2016-2017
FOURTH EDITION
FULL-LINE CATALOG

Carbide | Cobalt | Powder Metal | HSS
Endmills | Drills | Routers | Drill Mills | Specials Per Print

PCT™

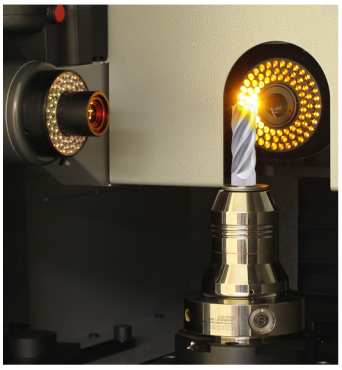
PRECISION CUTTING TOOLS, INC.

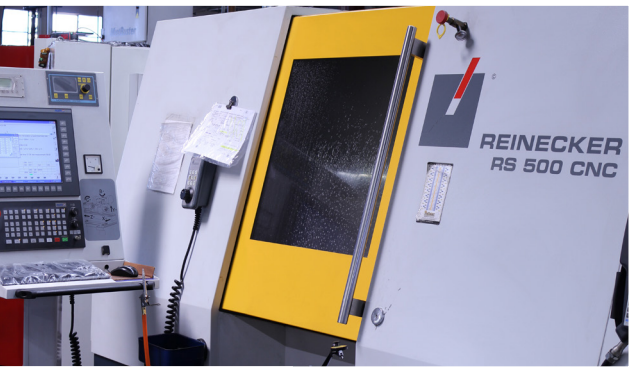
CUTTINGTOOL SOLUTIONS

PCTCUTTERS.COM

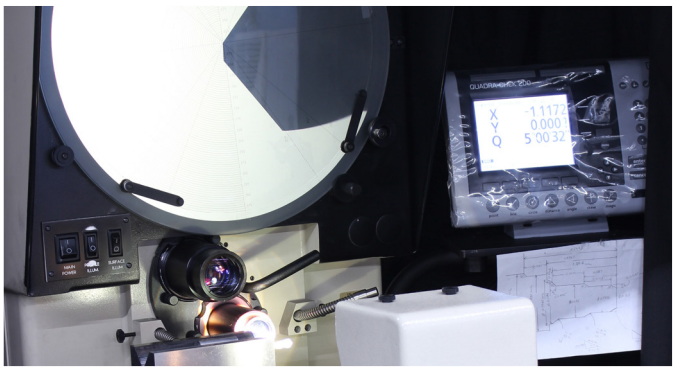
Proudly Manufactured in the United States of America

QUALITY





INNOVATION



RELIABILITY

OVER 50 YEARS IN THE INDUSTRY

PRECISION CUTTING TOOLS, INC.

13701 Excelsior Dr.
Santa Fe Springs, CA 90670

Email: sales@pctcutters.com
Web: www.pctcutters.com

Phone: (562) 921-7898
Fax: (562) 926-0156

MEMBERS OF:

UNITED STATES CUTTING TOOL INSTITUTE

INDUSTRIAL SUPPLY ASSOCIATION
Linking Channel Partners

ABOUT PCT

Precision Cutting Tools Inc. was founded in 1963 and has specialized in the production of high-quality cutting tools, ever since. Today, with over fifty years of experience, PCT is a leading cutting tool manufacturer that distributes its products all across the United States, Mexico and Europe.

We base our company's success on our long-standing commitment to satisfy our customers' needs, by utilizing the finest raw materials, introducing innovative cutting tools and providing excellent customer service. Furthermore, we have distinguished ourselves from our competitors, by providing our customers with American manufactured and German engineered cutting tools.

SPECIALTIES

Carbide | Cobalt | PowderMetal | HSS
Endmills | Drills | Drill Mills | Routers | Specials Per Print

MISSION

Our purpose is to satisfy and fulfill the needs of our customers and employees through product innovation, a pleasant work environment and continued financial growth.

VISION

Become the leader and most preferred end mill and drill manufacturer that delivers high-quality products at competitive pricing.

IN-HOUSE PVD COATING

In 2004, we integrated our own in-house coating facility, PCT Coating Solutions, to complement our cutting tools and simplify our customers' shopping experience. We invested heavily on quality management systems that earned our in-house coating facility ISO 9001:2008 certification.

QAS INTERNATIONAL
ISO 9001:2008
REGISTERED FIRM
Certificate No. US3597

Major Users

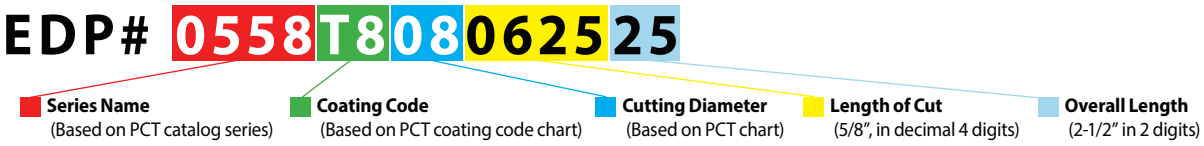
BOSCH
GKN AEROSPACE
Raytheon
ROLLS ROYCE
Cessna
TESLA
LOCKHEED MARTIN
NORTHROP GRUMMAN
United Technologies
BOEING
SPACEX
Triumph Group, Inc.

PCT does not endorse or is in affiliation with any of the logos (companies) displayed above.

UNDERSTANDING OUR EDP# SYSTEM

How to read Carbide Endmill EDP#'s

Example: **EDP#** 0558T808062525 **Dimensions:** 1/2 x 1/2 x 5/8 x 2-1/2



Additional Dimensions

Radius
.030-0558T808062525
If the cutting tool has a radius, the radius is added in front of the part number followed by a hyphen.

Ball End
0558T808062525B
If the cutting tool is a ball end, there is a "**B**" at the end of the part number.

Left-Hand
0558T808062525L
If the cutting tool has a left-hand spiral, there is an "**L**" at the end of the part number.

Extended Neck EDP#
0558T80806253.1
Cutting Dia: 1/2"
Shank Dia: 1/2"
LOC: 5/8"
REACH: 1-3/8
OAL: 3"
If the cutting tool has a reach, at the end of the base part number there is a "**.**" followed by the reach (1 single digit).

Cutting Diam. Code

Sizes	Decimal	Code
1/8	.1250	02
3/16	.1875	03
1/4	.2500	04
5/16	.3125	05
3/8	.3750	06
7/16	.4375	07
1/2	.5000	08
9/16	.5625	09
5/8	.6250	10
11/16	.6875	11
3/4	.7500	12
13/16	.8125	13
7/8	.8750	14
15/16	.9375	15
1	1.000	16
1-1/8	1.125	19
1-1/4	1.250	20
1-3/8	1.375	22
1-1/2	1.500	24

Coating Code

- **T0 - Uncoated**
- **T1 - TiN**
- **T2 - TiCN**
- **T4 - Exxtral Plus®/Varianta® Supral**
- **T5 - Variantic®**
- **T6 - Z-Power®/ZircoPlus®**
- **T7 - SisNa®**
- **T8 - Silver-Exx®**
- **T9 - Varianta® Supral**
- **TZ - ZircoPlus®**

Note: For order history purposes

- Drills ending in T6 are now coated with **ZircoPlus®**
- Carbide tools containing T4 are now coated with **Varianta® Supral**

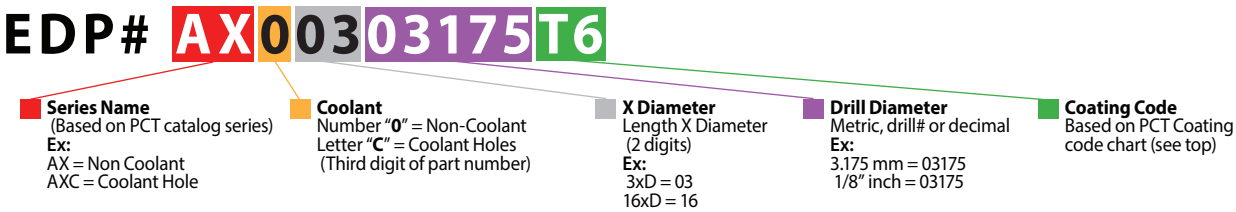
How to read Drill EDP#'s

Non-Coolant EDP#

AX0303175T6 **Dimensions:** .1250 X 1/8 X 7/8 X 2

Coolant-Hole EDP#

AXC0303175T6 **Dimensions:** .1250 X 6mm X 20mm X 62mm



NEW IN THIS CATALOG

Drills

HI-DEPTH™ LONG DRILLS
40xD-50xD

SXC Series ..... Page 94

AXC Series ..... Page 24

FXC Series - Straight Flute, 4 Margins for Aluminum & Cast Iron ..... Page 54

IXC Series - Triple-Margin, Internal Coolant for Cast & Ductile Iron ..... Page 64

NXC Series - Double-Margin, Internal Coolant for Nickel-Based Alloys ..... Page 126

Services

EDGECUT™ Edge Preparation Technology for a stronger cutting edge and longer tool life ..... Page 271

PVD Coatings

Coating Name Changes: Same great formulas: Exxtral Silver® -> Silver-Exx® and Sistral® -> SisNa®.

New Standard Coatings:

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

SisNa®

SisNa® is ideal for high-speed machining of tough materials; providing increased wear and oxidation resistance.

Applications Tabs

Find your tools faster! NEW Color-coded tabs designate applications for each tool.

P	M	K	N	S	H
Steels - Alloy/Carbon (FSS, MSS, PH)	Stainless Steels (AUSS, Duplex, FSS)	Iron (Gray Cast Iron, Ductile Iron)	Aluminum (Wrought, Hi/Lo - Si, Copper)	Heat-Resistant Alloys (Iron-Based, Nickel, Titanium)	Hardened Tool Steels (H Series, D Series)

Discontinued

C224 Series, see 224 Series page 180

428 Series, see 429 Series page 192

781 Series, see 545 Series page 188

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HIGH PERFORMANCE MACHINING + 174-177

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STANDARD ENDMILLS 196-213

CARBIDE ROUTERS Pages 214-215

CARBIDE DRILL MILLS Pages 216-217

PM30, PM4, COBALT, HSS ENDMILLS Pages 218-260

POWDER METAL (PM30) ENDMILLS 220-225

POWDER METAL (PM4) ENDMILLS 226-230

COBALT (M42) ENDMILLS 232-251

HIGH SPEED STEEL (M7) ENDMILLS 252-260

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SERVICES

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ALUMINUM & CAST IRON		Material	Depths	Flutes	Helix	Point	Page
AX		N	3xD - 5xD	2	15°	135°	18
AXC		N	3xD - 50xD	2	15°	135°	24
CX		K N	3xD - 5xD	3	30°	130°	42
CXC		K N	3xD - 5xD	3	30°	130°	48
FXC		K N	5xD - 16xD	2	0°	130°	54
IXC		K	3xD - 30xD	2	15°	135°	64
GENERAL/MULTI-PURPOSE							
SX		P M K S	3xD - 5xD	2	30°	135°	80
GXC		P M K S	3xD - 8xD	2	30°	135°	86
SXC		P M K S	12xD - 50xD	2	30°	135°	94
TX		P M N S	3xD - 5xD	2	38°	140°	106
TXC		P M N S	3xD - 5xD	2	38°	140°	112
STEELS (Carbon, Alloys, PH)							
DX		P K	3xD - 12xD	2	30°	140°	118
NICKEL-BASED ALLOYS							
NXC		S H	3xD - 30xD	2	15°	135°	126
HARDENED MATERIALS							
HX		P K H	3xD - 5xD	2	30°	140°	142
HXC		P K H	3xD - 5xD	2	30°	140°	148
SPOTTING & PILOT DRILLS							
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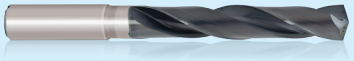
PILOT DRILL		P M K N S	5xD Pilot Drills	2	30°	140°	157

All deep-hole drills 16xD and above must utilize a pilot hole drill

MATERIAL CODE

P	1	**Low-Carbon Steels** - 1000 Series (>25 HRc)
	2	**Low-Carbon Steels** - 1000 Series (<25 HRc)
	3	**Alloy Tool Steels** - 1300, 2000, 3000 (≤35 HRc)
	4	**Alloy Tool Steels** - 1300, 2000, 3000 (36-48 HRc)
	5	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (≤35 HRc)
	6	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (36-48 HRc)
M	1	**Austenitic Stainless Steels** - Inox, 200 Series, 300 Series and 304L
	2	**Austenitic Stainless Steels & Cast Stainless Steels** - 310, 314, 316 (<25HRc)
	3	**Duplex Steels (Austenitic & Ferritic)** - 323, 329, F55, 2205
K	1	**Gray Cast Iron**
	2	**Ductile Iron** - 60-40-18, 65-45-12 (<28HRc)
	3	**Ductile Iron** - 32510, 35018 (<38HRc)
N	1	**Wrought Aluminum Alloys**
	2	**Low-Silicon Aluminum Alloys** - Si <12.2% - 6061, 7075
	3	**High-Silicon Aluminum Alloys** - Si >12.2% - 6061, 7075
	4	**Metal Matrix Composite** - (Glass Filament Epoxy, Fiber Glass, Graphite)
	5	**Copper & Copper Alloys**
	6	**Carbon & Graphite Composites**
S	1	**Iron-Based, Heat-Resistant Alloys** - Incoloy 800-802, A-286, N-155
	2	**Nickel-Based, Cobalt-Based, Heat-Resistant Alloys** - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48 HRc)
	4	**Titanium Alloys** - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
H	1	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRc)
	2	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRc)
	3	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRc)
	4	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

SOLID CARBIDE ENDMILLS

VARIABLE ENDMILLS	Flutes	Helix Angle
SERIES 360 Roughing or Finishing	3	-
SERIES 451 * Roughing or Finishing	4	-
SERIES 453 Rough & Finish	4	-
SERIES 538 Finishing	5	38°
SERIES 558 Roughing	5	35°
SERIES 374 Roughing or Finishing	6	-

HIGH PERFORMANCE MACHINING ENDMILLS (HPM+)	Flutes	Helix Angle
SERIES H235 Finishing	2	35°
SERIES H337 Finishing	3	37°

HIGH PERFORMANCE ENDMILLS	Flutes	Helix Angle
SERIES 603 Finishing	3	60°
SERIES 224 * Finishing	2	45°
SERIES 314 * Finishing	3	45°
SERIES 345/W345 Finishing	3	45°
SERIES 545 Finishing	5, 7	45°
SERIES 640 Finishing	6	40°

HIGH PERFORMANCE ROUGHING ENDMILLS	Flutes	Helix Angle
SERIES 429 * Coarse Pitch	5, 7	45°
SERIES 430 Negative Rake	4, 6	40°

*** Metric Available**

Performance Level

1 ELITE

Our *Elite Performance* tools are ideal for the most demanding applications. They are guaranteed to improve productivity and machining/cycle time, while still providing impressive tool life.

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●● Highly Recommended ● Recommended ○ Not Recommended

2 **SUPERIOR**

Our *Superior Performance* tools are ideal for challenging operations. They provide increased metal removal rates, while maintaining tool life.

3 **PREMIUM**

Our *Premium Performance* tools are ideal for standard machining. They provide impressive and reliable results at excellent value.

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	2	**Ductile Iron** - 60-40-18, 65-45-12 (<28HRc)
	3	**Ductile Iron** - 32510, 35018 (<38HRc)
N	1	**Wrought Aluminum Alloys**
	2	**Low-Silicon Aluminum Alloys** - Si <12.2% - 6061, 7075
	3	**High-Silicon Aluminum Alloys** - Si >12.2% - 6061, 7075
	4	**Metal Matrix Composite** - (Glass Filament Epoxy, Fiber Glass, Graphite)
	5	**Copper & Copper Alloys**
	6	**Carbon & Graphite Composites**
S	1	**Iron-Based, Heat-Resistant Alloys** - Incoloy 800-802, A-286, N-155
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	4	**Titanium Alloys** - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
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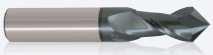
	4	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

SOLID CARBIDE ENDMILLS

STANDARD ENDMILLS (GENERAL PURPOSE)	Flutes	Helix Angle
SERIES 235 * Finishing	2	35°
SERIES 337/W337 Finishing	3	37°
SERIES 338 Coarse Pitch Rougher	3	37°
SERIES 339 Truncated Rougher	3	37°
SERIES 406 * Finishing	4	30°
SERIES 408 RH Cut - LH Spiral	4	30°
SERIES 410 LH Cut - RH Spiral	4	30°
SERIES 630 Finishing	6	30°
SERIES 423 * Fine Pitch Rougher	4	20°

CARBIDE ROUTERS	Flutes	Helix Angle
SERIES 219 Single Flute Router	1	0°
SERIES 220 2 Flute Router	2	0°

DRILL MILLS	Flutes	Helix Angle
SERIES 2060 60° Drill Point	2	30°
 **SERIES 2090** 90° Drill Point	2	30°
SERIES 4060 60° Drill Point	4	30°
SERIES 4090 90° Drill Point	4	30°

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	2	**Nickel-Based, Cobalt-Based, Heat-Resistant Alloys** - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48 HRc)
	4	**Titanium Alloys** - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
H	1	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRc)
	2	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRc)
	3	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRc)
	4	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

POWDER METAL / COBALT / HSS ENDMILLS

POWDER METAL (PM30) ENDMILLS

4 Flute Finisher

5 Flute Finisher

6 Flute Finisher

8 Flute Finisher

4 Flute Rougher - Coarse Pitch

5 Flute Rougher - Coarse Pitch

6 Flute Rougher - Coarse Pitch

8 Flute Rougher - Coarse Pitch

4 Flute Rougher - Fine Pitch

5 Flute Rougher - Fine Pitch

6 Flute Rougher - Fine Pitch

8 Flute Rougher - Fine Pitch

POWDER METAL (PM4) ENDMILLS

3 Flute Finisher

3 Flute Truncated Rougher / Finisher

3 Flute Rougher - Coarse Pitch

COBALT (M42) ENDMILLS

2 Flute Finisher

4 Flute Finisher

6 Flute Finisher

8 Flute Finisher

High-Performance - For Titanium And Stainless Steel Alloys		Helix	Extended Neck	Left-Hand	Standard
Square / Ball End	P M K S H	35°	-	-	220
Square / Ball End	P M K S H	35°	Page 222	-	-
Square / Ball End	P M K S H	35°	Page 222	-	221
Square / Ball End	P M K S H	35°	Page 222	-	221
Square / Ball End	P M K S H	30°	-	-	223
Square / Ball End	P M K S H	30°	-	-	223
Square / Ball End	P M K S H	30°	-	-	223
Square / Ball End	P M K S H	30°	-	-	223
Square / Ball End	P M K S H	30°	-	-	224
Square / Ball End	P M K S H	30°	Page 225	-	224
Square / Ball End	P M K S H	30°	Page 225	-	224
Square / Ball End	P M K S H	30°	Page 225	-	224

High-Performance - For Aluminum Alloys / General Purpose		Helix	Extended Neck	Left-Hand	Standard
Square / Ball End	N	37°	Page 227	-	226
Square / Ball End	N	37°	Page 229	-	228
Square / Ball End	N	37°	-	-	230

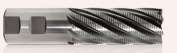
For General Purpose		Helix	Extended Neck	Left-Hand	Standard
Square / Ball End	P M K S	35°	Page 233	233	232
Square / Ball End	P M K S	35°	-	238	234
Square / Ball End	P M K S	35°	-	239	236
Square / Ball End	P M K S	35°	-	239	237

MATERIAL CODE

P	1	**Low-Carbon Steels** - 1000 Series (>25 HRc)
	2	**Low-Carbon Steels** - 1000 Series (<25 HRc)
	3	**Alloy Tool Steels** - 1300, 2000, 3000 (≤35 HRc)
	4	**Alloy Tool Steels** - 1300, 2000, 3000 (36-48 HRc)
	5	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (≤35 HRc)
	6	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (36-48 HRc)
M	1	**Austenitic Stainless Steels** - Inox, 200 Series, 300 Series and 304L
	2	**Austenitic Stainless Steels & Cast Stainless Steels** - 310, 314, 316 (<25HRc)
	3	**Duplex Steels (Austenitic & Ferritic)** - 323, 329, F55, 2205
K	1	**Gray Cast Iron**
	2	**Ductile Iron** - 60-40-18, 65-45-12 (<28HRc)
	3	**Ductile Iron** - 32510, 35018 (<38HRc)
N	1	**Wrought Aluminum Alloys**
	2	**Low-Silicon Aluminum Alloys** - Si <12.2% - 6061, 7075
	3	**High-Silicon Aluminum Alloys** - Si >12.2% - 6061, 7075
	4	**Metal Matrix Composite** - (Glass Filament Epoxy, Fiber Glass, Graphite)
	5	**Copper & Copper Alloys**
	6	**Carbon & Graphite Composites**
S	1	**Iron-Based, Heat-Resistant Alloys** - Incoloy 800-802, A-286, N-155
	2	**Nickel-Based, Cobalt-Based, Heat-Resistant Alloys** - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48 HRc)
	4	**Titanium Alloys** - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
H	1	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRc)
	2	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRc)
	3	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRc)
	4	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

POWDER METAL / COBALT / HSS **ENDMILLS**

COBALT (M42) ENDMILLS

	4 Flute Rougher / Finisher
	6 Flute Rougher / Finisher
	4 Flute Rougher - Coarse Pitch
	5 Flute Rougher - Coarse Pitch
	6 Flute Rougher - Coarse Pitch
	8 Flute Rougher - Coarse Pitch
	4 Flute Rougher - Fine Pitch
	5 Flute Rougher - Fine Pitch
	6 Flute Rougher - Fine Pitch
	8 Flute Rougher - Fine Pitch
	4, 6, 8 Flute CurveCut™ Ground
	4, 6, 8 Flute CurveCut™ Milled

HIGH SPEED STEEL (M7) ENDMILLS

	2 Flute Finisher
	2 Flute Finisher
	3 Flute Finisher
	3 Flute Rougher - Coarse Pitch
	4 Flute Finisher
	6 Flute Finisher
	8 Flute Finisher

For General Purpose		Helix	Extended Neck	Left-Hand	Standard
Square / Ball End	P M K S	35°	-	-	240
Square / Ball End	P M K S	35°	-	-	241
Square / Ball End	P M K S	30°	-	244	242
Square / Ball End	P M K S	30°	-	244	242
Square / Ball End	P M K S	30°	-	244	243
Square / Ball End	P M K S	30°	-	244	243
Square / Ball End	P M K S	30°	-	245	245
Square / Ball End	P M K S	30°	-	246	246
Square / Ball End	P M K S	30°	-	247	247
Square / Ball End	P M K S	30°	-	248	248
Square	P M K S	35°	-	-	250
Square	P M K S	35°	-	-	251

For General Purpose		Helix	Extended Neck	Left-Hand	Standard
Square / Ball End	P M K S	30°	Page 253	253	252
Square / Ball End	N	37°	-	255	254
Square / Ball End	N	37°	-	257	256
Square / Ball End	N	37°	-	259	258
Square / Ball End	P M K S	32-1/2°	-	-	260
Square / Ball End	P M K S	32-1/2°	-	-	260
Square / Ball End	P M K S	32-1/2°	-	-	260

MATERIAL CODE **Page 261**

PRECISION CUTTING TOOLS, INC.

CARBIDE DRILLS

External Coolant & Internal Coolant

FXC Series p.54

DX Series p.118

NXC Series p.126

CXC Series p.48

TX Series p.106

Drills from 3xD - 50xD

SXC Series p.94

AXC Series p.24

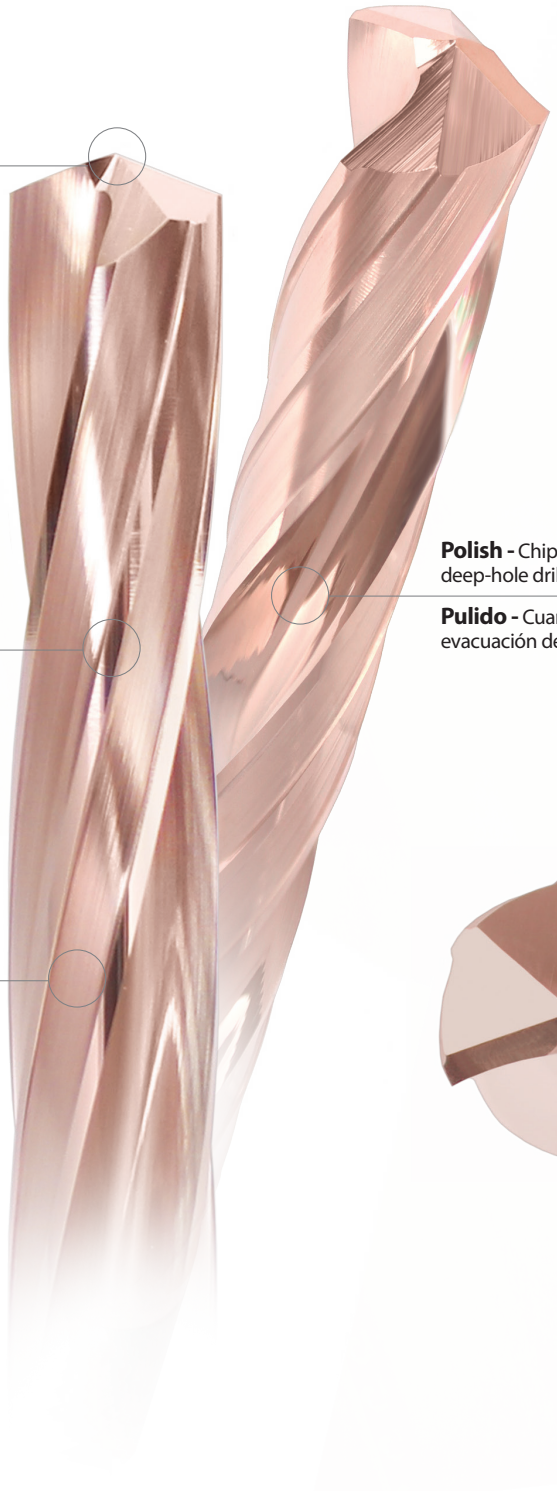
Now Improved with EDGE CUT™ for Superior Cutter Performance

AX

High-Performance Drill
Triple-Margin
Ideal for Aluminum and Non-Ferrous Materials
3xD-5xD

135° Point Geometry - Engineered to provide you with advanced drilling capabilities.

135° Geometría de la Punta - Diseñado para ofrecerle capacidades avanzadas de perforación.



Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

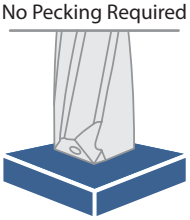
Triple-Margin Design - Ideal for improving surface finish and increasing stability.

Diseño de Tres Márgenes - Ideal para mejorar el acabado superficial y aumentar la estabilidad.

ZircoPlus® Coating - Provides increased corrosion and abrasion resistance, for maximized machining.

ZircoPlus® Recubrimiento - Ofrece mayor resistencia a la abrasión y corrosión, para lograr máximo mecanizado.

No Pecking Required



CARBIDE CARBURO | 3xD to 5xD | 135° | 15° | Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

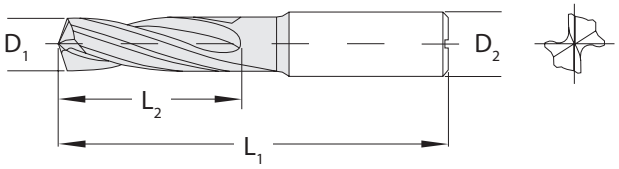
Design
Long spiral-fluted, triple-margin, right-hand cut and external coolant.

Coating
ZircoPlus®

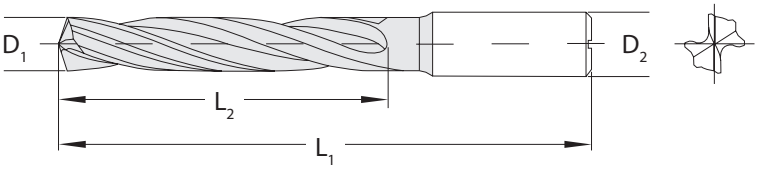
Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

3xD PAGE 20



5xD PAGE 22



Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante externo.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Speeds & Feeds: Refer to Page 21 & 23.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Design
Long spiral-fluted, triple-margin, right-hand cut and external coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante externo.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

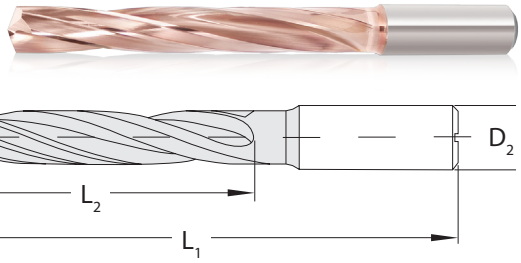
N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 21.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	AX00306250T6
#52	.0635	1.61	1/8	11/16	2	AX00300520T6
#51	.0670	1.70	1/8	11/16	2	AX00300510T6
#50	.0700	1.78	1/8	11/16	2	AX00300500T6
#49	.0730	1.85	1/8	11/16	2	AX00300490T6
#48	.0760	1.93	1/8	11/16	2	AX00300480T6
5/64	.0781	1.98	1/8	11/16	2	AX00307810T6
#47	.0785	1.99	1/8	3/4	2-1/2	AX00300470T6
	.0787	2.00	1/8	3/4	2-1/2	AX00307870T6
#46	.0810	2.06	1/8	3/4	2-1/2	AX00300460T6
#45	.0820	2.08	1/8	3/4	2-1/2	AX00300450T6
#44	.0860	2.18	1/8	3/4	2-1/2	AX00300440T6
#43	.0890	2.26	1/8	3/4	2-1/2	AX00300430T6
#42	.0935	2.37	1/8	3/4	2-1/2	AX00300420T6
3/32	.0938	2.38	1/8	3/4	2-1/2	AX00309380T6
#41	.0960	2.44	1/8	13/16	2-1/2	AX00300410T6
#40	.0980	2.49	1/8	13/16	2-1/2	AX00300400T6
	.0984	2.50	1/8	13/16	2-1/2	AX00309840T6
#39	.0995	2.53	1/8	13/16	2-1/2	AX00300390T6
#38	.1015	2.58	1/8	13/16	2-1/2	AX00300380T6
#37	.1040	2.64	1/8	13/16	2-1/2	AX00300370T6
#36	.1065	2.71	1/8	13/16	2-1/2	AX00300360T6
7/64	.1094	2.78	1/8	13/16	2-1/2	AX00301094T6
#35	.1100	2.79	1/8	7/8	2-1/2	AX00300350T6
#34	.1110	2.82	1/8	7/8	2-1/2	AX00300340T6
#33	.1130	2.87	1/8	7/8	2-1/2	AX00300330T6
#32	.1160	2.95	1/8	7/8	2-1/2	AX00300320T6
	.1181	3.00	1/8	7/8	2-1/2	AX00303000T6
#31	.1200	3.05	1/8	7/8	2-1/2	AX00300310T6
1/8	.1250	3.17	1/8	7/8	2-1/2	AX00303175T6
#30	.1285	3.26	3/16	15/16	2-1/2	AX00300300T6
#29	.1360	3.45	3/16	15/16	2-1/2	AX00300290T6
	.1378	3.50	3/16	15/16	2-1/2	AX00303500T6
#28	.1405	3.57	3/16	15/16	2-1/2	AX00300280T6
9/64	.1406	3.57	3/16	1	2-1/2	AX00303570T6
#27	.1440	3.66	3/16	1	2-1/2	AX00300270T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1	2-1/2	AX00300260T6
#25	.1495	3.80	3/16	1	2-1/2	AX00300250T6
#24	.1520	3.86	3/16	1	2-1/2	AX00300240T6
#23	.1540	3.91	3/16	1	2-1/2	AX00300230T6
5/32	.1562	3.97	3/16	1	2-1/2	AX00303970T6
#22	.1570	3.99	3/16	1-1/16	2-1/2	AX00300220T6
	.1575	4.00	3/16	1-1/16	2-1/2	AX00304000T6
#21	.1590	4.04	3/16	1-1/16	2-1/2	AX00300210T6
#20	.1610	4.09	3/16	1-1/16	2-1/2	AX00300200T6
	.1654	4.20	3/16	1-1/16	2-1/2	AX00304200T6
#19	.1660	4.22	3/16	1-1/16	2-1/2	AX00300190T6
#18	.1695	4.30	3/16	1-1/16	2-1/2	AX00300180T6
11/64	.1719	4.37	3/16	1-1/16	2-1/2	AX00304370T6
#17	.1730	4.39	3/16	1-1/8	3	AX00300170T6
#16	.1770	4.49	3/16	1-1/8	3	AX00300160T6
	.1772	4.50	3/16	1-1/8	3	AX00304500T6
#15	.1800	4.57	3/16	1-1/8	3	AX00300150T6
#14	.1820	4.62	3/16	1-1/8	3	AX00300140T6
#13	.1850	4.70	3/16	1-1/8	3	AX00300130T6
3/16	.1875	4.76	3/16	1-1/8	3	AX00304760T6
#12	.1890	4.80	1/4	1-3/16	3	AX00300120T6
#11	.1910	4.85	1/4	1-3/16	3	AX00300110T6
#10	.1935	4.91	1/4	1-3/16	3	AX00300100T6
#9	.1960	4.98	1/4	1-3/16	3	AX00300090T6
	.1969	5.00	1/4	1-3/16	3	AX00305000T6
#8	.1990	5.05	1/4	1-3/16	3	AX00300080T6
	.2008	5.10	1/4	1-3/16	3	AX00305100T6
#7	.2010	5.10	1/4	1-3/16	3	AX00300070T6
13/64	.2031	5.16	1/4	1-3/16	3	AX00305160T6
#6	.2040	5.18	1/4	1-1/4	3	AX00300060T6
#5	.2055	5.22	1/4	1-1/4	3	AX00300050T6
#4	.2090	5.31	1/4	1-1/4	3	AX00300040T6
#3	.2130	5.41	1/4	1-1/4	3	AX00300030T6
	.2165	5.50	1/4	1-1/4	3	AX00302165T6
7/32	.2188	5.56	1/4	1-1/4	3	AX00305560T6
#2	.2210	5.61	1/4	1-1/4	3	AX00300020T6

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#1	.2280	5.79	1/4	1-1/4	3	AX00300010T6
A	.2340	5.94	1/4	1-1/4	3	AX003000A0T6
15/64	.2344	5.95	1/4	1-1/4	3	AX00305950T6
	.2362	6.00	1/4	1-3/8	3	AX00306000T6
B	.2380	6.04	1/4	1-3/8	3	AX003000B0T6
C	.2420	6.15	1/4	1-3/8	3	AX003000C0T6
D	.2460	6.25	1/4	1-3/8	3	AX003000D0T6
1/4/E	.2500	6.35	1/4	1-3/8	3	AX00306350T6
	.2559	6.50	5/16	1-7/16	3	AX00306500T6
F	.2570	6.53	5/16	1-7/16	3	AX003000F0T6
G	.2610	6.63	5/16	1-7/16	3	AX003000G0T6
17/64	.2656	6.75	5/16	1-7/16	3	AX00306750T6
H	.2660	6.76	5/16	1-1/2	3	AX003000H0T6
I	.2720	6.91	5/16	1-1/2	3	AX003000I0T6
	.2756	7.00	5/16	1-1/2	3	AX00307000T6
J	.2770	7.03	5/16	1-1/2	3	AX003000J0T6
K	.2810	7.14	5/16	1-1/2	3	AX003000K0T6
9/32	.2812	7.14	5/16	1-1/2	3	AX00307140T6
L	.2900	7.37	5/16	1-9/16	4	AX003000L0T6
M	.2950	7.49	5/16	1-9/16	4	AX003000M0T6
	.2953	7.50	5/16	1-9/16	4	AX00307500T6
19/64	.2969	7.54	5/16	1-9/16	4	AX00307540T6
N	.3020	7.67	5/16	1-5/8	4	AX003000N0T6
5/16	.3125	7.94	5/16	1-5/8	4	AX00307940T6
	.3150	8.00	3/8	1-11/16	3	AX00308000T6
O	.3160	8.03	3/8	1-11/16	3	AX003000O0T6
P	.3230	8.20	3/8	1-11/16	3	AX003000P0T6
21/64	.3281	8.33	3/8	1-11/16	3	AX00308330T6
Q	.3320	8.43	3/8	1-11/16	3	AX003000Q0T6
	.3346	8.50	3/8	1-11/16	3	AX00308500T6
R	.3390	8.61	3/8	1-11/16	4	AX003000R0T6
11/32	.3438	8.73	3/8	1-11/16	4	AX00308730T6
S	.3480	8.84	3/8	1-3/4	4	AX003000S0T6
	.3543	9.00	3/8	1-3/4	4	AX00309000T6
T	.3580	9.09	3/8	1-3/4	4	AX003000T0T6
23/64	.3594	9.13	3/8	1-3/4	4	AX00309130T6
U	.3680	9.35	3/8	1-13/16	4	AX003000U0T6
	.3740	9.50	3/8	1-13/16	4	AX00309500T6
3/8	.3750	9.52	3/8	1-13/16	4	AX00309520T6
V	.3770	9.57	7/16	1-7/8	4	AX003000V0T6
W	.3860	9.80	7/16	1-7/8	4	AX003000W0T6
25/64	.3906	9.92	7/16	1-7/8	4	AX00309920T6
	.3937	10.00	7/16	1-15/16	4	AX00310000T6
X	.3970	10.08	7/16	1-15/16	4	AX003000X0T6
Y	.4040	10.26	7/16	1-15/16	4	AX003000Y0T6
13/32	.4062	10.32	7/16	1-15/16	4	AX00310320T6
Z	.4130	10.49	7/16	2	4	AX003000Z0T6
	.4134	10.50	7/16	2	4	AX00310500T6
27/64	.4219	10.72	7/16	2	4	AX00310720T6
	.4252	10.80	7/16	2	4	AX00310800T6
	.4331	11.00	7/16	2-1/16	4	AX00311000T6
7/16	.4375	11.11	7/16	2-1/16	4	AX00311110T6
	.4528	11.50	1/2	2-1/8	4	AX00311500T6
29/64	.4531	11.51	1/2	2-1/8	4	AX00311510T6
15/32	.4688	11.91	1/2	2-1/8	4	AX00311910T6
	.4724	12.00	1/2	2-3/16	5	AX00312000T6
31/64	.4844	12.30	1/2	2-3/16	5	AX00312300T6
	.4921	12.50	1/2	2-1/4	5	AX00312500T6
1/2	.5000	12.70	1/2	2-1/4	5	AX00312700T6
	.5118	13.00	9/16	2-3/8	5	AX00313000T6
33/64	.5156	13.10	9/16	2-3/8	5	AX00313100T6
17/32	.5312	13.49	9/16	2-1/2	5	AX00313490T6
	.5315	13.50	9/16	2-1/2	5	AX00313500T6
35/64	.5469	13.89	9/16	2-1/2	5	AX00313890T6
	.5512	14.00	9/16	2-1/2	5	AX00314000T6
9/16	.5625	14.29	9/16	3	5	AX00314290T6
	.5709	14.50	5/8	3	5	AX00314500T6
37/64	.5781	14.68	5/8	3	5	AX00314680T6
	.5906	15.00	5/8	3	5	AX00315000T6
19/32	.5938	15.08	5/8	3	5	AX00315080T6
39/64	.6094	15.48	5/8	3	5	AX00315480T6
	.6102	15.50	5/8	3	5	AX00315500T6
5/8	.6250	15.87	5/8	3	5	AX00315870T6
	.6299	16.00	3/4	3	5	AX00316000T6

Other Dimensions are Available Upon Request

AX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	326		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	326		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	317		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	156		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	1069.6		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1069.6		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1040.1		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	511.8		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, triple-margin, right-hand cut and external coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante externo.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

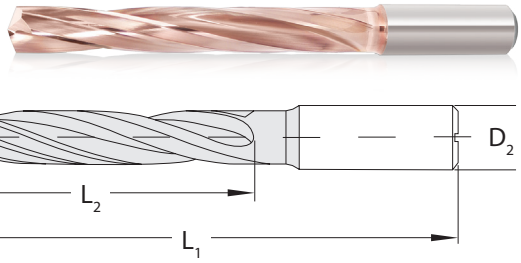
N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 23.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	AX00506250T6
#52	.0635	1.61	1/8	3/4	2-1/2	AX00500520T6
#51	.0670	1.70	1/8	3/4	2-1/2	AX00500510T6
#50	.0700	1.78	1/8	7/8	2-1/2	AX00500500T6
#49	.0730	1.85	1/8	7/8	2-1/2	AX00500490T6
#48	.0760	1.93	1/8	7/8	2-1/2	AX00500480T6
5/64	.0781	1.98	1/8	7/8	2-1/2	AX00507810T6
#47	.0785	1.99	1/8	7/8	2-1/2	AX00500470T6
	.0787	2.00	1/8	7/8	2-1/2	AX00507870T6
#46	.0810	2.06	1/8	7/8	2-1/2	AX00500460T6
#45	.0820	2.08	1/8	7/8	2-1/2	AX00500450T6
#44	.0860	2.18	1/8	1	2-1/2	AX00500440T6
#43	.0890	2.26	1/8	1	2-1/2	AX00500430T6
#42	.0935	2.37	1/8	1	2-1/2	AX00500420T6
3/32	.0938	2.38	1/8	1	2-1/2	AX00509380T6
#41	.0960	2.44	1/8	1	3	AX00500410T6
#40	.0980	2.49	1/8	1	3	AX00500400T6
	.0984	2.50	1/8	1-1/4	3	AX00509840T6
#39	.0995	2.53	1/8	1-1/4	3	AX00500390T6
#38	.1015	2.58	1/8	1-1/4	3	AX00500380T6
#37	.1040	2.64	1/8	1-1/4	3	AX00500370T6
#36	.1065	2.71	1/8	1-1/4	3	AX00500360T6
7/64	.1094	2.78	1/8	1-1/4	3	AX00501094T6
#35	.1100	2.79	1/8	1-1/4	3	AX00500350T6
#34	.1110	2.82	1/8	1-1/4	3	AX00500340T6
#33	.1130	2.87	1/8	1-1/4	3	AX00500330T6
#32	.1160	2.95	1/8	1-1/4	3	AX00500320T6
	.1181	3.00	1/8	1-1/4	3	AX00503000T6
#31	.1200	3.05	1/8	1-1/4	3	AX00500310T6
1/8	.1250	3.17	1/8	1-1/4	3	AX00503175T6
#30	.1285	3.26	3/16	1-1/4	3	AX00500300T6
#29	.1360	3.45	3/16	1-3/8	3	AX00500290T6
	.1378	3.50	3/16	1-3/8	3	AX00503500T6
#28	.1405	3.57	3/16	1-3/8	3	AX00500280T6
9/64	.1406	3.57	3/16	1-3/8	3	AX00503570T6
#27	.1440	3.66	3/16	1-3/8	3	AX00500270T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1-3/8	3	AX00500260T6
#25	.1495	3.80	3/16	1-3/8	3	AX00500250T6
#24	.1520	3.86	3/16	1-3/8	3	AX00500240T6
#23	.1540	3.91	3/16	1-3/8	3	AX00500230T6
5/32	.1562	3.97	3/16	1-3/8	3	AX00503970T6
#22	.1570	3.99	3/16	1-3/8	3	AX00500220T6
	.1575	4.00	3/16	1-3/8	3	AX00504000T6
#21	.1590	4.04	3/16	1-3/8	3	AX00500210T6
#20	.1610	4.09	3/16	1-3/8	3	AX00500200T6
#19	.1660	4.22	3/16	1-5/8	4	AX00500190T6
#18	.1695	4.30	3/16	1-5/8	4	AX00500180T6
11/64	.1719	4.37	3/16	1-5/8	4	AX00504370T6
#17	.1730	4.39	3/16	1-5/8	4	AX00500170T6
#16	.1770	4.49	3/16	1-5/8	4	AX00500160T6
	.1772	4.50	3/16	1-5/8	4	AX00504500T6
#15	.1800	4.57	3/16	1-5/8	4	AX00500150T6
#14	.1820	4.62	3/16	1-5/8	4	AX00500140T6
#13	.1850	4.70	3/16	1-5/8	4	AX00500130T6
3/16	.1875	4.76	3/16	1-5/8	4	AX00504760T6
#12	.1890	4.80	1/4	1-5/8	4	AX00500120T6
#11	.1910	4.85	1/4	1-5/8	4	AX00500110T6
#10	.1935	4.91	1/4	1-5/8	4	AX00500100T6
#9	.1960	4.98	1/4	1-3/4	4	AX00500090T6
	.1969	5.00	1/4	1-3/4	4	AX00505000T6
#8	.1990	5.05	1/4	1-3/4	4	AX00500080T6
#7	.2010	5.10	1/4	1-3/4	4	AX00500070T6
13/64	.2031	5.16	1/4	1-3/4	4	AX00505160T6
#6	.2040	5.18	1/4	1-3/4	4	AX00500060T6
#5	.2055	5.22	1/4	1-3/4	4	AX00500050T6
#4	.2090	5.31	1/4	1-3/4	4	AX00500040T6
#3	.2130	5.41	1/4	1-3/4	4	AX00500030T6
	.2165	5.50	1/4	1-3/4	4	AX00502165T6
7/32	.2188	5.56	1/4	1-3/4	4	AX00505560T6
#2	.2210	5.61	1/4	1-3/4	4	AX00500020T6
#1	.2280	5.79	1/4	1-3/4	4	AX00500010T6
A	.2340	5.94	1/4	2	4	AX005000A0T6

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
15/64	.2344	5.95	1/4	2	4	AX00505950T6
	.2362	6.00	1/4	2	4	AX00506000T6
B	.2380	6.04	1/4	2	4	AX005000B0T6
C	.2420	6.15	1/4	2	4	AX005000C0T6
D	.2460	6.25	1/4	2	4	AX005000D0T6
1/4/E	.2500	6.35	1/4	2	4	AX00506350T6
	.2559	6.50	5/16	2	4	AX00506500T6
F	.2570	6.53	5/16	2	4	AX005000F0T6
G	.2610	6.63	5/16	2-1/8	4	AX005000G0T6
17/64	.2656	6.75	5/16	2-1/8	4	AX00506750T6
H	.2660	6.76	5/16	2-1/8	4	AX005000H0T6
I	.2720	6.91	5/16	2-1/8	4	AX005000I0T6
	.2756	7.00	5/16	2-1/8	4	AX00507000T6
J	.2770	7.03	5/16	2-1/8	4	AX005000J0T6
K	.2810	7.14	5/16	2-1/8	4	AX005000K0T6
9/32	.2812	7.14	5/16	2-1/8	4	AX00507140T6
L	.2900	7.37	5/16	2-1/8	4	AX005000L0T6
M	.2950	7.49	5/16	2-3/8	4	AX005000M0T6
	.2953	7.50	5/16	2-3/8	4	AX00507500T6
19/64	.2969	7.54	5/16	2-3/8	4	AX00507540T6
N	.3020	7.67	5/16	2-3/8	4	AX005000N0T6
5/16	.3125	7.94	5/16	2-3/8	4	AX00507940T6
	.3150	8.00	3/8	2-3/8	4	AX00508000T6
O	.3160	8.03	3/8	2-3/8	4	AX005000O0T6
P	.3230	8.20	3/8	2-3/8	4	AX005000P0T6
21/64	.3281	8.33	3/8	2-1/2	5	AX00508330T6
Q	.3320	8.43	3/8	2-1/2	5	AX005000Q0T6
	.3346	8.50	3/8	2-1/2	5	AX00508500T6
R	.3390	8.61	3/8	2-1/2	5	AX005000R0T6
11/32	.3438	8.73	3/8	2-1/2	5	AX00508730T6
S	.3480	8.84	3/8	2-1/2	5	AX005000S0T6
	.3543	9.00	3/8	2-1/2	5	AX00509000T6
T	.3580	9.09	3/8	2-3/4	5	AX005000T0T6
23/64	.3594	9.13	3/8	2-3/4	5	AX00509130T6
U	.3680	9.35	3/8	2-3/4	5	AX005000U0T6
	.3740	9.50	3/8	2-3/4	5	AX00509500T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
3/8	.3750	9.52	3/8	2-3/4	5	AX00509520T6
V	.3770	9.57	7/16	2-7/8	5	AX005000V0T6
W	.3860	9.80	7/16	2-7/8	5	AX005000W0T6
25/64	.3906	9.92	7/16	2-7/8	5	AX00509920T6
	.3937	10.00	7/16	2-7/8	5	AX00510000T6
X	.3970	10.08	7/16	2-7/8	5	AX005000X0T6
Y	.4040	10.26	7/16	2-7/8	5	AX005000Y0T6
13/32	.4062	10.32	7/16	2-7/8	5	AX00510320T6
Z	.4130	10.49	7/16	2-7/8	5	AX005000Z0T6
	.4134	10.50	7/16	2-7/8	5	AX00510500T6
27/64	.4219	10.72	7/16	2-7/8	5	AX00510720T6
	.4252	10.80	7/16	2-7/8	5	AX00510800T6
	.4331	11.00	7/16	2-7/8	5	AX00511000T6
7/16	.4375	11.11	7/16	2-7/8	5	AX00511110T6
	.4528	11.50	1/2	3	5	AX00511500T6
29/64	.4531	11.51	1/2	3	5	AX00511510T6
15/32	.4688	11.91	1/2	3	5	AX00511910T6
	.4724	12.00	1/2	3	5	AX00512000T6
31/64	.4844	12.30	1/2	3	5	AX00512300T6
	.4921	12.50	1/2	3	5	AX00512500T6
1/2	.5000	12.70	1/2	3	5	AX00512700T6
	.5118	13.00	9/16	3-1/4	5	AX00513000T6
33/64	.5156	13.10	9/16	3-1/4	5	AX00513100T6
17/32	.5312	13.49	9/16	3-1/4	5	AX00513490T6
	.5315	13.50	9/16	3-1/4	5	AX00513500T6
35/64	.5469	13.89	9/16	3-1/4	5	AX00513890T6
	.5512	14.00	9/16	3-1/4	5	AX00514000T6
9/16	.5625	14.29	9/16	3-1/4	5	AX00514290T6
	.5709	14.50	5/8	3-1/4	5	AX00514500T6
37/64	.5781	14.68	5/8	3-1/2	6	AX00514680T6
	.5906	15.00	5/8	3-1/2	6	AX00515000T6
19/32	.5938	15.08	5/8	3-1/2	6	AX00515080T6
39/64	.6094	15.48	5/8	3-1/2	6	AX00515480T6
	.6102	15.50	5/8	3-1/2	6	AX00515500T6
5/8	.6250	15.87	5/8	3-1/2	6	AX00515870T6
	.6299	16.00	3/4	3-1/2	6	AX00516000T6

Other Dimensions are Available Upon Request

AX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	306		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	306		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	297		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	136		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	1004		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1004		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	976		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	446		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

AXC

High-Performance Drill
Triple-Margin
Ideal for Aluminum and Non-Ferrous Materials
3xD-50xD

135° Point Geometry - Engineered to provide you with advanced drilling capabilities.

135° Geometría de la Punta - Diseñado para ofrecerle capacidades avanzadas de perforación.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Triple-Margin Design - Ideal for improving surface finish and increasing stability.

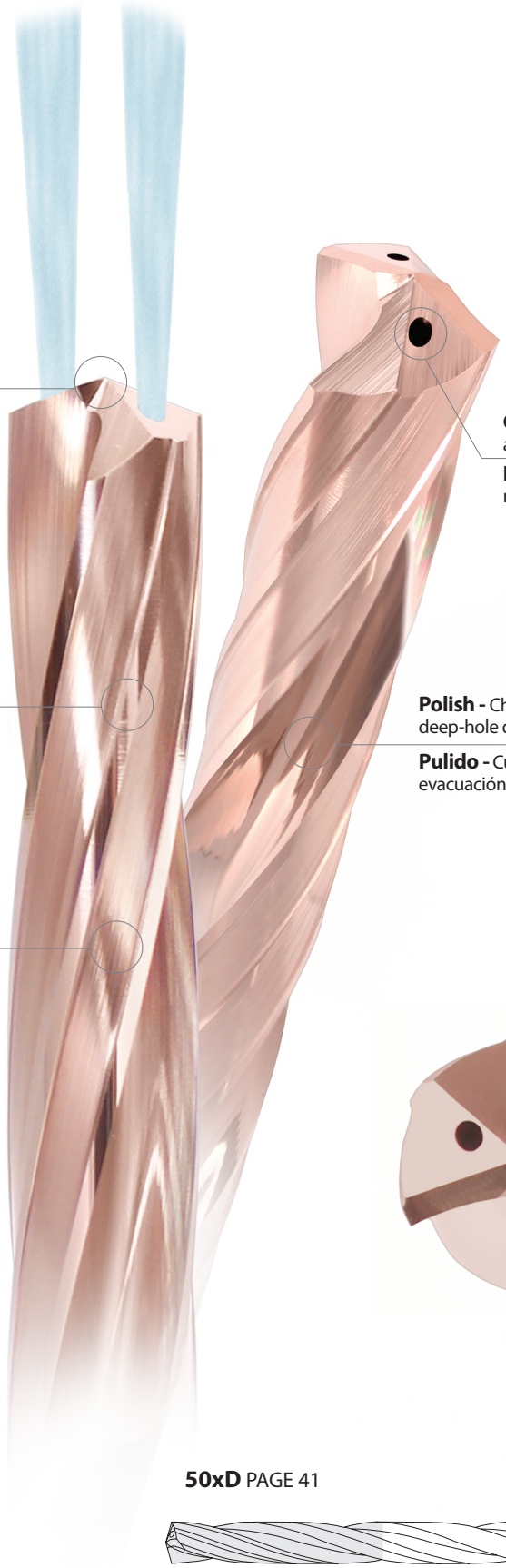
Diseño de Tres Márgenes - Ideal para mejorar el acabado superficial y aumentar la estabilidad.

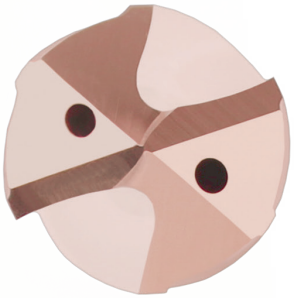
Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

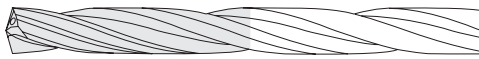
ZircoPlus® Coating - Provides increased corrosion and abrasion resistance, for maximized machining.

ZircoPlus® Recubrimiento - Ofrece mayor resistencia a la abrasión y corrosión, para lograr máximo mecanizado.

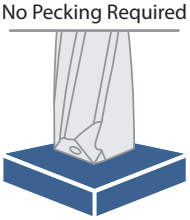




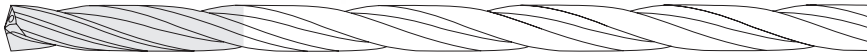
40xD PAGE 40



No Pecking Required



50xD PAGE 41



CARBIDE CARBURO | 3xD to 50xD | 135° | 15° | Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

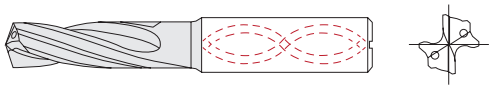
Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

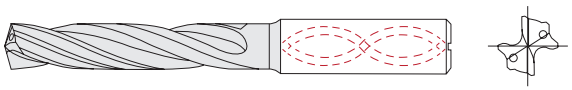
Speeds & Feeds: Refer to page 27, 29, 31, 33, 38, 39 & 41.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

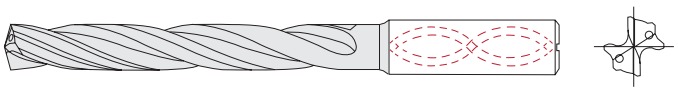
3xD PAGE 26



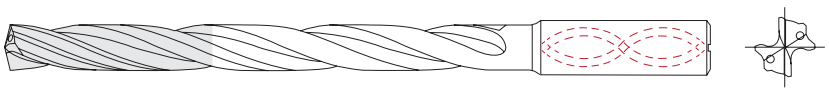
5xD PAGE 28



8xD PAGE 30



12xD PAGE 32

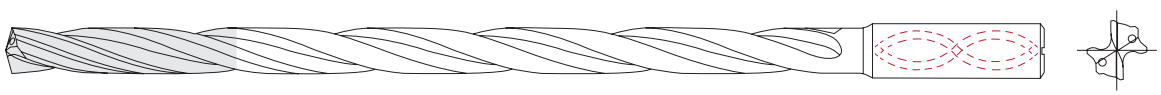


16xD PAGE 34

Must utilize a pilot hole drill. Refer to page 157

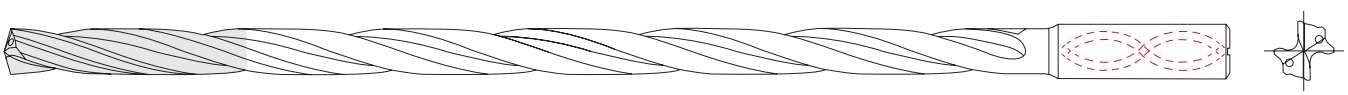
20xD PAGE 35

Must utilize a pilot hole drill. Refer to page 157



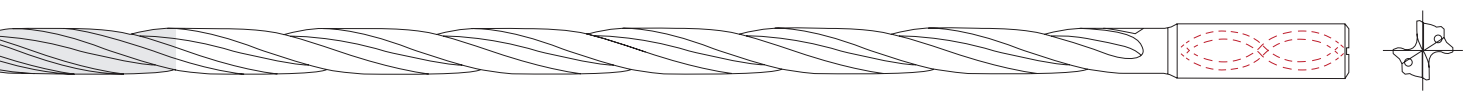
25xD PAGE 36

Must utilize a pilot hole drill. Refer to page 157

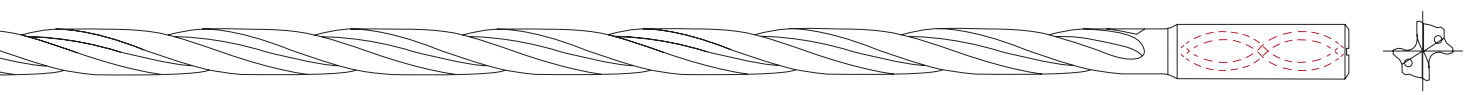


30xD PAGE 37

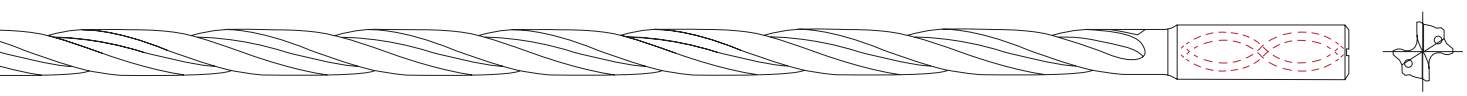
Must utilize a pilot hole drill. Refer to page 157



Must utilize a pilot hole drill. 20xD intermediary drill recommended. Refer to pages 157 & 35



Must utilize a pilot hole drill. 20xD intermediary drill recommended. Refer to pages 157 & 35



Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

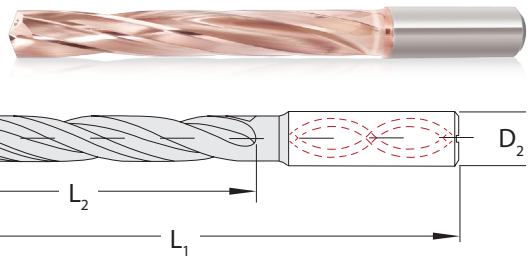
N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 27.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	AXC0303000T6
	.1220	3.100	6	20	62	AXC0303100T6
1/8	.1250	3.175	6	20	62	AXC0303175T6
	.1260	3.200	6	20	62	AXC0303200T6
	.1299	3.300	6	20	62	AXC0303300T6
	.1339	3.400	6	20	62	AXC0303400T6
	.1378	3.500	6	20	62	AXC0303500T6
9/64	.1406	3.572	6	20	62	AXC0303572T6
	.1417	3.600	6	20	62	AXC0303600T6
	.1457	3.700	6	20	62	AXC0303700T6
#25	.1496	3.800	6	24	66	AXC0303800T6
	.1535	3.900	6	24	66	AXC0303900T6
5/32	.1563	3.970	6	24	66	AXC0303970T6
	.1575	4.000	6	24	66	AXC0304000T6
	.1614	4.100	6	24	66	AXC0304100T6
	.1654	4.200	6	24	66	AXC0304200T6
	.1693	4.300	6	24	66	AXC0304300T6
11/64	.1719	4.370	6	24	66	AXC0304370T6
	.1732	4.400	6	24	66	AXC0304400T6
	.1772	4.500	6	24	66	AXC0304500T6
	.1811	4.600	6	24	66	AXC0304600T6
	.1831	4.650	6	24	66	AXC0304650T6
#13	.1850	4.700	6	24	66	AXC0300130T6
3/16	.1875	4.760	6	28	66	AXC0304760T6
#12	.1890	4.800	6	28	66	AXC0300120T6
	.1929	4.900	6	28	66	AXC0304900T6
	.1969	5.000	6	28	66	AXC0305000T6
	.2008	5.100	6	28	66	AXC0305100T6
13/64	.2031	5.160	6	28	66	AXC0305160T6
#6	.2040	5.182	6	28	66	AXC0300060T6
	.2047	5.200	6	28	66	AXC0305200T6
	.2087	5.300	6	28	66	AXC0305300T6
	.2126	5.400	6	28	66	AXC0305400T6
	.2165	5.500	6	28	66	AXC0305500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	AXC0305550T6
7/32	.2187	5.560	6	28	66	AXC0305560T6
	.2205	5.600	6	28	66	AXC0305600T6
	.2244	5.700	6	28	66	AXC0305700T6
	.2283	5.800	6	28	66	AXC0305800T6
	.2323	5.900	6	28	66	AXC0305900T6
15/64	.2344	5.950	6	28	66	AXC0305950T6
	.2362	6.000	6	28	66	AXC0306000T6
	.2402	6.100	8	34	79	AXC0306100T6
	.2441	6.200	8	34	79	AXC0306200T6
	.2480	6.300	8	34	79	AXC0306300T6
1/4	.2500	6.350	8	34	79	AXC0306350T6
	.2520	6.400	8	34	79	AXC0306400T6
	.2559	6.500	8	34	79	AXC0306500T6
	.2598	6.600	8	34	79	AXC0306600T6
	.2638	6.700	8	34	79	AXC0306700T6
17/64	.2656	6.750	8	34	79	AXC0306750T6
	.2677	6.800	8	34	79	AXC0306800T6
	.2717	6.900	8	41	79	AXC0306900T6
	.2756	7.000	8	41	79	AXC0307000T6
	.2795	7.100	8	41	79	AXC0307100T6
9/32	.2813	7.140	8	41	79	AXC0307140T6
	.2835	7.200	8	41	79	AXC0307200T6
	.2874	7.300	8	41	79	AXC0307300T6
	.2913	7.400	8	41	79	AXC0307400T6
	.2953	7.500	8	41	79	AXC0307500T6
19/64	.2969	7.540	8	41	79	AXC0307540T6
	.3031	7.700	8	41	79	AXC0307700T6
	.3071	7.800	8	41	79	AXC0307800T6
	.3110	7.900	8	41	79	AXC0307900T6
5/16	.3125	7.940	8	41	79	AXC0307940T6
	.3150	8.000	8	41	79	AXC0308000T6
	.3189	8.100	10	47	89	AXC0308100T6
	.3228	8.200	10	47	89	AXC0308200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	AXC0308300T6
21/64	.3281	8.330	10	47	89	AXC0308330T6
	.3307	8.400	10	47	89	AXC0308400T6
	.3346	8.500	10	47	89	AXC0308500T6
	.3386	8.600	10	47	89	AXC0308600T6
	.3425	8.700	10	47	89	AXC0308700T6
11/32	.3437	8.730	10	47	89	AXC0308730T6
	.3465	8.800	10	47	89	AXC0308800T6
	.3543	9.000	10	47	89	AXC0309000T6
23/64	.3594	9.130	10	47	89	AXC0309130T6
	.3622	9.200	10	47	89	AXC0309200T6
	.3661	9.300	10	47	89	AXC0309300T6
	.3740	9.500	10	47	89	AXC0309500T6
3/8	.3750	9.520	10	47	89	AXC0309520T6
	.3780	9.600	10	47	89	AXC0309600T6
	.3858	9.800	10	47	89	AXC0309800T6
	.3898	9.900	10	47	89	AXC0309900T6
25/64	.3906	9.920	10	47	89	AXC0309920T6
	.3937	10.000	10	47	89	AXC0310000T6
	.3976	10.100	12	55	102	AXC0310100T6
	.4016	10.200	12	55	102	AXC0310200T6
	.4055	10.300	12	55	102	AXC0310300T6
13/32	.4063	10.320	12	55	102	AXC0310320T6
	.4094	10.400	12	55	102	AXC0310400T6
	.4134	10.500	12	55	102	AXC0310500T6
27/64	.4219	10.720	12	55	102	AXC0310720T6
	.4252	10.800	12	55	102	AXC0310800T6
	.4331	11.000	12	55	102	AXC0311000T6
	.4370	11.100	12	55	102	AXC0311100T6
7/16	.4375	11.113	12	55	102	AXC0311113T6
	.4409	11.200	12	55	102	AXC0311200T6
	.4528	11.500	12	55	102	AXC0311500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	AXC0311510T6
	.4606	11.700	12	55	102	AXC0311700T6
	.4646	11.800	12	55	102	AXC0311800T6
15/32	.4687	11.910	12	55	102	AXC0311910T6
	.4724	12.000	12	55	102	AXC0312000T6
	.4764	12.100	14	60	107	AXC0312100T6
	.4803	12.200	14	60	107	AXC0312200T6
	.4843	12.300	14	60	107	AXC0312300T6
31/64	.4844	12.303	14	60	107	AXC0312303T6
	.4921	12.500	14	60	107	AXC0312500T6
	.4961	12.600	14	60	107	AXC0312600T6
1/2	.5000	12.700	14	60	107	AXC0312700T6
	.5118	13.000	14	60	107	AXC0313000T6
	.5236	13.300	14	60	107	AXC0313300T6
17/32	.5313	13.490	14	60	107	AXC0313490T6
	.5315	13.500	14	60	107	AXC0313500T6
	.5512	14.000	14	60	107	AXC0314000T6
9/16	.5625	14.290	16	65	115	AXC0314290T6
	.5709	14.500	16	65	115	AXC0314500T6
	.5906	15.000	16	65	115	AXC0315000T6
	.6102	15.500	16	65	115	AXC0315500T6
5/8	.6250	15.870	16	65	115	AXC0315870T6
	.6299	16.000	16	65	115	AXC0316000T6
	.6496	16.500	18	73	123	AXC0316500T6
	.6693	17.000	18	73	123	AXC0317000T6
	.6890	17.500	18	73	123	AXC0317500T6
	.7087	18.000	18	73	123	AXC0318000T6
	.7283	18.500	20	79	131	AXC0318500T6
3/4	.7500	19.050	20	79	131	AXC0319050T6
	.7677	19.500	20	79	131	AXC0319500T6
	.7874	20.000	20	79	131	AXC0320000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

AXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	340		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	340		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	325		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	158		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	1115.5		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1115.5		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1066.3		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	518.4		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

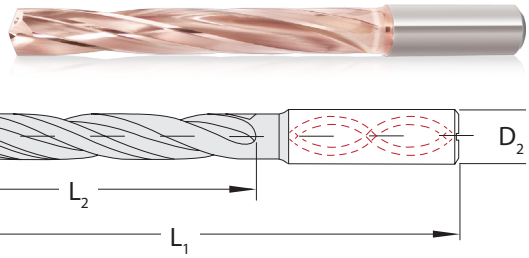
N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 29.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	AXC0503000T6
	.1220	3.100	6	28	66	AXC0503100T6
1/8	.1250	3.175	6	28	66	AXC0503175T6
	.1260	3.200	6	28	66	AXC0503200T6
	.1299	3.300	6	28	66	AXC0503300T6
	.1339	3.400	6	28	66	AXC0503400T6
	.1378	3.500	6	28	66	AXC0503500T6
9/64	.1406	3.572	6	28	66	AXC0503572T6
	.1417	3.600	6	28	66	AXC0503600T6
	.1457	3.700	6	28	66	AXC0503700T6
#25	.1496	3.800	6	36	74	AXC0503800T6
	.1535	3.900	6	36	74	AXC0503900T6
5/32	.1563	3.970	6	36	74	AXC0503970T6
	.1575	4.000	6	36	74	AXC0504000T6
	.1614	4.100	6	36	74	AXC0504100T6
	.1654	4.200	6	36	74	AXC0504200T6
	.1693	4.300	6	36	74	AXC0504300T6
11/64	.1719	4.370	6	36	74	AXC0504370T6
	.1732	4.400	6	36	74	AXC0504400T6
	.1772	4.500	6	36	74	AXC0504500T6
	.1811	4.600	6	36	74	AXC0504600T6
	.1831	4.650	6	36	74	AXC0504650T6
#13	.1850	4.700	6	36	74	AXC0500130T6
3/16	.1875	4.760	6	44	82	AXC0504760T6
#12	.1890	4.800	6	44	82	AXC0500120T6
	.1929	4.900	6	44	82	AXC0504900T6
	.1969	5.000	6	44	82	AXC0505000T6
	.2008	5.100	6	44	82	AXC0505100T6
13/64	.2031	5.160	6	44	82	AXC0505160T6
#6	.2040	5.182	6	44	82	AXC0500060T6
	.2047	5.200	6	44	82	AXC0505200T6
	.2087	5.300	6	44	82	AXC0505300T6
	.2126	5.400	6	44	82	AXC0505400T6
	.2165	5.500	6	44	82	AXC0505500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	AXC0505550T6
7/32	.2187	5.560	6	44	82	AXC0505560T6
	.2205	5.600	6	44	82	AXC0505600T6
	.2244	5.700	6	44	82	AXC0505700T6
	.2283	5.800	6	44	82	AXC0505800T6
	.2323	5.900	6	44	82	AXC0505900T6
15/64	.2344	5.950	6	44	82	AXC0505950T6
	.2362	6.000	6	44	82	AXC0506000T6
	.2402	6.100	8	53	91	AXC0506100T6
	.2441	6.200	8	53	91	AXC0506200T6
	.2480	6.300	8	53	91	AXC0506300T6
1/4	.2500	6.350	8	53	91	AXC0506350T6
	.2520	6.400	8	53	91	AXC0506400T6
	.2559	6.500	8	53	91	AXC0506500T6
	.2598	6.600	8	53	91	AXC0506600T6
	.2638	6.700	8	53	91	AXC0506700T6
17/64	.2656	6.750	8	53	91	AXC0506750T6
	.2677	6.800	8	53	91	AXC0506800T6
	.2717	6.900	8	53	91	AXC0506900T6
	.2756	7.000	8	53	91	AXC0507000T6
	.2795	7.100	8	53	91	AXC0507100T6
9/32	.2813	7.140	8	53	91	AXC0507140T6
	.2835	7.200	8	53	91	AXC0507200T6
	.2874	7.300	8	53	91	AXC0507300T6
	.2913	7.400	8	53	91	AXC0507400T6
	.2953	7.500	8	53	91	AXC0507500T6
19/64	.2969	7.540	8	53	91	AXC0507540T6
	.3031	7.700	8	53	91	AXC0507700T6
	.3071	7.800	8	53	91	AXC0507800T6
	.3110	7.900	8	53	91	AXC0507900T6
5/16	.3125	7.940	8	53	91	AXC0507940T6
	.3150	8.000	8	53	91	AXC0508000T6
	.3189	8.100	10	61	103	AXC0508100T6
	.3228	8.200	10	61	103	AXC0508200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	AXC0508300T6
21/64	.3281	8.330	10	61	103	AXC0508330T6
	.3307	8.400	10	61	103	AXC0508400T6
	.3346	8.500	10	61	103	AXC0508500T6
	.3386	8.600	10	61	103	AXC0508600T6
	.3425	8.700	10	61	103	AXC0508700T6
11/32	.3437	8.730	10	61	103	AXC0508730T6
	.3465	8.800	10	61	103	AXC0508800T6
	.3543	9.000	10	61	103	AXC0509000T6
23/64	.3594	9.130	10	61	103	AXC0509130T6
	.3622	9.200	10	61	103	AXC0509200T6
	.3661	9.300	10	61	103	AXC0509300T6
	.3740	9.500	10	61	103	AXC0509500T6
3/8	.3750	9.520	10	61	103	AXC0509520T6
	.3780	9.600	10	61	103	AXC0509600T6
	.3858	9.800	10	61	103	AXC0509800T6
	.3898	9.900	10	61	103	AXC0509900T6
25/64	.3906	9.920	10	61	103	AXC0509920T6
	.3937	10.000	10	61	103	AXC0510000T6
	.3976	10.100	12	71	118	AXC0510100T6
	.4016	10.200	12	71	118	AXC0510200T6
	.4055	10.300	12	71	118	AXC0510300T6
13/32	.4063	10.320	12	71	118	AXC0510320T6
	.4094	10.400	12	71	118	AXC0510400T6
	.4134	10.500	12	71	118	AXC0510500T6
27/64	.4219	10.720	12	71	118	AXC0510720T6
	.4252	10.800	12	71	118	AXC0510800T6
	.4331	11.000	12	71	118	AXC0511000T6
	.4370	11.100	12	71	118	AXC0511100T6
7/16	.4375	11.113	12	71	118	AXC0511113T6
	.4409	11.200	12	71	118	AXC0511200T6
	.4528	11.500	12	71	118	AXC0511500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	AXC0511510T6
	.4606	11.700	12	71	118	AXC0511700T6
	.4646	11.800	12	71	118	AXC0511800T6
15/32	.4687	11.910	12	71	118	AXC0511910T6
	.4724	12.000	12	71	118	AXC0512000T6
	.4764	12.100	14	77	124	AXC0512100T6
	.4803	12.200	14	77	124	AXC0512200T6
	.4843	12.300	14	77	124	AXC0512300T6
31/64	.4844	12.303	14	77	124	AXC0512303T6
	.4921	12.500	14	77	124	AXC0512500T6
	.4961	12.600	14	77	124	AXC0512600T6
1/2	.5000	12.700	14	77	124	AXC0512700T6
	.5118	13.000	14	77	124	AXC0513000T6
	.5236	13.300	14	77	124	AXC0513300T6
17/32	.5313	13.490	14	77	124	AXC0513490T6
	.5315	13.500	14	77	124	AXC0513500T6
	.5512	14.000	14	77	124	AXC0514000T6
9/16	.5625	14.290	16	83	133	AXC0514290T6
	.5709	14.500	16	83	133	AXC0514500T6
	.5906	15.000	16	83	133	AXC0515000T6
	.6102	15.500	16	83	133	AXC0515500T6
5/8	.6250	15.870	16	83	133	AXC0515870T6
	.6299	16.000	16	83	133	AXC0516000T6
	.6496	16.500	18	93	143	AXC0516500T6
	.6693	17.000	18	93	143	AXC0517000T6
	.6890	17.500	18	93	143	AXC0517500T6
	.7087	18.000	18	93	143	AXC0518000T6
	.7283	18.500	20	101	153	AXC0518500T6
3/4	.7500	19.050	20	101	153	AXC0519050T6
	.7677	19.500	20	101	153	AXC0519500T6
	.7874	20.000	20	101	153	AXC0520000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

AXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	360		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	360		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	350		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	160		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	1181.2		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1181.2		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1148.4		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	525.0		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

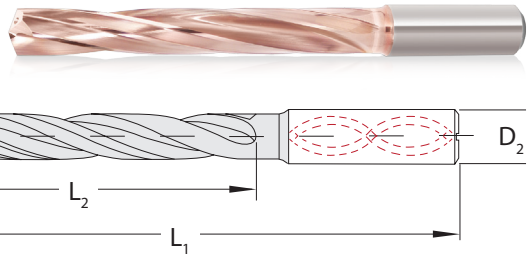
N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 31.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	34	72	AXC0803000T6
	.1220	3.100	6	34	72	AXC0803100T6
1/8	.1250	3.175	6	34	72	AXC0803175T6
	.1260	3.200	6	34	72	AXC0803200T6
	.1299	3.300	6	34	72	AXC0803300T6
	.1339	3.400	6	34	72	AXC0803400T6
	.1378	3.500	6	34	72	AXC0803500T6
9/64	.1406	3.572	6	34	72	AXC0803572T6
	.1417	3.600	6	34	72	AXC0803600T6
	.1457	3.700	6	34	72	AXC0803700T6
#25	.1496	3.800	6	43	81	AXC0803800T6
	.1535	3.900	6	43	81	AXC0803900T6
5/32	.1563	3.970	6	43	81	AXC0803970T6
	.1575	4.000	6	43	81	AXC0804000T6
	.1614	4.100	6	43	81	AXC0804100T6
	.1654	4.200	6	43	81	AXC0804200T6
	.1693	4.300	6	43	81	AXC0804300T6
11/64	.1719	4.370	6	43	81	AXC0804370T6
	.1732	4.400	6	43	81	AXC0804400T6
	.1772	4.500	6	43	81	AXC0804500T6
	.1811	4.600	6	43	81	AXC0804600T6
	.1831	4.650	6	43	81	AXC0804650T6
#13	.1850	4.700	6	43	81	AXC0800130T6
3/16	.1875	4.760	6	57	95	AXC0804760T6
#12	.1890	4.800	6	57	95	AXC0800120T6
	.1929	4.900	6	57	95	AXC0804900T6
	.1969	5.000	6	57	95	AXC0805000T6
	.2008	5.100	6	57	95	AXC0805100T6
13/64	.2031	5.160	6	57	95	AXC0805160T6
#6	.2040	5.182	6	57	95	AXC0800060T6
	.2047	5.200	6	57	95	AXC0805200T6
	.2087	5.300	6	57	95	AXC0805300T6
	.2126	5.400	6	57	95	AXC0805400T6
	.2165	5.500	6	57	95	AXC0805500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	57	95	AXC0805550T6
7/32	.2187	5.560	6	57	95	AXC0805560T6
	.2205	5.600	6	57	95	AXC0805600T6
	.2244	5.700	6	57	95	AXC0805700T6
	.2283	5.800	6	57	95	AXC0805800T6
	.2323	5.900	6	57	95	AXC0805900T6
15/64	.2344	5.950	6	57	95	AXC0805950T6
	.2362	6.000	6	57	95	AXC0806000T6
	.2402	6.100	8	76	114	AXC0806100T6
	.2441	6.200	8	76	114	AXC0806200T6
	.2480	6.300	8	76	114	AXC0806300T6
1/4	.2500	6.350	8	76	114	AXC0806350T6
	.2520	6.400	8	76	114	AXC0806400T6
	.2559	6.500	8	76	114	AXC0806500T6
	.2598	6.600	8	76	114	AXC0806600T6
	.2638	6.700	8	76	114	AXC0806700T6
17/64	.2656	6.750	8	76	114	AXC0806750T6
	.2677	6.800	8	76	114	AXC0806800T6
	.2717	6.900	8	76	114	AXC0806900T6
	.2756	7.000	8	76	114	AXC0807000T6
	.2795	7.100	8	76	114	AXC0807100T6
9/32	.2813	7.140	8	76	114	AXC0807140T6
	.2835	7.200	8	76	114	AXC0807200T6
	.2874	7.300	8	76	114	AXC0807300T6
	.2913	7.400	8	76	114	AXC0807400T6
	.2953	7.500	8	76	114	AXC0807500T6
19/64	.2969	7.540	8	76	114	AXC0807540T6
	.3031	7.700	8	76	114	AXC0807700T6
	.3071	7.800	8	76	114	AXC0807800T6
	.3110	7.900	8	76	114	AXC0807900T6
5/16	.3125	7.940	8	76	114	AXC0807940T6
	.3150	8.000	8	76	114	AXC0808000T6
	.3189	8.100	10	95	142	AXC0808100T6
	.3228	8.200	10	95	142	AXC0808200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	95	142	AXC0808300T6
21/64	.3281	8.330	10	95	142	AXC0808330T6
	.3307	8.400	10	95	142	AXC0808400T6
	.3346	8.500	10	95	142	AXC0808500T6
	.3386	8.600	10	95	142	AXC0808600T6
	.3425	8.700	10	95	142	AXC0808700T6
11/32	.3437	8.730	10	95	142	AXC0808730T6
	.3465	8.800	10	95	142	AXC0808800T6
	.3543	9.000	10	95	142	AXC0809000T6
23/64	.3594	9.130	10	95	142	AXC0809130T6
	.3622	9.200	10	95	142	AXC0809200T6
	.3661	9.300	10	95	142	AXC0809300T6
	.3740	9.500	10	95	142	AXC0809500T6
3/8	.3750	9.520	10	95	142	AXC0809520T6
	.3780	9.600	10	95	142	AXC0809600T6
	.3858	9.800	10	95	142	AXC0809800T6
	.3898	9.900	10	95	142	AXC0809900T6
25/64	.3906	9.920	10	95	142	AXC0809920T6
	.3937	10.000	10	95	142	AXC0810000T6
	.3976	10.100	12	114	162	AXC0810100T6
	.4016	10.200	12	114	162	AXC0810200T6
	.4055	10.300	12	114	162	AXC0810300T6
13/32	.4063	10.320	12	114	162	AXC0810320T6
	.4094	10.400	12	114	162	AXC0810400T6
	.4134	10.500	12	114	162	AXC0810500T6
27/64	.4219	10.720	12	114	162	AXC0810720T6
	.4252	10.800	12	114	162	AXC0810800T6
	.4331	11.000	12	114	162	AXC0811000T6
	.4370	11.100	12	114	162	AXC0811100T6
7/16	.4375	11.113	12	114	162	AXC0811113T6
	.4409	11.200	12	114	162	AXC0811200T6
	.4528	11.500	12	114	162	AXC0811500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	114	162	AXC0811510T6
	.4606	11.700	12	114	162	AXC0811700T6
	.4646	11.800	12	114	162	AXC0811800T6
15/32	.4687	11.910	12	114	162	AXC0811910T6
	.4724	12.000	12	114	162	AXC0812000T6
	.4764	12.100	14	131	178	AXC0812100T6
	.4803	12.200	14	131	178	AXC0812200T6
	.4843	12.300	14	131	178	AXC0812300T6
31/64	.4844	12.303	14	131	178	AXC0812303T6
	.4921	12.500	14	131	178	AXC0812500T6
	.4961	12.600	14	131	178	AXC0812600T6
1/2	.5000	12.700	14	131	178	AXC0812700T6
	.5118	13.000	14	131	178	AXC0813000T6
	.5236	13.300	14	131	178	AXC0813300T6
17/32	.5313	13.490	14	131	178	AXC0813490T6
	.5315	13.500	14	131	178	AXC0813500T6
	.5512	14.000	14	131	178	AXC0814000T6
9/16	.5625	14.290	16	152	203	AXC0814290T6
	.5709	14.500	16	152	203	AXC0814500T6
	.5906	15.000	16	152	203	AXC0815000T6
	.6102	15.500	16	152	203	AXC0815500T6
5/8	.6250	15.870	16	152	203	AXC0815870T6
	.6299	16.000	16	152	203	AXC0816000T6
	.6496	16.500	18	171	222	AXC0816500T6
	.6693	17.000	18	171	222	AXC0817000T6
	.6890	17.500	18	171	222	AXC0817500T6
	.7087	18.000	18	171	222	AXC0818000T6
	.7283	18.500	20	190	243	AXC0818500T6
3/4	.7500	19.050	20	190	243	AXC0819050T6
	.7677	19.500	20	190	243	AXC0819500T6
	.7874	20.000	20	190	243	AXC0820000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

AXC
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	320		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	320		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	310		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	135		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	1049.9		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1049.9		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1017.9		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	442.9		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

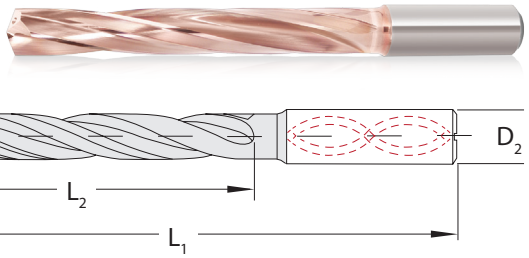
N Consulte la página 261

CARBIDE CARBURO | 12xD | 135° | 15°

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 33.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	54	92	AXC1203000T6
	.1220	3.100	6	54	92	AXC1203100T6
1/8	.1250	3.175	6	54	92	AXC1203175T6
	.1260	3.200	6	54	92	AXC1203200T6
	.1299	3.300	6	54	92	AXC1203300T6
	.1339	3.400	6	54	92	AXC1203400T6
	.1378	3.500	6	54	92	AXC1203500T6
9/64	.1406	3.572	6	54	92	AXC1203572T6
	.1417	3.600	6	54	92	AXC1203600T6
	.1457	3.700	6	54	92	AXC1203700T6
#25	.1496	3.800	6	64	102	AXC1203800T6
	.1535	3.900	6	64	102	AXC1203900T6
5/32	.1563	3.970	6	64	102	AXC1203970T6
	.1575	4.000	6	64	102	AXC1204000T6
	.1614	4.100	6	64	102	AXC1204100T6
	.1654	4.200	6	64	102	AXC1204200T6
	.1693	4.300	6	64	102	AXC1204300T6
11/64	.1719	4.370	6	64	102	AXC1204370T6
	.1732	4.400	6	64	102	AXC1204400T6
	.1772	4.500	6	64	102	AXC1204500T6
	.1811	4.600	6	64	102	AXC1204600T6
	.1831	4.650	6	64	102	AXC1204650T6
#13	.1850	4.700	6	64	102	AXC1200130T6
3/16	.1875	4.760	6	78	116	AXC1204760T6
#12	.1890	4.800	6	78	116	AXC1200120T6
	.1929	4.900	6	78	116	AXC1204900T6
	.1969	5.000	6	78	116	AXC1205000T6
	.2008	5.100	6	78	116	AXC1205100T6
13/64	.2031	5.160	6	78	116	AXC1205160T6
#6	.2040	5.182	6	78	116	AXC1200060T6
	.2047	5.200	6	78	116	AXC1205200T6
	.2087	5.300	6	78	116	AXC1205300T6
	.2126	5.400	6	78	116	AXC1205400T6
	.2165	5.500	6	78	116	AXC1205500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	78	116	AXC1205550T6
7/32	.2187	5.560	6	78	116	AXC1205560T6
	.2205	5.600	6	78	116	AXC1205600T6
	.2244	5.700	6	78	116	AXC1205700T6
	.2283	5.800	6	78	116	AXC1205800T6
	.2323	5.900	6	78	116	AXC1205900T6
15/64	.2344	5.950	6	78	116	AXC1205950T6
	.2362	6.000	6	78	116	AXC1206000T6
	.2402	6.100	8	108	146	AXC1206100T6
	.2441	6.200	8	108	146	AXC1206200T6
	.2480	6.300	8	108	146	AXC1206300T6
1/4	.2500	6.350	8	108	146	AXC1206350T6
	.2520	6.400	8	108	146	AXC1206400T6
	.2559	6.500	8	108	146	AXC1206500T6
	.2598	6.600	8	108	146	AXC1206600T6
	.2638	6.700	8	108	146	AXC1206700T6
17/64	.2656	6.750	8	108	146	AXC1206750T6
	.2677	6.800	8	108	146	AXC1206800T6
	.2717	6.900	8	108	146	AXC1206900T6
	.2756	7.000	8	108	146	AXC1207000T6
	.2795	7.100	8	108	146	AXC1207100T6
9/32	.2813	7.140	8	108	146	AXC1207140T6
	.2835	7.200	8	108	146	AXC1207200T6
	.2874	7.300	8	108	146	AXC1207300T6
	.2913	7.400	8	108	146	AXC1207400T6
	.2953	7.500	8	108	146	AXC1207500T6
19/64	.2969	7.540	8	108	146	AXC1207540T6
	.3031	7.700	8	108	146	AXC1207700T6
	.3071	7.800	8	108	146	AXC1207800T6
	.3110	7.900	8	108	146	AXC1207900T6
5/16	.3125	7.940	8	108	146	AXC1207940T6
	.3150	8.000	8	108	146	AXC1208000T6
	.3189	8.100	10	120	162	AXC1208100T6
	.3228	8.200	10	120	162	AXC1208200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	120	162	AXC1208300T6
21/64	.3281	8.330	10	120	162	AXC1208330T6
	.3307	8.400	10	120	162	AXC1208400T6
	.3346	8.500	10	120	162	AXC1208500T6
	.3386	8.600	10	120	162	AXC1208600T6
	.3425	8.700	10	120	162	AXC1208700T6
11/32	.3437	8.730	10	120	162	AXC1208730T6
	.3465	8.800	10	120	162	AXC1208800T6
	.3543	9.000	10	120	162	AXC1209000T6
23/64	.3594	9.130	10	120	162	AXC1209130T6
	.3622	9.200	10	120	162	AXC1209200T6
	.3661	9.300	10	120	162	AXC1209300T6
	.3740	9.500	10	120	162	AXC1209500T6
3/8	.3750	9.520	10	120	162	AXC1209520T6
	.3780	9.600	10	120	162	AXC1209600T6
	.3858	9.800	10	120	162	AXC1209800T6
	.3898	9.900	10	120	162	AXC1209900T6
25/64	.3906	9.920	10	120	162	AXC1209920T6
	.3937	10.000	10	120	162	AXC1210000T6
	.3976	10.100	12	156	204	AXC1210100T6
	.4016	10.200	12	156	204	AXC1210200T6
	.4055	10.300	12	156	204	AXC1210300T6
13/32	.4063	10.320	12	156	204	AXC1210320T6
	.4094	10.400	12	156	204	AXC1210400T6
	.4134	10.500	12	156	204	AXC1210500T6
27/64	.4219	10.720	12	156	204	AXC1210720T6
	.4252	10.800	12	156	204	AXC1210800T6
	.4331	11.000	12	156	204	AXC1211000T6
	.4370	11.100	12	156	204	AXC1211100T6
7/16	.4375	11.113	12	156	204	AXC1211113T6
	.4409	11.200	12	156	204	AXC1211200T6
	.4528	11.500	12	156	204	AXC1211500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	156	204	AXC1211510T6
	.4606	11.700	12	156	204	AXC1211700T6
	.4646	11.800	12	156	204	AXC1211800T6
15/32	.4687	11.910	12	156	204	AXC1211910T6
	.4724	12.000	12	156	204	AXC1212000T6
	.4764	12.100	14	182	230	AXC1212100T6
	.4803	12.200	14	182	230	AXC1212200T6
	.4843	12.300	14	182	230	AXC1212300T6
31/64	.4844	12.303	14	182	230	AXC1212303T6
	.4921	12.500	14	182	230	AXC1212500T6
	.4961	12.600	14	182	230	AXC1212600T6
1/2	.5000	12.700	14	182	230	AXC1212700T6
	.5118	13.000	14	182	230	AXC1213000T6
	.5236	13.300	14	182	230	AXC1213300T6
17/32	.5313	13.490	14	182	230	AXC1213490T6
	.5315	13.500	14	182	230	AXC1213500T6
	.5512	14.000	14	182	230	AXC1214000T6
9/16	.5625	14.290	16	208	260	AXC1214290T6
	.5709	14.500	16	208	260	AXC1214500T6
	.5906	15.000	16	208	260	AXC1215000T6
	.6102	15.500	16	208	260	AXC1215500T6
5/8	.6250	15.870	16	208	260	AXC1215870T6
	.6299	16.000	16	208	260	AXC1216000T6
	.6496	16.500	18	234	285	AXC1216500T6
	.6693	17.000	18	234	285	AXC1217000T6
	.6890	17.500	18	234	285	AXC1217500T6
	.7087	18.000	18	234	285	AXC1218000T6
	.7283	18.500	20	258	310	AXC1218500T6
3/4	.7500	19.050	20	258	310	AXC1219050T6
	.7677	19.500	20	258	310	AXC1219500T6
	.7874	20.000	20	258	310	AXC1220000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

AXC
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	250		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	250		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	245		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	120		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	820.3		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	820.3		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	803.8		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	393.7		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 38.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

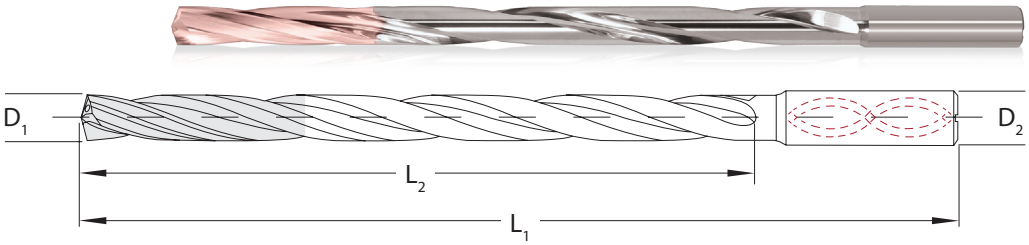
Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	60	100	AXC1603000T6
1/8	.1250	3.175	6	60	100	AXC1603175T6
	.1260	3.200	6	60	100	AXC1603200T6
	.1299	3.300	6	60	100	AXC1603300T6
	.1378	3.500	6	60	100	AXC1603500T6
9/64	.1406	3.572	6	75	115	AXC1603572T6
#25	.1496	3.800	6	75	115	AXC1603800T6
5/32	.1563	3.970	6	75	115	AXC1603970T6
	.1575	4.000	6	75	115	AXC1604000T6
	.1654	4.200	6	75	115	AXC1604200T6
11/64	.1719	4.370	6	90	130	AXC1604370T6
	.1772	4.500	6	90	130	AXC1604500T6
#13	.1850	4.700	6	90	130	AXC1600130T6
3/16	.1875	4.760	6	90	130	AXC1604760T6
#12	.1890	4.800	6	90	130	AXC1600120T6
	.1969	5.000	6	90	130	AXC1605000T6
13/64	.2031	5.160	6	108	150	AXC1605160T6
#6	.2040	5.182	6	108	150	AXC1600060T6
	.2165	5.500	6	108	150	AXC1605500T6
7/32	.2187	5.560	6	108	150	AXC1605560T6
	.2283	5.800	6	108	150	AXC1605800T6
15/64	.2344	5.950	6	108	150	AXC1605950T6
	.2362	6.000	6	108	150	AXC1606000T6
1/4	.2500	6.350	8	125	165	AXC1606350T6
	.2559	6.500	8	125	165	AXC1606500T6
17/64	.2656	6.750	8	125	165	AXC1606750T6
	.2677	6.800	8	125	165	AXC1606800T6
	.2756	7.000	8	125	165	AXC1607000T6
9/32	.2813	7.140	8	140	180	AXC1607140T6
	.2953	7.500	8	140	180	AXC1607500T6
19/64	.2969	7.540	8	140	180	AXC1607540T6
	.3071	7.800	8	140	180	AXC1607800T6
5/16	.3125	7.940	8	140	180	AXC1607940T6
	.3150	8.000	8	140	180	AXC1608000T6
21/64	.3281	8.330	10	160	205	AXC1608330T6
	.3346	8.500	10	160	205	AXC1608500T6
11/32	.3437	8.730	10	160	205	AXC1608730T6
	.3465	8.800	10	160	205	AXC1608800T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3543	9.000	10	160	205	AXC1609000T6
23/64	.3594	9.130	10	180	225	AXC1609130T6
3/8	.3750	9.520	10	180	225	AXC1609520T6
	.3858	9.800	10	180	225	AXC1609800T6
25/64	.3906	9.920	10	180	225	AXC1609920T6
	.3937	10.000	10	180	225	AXC1610000T6
	.4016	10.200	12	190	240	AXC1610200T6
13/32	.4063	10.320	12	190	240	AXC1610320T6
27/64	.4219	10.720	12	190	240	AXC1610720T6
	.4252	10.800	12	190	240	AXC1610800T6
	.4331	11.000	12	190	240	AXC1611000T6
7/16	.4375	11.113	12	215	265	AXC1611113T6
	.4528	11.500	12	215	265	AXC1611500T6
29/64	.4531	11.510	12	215	265	AXC1611510T6
15/32	.4687	11.910	12	215	265	AXC1611910T6
	.4724	12.000	12	215	265	AXC1612000T6
	.4843	12.300	14	230	280	AXC1612300T6
31/64	.4844	12.303	14	230	280	AXC1612303T6
1/2	.5000	12.700	14	230	280	AXC1612700T6
	.5118	13.000	14	230	280	AXC1613000T6
	.5236	13.300	14	245	295	AXC1613300T6
17/32	.5313	13.490	14	245	295	AXC1613490T6
	.5315	13.500	14	245	295	AXC1613500T6
	.5512	14.000	14	245	295	AXC1614000T6
9/16	.5625	14.290	16	255	305	AXC1614290T6
	.5709	14.500	16	255	305	AXC1614500T6
	.5906	15.000	16	255	305	AXC1615000T6
	.6102	15.500	16	275	325	AXC1615500T6
5/8	.6250	15.870	16	275	325	AXC1615870T6
	.6299	16.000	16	275	325	AXC1616000T6
	.6496	16.500	18	320	370	AXC1616500T6
	.6693	17.000	18	320	370	AXC1617000T6
	.6890	17.500	18	320	370	AXC1617500T6
	.7087	18.000	18	320	370	AXC1618000T6
	.7283	18.500	20	330	380	AXC1618500T6
3/4	.7500	19.050	20	330	380	AXC1619050T6
	.7677	19.500	20	350	400	AXC1619500T6
	.7874	20.000	20	350	400	AXC1620000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 38.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

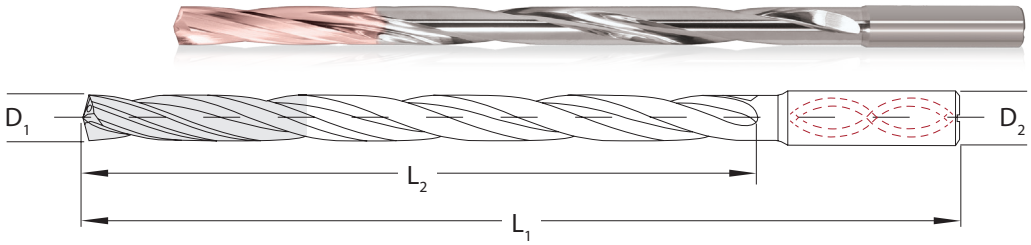
Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	80	120	AXC2003000T6
1/8	.1250	3.175	6	80	120	AXC2003175T6
	.1260	3.200	6	80	120	AXC2003200T6
	.1299	3.300	6	80	120	AXC2003300T6
	.1378	3.500	6	80	120	AXC2003500T6
9/64	.1406	3.572	6	90	130	AXC2003572T6
#25	.1496	3.800	6	90	130	AXC2003800T6
5/32	.1563	3.970	6	90	130	AXC2003970T6
	.1575	4.000	6	90	130	AXC2004000T6
	.1654	4.200	6	110	160	AXC2004200T6
11/64	.1719	4.370	6	110	160	AXC2004370T6
	.1772	4.500	6	110	160	AXC2004500T6
#13	.1850	4.700	6	120	160	AXC2000130T6
3/16	.1875	4.760	6	120	160	AXC2004760T6
#12	.1890	4.800	6	120	160	AXC2000120T6
	.1969	5.000	6	120	160	AXC2005000T6
13/64	.2031	5.160	6	140	185	AXC2005160T6
#6	.2040	5.182	6	140	185	AXC2000060T6
	.2165	5.500	6	140	185	AXC2005500T6
7/32	.2187	5.560	6	140	185	AXC2005560T6
	.2283	5.800	6	140	185	AXC2005800T6
15/64	.2344	5.950	6	140	185	AXC2005950T6
	.2362	6.000	6	140	185	AXC2006000T6
1/4	.2500	6.350	8	160	210	AXC2006350T6
	.2559	6.500	8	160	210	AXC2006500T6
17/64	.2656	6.750	8	160	210	AXC2006750T6
	.2677	6.800	8	160	210	AXC2006800T6
	.2756	7.000	8	160	210	AXC2007000T6
9/32	.2813	7.140	8	180	230	AXC2007140T6
	.2953	7.500	8	180	230	AXC2007500T6
19/64	.2969	7.540	8	180	230	AXC2007540T6
	.3071	7.800	8	180	230	AXC2007800T6
5/16	.3125	7.940	8	180	230	AXC2007940T6
	.3150	8.000	8	180	230	AXC2008000T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
21/64	.3281	8.330	10	195	260	AXC2008330T6
	.3346	8.500	10	195	260	AXC2008500T6
11/32	.3437	8.730	10	230	290	AXC2008730T6
	.3465	8.800	10	230	290	AXC2008800T6
	.3543	9.000	10	230	290	AXC2009000T6
23/64	.3594	9.130	10	230	290	AXC2009130T6
3/8	.3750	9.520	10	230	290	AXC2009520T6
	.3858	9.800	10	230	290	AXC2009800T6
25/64	.3906	9.920	10	230	290	AXC2009920T6
	.3937	10.000	10	230	290	AXC2010000T6
	.4016	10.200	12	268	315	AXC2010200T6
13/32	.4063	10.320	12	268	315	AXC2010320T6
27/64	.4219	10.720	12	268	315	AXC2010720T6
	.4252	10.800	12	268	315	AXC2010800T6
	.4331	11.000	12	268	315	AXC2011000T6
7/16	.4375	11.113	12	268	315	AXC2011113T6
	.4528	11.500	12	268	315	AXC2011500T6
29/64	.4531	11.510	12	268	315	AXC2011510T6
15/32	.4687	11.910	12	268	315	AXC2011910T6
	.4724	12.000	12	268	315	AXC2012000T6
	.4843	12.300	14	280	325	AXC2012300T6
31/64	.4844	12.303	14	280	325	AXC2012303T6
1/2	.5000	12.700	14	280	325	AXC2012700T6
	.5118	13.000	14	280	325	AXC2013000T6
	.5236	13.300	14	305	355	AXC2013300T6
17/32	.5313	13.490	14	305	355	AXC2013490T6
	.5315	13.500	14	305	355	AXC2013500T6
	.5512	14.000	14	305	355	AXC2014000T6
9/16	.5625	14.290	16	320	370	AXC2014290T6
	.5709	14.500	16	320	370	AXC2014500T6
	.5906	15.000	16	350	400	AXC2015000T6
	.6102	15.500	16	350	400	AXC2015500T6
5/8	.6250	15.870	16	350	400	AXC2015870T6
	.6299	16.000	16	350	400	AXC2016000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 39.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

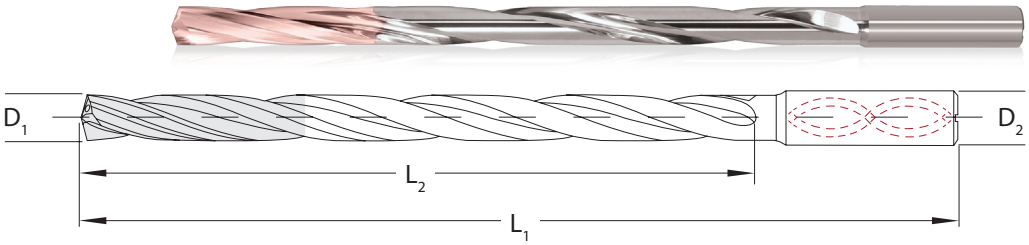
Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	98	135	AXC2503000T6
1/8	.1250	3.175	6	98	135	AXC2503175T6
	.1260	3.200	6	98	135	AXC2503200T6
	.1299	3.300	6	110	150	AXC2503300T6
	.1378	3.500	6	110	150	AXC2503500T6
9/64	.1406	3.572	6	120	160	AXC2503572T6
#25	.1496	3.800	6	120	160	AXC2503800T6
5/32	.1563	3.970	6	120	160	AXC2503970T6
	.1575	4.000	6	120	160	AXC2504000T6
	.1654	4.200	6	120	160	AXC2504200T6
11/64	.1719	4.370	6	135	180	AXC2504370T6
	.1772	4.500	6	135	180	AXC2504500T6
#13	.1850	4.700	6	135	180	AXC2500130T6
3/16	.1875	4.760	6	135	180	AXC2504760T6
#12	.1890	4.800	6	135	180	AXC2500120T6
	.1969	5.000	6	135	180	AXC2505000T6
13/64	.2031	5.160	6	168	205	AXC2505160T6
#6	.2040	5.182	6	168	205	AXC2500060T6
	.2165	5.500	6	168	205	AXC2505500T6
7/32	.2187	5.560	6	168	205	AXC2505560T6
	.2283	5.800	6	168	205	AXC2505800T6
15/64	.2344	5.950	6	168	205	AXC2505950T6
	.2362	6.000	6	168	205	AXC2506000T6
1/4	.2500	6.350	8	200	240	AXC2506350T6
	.2559	6.500	8	200	240	AXC2506500T6
17/64	.2656	6.750	8	200	240	AXC2506750T6
	.2677	6.800	8	200	240	AXC2506800T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2756	7.000	8	200	240	AXC2507000T6
9/32	.2813	7.140	8	220	260	AXC2507140T6
	.2953	7.500	8	220	260	AXC2507500T6
19/64	.2969	7.540	8	220	260	AXC2507540T6
	.3071	7.800	8	220	260	AXC2507800T6
5/16	.3125	7.940	8	220	260	AXC2507940T6
	.3150	8.000	8	220	260	AXC2508000T6
21/64	.3281	8.330	10	240	285	AXC2508330T6
	.3346	8.500	10	240	285	AXC2508500T6
11/32	.3437	8.730	10	268	310	AXC2508730T6
	.3465	8.800	10	268	310	AXC2508800T6
	.3543	9.000	10	268	310	AXC2509000T6
23/64	.3594	9.130	10	268	310	AXC2509130T6
3/8	.3750	9.520	10	268	310	AXC2509520T6
	.3858	9.800	10	268	310	AXC2509800T6
25/64	.3906	9.920	10	268	310	AXC2509920T6
	.3937	10.000	10	268	310	AXC2510000T6
13/32	.4063	10.320	12	325	375	AXC2510320T6
27/64	.4219	10.720	12	325	375	AXC2510720T6
	.4331	11.000	12	325	375	AXC2511000T6
7/16	.4375	11.113	12	325	375	AXC2511113T6
	.4528	11.500	12	325	375	AXC2511500T6
29/64	.4531	11.510	12	325	375	AXC2511510T6
15/32	.4687	11.910	12	325	375	AXC2511910T6
	.4724	12.000	12	325	375	AXC2512000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 39.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

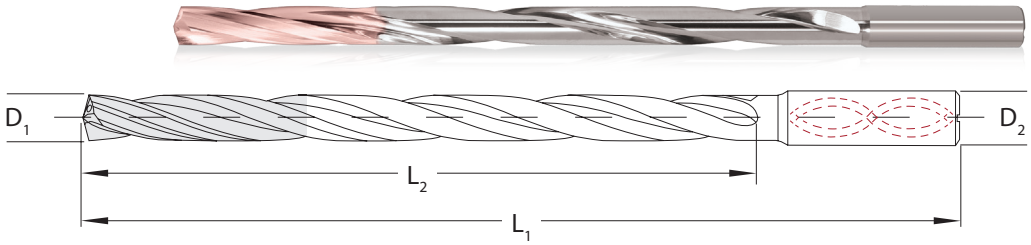
Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	105	150	AXC3003000T6
1/8	.1250	3.175	6	105	150	AXC3003175T6
	.1260	3.200	6	105	150	AXC3003200T6
	.1299	3.300	6	135	185	AXC3003300T6
	.1378	3.500	6	135	185	AXC3003500T6
9/64	.1406	3.572	6	135	185	AXC3003572T6
#25	.1496	3.800	6	135	185	AXC3003800T6
5/32	.1563	3.970	6	135	185	AXC3003970T6
	.1575	4.000	6	135	185	AXC3004000T6
	.1654	4.200	6	135	185	AXC3004200T6
11/64	.1719	4.370	6	165	215	AXC3004370T6
	.1772	4.500	6	165	215	AXC3004500T6
#13	.1850	4.700	6	165	215	AXC3000130T6
3/16	.1875	4.760	6	165	215	AXC3004760T6
#12	.1890	4.800	6	165	215	AXC3000120T6
	.1969	5.000	6	165	215	AXC3005000T6
13/64	.2031	5.160	6	180	230	AXC3005160T6
#6	.2040	5.182	6	180	230	AXC3000060T6
	.2165	5.500	6	180	230	AXC3005500T6
7/32	.2187	5.560	6	180	230	AXC3005560T6
	.2283	5.800	6	180	230	AXC3005800T6
15/64	.2344	5.950	6	180	230	AXC3005950T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2362	6.000	6	180	230	AXC3006000T6
1/4	.2500	6.350	8	215	280	AXC3006350T6
	.2559	6.500	8	215	280	AXC3006500T6
17/64	.2656	6.750	8	230	280	AXC3006750T6
	.2677	6.800	8	230	280	AXC3006800T6
	.2756	7.000	8	230	280	AXC3007000T6
9/32	.2813	7.140	8	230	280	AXC3007140T6
	.2953	7.500	8	230	280	AXC3007500T6
19/64	.2969	7.540	8	265	315	AXC3007540T6
	.3071	7.800	8	265	315	AXC3007800T6
5/16	.3125	7.940	8	265	315	AXC3007940T6
	.3150	8.000	8	265	315	AXC3008000T6
21/64	.3281	8.330	10	295	350	AXC3008330T6
	.3346	8.500	10	295	350	AXC3008500T6
11/32	.3437	8.730	10	330	380	AXC3008730T6
	.3465	8.800	10	330	380	AXC3008800T6
	.3543	9.000	10	330	380	AXC3009000T6
23/64	.3594	9.130	10	330	380	AXC3009130T6
3/8	.3750	9.520	10	330	380	AXC3009520T6
	.3858	9.800	10	330	380	AXC3009800T6
25/64	.3906	9.920	10	330	380	AXC3009920T6
	.3937	10.000	10	330	380	AXC3010000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

AXC
16xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	160		.30	.40	.50	.60	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	160		.35	.45	.55	.65	.70
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	140		.30	.40	.50	.60	.65
N 5	Copper & Copper Alloys	90		.23	.30	.38	.45	.52

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
16xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	525.0		.012	.015	.019	.023	.025
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	525.0		.013	.017	.022	.025	.027
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	459.3		.011	.015	.019	.023	.025
N 5	Copper & Copper Alloys	295.3		.009	.011	.015	.015	.021

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
20xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	150		.20	.25	.35	.40	.46
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	150		.25	.30	.38	.45	.52
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	130		.20	.25	.35	.40	.46
N 5	Copper & Copper Alloys	80		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
20xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	492.2		.008	.010	.014	.016	.018
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	492.2		.010	.012	.015	.018	.020
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	426.5		.008	.010	.014	.016	.018
N 5	Copper & Copper Alloys	262.5		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
25xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	130		.20	.25	.35	.40	.46
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	130		.25	.30	.38	.45	.52
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	120		.20	.25	.35	.40	.46
N 5	Copper & Copper Alloys	75		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
25xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	426.5		.008	.010	.014	.016	.018
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	426.5		.010	.012	.015	.018	.020
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	393.7		.008	.010	.014	.016	.018
N 5	Copper & Copper Alloys	246.1		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
30xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	120		.20	.25	.35	.40	.46
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	120		.25	.30	.38	.45	.52
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	115		.20	.25	.35	.40	.46
N 5	Copper & Copper Alloys	65		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
30xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
N 1	Wrought Aluminum Alloys	397.7		.008	.010	.014	.016	.018
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	397.7		.010	.012	.015	.018	.020
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	377.3		.008	.010	.014	.016	.018
N 5	Copper & Copper Alloys	213.3		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

HI-DEPTH™ LONG DRILLS — High-Performance Drill 2 Flute / 15° Helix / 135° Point / Internal Coolant

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 41.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. We also recommend using a corresponding 20xD intermediary drill. (Refer to pages 157 & 35)

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	140	190	AXC4003000T6
1/8	.1250	3.175	6	140	190	AXC4003175T6
9/64	.1406	3.572	6	180	230	AXC4003572T6
#25	.1496	3.800	6	180	230	AXC4003800T6
5/32	.1563	3.970	6	180	230	AXC4003970T6
	.1575	4.000	6	180	230	AXC4004000T6
	.1654	4.200	6	180	230	AXC4004200T6
11/64	.1719	4.370	6	220	270	AXC4004370T6
	.1772	4.500	6	220	270	AXC4004500T6
#13	.1850	4.700	6	220	270	AXC4000130T6
3/16	.1875	4.760	6	220	270	AXC4004760T6
#12	.1890	4.800	6	220	270	AXC4000120T6
	.1969	5.000	6	220	270	AXC4005000T6
13/64	.2031	5.160	6	240	290	AXC4005160T6
#6	.2040	5.182	6	240	290	AXC4000060T6
	.2165	5.500	6	240	290	AXC4005500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
7/32	.2187	5.560	6	240	290	AXC4005560T6
	.2283	5.800	6	240	290	AXC4005800T6
15/64	.2344	5.950	6	240	290	AXC4005950T6
	.2362	6.000	6	240	290	AXC4006000T6
1/4	.2500	6.350	8	290	340	AXC4006350T6
	.2559	6.500	8	290	340	AXC4006500T6
17/64	.2656	6.750	8	320	370	AXC4006750T6
	.2677	6.800	8	320	370	AXC4006800T6
	.2756	7.000	8	320	370	AXC4007000T6
9/32	.2813	7.140	8	320	370	AXC4007140T6
	.2953	7.500	8	320	370	AXC4007500T6
19/64	.2969	7.540	8	350	400	AXC4007540T6
	.3071	7.800	8	350	400	AXC4007800T6
5/16	.3125	7.940	8	350	400	AXC4007940T6
	.3150	8.000	8	350	400	AXC4008000T6

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum and non-ferrous materials

N Refer to page 261

Speeds & Feeds: Refer to Page 41.

Diseño
Flautas largas espirales, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio y materiales no ferrosos

N Consulte la página 261

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.

This drill must utilize a pilot hole drill. We also recommend using a corresponding 20xD intermediary drill. (Refer to pages 157 & 35)

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1575	4.000	6	225	270	AXC5004000T6
	.1654	4.200	6	225	270	AXC5004200T6
11/64	.1719	4.370	6	275	320	AXC5004370T6
	.1772	4.500	6	275	320	AXC5004500T6
#13	.1850	4.700	6	275	320	AXC5000130T6
3/16	.1875	4.760	6	275	320	AXC5004760T6
#12	.1890	4.800	6	275	320	AXC5000120T6
	.1969	5.000	6	275	320	AXC5005000T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
13/64	.2031	5.160	6	310	360	AXC5005160T6
#6	.2040	5.182	6	310	360	AXC5000060T6
	.2165	5.500	6	310	360	AXC5005500T6
7/32	.2187	5.560	6	310	360	AXC5005560T6
	.2283	5.800	6	310	360	AXC5005800T6
15/64	.2344	5.950	6	310	360	AXC5005950T6
	.2362	6.000	6	310	360	AXC5006000T6
1/4	.2500	8.000	8	340	385	AXC5006350T6

Other Dimensions are Available Upon Request

AXC
40xD & 50xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 4.00	> 4.00 ≤ 5.00	> 5.00 ≤ 6.00	> 6.00 ≤ 7.00	> 7.00 ≤ 7.50	> 7.50 ≤ 8.00
			Dec. Inch.	.1181-.1576	.1577-.1970	.1971-.2364	.2365-.2758	.2759-.2955	.2956-.3152
N 1	Wrought Aluminum Alloys	110		.19	.20	.21	.24	.26	.30
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	110		.19	.20	.21	.24	.26	.30
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	105		.15	.16	.18	.20	.22	.25
N 5	Copper & Copper Alloys	55		.18	.19	.20	.25	.27	.33

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

AXC
40xD & 50xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 4.00	> 4.00 ≤ 5.00	> 5.00 ≤ 6.00	> 6.00 ≤ 7.00	> 7.00 ≤ 7.50	> 7.50 ≤ 8.00
			Dec. Inch.	.1181-.1576	.1577-.1970	.1971-.2364	.2365-.2758	.2759-.2955	.2956-.3152
N 1	Wrought Aluminum Alloys	360.9		.007	.008	.008	.009	.010	.012
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	360.9		.007	.008	.008	.009	.010	.012
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	344.5		.006	.006	.007	.008	.009	.010
N 5	Copper & Copper Alloys	180.5		.007	.007	.008	.010	.011	.013

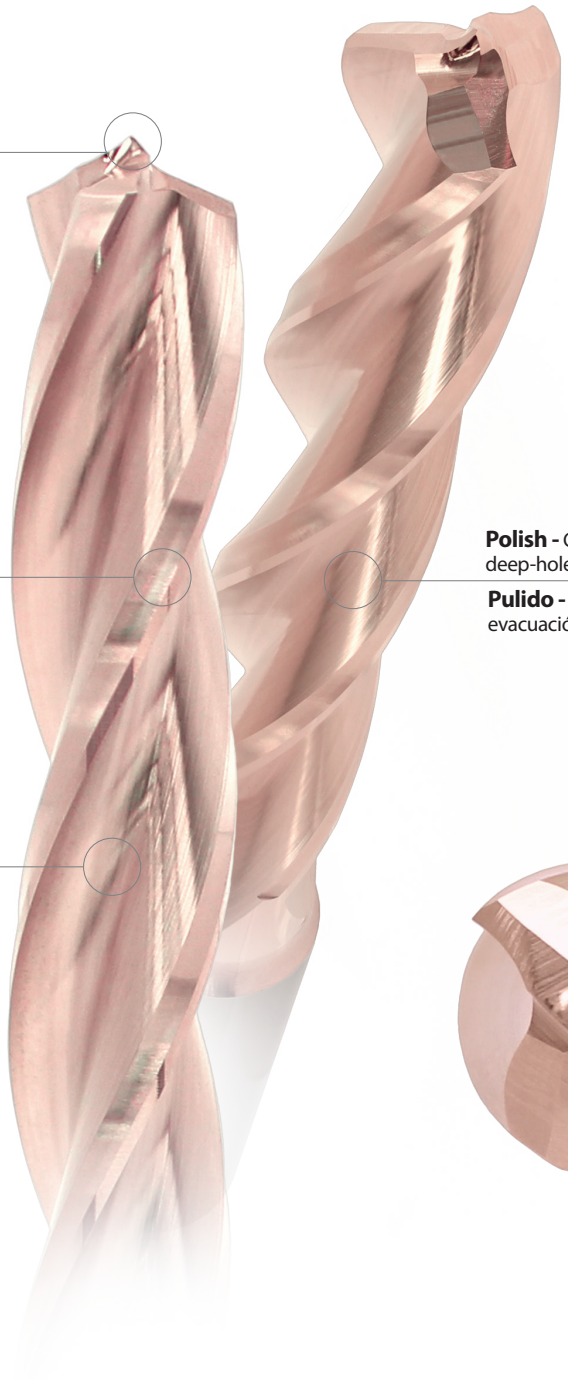
Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

High-Performance Drill
Single-Margin
Ideal for Aluminum & Cast Materials
3xD-5xD

130° Point Geometry - Ideal for faster drilling and high feed rates.

130° Geometría de la Punta - Ideal para perforaciónes rápidas y altas velocidades de avance.



Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

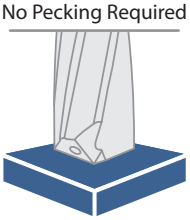
Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

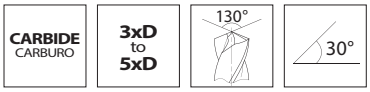
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

ZircoPlus® Coating - Provides increased corrosion and abrasion resistance, for maximized machining.

ZircoPlus® Recubrimiento - Ofrece mayor resistencia a la abrasión y corrosión, para lograr máximo mecanizado.

No Pecking Required





ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Zirco Plus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Zirco Plus®

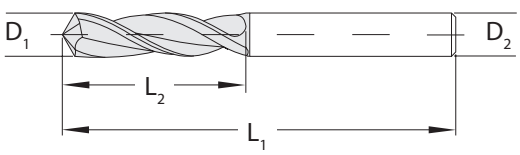
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

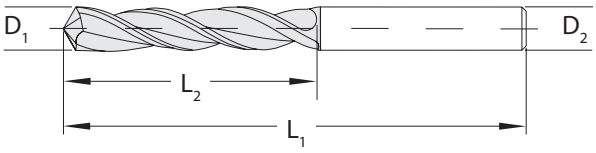
Speeds & Feeds: Refer to page 45 & 47.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

3xD PAGE 44



5xD PAGE 46



Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Zirco Plus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Zirco Plus®

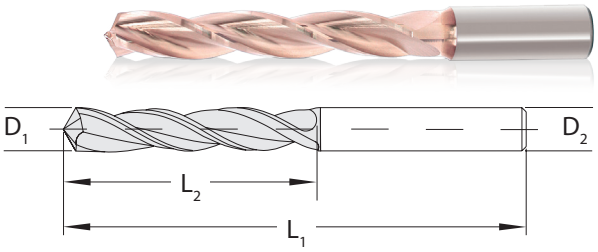
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

Speeds & Feeds: Refer to Page 45.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	CX00306250T6
#52	.0635	1.61	1/8	11/16	2	CX00300520T6
#51	.0670	1.70	1/8	11/16	2	CX00300510T6
#50	.0700	1.78	1/8	11/16	2	CX00300500T6
#49	.0730	1.85	1/8	11/16	2	CX00300490T6
#48	.0760	1.93	1/8	11/16	2	CX00300480T6
5/64	.0781	1.98	1/8	11/16	2	CX00307810T6
#47	.0785	1.99	1/8	3/4	2-1/2	CX00300470T6
	.0787	2.00	1/8	3/4	2-1/2	CX00307870T6
#46	.0810	2.06	1/8	3/4	2-1/2	CX00300460T6
#45	.0820	2.08	1/8	3/4	2-1/2	CX00300450T6
#44	.0860	2.18	1/8	3/4	2-1/2	CX00300440T6
#43	.0890	2.26	1/8	3/4	2-1/2	CX00300430T6
#42	.0935	2.37	1/8	3/4	2-1/2	CX00300420T6
3/32	.0938	2.38	1/8	3/4	2-1/2	CX00309380T6
#41	.0960	2.44	1/8	13/16	2-1/2	CX00300410T6
#40	.0980	2.49	1/8	13/16	2-1/2	CX00300400T6
	.0984	2.50	1/8	13/16	2-1/2	CX00309840T6
#39	.0995	2.53	1/8	13/16	2-1/2	CX00300390T6
#38	.1015	2.58	1/8	13/16	2-1/2	CX00300380T6
#37	.1040	2.64	1/8	13/16	2-1/2	CX00300370T6
#36	.1065	2.71	1/8	13/16	2-1/2	CX00300360T6
7/64	.1094	2.78	1/8	13/16	2-1/2	CX00301094T6
#35	.1100	2.79	1/8	7/8	2-1/2	CX00300350T6
#34	.1110	2.82	1/8	7/8	2-1/2	CX00300340T6
#33	.1130	2.87	1/8	7/8	2-1/2	CX00300330T6
#32	.1160	2.95	1/8	7/8	2-1/2	CX00300320T6
	.1181	3.00	1/8	7/8	2-1/2	CX00303000T6
#31	.1200	3.05	1/8	7/8	2-1/2	CX00300310T6
1/8	.1250	3.17	1/8	7/8	2-1/2	CX00303175T6
#30	.1285	3.26	3/16	15/16	2-1/2	CX00300300T6
#29	.1360	3.45	3/16	15/16	2-1/2	CX00300290T6
	.1378	3.50	3/16	15/16	2-1/2	CX00303500T6
#28	.1405	3.57	3/16	15/16	2-1/2	CX00300280T6
9/64	.1406	3.57	3/16	1	2-1/2	CX00303570T6
#27	.1440	3.66	3/16	1	2-1/2	CX00300270T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1	2-1/2	CX00300260T6
#25	.1495	3.80	3/16	1	2-1/2	CX00300250T6
#24	.1520	3.86	3/16	1	2-1/2	CX00300240T6
#23	.1540	3.91	3/16	1	2-1/2	CX00300230T6
5/32	.1562	3.97	3/16	1	2-1/2	CX00303970T6
#22	.1570	3.99	3/16	1-1/16	2-1/2	CX00300220T6
	.1575	4.00	3/16	1-1/16	2-1/2	CX00304000T6
#21	.1590	4.04	3/16	1-1/16	2-1/2	CX00300210T6
#20	.1610	4.09	3/16	1-1/16	2-1/2	CX00300200T6
	.1654	4.20	3/16	1-1/16	2-1/2	CX00304200T6
#19	.1660	4.22	3/16	1-1/16	2-1/2	CX00300190T6
#18	.1695	4.30	3/16	1-1/16	2-1/2	CX00300180T6
11/64	.1719	4.37	3/16	1-1/16	2-1/2	CX00304370T6
#17	.1730	4.39	3/16	1-1/8	3	CX00300170T6
#16	.1770	4.49	3/16	1-1/8	3	CX00300160T6
	.1772	4.50	3/16	1-1/8	3	CX00304500T6
#15	.1800	4.57	3/16	1-1/8	3	CX00300150T6
#14	.1820	4.62	3/16	1-1/8	3	CX00300140T6
#13	.1850	4.70	3/16	1-1/8	3	CX00300130T6
3/16	.1875	4.76	3/16	1-1/8	3	CX00304760T6
#12	.1890	4.80	1/4	1-3/16	3	CX00300120T6
#11	.1910	4.85	1/4	1-3/16	3	CX00300110T6
#10	.1935	4.91	1/4	1-3/16	3	CX00300100T6
#9	.1960	4.98	1/4	1-3/16	3	CX00300090T6
	.1969	5.00	1/4	1-3/16	3	CX00305000T6
#8	.1990	5.05	1/4	1-3/16	3	CX00300080T6
	.2008	5.10	1/4	1-3/16	3	CX00305100T6
#7	.2010	5.10	1/4	1-3/16	3	CX00300070T6
13/64	.2031	5.16	1/4	1-3/16	3	CX00305160T6
#6	.2040	5.18	1/4	1-1/4	3	CX00300060T6
#5	.2055	5.22	1/4	1-1/4	3	CX00300050T6
#4	.2090	5.31	1/4	1-1/4	3	CX00300040T6
#3	.2130	5.41	1/4	1-1/4	3	CX00300030T6
	.2165	5.50	1/4	1-1/4	3	CX00302165T6
7/32	.2188	5.56	1/4	1-1/4	3	CX00305560T6
#2	.2210	5.61	1/4	1-5/16	3	CX00300020T6

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#1	.2280	5.79	1/4	1-5/16	3	CX00300010T6
A	.2340	5.94	1/4	1-5/16	3	CX003000A0T6
15/64	.2344	5.95	1/4	1-5/16	3	CX00305950T6
	.2362	6.00	1/4	1-3/8	3	CX00306000T6
B	.2380	6.04	1/4	1-3/8	3	CX003000B0T6
C	.2420	6.15	1/4	1-3/8	3	CX003000C0T6
D	.2460	6.25	1/4	1-3/8	3	CX003000D0T6
1/4/E	.2500	6.35	1/4	1-3/8	3	CX00306350T6
	.2559	6.50	5/16	1-7/16	3	CX00306500T6
F	.2570	6.53	5/16	1-7/16	3	CX003000F0T6
G	.2610	6.63	5/16	1-7/16	3	CX003000G0T6
17/64	.2656	6.75	5/16	1-7/16	3	CX00306750T6
H	.2660	6.76	5/16	1-1/2	3	CX003000H0T6
I	.2720	6.91	5/16	1-1/2	3	CX003000I0T6
	.2756	7.00	5/16	1-1/2	3	CX00307000T6
J	.2770	7.03	5/16	1-1/2	3	CX003000J0T6
K	.2810	7.14	5/16	1-1/2	3	CX003000K0T6
9/32	.2812	7.14	5/16	1-1/2	3	CX00307140T6
L	.2900	7.37	5/16	1-9/16	4	CX003000L0T6
M	.2950	7.49	5/16	1-9/16	4	CX003000M0T6
	.2953	7.50	5/16	1-9/16	4	CX00307500T6
19/64	.2969	7.54	5/16	1-9/16	4	CX00307540T6
N	.3020	7.67	5/16	1-5/8	4	CX003000N0T6
5/16	.3125	7.94	5/16	1-5/8	4	CX00307940T6
	.3150	8.00	3/8	1-11/16	4	CX00308000T6
O	.3160	8.03	3/8	1-11/16	4	CX003000O0T6
P	.3230	8.20	3/8	1-11/16	4	CX003000P0T6
21/64	.3281	8.33	3/8	1-11/16	4	CX00308330T6
Q	.3320	8.43	3/8	1-11/16	4	CX003000Q0T6
	.3346	8.50	3/8	1-11/16	4	CX00308500T6
R	.3390	8.61	3/8	1-11/16	4	CX003000R0T6
11/32	.3438	8.73	3/8	1-11/16	4	CX00308730T6
S	.3480	8.84	3/8	1-3/4	4	CX003000S0T6
	.3543	9.00	3/8	1-3/4	4	CX00309000T6
T	.3580	9.09	3/8	1-3/4	4	CX003000T0T6
23/64	.3594	9.13	3/8	1-3/4	4	CX00309130T6
U	.3680	9.35	3/8	1-13/16	4	CX003000U0T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
	.3740	9.50	3/8	1-13/16	4	CX00309500T6
3/8	.3750	9.52	3/8	1-13/16	4	CX00309520T6
V	.3770	9.57	7/16	1-7/8	4	CX003000V0T6
W	.3860	9.80	7/16	1-7/8	4	CX003000W0T6
25/64	.3906	9.92	7/16	1-7/8	4	CX00309920T6
	.3937	10.00	7/16	1-15/16	4	CX00310000T6
X	.3970	10.08	7/16	1-15/16	4	CX003000X0T6
Y	.4040	10.26	7/16	1-15/16	4	CX003000Y0T6
13/32	.4062	10.32	7/16	1-15/16	4	CX00310320T6
Z	.4130	10.49	7/16	2	4	CX003000Z0T6
	.4134	10.50	7/16	2	4	CX00310500T6
27/64	.4219	10.72	7/16	2	4	CX00310720T6
	.4252	10.80	7/16	2	4	CX00310800T6
	.4331	11.00	7/16	2-1/16	4	CX00311000T6
7/16	.4375	11.11	7/16	2-1/16	4	CX00311110T6
	.4528	11.50	1/2	2-1/8	4	CX00311500T6
29/64	.4531	11.51	1/2	2-1/8	4	CX00311510T6
15/32	.4688	11.91	1/2	2-1/8	4	CX00311910T6
	.4724	12.00	1/2	2-3/16	5	CX00312000T6
31/64	.4844	12.30	1/2	2-3/16	5	CX00312300T6
	.4921	12.50	1/2	2-1/4	5	CX00312500T6
1/2	.5000	12.70	1/2	2-1/4	5	CX00312700T6
	.5118	13.00	9/16	2-3/8	5	CX00313000T6
33/64	.5156	13.10	9/16	2-3/8	5	CX00313100T6
17/32	.5312	13.49	9/16	2-1/2	5	CX00313490T6
	.5315	13.50	9/16	2-1/2	5	CX00313500T6
35/64	.5469	13.89	9/16	2-1/2	5	CX00313890T6
	.5512	14.00	9/16	2-1/2	5	CX00314000T6
9/16	.5625	14.29	9/16	3	5	CX00314290T6
	.5709	14.50	5/8	3	5	CX00314500T6
37/64	.5781	14.68	5/8	3	5	CX00314680T6
	.5906	15.00	5/8	3	5	CX00315000T6
19/32	.5938	15.08	5/8	3	5	CX00315080T6
39/64	.6094	15.48	5/8	3	5	CX00315480T6
	.6102	15.50	5/8	3	5	CX00315500T6
5/8	.6250	15.87	5/8	3	5	CX00315870T6
	.6299	16.00	3/4	3	5	CX00316000T6

Other Dimensions are Available Upon Request

CX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	70		.14	.20	.28	.35	.45
N 1	Wrought Aluminum Alloys	180		.14	.20	.28	.35	.45
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	140		.14	.20	.28	.35	.45
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	110		.14	.20	.28	.35	.45
N 5	Copper & Copper Alloys	140		.10	.15	.20	.26	.33

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

CX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	229.7		.005	.007	.010	.013	.017
N 1	Wrought Aluminum Alloys	590.6		.005	.007	.010	.013	.017
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	459.3		.005	.007	.010	.013	.017
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	360.9		.005	.007	.010	.013	.017
N 5	Copper & Copper Alloys	459.3		.003	.005	.007	.010	.012

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Zirco Plus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Zirco Plus®

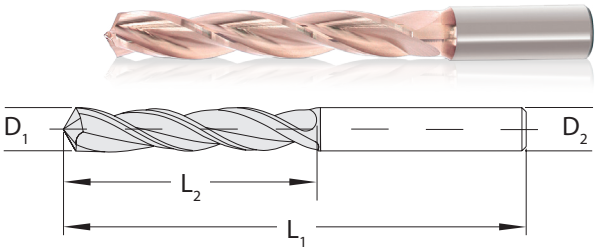
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

Speeds & Feeds: Refer to Page 47.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	CX00506250T6
#52	.0635	1.61	1/8	3/4	2-1/2	CX00500520T6
#51	.0670	1.70	1/8	3/4	2-1/2	CX00500510T6
#50	.0700	1.78	1/8	7/8	2-1/2	CX00500500T6
#49	.0730	1.85	1/8	7/8	2-1/2	CX00500490T6
#48	.0760	1.93	1/8	7/8	2-1/2	CX00500480T6
5/64	.0781	1.98	1/8	7/8	2-1/2	CX00507810T6
#47	.0785	1.99	1/8	7/8	2-1/2	CX00500470T6
	.0787	2.00	1/8	7/8	2-1/2	CX00507870T6
#46	.0810	2.06	1/8	7/8	2-1/2	CX00500460T6
#45	.0820	2.08	1/8	7/8	2-1/2	CX00500450T6
#44	.0860	2.18	1/8	1	2-1/2	CX00500440T6
#43	.0890	2.26	1/8	1	2-1/2	CX00500430T6
#42	.0935	2.37	1/8	1	2-1/2	CX00500420T6
3/32	.0938	2.38	1/8	1	2-1/2	CX00509380T6
#41	.0960	2.44	1/8	1	3	CX00500410T6
#40	.0980	2.49	1/8	1	3	CX00500400T6
	.0984	2.50	1/8	1	3	CX00509840T6
#39	.0995	2.53	1/8	1-1/4	3	CX00500390T6
#38	.1015	2.58	1/8	1-1/4	3	CX00500380T6
#37	.1040	2.64	1/8	1-1/4	3	CX00500370T6
#36	.1065	2.71	1/8	1-1/4	3	CX00500360T6
7/64	.1094	2.78	1/8	1-1/4	3	CX00501094T6
#35	.1100	2.79	1/8	1-1/4	3	CX00500350T6
#34	.1110	2.82	1/8	1-1/4	3	CX00500340T6
#33	.1130	2.87	1/8	1-1/4	3	CX00500330T6
#32	.1160	2.95	1/8	1-1/4	3	CX00500320T6
	.1181	3.00	1/8	1-1/4	3	CX00503000T6
#31	.1200	3.05	1/8	1-1/4	3	CX00500310T6
1/8	.1250	3.17	1/8	1-1/4	3	CX00503175T6
#30	.1285	3.26	3/16	1-3/8	3	CX00500300T6
#29	.1360	3.45	3/16	1-3/8	3	CX00500290T6
	.1378	3.50	3/16	1-3/8	3	CX00503500T6
#28	.1405	3.57	3/16	1-3/8	3	CX00500280T6
9/64	.1406	3.57	3/16	1-3/8	3	CX00503570T6
#27	.1440	3.66	3/16	1-3/8	3	CX00500270T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1-3/8	3	CX00500260T6
#25	.1495	3.80	3/16	1-3/8	3	CX00500250T6
#24	.1520	3.86	3/16	1-3/8	3	CX00500240T6
#23	.1540	3.91	3/16	1-3/8	3	CX00500230T6
5/32	.1562	3.97	3/16	1-3/8	3	CX00503970T6
#22	.1570	3.99	3/16	1-3/8	3	CX00500220T6
	.1575	4.00	3/16	1-3/8	3	CX00504000T6
#21	.1590	4.04	3/16	1-3/8	3	CX00500210T6
#20	.1610	4.09	3/16	1-3/8	3	CX00500200T6
#19	.1660	4.22	3/16	1-5/8	4	CX00500190T6
#18	.1695	4.30	3/16	1-5/8	4	CX00500180T6
11/64	.1719	4.37	3/16	1-5/8	4	CX00504370T6
#17	.1730	4.39	3/16	1-5/8	4	CX00500170T6
#16	.1770	4.49	3/16	1-5/8	4	CX00500160T6
	.1772	4.50	3/16	1-5/8	4	CX00504500T6
#15	.1800	4.57	3/16	1-5/8	4	CX00500150T6
#14	.1820	4.62	3/16	1-5/8	4	CX00500140T6
#13	.1850	4.70	3/16	1-5/8	4	CX00500130T6
3/16	.1875	4.76	3/16	1-5/8	4	CX00504760T6
#12	.1890	4.80	1/4	1-5/8	4	CX00500120T6
#11	.1910	4.85	1/4	1-5/8	4	CX00500110T6
#10	.1935	4.91	1/4	1-5/8	4	CX00500100T6
#9	.1960	4.98	1/4	1-3/4	4	CX00500090T6
	.1969	5.00	1/4	1-3/4	4	CX00505000T6
#8	.1990	5.05	1/4	1-3/4	4	CX00500080T6
#7	.2010	5.10	1/4	1-3/4	4	CX00500070T6
13/64	.2031	5.16	1/4	1-3/4	4	CX00505160T6
#6	.2040	5.18	1/4	1-3/4	4	CX00500060T6
#5	.2055	5.22	1/4	1-3/4	4	CX00500050T6
#4	.2090	5.31	1/4	1-3/4	4	CX00500040T6
#3	.2130	5.41	1/4	1-3/4	4	CX00500030T6
	.2165	5.50	1/4	1-3/4	4	CX00502165T6
7/32	.2188	5.56	1/4	1-3/4	4	CX00505560T6
#2	.2210	5.61	1/4	1-3/4	4	CX00500020T6
#1	.2280	5.79	1/4	1-3/4	4	CX00500010T6
A	.2340	5.94	1/4	2	4	CX005000A0T6

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
15/64	.2344	5.95	1/4	2	4	CX00505950T6
	.2362	6.00	1/4	2	4	CX00506000T6
B	.2380	6.04	1/4	2	4	CX005000B0T6
C	.2420	6.15	1/4	2	4	CX005000C0T6
D	.2460	6.25	1/4	2	4	CX005000D0T6
1/4/E	.2500	6.35	1/4	2	4	CX00506350T6
	.2559	6.50	5/16	2	4	CX00506500T6
F	.2570	6.53	5/16	2	4	CX005000F0T6
G	.2610	6.63	5/16	2-1/8	4	CX005000G0T6
17/64	.2656	6.75	5/16	2-1/8	4	CX00506750T6
H	.2660	6.76	5/16	2-1/8	4	CX005000H0T6
I	.2720	6.91	5/16	2-1/8	4	CX005000I0T6
	.2756	7.00	5/16	2-1/8	4	CX00507000T6
J	.2770	7.03	5/16	2-1/8	4	CX005000J0T6
K	.2810	7.14	5/16	2-1/8	4	CX005000K0T6
9/32	.2812	7.14	5/16	2-1/8	4	CX00507140T6
L	.2900	7.37	5/16	2-1/8	4	CX005000L0T6
M	.2950	7.49	5/16	2-3/8	4	CX005000M0T6
	.2953	7.50	5/16	2-3/8	4	CX00507500T6
19/64	.2969	7.54	5/16	2-3/8	4	CX00507540T6
N	.3020	7.67	5/16	2-3/8	4	CX005000N0T6
5/16	.3125	7.94	5/16	2-3/8	4	CX00507940T6
	.3150	8.00	3/8	2-3/8	4	CX00508000T6
O	.3160	8.03	3/8	2-3/8	4	CX005000O0T6
P	.3230	8.20	3/8	2-3/8	4	CX005000P0T6
21/64	.3281	8.33	3/8	2-1/2	5	CX00508330T6
Q	.3320	8.43	3/8	2-1/2	5	CX005000Q0T6
	.3346	8.50	3/8	2-1/2	5	CX00508500T6
R	.3390	8.61	3/8	2-1/2	5	CX005000R0T6
11/32	.3438	8.73	3/8	2-1/2	5	CX00508730T6
S	.3480	8.84	3/8	2-1/2	5	CX005000S0T6
	.3543	9.00	3/8	2-1/4	5	CX00509000T6
T	.3580	9.09	3/8	2-3/4	5	CX005000T0T6
23/64	.3594	9.13	3/8	2-3/4	5	CX00509130T6
U	.3680	9.35	3/8	2-3/4	5	CX005000U0T6
	.3740	9.50	3/8	2-3/4	5	CX00509500T6

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
3/8	.3750	9.52	3/8	2-3/4	5	CX00509520T6
V	.3770	9.57	7/16	2-7/8	5	CX005000V0T6
W	.3860	9.80	7/16	2-7/8	5	CX005000W0T6
25/64	.3906	9.92	7/16	2-7/8	5	CX00509920T6
	.3937	10.00	7/16	2-7/8	5	CX00510000T6
X	.3970	10.08	7/16	2-7/8	5	CX005000X0T6
Y	.4040	10.26	7/16	2-7/8	5	CX005000Y0T6
13/32	.4062	10.32	7/16	2-7/8	5	CX00510320T6
Z	.4130	10.49	7/16	2-7/8	5	CX005000Z0T6
	.4134	10.50	7/16	2-7/8	5	CX00510500T6
27/64	.4219	10.72	7/16	2-7/8	5	CX00510720T6
	.4252	10.80	7/16	2-7/8	5	CX00510800T6
	.4331	11.00	7/16	2-7/8	5	CX00511000T6
7/16	.4375	11.11	7/16	2-7/8	5	CX00511110T6
	.4528	11.50	1/2	3	5	CX00511500T6
29/64	.4531	11.51	1/2	3	5	CX00511510T6
15/32	.4688	11.91	1/2	3	5	CX00511910T6
	.4724	12.00	1/2	3	5	CX00512000T6
31/64	.4844	12.30	1/2	3	5	CX00512300T6
	.4921	12.50	1/2	3	5	CX00512500T6
1/2	.5000	12.70	1/2	3	5	CX00512700T6
	.5118	13.00	9/16	3-1/4	5	CX00513000T6
33/64	.5156	13.10	9/16	3-1/4	5	CX00513100T6
17/32	.5312	13.49	9/16	3-1/4	5	CX00513490T6
	.5315	13.50	9/16	3-1/4	5	CX00513500T6
35/64	.5469	13.89	9/16	3-1/4	5	CX00513890T6
	.5512	14.00	9/16	3-1/4	5	CX00514000T6
9/16	.5625	14.29	9/16	3-1/4	5	CX00514290T6
	.5709	14.50	5/8	3-1/4	5	CX00514500T6
37/64	.5781	14.68	5/8	3-1/2	6	CX00514680T6
	.5906	15.00	5/8	3-1/2	6	CX00515000T6
19/32	.5938	15.08	5/8	3-1/2	6	CX00515080T6
39/64	.6094	15.48	5/8	3-1/2	6	CX00515480T6
	.6102	15.50	5/8	3-1/2	6	CX00515500T6
5/8	.6250	15.87	5/8	3-1/2	6	CX00515870T6
	.6299	16.00	3/4	3-1/2	6	CX00516000T6

Other Dimensions are Available Upon Request

CX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	59		.14	.20	.28	.35	.45
N 1	Wrought Aluminum Alloys	153		.14	.20	.28	.35	.45
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	119		.14	.20	.28	.35	.45
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	93		.14	.20	.28	.35	.45
N 5	Copper & Copper Alloys	119		.10	.15	.20	.26	.33

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

CX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	195		.005	.007	.010	.013	.017
N 1	Wrought Aluminum Alloys	502		.005	.007	.010	.013	.017
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	390		.005	.007	.010	.013	.017
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	307		.005	.007	.010	.013	.017
N 5	Copper & Copper Alloys	390		.003	.005	.007	.010	.012

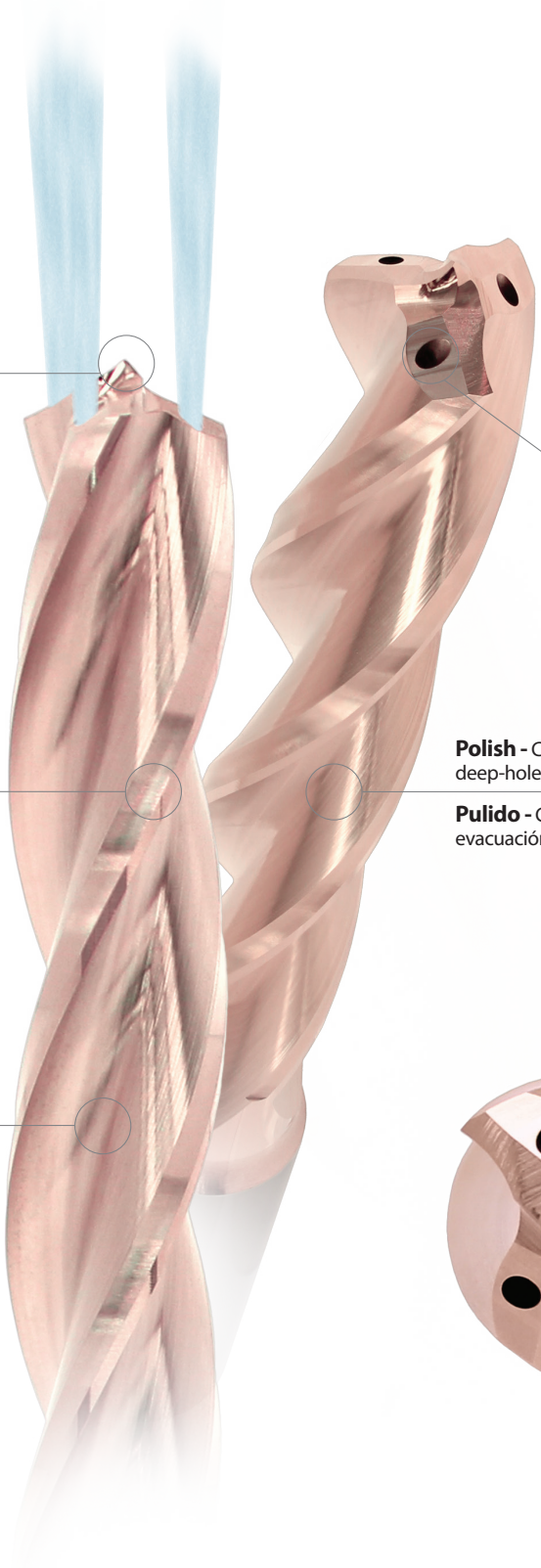
Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with
EDGE CUT™ for
Superior Cutter Performance

High-Performance Drill
Single-Margin
Ideal for Aluminum and Cast Materials
3xD-5xD

130° Point Geometry - Ideal for faster drilling and high feed rates.

130° Geometría de la Punta - Ideal para perforaciónes rápidas y altas velocidades de avance.



Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

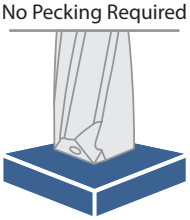
Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

ZircoPlus® Coating - Provides increased corrosion and abrasion resistance, for maximized machining.

ZircoPlus® Recubrimiento - Ofrece mayor resistencia a la abrasión y corrosión, para lograr máximo mecanizado.

No Pecking Required



CARBIDE CARBURO | 3xD to 5xD | 130° | 30° | Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

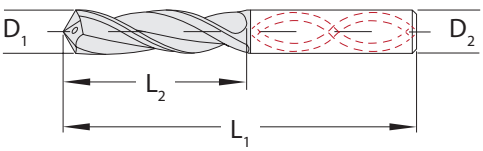
Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

3xD PAGE 50



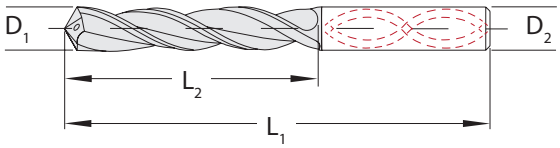
Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

5xD PAGE 52



Speeds & Feeds: Refer to page 51 & 53.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

High-Performance Drill 3 Flute Drill / 30° Helix / 130° Point / Internal Coolant

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
ZircoPlus®

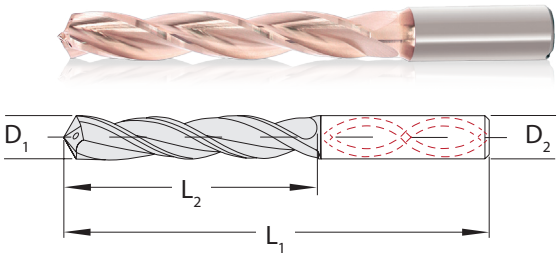
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

Speeds & Feeds: Refer to Page 51.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	CXC0303000T6
	.1220	3.100	6	20	62	CXC0303100T6
1/8	.1250	3.175	6	20	62	CXC0303175T6
	.1260	3.200	6	20	62	CXC0303200T6
	.1299	3.300	6	20	62	CXC0303300T6
	.1339	3.400	6	20	62	CXC0303400T6
	.1378	3.500	6	20	62	CXC0303500T6
9/64	.1406	3.572	6	20	62	CXC0303572T6
	.1417	3.600	6	20	62	CXC0303600T6
	.1457	3.700	6	20	62	CXC0303700T6
#25	.1496	3.800	6	24	66	CXC0303800T6
	.1535	3.900	6	24	66	CXC0303900T6
5/32	.1563	3.970	6	24	66	CXC0303970T6
	.1575	4.000	6	24	66	CXC0304000T6
	.1614	4.100	6	24	66	CXC0304100T6
	.1654	4.200	6	24	66	CXC0304200T6
	.1693	4.300	6	24	66	CXC0304300T6
11/64	.1719	4.370	6	24	66	CXC0304370T6
	.1732	4.400	6	24	66	CXC0304400T6
	.1772	4.500	6	24	66	CXC0304500T6
	.1811	4.600	6	24	66	CXC0304600T6
	.1831	4.650	6	24	66	CXC0304650T6
#13	.1850	4.700	6	24	66	CXC0300130T6
3/16	.1875	4.760	6	28	66	CXC0304760T6
#12	.1890	4.800	6	28	66	CXC0300120T6
	.1929	4.900	6	28	66	CXC0304900T6
	.1969	5.000	6	28	66	CXC0305000T6
	.2008	5.100	6	28	66	CXC0305100T6
13/64	.2031	5.160	6	28	66	CXC0305160T6
#6	.2040	5.182	6	28	66	CXC0300060T6
	.2047	5.200	6	28	66	CXC0305200T6
	.2087	5.300	6	28	66	CXC0305300T6
	.2126	5.400	6	28	66	CXC0305400T6
	.2165	5.500	6	28	66	CXC0305500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	CXC0305550T6
7/32	.2187	5.560	6	28	66	CXC0305560T6
	.2205	5.600	6	28	66	CXC0305600T6
	.2244	5.700	6	28	66	CXC0305700T6
	.2283	5.800	6	28	66	CXC0305800T6
	.2323	5.900	6	28	66	CXC0305900T6
15/64	.2344	5.950	6	28	66	CXC0305950T6
	.2362	6.000	6	28	66	CXC0306000T6
	.2402	6.100	8	34	79	CXC0306100T6
	.2441	6.200	8	34	79	CXC0306200T6
	.2480	6.300	8	34	79	CXC0306300T6
1/4	.2500	6.350	8	34	79	CXC0306350T6
	.2520	6.400	8	34	79	CXC0306400T6
	.2559	6.500	8	34	79	CXC0306500T6
	.2598	6.600	8	34	79	CXC0306600T6
	.2638	6.700	8	34	79	CXC0306700T6
17/64	.2656	6.750	8	34	79	CXC0306750T6
	.2677	6.800	8	34	79	CXC0306800T6
	.2717	6.900	8	41	79	CXC0306900T6
	.2756	7.000	8	41	79	CXC0307000T6
	.2795	7.100	8	41	79	CXC0307100T6
9/32	.2813	7.140	8	41	79	CXC0307140T6
	.2835	7.200	8	41	79	CXC0307200T6
	.2874	7.300	8	41	79	CXC0307300T6
	.2913	7.400	8	41	79	CXC0307400T6
	.2953	7.500	8	41	79	CXC0307500T6
19/64	.2969	7.540	8	41	79	CXC0307540T6
	.3031	7.700	8	41	79	CXC0307700T6
	.3071	7.800	8	41	79	CXC0307800T6
	.3110	7.900	8	41	79	CXC0307900T6
5/16	.3125	7.940	8	41	79	CXC0307940T6
	.3150	8.000	8	41	79	CXC0308000T6
	.3189	8.100	10	47	89	CXC0308100T6
	.3228	8.200	10	47	89	CXC0308200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010	.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012	.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015	.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018	.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	CXC0308300T6
21/64	.3281	8.330	10	47	89	CXC0308330T6
	.3307	8.400	10	47	89	CXC0308400T6
	.3346	8.500	10	47	89	CXC0308500T6
	.3386	8.600	10	47	89	CXC0308600T6
	.3425	8.700	10	47	89	CXC0308700T6
11/32	.3437	8.730	10	47	89	CXC0308730T6
	.3465	8.800	10	47	89	CXC0308800T6
	.3543	9.000	10	47	89	CXC0309000T6
23/64	.3594	9.130	10	47	89	CXC0309130T6
	.3622	9.200	10	47	89	CXC0309200T6
	.3661	9.300	10	47	89	CXC0309300T6
	.3740	9.500	10	47	89	CXC0309500T6
3/8	.3750	9.520	10	47	89	CXC0309520T6
	.3780	9.600	10	47	89	CXC0309600T6
	.3858	9.800	10	47	89	CXC0309800T6
	.3898	9.900	10	47	89	CXC0309900T6
25/64	.3906	9.920	10	47	89	CXC0309920T6
	.3937	10.000	10	47	89	CXC0310000T6
	.3976	10.100	12	55	102	CXC0310100T6
	.4016	10.200	12	55	102	CXC0310200T6
	.4055	10.300	12	55	102	CXC0310300T6
13/32	.4063	10.320	12	55	102	CXC0310320T6
	.4094	10.400	12	55	102	CXC0310400T6
	.4134	10.500	12	55	102	CXC0310500T6
27/64	.4219	10.720	12	55	102	CXC0310720T6
	.4252	10.800	12	55	102	CXC0310800T6
	.4331	11.000	12	55	102	CXC0311000T6
	.4370	11.100	12	55	102	CXC0311100T6
7/16	.4375	11.113	12	55	102	CXC0311113T6
	.4409	11.200	12	55	102	CXC0311200T6
	.4528	11.500	12	55	102	CXC0311500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	CXC0311510T6
	.4606	11.700	12	55	102	CXC0311700T6
	.4646	11.800	12	55	102	CXC0311800T6
15/32	.4687	11.910	12	55	102	CXC0311910T6
	.4724	12.000	12	55	102	CXC0312000T6
	.4764	12.100	14	60	107	CXC0312100T6
	.4803	12.200	14	60	107	CXC0312200T6
	.4843	12.300	14	60	107	CXC0312300T6
31/64	.4844	12.303	14	60	107	CXC0312303T6
	.4921	12.500	14	60	107	CXC0312500T6
	.4961	12.600	14	60	107	CXC0312600T6
1/2	.5000	12.700	14	60	107	CXC0312700T6
	.5118	13.000	14	60	107	CXC0313000T6
	.5236	13.300	14	60	107	CXC0313300T6
17/32	.5313	13.490	14	60	107	CXC0313490T6
	.5315	13.500	14	60	107	CXC0313500T6
	.5512	14.000	14	60	107	CXC0314000T6
9/16	.5625	14.290	16	65	115	CXC0314290T6
	.5709	14.500	16	65	115	CXC0314500T6
	.5906	15.000	16	65	115	CXC0315000T6
	.6102	15.500	16	65	115	CXC0315500T6
5/8	.6250	15.870	16	65	115	CXC0315870T6
	.6299	16.000	16	65	115	CXC0316000T6
	.6496	16.500	18	73	123	CXC0316500T6
	.6693	17.000	18	73	123	CXC0317000T6
	.6890	17.500	18	73	123	CXC0317500T6
	.7087	18.000	18	73	123	CXC0318000T6
	.7283	18.500	20	79	131	CXC0318500T6
3/4	.7500	19.050	20	79	131	CXC0319050T6
	.7677	19.500	20	79	131	CXC0319500T6
	.7874	20.000	20	79	131	CXC0320000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

CXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
K 1	Gray Cast Iron	80		.14	.20	.28	.35	.45
N 1	Wrought Aluminum Alloys	190		.14	.20	.28	.35	.45
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	150		.14	.20	.28	.35	.45
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	120		.14	.20	.28	.35	.45
N 5	Copper & Copper Alloys	150		.10	.15	.20	.26	.33

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

CXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
K 1	Gray Cast Iron	262.5		.005	.007	.010	.013	.017
N 1	Wrought Aluminum Alloys	623.4		.005	.007	.010	.013	.017
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	492.2		.005	.007	.010	.013	.017
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	393.7		.005	.007	.010	.013	.017
N 5	Copper & Copper Alloys	492.2		.003	.005	.007	.010	.012

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
ZircoPlus®

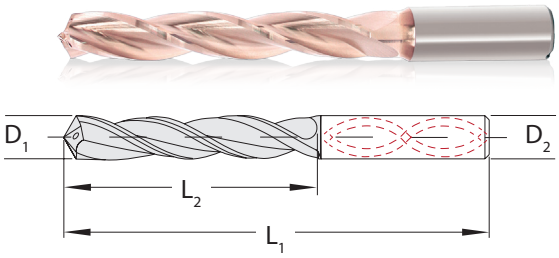
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

Speeds & Feeds: Refer to Page 53.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Zirco Plus® **ZircoPlus®** provides increased corrosion and abrasion resistance, for maximized machining.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	CXC0503000T6
	.1220	3.100	6	28	66	CXC0503100T6
1/8	.1250	3.175	6	28	66	CXC0503175T6
	.1260	3.200	6	28	66	CXC0503200T6
	.1299	3.300	6	28	66	CXC0503300T6
	.1339	3.400	6	28	66	CXC0503400T6
	.1378	3.500	6	28	66	CXC0503500T6
9/64	.1406	3.572	6	28	66	CXC0503572T6
	.1417	3.600	6	28	66	CXC0503600T6
	.1457	3.700	6	28	66	CXC0503700T6
#25	.1496	3.800	6	36	74	CXC0503800T6
	.1535	3.900	6	36	74	CXC0503900T6
5/32	.1563	3.970	6	36	74	CXC0503970T6
	.1575	4.000	6	36	74	CXC0504000T6
	.1614	4.100	6	36	74	CXC0504100T6
	.1654	4.200	6	36	74	CXC0504200T6
	.1693	4.300	6	36	74	CXC0504300T6
11/64	.1719	4.370	6	36	74	CXC0504370T6
	.1732	4.400	6	36	74	CXC0504400T6
	.1772	4.500	6	36	74	CXC0504500T6
	.1811	4.600	6	36	74	CXC0504600T6
	.1831	4.650	6	36	74	CXC0504650T6
#13	.1850	4.700	6	36	74	CXC0500130T6
3/16	.1875	4.760	6	44	82	CXC0504760T6
#12	.1890	4.800	6	44	82	CXC0500120T6
	.1929	4.900	6	44	82	CXC0504900T6
	.1969	5.000	6	44	82	CXC0505000T6
	.2008	5.100	6	44	82	CXC0505100T6
13/64	.2031	5.160	6	44	82	CXC0505160T6
#6	.2040	5.182	6	44	82	CXC0500060T6
	.2047	5.200	6	44	82	CXC0505200T6
	.2087	5.300	6	44	82	CXC0505300T6
	.2126	5.400	6	44	82	CXC0505400T6
	.2165	5.500	6	44	82	CXC0505500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	CXC0505550T6
7/32	.2187	5.560	6	44	82	CXC0505560T6
	.2205	5.600	6	44	82	CXC0505600T6
	.2244	5.700	6	44	82	CXC0505700T6
	.2283	5.800	6	44	82	CXC0505800T6
	.2323	5.900	6	44	82	CXC0505900T6
15/64	.2344	5.950	6	44	82	CXC0505950T6
	.2362	6.000	6	44	82	CXC0506000T6
	.2402	6.100	8	53	91	CXC0506100T6
	.2441	6.200	8	53	91	CXC0506200T6
	.2480	6.300	8	53	91	CXC0506300T6
1/4	.2500	6.350	8	53	91	CXC0506350T6
	.2520	6.400	8	53	91	CXC0506400T6
	.2559	6.500	8	53	91	CXC0506500T6
	.2598	6.600	8	53	91	CXC0506600T6
	.2638	6.700	8	53	91	CXC0506700T6
17/64	.2656	6.750	8	53	91	CXC0506750T6
	.2677	6.800	8	53	91	CXC0506800T6
	.2717	6.900	8	53	91	CXC0506900T6
	.2756	7.000	8	53	91	CXC0507000T6
	.2795	7.100	8	53	91	CXC0507100T6
9/32	.2813	7.140	8	53	91	CXC0507140T6
	.2835	7.200	8	53	91	CXC0507200T6
	.2874	7.300	8	53	91	CXC0507300T6
	.2913	7.400	8	53	91	CXC0507400T6
	.2953	7.500	8	53	91	CXC0507500T6
19/64	.2969	7.540	8	53	91	CXC0507540T6
	.3031	7.700	8	53	91	CXC0507700T6
	.3071	7.800	8	53	91	CXC0507800T6
	.3110	7.900	8	53	91	CXC0507900T6
5/16	.3125	7.940	8	53	91	CXC0507940T6
	.3150	8.000	8	53	91	CXC0508000T6
	.3189	8.100	10	61	103	CXC0508100T6
	.3228	8.200	10	61	103	CXC0508200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010	.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012	.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015	.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018	.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	CXC0508300T6
21/64	.3281	8.330	10	61	103	CXC0508330T6
	.3307	8.400	10	61	103	CXC0508400T6
	.3346	8.500	10	61	103	CXC0508500T6
	.3386	8.600	10	61	103	CXC0508600T6
	.3425	8.700	10	61	103	CXC0508700T6
11/32	.3437	8.730	10	61	103	CXC0508730T6
	.3465	8.800	10	61	103	CXC0508800T6
	.3543	9.000	10	61	103	CXC0509000T6
23/64	.3594	9.130	10	61	103	CXC0509130T6
	.3622	9.200	10	61	103	CXC0509200T6
	.3661	9.300	10	61	103	CXC0509300T6
	.3740	9.500	10	61	103	CXC0509500T6
3/8	.3750	9.520	10	61	103	CXC0509520T6
	.3780	9.600	10	61	103	CXC0509600T6
	.3858	9.800	10	61	103	CXC0509800T6
	.3898	9.900	10	61	103	CXC0509900T6
25/64	.3906	9.920	10	61	103	CXC0509920T6
	.3937	10.000	10	61	103	CXC0510000T6
	.3976	10.100	12	71	118	CXC0510100T6
	.4016	10.200	12	71	118	CXC0510200T6
	.4055	10.300	12	71	118	CXC0510300T6
13/32	.4063	10.320	12	71	118	CXC0510320T6
	.4094	10.400	12	71	118	CXC0510400T6
	.4134	10.500	12	71	118	CXC0510500T6
27/64	.4219	10.720	12	71	118	CXC0510720T6
	.4252	10.800	12	71	118	CXC0510800T6
	.4331	11.000	12	71	118	CXC0511000T6
	.4370	11.100	12	71	118	CXC0511100T6
7/16	.4375	11.113	12	71	118	CXC0511113T6
	.4409	11.200	12	71	118	CXC0511200T6
	.4528	11.500	12	71	118	CXC0511500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	CXC0511510T6
	.4606	11.700	12	71	118	CXC0511700T6
	.4646	11.800	12	71	118	CXC0511800T6
15/32	.4687	11.910	12	71	118	CXC0511910T6
	.4724	12.000	12	71	118	CXC0512000T6
	.4764	12.100	14	77	124	CXC0512100T6
	.4803	12.200	14	77	124	CXC0512200T6
	.4843	12.300	14	77	124	CXC0512300T6
31/64	.4844	12.303	14	77	124	CXC0512303T6
	.4921	12.500	14	77	124	CXC0512500T6
	.4961	12.600	14	77	124	CXC0512600T6
1/2	.5000	12.700	14	77	124	CXC0512700T6
	.5118	13.000	14	77	124	CXC0513000T6
	.5236	13.300	14	77	124	CXC0513300T6
17/32	.5313	13.490	14	77	124	CXC0513490T6
	.5315	13.500	14	77	124	CXC0513500T6
	.5512	14.000	14	77	124	CXC0514000T6
9/16	.5625	14.290	16	83	133	CXC0514290T6
	.5709	14.500	16	83	133	CXC0514500T6
	.5906	15.000	16	83	133	CXC0515000T6
	.6102	15.500	16	83	133	CXC0515500T6
5/8	.6250	15.870	16	83	133	CXC0515870T6
	.6299	16.000	16	83	133	CXC0516000T6
	.6496	16.500	18	93	143	CXC0516500T6
	.6693	17.000	18	93	143	CXC0517000T6
	.6890	17.500	18	93	143	CXC0517500T6
	.7087	18.000	18	93	143	CXC0518000T6
	.7283	18.500	20	101	153	CXC0518500T6
3/4	.7500	19.050	20	101	153	CXC0519050T6
	.7677	19.500	20	101	153	CXC0519500T6
	.7874	20.000	20	101	153	CXC0520000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

CXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	70		.14	.20	.28	.35	.45
N 1	Wrought Aluminum Alloys	180		.14	.20	.28	.35	.45
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	140		.14	.20	.28	.35	.45
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	110		.14	.20	.28	.35	.45
N 5	Copper & Copper Alloys	140		.10	.15	.20	.26	.33

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

CXC
5xD Speeds and Feeds
INCHES

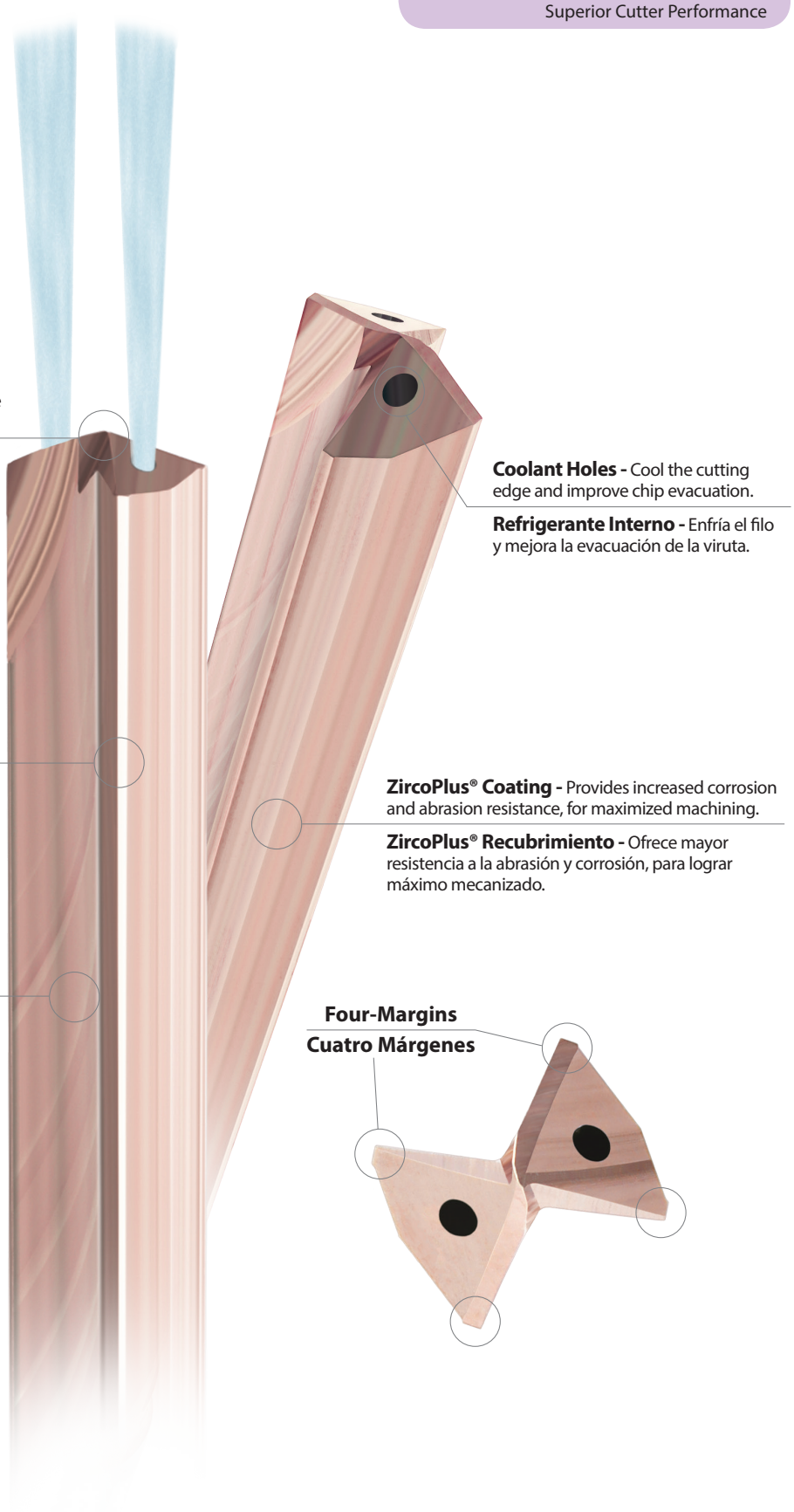
	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	229.7		.005	.007	.010	.013	.017
N 1	Wrought Aluminum Alloys	590.6		.005	.007	.010	.013	.017
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	459.3		.005	.007	.010	.013	.017
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	360.9		.005	.007	.010	.013	.017
N 5	Copper & Copper Alloys	459.3		.003	.005	.007	.010	.012

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

FXC

High-Performance Drill
Four-Margin
Ideal for Aluminum and Cast Materials
5xD-16xD



130° Point Geometry - Self-centering point to provide you with maximum precision, to meet tight tolerances.

130° Punto de Geometría - El punto auto-centrado es ideal para máxima precisión y tolerancias estrictas.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Four-Margin Design - Ideal for advanced precision and a smooth surface finish.

Diseño de Cuatro Márgenes - Ideal para precisión avanzada y un acabado liso.

ZircoPlus® Coating - Provides increased corrosion and abrasion resistance, for maximized machining.

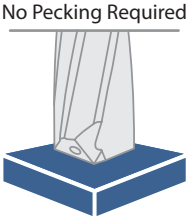
ZircoPlus® Recubrimiento - Ofrece mayor resistencia a la abrasión y corrosión, para lograr máximo mecanizado.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

Four-Margins
Cuatro Márgenes

No Pecking Required



CARBIDE CARBURO | 5xD to 16xD | 130° | 0° | Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Design
Straight-flute, four-margins and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas rectas, cuatro-márgenes y refrigeración interna.

Recubrimiento
ZircoPlus®

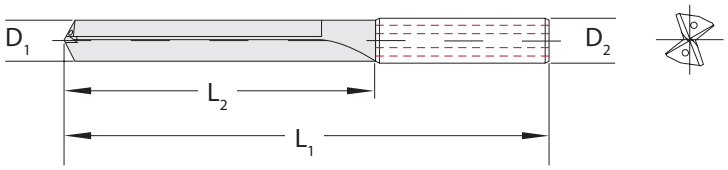
Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

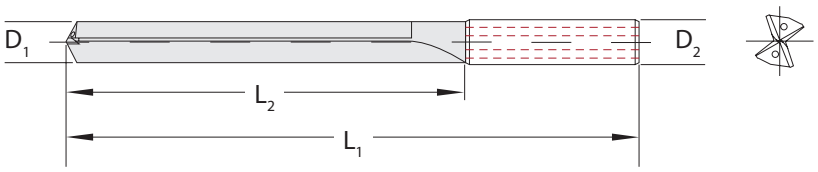
Speeds & Feeds: Refer to page 57, 59 & 63.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

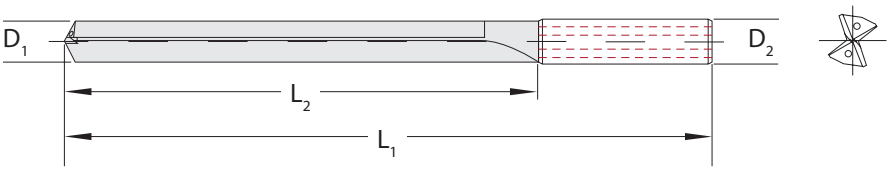
5xD PAGE 56



8xD PAGE 58

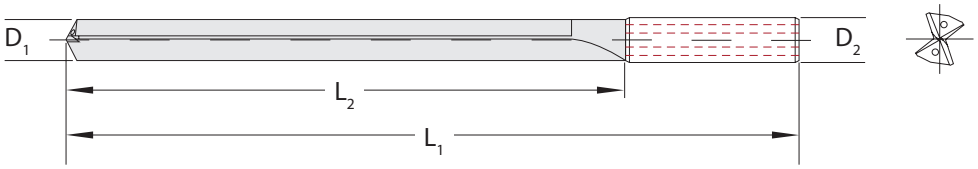


12xD PAGE 60



16xD PAGE 62

Must utilize a pilot hole drill. Refer to page 157



Design
Straight-flute, four-margins and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas rectas, cuatro-márgenes y refrigeración interna.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

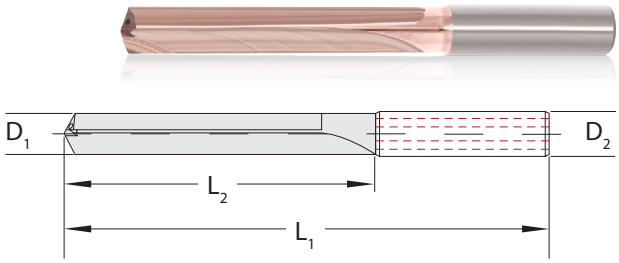
K N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 57.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	FXC0503000T6
	.1220	3.100	6	28	66	FXC0503100T6
1/8	.1250	3.175	6	28	66	FXC0503175T6
	.1260	3.200	6	28	66	FXC0503200T6
	.1299	3.300	6	28	66	FXC0503300T6
	.1339	3.400	6	28	66	FXC0503400T6
	.1378	3.500	6	28	66	FXC0503500T6
9/64	.1406	3.572	6	28	66	FXC0503572T6
	.1417	3.600	6	28	66	FXC0503600T6
	.1457	3.700	6	28	66	FXC0503700T6
#25	.1496	3.800	6	36	74	FXC0503800T6
	.1535	3.900	6	36	74	FXC0503900T6
5/32	.1563	3.970	6	36	74	FXC0503970T6
	.1575	4.000	6	36	74	FXC0504000T6
	.1614	4.100	6	36	74	FXC0504100T6
	.1654	4.200	6	36	74	FXC0504200T6
	.1693	4.300	6	36	74	FXC0504300T6
11/64	.1719	4.370	6	36	74	FXC0504370T6
	.1732	4.400	6	36	74	FXC0504400T6
	.1772	4.500	6	36	74	FXC0504500T6
	.1811	4.600	6	36	74	FXC0504600T6
	.1831	4.650	6	36	74	FXC0504650T6
#13	.1850	4.700	6	36	74	FXC0500130T6
3/16	.1875	4.760	6	44	82	FXC0504760T6
#12	.1890	4.800	6	44	82	FXC0500120T6
	.1929	4.900	6	44	82	FXC0504900T6
	.1969	5.000	6	44	82	FXC0505000T6
	.2008	5.100	6	44	82	FXC0505100T6
13/64	.2031	5.160	6	44	82	FXC0505160T6
#6	.2040	5.182	6	44	82	FXC0500060T6
	.2047	5.200	6	44	82	FXC0505200T6
	.2087	5.300	6	44	82	FXC0505300T6
	.2126	5.400	6	44	82	FXC0505400T6
	.2165	5.500	6	44	82	FXC0505500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	FXC0505550T6
7/32	.2187	5.560	6	44	82	FXC0505560T6
	.2205	5.600	6	44	82	FXC0505600T6
	.2244	5.700	6	44	82	FXC0505700T6
	.2283	5.800	6	44	82	FXC0505800T6
	.2323	5.900	6	44	82	FXC0505900T6
15/64	.2344	5.950	6	44	82	FXC0505950T6
	.2362	6.000	6	44	82	FXC0506000T6
	.2402	6.100	8	53	91	FXC0506100T6
	.2441	6.200	8	53	91	FXC0506200T6
	.2480	6.300	8	53	91	FXC0506300T6
1/4	.2500	6.350	8	53	91	FXC0506350T6
	.2520	6.400	8	53	91	FXC0506400T6
	.2559	6.500	8	53	91	FXC0506500T6
	.2598	6.600	8	53	91	FXC0506600T6
	.2638	6.700	8	53	91	FXC0506700T6
17/64	.2656	6.750	8	53	91	FXC0506750T6
	.2677	6.800	8	53	91	FXC0506800T6
	.2717	6.900	8	53	91	FXC0506900T6
	.2756	7.000	8	53	91	FXC0507000T6
	.2795	7.100	8	53	91	FXC0507100T6
9/32	.2813	7.140	8	53	91	FXC0507140T6
	.2835	7.200	8	53	91	FXC0507200T6
	.2874	7.300	8	53	91	FXC0507300T6
	.2913	7.400	8	53	91	FXC0507400T6
	.2953	7.500	8	53	91	FXC0507500T6
19/64	.2969	7.540	8	53	91	FXC0507540T6
	.3031	7.700	8	53	91	FXC0507700T6
	.3071	7.800	8	53	91	FXC0507800T6
	.3110	7.900	8	53	91	FXC0507900T6
5/16	.3125	7.940	8	53	91	FXC0507940T6
	.3150	8.000	8	53	91	FXC0508000T6
	.3189	8.100	10	61	103	FXC0508100T6
	.3228	8.200	10	61	103	FXC0508200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	FXC0508300T6
21/64	.3281	8.330	10	61	103	FXC0508330T6
	.3307	8.400	10	61	103	FXC0508400T6
	.3346	8.500	10	61	103	FXC0508500T6
	.3386	8.600	10	61	103	FXC0508600T6
	.3425	8.700	10	61	103	FXC0508700T6
11/32	.3437	8.730	10	61	103	FXC0508730T6
	.3465	8.800	10	61	103	FXC0508800T6
	.3543	9.000	10	61	103	FXC0509000T6
23/64	.3594	9.130	10	61	103	FXC0509130T6
	.3622	9.200	10	61	103	FXC0509200T6
	.3661	9.300	10	61	103	FXC0509300T6
	.3740	9.500	10	61	103	FXC0509500T6
3/8	.3750	9.520	10	61	103	FXC0509520T6
	.3780	9.600	10	61	103	FXC0509600T6
	.3858	9.800	10	61	103	FXC0509800T6
	.3898	9.900	10	61	103	FXC0509900T6
25/64	.3906	9.920	10	61	103	FXC0509920T6
	.3937	10.000	10	61	103	FXC0510000T6
	.3976	10.100	12	71	118	FXC0510100T6
	.4016	10.200	12	71	118	FXC0510200T6
	.4055	10.300	12	71	118	FXC0510300T6
13/32	.4063	10.320	12	71	118	FXC0510320T6
	.4094	10.400	12	71	118	FXC0510400T6
	.4134	10.500	12	71	118	FXC0510500T6
27/64	.4219	10.720	12	71	118	FXC0510720T6
	.4252	10.800	12	71	118	FXC0510800T6
	.4331	11.000	12	71	118	FXC0511000T6
	.4370	11.100	12	71	118	FXC0511100T6
7/16	.4375	11.113	12	71	118	FXC0511113T6
	.4409	11.200	12	71	118	FXC0511200T6
	.4528	11.500	12	71	118	FXC0511500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	FXC0511510T6
	.4606	11.700	12	71	118	FXC0511700T6
	.4646	11.800	12	71	118	FXC0511800T6
15/32	.4687	11.910	12	71	118	FXC0511910T6
	.4724	12.000	12	71	118	FXC0512000T6
	.4764	12.100	14	77	124	FXC0512100T6
	.4803	12.200	14	77	124	FXC0512200T6
	.4843	12.300	14	77	124	FXC0512300T6
31/64	.4844	12.303	14	77	124	FXC0512303T6
	.4921	12.500	14	77	124	FXC0512500T6
	.4961	12.600	14	77	124	FXC0512600T6
1/2	.5000	12.700	14	77	124	FXC0512700T6
	.5118	13.000	14	77	124	FXC0513000T6
	.5236	13.300	14	77	124	FXC0513300T6
17/32	.5313	13.490	14	77	124	FXC0513490T6
	.5315	13.500	14	77	124	FXC0513500T6
	.5512	14.000	14	77	124	FXC0514000T6
9/16	.5625	14.290	16	83	133	FXC0514290T6
	.5709	14.500	16	83	133	FXC0514500T6
	.5906	15.000	16	83	133	FXC0515000T6
	.6102	15.500	16	83	133	FXC0515500T6
5/8	.6250	15.870	16	83	133	FXC0515870T6
	.6299	16.000	16	83	133	FXC0516000T6
	.6496	16.500	18	93	143	FXC0516500T6
	.6693	17.000	18	93	143	FXC0517000T6
	.6890	17.500	18	93	143	FXC0517500T6
	.7087	18.000	18	93	143	FXC0518000T6
	.7283	18.500	20	101	153	FXC0518500T6
3/4	.7500	19.050	20	101	153	FXC0519050T6
	.7677	19.500	20	101	153	FXC0519500T6
	.7874	20.000	20	101	153	FXC0520000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

FXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	121		.14	.25	.28	.36	.45
N 1	Wrought Aluminum Alloys	426		.21	.28	.41	.57	.65
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	405		.21	.28	.41	.57	.65
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	358		.21	.28	.41	.57	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

FXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	397		.006	.010	.011	.014	.018
N 1	Wrought Aluminum Alloys	1397.7		.008	.011	.016	.022	.026
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1328.8		.008	.011	.016	.022	.026
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1174.6		.008	.011	.016	.022	.026

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Straight-flute, four-margins and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas rectas, cuatro-márgenes y refrigeración interna.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

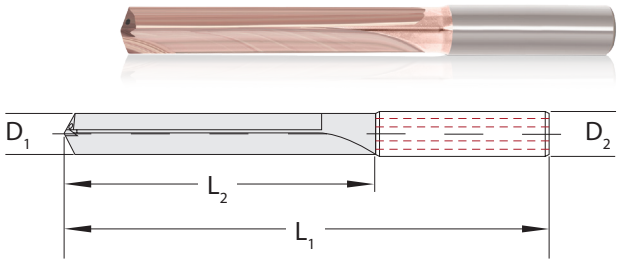
K N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 59.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	34	72	FXC0803000T6
	.1220	3.100	6	34	72	FXC0803100T6
1/8	.1250	3.175	6	34	72	FXC0803175T6
	.1260	3.200	6	34	72	FXC0803200T6
	.1299	3.300	6	34	72	FXC0803300T6
	.1339	3.400	6	34	72	FXC0803400T6
	.1378	3.500	6	34	72	FXC0803500T6
9/64	.1406	3.572	6	34	72	FXC0803572T6
	.1417	3.600	6	34	72	FXC0803600T6
	.1457	3.700	6	34	72	FXC0803700T6
#25	.1496	3.800	6	43	81	FXC0803800T6
	.1535	3.900	6	43	81	FXC0803900T6
5/32	.1563	3.970	6	43	81	FXC0803970T6
	.1575	4.000	6	43	81	FXC0804000T6
	.1614	4.100	6	43	81	FXC0804100T6
	.1654	4.200	6	43	81	FXC0804200T6
	.1693	4.300	6	43	81	FXC0804300T6
11/64	.1719	4.370	6	43	81	FXC0804370T6
	.1732	4.400	6	43	81	FXC0804400T6
	.1772	4.500	6	43	81	FXC0804500T6
	.1811	4.600	6	43	81	FXC0804600T6
	.1831	4.650	6	43	81	FXC0804650T6
#13	.1850	4.700	6	43	81	FXC0800130T6
3/16	.1875	4.760	6	57	95	FXC0804760T6
#12	.1890	4.800	6	57	95	FXC0800120T6
	.1929	4.900	6	57	95	FXC0804900T6
	.1969	5.000	6	57	95	FXC0805000T6
	.2008	5.100	6	57	95	FXC0805100T6
13/64	.2031	5.160	6	57	95	FXC0805160T6
#6	.2040	5.182	6	57	95	FXC0800060T6
	.2047	5.200	6	57	95	FXC0805200T6
	.2087	5.300	6	57	95	FXC0805300T6
	.2126	5.400	6	57	95	FXC0805400T6
	.2165	5.500	6	57	95	FXC0805500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	57	95	FXC0805550T6
7/32	.2187	5.560	6	57	95	FXC0805560T6
	.2205	5.600	6	57	95	FXC0805600T6
	.2244	5.700	6	57	95	FXC0805700T6
	.2283	5.800	6	57	95	FXC0805800T6
	.2323	5.900	6	57	95	FXC0805900T6
15/64	.2344	5.950	6	57	95	FXC0805950T6
	.2362	6.000	6	57	95	FXC0806000T6
	.2402	6.100	8	76	114	FXC0806100T6
	.2441	6.200	8	76	114	FXC0806200T6
	.2480	6.300	8	76	114	FXC0806300T6
1/4	.2500	6.350	8	76	114	FXC0806350T6
	.2520	6.400	8	76	114	FXC0806400T6
	.2559	6.500	8	76	114	FXC0806500T6
	.2598	6.600	8	76	114	FXC0806600T6
	.2638	6.700	8	76	114	FXC0806700T6
17/64	.2656	6.750	8	76	114	FXC0806750T6
	.2677	6.800	8	76	114	FXC0806800T6
	.2717	6.900	8	76	114	FXC0806900T6
	.2756	7.000	8	76	114	FXC0807000T6
	.2795	7.100	8	76	114	FXC0807100T6
9/32	.2813	7.140	8	76	114	FXC0807140T6
	.2835	7.200	8	76	114	FXC0807200T6
	.2874	7.300	8	76	114	FXC0807300T6
	.2913	7.400	8	76	114	FXC0807400T6
	.2953	7.500	8	76	114	FXC0807500T6
19/64	.2969	7.540	8	76	114	FXC0807540T6
	.3031	7.700	8	76	114	FXC0807700T6
	.3071	7.800	8	76	114	FXC0807800T6
	.3110	7.900	8	76	114	FXC0807900T6
5/16	.3125	7.940	8	76	114	FXC0807940T6
	.3150	8.000	8	76	114	FXC0808000T6
	.3189	8.100	10	95	142	FXC0808100T6
	.3228	8.200	10	95	142	FXC0808200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	95	142	FXC0808300T6
21/64	.3281	8.330	10	95	142	FXC0808330T6
	.3307	8.400	10	95	142	FXC0808400T6
	.3346	8.500	10	95	142	FXC0808500T6
	.3386	8.600	10	95	142	FXC0808600T6
	.3425	8.700	10	95	142	FXC0808700T6
11/32	.3437	8.730	10	95	142	FXC0808730T6
	.3465	8.800	10	95	142	FXC0808800T6
	.3543	9.000	10	95	142	FXC0809000T6
23/64	.3594	9.130	10	95	142	FXC0809130T6
	.3622	9.200	10	95	142	FXC0809200T6
	.3661	9.300	10	95	142	FXC0809300T6
	.3740	9.500	10	95	142	FXC0809500T6
3/8	.3750	9.520	10	95	142	FXC0809520T6
	.3780	9.600	10	95	142	FXC0809600T6
	.3858	9.800	10	95	142	FXC0809800T6
	.3898	9.900	10	95	142	FXC0809900T6
25/64	.3906	9.920	10	95	142	FXC0809920T6
	.3937	10.000	10	95	142	FXC0810000T6
	.3976	10.100	12	114	162	FXC0810100T6
	.4016	10.200	12	114	162	FXC0810200T6
	.4055	10.300	12	114	162	FXC0810300T6
13/32	.4063	10.320	12	114	162	FXC0810320T6
	.4094	10.400	12	114	162	FXC0810400T6
	.4134	10.500	12	114	162	FXC0810500T6
27/64	.4219	10.720	12	114	162	FXC0810720T6
	.4252	10.800	12	114	162	FXC0810800T6
	.4331	11.000	12	114	162	FXC0811000T6
	.4370	11.100	12	114	162	FXC0811100T6
7/16	.4375	11.113	12	114	162	FXC0811113T6
	.4409	11.200	12	114	162	FXC0811200T6
	.4528	11.500	12	114	162	FXC0811500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	114	162	FXC0811510T6
	.4606	11.700	12	114	162	FXC0811700T6
	.4646	11.800	12	114	162	FXC0811800T6
15/32	.4687	11.910	12	114	162	FXC0811910T6
	.4724	12.000	12	114	162	FXC0812000T6
	.4764	12.100	14	131	178	FXC0812100T6
	.4803	12.200	14	131	178	FXC0812200T6
	.4843	12.300	14	131	178	FXC0812300T6
31/64	.4844	12.303	14	131	178	FXC0812303T6
	.4921	12.500	14	131	178	FXC0812500T6
	.4961	12.600	14	131	178	FXC0812600T6
1/2	.5000	12.700	14	131	178	FXC0812700T6
	.5118	13.000	14	131	178	FXC0813000T6
	.5236	13.300	14	131	178	FXC0813300T6
17/32	.5313	13.490	14	131	178	FXC0813490T6
	.5315	13.500	14	131	178	FXC0813500T6
	.5512	14.000	14	131	178	FXC0814000T6
9/16	.5625	14.290	16	152	203	FXC0814290T6
	.5709	14.500	16	152	203	FXC0814500T6
	.5906	15.000	16	152	203	FXC0815000T6
	.6102	15.500	16	152	203	FXC0815500T6
5/8	.6250	15.870	16	152	203	FXC0815870T6
	.6299	16.000	16	152	203	FXC0816000T6
	.6496	16.500	18	171	222	FXC0816500T6
	.6693	17.000	18	171	222	FXC0817000T6
	.6890	17.500	18	171	222	FXC0817500T6
	.7087	18.000	18	171	222	FXC0818000T6
	.7283	18.500	20	190	243	FXC0818500T6
3/4	.7500	19.050	20	190	243	FXC0819050T6
	.7677	19.500	20	190	243	FXC0819500T6
	.7874	20.000	20	190	243	FXC0820000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

FXC
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	115		.11	.14	.23	.28	.36
N 1	Wrought Aluminum Alloys	405		.18	.26	.36	.45	.57
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	385		.18	.26	.36	.45	.57
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	340		.18	.26	.36	.45	.57

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

FXC
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	377.3		.004	.006	.009	.011	.014
N 1	Wrought Aluminum Alloys	1328.8		.007	.010	.014	.018	.022
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1263.2		.007	.010	.014	.018	.022
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1115.5		.007	.010	.014	.018	.022

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Straight-flute, four-margins and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas rectas, cuatro-márgenes y refrigeración interna.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

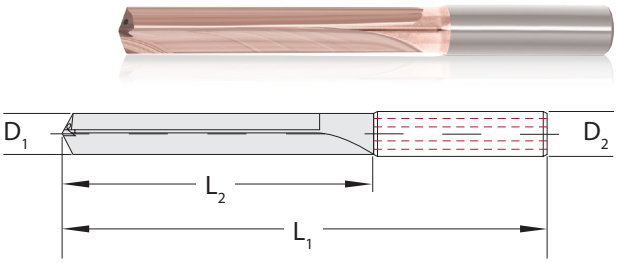
K N Consulte la página 261

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

Speeds & Feeds: Refer to Page 63.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	54	92	FXC1203000T6
	.1220	3.100	6	54	92	FXC1203100T6
1/8	.1250	3.175	6	54	92	FXC1203175T6
	.1260	3.200	6	54	92	FXC1203200T6
	.1299	3.300	6	54	92	FXC1203300T6
	.1339	3.400	6	54	92	FXC1203400T6
	.1378	3.500	6	54	92	FXC1203500T6
9/64	.1406	3.572	6	54	92	FXC1203572T6
	.1417	3.600	6	54	92	FXC1203600T6
	.1457	3.700	6	54	92	FXC1203700T6
#25	.1496	3.800	6	64	102	FXC1203800T6
	.1535	3.900	6	64	102	FXC1203900T6
5/32	.1563	3.970	6	64	102	FXC1203970T6
	.1575	4.000	6	64	102	FXC1204000T6
	.1614	4.100	6	64	102	FXC1204100T6
	.1654	4.200	6	64	102	FXC1204200T6
	.1693	4.300	6	64	102	FXC1204300T6
11/64	.1719	4.370	6	64	102	FXC1204370T6
	.1732	4.400	6	64	102	FXC1204400T6
	.1772	4.500	6	64	102	FXC1204500T6
	.1811	4.600	6	64	102	FXC1204600T6
	.1831	4.650	6	64	102	FXC1204650T6
#13	.1850	4.700	6	64	102	FXC1200130T6
3/16	.1875	4.760	6	78	116	FXC1204760T6
#12	.1890	4.800	6	78	116	FXC1200120T6
	.1929	4.900	6	78	116	FXC1204900T6
	.1969	5.000	6	78	116	FXC1205000T6
	.2008	5.100	6	78	116	FXC1205100T6
13/64	.2031	5.160	6	78	116	FXC1205160T6
#6	.2040	5.182	6	78	116	FXC1200060T6
	.2047	5.200	6	78	116	FXC1205200T6
	.2087	5.300	6	78	116	FXC1205300T6
	.2126	5.400	6	78	116	FXC1205400T6
	.2165	5.500	6	78	116	FXC1205500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	78	116	FXC1205550T6
7/32	.2187	5.560	6	78	116	FXC1205560T6
	.2205	5.600	6	78	116	FXC1205600T6
	.2244	5.700	6	78	116	FXC1205700T6
	.2283	5.800	6	78	116	FXC1205800T6
	.2323	5.900	6	78	116	FXC1205900T6
15/64	.2344	5.950	6	78	116	FXC1205950T6
	.2362	6.000	6	78	116	FXC1206000T6
	.2402	6.100	8	108	146	FXC1206100T6
	.2441	6.200	8	108	146	FXC1206200T6
	.2480	6.300	8	108	146	FXC1206300T6
1/4	.2500	6.350	8	108	146	FXC1206350T6
	.2520	6.400	8	108	146	FXC1206400T6
	.2559	6.500	8	108	146	FXC1206500T6
	.2598	6.600	8	108	146	FXC1206600T6
	.2638	6.700	8	108	146	FXC1206700T6
17/64	.2656	6.750	8	108	146	FXC1206750T6
	.2677	6.800	8	108	146	FXC1206800T6
	.2717	6.900	8	108	146	FXC1206900T6
	.2756	7.000	8	108	146	FXC1207000T6
	.2795	7.100	8	108	146	FXC1207100T6
9/32	.2813	7.140	8	108	146	FXC1207140T6
	.2835	7.200	8	108	146	FXC1207200T6
	.2874	7.300	8	108	146	FXC1207300T6
	.2913	7.400	8	108	146	FXC1207400T6
	.2953	7.500	8	108	146	FXC1207500T6
19/64	.2969	7.540	8	108	146	FXC1207540T6
	.3031	7.700	8	108	146	FXC1207700T6
	.3071	7.800	8	108	146	FXC1207800T6
	.3110	7.900	8	108	146	FXC1207900T6
5/16	.3125	7.940	8	108	146	FXC1207940T6
	.3150	8.000	8	108	146	FXC1208000T6
	.3189	8.100	10	120	162	FXC1208100T6
	.3228	8.200	10	120	162	FXC1208200T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	120	162	FXC1208300T6
21/64	.3281	8.330	10	120	162	FXC1208330T6
	.3307	8.400	10	120	162	FXC1208400T6
	.3346	8.500	10	120	162	FXC1208500T6
	.3386	8.600	10	120	162	FXC1208600T6
	.3425	8.700	10	120	162	FXC1208700T6
11/32	.3437	8.730	10	120	162	FXC1208730T6
	.3465	8.800	10	120	162	FXC1208800T6
	.3543	9.000	10	120	162	FXC1209000T6
23/64	.3594	9.130	10	120	162	FXC1209130T6
	.3622	9.200	10	120	162	FXC1209200T6
	.3661	9.300	10	120	162	FXC1209300T6
	.3740	9.500	10	120	162	FXC1209500T6
3/8	.3750	9.520	10	120	162	FXC1209520T6
	.3780	9.600	10	120	162	FXC1209600T6
	.3858	9.800	10	120	162	FXC1209800T6
	.3898	9.900	10	120	162	FXC1209900T6
25/64	.3906	9.920	10	120	162	FXC1209920T6
	.3937	10.000	10	120	162	FXC1210000T6
	.3976	10.100	12	156	204	FXC1210100T6
	.4016	10.200	12	156	204	FXC1210200T6
	.4055	10.300	12	156	204	FXC1210300T6
13/32	.4063	10.320	12	156	204	FXC1210320T6
	.4094	10.400	12	156	204	FXC1210400T6
	.4134	10.500	12	156	204	FXC1210500T6
27/64	.4219	10.720	12	156	204	FXC1210720T6
	.4252	10.800	12	156	204	FXC1210800T6
	.4331	11.000	12	156	204	FXC1211000T6
	.4370	11.100	12	156	204	FXC1211100T6
7/16	.4375	11.113	12	156	204	FXC1211113T6
	.4409	11.200	12	156	204	FXC1211200T6
	.4528	11.500	12	156	204	FXC1211500T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	156	204	FXC1211510T6
	.4606	11.700	12	156	204	FXC1211700T6
	.4646	11.800	12	156	204	FXC1211800T6
15/32	.4687	11.910	12	156	204	FXC1211910T6
	.4724	12.000	12	156	204	FXC1212000T6
	.4764	12.100	14	182	230	FXC1212100T6
	.4803	12.200	14	182	230	FXC1212200T6
	.4843	12.300	14	182	230	FXC1212300T6
31/64	.4844	12.303	14	182	230	FXC1212303T6
	.4921	12.500	14	182	230	FXC1212500T6
	.4961	12.600	14	182	230	FXC1212600T6
1/2	.5000	12.700	14	182	230	FXC1212700T6
	.5118	13.000	14	182	230	FXC1213000T6
	.5236	13.300	14	182	230	FXC1213300T6
17/32	.5313	13.490	14	182	230	FXC1213490T6
	.5315	13.500	14	182	230	FXC1213500T6
	.5512	14.000	14	182	230	FXC1214000T6
9/16	.5625	14.290	16	208	260	FXC1214290T6
	.5709	14.500	16	208	260	FXC1214500T6
	.5906	15.000	16	208	260	FXC1215000T6
	.6102	15.500	16	208	260	FXC1215500T6
5/8	.6250	15.870	16	208	260	FXC1215870T6
	.6299	16.000	16	208	260	FXC1216000T6
	.6496	16.500	18	234	285	FXC1216500T6
	.6693	17.000	18	234	285	FXC1217000T6
	.6890	17.500	18	234	285	FXC1217500T6
	.7087	18.000	18	234	285	FXC1218000T6
	.7283	18.500	20	258	310	FXC1218500T6
3/4	.7500	19.050	20	258	310	FXC1219050T6
	.7677	19.500	20	258	310	FXC1219500T6
	.7874	20.000	20	258	310	FXC1220000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Straight-flute, four-margins and internal coolant.

Coating
ZircoPlus®

Ideal for
Aluminum, cast materials and non-ferrous materials

K N Refer to page 261

Diseño
Flautas rectas, cuatro-márgenes y refrigeración interna.

Recubrimiento
ZircoPlus®

Ideal para
Aluminio, materiales de fundición y materiales no ferrosos

K N Consulte la página 261

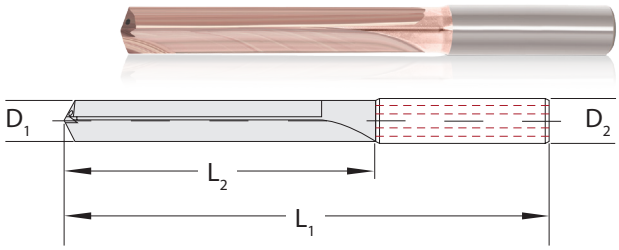
Speeds & Feeds: Refer to Page 63.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Zirco Plus®

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	60	100	FXC1603000T6
1/8	.1250	3.175	6	60	100	FXC1603175T6
	.1260	3.200	6	60	100	FXC1603200T6
	.1299	3.300	6	60	100	FXC1603300T6
	.1378	3.500	6	60	100	FXC1603500T6
9/64	.1406	3.572	6	75	115	FXC1603572T6
#25	.1496	3.800	6	75	115	FXC1603800T6
5/32	.1563	3.970	6	75	115	FXC1603970T6
	.1575	4.000	6	75	115	FXC1604000T6
	.1654	4.200	6	75	115	FXC1604200T6
11/64	.1719	4.370	6	90	130	FXC1604370T6
	.1772	4.500	6	90	130	FXC1604500T6
#13	.1850	4.700	6	90	130	FXC1600130T6
3/16	.1875	4.760	6	90	130	FXC1604760T6
#12	.1890	4.800	6	90	130	FXC1600120T6
	.1969	5.000	6	90	130	FXC1605000T6
13/64	.2031	5.160	6	108	150	FXC1605160T6
#6	.2040	5.182	6	108	150	FXC1600060T6
	.2165	5.500	6	108	150	FXC1605500T6
7/32	.2187	5.560	6	108	150	FXC1605560T6
	.2283	5.800	6	108	150	FXC1605800T6
15/64	.2344	5.950	6	108	150	FXC1605950T6
	.2362	6.000	6	108	150	FXC1606000T6
1/4	.2500	6.350	8	125	165	FXC1606350T6
	.2559	6.500	8	125	165	FXC1606500T6
17/64	.2656	6.750	8	125	165	FXC1606750T6
	.2677	6.800	8	125	165	FXC1606800T6

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2756	7.000	8	125	165	FXC1607000T6
9/32	.2813	7.140	8	140	180	FXC1607140T6
	.2953	7.500	8	140	180	FXC1607500T6
19/64	.2969	7.540	8	140	180	FXC1607540T6
	.3071	7.800	8	140	180	FXC1607800T6
5/16	.3125	7.940	8	140	180	FXC1607940T6
	.3150	8.000	8	140	180	FXC1608000T6
21/64	.3281	8.330	10	160	205	FXC1608330T6
	.3346	8.500	10	160	205	FXC1608500T6
11/32	.3437	8.730	10	160	205	FXC1608730T6
	.3465	8.800	10	160	205	FXC1608800T6
	.3543	9.000	10	160	205	FXC1609000T6
23/64	.3594	9.130	10	180	225	FXC1609130T6
3/8	.3750	9.520	10	180	225	FXC1609520T6
	.3858	9.800	10	180	225	FXC1609800T6
25/64	.3906	9.920	10	180	225	FXC1609920T6
	.3937	10.000	10	180	225	FXC1610000T6
	.4016	10.200	12	190	240	FXC1610200T6
13/32	.4063	10.320	12	190	240	FXC1610320T6
27/64	.4219	10.720	12	190	240	FXC1610720T6
	.4252	10.800	12	190	240	FXC1610800T6
	.4331	11.000	12	190	240	FXC1611000T6
7/16	.4375	11.113	12	215	265	FXC1611113T6
	.4528	11.500	12	215	265	FXC1611500T6
29/64	.4531	11.510	12	215	265	FXC1611510T6
15/32	.4687	11.910	12	215	265	FXC1611910T6
	.4724	12.000	12	215	265	FXC1612000T6

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010	.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012	.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015	.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018	.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

FXC
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	109		.11	.14	.23	.28	.36
N 1	Wrought Aluminum Alloys	385		.18	.26	.36	.45	.57
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	366		.18	.26	.36	.45	.57
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	323		.18	.26	.36	.45	.57

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

FXC
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	357.6		.004	.006	.009	.011	.014
N 1	Wrought Aluminum Alloys	1263.2		.007	.010	.014	.018	.022
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1200.8		.007	.010	.014	.018	.022
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1059.7		.007	.010	.014	.018	.022

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

FXC
16xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	104		.09	.13	.18	.23	.28
N 1	Wrought Aluminum Alloys	366		.11	.14	.23	.28	.36
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	347		.11	.14	.23	.28	.36
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	307		.11	.14	.23	.28	.36

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

FXC
16xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	341.2		.004	.005	.007	.009	.011
N 1	Wrought Aluminum Alloys	1200.8		.004	.006	.009	.011	.014
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1138.5		.004	.006	.009	.011	.014
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	1007.3		.004	.006	.009	.011	.014

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

IXC

High-Performance Drill
Triple-Margin
Ideal for Gray Cast Iron and Ductile Iron
3xD-30xD

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

135° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

135° Geometría de la Punta - Diseño con punto dividido para superior perforación precisión.

Triple-Margin Design - Ideal for improving surface finish and increasing stability.

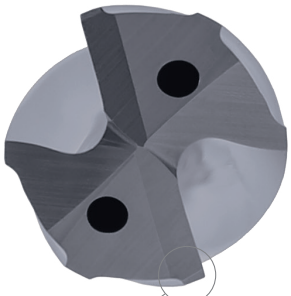
Diseño de Tres Márgenes - Ideal para mejorar el acabado superficial y aumentar la estabilidad.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

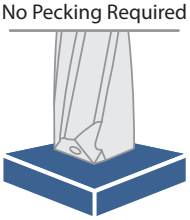
Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.



45° Standard Chamfer - Cutting edge protection and longer tool life.

45° Chaflán Estándar de Esquina - Elimina astillado, para prolongar la vida de la herramienta.

No Pecking Required



CARBIDE CARBURO | 3xD to 30xD | 135° | 15° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

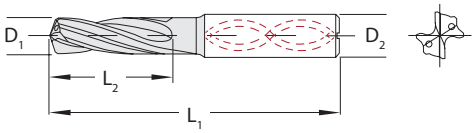
Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

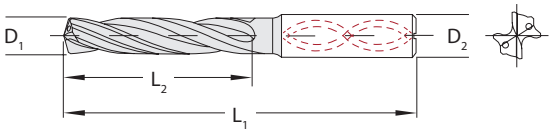
Speeds & Feeds: Refer to page 67, 69, 71, 73 & 78.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

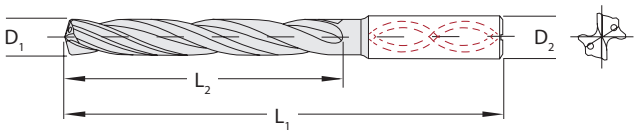
3xD PAGE 66



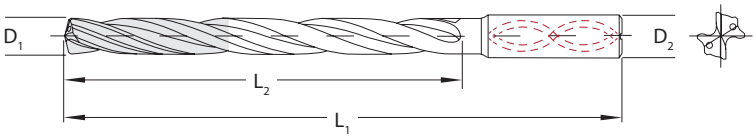
5xD PAGE 68



8xD PAGE 70

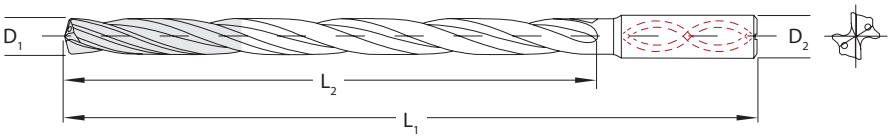


12xD PAGE 72



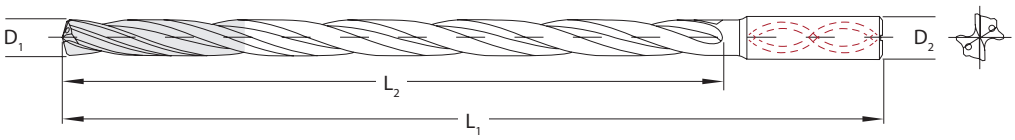
16xD PAGE 74

Must utilize a pilot hole drill. Refer to page 157



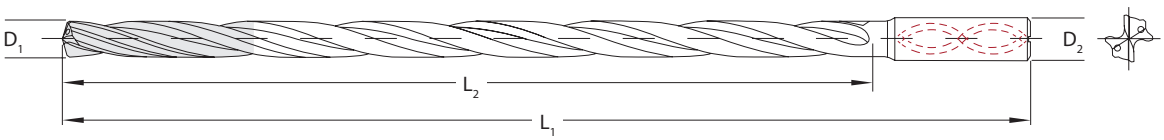
20xD PAGE 75

Must utilize a pilot hole drill. Refer to page 157



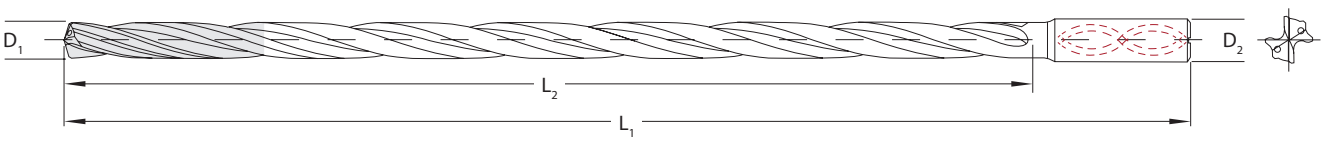
25xD PAGE 76

Must utilize a pilot hole drill. Refer to page 157



30xD PAGE 77

Must utilize a pilot hole drill. Refer to page 157



High-Performance Drill 2 Flute / 15° Helix / 135° Point / Internal Coolant

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

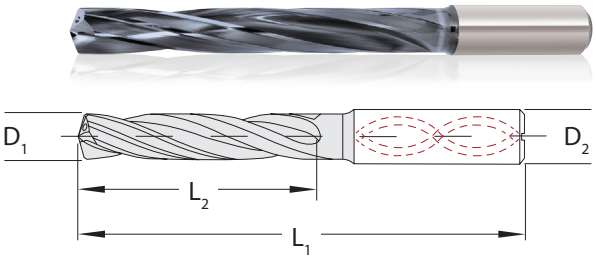
CARBIDE CARBURO | 3xD | 135° | 15°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 67.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	IXC0303000T9
	.1220	3.100	6	20	62	IXC0303100T9
1/8	.1250	3.175	6	20	62	IXC0303175T9
	.1260	3.200	6	20	62	IXC0303200T9
	.1299	3.300	6	20	62	IXC0303300T9
	.1339	3.400	6	20	62	IXC0303400T9
	.1378	3.500	6	20	62	IXC0303500T9
9/64	.1406	3.572	6	20	62	IXC0303572T9
	.1417	3.600	6	20	62	IXC0303600T9
	.1457	3.700	6	20	62	IXC0303700T9
#25	.1496	3.800	6	24	66	IXC0303800T9
	.1535	3.900	6	24	66	IXC0303900T9
5/32	.1563	3.970	6	24	66	IXC0303970T9
	.1575	4.000	6	24	66	IXC0304000T9
	.1614	4.100	6	24	66	IXC0304100T9
	.1654	4.200	6	24	66	IXC0304200T9
	.1693	4.300	6	24	66	IXC0304300T9
11/64	.1719	4.370	6	24	66	IXC0304370T9
	.1732	4.400	6	24	66	IXC0304400T9
	.1772	4.500	6	24	66	IXC0304500T9
	.1811	4.600	6	24	66	IXC0304600T9
	.1831	4.650	6	24	66	IXC0304650T9
#13	.1850	4.700	6	24	66	IXC0300130T9
3/16	.1875	4.760	6	28	66	IXC0304760T9
#12	.1890	4.800	6	28	66	IXC0300120T9
	.1929	4.900	6	28	66	IXC0304900T9
	.1969	5.000	6	28	66	IXC0305000T9
	.2008	5.100	6	28	66	IXC0305100T9
13/64	.2031	5.160	6	28	66	IXC0305160T9
#6	.2040	5.182	6	28	66	IXC0300060T9
	.2047	5.200	6	28	66	IXC0305200T9
	.2087	5.300	6	28	66	IXC0305300T9
	.2126	5.400	6	28	66	IXC0305400T9
	.2165	5.500	6	28	66	IXC0305500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	IXC0305550T9
7/32	.2187	5.560	6	28	66	IXC0305560T9
	.2205	5.600	6	28	66	IXC0305600T9
	.2244	5.700	6	28	66	IXC0305700T9
	.2283	5.800	6	28	66	IXC0305800T9
	.2323	5.900	6	28	66	IXC0305900T9
15/64	.2344	5.950	6	28	66	IXC0305950T9
	.2362	6.000	6	28	66	IXC0306000T9
	.2402	6.100	8	34	79	IXC0306100T9
	.2441	6.200	8	34	79	IXC0306200T9
	.2480	6.300	8	34	79	IXC0306300T9
1/4	.2500	6.350	8	34	79	IXC0306350T9
	.2520	6.400	8	34	79	IXC0306400T9
	.2559	6.500	8	34	79	IXC0306500T9
	.2598	6.600	8	34	79	IXC0306600T9
	.2638	6.700	8	34	79	IXC0306700T9
17/64	.2656	6.750	8	34	79	IXC0306750T9
	.2677	6.800	8	34	79	IXC0306800T9
	.2717	6.900	8	41	79	IXC0306900T9
	.2756	7.000	8	41	79	IXC0307000T9
	.2795	7.100	8	41	79	IXC0307100T9
9/32	.2813	7.140	8	41	79	IXC0307140T9
	.2835	7.200	8	41	79	IXC0307200T9
	.2874	7.300	8	41	79	IXC0307300T9
	.2913	7.400	8	41	79	IXC0307400T9
	.2953	7.500	8	41	79	IXC0307500T9
19/64	.2969	7.540	8	41	79	IXC0307540T9
	.3031	7.700	8	41	79	IXC0307700T9
	.3071	7.800	8	41	79	IXC0307800T9
	.3110	7.900	8	41	79	IXC0307900T9
5/16	.3125	7.940	8	41	79	IXC0307940T9
	.3150	8.000	8	41	79	IXC0308000T9
	.3189	8.100	10	47	89	IXC0308100T9
	.3228	8.200	10	47	89	IXC0308200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	IXC0308300T9
21/64	.3281	8.330	10	47	89	IXC0308330T9
	.3307	8.400	10	47	89	IXC0308400T9
	.3346	8.500	10	47	89	IXC0308500T9
	.3386	8.600	10	47	89	IXC0308600T9
	.3425	8.700	10	47	89	IXC0308700T9
11/32	.3437	8.730	10	47	89	IXC0308730T9
	.3465	8.800	10	47	89	IXC0308800T9
	.3543	9.000	10	47	89	IXC0309000T9
23/64	.3594	9.130	10	47	89	IXC0309130T9
	.3622	9.200	10	47	89	IXC0309200T9
	.3661	9.300	10	47	89	IXC0309300T9
	.3740	9.500	10	47	89	IXC0309500T9
3/8	.3750	9.520	10	47	89	IXC0309520T9
	.3780	9.600	10	47	89	IXC0309600T9
	.3858	9.800	10	47	89	IXC0309800T9
	.3898	9.900	10	47	89	IXC0309900T9
25/64	.3906	9.920	10	47	89	IXC0309920T9
	.3937	10.000	10	47	89	IXC0310000T9
	.3976	10.100	12	55	102	IXC0310100T9
	.4016	10.200	12	55	102	IXC0310200T9
	.4055	10.300	12	55	102	IXC0310300T9
13/32	.4063	10.320	12	55	102	IXC0310320T9
	.4094	10.400	12	55	102	IXC0310400T9
	.4134	10.500	12	55	102	IXC0310500T9
27/64	.4219	10.720	12	55	102	IXC0310720T9
	.4252	10.800	12	55	102	IXC0310800T9
	.4331	11.000	12	55	102	IXC0311000T9
	.4370	11.100	12	55	102	IXC0311100T9
7/16	.4375	11.113	12	55	102	IXC0311113T9
	.4409	11.200	12	55	102	IXC0311200T9
	.4528	11.500	12	55	102	IXC0311500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	IXC0311510T9
	.4606	11.700	12	55	102	IXC0311700T9
	.4646	11.800	12	55	102	IXC0311800T9
15/32	.4687	11.910	12	55	102	IXC0311910T9
	.4724	12.000	12	55	102	IXC0312000T9
	.4764	12.100	14	60	107	IXC0312100T9
	.4803	12.200	14	60	107	IXC0312200T9
	.4843	12.300	14	60	107	IXC0312300T9
31/64	.4844	12.303	14	60	107	IXC0312303T9
	.4921	12.500	14	60	107	IXC0312500T9
	.4961	12.600	14	60	107	IXC0312600T9
1/2	.5000	12.700	14	60	107	IXC0312700T9
	.5118	13.000	14	60	107	IXC0313000T9
	.5236	13.300	14	60	107	IXC0313300T9
17/32	.5313	13.490	14	60	107	IXC0313490T9
	.5315	13.500	14	60	107	IXC0313500T9
	.5512	14.000	14	60	107	IXC0314000T9
9/16	.5625	14.290	16	65	115	IXC0314290T9
	.5709	14.500	16	65	115	IXC0314500T9
	.5906	15.000	16	65	115	IXC0315000T9
	.6102	15.500	16	65	115	IXC0315500T9
5/8	.6250	15.870	16	65	115	IXC0315870T9
	.6299	16.000	16	65	115	IXC0316000T9
	.6496	16.500	18	73	123	IXC0316500T9
	.6693	17.000	18	73	123	IXC0317000T9
	.6890	17.500	18	73	123	IXC0317500T9
	.7087	18.000	18	73	123	IXC0318000T9
	.7283	18.500	20	79	131	IXC0318500T9
3/4	.7500	19.050	20	79	131	IXC0319050T9
	.7677	19.500	20	79	131	IXC0319500T9
	.7874	20.000	20	79	131	IXC0320000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

IXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
K 1	Gray Cast Iron	238		.30	.40	.50	.60	.65
K 2	Ductile Iron (<28 HRc)	204		.30	.40	.50	.60	.65
K 3	Ductile Iron (<38 HRc)	187		.30	.40	.50	.60	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
K 1	Gray Cast Iron	780.8		.012	.015	.019	.023	.025
K 2	Ductile Iron (<28 HRc)	669.3		.012	.015	.019	.023	.025
K 3	Ductile Iron (<38 HRc)	613.5		.012	.015	.019	.023	.025

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

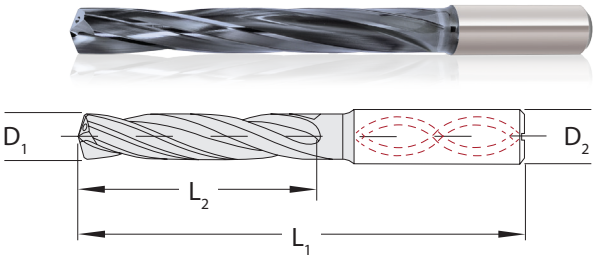
CARBIDE CARBURO | 5xD | 135° | 15°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 69.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	IXC0503000T9
	.1220	3.100	6	28	66	IXC0503100T9
1/8	.1250	3.175	6	28	66	IXC0503175T9
	.1260	3.200	6	28	66	IXC0503200T9
	.1299	3.300	6	28	66	IXC0503300T9
	.1339	3.400	6	28	66	IXC0503400T9
	.1378	3.500	6	28	66	IXC0503500T9
9/64	.1406	3.572	6	28	66	IXC0503572T9
	.1417	3.600	6	28	66	IXC0503600T9
	.1457	3.700	6	28	66	IXC0503700T9
#25	.1496	3.800	6	36	74	IXC0503800T9
	.1535	3.900	6	36	74	IXC0503900T9
5/32	.1563	3.970	6	36	74	IXC0503970T9
	.1575	4.000	6	36	74	IXC0504000T9
	.1614	4.100	6	36	74	IXC0504100T9
	.1654	4.200	6	36	74	IXC0504200T9
	.1693	4.300	6	36	74	IXC0504300T9
11/64	.1719	4.370	6	36	74	IXC0504370T9
	.1732	4.400	6	36	74	IXC0504400T9
	.1772	4.500	6	36	74	IXC0504500T9
	.1811	4.600	6	36	74	IXC0504600T9
	.1831	4.650	6	36	74	IXC0504650T9
#13	.1850	4.700	6	36	74	IXC0500130T9
3/16	.1875	4.760	6	44	82	IXC0504760T9
#12	.1890	4.800	6	44	82	IXC0500120T9
	.1929	4.900	6	44	82	IXC0504900T9
	.1969	5.000	6	44	82	IXC0505000T9
	.2008	5.100	6	44	82	IXC0505100T9
13/64	.2031	5.160	6	44	82	IXC0505160T9
#6	.2040	5.182	6	44	82	IXC0500060T9
	.2047	5.200	6	44	82	IXC0505200T9
	.2087	5.300	6	44	82	IXC0505300T9
	.2126	5.400	6	44	82	IXC0505400T9
	.2165	5.500	6	44	82	IXC0505500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	IXC0505550T9
7/32	.2187	5.560	6	44	82	IXC0505560T9
	.2205	5.600	6	44	82	IXC0505600T9
	.2244	5.700	6	44	82	IXC0505700T9
	.2283	5.800	6	44	82	IXC0505800T9
	.2323	5.900	6	44	82	IXC0505900T9
15/64	.2344	5.950	6	44	82	IXC0505950T9
	.2362	6.000	6	44	82	IXC0506000T9
	.2402	6.100	8	53	91	IXC0506100T9
	.2441	6.200	8	53	91	IXC0506200T9
	.2480	6.300	8	53	91	IXC0506300T9
1/4	.2500	6.350	8	53	91	IXC0506350T9
	.2520	6.400	8	53	91	IXC0506400T9
	.2559	6.500	8	53	91	IXC0506500T9
	.2598	6.600	8	53	91	IXC0506600T9
	.2638	6.700	8	53	91	IXC0506700T9
17/64	.2656	6.750	8	53	91	IXC0506750T9
	.2677	6.800	8	53	91	IXC0506800T9
	.2717	6.900	8	53	91	IXC0506900T9
	.2756	7.000	8	53	91	IXC0507000T9
	.2795	7.100	8	53	91	IXC0507100T9
9/32	.2813	7.140	8	53	91	IXC0507140T9
	.2835	7.200	8	53	91	IXC0507200T9
	.2874	7.300	8	53	91	IXC0507300T9
	.2913	7.400	8	53	91	IXC0507400T9
	.2953	7.500	8	53	91	IXC0507500T9
19/64	.2969	7.540	8	53	91	IXC0507540T9
	.3031	7.700	8	53	91	IXC0507700T9
	.3071	7.800	8	53	91	IXC0507800T9
	.3110	7.900	8	53	91	IXC0507900T9
5/16	.3125	7.940	8	53	91	IXC0507940T9
	.3150	8.000	8	53	91	IXC0508000T9
	.3189	8.100	10	61	103	IXC0508100T9
	.3228	8.200	10	61	103	IXC0508200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	IXC0508300T9
21/64	.3281	8.330	10	61	103	IXC0508330T9
	.3307	8.400	10	61	103	IXC0508400T9
	.3346	8.500	10	61	103	IXC0508500T9
	.3386	8.600	10	61	103	IXC0508600T9
	.3425	8.700	10	61	103	IXC0508700T9
11/32	.3437	8.730	10	61	103	IXC0508730T9
	.3465	8.800	10	61	103	IXC0508800T9
	.3543	9.000	10	61	103	IXC0509000T9
23/64	.3594	9.130	10	61	103	IXC0509130T9
	.3622	9.200	10	61	103	IXC0509200T9
	.3661	9.300	10	61	103	IXC0509300T9
	.3740	9.500	10	61	103	IXC0509500T9
3/8	.3750	9.520	10	61	103	IXC0509520T9
	.3780	9.600	10	61	103	IXC0509600T9
	.3858	9.800	10	61	103	IXC0509800T9
	.3898	9.900	10	61	103	IXC0509900T9
25/64	.3906	9.920	10	61	103	IXC0509920T9
	.3937	10.000	10	61	103	IXC0510000T9
	.3976	10.100	12	71	118	IXC0510100T9
	.4016	10.200	12	71	118	IXC0510200T9
	.4055	10.300	12	71	118	IXC0510300T9
13/32	.4063	10.320	12	71	118	IXC0510320T9
	.4094	10.400	12	71	118	IXC0510400T9
	.4134	10.500	12	71	118	IXC0510500T9
27/64	.4219	10.720	12	71	118	IXC0510720T9
	.4252	10.800	12	71	118	IXC0510800T9
	.4331	11.000	12	71	118	IXC0511000T9
	.4370	11.100	12	71	118	IXC0511100T9
7/16	.4375	11.113	12	71	118	IXC0511113T9
	.4409	11.200	12	71	118	IXC0511200T9
	.4528	11.500	12	71	118	IXC0511500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	IXC0511510T9
	.4606	11.700	12	71	118	IXC0511700T9
	.4646	11.800	12	71	118	IXC0511800T9
15/32	.4687	11.910	12	71	118	IXC0511910T9
	.4724	12.000	12	71	118	IXC0512000T9
	.4764	12.100	14	77	124	IXC0512100T9
	.4803	12.200	14	77	124	IXC0512200T9
	.4843	12.300	14	77	124	IXC0512300T9
31/64	.4844	12.303	14	77	124	IXC0512303T9
	.4921	12.500	14	77	124	IXC0512500T9
	.4961	12.600	14	77	124	IXC0512600T9
1/2	.5000	12.700	14	77	124	IXC0512700T9
	.5118	13.000	14	77	124	IXC0513000T9
	.5236	13.300	14	77	124	IXC0513300T9
17/32	.5313	13.490	14	77	124	IXC0513490T9
	.5315	13.500	14	77	124	IXC0513500T9
	.5512	14.000	14	77	124	IXC0514000T9
9/16	.5625	14.290	16	83	133	IXC0514290T9
	.5709	14.500	16	83	133	IXC0514500T9
	.5906	15.000	16	83	133	IXC0515000T9
	.6102	15.500	16	83	133	IXC0515500T9
5/8	.6250	15.870	16	83	133	IXC0515870T9
	.6299	16.000	16	83	133	IXC0516000T9
	.6496	16.500	18	93	143	IXC0516500T9
	.6693	17.000	18	93	143	IXC0517000T9
	.6890	17.500	18	93	143	IXC0517500T9
	.7087	18.000	18	93	143	IXC0518000T9
	.7283	18.500	20	101	153	IXC0518500T9
3/4	.7500	19.050	20	101	153	IXC0519050T9
	.7677	19.500	20	101	153	IXC0519500T9
	.7874	20.000	20	101	153	IXC0520000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

IXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	252		.30	.40	.50	.60	.65
K 2	Ductile Iron (<28 HRc)	216		.30	.40	.50	.60	.65
K 3	Ductile Iron (<38 HRc)	198		.30	.40	.50	.60	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	826.8		.012	.015	.019	.023	.025
K 2	Ductile Iron (<28 HRc)	708.7		.012	.015	.019	.023	.025
K 3	Ductile Iron (<38 HRc)	649.6		.012	.015	.019	.023	.025

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

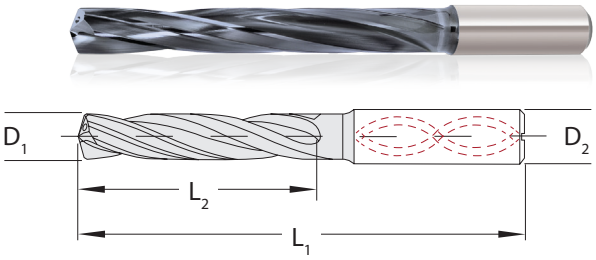
CARBIDE CARBURO | 8xD | 135° | 15°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 71.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	34	72	IXC0803000T9
	.1220	3.100	6	34	72	IXC0803100T9
1/8	.1250	3.175	6	34	72	IXC0803175T9
	.1260	3.200	6	34	72	IXC0803200T9
	.1299	3.300	6	34	72	IXC0803300T9
	.1339	3.400	6	34	72	IXC0803400T9
	.1378	3.500	6	34	72	IXC0803500T9
9/64	.1406	3.572	6	34	72	IXC0803572T9
	.1417	3.600	6	34	72	IXC0803600T9
	.1457	3.700	6	34	72	IXC0803700T9
#25	.1496	3.800	6	43	81	IXC0803800T9
	.1535	3.900	6	43	81	IXC0803900T9
5/32	.1563	3.970	6	43	81	IXC0803970T9
	.1575	4.000	6	43	81	IXC0804000T9
	.1614	4.100	6	43	81	IXC0804100T9
	.1654	4.200	6	43	81	IXC0804200T9
	.1693	4.300	6	43	81	IXC0804300T9
11/64	.1719	4.370	6	43	81	IXC0804370T9
	.1732	4.400	6	43	81	IXC0804400T9
	.1772	4.500	6	43	81	IXC0804500T9
	.1811	4.600	6	43	81	IXC0804600T9
	.1831	4.650	6	43	81	IXC0804650T9
#13	.1850	4.700	6	43	81	IXC0800130T9
3/16	.1875	4.760	6	57	95	IXC0804760T9
#12	.1890	4.800	6	57	95	IXC0800120T9
	.1929	4.900	6	57	95	IXC0804900T9
	.1969	5.000	6	57	95	IXC0805000T9
	.2008	5.100	6	57	95	IXC0805100T9
13/64	.2031	5.160	6	57	95	IXC0805160T9
#6	.2040	5.182	6	57	95	IXC0800060T9
	.2047	5.200	6	57	95	IXC0805200T9
	.2087	5.300	6	57	95	IXC0805300T9
	.2126	5.400	6	57	95	IXC0805400T9
	.2165	5.500	6	57	95	IXC0805500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	57	95	IXC0805550T9
7/32	.2187	5.560	6	57	95	IXC0805560T9
	.2205	5.600	6	57	95	IXC0805600T9
	.2244	5.700	6	57	95	IXC0805700T9
	.2283	5.800	6	57	95	IXC0805800T9
	.2323	5.900	6	57	95	IXC0805900T9
15/64	.2344	5.950	6	57	95	IXC0805950T9
	.2362	6.000	6	57	95	IXC0806000T9
	.2402	6.100	8	76	114	IXC0806100T9
	.2441	6.200	8	76	114	IXC0806200T9
	.2480	6.300	8	76	114	IXC0806300T9
1/4	.2500	6.350	8	76	114	IXC0806350T9
	.2520	6.400	8	76	114	IXC0806400T9
	.2559	6.500	8	76	114	IXC0806500T9
	.2598	6.600	8	76	114	IXC0806600T9
	.2638	6.700	8	76	114	IXC0806700T9
17/64	.2656	6.750	8	76	114	IXC0806750T9
	.2677	6.800	8	76	114	IXC0806800T9
	.2717	6.900	8	76	114	IXC0806900T9
	.2756	7.000	8	76	114	IXC0807000T9
	.2795	7.100	8	76	114	IXC0807100T9
9/32	.2813	7.140	8	76	114	IXC0807140T9
	.2835	7.200	8	76	114	IXC0807200T9
	.2874	7.300	8	76	114	IXC0807300T9
	.2913	7.400	8	76	114	IXC0807400T9
	.2953	7.500	8	76	114	IXC0807500T9
19/64	.2969	7.540	8	76	114	IXC0807540T9
	.3031	7.700	8	76	114	IXC0807700T9
	.3071	7.800	8	76	114	IXC0807800T9
	.3110	7.900	8	76	114	IXC0807900T9
5/16	.3125	7.940	8	76	114	IXC0807940T9
	.3150	8.000	8	76	114	IXC0808000T9
	.3189	8.100	10	95	142	IXC0808100T9
	.3228	8.200	10	95	142	IXC0808200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	95	142	IXC0808300T9
21/64	.3281	8.330	10	95	142	IXC0808330T9
	.3307	8.400	10	95	142	IXC0808400T9
	.3346	8.500	10	95	142	IXC0808500T9
	.3386	8.600	10	95	142	IXC0808600T9
	.3425	8.700	10	95	142	IXC0808700T9
11/32	.3437	8.730	10	95	142	IXC0808730T9
	.3465	8.800	10	95	142	IXC0808800T9
	.3543	9.000	10	95	142	IXC0809000T9
23/64	.3594	9.130	10	95	142	IXC0809130T9
	.3622	9.200	10	95	142	IXC0809200T9
	.3661	9.300	10	95	142	IXC0809300T9
	.3740	9.500	10	95	142	IXC0809500T9
3/8	.3750	9.520	10	95	142	IXC0809520T9
	.3780	9.600	10	95	142	IXC0809600T9
	.3858	9.800	10	95	142	IXC0809800T9
	.3898	9.900	10	95	142	IXC0809900T9
25/64	.3906	9.920	10	95	142	IXC0809920T9
	.3937	10.000	10	95	142	IXC0810000T9
	.3976	10.100	12	114	162	IXC0810100T9
	.4016	10.200	12	114	162	IXC0810200T9
	.4055	10.300	12	114	162	IXC0810300T9
13/32	.4063	10.320	12	114	162	IXC0810320T9
	.4094	10.400	12	114	162	IXC0810400T9
	.4134	10.500	12	114	162	IXC0810500T9
27/64	.4219	10.720	12	114	162	IXC0810720T9
	.4252	10.800	12	114	162	IXC0810800T9
	.4331	11.000	12	114	162	IXC0811000T9
	.4370	11.100	12	114	162	IXC0811100T9
7/16	.4375	11.113	12	114	162	IXC0811113T9
	.4409	11.200	12	114	162	IXC0811200T9
	.4528	11.500	12	114	162	IXC0811500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	114	162	IXC0811510T9
	.4606	11.700	12	114	162	IXC0811700T9
	.4646	11.800	12	114	162	IXC0811800T9
15/32	.4687	11.910	12	114	162	IXC0811910T9
	.4724	12.000	12	114	162	IXC0812000T9
	.4764	12.100	14	131	178	IXC0812100T9
	.4803	12.200	14	131	178	IXC0812200T9
	.4843	12.300	14	131	178	IXC0812300T9
31/64	.4844	12.303	14	131	178	IXC0812303T9
	.4921	12.500	14	131	178	IXC0812500T9
	.4961	12.600	14	131	178	IXC0812600T9
1/2	.5000	12.700	14	131	178	IXC0812700T9
	.5118	13.000	14	131	178	IXC0813000T9
	.5236	13.300	14	131	178	IXC0813300T9
17/32	.5313	13.490	14	131	178	IXC0813490T9
	.5315	13.500	14	131	178	IXC0813500T9
	.5512	14.000	14	131	178	IXC0814000T9
9/16	.5625	14.290	16	152	203	IXC0814290T9
	.5709	14.500	16	152	203	IXC0814500T9
	.5906	15.000	16	152	203	IXC0815000T9
	.6102	15.500	16	152	203	IXC0815500T9
5/8	.6250	15.870	16	152	203	IXC0815870T9
	.6299	16.000	16	152	203	IXC0816000T9
	.6496	16.500	18	171	222	IXC0816500T9
	.6693	17.000	18	171	222	IXC0817000T9
	.6890	17.500	18	171	222	IXC0817500T9
	.7087	18.000	18	171	222	IXC0818000T9
	.7283	18.500	20	190	243	IXC0818500T9
3/4	.7500	19.050	20	190	243	IXC0819050T9
	.7677	19.500	20	190	243	IXC0819500T9
	.7874	20.000	20	190	243	IXC0820000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

IXC
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	224		.30	.40	.50	.60	.65
K 2	Ductile Iron (<28 HRc)	192		.30	.40	.50	.60	.65
K 3	Ductile Iron (<38 HRc)	176		.30	.40	.50	.60	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	734.9		.012	.015	.019	.023	.025
K 2	Ductile Iron (<28 HRc)	629.9		.012	.015	.019	.023	.025
K 3	Ductile Iron (<38 HRc)	577.4		.012	.015	.019	.023	.025

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

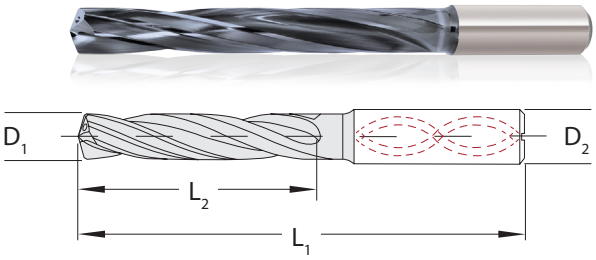
K Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 73.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	54	92	IXC1203000T9
	.1220	3.100	6	54	92	IXC1203100T9
1/8	.1250	3.175	6	54	92	IXC1203175T9
	.1260	3.200	6	54	92	IXC1203200T9
	.1299	3.300	6	54	92	IXC1203300T9
	.1339	3.400	6	54	92	IXC1203400T9
	.1378	3.500	6	54	92	IXC1203500T9
9/64	.1406	3.572	6	54	92	IXC1203572T9
	.1417	3.600	6	54	92	IXC1203600T9
	.1457	3.700	6	54	92	IXC1203700T9
#25	.1496	3.800	6	64	102	IXC1203800T9
	.1535	3.900	6	64	102	IXC1203900T9
5/32	.1563	3.970	6	64	102	IXC1203970T9
	.1575	4.000	6	64	102	IXC1204000T9
	.1614	4.100	6	64	102	IXC1204100T9
	.1654	4.200	6	64	102	IXC1204200T9
	.1693	4.300	6	64	102	IXC1204300T9
11/64	.1719	4.370	6	64	102	IXC1204370T9
	.1732	4.400	6	64	102	IXC1204400T9
	.1772	4.500	6	64	102	IXC1204500T9
	.1811	4.600	6	64	102	IXC1204600T9
	.1831	4.650	6	64	102	IXC1204650T9
#13	.1850	4.700	6	64	102	IXC1200130T9
3/16	.1875	4.760	6	78	116	IXC1204760T9
#12	.1890	4.800	6	78	116	IXC1200120T9
	.1929	4.900	6	78	116	IXC1204900T9
	.1969	5.000	6	78	116	IXC1205000T9
	.2008	5.100	6	78	116	IXC1205100T9
13/64	.2031	5.160	6	78	116	IXC1205160T9
#6	.2040	5.182	6	78	116	IXC1200060T9
	.2047	5.200	6	78	116	IXC1205200T9
	.2087	5.300	6	78	116	IXC1205300T9
	.2126	5.400	6	78	116	IXC1205400T9
	.2165	5.500	6	78	116	IXC1205500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	78	116	IXC1205550T9
7/32	.2187	5.560	6	78	116	IXC1205560T9
	.2205	5.600	6	78	116	IXC1205600T9
	.2244	5.700	6	78	116	IXC1205700T9
	.2283	5.800	6	78	116	IXC1205800T9
	.2323	5.900	6	78	116	IXC1205900T9
15/64	.2344	5.950	6	78	116	IXC1205950T9
	.2362	6.000	6	78	116	IXC1206000T9
	.2402	6.100	8	108	146	IXC1206100T9
	.2441	6.200	8	108	146	IXC1206200T9
	.2480	6.300	8	108	146	IXC1206300T9
1/4	.2500	6.350	8	108	146	IXC1206350T9
	.2520	6.400	8	108	146	IXC1206400T9
	.2559	6.500	8	108	146	IXC1206500T9
	.2598	6.600	8	108	146	IXC1206600T9
	.2638	6.700	8	108	146	IXC1206700T9
17/64	.2656	6.750	8	108	146	IXC1206750T9
	.2677	6.800	8	108	146	IXC1206800T9
	.2717	6.900	8	108	146	IXC1206900T9
	.2756	7.000	8	108	146	IXC1207000T9
	.2795	7.100	8	108	146	IXC1207100T9
9/32	.2813	7.140	8	108	146	IXC1207140T9
	.2835	7.200	8	108	146	IXC1207200T9
	.2874	7.300	8	108	146	IXC1207300T9
	.2913	7.400	8	108	146	IXC1207400T9
	.2953	7.500	8	108	146	IXC1207500T9
19/64	.2969	7.540	8	108	146	IXC1207540T9
	.3031	7.700	8	108	146	IXC1207700T9
	.3071	7.800	8	108	146	IXC1207800T9
	.3110	7.900	8	108	146	IXC1207900T9
5/16	.3125	7.940	8	108	146	IXC1207940T9
	.3150	8.000	8	108	146	IXC1208000T9
	.3189	8.100	10	120	162	IXC1208100T9
	.3228	8.200	10	120	162	IXC1208200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	120	162	IXC1208300T9
21/64	.3281	8.330	10	120	162	IXC1208330T9
	.3307	8.400	10	120	162	IXC1208400T9
	.3346	8.500	10	120	162	IXC1208500T9
	.3386	8.600	10	120	162	IXC1208600T9
	.3425	8.700	10	120	162	IXC1208700T9
11/32	.3437	8.730	10	120	162	IXC1208730T9
	.3465	8.800	10	120	162	IXC1208800T9
	.3543	9.000	10	120	162	IXC1209000T9
23/64	.3594	9.130	10	120	162	IXC1209130T9
	.3622	9.200	10	120	162	IXC1209200T9
	.3661	9.300	10	120	162	IXC1209300T9
	.3740	9.500	10	120	162	IXC1209500T9
3/8	.3750	9.520	10	120	162	IXC1209520T9
	.3780	9.600	10	120	162	IXC1209600T9
	.3858	9.800	10	120	162	IXC1209800T9
	.3898	9.900	10	120	162	IXC1209900T9
25/64	.3906	9.920	10	120	162	IXC1209920T9
	.3937	10.000	10	120	162	IXC1210000T9
	.3976	10.100	12	156	204	IXC1210100T9
	.4016	10.200	12	156	204	IXC1210200T9
	.4055	10.300	12	156	204	IXC1210300T9
13/32	.4063	10.320	12	156	204	IXC1210320T9
	.4094	10.400	12	156	204	IXC1210400T9
	.4134	10.500	12	156	204	IXC1210500T9
27/64	.4219	10.720	12	156	204	IXC1210720T9
	.4252	10.800	12	156	204	IXC1210800T9
	.4331	11.000	12	156	204	IXC1211000T9
	.4370	11.100	12	156	204	IXC1211100T9
7/16	.4375	11.113	12	156	204	IXC1211113T9
	.4409	11.200	12	156	204	IXC1211200T9
	.4528	11.500	12	156	204	IXC1211500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	156	204	IXC1211510T9
	.4606	11.700	12	156	204	IXC1211700T9
	.4646	11.800	12	156	204	IXC1211800T9
15/32	.4687	11.910	12	156	204	IXC1211910T9
	.4724	12.000	12	156	204	IXC1212000T9
	.4764	12.100	14	182	230	IXC1212100T9
	.4803	12.200	14	182	230	IXC1212200T9
	.4843	12.300	14	182	230	IXC1212300T9
31/64	.4844	12.303	14	182	230	IXC1212303T9
	.4921	12.500	14	182	230	IXC1212500T9
	.4961	12.600	14	182	230	IXC1212600T9
1/2	.5000	12.700	14	182	230	IXC1212700T9
	.5118	13.000	14	182	230	IXC1213000T9
	.5236	13.300	14	182	230	IXC1213300T9
17/32	.5313	13.490	14	182	230	IXC1213490T9
	.5315	13.500	14	182	230	IXC1213500T9
	.5512	14.000	14	182	230	IXC1214000T9
9/16	.5625	14.290	16	208	260	IXC1214290T9
	.5709	14.500	16	208	260	IXC1214500T9
	.5906	15.000	16	208	260	IXC1215000T9
	.6102	15.500	16	208	260	IXC1215500T9
5/8	.6250	15.870	16	208	260	IXC1215870T9
	.6299	16.000	16	208	260	IXC1216000T9
	.6496	16.500	18	234	285	IXC1216500T9
	.6693	17.000	18	234	285	IXC1217000T9
	.6890	17.500	18	234	285	IXC1217500T9
	.7087	18.000	18	234	285	IXC1218000T9
	.7283	18.500	20	258	310	IXC1218500T9
3/4	.7500	19.050	20	258	310	IXC1219050T9
	.7677	19.500	20	258	310	IXC1219500T9
	.7874	20.000	20	258	310	IXC1220000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

IXC
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	175		.30	.40	.50	.60	.65
K 2	Ductile Iron (<28 HRc)	150		.30	.40	.50	.60	.65
K 3	Ductile Iron (<38 HRc)	137		.30	.40	.50	.60	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K 1	Gray Cast Iron	574.2		.012	.015	.019	.023	.025
K 2	Ductile Iron (<28 HRc)	492.1		.012	.015	.019	.023	.025
K 3	Ductile Iron (<38 HRc)	451.1		.012	.015	.019	.023	.025

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Speeds & Feeds: Refer to Page 78.

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

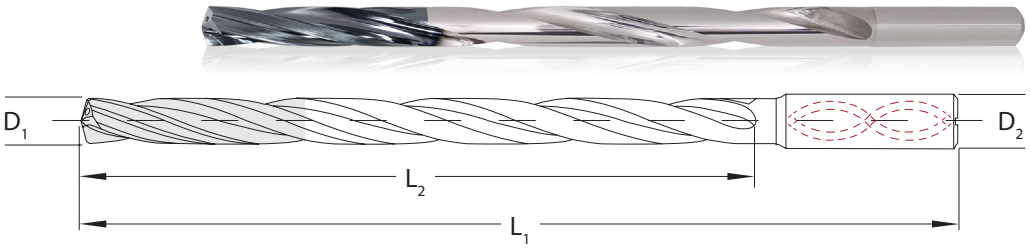
Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

Varianta® Supral **Varianta® Supral** is ideal for high-speed machining operations (dry/semi-dry).

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	60	100	IXC1603000T9
1/8	.1250	3.175	6	60	100	IXC1603175T9
	.1260	3.200	6	60	100	IXC1603200T9
	.1299	3.300	6	60	100	IXC1603300T9
	.1378	3.500	6	60	100	IXC1603500T9
9/64	.1406	3.572	6	75	115	IXC1603572T9
#25	.1496	3.800	6	75	115	IXC1603800T9
5/32	.1563	3.970	6	75	115	IXC1603970T9
	.1575	4.000	6	75	115	IXC1604000T9
	.1654	4.200	6	75	115	IXC1604200T9
11/64	.1719	4.370	6	90	130	IXC1604370T9
	.1772	4.500	6	90	130	IXC1604500T9
#13	.1850	4.700	6	90	130	IXC1600130T9
3/16	.1875	4.760	6	90	130	IXC1604760T9
#12	.1890	4.800	6	90	130	IXC1600120T9
	.1969	5.000	6	90	130	IXC1605000T9
13/64	.2031	5.160	6	108	150	IXC1605160T9
#6	.2040	5.182	6	108	150	IXC1600060T9
	.2165	5.500	6	108	150	IXC1605500T9
7/32	.2187	5.560	6	108	150	IXC1605560T9
	.2283	5.800	6	108	150	IXC1605800T9
15/64	.2344	5.950	6	108	150	IXC1605950T9
	.2362	6.000	6	108	150	IXC1606000T9
1/4	.2500	6.350	8	125	165	IXC1606350T9
	.2559	6.500	8	125	165	IXC1606500T9
17/64	.2656	6.750	8	125	165	IXC1606750T9
	.2677	6.800	8	125	165	IXC1606800T9
	.2756	7.000	8	125	165	IXC1607000T9
9/32	.2813	7.140	8	140	180	IXC1607140T9
	.2953	7.500	8	140	180	IXC1607500T9
19/64	.2969	7.540	8	140	180	IXC1607540T9
	.3071	7.800	8	140	180	IXC1607800T9
5/16	.3125	7.940	8	140	180	IXC1607940T9
	.3150	8.000	8	140	180	IXC1608000T9
21/64	.3281	8.330	10	160	205	IXC1608330T9
	.3346	8.500	10	160	205	IXC1608500T9
11/32	.3437	8.730	10	160	205	IXC1608730T9
	.3465	8.800	10	160	205	IXC1608800T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3543	9.000	10	160	205	IXC1609000T9
23/64	.3594	9.130	10	180	225	IXC1609130T9
3/8	.3750	9.520	10	180	225	IXC1609520T9
	.3858	9.800	10	180	225	IXC1609800T9
25/64	.3906	9.920	10	180	225	IXC1609920T9
	.3937	10.000	10	180	225	IXC1610000T9
	.4016	10.200	12	190	240	IXC1610200T9
13/32	.4063	10.320	12	190	240	IXC1610320T9
27/64	.4219	10.720	12	190	240	IXC1610720T9
	.4252	10.800	12	190	240	IXC1610800T9
	.4331	11.000	12	190	240	IXC1611000T9
7/16	.4375	11.113	12	215	265	IXC1611113T9
	.4528	11.500	12	215	265	IXC1611500T9
29/64	.4531	11.510	12	215	265	IXC1611510T9
15/32	.4687	11.910	12	215	265	IXC1611910T9
	.4724	12.000	12	215	265	IXC1612000T9
	.4843	12.300	14	230	280	IXC1612300T9
31/64	.4844	12.303	14	230	280	IXC1612303T9
1/2	.5000	12.700	14	230	280	IXC1612700T9
	.5118	13.000	14	230	280	IXC1613000T9
	.5236	13.300	14	245	295	IXC1613300T9
17/32	.5313	13.490	14	245	295	IXC1613490T9
	.5315	13.500	14	245	295	IXC1613500T9
	.5512	14.000	14	245	295	IXC1614000T9
9/16	.5625	14.290	16	255	305	IXC1614290T9
	.5709	14.500	16	255	305	IXC1614500T9
	.5906	15.000	16	255	305	IXC1615000T9
	.6102	15.500	16	275	325	IXC1615500T9
5/8	.6250	15.870	16	275	325	IXC1615870T9
	.6299	16.000	16	275	325	IXC1616000T9
	.6496	16.500	18	320	370	IXC1616500T9
	.6693	17.000	18	320	370	IXC1617000T9
	.6890	17.500	18	320	370	IXC1617500T9
	.7087	18.000	18	320	370	IXC1618000T9
	.7283	18.500	20	330	380	IXC1618500T9
3/4	.7500	19.050	20	330	380	IXC1619050T9
	.7677	19.500	20	350	400	IXC1619500T9
	.7874	20.000	20	350	400	IXC1620000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Speeds & Feeds: Refer to Page 78.

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

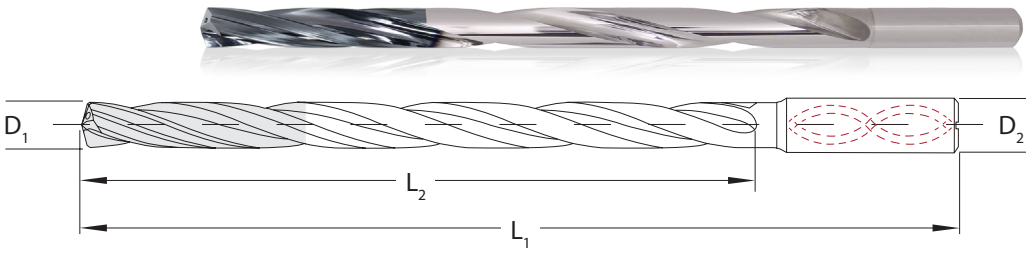
Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261

Varianta® Supral — **Varianta® Supral** is ideal for high-speed machining operations (dry/semi-dry).

This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	80	120	IXC2003000T9
1/8	.1250	3.175	6	80	120	IXC2003175T9
	.1260	3.200	6	80	120	IXC2003200T9
	.1299	3.300	6	80	120	IXC2003300T9
	.1378	3.500	6	80	120	IXC2003500T9
9/64	.1406	3.572	6	90	130	IXC2003572T9
#25	.1496	3.800	6	90	130	IXC2003800T9
5/32	.1563	3.970	6	90	130	IXC2003970T9
	.1575	4.000	6	90	130	IXC2004000T9
	.1654	4.200	6	110	160	IXC2004200T9
11/64	.1719	4.370	6	110	160	IXC2004370T9
	.1772	4.500	6	110	160	IXC2004500T9
#13	.1850	4.700	6	120	160	IXC2000130T9
3/16	.1875	4.760	6	120	160	IXC2004760T9
#12	.1890	4.800	6	120	160	IXC2000120T9
	.1969	5.000	6	120	160	IXC2005000T9
13/64	.2031	5.160	6	140	185	IXC2005160T9
#6	.2040	5.182	6	140	185	IXC2000060T9
	.2165	5.500	6	140	185	IXC2005500T9
7/32	.2187	5.560	6	140	185	IXC2005560T9
	.2283	5.800	6	140	185	IXC2005800T9
15/64	.2344	5.950	6	140	185	IXC2005950T9
	.2362	6.000	6	140	185	IXC2006000T9
1/4	.2500	6.350	8	160	210	IXC2006350T9
	.2559	6.500	8	160	210	IXC2006500T9
17/64	.2656	6.750	8	160	210	IXC2006750T9
	.2677	6.800	8	160	210	IXC2006800T9
	.2756	7.000	8	160	210	IXC2007000T9
9/32	.2813	7.140	8	180	230	IXC2007140T9
	.2953	7.500	8	180	230	IXC2007500T9
19/64	.2969	7.540	8	180	230	IXC2007540T9
	.3071	7.800	8	180	230	IXC2007800T9
5/16	.3125	7.940	8	180	230	IXC2007940T9
	.3150	8.000	8	180	230	IXC2008000T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
21/64	.3281	8.330	10	195	260	IXC2008330T9
	.3346	8.500	10	195	260	IXC2008500T9
11/32	.3437	8.730	10	230	290	IXC2008730T9
	.3465	8.800	10	230	290	IXC2008800T9
	.3543	9.000	10	230	290	IXC2009000T9
23/64	.3594	9.130	10	230	290	IXC2009130T9
3/8	.3750	9.520	10	230	290	IXC2009520T9
	.3858	9.800	10	230	290	IXC2009800T9
25/64	.3906	9.920	10	230	290	IXC2009920T9
	.3937	10.000	10	230	290	IXC2010000T9
	.4016	10.200	12	268	315	IXC2010200T9
13/32	.4063	10.320	12	268	315	IXC2010320T9
27/64	.4219	10.720	12	268	315	IXC2010720T9
	.4252	10.800	12	268	315	IXC2010800T9
	.4331	11.000	12	268	315	IXC2011000T9
7/16	.4375	11.113	12	268	315	IXC2011113T9
	.4528	11.500	12	268	315	IXC2011500T9
29/64	.4531	11.510	12	268	315	IXC2011510T9
15/32	.4687	11.910	12	268	315	IXC2011910T9
	.4724	12.000	12	268	315	IXC2012000T9
	.4843	12.300	14	275	325	IXC2012300T9
31/64	.4844	12.303	14	275	325	IXC2012303T9
1/2	.5000	12.700	14	275	325	IXC2012700T9
	.5118	13.000	14	275	325	IXC2013000T9
	.5236	13.300	14	305	355	IXC2013300T9
17/32	.5313	13.490	14	305	355	IXC2013490T9
	.5315	13.500	14	305	355	IXC2013500T9
	.5512	14.000	14	305	355	IXC2014000T9
9/16	.5625	14.290	16	320	370	IXC2014290T9
	.5709	14.500	16	320	370	IXC2014500T9
	.5906	15.000	16	340	390	IXC2015000T9
	.6102	15.500	16	340	390	IXC2015500T9
5/8	.6250	15.870	16	340	390	IXC2015870T9
	.6299	16.000	16	340	390	IXC2016000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

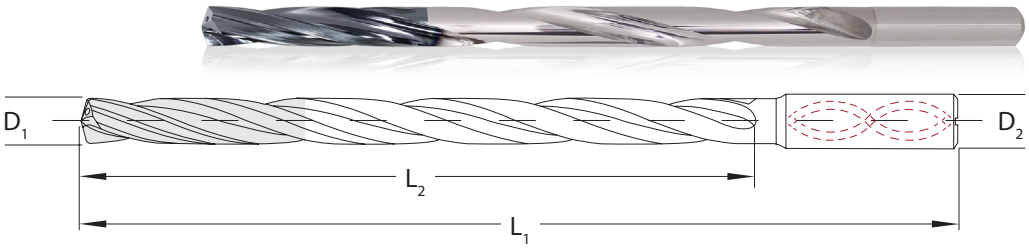
K Consulte la página 261

Speeds & Feeds: Refer to Page 79.

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	98	135	IXC2503000T9
1/8	.1250	3.175	6	98	135	IXC2503175T9
	.1260	3.200	6	98	135	IXC2503200T9
	.1299	3.300	6	110	150	IXC2503300T9
	.1378	3.500	6	110	150	IXC2503500T9
9/64	.1406	3.572	6	120	160	IXC2503572T9
#25	.1496	3.800	6	120	160	IXC2503800T9
5/32	.1563	3.970	6	120	160	IXC2503970T9
	.1575	4.000	6	120	160	IXC2504000T9
	.1654	4.200	6	120	160	IXC2504200T9
11/64	.1719	4.370	6	135	180	IXC2504370T9
	.1772	4.500	6	135	180	IXC2504500T9
#13	.1850	4.700	6	135	180	IXC2500130T9
3/16	.1875	4.760	6	135	180	IXC2504760T9
#12	.1890	4.800	6	135	180	IXC2500120T9
	.1969	5.000	6	135	180	IXC2505000T9
13/64	.2031	5.160	6	168	205	IXC2505160T9
#6	.2040	5.182	6	168	205	IXC2500060T9
	.2165	5.500	6	168	205	IXC2505500T9
7/32	.2187	5.560	6	168	205	IXC2505560T9
	.2283	5.800	6	168	205	IXC2505800T9
15/64	.2344	5.950	6	168	205	IXC2505950T9
	.2362	6.000	6	168	205	IXC2506000T9
1/4	.2500	6.350	8	200	240	IXC2506350T9
	.2559	6.500	8	200	240	IXC2506500T9
17/64	.2656	6.750	8	200	240	IXC2506750T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2677	6.800	8	200	240	IXC2506800T9
	.2756	7.000	8	200	240	IXC2507000T9
9/32	.2813	7.140	8	220	260	IXC2507140T9
	.2953	7.500	8	220	260	IXC2507500T9
19/64	.2969	7.540	8	220	260	IXC2507540T9
	.3071	7.800	8	220	260	IXC2507800T9
5/16	.3125	7.940	8	220	260	IXC2507940T9
	.3150	8.000	8	220	260	IXC2508000T9
21/64	.3281	8.330	10	240	285	IXC2508330T9
	.3346	8.500	10	240	285	IXC2508500T9
11/32	.3437	8.730	10	268	310	IXC2508730T9
	.3465	8.800	10	268	310	IXC2508800T9
	.3543	9.000	10	268	310	IXC2509000T9
23/64	.3594	9.130	10	268	310	IXC2509130T9
3/8	.3750	9.520	10	268	310	IXC2509520T9
	.3858	9.800	10	268	310	IXC2509800T9
25/64	.3906	9.920	10	268	310	IXC2509920T9
	.3937	10.000	10	268	310	IXC2510000T9
13/32	.4063	10.320	12	325	375	IXC2510320T9
27/64	.4219	10.720	12	325	375	IXC2510720T9
	.4331	11.000	12	325	375	IXC2511000T9
7/16	.4375	11.113	12	325	375	IXC2511113T9
	.4528	11.500	12	325	375	IXC2511500T9
29/64	.4531	11.510	12	325	375	IXC2511510T9
15/32	.4687	11.910	12	325	375	IXC2511910T9
	.4724	12.000	12	325	375	IXC2512000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
Gray cast iron and ductile iron

K Refer to page 261

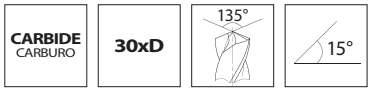
Speeds & Feeds: Refer to Page 79.

Diseño
Flautas largas espirales, 45° chaflán de esquina, margen triple con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Hierro fundido gris y hierro dúctil

K Consulte la página 261



Varianta® Supral **Varianta® Supral** is ideal for high-speed machining operations (dry/semi-dry).

This drill must utilize a pilot hole drill. (Refer to page 157)

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	105	150	IXC3003000T9
1/8	.1250	3.175	6	105	150	IXC3003175T9
	.1260	3.200	6	105	150	IXC3003200T9
	.1299	3.300	6	135	185	IXC3003300T9
	.1378	3.500	6	135	185	IXC3003500T9
9/64	.1406	3.572	6	135	185	IXC3003572T9
#25	.1496	3.800	6	135	185	IXC3003800T9
5/32	.1563	3.970	6	135	185	IXC3003970T9
	.1575	4.000	6	135	185	IXC3004000T9
	.1654	4.200	6	135	185	IXC3004200T9
11/64	.1719	4.370	6	165	215	IXC3004370T9
	.1772	4.500	6	165	215	IXC3004500T9
#13	.1850	4.700	6	165	215	IXC3000130T9
3/16	.1875	4.760	6	165	215	IXC3004760T9
#12	.1890	4.800	6	165	215	IXC3000120T9
	.1969	5.000	6	165	215	IXC3005000T9
13/64	.2031	5.160	6	180	230	IXC3005160T9
#6	.2040	5.182	6	180	230	IXC3000060T9
	.2165	5.500	6	180	230	IXC3005500T9
7/32	.2187	5.560	6	180	230	IXC3005560T9
	.2283	5.800	6	180	230	IXC3005800T9
15/64	.2344	5.950	6	180	230	IXC3005950T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2362	6.000	6	180	230	IXC3006000T9
1/4	.2500	6.350	8	215	280	IXC3006350T9
	.2559	6.500	8	215	280	IXC3006500T9
17/64	.2656	6.750	8	230	280	IXC3006750T9
	.2677	6.800	8	230	280	IXC3006800T9
	.2756	7.000	8	230	280	IXC3007000T9
9/32	.2813	7.140	8	230	280	IXC3007140T9
	.2953	7.500	8	230	280	IXC3007500T9
19/64	.2969	7.540	8	265	315	IXC3007540T9
	.3071	7.800	8	265	315	IXC3007800T9
5/16	.3125	7.940	8	265	315	IXC3007940T9
	.3150	8.000	8	265	315	IXC3008000T9
21/64	.3281	8.330	10	295	350	IXC3008330T9
	.3346	8.500	10	295	350	IXC3008500T9
11/32	.3437	8.730	10	330	380	IXC3008730T9
	.3465	8.800	10	330	380	IXC3008800T9
	.3543	9.000	10	330	380	IXC3009000T9
23/64	.3594	9.130	10	330	380	IXC3009130T9
3/8	.3750	9.520	10	330	380	IXC3009520T9
	.3858	9.800	10	330	380	IXC3009800T9
25/64	.3906	9.920	10	330	380	IXC3009920T9
	.3937	10.000	10	330	380	IXC3010000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

IXC
16xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	112		.30	.40	.50	.60	.65
K2	Ductile Iron (<28 HRc)	96		.30	.40	.50	.60	.65
K3	Ductile Iron (<38 HRc)	88		.30	.40	.50	.60	.65

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
16xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	367.5		.012	.015	.019	.023	.025
K2	Ductile Iron (<28 HRc)	315.1		.012	.015	.019	.023	.025
K3	Ductile Iron (<38 HRc)	288.7		.012	.015	.019	.023	.025

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
20xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	105		.20	.25	.35	.40	.46
K2	Ductile Iron (<28 HRc)	90		.20	.25	.35	.40	.46
K3	Ductile Iron (<38 HRc)	82		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
20xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	344.5		.008	.010	.014	.016	.018
K2	Ductile Iron (<28 HRc)	295.3		.008	.010	.014	.016	.018
K3	Ductile Iron (<38 HRc)	270.7		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
25xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	91		.20	.25	.35	.40	.46
K2	Ductile Iron (<28 HRc)	78		.20	.25	.35	.40	.46
K3	Ductile Iron (<38 HRc)	71		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
25xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	298.5		.008	.010	.014	.016	.018
K2	Ductile Iron (<28 HRc)	255.9		.008	.010	.014	.016	.018
K3	Ductile Iron (<38 HRc)	234.5		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
30xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	84		.20	.25	.35	.40	.46
K2	Ductile Iron (<28 HRc)	72		.20	.25	.35	.40	.46
K3	Ductile Iron (<38 HRc)	66		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

IXC
30xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
K1	Gray Cast Iron	278.3		.008	.010	.014	.016	.018
K2	Ductile Iron (<28 HRc)	238.6		.008	.010	.014	.016	.018
K3	Ductile Iron (<38 HRc)	218.7		.008	.010	.014	.016	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

SX

High-Performance Drill
Single-Margin
Ideal for General Purpose Drilling
3xD-5xD

135° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

135° Geometría de la Punta - Diseño con punto dividido para superior perforación precisión.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

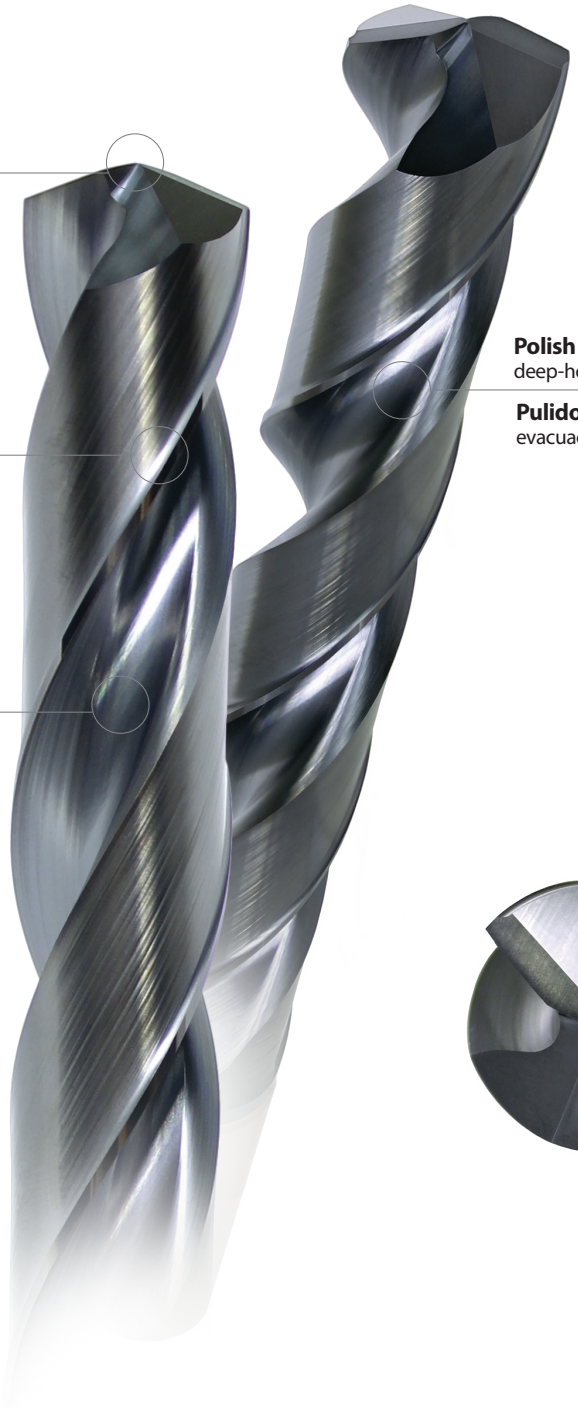
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

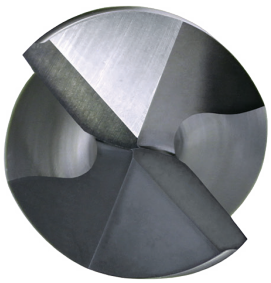
Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

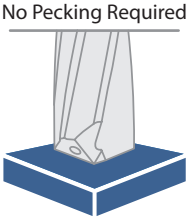
Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.





No Pecking Required



CARBIDE CARBURO | 3xD to 5xD | 135° | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

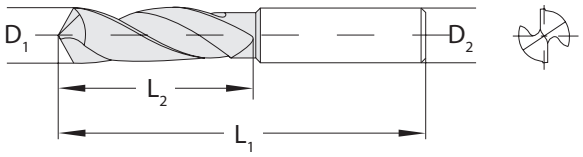
Design
Spiral-fluted, right-hand cut, with external coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

3xD PAGE 82



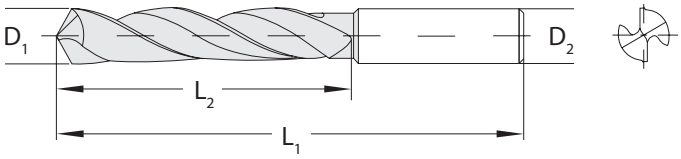
Diseño
Flautas espirales con corte de mano derecha y refrigerante externo

Recubrimiento
Varianta® Supral

Ideal para
Uso General

P M K S Consulte la página 261

5xD PAGE 84



Speeds & Feeds: Refer to page 83 & 85.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Design
Spiral-fluted, right-hand cut, with external coolant.

Coating
Varianta® Supral

Ideal for
General Purpose Drilling

P M K S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha y refrigerante externo

Recubrimiento
Varianta® Supral

Ideal para
Uso General

P M K S Consulte la página 261

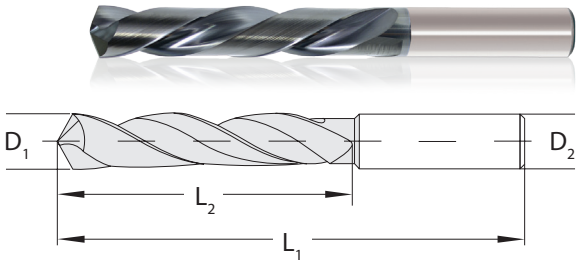
CARBIDE CARBURO | 3xD | 135° | 30°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 83.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	SX00306250T9
#52	.0635	1.61	1/8	11/16	2	SX00300520T9
#51	.0670	1.70	1/8	11/16	2	SX00300510T9
#50	.0700	1.78	1/8	11/16	2	SX00300500T9
#49	.0730	1.85	1/8	11/16	2	SX00300490T9
#48	.0760	1.93	1/8	11/16	2	SX00300480T9
5/64	.0781	1.98	1/8	11/16	2	SX00307810T9
#47	.0785	1.99	1/8	3/4	2	SX00300470T9
	.0787	2.00	1/8	3/4	2-1/2	SX00307870T9
#46	.0810	2.06	1/8	3/4	2-1/2	SX00300460T9
#45	.0820	2.08	1/8	3/4	2-1/2	SX00300450T9
#44	.0860	2.18	1/8	3/4	2-1/2	SX00300440T9
#43	.0890	2.26	1/8	3/4	2-1/2	SX00300430T9
#42	.0935	2.37	1/8	3/4	2-1/2	SX00300420T9
3/32	.0938	2.38	1/8	3/4	2-1/2	SX00309380T9
#41	.0960	2.44	1/8	13/16	2-1/2	SX00300410T9
#40	.0980	2.49	1/8	13/16	2-1/2	SX00300400T9
	.0984	2.50	1/8	13/16	2-1/2	SX00309840T9
#39	.0995	2.53	1/8	13/16	2-1/2	SX00300390T9
#38	.1015	2.58	1/8	13/16	2-1/2	SX00300380T9
#37	.1040	2.64	1/8	13/16	2-1/2	SX00300370T9
#36	.1065	2.71	1/8	13/16	2-1/2	SX00300360T9
7/64	.1094	2.78	1/8	13/16	2-1/2	SX00301094T9
#35	.1100	2.79	1/8	7/8	2-1/2	SX00300350T9
#34	.1110	2.82	1/8	7/8	2-1/2	SX00300340T9
#33	.1130	2.87	1/8	7/8	2-1/2	SX00300330T9
#32	.1160	2.95	1/8	7/8	2-1/2	SX00300320T9
	.1181	3.00	1/8	7/8	2-1/2	SX00303000T9
#31	.1200	3.05	1/8	7/8	2-1/2	SX00300310T9
1/8	.1250	3.17	1/8	7/8	2-1/2	SX00303175T9
#30	.1285	3.26	3/16	15/16	2-1/2	SX00300300T9
#29	.1360	3.45	3/16	15/16	2-1/2	SX00300290T9
	.1378	3.50	3/16	15/16	2-1/2	SX00303500T9
#28	.1405	3.57	3/16	15/16	2-1/2	SX00300280T9
9/64	.1406	3.57	3/16	1	2-1/2	SX00303570T9
#27	.1440	3.66	3/16	1	2-1/2	SX00300270T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1	2-1/2	SX00300260T9
#25	.1495	3.80	3/16	1	2-1/2	SX00300250T9
#24	.1520	3.86	3/16	1	2-1/2	SX00300240T9
#23	.1540	3.91	3/16	1	2-1/2	SX00300230T9
5/32	.1562	3.97	3/16	1	2-1/2	SX00303970T9
#22	.1570	3.99	3/16	1-1/16	2-1/2	SX00300220T9
	.1575	4.00	3/16	1-1/16	2-1/2	SX00304000T9
#21	.1590	4.04	3/16	1-1/16	2-1/2	SX00300210T9
#20	.1610	4.09	3/16	1-1/16	2-1/2	SX00300200T9
	.1654	4.20	3/16	1-1/16	2-1/2	SX00304200T9
#19	.1660	4.22	3/16	1-1/16	2-1/2	SX00300190T9
#18	.1695	4.30	3/16	1-1/16	2-1/2	SX00300180T9
11/64	.1719	4.37	3/16	1-1/16	2-1/2	SX00304370T9
#17	.1730	4.39	3/16	1-1/8	3	SX00300170T9
#16	.1770	4.49	3/16	1-1/8	3	SX00300160T9
	.1772	4.50	3/16	1-1/8	3	SX00304500T9
#15	.1800	4.57	3/16	1-1/8	3	SX00300150T9
#14	.1820	4.62	3/16	1-1/8	3	SX00300140T9
#13	.1850	4.70	3/16	1-1/8	3	SX00300130T9
3/16	.1875	4.76	3/16	1-1/8	3	SX00304760T9
#12	.1890	4.80	1/4	1-3/16	3	SX00300120T9
#11	.1910	4.85	1/4	1-3/16	3	SX00300110T9
#10	.1935	4.91	1/4	1-3/16	3	SX00300100T9
#9	.1960	4.98	1/4	1-3/16	3	SX00300090T9
	.1969	5.00	1/4	1-3/16	3	SX00305000T9
#8	.1990	5.05	1/4	1-3/16	3	SX00300080T9
	.2008	5.10	1/4	1-3/16	3	SX00305100T9
#7	.2010	5.10	1/4	1-3/16	3	SX00300070T9
13/64	.2031	5.16	1/4	1-3/16	3	SX00305160T9
#6	.2040	5.18	1/4	1-1/4	3	SX00300060T9
#5	.2055	5.22	1/4	1-1/4	3	SX00300050T9
#4	.2090	5.31	1/4	1-1/4	3	SX00300040T9
#3	.2130	5.41	1/4	1-1/4	3	SX00300030T9
	.2165	5.50	1/4	1-1/4	3	SX00302165T9
7/32	.2188	5.56	1/4	1-1/4	3	SX00305560T9
#2	.2210	5.61	1/4	1-5/16	3	SX00300020T9

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#1	.2280	5.79	1/4	1-5/16	3	SX00300010T9
A	.2340	5.94	1/4	1-5/16	3	SX003000A0T9
15/64	.2344	5.95	1/4	1-5/16	3	SX00305950T9
	.2362	6.00	1/4	1-3/8	3	SX00306000T9
B	.2380	6.04	1/4	1-3/8	3	SX003000B0T9
C	.2420	6.15	1/4	1-3/8	3	SX003000C0T9
D	.2460	6.25	1/4	1-3/8	3	SX003000D0T9
1/4/E	.2500	6.35	1/4	1-3/8	3	SX00306350T9
	.2559	6.50	5/16	1-7/16	3	SX00306500T9
F	.2570	6.53	5/16	1-7/16	3	SX003000F0T9
G	.2610	6.63	5/16	1-7/16	3	SX003000G0T9
17/64	.2656	6.75	5/16	1-7/16	3	SX00306750T9
H	.2660	6.76	5/16	1-1/2	3	SX003000H0T9
I	.2720	6.91	5/16	1-1/2	3	SX003000I0T9
	.2756	7.00	5/16	1-1/2	3	SX00307000T9
J	.2770	7.03	5/16	1-1/2	3	SX003000J0T9
K	.2810	7.14	5/16	1-1/2	3	SX003000K0T9
9/32	.2812	7.14	5/16	1-1/2	3	SX00307140T9
L	.2900	7.37	5/16	1-9/16	4	SX003000L0T9
M	.2950	7.49	5/16	1-9/16	4	SX003000M0T9
	.2953	7.50	5/16	1-9/16	4	SX00307500T9
19/64	.2969	7.54	5/16	1-9/16	4	SX00307540T9
N	.3020	7.67	5/16	1-5/8	4	SX003000N0T9
5/16	.3125	7.94	5/16	1-5/8	4	SX00307940T9
	.3150	8.00	3/8	1-11/16	4	SX00308000T9
O	.3160	8.03	3/8	1-11/16	4	SX003000O0T9
P	.3230	8.20	3/8	1-11/16	4	SX003000P0T9
21/64	.3281	8.33	3/8	1-11/16	4	SX00308330T9
Q	.3320	8.43	3/8	1-11/16	4	SX003000Q0T9
	.3346	8.50	3/8	1-11/16	4	SX00308500T9
R	.3390	8.61	3/8	1-11/16	4	SX003000R0T9
11/32	.3438	8.73	3/8	1-11/16	4	SX00308730T9
S	.3480	8.84	3/8	1-3/4	4	SX003000S0T9
	.3543	9.00	3/8	1-3/4	4	SX00309000T9
T	.3580	9.09	3/8	1-3/4	4	SX003000T0T9
23/64	.3594	9.13	3/8	1-3/4	4	SX00309130T9
U	.3680	9.35	3/8	1-13/16	4	SX003000U0T9
	.3740	9.50	3/8	1-13/16	4	SX00309500T9
3/8	.3750	9.52	3/8	1-13/16	4	SX00309520T9
V	.3770	9.57	7/16	1-7/8	4	SX003000V0T9
W	.3860	9.80	7/16	1-7/8	4	SX003000W0T9
25/64	.3906	9.92	7/16	1-7/8	4	SX00309920T9
	.3937	10.00	7/16	1-15/16	4	SX00310000T9
X	.3970	10.08	7/16	1-15/16	4	SX003000X0T9
Y	.4040	10.26	7/16	1-15/16	4	SX003000Y0T9
13/32	.4062	10.32	7/16	1-15/16	4	SX00310320T9
Z	.4130	10.49	7/16	2	4	SX003000Z0T9
	.4134	10.50	7/16	2	4	SX00310500T9
27/64	.4219	10.72	7/16	2	4	SX00310720T9
	.4252	10.80	7/16	2	4	SX00310800T9
	.4331	11.00	7/16	2-1/16	4	SX00311000T9
7/16	.4375	11.11	7/16	2-1/16	4	SX00311110T9
	.4528	11.50	1/2	2-1/8	4	SX00311500T9
29/64	.4531	11.51	1/2	2-1/8	4	SX00311510T9
15/32	.4688	11.91	1/2	2-1/8	4	SX00311910T9
	.4724	12.00	1/2	2-3/16	5	SX00312000T9
31/64	.4844	12.30	1/2	2-3/16	5	SX00312300T9
	.4921	12.50	1/2	2-1/4	5	SX00312500T9
1/2	.5000	12.70	1/2	2-1/4	5	SX00312700T9
	.5118	13.00	9/16	2-3/8	5	SX00313000T9
33/64	.5156	13.10	9/16	2-3/8	5	SX00313100T9
17/32	.5312	13.49	9/16	2-1/2	5	SX00313490T9
	.5315	13.50	9/16	2-1/2	5	SX00313500T9
35/64	.5469	13.89	9/16	2-1/2	5	SX00313890T9
	.5512	14.00	9/16	2-1/2	5	SX00314000T9
9/16	.5625	14.29	9/16	3	5	SX00314290T9
	.5709	14.50	5/8	3	5	SX00314500T9
37/64	.5781	14.68	5/8	3	5	SX00314680T9
	.5906	15.00	5/8	3	5	SX00315000T9
19/32	.5938	15.08	5/8	3	5	SX00315080T9
39/64	.6094	15.48	5/8	3	5	SX00315480T9
	.6102	15.50	5/8	3	5	SX00315500T9
5/8	.6250	15.87	5/8	3	5	SX00315870T9
	.6299	16.00	3/4	3	5	SX00316000T9

Other Dimensions are Available Upon Request

SX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	92		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	69		.08	.12	.15	.21	.25
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	64		.08	.12	.15	.22	.25
K 1	Gray Cast Iron	74		.13	.18	.23	.30	.38
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	28		.04	.08	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	301.9		.006	.008	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	226.4		.003	.004	.005	.008	.009
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	211.3		.003	.004	.005	.008	.009
K 1	Gray Cast Iron	241.5		.004	.006	.008	.011	.014
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	90.1		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with external coolant.

Coating
Varianta® Supral

Ideal for
General Purpose Drilling

P M K S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha y refrigerante externo.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

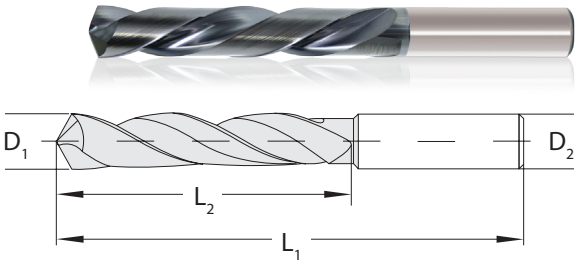
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 85.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	SX00506250T9
#52	.0635	1.61	1/8	3/4	2-1/2	SX00500520T9
#51	.0670	1.70	1/8	3/4	2-1/2	SX00500510T9
#50	.0700	1.78	1/8	7/8	2-1/2	SX00500500T9
#49	.0730	1.85	1/8	7/8	2-1/2	SX00500490T9
#48	.0760	1.93	1/8	7/8	2-1/2	SX00500480T9
5/64	.0781	1.98	1/8	7/8	2-1/2	SX00507810T9
#47	.0785	1.99	1/8	7/8	2-1/2	SX00500470T9
	.0787	2.00	1/8	7/8	2-1/2	SX00507870T9
#46	.0810	2.06	1/8	7/8	2-1/2	SX00500460T9
#45	.0820	2.08	1/8	7/8	2-1/2	SX00500450T9
#44	.0860	2.18	1/8	1	2-1/2	SX00500440T9
#43	.0890	2.26	1/8	1	2-1/2	SX00500430T9
#42	.0935	2.37	1/8	1	2-1/2	SX00500420T9
3/32	.0938	2.38	1/8	1	2-1/2	SX00509380T9
#41	.0960	2.44	1/8	1	2-1/2	SX00500410T9
#40	.0980	2.49	1/8	1	2-1/2	SX00500400T9
	.0984	2.50	1/8	1-1/4	3	SX00509840T9
#39	.0995	2.53	1/8	1-1/4	3	SX00500390T9
#38	.1015	2.58	1/8	1-1/4	3	SX00500380T9
#37	.1040	2.64	1/8	1-1/4	3	SX00500370T9
#36	.1065	2.71	1/8	1-1/4	3	SX00500360T9
7/64	.1094	2.78	1/8	1-1/4	3	SX00501094T9
#35	.1100	2.79	1/8	1-1/4	3	SX00500350T9
#34	.1110	2.82	1/8	1-1/4	3	SX00500340T9
#33	.1130	2.87	1/8	1-1/4	3	SX00500330T9
#32	.1160	2.95	1/8	1-1/4	3	SX00500320T9
	.1181	3.00	1/8	1-1/4	3	SX00503000T9
#31	.1200	3.05	1/8	1-1/4	3	SX00500310T9
1/8	.1250	3.17	1/8	1-1/4	3	SX00503175T9
#30	.1285	3.26	3/16	1-1/4	3	SX00500300T9
#29	.1360	3.45	3/16	1-3/8	3	SX00500290T9
	.1378	3.50	3/16	1-3/8	3	SX00503500T9
#28	.1405	3.57	3/16	1-3/8	3	SX00500280T9
9/64	.1406	3.57	3/16	1-3/8	3	SX00503570T9
#27	.1440	3.66	3/16	1-3/8	3	SX00500270T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#26	.1470	3.73	3/16	1-3/8	3	SX00500260T9
#25	.1495	3.80	3/16	1-3/8	3	SX00500250T9
#24	.1520	3.86	3/16	1-3/8	3	SX00500240T9
#23	.1540	3.91	3/16	1-3/8	3	SX00500230T9
5/32	.1562	3.97	3/16	1-3/8	3	SX00503970T9
#22	.1570	3.99	3/16	1-3/8	3	SX00500220T9
	.1575	4.00	3/16	1-3/8	3	SX00504000T9
#21	.1590	4.04	3/16	1-3/8	3	SX00500210T9
#20	.1610	4.09	3/16	1-3/8	3	SX00500200T9
#19	.1660	4.22	3/16	1-5/8	4	SX00500190T9
#18	.1695	4.30	3/16	1-5/8	4	SX00500180T9
11/64	.1719	4.37	3/16	1-5/8	4	SX00504370T9
#17	.1730	4.39	3/16	1-5/8	4	SX00500170T9
#16	.1770	4.49	3/16	1-5/8	4	SX00500160T9
	.1772	4.50	3/16	1-5/8	4	SX00504500T9
#15	.1800	4.57	3/16	1-5/8	4	SX00500150T9
#14	.1820	4.62	3/16	1-5/8	4	SX00500140T9
#13	.1850	4.70	3/16	1-5/8	4	SX00500130T9
3/16	.1875	4.76	3/16	1-5/8	4	SX00504760T9
#12	.1890	4.80	1/4	1-5/8	4	SX00500120T9
#11	.1910	4.85	1/4	1-5/8	4	SX00500110T9
#10	.1935	4.91	1/4	1-5/8	4	SX00500100T9
#9	.1960	4.98	1/4	1-3/4	4	SX00500090T9
	.1969	5.00	1/4	1-1/2	4	SX00505000T9
#8	.1990	5.05	1/4	1-1/2	4	SX00500080T9
#7	.2010	5.10	1/4	1-3/4	4	SX00500070T9
13/64	.2031	5.16	1/4	1-3/4	4	SX00505160T9
#6	.2040	5.18	1/4	1-3/4	4	SX00500060T9
#5	.2055	5.22	1/4	1-3/4	4	SX00500050T9
#4	.2090	5.31	1/4	1-3/4	4	SX00500040T9
#3	.2130	5.41	1/4	1-3/4	4	SX00500030T9
	.2165	5.50	1/4	1-3/4	4	SX00502165T9
7/32	.2188	5.56	1/4	1-3/4	4	SX00505560T9
#2	.2210	5.61	1/4	1-3/4	4	SX00500020T9
#1	.2280	5.79	1/4	1-3/4	4	SX00500010T9
A	.2340	5.94	1/4	2	4	SX005000A0T9

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
15/64	.2344	5.95	1/4	2	4	SX00505950T9
	.2362	6.00	1/4	2	4	SX00506000T9
B	.2380	6.04	1/4	2	4	SX005000B0T9
C	.2420	6.15	1/4	2	4	SX005000C0T9
D	.2460	6.25	1/4	2	4	SX005000D0T9
1/4/E	.2500	6.35	1/4	2	4	SX00506350T9
	.2559	6.50	5/16	2	4	SX00506500T9
F	.2570	6.53	5/16	2	4	SX005000F0T9
G	.2610	6.63	5/16	2-1/8	4	SX005000G0T9
17/64	.2656	6.75	5/16	2-1/8	4	SX00506750T9
H	.2660	6.76	5/16	2-1/8	4	SX005000H0T9
I	.2720	6.91	5/16	2-1/8	4	SX005000I0T9
	.2756	7.00	5/16	2-1/8	4	SX00507000T9
J	.2770	7.03	5/16	2-1/8	4	SX005000J0T9
K	.2810	7.14	5/16	2-1/8	4	SX005000K0T9
9/32	.2812	7.14	5/16	2-1/8	4	SX00507140T9
L	.2900	7.37	5/16	2-1/8	4	SX005000L0T9
M	.2950	7.49	5/16	2-3/8	4	SX005000M0T9
	.2953	7.50	5/16	2-3/8	4	SX00507500T9
19/64	.2969	7.54	5/16	2-3/8	4	SX00507540T9
N	.3020	7.67	5/16	2-3/8	4	SX005000N0T9
5/16	.3125	7.94	5/16	2-3/8	4	SX00507940T9
	.3150	8.00	3/8	2-3/8	4	SX00508000T9
O	.3160	8.03	3/8	2-3/8	4	SX005000O0T9
P	.3230	8.20	3/8	2-3/8	4	SX005000P0T9
21/64	.3281	8.33	3/8	2-1/2	5	SX00508330T9
Q	.3320	8.43	3/8	2-1/2	5	SX005000Q0T9
	.3346	8.50	3/8	2-1/2	5	SX00508500T9
R	.3390	8.61	3/8	2-1/2	5	SX005000R0T9
11/32	.3438	8.73	3/8	2-1/2	5	SX00508730T9
S	.3480	8.84	3/8	2-1/2	5	SX005000S0T9
	.3543	9.00	3/8	2-1/2	5	SX00509000T9
T	.3580	9.09	3/8	2-3/4	5	SX005000T0T9
23/64	.3594	9.13	3/8	2-3/4	5	SX00509130T9
U	.3680	9.35	3/8	2-3/4	5	SX005000U0T9
	.3740	9.50	3/8	2-3/4	5	SX00509500T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
3/8	.3750	9.52	3/8	2-3/4	5	SX00509520T9
V	.3770	9.57	7/16	2-7/8	5	SX005000V0T9
W	.3860	9.80	7/16	2-7/8	5	SX005000W0T9
25/64	.3906	9.92	7/16	2-7/8	5	SX00509920T9
	.3937	10.00	7/16	2-7/8	5	SX00510000T9
X	.3970	10.08	7/16	2-7/8	5	SX005000X0T9
Y	.4040	10.26	7/16	2-7/8	5	SX005000Y0T9
13/32	.4062	10.32	7/16	2-7/8	5	SX00510320T9
Z	.4130	10.49	7/16	2-7/8	5	SX005000Z0T9
	.4134	10.50	7/16	2-7/8	5	SX00510500T9
27/64	.4219	10.72	7/16	2-7/8	5	SX00510720T9
	.4252	10.80	7/16	2-7/8	5	SX00510800T9
	.4331	11.00	7/16	2-7/8	5	SX00511000T9
7/16	.4375	11.11	7/16	2-7/8	5	SX00511110T9
	.4528	11.50	1/2	3	5	SX00511500T9
29/64	.4531	11.51	1/2	3	5	SX00511510T9
15/32	.4688	11.91	1/2	3	5	SX00511910T9
	.4724	12.00	1/2	3	5	SX00512000T9
31/64	.4844	12.30	1/2	3	5	SX00512300T9
	.4921	12.50	1/2	3	5	SX00512500T9
1/2	.5000	12.70	1/2	3	5	SX00512700T9
	.5118	13.00	9/16	3-1/4	5	SX00513000T9
33/64	.5156	13.10	9/16	3-1/4	5	SX00513100T9
17/32	.5312	13.49	9/16	3-1/4	5	SX00513490T9
	.5315	13.50	9/16	3-1/4	5	SX00513500T9
35/64	.5469	13.89	9/16	3-1/4	5	SX00513890T9
	.5512	14.00	9/16	3-1/4	5	SX00514000T9
9/16	.5625	14.29	9/16	3-1/4	5	SX00514290T9
	.5709	14.50	5/8	3-1/4	5	SX00514500T9
37/64	.5781	14.68	5/8	3-1/2	6	SX00514680T9
	.5906	15.00	5/8	3-1/2	6	SX00515000T9
19/32	.5938	15.08	5/8	3-1/2	6	SX00515080T9
39/64	.6094	15.48	5/8	3-1/2	6	SX00515480T9
	.6102	15.50	5/8	3-1/2	6	SX00515500T9
5/8	.6250	15.87	5/8	3-1/2	6	SX00515870T9
	.6299	16.00	3/4	3-1/2	6	SX00516000T9

Other Dimensions are Available Upon Request

SX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	92		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	69		.08	.12	.15	.21	.25
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	64		.08	.12	.15	.22	.25
K 1	Gray Cast Iron	74		.13	.18	.23	.30	.38
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	28		.04	.08	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	301.9		.006	.008	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	226.4		.003	.004	.005	.008	.009
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	211.3		.003	.004	.005	.008	.009
K 1	Gray Cast Iron	241.5		.004	.006	.008	.011	.014
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	90.1		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

GXC

High-Performance Drill
Single-Margin
Ideal for General Purpose Drilling
3xD-8xD

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

135° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

135° Geometría de la Punta - Diseño con punto dividido para superior perforación precisión.

Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

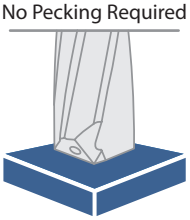
Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

No Pecking Required



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Design
Long spiral-fluted, single-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
General Purpose Drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, margen con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

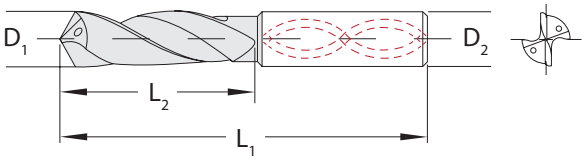
Ideal para
Uso General

P M K S Consulte la página 261

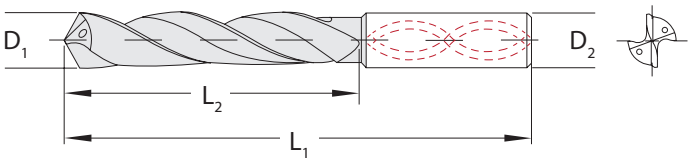
Speeds & Feeds: Refer to page 89, 91 & 93.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

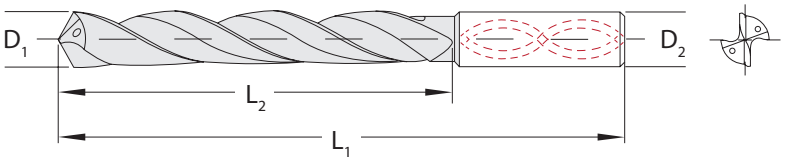
3xD PAGE 88



5xD PAGE 90



8xD PAGE 92



High-Performance Drill 2 Flute / 30° Helix / 135° Point / Internal Coolant

Design
Long spiral-fluted, single-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
General Purpose Drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, margen con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

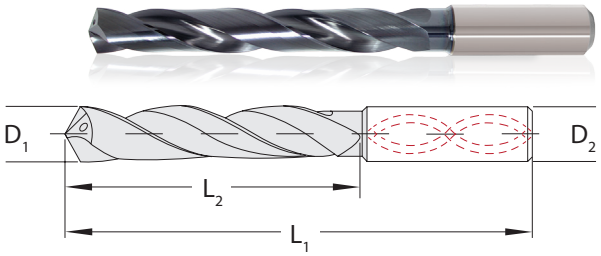
Ideal para
Uso General

P M K S Consulte la página 261

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 89.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	GXC0303000T9
	.1220	3.100	6	20	62	GXC0303100T9
1/8	.1250	3.175	6	20	62	GXC0303175T9
	.1260	3.200	6	20	62	GXC0303200T9
	.1299	3.300	6	20	62	GXC0303300T9
	.1339	3.400	6	20	62	GXC0303400T9
	.1378	3.500	6	20	62	GXC0303500T9
9/64	.1406	3.572	6	20	62	GXC0303572T9
	.1417	3.600	6	20	62	GXC0303600T9
	.1457	3.700	6	20	62	GXC0303700T9
#25	.1496	3.800	6	24	66	GXC0303800T9
	.1535	3.900	6	24	66	GXC0303900T9
5/32	.1563	3.970	6	24	66	GXC0303970T9
	.1575	4.000	6	24	66	GXC0304000T9
	.1614	4.100	6	24	66	GXC0304100T9
	.1654	4.200	6	24	66	GXC0304200T9
	.1693	4.300	6	24	66	GXC0304300T9
11/64	.1719	4.370	6	24	66	GXC0304370T9
	.1732	4.400	6	24	66	GXC0304400T9
	.1772	4.500	6	24	66	GXC0304500T9
	.1811	4.600	6	24	66	GXC0304600T9
	.1831	4.650	6	24	66	GXC0304650T9
#13	.1850	4.700	6	24	66	GXC0300130T9
3/16	.1875	4.760	6	28	66	GXC0304760T9
#12	.1890	4.800	6	28	66	GXC0300120T9
	.1929	4.900	6	28	66	GXC0304900T9
	.1969	5.000	6	28	66	GXC0305000T9
	.2008	5.100	6	28	66	GXC0305100T9
13/64	.2031	5.160	6	28	66	GXC0305160T9
#6	.2040	5.182	6	28	66	GXC0300060T9
	.2047	5.200	6	28	66	GXC0305200T9
	.2087	5.300	6	28	66	GXC0305300T9
	.2126	5.400	6	28	66	GXC0305400T9
	.2165	5.500	6	28	66	GXC0305500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	GXC0305550T9
7/32	.2187	5.560	6	28	66	GXC0305560T9
	.2205	5.600	6	28	66	GXC0305600T9
	.2244	5.700	6	28	66	GXC0305700T9
	.2283	5.800	6	28	66	GXC0305800T9
	.2323	5.900	6	28	66	GXC0305900T9
15/64	.2344	5.950	6	28	66	GXC0305950T9
	.2362	6.000	6	28	66	GXC0306000T9
	.2402	6.100	8	34	79	GXC0306100T9
	.2441	6.200	8	34	79	GXC0306200T9
	.2480	6.300	8	34	79	GXC0306300T9
1/4	.2500	6.350	8	34	79	GXC0306350T9
	.2520	6.400	8	34	79	GXC0306400T9
	.2559	6.500	8	34	79	GXC0306500T9
	.2598	6.600	8	34	79	GXC0306600T9
	.2638	6.700	8	34	79	GXC0306700T9
17/64	.2656	6.750	8	34	79	GXC0306750T9
	.2677	6.800	8	34	79	GXC0306800T9
	.2717	6.900	8	41	79	GXC0306900T9
	.2756	7.000	8	41	79	GXC0307000T9
	.2795	7.100	8	41	79	GXC0307100T9
9/32	.2813	7.140	8	41	79	GXC0307140T9
	.2835	7.200	8	41	79	GXC0307200T9
	.2874	7.300	8	41	79	GXC0307300T9
	.2913	7.400	8	41	79	GXC0307400T9
	.2953	7.500	8	41	79	GXC0307500T9
19/64	.2969	7.540	8	41	79	GXC0307540T9
	.3031	7.700	8	41	79	GXC0307700T9
	.3071	7.800	8	41	79	GXC0307800T9
	.3110	7.900	8	41	79	GXC0307900T9
5/16	.3125	7.940	8	41	79	GXC0307940T9
	.3150	8.000	8	41	79	GXC0308000T9
	.3189	8.100	10	47	89	GXC0308100T9
	.3228	8.200	10	47	89	GXC0308200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	GXC0308300T9
21/64	.3281	8.330	10	47	89	GXC0308330T9
	.3307	8.400	10	47	89	GXC0308400T9
	.3346	8.500	10	47	89	GXC0308500T9
	.3386	8.600	10	47	89	GXC0308600T9
	.3425	8.700	10	47	89	GXC0308700T9
11/32	.3437	8.730	10	47	89	GXC0308730T9
	.3465	8.800	10	47	89	GXC0308800T9
	.3543	9.000	10	47	89	GXC0309000T9
23/64	.3594	9.130	10	47	89	GXC0309130T9
	.3622	9.200	10	47	89	GXC0309200T9
	.3661	9.300	10	47	89	GXC0309300T9
	.3740	9.500	10	47	89	GXC0309500T9
3/8	.3750	9.520	10	47	89	GXC0309520T9
	.3780	9.600	10	47	89	GXC0309600T9
	.3858	9.800	10	47	89	GXC0309800T9
	.3898	9.900	10	47	89	GXC0309900T9
25/64	.3906	9.920	10	47	89	GXC0309920T9
	.3937	10.000	10	47	89	GXC0310000T9
	.3976	10.100	12	55	102	GXC0310100T9
	.4016	10.200	12	55	102	GXC0310200T9
	.4055	10.300	12	55	102	GXC0310300T9
13/32	.4063	10.320	12	55	102	GXC0310320T9
	.4094	10.400	12	55	102	GXC0310400T9
	.4134	10.500	12	55	102	GXC0310500T9
27/64	.4219	10.720	12	55	102	GXC0310720T9
	.4252	10.800	12	55	102	GXC0310800T9
	.4331	11.000	12	55	102	GXC0311000T9
	.4370	11.100	12	55	102	GXC0311100T9
7/16	.4375	11.113	12	55	102	GXC0311113T9
	.4409	11.200	12	55	102	GXC0311200T9
	.4528	11.500	12	55	102	GXC0311500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	GXC0311510T9
	.4606	11.700	12	55	102	GXC0311700T9
	.4646	11.800	12	55	102	GXC0311800T9
15/32	.4687	11.910	12	55	102	GXC0311910T9
	.4724	12.000	12	55	102	GXC0312000T9
	.4764	12.100	14	60	107	GXC0312100T9
	.4803	12.200	14	60	107	GXC0312200T9
	.4843	12.300	14	60	107	GXC0312300T9
31/64	.4844	12.303	14	60	107	GXC0312303T9
	.4921	12.500	14	60	107	GXC0312500T9
	.4961	12.600	14	60	107	GXC0312600T9
1/2	.5000	12.700	14	60	107	GXC0312700T9
	.5118	13.000	14	60	107	GXC0313000T9
	.5236	13.300	14	60	107	GXC0313300T9
17/32	.5313	13.490	14	60	107	GXC0313490T9
	.5315	13.500	14	60	107	GXC0313500T9
	.5512	14.000	14	60	107	GXC0314000T9
9/16	.5625	14.290	16	65	115	GXC0314290T9
	.5709	14.500	16	65	115	GXC0314500T9
	.5906	15.000	16	65	115	GXC0315000T9
	.6102	15.500	16	65	115	GXC0315500T9
5/8	.6250	15.870	16	65	115	GXC0315870T9
	.6299	16.000	16	65	115	GXC0316000T9
	.6496	16.500	18	73	123	GXC0316500T9
	.6693	17.000	18	73	123	GXC0317000T9
	.6890	17.500	18	73	123	GXC0317500T9
	.7087	18.000	18	73	123	GXC0318000T9
	.7283	18.500	20	79	131	GXC0318500T9
3/4	.7500	19.050	20	79	131	GXC0319050T9
	.7677	19.500	20	79	131	GXC0319500T9
	.7874	20.000	20	79	131	GXC0320000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

GXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	100		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	75		.08	.12	.15	.21	.25
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	70		.08	.12	.15	.22	.25
K 1	Gray Cast Iron	80		.13	.18	.23	.30	.38
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	30		.04	.08	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

GXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	328.1		.006	.008	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	246.1		.003	.004	.005	.008	.009
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	229.7		.003	.004	.005	.008	.009
K 1	Gray Cast Iron	262.5		.004	.006	.008	.011	.014
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	98.4		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, single-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
General Purpose Drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, margen con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

P M K S Consulte la página 261

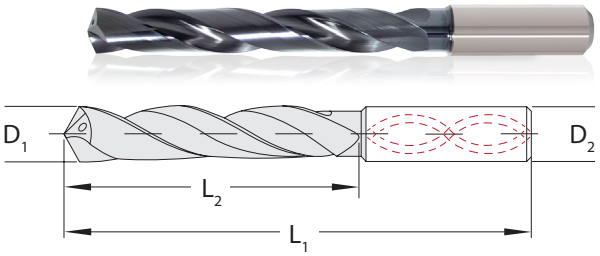
CARBIDE CARBURO | 5xD | 135° | 30°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 91.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	GXC0503000T9
	.1220	3.100	6	28	66	GXC0503100T9
1/8	.1250	3.175	6	28	66	GXC0503175T9
	.1260	3.200	6	28	66	GXC0503200T9
	.1299	3.300	6	28	66	GXC0503300T9
	.1339	3.400	6	28	66	GXC0503400T9
	.1378	3.500	6	28	66	GXC0503500T9
9/64	.1406	3.572	6	28	66	GXC0503572T9
	.1417	3.600	6	28	66	GXC0503600T9
	.1457	3.700	6	28	66	GXC0503700T9
#25	.1496	3.800	6	36	74	GXC0503800T9
	.1535	3.900	6	36	74	GXC0503900T9
5/32	.1563	3.970	6	36	74	GXC0503970T9
	.1575	4.000	6	36	74	GXC0504000T9
	.1614	4.100	6	36	74	GXC0504100T9
	.1654	4.200	6	36	74	GXC0504200T9
	.1693	4.300	6	36	74	GXC0504300T9
11/64	.1719	4.370	6	36	74	GXC0504370T9
	.1732	4.400	6	36	74	GXC0504400T9
	.1772	4.500	6	36	74	GXC0504500T9
	.1811	4.600	6	36	74	GXC0504600T9
	.1831	4.650	6	36	74	GXC0504650T9
#13	.1850	4.700	6	36	74	GXC0500130T9
3/16	.1875	4.760	6	44	82	GXC0504760T9
#12	.1890	4.800	6	44	82	GXC0500120T9
	.1929	4.900	6	44	82	GXC0504900T9
	.1969	5.000	6	44	82	GXC0505000T9
	.2008	5.100	6	44	82	GXC0505100T9
13/64	.2031	5.160	6	44	82	GXC0505160T9
#6	.2040	5.182	6	44	82	GXC0500060T9
	.2047	5.200	6	44	82	GXC0505200T9
	.2087	5.300	6	44	82	GXC0505300T9
	.2126	5.400	6	44	82	GXC0505400T9
	.2165	5.500	6	44	82	GXC0505500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	GXC0505550T9
7/32	.2187	5.560	6	44	82	GXC0505560T9
	.2205	5.600	6	44	82	GXC0505600T9
	.2244	5.700	6	44	82	GXC0505700T9
	.2283	5.800	6	44	82	GXC0505800T9
	.2323	5.900	6	44	82	GXC0505900T9
15/64	.2344	5.950	6	44	82	GXC0505950T9
	.2362	6.000	6	44	82	GXC0506000T9
	.2402	6.100	8	53	91	GXC0506100T9
	.2441	6.200	8	53	91	GXC0506200T9
	.2480	6.300	8	53	91	GXC0506300T9
1/4	.2500	6.350	8	53	91	GXC0506350T9
	.2520	6.400	8	53	91	GXC0506400T9
	.2559	6.500	8	53	91	GXC0506500T9
	.2598	6.600	8	53	91	GXC0506600T9
	.2638	6.700	8	53	91	GXC0506700T9
17/64	.2656	6.750	8	53	91	GXC0506750T9
	.2677	6.800	8	53	91	GXC0506800T9
	.2717	6.900	8	53	91	GXC0506900T9
	.2756	7.000	8	53	91	GXC0507000T9
	.2795	7.100	8	53	91	GXC0507100T9
9/32	.2813	7.140	8	53	91	GXC0507140T9
	.2835	7.200	8	53	91	GXC0507200T9
	.2874	7.300	8	53	91	GXC0507300T9
	.2913	7.400	8	53	91	GXC0507400T9
	.2953	7.500	8	53	91	GXC0507500T9
19/64	.2969	7.540	8	53	91	GXC0507540T9
	.3031	7.700	8	53	91	GXC0507700T9
	.3071	7.800	8	53	91	GXC0507800T9
	.3110	7.900	8	53	91	GXC0507900T9
5/16	.3125	7.940	8	53	91	GXC0507940T9
	.3150	8.000	8	53	91	GXC0508000T9
	.3189	8.100	10	61	103	GXC0508100T9
	.3228	8.200	10	61	103	GXC0508200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	GXC0508300T9
21/64	.3281	8.330	10	61	103	GXC0508330T9
	.3307	8.400	10	61	103	GXC0508400T9
	.3346	8.500	10	61	103	GXC0508500T9
	.3386	8.600	10	61	103	GXC0508600T9
	.3425	8.700	10	61	103	GXC0508700T9
11/32	.3437	8.730	10	61	103	GXC0508730T9
	.3465	8.800	10	61	103	GXC0508800T9
	.3543	9.000	10	61	103	GXC0509000T9
23/64	.3594	9.130	10	61	103	GXC0509130T9
	.3622	9.200	10	61	103	GXC0509200T9
	.3661	9.300	10	61	103	GXC0509300T9
	.3740	9.500	10	61	103	GXC0509500T9
3/8	.3750	9.520	10	61	103	GXC0509520T9
	.3780	9.600	10	61	103	GXC0509600T9
	.3858	9.800	10	61	103	GXC0509800T9
	.3898	9.900	10	61	103	GXC0509900T9
25/64	.3906	9.920	10	61	103	GXC0509920T9
	.3937	10.000	10	61	103	GXC0510000T9
	.3976	10.100	12	71	118	GXC0510100T9
	.4016	10.200	12	71	118	GXC0510200T9
	.4055	10.300	12	71	118	GXC0510300T9
13/32	.4063	10.320	12	71	118	GXC0510320T9
	.4094	10.400	12	71	118	GXC0510400T9
	.4134	10.500	12	71	118	GXC0510500T9
27/64	.4219	10.720	12	71	118	GXC0510720T9
	.4252	10.800	12	71	118	GXC0510800T9
	.4331	11.000	12	71	118	GXC0511000T9
	.4370	11.100	12	71	118	GXC0511100T9
7/16	.4375	11.113	12	71	118	GXC0511113T9
	.4409	11.200	12	71	118	GXC0511200T9
	.4528	11.500	12	71	118	GXC0511500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	GXC0511510T9
	.4606	11.700	12	71	118	GXC0511700T9
	.4646	11.800	12	71	118	GXC0511800T9
15/32	.4687	11.910	12	71	118	GXC0511910T9
	.4724	12.000	12	71	118	GXC0512000T9
	.4764	12.100	14	77	124	GXC0512100T9
	.4803	12.200	14	77	124	GXC0512200T9
	.4843	12.300	14	77	124	GXC0512300T9
31/64	.4844	12.303	14	77	124	GXC0512303T9
	.4921	12.500	14	77	124	GXC0512500T9
	.4961	12.600	14	77	124	GXC0512600T9
1/2	.5000	12.700	14	77	124	GXC0512700T9
	.5118	13.000	14	77	124	GXC0513000T9
	.5236	13.300	14	77	124	GXC0513300T9
17/32	.5313	13.490	14	77	124	GXC0513490T9
	.5315	13.500	14	77	124	GXC0513500T9
	.5512	14.000	14	77	124	GXC0514000T9
9/16	.5625	14.290	16	83	133	GXC0514290T9
	.5709	14.500	16	83	133	GXC0514500T9
	.5906	15.000	16	83	133	GXC0515000T9
	.6102	15.500	16	83	133	GXC0515500T9
5/8	.6250	15.870	16	83	133	GXC0515870T9
	.6299	16.000	16	83	133	GXC0516000T9
	.6496	16.500	18	93	143	GXC0516500T9
	.6693	17.000	18	93	143	GXC0517000T9
	.6890	17.500	18	93	143	GXC0517500T9
	.7087	18.000	18	93	143	GXC0518000T9
	.7283	18.500	20	101	153	GXC0518500T9
3/4	.7500	19.050	20	101	153	GXC0519050T9
	.7677	19.500	20	101	153	GXC0519500T9
	.7874	20.000	20	101	153	GXC0520000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

GXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	100		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	75		.08	.12	.15	.21	.25
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	70		.08	.12	.15	.22	.25
K 1	Gray Cast Iron	80		.13	.18	.23	.30	.38
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	30		.04	.08	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

GXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	328.1		.006	.008	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	246.1		.003	.004	.005	.008	.009
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	229.7		.003	.004	.005	.008	.009
K 1	Gray Cast Iron	262.5		.004	.006	.008	.011	.014
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	98.4		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, single-margin, right-hand cut and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, margen con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

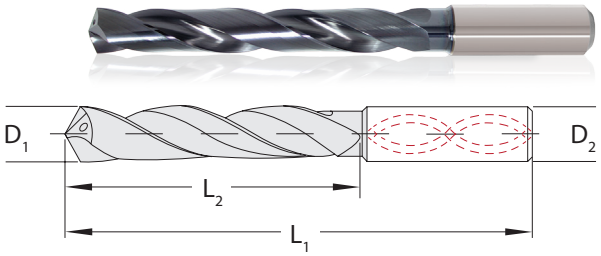
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 93.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	34	72	GXC0803000T9
	.1220	3.100	6	34	72	GXC0803100T9
1/8	.1250	3.175	6	34	72	GXC0803175T9
	.1260	3.200	6	34	72	GXC0803200T9
	.1299	3.300	6	34	72	GXC0803300T9
	.1339	3.400	6	34	72	GXC0803400T9
	.1378	3.500	6	34	72	GXC0803500T9
9/64	.1406	3.572	6	34	72	GXC0803572T9
	.1417	3.600	6	34	72	GXC0803600T9
	.1457	3.700	6	34	72	GXC0803700T9
#25	.1496	3.800	6	43	81	GXC0803800T9
	.1535	3.900	6	43	81	GXC0803900T9
5/32	.1563	3.970	6	43	81	GXC0803970T9
	.1575	4.000	6	43	81	GXC0804000T9
	.1614	4.100	6	43	81	GXC0804100T9
	.1654	4.200	6	43	81	GXC0804200T9
	.1693	4.300	6	43	81	GXC0804300T9
11/64	.1719	4.370	6	43	81	GXC0804370T9
	.1732	4.400	6	43	81	GXC0804400T9
	.1772	4.500	6	43	81	GXC0804500T9
	.1811	4.600	6	43	81	GXC0804600T9
	.1831	4.650	6	43	81	GXC0804650T9
#13	.1850	4.700	6	43	81	GXC0800130T9
3/16	.1875	4.760	6	57	95	GXC0804760T9
#12	.1890	4.800	6	57	95	GXC0800120T9
	.1929	4.900	6	57	95	GXC0804900T9
	.1969	5.000	6	57	95	GXC0805000T9
	.2008	5.100	6	57	95	GXC0805100T9
13/64	.2031	5.160	6	57	95	GXC0805160T9
#6	.2040	5.182	6	57	95	GXC0800060T9
	.2047	5.200	6	57	95	GXC0805200T9
	.2087	5.300	6	57	95	GXC0805300T9
	.2126	5.400	6	57	95	GXC0805400T9
	.2165	5.500	6	57	95	GXC0805500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	57	95	GXC0805550T9
7/32	.2187	5.560	6	57	95	GXC0805560T9
	.2205	5.600	6	57	95	GXC0805600T9
	.2244	5.700	6	57	95	GXC0805700T9
	.2283	5.800	6	57	95	GXC0805800T9
	.2323	5.900	6	57	95	GXC0805900T9
15/64	.2344	5.950	6	57	95	GXC0805950T9
	.2362	6.000	6	57	95	GXC0806000T9
	.2402	6.100	8	76	114	GXC0806100T9
	.2441	6.200	8	76	114	GXC0806200T9
	.2480	6.300	8	76	114	GXC0806300T9
1/4	.2500	6.350	8	76	114	GXC0806350T9
	.2520	6.400	8	76	114	GXC0806400T9
	.2559	6.500	8	76	114	GXC0806500T9
	.2598	6.600	8	76	114	GXC0806600T9
	.2638	6.700	8	76	114	GXC0806700T9
17/64	.2656	6.750	8	76	114	GXC0806750T9
	.2677	6.800	8	76	114	GXC0806800T9
	.2717	6.900	8	76	114	GXC0806900T9
	.2756	7.000	8	76	114	GXC0807000T9
	.2795	7.100	8	76	114	GXC0807100T9
9/32	.2813	7.140	8	76	114	GXC0807140T9
	.2835	7.200	8	76	114	GXC0807200T9
	.2874	7.300	8	76	114	GXC0807300T9
	.2913	7.400	8	76	114	GXC0807400T9
	.2953	7.500	8	76	114	GXC0807500T9
19/64	.2969	7.540	8	76	114	GXC0807540T9
	.3031	7.700	8	76	114	GXC0807700T9
	.3071	7.800	8	76	114	GXC0807800T9
	.3110	7.900	8	76	114	GXC0807900T9
5/16	.3125	7.940	8	76	114	GXC0807940T9
	.3150	8.000	8	76	114	GXC0808000T9
	.3189	8.100	10	95	142	GXC0808100T9
	.3228	8.200	10	95	142	GXC0808200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	95	142	GXC0808300T9
21/64	.3281	8.330	10	95	142	GXC0808330T9
	.3307	8.400	10	95	142	GXC0808400T9
	.3346	8.500	10	95	142	GXC0808500T9
	.3386	8.600	10	95	142	GXC0808600T9
	.3425	8.700	10	95	142	GXC0808700T9
11/32	.3437	8.730	10	95	142	GXC0808730T9
	.3465	8.800	10	95	142	GXC0808800T9
	.3543	9.000	10	95	142	GXC0809000T9
23/64	.3594	9.130	10	95	142	GXC0809130T9
	.3622	9.200	10	95	142	GXC0809200T9
	.3661	9.300	10	95	142	GXC0809300T9
	.3740	9.500	10	95	142	GXC0809500T9
3/8	.3750	9.520	10	95	142	GXC0809520T9
	.3780	9.600	10	95	142	GXC0809600T9
	.3858	9.800	10	95	142	GXC0809800T9
	.3898	9.900	10	95	142	GXC0809900T9
25/64	.3906	9.920	10	95	142	GXC0809920T9
	.3937	10.000	10	95	142	GXC0810000T9
	.3976	10.100	12	114	162	GXC0810100T9
	.4016	10.200	12	114	162	GXC0810200T9
	.4055	10.300	12	114	162	GXC0810300T9
13/32	.4063	10.320	12	114	162	GXC0810320T9
	.4094	10.400	12	114	162	GXC0810400T9
	.4134	10.500	12	114	162	GXC0810500T9
27/64	.4219	10.720	12	114	162	GXC0810720T9
	.4252	10.800	12	114	162	GXC0810800T9
	.4331	11.000	12	114	162	GXC0811000T9
	.4370	11.100	12	114	162	GXC0811100T9
7/16	.4375	11.113	12	114	162	GXC0811113T9
	.4409	11.200	12	114	162	GXC0811200T9
	.4528	11.500	12	114	162	GXC0811500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	114	162	GXC0811510T9
	.4606	11.700	12	114	162	GXC0811700T9
	.4646	11.800	12	114	162	GXC0811800T9
15/32	.4687	11.910	12	114	162	GXC0811910T9
	.4724	12.000	12	114	162	GXC0812000T9
	.4764	12.100	14	131	178	GXC0812100T9
	.4803	12.200	14	131	178	GXC0812200T9
	.4843	12.300	14	131	178	GXC0812300T9
31/64	.4844	12.303	14	131	178	GXC0812303T9
	.4921	12.500	14	131	178	GXC0812500T9
	.4961	12.600	14	131	178	GXC0812600T9
1/2	.5000	12.700	14	131	178	GXC0812700T9
	.5118	13.000	14	131	178	GXC0813000T9
	.5236	13.300	14	131	178	GXC0813300T9
17/32	.5313	13.490	14	131	178	GXC0813490T9
	.5315	13.500	14	131	178	GXC0813500T9
	.5512	14.000	14	131	178	GXC0814000T9
9/16	.5625	14.290	16	152	203	GXC0814290T9
	.5709	14.500	16	152	203	GXC0814500T9
	.5906	15.000	16	152	203	GXC0815000T9
	.6102	15.500	16	152	203	GXC0815500T9
5/8	.6250	15.870	16	152	203	GXC0815870T9
	.6299	16.000	16	152	203	GXC0816000T9
	.6496	16.500	18	171	222	GXC0816500T9
	.6693	17.000	18	171	222	GXC0817000T9
	.6890	17.500	18	171	222	GXC0817500T9
	.7087	18.000	18	171	222	GXC0818000T9
	.7283	18.500	20	190	243	GXC0818500T9
3/4	.7500	19.050	20	190	243	GXC0819050T9
	.7677	19.500	20	190	243	GXC0819500T9
	.7874	20.000	20	190	243	GXC0820000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

GXC
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	95		.10	.15	.20	.26	.33
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	90		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	65		.08	.12	.15	.20	.25
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	25		.04	.08	.12	.16	.20
K 1	Gray Cast Iron	70		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

GXC
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	311.7		.003	.005	.007	.010	.012
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	295.3		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	213.3		.003	.004	.005	.007	.009
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	82.0		.001	.003	.004	.006	.007
K 1	Gray Cast Iron	229.7		.007	.009	.013	.015	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

SXC

High-Performance Drill
Double-Margin
Ideal for General Purpose Drilling
12xD-50xD

135° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

135° Geometría de la Punta - Diseño con punto dividido para superior perforación precisión.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

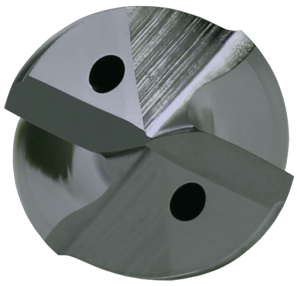
Pulido - Cuando las flautas están pulidas las evacuación de la viruta es mejorada.

Double-Margin Design - For improved drilling stability and smooth surface finish.

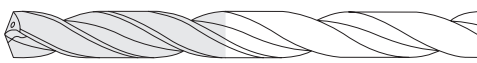
Diseño de Doble Margen - Para mayor estabilidad y un acabado liso.

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

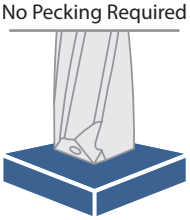
Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.



40xD PAGE 104



No Pecking Required



50xD PAGE 105

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

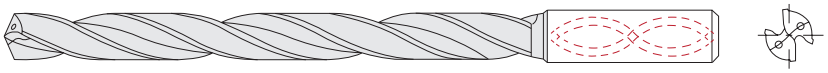
Ideal para
Uso General

P M K S Consulte la página 261

Speeds & Feeds: Refer to page 97, 102, 102, 103 & 105.

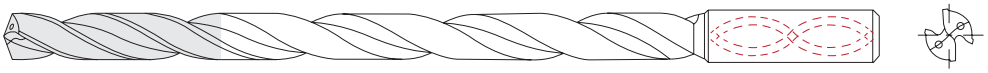
Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

12xD PAGE 96



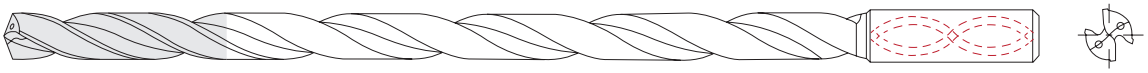
16xD PAGE 98

Must utilize a pilot hole drill. Refer to page 157



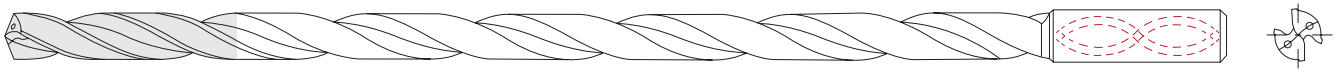
20xD PAGE 99

Must utilize a pilot hole drill. Refer to page 157



25xD PAGE 100

Must utilize a pilot hole drill. Refer to page 157



30xD PAGE 101

Must utilize a pilot hole drill. Refer to page 157

Must utilize a pilot hole drill. 20xD intermediary drill recommended. Refer to pages 157 & 99

Must utilize a pilot hole drill. 20xD intermediary drill recommended. Refer to pages 157 & 99

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

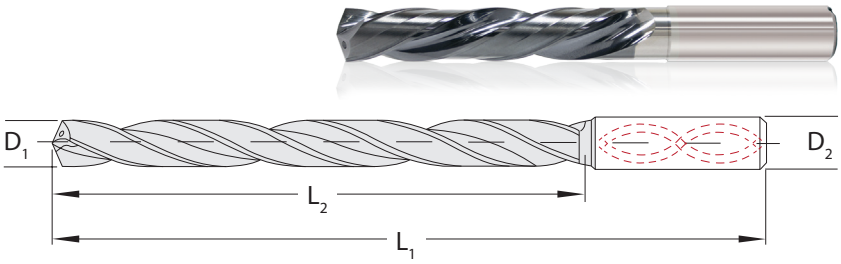
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 97.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	54	92	SXC1203000T9
	.1220	3.100	6	54	92	SXC1203100T9
1/8	.1250	3.175	6	54	92	SXC1203175T9
	.1260	3.200	6	54	92	SXC1203200T9
	.1299	3.300	6	54	92	SXC1203300T9
	.1339	3.400	6	54	92	SXC1203400T9
	.1378	3.500	6	54	92	SXC1203500T9
9/64	.1406	3.572	6	54	92	SXC1203572T9
	.1417	3.600	6	54	92	SXC1203600T9
	.1457	3.700	6	54	92	SXC1203700T9
#25	.1496	3.800	6	64	102	SXC1203800T9
	.1535	3.900	6	64	102	SXC1203900T9
5/32	.1563	3.970	6	64	102	SXC1203970T9
	.1575	4.000	6	64	102	SXC1204000T9
	.1614	4.100	6	64	102	SXC1204100T9
	.1654	4.200	6	64	102	SXC1204200T9
	.1693	4.300	6	64	102	SXC1204300T9
11/64	.1719	4.370	6	64	102	SXC1204370T9
	.1732	4.400	6	64	102	SXC1204400T9
	.1772	4.500	6	64	102	SXC1204500T9
	.1811	4.600	6	64	102	SXC1204600T9
	.1831	4.650	6	64	102	SXC1204650T9
#13	.1850	4.700	6	64	102	SXC1200130T9
3/16	.1875	4.760	6	78	116	SXC1204760T9
#12	.1890	4.800	6	78	116	SXC1200120T9
	.1929	4.900	6	78	116	SXC1204900T9
	.1969	5.000	6	78	116	SXC1205000T9
	.2008	5.100	6	78	116	SXC1205100T9
13/64	.2031	5.160	6	78	116	SXC1205160T9
#6	.2040	5.182	6	78	116	SXC1200060T9
	.2047	5.200	6	78	116	SXC1205200T9
	.2087	5.300	6	78	116	SXC1205300T9
	.2126	5.400	6	78	116	SXC1205400T9
	.2165	5.500	6	78	116	SXC1205500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	78	116	SXC1205550T9
7/32	.2187	5.560	6	78	116	SXC1205560T9
	.2205	5.600	6	78	116	SXC1205600T9
	.2244	5.700	6	78	116	SXC1205700T9
	.2283	5.800	6	78	116	SXC1205800T9
	.2323	5.900	6	78	116	SXC1205900T9
15/64	.2344	5.950	6	78	116	SXC1205950T9
	.2362	6.000	6	78	116	SXC1206000T9
	.2402	6.100	8	108	146	SXC1206100T9
	.2441	6.200	8	108	146	SXC1206200T9
	.2480	6.300	8	108	146	SXC1206300T9
1/4	.2500	6.350	8	108	146	SXC1206350T9
	.2520	6.400	8	108	146	SXC1206400T9
	.2559	6.500	8	108	146	SXC1206500T9
	.2598	6.600	8	108	146	SXC1206600T9
	.2638	6.700	8	108	146	SXC1206700T9
17/64	.2656	6.750	8	108	146	SXC1206750T9
	.2677	6.800	8	108	146	SXC1206800T9
	.2717	6.900	8	108	146	SXC1206900T9
	.2756	7.000	8	108	146	SXC1207000T9
	.2795	7.100	8	108	146	SXC1207100T9
9/32	.2813	7.140	8	108	146	SXC1207140T9
	.2835	7.200	8	108	146	SXC1207200T9
	.2874	7.300	8	108	146	SXC1207300T9
	.2913	7.400	8	108	146	SXC1207400T9
	.2953	7.500	8	108	146	SXC1207500T9
19/64	.2969	7.540	8	108	146	SXC1207540T9
	.3031	7.700	8	108	146	SXC1207700T9
	.3071	7.800	8	108	146	SXC1207800T9
	.3110	7.900	8	108	146	SXC1207900T9
5/16	.3125	7.940	8	108	146	SXC1207940T9
	.3150	8.000	8	108	146	SXC1208000T9
	.3189	8.100	10	120	162	SXC1208100T9
	.3228	8.200	10	120	162	SXC1208200T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	120	162	SXC1208300T9
21/64	.3281	8.330	10	120	162	SXC1208330T9
	.3307	8.400	10	120	162	SXC1208400T9
	.3346	8.500	10	120	162	SXC1208500T9
	.3386	8.600	10	120	162	SXC1208600T9
	.3425	8.700	10	120	162	SXC1208700T9
11/32	.3437	8.730	10	120	162	SXC1208730T9
	.3465	8.800	10	120	162	SXC1208800T9
	.3543	9.000	10	120	162	SXC1209000T9
23/64	.3594	9.130	10	120	162	SXC1209130T9
	.3622	9.200	10	120	162	SXC1209200T9
	.3661	9.300	10	120	162	SXC1209300T9
	.3740	9.500	10	120	162	SXC1209500T9
3/8	.3750	9.520	10	120	162	SXC1209520T9
	.3780	9.600	10	120	162	SXC1209600T9
	.3858	9.800	10	120	162	SXC1209800T9
	.3898	9.900	10	120	162	SXC1209900T9
25/64	.3906	9.920	10	120	162	SXC1209920T9
	.3937	10.000	10	120	162	SXC1210000T9
	.3976	10.100	12	156	204	SXC1210100T9
	.4016	10.200	12	156	204	SXC1210200T9
	.4055	10.300	12	156	204	SXC1210300T9
13/32	.4063	10.320	12	156	204	SXC1210320T9
	.4094	10.400	12	156	204	SXC1210400T9
	.4134	10.500	12	156	204	SXC1210500T9
27/64	.4219	10.720	12	156	204	SXC1210720T9
	.4252	10.800	12	156	204	SXC1210800T9
	.4331	11.000	12	156	204	SXC1211000T9
	.4370	11.100	12	156	204	SXC1211100T9
7/16	.4375	11.113	12	156	204	SXC1211113T9
	.4409	11.200	12	156	204	SXC1211200T9
	.4528	11.500	12	156	204	SXC1211500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	156	204	SXC1211510T9
	.4606	11.700	12	156	204	SXC1211700T9
	.4646	11.800	12	156	204	SXC1211800T9
15/32	.4687	11.910	12	156	204	SXC1211910T9
	.4724	12.000	12	156	204	SXC1212000T9
	.4764	12.100	14	182	230	SXC1212100T9
	.4803	12.200	14	182	230	SXC1212200T9
	.4843	12.300	14	182	230	SXC1212300T9
31/64	.4844	12.303	14	182	230	SXC1212303T9
	.4921	12.500	14	182	230	SXC1212500T9
	.4961	12.600	14	182	230	SXC1212600T9
1/2	.5000	12.700	14	182	230	SXC1212700T9
	.5118	13.000	14	182	230	SXC1213000T9
	.5236	13.300	14	182	230	SXC1213300T9
17/32	.5313	13.490	14	182	230	SXC1213490T9
	.5315	13.500	14	182	230	SXC1213500T9
	.5512	14.000	14	182	230	SXC1214000T9
9/16	.5625	14.290	16	208	260	SXC1214290T9
	.5709	14.500	16	208	260	SXC1214500T9
	.5906	15.000	16	208	260	SXC1215000T9
	.6102	15.500	16	208	260	SXC1215500T9
5/8	.6250	15.870	16	208	260	SXC1215870T9
	.6299	16.000	16	208	260	SXC1216000T9
	.6496	16.500	18	234	285	SXC1216500T9
	.6693	17.000	18	234	285	SXC1217000T9
	.6890	17.500	18	234	285	SXC1217500T9
	.7087	18.000	18	234	285	SXC1218000T9
	.7283	18.500	20	258	310	SXC1218500T9
3/4	.7500	19.050	20	258	310	SXC1219050T9
	.7677	19.500	20	258	310	SXC1219500T9
	.7874	20.000	20	258	310	SXC1220000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

SXC
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	85		.10	.15	.20	.26	.33
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	80		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	65		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	105		.20	.25	.35	.40	.46
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	45		.13	.18	.28	.33	.41

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	295.3		.003	.005	.007	.010	.012
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	262.5		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	213.3		.003	.004	.005	.007	.009
K 1	Gray Cast Iron	344.5		.007	.009	.013	.015	.018
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	148.8		.005	.007	.011	.013	.016

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

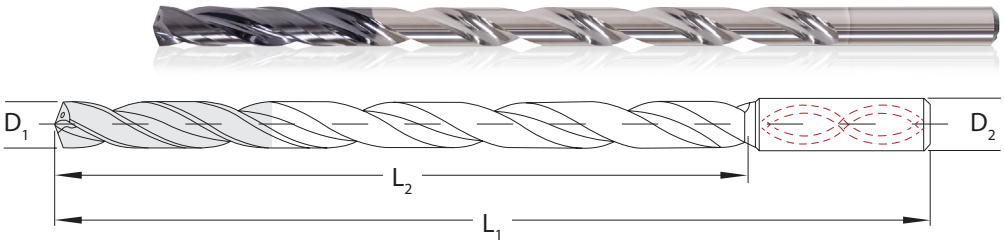
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

■ This drill must utilize a pilot hole drill. (Refer to page 157)

Speeds & Feeds: Refer to Page 102.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	60	100	SXC1603000T9
1/8	.1250	3.175	6	60	100	SXC1603175T9
	.1260	3.200	6	60	100	SXC1603200T9
	.1299	3.300	6	60	100	SXC1603300T9
	.1378	3.500	6	60	100	SXC1603500T9
9/64	.1406	3.572	6	75	115	SXC1603572T9
#25	.1496	3.800	6	75	115	SXC1603800T9
5/32	.1563	3.970	6	75	115	SXC1603970T9
	.1575	4.000	6	75	115	SXC1604000T9
	.1654	4.200	6	75	115	SXC1604200T9
11/64	.1719	4.370	6	90	130	SXC1604370T9
	.1772	4.500	6	90	130	SXC1604500T9
#13	.1850	4.700	6	90	130	SXC1600130T9
3/16	.1875	4.760	6	90	130	SXC1604760T9
#12	.1890	4.800	6	90	130	SXC1600120T9
	.1969	5.000	6	90	130	SXC1605000T9
13/64	.2031	5.160	6	108	150	SXC1605160T9
#6	.2040	5.182	6	108	150	SXC1600060T9
	.2165	5.500	6	108	150	SXC1605500T9
7/32	.2187	5.560	6	108	150	SXC1605560T9
	.2283	5.800	6	108	150	SXC1605800T9
15/64	.2344	5.950	6	108	150	SXC1605950T9
	.2362	6.000	6	108	150	SXC1606000T9
1/4	.2500	6.350	8	125	165	SXC1606350T9
	.2559	6.500	8	125	165	SXC1606500T9
17/64	.2656	6.750	8	125	165	SXC1606750T9
	.2677	6.800	8	125	165	SXC1606800T9
	.2756	7.000	8	125	165	SXC1607000T9
9/32	.2813	7.140	8	140	180	SXC1607140T9
	.2953	7.500	8	140	180	SXC1607500T9
19/64	.2969	7.540	8	140	180	SXC1607540T9
	.3071	7.800	8	140	180	SXC1607800T9
5/16	.3125	7.940	8	140	180	SXC1607940T9
	.3150	8.000	8	140	180	SXC1608000T9
21/64	.3281	8.330	10	160	205	SXC1608330T9
	.3346	8.500	10	160	205	SXC1608500T9
11/32	.3437	8.730	10	160	205	SXC1608730T9
	.3465	8.800	10	160	205	SXC1608800T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3543	9.000	10	160	205	SXC1609000T9
23/64	.3594	9.130	10	180	225	SXC1609130T9
3/8	.3750	9.520	10	180	225	SXC1609520T9
	.3858	9.800	10	180	225	SXC1609800T9
25/64	.3906	9.920	10	180	225	SXC1609920T9
	.3937	10.000	10	180	225	SXC1610000T9
	.4016	10.200	12	190	240	SXC1610200T9
13/32	.4063	10.320	12	190	240	SXC1610320T9
27/64	.4219	10.720	12	190	240	SXC1610720T9
	.4252	10.800	12	190	240	SXC1610800T9
	.4331	11.000	12	190	240	SXC1611000T9
7/16	.4375	11.113	12	215	265	SXC1611113T9
	.4528	11.500	12	215	265	SXC1611500T9
29/64	.4531	11.510	12	215	265	SXC1611510T9
15/32	.4687	11.910	12	215	265	SXC1611910T9
	.4724	12.000	12	215	265	SXC1612000T9
	.4843	12.300	14	230	280	SXC1612300T9
31/64	.4844	12.303	14	230	280	SXC1612303T9
1/2	.5000	12.700	14	230	280	SXC1612700T9
	.5118	13.000	14	230	280	SXC1613000T9
	.5236	13.300	14	245	295	SXC1613300T9
17/32	.5313	13.490	14	245	295	SXC1613490T9
	.5315	13.500	14	245	295	SXC1613500T9
	.5512	14.000	14	245	295	SXC1614000T9
9/16	.5625	14.290	16	255	305	SXC1614290T9
	.5709	14.500	16	255	305	SXC1614500T9
	.5906	15.000	16	255	305	SXC1615000T9
	.6102	15.500	16	275	325	SXC1615500T9
5/8	.6250	15.870	16	275	325	SXC1615870T9
	.6299	16.000	16	275	325	SXC1616000T9
	.6496	16.500	18	320	370	SXC1616500T9
	.6693	17.000	18	320	370	SXC1617000T9
	.6890	17.500	18	320	370	SXC1617500T9
	.7087	18.000	18	320	370	SXC1618000T9
	.7283	18.500	20	330	380	SXC1618500T9
3/4	.7500	19.050	20	330	380	SXC1619050T9
	.7677	19.500	20	350	400	SXC1619500T9
	.7874	20.000	20	350	400	SXC1620000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

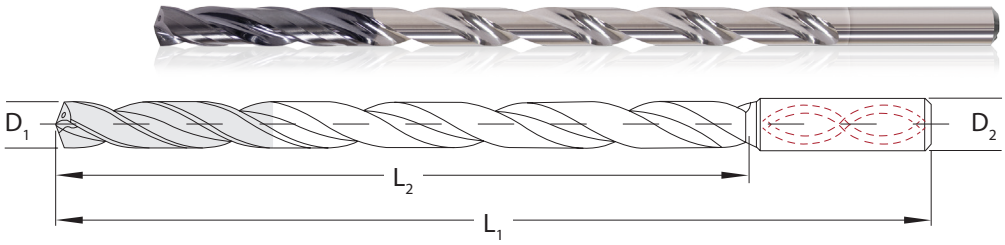
P M K S Consulte la página 261

Speeds & Feeds: Refer to Page 102.

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	80	120	SXC2003000T9
1/8	.1250	3.175	6	80	120	SXC2003175T9
	.1260	3.200	6	80	120	SXC2003200T9
	.1299	3.300	6	80	120	SXC2003300T9
	.1378	3.500	6	80	120	SXC2003500T9
9/64	.1406	3.572	6	90	130	SXC2003572T9
#25	.1496	3.800	6	90	130	SXC2003800T9
5/32	.1563	3.970	6	90	130	SXC2003970T9
	.1575	4.000	6	90	130	SXC2004000T9
	.1654	4.200	6	110	160	SXC2004200T9
11/64	.1719	4.370	6	110	160	SXC2004370T9
	.1772	4.500	6	110	160	SXC2004500T9
#13	.1850	4.700	6	120	160	SXC2000130T9
3/16	.1875	4.760	6	120	160	SXC2004760T9
#12	.1890	4.800	6	120	160	SXC2000120T9
	.1969	5.000	6	120	160	SXC2005000T9
13/64	.2031	5.160	6	140	185	SXC2005160T9
#6	.2040	5.182	6	140	185	SXC2000060T9
	.2165	5.500	6	140	185	SXC2005500T9
7/32	.2187	5.560	6	140	185	SXC2005560T9
	.2283	5.800	6	140	185	SXC2005800T9
15/64	.2344	5.950	6	140	185	SXC2005950T9
	.2362	6.000	6	140	185	SXC2006000T9
1/4	.2500	6.350	8	160	210	SXC2006350T9
	.2559	6.500	8	160	210	SXC2006500T9
17/64	.2656	6.750	8	160	210	SXC2006750T9
	.2677	6.800	8	160	210	SXC2006800T9
	.2756	7.000	8	160	210	SXC2007000T9
9/32	.2813	7.140	8	180	230	SXC2007140T9
	.2953	7.500	8	180	230	SXC2007500T9
19/64	.2969	7.540	8	180	230	SXC2007540T9
	.3071	7.800	8	180	230	SXC2007800T9
5/16	.3125	7.940	8	180	230	SXC2007940T9
	.3150	8.000	8	180	230	SXC2008000T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
21/64	.3281	8.330	10	195	260	SXC2008330T9
	.3346	8.500	10	195	260	SXC2008500T9
11/32	.3437	8.730	10	230	290	SXC2008730T9
	.3465	8.800	10	230	290	SXC2008800T9
	.3543	9.000	10	230	290	SXC2009000T9
23/64	.3594	9.130	10	230	290	SXC2009130T9
3/8	.3750	9.520	10	230	290	SXC2009520T9
	.3858	9.800	10	230	290	SXC2009800T9
25/64	.3906	9.920	10	230	290	SXC2009920T9
	.3937	10.000	10	230	290	SXC2010000T9
	.4016	10.200	12	268	315	SXC2010200T9
13/32	.4063	10.320	12	268	315	SXC2010320T9
27/64	.4219	10.720	12	268	315	SXC2010720T9
	.4252	10.800	12	268	315	SXC2010800T9
	.4331	11.000	12	268	315	SXC2011000T9
7/16	.4375	11.113	12	268	315	SXC2011113T9
	.4528	11.500	12	268	315	SXC2011500T9
29/64	.4531	11.510	12	268	315	SXC2011510T9
15/32	.4687	11.910	12	268	315	SXC2011910T9
	.4724	12.000	12	268	315	SXC2012000T9
	.4843	12.300	14	275	325	SXC2012300T9
31/64	.4844	12.303	14	275	325	SXC2012303T9
1/2	.5000	12.700	14	275	325	SXC2012700T9
	.5118	13.000	14	275	325	SXC2013000T9
	.5236	13.300	14	305	355	SXC2013300T9
17/32	.5313	13.490	14	305	355	SXC2013490T9
	.5315	13.500	14	305	355	SXC2013500T9
	.5512	14.000	14	305	355	SXC2014000T9
9/16	.5625	14.290	16	320	370	SXC2014290T9
	.5709	14.500	16	320	370	SXC2014500T9
	.5906	15.000	16	340	390	SXC2015000T9
	.6102	15.500	16	340	390	SXC2015500T9
5/8	.6250	15.870	16	340	390	SXC2015870T9
	.6299	16.000	16	340	390	SXC2016000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

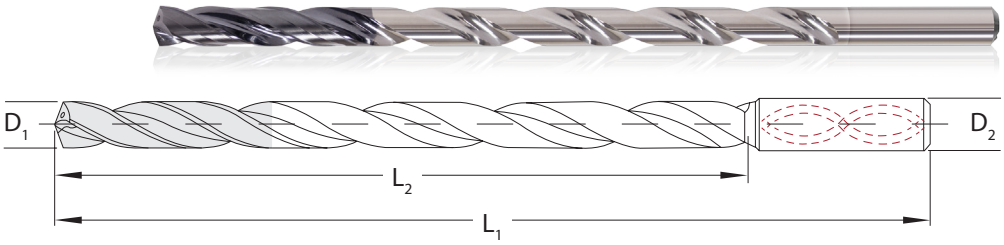
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

■ This drill must utilize a pilot hole drill. (Refer to page 157)

Speeds & Feeds: Refer to Page 103.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	98	135	SXC2503000T9
1/8	.1250	3.175	6	98	135	SXC2503175T9
	.1260	3.200	6	98	135	SXC2503200T9
	.1299	3.300	6	110	150	SXC2503300T9
	.1378	3.500	6	110	150	SXC2503500T9
9/64	.1406	3.572	6	120	160	SXC2503572T9
#25	.1496	3.800	6	120	160	SXC2503800T9
5/32	.1563	3.970	6	120	160	SXC2503970T9
	.1575	4.000	6	120	160	SXC2504000T9
	.1654	4.200	6	120	160	SXC2504200T9
11/64	.1719	4.370	6	135	180	SXC2504370T9
	.1772	4.500	6	135	180	SXC2504500T9
#13	.1850	4.700	6	135	180	SXC2500130T9
3/16	.1875	4.760	6	135	180	SXC2504760T9
#12	.1890	4.800	6	135	180	SXC2500120T9
	.1969	5.000	6	135	180	SXC2505000T9
13/64	.2031	5.160	6	168	205	SXC2505160T9
#6	.2040	5.182	6	168	205	SXC2500060T9
	.2165	5.500	6	168	205	SXC2505500T9
7/32	.2187	5.560	6	168	205	SXC2505560T9
	.2283	5.800	6	168	205	SXC2505800T9
15/64	.2344	5.950	6	168	205	SXC2505950T9
	.2362	6.000	6	168	205	SXC2506000T9
1/4	.2500	6.350	8	200	240	SXC2506350T9
	.2559	6.500	8	200	240	SXC2506500T9
17/64	.2656	6.750	8	200	240	SXC2506750T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2677	6.800	8	200	240	SXC2506800T9
	.2756	7.000	8	200	240	SXC2507000T9
9/32	.2813	7.140	8	220	260	SXC2507140T9
	.2953	7.500	8	220	260	SXC2507500T9
19/64	.2969	7.540	8	220	260	SXC2507540T9
	.3071	7.800	8	220	260	SXC2507800T9
5/16	.3125	7.940	8	220	260	SXC2507940T9
	.3150	8.000	8	220	260	SXC2508000T9
21/64	.3281	8.330	10	240	285	SXC2508330T9
	.3346	8.500	10	240	285	SXC2508500T9
11/32	.3437	8.730	10	268	310	SXC2508730T9
	.3465	8.800	10	268	310	SXC2508800T9
	.3543	9.000	10	268	310	SXC2509000T9
23/64	.3594	9.130	10	268	310	SXC2509130T9
3/8	.3750	9.520	10	268	310	SXC2509520T9
	.3858	9.800	10	268	310	SXC2509800T9
25/64	.3906	9.920	10	268	310	SXC2509920T9
	.3937	10.000	10	268	310	SXC2510000T9
13/32	.4063	10.320	12	325	375	SXC2510320T9
27/64	.4219	10.720	12	325	375	SXC2510720T9
	.4331	11.000	12	325	375	SXC2511000T9
7/16	.4375	11.113	12	325	375	SXC2511113T9
	.4528	11.500	12	325	375	SXC2511500T9
29/64	.4531	11.510	12	325	375	SXC2511510T9
15/32	.4687	11.910	12	325	375	SXC2511910T9
	.4724	12.000	12	325	375	SXC2512000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

P M K S Consulte la página 261

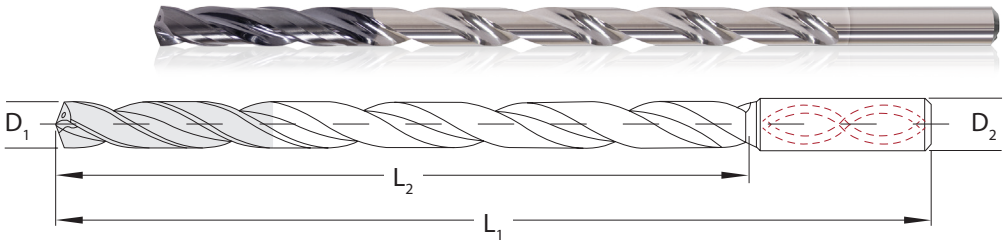
CARBIDE CARBURO | 30xD | 135° | 30°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

This drill must utilize a pilot hole drill. (Refer to page 157)

Speeds & Feeds: Refer to Page 103.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	105	150	SXC3003000T9
1/8	.1250	3.175	6	105	150	SXC3003175T9
	.1260	3.200	6	105	150	SXC3003200T9
	.1299	3.300	6	135	185	SXC3003300T9
	.1378	3.500	6	135	185	SXC3003500T9
9/64	.1406	3.572	6	135	185	SXC3003572T9
#25	.1496	3.800	6	135	185	SXC3003800T9
5/32	.1563	3.970	6	135	185	SXC3003970T9
	.1575	4.000	6	135	185	SXC3004000T9
	.1654	4.200	6	135	185	SXC3004200T9
11/64	.1719	4.370	6	165	215	SXC3004370T9
	.1772	4.500	6	165	215	SXC3004500T9
#13	.1850	4.700	6	165	215	SXC3000130T9
3/16	.1875	4.760	6	165	215	SXC3004760T9
#12	.1890	4.800	6	165	215	SXC3000120T9
	.1969	5.000	6	165	215	SXC3005000T9
13/64	.2031	5.160	6	180	230	SXC3005160T9
#6	.2040	5.182	6	180	230	SXC3000060T9
	.2165	5.500	6	180	230	SXC3005500T9
7/32	.2187	5.560	6	180	230	SXC3005560T9
	.2283	5.800	6	180	230	SXC3005800T9
15/64	.2344	5.950	6	180	230	SXC3005950T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2362	6.000	6	180	230	SXC3006000T9
1/4	.2500	6.350	8	215	280	SXC3006350T9
	.2559	6.500	8	215	280	SXC3006500T9
17/64	.2656	6.750	8	230	280	SXC3006750T9
	.2677	6.800	8	230	280	SXC3006800T9
	.2756	7.000	8	230	280	SXC3007000T9
9/32	.2813	7.140	8	230	280	SXC3007140T9
	.2953	7.500	8	230	280	SXC3007500T9
19/64	.2969	7.540	8	265	315	SXC3007540T9
	.3071	7.800	8	265	315	SXC3007800T9
5/16	.3125	7.940	8	265	315	SXC3007940T9
	.3150	8.000	8	265	315	SXC3008000T9
21/64	.3281	8.330	10	295	350	SXC3008330T9
	.3346	8.500	10	295	350	SXC3008500T9
11/32	.3437	8.730	10	330	380	SXC3008730T9
	.3465	8.800	10	330	380	SXC3008800T9
	.3543	9.000	10	330	380	SXC3009000T9
23/64	.3594	9.130	10	330	380	SXC3009130T9
3/8	.3750	9.520	10	330	380	SXC3009520T9
	.3858	9.800	10	330	380	SXC3009800T9
25/64	.3906	9.920	10	330	380	SXC3009920T9
	.3937	10.000	10	330	380	SXC3010000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

SXC
16xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	80		.10	.15	.20	.26	.33
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	75		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	55		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	100		.20	.25	.35	.40	.46
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	43		.13	.18	.28	.33	.41

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
16xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	262.5		.003	.005	.007	.010	.012
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	246.1		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	180.5		.003	.004	.005	.007	.009
K 1	Gray Cast Iron	328.1		.007	.009	.013	.015	.018
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	141.6		.005	.007	.011	.013	.016

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
20xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	75		.10	.15	.20	.26	.33
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	70		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	50		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	95		.20	.25	.35	.40	.46
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	41		.13	.18	.28	.33	.41

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
20xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	246.1		.003	.005	.007	.010	.012
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	229.7		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	164.1		.003	.004	.005	.007	.009
K 1	Gray Cast Iron	311.7		.007	.009	.013	.015	.018
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	134.4		.005	.007	.011	.013	.016

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
25xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	70		.10	.15	.20	.26	.33
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	65		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	50		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	85		.20	.25	.35	.40	.46
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	39		.13	.18	.28	.33	.41

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
25xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	229.7		.003	.005	.007	.010	.012
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	213.3		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	164.1		.003	.004	.005	.007	.009
K 1	Gray Cast Iron	278.9		.007	.009	.013	.015	.018
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	127.2		.005	.007	.011	.013	.016

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
30xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	65		.10	.15	.20	.26	.33
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	60		.10	.15	.20	.26	.33
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	45		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	80		.20	.25	.35	.40	.46
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	36		.13	.18	.28	.33	.41

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SXC
30xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	213.3		.003	.005	.007	.010	.012
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	196.9		.003	.005	.007	.010	.012
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	147.6		.003	.004	.005	.007	.009
K 1	Gray Cast Iron	262.5		.007	.009	.013	.015	.018
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	117.6		.005	.007	.011	.013	.016

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

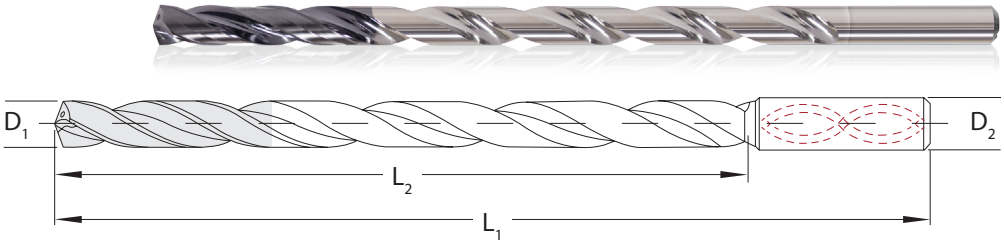
P M K S Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 105.

This drill must utilize a pilot hole drill. We also recommend using a corresponding 20xD intermediary drill. (Refer to pages 157 & 99)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	140	190	SXC4003000T9
1/8	.1250	3.175	6	140	190	SXC4003175T9
9/64	.1406	3.572	6	180	230	SXC4003572T9
#25	.1496	3.800	6	180	230	SXC4003800T9
5/32	.1563	3.970	6	180	230	SXC4003970T9
	.1575	4.000	6	180	230	SXC4004000T9
	.1654	4.200	6	180	230	SXC4004200T9
11/64	.1719	4.370	6	220	270	SXC4004370T9
	.1772	4.500	6	220	270	SXC4004500T9
#13	.1850	4.700	6	220	270	SXC4000130T9
3/16	.1875	4.760	6	220	270	SXC4004760T9
#12	.1890	4.800	6	220	270	SXC4000120T9
	.1969	5.000	6	220	270	SXC4005000T9
13/64	.2031	5.160	6	240	290	SXC4005160T9
#6	.2040	5.182	6	240	290	SXC4000060T9
	.2165	5.500	6	240	290	SXC4005500T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
7/32	.2187	5.560	6	240	290	SXC4005560T9
	.2283	5.800	6	240	290	SXC4005800T9
15/64	.2344	5.950	6	240	290	SXC4005950T9
	.2362	6.000	6	240	290	SXC4006000T9
1/4	.2500	6.350	8	290	340	SXC4006350T9
	.2559	6.500	8	290	340	SXC4006500T9
17/64	.2656	6.750	8	320	370	SXC4006750T9
	.2677	6.800	8	320	370	SXC4006800T9
	.2756	7.000	8	320	370	SXC4007000T9
9/32	.2813	7.140	8	320	370	SXC4007140T9
	.2953	7.500	8	320	370	SXC4007500T9
19/64	.2969	7.540	8	350	400	SXC4007540T9
	.3071	7.800	8	350	400	SXC4007800T9
5/16	.3125	7.940	8	350	400	SXC4007940T9
	.3150	8.000	8	350	400	SXC4008000T9

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, right-hand cut, double-margin and internal coolant.

Coating
Varianta® Supral

Ideal for
General purpose drilling

P M K S Refer to page 261

Diseño
Flautas largas espirales, con corte de mano derecha y refrigerante interno.

Recubrimiento
Varianta® Supral

Ideal para
Uso General

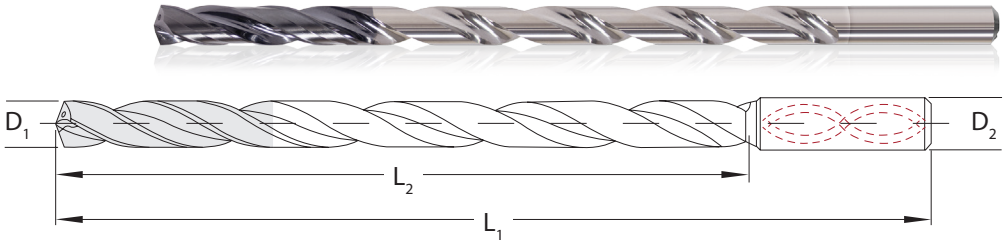
P M K S Consulte la página 261

Speeds & Feeds: Refer to Page 105.

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

■ This drill must utilize a pilot hole drill. We also recommend using a corresponding 20xD intermediary drill. (Refer to pages 157 & 99)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1575	4.000	6	225	270	SXC5004000T9
	.1654	4.200	6	225	270	SXC5004200T9
11/64	.1719	4.370	6	275	320	SXC5004370T9
	.1772	4.500	6	275	320	SXC5004500T9
#13	.1850	4.700	6	275	320	SXC5000130T9
3/16	.1875	4.760	6	275	320	SXC5004760T9
#12	.1890	4.800	6	275	320	SXC5000120T9
	.1969	5.000	6	275	320	SXC5005000T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
13/64	.2031	5.160	6	310	360	SXC5005160T9
#6	.2040	5.182	6	310	360	SXC5000060T9
	.2165	5.500	6	310	360	SXC5005500T9
7/32	.2187	5.560	6	310	360	SXC5005560T9
	.2283	5.800	6	310	360	SXC5005800T9
15/64	.2344	5.950	6	310	360	SXC5005950T9
	.2362	6.000	6	310	360	SXC5006000T9
1/4	.2500	8.000	8	340	385	SXC5006350T9

Other Dimensions are Available Upon Request

SXC
40xD & 50xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 4.00 .1181-.1576	> 4.00 ≤ 5.00 .1577-.1970	> 5.00 ≤ 6.00 .1971-.2364	> 6.00 ≤ 7.00 .2365-.2758	> 7.00 ≤ 7.50 .2759-.2955	> 7.50 ≤ 8.00 .2956-.3152
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	75		.048	.063	.078	.093	.103	.117
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	55		.043	.058	.068	.083	.093	.103
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	55		.043	.058	.068	.083	.093	.103
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	45		.023	.033	.043	.053	.065	.071
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	35		.023	.033	.043	.055	.063	.071
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	35		.023	.033	.043	.055	.063	.071
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	35		.023	.033	.043	.055	.063	.071
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	35		.023	.033	.043	.055	.063	.071
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205	30		.020	.030	.040	.051	.060	.066
K 1	Gray Cast Iron	70		.071	.098	.121	.150	.178	.198
K 2	Ductile Iron (<28 HRc)	55		.040	.055	.065	.078	.090	.100
K 3	Ductile Iron (<38 HRc)	50		.035	.050	.060	.075	.085	.095
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	35		.023	.033	.043	.055	.063	.071
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	30		.020	.030	.040	.051	.060	.066
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	35		.021	.033	.042	.053	.062	.069

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

TX

High-Performance Drill
Single-Margin
Ideal for Multi-Purpose Drilling
3xD-5xD

140° Point Geometry - For improved accuracy and thicker chip removal.

140° Geometría de la Punta - Para mejor Precisión y la evacuación de las virutas más gruesas.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

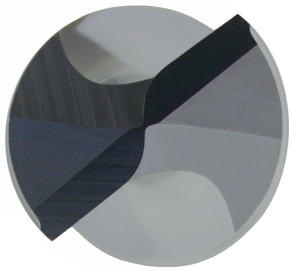
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

Single-Margin Design - For drilling accuracy.

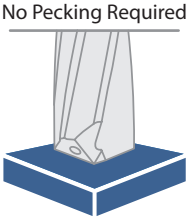
Diseño de Un Margen - Para precisión durante perforación.

SisNa® Coating - Ideal for high-speed machining of tough materials.

Recubrimiento SisNa® - Ideal para el mecanizado de alta velocidad de materiales endurecidos.



No Pecking Required



SisNa® is ideal for high-speed machining of tough materials.

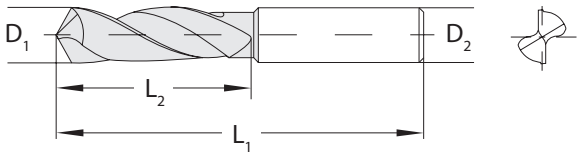
Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

P M N S Refer to page 261

3xD PAGE 108



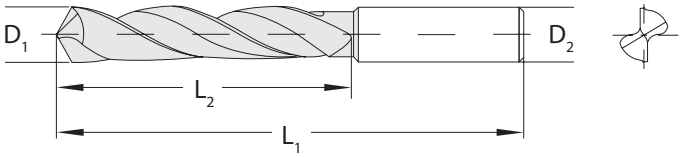
Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Usos Múltiples

P M N S Consulte la página 261

5xD PAGE 110



Speeds & Feeds: Refer to Page 109 & 111.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

P M N S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Usos Múltiples

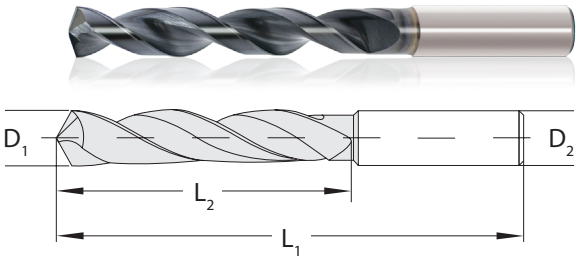
P M N S Consulte la página 261

CARBIDE CARBURO | 3xD | 140° | 38°

SisNa® **SisNa®** is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 109.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	TX00306250T7
#52	.0635	1.61	1/8	11/16	2	TX00300520T7
#51	.0670	1.70	1/8	11/16	2	TX00300510T7
#50	.0700	1.78	1/8	11/16	2	TX00300500T7
#49	.0730	1.85	1/8	11/16	2	TX00300490T7
#48	.0760	1.93	1/8	11/16	2	TX00300480T7
5/64	.0781	1.98	1/8	11/16	2	TX00307810T7
#47	.0785	1.99	1/8	3/4	2-1/2	TX00300470T7
	.0787	2.00	1/8	3/4	2-1/2	TX00307870T7
#46	.0810	2.06	1/8	3/4	2-1/2	TX00300460T7
#45	.0820	2.08	1/8	3/4	2-1/2	TX00300450T7
#44	.0860	2.18	1/8	3/4	2-1/2	TX00300440T7
#43	.0890	2.26	1/8	3/4	2-1/2	TX00300430T7
#42	.0935	2.37	1/8	3/4	2-1/2	TX00300420T7
3/32	.0938	2.38	1/8	3/4	2-1/2	TX00309380T7
#41	.0960	2.44	1/8	13/16	2-1/2	TX00300410T7
#40	.0980	2.49	1/8	13/16	2-1/2	TX00300400T7
	.0984	2.50	1/8	13/16	2-1/2	TX00309840T7
#39	.0995	2.53	1/8	13/16	2-1/2	TX00300390T7
#38	.1015	2.58	1/8	13/16	2-1/2	TX00300380T7
#37	.1040	2.64	1/8	13/16	2-1/2	TX00300370T7
#36	.1065	2.71	1/8	13/16	2-1/2	TX00300360T7
7/64	.1094	2.78	1/8	13/16	2-1/2	TX00301094T7
#35	.1100	2.79	1/8	7/8	2-1/2	TX00300350T7
#34	.1110	2.82	1/8	7/8	2-1/2	TX00300340T7
#33	.1130	2.87	1/8	7/8	2-1/2	TX00300330T7
#32	.1160	2.95	1/8	7/8	2-1/2	TX00300320T7
	.1181	3.00	1/8	7/8	2-1/2	TX00303000T7
#31	.1200	3.05	1/8	7/8	2-1/2	TX00300310T7
1/8	.1250	3.17	1/8	7/8	2-1/2	TX00303175T7
#30	.1285	3.26	3/16	15/16	2-1/2	TX00300300T7
#29	.1360	3.45	3/16	15/16	2-1/2	TX00300290T7
	.1378	3.50	3/16	15/16	2-1/2	TX00303500T7
#28	.1405	3.57	3/16	15/16	2-1/2	TX00300280T7
9/64	.1406	3.57	3/16	1	2-1/2	TX00303570T7
#27	.1440	3.66	3/16	1	2-1/2	TX00300270T7
#26	.1470	3.73	3/16	1	2-1/2	TX00300260T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#25	.1495	3.80	3/16	1	2-1/2	TX00300250T7
#24	.1520	3.86	3/16	1	2-1/2	TX00300240T7
#23	.1540	3.91	3/16	1	2-1/2	TX00300230T7
5/32	.1562	3.97	3/16	1	2-1/2	TX00303970T7
#22	.1570	3.99	3/16	1-1/16	2-1/2	TX00300220T7
	.1575	4.00	3/16	1-1/16	2-1/2	TX00304000T7
#21	.1590	4.04	3/16	1-1/16	2-1/2	TX00300210T7
#20	.1610	4.09	3/16	1-1/16	2-1/2	TX00300200T7
	.1654	4.20	3/16	1-1/16	2-1/2	TX00304200T7
#19	.1660	4.22	3/16	1-1/16	2-1/2	TX00300190T7
#18	.1695	4.30	3/16	1-1/16	2-1/2	TX00300180T7
11/64	.1719	4.37	3/16	1-1/16	2-1/2	TX00304370T7
#17	.1730	4.39	3/16	1-1/8	3	TX00300170T7
#16	.1770	4.49	3/16	1-1/8	3	TX00300160T7
	.1772	4.50	3/16	1-1/8	3	TX00304500T7
#15	.1800	4.57	3/16	1-1/8	3	TX00300150T7
#14	.1820	4.62	3/16	1-1/8	3	TX00300140T7
#13	.1850	4.70	3/16	1-1/8	3	TX00300130T7
3/16	.1875	4.76	3/16	1-1/8	3	TX00304760T7
#12	.1890	4.80	1/4	1-3/16	3	TX00300120T7
#11	.1910	4.85	1/4	1-3/16	3	TX00300110T7
#10	.1935	4.91	1/4	1-3/16	3	TX00300100T7
#9	.1960	4.98	1/4	1-3/16	3	TX00300090T7
	.1969	5.00	1/4	1-3/16	3	TX00305000T7
#8	.1990	5.05	1/4	1-3/16	3	TX00300080T7
	.2008	5.10	1/4	1-3/16	3	TX00305100T7
#7	.2010	5.10	1/4	1-3/16	3	TX00300070T7
13/64	.2031	5.16	1/4	1-3/16	3	TX00305160T7
#6	.2040	5.18	1/4	1-1/4	3	TX00300060T7
#5	.2055	5.22	1/4	1-1/4	3	TX00300050T7
#4	.2090	5.31	1/4	1-1/4	3	TX00300040T7
#3	.2130	5.41	1/4	1-1/4	3	TX00300030T7
	.2165	5.50	1/4	1-1/4	3	TX00302165T7
7/32	.2188	5.56	1/4	1-1/4	3	TX00305560T7
#2	.2210	5.61	1/4	1-5/16	3	TX00300020T7
#1	.2280	5.79	1/4	1-5/16	3	TX00300010T7
A	.2340	5.94	1/4	1-5/16	3	TX003000A0T7

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010	.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012	.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015	.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018	.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
15/64	.2344	5.95	1/4	1-5/16	3	TX00305950T7
	.2362	6.00	1/4	1-3/8	3	TX00306000T7
B	.2380	6.04	1/4	1-3/8	3	TX003000B0T7
C	.2420	6.15	1/4	1-3/8	3	TX003000C0T7
D	.2460	6.25	1/4	1-3/8	3	TX003000D0T7
1/4/E	.2500	6.35	1/4	1-3/8	3	TX00306350T7
	.2559	6.50	5/16	1-7/16	3	TX00306500T7
F	.2570	6.53	5/16	1-7/16	3	TX003000F0T7
G	.2610	6.63	5/16	1-7/16	3	TX003000G0T7
17/64	.2656	6.75	5/16	1-7/16	3	TX00306750T7
H	.2660	6.76	5/16	1-1/2	3	TX003000H0T7
I	.2720	6.91	5/16	1-1/2	3	TX003000I0T7
	.2756	7.00	5/16	1-1/2	3	TX00307000T7
J	.2770	7.03	5/16	1-1/2	3	TX003000J0T7
K	.2810	7.14	5/16	1-1/2	3	TX003000K0T7
9/32	.2812	7.14	5/16	1-1/2	3	TX00307140T7
L	.2900	7.37	5/16	1-9/16	4	TX003000L0T7
M	.2950	7.49	5/16	1-9/16	4	TX003000M0T7
	.2953	7.50	5/16	1-9/16	4	TX00307500T7
19/64	.2969	7.54	5/16	1-9/16	4	TX00307540T7
N	.3020	7.67	5/16	1-5/8	4	TX003000N0T7
5/16	.3125	7.94	5/16	1-5/8	4	TX00307940T7
	.3150	8.00	3/8	1-11/16	4	TX00308000T7
O	.3160	8.03	3/8	1-11/16	4	TX003000O0T7
P	.3230	8.20	3/8	1-11/16	4	TX003000P0T7
21/64	.3281	8.33	3/8	1-11/16	4	TX00308330T7
Q	.3320	8.43	3/8	1-11/16	4	TX003000Q0T7
	.3346	8.50	3/8	1-11/16	4	TX00308500T7
R	.3390	8.61	3/8	1-11/16	4	TX003000R0T7
11/32	.3438	8.73	3/8	1-11/16	4	TX00308730T7
S	.3480	8.84	3/8	1-3/4	4	TX003000S0T7
	.3543	9.00	3/8	1-3/4	4	TX00309000T7
T	.3580	9.09	3/8	1-3/4	4	TX003000T0T7
23/64	.3594	9.13	3/8	1-3/4	4	TX00309130T7
U	.3680	9.35	3/8	1-13/16	4	TX003000U0T7
	.3740	9.50	3/8	1-13/16	4	TX00309500T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
3/8	.3750	9.52	3/8	1-13/16	4	TX00309520T7
V	.3770	9.57	7/16	1-7/8	4	TX003000V0T7
W	.3860	9.80	7/16	1-7/8	4	TX003000W0T7
25/64	.3906	9.92	7/16	1-7/8	4	TX00309920T7
	.3937	10.00	7/16	1-15/16	4	TX00310000T7
X	.3970	10.08	7/16	1-15/16	4	TX003000X0T7
Y	.4040	10.26	7/16	1-15/16	4	TX003000Y0T7
13/32	.4062	10.32	7/16	1-15/16	4	TX00310320T7
Z	.4130	10.49	7/16	2	4	TX003000Z0T7
	.4134	10.50	7/16	2	4	TX00310500T7
27/64	.4219	10.72	7/16	2	4	TX00310720T7
	.4252	10.80	7/16	2	4	TX00310800T7
	.4331	11.00	7/16	2-1/16	4	TX00311000T7
7/16	.4375	11.11	7/16	2-1/16	4	TX00311110T7
	.4528	11.50	1/2	2-1/8	4	TX00311500T7
29/64	.4531	11.51	1/2	2-1/8	4	TX00311510T7
15/32	.4688	11.91	1/2	2-1/8	4	TX00311910T7
	.4724	12.00	1/2	2-3/16	5	TX00312000T7
31/64	.4844	12.30	1/2	2-3/16	5	TX00312300T7
	.4921	12.50	1/2	2-1/4	5	TX00312500T7
1/2	.5000	12.70	1/2	2-1/4	5	TX00312700T7
	.5118	13.00	9/16	2-3/8	5	TX00313000T7
33/64	.5156	13.10	9/16	2-3/8	5	TX00313100T7
17/32	.5312	13.49	9/16	2-1/2	5	TX00313490T7
	.5315	13.50	9/16	2-1/2	5	TX00313500T7
35/64	.5469	13.89	9/16	2-1/2	5	TX00313890T7
	.5512	14.00	9/16	2-1/2	5	TX00314000T7
9/16	.5625	14.29	9/16	3	5	TX00314290T7
	.5709	14.50	5/8	3	5	TX00314500T7
37/64	.5781	14.68	5/8	3	5	TX00314680T7
	.5906	15.00	5/8	3	5	TX00315000T7
19/32	.5938	15.08	5/8	3	5	TX00315080T7
39/64	.6094	15.48	5/8	3	5	TX00315480T7
	.6102	15.50	5/8	3	5	TX00315500T7
5/8	.6250	15.87	5/8	3	5	TX00315870T7
	.6299	16.00	3/4	3	5	TX00316000T7

Other Dimensions are Available Upon Request

TX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	65		.14	.20	.28	.35	.45
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	60		.14	.20	.28	.35	.45
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	60		.08	.12	.15	.20	.25
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	132		.14	.14	.28	.35	.45
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	34		.04	.04	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

TX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	213.3		.005	.007	.010	.013	.017
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	196.9		.005	.007	.010	.013	.017
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	196.9		.003	.004	.005	.007	.009
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	433.1		.005	.007	.010	.013	.017
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	111.6		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

P M N S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Usos Múltiples

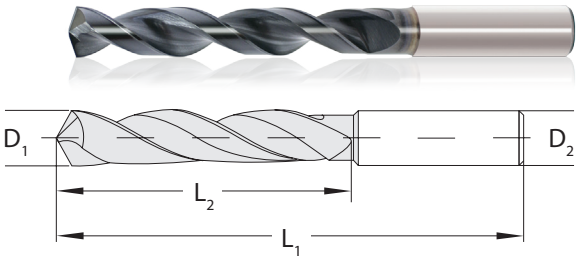
P M N S Consulte la página 261

CARBIDE CARBURO | 5xD | 140° | 38°

SisNa® **SisNa®** is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 111.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	TX00506250T7
#52	.0635	1.61	1/8	3/4	2-1/2	TX00500520T7
#51	.0670	1.70	1/8	3/4	2-1/2	TX00500510T7
#50	.0700	1.78	1/8	7/8	2-1/2	TX00500500T7
#49	.0730	1.85	1/8	7/8	2-1/2	TX00500490T7
#48	.0760	1.93	1/8	7/8	2-1/2	TX00500480T7
5/64	.0781	1.98	1/8	7/8	2-1/2	TX00507810T7
#47	.0785	1.99	1/8	7/8	2-1/2	TX00500470T7
	.0787	2.00	1/8	7/8	2-1/2	TX00507870T7
#46	.0810	2.06	1/8	7/8	2-1/2	TX00500460T7
#45	.0820	2.08	1/8	7/8	2-1/2	TX00500450T7
#44	.0860	2.18	1/8	1	2-1/2	TX00500440T7
#43	.0890	2.26	1/8	1	2-1/2	TX00500430T7
#42	.0935	2.37	1/8	1	2-1/2	TX00500420T7
3/32	.0938	2.38	1/8	1	2-1/2	TX00509380T7
#41	.0960	2.44	1/8	1	2-1/2	TX00500410T7
#40	.0980	2.49	1/8	1	2-1/2	TX00500400T7
	.0984	2.50	1/8	1-1/4	3	TX00509840T7
#39	.0995	2.53	1/8	1-1/4	3	TX00500390T7
#38	.1015	2.58	1/8	1-1/4	3	TX00500380T7
#37	.1040	2.64	1/8	1-1/4	3	TX00500370T7
#36	.1065	2.71	1/8	1-1/4	3	TX00500360T7
7/64	.1094	2.78	1/8	1-1/4	3	TX00501094T7
#35	.1100	2.79	1/8	1-1/4	3	TX00500350T7
#34	.1110	2.82	1/8	1-1/4	3	TX00500340T7
#33	.1130	2.87	1/8	1-1/4	3	TX00500330T7
#32	.1160	2.95	1/8	1-1/4	3	TX00500320T7
	.1181	3.00	1/8	1-1/4	3	TX00503000T7
#31	.1200	3.05	1/8	1-1/4	3	TX00500310T7
1/8	.1250	3.17	1/8	1-1/4	3	TX00503175T7
#30	.1285	3.26	3/16	1-1/4	3	TX00500300T7
#29	.1360	3.45	3/16	1-3/8	3	TX00500290T7
	.1378	3.50	3/16	1-3/8	3	TX00503500T7
#28	.1405	3.57	3/16	1-3/8	3	TX00500280T7
9/64	.1406	3.57	3/16	1-3/8	3	TX00503570T7
#27	.1440	3.66	3/16	1-3/8	3	TX00500270T7
#26	.1470	3.73	3/16	1-3/8	3	TX00500260T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#25	.1495	3.80	3/16	1-3/8	3	TX00500250T7
#24	.1520	3.86	3/16	1-3/8	3	TX00500240T7
#23	.1540	3.91	3/16	1-3/8	3	TX00500230T7
5/32	.1562	3.97	3/16	1-3/8	3	TX00503970T7
#22	.1570	3.99	3/16	1-3/8	3	TX00500220T7
	.1575	4.00	3/16	1-3/8	3	TX00504000T7
#21	.1590	4.04	3/16	1-3/8	3	TX00500210T7
#20	.1610	4.09	3/16	1-3/8	3	TX00500200T7
#19	.1660	4.22	3/16	1-5/8	4	TX00500190T7
#18	.1695	4.30	3/16	1-5/8	4	TX00500180T7
11/64	.1719	4.37	3/16	1-5/8	4	TX00504370T7
#17	.1730	4.39	3/16	1-5/8	4	TX00500170T7
#16	.1770	4.49	3/16	1-5/8	4	TX00500160T7
	.1772	4.50	3/16	1-5/8	4	TX00504500T7
#15	.1800	4.57	3/16	1-5/8	4	TX00500150T7
#14	.1820	4.62	3/16	1-5/8	4	TX00500140T7
#13	.1850	4.70	3/16	1-5/8	4	TX00500130T7
3/16	.1875	4.76	3/16	1-5/8	4	TX00504760T7
#12	.1890	4.80	1/4	1-5/8	4	TX00500120T7
#11	.1910	4.85	1/4	1-5/8	4	TX00500110T7
#10	.1935	4.91	1/4	1-5/8	4	TX00500100T7
#9	.1960	4.98	1/4	1-3/4	4	TX00500090T7
	.1969	5.00	1/4	1-3/4	4	TX00505000T7
#8	.1990	5.05	1/4	1-3/4	4	TX00500080T7
#7	.2010	5.10	1/4	1-3/4	4	TX00500070T7
13/64	.2031	5.16	1/4	1-3/4	4	TX00505160T7
#6	.2040	5.18	1/4	1-3/4	4	TX00500060T7
#5	.2055	5.22	1/4	1-3/4	4	TX00500050T7
#4	.2090	5.31	1/4	1-3/4	4	TX00500040T7
#3	.2130	5.41	1/4	1-3/4	4	TX00500030T7
	.2165	5.50	1/4	1-3/4	4	TX00502165T7
7/32	.2188	5.56	1/4	1-3/4	4	TX00505560T7
#2	.2210	5.61	1/4	1-3/4	4	TX00500020T7
#1	.2280	5.79	1/4	1-3/4	4	TX00500010T7
A	.2340	5.94	1/4	2	4	TX005000A0T7
15/64	.2344	5.95	1/4	2	4	TX00505950T7
	.2362	6.00	1/4	2	4	TX00506000T7

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
B	.2380	6.04	1/4	2	4	TX005000B0T7
C	.2420	6.15	1/4	2	4	TX005000C0T7
D	.2460	6.25	1/4	2	4	TX005000D0T7
1/4/E	.2500	6.35	1/4	2	4	TX00506350T7
	.2559	6.50	5/16	2	4	TX00506500T7
F	.2570	6.53	5/16	2	4	TX005000F0T7
G	.2610	6.63	5/16	2-1/8	4	TX005000G0T7
17/64	.2656	6.75	5/16	2-1/8	4	TX00506750T7
H	.2660	6.76	5/16	2-1/8	4	TX005000H0T7
I	.2720	6.91	5/16	2-1/8	4	TX005000I0T7
	.2756	7.00	5/16	2-1/8	4	TX00507000T7
J	.2770	7.03	5/16	2-1/8	4	TX005000J0T7
K	.2810	7.14	5/16	2-1/8	4	TX005000K0T7
9/32	.2812	7.14	5/16	2-1/8	4	TX00507140T7
L	.2900	7.37	5/16	2-1/8	4	TX005000L0T7
M	.2950	7.49	5/16	2-3/8	4	TX005000M0T7
	.2953	7.50	5/16	2-3/8	4	TX00507500T7
19/64	.2969	7.54	5/16	2-3/8	4	TX00507540T7
N	.3020	7.67	5/16	2-3/8	4	TX005000N0T7
5/16	.3125	7.94	5/16	2-3/8	4	TX00507940T7
	.3150	8.00	3/8	2-3/8	4	TX00508000T7
O	.3160	8.03	3/8	2-3/8	4	TX005000O0T7
P	.3230	8.20	3/8	2-3/8	4	TX005000P0T7
21/64	.3281	8.33	3/8	2-1/2	5	TX00508330T7
Q	.3320	8.43	3/8	2-1/2	5	TX005000Q0T7
	.3346	8.50	3/8	2-1/2	5	TX00508500T7
R	.3390	8.61	3/8	2-1/2	5	TX005000R0T7
11/32	.3438	8.73	3/8	2-1/2	5	TX00508730T7
S	.3480	8.84	3/8	2-1/2	5	TX005000S0T7
	.3543	9.00	3/8	2-1/2	5	TX00509000T7
T	.3580	9.09	3/8	2-3/4	5	TX005000T0T7
23/64	.3594	9.13	3/8	2-3/4	5	TX00509130T7
U	.3680	9.35	3/8	2-3/4	5	TX005000U0T7
	.3740	9.50	3/8	2-3/4	5	TX00509500T7
3/8	.3750	9.52	3/8	2-3/4	5	TX00509520T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
V	.3770	9.57	7/16	2-7/8	5	TX005000V0T7
W	.3860	9.80	7/16	2-7/8	5	TX005000W0T7
25/64	.3906	9.92	7/16	2-7/8	5	TX00509920T7
	.3937	10.00	7/16	2-7/8	5	TX00510000T7
X	.3970	10.08	7/16	2-7/8	5	TX005000X0T7
Y	.4040	10.26	7/16	2-7/8	5	TX005000Y0T7
13/32	.4062	10.32	7/16	2-7/8	5	TX00510320T7
Z	.4130	10.49	7/16	2-7/8	5	TX005000Z0T7
	.4134	10.50	7/16	2-7/8	5	TX00510500T7
27/64	.4219	10.72	7/16	2-7/8	5	TX00510720T7
	.4252	10.80	7/16	2-7/8	5	TX00510800T7
	.4331	11.00	7/16	2-7/8	5	TX00511000T7
7/16	.4375	11.11	7/16	2-7/8	5	TX00511110T7
	.4528	11.50	1/2	3	5	TX00511500T7
29/64	.4531	11.51	1/2	3	5	TX00511510T7
15/32	.4688	11.91	1/2	3	5	TX00511910T7
	.4724	12.00	1/2	3	5	TX00512000T7
31/64	.4844	12.30	1/2	3	5	TX00512300T7
	.4921	12.50	1/2	3	5	TX00512500T7
1/2	.5000	12.70	1/2	3	5	TX00512700T7
	.5118	13.00	9/16	3-1/4	5	TX00513000T7
33/64	.5156	13.10	9/16	3-1/4	5	TX00513100T7
17/32	.5312	13.49	9/16	3-1/4	5	TX00513490T7
	.5315	13.50	9/16	3-1/4	5	TX00513500T7
35/64	.5469	13.89	9/16	3-1/4	5	TX00513890T7
	.5512	14.00	9/16	3-1/4	5	TX00514000T7
9/16	.5625	14.29	9/16	3-1/4	5	TX00514290T7
	.5709	14.50	5/8	3-1/4	5	TX00514500T7
37/64	.5781	14.68	5/8	3-1/2	6	TX00514680T7
	.5906	15.00	5/8	3-1/2	6	TX00515000T7
19/32	.5938	15.08	5/8	3-1/2	6	TX00515080T7
39/64	.6094	15.48	5/8	3-1/2	6	TX00515480T7
	.6102	15.50	5/8	3-1/2	6	TX00515500T7
5/8	.6250	15.87	5/8	3-1/2	6	TX00515870T7
	.6299	16.00	3/4	3-1/2	6	TX00516000T7

Other Dimensions are Available Upon Request

TX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	60		.14	.20	.28	.35	.45
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	55		.14	.20	.28	.35	.45
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	55		.08	.12	.15	.20	.25
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	127		.14	.20	.28	.35	.45
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	29		.04	.08	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

TX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	195.4		.005	.007	.010	.013	.017
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	181.3		.005	.007	.010	.013	.017
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	181.3		.003	.004	.005	.007	.009
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	418.3		.005	.007	.010	.013	.017
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	97.5		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

TXC

High-Performance Drill
Single-Margin
Ideal for Multi-Purpose Drilling
3xD-5xD

140° Point Geometry - For improved accuracy and thicker chip removal.

140° Geometría de la Punta - Para mejor Precisión y la evacuación de las virutas más gruesas.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Single-Margin Design - For drilling accuracy.

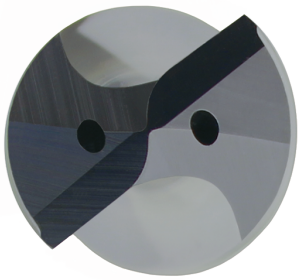
Diseño de Un Margen - Para precisión durante perforación.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

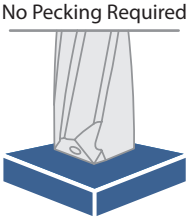
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

SisNa® Coating - Ideal for high-speed machining of tough materials.

Recubrimiento SisNa® - Ideal para el mecanizado de alta velocidad de materiales endurecidos.



No Pecking Required



SisNa® is ideal for high-speed machining of tough materials.

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

P M N S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

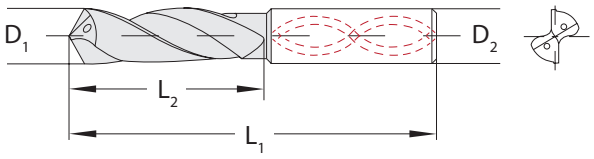
Ideal para
Usos Múltiples

P M N S Consulte la página 261

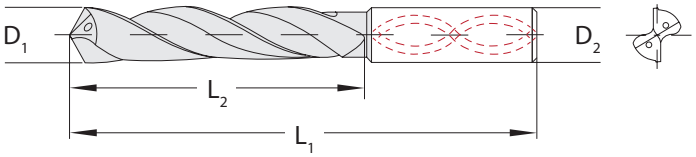
Speeds & Feeds: Refer to page 115 & 117.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

3xD PAGE 114



5xD PAGE 116



Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

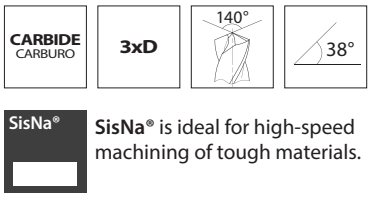
P M N S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Usos Múltiples

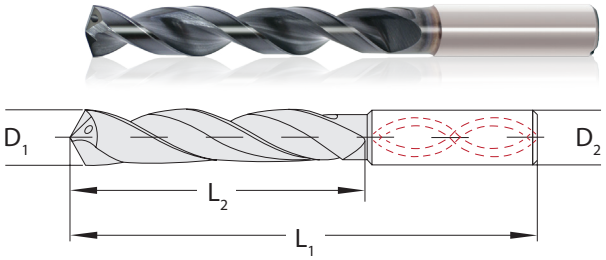
P M N S Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 115.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	TXC0303000T7
	.1220	3.100	6	20	62	TXC0303100T7
1/8	.1250	3.175	6	20	62	TXC0303175T7
	.1260	3.200	6	20	62	TXC0303200T7
	.1299	3.300	6	20	62	TXC0303300T7
	.1339	3.400	6	20	62	TXC0303400T7
	.1378	3.500	6	20	62	TXC0303500T7
9/64	.1406	3.572	6	20	62	TXC0303572T7
	.1417	3.600	6	20	62	TXC0303600T7
	.1457	3.700	6	20	62	TXC0303700T7
#25	.1496	3.800	6	24	66	TXC0303800T7
	.1535	3.900	6	24	66	TXC0303900T7
5/32	.1563	3.970	6	24	66	TXC0303970T7
	.1575	4.000	6	24	66	TXC0304000T7
	.1614	4.100	6	24	66	TXC0304100T7
	.1654	4.200	6	24	66	TXC0304200T7
	.1693	4.300	6	24	66	TXC0304300T7
11/64	.1719	4.370	6	24	66	TXC0304370T7
	.1732	4.400	6	24	66	TXC0304400T7
	.1772	4.500	6	24	66	TXC0304500T7
	.1811	4.600	6	24	66	TXC0304600T7
	.1831	4.650	6	24	66	TXC0304650T7
#13	.1850	4.700	6	24	66	TXC0300130T7
3/16	.1875	4.760	6	28	66	TXC0304760T7
#12	.1890	4.800	6	28	66	TXC0300120T7
	.1929	4.900	6	28	66	TXC0304900T7
	.1969	5.000	6	28	66	TXC0305000T7
	.2008	5.100	6	28	66	TXC0305100T7
13/64	.2031	5.160	6	28	66	TXC0305160T7
#6	.2040	5.182	6	28	66	TXC0300060T7
	.2047	5.200	6	28	66	TXC0305200T7
	.2087	5.300	6	28	66	TXC0305300T7
	.2126	5.400	6	28	66	TXC0305400T7
	.2165	5.500	6	28	66	TXC0305500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	TXC0305550T7
7/32	.2187	5.560	6	28	66	TXC0305560T7
	.2205	5.600	6	28	66	TXC0305600T7
	.2244	5.700	6	28	66	TXC0305700T7
	.2283	5.800	6	28	66	TXC0305800T7
	.2323	5.900	6	28	66	TXC0305900T7
15/64	.2344	5.950	6	28	66	TXC0305950T7
	.2362	6.000	6	28	66	TXC0306000T7
	.2402	6.100	8	34	79	TXC0306100T7
	.2441	6.200	8	34	79	TXC0306200T7
	.2480	6.300	8	34	79	TXC0306300T7
1/4	.2500	6.350	8	34	79	TXC0306350T7
	.2520	6.400	8	34	79	TXC0306400T7
	.2559	6.500	8	34	79	TXC0306500T7
	.2598	6.600	8	34	79	TXC0306600T7
	.2638	6.700	8	34	79	TXC0306700T7
17/64	.2656	6.750	8	34	79	TXC0306750T7
	.2677	6.800	8	34	79	TXC0306800T7
	.2717	6.900	8	41	79	TXC0306900T7
	.2756	7.000	8	41	79	TXC0307000T7
	.2795	7.100	8	41	79	TXC0307100T7
9/32	.2813	7.140	8	41	79	TXC0307140T7
	.2835	7.200	8	41	79	TXC0307200T7
	.2874	7.300	8	41	79	TXC0307300T7
	.2913	7.400	8	41	79	TXC0307400T7
	.2953	7.500	8	41	79	TXC0307500T7
19/64	.2969	7.540	8	41	79	TXC0307540T7
	.3031	7.700	8	41	79	TXC0307700T7
	.3071	7.800	8	41	79	TXC0307800T7
	.3110	7.900	8	41	79	TXC0307900T7
5/16	.3125	7.940	8	41	79	TXC0307940T7
	.3150	8.000	8	41	79	TXC0308000T7
	.3189	8.100	10	47	89	TXC0308100T7
	.3228	8.200	10	47	89	TXC0308200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	TXC0308300T7
21/64	.3281	8.330	10	47	89	TXC0308330T7
	.3307	8.400	10	47	89	TXC0308400T7
	.3346	8.500	10	47	89	TXC0308500T7
	.3386	8.600	10	47	89	TXC0308600T7
	.3425	8.700	10	47	89	TXC0308700T7
11/32	.3437	8.730	10	47	89	TXC0308730T7
	.3465	8.800	10	47	89	TXC0308800T7
	.3543	9.000	10	47	89	TXC0309000T7
23/64	.3594	9.130	10	47	89	TXC0309130T7
	.3622	9.200	10	47	89	TXC0309200T7
	.3661	9.300	10	47	89	TXC0309300T7
	.3740	9.500	10	47	89	TXC0309500T7
3/8	.3750	9.520	10	47	89	TXC0309520T7
	.3780	9.600	10	47	89	TXC0309600T7
	.3858	9.800	10	47	89	TXC0309800T7
	.3898	9.900	10	47	89	TXC0309900T7
25/64	.3906	9.920	10	47	89	TXC0309920T7
	.3937	10.000	10	47	89	TXC0310000T7
	.3976	10.100	12	55	102	TXC0310100T7
	.4016	10.200	12	55	102	TXC0310200T7
	.4055	10.300	12	55	102	TXC0310300T7
13/32	.4063	10.320	12	55	102	TXC0310320T7
	.4094	10.400	12	55	102	TXC0310400T7
	.4134	10.500	12	55	102	TXC0310500T7
27/64	.4219	10.720	12	55	102	TXC0310720T7
	.4252	10.800	12	55	102	TXC0310800T7
	.4331	11.000	12	55	102	TXC0311000T7
	.4370	11.100	12	55	102	TXC0311100T7
7/16	.4375	11.113	12	55	102	TXC0311113T7
	.4409	11.200	12	55	102	TXC0311200T7
	.4528	11.500	12	55	102	TXC0311500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	TXC0311510T7
	.4606	11.700	12	55	102	TXC0311700T7
	.4646	11.800	12	55	102	TXC0311800T7
15/32	.4687	11.910	12	55	102	TXC0311910T7
	.4724	12.000	12	55	102	TXC0312000T7
	.4764	12.100	14	60	107	TXC0312100T7
	.4803	12.200	14	60	107	TXC0312200T7
	.4843	12.300	14	60	107	TXC0312300T7
31/64	.4844	12.303	14	60	107	TXC0312303T7
	.4921	12.500	14	60	107	TXC0312500T7
	.4961	12.600	14	60	107	TXC0312600T7
1/2	.5000	12.700	14	60	107	TXC0312700T7
	.5118	13.000	14	60	107	TXC0313000T7
	.5236	13.300	14	60	107	TXC0313300T7
17/32	.5313	13.490	14	60	107	TXC0313490T7
	.5315	13.500	14	60	107	TXC0313500T7
	.5512	14.000	14	60	107	TXC0314000T7
9/16	.5625	14.290	16	65	115	TXC0314290T7
	.5709	14.500	16	65	115	TXC0314500T7
	.5906	15.000	16	65	115	TXC0315000T7
	.6102	15.500	16	65	115	TXC0315500T7
5/8	.6250	15.870	16	65	115	TXC0315870T7
	.6299	16.000	16	65	115	TXC0316000T7
	.6496	16.500	18	73	123	TXC0316500T7
	.6693	17.000	18	73	123	TXC0317000T7
	.6890	17.500	18	73	123	TXC0317500T7
	.7087	18.000	18	73	123	TXC0318000T7
	.7283	18.500	20	79	131	TXC0318500T7
3/4	.7500	19.050	20	79	131	TXC0319050T7
	.7677	19.500	20	79	131	TXC0319500T7
	.7874	20.000	20	79	131	TXC0320000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

TXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	75		.14	.20	.28	.35	.45
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	70		.14	.20	.28	.35	.45
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	70		.08	.12	.15	.20	.25
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	155		.14	.14	.28	.35	.45
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	40		.04	.04	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

TXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	246.1		.005	.007	.010	.013	.017
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	229.1		.005	.007	.010	.013	.017
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	229.1		.003	.004	.005	.007	.009
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	508.6		.005	.007	.010	.013	.017
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	131.2		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Multi-Purpose Drilling

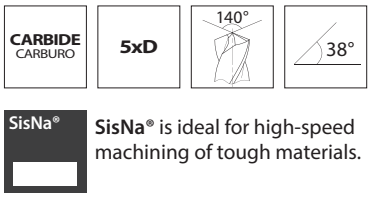
P M N S Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Usos Múltiples

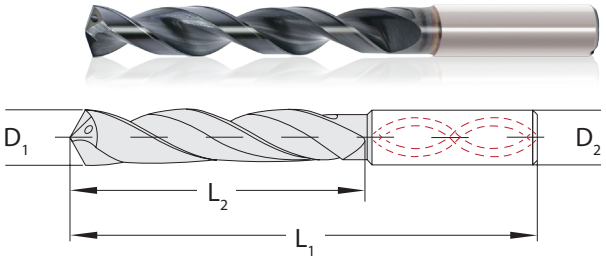
P M N S Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 117.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	TXC0503000T7
	.1220	3.100	6	28	66	TXC0503100T7
1/8	.1250	3.175	6	28	66	TXC0503175T7
	.1260	3.200	6	28	66	TXC0503200T7
	.1299	3.300	6	28	66	TXC0503300T7
	.1339	3.400	6	28	66	TXC0503400T7
	.1378	3.500	6	28	66	TXC0503500T7
9/64	.1406	3.572	6	28	66	TXC0503572T7
	.1417	3.600	6	28	66	TXC0503600T7
	.1457	3.700	6	28	66	TXC0503700T7
#25	.1496	3.800	6	36	74	TXC0503800T7
	.1535	3.900	6	36	74	TXC0503900T7
5/32	.1563	3.970	6	36	74	TXC0503970T7
	.1575	4.000	6	36	74	TXC0504000T7
	.1614	4.100	6	36	74	TXC0504100T7
	.1654	4.200	6	36	74	TXC0504200T7
	.1693	4.300	6	36	74	TXC0504300T7
11/64	.1719	4.370	6	36	74	TXC0504370T7
	.1732	4.400	6	36	74	TXC0504400T7
	.1772	4.500	6	36	74	TXC0504500T7
	.1811	4.600	6	36	74	TXC0504600T7
	.1831	4.650	6	36	74	TXC0504650T7
#13	.1850	4.700	6	36	74	TXC0500130T7
3/16	.1875	4.760	6	44	82	TXC0504760T7
#12	.1890	4.800	6	44	82	TXC0500120T7
	.1929	4.900	6	44	82	TXC0504900T7
	.1969	5.000	6	44	82	TXC0505000T7
	.2008	5.100	6	44	82	TXC0505100T7
13/64	.2031	5.160	6	44	82	TXC0505160T7
#6	.2040	5.182	6	44	82	TXC0500060T7
	.2047	5.200	6	44	82	TXC0505200T7
	.2087	5.300	6	44	82	TXC0505300T7
	.2126	5.400	6	44	82	TXC0505400T7
	.2165	5.500	6	44	82	TXC0505500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	TXC0505550T7
7/32	.2187	5.560	6	44	82	TXC0505560T7
	.2205	5.600	6	44	82	TXC0505600T7
	.2244	5.700	6	44	82	TXC0505700T7
	.2283	5.800	6	44	82	TXC0505800T7
	.2323	5.900	6	44	82	TXC0505900T7
15/64	.2344	5.950	6	44	82	TXC0505950T7
	.2362	6.000	6	44	82	TXC0506000T7
	.2402	6.100	8	53	91	TXC0506100T7
	.2441	6.200	8	53	91	TXC0506200T7
	.2480	6.300	8	53	91	TXC0506300T7
1/4	.2500	6.350	8	53	91	TXC0506350T7
	.2520	6.400	8	53	91	TXC0506400T7
	.2559	6.500	8	53	91	TXC0506500T7
	.2598	6.600	8	53	91	TXC0506600T7
	.2638	6.700	8	53	91	TXC0506700T7
17/64	.2656	6.750	8	53	91	TXC0506750T7
	.2677	6.800	8	53	91	TXC0506800T7
	.2717	6.900	8	53	91	TXC0506900T7
	.2756	7.000	8	53	91	TXC0507000T7
	.2795	7.100	8	53	91	TXC0507100T7
9/32	.2813	7.140	8	53	91	TXC0507140T7
	.2835	7.200	8	53	91	TXC0507200T7
	.2874	7.300	8	53	91	TXC0507300T7
	.2913	7.400	8	53	91	TXC0507400T7
	.2953	7.500	8	53	91	TXC0507500T7
19/64	.2969	7.540	8	53	91	TXC0507540T7
	.3031	7.700	8	53	91	TXC0507700T7
	.3071	7.800	8	53	91	TXC0507800T7
	.3110	7.900	8	53	91	TXC0507900T7
5/16	.3125	7.940	8	53	91	TXC0507940T7
	.3150	8.000	8	53	91	TXC0508000T7
	.3189	8.100	10	61	103	TXC0508100T7
	.3228	8.200	10	61	103	TXC0508200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	TXC0508300T7
21/64	.3281	8.330	10	61	103	TXC0508330T7
	.3307	8.400	10	61	103	TXC0508400T7
	.3346	8.500	10	61	103	TXC0508500T7
	.3386	8.600	10	61	103	TXC0508600T7
	.3425	8.700	10	61	103	TXC0508700T7
11/32	.3437	8.730	10	61	103	TXC0508730T7
	.3465	8.800	10	61	103	TXC0508800T7
	.3543	9.000	10	61	103	TXC0509000T7
23/64	.3594	9.130	10	61	103	TXC0509130T7
	.3622	9.200	10	61	103	TXC0509200T7
	.3661	9.300	10	61	103	TXC0509300T7
	.3740	9.500	10	61	103	TXC0509500T7
3/8	.3750	9.520	10	61	103	TXC0509520T7
	.3780	9.600	10	61	103	TXC0509600T7
	.3858	9.800	10	61	103	TXC0509800T7
	.3898	9.900	10	61	103	TXC0509900T7
25/64	.3906	9.920	10	61	103	TXC0509920T7
	.3937	10.000	10	61	103	TXC0510000T7
	.3976	10.100	12	71	118	TXC0510100T7
	.4016	10.200	12	71	118	TXC0510200T7
	.4055	10.300	12	71	118	TXC0510300T7
13/32	.4063	10.320	12	71	118	TXC0510320T7
	.4094	10.400	12	71	118	TXC0510400T7
	.4134	10.500	12	71	118	TXC0510500T7
27/64	.4219	10.720	12	71	118	TXC0510720T7
	.4252	10.800	12	71	118	TXC0510800T7
	.4331	11.000	12	71	118	TXC0511000T7
	.4370	11.100	12	71	118	TXC0511100T7
7/16	.4375	11.113	12	71	118	TXC0511113T7
	.4409	11.200	12	71	118	TXC0511200T7
	.4528	11.500	12	71	118	TXC0511500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	TXC0511510T7
	.4606	11.700	12	71	118	TXC0511700T7
	.4646	11.800	12	71	118	TXC0511800T7
15/32	.4687	11.910	12	71	118	TXC0511910T7
	.4724	12.000	12	71	118	TXC0512000T7
	.4764	12.100	14	77	124	TXC0512100T7
	.4803	12.200	14	77	124	TXC0512200T7
	.4843	12.300	14	77	124	TXC0512300T7
31/64	.4844	12.303	14	77	124	TXC0512303T7
	.4921	12.500	14	77	124	TXC0512500T7
	.4961	12.600	14	77	124	TXC0512600T7
1/2	.5000	12.700	14	77	124	TXC0512700T7
	.5118	13.000	14	77	124	TXC0513000T7
	.5236	13.300	14	77	124	TXC0513300T7
17/32	.5313	13.490	14	77	124	TXC0513490T7
	.5315	13.500	14	77	124	TXC0513500T7
	.5512	14.000	14	77	124	TXC0514000T7
9/16	.5625	14.290	16	83	133	TXC0514290T7
	.5709	14.500	16	83	133	TXC0514500T7
	.5906	15.000	16	83	133	TXC0515000T7
	.6102	15.500	16	83	133	TXC0515500T7
5/8	.6250	15.870	16	83	133	TXC0515870T7
	.6299	16.000	16	83	133	TXC0516000T7
	.6496	16.500	18	93	143	TXC0516500T7
	.6693	17.000	18	93	143	TXC0517000T7
	.6890	17.500	18	93	143	TXC0517500T7
	.7087	18.000	18	93	143	TXC0518000T7
	.7283	18.500	20	101	153	TXC0518500T7
3/4	.7500	19.050	20	101	153	TXC0519050T7
	.7677	19.500	20	101	153	TXC0519500T7
	.7874	20.000	20	101	153	TXC0520000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

TXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
			Dec. Inch.	> 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	70		.14	.20	.28	.35	.45
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	65		.14	.20	.28	.35	.45
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	65		.08	.12	.15	.20	.25
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	150		.14	.14	.28	.35	.45
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	35		.04	.04	.12	.16	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

TXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
			Dec. Inch.	> 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (> 25 HRc)	229.7		.005	.007	.010	.013	.017
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤ 35 HRc)	213.3		.005	.007	.010	.013	.017
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (< 25 HRc)	213.3		.003	.004	.005	.007	.009
N 2	Low-Silicon Aluminum Alloys Si < 12.2% - 6061, 7075	492.2		.005	.007	.010	.013	.017
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	114.8		.001	.003	.004	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

DX

High-Performance Drill
Double-Margin
Ideal for Steels & Cast Materials
3xD-12xD

140° Point Geometry - Designed for efficient chip evacuation and drilling accuracy

140° Geometría de la Punta - Diseñado para la evacuación de la viruta eficiente y precisión de perforación.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

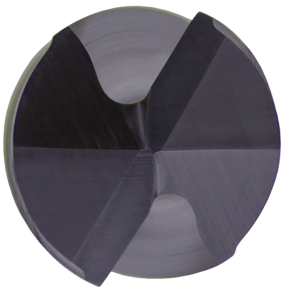
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada .

Double-Margin Design - For improved drilling stability and smooth surface finish.

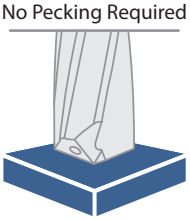
Diseño de Doble Margen - Para mayor estabilidad y un acabado liso.

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.



No Pecking Required



CARBIDE CARBURO | 3xD to 12xD | 140° | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Varianta® Supral

Ideal for
Steels and cast materials

P K Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Varianta® Supral

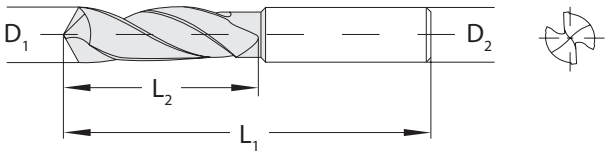
Ideal para
Aceros y materiales de fundición

P K Consulte la página 261

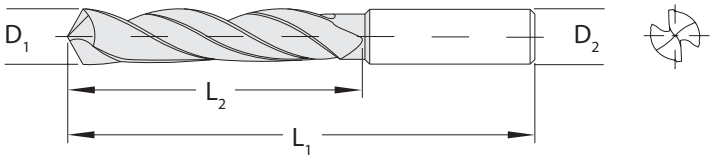
Speeds & Feeds: Refer to Page 121, 123, 124 & 125.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

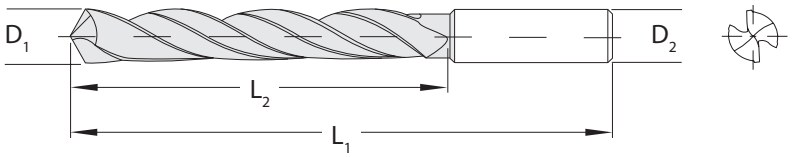
3xD PAGE 120



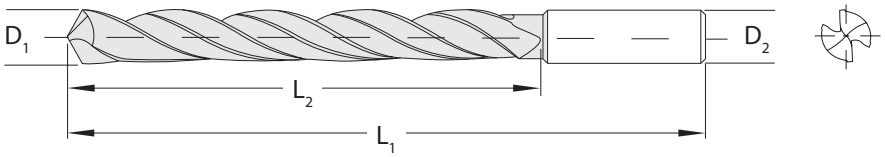
5xD PAGE 122



8xD PAGE 124



12xD PAGE 125



Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Varianta® Supral

Ideal for
Steels and cast materials

P K Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Varianta® Supral

Ideal para
Aceros y materiales de fundición

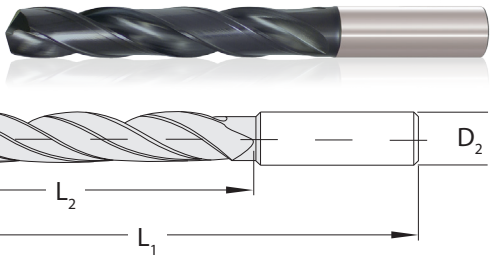
P K Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 121.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	DX00306250T9
#52	.0635	1.61	1/8	11/16	2	DX00300520T9
#51	.0670	1.70	1/8	11/16	2	DX00300510T9
#50	.0700	1.78	1/8	11/16	2	DX00300500T9
#49	.0730	1.85	1/8	11/16	2	DX00300490T9
#48	.0760	1.93	1/8	11/16	2	DX00300480T9
5/64	.0781	1.98	1/8	11/16	2	DX00307810T9
#47	.0785	1.99	1/8	3/4	2-1/2	DX00300470T9
	.0787	2.00	1/8	3/4	2-1/2	DX00307870T9
#46	.0810	2.06	1/8	3/4	2-1/2	DX00300460T9
#45	.0820	2.08	1/8	3/4	2-1/2	DX00300450T9
#44	.0860	2.18	1/8	3/4	2-1/2	DX00300440T9
#43	.0890	2.26	1/8	3/4	2-1/2	DX00300430T9
#42	.0935	2.37	1/8	3/4	2-1/2	DX00300420T9
3/32	.0938	2.38	1/8	3/4	2-1/2	DX00309380T9
#41	.0960	2.44	1/8	13/16	2-1/2	DX00300410T9
#40	.0980	2.49	1/8	13/16	2-1/2	DX00300400T9
	.0984	2.50	1/8	13/16	2-1/2	DX00309840T9
#39	.0995	2.53	1/8	13/16	2-1/2	DX00300390T9
#38	.1015	2.58	1/8	13/16	2-1/2	DX00300380T9
#37	.1040	2.64	1/8	13/16	2-1/2	DX00300370T9
#36	.1065	2.71	1/8	13/16	2-1/2	DX00300360T9
7/64	.1094	2.78	1/8	13/16	2-1/2	DX00301094T9
#35	.1100	2.79	1/8	7/8	2-1/2	DX00300350T9
#34	.1110	2.82	1/8	7/8	2-1/2	DX00300340T9
#33	.1130	2.87	1/8	7/8	2-1/2	DX00300330T9
#32	.1160	2.95	1/8	7/8	2-1/2	DX00300320T9
	.1181	3.00	1/8	7/8	2-1/2	DX00303000T9
#31	.1200	3.05	1/8	7/8	2-1/2	DX00300310T9
1/8	.1250	3.17	1/8	7/8	2-1/2	DX00303175T9
#30	.1285	3.26	3/16	15/16	2-1/2	DX00300300T9
#29	.1360	3.45	3/16	15/16	2-1/2	DX00300290T9
	.1378	3.50	3/16	15/16	2-1/2	DX00303500T9
#28	.1405	3.57	3/16	15/16	2-1/2	DX00300280T9
9/64	.1406	3.57	3/16	1	2-1/2	DX00303570T9
#27	.1440	3.66	3/16	1	2-1/2	DX00300270T9
#26	.1470	3.73	3/16	1	2-1/2	DX00300260T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#25	.1495	3.80	3/16	1	2-1/2	DX00300250T9
#24	.1520	3.86	3/16	1	2-1/2	DX00300240T9
#23	.1540	3.91	3/16	1	2-1/2	DX00300230T9
5/32	.1562	3.97	3/16	1	2-1/2	DX00303970T9
#22	.1570	3.99	3/16	1-1/16	2-1/2	DX00300220T9
	.1575	4.00	3/16	1-1/16	2-1/2	DX00304000T9
#21	.1590	4.04	3/16	1-1/16	2-1/2	DX00300210T9
#20	.1610	4.09	3/16	1-1/16	2-1/2	DX00300200T9
	.1654	4.20	3/16	1-1/16	2-1/2	DX00304200T9
#19	.1660	4.22	3/16	1-1/16	2-1/2	DX00300190T9
#18	.1695	4.30	3/16	1-1/16	2-1/2	DX00300180T9
11/64	.1719	4.37	3/16	1-1/16	2-1/2	DX00304370T9
#17	.1730	4.39	3/16	1-1/8	3	DX00300170T9
#16	.1770	4.49	3/16	1-1/8	3	DX00300160T9
	.1772	4.50	3/16	1-1/8	3	DX00304500T9
#15	.1800	4.57	3/16	1-1/8	3	DX00300150T9
#14	.1820	4.62	3/16	1-1/8	3	DX00300140T9
#13	.1850	4.70	3/16	1-1/8	3	DX00300130T9
3/16	.1875	4.76	3/16	1-1/8	3	DX00304760T9
#12	.1890	4.80	1/4	1-3/16	3	DX00300120T9
#11	.1910	4.85	1/4	1-3/16	3	DX00300110T9
#10	.1935	4.91	1/4	1-3/16	3	DX00300100T9
#9	.1960	4.98	1/4	1-3/16	3	DX00300090T9
	.1969	5.00	1/4	1-3/16	3	DX00305000T9
#8	.1990	5.05	1/4	1-3/16	3	DX00300080T9
	.2008	5.10	1/4	1-3/16	3	DX00305100T9
#7	.2010	5.10	1/4	1-3/16	3	DX00300070T9
13/64	.2031	5.16	1/4	1-3/16	3	DX00305160T9
#6	.2040	5.18	1/4	1-1/4	3	DX00300060T9
#5	.2055	5.22	1/4	1-1/4	3	DX00300050T9
#4	.2090	5.31	1/4	1-1/4	3	DX00300040T9
#3	.2130	5.41	1/4	1-1/4	3	DX00300030T9
	.2165	5.50	1/4	1-1/4	3	DX00302165T9
7/32	.2188	5.56	1/4	1-1/4	3	DX00305560T9
#2	.2210	5.61	1/4	1-5/16	3	DX00300020T9
#1	.2280	5.79	1/4	1-5/16	3	DX00300010T9
A	.2340	5.94	1/4	1-5/16	3	DX003000A0T9

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
15/64	.2344	5.95	1/4	1-5/16	3	DX00305950T9
	.2362	6.00	1/4	1-3/8	3	DX00306000T9
B	.2380	6.04	1/4	1-3/8	3	DX003000B0T9
C	.2420	6.15	1/4	1-3/8	3	DX003000C0T9
D	.2460	6.25	1/4	1-3/8	3	DX003000D0T9
1/4/E	.2500	6.35	1/4	1-3/8	3	DX00306350T9
	.2559	6.50	5/16	1-7/16	3	DX00306500T9
F	.2570	6.53	5/16	1-7/16	3	DX003000F0T9
G	.2610	6.63	5/16	1-7/16	3	DX003000G0T9
17/64	.2656	6.75	5/16	1-7/16	3	DX00306750T9
H	.2660	6.76	5/16	1-1/2	3	DX003000H0T9
I	.2720	6.91	5/16	1-1/2	3	DX003000I0T9
	.2756	7.00	5/16	1-1/2	3	DX00307000T9
J	.2770	7.03	5/16	1-1/2	3	DX003000J0T9
K	.2810	7.14	5/16	1-1/2	3	DX003000K0T9
9/32	.2812	7.14	5/16	1-1/2	3	DX00307140T9
L	.2900	7.37	5/16	1-9/16	4	DX003000L0T9
M	.2950	7.49	5/16	1-9/16	4	DX003000M0T9
	.2953	7.50	5/16	1-9/16	4	DX00307500T9
19/64	.2969	7.54	5/16	1-9/16	4	DX00307540T9
N	.3020	7.67	5/16	1-5/8	4	DX003000N0T9
5/16	.3125	7.94	5/16	1-5/8	4	DX00307940T9
	.3150	8.00	3/8	1-11/16	4	DX00308000T9
O	.3160	8.03	3/8	1-11/16	4	DX003000O0T9
P	.3230	8.20	3/8	1-11/16	4	DX003000P0T9
21/64	.3281	8.33	3/8	1-11/16	4	DX00308330T9
Q	.3320	8.43	3/8	1-11/16	4	DX003000Q0T9
	.3346	8.50	3/8	1-11/16	4	DX00308500T9
R	.3390	8.61	3/8	1-11/16	4	DX003000R0T9
11/32	.3438	8.73	3/8	1-11/16	4	DX00308730T9
S	.3480	8.84	3/8	1-3/4	4	DX003000S0T9
	.3543	9.00	3/8	1-3/4	4	DX00309000T9
T	.3580	9.09	3/8	1-3/4	4	DX003000T0T9
23/64	.3594	9.13	3/8	1-3/4	4	DX00309130T9
U	.3680	9.35	3/8	1-13/16	4	DX003000U0T9
	.3740	9.50	3/8	1-13/16	4	DX00309500T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
3/8	.3750	9.52	3/8	1-13/16	4	DX00309520T9
V	.3770	9.57	7/16	1-7/8	4	DX003000V0T9
W	.3860	9.80	7/16	1-7/8	4	DX003000W0T9
25/64	.3906	9.92	7/16	1-7/8	4	DX00309920T9
	.3937	10.00	7/16	1-15/16	4	DX00310000T9
X	.3970	10.08	7/16	1-15/16	4	DX003000X0T9
Y	.4040	10.26	7/16	1-15/16	4	DX003000Y0T9
13/32	.4062	10.32	7/16	1-15/16	4	DX00310320T9
Z	.4130	10.49	7/16	2	4	DX003000Z0T9
	.4134	10.50	7/16	2	4	DX00310500T9
27/64	.4219	10.72	7/16	2	4	DX00310720T9
	.4252	10.80	7/16	2	4	DX00310800T9
	.4331	11.00	7/16	2-1/16	4	DX00311000T9
7/16	.4375	11.11	7/16	2-1/16	4	DX00311110T9
	.4528	11.50	1/2	2-1/8	4	DX00311500T9
29/64	.4531	11.51	1/2	2-1/8	4	DX00311510T9
15/32	.4688	11.91	1/2	2-1/8	4	DX00311910T9
	.4724	12.00	1/2	2-3/16	4	DX00312000T9
31/64	.4844	12.30	1/2	2-3/16	4	DX00312300T9
	.4921	12.50	1/2	2-1/4	4	DX00312500T9
1/2	.5000	12.70	1/2	2-1/4	4	DX00312700T9
	.5118	13.00	9/16	2-3/8	5	DX00313000T9
33/64	.5156	13.10	9/16	2-3/8	5	DX00313100T9
17/32	.5312	13.49	9/16	2-1/2	5	DX00313490T9
	.5315	13.50	9/16	2-1/2	5	DX00313500T9
35/64	.5469	13.89	9/16	2-1/2	5	DX00313890T9
	.5512	14.00	9/16	2-1/2	5	DX00314000T9
9/16	.5625	14.29	9/16	3	5	DX00314290T9
	.5709	14.50	5/8	3	5	DX00314500T9
37/64	.5781	14.68	5/8	3	5	DX00314680T9
	.5906	15.00	5/8	3	5	DX00315000T9
19/32	.5938	15.08	5/8	3	5	DX00315080T9
39/64	.6094	15.48	5/8	3	5	DX00315480T9
	.6102	15.50	5/8	3	5	DX00315500T9
5/8	.6250	15.87	5/8	3	5	DX00315870T9
	.6299	16.00	3/4	3	5	DX00316000T9

Other Dimensions are Available Upon Request

DX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	90		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	75		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	60		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	75		.20	.25	.35	.40	.46
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	80		.13	.18	.23	.30	.38

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

DX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	295.3		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	246.1		.006	.008	.010	.012	.015
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	196.9		.003	.005	.006	.007	.009
K 1	Gray Cast Iron	246.1		.008	.009	.014	.015	.018
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	262.5		.005	.007	.008	.011	.014

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

High-Performance Drill 2 Flute / 30° Helix / 140° Point / External Coolant

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Varianta® Supral

Ideal for
Steels and cast materials

P K Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Varianta® Supral

Ideal para
Aceros y materiales de fundición

P K Consulte la página 261

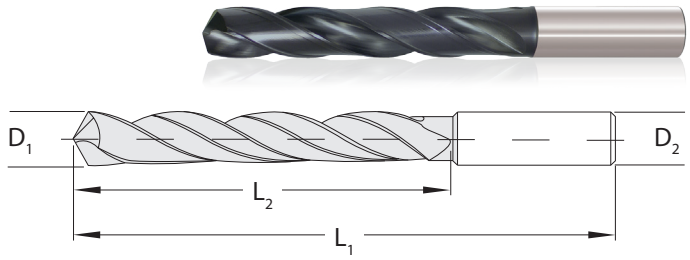
CARBIDE CARBURO | 5xD | 140° | 30°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 123.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	DX00506250T9
#52	.0635	1.61	1/8	3/4	2-1/2	DX00500520T9
#51	.0670	1.70	1/8	3/4	2-1/2	DX00500510T9
#50	.0700	1.78	1/8	7/8	2-1/2	DX00500500T9
#49	.0730	1.85	1/8	7/8	2-1/2	DX00500490T9
#48	.0760	1.93	1/8	7/8	2-1/2	DX00500480T9
5/64	.0781	1.98	1/8	7/8	2-1/2	DX00507810T9
#47	.0785	1.99	1/8	7/8	2-1/2	DX00500470T9
	.0787	2.00	1/8	7/8	2-1/2	DX00507870T9
#46	.0810	2.06	1/8	7/8	2-1/2	DX00500460T9
#45	.0820	2.08	1/8	7/8	2-1/2	DX00500450T9
#44	.0860	2.18	1/8	1	2-1/2	DX00500440T9
#43	.0890	2.26	1/8	1	2-1/2	DX00500430T9
#42	.0935	2.37	1/8	1	2-1/2	DX00500420T9
3/32	.0938	2.38	1/8	1	2-1/2	DX00509380T9
#41	.0960	2.44	1/8	1	2-1/2	DX00500410T9
#40	.0980	2.49	1/8	1	3	DX00500400T9
	.0984	2.50	1/8	1-1/4	3	DX00509840T9
#39	.0995	2.53	1/8	1-1/4	3	DX00500390T9
#38	.1015	2.58	1/8	1-1/4	3	DX00500380T9
#37	.1040	2.64	1/8	1-1/4	3	DX00500370T9
#36	.1065	2.71	1/8	1-1/4	3	DX00500360T9
7/64	.1094	2.78	1/8	1-1/4	3	DX00501094T9
#35	.1100	2.79	1/8	1-1/4	3	DX00500350T9
#34	.1110	2.82	1/8	1-1/4	3	DX00500340T9
#33	.1130	2.87	1/8	1-1/4	3	DX00500330T9
#32	.1160	2.95	1/8	1-1/4	3	DX00500320T9
	.1181	3.00	1/8	1-1/4	3	DX00503000T9
#31	.1200	3.05	1/8	1-1/4	3	DX00500310T9
1/8	.1250	3.17	1/8	1-1/4	3	DX00503175T9
#30	.1285	3.26	3/16	1-1/4	3	DX00500300T9
#29	.1360	3.45	3/16	1-3/8	3	DX00500290T9
	.1378	3.50	3/16	1-3/8	3	DX00503500T9
#28	.1405	3.57	3/16	1-3/8	3	DX00500280T9
9/64	.1406	3.57	3/16	1-3/8	3	DX00503570T9
#27	.1440	3.66	3/16	1-3/8	3	DX00500270T9
#26	.1470	3.73	3/16	1-3/8	3	DX00500260T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#25	.1495	3.80	3/16	1-3/8	3	DX00500250T9
#24	.1520	3.86	3/16	1-3/8	3	DX00500240T9
#23	.1540	3.91	3/16	1-3/8	3	DX00500230T9
5/32	.1562	3.97	3/16	1-3/8	3	DX00503970T9
#22	.1570	3.99	3/16	1-3/8	3	DX00500220T9
	.1575	4.00	3/16	1-3/8	3	DX00504000T9
#21	.1590	4.04	3/16	1-3/8	3	DX00500210T9
#20	.1610	4.09	3/16	1-3/8	3	DX00500200T9
#19	.1660	4.22	3/16	1-5/8	4	DX00500190T9
#18	.1695	4.30	3/16	1-5/8	4	DX00500180T9
11/64	.1719	4.37	3/16	1-5/8	4	DX00504370T9
#17	.1730	4.39	3/16	1-5/8	4	DX00500170T9
#16	.1770	4.49	3/16	1-5/8	4	DX00500160T9
	.1772	4.50	3/16	1-5/8	4	DX00504500T9
#15	.1800	4.57	3/16	1-5/8	4	DX00500150T9
#14	.1820	4.62	3/16	1-5/8	4	DX00500140T9
#13	.1850	4.70	3/16	1-5/8	4	DX00500130T9
3/16	.1875	4.76	3/16	1-5/8	4	DX00504760T9
#12	.1890	4.80	1/4	1-5/8	4	DX00500120T9
#11	.1910	4.85	1/4	1-5/8	4	DX00500110T9
#10	.1935	4.91	1/4	1-5/8	4	DX00500100T9
#9	.1960	4.98	1/4	1-3/4	4	DX00500090T9
	.1969	5.00	1/4	1-3/4	4	DX00505000T9
#8	.1990	5.05	1/4	1-3/4	4	DX00500080T9
#7	.2010	5.10	1/4	1-3/4	4	DX00500070T9
13/64	.2031	5.16	1/4	1-3/4	4	DX00505160T9
#6	.2040	5.18	1/4	1-3/4	4	DX00500060T9
#5	.2055	5.22	1/4	1-3/4	4	DX00500050T9
#4	.2090	5.31	1/4	1-3/4	4	DX00500040T9
#3	.2130	5.41	1/4	1-3/4	4	DX00500030T9
	.2165	5.50	1/4	1-3/4	4	DX00502165T9
7/32	.2188	5.56	1/4	1-3/4	4	DX00505560T9
#2	.2210	5.61	1/4	1-3/4	4	DX00500020T9
#1	.2280	5.79	1/4	1-3/4	4	DX00500010T9
A	.2340	5.94	1/4	2	4	DX005000A0T9
15/64	.2344	5.95	1/4	2	4	DX00505950T9
	.2362	6.00	1/4	2	4	DX00506000T9

Other Dimensions are Available Upon Request

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
B	.2380	6.04	1/4	2	4	DX005000B0T9
C	.2420	6.15	1/4	2	4	DX005000C0T9
D	.2460	6.25	1/4	2	4	DX005000D0T9
1/4/E	.2500	6.35	1/4	2	4	DX00506350T9
	.2559	6.50	5/16	2	4	DX00506500T9
F	.2570	6.53	5/16	2	4	DX005000F0T9
G	.2610	6.63	5/16	2-1/8	4	DX005000G0T9
17/64	.2656	6.75	5/16	2-1/8	4	DX00506750T9
H	.2660	6.76	5/16	2-1/8	4	DX005000H0T9
I	.2720	6.91	5/16	2-1/8	4	DX005000I0T9
	.2756	7.00	5/16	2-1/8	4	DX00507000T9
J	.2770	7.03	5/16	2-1/8	4	DX005000J0T9
K	.2810	7.14	5/16	2-1/8	4	DX005000K0T9
9/32	.2812	7.14	5/16	2-1/8	4	DX00507140T9
L	.2900	7.37	5/16	2-1/8	4	DX005000L0T9
M	.2950	7.49	5/16	2-3/8	4	DX005000M0T9
	.2953	7.50	5/16	2-3/8	4	DX00507500T9
19/64	.2969	7.54	5/16	2-3/8	4	DX00507540T9
N	.3020	7.67	5/16	2-3/8	4	DX005000N0T9
5/16	.3125	7.94	5/16	2-3/8	4	DX00507940T9
	.3150	8.00	3/8	2-3/8	4	DX00508000T9
O	.3160	8.03	3/8	2-3/8	4	DX005000O0T9
P	.3230	8.20	3/8	2-3/8	4	DX005000P0T9
21/64	.3281	8.33	3/8	2-1/2	5	DX00508330T9
Q	.3320	8.43	3/8	2-1/2	5	DX005000Q0T9
	.3346	8.50	3/8	2-1/2	5	DX00508500T9
R	.3390	8.61	3/8	2-1/2	5	DX005000R0T9
11/32	.3438	8.73	3/8	2-1/2	5	DX00508730T9
S	.3480	8.84	3/8	2-1/2	5	DX005000S0T9
	.3543	9.00	3/8	2-1/2	5	DX00509000T9
T	.3580	9.09	3/8	2-3/4	5	DX005000T0T9
23/64	.3594	9.13	3/8	2-3/4	5	DX00509130T9
U	.3680	9.35	3/8	2-3/4	5	DX005000U0T9
	.3740	9.50	3/8	2-3/4	5	DX00509500T9
3/8	.3750	9.52	3/8	2-3/4	5	DX00509520T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
V	.3770	9.57	7/16	2-7/8	5	DX005000V0T9
W	.3860	9.80	7/16	2-7/8	5	DX005000W0T9
25/64	.3906	9.92	7/16	2-7/8	5	DX00509920T9
	.3937	10.00	7/16	2-7/8	5	DX00510000T9
X	.3970	10.08	7/16	2-7/8	5	DX005000X0T9
Y	.4040	10.26	7/16	2-7/8	5	DX005000Y0T9
13/32	.4062	10.32	7/16	2-7/8	5	DX00510320T9
Z	.4130	10.49	7/16	2-7/8	5	DX005000Z0T9
	.4134	10.50	7/16	2-7/8	5	DX00510500T9
27/64	.4219	10.72	7/16	2-7/8	5	DX00510720T9
	.4252	10.80	7/16	2-7/8	5	DX00510800T9
	.4331	11.00	7/16	2-7/8	5	DX00511000T9
7/16	.4375	11.11	7/16	2-7/8	5	DX00511110T9
	.4528	11.50	1/2	3	5	DX00511500T9
29/64	.4531	11.51	1/2	3	5	DX00511510T9
15/32	.4688	11.91	1/2	3	5	DX00511910T9
	.4724	12.00	1/2	3	5	DX00512000T9
31/64	.4844	12.30	1/2	3	5	DX00512300T9
	.4921	12.50	1/2	3	5	DX00512500T9
1/2	.5000	12.70	1/2	3	5	DX00512700T9
	.5118	13.00	9/16	3-1/4	5	DX00513000T9
33/64	.5156	13.10	9/16	3-1/4	5	DX00513100T9
17/32	.5312	13.49	9/16	3-1/4	5	DX00513490T9
	.5315	13.50	9/16	3-1/4	5	DX00513500T9
35/64	.5469	13.89	9/16	3-1/4	5	DX00513890T9
	.5512	14.00	9/16	3-1/4	5	DX00514000T9
9/16	.5625	14.29	9/16	3-1/4	5	DX00514290T9
	.5709	14.50	5/8	3-1/4	5	DX00514500T9
37/64	.5781	14.68	5/8	3-1/2	6	DX00514680T9
	.5906	15.00	5/8	3-1/2	6	DX00515000T9
19/32	.5938	15.08	5/8	3-1/2	6	DX00515080T9
39/64	.6094	15.48	5/8	3-1/2	6	DX00515480T9
	.6102	15.50	5/8	3-1/2	6	DX00515500T9
5/8	.6250	15.87	5/8	3-1/2	6	DX00515870T9
	.6299	16.00	3/4	3-1/2	6	DX00516000T9

Other Dimensions are Available Upon Request

DX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	90		.16	.22	.28	.34	.38
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	75		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	60		.08	.12	.15	.20	.25
K 1	Gray Cast Iron	75		.20	.25	.35	.40	.46
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	80		.13	.18	.23	.30	.38

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

DX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	295.3		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	246.1		.006	.008	.010	.012	.015
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	196.9		.003	.005	.006	.007	.009
K 1	Gray Cast Iron	246.1		.008	.009	.014	.015	.018
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	262.5		.005	.007	.008	.011	.014

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Varianta® Supral

Ideal for
Steels and cast materials

P K Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Varianta® Supral

Ideal para
Aceros y materiales de fundición

P K Consulte la página 261

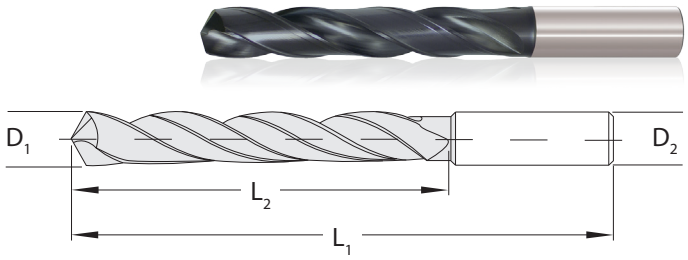
CARBIDE CARBURO | 8xD | 140° | 30°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 124.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
	.1181	3.00	1/8	1-1/2	3	DX00803000T9
1/8	.1250	3.17	1/8	1-1/2	3	DX00803175T9
9/64	.1406	3.57	3/16	1-1/2	3	DX00803570T9
5/32	.1563	3.97	3/16	1-1/2	3	DX00803970T9
	.1575	4.00	3/16	1-1/2	3	DX00804000T9
	.1654	4.20	3/16	1-1/2	3	DX00804200T9
11/64	.1720	4.37	3/16	1-1/2	3	DX00804370T9
3/16	.1874	4.76	3/16	2-1/4	4	DX00804760T9
	.1969	5.00	1/4	2-1/4	4	DX00805000T9
13/64	.2031	5.16	1/4	2-1/4	4	DX00805160T9
7/32	.2189	5.56	1/4	2-1/4	4	DX00805560T9
15/64	.2343	5.95	1/4	2-1/4	4	DX00805950T9
	.2362	6.00	1/4	2-1/4	4	DX00806000T9
1/4	.2500	6.35	1/4	2-3/4	5	DX00806350T9
17/64	.2657	6.75	5/16	2-3/4	5	DX00806750T9
	.2677	6.80	5/16	2-3/4	5	DX00806800T9
	.2756	7.00	5/16	2-3/4	5	DX00807000T9
9/32	.2811	7.14	5/16	2-3/4	5	DX00807140T9
19/64	.2969	7.54	5/16	2-3/4	5	DX00807540T9
5/16	.3126	7.94	5/16	2-3/4	5	DX00807940T9
	.3150	8.00	3/8	3-1/2	5	DX00808000T9
21/64	.3280	8.33	3/8	3-1/2	5	DX00808330T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
11/32	.3437	8.73	3/8	3-1/2	5	DX00808730T9
	.3543	9.00	3/8	3-1/2	5	DX00809000T9
23/64	.3594	9.13	3/8	3-1/2	5	DX00809130T9
	.3701	9.40	3/8	3-1/2	5	DX00809400T9
3/8	.3748	9.52	3/8	3-1/2	5	DX00809520T9
25/64	.3906	9.92	1/2	4	6	DX00809920T9
	.3937	10.00	1/2	4	6	DX00810000T9
13/32	.4063	10.32	1/2	4	6	DX00810320T9
27/64	.4220	10.72	1/2	4	6	DX00810720T9
	.4331	11.00	1/2	4	6	DX00811000T9
29/64	.4531	11.51	1/2	4	6	DX00811510T9
15/32	.4689	11.91	1/2	4	6	DX00811910T9
	.4724	12.00	1/2	4	6	DX00812000T9
31/64	.4843	12.30	1/2	5	7	DX00812300T9
1/2	.5000	12.70	1/2	5	7	DX00812700T9
	.5118	13.00	9/16	5	7	DX00813000T9
33/64	.5157	13.10	9/16	5	7	DX00813100T9
	.5512	14.00	9/16	5	7	DX00814000T9
9/16	.5626	14.29	9/16	5-1/2	7	DX00814290T9
	.5906	15.00	5/8	5-1/2	7	DX00815000T9
5/8	.6248	15.87	5/8	5-1/2	7	DX00815870T9

Other Dimensions are Available Upon Request

DX
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	65		.10	.15	.20	.26	.33
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	60		.14	.20	.28	.35	.45
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	50		.10	.15	.20	.26	.33
K 1	Gray Cast Iron	60		.23	.34	.43	.52	.58
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	65		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

DX
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	213.3		.004	.005	.007	.010	.012
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	196.9		.005	.007	.010	.013	.017
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	164.1		.004	.005	.007	.010	.012
K 1	Gray Cast Iron	196.9		.009	.013	.016	.020	.022
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	213.3		.007	.009	.013	.015	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
Varianta® Supral

Ideal for
Steels and cast materials

P K Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
Varianta® Supral

Ideal para
Aceros y materiales de fundición

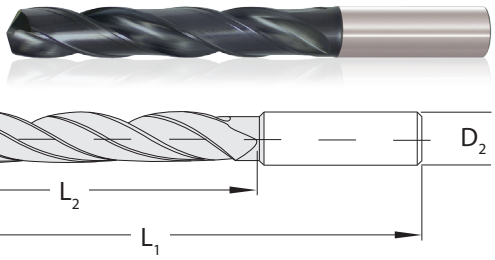
P K Consulte la página 261

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 125.

Available Upon Request: Add Flats, Left-Hand, **Firm Hold Shank**, Whistle Notch, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
	.1181	3.00	1/8	2-1/4	4	DX01203000T9
1/8	.1250	3.17	1/8	2-1/4	4	DX01203175T9
9/64	.1406	3.57	3/16	2-1/4	4	DX01203570T9
5/32	.1563	3.97	3/16	2-1/2	4	DX01203970T9
	.1575	4.00	3/16	2-1/2	4	DX01204000T9
	.1654	4.20	3/16	2-1/2	4	DX01204200T9
11/64	.1720	4.37	3/16	2-1/2	4	DX01204370T9
3/16	.1874	4.76	3/16	3	5	DX01204760T9
	.1969	5.00	1/4	3	5	DX01205000T9
13/64	.2031	5.16	1/4	3	5	DX01205160T9
7/32	.2189	5.56	1/4	3-1/2	5	DX01205560T9
15/64	.2343	5.95	1/4	3-1/2	5	DX01205950T9
	.2362	6.00	1/4	3-1/2	5	DX01206000T9
1/4	.2500	6.35	1/4	3-1/2	5	DX01206350T9
17/64	.2657	6.75	5/16	4-1/4	6	DX01206750T9
	.2677	6.80	5/16	4-1/4	6	DX01206800T9
	.2756	7.00	5/16	4-1/4	6	DX01207000T9
9/32	.2811	7.14	5/16	4-1/4	6	DX01207140T9
19/64	.2969	7.54	5/16	4-1/4	6	DX01207540T9
5/16	.3126	7.94	5/16	4-1/4	6	DX01207940T9
	.3150	8.00	3/8	4-1/4	6	DX01208000T9
21/64	.3280	8.33	3/8	4-3/4	7	DX01208330T9

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
11/32	.3437	8.73	3/8	4-3/4	7	DX01208730T9
	.3543	9.00	3/8	5	7	DX01209000T9
23/64	.3594	9.13	3/8	5	7	DX01209130T9
	.3701	9.40	3/8	5	7	DX01209400T9
3/8	.3748	9.52	3/8	5	7	DX01209520T9
25/64	.3906	9.92	1/2	5	7	DX01209920T9
	.3937	10.00	1/2	5	7	DX01210000T9
13/32	.4063	10.32	1/2	6-1/4	8	DX01210320T9
27/64	.4220	10.72	1/2	6-1/4	8	DX01210720T9
	.4331	11.00	1/2	6-1/4	8	DX01211000T9
29/64	.4531	11.51	1/2	6-1/4	8	DX01211510T9
15/32	.4689	11.91	1/2	6-1/4	8	DX01211910T9
	.4724	12.00	1/2	6-1/4	8	DX01212000T9
31/64	.4843	12.30	1/2	6-1/4	8	DX01212300T9
1/2	.5000	12.70	1/2	7-1/4	9	DX01212700T9
	.5118	13.00	9/16	7-1/4	9	DX01213000T9
33/64	.5157	13.10	9/16	7-1/4	9	DX01213100T9
	.5512	14.00	9/16	7-1/4	9	DX01214000T9
9/16	.5626	14.29	9/16	7-1/4	9	DX01214290T9
	.5906	15.00	5/8	8-1/4	10	DX01215000T9
5/8	.6248	15.87	5/8	8-1/4	10	DX01215870T9

Other Dimensions are Available Upon Request

DX
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	60		.10	.15	.20	.26	.33
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	55		.14	.20	.28	.35	.45
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	45		.10	.15	.20	.26	.33
K 1	Gray Cast Iron	55		.23	.35	.43	.52	.58
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	60		.20	.25	.35	.40	.46

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

DX
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution > 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	196.9		.003	.005	.007	.010	.012
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	180.5		.005	.007	.010	.013	.017
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	147.6		.004	.005	.007	.010	.012
K 1	Gray Cast Iron	180.5		.009	.013	.016	.020	.022
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	196.9		.007	.009	.013	.015	.018

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

NXC

High-Performance Drill
Double-Margin
Ideal for Nickel-Based Alloys
3xD-30xD

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

135° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

135° Geometría de la Punta - Diseño con punto dividido para superior perforación precisión.

Double-Margin Design - For improved drilling stability and smooth surface finish.

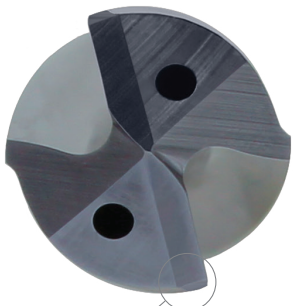
Diseño de Doble Margen - Para mayor estabilidad y un acabado liso.

SisNa® Coating - Ideal for high-speed machining of tough materials.

Recubrimiento SisNa® - Ideal para el mecanizado de alta velocidad de materiales endurecidos.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

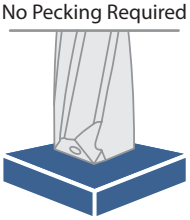
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.



45° Standard Chamfer - Cutting edge protection and longer tool life.

45° Chaflán Estándar de Esquina - Elimina astillado, para prolongar la vida de la herramienta.

No Pecking Required



SisNa® is ideal for high-speed machining of tough materials.

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

Recubrimiento
SisNa®

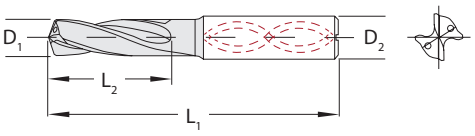
Ideal para
Aleaciones de níquel

S H Consulte la página 261

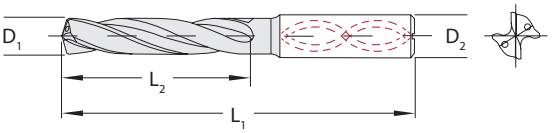
Speeds & Feeds: Refer to Page 129, 131, 133, 135 & 140.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

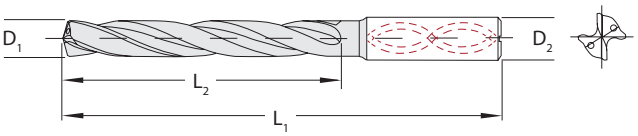
3xD PAGE 128



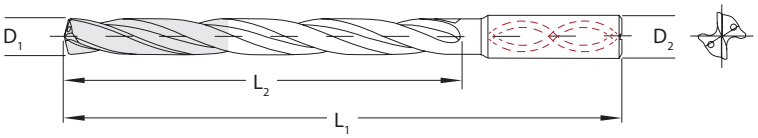
5xD PAGE 130



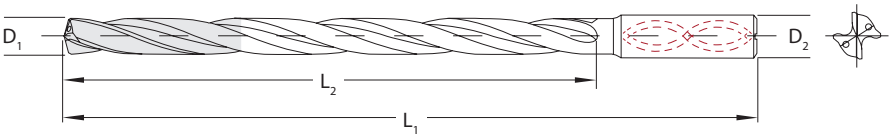
8xD PAGE 132



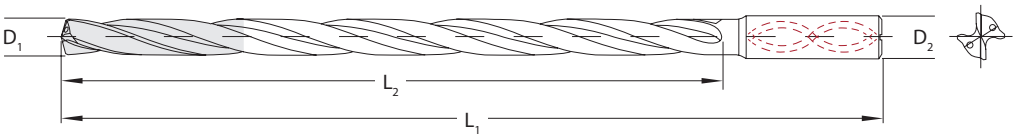
12xD PAGE 134



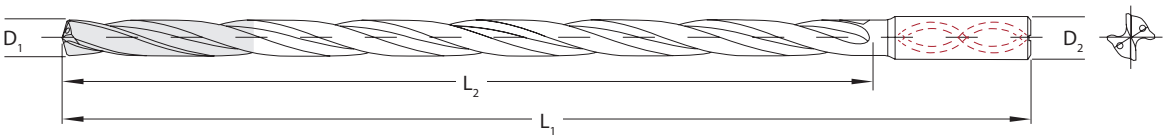
16xD PAGE 136 Must utilize a pilot hole drill. Refer to page 157



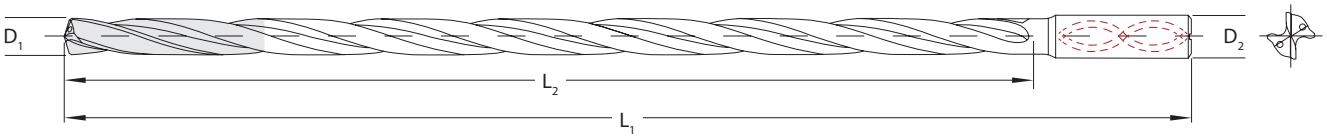
20xD PAGE 137 Must utilize a pilot hole drill. Refer to page 157



25xD PAGE 138 Must utilize a pilot hole drill. Refer to page 157



30xD PAGE 139 Must utilize a pilot hole drill. Refer to page 157



Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

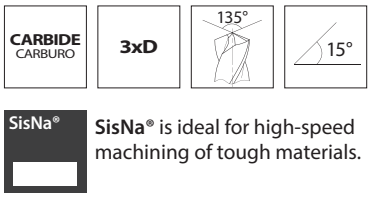
S H Refer to page 261

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

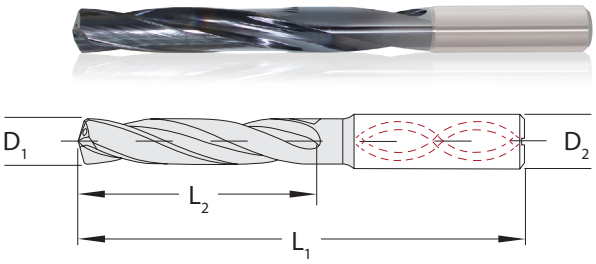
S H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 129.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	NXC0303000T7
	.1220	3.100	6	20	62	NXC0303100T7
1/8	.1250	3.175	6	20	62	NXC0303175T7
	.1260	3.200	6	20	62	NXC0303200T7
	.1299	3.300	6	20	62	NXC0303300T7
	.1339	3.400	6	20	62	NXC0303400T7
	.1378	3.500	6	20	62	NXC0303500T7
9/64	.1406	3.572	6	20	62	NXC0303572T7
	.1417	3.600	6	20	62	NXC0303600T7
	.1457	3.700	6	20	62	NXC0303700T7
#25	.1496	3.800	6	24	66	NXC0303800T7
	.1535	3.900	6	24	66	NXC0303900T7
5/32	.1563	3.970	6	24	66	NXC0303970T7
	.1575	4.000	6	24	66	NXC0304000T7
	.1614	4.100	6	24	66	NXC0304100T7
	.1654	4.200	6	24	66	NXC0304200T7
	.1693	4.300	6	24	66	NXC0304300T7
11/64	.1719	4.370	6	24	66	NXC0304370T7
	.1732	4.400	6	24	66	NXC0304400T7
	.1772	4.500	6	24	66	NXC0304500T7
	.1811	4.600	6	24	66	NXC0304600T7
	.1831	4.650	6	24	66	NXC0304650T7
#13	.1850	4.700	6	24	66	NXC0300130T7
3/16	.1875	4.760	6	28	66	NXC0304760T7
#12	.1890	4.800	6	28	66	NXC0300120T7
	.1929	4.900	6	28	66	NXC0304900T7
	.1969	5.000	6	28	66	NXC0305000T7
	.2008	5.100	6	28	66	NXC0305100T7
13/64	.2031	5.160	6	28	66	NXC0305160T7
#6	.2040	5.182	6	28	66	NXC0300060T7
	.2047	5.200	6	28	66	NXC0305200T7
	.2087	5.300	6	28	66	NXC0305300T7
	.2126	5.400	6	28	66	NXC0305400T7
	.2165	5.500	6	28	66	NXC0305500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	NXC0305550T7
7/32	.2187	5.560	6	28	66	NXC0305560T7
	.2205	5.600	6	28	66	NXC0305600T7
	.2244	5.700	6	28	66	NXC0305700T7
	.2283	5.800	6	28	66	NXC0305800T7
	.2323	5.900	6	28	66	NXC0305900T7
15/64	.2344	5.950	6	28	66	NXC0305950T7
	.2362	6.000	6	28	66	NXC0306000T7
	.2402	6.100	8	34	79	NXC0306100T7
	.2441	6.200	8	34	79	NXC0306200T7
	.2480	6.300	8	34	79	NXC0306300T7
1/4	.2500	6.350	8	34	79	NXC0306350T7
	.2520	6.400	8	34	79	NXC0306400T7
	.2559	6.500	8	34	79	NXC0306500T7
	.2598	6.600	8	34	79	NXC0306600T7
	.2638	6.700	8	34	79	NXC0306700T7
17/64	.2656	6.750	8	34	79	NXC0306750T7
	.2677	6.800	8	34	79	NXC0306800T7
	.2717	6.900	8	41	79	NXC0306900T7
	.2756	7.000	8	41	79	NXC0307000T7
	.2795	7.100	8	41	79	NXC0307100T7
9/32	.2813	7.140	8	41	79	NXC0307140T7
	.2835	7.200	8	41	79	NXC0307200T7
	.2874	7.300	8	41	79	NXC0307300T7
	.2913	7.400	8	41	79	NXC0307400T7
	.2953	7.500	8	41	79	NXC0307500T7
19/64	.2969	7.540	8	41	79	NXC0307540T7
	.3031	7.700	8	41	79	NXC0307700T7
	.3071	7.800	8	41	79	NXC0307800T7
	.3110	7.900	8	41	79	NXC0307900T7
5/16	.3125	7.940	8	41	79	NXC0307940T7
	.3150	8.000	8	41	79	NXC0308000T7
	.3189	8.100	10	47	89	NXC0308100T7
	.3228	8.200	10	47	89	NXC0308200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	NXC0308300T7
21/64	.3281	8.330	10	47	89	NXC0308330T7
	.3307	8.400	10	47	89	NXC0308400T7
	.3346	8.500	10	47	89	NXC0308500T7
	.3386	8.600	10	47	89	NXC0308600T7
	.3425	8.700	10	47	89	NXC0308700T7
11/32	.3437	8.730	10	47	89	NXC0308730T7
	.3465	8.800	10	47	89	NXC0308800T7
	.3543	9.000	10	47	89	NXC0309000T7
23/64	.3594	9.130	10	47	89	NXC0309130T7
	.3622	9.200	10	47	89	NXC0309200T7
	.3661	9.300	10	47	89	NXC0309300T7
	.3740	9.500	10	47	89	NXC0309500T7
3/8	.3750	9.520	10	47	89	NXC0309520T7
	.3780	9.600	10	47	89	NXC0309600T7
	.3858	9.800	10	47	89	NXC0309800T7
	.3898	9.900	10	47	89	NXC0309900T7
25/64	.3906	9.920	10	47	89	NXC0309920T7
	.3937	10.000	10	47	89	NXC0310000T7
	.3976	10.100	12	55	102	NXC0310100T7
	.4016	10.200	12	55	102	NXC0310200T7
	.4055	10.300	12	55	102	NXC0310300T7
13/32	.4063	10.320	12	55	102	NXC0310320T7
	.4094	10.400	12	55	102	NXC0310400T7
	.4134	10.500	12	55	102	NXC0310500T7
27/64	.4219	10.720	12	55	102	NXC0310720T7
	.4252	10.800	12	55	102	NXC0310800T7
	.4331	11.000	12	55	102	NXC0311000T7
	.4370	11.100	12	55	102	NXC0311100T7
7/16	.4375	11.113	12	55	102	NXC0311113T7
	.4409	11.200	12	55	102	NXC0311200T7
	.4528	11.500	12	55	102	NXC0311500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	NXC0311510T7
	.4606	11.700	12	55	102	NXC0311700T7
	.4646	11.800	12	55	102	NXC0311800T7
15/32	.4687	11.910	12	55	102	NXC0311910T7
	.4724	12.000	12	55	102	NXC0312000T7
	.4764	12.100	14	60	107	NXC0312100T7
	.4803	12.200	14	60	107	NXC0312200T7
	.4843	12.300	14	60	107	NXC0312300T7
31/64	.4844	12.303	14	60	107	NXC0312303T7
	.4921	12.500	14	60	107	NXC0312500T7
	.4961	12.600	14	60	107	NXC0312600T7
1/2	.5000	12.700	14	60	107	NXC0312700T7
	.5118	13.000	14	60	107	NXC0313000T7
	.5236	13.300	14	60	107	NXC0313300T7
17/32	.5313	13.490	14	60	107	NXC0313490T7
	.5315	13.500	14	60	107	NXC0313500T7
	.5512	14.000	14	60	107	NXC0314000T7
9/16	.5625	14.290	16	65	115	NXC0314290T7
	.5709	14.500	16	65	115	NXC0314500T7
	.5906	15.000	16	65	115	NXC0315000T7
	.6102	15.500	16	65	115	NXC0315500T7
5/8	.6250	15.870	16	65	115	NXC0315870T7
	.6299	16.000	16	65	115	NXC0316000T7
	.6496	16.500	18	73	123	NXC0316500T7
	.6693	17.000	18	73	123	NXC0317000T7
	.6890	17.500	18	73	123	NXC0317500T7
	.7087	18.000	18	73	123	NXC0318000T7
	.7283	18.500	20	79	131	NXC0318500T7
3/4	.7500	19.050	20	79	131	NXC0319050T7
	.7677	19.500	20	79	131	NXC0319500T7
	.7874	20.000	20	79	131	NXC0320000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

NXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	43.3		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	142		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

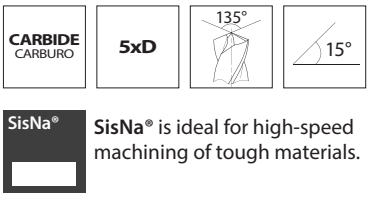
Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

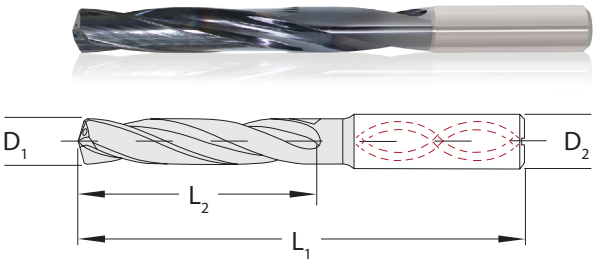
S H Consulte la página 261

Speeds & Feeds: Refer to Page 131.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



SisNa® is ideal for high-speed machining of tough materials.



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	NXC0503000T7
	.1220	3.100	6	28	66	NXC0503100T7
1/8	.1250	3.175	6	28	66	NXC0503175T7
	.1260	3.200	6	28	66	NXC0503200T7
	.1299	3.300	6	28	66	NXC0503300T7
	.1339	3.400	6	28	66	NXC0503400T7
	.1378	3.500	6	28	66	NXC0503500T7
9/64	.1406	3.572	6	28	66	NXC0503572T7
	.1417	3.600	6	28	66	NXC0503600T7
	.1457	3.700	6	28	66	NXC0503700T7
#25	.1496	3.800	6	36	74	NXC0503800T7
	.1535	3.900	6	36	74	NXC0503900T7
5/32	.1563	3.970	6	36	74	NXC0503970T7
	.1575	4.000	6	36	74	NXC0504000T7
	.1614	4.100	6	36	74	NXC0504100T7
	.1654	4.200	6	36	74	NXC0504200T7
	.1693	4.300	6	36	74	NXC0504300T7
11/64	.1719	4.370	6	36	74	NXC0504370T7
	.1732	4.400	6	36	74	NXC0504400T7
	.1772	4.500	6	36	74	NXC0504500T7
	.1811	4.600	6	36	74	NXC0504600T7
	.1831	4.650	6	36	74	NXC0504650T7
#13	.1850	4.700	6	36	74	NXC0500130T7
3/16	.1875	4.760	6	44	82	NXC0504760T7
#12	.1890	4.800	6	44	82	NXC0500120T7
	.1929	4.900	6	44	82	NXC0504900T7
	.1969	5.000	6	44	82	NXC0505000T7
	.2008	5.100	6	44	82	NXC0505100T7
13/64	.2031	5.160	6	44	82	NXC0505160T7
#6	.2040	5.182	6	44	82	NXC0500060T7
	.2047	5.200	6	44	82	NXC0505200T7
	.2087	5.300	6	44	82	NXC0505300T7
	.2126	5.400	6	44	82	NXC0505400T7
	.2165	5.500	6	44	82	NXC0505500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	NXC0505550T7
7/32	.2187	5.560	6	44	82	NXC0505560T7
	.2205	5.600	6	44	82	NXC0505600T7
	.2244	5.700	6	44	82	NXC0505700T7
	.2283	5.800	6	44	82	NXC0505800T7
	.2323	5.900	6	44	82	NXC0505900T7
15/64	.2344	5.950	6	44	82	NXC0505950T7
	.2362	6.000	6	44	82	NXC0506000T7
	.2402	6.100	8	53	91	NXC0506100T7
	.2441	6.200	8	53	91	NXC0506200T7
	.2480	6.300	8	53	91	NXC0506300T7
1/4	.2500	6.350	8	53	91	NXC0506350T7
	.2520	6.400	8	53	91	NXC0506400T7
	.2559	6.500	8	53	91	NXC0506500T7
	.2598	6.600	8	53	91	NXC0506600T7
	.2638	6.700	8	53	91	NXC0506700T7
17/64	.2656	6.750	8	53	91	NXC0506750T7
	.2677	6.800	8	53	91	NXC0506800T7
	.2717	6.900	8	53	91	NXC0506900T7
	.2756	7.000	8	53	91	NXC0507000T7
	.2795	7.100	8	53	91	NXC0507100T7
9/32	.2813	7.140	8	53	91	NXC0507140T7
	.2835	7.200	8	53	91	NXC0507200T7
	.2874	7.300	8	53	91	NXC0507300T7
	.2913	7.400	8	53	91	NXC0507400T7
	.2953	7.500	8	53	91	NXC0507500T7
19/64	.2969	7.540	8	53	91	NXC0507540T7
	.3031	7.700	8	53	91	NXC0507700T7
	.3071	7.800	8	53	91	NXC0507800T7
	.3110	7.900	8	53	91	NXC0507900T7
5/16	.3125	7.940	8	53	91	NXC0507940T7
	.3150	8.000	8	53	91	NXC0508000T7
	.3189	8.100	10	61	103	NXC0508100T7
	.3228	8.200	10	61	103	NXC0508200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	NXC0508300T7
21/64	.3281	8.330	10	61	103	NXC0508330T7
	.3307	8.400	10	61	103	NXC0508400T7
	.3346	8.500	10	61	103	NXC0508500T7
	.3386	8.600	10	61	103	NXC0508600T7
	.3425	8.700	10	61	103	NXC0508700T7
11/32	.3437	8.730	10	61	103	NXC0508730T7
	.3465	8.800	10	61	103	NXC0508800T7
	.3543	9.000	10	61	103	NXC0509000T7
23/64	.3594	9.130	10	61	103	NXC0509130T7
	.3622	9.200	10	61	103	NXC0509200T7
	.3661	9.300	10	61	103	NXC0509300T7
	.3740	9.500	10	61	103	NXC0509500T7
3/8	.3750	9.520	10	61	103	NXC0509520T7
	.3780	9.600	10	61	103	NXC0509600T7
	.3858	9.800	10	61	103	NXC0509800T7
	.3898	9.900	10	61	103	NXC0509900T7
25/64	.3906	9.920	10	61	103	NXC0509920T7
	.3937	10.000	10	61	103	NXC0510000T7
	.3976	10.100	12	71	118	NXC0510100T7
	.4016	10.200	12	71	118	NXC0510200T7
	.4055	10.300	12	71	118	NXC0510300T7
13/32	.4063	10.320	12	71	118	NXC0510320T7
	.4094	10.400	12	71	118	NXC0510400T7
	.4134	10.500	12	71	118	NXC0510500T7
27/64	.4219	10.720	12	71	118	NXC0510720T7
	.4252	10.800	12	71	118	NXC0510800T7
	.4331	11.000	12	71	118	NXC0511000T7
	.4370	11.100	12	71	118	NXC0511100T7
7/16	.4375	11.113	12	71	118	NXC0511113T7
	.4409	11.200	12	71	118	NXC0511200T7
	.4528	11.500	12	71	118	NXC0511500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	NXC0511510T7
	.4606	11.700	12	71	118	NXC0511700T7
	.4646	11.800	12	71	118	NXC0511800T7
15/32	.4687	11.910	12	71	118	NXC0511910T7
	.4724	12.000	12	71	118	NXC0512000T7
	.4764	12.100	14	77	124	NXC0512100T7
	.4803	12.200	14	77	124	NXC0512200T7
	.4843	12.300	14	77	124	NXC0512300T7
31/64	.4844	12.303	14	77	124	NXC0512303T7
	.4921	12.500	14	77	124	NXC0512500T7
	.4961	12.600	14	77	124	NXC0512600T7
1/2	.5000	12.700	14	77	124	NXC0512700T7
	.5118	13.000	14	77	124	NXC0513000T7
	.5236	13.300	14	77	124	NXC0513300T7
17/32	.5313	13.490	14	77	124	NXC0513490T7
	.5315	13.500	14	77	124	NXC0513500T7
	.5512	14.000	14	77	124	NXC0514000T7
9/16	.5625	14.290	16	83	133	NXC0514290T7
	.5709	14.500	16	83	133	NXC0514500T7
	.5906	15.000	16	83	133	NXC0515000T7
	.6102	15.500	16	83	133	NXC0515500T7
5/8	.6250	15.870	16	83	133	NXC0515870T7
	.6299	16.000	16	83	133	NXC0516000T7
	.6496	16.500	18	93	143	NXC0516500T7
	.6693	17.000	18	93	143	NXC0517000T7
	.6890	17.500	18	93	143	NXC0517500T7
	.7087	18.000	18	93	143	NXC0518000T7
	.7283	18.500	20	101	153	NXC0518500T7
3/4	.7500	19.050	20	101	153	NXC0519050T7
	.7677	19.500	20	101	153	NXC0519500T7
	.7874	20.000	20	101	153	NXC0520000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

NXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	41.5		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	136		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

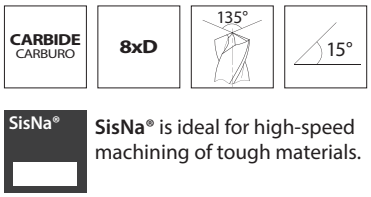
S H Refer to page 261

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

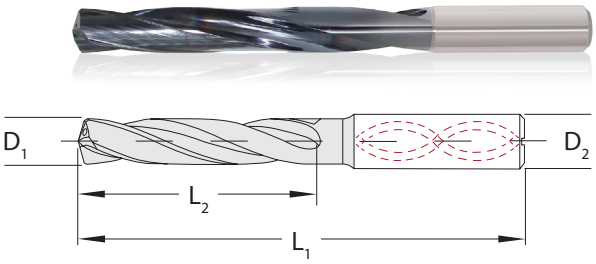
S H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 133.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	34	72	NXC0803000T7
	.1220	3.100	6	34	72	NXC0803100T7
1/8	.1250	3.175	6	34	72	NXC0803175T7
	.1260	3.200	6	34	72	NXC0803200T7
	.1299	3.300	6	34	72	NXC0803300T7
	.1339	3.400	6	34	72	NXC0803400T7
	.1378	3.500	6	34	72	NXC0803500T7
9/64	.1406	3.572	6	34	72	NXC0803572T7
	.1417	3.600	6	34	72	NXC0803600T7
	.1457	3.700	6	34	72	NXC0803700T7
#25	.1496	3.800	6	43	81	NXC0803800T7
	.1535	3.900	6	43	81	NXC0803900T7
5/32	.1563	3.970	6	43	81	NXC0803970T7
	.1575	4.000	6	43	81	NXC0804000T7
	.1614	4.100	6	43	81	NXC0804100T7
	.1654	4.200	6	43	81	NXC0804200T7
	.1693	4.300	6	43	81	NXC0804300T7
11/64	.1719	4.370	6	43	81	NXC0804370T7
	.1732	4.400	6	43	81	NXC0804400T7
	.1772	4.500	6	43	81	NXC0804500T7
	.1811	4.600	6	43	81	NXC0804600T7
	.1831	4.650	6	43	81	NXC0804650T7
#13	.1850	4.700	6	43	81	NXC0800130T7
3/16	.1875	4.760	6	57	95	NXC0804760T7
#12	.1890	4.800	6	57	95	NXC0800120T7
	.1929	4.900	6	57	95	NXC0804900T7
	.1969	5.000	6	57	95	NXC0805000T7
	.2008	5.100	6	57	95	NXC0805100T7
13/64	.2031	5.160	6	57	95	NXC0805160T7
#6	.2040	5.182	6	57	95	NXC0800060T7
	.2047	5.200	6	57	95	NXC0805200T7
	.2087	5.300	6	57	95	NXC0805300T7
	.2126	5.400	6	57	95	NXC0805400T7
	.2165	5.500	6	57	95	NXC0805500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	57	95	NXC0805550T7
7/32	.2187	5.560	6	57	95	NXC0805560T7
	.2205	5.600	6	57	95	NXC0805600T7
	.2244	5.700	6	57	95	NXC0805700T7
	.2283	5.800	6	57	95	NXC0805800T7
	.2323	5.900	6	57	95	NXC0805900T7
15/64	.2344	5.950	6	57	95	NXC0805950T7
	.2362	6.000	6	57	95	NXC0806000T7
	.2402	6.100	8	76	114	NXC0806100T7
	.2441	6.200	8	76	114	NXC0806200T7
	.2480	6.300	8	76	114	NXC0806300T7
1/4	.2500	6.350	8	76	114	NXC0806350T7
	.2520	6.400	8	76	114	NXC0806400T7
	.2559	6.500	8	76	114	NXC0806500T7
	.2598	6.600	8	76	114	NXC0806600T7
	.2638	6.700	8	76	114	NXC0806700T7
17/64	.2656	6.750	8	76	114	NXC0806750T7
	.2677	6.800	8	76	114	NXC0806800T7
	.2717	6.900	8	76	114	NXC0806900T7
	.2756	7.000	8	76	114	NXC0807000T7
	.2795	7.100	8	76	114	NXC0807100T7
9/32	.2813	7.140	8	76	114	NXC0807140T7
	.2835	7.200	8	76	114	NXC0807200T7
	.2874	7.300	8	76	114	NXC0807300T7
	.2913	7.400	8	76	114	NXC0807400T7
	.2953	7.500	8	76	114	NXC0807500T7
19/64	.2969	7.540	8	76	114	NXC0807540T7
	.3031	7.700	8	76	114	NXC0807700T7
	.3071	7.800	8	76	114	NXC0807800T7
	.3110	7.900	8	76	114	NXC0807900T7
5/16	.3125	7.940	8	76	114	NXC0807940T7
	.3150	8.000	8	76	114	NXC0808000T7
	.3189	8.100	10	95	142	NXC0808100T7
	.3228	8.200	10	95	142	NXC0808200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	95	142	NXC0808300T7
21/64	.3281	8.330	10	95	142	NXC0808330T7
	.3307	8.400	10	95	142	NXC0808400T7
	.3346	8.500	10	95	142	NXC0808500T7
	.3386	8.600	10	95	142	NXC0808600T7
	.3425	8.700	10	95	142	NXC0808700T7
11/32	.3437	8.730	10	95	142	NXC0808730T7
	.3465	8.800	10	95	142	NXC0808800T7
	.3543	9.000	10	95	142	NXC0809000T7
23/64	.3594	9.130	10	95	142	NXC0809130T7
	.3622	9.200	10	95	142	NXC0809200T7
	.3661	9.300	10	95	142	NXC0809300T7
	.3740	9.500	10	95	142	NXC0809500T7
3/8	.3750	9.520	10	95	142	NXC0809520T7
	.3780	9.600	10	95	142	NXC0809600T7
	.3858	9.800	10	95	142	NXC0809800T7
	.3898	9.900	10	95	142	NXC0809900T7
25/64	.3906	9.920	10	95	142	NXC0809920T7
	.3937	10.000	10	95	142	NXC0810000T7
	.3976	10.100	12	114	162	NXC0810100T7
	.4016	10.200	12	114	162	NXC0810200T7
	.4055	10.300	12	114	162	NXC0810300T7
13/32	.4063	10.320	12	114	162	NXC0810320T7
	.4094	10.400	12	114	162	NXC0810400T7
	.4134	10.500	12	114	162	NXC0810500T7
27/64	.4219	10.720	12	114	162	NXC0810720T7
	.4252	10.800	12	114	162	NXC0810800T7
	.4331	11.000	12	114	162	NXC0811000T7
	.4370	11.100	12	114	162	NXC0811100T7
7/16	.4375	11.113	12	114	162	NXC0811113T7
	.4409	11.200	12	114	162	NXC0811200T7
	.4528	11.500	12	114	162	NXC0811500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	114	162	NXC0811510T7
	.4606	11.700	12	114	162	NXC0811700T7
	.4646	11.800	12	114	162	NXC0811800T7
15/32	.4687	11.910	12	114	162	NXC0811910T7
	.4724	12.000	12	114	162	NXC0812000T7
	.4764	12.100	14	131	178	NXC0812100T7
	.4803	12.200	14	131	178	NXC0812200T7
	.4843	12.300	14	131	178	NXC0812300T7
31/64	.4844	12.303	14	131	178	NXC0812303T7
	.4921	12.500	14	131	178	NXC0812500T7
	.4961	12.600	14	131	178	NXC0812600T7
1/2	.5000	12.700	14	131	178	NXC0812700T7
	.5118	13.000	14	131	178	NXC0813000T7
	.5236	13.300	14	131	178	NXC0813300T7
17/32	.5313	13.490	14	131	178	NXC0813490T7
	.5315	13.500	14	131	178	NXC0813500T7
	.5512	14.000	14	131	178	NXC0814000T7
9/16	.5625	14.290	16	152	203	NXC0814290T7
	.5709	14.500	16	152	203	NXC0814500T7
	.5906	15.000	16	152	203	NXC0815000T7
	.6102	15.500	16	152	203	NXC0815500T7
5/8	.6250	15.870	16	152	203	NXC0815870T7
	.6299	16.000	16	152	203	NXC0816000T7
	.6496	16.500	18	171	222	NXC0816500T7
	.6693	17.000	18	171	222	NXC0817000T7
	.6890	17.500	18	171	222	NXC0817500T7
	.7087	18.000	18	171	222	NXC0818000T7
	.7283	18.500	20	190	243	NXC0818500T7
3/4	.7500	19.050	20	190	243	NXC0819050T7
	.7677	19.500	20	190	243	NXC0819500T7
	.7874	20.000	20	190	243	NXC0820000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

NXC
8xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	39.6		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
8xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	130		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

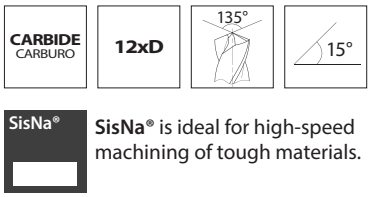
S H Refer to page 261

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

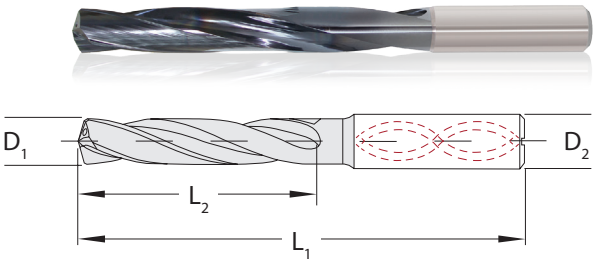
S H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 135.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	54	92	NXC1203000T7
	.1220	3.100	6	54	92	NXC1203100T7
1/8	.1250	3.175	6	54	92	NXC1203175T7
	.1260	3.200	6	54	92	NXC1203200T7
	.1299	3.300	6	54	92	NXC1203300T7
	.1339	3.400	6	54	92	NXC1203400T7
	.1378	3.500	6	54	92	NXC1203500T7
9/64	.1406	3.572	6	54	92	NXC1203572T7
	.1417	3.600	6	54	92	NXC1203600T7
	.1457	3.700	6	54	92	NXC1203700T7
#25	.1496	3.800	6	64	102	NXC1203800T7
	.1535	3.900	6	64	102	NXC1203900T7
5/32	.1563	3.970	6	64	102	NXC1203970T7
	.1575	4.000	6	64	102	NXC1204000T7
	.1614	4.100	6	64	102	NXC1204100T7
	.1654	4.200	6	64	102	NXC1204200T7
	.1693	4.300	6	64	102	NXC1204300T7
11/64	.1719	4.370	6	64	102	NXC1204370T7
	.1732	4.400	6	64	102	NXC1204400T7
	.1772	4.500	6	64	102	NXC1204500T7
	.1811	4.600	6	64	102	NXC1204600T7
	.1831	4.650	6	64	102	NXC1204650T7
#13	.1850	4.700	6	64	102	NXC1200130T7
3/16	.1875	4.760	6	78	116	NXC1204760T7
#12	.1890	4.800	6	78	116	NXC1200120T7
	.1929	4.900	6	78	116	NXC1204900T7
	.1969	5.000	6	78	116	NXC1205000T7
	.2008	5.100	6	78	116	NXC1205100T7
13/64	.2031	5.160	6	78	116	NXC1205160T7
#6	.2040	5.182	6	78	116	NXC1200060T7
	.2047	5.200	6	78	116	NXC1205200T7
	.2087	5.300	6	78	116	NXC1205300T7
	.2126	5.400	6	78	116	NXC1205400T7
	.2165	5.500	6	78	116	NXC1205500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	78	116	NXC1205550T7
7/32	.2187	5.560	6	78	116	NXC1205560T7
	.2205	5.600	6	78	116	NXC1205600T7
	.2244	5.700	6	78	116	NXC1205700T7
	.2283	5.800	6	78	116	NXC1205800T7
	.2323	5.900	6	78	116	NXC1205900T7
15/64	.2344	5.950	6	78	116	NXC1205950T7
	.2362	6.000	6	78	116	NXC1206000T7
	.2402	6.100	8	108	146	NXC1206100T7
	.2441	6.200	8	108	146	NXC1206200T7
	.2480	6.300	8	108	146	NXC1206300T7
1/4	.2500	6.350	8	108	146	NXC1206350T7
	.2520	6.400	8	108	146	NXC1206400T7
	.2559	6.500	8	108	146	NXC1206500T7
	.2598	6.600	8	108	146	NXC1206600T7
	.2638	6.700	8	108	146	NXC1206700T7
17/64	.2656	6.750	8	108	146	NXC1206750T7
	.2677	6.800	8	108	146	NXC1206800T7
	.2717	6.900	8	108	146	NXC1206900T7
	.2756	7.000	8	108	146	NXC1207000T7
	.2795	7.100	8	108	146	NXC1207100T7
9/32	.2813	7.140	8	108	146	NXC1207140T7
	.2835	7.200	8	108	146	NXC1207200T7
	.2874	7.300	8	108	146	NXC1207300T7
	.2913	7.400	8	108	146	NXC1207400T7
	.2953	7.500	8	108	146	NXC1207500T7
19/64	.2969	7.540	8	108	146	NXC1207540T7
	.3031	7.700	8	108	146	NXC1207700T7
	.3071	7.800	8	108	146	NXC1207800T7
	.3110	7.900	8	108	146	NXC1207900T7
5/16	.3125	7.940	8	108	146	NXC1207940T7
	.3150	8.000	8	108	146	NXC1208000T7
	.3189	8.100	10	120	162	NXC1208100T7
	.3228	8.200	10	120	162	NXC1208200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	120	162	NXC1208300T7
21/64	.3281	8.330	10	120	162	NXC1208330T7
	.3307	8.400	10	120	162	NXC1208400T7
	.3346	8.500	10	120	162	NXC1208500T7
	.3386	8.600	10	120	162	NXC1208600T7
	.3425	8.700	10	120	162	NXC1208700T7
11/32	.3437	8.730	10	120	162	NXC1208730T7
	.3465	8.800	10	120	162	NXC1208800T7
	.3543	9.000	10	120	162	NXC1209000T7
23/64	.3594	9.130	10	120	162	NXC1209130T7
	.3622	9.200	10	120	162	NXC1209200T7
	.3661	9.300	10	120	162	NXC1209300T7
	.3740	9.500	10	120	162	NXC1209500T7
3/8	.3750	9.520	10	120	162	NXC1209520T7
	.3780	9.600	10	120	162	NXC1209600T7
	.3858	9.800	10	120	162	NXC1209800T7
	.3898	9.900	10	120	162	NXC1209900T7
25/64	.3906	9.920	10	120	162	NXC1209920T7
	.3937	10.000	10	120	162	NXC1210000T7
	.3976	10.100	12	156	204	NXC1210100T7
	.4016	10.200	12	156	204	NXC1210200T7
	.4055	10.300	12	156	204	NXC1210300T7
13/32	.4063	10.320	12	156	204	NXC1210320T7
	.4094	10.400	12	156	204	NXC1210400T7
	.4134	10.500	12	156	204	NXC1210500T7
27/64	.4219	10.720	12	156	204	NXC1210720T7
	.4252	10.800	12	156	204	NXC1210800T7
	.4331	11.000	12	156	204	NXC1211000T7
	.4370	11.100	12	156	204	NXC1211100T7
7/16	.4375	11.113	12	156	204	NXC1211113T7
	.4409	11.200	12	156	204	NXC1211200T7
	.4528	11.500	12	156	204	NXC1211500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	156	204	NXC1211510T7
	.4606	11.700	12	156	204	NXC1211700T7
	.4646	11.800	12	156	204	NXC1211800T7
15/32	.4687	11.910	12	156	204	NXC1211910T7
	.4724	12.000	12	156	204	NXC1212000T7
	.4764	12.100	14	182	230	NXC1212100T7
	.4803	12.200	14	182	230	NXC1212200T7
	.4843	12.300	14	182	230	NXC1212300T7
31/64	.4844	12.303	14	182	230	NXC1212303T7
	.4921	12.500	14	182	230	NXC1212500T7
	.4961	12.600	14	182	230	NXC1212600T7
1/2	.5000	12.700	14	182	230	NXC1212700T7
	.5118	13.000	14	182	230	NXC1213000T7
	.5236	13.300	14	182	230	NXC1213300T7
17/32	.5313	13.490	14	182	230	NXC1213490T7
	.5315	13.500	14	182	230	NXC1213500T7
	.5512	14.000	14	182	230	NXC1214000T7
9/16	.5625	14.290	16	208	260	NXC1214290T7
	.5709	14.500	16	208	260	NXC1214500T7
	.5906	15.000	16	208	260	NXC1215000T7
	.6102	15.500	16	208	260	NXC1215500T7
5/8	.6250	15.870	16	208	260	NXC1215870T7
	.6299	16.000	16	208	260	NXC1216000T7
	.6496	16.500	18	234	285	NXC1216500T7
	.6693	17.000	18	234	285	NXC1217000T7
	.6890	17.500	18	234	285	NXC1217500T7
	.7087	18.000	18	234	285	NXC1218000T7
	.7283	18.500	20	258	310	NXC1218500T7
3/4	.7500	19.050	20	258	310	NXC1219050T7
	.7677	19.500	20	258	310	NXC1219500T7
	.7874	20.000	20	258	310	NXC1220000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

NXC
12xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	37.8		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
12xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	124		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Speeds & Feeds: Refer to Page 140.

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

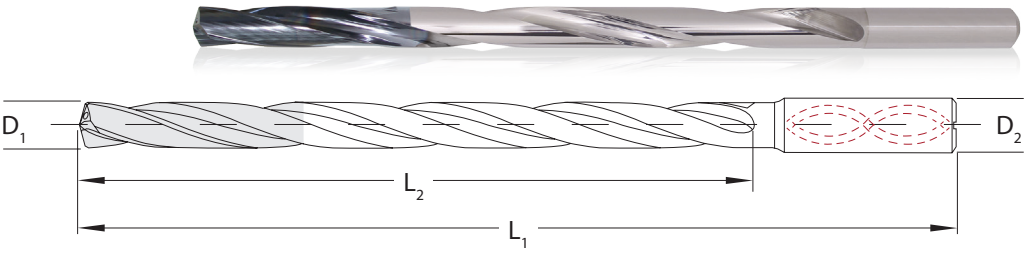
Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

S H Consulte la página 261

SisNa® is ideal for high-speed machining of tough materials.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	60	100	NXC1603000T7
1/8	.1250	3.175	6	60	100	NXC1603175T7
	.1260	3.200	6	60	100	NXC1603200T7
	.1299	3.300	6	60	100	NXC1603300T7
	.1378	3.500	6	60	100	NXC1603500T7
9/64	.1406	3.572	6	75	115	NXC1603572T7
#25	.1496	3.800	6	75	115	NXC1603800T7
5/32	.1563	3.970	6	75	115	NXC1603970T7
	.1575	4.000	6	75	115	NXC1604000T7
	.1654	4.200	6	75	115	NXC1604200T7
11/64	.1719	4.370	6	90	130	NXC1604370T7
	.1772	4.500	6	90	130	NXC1604500T7
#13	.1850	4.700	6	90	130	NXC1600130T7
3/16	.1875	4.760	6	90	130	NXC1604760T7
#12	.1890	4.800	6	90	130	NXC1600120T7
	.1969	5.000	6	90	130	NXC1605000T7
13/64	.2031	5.160	6	108	150	NXC1605160T7
#6	.2040	5.182	6	108	150	NXC1600060T7
	.2165	5.500	6	108	150	NXC1605500T7
7/32	.2187	5.560	6	108	150	NXC1605560T7
	.2283	5.800	6	108	150	NXC1605800T7
15/64	.2344	5.950	6	108	150	NXC1605950T7
	.2362	6.000	6	108	150	NXC1606000T7
1/4	.2500	6.350	8	125	165	NXC1606350T7
	.2559	6.500	8	125	165	NXC1606500T7
17/64	.2656	6.750	8	125	165	NXC1606750T7
	.2677	6.800	8	125	165	NXC1606800T7
	.2756	7.000	8	125	165	NXC1607000T7
9/32	.2813	7.140	8	140	180	NXC1607140T7
	.2953	7.500	8	140	180	NXC1607500T7
19/64	.2969	7.540	8	140	180	NXC1607540T7
	.3071	7.800	8	140	180	NXC1607800T7
5/16	.3125	7.940	8	140	180	NXC1607940T7
	.3150	8.000	8	140	180	NXC1608000T7
21/64	.3281	8.330	10	160	205	NXC1608330T7
	.3346	8.500	10	160	205	NXC1608500T7
11/32	.3437	8.730	10	160	205	NXC1608730T7
	.3465	8.800	10	160	205	NXC1608800T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3543	9.000	10	160	205	NXC1609000T7
23/64	.3594	9.130	10	180	225	NXC1609130T7
3/8	.3750	9.520	10	180	225	NXC1609520T7
	.3858	9.800	10	180	225	NXC1609800T7
25/64	.3906	9.920	10	180	225	NXC1609920T7
	.3937	10.000	10	180	225	NXC1610000T7
	.4016	10.200	12	190	240	NXC1610200T7
13/32	.4063	10.320	12	190	240	NXC1610320T7
27/64	.4219	10.720	12	190	240	NXC1610720T7
	.4252	10.800	12	190	240	NXC1610800T7
	.4331	11.000	12	190	240	NXC1611000T7
7/16	.4375	11.113	12	215	265	NXC1611113T7
	.4528	11.500	12	215	265	NXC1611500T7
29/64	.4531	11.510	12	215	265	NXC1611510T7
15/32	.4687	11.910	12	215	265	NXC1611910T7
	.4724	12.000	12	215	265	NXC1612000T7
	.4843	12.300	14	230	280	NXC1612300T7
31/64	.4844	12.303	14	230	280	NXC1612303T7
1/2	.5000	12.700	14	230	280	NXC1612700T7
	.5118	13.000	14	230	280	NXC1613000T7
	.5236	13.300	14	245	295	NXC1613300T7
17/32	.5313	13.490	14	245	295	NXC1613490T7
	.5315	13.500	14	245	295	NXC1613500T7
	.5512	14.000	14	245	295	NXC1614000T7
9/16	.5625	14.290	16	255	305	NXC1614290T7
	.5709	14.500	16	255	305	NXC1614500T7
	.5906	15.000	16	255	305	NXC1615000T7
	.6102	15.500	16	275	325	NXC1615500T7
5/8	.6250	15.870	16	275	325	NXC1615870T7
	.6299	16.000	16	275	325	NXC1616000T7
	.6496	16.500	18	320	370	NXC1616500T7
	.6693	17.000	18	320	370	NXC1617000T7
	.6890	17.500	18	320	370	NXC1617500T7
	.7087	18.000	18	320	370	NXC1618000T7
	.7283	18.500	20	330	380	NXC1618500T7
3/4	.7500	19.050	20	330	380	NXC1619050T7
	.7677	19.500	20	350	400	NXC1619500T7
	.7874	20.000	20	350	400	NXC1620000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Speeds & Feeds: Refer to Page 140.

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

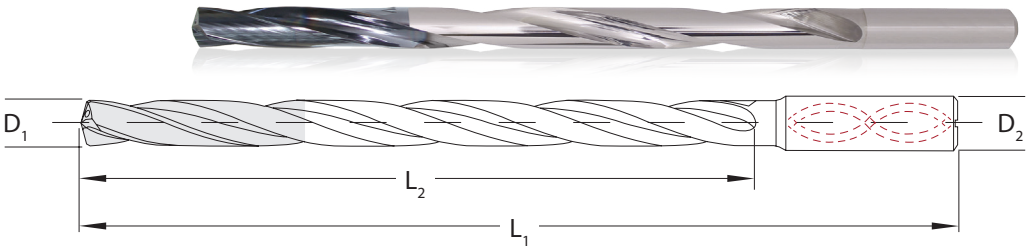
Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

S H Consulte la página 261

SisNa® is ideal for high-speed machining of tough materials.

This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	80	120	NXC2003000T7
1/8	.1250	3.175	6	80	120	NXC2003175T7
	.1260	3.200	6	80	120	NXC2003200T7
	.1299	3.300	6	80	120	NXC2003300T7
	.1378	3.500	6	80	120	NXC2003500T7
9/64	.1406	3.572	6	90	130	NXC2003572T7
#25	.1496	3.800	6	90	130	NXC2003800T7
5/32	.1563	3.970	6	90	130	NXC2003970T7
	.1575	4.000	6	90	130	NXC2004000T7
	.1654	4.200	6	110	160	NXC2004200T7
11/64	.1719	4.370	6	110	160	NXC2004370T7
	.1772	4.500	6	110	160	NXC2004500T7
#13	.1850	4.700	6	120	160	NXC2000130T7
3/16	.1875	4.760	6	120	160	NXC2004760T7
#12	.1890	4.800	6	120	160	NXC2000120T7
	.1969	5.000	6	120	160	NXC2005000T7
13/64	.2031	5.160	6	140	185	NXC2005160T7
#6	.2040	5.182	6	140	185	NXC2000060T7
	.2165	5.500	6	140	185	NXC2005500T7
7/32	.2187	5.560	6	140	185	NXC2005560T7
	.2283	5.800	6	140	185	NXC2005800T7
15/64	.2344	5.950	6	140	185	NXC2005950T7
	.2362	6.000	6	140	185	NXC2006000T7
1/4	.2500	6.350	8	160	210	NXC2006350T7
	.2559	6.500	8	160	210	NXC2006500T7
17/64	.2656	6.750	8	160	210	NXC2006750T7
	.2677	6.800	8	160	210	NXC2006800T7
	.2756	7.000	8	160	210	NXC2007000T7
9/32	.2813	7.140	8	180	230	NXC2007140T7
	.2953	7.500	8	180	230	NXC2007500T7
19/64	.2969	7.540	8	180	230	NXC2007540T7
	.3071	7.800	8	180	230	NXC2007800T7
5/16	.3125	7.940	8	180	230	NXC2007940T7
	.3150	8.000	8	180	230	NXC2008000T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
21/64	.3281	8.330	10	195	260	NXC2008330T7
	.3346	8.500	10	195	260	NXC2008500T7
11/32	.3437	8.730	10	230	290	NXC2008730T7
	.3465	8.800	10	230	290	NXC2008800T7
	.3543	9.000	10	230	290	NXC2009000T7
23/64	.3594	9.130	10	230	290	NXC2009130T7
3/8	.3750	9.520	10	230	290	NXC2009520T7
	.3858	9.800	10	230	290	NXC2009800T7
25/64	.3906	9.920	10	230	290	NXC2009920T7
	.3937	10.000	10	230	290	NXC2010000T7
	.4016	10.200	12	268	315	NXC2010200T7
13/32	.4063	10.320	12	268	315	NXC2010320T7
27/64	.4219	10.720	12	268	315	NXC2010720T7
	.4252	10.800	12	268	315	NXC2010800T7
	.4331	11.000	12	268	315	NXC2011000T7
7/16	.4375	11.113	12	268	315	NXC2011113T7
	.4528	11.500	12	268	315	NXC2011500T7
29/64	.4531	11.510	12	268	315	NXC2011510T7
15/32	.4687	11.910	12	268	315	NXC2011910T7
	.4724	12.000	12	268	315	NXC2012000T7
	.4843	12.300	14	275	325	NXC2012300T7
31/64	.4844	12.303	14	275	325	NXC2012303T7
1/2	.5000	12.700	14	275	325	NXC2012700T7
	.5118	13.000	14	275	325	NXC2013000T7
	.5236	13.300	14	305	355	NXC2013300T7
17/32	.5313	13.490	14	305	355	NXC2013490T7
	.5315	13.500	14	305	355	NXC2013500T7
	.5512	14.000	14	305	355	NXC2014000T7
9/16	.5625	14.290	16	320	370	NXC2014290T7
	.5709	14.500	16	320	370	NXC2014500T7
	.5906	15.000	16	340	390	NXC2015000T7
	.6102	15.500	16	340	390	NXC2015500T7
5/8	.6250	15.870	16	340	390	NXC2015870T7
	.6299	16.000	16	340	390	NXC2016000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Speeds & Feeds: Refer to Page 141.

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

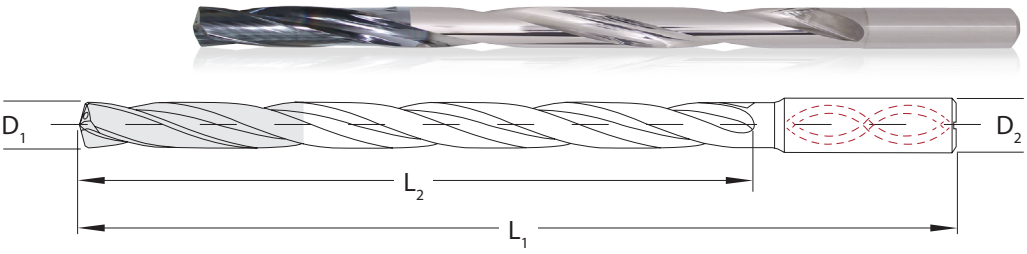
Recubrimiento
SisNa®

Ideal para
Aleaciones de níquel

S H Consulte la página 261

SisNa® **SisNa®** is ideal for high-speed machining of tough materials.

■ This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	98	135	NXC2503000T7
1/8	.1250	3.175	6	98	135	NXC2503175T7
	.1260	3.200	6	98	135	NXC2503200T7
	.1299	3.300	6	110	150	NXC2503300T7
	.1378	3.500	6	110	150	NXC2503500T7
9/64	.1406	3.572	6	120	160	NXC2503572T7
#25	.1496	3.800	6	120	160	NXC2503800T7
5/32	.1563	3.970	6	120	160	NXC2503970T7
	.1575	4.000	6	120	160	NXC2504000T7
	.1654	4.200	6	120	160	NXC2504200T7
11/64	.1719	4.370	6	135	180	NXC2504370T7
	.1772	4.500	6	135	180	NXC2504500T7
#13	.1850	4.700	6	135	180	NXC2500130T7
3/16	.1875	4.760	6	135	180	NXC2504760T7
#12	.1890	4.800	6	135	180	NXC2500120T7
	.1969	5.000	6	135	180	NXC2505000T7
13/64	.2031	5.160	6	168	205	NXC2505160T7
#6	.2040	5.182	6	168	205	NXC2500060T7
	.2165	5.500	6	168	205	NXC2505500T7
7/32	.2187	5.560	6	168	205	NXC2505560T7
	.2283	5.800	6	168	205	NXC2505800T7
15/64	.2344	5.950	6	168	205	NXC2505950T7
	.2362	6.000	6	168	205	NXC2506000T7
1/4	.2500	6.350	8	200	240	NXC2506350T7
	.2559	6.500	8	200	240	NXC2506500T7
17/64	.2656	6.750	8	200	240	NXC2506750T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2677	6.800	8	200	240	NXC2506800T7
	.2756	7.000	8	200	240	NXC2507000T7
9/32	.2813	7.140	8	220	260	NXC2507140T7
	.2953	7.500	8	220	260	NXC2507500T7
19/64	.2969	7.540	8	220	260	NXC2507540T7
	.3071	7.800	8	220	260	NXC2507800T7
5/16	.3125	7.940	8	220	260	NXC2507940T7
	.3150	8.000	8	220	260	NXC2508000T7
21/64	.3281	8.330	10	240	285	NXC2508330T7
	.3346	8.500	10	240	285	NXC2508500T7
11/32	.3437	8.730	10	268	310	NXC2508730T7
	.3465	8.800	10	268	310	NXC2508800T7
	.3543	9.000	10	268	310	NXC2509000T7
23/64	.3594	9.130	10	268	310	NXC2509130T7
3/8	.3750	9.520	10	268	310	NXC2509520T7
	.3858	9.800	10	268	310	NXC2509800T7
25/64	.3906	9.920	10	268	310	NXC2509920T7
	.3937	10.000	10	268	310	NXC2510000T7
13/32	.4063	10.320	12	325	375	NXC2510320T7
27/64	.4219	10.720	12	325	375	NXC2510720T7
	.4331	11.000	12	325	375	NXC2511000T7
7/16	.4375	11.113	12	325	375	NXC2511113T7
	.4528	11.500	12	325	375	NXC2511500T7
29/64	.4531	11.510	12	325	375	NXC2511510T7
15/32	.4687	11.910	12	325	375	NXC2511910T7
	.4724	12.000	12	325	375	NXC2512000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

Design
Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

Coating
SisNa®

Ideal for
Nickel-based alloys

S H Refer to page 261

Speeds & Feeds: Refer to Page 141.

Diseño
Flautas largas espirales, doble margen, 45° chaflán de esquina y refrigerante interno.

Recubrimiento
SisNa®

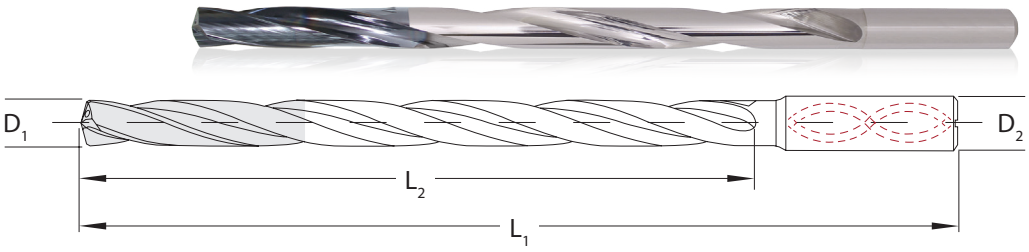
Ideal para
Aleaciones de níquel

S H Consulte la página 261

CARBIDE CARBURO | 30xD | 135° | 15°

SisNa® **SisNa®** is ideal for high-speed machining of tough materials.

This drill must utilize a pilot hole drill. (Refer to page 157)



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	105	150	NXC3003000T7
1/8	.1250	3.175	6	105	150	NXC3003175T7
	.1260	3.200	6	105	150	NXC3003200T7
	.1299	3.300	6	135	185	NXC3003300T7
	.1378	3.500	6	135	185	NXC3003500T7
9/64	.1406	3.572	6	135	185	NXC3003572T7
#25	.1496	3.800	6	135	185	NXC3003800T7
5/32	.1563	3.970	6	135	185	NXC3003970T7
	.1575	4.000	6	135	185	NXC3004000T7
	.1654	4.200	6	135	185	NXC3004200T7
11/64	.1719	4.370	6	165	215	NXC3004370T7
	.1772	4.500	6	165	215	NXC3004500T7
#13	.1850	4.700	6	165	215	NXC3000130T7
3/16	.1875	4.760	6	165	215	NXC3004760T7
#12	.1890	4.800	6	165	215	NXC3000120T7
	.1969	5.000	6	165	215	NXC3005000T7
13/64	.2031	5.160	6	180	230	NXC3005160T7
#6	.2040	5.182	6	180	230	NXC3000060T7
	.2165	5.500	6	180	230	NXC3005500T7
7/32	.2187	5.560	6	180	230	NXC3005560T7
	.2283	5.800	6	180	230	NXC3005800T7
15/64	.2344	5.950	6	180	230	NXC3005950T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2362	6.000	6	180	230	NXC3006000T7
1/4	.2500	6.350	8	215	280	NXC3006350T7
	.2559	6.500	8	215	280	NXC3006500T7
17/64	.2656	6.750	8	230	280	NXC3006750T7
	.2677	6.800	8	230	280	NXC3006800T7
	.2756	7.000	8	230	280	NXC3007000T7
9/32	.2813	7.140	8	230	280	NXC3007140T7
	.2953	7.500	8	230	280	NXC3007500T7
19/64	.2969	7.540	8	265	315	NXC3007540T7
	.3071	7.800	8	265	315	NXC3007800T7
5/16	.3125	7.940	8	265	315	NXC3007940T7
	.3150	8.000	8	265	315	NXC3008000T7
21/64	.3281	8.330	10	295	350	NXC3008330T7
	.3346	8.500	10	295	350	NXC3008500T7
11/32	.3437	8.730	10	330	380	NXC3008730T7
	.3465	8.800	10	330	380	NXC3008800T7
	.3543	9.000	10	330	380	NXC3009000T7
23/64	.3594	9.130	10	330	380	NXC3009130T7
3/8	.3750	9.520	10	330	380	NXC3009520T7
	.3858	9.800	10	330	380	NXC3009800T7
25/64	.3906	9.920	10	330	380	NXC3009920T7
	.3937	10.000	10	330	380	NXC3010000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

NXC
16xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	36.0		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
16xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	118		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
20xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	34.1		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
20xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	112		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
25xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	32.3		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
25xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	106		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
30xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	29.9		.05	.05	.08	.10	.13

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

NXC
30xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	98		.002	.002	.003	.004	.005

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

High-Performance Drill
Single-Margin
Ideal for Steels, Gray Cast Iron & Hardened Materials
3xD-5xD

140° Point Geometry - Designed for low-cutting force and chip evacuation.

140° Geometría de la Punta - Diseñado para fuerza moderada y evacuación de la viruta.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

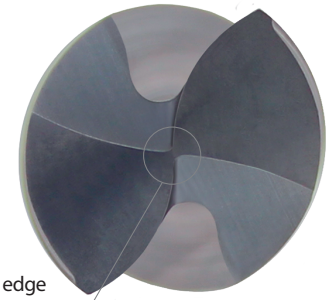
Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

SisNa® Coating - Ideal for high-speed machining of tough materials.

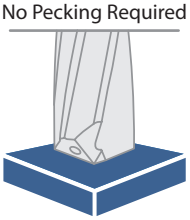
Recubrimiento SisNa® - Ideal para el mecanizado de alta velocidad de materiales endurecidos.



S-Point - Stronger point edge & corner protection.

Punto-S - Brinda un punto más fuerte y protección en las esquinas.

No Pecking Required



SisNa® is ideal for high-speed machining of tough materials.

Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Steels

P K H Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

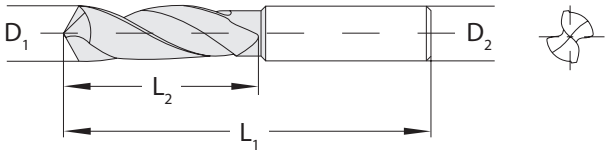
Ideal para
Aceros endurecidos

P K H Consulte la página 261

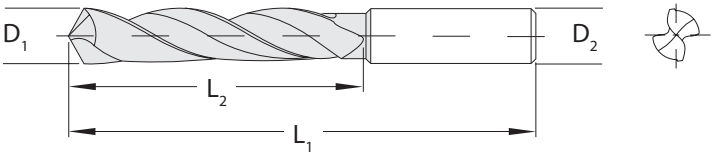
Speeds & Feeds: Refer to page 145 & 147.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

3xD PAGE 144



5xD PAGE 146



Design
Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Steels

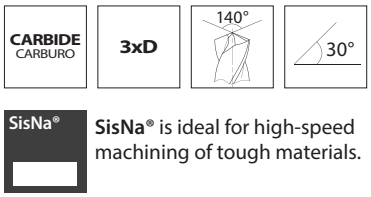
P K H Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Aceros Endurecidos

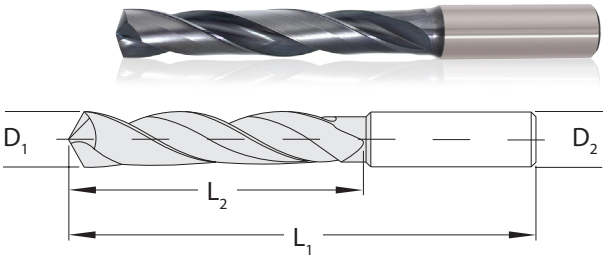
P K H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 145.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	5/8	2	HX00306250T7
#52	.0635	1.61	1/8	11/16	2	HX00300520T7
#51	.0670	1.70	1/8	11/16	2	HX00300510T7
#50	.0700	1.78	1/8	11/16	2	HX00300500T7
#49	.0730	1.85	1/8	11/16	2	HX00300490T7
#48	.0760	1.93	1/8	11/16	2	HX00300480T7
5/64	.0781	1.98	1/8	11/16	2	HX00307810T7
#47	.0785	1.99	1/8	3/4	2-1/2	HX00300470T7
	.0787	2.00	1/8	3/4	2-1/2	HX00307870T7
#46	.0810	2.06	1/8	3/4	2-1/2	HX00300460T7
#45	.0820	2.08	1/8	3/4	2-1/2	HX00300450T7
#44	.0860	2.18	1/8	3/4	2-1/2	HX00300440T7
#43	.0890	2.26	1/8	3/4	2-1/2	HX00300430T7
#42	.0935	2.37	1/8	3/4	2-1/2	HX00300420T7
3/32	.0938	2.38	1/8	3/4	2-1/2	HX00309380T7
#41	.0960	2.44	1/8	13/16	2-1/2	HX00300410T7
#40	.0980	2.49	1/8	13/16	2-1/2	HX00300400T7
	.0984	2.50	1/8	13/16	2-1/2	HX00309840T7
#39	.0995	2.53	1/8	13/16	2-1/2	HX00300390T7
#38	.1015	2.58	1/8	13/16	2-1/2	HX00300380T7
#37	.1040	2.64	1/8	13/16	2-1/2	HX00300370T7
#36	.1065	2.71	1/8	13/16	2-1/2	HX00300360T7
7/64	.1094	2.78	1/8	13/16	2-1/2	HX00301094T7
#35	.1100	2.79	1/8	7/8	2-1/2	HX00300350T7
#34	.1110	2.82	1/8	7/8	2-1/2	HX00300340T7
#33	.1130	2.87	1/8	7/8	2-1/2	HX00300330T7
#32	.1160	2.95	1/8	7/8	2-1/2	HX00300320T7
	.1181	3.00	1/8	7/8	2-1/2	HX00303000T7
#31	.1200	3.05	1/8	7/8	2-1/2	HX00300310T7
1/8	.1250	3.17	1/8	7/8	2-1/2	HX00303175T7
#30	.1285	3.26	3/16	15/16	2-1/2	HX00300300T7
#29	.1360	3.45	3/16	15/16	2-1/2	HX00300290T7
	.1378	3.50	3/16	15/16	2-1/2	HX00303500T7
#28	.1405	3.57	3/16	15/16	2-1/2	HX00300280T7
9/64	.1406	3.57	3/16	1	2-1/2	HX00303570T7
#27	.1440	3.66	3/16	1	2-1/2	HX00300270T7
#26	.1470	3.73	3/16	1	2-1/2	HX00300260T7
#25	.1495	3.80	3/16	1	2-1/2	HX00300250T7
#24	.1520	3.86	3/16	1	2-1/2	HX00300240T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#23	.1540	3.91	3/16	1	2-1/2	HX00300230T7
5/32	.1562	3.97	3/16	1	2-1/2	HX00303970T7
#22	.1570	3.99	3/16	1-1/16	2-1/2	HX00300220T7
	.1575	4.00	3/16	1-1/16	2-1/2	HX00304000T7
#21	.1590	4.04	3/16	1-1/16	2-1/2	HX00300210T7
#20	.1610	4.09	3/16	1-1/16	2-1/2	HX00300200T7
	.1654	4.20	3/16	1-1/16	2-1/2	HX00304200T7
#19	.1660	4.22	3/16	1-1/16	2-1/2	HX00300190T7
#18	.1695	4.30	3/16	1-1/16	2-1/2	HX00300180T7
11/64	.1719	4.37	3/16	1-1/16	2-1/2	HX00304370T7
#17	.1730	4.39	3/16	1-1/8	3	HX00300170T7
#16	.1770	4.49	3/16	1-1/8	3	HX00300160T7
	.1772	4.50	3/16	1-1/8	3	HX00304500T7
#15	.1800	4.57	3/16	1-1/8	3	HX00300150T7
#14	.1820	4.62	3/16	1-1/8	3	HX00300140T7
#13	.1850	4.70	3/16	1-1/8	3	HX00300130T7
3/16	.1875	4.76	3/16	1-1/8	3	HX00304760T7
#12	.1890	4.80	1/4	1-3/16	3	HX00300120T7
#11	.1910	4.85	1/4	1-3/16	3	HX00300110T7
#10	.1935	4.91	1/4	1-3/16	3	HX00300100T7
#9	.1960	4.98	1/4	1-3/16	3	HX00300090T7
	.1969	5.00	1/4	1-3/16	3	HX00305000T7
#8	.1990	5.05	1/4	1-3/16	3	HX00300080T7
	.2008	5.10	1/4	1-3/16	3	HX00305100T7
#7	.2010	5.10	1/4	1-3/16	3	HX00300070T7
13/64	.2031	5.16	1/4	1-3/16	3	HX00305160T7
#6	.2040	5.18	1/4	1-1/4	3	HX00300060T7
#5	.2055	5.22	1/4	1-1/4	3	HX00300050T7
#4	.2090	5.31	1/4	1-1/4	3	HX00300040T7
#3	.2130	5.41	1/4	1-1/4	3	HX00300030T7
	.2165	5.50	1/4	1-1/4	3	HX00302165T7
7/32	.2188	5.56	1/4	1-1/4	3	HX00305560T7
#2	.2210	5.61	1/4	1-5/16	3	HX00300020T7
#1	.2280	5.79	1/4	1-5/16	3	HX00300010T7
A	.2340	5.94	1/4	1-5/16	3	HX003000A0T7
15/64	.2344	5.95	1/4	1-5/16	3	HX00305950T7
	.2362	6.00	1/4	1-3/8	3	HX00306000T7
B	.2380	6.04	1/4	1-3/8	3	HX003000B0T7
C	.2420	6.15	1/4	1-3/8	3	HX003000C0T7

Other Dimensions are Available Upon Request

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
D	.2460	6.25	1/4	1-3/8	3	HX003000D0T7
1/4/E	.2500	6.35	1/4	1-3/8	3	HX00306350T7
	.2559	6.50	5/16	1-7/16	3	HX00306500T7
F	.2570	6.53	5/16	1-7/16	3	HX003000F0T7
G	.2610	6.63	5/16	1-7/16	3	HX003000G0T7
17/64	.2656	6.75	5/16	1-7/16	3	HX00306750T7
H	.2660	6.76	5/16	1-1/2	3	HX003000H0T7
I	.2720	6.91	5/16	1-1/2	3	HX003000I0T7
	.2756	7.00	5/16	1-1/2	3	HX00307000T7
J	.2770	7.03	5/16	1-1/2	3	HX003000J0T7
K	.2810	7.14	5/16	1-1/2	3	HX003000K0T7
9/32	.2812	7.14	5/16	1-1/2	3	HX00307140T7
L	.2900	7.37	5/16	1-9/16	4	HX003000L0T7
M	.2950	7.49	5/16	1-9/16	4	HX003000M0T7
	.2953	7.50	5/16	1-9/16	4	HX00307500T7
19/64	.2969	7.54	5/16	1-9/16	4	HX00307540T7
N	.3020	7.67	5/16	1-5/8	4	HX003000N0T7
5/16	.3125	7.94	5/16	1-5/8	4	HX00307940T7
	.3150	8.00	3/8	1-11/16	4	HX00308000T7
O	.3160	8.03	3/8	1-11/16	4	HX003000O0T7
P	.3230	8.20	3/8	1-11/16	4	HX003000P0T7
21/64	.3281	8.33	3/8	1-11/16	4	HX00308330T7
Q	.3320	8.43	3/8	1-11/16	4	HX003000Q0T7
	.3346	8.50	3/8	1-11/16	4	HX00308500T7
R	.3390	8.61	3/8	1-11/16	4	HX003000R0T7
11/32	.3438	8.73	3/8	1-11/16	4	HX00308730T7
S	.3480	8.84	3/8	1-3/4	4	HX003000S0T7
	.3543	9.00	3/8	1-3/4	4	HX00309000T7
T	.3580	9.09	3/8	1-3/4	4	HX003000T0T7
23/64	.3594	9.13	3/8	1-3/4	4	HX00309130T7
U	.3680	9.35	3/8	1-13/16	4	HX003000U0T7
	.3740	9.50	3/8	1-13/16	4	HX00309500T7
3/8	.3750	9.52	3/8	1-13/16	4	HX00309520T7
V	.3770	9.57	7/16	1-7/8	4	HX003000V0T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
W	.3860	9.80	7/16	1-7/8	4	HX003000W0T7
25/64	.3906	9.92	7/16	1-7/8	4	HX00309920T7
	.3937	10.00	7/16	1-15/16	4	HX00310000T7
X	.3970	10.08	7/16	1-15/16	4	HX003000X0T7
Y	.4040	10.26	7/16	1-15/16	4	HX003000Y0T7
13/32	.4062	10.32	7/16	1-15/16	4	HX00310320T7
Z	.4130	10.49	7/16	2	4	HX003000Z0T7
	.4134	10.50	7/16	2	4	HX00310500T7
27/64	.4219	10.72	7/16	2	4	HX00310720T7
	.4252	10.80	7/16	2	4	HX00310800T7
	.4331	11.00	7/16	2-1/16	4	HX00311000T7
7/16	.4375	11.11	7/16	2-1/16	4	HX00311110T7
	.4528	11.50	1/2	2-1/8	4	HX00311500T7
29/64	.4531	11.51	1/2	2-1/8	4	HX00311510T7
15/32	.4688	11.91	1/2	2-1/8	4	HX00311910T7
	.4724	12.00	1/2	2-3/16	5	HX00312000T7
31/64	.4844	12.30	1/2	2-3/16	5	HX00312300T7
	.4921	12.50	1/2	2-1/4	5	HX00312500T7
1/2	.5000	12.70	1/2	2-1/4	5	HX00312700T7
	.5118	13.00	9/16	2-3/8	5	HX00313000T7
33/64	.5156	13.10	9/16	2-3/8	5	HX00313100T7
17/32	.5312	13.49	9/16	2-1/2	5	HX00313490T7
	.5315	13.50	9/16	2-1/2	5	HX00313500T7
35/64	.5469	13.89	9/16	2-1/2	5	HX00313890T7
	.5512	14.00	9/16	2-1/2	5	HX00314000T7
9/16	.5625	14.29	9/16	3	5	HX00314290T7
	.5709	14.50	5/8	3	5	HX00314500T7
37/64	.5781	14.68	5/8	3	5	HX00314680T7
	.5906	15.00	5/8	3	5	HX00315000T7
19/32	.5938	15.08	5/8	3	5	HX00315080T7
39/64	.6094	15.48	5/8	3	5	HX00315480T7
	.6102	15.50	5/8	3	5	HX00315500T7
5/8	.6250	15.87	5/8	3	5	HX00315870T7
	.6299	16.00	3/4	3	5	HX00316000T7

Other Dimensions are Available Upon Request

HX
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm / Dec. Inch.	F[mm/u] Feed Per Revolution: > 3.00 ≤ 5.00 / .1181-.1969	> 5.00 ≤ 8.00 / .1970-.3150	> 8.00 ≤ 12.00 / .3151-.4724	> 12.00 ≤ 16.00 / .4725-.6299	> 16.00 ≤ 20.00 / .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	80		.18	.24	.30	.35	.40
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	65		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	40		.15	.21	.27	.32	.37
K 1	Gray Cast Iron	75		.20	.25	.35	.40	.46
H 2	Hardened Tool Steels (48-55 HRc)	23		.08	.09	.11	.13	.15
H 3	Hardened Tool Steels (56-60 HRc)	11		.08	.09	.11	.13	.15
H 4	Hardened Tool Steels (60-62 HRc) Hardened Tool Steels (62-64 HRc)	9 7		.08 .08	.09 .09	.11 .11	.13 .13	.15 .15

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

HX
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm / Dec. Inch.	IPR = Inches Per Revolution: > 3.00 ≤ 5.00 / .1181-.1969	> 5.00 ≤ 8.00 / .1970-.3150	> 8.00 ≤ 12.00 / .3151-.4724	> 12.00 ≤ 16.00 / .4725-.6299	> 16.00 ≤ 20.00 / .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	262.5		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	213.3		.005	.008	.010	.012	.014
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	131.2		.005	.008	.010	.012	.014
K 1	Gray Cast Iron	246.1		.007	.009	.013	.015	.018
H 2	Hardened Tool Steels (48-55 HRc)	75.5		.003	.004	.004	.005	.006
H 3	Hardened Tool Steels (56-60 HRc)	36.1		.003	.004	.004	.005	.006
H 4	Hardened Tool Steels (60-62 HRc) Hardened Tool Steels (62-64 HRc)	29.5 23.0		.003 .003	.004 .004	.004 .004	.005 .005	.006 .006

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-flute, right-hand cut, with external coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Steels

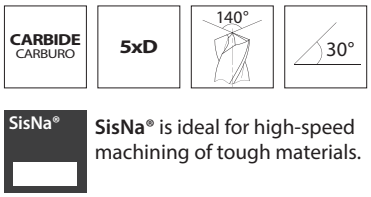
P K H Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante externo y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Aceros Endurecidos

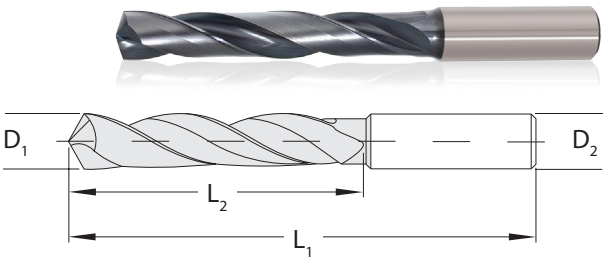
P K H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 147.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/16	.0625	1.59	1/8	3/4	2-1/2	HX00506250T7
#52	.0635	1.61	1/8	3/4	2-1/2	HX00500520T7
#51	.0670	1.70	1/8	3/4	2-1/2	HX00500510T7
#50	.0700	1.78	1/8	7/8	2-1/2	HX00500500T7
#49	.0730	1.85	1/8	7/8	2-1/2	HX00500490T7
#48	.0760	1.93	1/8	7/8	2-1/2	HX00500480T7
5/64	.0781	1.98	1/8	7/8	2-1/2	HX00507810T7
#47	.0785	1.99	1/8	7/8	2-1/2	HX00500470T7
	.0787	2.00	1/8	7/8	2-1/2	HX00507870T7
#46	.0810	2.06	1/8	7/8	2-1/2	HX00500460T7
#45	.0820	2.08	1/8	7/8	2-1/2	HX00500450T7
#44	.0860	2.18	1/8	1	2-1/2	HX00500440T7
#43	.0890	2.26	1/8	1	2-1/2	HX00500430T7
#42	.0935	2.37	1/8	1	2-1/2	HX00500420T7
3/32	.0938	2.38	1/8	1	2-1/2	HX00509380T7
#41	.0960	2.44	1/8	1	2-1/2	HX00500410T7
#40	.0980	2.49	1/8	1	3	HX00500400T7
	.0984	2.50	1/8	1-1/4	3	HX00509840T7
#39	.0995	2.53	1/8	1-1/4	3	HX00500390T7
#38	.1015	2.58	1/8	1-1/4	3	HX00500380T7
#37	.1040	2.64	1/8	1-1/4	3	HX00500370T7
#36	.1065	2.71	1/8	1-1/4	3	HX00500360T7
7/64	.1094	2.78	1/8	1-1/4	3	HX00501094T7
#35	.1100	2.79	1/8	1-1/4	3	HX00500350T7
#34	.1110	2.82	1/8	1-1/4	3	HX00500340T7
#33	.1130	2.87	1/8	1-1/4	3	HX00500330T7
#32	.1160	2.95	1/8	1-1/4	3	HX00500320T7
	.1181	3.00	1/8	1-1/4	3	HX00503000T7
#31	.1200	3.05	1/8	1-1/4	3	HX00500310T7
1/8	.1250	3.17	1/8	1-1/4	3	HX00503175T7
#30	.1285	3.26	3/16	1-1/4	3	HX00500300T7
#29	.1360	3.45	3/16	1-3/8	3	HX00500290T7
	.1378	3.50	3/16	1-3/8	3	HX00503500T7
#28	.1405	3.57	3/16	1-3/8	3	HX00500280T7
9/64	.1406	3.57	3/16	1-3/8	3	HX00503570T7
#27	.1440	3.66	3/16	1-3/8	3	HX00500270T7
#26	.1470	3.73	3/16	1-3/8	3	HX00500260T7
#25	.1495	3.80	3/16	1-3/8	3	HX00500250T7
#24	.1520	3.86	3/16	1-3/8	3	HX00500240T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
#23	.1540	3.91	3/16	1-3/8	3	HX00500230T7
5/32	.1562	3.97	3/16	1-3/8	3	HX00503970T7
#22	.1570	3.99	3/16	1-3/8	3	HX00500220T7
	.1575	4.00	3/16	1-3/8	3	HX00504000T7
#21	.1590	4.04	3/16	1-3/8	3	HX00500210T7
#20	.1610	4.09	3/16	1-5/8	3	HX00500200T7
#19	.1660	4.22	3/16	1-5/8	4	HX00500190T7
#18	.1695	4.30	3/16	1-5/8	4	HX00500180T7
11/64	.1719	4.37	3/16	1-5/8	4	HX00504370T7
#17	.1730	4.39	3/16	1-5/8	4	HX00500170T7
#16	.1770	4.49	3/16	1-5/8	4	HX00500160T7
	.1772	4.50	3/16	1-5/8	4	HX00504500T7
#15	.1800	4.57	3/16	1-5/8	4	HX00500150T7
#14	.1820	4.62	3/16	1-5/8	4	HX00500140T7
#13	.1850	4.70	3/16	1-5/8	4	HX00500130T7
3/16	.1875	4.76	3/16	1-5/8	4	HX00504760T7
#12	.1890	4.80	1/4	1-5/8	4	HX00500120T7
#11	.1910	4.85	1/4	1-5/8	4	HX00500110T7
#10	.1935	4.91	1/4	1-5/8	4	HX00500100T7
#9	.1960	4.98	1/4	1-3/4	4	HX00500090T7
	.1969	5.00	1/4	1-3/4	4	HX00505000T7
#8	.1990	5.05	1/4	1-3/4	4	HX00500080T7
#7	.2010	5.10	1/4	1-3/4	4	HX00500070T7
13/64	.2031	5.16	1/4	1-3/4	4	HX00505160T7
#6	.2040	5.18	1/4	1-3/4	4	HX00500060T7
#5	.2055	5.22	1/4	1-3/4	4	HX00500050T7
#4	.2090	5.31	1/4	1-3/4	4	HX00500040T7
#3	.2130	5.41	1/4	1-3/4	4	HX00500030T7
	.2165	5.50	1/4	1-3/4	4	HX00502165T7
7/32	.2188	5.56	1/4	1-3/4	4	HX00505560T7
#2	.2210	5.61	1/4	1-3/4	4	HX00500020T7
#1	.2280	5.79	1/4	1-3/4	4	HX00500010T7
A	.2340	5.94	1/4	2	4	HX005000A0T7
15/64	.2344	5.95	1/4	2	4	HX00505950T7
	.2362	6.00	1/4	2	4	HX00506000T7
B	.2380	6.04	1/4	2	4	HX005000B0T7
C	.2420	6.15	1/4	2	4	HX005000C0T7
D	.2460	6.25	1/4	2	4	HX005000D0T7
1/4/E	.2500	6.35	1/4	2	4	HX00506350T7

Other Dimensions are Available Upon Request

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
	.2559	6.50	5/16	2	4	HX00506500T7
F	.2570	6.53	5/16	2	4	HX005000F0T7
G	.2610	6.63	5/16	2-1/8	4	HX005000G0T7
17/64	.2656	6.75	5/16	2-1/8	4	HX00506750T7
H	.2660	6.76	5/16	2-1/8	4	HX005000H0T7
I	.2720	6.91	5/16	2-1/8	4	HX005000I0T7
	.2756	7.00	5/16	2-1/8	4	HX00507000T7
J	.2770	7.03	5/16	2-1/8	4	HX005000J0T7
K	.2810	7.14	5/16	2-1/8	4	HX005000K0T7
9/32	.2812	7.14	5/16	2-1/8	4	HX00507140T7
L	.2900	7.37	5/16	2-1/8	4	HX005000L0T7
M	.2950	7.49	5/16	2-3/8	4	HX005000M0T7
	.2953	7.50	5/16	2-3/8	4	HX00507500T7
19/64	.2969	7.54	5/16	2-3/8	4	HX00507540T7
N	.3020	7.67	5/16	2-3/8	4	HX005000N0T7
5/16	.3125	7.94	5/16	2-3/8	4	HX00507940T7
	.3150	8.00	3/8	2-3/8	4	HX00508000T7
O	.3160	8.03	3/8	2-3/8	4	HX005000O0T7
P	.3230	8.20	3/8	2-3/8	4	HX005000P0T7
21/64	.3281	8.33	3/8	2-1/2	5	HX00508330T7
Q	.3320	8.43	3/8	2-1/2	5	HX005000Q0T7
	.3346	8.50	3/8	2-1/2	5	HX00508500T7
R	.3390	8.61	3/8	2-1/2	5	HX005000R0T7
11/32	.3438	8.73	3/8	2-1/2	5	HX00508730T7
S	.3480	8.84	3/8	2-1/2	5	HX005000S0T7
	.3543	9.00	3/8	2-1/2	5	HX00509000T7
T	.3580	9.09	3/8	2-3/4	5	HX005000T0T7
23/64	.3594	9.13	3/8	2-3/4	5	HX00509130T7
U	.3680	9.35	3/8	2-3/4	5	HX005000U0T7
	.3740	9.50	3/8	2-3/4	5	HX00509500T7
3/8	.3750	9.52	3/8	2-3/4	5	HX00509520T7
V	.3770	9.57	7/16	2-7/8	5	HX005000V0T7
W	.3860	9.80	7/16	2-7/8	5	HX005000W0T7

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
25/64	.3906	9.92	7/16	2-7/8	5	HX00509920T7
	.3937	10.00	7/16	2-7/8	5	HX00510000T7
X	.3970	10.08	7/16	2-7/8	5	HX005000X0T7
Y	.4040	10.26	7/16	2-7/8	5	HX005000Y0T7
13/32	.4062	10.32	7/16	2-7/8	5	HX00510320T7
Z	.4130	10.49	7/16	2-7/8	5	HX005000Z0T7
	.4134	10.50	7/16	2-7/8	5	HX00510500T7
27/64	.4219	10.72	7/16	2-7/8	5	HX00510720T7
	.4252	10.80	7/16	2-7/8	5	HX00510800T7
	.4331	11.00	7/16	2-7/8	5	HX00511000T7
7/16	.4375	11.11	7/16	2-7/8	5	HX00511110T7
	.4528	11.50	1/2	3	5	HX00511500T7
29/64	.4531	11.51	1/2	3	5	HX00511510T7
15/32	.4688	11.91	1/2	3	5	HX00511910T7
	.4724	12.00	1/2	3	5	HX00512000T7
31/64	.4844	12.30	1/2	3	5	HX00512300T7
	.4921	12.50	1/2	3	5	HX00512500T7
1/2	.5000	12.70	1/2	3	5	HX00512700T7
	.5118	13.00	9/16	3-1/4	5	HX00513000T7
33/64	.5156	13.10	9/16	3-1/4	5	HX00513100T7
17/32	.5312	13.49	9/16	3-1/4	5	HX00513490T7
	.5315	13.50	9/16	3-1/4	5	HX00513500T7
35/64	.5469	13.89	9/16	3-1/4	5	HX00513890T7
	.5512	14.00	9/16	3-1/4	5	HX00514000T7
9/16	.5625	14.29	9/16	3-1/4	5	HX00514290T7
	.5709	14.50	5/8	3-1/4	5	HX00514500T7
37/64	.5781	14.68	5/8	3-1/2	6	HX00514680T7
	.5906	15.00	5/8	3-1/2	6	HX00515000T7
19/32	.5938	15.08	5/8	3-1/2	6	HX00515080T7
39/64	.6094	15.48	5/8	3-1/2	6	HX00515480T7
	.6102	15.50	5/8	3-1/2	6	HX00515500T7
5/8	.6250	15.87	5/8	3-1/2	6	HX00515870T7
	.6299	16.00	3/4	3-1/2	6	HX00516000T7

Other Dimensions are Available Upon Request

HX
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm	F[mm/u] Feed Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	75		.18	.24	.30	.35	.40
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	60		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	40		.15	.21	.27	.32	.37
K 1	Gray Cast Iron	70		.20	.25	.35	.40	.46
H 2	Hardened Tool Steels (48-55 HRc)	22		.08	.09	.11	.13	.15
H 3	Hardened Tool Steels (56-60 HRc)	11		.08	.09	.11	.13	.15
H 4	Hardened Tool Steels (60-62 HRc)	9		.08	.09	.11	.13	.15
	Hardened Tool Steels (62-64 HRc)	7		.08	.09	.11	.13	.15

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

HX
5xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm	IPR = Inches Per Revolution				
				> 3.00 ≤ 5.00	> 5.00 ≤ 8.00	> 8.00 ≤ 12.00	> 12.00 ≤ 16.00	> 16.00 ≤ 20.00
			Dec. Inch.	.1181-.1969	.1970-.3150	.3151-.4724	.4725-.6299	.6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	246.1		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	196.9		.005	.008	.010	.012	.014
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	131.2		.005	.008	.010	.012	.014
K 1	Gray Cast Iron	229.7		.007	.009	.013	.015	.018
H 2	Hardened Tool Steels (48-55 HRc)	72.2		.003	.004	.004	.005	.006
H 3	Hardened Tool Steels (56-60 HRc)	36.1		.003	.004	.004	.005	.006
H 4	Hardened Tool Steels (60-62 HRc)	29.5		.003	.004	.004	.005	.006
	Hardened Tool Steels (62-64 HRc)	23.0		.003	.004	.004	.005	.006

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Now Improved with EDGE CUT™ for Superior Cutter Performance

HXC

High-Performance Drill
Single-Margin
Ideal for Steels, Gray Cast Iron & Hardened Materials
3xD-5xD

140° Point Geometry - Designed for low-cutting force and chip evacuation.

140° Geometría de la Punta - Diseñado para fuerza moderada y evacuación de la viruta.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Single-Margin Design - For drilling accuracy.

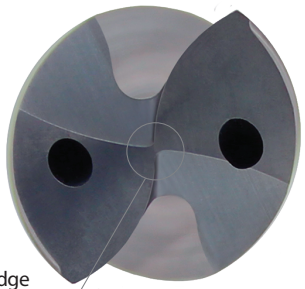
Diseño de Un Margen - Para precisión durante perforación.

Polish - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

Pulido - Cuando las flautas están pulidas la evacuación de la viruta es mejorada.

SisNa® Coating - Ideal for high-speed machining of tough materials.

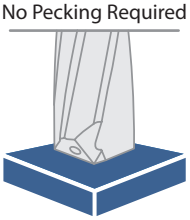
Recubrimiento SisNa® - Ideal para el mecanizado de alta velocidad de materiales endurecidos.



S-Point - Stronger point edge & corner protection.

Punto-S - Brinda un punto más fuerte y protección en las esquinas.

No Pecking Required



SisNa® is ideal for high-speed machining of tough materials.

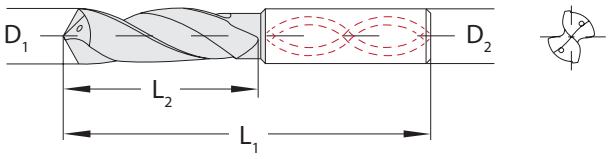
Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Materials

P K H Refer to page 261

3xD PAGE 150



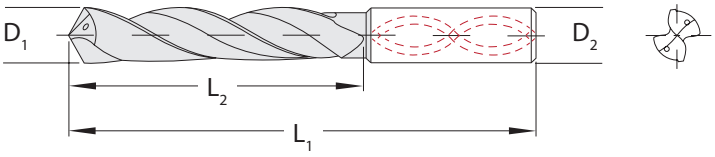
Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Materiales Endurecidos

P K H Consulte la página 261

5xD Page 152



Speeds & Feeds: Refer to page 151 & 153.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Materials

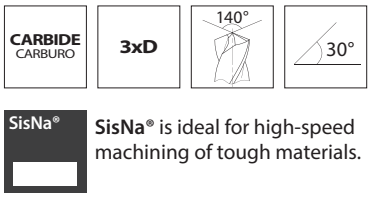
P K H Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Materiales Endurecidos

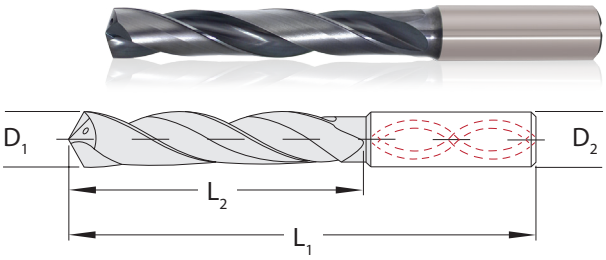
P K H Consulte la página 261



SisNa® is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 151.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	20	62	HXC0303000T7
	.1220	3.100	6	20	62	HXC0303100T7
1/8	.1250	3.175	6	20	62	HXC0303175T7
	.1260	3.200	6	20	62	HXC0303200T7
	.1299	3.300	6	20	62	HXC0303300T7
	.1339	3.400	6	20	62	HXC0303400T7
	.1378	3.500	6	20	62	HXC0303500T7
9/64	.1406	3.572	6	20	62	HXC0303572T7
	.1417	3.600	6	20	62	HXC0303600T7
	.1457	3.700	6	20	62	HXC0303700T7
#25	.1496	3.800	6	24	66	HXC0303800T7
	.1535	3.900	6	24	66	HXC0303900T7
5/32	.1563	3.970	6	24	66	HXC0303970T7
	.1575	4.000	6	24	66	HXC0304000T7
	.1614	4.100	6	24	66	HXC0304100T7
	.1654	4.200	6	24	66	HXC0304200T7
	.1693	4.300	6	24	66	HXC0304300T7
11/64	.1719	4.370	6	24	66	HXC0304370T7
	.1732	4.400	6	24	66	HXC0304400T7
	.1772	4.500	6	24	66	HXC0304500T7
	.1811	4.600	6	24	66	HXC0304600T7
	.1831	4.650	6	24	66	HXC0304650T7
#13	.1850	4.700	6	24	66	HXC0300130T7
3/16	.1875	4.760	6	28	66	HXC0304760T7
#12	.1890	4.800	6	28	66	HXC0300120T7
	.1929	4.900	6	28	66	HXC0304900T7
	.1969	5.000	6	28	66	HXC0305000T7
	.2008	5.100	6	28	66	HXC0305100T7
13/64	.2031	5.160	6	28	66	HXC0305160T7
#6	.2040	5.182	6	28	66	HXC0300060T7
	.2047	5.200	6	28	66	HXC0305200T7
	.2087	5.300	6	28	66	HXC0305300T7
	.2126	5.400	6	28	66	HXC0305400T7
	.2165	5.500	6	28	66	HXC0305500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	28	66	HXC0305550T7
7/32	.2187	5.560	6	28	66	HXC0305560T7
	.2205	5.600	6	28	66	HXC0305600T7
	.2244	5.700	6	28	66	HXC0305700T7
	.2283	5.800	6	28	66	HXC0305800T7
	.2323	5.900	6	28	66	HXC0305900T7
15/64	.2344	5.950	6	28	66	HXC0305950T7
	.2362	6.000	6	28	66	HXC0306000T7
	.2402	6.100	8	34	79	HXC0306100T7
	.2441	6.200	8	34	79	HXC0306200T7
	.2480	6.300	8	34	79	HXC0306300T7
1/4	.2500	6.350	8	34	79	HXC0306350T7
	.2520	6.400	8	34	79	HXC0306400T7
	.2559	6.500	8	34	79	HXC0306500T7
	.2598	6.600	8	34	79	HXC0306600T7
	.2638	6.700	8	34	79	HXC0306700T7
17/64	.2656	6.750	8	34	79	HXC0306750T7
	.2677	6.800	8	34	79	HXC0306800T7
	.2717	6.900	8	41	79	HXC0306900T7
	.2756	7.000	8	41	79	HXC0307000T7
	.2795	7.100	8	41	79	HXC0307100T7
9/32	.2813	7.140	8	41	79	HXC0307140T7
	.2835	7.200	8	41	79	HXC0307200T7
	.2874	7.300	8	41	79	HXC0307300T7
	.2913	7.400	8	41	79	HXC0307400T7
	.2953	7.500	8	41	79	HXC0307500T7
19/64	.2969	7.540	8	41	79	HXC0307540T7
	.3031	7.700	8	41	79	HXC0307700T7
	.3071	7.800	8	41	79	HXC0307800T7
	.3110	7.900	8	41	79	HXC0307900T7
5/16	.3125	7.940	8	41	79	HXC0307940T7
	.3150	8.000	8	41	79	HXC0308000T7
	.3189	8.100	10	47	89	HXC0308100T7
	.3228	8.200	10	47	89	HXC0308200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010	.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012	.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015	.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018	.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	47	89	HXC0308300T7
21/64	.3281	8.330	10	47	89	HXC0308330T7
	.3307	8.400	10	47	89	HXC0308400T7
	.3346	8.500	10	47	89	HXC0308500T7
	.3386	8.600	10	47	89	HXC0308600T7
	.3425	8.700	10	47	89	HXC0308700T7
11/32	.3437	8.730	10	47	89	HXC0308730T7
	.3465	8.800	10	47	89	HXC0308800T7
	.3543	9.000	10	47	89	HXC0309000T7
23/64	.3594	9.130	10	47	89	HXC0309130T7
	.3622	9.200	10	47	89	HXC0309200T7
	.3661	9.300	10	47	89	HXC0309300T7
	.3740	9.500	10	47	89	HXC0309500T7
3/8	.3750	9.520	10	47	89	HXC0309520T7
	.3780	9.600	10	47	89	HXC0309600T7
	.3858	9.800	10	47	89	HXC0309800T7
	.3898	9.900	10	47	89	HXC0309900T7
25/64	.3906	9.920	10	47	89	HXC0309920T7
	.3937	10.000	10	47	89	HXC0310000T7
	.3976	10.100	12	55	102	HXC0310100T7
	.4016	10.200	12	55	102	HXC0310200T7
	.4055	10.300	12	55	102	HXC0310300T7
13/32	.4063	10.320	12	55	102	HXC0310320T7
	.4094	10.400	12	55	102	HXC0310400T7
	.4134	10.500	12	55	102	HXC0310500T7
27/64	.4219	10.720	12	55	102	HXC0310720T7
	.4252	10.800	12	55	102	HXC0310800T7
	.4331	11.000	12	55	102	HXC0311000T7
	.4370	11.100	12	55	102	HXC0311100T7
7/16	.4375	11.113	12	55	102	HXC0311113T7
	.4409	11.200	12	55	102	HXC0311200T7
	.4528	11.500	12	55	102	HXC0311500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	55	102	HXC0311510T7
	.4606	11.700	12	55	102	HXC0311700T7
	.4646	11.800	12	55	102	HXC0311800T7
15/32	.4687	11.910	12	55	102	HXC0311910T7
	.4724	12.000	12	55	102	HXC0312000T7
	.4764	12.100	14	60	107	HXC0312100T7
	.4803	12.200	14	60	107	HXC0312200T7
	.4843	12.300	14	60	107	HXC0312300T7
31/64	.4844	12.303	14	60	107	HXC0312303T7
	.4921	12.500	14	60	107	HXC0312500T7
	.4961	12.600	14	60	107	HXC0312600T7
1/2	.5000	12.700	14	60	107	HXC0312700T7
	.5118	13.000	14	60	107	HXC0313000T7
	.5236	13.300	14	60	107	HXC0313300T7
17/32	.5313	13.490	14	60	107	HXC0313490T7
	.5315	13.500	14	60	107	HXC0313500T7
	.5512	14.000	14	60	107	HXC0314000T7
9/16	.5625	14.290	16	65	115	HXC0314290T7
	.5709	14.500	16	65	115	HXC0314500T7
	.5906	15.000	16	65	115	HXC0315000T7
	.6102	15.500	16	65	115	HXC0315500T7
5/8	.6250	15.870	16	65	115	HXC0315870T7
	.6299	16.000	16	65	115	HXC0316000T7
	.6496	16.500	18	73	123	HXC0316500T7
	.6693	17.000	18	73	123	HXC0317000T7
	.6890	17.500	18	73	123	HXC0317500T7
	.7087	18.000	18	73	123	HXC0318000T7
	.7283	18.500	20	79	131	HXC0318500T7
3/4	.7500	19.050	20	79	131	HXC0319050T7
	.7677	19.500	20	79	131	HXC0319500T7
	.7874	20.000	20	79	131	HXC0320000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

HXC
3xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	85		.18	.24	.30	.35	.40
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	70		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	45		.15	.21	.27	.32	.37
K 1	Gray Cast Iron	80		.20	.25	.35	.40	.46
H 2	Hardened Tool Steels (48-55 HRc)	28		.08	.09	.11	.13	.15
H 3	Hardened Tool Steels (56-60 HRc)	16		.08	.09	.11	.13	.15
H 4	Hardened Tool Steels (60-62 HRc) Hardened Tool Steels (62-64 HRc)	14 10		.08 .08	.09 .09	.11 .11	.13 .13	.15 .15

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

HXC
3xD Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	278.9		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	229.7		.005	.008	.010	.012	.014
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	147.6		.005	.008	.010	.012	.014
K 1	Gray Cast Iron	262.5		.007	.009	.013	.015	.018
H 2	Hardened Tool Steels (48-55 HRc)	91.9		.003	.004	.004	.005	.006
H 3	Hardened Tool Steels (56-60 HRc)	52.5		.003	.004	.004	.005	.006
H 4	Hardened Tool Steels (60-62 HRc) Hardened Tool Steels (62-64 HRc)	45.9 32.8		.003 .003	.004 .004	.004 .004	.005 .005	.006 .006

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Design
Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

Coating
SisNa®

Ideal for
Hardened Materials

P K H Refer to page 261

Diseño
Flautas espirales con corte de mano derecha, refrigerante interno y un zanco cilíndrico.

Recubrimiento
SisNa®

Ideal para
Materiales Endurecidos

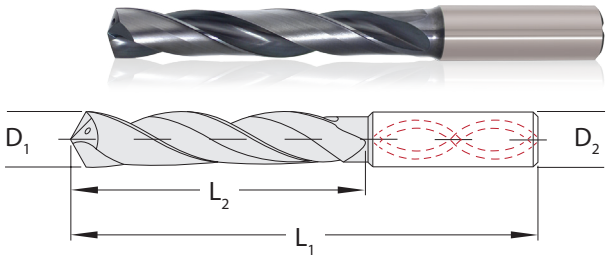
P K H Consulte la página 261

CARBIDE CARBURO | 5xD | 140° | 30°

SisNa® **SisNa®** is ideal for high-speed machining of tough materials.

Speeds & Feeds: Refer to Page 153.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings



D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	HXC0503000T7
	.1220	3.100	6	28	66	HXC0503100T7
1/8	.1250	3.175	6	28	66	HXC0503175T7
	.1260	3.200	6	28	66	HXC0503200T7
	.1299	3.300	6	28	66	HXC0503300T7
	.1339	3.400	6	28	66	HXC0503400T7
	.1378	3.500	6	28	66	HXC0503500T7
9/64	.1406	3.572	6	28	66	HXC0503572T7
	.1417	3.600	6	28	66	HXC0503600T7
	.1457	3.700	6	28	66	HXC0503700T7
#25	.1496	3.800	6	36	74	HXC0503800T7
	.1535	3.900	6	36	74	HXC0503900T7
5/32	.1563	3.970	6	36	74	HXC0503970T7
	.1575	4.000	6	36	74	HXC0504000T7
	.1614	4.100	6	36	74	HXC0504100T7
	.1654	4.200	6	36	74	HXC0504200T7
	.1693	4.300	6	36	74	HXC0504300T7
11/64	.1719	4.370	6	36	74	HXC0504370T7
	.1732	4.400	6	36	74	HXC0504400T7
	.1772	4.500	6	36	74	HXC0504500T7
	.1811	4.600	6	36	74	HXC0504600T7
	.1831	4.650	6	36	74	HXC0504650T7
#13	.1850	4.700	6	36	74	HXC0500130T7
3/16	.1875	4.760	6	44	82	HXC0504760T7
#12	.1890	4.800	6	44	82	HXC0500120T7
	.1929	4.900	6	44	82	HXC0504900T7
	.1969	5.000	6	44	82	HXC0505000T7
	.2008	5.100	6	44	82	HXC0505100T7
13/64	.2031	5.160	6	44	82	HXC0505160T7
#6	.2040	5.182	6	44	82	HXC0500060T7
	.2047	5.200	6	44	82	HXC0505200T7
	.2087	5.300	6	44	82	HXC0505300T7
	.2126	5.400	6	44	82	HXC0505400T7
	.2165	5.500	6	44	82	HXC0505500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2185	5.550	6	44	82	HXC0505550T7
7/32	.2187	5.560	6	44	82	HXC0505560T7
	.2205	5.600	6	44	82	HXC0505600T7
	.2244	5.700	6	44	82	HXC0505700T7
	.2283	5.800	6	44	82	HXC0505800T7
	.2323	5.900	6	44	82	HXC0505900T7
15/64	.2344	5.950	6	44	82	HXC0505950T7
	.2362	6.000	6	44	82	HXC0506000T7
	.2402	6.100	8	53	91	HXC0506100T7
	.2441	6.200	8	53	91	HXC0506200T7
	.2480	6.300	8	53	91	HXC0506300T7
1/4	.2500	6.350	8	53	91	HXC0506350T7
	.2520	6.400	8	53	91	HXC0506400T7
	.2559	6.500	8	53	91	HXC0506500T7
	.2598	6.600	8	53	91	HXC0506600T7
	.2638	6.700	8	53	91	HXC0506700T7
17/64	.2656	6.750	8	53	91	HXC0506750T7
	.2677	6.800	8	53	91	HXC0506800T7
	.2717	6.900	8	53	91	HXC0506900T7
	.2756	7.000	8	53	91	HXC0507000T7
	.2795	7.100	8	53	91	HXC0507100T7
9/32	.2813	7.140	8	53	91	HXC0507140T7
	.2835	7.200	8	53	91	HXC0507200T7
	.2874	7.300	8	53	91	HXC0507300T7
	.2913	7.400	8	53	91	HXC0507400T7
	.2953	7.500	8	53	91	HXC0507500T7
19/64	.2969	7.540	8	53	91	HXC0507540T7
	.3031	7.700	8	53	91	HXC0507700T7
	.3071	7.800	8	53	91	HXC0507800T7
	.3110	7.900	8	53	91	HXC0507900T7
5/16	.3125	7.940	8	53	91	HXC0507940T7
	.3150	8.000	8	53	91	HXC0508000T7
	.3189	8.100	10	61	103	HXC0508100T7
	.3228	8.200	10	61	103	HXC0508200T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3268	8.300	10	61	103	HXC0508300T7
21/64	.3281	8.330	10	61	103	HXC0508330T7
	.3307	8.400	10	61	103	HXC0508400T7
	.3346	8.500	10	61	103	HXC0508500T7
	.3386	8.600	10	61	103	HXC0508600T7
	.3425	8.700	10	61	103	HXC0508700T7
11/32	.3437	8.730	10	61	103	HXC0508730T7
	.3465	8.800	10	61	103	HXC0508800T7
	.3543	9.000	10	61	103	HXC0509000T7
23/64	.3594	9.130	10	61	103	HXC0509130T7
	.3622	9.200	10	61	103	HXC0509200T7
	.3661	9.300	10	61	103	HXC0509300T7
	.3740	9.500	10	61	103	HXC0509500T7
3/8	.3750	9.520	10	61	103	HXC0509520T7
	.3780	9.600	10	61	103	HXC0509600T7
	.3858	9.800	10	61	103	HXC0509800T7
	.3898	9.900	10	61	103	HXC0509900T7
25/64	.3906	9.920	10	61	103	HXC0509920T7
	.3937	10.000	10	61	103	HXC0510000T7
	.3976	10.100	12	71	118	HXC0510100T7
	.4016	10.200	12	71	118	HXC0510200T7
	.4055	10.300	12	71	118	HXC0510300T7
13/32	.4063	10.320	12	71	118	HXC0510320T7
	.4094	10.400	12	71	118	HXC0510400T7
	.4134	10.500	12	71	118	HXC0510500T7
27/64	.4219	10.720	12	71	118	HXC0510720T7
	.4252	10.800	12	71	118	HXC0510800T7
	.4331	11.000	12	71	118	HXC0511000T7
	.4370	11.100	12	71	118	HXC0511100T7
7/16	.4375	11.113	12	71	118	HXC0511113T7
	.4409	11.200	12	71	118	HXC0511200T7
	.4528	11.500	12	71	118	HXC0511500T7

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
29/64	.4531	11.510	12	71	118	HXC0511510T7
	.4606	11.700	12	71	118	HXC0511700T7
	.4646	11.800	12	71	118	HXC0511800T7
15/32	.4687	11.910	12	71	118	HXC0511910T7
	.4724	12.000	12	71	118	HXC0512000T7
	.4764	12.100	14	77	124	HXC0512100T7
	.4803	12.200	14	77	124	HXC0512200T7
	.4843	12.300	14	77	124	HXC0512300T7
31/64	.4844	12.303	14	77	124	HXC0512303T7
	.4921	12.500	14	77	124	HXC0512500T7
	.4961	12.600	14	77	124	HXC0512600T7
1/2	.5000	12.700	14	77	124	HXC0512700T7
	.5118	13.000	14	77	124	HXC0513000T7
	.5236	13.300	14	77	124	HXC0513300T7
17/32	.5313	13.490	14	77	124	HXC0513490T7
	.5315	13.500	14	77	124	HXC0513500T7
	.5512	14.000	14	77	124	HXC0514000T7
9/16	.5625	14.290	16	83	133	HXC0514290T7
	.5709	14.500	16	83	133	HXC0514500T7
	.5906	15.000	16	83	133	HXC0515000T7
	.6102	15.500	16	83	133	HXC0515500T7
5/8	.6250	15.870	16	83	133	HXC0515870T7
	.6299	16.000	16	83	133	HXC0516000T7
	.6496	16.500	18	93	143	HXC0516500T7
	.6693	17.000	18	93	143	HXC0517000T7
	.6890	17.500	18	93	143	HXC0517500T7
	.7087	18.000	18	93	143	HXC0518000T7
	.7283	18.500	20	101	153	HXC0518500T7
3/4	.7500	19.050	20	101	153	HXC0519050T7
	.7677	19.500	20	101	153	HXC0519500T7
	.7874	20.000	20	101	153	HXC0520000T7

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

HXC
5xD Speeds and Feeds
METRIC

	Material	Vc m/min (Cutting speed)	D1mm Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	80		.18	.24	.30	.35	.40
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	65		.15	.21	.27	.32	.37
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	40		.15	.21	.27	.32	.37
K 1	Gray Cast Iron	75		.20	.25	.35	.40	.46
H 2	Hardened Tool Steels (48-55 HRc)	23		.08	.09	.11	.13	.15
H 3	Hardened Tool Steels (56-60 HRc)	11		.08	.09	.11	.13	.15
H 4	Hardened Tool Steels (60-62 HRc)	9		.08	.09	.11	.13	.15
	Hardened Tool Steels (62-64 HRc)	7		.08	.09	.11	.13	.15

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

HXC
5xD Speeds and Feeds
INCHES

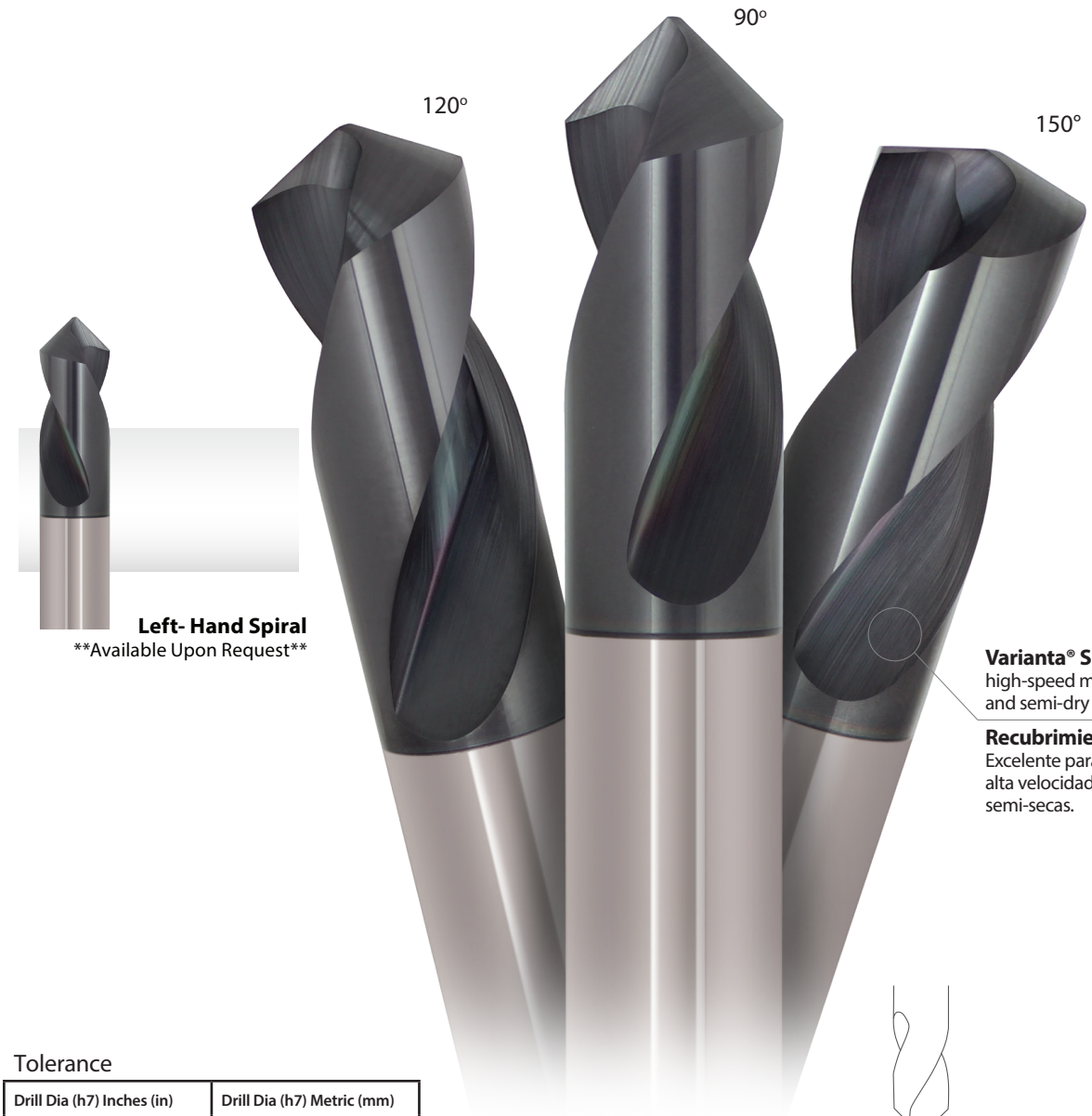
	Material	SFM (Vc) Surface Feet Per Minute	D1mm Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 .1181-.1969	> 5.00 ≤ 8.00 .1970-.3150	> 8.00 ≤ 12.00 .3151-.4724	> 12.00 ≤ 16.00 .4725-.6299	> 16.00 ≤ 20.00 .6300-.7874
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	262.5		.007	.009	.011	.013	.015
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	213.3		.005	.008	.010	.012	.014
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	131.2		.005	.008	.010	.012	.014
K 1	Gray Cast Iron	246.1		.007	.009	.013	.015	.018
H 2	Hardened Tool Steels (48-55 HRc)	75.5		.003	.004	.004	.005	.006
H 3	Hardened Tool Steels (56-60 HRc)	36.1		.003	.004	.004	.005	.006
H 4	Hardened Tool Steels (60-62 HRc)	29.5		.003	.004	.004	.005	.006
	Hardened Tool Steels (62-64 HRc)	23.0		.003	.004	.004	.005	.006

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

SPOTTING DRILLS

The SD drill should be utilized to create punctures at the desired location (s).
Please note that our SD drill is not engineered to drill past the angle point's depth

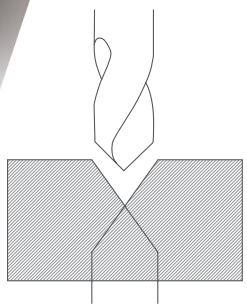
La broca SD debe ser utilizada para crear pinchaduras en el lugar deseado (s).
* Tenga en cuenta que nuestra broca SD no está diseñada para perforar más allá del punto de ángulo de profundidad *

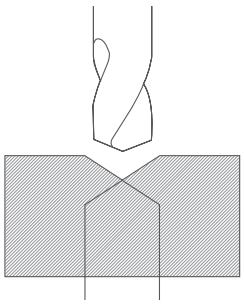


Left- Hand Spiral
Available Upon Request

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

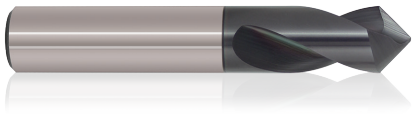

90° or 120°

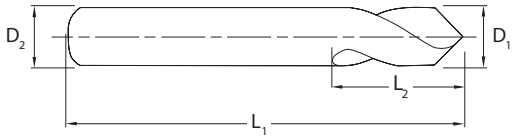

150°

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011





90° SD Spotting Drill

Coating
Varianta® Supral

Self-Centering

P M K N S Refer to page 261

CARBIDE CARBURO | 90° | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 155.

Inches

Metric Available Upon Request

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/8	.1250	3.17	1/8	5/8	2-1/2	SD00903170T9
3/16	.1875	4.76	3/16	3/4	2-1/2	SD00904760T9
1/4	.2500	6.35	1/4	1	2-1/2	SD00906350T9
5/16	.3125	7.94	5/16	1	2-1/2	SD00907940T9
3/8	.3750	9.52	3/8	1-1/4	3	SD00909520T9
1/2	.5000	12.70	1/2	1-1/4	3	SD00902700T9
3/4	.7500	19.05	3/4	1-1/4	3	SD00909050T9

Other Dimensions are Available Upon Request

90° SPOTTING DRILL
Speeds and Feeds
METRIC

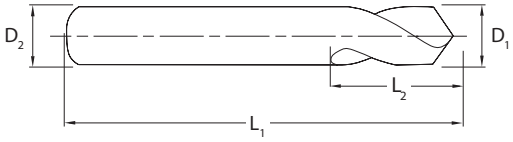
	Material	Vc m/min (Cutting speed)	D1mm / Dec. Inch.	F[mm/u] Feed Per Revolution > 3.00 ≤ 5.00 / .1181-.1969	> 5.00 ≤ 8.00 / .1970-.3150	> 8.00 ≤ 12.00 / .3151-.4724	> 12.00 ≤ 16.00 / .4725-.6299	> 16.00 ≤ 20.00 / .6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	65		.14	.20	.275	.35	.45
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	50		.10	.15	.20	.28	.33
K 1	Gray Cast Iron	70		.10	.15	.20	.28	.33
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	160		.03	.07	.11	.15	.20

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

90° SPOTTING DRILL
Speeds and Feeds
INCHES

	Material	SFM (Vc) Surface Feet Per Minute	D1mm / Dec. Inch.	IPR = Inches Per Revolution > 3.00 ≤ 5.00 / .1181-.1969	> 5.00 ≤ 8.00 / .1970-.3150	> 8.00 ≤ 12.00 / .3151-.4724	> 12.00 ≤ 16.00 / .4725-.6299	> 16.00 ≤ 20.00 / .6300-.7874
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	213.3		.005	.007	.010	.013	.017
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	164.1		.003	.005	.007	.010	.127
K 1	Gray Cast Iron	229.7		.003	.005	.007	.010	.012
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	525		.001	.002	.004	.005	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED



CARBIDE CARBURO | 120° | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

120° SD Spotting Drill

Coating
Varianta® Supral

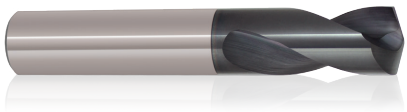
Self-Centering

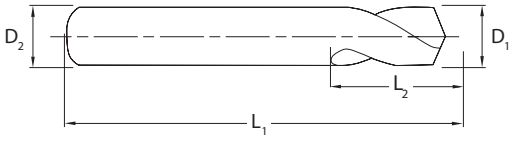
P M K N S Refer to page 261

Inches — **Metric Available Upon Request**

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/8	.1250	3.17	1/8	5/8	2-1/2	SD00203170T9
3/16	.1875	4.76	3/16	3/4	2-1/2	SD00204760T9
1/4	.2500	6.35	1/4	1	2-1/2	SD00206350T9
5/16	.3125	7.94	5/16	1	2-1/2	SD00207940T9
3/8	.3750	9.52	3/8	1-1/4	3	SD00209520T9
1/2	.5000	12.70	1/2	1-1/4	3	SD00202700T9
3/4	.7500	19.05	3/4	1-1/4	3	SD00209050T9

Other Dimensions are Available Upon Request





CARBIDE CARBURO | 150° | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

150° SD Spotting Drill

Coating
Varianta® Supral

Self-Centering

P M K N S Refer to page 261

Inches — **Metric Available Upon Request**

D_1	Decimal	D_1mm	D_2in	L_2in	L_1in	Part #
1/8	.1250	3.17	1/8	5/8	2-1/2	SD00503170T9
3/16	.1875	4.76	3/16	3/4	2-1/2	SD00504760T9
1/4	.2500	6.35	1/4	1	2-1/2	SD00506350T9
5/16	.3125	7.94	5/16	1	2-1/2	SD00507940T9
3/8	.3750	9.52	3/8	1-1/4	3	SD00509520T9
1/2	.5000	12.70	1/2	1-1/4	3	SD00502700T9
3/4	.7500	19.05	3/4	1-1/4	3	SD00509050T9

Other Dimensions are Available Upon Request

PILOT DRILL

Recommended for drills 16xD and above.
For Technical Information: Refer to Page 262.

PILOT DRILL

Before a long-drill begins perforation, we recommend our PXC Pilot Drill for deep-hole drilling.

Antes de utilizar una broca larga para perforaciónes profundas, recomendamos nuestra PXC Pilot Drill.

140° Point Geometry - Split-point geometry for superior drill penetration and accuracy.

140° Geometría de la Punta - Diseño con punto dividido para superior perforación y precisión.

Coolant Holes - Cool the cutting edge and improve chip evacuation.

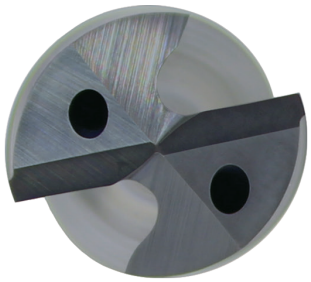
Refrigerante Interno - Enfría el filo y mejora la evacuación de la viruta.

Single-Margin Design - For drilling accuracy.

Diseño de Un Margen - Para precisión durante perforación.

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

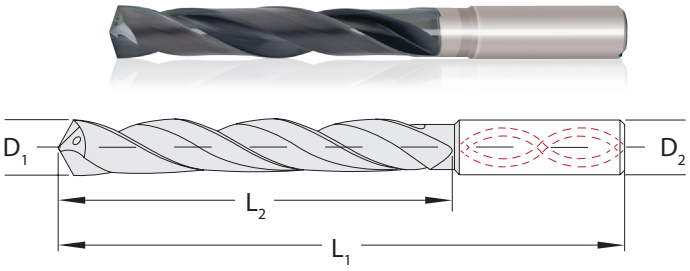
Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.



Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)
.0000-.1181: + 0/-.00039	0-3: + 0/-.010
.1182-.2362: + 0/-.00047	3.01-6: + 0/-.012
.2363-.3937: + 0/-.00059	6.01-10.0: + 0/-.015
.3938-.7087: + 0/-.00071	10.01-18.0: + 0/-.018

Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-.00024	0-3: + 0/-.006
.1182-.2362: + 0/-.00031	3.01-6: + 0/-.008
.2363-.3937: + 0/-.00035	6.01-10.0: + 0/-.009
.3938-.7087: + 0/-.00043	10.01-18.0: + 0/-.011



For Technical Information: Refer to Page 262.

CARBIDE CARBURO | 5xD | 140° | 30°

PILOT DRILL | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

P M K N S **Material Code**: Refer to Page 261.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

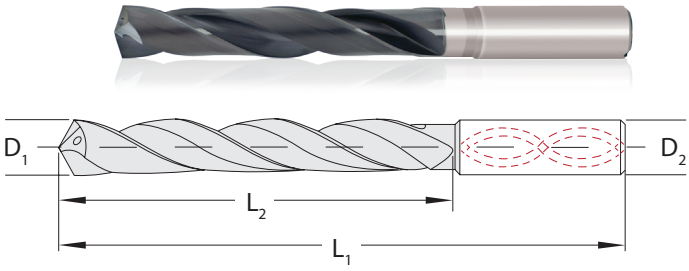
The pilot drill is .00078 in (.02mm) larger in diameter than the diameter of the long drill

Example: If diameter is shown as 3.00mm we add an additional .02mm in diameter to make it a pilot drill. (3.00mm + .02mm = 3.02mm)

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.1181	3.000	6	28	66	PXC0503000T9
	.1220	3.100	6	28	66	PXC0503100T9
1/8	.1250	3.175	6	28	66	PXC0503175T9
	.1260	3.200	6	28	66	PXC0503200T9
	.1299	3.300	6	28	66	PXC0503300T9
	.1339	3.400	6	28	66	PXC0503400T9
	.1378	3.500	6	28	66	PXC0503500T9
9/64	.1406	3.572	6	28	66	PXC0503572T9
	.1417	3.600	6	28	66	PXC0503600T9
	.1457	3.700	6	28	66	PXC0503700T9
#25	.1496	3.800	6	36	74	PXC0503800T9
	.1535	3.900	6	36	74	PXC0503900T9
5/32	.1563	3.970	6	36	74	PXC0503970T9
	.1575	4.000	6	36	74	PXC0504000T9
	.1614	4.100	6	36	74	PXC0504100T9
	.1654	4.200	6	36	74	PXC0504200T9
	.1693	4.300	6	36	74	PXC0504300T9
11/64	.1719	4.370	6	36	74	PXC0504370T9
	.1732	4.400	6	36	74	PXC0504400T9
	.1772	4.500	6	36	74	PXC0504500T9
	.1811	4.600	6	36	74	PXC0504600T9
	.1831	4.650	6	36	74	PXC0504650T9
#13	.1850	4.700	6	36	74	PXC0500130T9
3/16	.1875	4.760	6	44	82	PXC0504760T9
#12	.1890	4.800	6	44	82	PXC0500120T9
	.1929	4.900	6	44	82	PXC0504900T9
	.1969	5.000	6	44	82	PXC0505000T9
	.2008	5.100	6	44	82	PXC0505100T9
13/64	.2031	5.160	6	44	82	PXC0505160T9
#6	.2040	5.182	6	44	82	PXC0500060T9
	.2047	5.200	6	44	82	PXC0505200T9
	.2087	5.300	6	44	82	PXC0505300T9
	.2126	5.400	6	44	82	PXC0505400T9
	.2165	5.500	6	44	82	PXC0505500T9
	.2185	5.550	6	44	82	PXC0505550T9
7/32	.2187	5.560	6	44	82	PXC0505560T9
	.2205	5.600	6	44	82	PXC0505600T9
	.2244	5.700	6	44	82	PXC0505700T9
	.2283	5.800	6	44	82	PXC0505800T9
	.2323	5.900	6	44	82	PXC0505900T9
15/64	.2344	5.950	6	44	82	PXC0505950T9
	.2362	6.000	8	44	82	PXC0506000T9

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.2402	6.100	8	53	91	PXC0506100T9
	.2441	6.200	8	53	91	PXC0506200T9
	.2480	6.300	8	53	91	PXC0506300T9
1/4	.2500	6.350	8	53	91	PXC0506350T9
	.2520	6.400	8	53	91	PXC0506400T9
	.2559	6.500	8	53	91	PXC0506500T9
	.2598	6.600	8	53	91	PXC0506600T9
	.2638	6.700	8	53	91	PXC0506700T9
17/64	.2656	6.750	8	53	91	PXC0506750T9
	.2677	6.800	8	53	91	PXC0506800T9
	.2717	6.900	8	53	91	PXC0506900T9
	.2756	7.000	8	53	91	PXC0507000T9
	.2795	7.100	8	53	91	PXC0507100T9
9/32	.2813	7.140	8	53	91	PXC0507140T9
	.2835	7.200	8	53	91	PXC0507200T9
	.2874	7.300	8	53	91	PXC0507300T9
	.2913	7.400	8	53	91	PXC0507400T9
	.2953	7.500	8	53	91	PXC0507500T9
19/64	.2969	7.540	8	53	91	PXC0507540T9
	.3031	7.700	8	53	91	PXC0507700T9
	.3071	7.800	8	53	91	PXC0507800T9
	.3110	7.900	8	53	91	PXC0507900T9
5/16	.3125	7.940	8	53	91	PXC0507940T9
	.3150	8.000	10	53	91	PXC0508000T9
	.3189	8.100	10	61	103	PXC0508100T9
	.3228	8.200	10	61	103	PXC0508200T9
	.3268	8.300	10	61	103	PXC0508300T9
21/64	.3281	8.330	10	61	103	PXC0508330T9
	.3307	8.400	10	61	103	PXC0508400T9
	.3346	8.500	10	61	103	PXC0508500T9
	.3386	8.600	10	61	103	PXC0508600T9
	.3425	8.700	10	61	103	PXC0508700T9
11/32	.3437	8.730	10	61	103	PXC0508730T9
	.3465	8.800	10	61	103	PXC0508800T9
	.3543	9.000	10	61	103	PXC0509000T9
23/64	.3594	9.130	10	61	103	PXC0509130T9
	.3622	9.200	10	61	103	PXC0509200T9
	.3661	9.300	10	61	103	PXC0509300T9
	.3740	9.500	10	61	103	PXC0509500T9
3/8	.3750	9.520	10	61	103	PXC0509520T9
	.3780	9.600	10	61	103	PXC0509600T9
	.3858	9.800	10	61	103	PXC0509800T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**



For Technical Information: Refer to Page 262.

CARBIDE CARBURO | 5xD | 140° | 30°

PILOT DRILL | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

P M K N S **Material Code**: Refer to Page 261.

Available Upon Request: Add Flats, Left-Hand, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

The pilot drill is .00078 in (.02mm) larger in diameter than the diameter of the long drill

Example: If diameter is shown as 3.00 mm we add an additional .02mm in diameter to make it a pilot drill. (3.00mm + .02mm = 3.02mm)

D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
	.3898	9.900	10	61	103	PXC0509900T9
25/64	.3906	9.920	10	61	103	PXC0509920T9
	.3937	10.000	12	61	103	PXC0510000T9
	.3976	10.100	12	71	118	PXC0510100T9
	.4016	10.200	12	71	118	PXC0510200T9
	.4055	10.300	12	71	118	PXC0510300T9
13/32	.4063	10.320	12	71	118	PXC0510320T9
	.4094	10.400	12	71	118	PXC0510400T9
	.4134	10.500	12	71	118	PXC0510500T9
27/64	.4219	10.720	12	71	118	PXC0510720T9
	.4252	10.800	12	71	118	PXC0510800T9
	.4331	11.000	12	71	118	PXC0511000T9
	.4370	11.100	12	71	118	PXC0511100T9
7/16	.4375	11.113	12	71	118	PXC0511113T9
	.4409	11.200	12	71	118	PXC0511200T9
	.4528	11.500	12	71	118	PXC0511500T9
29/64	.4531	11.510	12	71	118	PXC0511510T9
	.4606	11.700	12	71	118	PXC0511700T9
	.4646	11.800	12	71	118	PXC0511800T9
15/32	.4687	11.910	12	71	118	PXC0511910T9
	.4724	12.000	14	71	118	PXC0512000T9
	.4764	12.100	14	77	124	PXC0512100T9
	.4803	12.200	14	77	124	PXC0512200T9
	.4843	12.300	14	77	124	PXC0512300T9

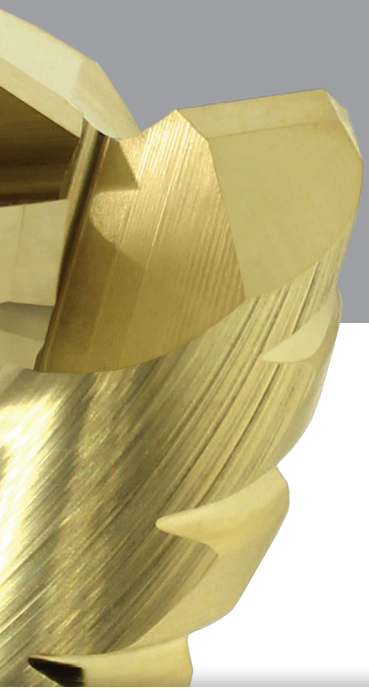
D_1	Decimal	D_1mm	D_2mm	L_2mm	L_1mm	Part #
31/64	.4844	12.303	14	77	124	PXC0512303T9
	.4921	12.500	14	77	124	PXC0512500T9
	.4961	12.600	14	77	124	PXC0512600T9
1/2	.5000	12.700	14	77	124	PXC0512700T9
	.5118	13.000	14	77	124	PXC0513000T9
	.5236	13.300	14	77	124	PXC0513300T9
17/32	.5313	13.490	14	77	124	PXC0513490T9
	.5315	13.500	14	77	124	PXC0513500T9
	.5512	14.000	14	77	124	PXC0514000T9
9/16	.5625	14.290	16	83	133	PXC0514290T9
	.5709	14.500	16	83	133	PXC0514500T9
	.5906	15.000	16	83	133	PXC0515000T9
	.6102	15.500	16	83	133	PXC0515500T9
5/8	.6250	15.870	16	83	133	PXC0515870T9
	.6299	16.000	16	83	133	PXC0516000T9
	.6496	16.500	18	93	143	PXC0516500T9
	.6693	17.000	18	93	143	PXC0517000T9
	.6890	17.500	18	93	143	PXC0517500T9
	.7087	18.000	18	93	143	PXC0518000T9
	.7283	18.500	20	101	153	PXC0518500T9
3/4	.7500	19.050	20	101	153	PXC0519050T9
	.7677	19.500	20	101	153	PXC0519500T9
	.7874	20.000	20	101	153	PXC0520000T9

** Diameters (2.0-2.9mm) and other dimensions are available upon request**

PRECISION CUTTING TOOLS, INC.

SOLID CARBIDE ENDMILLS

VARIABLE HELIX
HIGH PERFORMANCE MACHINING +
HIGH PERFORMANCE
STANDARD



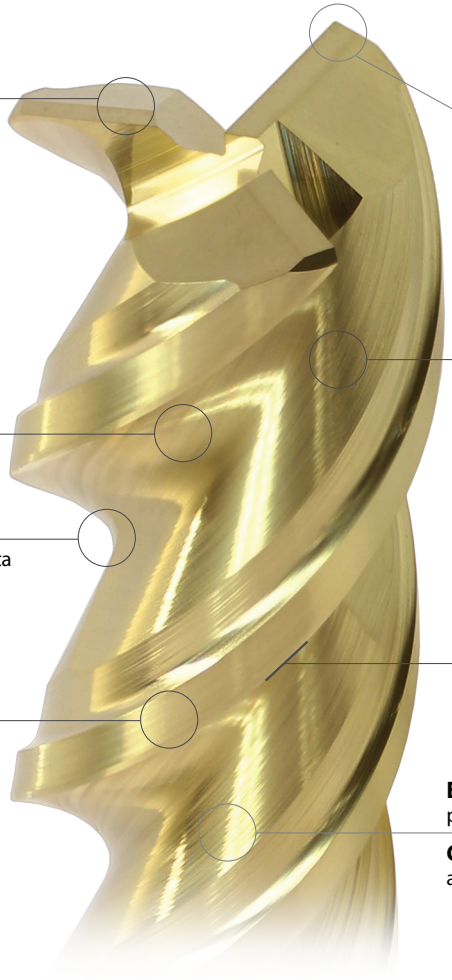
Left:
558 Series p.170

Center:
453 Series p.166

Right:
339 Series p.204

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR ROUGHING OR FINISHING OPERATIONS



3 Flute Variable - Eliminates harmonics
3 Flauta Variable - Elimina los armónicos

Standard Chamfer
****Corner Radii** (Available upon request)
Chaflán Estándar de Esquina
****Radios** (Disponible a petición)

Z-Power® Coating -
Reduces friction between the chip and tool.
Revestimiento Z-Power® -
Reduce la fricción entre la viruta y herramienta.

E- Cut - Faster chip evacuation
Corte-E - Evacuación más rápida de la viruta

Large Gullet - For better chip flow
Gaznate grande - Para mejor el flujo de viruta

1° Radial Land - Reduce chatter
Tierra Radial - Reduce la vibración

Eccentric OD - For a tougher cutting edge
Diámetro Exterior Excéntrico - Para un borde de corte más resistente

Extended Neck - Available for deep-pocket applications
Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

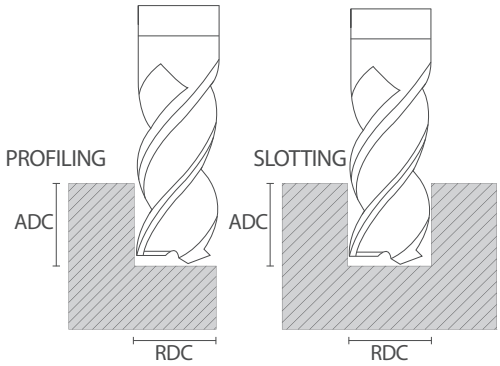
360 SERIES

3 Flute Variable Endmill, Eccentric OD Aluminum Applications

The 360 Series is engineered for improved chip evacuation and maximum metal removal rates. Its design consists of an eccentric OD, standard chamfer, large gullet and a 1° radial land; excellent features for chatter-free machining. Our 360 Series can be used for both roughing and finishing applications of Aluminum alloys.

3 Flautas Variable, Diámetro Excéntrico Aplicaciones de Aluminio

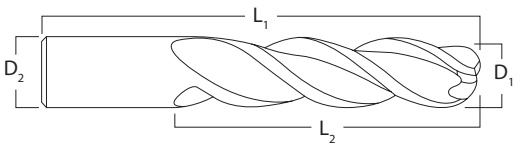
La Serie 360 está diseñada para máxima evacuación de la viruta. Su diseño consiste de un diámetro excéntrico, chaflán estándar y un gaznate grande; características necesarias para el mecanizado sin vibración. Además, nuestra Serie 360 se puede utilizar para ambos el desbaste y acabado de aluminio.



Speeds & Feeds for High-Performance Milling

	Material	SFM (Vc)	Axial Max	Radial Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
N 1	Wrought Aluminum Alloys	1968.6	1xD	1xD	.002	.002	.003	.004	.004	.005	.006	.007
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1181.2	1xD	1xD	.002	.002	.003	.004	.004	.005	.006	.007
N 3	High-Silicon Aluminum Alloys Si >12.2% - 6061, 7075	787.4	1xD	1xD	.002	.002	.003	.003	.005	.007	.008	.011
N 5	Copper & Copper Alloys	525	1xD	1xD	.002	.002	.002	.003	.003	.005	.006	.007

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED
Z-Power® Coating Recommended for High Silicon



3 Flute Variable Endmill

- Z-Power® recommended
- Eccentric OD
- Standard 45° chamfer

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 3 Flutes | Z-Power®

Z-Power® has excellent corrosion and adhesion resistant properties.

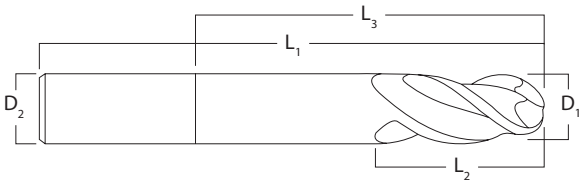
Speeds & Feeds: Refer to Page 162.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Available Radius	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	1/2	2	.015 |.020 |.030 |.045	0360T60405002	0360T60405002B
1/4	1/4	3/4	2-1/2	.015 |.020 |.030 |.045	0360T604075025	0360T604075025B
5/16	5/16	1/2	2	.015 |.020 |.030 |.045	0360T60505002	0360T60505002B
5/16	5/16	3/4	2-1/2	.015 |.020 |.030 |.045	0360T605075025	0360T605075025B
3/8	3/8	5/8	2	.015 |.020 |.030 |.045	0360T60606252	0360T60606252B
3/8	3/8	1	2-1/2	.015 |.020 |.030 |.045	0360T606100025	0360T606100025B
1/2	1/2	5/8	2-1/2	.015 |.020 |.030 |.045 |.060	0360T608062525	0360T608062525B
1/2	1/2	1	3	.015 |.020 |.030 |.045 |.060	0360T60810003	0360T60810003B
5/8	5/8	3/4	3	.015 |.020 |.030 |.045 |.060 |.090	0360T61007503	0360T61007503B
5/8	5/8	1-1/4	3-1/2	.015 |.020 |.030 |.045 |.060 |.090	0360T610125035	0360T610125035B
3/4	3/4	1	3	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61210003	0360T61210003B
3/4	3/4	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61215004	0360T61215004B
7/8	7/8	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61415004	0360T61415004B
1	1	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61615004	0360T61615004B

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0360 (series) + T6 04 0500 2 (part) = .015-0360T6 04 0500 2



Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Available Radius	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 |.020 |.030 |.045	0360T60403753.1	0360T60403753.1B
1/4	1/4	3/8	2-1/8	4	.015 |.020 |.030 |.045	0360T60403754.2	0360T60403754.2B
3/8	3/8	1/2	1-1/8	3	.015 |.020 |.030 |.045	0360T60605003.1	0360T60605003.1B
3/8	3/8	1/2	2-1/8	4	.015 |.020 |.030 |.045	0360T60605004.2	0360T60605004.2B
1/2	1/2	5/8	2-1/8	4	.015 |.020 |.030 |.045 |.060	0360T60806254.2	0360T60806254.2B
1/2	1/2	5/8	3-1/8	5	.015 |.020 |.030 |.045 |.060	0360T60806255.3	0360T60806255.3B
1/2	1/2	5/8	4-1/8	6	.015 |.020 |.030 |.045 |.060	0360T60806256.4	0360T60806256.4B
5/8	5/8	3/4	2-1/8	4	.015 |.020 |.030 |.045 |.060 |.090	0360T61007504.2	0360T61007504.2B
5/8	5/8	3/4	3-1/8	5	.015 |.020 |.030 |.045 |.060 |.090	0360T61007505.3	0360T61007505.3B
5/8	5/8	3/4	4-1/8	6	.015 |.020 |.030 |.045 |.060 |.090	0360T61007506.4	0360T61007506.4B
3/4	3/4	1	2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61210004.2	0360T61210004.2B
3/4	3/4	1	3	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61210005.3	0360T61210005.3B
3/4	3/4	1	4	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61210006.4	0360T61210006.4B
1	1	1-1/4	3	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61612505.3	0360T61612505.3B
1	1	1-1/4	4	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0360T61612506.4	0360T61612506.4B

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR ROUGHING OR FINISHING OPERATIONS

4 Flute Variable - Eliminates harmonics

4 Flauta Variable - Elimina los armónicos

Standard Chamfer
****Corner Radii** (Available upon request)

Chaflán Estándar de Esquina
****Radios** (Disponible a petición)

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

Primary & Secondary - Provides sharper cutting edge

Angulo de Corte Mas Filoso - Para un borde de corte más resistente

Extended Neck - Available for deep-pocket applications

Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

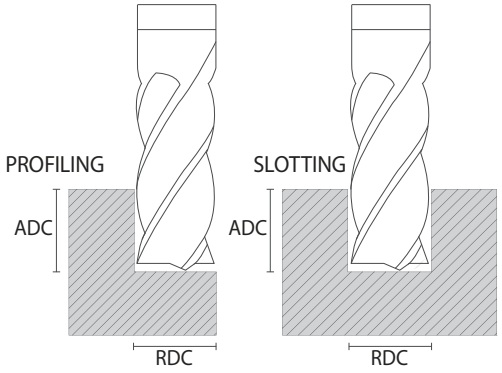
451 SERIES

4 Flute Variable Endmill, Primary & Secondary Difficult-to-Machine Materials

The 451 Series is engineered for improved chip evacuation and maximum speeds and feeds. Its design consists of primary and secondary relief angles, standard chamfer and a variable flute; ideal properties for operations of tough materials. In addition, our 451 Series leaves a superior finish on the part.

4 Flautas Variable, Ángulos Primarios Y Secundarios Materiales Difícil de Mecanizar

La Serie 451 está diseñada para mejorar la evacuación de la viruta durante operaciones de alta velocidad. Su diseño consiste de ángulos primarios y secundarios, chaflán estándar y una flauta variable; propiedades ideales para las operaciones de materiales endurecidos. Además, nuestra Serie 451 deja un acabado superior en la pieza.



Speeds & Feeds for High-Performance Milling

			Chipload Per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial
	Material	SFM (Vc)	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	280	.002	.002	.002	.003	.003	.003	.003	1.5xD	.5xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	200	.001	.002	.002	.002	.002	.002	.002	1.5xD	.5xD	1xD
K 1	Gray Cast Iron	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	170	.001	.001	.001	.002	.002	.002	.003	1.5xD	.5xD	1xD

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

Extended Neck

4 Flute Variable Endmill

- Varianta® Supral recommended
- Primary and Secondary
- Standard 45° chamfer

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 4 Flutes | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 164.

Fractional

* = 38° Helix

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated	Varianta® Supral Sharp Corner
1/8	1/8	1/2	1-1/2	.010	0451T402050015	0451T402050015B	0451T402050015S
3/16	3/16	5/8	2	.010	0451T40306252	0451T40306252B	0451T40306252S
1/4	1/4	3/8	2	.015 | .020 | .030 | .045	0451T40403752	0451T40403752B	0451T40403752S
* 1/4	1/4	3/4	2-1/2	.015 | .020 | .030 | .045	0451T404075025	0451T404075025B	0451T404075025S
* 1/4	1/4	1	3	.015 | .020 | .030 | .045	0451T40410003	0451T40410003B	0451T404100003S
* 1/4	1/4	1-1/4	4	.015 | .020 | .030 | .045	0451T40412504	0451T40412504B	0451T40412504S
* 1/4	1/4	1-3/4	4	.015 | .020 | .030 | .045	0451T40417504	0451T40417504B	0451T40417504S
5/16	5/16	1/2	2	.015 | .020 | .030 | .045	0451T40505002	0451T40505002B	0451T40505002S
5/16	5/16	7/8	2-1/2	.015 | .020 | .030 | .045	0451T405087525	0451T405087525B	0451T405087525S
* 5/16	5/16	1	3	.015 | .020 | .030 | .045	0451T40510003	0451T40510003B	0451T405100003S
* 5/16	5/16	1-1/4	4	.015 | .020 | .030 | .045	0451T40512504	0451T40512504B	0451T405125004S
* 5/16	5/16	1-5/8	4	.015 | .020 | .030 | .045	0451T40516254	0451T405162504B	0451T405162504S
3/8	3/8	1/2	2	.015 | .020 | .030 | .045	0451T40605002	0451T40605002B	0451T406050002S
3/8	3/8	1	2-1/2	.015 | .020 | .030 | .045	0451T406100025	0451T406100025B	0451T406100025S
3/8	3/8	1	3	.015 | .020 | .030 | .045	0451T40610003	0451T40610003B	0451T406100003S
* 3/8	3/8	1-1/2	4	.015 | .020 | .030 | .045	0451T40615004	0451T40615004B	0451T406150004S
* 3/8	3/8	2-1/2	5	.015 | .020 | .030 | .045	0451T40625005	0451T40625005B	0451T406250005S
7/16	7/16	5/8	2-3/4	.015 | .020 | .030 | .045	0451T407062527	0451T407062527B	0451T407062527S
7/16	7/16	1	2-3/4	.015 | .020 | .030 | .045	0451T407100027	0451T407100027B	0451T407100027S
* 7/16	7/16	1-1/2	4	.015 | .020 | .030 | .045	0451T40715004	0451T40715004B	0451T407150004S
* 7/16	7/16	3	6	.015 | .020 | .030 | .045	0451T40730006	0451T40730006B	0451T407300006S
1/2	1/2	5/8	2-1/2	.015 | .020 | .030 | .045 | .060	0451T408062525	0451T408062525B	0451T408062525S
1/2	1/2	1	3	.015 | .020 | .030 | .045 | .060	0451T40810003	0451T40810003B	0451T408100003S
* 1/2	1/2	1-1/4	3	.015 | .020 | .030 | .045 | .060	0451T40812503	0451T40812503B	0451T408125003S
* 1/2	1/2	1-1/2	4	.015 | .020 | .030 | .045 | .060	0451T40815004	0451T40815004B	0451T408150004S
* 1/2	1/2	2	4	.015 | .020 | .030 | .045 | .060	0451T40820004	0451T40820004B	0451T408200004S
* 1/2	1/2	2-1/2	5	.015 | .020 | .030 | .045 | .060	0451T40825005	0451T40825005B	0451T408250005S
* 1/2	1/2	3	6	.015 | .020 | .030 | .045 | .060	0451T40830006	0451T40830006B	0451T408300006S
5/8	5/8	3/4	3	.015 | .020 | .030 | .045 | .060 | .090	0451T41007503	0451T41007503B	0451T410075003S
* 5/8	5/8	1-1/4	3-1/2	.015 | .020 | .030 | .045 | .060 | .090	0451T410125035	0451T410125035B	0451T410125035S
* 5/8	5/8	1-3/4	4	.015 | .020 | .030 | .045 | .060 | .090	0451T41017504	0451T41017504B	0451T410175004S
* 5/8	5/8	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090	0451T41022505	0451T41022505B	0451T410225005S
* 5/8	5/8	3	6	.015 | .020 | .030 | .045 | .060 | .090	0451T41030006	0451T41030006B	0451T410300006S
3/4	3/4	7/8	3	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41208753	0451T41208753B	0451T412087533S
3/4	3/4	1-1/2	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41215004	0451T41215004B	0451T412150043S
* 3/4	3/4	1-5/8	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41216254	0451T41216254B	0451T412162543S
* 3/4	3/4	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41222505	0451T41222505B	0451T412225053S
* 3/4	3/4	3	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41230006	0451T41230006B	0451T412300063S
* 3/4	3/4	4	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41240007	0451T41240007B	0451T412400073S
1	1	1-1/2	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41615004	0451T41615004B	0451T416150043S
* 1	1	2	4-1/2	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T416200045	0451T416200045B	0451T416200045S
* 1	1	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41622505	0451T41622505B	0451T416225053S
* 1	1	3	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41630006	0451T41630006B	0451T416300063S
* 1	1	4	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41640007	0451T41640007B	0451T416400073S

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0451 (series) + T4 16 4000 7 (part) = .015-0451T41640007

Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 | .020 | .030 | .045	0451T40403753.1	0451T40403753.1B
1/4	1/4	3/8	2-1/8	4	.015 | .020 | .030 | .045	0451T40403754.2	0451T40403754.2B
3/8	3/8	1/2	2-1/8	4	.015 | .020 | .030 | .045	0451T40605004.2	0451T40605004.2B
3/8	3/8	1/2	3-3/8	6	.015 | .020 | .030 | .045	0451T40605006.3	0451T40605006.3B
1/2	1/2	5/8	2-1/8	4	.015 | .020 | .030 | .045 | .060	0451T40806254.2	0451T40806254.2B
1/2	1/2	5/8	3-1/8	5	.015 | .020 | .030 | .045 | .060	0451T40806255.3	0451T40806255.3B
1/2	1/2	5/8	4-1/8	6	.015 | .020 | .030 | .045 | .060	0451T40806256.4	0451T40806256.4B
5/8	5/8	3/4	2-1/8	4	.015 | .020 | .030 | .045 | .060 | .090	0451T41007504.2	0451T41007504.2B
5/8	5/8	3/4	3-1/8	5	.015 | .020 | .030 | .045 | .060 | .090	0451T41007505.3	0451T41007505.3B
5/8	5/8	3/4	4-1/8	6	.015 | .020 | .030 | .045 | .060 | .090	0451T41007506.4	0451T41007506.4B
3/4	3/4	1	2	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41210004.2	0451T41210004.2B
3/4	3/4	1	3	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41210005.3	0451T41210005.3B
3/4	3/4	1	4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41210006.4	0451T41210006.4B
1	1	1-1/4	2-5/8	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41612505.2	0451T41612505.2B
1	1	1-1/4	3-1/8	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41612506.3	0451T41612506.3B
1	1	1-1/4	4-1/8	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0451T41612507.4	0451T41612507.4B

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR ROUGH & FINISH OPERATIONS

4 Flute Variable - Eliminates harmonics

4 Flauta Variable - Elimina los armónicos

Standard Chamfer
****Corner Radii** (Available upon request)

Chaflán Estándar de Esquina
****Radios** (Disponibles a petición)

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

Chip Breakers -
For Roughing Operations

Rompe-Chips -
Para operaciones de desbaste

Extended Neck - Available for deep-pocket applications

Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

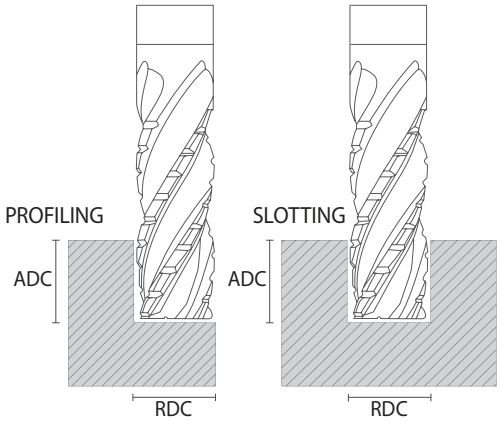
453 SERIES

4 Flute Variable Endmill, Chip-Breakers Difficult-to-Machine Materials

Inspired by our 451 Series, the 453 Series is designed with added chip-breakers for efficient chip removal. Its unique geometry allows for increased speeds and feeds and cutting depth. Our 453 Series is ideal for plunging, slotting, ramping and peripheral milling operations of Steels, Titanium and Cast Iron.

4 Flautas Variable, Rompe-Chip Materiales Difíciles de Mecanizar

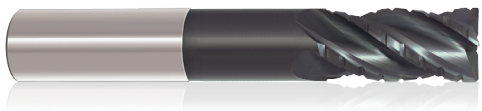
Inspirada por nuestra Serie 451, la Serie 453 está diseñado con rompe-chips añadidos para una evacuación de viruta eficaz Su geometría única permite altas velocidades y aumento de profundidad de corte. Nuestra Serie 453 es ideal para ranurado, rampa y operaciones periféricas de aceros, titanio y hierro fundido.



Speeds & Feeds for High-Performance Milling

			Chipload Per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial
	Material	SFM (Vc)	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	280	.002	.002	.002	.003	.003	.003	.003	1.5xD	.5xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	200	.001	.002	.002	.002	.002	.002	.002	1.5xD	.5xD	1xD
K 1	Gray Cast Iron	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	170	.001	.001	.001	.002	.002	.002	.003	1.5xD	.5xD	1xD

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED



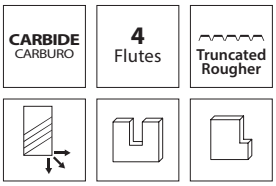
Extended Neck

4 Flute Variable Endmill - Chip Breakers

- Varianta® Supral recommended
- Rough & Finish
- Standard 45° chamfer

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code:** Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 166.

Fractional

* = 38° Helix

	D1	D2	L2	L1		Varianta® Supral	Varianta® Supral
	Cutting Dia	Shank Dia	LOC	OAL	Available Radius	Square Coated	Ball End Coated
*	1/4	1/4	3/8	2	.015 |.020 |.030 |.045	0453T40403752	0453T40403752B
*	1/4	1/4	3/4	2-1/2	.015 |.020 |.030 |.045	0453T404075025	0453T404075025B
*	1/4	1/4	1	3	.015 |.020 |.030 |.045	0453T40410003	0453T40410003B
*	1/4	1/4	1-1/4	4	.015 |.020 |.030 |.045	0453T40412504	0453T40412504B
*	1/4	1/4	1-3/4	4	.015 |.020 |.030 |.045	0453T40417504	0453T40417504B
	5/16	5/16	1/2	2	.015 |.020 |.030 |.045	0453T40505002	0453T40505002B
	5/16	5/16	7/8	2-1/2	.015 |.020 |.030 |.045	0453T405087525	0453T405087525B
*	5/16	5/16	1	3	.015 |.020 |.030 |.045	0453T40510003	0453T40510003B
*	5/16	5/16	1-1/4	4	.015 |.020 |.030 |.045	0453T40512504	0453T40512504B
*	5/16	5/16	1-5/8	4	.015 |.020 |.030 |.045	0453T40516254	0453T40516254B
	3/8	3/8	1/2	2	.015 |.020 |.030 |.045	0453T40605002	0453T40605002B
	3/8	3/8	1	2-1/2	.015 |.020 |.030 |.045	0453T406100025	0453T406100025B
	3/8	3/8	1	3	.015 |.020 |.030 |.045	0453T40610003	0453T40610003B
*	3/8	3/8	1-1/2	4	.015 |.020 |.030 |.045	0453T40615004	0453T40615004B
*	3/8	3/8	2-1/2	5	.015 |.020 |.030 |.045	0453T40625005	0453T40625005B
	7/16	7/16	5/8	2-3/4	.015 |.020 |.030 |.045	0453T407062527	0453T407062527B
	7/16	7/16	1	2-3/4	.015 |.020 |.030 |.045	0453T407100027	0453T407100027B
*	7/16	7/16	1-1/2	4	.015 |.020 |.030 |.045	0453T40715004	0453T40715004B
*	7/16	7/16	3	6	.015 |.020 |.030 |.045	0453T40730006	0453T40730006B
	1/2	1/2	5/8	2-1/2	.015 |.020 |.030 |.045 |.060	0453T408062525	0453T408062525B
	1/2	1/2	1	3	.015 |.020 |.030 |.045 |.060	0453T40810003	0453T40810003B
*	1/2	1/2	1-1/4	3	.015 |.020 |.030 |.045 |.060	0453T40812503	0453T40812503B
*	1/2	1/2	1-1/2	4	.015 |.020 |.030 |.045 |.060	0453T40815004	0453T40815004B
*	1/2	1/2	2	4	.015 |.020 |.030 |.045 |.060	0453T40820004	0453T40820004B
*	1/2	1/2	2-1/2	5	.015 |.020 |.030 |.045 |.060	0453T40825005	0453T40825005B
*	1/2	1/2	3	6	.015 |.020 |.030 |.045 |.060	0453T40830006	0453T40830006B
	5/8	5/8	3/4	3	.015 |.020 |.030 |.045 |.060 |.090	0453T41007503	0453T41007503B
*	5/8	5/8	1-1/4	3-1/2	.015 |.020 |.030 |.045 |.060 |.090	0453T410125035	0453T410125035B
*	5/8	5/8	1-3/4	4	.015 |.020 |.030 |.045 |.060 |.090	0453T41017504	0453T41017504B
*	5/8	5/8	2-1/4	5	.015 |.020 |.030 |.045 |.060 |.090	0453T41022505	0453T41022505B
*	5/8	5/8	3	6	.015 |.020 |.030 |.045 |.060 |.090	0453T41030006	0453T41030006B
	3/4	3/4	7/8	3	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41208753	0453T41208753B
	3/4	3/4	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41215004	0453T41215004B
*	3/4	3/4	1-5/8	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41216254	0453T41216254B
*	3/4	3/4	2-1/4	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41222505	0453T41222505B
*	3/4	3/4	3	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41230006	0453T41230006B
*	3/4	3/4	4	7	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41240007	0453T41240007B
	1	1	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41615004	0453T41615004B
*	1	1	2	4-1/2	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T416200045	0453T416200045B
*	1	1	2-1/4	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41622505	0453T41622505B
*	1	1	3	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41630006	0453T41630006B
*	1	1	4	7	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41640007	0453T41640007B

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0453 (series) + T4 04 1750 4 (part) = .015-0453T40417504

Extended Neck

D1	D2	L2	L3	L1		Varianta® Supral	Varianta® Supral
Cutting Dia	Shank Dia	LOC	REACH	OAL	Available Radius	Square Coated	Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 |.020 |.030 |.045	0453T40403753.1	0453T40403753.1B
1/4	1/4	3/8	2-1/8	4	.015 |.020 |.030 |.045	0453T40403754.2	0453T40403754.2B
3/8	3/8	1/2	2-1/8	4	.015 |.020 |.030 |.045	0453T40605004.2	0453T40605004.2B
3/8	3/8	1/2	3-3/8	6	.015 |.020 |.030 |.045	0453T40605006.3	0453T40605006.3B
1/2	1/2	5/8	2-1/8	4	.015 |.020 |.030 |.045 |.060	0453T40806254.2	0453T40806254.2B
1/2	1/2	5/8	3-1/8	5	.015 |.020 |.030 |.045 |.060	0453T40806255.3	0453T40806255.3B
1/2	1/2	5/8	4-1/8	6	.015 |.020 |.030 |.045 |.060	0453T40806256.4	0453T40806256.4B
5/8	5/8	3/4	2-1/8	4	.015 |.020 |.030 |.045 |.060 |.090	0453T41007504.2	0453T41007504.2B
5/8	5/8	3/4	3-1/8	5	.015 |.020 |.030 |.045 |.060 |.090	0453T41007505.3	0453T41007505.3B
5/8	5/8	3/4	4-1/8	6	.015 |.020 |.030 |.045 |.060 |.090	0453T41007506.4	0453T41007506.4B
3/4	3/4	1	2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41210004.2	0453T41210004.2B
3/4	3/4	1	3	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41210005.3	0453T41210005.3B
3/4	3/4	1	4	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41210006.4	0453T41210006.4B
1	1	1-1/4	2-5/8	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41612505.2	0453T41612505.2B
1	1	1-1/4	3-1/8	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41612506.3	0453T41612506.3B
1	1	1-1/4	4-1/8	7	.015 |.020 |.030 |.045 |.060 |.090 |.125	0453T41612507.4	0453T41612507.4B

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR FINISHING OPERATIONS

5 Flute Variable - Eliminates harmonics

5 Variable Flauta - Elimina los armónicos

Sharp Corner
(Chamfer/corner radii available upon request)

Esquina Cuadrada
(Chaflán de esquina/radios disponibles a petición)

Primary & Secondary - Provides sharper cutting edge

Angulo de Corte Mas Filoso - Para un borde de corte más resistente

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

Extended Neck - Available for deep-pocket applications

Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

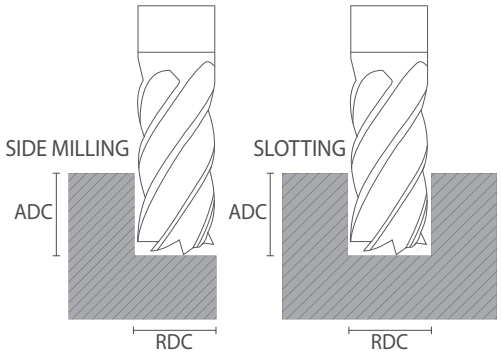
538 SERIES

5 Flute Variable Endmill
Primary & Secondary
Difficult-to-Machine Materials

The 538 Series is engineered to provide you with chatter-free machining for a smooth finish on the part.

5 Flautas Variable, Ángulos Primarios y Secundarios
Materiales Difícil de Mecanizar

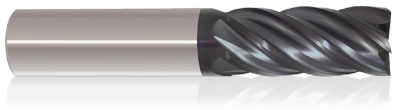
La serie 538 está diseñada para un mecanizado sin vibración, proporcionándole un acabado liso en la parte.



Speeds & Feeds for High-Performance Milling

			Chipload Per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial
	Material	SFM (Vc)	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	480-650	.0016	.0021	.0025	.0030	.0036	.0040	.0045	1.25xD	.5xD	1xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	450-610	.0016	.0021	.0025	.0030	.0036	.0040	.0045	1.25xD	.5xD	1xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 HRc)	400-530	.0015	.0020	.0023	.0029	.0032	.0036	.0042	1.25xD	.5xD	1xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	290-480	.0016	.0016	.0018	.0022	.0026	.0030	.0034	1.25xD	.5xD	1xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	210-340	.0014	.0018	.0020	.0024	.0028	.0032	.0036	1.25xD	.5xD	1xD
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	150-260	.0008	.0012	.0013	.0018	.0024	.0028	.0032	1.25xD	.5xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	250-340	.0014	.0022	.0025	.0027	.0032	.0036	.0041	1.25xD	.5xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	210-250	.0012	.0016	.0020	.0024	.0028	.0032	.0034	1.25xD	.5xD	1xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205	210-250	.0012	.0016	.0020	.0024	.0026	.0027	.0030	1.25xD	.5xD	1xD
K 1	Gray Cast Iron	400-530	.0016	.0025	.0028	.0033	.0037	.0041	.0045	1.25xD	.5xD	1xD
K 2	Ductile Iron (<28 HRc)	350-450	.0014	.0018	.0021	.0025	.0030	.0034	.0039	1.25xD	.5xD	1xD
K 3	Ductile Iron (<38 HRc)	320-440	.0015	.0016	.0020	.0023	.0028	.0032	.0036	1.25xD	.5xD	1xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	150-290	.0018	.0020	.0025	.0028	.0032	.0036	.0040	1.25xD	.5xD	.4xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	80-140	.0010	.0012	.0015	.0018	.0020	.0022	.0025	1.25xD	.5xD	.4xD
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	140-220	.0008	.0012	.0016	.0020	.0023	.0030	.0032	1.25xD	.5xD	1xD
H 1	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (≤48 HRc)	250-450	.0012	.0020	.0022	.0027	.0030	.0032	.0034	1.25xD	.5xD	.8xD

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED



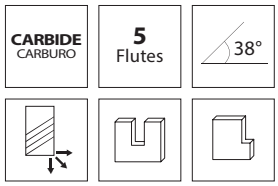
Extended Neck

5 Flute Variable Endmill

- Varianta® Supral recommended
- Primary and Secondary
- Sharp Corner

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds & Feeds: Refer to Page 168.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	1/2	2	.015 | .020 | .030 | .045	0538T40405002	0538T40405002B
1/4	1/4	3/4	2-1/2	.015 | .020 | .030 | .045	0538T404075025	0538T404075025B
1/4	1/4	1	3	.015 | .020 | .030 | .045	0538T40410003	0538T40410003B
1/4	1/4	1-1/4	4	.015 | .020 | .030 | .045	0538T40412504	0538T40412504B
5/16	5/16	1/2	2	.015 | .020 | .030 | .045	0538T40505002	0538T40505002B
5/16	5/16	7/8	2-1/2	.015 | .020 | .030 | .045	0538T405087525	0538T405087525B
5/16	5/16	1	3	.015 | .020 | .030 | .045	0538T40510003	0538T40510003B
5/16	5/16	1-1/4	4	.015 | .020 | .030 | .045	0538T40512504	0538T40512504B
3/8	3/8	1/2	2	.015 | .020 | .030 | .045	0538T40605002	0538T40605002B
3/8	3/8	1	2-1/2	.015 | .020 | .030 | .045	0538T406100025	0538T406100025B
3/8	3/8	1	3	.015 | .020 | .030 | .045	0538T40610003	0538T40610003B
3/8	3/8	1-1/2	4	.015 | .020 | .030 | .045	0538T40615004	0538T40615004B
7/16	7/16	1	2-3/4	.015 | .020 | .030 | .045	0538T4071000275	0538T4071000275B
7/16	7/16	2	4	.015 | .020 | .030 | .045	0538T40720004	0538T40720004B
1/2	1/2	5/8	2-1/2	.015 | .020 | .030 | .045 | .060	0538T408062525	0538T408062525B
1/2	1/2	1-1/4	3	.015 | .020 | .030 | .045 | .060	0538T40812503	0538T40812503B
1/2	1/2	2	4	.015 | .020 | .030 | .045 | .060	0538T40820004	0538T40820004B
1/2	1/2	2-1/2	5	.015 | .020 | .030 | .045 | .060	0538T40825005	0538T40825005B
1/2	1/2	3-1/8	6	.015 | .020 | .030 | .045 | .060	0538T40831256	0538T40831256B
5/8	5/8	3/4	3	.015 | .020 | .030 | .045 | .060 | .090	0538T41007503	0538T41007503B
5/8	5/8	1-5/8	3-1/2	.015 | .020 | .030 | .045 | .060 | .090	0538T410162535	0538T410162535B
5/8	5/8	2-1/2	5	.015 | .020 | .030 | .045 | .060 | .090	0538T41025005	0538T41025005B
5/8	5/8	3	6	.015 | .020 | .030 | .045 | .060 | .090	0538T41030006	0538T41030006B
3/4	3/4	1	3	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41210003	0538T41210003B
3/4	3/4	1-5/8	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41216254	0538T41216254B
3/4	3/4	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41222505	0538T41222505B
3/4	3/4	3-1/4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41232506	0538T41232506B
3/4	3/4	4	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41240007	0538T41240007B
1	1	1-1/4	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41612504	0538T41612504B
1	1	2	4-1/2	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T416200045	0538T416200045B
1	1	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41622505	0538T41622505B
1	1	2-5/8	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41626256	0538T41626256B
1	1	3-1/4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41632506	0538T41632506B
1	1	4-1/8	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41641257	0538T41641257B
1-1/4	1-1/4	2	4-1/2	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T420200045	0538T420200045B
1-1/4	1-1/4	3	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T42030006	0538T42030006B

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0538 (series) + T4 20 3000 6 (part) = .015-0538T42030006

Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 | .020 | .030 | .045	0538T40403753.1	0538T40403753.1B
1/4	1/4	3/8	2-1/8	4	.015 | .020 | .030 | .045	0538T40403754.2	0538T40403754.2B
3/8	3/8	1/2	1-1/8	3	.015 | .020 | .030 | .045	0538T40605003.1	0538T40605003.1B
3/8	3/8	1/2	2-1/8	4	.015 | .020 | .030 | .045	0538T40605004.2	0538T40605004.2B
1/2	1/2	5/8	1-3/8	3	.015 | .020 | .030 | .045 | .060	0538T40806253.1	0538T40806253.1B
1/2	1/2	5/8	2-1/8	4	.015 | .020 | .030 | .045 | .060	0538T40806254.2	0538T40806254.2B
1/2	1/2	5/8	3-3/8	6	.015 | .020 | .030 | .045 | .060	0538T40806256.3	0538T40806256.3B
5/8	5/8	3/4	1-5/8	4	.015 | .020 | .030 | .045 | .060 | .090	0538T41007504.1	0538T41007504.1B
5/8	5/8	3/4	2-3/8	5	.015 | .020 | .030 | .045 | .060 | .090	0538T41007505.2	0538T41007505.2B
5/8	5/8	3/4	3-3/8	6	.015 | .020 | .030 | .045 | .060 | .090	0538T41007506.3	0538T41007506.3B
3/4	3/4	1	2	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41210004.2	0538T41210004.2B
3/4	3/4	1	3	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41210005.3	0538T41210005.3B
3/4	3/4	1	4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41210006.4	0538T41210006.4B
1	1	1-1/4	2	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41612505.2	0538T41612505.2B
1	1	1-1/4	3-3/8	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41612506.3	0538T41612506.3B
1	1	1-1/4	4-3/8	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0538T41612507.4	0538T41612507.4B

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR ROUGHING OPERATIONS

5 Flute Variable - Eliminates harmonics

5 Variable Flauta - Elimina los armónicos

Sharp Corner
(Chamfer/corner radii available upon request)

Esquina Cuadrada
(Chaflán de esquina/radios disponibles a petición)

Silver-Exx® Coating - Is ideal for machining abrasive and gummy materials.

Revestimiento Silver-Exx® - Operaciones de mecanizado de alta velocidad, semi-seco o seco.

Eccentric OD - For a tougher cutting edge

Diámetro Exterior Excéntrico -
Para un borde de corte más resistente

Extended Neck - Available for deep-pocket applications

Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

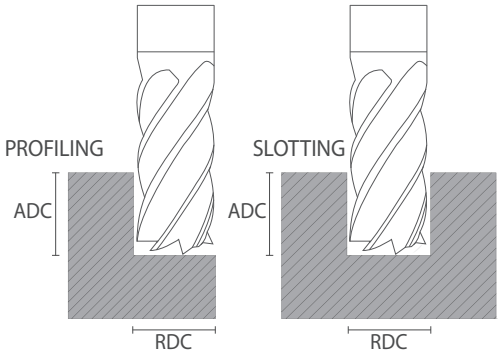
558 SERIES

5 Flute Variable Endmill, Eccentric OD Difficult-to-Machine Materials

The 558 Series is engineered to provide you with increased metal removal rates and cutting depth. Its design consists of an eccentric OD and variable flute; features ideal for increased metal removal rates and high speeds and feeds.

5 Flautas Variable, Diámetro Excéntrico Materiales Difícil de Mecanizar

La Serie 558 está diseñada para aumentar las tasas de eliminación de metal y profundidad de corte. Su diseño consiste en un diámetro excéntrico y flautas variables; características ideales para máxima eliminación de metal y altas velocidades.



Speeds & Feeds for High-Performance Milling

		SFM		Chipload Per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial
	Material	SFM <32 HRc	SFM >32 HRc	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	225-425	125-225	.0018	.0019	.0023	.0035	.0048	.0050	.0059	1.5xD	.25xD	1xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	150-320	80-220	.0015	.0016	.0021	.0025	.0043	.0033	.0060	1.5xD	.25xD	1xD
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	100-250	100-135	.0016	.0017	.0019	.0025	.0038	.0033	.0055	1.5xD	.25xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	150-325	100-200	.0018	.0018	.0021	.0028	.0049	.0045	.0053	1.5xD	.25xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316 (<25 HRc)	220-425	100-245	.0019	.0020	.0023	.0028	.0050	.0047	.0055	1.5xD	.25xD	1xD
K 1	Gray Cast Iron	260-455	130-300	.0010	.0014	.0019	.0022	.0036	.0047	.0036	1.5xD	.25xD	1xD
K 3	Ductile Iron (<38 HRc)	130-355	90-150	.0016	.0017	.0023	.0030	.0045	.0033	.0061	1.5xD	.25xD	1xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	80-125	40-100	.0013	.0015	.0018	.0026	.0038	.0043	.0046	1.5xD	.25xD	1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	150-185	100-150	.0015	.0019	.0022	.0031	.0048	.0046	.0058	1.5xD	.25xD	1xD

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED

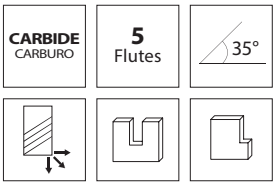
Extended Neck

5 Flute Variable Endmill, Eccentric OD

- Silver-Exx® recommended
- Eccentric OD

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code:** Refer to Page 261.



Silver-Exx® is ideal for machining abrasive and gummy materials.

Speeds & Feeds: Refer to Page 170.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Available Radius	Silver-Exx® Square Coated	Silver-Exx® Ball End Coated
1/4	1/4	1/2	2	.015 | .020 | .030 | .045	0558T80405002	0558T80405002B
1/4	1/4	3/4	2-1/2	.015 | .020 | .030 | .045	0558T804075025	0558T804075025B
1/4	1/4	1	3	.015 | .020 | .030 | .045	0558T80410003	0558T80410003B
1/4	1/4	1-1/4	4	.015 | .020 | .030 | .045	0558T80412504	0558T80412504B
5/16	5/16	1/2	2	.015 | .020 | .030 | .045	0558T80505002	0558T80505002B
5/16	5/16	7/8	2-1/2	.015 | .020 | .030 | .045	0558T805087525	0558T805087525B
5/16	5/16	1	3	.015 | .020 | .030 | .045	0558T80510003	0558T80510003B
5/16	5/16	1-1/4	4	.015 | .020 | .030 | .045	0558T80512504	0558T80512504B
3/8	3/8	1/2	2	.015 | .020 | .030 | .045	0558T80605002	0558T80605002B
3/8	3/8	1	2-1/2	.015 | .020 | .030 | .045	0558T806100025	0558T806100025B
3/8	3/8	1	3	.015 | .020 | .030 | .045	0558T80610003	0558T80610003B
3/8	3/8	1-1/2	4	.015 | .020 | .030 | .045	0558T80615004	0558T80615004B
7/16	7/16	1	2-3/4	.015 | .020 | .030 | .045	0558T8071000275	0558T8071000275B
7/16	7/16	2	4	.015 | .020 | .030 | .045	0558T80720004	0558T80720004B
1/2	1/2	5/8	2-1/2	.015 | .020 | .030 | .045 | .060	0558T808062525	0558T808062525B
1/2	1/2	1-1/4	3	.015 | .020 | .030 | .045 | .060	0558T80812503	0558T80812503B
1/2	1/2	2	4	.015 | .020 | .030 | .045 | .060	0558T80820004	0558T80820004B
1/2	1/2	2-1/2	5	.015 | .020 | .030 | .045 | .060	0558T80825005	0558T80825005B
1/2	1/2	3-1/8	6	.015 | .020 | .030 | .045 | .060	0558T80831256	0558T80831256B
5/8	5/8	3/4	3	.015 | .020 | .030 | .045 | .060 | .090	0558T81007503	0558T81007503B
5/8	5/8	1-5/8	3-1/2	.015 | .020 | .030 | .045 | .060 | .090	0558T810162535	0558T810162535B
5/8	5/8	2-1/2	5	.015 | .020 | .030 | .045 | .060 | .090	0558T81025005	0558T81025005B
5/8	5/8	3	6	.015 | .020 | .030 | .045 | .060 | .090	0558T81030006	0558T81030006B
3/4	3/4	1	3	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81210003	0558T81210003B
3/4	3/4	1-5/8	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81216254	0558T81216254B
3/4	3/4	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81222505	0558T81222505B
3/4	3/4	3-1/4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81232506	0558T81232506B
3/4	3/4	4	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81240007	0558T81240007B
1	1	1-1/4	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81612504	0558T81612504B
1	1	2	4-1/2	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T816200045	0558T816200045B
1	1	2-1/4	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81622505	0558T81622505B
1	1	2-5/8	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81626256	0558T81626256B
1	1	3-1/4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81632506	0558T81632506B
1	1	4-1/8	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81641257	0558T81641257B
1-1/4	1-1/4	2	4-1/2	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T820200045	0558T820200045B
1-1/4	1-1/4	3	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T82030006	0558T82030006B

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0558 (series) + T8 20 3000 6 (part) = .015-0558T82030006

Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Available Radius	Silver-Exx® Square Coated	Silver-Exx® Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 | .020 | .030 | .045	0558T80403753.1	0558T80403753.1B
1/4	1/4	3/8	2-1/8	4	.015 | .020 | .030 | .045	0558T80403754.2	0558T80403754.2B
3/8	3/8	1/2	1-1/8	3	.015 | .020 | .030 | .045	0558T80605003.1	0558T80605003.1B
3/8	3/8	1/2	2-1/8	4	.015 | .020 | .030 | .045	0558T80605004.2	0558T80605004.2B
1/2	1/2	5/8	1-3/8	3	.015 | .020 | .030 | .045 | .060	0558T80806253.1	0558T80806253.1B
1/2	1/2	5/8	2-1/8	4	.015 | .020 | .030 | .045 | .060	0558T80806254.2	0558T80806254.2B
1/2	1/2	5/8	3-3/8	6	.015 | .020 | .030 | .045 | .060	0558T80806256.3	0558T80806256.3B
5/8	5/8	3/4	1-5/8	4	.015 | .020 | .030 | .045 | .060 | .090	0558T81007504.1	0558T81007504.1B
5/8	5/8	3/4	2-3/8	5	.015 | .020 | .030 | .045 | .060 | .090	0558T81007505.2	0558T81007505.2B
5/8	5/8	3/4	3-3/8	6	.015 | .020 | .030 | .045 | .060 | .090	0558T81007506.3	0558T81007506.3B
3/4	3/4	1	2	4	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81210004.2	0558T81210004.2B
3/4	3/4	1	3	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81210005.3	0558T81210005.3B
3/4	3/4	1	4	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81210006.4	0558T81210006.4B
1	1	1-1/4	2-5/8	5	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81612505.2	0558T81612505.2B
1	1	1-1/4	3-3/8	6	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81612506.3	0558T81612506.3B
1	1	1-1/4	4-3/8	7	.015 | .020 | .030 | .045 | .060 | .090 | .125	0558T81612507.4	0558T81612507.4B

Now Improved with EDGE CUT™ for Superior Cutter Performance

IDEAL FOR ROUGHING OR FINISHING OPERATIONS

6 Flute Variable - Eliminates harmonics
6 Variable Flauta - Elimina los armónicos

Sharp Corner
(Chamfer/corner radii available upon request)

Esquina Cuadrada
(Chaflán de esquina/radios disponibles a petición)

Eccentric OD - For a tougher cutting edge

Diámetro Exterior Excéntrico - Para un borde de corte más resistente

Varianta® Supral Coating - Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

Recubrimiento Varianta® Supral - Excelente para operaciones de mecanizado de alta velocidad; ideal para condiciones secas y semi-secas.

Extended Neck - Available for deep-pocket applications

Cuello Extendido - Disponible para aplicaciones de bolsillos profundos

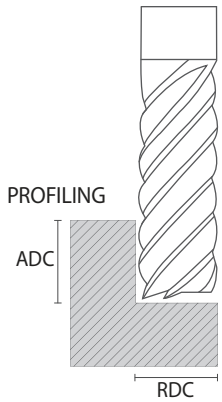
374 SERIES

6 Flute Variable Endmill, Eccentric OD Difficult-to-Machine Materials

The 374 Series is engineered for increased chip removal rates and chatter-free machining. Its design consists of 6 flutes and an eccentric OD; excellent features for roughing and finishing operations of tough materials.

6 Flautas Variable, Diámetro Excéntrico Materiales Difícil de Mecanizar

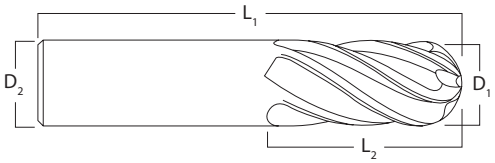
La Serie 374 está diseñada para aumentar la eliminación de viruta y para el mecanizado sin vibración. Su diseño consiste de 6 flautas y un diámetro excéntrico; excelentes características para operaciones de desbaste y acabado de materiales endurecidos.



Speeds & Feeds for High-Performance Milling

	Material	Hardness	Type of Cut	SFM (Vc)	Chipload Per Tooth Recommendations (CPT) 1/4"	3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	(RDC)
P1	Low-Carbon Steel - 1000 Series (>25 HRc)	40 HRc to 54 HRc	Rough	175	.001	.002	.002	.003	.003	.005	1.5xD	.2xD
			Finish	200	.002	.002	.003	.004	.004	.006	2xD	.1xD
P5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	Less than 38 HRc	Rough	180	.001	.003	.003	.004	.005	.007	1.5xD	.2xD
			Finish	350	.002	.003	.004	.005	.006	.008	2xD	.1xD
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48hRc)	Less than 38 HRc	Rough	100	.001	.001	.002	.002	.002	.003	1.5xD	.2xD
			Finish	130	.001	.002	.002	.002	.002	.004	2xD	.1xD
S4	Titanium Alloys - Commercially Pure, 6Al-AV, AStm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)	Less than 38 HRc	Rough	200	.001	.001	.002	.002	.002	.003	1.5xD	.2xD
			Finish	350	.001	.002	.002	.002	.002	.004	2xD	.1xD

Note: These are only recommended starting figures that depend on conditions such as machine and material rigidity, type of coating if any, etc. TESTING IS RECOMMENDED



6 Flute Variable Endmill

- Varianta® Supral recommended
- Eccentric OD

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 6 Flutes | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

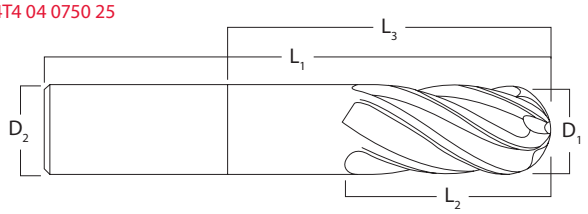
Speeds & Feeds: Refer to Page 172.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	1/2	2	.015 |.020 |.030 |.045	0374T40405002	0374T40405002B
1/4	1/4	3/4	2-1/2	.015 |.020 |.030 |.045	0374T404075025	0374T404075025B
5/16	5/16	1/2	2	.015 |.020 |.030 |.045	0374T40505002	0374T40505002B
5/16	5/16	3/4	2-1/2	.015 |.020 |.030 |.045	0374T405075025	0374T405075025B
3/8	3/8	5/8	2	.015 |.020 |.030 |.045	0374T40606252	0374T40606252B
3/8	3/8	1	2-1/2	.015 |.020 |.030 |.045	0374T406100025	0374T406100025B
1/2	1/2	5/8	2-1/2	.015 |.020 |.030 |.045 |.060	0374T408062525	0374T408062525B
1/2	1/2	1	3	.015 |.020 |.030 |.045 |.060	0374T40810003	0374T40810003B
5/8	5/8	3/4	3	.015 |.020 |.030 |.045 |.060 |.090	0374T41007503	0374T41007503B
5/8	5/8	1-5/8	3-1/2	.015 |.020 |.030 |.045 |.060 |.090	0374T410162535	0374T410162535B
3/4	3/4	1	3	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41210003	0374T41210003B
3/4	3/4	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41215004	0374T41215004B
1	1	1-1/4	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41612504	0374T41612504B
1	1	1-1/2	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41615004	0374T41615004B

Other Dimensions & Radii are Available Upon Request

NOTE: When ordering with radius, include the series and part number.
Example: .015 (radius) + 0374 (series) + T4 04 0750 25 (part#) = .015-0374T4 04 0750 25



Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Available Radius	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	.015 |.020 |.030 |.045	0374T40403753.1	0374T40403753.1B
1/4	1/4	3/8	2-1/8	4	.015 |.020 |.030 |.045	0374T40403754.2	0374T40403754.2B
3/8	3/8	1/2	1-1/8	3	.015 |.020 |.030 |.045	0374T40605003.1	0374T40605003.1B
3/8	3/8	1/2	2-1/8	4	.015 |.020 |.030 |.045	0374T40605004.2	0374T40605004.2B
3/8	3/8	1/2	3-1/8	6	.015 |.020 |.030 |.045	0374T40605006.3	0374T40605006.3B
3/8	3/8	1/2	4-1/4	6	.015 |.020 |.030 |.045	0374T40605006.4	0374T40605006.4B
1/2	1/2	5/8	1-1/8	3	.015 |.020 |.030 |.045 |.060	0374T40806253.1	0374T40806253.1B
1/2	1/2	5/8	2-1/8	4	.015 |.020 |.030 |.045 |.060	0374T40806254.2	0374T40806254.2B
1/2	1/2	5/8	3-1/8	6	.015 |.020 |.030 |.045 |.060	0374T40806256.3	0374T40806256.3B
1/2	1/2	5/8	4-1/4	6	.015 |.020 |.030 |.045 |.060	0374T40806256.4	0374T40806256.4B
5/8	5/8	3/4	1-3/4	4	.015 |.020 |.030 |.045 |.060 |.090	0374T41007504.1	0374T41007504.1B
5/8	5/8	3/4	2-5/8	5	.015 |.020 |.030 |.045 |.060 |.090	0374T41007505.2	0374T41007505.2B
5/8	5/8	3/4	3-3/8	6	.015 |.020 |.030 |.045 |.060 |.090	0374T41007506.3	0374T41007506.3B
5/8	5/8	3/4	4-1/4	6	.015 |.020 |.030 |.045 |.060 |.090	0374T41007506.4	0374T41007506.4B
3/4	3/4	1	1-3/4	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41210004.1	0374T41210004.1B
3/4	3/4	1	2-5/8	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41210005.2	0374T41210005.2B
3/4	3/4	1	3-3/8	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41210006.3	0374T41210006.3B
3/4	3/4	1	4-1/4	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41210006.4	0374T41210006.4B
1	1	1-1/4	1-3/4	4	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41612504.1	0374T41612504.1B
1	1	1-1/4	2-5/8	5	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41612505.2	0374T41612505.2B
1	1	1-1/4	3-3/8	6	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41612506.3	0374T41612506.3B
1	1	1-1/4	4-1/4	7	.015 |.020 |.030 |.045 |.060 |.090 |.125	0374T41612507.4	0374T41612507.4B

PRECISION CUTTING TOOLS, INC.

HIGH-SPEED ENDMILLS

For Aluminum Applications

HPM+
HIGH PERFORMANCE
MACHINING-PLUS

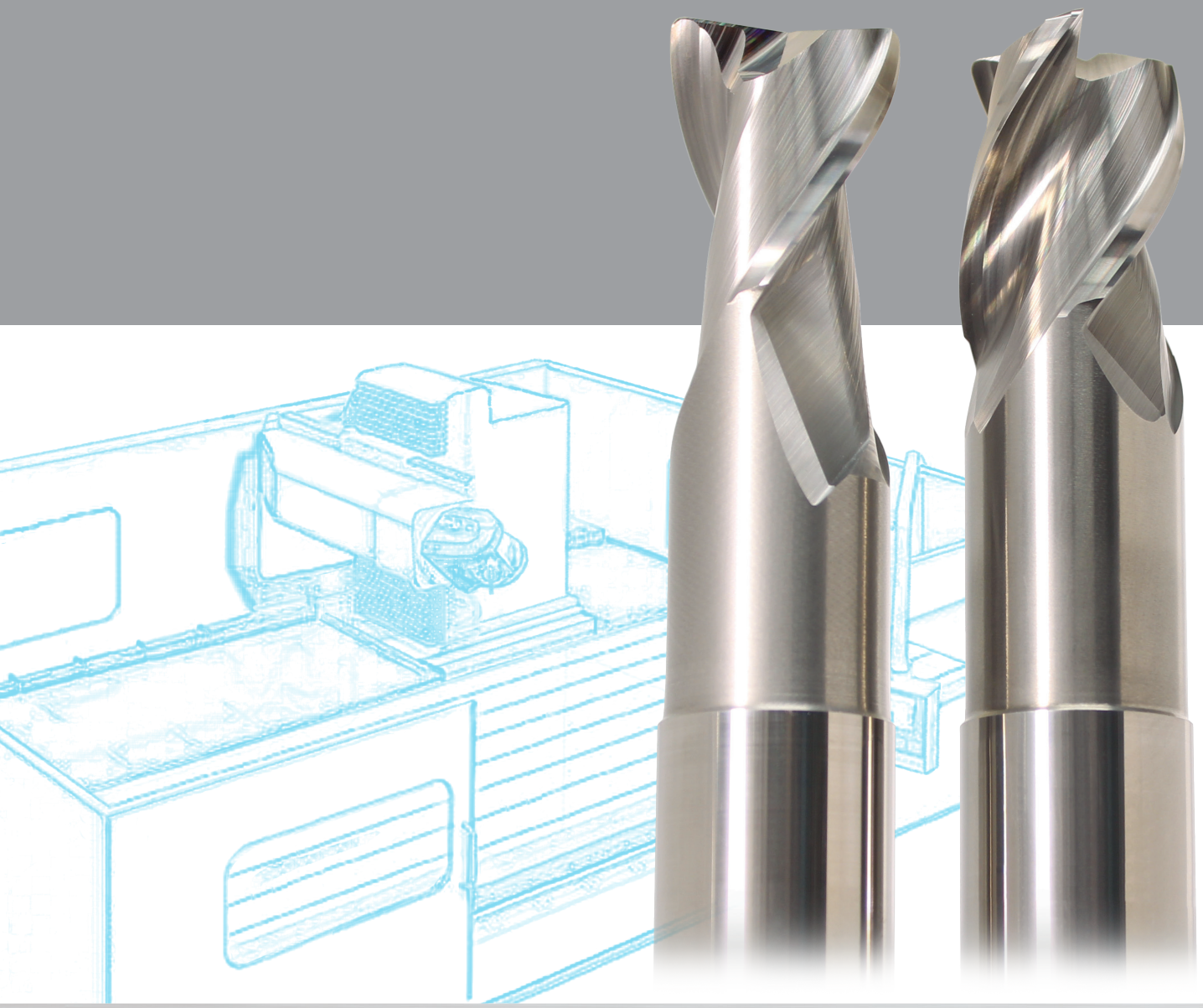
UP TO
33,000
RPM
1" Diameters

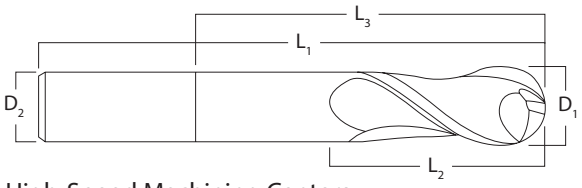
Our new High-Performance Machining Plus+ Endmills, H235 and H337 Series, are engineered exclusively for high-speed milling centers. The H235 and H337 run at maximum spindle speed and power, achieving RPMs as high as 33,000 (1" Diameters). Furthermore, the H235 & H337 Series allow for increased productivity and reduced machining time, during operations of Aluminum applications.

- Higher Speeds & Feeds
- Increased Productivity
- Improved Tool Balance
- Reduced Machining Time

MILLING

Now Improved with
EDGE CUT™ for
Superior Cutter Performance





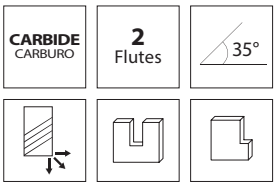
2 Flute Endmill - EdgeCut™

- High-Speed Machining Centers
- Higher speeds & feeds (up to 33,000 RPMs - 1" Diameters)
- Increased productivity & reduced machining time

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.

High-Speed Machining Centers



Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 176.

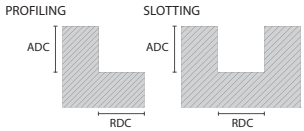
Extended Neck

D1	D2	L2	L3	L1		Z-Power®
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated
3/8	3/8	1/2	1-1/8	3	H235T00605003.1	H235T60605003.1
3/8	3/8	1/2	2-1/8	4	H235T00605004.2	H235T60605004.2
1/2	1/2	5/8	1-3/8	3	H235T00806253.1	H235T60806253.1
1/2	1/2	5/8	2-1/8	4	H235T00806254.2	H235T60806254.2
1/2	1/2	5/8	3-3/8	6	H235T00806256.3	H235T60806256.3
5/8	5/8	3/4	1-5/8	4	H235T01007504.1	H235T61007504.1
5/8	5/8	3/4	2-3/8	5	H235T01007505.2	H235T61007505.2
5/8	5/8	3/4	3-3/8	6	H235T01007506.3	H235T61007506.3
3/4	3/4	1	2	4	H235T01210004.2	H235T61210004.2
3/4	3/4	1	2-1/2	5	H235T01210005.2	H235T61210005.2
3/4	3/4	1	3-3/8	6	H235T01210006.3	H235T61210006.3
1	1	1-1/4	2-5/8	5	H235T01612505.2	H235T61612505.2
1	1	1-1/4	3-3/8	6	H235T01612506.3	H235T61612506.3
1	1	1-1/4	4-3/8	7	H235T01612507.4	H235T61612507.4

Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

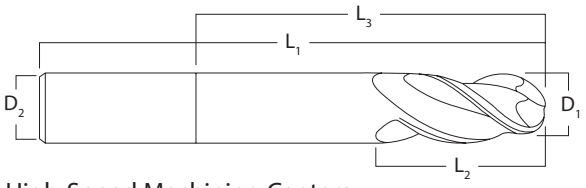
Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



H235 Speeds and Feeds

	Material	SFM (Vc)	Type of Cut	Chipload Per Tooth (CPT) 3/8"	1/2"	5/8"	3/4"	1"
N 1	Wrought Aluminum Alloys	490-910	Slotting	.0050	.0085	.0090	.0095	.0148
			Light Peripheral	.0091	.0123	.0132	.0150	.0220
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	790-Max	Slotting	.0055	.0085	.0078	.0088	.0140
			Light Peripheral	.0081	.0123	.0145	.0165	.0245
N 3	High-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	590-1010	Slotting	.0038	.0068	.0075	.0072	.0123
			Light Peripheral	.0073	.0105	.0123	.0138	.0206
N 5	Copper & Copper Alloys	690-1010	Slotting	.0045	.0068	.0075	.0072	.0123
			Light Peripheral	.0068	.0105	.0125	.0138	.0206

For high silicon materials we recommend Z-Power® Coating



3 Flute Endmill - EdgeCut™

- High-Speed Machining Centers
- Higher speeds & feeds (up to 33,000 RPMs - 1" Diameters)
- Increased productivity & reduced machining time

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.

High-Speed Machining Centers

CARBIDE CARBURO | 3 Flutes | 37° | Z-Power®

Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 177.

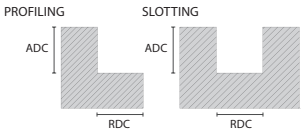
Extended Neck

D1	D2	L2	L3	L1		Z-Power®
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated
3/8	3/8	1/2	1-1/8	3	H337T00605003.1	H337T60605003.1
3/8	3/8	1/2	2-1/8	4	H337T00605004.2	H337T60605004.2
1/2	1/2	5/8	1-3/8	3	H337T00806253.1	H337T60806253.1
1/2	1/2	5/8	2-1/8	4	H337T00806254.2	H337T60806254.2
1/2	1/2	5/8	3-3/8	6	H337T00806256.3	H337T60806256.3
5/8	5/8	3/4	1-5/8	4	H337T01007504.1	H337T61007504.1
5/8	5/8	3/4	2-3/8	5	H337T01007505.2	H337T61007505.2
5/8	5/8	3/4	3-3/8	6	H337T01007506.3	H337T61007506.3
3/4	3/4	1	2	4	H337T01210004.2	H337T61210004.2
3/4	3/4	1	3	5	H337T01210005.2	H337T61210005.2
3/4	3/4	1	4	6	H337T01210006.3	H337T61210006.3
1	1	1-1/4	2-1/4	5	H337T01612505.2	H337T61612505.2
1	1	1-1/4	3-1/2	6	H337T01612506.3	H337T61612506.3
1	1	1-1/4	4-1/4	7	H337T01612507.4	H337T61612507.4

Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



H337 Speeds and Feeds

	Material	SFM (Vc)	Type of Cut	Chipload Per Tooth (CPT) 3/8"	1/2"	5/8"	3/4"	1"
N 1	Wrought Aluminum Alloys	490-910	Slotting	.0050	.0085	.0090	.0095	.0148
			Light Peripheral	.0091	.0123	.0132	.0150	.0220
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	790-Max	Slotting	.0055	.0085	.0078	.0088	.0140
			Light Peripheral	.0081	.0123	.0145	.0165	.0245
N 3	High-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	590-1010	Slotting	.0038	.0068	.0075	.0072	.0123
			Light Peripheral	.0073	.0105	.0123	.0138	.0206
N 5	Copper & Copper Alloys	690-1010	Slotting	.0045	.0068	.0075	.0072	.0123
			Light Peripheral	.0068	.0105	.0125	.0138	.0206

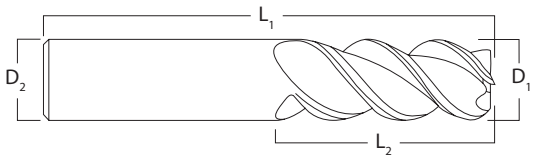
For high silicon materials we recommend Z-Power® Coating

PRECISION CUTTING TOOLS, INC.

HIGH PERFORMANCE MILLING

Increased Productivity & Long-Term Cost Savings

Left:
345 Series p.184
Center:
430 Series p.194
Right:
W345 Series p.186



3 Flute Endmill

- Varianta® Supral recommended
- Eccentric OD

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 3 Flutes | 60°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 179.

Fractional

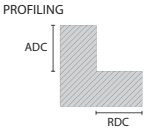
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated
1/4	1/4	3/4	2-1/2	0603T004075025	0603T404075025
5/16	5/16	7/8	2-1/2	0603T005087525	0603T405087525
3/8	3/8	7/8	2-1/2	0603T006087525	0603T406087525
7/16	7/16	1	2-3/4	0603T007100027	0603T407100027
1/2	1/2	1	3	0603T00810003	0603T40810003
5/8	5/8	1-1/4	3-1/2	0603T010125035	0603T410125035
3/4	3/4	1-1/4	4	0603T01212504	0603T41212504
1	1	1-1/2	4	0603T01615004	0603T41615004

Other Dimensions are Available Upon Request

Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

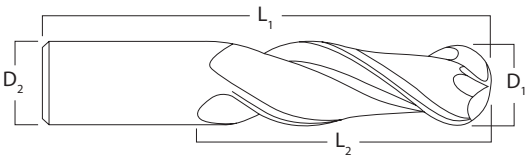
Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



603 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) SFM <32 HRc	SFM <32 HRc	Chipload Per Tooth Recommendations (CPT) 1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	(RDC)
P 2	Low-Carbon Steel - 1000 Series	200-440	100-225	.0008	.0020	.0020	.0026	.0034	.0041	.0049	.0089	1xD	.2xD
P 4	Alloy Tool Steels - 1300, 2000, 3000	150-350	80-200	.0007	.0012	.0020	.0020	.0032	.0037	.0042	.0080	1xD	.2xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	150-325	80-225	.0006	.0014	.0019	.0022	.0028	.0037	.0042	.0081	1xD	.2xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316	200-425	100-275	.0007	.0015	.0019	.0022	.0028	.0037	.0042	.0081	1xD	.2xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205	80-225	90-155	.0007	.0015	.0019	.0022	.0030	.0037	.0042	.0081	1xD	.2xD
K 1	Gray Cast Iron	220-450	130-300	.0008	.0015	.0019	.0022	.0030	.0036	.0042	.0081	1xD	.2xD
K 3	Ductile Iron - 32510, 35018	120-350	80-150	.0007	.0015	.0018	.0022	.0028	.0036	.0042	.0081	1xD	.2xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	70-100	40-100	.0006	.0010	.0020	.0014	.0020	.0022	.0028	.0058	1xD	.2xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	150-200	90-150	.0007	.0015	.0018	.0022	.0028	.0035	.0042	.0081	1xD	.2xD

For high-performance milling we recommend Varianta® Supral Coating

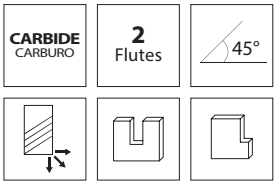


2 Flute Endmill

- Z-Power® recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.



Z-Power® has excellent corrosion and adhesion resistant properties.

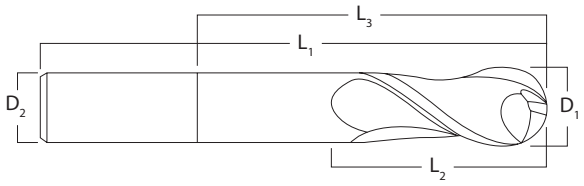
Speeds and Feeds: Refer to Page 181.

Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
3/16	3/16	5/16	2	0224T00303122	0224T60303122	0224T60303122B
3/16	3/16	9/16	2	0224T00305622	0224T60305622	0224T60305622B
1/4	1/4	1/2	2	0224T00405002	0224T60405002	0224T60405002B
1/4	1/4	3/4	2-1/2	0224T004075025	0224T604075025	0224T604075025B
1/4	1/4	1	3	0224T00410003	0224T60410003	0224T60410003B
1/4	1/4	1-1/4	4	0224T00412504	0224T60412504	0224T60412504B
5/16	5/16	7/16	2	0224T00543752	0224T60543752	0224T60543752B
5/16	5/16	7/8	2-1/2	0224T005087525	0224T605087525	0224T605087525B
5/16	5/16	1-1/4	4	0224T00512504	0224T60512504	0224T60512504B
5/16	5/16	1-5/8	4	0224T00516254	0224T60516254	0224T60516254B
3/8	3/8	1/2	2	0224T00605002	0224T60605002	0224T60605002B
3/8	3/8	1	2-1/2	0224T006100025	0224T606100025	0224T606100025B
3/8	3/8	1-1/8	3	0224T00611253	0224T60611253	0224T60611253B
3/8	3/8	1-1/2	4	0224T00615004	0224T60615004	0224T60615004B
7/16	7/16	9/16	2-3/4	0224T0070562275	0224T6070562275	0224T6070562275B
7/16	7/16	1	2-3/4	0224T0071000275	0224T6071000275	0224T6071000275B
7/16	7/16	2	4	0224T00720004	0224T60720004	0224T60720004B
1/2	1/2	5/8	2-1/2	0224T008062525	0224T608062525	0224T608062525B
1/2	1/2	1-1/4	3	0224T00812503	0224T60812503	0224T60812503B
1/2	1/2	1-1/2	4	0224T00815004	0224T60815004	0224T60815004B
1/2	1/2	2	4	0224T00820004	0224T60820004	0224T60820004B
1/2	1/2	1-1/2	6	0224T00815006	0224T60815006	0224T60815006B
1/2	1/2	3-1/8	6	0224T00831256	0224T60831256	0224T60831256B
5/8	5/8	3/4	3	0224T01007503	0224T61007503	0224T61007503B
5/8	5/8	1-5/8	3-1/2	0224T010162535	0224T610162535	0224T610162535B
5/8	5/8	2	4	0224T01020004	0224T61020004	0224T61020004B
5/8	5/8	2-1/4	5	0224T01022505	0224T61022505	0224T61022505B
5/8	5/8	1-1/2	6	0224T01015006	0224T61015006	0224T61015006B
5/8	5/8	3	6	0224T01030006	0224T61030006	0224T61030006B
3/4	3/4	1	3	0224T01210003	0224T61210003	0224T61210003B
3/4	3/4	1-5/8	4	0224T01216254	0224T61216254	0224T61216254B
3/4	3/4	2-1/4	5	0224T01222505	0224T61222505	0224T61222505B
3/4	3/4	1-1/2	6	0224T01215006	0224T61215006	0224T61215006B
3/4	3/4	3-1/4	6	0224T01232506	0224T61232506	0224T61232506B
3/4	3/4	4	7	0224T01240007	0224T61240007	0224T61240007B
1	1	1-1/4	4	0224T01612504	0224T61612504	0224T61612504B
1	1	2	4-1/2	0224T016200045	0224T616200045	0224T616200045B
1	1	2-1/4	5	0224T01622505	0224T61622505	0224T61622505B
1	1	1-1/2	6	0224T01615006	0224T61615006	0224T61615006B
1	1	2-5/8	6	0224T01626256	0224T61626256	0224T61626256B
1	1	3-1/4	6	0224T01632506	0224T61632506	0224T61632506B
1	1	4-1/8	7	0224T01641257	0224T61641257	0224T61641257B

Other Dimensions are Available Upon Request



Tolerance

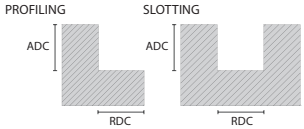
Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	(D2) h6

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

Metric Available Upon Request

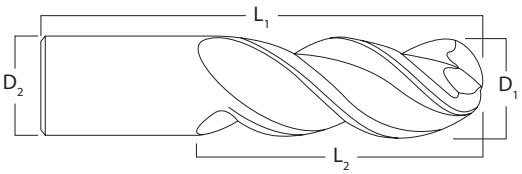
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	0224T00403753.1	0224T60403753.1	0224T60403753.1B
1/4	1/4	3/8	2-1/8	4	0224T00403754.2	0224T60403754.2	0224T60403754.2B
3/8	3/8	1/2	1-1/8	3	0224T00605003.1	0224T60605003.1	0224T60605003.1B
3/8	3/8	1/2	2-1/8	4	0224T00605004.2	0224T60605004.2	0224T60605004.2B
1/2	1/2	5/8	1-3/8	3	0224T00806253.1	0224T60806253.1	0224T60806253.1B
1/2	1/2	5/8	2-1/8	4	0224T00806254.2	0224T60806254.2	0224T60806254.2B
1/2	1/2	5/8	3-3/8	6	0224T00806256.3	0224T60806256.3	0224T60806256.3B
5/8	5/8	3/4	1-5/8	4	0224T01007504.1	0224T61007504.1	0224T61007504.1B
5/8	5/8	3/4	2-3/8	5	0224T01007505.2	0224T61007505.2	0224T61007505.2B
5/8	5/8	3/4	3-3/8	6	0224T01007506.3	0224T61007506.3	0224T61007506.3B
3/4	3/4	1	2	4	0224T01210004.2	0224T61210004.2	0224T61210004.2B
3/4	3/4	1	2-1/2	5	0224T01210005.2	0224T61210005.2	0224T61210005.2B
3/4	3/4	1	3-3/8	6	0224T01210006.3	0224T61210006.3	0224T61210006.3B
1	1	1-1/4	2-5/8	5	0224T01612505.2	0224T61612505.2	0224T61612505.2B
1	1	1-1/4	3-3/8	6	0224T01612506.3	0224T61612506.3	0224T61612506.3B
1	1	1-1/4	4-3/8	7	0224T01612507.4	0224T61612507.4	0224T61612507.4B



224 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
N 1	Wrought Aluminum Alloys	1575-6500	1575-6550	.0025	.0029	.0033	.0040	.0055	.0067	.0082	.0096	1xD	.5xD	1xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1575-4500	1575-6550	.0022	.0025	.0028	.0037	.0052	.0063	.0073	.0090	1xD	.5xD	1xD

For high silicon materials we recommend Z-Power® Coating



3 Flute Endmill

- Varianta® Supral recommended
- Eccentric OD

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S **Material Code:** Refer to Page 261.

CARBIDE CARBURO | 3 Flutes | 45° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 183.

Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated	Ball End Uncoated
1/8	1/8	1/4	1-1/2	0314T002025015	0314T402025015	0314T002025015B
1/8	1/8	1/2	1-1/2	0314T002050015	0314T402050015	0314T002050015B
3/16	3/16	5/16	2	0314T00331252	0314T40331252	0314T00331252B
3/16	3/16	9/16	2	0314T00356252	0314T40356252	0314T00356252B
1/4	1/4	3/8	2	0314T00403752	0314T40403752	0314T00403752B
1/4	1/4	3/4	2-1/2	0314T004075025	0314T404075025	0314T004075025B
1/4	1/4	1	3	0314T00410003	0314T40410003	0314T00410003B
1/4	1/4	1-1/4	4	0314T00412504	0314T40412504	0314T00412504B
5/16	5/16	1/2	2	0314T00505002	0314T40505002	0314T00505002B
5/16	5/16	7/8	2-1/2	0314T005087525	0314T405087525	0314T005087525B
5/16	5/16	1	3	0314T00510003	0314T40510003	0314T00510003B
5/16	5/16	1-1/4	4	0314T00512504	0314T40512504	0314T00512504B
3/8	3/8	1/2	2	0314T00605002	0314T40605002	0314T00605002B
3/8	3/8	1	2-1/2	0314T006100025	0314T406100025	0314T006100025B
3/8	3/8	1	3	0314T00610003	0314T40610003	0314T00610003B
3/8	3/8	1-1/2	4	0314T00615004	0314T40615004	0314T00615004B
7/16	7/16	1	2-3/4	0314T0071000275	0314T4071000275	0314T0071000275B
7/16	7/16	1-1/2	4	0314T00715004	0314T40715004	0314T00715004B
1/2	1/2	5/8	2-1/2	0314T008062525	0314T408062525	0314T008062525B
1/2	1/2	1-1/4	3	0314T00812503	0314T40812503	0314T00812503B
1/2	1/2	1-1/2	4	0314T00815004	0314T40815004	0314T00815004B
1/2	1/2	2	4	0314T00820004	0314T40820004	0314T00820004B
1/2	1/2	2-1/2	5	0314T00825005	0314T40825005	0314T00825005B
1/2	1/2	1-1/2	6	0314T00815006	0314T40815006	0314T00815006B
1/2	1/2	3-1/8	6	0314T00831256	0314T40831256	0314T00831256B
5/8	5/8	3/4	3	0314T01007503	0314T41007503	0314T01007503B
5/8	5/8	1-1/4	3-1/2	0314T010125035	0314T410125035	0314T010125035B
5/8	5/8	2	4	0314T01020004	0314T41020004	0314T01020004B
5/8	5/8	2-1/4	5	0314T01022505	0314T41022505	0314T01022505B
5/8	5/8	3	6	0314T01030006	0314T41030006	0314T01030006B
3/4	3/4	1	3	0314T01210003	0314T41210003	0314T01210003B
3/4	3/4	1-5/8	4	0314T01216254	0314T41216254	0314T01216254B
3/4	3/4	2-1/4	5	0314T01222505	0314T41222505	0314T01222505B
3/4	3/4	3	6	0314T01230006	0314T41230006	0314T01230006B
3/4	3/4	4	7	0314T01240007	0314T41240007	0314T01240007B
1	1	1-1/2	4	0314T01615004	0314T41615004	0314T01615004B
1	1	2-1/4	5	0314T01622505	0314T41622505	0314T01622505B
1	1	2-5/8	6	0314T01626256	0314T41626256	0314T01626256B
1	1	3	6	0314T01630006	0314T41630006	0314T01630006B
1	1	4	7	0314T01640007	0314T41640007	0314T01640007B
1-1/4	1-1/4	2	4-1/2	0314T020200045	0314T420200045	0314T020200045B
1-1/4	1-1/4	3	6	0314T02030006	0314T42030006	0314T02030006B

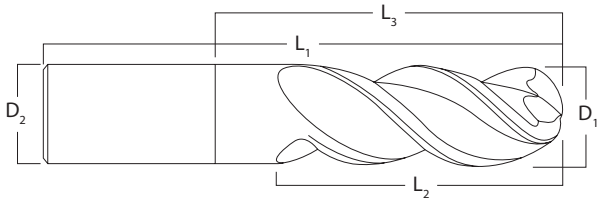
Other Dimensions are Available Upon Request

Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

(D1) +.00mm-.013mm
(D2) h6

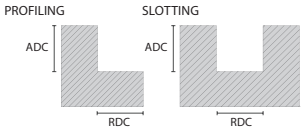
Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



Extended Neck

Metric Available Upon Request

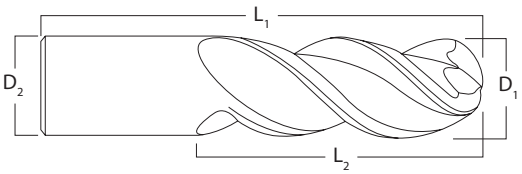
D1	D2	L2	L3	L1		Varianta® Supral	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1/4	1/4	3/8	1-1/8	3	0314T00403753.1	0314T40403753.1	0314T00403753.1B
1/4	1/4	3/8	2-1/8	4	0314T00403754.2	0314T40403754.2	0314T00403754.2B
3/8	3/8	1/2	1-1/8	3	0314T00605003.1	0314T40605003.1	0314T00605003.1B
3/8	3/8	1/2	2-1/8	4	0314T00605004.2	0314T40605004.2	0314T00605004.2B
1/2	1/2	5/8	1-3/8	3	0314T00806253.1	0314T40806253.1	0314T00806253.1B
1/2	1/2	5/8	2-1/8	4	0314T00806254.2	0314T40806254.2	0314T00806254.2B
1/2	1/2	5/8	3-3/8	6	0314T00806256.3	0314T40806256.3	0314T00806256.3B
5/8	5/8	3/4	1-5/8	4	0314T01007504.1	0314T41007504.1	0314T01007504.1B
5/8	5/8	3/4	2-3/8	5	0314T01007505.2	0314T41007505.2	0314T01007505.2B
5/8	5/8	3/4	3-3/8	6	0314T01007506.3	0314T41007506.3	0314T01007506.3B
3/4	3/4	1	2	4	0314T01210004.2	0314T41210004.2	0314T01210004.2B
3/4	3/4	1	2-1/2	5	0314T01210005.2	0314T41210005.2	0314T01210005.2B
3/4	3/4	1	3-3/8	6	0314T01210006.3	0314T41210006.3	0314T01210006.3B
1	1	1-1/4	2-5/8	5	0314T01612505.2	0314T41612505.2	0314T01612505.2B
1	1	1-1/4	3-3/8	6	0314T01612506.3	0314T41612506.3	0314T01612506.3B
1	1	1-1/4	4-3/8	7	0314T01612507.4	0314T41612507.4	0314T01612507.4B



3|14 SERIES Speeds and Feeds

		Milling SFM (Vc)		Chipload Per Tooth Recommendations (CPT)									Profiling Radial		Slotting Axial
	Material	Uncoated Min-Max	Coated Min-Max	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	1-1/4"	(ADC)	(RDC)	(ADC)
P1	Low-Carbon Steel - 1000 Series (>25 HRc)	220-260	500-630	.0018	.0023	.0025	.0028	.0035	.0039	.0043	.0050	.0062	1xD	.5xD	.5xD
P2	Low-Carbon Steel - 1000 Series (<25 HRc)	160-250	445-600	.0018	.0023	.0025	.0028	.0035	.0039	.0043	.0050	.0062	1xD	.5xD	.5xD
P3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	160-200	400-500	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057	1xD	.5xD	.5xD
P4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		350-450	.0014	.0018	.0020	.0023	.0026	.0030	.0030	.0039	.0049	1xD	.5xD	.5xD
P5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)		200-325	.0012	.0016	.0018	.0021	.0023	.0025	.0030	.0035	.0046	1xD	.5xD	.5xD
P6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)		150-200	.0010	.0013	.0015	.0017	.0020	.0022	.0024	.0028	.0036	1xD	.5xD	.5xD
M1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	120-130	250-325	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057	1xD	.5xD	.5xD
M2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		175-250	.0012	.0016	.0018	.0021	.0023	.0025	.0030	.0036	.0046	1xD	.5xD	.5xD
M3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205		200-250	.0010	.0013	.0015	.0017	.0020	.0022	.0024	.0028	.0037	1xD	.5xD	.5xD
K1	Gray Cast Iron	150-200	425-525	.0018	.0023	.0025	.0028	.0035	.0039	.0043	.0050	.0062	1xD	.5xD	.5xD
K2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		360-450	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057	1xD	.5xD	.5xD
K3	Ductile Iron - 32510, 35018		330-440	.0012	.0016	.0018	.0021	.0023	.0025	.0030	.0036	.0046	1xD	.5xD	.5xD
S1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155		160-275	.0015	.0020	.0023	.0026	.0029	.0034	.0038	.0046	.0057	1xD	.5xD	.5xD
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718		65-100	.0008	.0010	.0012	.0014	.0016	.0018	.0020	.0025	.0028	1xD	.5xD	.5xD
S4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo		150-225	.0013	.0014	.0017	.0020	.0022	.0025	.0028	.0030	.0042	1xD	.5xD	.5xD

For high-performance milling we recommend Varianta® Supral Coating

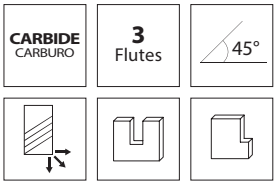


3 Flute Endmill

- Z-Power® recommended
- Primary & Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

K N **Material Code**: Refer to Page 261.



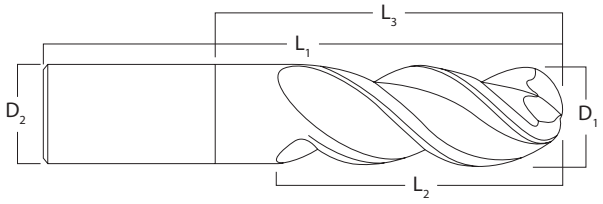
Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 185.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/8	1/8	1/4	1-1/2	0345T002025015	0345T602025015	0345T602025015B
1/8	1/8	1/2	1-1/2	0345T002050015	0345T602050015	0345T602050015B
3/16	3/16	5/16	2	0345T00331252	0345T60331252	0345T60331252B
3/16	3/16	9/16	2	0345T00356252	0345T60356252	0345T60356252B
1/4	1/4	3/8	2	0345T00403752	0345T60403752	0345T60403752B
1/4	1/4	3/4	2-1/2	0345T004075025	0345T604075025	0345T604075025B
1/4	1/4	1	3	0345T00410003	0345T60410003	0345T60410003B
1/4	1/4	1-1/4	4	0345T00412504	0345T60412504	0345T60412504B
5/16	5/16	1/2	2	0345T00505002	0345T60505002	0345T60505002B
5/16	5/16	7/8	2-1/2	0345T005087525	0345T605087525	0345T605087525B
5/16	5/16	1	3	0345T00510003	0345T60510003	0345T60510003B
5/16	5/16	1-1/4	4	0345T00512504	0345T60512504	0345T60512504B
3/8	3/8	1/2	2	0345T00605002	0345T60605002	0345T60605002B
3/8	3/8	1	2-1/2	0345T006100025	0345T606100025	0345T606100025B
3/8	3/8	1	3	0345T00610003	0345T60610003	0345T60610003B
3/8	3/8	1-1/2	4	0345T00615004	0345T60615004	0345T60615004B
7/16	7/16	1	2-3/4	0345T0071000275	0345T6071000275	0345T6071000275B
7/16	7/16	1-1/2	4	0345T00715004	0345T60715004	0345T60715004B
7/16	7/16	2	4	0345T00720004	0345T60720004	0345T60720004B
1/2	1/2	5/8	2-1/2	0345T008062525	0345T608062525	0345T608062525B
1/2	1/2	1-1/4	3	0345T00812503	0345T60812503	0345T60812503B
1/2	1/2	1-1/2	4	0345T00815004	0345T60815004	0345T60815004B
1/2	1/2	2	4	0345T00820004	0345T60820004	0345T60820004B
1/2	1/2	2-1/2	5	0345T00825005	0345T60825005	0345T60825005B
1/2	1/2	1-1/2	6	0345T00815006	0345T60815006	0345T60815006B
1/2	1/2	3-1/8	6	0345T00831256	0345T60831256	0345T60831256B
5/8	5/8	3/4	3	0345T01007503	0345T61007503	0345T61007503B
5/8	5/8	1-1/4	3-1/2	0345T010125035	0345T610125035	0345T610125035B
5/8	5/8	2	4	0345T01020004	0345T61020004	0345T61020004B
5/8	5/8	2-1/4	5	0345T01022505	0345T61022505	0345T61022505B
5/8	5/8	1-1/2	6	0345T01015006	0345T61015006	0345T61015006B
5/8	5/8	3	6	0345T01030006	0345T61030006	0345T61030006B
3/4	3/4	1	3	0345T01210003	0345T61210003	0345T61210003B
3/4	3/4	1-5/8	4	0345T01216254	0345T61216254	0345T61216254B
3/4	3/4	2-1/4	5	0345T01222505	0345T61222505	0345T61222505B
3/4	3/4	1-1/2	6	0345T01215006	0345T61215006	0345T61215006B
3/4	3/4	3	6	0345T01230006	0345T61230006	0345T61230006B
3/4	3/4	4	7	0345T01240007	0345T61240007	0345T61240007B
1	1	1-1/2	4	0345T01615004	0345T61615004	0345T61615004B
1	1	2	4-1/2	0345T016200045	0345T616200045	0345T616200045B
1	1	2-1/4	5	0345T01622505	0345T61622505	0345T61622505B
1	1	1-1/2	6	0345T01615006	0345T61615006	0345T61615006B
1	1	2-5/8	6	0345T01626256	0345T61626256	0345T61626256B
1	1	3	6	0345T01630006	0345T61630006	0345T61630006B
1	1	4	7	0345T01640007	0345T61640007	0345T61640007B
1-1/4	1-1/4	2	4-1/2	0345T020200045	0345T620200045	0345T620200045B
1-1/4	1-1/4	3	6	0345T02030006	0345T62030006	0345T62030006B

Other Dimensions are Available Upon Request



Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

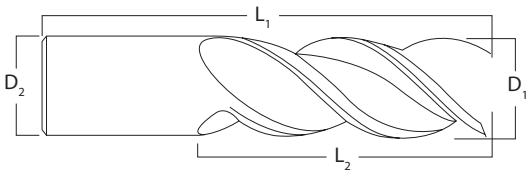
Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	0345T00403753.1	0345T60403753.1	0345T60403753.1B
1/4	1/4	3/8	2-1/8	4	0345T00403754.2	0345T60403754.2	0345T60403754.2B
3/8	3/8	1/2	1-1/8	3	0345T00605003.1	0345T60605003.1	0345T60605003.1B
3/8	3/8	1/2	2-1/8	4	0345T00605004.2	0345T60605004.2	0345T60605004.2B
1/2	1/2	5/8	1-3/8	3	0345T00806253.1	0345T60806253.1	0345T60806253.1B
1/2	1/2	5/8	2-1/8	4	0345T00806254.2	0345T60806254.2	0345T60806254.2B
1/2	1/2	5/8	3-3/8	6	0345T00806256.3	0345T60806256.3	0345T60806256.3B
5/8	5/8	3/4	1-5/8	4	0345T01007504.1	0345T61007504.1	0345T61007504.1B
5/8	5/8	3/4	2-3/8	5	0345T01007505.2	0345T61007505.2	0345T61007505.2B
5/8	5/8	3/4	3-3/8	6	0345T01007506.3	0345T61007506.3	0345T61007506.3B
3/4	3/4	1	2	4	0345T01210004.2	0345T61210004.2	0345T61210004.2B
3/4	3/4	1	2-1/2	5	0345T01210005.2	0345T61210005.2	0345T61210005.2B
3/4	3/4	1	3-3/8	6	0345T01210006.3	0345T61210006.3	0345T61210006.3B
1	1	1-1/4	2-5/8	5	0345T01612505.2	0345T61612505.2	0345T61612505.2B
1	1	1-1/4	3-3/8	6	0345T01612506.3	0345T61612506.3	0345T61612506.3B
1	1	1-1/4	4-3/8	7	0345T01612507.4	0345T61612507.4	0345T61612507.4B

345 SERIES Speeds and Feeds

	Material	SFM (Vc)	Operation	Feed per Tooth (FPT) 1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
N 1	Wrought Aluminum Alloys	1580-2410	Slotting	.0008-.0013	.0017-.0023	.0025-.0036	.0034-.0048	.0046-.0060	.0051-.0073	.0071-.0096
			Heavy Roughing	.0011-.0015	.0022-.0031	.0034-.0048	.0048-.0062	.0057-.0080	.0068-.0095	.0091-.0129
			Light Roughing	.0014-.0021	.0029-.0039	.0044-.0060	.0059-.0076	.0072-.0099	.0086-.0119	.0118-.0159
			Finishing	.0010-.0012	.0019-.0025	.0025-.0037	.0034-.0049	.0046-.0061	.0055-.0072	.0072-.0097
K 1	Gray Cast Iron	710-1060	Slotting	.0006-.0011	.0012-.0018	.0022-.0030	.0030-.0038	.0034-.0050	.0044-.0059	.0058-.0076
			Heavy Roughing	.0010-.0014	.0016-.0028	.0030-.0041	.0039-.0053	.0046-.0067	.0058-.0077	.0078-.0106
			Light Roughing	.0012-.0015	.0020-.0029	.0032-.0043	.0044-.0059	.0053-.0073	.0063-.0087	.0089-.0116
			Finishing	.0008-.0009	.0014-.0020	.0021-.0030	.0030-.0038	.0035-.0049	.0044-.0058	.0058-.0079

For high silicon materials we recommend Z-Power® Coating

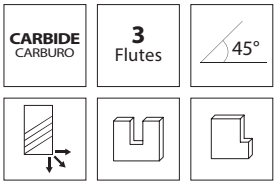


3 Flute Endmill

- Wiper Flatt on end face for improved finish
- Z-Power® recommended
- Primary & Secondary

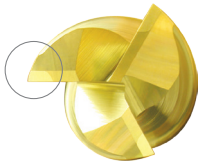
Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.

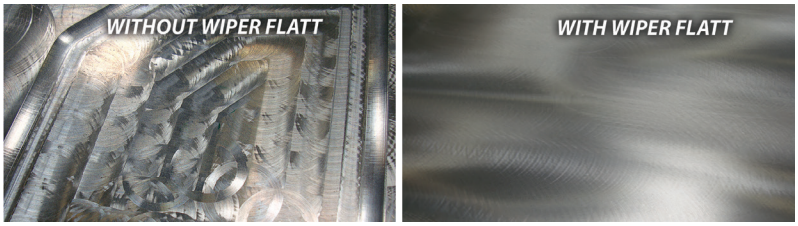


Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 187.



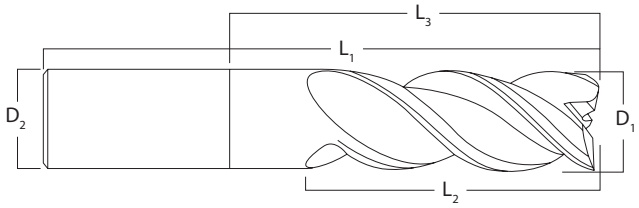
End face - Wiper Flatt



Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated
1/4	1/4	3/8	2	W345T00403752	W345T60403752
1/4	1/4	3/4	2-1/2	W345T004075025	W345T604075025
5/16	5/16	1/2	2	W345T00505002	W345T60505002
5/16	5/16	7/8	2-1/2	W345T005087525	W345T605087525
3/8	3/8	1/2	2	W345T00605002	W345T60605002
3/8	3/8	1	2-1/2	W345T006100025	W345T606100025
3/8	3/8	1	3	W345T00610003	W345T60610003
7/16	7/16	1	2-3/4	W345T0071000275	W345T6071000275
7/16	7/16	1-1/2	4	W345T00715004	W345T60715004
1/2	1/2	5/8	2-1/2	W345T008062525	W345T608062525
1/2	1/2	1-1/4	3	W345T00812503	W345T60812503
5/8	5/8	3/4	3	W345T01007503	W345T61007503
5/8	5/8	1-1/4	3-1/2	W345T010125035	W345T610125035
3/4	3/4	1	3	W345T01210003	W345T61210003
3/4	3/4	1-1/2	4	W345T01215004	W345T61215004
1	1	1-1/2	4	W345T01615004	W345T61615004
1	1	2	4-1/2	W345T01620045	W345T61620045

Other Dimensions are Available Upon Request



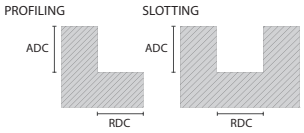
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

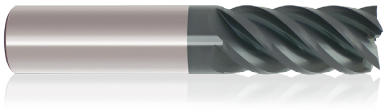
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated
1/4	1/4	3/8	1-1/8	3	W345T00403753.1	W345T60403753.1
1/4	1/4	3/8	2-1/8	4	W345T00403754.2	W345T60403754.2
3/8	3/8	1/2	1-1/8	3	W345T00605003.1	W345T60605003.1
3/8	3/8	1/2	2-1/8	4	W345T00605004.2	W345T60605004.2
1/2	1/2	5/8	1-3/8	3	W345T00806253.1	W345T60806253.1
1/2	1/2	5/8	2-1/8	4	W345T00806254.2	W345T60806254.2
1/2	1/2	5/8	3-3/8	6	W345T00806256.3	W345T60806256.3
5/8	5/8	3/4	1-5/8	4	W345T01007504.1	W345T61007504.1
5/8	5/8	3/4	2-3/8	5	W345T01007505.2	W345T61007505.2
5/8	5/8	3/4	3-3/8	6	W345T01007506.3	W345T61007506.3
3/4	3/4	1	2	4	W345T01210004.2	W345T61210004.2
3/4	3/4	1	2-1/2	5	W345T01210005.2	W345T61210005.2
3/4	3/4	1	3-3/8	6	W345T01210006.3	W345T61210006.3
1	1	1-1/4	2-5/8	5	W345T01612505.2	W345T61612505.2
1	1	1-1/4	3-3/8	6	W345T01612506.3	W345T61612506.3
1	1	1-1/4	4-3/8	7	W345T01612507.4	W345T61612507.4

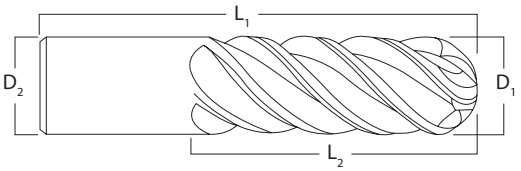


W345 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
N 1	Wrought Aluminum Alloys	1575-6500	1575-6550	.0025	.0029	.0033	.0040	.0055	.0067	.0082	.0096	1xD	.5xD	1xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1575-4500	1575-6550	.0022	.0025	.0028	.0037	.0052	.0063	.0073	.0090	1xD	.5xD	1xD

For high silicon materials we recommend Z-Power® Coating



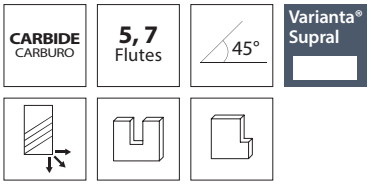


5, 7 Flute Endmill

- Varianta® Supral recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 189.

Fractional

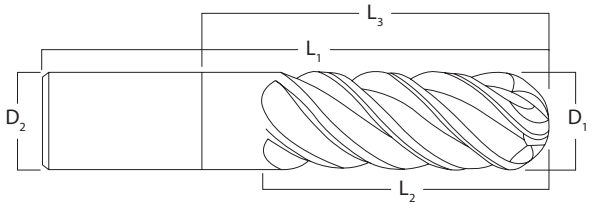
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Flutes	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	1/2	2	5	0545T00405002	0545T40405002	0545T40405002B
1/4	1/4	3/4	2-1/2	5	0545T004075025	0545T404075025	0545T404075025B
1/4	1/4	1	3	5	0545T00410003	0545T40410003	0545T40410003B
1/4	1/4	1-1/4	4	5	0545T00412504	0545T40412504	0545T40412504B
5/16	5/16	1/2	2	5	0545T00505002	0545T40505002	0545T40505002B
5/16	5/16	7/8	2-1/2	5	0545T005087525	0545T405087525	0545T405087525B
5/16	5/16	1	3	5	0545T00510003	0545T40510003	0545T40510003B
5/16	5/16	1-1/4	4	5	0545T00512504	0545T40512504	0545T40512504B
3/8	3/8	1/2	2	5	0545T00605002	0545T40605002	0545T40605002B
3/8	3/8	1	2-1/2	5	0545T006100025	0545T406100025	0545T406100025B
3/8	3/8	1	3	5	0545T00610003	0545T40610003	0545T40610003B
3/8	3/8	1-1/2	4	5	0545T00615004	0545T40615004	0545T40615004B
7/16	7/16	1	2-3/4	5	0545T0071000275	0545T4071000275	0545T4071000275B
7/16	7/16	2	4	5	0545T00720004	0545T40720004	0545T40720004B
1/2	1/2	5/8	2-1/2	5	0545T008062525	0545T408062525	0545T408062525B
1/2	1/2	1-1/4	3	5	0545T00812503	0545T40812503	0545T40812503B
1/2	1/2	2	4	5	0545T00820004	0545T40820004	0545T40820004B
1/2	1/2	2-1/2	5	5	0545T00825005	0545T40825005	0545T40825005B
1/2	1/2	3-1/8	6	5	0545T00831256	0545T40831256	0545T40831256B
5/8	5/8	3/4	3	5	0545T01007503	0545T41007503	0545T41007503B
5/8	5/8	1-5/8	3-1/2	5	0545T010162535	0545T410162535	0545T410162535B
5/8	5/8	2-1/2	5	5	0545T01025005	0545T41025005	0545T41025005B
5/8	5/8	3	6	5	0545T01030006	0545T41030006	0545T41030006B
3/4	3/4	1	3	5	0545T01210003	0545T41210003	0545T41210003B
3/4	3/4	1-5/8	4	5	0545T01216254	0545T41216254	0545T41216254B
3/4	3/4	2-1/4	5	5	0545T01222505	0545T41222505	0545T41222505B
3/4	3/4	3-1/4	6	5	0545T01232506	0545T41232506	0545T41232506B
3/4	3/4	4	6	5	0545T01240006	0545T41240006	0545T41240006B
1	1	1-1/4	4	5	0545T01612504	0545T41612504	0545T41612504B
1	1	2	4-1/2	5	0545T016200045	0545T416200045	0545T416200045B
1	1	2-5/8	6	5	0545T01626256	0545T41626256	0545T41626256B
1	1	3-1/4	6	5	0545T01632506	0545T41632506	0545T41632506B
1	1	41/8	7	5	0545T01641257	0545T41641257	0545T41641257B
1-1/4	1-1/4	2	4-1/2	7	0545T020200045	0545T420200045	0545T420200045B
1-1/4	1-1/4	3	6	7	0545T02030006	0545T42030006	0545T42030006B
1-1/4	1-1/4	4	7	7	0545T02040007	0545T42040007	0545T42040007B
1-1/4	1-1/4	5	8	7	0545T02050008	0545T42050008	0545T42050008B

Other Dimensions are Available Upon Request

Tolerance

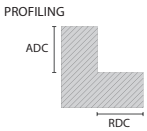
Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



Extended Neck

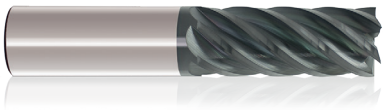
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Flutes	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	5	0545T00403753.1	0545T40403753.1	0545T40403753.1B
1/4	1/4	3/8	2-1/8	4	5	0545T00403754.2	0545T40403754.2	0545T40403754.2B
3/8	3/8	1/2	1-1/8	3	5	0545T00605003.1	0545T40605003.1	0545T40605003.1B
3/8	3/8	1/2	2-1/8	4	5	0545T00605004.2	0545T40605004.2	0545T40605004.2B
1/2	1/2	5/8	1-3/8	3	5	0545T00806253.1	0545T40806253.1	0545T40806253.1B
1/2	1/2	5/8	2-1/8	4	5	0545T00806254.2	0545T40806254.2	0545T40806254.2B
1/2	1/2	5/8	3-3/8	6	5	0545T00806256.3	0545T40806256.3	0545T40806256.3B
5/8	5/8	3/4	1-5/8	4	5	0545T01007504.1	0545T41007504.1	0545T41007504.1B
5/8	5/8	3/4	2-3/8	5	5	0545T01007505.2	0545T41007505.2	0545T41007505.2B
5/8	5/8	3/4	3-3/8	6	5	0545T01007506.3	0545T41007506.3	0545T41007506.3B
3/4	3/4	1	2	4	5	0545T01210004.2	0545T41210004.2	0545T41210004.2B
3/4	3/4	1	2-1/2	5	5	0545T01210005.2	0545T41210005.2	0545T41210005.2B
3/4	3/4	1	3-3/8	6	5	0545T01210006.3	0545T41210006.3	0545T41210006.3B
1	1	1-1/4	2	5	5	0545T01612505.2	0545T41612505.2	0545T41612505.2B
1	1	1-1/4	3-3/8	6	5	0545T01612506.3	0545T41612506.3	0545T41612506.3B
1	1	1-1/4	4-3/8	7	5	0545T01612507.4	0545T41612507.4	0545T41612507.4B

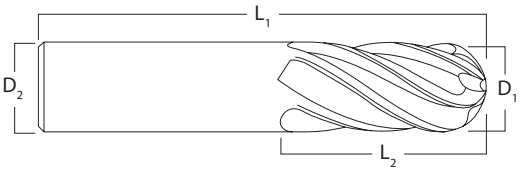


545 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	1-1/4"	Profiling Radial (ADC)	Profiling Radial (RDC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	200-250	500-640	.0019	.0024	.0028	.0031	.0035	.0039	.0043	.0050	.0062	1xD	.4xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	180-240	440-625	.0019	.0024	.0028	.0031	.0035	.0039	.0043	.0050	.0062	1xD	.4xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	150-200	400-500	.0015	.0020	.0024	.0026	.0029	.0034	.0039	.0046	.0057	1xD	.4xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		320-475	.0014	.0019	.0020	.0024	.0026	.0030	.0032	.0039	.0049	1xD	.4xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)		200-300	.0012	.0016	.0019	.0021	.0024	.0028	.0030	.0036	.0046	1xD	.2xD
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)		150-230	.0012	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036	1xD	.4xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	100-130	260-320	.0015	.0020	.0024	.0026	.0029	.0034	.0039	.0046	.0057	1xD	.4xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		225-270	.0012	.0016	.0019	.0021	.0024	.0028	.0030	.0036	.0046	1xD	.4xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205		200-260	.0010	.0013	.0015	.0017	.0019	.0022	.0024	.0028	.0036	1xD	.4xD
K 1	Gray Cast Iron	150-200	390-500	.0019	.0024	.0028	.0031	.0035	.0039	.0043	.0050	.0062	1xD	.4xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		360-450	.0015	.0020	.0024	.0026	.0029	.0034	.0039	.0046	.0057	1xD	.4xD
K 3	Ductile Iron - 60-40-18, 65-45-12 (<38 HRc)		330-420	.0012	.0016	.0019	.0021	.0024	.0028	.0030	.0036	.0046	1xD	.4xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155		150-255	.0015	.0020	.0024	.0026	.0029	.0034	.0039	.0046	.0057	1xD	.4xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718		70-150	.0008	.0010	.0012	.0014	.0016	.0019	.0020	.0025	.0031	1xD	.2xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo		150-210	.0013	.0014	.0017	.0019	.0022	.0026	.0028	.0032	.0042	1xD	.3xD
H 1	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (≤48 HRc)		260-420	.0014	.0019	.0020	.0024	.0028	.0030	.0032	.0039	.0049	1xD	.2xD

For high-performance milling we recommend Varianta® Supral Coating





6 Flute Endmill

- Varianta® Supral recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 6 Flutes | 40°

Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 191.

Fractional

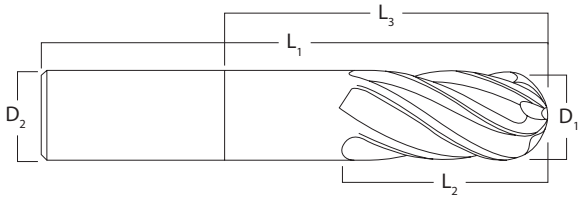
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	2	0640T00403752	0640T40403752	0640T40403752B
1/4	1/4	3/4	2-1/2	0640T004075025	0640T404075025	0640T404075025B
1/4	1/4	1-1/8	3	0640T00411253	0640T40411253	0640T40411253B
1/4	1/4	1-1/4	4	0640T00412504	0640T40412504	0640T40412504B
5/16	5/16	1/2	2	0640T00505002	0640T40505002	0640T40505002B
5/16	5/16	7/8	2-1/2	0640T005087525	0640T405087525	0640T405087525B
5/16	5/16	1-1/8	3	0640T00511253	0640T40511253	0640T40511253B
5/16	5/16	1-1/4	4	0640T00512504	0640T40512504	0640T40512504B
3/8	3/8	1/2	2	0640T00605002	0640T40605002	0640T40605002B
3/8	3/8	1	2-1/2	0640T006100025	0640T406100025	0640T406100025B
3/8	3/8	1-1/8	3	0640T00611253	0640T40611253	0640T40611253B
3/8	3/8	1-1/2	4	0640T00615004	0640T40615004	0640T40615004B
7/16	7/16	1	2-3/4	0640T0071000275	0640T4071000275	0640T4071000275B
7/16	7/16	2	4	0640T00720004	0640T40720004	0640T40720004B
1/2	1/2	5/8	2-1/2	0640T008062525	0640T408062525	0640T408062525B
1/2	1/2	1-1/4	3	0640T00812503	0640T40812503	0640T40812503B
1/2	1/2	1-1/2	4	0640T00815004	0640T40815004	0640T40815004B
1/2	1/2	3	6	0640T00830006	0640T40830006	0640T40830006B
5/8	5/8	3/4	3	0640T01007503	0640T41007503	0640T41007503B
5/8	5/8	1-1/4	3-1/2	0640T010125035	0640T410125035	0640T410125035B
5/8	5/8	2-1/4	5	0640T01022505	0640T41022505	0640T41022505B
5/8	5/8	3	6	0640T01030006	0640T41030006	0640T41030006B
3/4	3/4	1	3	0640T01210003	0640T41210003	0640T41210003B
3/4	3/4	1-1/2	4	0640T01215004	0640T41215004	0640T41215004B
3/4	3/4	2-1/4	5	0640T01222505	0640T41222505	0640T41222505B
3/4	3/4	3-1/4	6	0640T01232506	0640T41232506	0640T41232506B
1	1	1-1/2	4	0640T01615004	0640T41615004	0640T41615004B
1	1	2-1/4	5	0640T01622505	0640T41622505	0640T41622505B
1	1	2	6	0640T01620006	0640T41620006	0640T41620006B
1	1	3	6	0640T01630006	0640T41630006	0640T41630006B

Other Dimensions are Available Upon Request

Tolerance

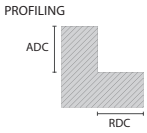
Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



Extended Neck

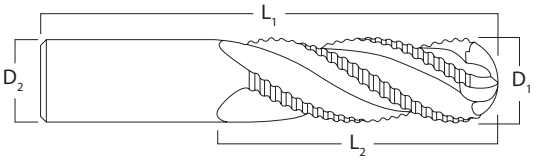
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	0640T00403753.1	0640T40403753.1	0640T40403753.1B
1/4	1/4	3/8	2-1/8	4	0640T00403754.2	0640T40403754.2	0640T40403754.2B
3/8	3/8	1/2	1-1/8	3	0640T00605003.1	0640T40605003.1	0640T40605003.1B
3/8	3/8	1/2	2-1/8	4	0640T00605004.2	0640T40605004.2	0640T40605004.2B
1/2	1/2	5/8	1-3/8	3	0640T00806253.1	0640T40806253.1	0640T40806253.1B
1/2	1/2	5/8	2-1/8	4	0640T00806254.2	0640T40806254.2	0640T40806254.2B
1/2	1/2	5/8	3-3/8	6	0640T00806256.3	0640T40806256.3	0640T40806256.3B
5/8	5/8	3/4	1-5/8	4	0640T01007504.1	0640T41007504.1	0640T41007504.1B
5/8	5/8	3/4	2-3/8	5	0640T01007505.2	0640T41007505.2	0640T41007505.2B
5/8	5/8	3/4	3-3/8	6	0640T01007506.3	0640T41007506.3	0640T41007506.3B
3/4	3/4	1	2	4	0640T01210004.2	0640T41210004.2	0640T41210004.2B
3/4	3/4	1	2-1/2	5	0640T01210005.2	0640T41210005.2	0640T41210005.2B
3/4	3/4	1	3-3/8	6	0640T01210006.3	0640T41210006.3	0640T41210006.3B
1	1	1-1/4	2	5	0640T01612505.2	0640T41612505.2	0640T41612505.2B
1	1	1-1/4	3-3/8	6	0640T01612506.3	0640T41612506.3	0640T41612506.3B
1	1	1-1/4	4-3/8	7	0640T01612507.4	0640T41612507.4	0640T41612507.4B



640 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	(RDC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	200-440	580-710	.0020	.0023	.0027	.0031	.0035	.0039	.0043	.0048	1xD	.2xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	180-240	530-670	.0020	.0023	.0027	.0032	.0035	.0039	.0043	.0048	1xD	.2xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	150-200	530-590	.0015	.0020	.0023	.0027	.0029	.0034	.0038	.0046	1xD	.1xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		450-510	.0014	.0021	.0020	.0024	.0030	.0030	.0031	.0039	1xD	.1xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)		210-320	.0013	.0016	.0020	.0021	.0023	.0027	.0030	.0036	1xD	.1xD
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)		160-260	.0010	.0013	.0023	.0020	.0019	.0022	.0024	.0028	1xD	.1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	100-150	260-320	.0015	.0020	.0020	.0027	.0029	.0034	.0038	.0046	1xD	.1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		200-250	.0013	.0016	.0015	.0021	.0023	.0027	.0030	.0036	1xD	.1xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205		200-250	.0010	.0013	.0027	.0020	.0019	.0022	.0024	.0028	1xD	.1xD
K 1	Gray Cast Iron	150-200	390-520	.0020	.0023	.0023	.0031	.0035	.0039	.0043	.0048	1xD	.1xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		360-450	.0015	.0020	.0020	.0027	.0029	.0027	.0030	.0046	1xD	.1xD
K 3	Ductile Iron - 60-40-18, 65-45-12 (<38 HRc)		320-420	.0016	.0020	.0023	.0023	.0023	.0034	.0038	.0036	1xD	.1xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155		310-390	.0015	.0010	.0013	.0025	.0029	.0034	.0038	.0046	1xD	.1xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718		70-130	.0008	.0016	.0020	.0020	.0016	.0019	.0019	.0025	1xD	.1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo		140-200	.0013	.0020	.0020	.0021	.0022	.0025	.0028	.0031	1xD	.15xD
H 1	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (≤48 HRc)		320-450	.0014	.0021	.0021	.0024	.0027	.0030	.0031	.0039	1xD	.1xD

For high-performance milling we recommend Varianta® Supral Coating

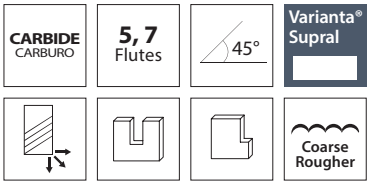


5, 7 Flute Coarse Pitch Rougher

- Varianta® Supral recommended
- Coarse Pitch Rougher

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

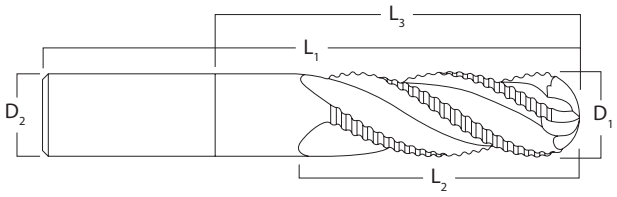
Speeds and Feeds: Refer to Page 193.

Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Flute	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
3/8	3/8	1/2	2	5	0429T40605002	0429T40605002B
3/8	3/8	1	2-1/2	5	0429T406100025	0429T406100025B
7/16	7/16	9/16	2-1/2	5	0429T407056225	0429T407056225B
7/16	7/16	1	2-3/4	5	0429T407100027	0429T407100027B
1/2	1/2	5/8	2-1/2	5	0429T408062525	0429T408062525B
1/2	1/2	1-1/4	3	5	0429T40812503	0429T40812503B
5/8	5/8	3/4	3	5	0429T41007503	0429T41007503B
5/8	5/8	1-5/8	3-1/2	5	0429T410162535	0429T410162535B
3/4	3/4	1	3	5	0429T41210003	0429T41210003B
3/4	3/4	1-5/8	4	5	0429T41216254	0429T41216254B
1	1	1-1/4	3	5	0429T41612503	0429T41612503B
1	1	2	4-1/2	5	0429T416200045	0429T416200045B
1-1/4	1-1/4	2	4-1/2	7	0429T420200045	0429T420200045B
1-1/4	1-1/4	3	6	7	0429T42030006	0429T42030006B

Other Dimensions are Available Upon Request



Tolerance

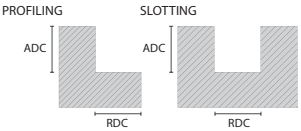
Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Flute	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/2	1/2	5/8	1-3/8	3	5	0429T40806253.1	0429T40806253.1B
1/2	1/2	5/8	2-1/8	4	5	0429T40806254.2	0429T40806254.2B
1/2	1/2	5/8	3-3/8	6	5	0429T40806256.3	0429T40806256.3B
5/8	5/8	3/4	1-5/8	4	5	0429T41007504.1	0429T41007504.1B
5/8	5/8	3/4	2-3/8	5	5	0429T41007505.2	0429T41007505.2B
5/8	5/8	3/4	3-3/8	6	5	0429T41007506.3	0429T41007506.3B
3/4	3/4	1	2	4	5	0429T41210004.2	0429T41210004.2B
3/4	3/4	1	2-1/2	5	5	0429T41210005.2	0429T41210005.2B
3/4	3/4	1	3-3/8	6	5	0429T41210006.3	0429T41210006.3B
1	1	1-1/4	2	5	5	0429T41612505.2	0429T41612505.2B
1	1	1-1/4	3-3/8	6	5	0429T41612506.3	0429T41612506.3B
1	1	1-1/4	4-3/8	7	5	0429T41612507.4	0429T41612507.4B

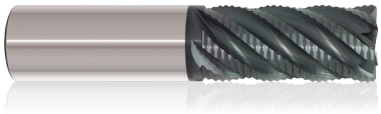


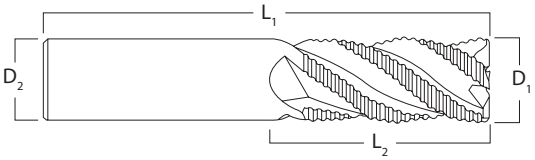
429 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) SFM <32 HRc	Milling SFM (Vc) SFM >32 HRc	Chipload Per Tooth (CPT) 3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	225-450	125-260	.0027	.0035	.0046	.0053	.0070	.5xD	.5xD	.5xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	150-320	80-220	.0019	.0032	.0038	.0045	.0063	.5xD	.5xD	.5xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (15-5, 3-8, 17-4)	220-450	125-250	.0019	.0035	.0046	.0053	.0070	.5xD	.5xD	.5xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series and 304L	150-325	80-210	.0027	.0035	.0046	.0053	.0070	.5xD	.5xD	.5xD
K 1	Gray Cast Iron	225-450	80-210	.0019	.0032	.0038	.0045	.0063	.5xD	.5xD	.5xD
K 3	Ductile Iron - 32510, 35018	120-360	120-310	.0019	.0032	.0038	.0045	.0063	.5xD	.5xD	.5xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	70-135	50-90	.0018	.0027	.0031	.0038	.0050	.5xD	.5xD	.5xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	140-223	90-170	.0019	.0030	.0038	.0045	.0070	.5xD	.5xD	.5xD

For high-performance milling we recommend Varianta® Supral Coating

Negative Rake



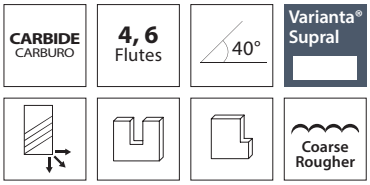


4, 6 Flute Coarse Pitch Rougher

- Varianta® Supral recommended
- Negative Rake
- Coarse Pitch Rougher
- Standard Radii

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

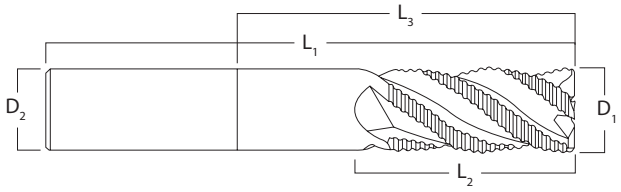
Speeds and Feeds: Refer to Page 195.

Fractional

D1	D2	L2	L1		Varianta® Supral
Cutting Dia	Shank Dia	LOC	OAL	Flute	Radius Coated
3/8	3/8	1/2	2	4	.030-0430T40605002
3/8	3/8	7/8	2-1/2	4	.030-0430T406087525
1/2	1/2	5/8	2-1/2	4	.040-0430T408062525
1/2	1/2	1-1/4	3	4	.040-0430T40812503
5/8	5/8	3/4	3	4	.040-0430T41007503
5/8	5/8	1-1/4	3-1/2	4	.040-0430T410125035
5/8	5/8	1-1/4	3-1/2	6	.040-0430T4101250356
3/4	3/4	1	3	4	.050-0430T41210003
3/4	3/4	1-1/2	4	4	.050-0430T41215004
3/4	3/4	1-1/2	4	6	.050-0430T412150046
3/4	3/4	2-1/4	5	6	.050-0430T41222505
1	1	1-1/2	4	4	.050-0430T41615004
1	1	1-1/2	4	6	.050-0430T416150046
1	1	2-1/4	5	6	.050-0430T41622505

Other Dimensions are Available Upon Request

Negative Rake



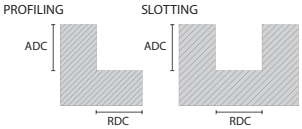
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

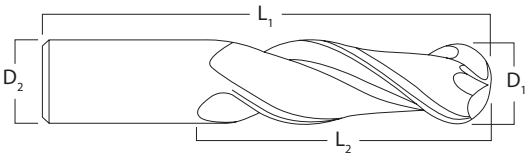
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Flute	Varianta® Supral Radius Coated
1/2	1/2	5/8	1-3/8	3	4	.040-0430T40806253.1
1/2	1/2	5/8	2-1/8	4	4	.040-0430T40806254.2
1/2	1/2	5/8	3-3/8	6	4	.040-0430T40806256.3
5/8	5/8	3/4	1-5/8	4	4	.040-0430T41007504.1
5/8	5/8	3/4	2-3/8	5	4	.040-0430T41007505.2
5/8	5/8	3/4	3-3/8	6	4	.040-0430T41007506.3
3/4	3/4	1	2	4	6	.050-0430T41210004.2
3/4	3/4	1	2-1/2	5	6	.050-0430T41210005.2
3/4	3/4	1	3-3/8	6	6	.050-0430T41210006.3
1	1	1-1/4	2	5	6	.050-0430T41612505.2
1	1	1-1/4	3-3/8	6	6	.050-0430T41612506.3
1	1	1-1/4	4-3/8	7	6	.050-0430T41612507.4



430 SERIES Speeds and Feeds

	Material	SFM (Vc) Coated Min-Max	Chipload Per Tooth (CPT) 1/4"	3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	380-530	.0017	.0020	.0028	.0031	.0038	.0046	1xD	.5xD	.5xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	370-500	.0012	.0020	.0023	.0027	.0035	.0039	1xD	.5xD	.4xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	200-320	.0010	.0015	.0020	.0025	.0036	.0036	1.5xD	.5xD	.5xD
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	160-250	.0010	.0017	.0020	.0020	.0025	.0028	1xD	.3xD	.4xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	260-330	.0015	.0019	.0028	.0031	.0038	.0046	1xD	.5xD	.5xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316	200-260	.0010	.0015	.0021	.0025	.0031	.0036	1xD	1.5xD	.5xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205	200-260	.0010	.0015	.0020	.0020	.0025	.0028	1xD	1xD	1xD
K 1	Gray Cast Iron	390-520	.0016	.0023	.0031	.0035	.0043	.0050	1xD	1.5xD	.5xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	360-460	.0015	.0021	.0028	.0031	.0038	.0046	1xD	.5xD	1xD
K 3	Ductile Iron - 60-40-18, 65-45-12 (<38 HRc)	330-430	.0010	.0015	.0020	.0025	.0031	.0036	1.5xD	.5xD	1xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	160-300	.0015	.0020	.0026	.0031	.0038	.0046	1xD	.3xD	.3xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	70-130	.0007	.0010	.0020	.0016	.0020	.0025	1.5xD	.5xD	.3xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	150-210	.0011	.0014	.0020	.0023	.0029	.0033	1xD	.4xD	.4xD
H 1	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (≤48 HRc)	260-460	.0013	.0020	.0023	.0028	.0031	.0040	1xD	.3xD	.3xD
H 2	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (48-55 HRc)	230-390	.0010	.0015	.0019	.0019	.0025	.0029	1xD	.2xD	.2xD
H 3	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (56-60 HRc)	200-300	.0004	.0005	.0007	.0010	.0010	.0014	.8xD	.2xD	.2xD

For high-performance milling we recommend Varianta® Supral Coating

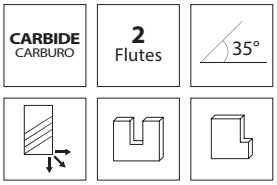


2 Flute Endmill

- TiCN recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K N **Material Code**: Refer to Page 261.



TiCN features high hardness and a low coefficient of friction; excellent for general purpose machining.

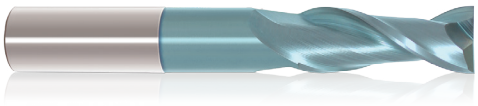
Speeds and Feeds: Refer to Page 197.

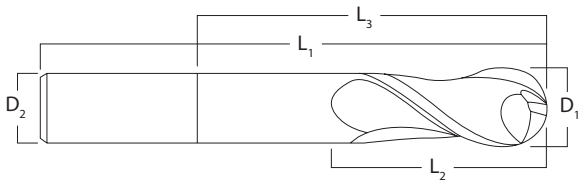
Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	TiCN Square Coated	TiCN Ball End Coated
1/8	1/8	1/2	1-1/2	0235T002050015	0235T202050015	0235T202050015B
1/8	1/8	3/4	2-1/2	0235T002075025	0235T202075025	0235T202075025B
1/8	1/8	1	3	0235T00210003	0235T20210003	0235T20210003B
3/16	3/16	5/8	2	0235T00306252	0235T20306252	0235T20306252B
3/16	3/16	3/4	2-1/2	0235T003075025	0235T203075025	0235T203075025B
3/16	3/16	1-1/8	3	0235T00311253	0235T20311253	0235T20311253B
3/16	3/16	1	4	0235T00310004	0235T20310004	0235T20310004B
1/4	1/4	1/2	2	0235T00405002	0235T20405002	0235T20405002B
1/4	1/4	3/4	2-1/2	0235T004075025	0235T204075025	0235T204075025B
1/4	1/4	1	3	0235T00410003	0235T20410003	0235T20410003B
1/4	1/4	1	4	0235T00410004	0235T20410004	0235T20410004B
1/4	1/4	1-1/2	4	0235T00415004	0235T20415004	0235T20415004B
1/4	1/4	1-1/2	6	0235T00415006	0235T20415006	0235T20415006B
5/16	5/16	1/2	2	0235T00505002	0235T20505002	0235T20505002B
5/16	5/16	7/8	2-1/2	0235T005087525	0235T205087525	0235T205087525B
5/16	5/16	1	3	0235T00510003	0235T20510003	0235T20510003B
5/16	5/16	1	4	0235T00510004	0235T20510004	0235T20510004B
5/16	5/16	1-5/8	4	0235T00516254	0235T20516254	0235T20516254B
5/16	5/16	1-1/2	6	0235T00515006	0235T20515006	0235T20515006B
3/8	3/8	1/2	2	0235T00605002	0235T20605002	0235T20605002B
3/8	3/8	1	2-1/2	0235T006100025	0235T206100025	0235T206100025B
3/8	3/8	1	3	0235T00610003	0235T20610003	0235T20610003B
3/8	3/8	1	4	0235T00610004	0235T20610004	0235T20610004B
3/8	3/8	2	4	0235T00620004	0235T20620004	0235T20620004B
3/8	3/8	1-1/2	6	0235T00615006	0235T20615006	0235T20615006B
3/8	3/8	3	6	0235T00630006	0235T20630006	0235T20630006B
7/16	7/16	5/8	2-3/4	0235T007062527	0235T207062527	0235T207062527B
7/16	7/16	1	2-3/4	0235T007100027	0235T207100027	0235T207100027B
7/16	7/16	1-1/2	4	0235T00715004	0235T20715004	0235T20715004B
7/16	7/16	1-1/2	6	0235T00715006	0235T20715006	0235T20715006B
1/2	1/2	5/8	2-1/2	0235T008062525	0235T208062525	0235T208062525B
1/2	1/2	1	3	0235T00810003	0235T20810003	0235T20810003B
1/2	1/2	1	4	0235T00810004	0235T20810004	0235T20810004B
1/2	1/2	1-1/2	4	0235T00815004	0235T20815004	0235T20815004B
1/2	1/2	2	4	0235T00820004	0235T20820004	0235T20820004B
1/2	1/2	1-1/2	6	0235T00815006	0235T20815006	0235T20815006B
1/2	1/2	3	6	0235T00830006	0235T20830006	0235T20830006B
5/8	5/8	3/4	3	0235T01007503	0235T21007503	0235T21007503B
5/8	5/8	1-1/4	3-1/2	0235T010125035	0235T210125035	0235T210125035B
5/8	5/8	2	6	0235T01020006	0235T21020006	0235T21020006B
5/8	5/8	2-1/4	5	0235T01022505	0235T21022505	0235T21022505B
5/8	5/8	3	6	0235T01030006	0235T21030006	0235T21030006B
3/4	3/4	1	3	0235T01210003	0235T21210003	0235T21210003B
3/4	3/4	1-1/2	4	0235T01215004	0235T21215004	0235T21215004B
3/4	3/4	2	6	0235T01220006	0235T21220006	0235T21220006B
3/4	3/4	2-1/4	5	0235T01222505	0235T21222505	0235T21222505B
3/4	3/4	3	6	0235T01230006	0235T21230006	0235T21230006B
3/4	3/4	4	7	0235T01240007	0235T21240007	0235T21240007B
7/8	7/8	1-1/2	4	0235T01415004	0235T21415004	0235T21415004B
1	1	1	3	0235T01610003	0235T21610003	0235T21610003B
1	1	1-1/2	4	0235T01615004	0235T21615004	0235T21615004B
1	1	2	6	0235T01620006	0235T21620006	0235T21620006B
1	1	2-1/4	5	0235T01622505	0235T21622505	0235T21622505B
1	1	3	6	0235T01630006	0235T21630006	0235T21630006B
1	1	4	7	0235T01640007	0235T21640007	0235T21640007B

Other Dimensions are Available Upon Request





Tolerance

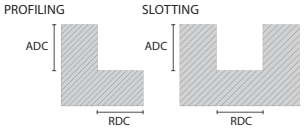
Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

Metric Available Upon Request

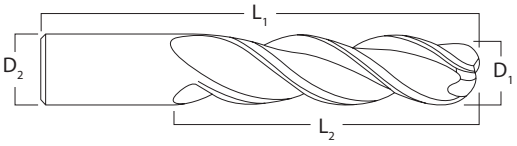
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	TiCN Square Coated	TiCN Ball End Coated
1/4	1/4	3/8	1-1/8	3	0235T00403753.1	0235T20403753.1	0235T20403753.1B
1/4	1/4	3/8	2-1/8	4	0235T00403754.2	0235T20403754.2	0235T20403754.2B
3/8	3/8	1/2	1-1/8	3	0235T00605003.1	0235T20605003.1	0235T20605003.1B
3/8	3/8	1/2	2-1/8	4	0235T00605004.2	0235T20605004.2	0235T20605004.2B
1/2	1/2	5/8	1-3/8	3	0235T00806253.1	0235T20806253.1	0235T20806253.1B
1/2	1/2	5/8	2-1/8	4	0235T00806254.2	0235T20806254.2	0235T20806254.2B
1/2	1/2	5/8	3-3/8	6	0235T00806256.3	0235T20806256.3	0235T20806256.3B
5/8	5/8	3/4	1-5/8	4	0235T01007504.1	0235T21007504.1	0235T21007504.1B
5/8	5/8	3/4	2-3/8	5	0235T01007505.2	0235T21007505.2	0235T21007505.2B
5/8	5/8	3/4	3-3/8	6	0235T01007506.3	0235T21007506.3	0235T21007506.3B
3/4	3/4	1	2	4	0235T01210004.2	0235T21210004.2	0235T21210004.2B
3/4	3/4	1	2-1/2	5	0235T01210005.2	0235T21210005.2	0235T21210005.2B
3/4	3/4	1	3-3/8	6	0235T01210006.3	0235T21210006.3	0235T21210006.3B
1	1	1-1/4	2-5/8	5	0235T01612505.2	0235T21612505.2	0235T21612505.2B
1	1	1-1/4	3-3/8	6	0235T01612506.3	0235T21612506.3	0235T21612506.3B
1	1	1-1/4	4-3/8	7	0235T01612507.4	0235T21612507.4	0235T21612507.4B



235 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	180-250	380-500	.0015	.0020	.0023	.0026	.0029	.0031	.0033	.0038	.0043	1xD	1xD	.25xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	190-240	350-500	.0015	.0019	.0023	.0026	.0029	.0031	.0033	.0038	.0043	1xD	1xD	.25xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)		300-400	.0014	.0017	.0019	.0022	.0025	.0028	.0031	.0033	.0035	1xD	1xD	.25xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		250-400	.0011	.0015	.0017	.0019	.0022	.0023	.0026	.0028	.0033	1xD	1xD	.25xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	125-135	200-250	.0013	.0014	.0017	.0019	.0021	.0025	.0026	.0028	.0033	1xD	1xD	.25xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		150-225	.0013	.0015	.0017	.0022	.0025	.0027	.0031	.0033	.0035	1xD	1xD	.25xD
K 1	Gray Cast Iron	160-200	320-425	.0010	.0013	.0015	.0017	.0021	.0022	.0025	.0026	.0030	1xD	1xD	.25xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		300-350	.0016	.0020	.0023	.0025	.0029	.0031	.0033	.0036	.0041	1xD	1xD	.25xD
N 1	Wrought Aluminum Alloys	1630-6500	1630-6500	.0015	.0019	.0023	.0025	.0028	.0031	.0033	.0038	.0042	1xD	1xD	.25xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1600-4875	1600-4880	.0015	.0019	.0022	.0025	.0029	.0030	.0034	.0036	.0040	1xD	1xD	.25xD
N 5	Copper & Copper Alloys	800-2430	800-2430	.0011	.0014	.0016	.0017	.0019	.0021	.0023	.0025	.0030	1xD	1xD	.25xD
N 6	Carbon & Graphite Composites	300-1600	300-160	.0025	.0028	.0035	.0039	.0043	.0048	.0053	.0060	.0067	1xD	1xD	.25xD

For general purpose milling, we recommend TiCN coating.



3 Flute Endmill

- E-Cut form and cylindrical land provide chatter-free machining
- Z-Power® recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

N **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 3 Flutes | 37° | Z-Power®

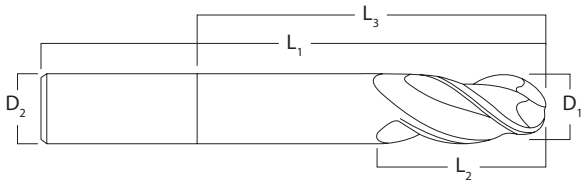
Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 199.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/8	1/8	1/4	1-1/2	0337T002025015	0337T602025015	0337T602025015B
1/8	1/8	1/2	1-1/2	0337T002050015	0337T602050015	0337T602050015B
3/16	3/16	5/16	2	0337T00331252	0337T60331252	0337T60331252B
3/16	3/16	9/16	2	0337T00356252	0337T60356252	0337T60356252B
1/4	1/4	3/8	2	0337T00403752	0337T60403752	0337T60403752B
1/4	1/4	3/4	2-1/2	0337T004075025	0337T604075025	0337T604075025B
1/4	1/4	1	3	0337T00410003	0337T60410003	0337T60410003B
1/4	1/4	1-1/4	4	0337T00412504	0337T60412504	0337T60412504B
5/16	5/16	1/2	2	0337T00505002	0337T60505002	0337T60505002B
5/16	5/16	7/8	2-1/2	0337T005087525	0337T605087525	0337T605087525B
5/16	5/16	1	3	0337T00510003	0337T60510003	0337T60510003B
5/16	5/16	1-1/4	4	0337T00512504	0337T60512504	0337T60512504B
3/8	3/8	1/2	2	0337T00605002	0337T60605002	0337T60605002B
3/8	3/8	1	2-1/2	0337T006100025	0337T606100025	0337T606100025B
3/8	3/8	1	3	0337T00610003	0337T60610003	0337T60610003B
3/8	3/8	1-1/2	4	0337T00615004	0337T60615004	0337T60615004B
7/16	7/16	1	2-3/4	0337T0071000275	0337T6071000275	0337T6071000275B
7/16	7/16	1-1/2	4	0337T00715004	0337T60715004	0337T60715004B
7/16	7/16	2	4	0337T00720004	0337T60720004	0337T60720004B
1/2	1/2	5/8	2-1/2	0337T008062525	0337T608062525	0337T608062525B
1/2	1/2	1-1/4	3	0337T00812503	0337T60812503	0337T60812503B
1/2	1/2	1-1/2	4	0337T00815004	0337T60815004	0337T60815004B
1/2	1/2	2	4	0337T00820004	0337T60820004	0337T60820004B
1/2	1/2	2-1/2	5	0337T00825005	0337T60825005	0337T60825005B
1/2	1/2	1-1/2	6	0337T00815006	0337T60815006	0337T60815006B
1/2	1/2	3-1/8	6	0337T00831256	0337T60831256	0337T60831256B
5/8	5/8	3/4	3	0337T01007503	0337T61007503	0337T61007503B
5/8	5/8	1-1/4	3-1/2	0337T010125035	0337T610125035	0337T610125035B
5/8	5/8	2	4	0337T01020004	0337T61020004	0337T61020004B
5/8	5/8	2-1/4	5	0337T01022505	0337T61022505	0337T61022505B
5/8	5/8	1-1/2	6	0337T01015006	0337T61015006	0337T61015006B
5/8	5/8	3	6	0337T01030006	0337T61030006	0337T61030006B
3/4	3/4	1	3	0337T01210003	0337T61210003	0337T61210003B
3/4	3/4	1-1/2	4	0337T01215004	0337T61215004	0337T61215004B
3/4	3/4	2-1/4	5	0337T01222505	0337T61222505	0337T61222505B
3/4	3/4	1-1/2	6	0337T01215006	0337T61215006	0337T61215006B
3/4	3/4	3	6	0337T01230006	0337T61230006	0337T61230006B
3/4	3/4	4	7	0337T01240007	0337T61240007	0337T61240007B
1	1	1-1/2	4	0337T01615004	0337T61615004	0337T61615004B
1	1	2	4-1/2	0337T016200045	0337T616200045	0337T616200045B
1	1	2-1/4	5	0337T01622505	0337T61622505	0337T61622505B
1	1	1-1/2	6	0337T01615006	0337T61615006	0337T61615006B
1	1	3	6	0337T01630006	0337T61630006	0337T61630006B
1	1	4	7	0337T01640007	0337T61640007	0337T61640007B
1-1/4	1-1/4	2	4-1/2	0337T020200045	0337T620200045	0337T620200045B
1-1/4	1-1/4	3	6	0337T02030006	0337T62030006	0337T620300006B

Other Dimensions are Available Upon Request



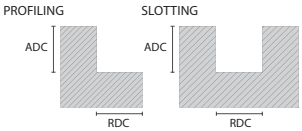
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

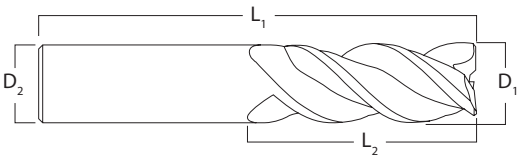
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	0337T00403753.1	0337T60403753.1	0337T60403753.1B
1/4	1/4	3/8	2-1/8	4	0337T00403754.2	0337T60403754.2	0337T60403754.2B
3/8	3/8	1/2	1-1/8	3	0337T00605003.1	0337T60605003.1	0337T60605003.1B
3/8	3/8	1/2	2-1/8	4	0337T00605004.2	0337T60605004.2	0337T60605004.2B
1/2	1/2	5/8	1-3/8	3	0337T00806253.1	0337T60806253.1	0337T60806253.1B
1/2	1/2	5/8	2-1/8	4	0337T00806254.2	0337T60806254.2	0337T60806254.2B
1/2	1/2	5/8	3-3/8	6	0337T00806256.3	0337T60806256.3	0337T60806256.3B
5/8	5/8	3/4	1-5/8	4	0337T01007504.1	0337T61007504.1	0337T61007504.1B
5/8	5/8	3/4	2-3/8	5	0337T01007505.2	0337T61007505.2	0337T61007505.2B
5/8	5/8	3/4	3-3/8	6	0337T01007506.3	0337T61007506.3	0337T61007506.3B
3/4	3/4	1	2	4	0337T01210004.2	0337T61210004.2	0337T61210004.2B
3/4	3/4	1	2-1/2	5	0337T01210005.2	0337T61210005.2	0337T61210005.2B
3/4	3/4	1	3-3/8	6	0337T01210006.3	0337T61210006.3	0337T61210006.3B
1	1	1-1/4	2-5/8	5	0337T01612505.2	0337T61612505.2	0337T61612505.2B
1	1	1-1/4	3-3/8	6	0337T01612506.3	0337T61612506.3	0337T61612506.3B
1	1	1-1/4	4-3/8	7	0337T01612507.4	0337T61612507.4	0337T61612507.4B



337 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
N 1	Wrought Aluminum Alloys	1575-6500	1575-6550	.0025	.0029	.0033	.0040	.0055	.0067	.0082	.0096	1xD	.5xD	1xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1575-4500	1575-6550	.0022	.0025	.0028	.0037	.0052	.0063	.0073	.0090	1xD	.5xD	1xD

For high silicon materials we recommend Z-Power® Coating

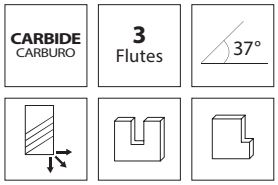


3 Flute Endmill

- Wiper Flatt on end face for improved finish
- Z-Power® recommended
- Primary & Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

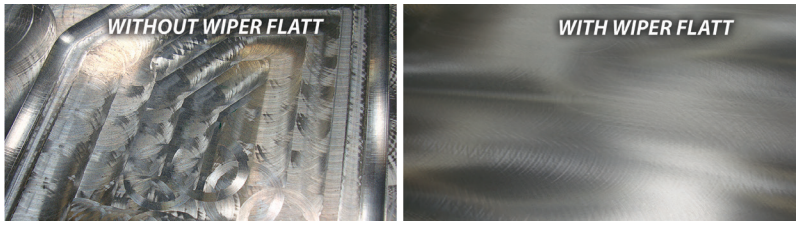
N **Material Code**: Refer to Page 261.



Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 201.

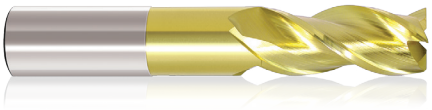
End face - Wiper Flatt

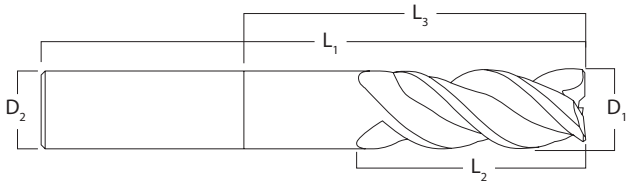


Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated
1/4	1/4	3/8	2	W337T00403752	W337T60403752
1/4	1/4	3/4	2-1/2	W337T004075025	W337T604075025
5/16	5/16	1/2	2	W337T00505002	W337T60505002
5/16	5/16	7/8	2-1/2	W337T005087525	W337T605087525
3/8	3/8	1/2	2	W337T00605002	W337T60605002
3/8	3/8	1	2-1/2	W337T006100025	W337T606100025
3/8	3/8	1	3	W337T00610003	W337T60610003
7/16	7/16	1	2-3/4	W337T0071000275	W337T6071000275
7/16	7/16	1-1/2	4	W337T00715004	W337T60715004
1/2	1/2	5/8	2-1/2	W337T008062525	W337T608062525
1/2	1/2	1-1/4	3	W337T00812503	W337T60812503
5/8	5/8	3/4	3	W337T01007503	W337T61007503
5/8	5/8	1-1/4	3-1/2	W337T010125035	W337T610125035
3/4	3/4	1	3	W337T01210003	W337T61210003
3/4	3/4	1-1/2	4	W337T01215004	W337T61215004
1	1	1-1/2	4	W337T01615004	W337T61615004
1	1	2	4-1/2	W337T01620045	W337T61620045

Other Dimensions are Available Upon Request





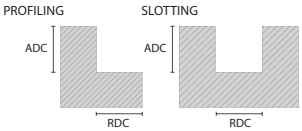
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

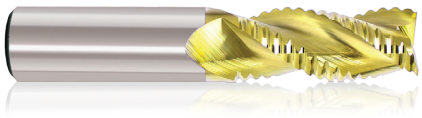
D1	D2	L2	L3	L1		Z-Power®
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated
1/4	1/4	3/8	1-1/8	3	W337T00403753.1	W337T60403753.1
1/4	1/4	3/8	2-1/8	4	W337T00403754.2	W337T60403754.2
3/8	3/8	1/2	1-1/8	3	W337T00605003.1	W337T60605003.1
3/8	3/8	1/2	2-1/8	4	W337T00605004.2	W337T60605004.2
1/2	1/2	5/8	1-3/8	3	W337T00806253.1	W337T60806253.1
1/2	1/2	5/8	2-1/8	4	W337T00806254.2	W337T60806254.2
1/2	1/2	5/8	3-3/8	6	W337T00806256.3	W337T60806256.3
5/8	5/8	3/4	1-5/8	4	W337T01007504.1	W337T61007504.1
5/8	5/8	3/4	2-3/8	5	W337T01007505.2	W337T61007505.2
5/8	5/8	3/4	3-3/8	6	W337T01007506.3	W337T61007506.3
3/4	3/4	1	2	4	W337T01210004.2	W337T61210004.2
3/4	3/4	1	2-1/2	5	W337T01210005.2	W337T61210005.2
3/4	3/4	1	3-3/8	6	W337T01210006.3	W337T61210006.3
1	1	1-1/4	2-5/8	5	W337T01612505.2	W337T61612505.2
1	1	1-1/4	3-3/8	6	W337T01612506.3	W337T61612506.3
1	1	1-1/4	4-3/8	7	W337T01612507.4	W337T61612507.4

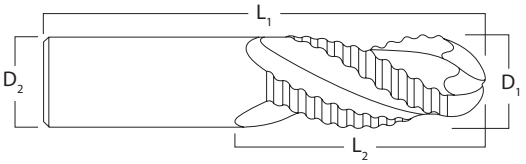


W337 SERIES Speeds and Feeds

		Milling SFM (Vc)		Chipload Per Tooth Recommendations (CPT)								Profiling Radial		Slotting Axial
	Material	Uncoated Min-Max	Coated Min-Max	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
N 1	Wrought Aluminum Alloys	1575-6500	1575-6550	.0025	.0029	.0033	.0040	.0055	.0067	.0082	.0096	1xD	.5xD	1xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1575-4500	1575-6550	.0022	.0025	.0028	.0037	.0052	.0063	.0073	.0090	1xD	.5xD	1xD

For high silicon materials we recommend Z-Power® Coating



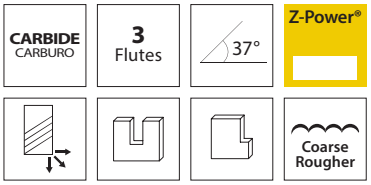


3 Flute Coarse Pitch Rougher

- Z-Power® recommended
- Coarse Pitch Rougher

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

K N **Material Code**: Refer to Page 261.



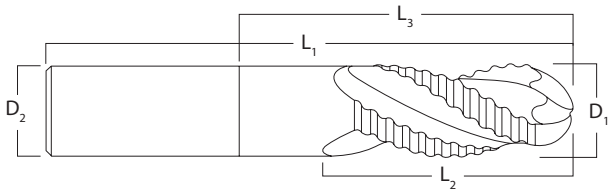
Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 203.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	2	0338T00403752	0338T60403752	0338T60403752B
1/4	1/4	3/4	2-1/2	0338T004075025	0338T604075025	0338T604075025B
1/4	1/4	1	3	0338T00410003	0338T60410003	0338T60410003B
1/4	1/4	1-1/4	4	0338T00412504	0338T60412504	0338T60412504B
5/16	5/16	1/2	2	0338T00505002	0338T60505002	0338T60505002B
5/16	5/16	7/8	2-1/2	0338T005087525	0338T605087525	0338T605087525B
5/16	5/16	1	3	0338T00510003	0338T60510003	0338T60510003B
5/16	5/16	1-1/4	4	0338T00512504	0338T60512504	0338T60512504B
3/8	3/8	1/2	2	0338T00605002	0338T60605002	0338T60605002B
3/8	3/8	1	2-1/2	0338T006100025	0338T606100025	0338T606100025B
3/8	3/8	1	3	0338T00610003	0338T60610003	0338T60610003B
3/8	3/8	1-1/2	4	0338T00615004	0338T60615004	0338T60615004B
7/16	7/16	1	2-3/4	0338T007100027	0338T607100027	0338T607100027B
7/16	7/16	2	4	0338T00720004	0338T60720004	0338T60720004B
1/2	1/2	5/8	2-1/2	0338T008062525	0338T608062525	0338T608062525B
1/2	1/2	1-1/4	3	0338T00812503	0338T60812503	0338T60812503B
1/2	1/2	1-1/2	4	0338T00815004	0338T60815004	0338T60815004B
1/2	1/2	2	4	0338T00820004	0338T60820004	0338T60820004B
1/2	1/2	2-1/2	5	0338T00825005	0338T60825005	0338T60825005B
1/2	1/2	1-1/2	6	0338T00815006	0338T60815006	0338T60815006B
1/2	1/2	3-1/8	6	0338T00831256	0338T60831256	0338T60831256B
5/8	5/8	3/4	3	0338T01007503	0338T61007503	0338T61007503B
5/8	5/8	1-1/4	3-1/2	0338T010125035	0338T610125035	0338T610125035B
5/8	5/8	2	4	0338T01020004	0338T61020004	0338T61020004B
5/8	5/8	2-1/4	5	0338T01022505	0338T61022505	0338T61022505B
5/8	5/8	1-1/2	6	0338T01015006	0338T61015006	0338T61015006B
5/8	5/8	3	6	0338T01030006	0338T61030006	0338T61030006B
3/4	3/4	1	3	0338T01210003	0338T61210003	0338T61210003B
3/4	3/4	1-1/2	4	0338T01215004	0338T61215004	0338T61215004B
3/4	3/4	2-1/4	5	0338T01222505	0338T61222505	0338T61222505B
3/4	3/4	1-1/2	6	0338T01215006	0338T61215006	0338T61215006B
3/4	3/4	3	6	0338T01230006	0338T61230006	0338T61230006B
3/4	3/4	4	7	0338T01240007	0338T61240007	0338T61240007B
1	1	1-1/2	4	0338T01615004	0338T61615004	0338T61615004B
1	1	2-1/4	5	0338T01622505	0338T61622505	0338T61622505B
1	1	1-1/2	6	0338T01615006	0338T61615006	0338T61615006B
1	1	3	6	0338T01630006	0338T61630006	0338T61630006B
1	1	4	7	0338T01640007	0338T61640007	0338T61640007B
1-1/4	1-1/4	2	4-1/2	0338T020200045	0338T620200045	0338T620200045B
1-1/4	1-1/4	3	6	0338T02030006	0338T62030006	0338T620300006B

Other Dimensions are Available Upon Request



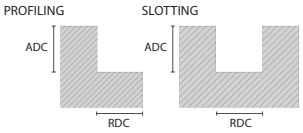
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

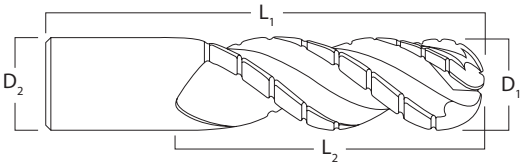
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	0338T00403753.1	0338T60403753.1	0338T60403753.1B
1/4	1/4	3/8	2-1/8	4	0338T00403754.2	0338T60403754.2	0338T60403754.2B
3/8	3/8	1/2	1-1/8	3	0338T00605003.1	0338T60605003.1	0338T60605003.1B
3/8	3/8	1/2	2-1/8	4	0338T00605004.2	0338T60605004.2	0338T60605004.2B
1/2	1/2	5/8	1-3/8	3	0338T00806253.1	0338T60806253.1	0338T60806253.1B
1/2	1/2	5/8	2-1/8	4	0338T00806254.2	0338T60806254.2	0338T60806254.2B
1/2	1/2	5/8	3-3/8	6	0338T00806256.3	0338T60806256.3	0338T60806256.3B
5/8	5/8	3/4	1-5/8	4	0338T01007504.1	0338T61007504.1	0338T61007504.1B
5/8	5/8	3/4	2-3/8	5	0338T01007505.2	0338T61007505.2	0338T61007505.2B
5/8	5/8	3/4	3-3/8	6	0338T01007506.3	0338T61007506.3	0338T61007506.3B
3/4	3/4	1	2	4	0338T01210004.2	0338T61210004.2	0338T61210004.2B
3/4	3/4	1	2-1/2	5	0338T01210005.2	0338T61210005.2	0338T61210005.2B
3/4	3/4	1	3-3/8	6	0338T01210006.3	0338T61210006.3	0338T61210006.3B
1	1	1-1/4	2-5/8	5	0338T01612505.2	0338T61612505.2	0338T61612505.2B
1	1	1-1/4	3-3/8	6	0338T01612506.3	0338T61612506.3	0338T61612506.3B
1	1	1-1/4	4-3/8	7	0338T01612507.4	0338T61612507.4	0338T61612507.4B



338 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Min-Max	Chipload Per Tooth (CPT) 1/4"	3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
N 1	Wrought Aluminum Alloys	1625-6475	.0026	.0040	.0054	.0070	.0084	.0110	1.25xD	.5xD	1xD
N 2	Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1625-5000	.0024	.0036	.0050	.0060	.0074	.0110	1.25xD	.5xD	1xD

For high silicon materials we recommend Z-Power® Coating

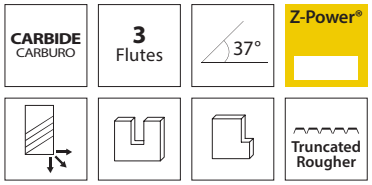


3 Flute Truncated Rougher

- Z-Power® recommended
- Truncated Rougher

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

K N **Material Code**: Refer to Page 261.

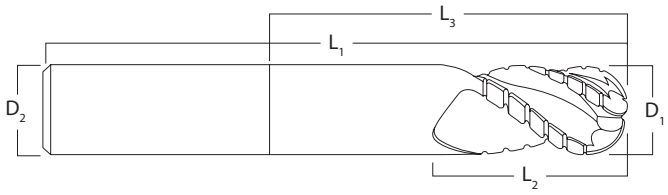


Z-Power® has excellent corrosion and adhesion resistant properties.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	2	0339T00403752	0339T60403752	0339T60403752B
1/4	1/4	3/4	2-1/2	0339T004075025	0339T604075025	0339T6040750 25B
1/4	1/4	1	3	0339T00410003	0339T60410003	0339T60410003B
1/4	1/4	1-1/4	4	0339T00412504	0339T60412504	0339T60412504B
5/16	5/16	1/2	2	0339T00505002	0339T60505002	0339T60505002B
5/16	5/16	7/8	2-1/2	0339T005087525	0339T605087525	0339T6050875 25B
5/16	5/16	1	3	0339T00510003	0339T60510003	0339T60510003B
5/16	5/16	1-1/4	4	0339T00512504	0339T60512504	0339T60512504B
3/8	3/8	1/2	2	0339T00605002	0339T60605002	0339T60605002B
3/8	3/8	1	2-1/2	0339T006100025	0339T606100025	0339T6061000 25B
3/8	3/8	1	3	0339T00610003	0339T60610003	0339T60610003B
3/8	3/8	1-1/2	4	0339T00615004	0339T60615004	0339T60615004B
7/16	7/16	1	2-3/4	0339T007100027	0339T607100027	0339T6071000 27B
7/16	7/16	2	4	0339T00720004	0339T60720004	0339T60720004B
1/2	1/2	5/8	2-1/2	0339T008062525	0339T608062525	0339T6080625 25B
1/2	1/2	1-1/4	3	0339T00812503	0339T60812503	0339T60812503B
1/2	1/2	1-1/2	4	0339T00815004	0339T60815004	0339T60815004B
1/2	1/2	2	4	0339T00820004	0339T60820004	0339T60820004B
1/2	1/2	2-1/2	5	0339T00825005	0339T60825005	0339T60825005B
1/2	1/2	1-1/2	6	0339T00815006	0339T60815006	0339T60815006B
1/2	1/2	3-1/8	6	0339T00831256	0339T60831256	0339T60831256B
5/8	5/8	3/4	3	0339T01007503	0339T61007503	0339T61007503B
5/8	5/8	1-1/4	3-1/2	0339T010125035	0339T610125035	0339T6101250 35B
5/8	5/8	2	4	0339T01020004	0339T61020004	0339T61020004B
5/8	5/8	2-1/4	5	0339T01022505	0339T61022505	0339T61022505B
5/8	5/8	1-1/2	6	0339T01015006	0339T61015006	0339T61015006B
5/8	5/8	3	6	0339T01030006	0339T61030006	0339T61030006B
3/4	3/4	1	3	0339T01210003	0339T61210003	0339T61210003B
3/4	3/4	1-1/2	4	0339T01215004	0339T61215004	0339T61215004B
3/4	3/4	2-1/4	5	0339T01222505	0339T61222505	0339T61222505B
3/4	3/4	1-1/2	6	0339T01215006	0339T61215006	0339T61215006B
3/4	3/4	3	6	0339T01230006	0339T61230006	0339T61230006B
3/4	3/4	4	7	0339T01240007	0339T61240007	0339T61240007B
1	1	1-1/2	4	0339T01615004	0339T61615004	0339T61615004B
1	1	2-1/4	5	0339T01622505	0339T61622505	0339T61622505B
1	1	1-1/2	6	0339T01615006	0339T61615006	0339T61615006B
1	1	3	6	0339T01630006	0339T61630006	0339T61630006B
1	1	4	7	0339T01640007	0339T61640007	0339T61640007B
1-1/4	1-1/4	2	4-1/2	0339T020200045	0339T620200045	0339T6202000 45B
1-1/4	1-1/4	3	6	0339T02030006	0339T62030006	0339T62030006B

Other Dimensions are Available Upon Request



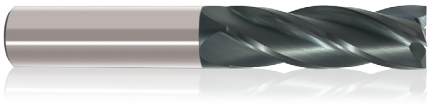
Tolerance

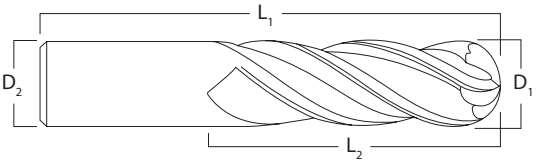
Cutting Diameter (D1)	Shank Diameter (D2)
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Z-Power® Square Coated	Z-Power® Ball End Coated
1/4	1/4	3/8	1-1/8	3	0339T00403753.1	0339T60403753.1	0339T60403753.1B
1/4	1/4	3/8	2-1/8	4	0339T00403754.2	0339T60403754.2	0339T60403754.2B
3/8	3/8	1/2	1-1/8	3	0339T00605003.1	0339T60605003.1	0339T60605003.1B
3/8	3/8	1/2	2-1/8	4	0339T00605004.2	0339T60605004.2	0339T60605004.2B
1/2	1/2	5/8	1-3/8	3	0339T00806253.1	0339T60806253.1	0339T60806253.1B
1/2	1/2	5/8	2-1/8	4	0339T00806254.2	0339T60806254.2	0339T60806254.2B
1/2	1/2	5/8	3-3/8	6	0339T00806256.3	0339T60806256.3	0339T60806256.3B
5/8	5/8	3/4	1-5/8	4	0339T01007504.1	0339T61007504.1	0339T61007504.1B
5/8	5/8	3/4	2-3/8	5	0339T01007505.2	0339T61007505.2	0339T61007505.2B
5/8	5/8	3/4	3-3/8	6	0339T01007506.3	0339T61007506.3	0339T61007506.3B
3/4	3/4	1	2	4	0339T01210004.2	0339T61210004.2	0339T61210004.2B
3/4	3/4	1	2-1/2	5	0339T01210005.2	0339T61210005.2	0339T61210005.2B
3/4	3/4	1	3-3/8	6	0339T01210006.3	0339T61210006.3	0339T61210006.3B
1	1	1-1/4	2-5/8	5	0339T01612505.2	0339T61612505.2	0339T61612505.2B
1	1	1-1/4	3-3/8	6	0339T01612506.3	0339T61612506.3	0339T61612506.3B
1	1	1-1/4	4-3/8	7	0339T01612507.4	0339T61612507.4	0339T61612507.4B





4 Flute Endmill

- Varianta® Supral recommended
- Primary and Secondary

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K N S H **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 4 Flutes | 30° | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

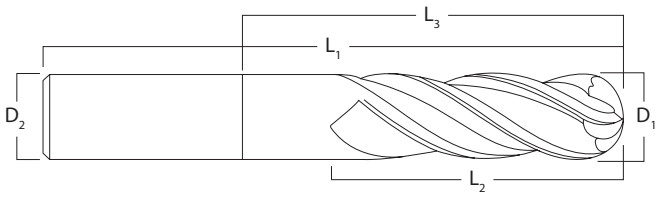
Speeds and Feeds: Refer to Page 207.

Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/8	1/8	1/2	1-1/2	0406T002050015	0406T402050015	0406T402050015B
1/8	1/8	3/4	2-1/2	0406T002075025	0406T402075025	0406T402075025B
1/8	1/8	1	3	0406T00210003	0406T40210003	0406T40210003B
3/16	3/16	5/8	2	0406T00306252	0406T40306252	0406T40306252B
3/16	3/16	3/4	2-1/2	0406T003075025	0406T403075025	0406T403075025B
3/16	3/16	1-1/8	3	0406T00311253	0406T40311253	0406T40311253B
3/16	3/16	1	4	0406T00310004	0406T40310004	0406T40310004B
1/4	1/4	1/2	2	0406T00405002	0406T40405002	0406T40405002B
1/4	1/4	3/4	2-1/2	0406T004075025	0406T404075025	0406T404075025B
1/4	1/4	1	3	0406T00410003	0406T40410003	0406T40410003B
1/4	1/4	1	4	0406T00410004	0406T40410004	0406T40410004B
1/4	1/4	1-1/8	3	0406T00411253	0406T40411253	0406T40411253B
1/4	1/4	1-1/2	4	0406T00415004	0406T40415004	0406T40415004B
1/4	1/4	1-1/2	6	0406T00415006	0406T40415006	0406T40415006B
5/16	5/16	1/2	2	0406T00505002	0406T40505002	0406T40505002B
5/16	5/16	7/8	2-1/2	0406T005087525	0406T405087525	0406T405087525B
5/16	5/16	1	3	0406T00510003	0406T40510003	0406T40510003B
5/16	5/16	1	4	0406T00510004	0406T40510004	0406T40510004B
5/16	5/16	1-5/8	4	0406T00516254	0406T40516254	0406T40516254B
5/16	5/16	1-1/2	6	0406T00515006	0406T40515006	0406T40515006B
3/8	3/8	1/2	2	0406T00605002	0406T40605002	0406T40605002B
3/8	3/8	1	2-1/2	0406T006100025	0406T406100025	0406T406100025B
3/8	3/8	1	3	0406T00610003	0406T40610003	0406T40610003B
3/8	3/8	1	4	0406T00610004	0406T40610004	0406T40610004B
3/8	3/8	2	4	0406T00620004	0406T40620004	0406T40620004B
3/8	3/8	1-1/8	3	0406T00611253	0406T40611253	0406T40611253B
3/8	3/8	1-1/2	6	0406T00615006	0406T40615006	0406T40615006B
3/8	3/8	1-3/4	4	0406T00617504	0406T40617504	0406T40617504B
3/8	3/8	3	6	0406T00630006	0406T40630006	0406T40630006B
7/16	7/16	5/8	2-3/4	0406T007062527	0406T407062527	0406T407062527B
7/16	7/16	1	2-3/4	0406T007100027	0406T407100027	0406T407100027B
7/16	7/16	1-1/2	4	0406T00715004	0406T40715004	0406T40715004B
7/16	7/16	1-1/2	6	0406T00715006	0406T40715006	0406T40715006B
1/2	1/2	5/8	2-1/2	0406T008062525	0406T408062525	0406T408062525B
1/2	1/2	1	3	0406T00810003	0406T40810003	0406T40810003B
1/2	1/2	1	4	0406T00810004	0406T40810004	0406T40810004B
1/2	1/2	1-1/2	4	0406T00815004	0406T40815004	0406T40815004B
1/2	1/2	2	4	0406T00820004	0406T40820004	0406T40820004B
1/2	1/2	1-1/2	6	0406T00815006	0406T40815006	0406T40815006B
1/2	1/2	3	6	0406T00830006	0406T40830006	0406T40830006B
5/8	5/8	3/4	3	0406T01007503	0406T41007503	0406T41007503B
5/8	5/8	1-1/4	3-1/2	0406T010125035	0406T410125035	0406T410125035B
5/8	5/8	2-1/4	5	0406T01022505	0406T41022505	0406T41022505B
5/8	5/8	2	6	0406T01020006	0406T41020006	0406T41020006B
5/8	5/8	3	6	0406T01030006	0406T41030006	0406T41030006B
3/4	3/4	1	3	0406T01210003	0406T41210003	0406T41210003B
3/4	3/4	1-1/2	4	0406T01215004	0406T41215004	0406T41215004B
3/4	3/4	2	6	0406T01220006	0406T41220006	0406T41220006B
3/4	3/4	2-1/4	5	0406T01222505	0406T41222505	0406T41222505B
3/4	3/4	3	6	0406T01230006	0406T41230006	0406T41230006B
3/4	3/4	4	7	0406T01240007	0406T41240007	0406T41240007B
7/8	7/8	1-1/2	4	0406T01415004	0406T41415004	0406T41415004B
1	1	1	3	0406T01610003	0406T41610003	0406T41610003B
1	1	1-1/2	4	0406T01615004	0406T41615004	0406T41615004B
1	1	2	6	0406T01620006	0406T41620006	0406T41620006B
1	1	2-1/4	5	0406T01622505	0406T41622505	0406T41622505B
1	1	3	6	0406T01630006	0406T41630006	0406T41630006B
1	1	4	7	0406T01640007	0406T41640007	0406T41640007B
1-1/4	1-1/4	2	4-1/2	0406T020200045	0406T420200045	0406T420200045B
1-1/4	1-1/4	3	6	0406T02030006	0406T42030006	0406T42030006B

Other Dimensions are Available Upon Request



Tolerance

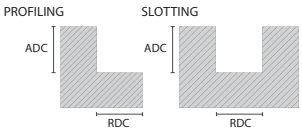
Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	0406T00403753.1	0406T40403753.1	0406T40403753.1B
1/4	1/4	3/8	2-1/8	4	0406T00403754.2	0406T40403754.2	0406T40403754.2B
3/8	3/8	1/2	1-1/8	3	0406T00605003.1	0406T40605003.1	0406T40605003.1B
3/8	3/8	1/2	2-1/8	4	0406T00605004.2	0406T40605004.2	0406T40605004.2B
1/2	1/2	5/8	1-3/8	3	0406T00806253.1	0406T40806253.1	0406T40806253.1B
1/2	1/2	5/8	2-1/8	4	0406T00806254.2	0406T40806254.2	0406T40806254.2B
1/2	1/2	5/8	3-1/8	6	0406T00806256.3	0406T40806256.3	0406T40806256.3B
5/8	5/8	3/4	1-5/8	4	0406T01007504.1	0406T41007504.1	0406T41007504.1B
5/8	5/8	3/4	2-1/8	5	0406T01007505.2	0406T41007505.2	0406T41007505.2B
5/8	5/8	3/4	3-1/8	6	0406T01007506.3	0406T41007506.3	0406T41007506.3B
3/4	3/4	1	2	4	0406T01210004.2	0406T41210004.2	0406T41210004.2B
3/4	3/4	1	2-1/8	5	0406T01210005.2	0406T41210005.2	0406T41210005.2B
3/4	3/4	1	3-1/8	6	0406T01210006.3	0406T41210006.3	0406T41210006.3B
1	1	1-1/4	2-5/8	5	0406T01612505.2	0406T41612505.2	0406T41612505.2B
1	1	1-1/4	3-1/8	6	0406T01612506.3	0406T41612506.3	0406T41612506.3B
1	1	1-1/4	4-1/8	7	0406T01612507.4	0406T41612507.4	0406T41612507.4B

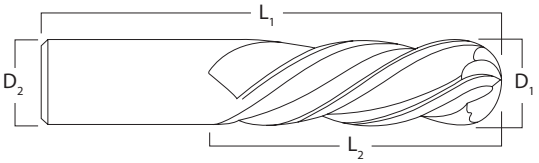


406 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P1	Low-Carbon Steel - 1000 Series (>25 HRc)	200-250	390-500	.0014	.0021	.0022	.0023	.0026	.0030	.0034	.0037	.0040	1xD	1xD	.25xD
P2	Low-Carbon Steel - 1000 Series (<25 HRc)	185-230	350-475	.0015	.0020	.0022	.0023	.0026	.0030	.0034	.0037	.0040	1xD	1xD	.25xD
P3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)		310-420	.0013	.0015	.0019	.0020	.0023	.0027	.0030	.0033	.0036	1xD	1xD	.25xD
P4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		250-375	.0012	.0014	.0017	.0021	.0024	.0025	.0028	.0030	.0031	1xD	1xD	.25xD
M1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	100-125	200-240	.0013	.0017	.0018	.0021	.0023	.0028	.0030	.0033	.0036	1xD	1xD	.25xD
M2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		160-200	.0012	.0013	.0015	.0017	.0019	.0022	.0024	.0026	.0029	1xD	1xD	.25xD
K1	Gray Cast Iron	150-500	300-410	.0010	.0019	.0022	.0025	.0028	.0033	.0034	.0036	.0040	1xD	1xD	.25xD
K2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		275-350	.0015	.0016	.0018	.0021	.0023	.0027	.0030	.0033	.0036	1xD	1xD	.25xD
N5	Copper & Copper Alloys	800-2300	800-2375	.0012	.0014	.0015	.0017	.0019	.0020	.0024	.0026	.0029	1xD	1xD	.25xD
N6	Carbon & Graphite Composites	325-1600	330-1575	.0010	.0025	.0030	.0035	.0040	.0050	.0060	.0067	.0081	1xD	1xD	.25xD
S1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	160-275	160-275	.0007	.0009	.0012	.0013	.0015	.0019	.0023	.0030	.0035	1xD	1xD	.25xD
S2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	70-120	70-120	.0008	.0009	.0013	.0014	.0015	.0020	.0023	.0031	.0035	1xD	1xD	.25xD

For general purpose milling, we recommend Varianta® Supral coating.

RH Cut - LH Spiral

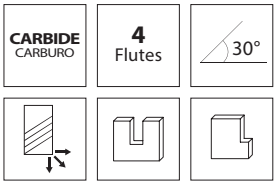


4 Flute Endmill

- Varianta® Supral recommended
- Primary and Secondary
- Right-Hand Cut - Left-Hand Spiral

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



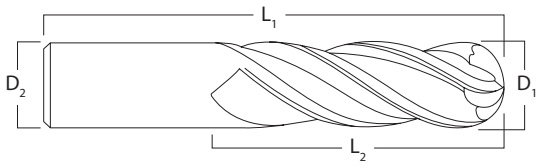
Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/4	2-1/2	0408T004075025	0408T404075025	0408T404075025B
5/16	5/16	7/8	2-1/2	0408T005087525	0408T405087525	0408T405087525B
3/8	3/8	1	2-1/2	0408T006100025	0408T406100025	0408T406100025B
1/2	1/2	1	3	0408T00810003	0408T40810003	0408T40810003B
5/8	5/8	1-1/4	3-1/2	0408T010125035	0408T410125035	0408T410125035B
3/4	3/4	1-1/2	4	0408T01215004	0408T41215004	0408T41215004B
1	1	1-1/2	4	0408T01615004	0408T41615004	0408T41615004B

Other Dimensions are Available Upon Request

LH Cut - RH Spiral

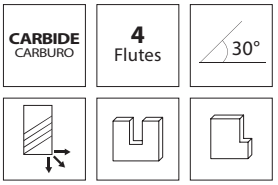


4 Flute Endmill

- Varianta® Supral recommended
- Primary and Secondary
- Left-Hand Cut - Right-Hand Spiral

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.

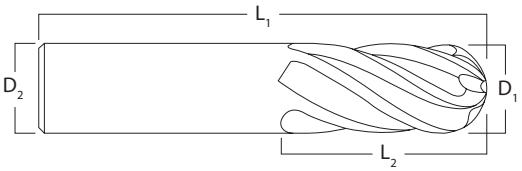


Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/4	2-1/2	0410T004075025	0410T404075025	0410T404075025B
5/16	5/16	7/8	2-1/2	0410T005087525	0410T405087525	0410T405087525B
3/8	3/8	1	2-1/2	0410T006100025	0410T406100025	0410T406100025B
1/2	1/2	1	3	0410T00810003	0410T40810003	0410T40810003B
5/8	5/8	1-1/4	3-1/2	0410T010125035	0410T410125035	0410T410125035B
3/4	3/4	1-1/2	4	0410T01215004	0410T41215004	0410T41215004B
1	1	1-1/2	4	0410T01615004	0410T41615004	0410T41615004B

Other Dimensions are Available Upon Request

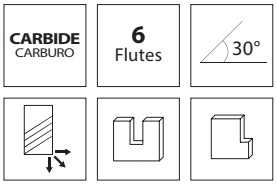


6 Flute Endmill

- Varianta® Supral recommended
- Eccentric OD

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S **Material Code**: Refer to Page 261.



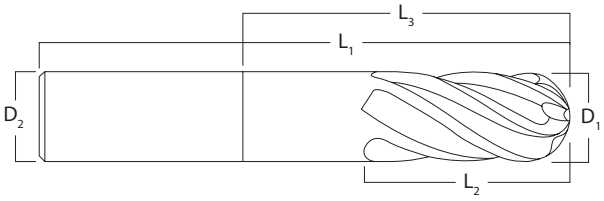
Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 211.

Fractional

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/4	2-1/2	0630T404075025	0630T404075025B
5/16	5/16	7/8	2-1/2	0630T405087525	0630T405087525B
3/8	3/8	1	2-1/2	0630T406100025	0630T406100025B
3/8	3/8	1-1/8	3	0630T40611253	0630T40611253B
7/16	7/16	1	2-3/4	0630T4071000275	0630T4071000275B
7/16	7/16	2	4	0630T40720004	0630T40720004B
1/2	1/2	1-1/4	3	0630T40812503	0630T40812503B
1/2	1/2	1-1/2	4	0630T40815004	0630T40815004B
5/8	5/8	1-1/4	3-1/2	0630T410125035	0630T410125035B
5/8	5/8	2-1/4	5	0630T41022505	0630T41022505B
3/4	3/4	1-1/2	4	0630T41215004	0630T41215004B
3/4	3/4	2-1/4	5	0630T41222505	0630T41222505B
3/4	3/4	3-1/4	6	0630T41232506	0630T41232506B
1	1	1-1/2	4	0630T41615004	0630T41615004B
1	1	2-1/4	5	0630T41622505	0630T41622505B
1	1	2	6	0630T41620006	0630T41620006B
1	1	3	6	0630T41630006	0630T41630006B

Other Dimensions are Available Upon Request



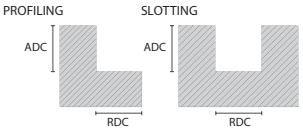
Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

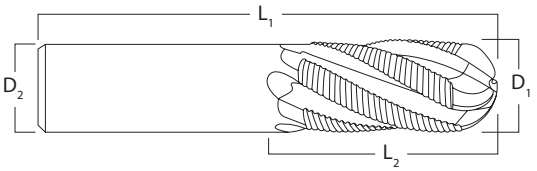
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	0630T40403753.1	0630T40403753.1B
1/4	1/4	3/8	2-1/8	4	0630T40403754.2	0630T40403754.2B
3/8	3/8	1/2	1-1/8	3	0630T40605003.1	0630T40605003.1B
3/8	3/8	1/2	2-1/8	4	0630T40605004.2	0630T40605004.2B
1/2	1/2	5/8	1-3/8	3	0630T40806253.1	0630T40806253.1B
1/2	1/2	5/8	2-1/8	4	0630T40806254.2	0630T40806254.2B
1/2	1/2	5/8	3-3/8	6	0630T40806256.3	0630T40806256.3B
5/8	5/8	3/4	1-5/8	4	0630T41007504.1	0630T41007504.1B
5/8	5/8	3/4	2-3/8	5	0630T41007505.2	0630T41007505.2B
5/8	5/8	3/4	3-3/8	6	0630T41007506.3	0630T41007506.3B
3/4	3/4	1	2	4	0630T41210004.2	0630T41210004.2B
3/4	3/4	1	2-1/2	5	0630T41210005.2	0630T41210005.2B
3/4	3/4	1	3-3/8	6	0630T41210006.3	0630T41210006.3B
1	1	1-1/4	2	5	0630T41612505.2	0630T41612505.2B
1	1	1-1/4	3-3/8	6	0630T41612506.3	0630T41612506.3B
1	1	1-1/4	4-3/8	7	0630T41612507.4	0630T41612507.4B



630 SERIES Speeds and Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Coated Min-Max	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	7/8"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	200-250	390-500	.0014	.0021	.0022	.0023	.0026	.0030	.0034	.0037	.0040	1xD	1xD	.25xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	185-230	350-475	.0015	.0020	.0022	.0023	.0026	.0030	.0034	.0037	.0040	1xD	1xD	.25xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)		310-420	.0013	.0015	.0019	.0020	.0023	.0027	.0030	.0033	.0036	1xD	1xD	.25xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)		250-375	.0012	.0014	.0017	.0021	.0024	.0025	.0028	.0030	.0031	1xD	1xD	.25xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	100-125	200-240	.0013	.0017	.0018	.0021	.0023	.0028	.0030	.0033	.0036	1xD	1xD	.25xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316		160-200	.0012	.0013	.0015	.0017	.0019	.0022	.0024	.0026	.0029	1xD	1xD	.25xD
K 1	Gray Cast Iron	150-500	300-410	.0010	.0019	.0022	.0025	.0028	.0033	.0034	.0036	.0040	1xD	1xD	.25xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)		275-350	.0015	.0016	.0018	.0021	.0023	.0027	.0030	.0033	.0036	1xD	1xD	.25xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	160-275	160-275	.0007	.0009	.0012	.0013	.0015	.0019	.0023	.0030	.0035	1xD	1xD	.25xD
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	70-120	70-120	.0008	.0009	.0013	.0014	.0015	.0020	.0023	.0031	.0035	1xD	1xD	.25xD

For general purpose milling, we recommend Varianta® Supral coating.

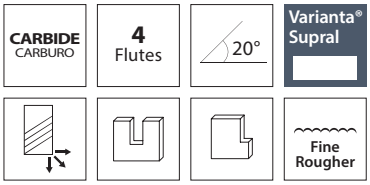


4 Flute Fine Pitch Rougher

- Varianta® Supral recommended
- Fine Pitch Rougher

Available Upon Request: Add Flats, Left-Hand, **EdgeCut**, Radii, Whistle Notch, **Firm Hold Shank**, Additional PVD Coatings

P M K S H **Material Code**: Refer to Page 261.



Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

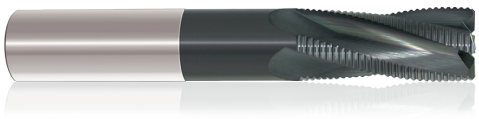
Speeds and Feeds: Refer to Page 213.

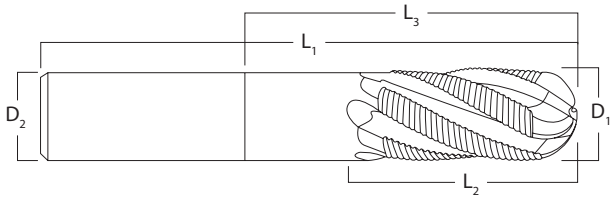
Fractional

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	1/2	2	0423T40405002	0423T40405002B
1/4	1/4	3/4	2-1/2	0423T404075025	0423T404075025B
5/16	5/16	1/2	2	0423T40505002	0423T40505002B
5/16	5/16	7/8	2-1/2	0423T405087525	0423T405087525B
3/8	3/8	1/2	2	0423T40605002	0423T40605002B
3/8	3/8	1	2-1/2	0423T406100025	0423T406100025B
1/2	1/2	5/8	2-1/2	0423T408062525	0423T408062525B
1/2	1/2	1	3	0423T40810003	0423T40810003B
5/8	5/8	3/4	3	0423T41007503	0423T41007503B
5/8	5/8	1-1/4	3-1/2	0423T410125035	0423T410125035B
5/8	5/8	1-5/8	4	0423T41016254	0423T41016254B
3/4	3/4	1	3	0423T41210003	0423T41210003B
3/4	3/4	1-5/8	4	0423T41216254	0423T41216254B
1	1	1-1/4	3	0423T41612503	0423T41612503B
1	1	1-1/2	4	0423T41615004	0423T41615004B
1	1	2	4-1/2	0423T416200045	0423T416200045B

Other Dimensions are Available Upon Request





Tolerance

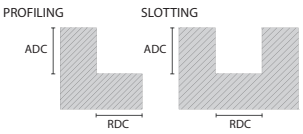
Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

Extended Neck

Metric Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Varianta® Supral Square Coated	Varianta® Supral Ball End Coated
1/4	1/4	3/8	1-1/8	3	0423T40403753.1	0423T40403753.1B
1/4	1/4	3/8	2-1/8	4	0423T40403754.2	0423T40403754.2B
3/8	3/8	1/2	1-1/8	3	0423T40605003.1	0423T40605003.1B
3/8	3/8	1/2	2-1/8	4	0423T40605004.2	0423T40605004.2B
1/2	1/2	5/8	1-3/8	3	0423T40806253.1	0423T40806253.1B
1/2	1/2	5/8	2-1/8	4	0423T40806254.2	0423T40806254.2B
1/2	1/2	5/8	3-3/8	6	0423T40806256.3	0423T40806256.3B
5/8	5/8	3/4	1-5/8	4	0423T41007504.1	0423T41007504.1B
5/8	5/8	3/4	2-3/8	5	0423T41007505.2	0423T41007505.2B
5/8	5/8	3/4	3-3/8	6	0423T41007506.3	0423T41007506.3B
3/4	3/4	1	2	4	0423T41210004.2	0423T41210004.2B
3/4	3/4	1	2-1/2	5	0423T41210005.2	0423T41210005.2B
3/4	3/4	1	3-3/8	6	0423T41210006.3	0423T41210006.3B
1	1	1-1/4	2	5	0423T41610005.2	0423T41610005.2B
1	1	1-1/4	3-3/8	6	0423T41610006.3	0423T41610006.3B
1	1	1-1/4	4-3/8	7	0423T41610007.4	0423T41610007.4B

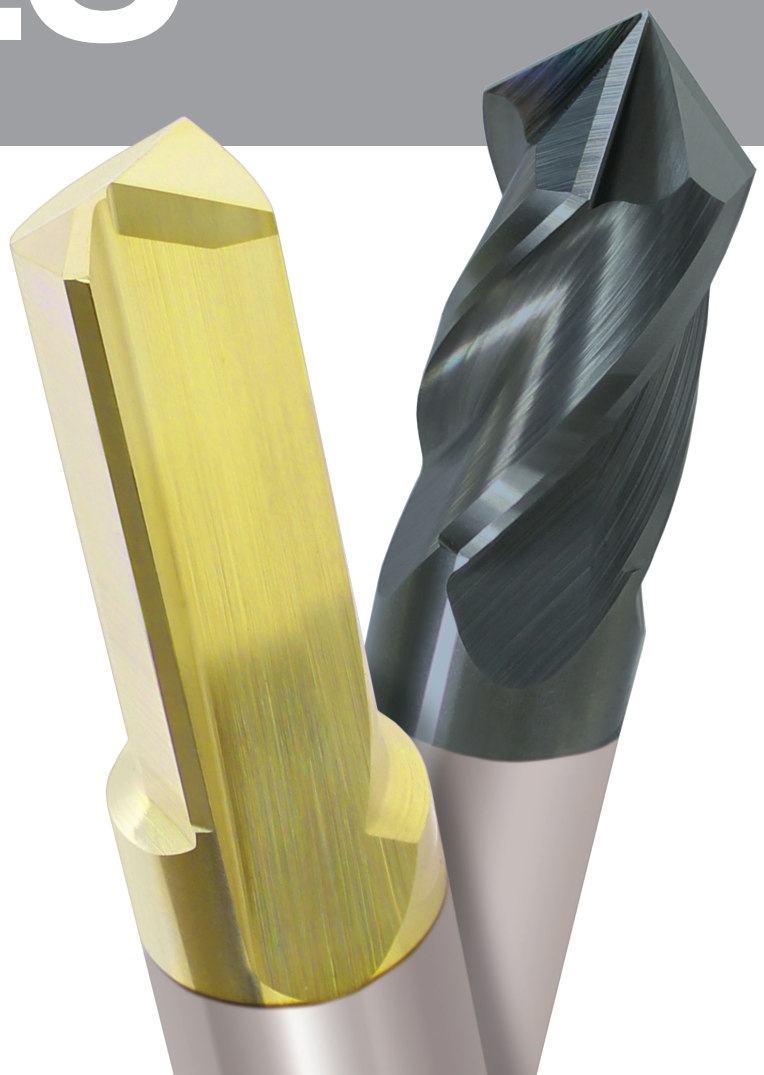


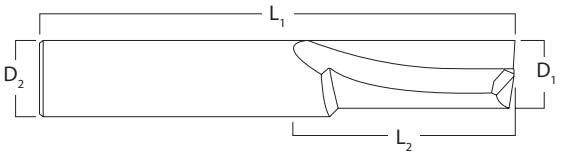
423 SERIES Speeds and Feeds

	Material	SFM (Vc) Coated Min-Max	Chipload Per Tooth Recommendations (CPT) 1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 1	Low-Carbon Steel - 1000 Series (>25 HRc)	450-600	.0013	.0018	.0021	.0026	.0030	.0033	.0038	1xD	.5xD	.5xD
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	425-600	.0011	.0018	.0021	.0026	.0032	.0032	.0036	1xD	.5xD	.5xD
P 3	Alloy Tool Steels - 1300, 2000, 3000 (≤35 Hrc)	375-500	.0010	.0014	.0016	.0024	.0025	.0030	.0036	1xD	.4xD	.5xD
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	350-450	.0008	.0016	.0018	.0021	.0022	.0025	.0033	1xD	.3xD	.4xD
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	225-320	.0012	.0014	.0016	.0020	.0021	.0023	.0028	1xD	.4xD	.5xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	225-320	.0008	.0015	.0020	.0022	.0026	.0028	.0034	1xD	.4xD	.5xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316	200-250	.0009	.0012	.0016	.0020	.0021	.0025	.0028	1xD	.4xD	.5xD
M 3	Duplex Steel (Austenitic & Ferritic) - 323, 329, F55, 2205	225-250	.0010	.0011	.0014	.0015	.0016	.0020	.0022	1xD	.5xD	.5xD
K 1	Gray Cast Iron	375-500	.0017	.0020	.0022	.0025	.0028	.0033	.0036	1xD	.4xD	.5xD
K 2	Ductile Iron - 60-40-18, 65-45-12 (<28 HRc)	350-450	.0013	.0015	.0018	.0025	.0026	.0030	.0033	1xD	.4xD	.5xD
K 3	Ductile Iron - 60-40-18, 65-45-12 (<38 HRc)	330-425	.0010	.0012	.0016	.0020	.0021	.0024	.0026	1xD	.4xD	.5xD
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	160-280	.0015	.0014	.0016	.0021	.0024	.0026	.0028	1xD	.4xD	.5xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	170-300	.0012	.0012	.0015	.0020	.0022	.0024	.0026	1xD	.4xD	.5xD
H 1	Hardened Tool Steels - H10, H11, H13, D2, D3, 4320, P20 (≤48 HRc)	250-450	.0009	.0013	.0015	.0021	.0024	.0027	.0030	1xD	.4xD	.5xD

For general purpose milling, we recommend Varianta® Supral coating.

ROUTERS & DRILL MILLS

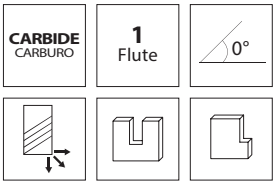




Single Flute Router

- Z-Power® recommended
- Left-Hand (available upon request)
- Flats added within 24 hrs.

N **Material Code**: Refer to Page 261.

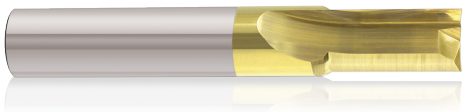


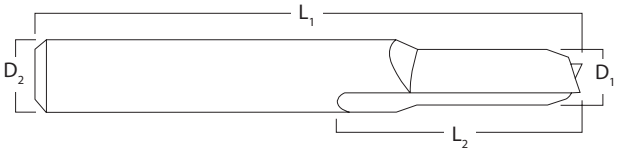
Z-Power® has excellent corrosion and adhesion resistant properties.

219 SERIES Fractional

D1	D2	L2	L1		Z-Power®
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated
1/4	1/4	3/4	2-1/2	0219T004075025	0219T604075025
5/16	5/16	7/8	2-1/2	0219T005087525	0219T605087525
3/8	3/8	1	2-1/2	0219T006100025	0219T606100025
7/16	7/16	1	2-3/4	0219T007100027	0219T607100027
1/2	1/2	1	3	0219T00810003	0219T60810003
5/8	5/8	1-1/4	3-1/2	0219T010125035	0219T610125035
3/4	3/4	1-1/2	4	0219T01215004	0219T61215004
1	1	1-1/2	4	0219T01615004	0219T61615004

Other Dimensions are Available Upon Request

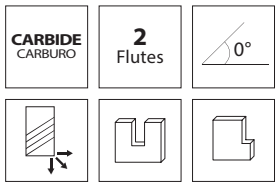




2 Flute Router

- Z-Power® recommended
- Radii (available upon request)
- Left-Hand (available upon request)
- Flats added within 24 hrs.

N **Material Code**: Refer to Page 261.

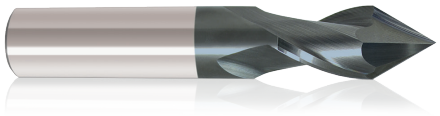


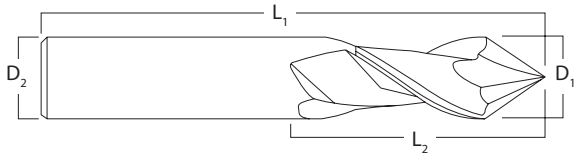
Z-Power® has excellent corrosion and adhesion resistant properties.

220 SERIES Fractional

D1	D2	L2	L1		Z-Power®
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated
1/4	1/4	3/4	2-1/2	0220T004075025	0220T604075025
5/16	5/16	7/8	2-1/2	0220T005087525	0220T605087525
3/8	3/8	1	2-1/2	0220T006100025	0220T606100025
7/16	7/16	1	2-3/4	0220T007100027	0220T607100027
1/2	1/2	1	3	0220T00810003	0220T60810003
5/8	5/8	1-1/4	3-1/2	0220T010125035	0220T610125035
3/4	3/4	1-1/2	4	0220T01215004	0220T61215004
1	1	1-1/2	4	0220T01615004	0220T61615004

Other Dimensions are Available Upon Request





2 Flute Drill Mill

- Available in Varianta® Supral Coating
- Engineered for drilling & chamfering in small passages
- Uniform finish on the part

P M K N S **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 2 Flutes | Varianta® Supral

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

30° | 60/90°

Speeds and Feeds: Refer to Page 216.

2060 SERIES 60° INCLUDED ANGLE

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated
1/8	1/8	1/2	1-1/2	2060T002050015	2060T402050015
3/16	3/16	5/8	2	2060T00306252	2060T40306252
1/4	1/4	3/4	2-1/2	2060T004075025	2060T404075025
5/16	5/16	7/8	2-1/2	2060T005087525	2060T405087525
3/8	3/8	1	2-1/2	2060T006100025	2060T406100025
7/16	7/16	1	2-3/4	2060T007100027	2060T407100027
1/2	1/2	1	3	2060T00810003	2060T40810003
5/8	5/8	1-1/4	3-1/2	2060T010125035	2060T410125035
3/4	3/4	1-1/2	4	2060T01215004	2060T41215004

Other Dimensions are Available Upon Request

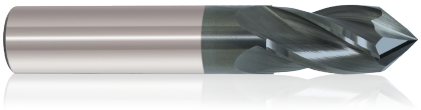
2090 SERIES 90° INCLUDED ANGLE

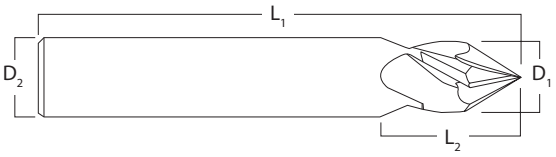
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated
1/8	1/8	1/2	1-1/2	2090T002050015	2090T402050015
3/16	3/16	5/8	2	2090T00306252	2090T40306252
1/4	1/4	3/4	2-1/2	2090T004075025	2090T404075025
5/16	5/16	7/8	2-1/2	2090T005087525	2090T405087525
3/8	3/8	1	2-1/2	2090T006100025	2090T406100025
7/16	7/16	1	2-3/4	2090T007100027	2090T407100027
1/2	1/2	1	3	2090T00810003	2090T40810003
5/8	5/8	1-1/4	3-1/2	2090T010125035	2090T410125035
3/4	3/4	1-1/2	4	2090T01215004	2090T41215004

Other Dimensions are Available Upon Request

Speeds and Feeds

	Material	Type of Cut	SFM <32 HRc	SFM >32 HRc	Chipload Per Tooth Recommendations (CPT) 1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	Slotting	190	90	.0005	.0010	.0013	.0019	.0022	.0028	.0036	.0008
		Profiling	440	245	.0005	.0013	.0019	.0020	.0028	.0039	.0044	.0008
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	Slotting	140	70	.0003	.0008	.0004	.0014	.0020	.0027	.0033	.0044
		Profiling	260	175	.0005	.0008	.0004	.0019	.0031	.0035	.0042	.0058
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	Slotting	140	70	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	290	175	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	Slotting	140	70	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	290	175	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series and 304L	Slotting	140	70	.0004	.0010	.0016	.0016	.0021	.0028	.0032	.0044
		Profiling	260	175	.0006	.0013	.0020	.0021	.0028	.0037	.0042	.0056
K 1	Gray Cast Iron	Slotting	240	115	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	415	275	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
K 2	Ductile Iron - 32510, 35018	Slotting	240	115	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	415	275	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
N 1	Wrought Aluminum Alloys	Slotting	645	N/A	.0005	.0011	.0015	.0016	.0031	.0050	.0063	.0076
		Profiling	760	N/A	.0005	.0013	.0020	.0022	.0033	.0055	.0067	.0097
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	Slotting	50	50	.0006	.0009	.0011	.0012	.0016	.0020	.0020	.0028
		Profiling	115	115	.0006	.0009	.0012	.0012	.0021	.0026	.0028	.0038
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	Slotting	50	50	.0006	.0009	.0011	.0012	.0016	.0020	.0020	.0028
		Profiling	115	115	.0006	.0009	.0012	.0012	.0021	.0026	.0028	.0038
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	Slotting	130	90	.0006	.0012	.0013	.0020	.0026	.0046	.0057	.0077
		Profiling	210	135	.0006	.0013	.0017	.0023	.0033	.0058	.0067	.0097





4 Flute Drill Mill

- Available in Varianta® Supral Coating
- Engineered for drilling & chamfering in small passages
- Uniform finish on the part

P M K N S **Material Code**: Refer to Page 261.

CARBIDE CARBURO | 4 Flutes | Varianta® Supral | 30° | 60/90°

Varianta® Supral is ideal for high-speed machining operations (dry/semi-dry).

Speeds and Feeds: Refer to Page 217.

4060 SERIES 60° INCLUDED ANGLE

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated
1/8	1/8	1/2	1-1/2	4060T002050015	4060T402050015
3/16	3/16	5/8	2	4060T00306252	4060T40306252
1/4	1/4	3/4	2-1/2	4060T004075025	4060T404075025
5/16	5/16	7/8	2-1/2	4060T005087525	4060T405087525
3/8	3/8	1	2-1/2	4060T006100025	4060T406100025
7/16	7/16	1	2-3/4	4060T007100027	4060T407100027
1/2	1/2	1	3	4060T00810003	4060T40810003
5/8	5/8	1-1/4	3-1/2	4060T010125035	4060T410125035
3/4	3/4	1-1/2	4	4060T01215004	4060T41215004

Other Dimensions are Available Upon Request

4090 SERIES 90° INCLUDED ANGLE

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Varianta® Supral Square Coated
1/8	1/8	1/2	1-1/2	4090T002050015	4090T402050015
3/16	3/16	5/8	2	4090T00306252	4090T40306252
1/4	1/4	3/4	2-1/2	4090T004075025	4090T404075025
5/16	5/16	7/8	2-1/2	4090T005087525	4090T405087525
3/8	3/8	1	2-1/2	4090T006100025	4090T406100025
7/16	7/16	1	2-3/4	4090T007100027	4090T407100027
1/2	1/2	1	3	4090T00810003	4090T40810003
5/8	5/8	1-1/4	3-1/2	4090T010125035	4090T410125035
3/4	3/4	1-1/2	4	4090T01215004	4090T41215004

Other Dimensions are Available Upon Request

Speeds and Feeds

	Material	Type of Cut	SFM <32 HRc	SFM >32 HRc	Chipload Per Tooth Recommendations (CPT) 1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
P 2	Low-Carbon Steel - 1000 Series (<25 HRc)	Slotting	190	90	.0005	.0010	.0013	.0019	.0022	.0028	.0036	.0008
		Profiling	440	245	.0005	.0013	.0019	.0020	.0028	.0039	.0044	.0008
P 4	Alloy Tool Steels - 1300, 2000, 3000 (36-48 HRc)	Slotting	140	70	.0003	.0008	.0004	.0014	.0020	.0027	.0033	.0044
		Profiling	260	175	.0005	.0008	.0004	.0019	.0031	.0035	.0042	.0058
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	Slotting	140	70	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	290	175	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
P 6	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (36-48 HRc)	Slotting	140	70	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	290	175	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series and 304L	Slotting	140	70	.0004	.0010	.0016	.0016	.0021	.0028	.0032	.0044
		Profiling	260	175	.0006	.0013	.0020	.0021	.0028	.0037	.0042	.0056
K 1	Gray Cast Iron	Slotting	240	115	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	415	275	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
K 2	Ductile Iron - 32510, 35018	Slotting	240	115	.0006	.0008	.0010	.0016	.0018	.0023	.0029	.0040
		Profiling	415	275	.0006	.0008	.0010	.0017	.0022	.0029	.0036	.0047
N 1	Wrought Aluminum Alloys	Slotting	645	N/A	.0005	.0011	.0015	.0016	.0031	.0050	.0063	.0076
		Profiling	760	N/A	.0005	.0013	.0020	.0022	.0033	.0055	.0067	.0097
S 1	Iron-Based, Heat-Resistant Alloys - Incoloy 800-802, A-286, N-155	Slotting	50	50	.0006	.0009	.0011	.0012	.0016	.0020	.0020	.0028
		Profiling	115	115	.0006	.0009	.0012	.0012	.0021	.0026	.0028	.0038
S 2	Nickel-Based, Cobalt-Based, Heat-Resistant Alloys - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718	Slotting	50	50	.0006	.0009	.0011	.0012	.0016	.0020	.0020	.0028
		Profiling	115	115	.0006	.0009	.0012	.0012	.0021	.0026	.0028	.0038
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	Slotting	130	90	.0006	.0012	.0013	.0020	.0026	.0046	.0057	.0077
		Profiling	210	135	.0006	.0013	.0017	.0023	.0033	.0058	.0067	.0097

PRECISION CUTTING TOOLS, INC.

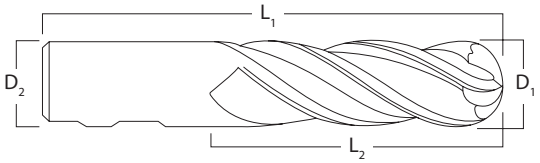
Top:
3 Flute Truncated Rougher/Finisher p.228

Center:
CurveCut-M (Milled) Cobalt p.251

Bottom:
2 Flute Finisher p.252

POWDERMETAL COBALT HIGH SPEED STEEL ENDMILLS

Manufacturing in dimensions of 1/4”-3” cutting diameter and up to 12” length of cut



PM30 | 4 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

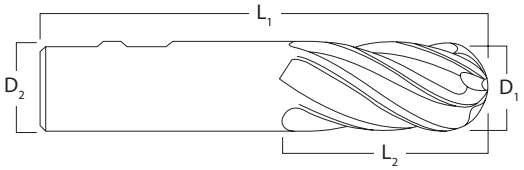
4 Flute Finisher - Center Cut

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S H **Material Code:** Refer to Page 261.

RIGHT HAND - 4 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	3-1/4	PM3-54008	T4-PM3-54008	PM3-54108
1/2	1/2	2	4	PM3-54208	T4-PM3-54208	PM3-54308
1/2	1/2	3	5	PM3-54408	T4-PM3-54408	PM3-54508
1/2	1/2	4	6	PM3-54608	T4-PM3-54608	PM3-54708
5/8	5/8	1-5/8	3-3/4	PM3-54010	T4-PM3-54010	PM3-54110
5/8	5/8	2-1/2	4-5/8	PM3-54210	T4-PM3-54210	PM3-54310
5/8	5/8	3	5-1/8	PM3-54410	T4-PM3-54410	PM3-54510
5/8	5/8	4	6-1/8	PM3-54610	T4-PM3-54610	PM3-54710
3/4	3/4	1-5/8	3-7/8	PM3-54012	T4-PM3-54012	PM3-54112
3/4	3/4	2	4-1/4	PM3-54212	T4-PM3-54212	PM3-54312
3/4	3/4	2-1/4	4-1/2	PM3-54212S	T4-PM3-54212S	PM3-54312S
3/4	3/4	3	5-1/4	PM3-54412	T4-PM3-54412	PM3-54512
3/4	3/4	4	6-1/4	PM3-54612	T4-PM3-54612	PM3-54712
3/4	3/4	5	7-1/4	PM3-54612S	T4-PM3-54612S	PM3-54712S
1	1	2	4-1/2	PM3-54016	T4-PM3-54016	PM3-54116
1	1	3	5-1/2	PM3-54216	T4-PM3-54216	PM3-54316
1	1	4	6-1/2	PM3-54416	T4-PM3-54416	PM3-54516
1	1	5	7-1/2	PM3-54416S	T4-PM3-54416S	PM3-54516S
1-1/4	1-1/4	2	4-1/2	PM3-54020	T4-PM3-54020	PM3-54120
1-1/4	1-1/4	3	5-1/2	PM3-54220	T4-PM3-54220	PM3-54320
1-1/4	1-1/4	4	6-1/2	PM3-54420	T4-PM3-54420	PM3-54520
1-1/4	1-1/4	5	7-1/2	PM3-54420S	T4-PM3-54420S	PM3-54520S
1-1/4	1-1/4	6	8-1/2	PM3-54620	T4-PM3-54620	PM3-54720
1-1/2	1-1/4	2	4-1/2	PM3-54024	T4-PM3-54024	PM3-54124
1-1/2	1-1/4	3	5-1/2	PM3-54224	T4-PM3-54224	PM3-54324
1-1/2	1-1/4	4	6-1/2	PM3-54424	T4-PM3-54424	PM3-54524
1-1/2	1-1/4	6	8-1/2	PM3-54624	T4-PM3-54624	PM3-54724



6 Flute Finisher - Center Cut

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S H **Material Code**: Refer to Page 261.

PM30 | 6 Flutes | 35° | Exxtral Plus®

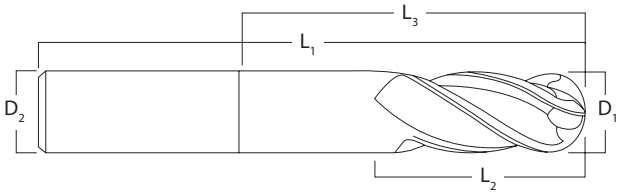
Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	3-1/4	PM3-54008X	T4-PM3-54008X	PM3-54108X
1/2	1/2	2	4	PM3-54208X	T4-PM3-54208X	PM3-54308X
1/2	1/2	3	5	PM3-54408X	T4-PM3-54408X	PM3-54508X
3/4	3/4	1-5/8	3-7/8	PM3-54012X	T4-PM3-54012X	PM3-54112X
3/4	3/4	2	4-1/4	PM3-54212X	T4-PM3-54212X	PM3-54312X
3/4	3/4	3	5-1/4	PM3-54412X	T4-PM3-54412X	PM3-54512X
3/4	3/4	4	6-1/4	PM3-54612X	T4-PM3-54612X	PM3-54712X
1	1	2	4-1/2	PM3-54016X	T4-PM3-54016X	PM3-54116X
1	1	3	5-1/2	PM3-54216X	T4-PM3-54216X	PM3-54316X
1	1	4	6-1/2	PM3-54416X	T4-PM3-54416X	PM3-54516X
1	1	5	7-1/2	PM3-54416SX	T4-PM3-54416SX	PM3-54516SX
1	1	6	8-1/2	PM3-54616X	T4-PM3-54616X	PM3-54716X
1-1/4	1-1/4	2	4-1/2	PM3-54020X	T4-PM3-54020X	PM3-54120X
1-1/4	1-1/4	3	5-1/2	PM3-54220X	T4-PM3-54220X	PM3-54320X
1-1/4	1-1/4	4	6-1/2	PM3-54420X	T4-PM3-54420X	PM3-54520X
1-1/4	1-1/4	5	7-1/2	PM3-54420SX	T4-PM3-54420SX	PM3-54520SX
1-1/4	1-1/4	6	8-1/2	PM3-54620X	T4-PM3-54620X	PM3-54720X
1-1/2	1-1/4	2	4-1/2	PM3-54024X	T4-PM3-54024X	PM3-54124X
1-1/2	1-1/4	3	5-1/2	PM3-54224X	T4-PM3-54224X	PM3-54324X
1-1/2	1-1/4	4	6-1/2	PM3-54424X	T4-PM3-54424X	PM3-54524X
1-1/2	1-1/4	6	8-1/2	PM3-54624X	T4-PM3-54624X	PM3-54724X
2	1-1/4	2	4-1/2	PM3-54032X	T4-PM3-54032X	PM3-54132X
2	1-1/4	3	5-1/2	PM3-54232X	T4-PM3-54232X	PM3-54332X
2	1-1/4	4	6-1/2	PM3-54432X	T4-PM3-54432X	PM3-54532X
2	2	4	7-3/4	PM3-68004A	T4-PM3-68004A	T4-PM3-68104A
2	2	6	9-3/4	PM3-68006A	T4-PM3-68006A	T4-PM3-68106A
2	2	8	11-3/4	PM3-68008A	T4-PM3-68008A	T4-PM3-68108A
2	2	10	13-3/4	PM3-68010A	T4-PM3-68010A	T4-PM3-68110A
2	2	12	15-3/4	PM3-68012A	T4-PM3-68012A	T4-PM3-68112A

RIGHT HAND - 8 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
2	2	4	7-3/4	PM3-88004A	T4-PM3-88004A	PM3-88104A
2	2	6	9-3/4	PM3-88006A	T4-PM3-88006A	PM3-88106A
2	2	8	11-3/4	PM3-88008A	T4-PM3-88008A	PM3-88108A
2	2	10	13-3/4	PM3-88010A	T4-PM3-88010A	PM3-88110A
2	2	12	15-3/4	PM3-88012A	T4-PM3-88012A	PM3-88112A



5, 6, 8 Flute Endmill - Extended Neck - Center Cut

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats (upon request)
- Square & Ballnose End

P M K S H **Material Code**: Refer to Page 261.

PM30 | 5, 6, 8 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - Extended Neck - 5 Flute

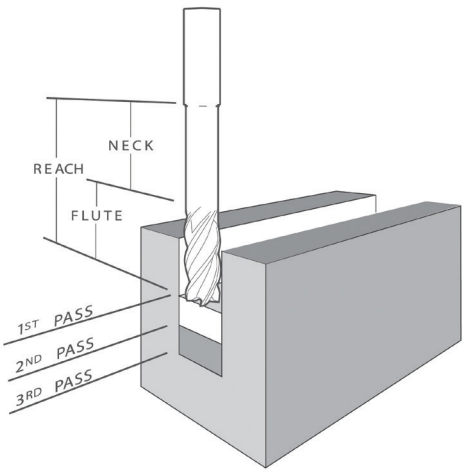
D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	4	6	PM3-54A08S.4Y	T4-PM3-54A08S.4Y	PM3-54B08S.4Y
5/8	5/8	1-1/2	5	7-1/8	PM3-54A10S.5Y	T4-PM3-54A10S.5Y	PM3-54B10S.5Y
3/4	3/4	1-1/2	4	6-1/4	PM3-54A12S.4Y	T4-PM3-54A12S.4Y	PM3-54B12S.4Y
3/4	3/4	1-3/4	5	7-1/4	PM3-54A12S.5Y	T4-PM3-54A12S.5Y	PM3-54B12S.5Y
3/4	3/4	2	6	8-1/4	PM3-54A12S.6Y	T4-PM3-54A12S.6Y	PM3-54B12S.6Y
1	1	2	4	6-1/2	PM3-54A16S.4Y	T4-PM3-54A16S.4Y	PM3-54B16S.4Y
1	1	2-1/2	6	8-1/2	PM3-54A16S.6Y	T4-PM3-54A16S.6Y	PM3-54B16S.6Y
1	1	3	8	10-1/2	PM3-54A16S.8Y	T4-PM3-54A16S.8Y	PM3-54B16S.8Y
1	1	3-1/2	10	12-1/2	PM3-54A16S.10Y	T4-PM3-54A16S.10Y	PM3-54B16S.10Y

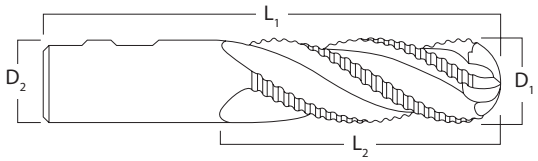
RIGHT HAND - Extended Neck - 6 Flute

D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/4	1-1/4	2	4	6-1/2	PM3-54A20S.04X	T4-PM3-54A20S.04X	PM3-54B20S.04X
1-1/4	1-1/4	2-1/2	6	8-1/2	PM3-54A20S.06X	T4-PM3-54A20S.06X	PM3-54B20S.06X
1-1/4	1-1/4	3	8	10-1/2	PM3-54A20S.08X	T4-PM3-54A20S.08X	PM3-54B20S.08X
1-1/4	1-1/4	3-1/2	10	12-1/2	PM3-54A20S.10X	T4-PM3-54A20S.10X	PM3-54B20S.10X
2	2	2	4	7-3/4	PM3-68A32S.4	T4-PM3-68A32S.4	PM3-68B32S.4
2	2	2-1/2	6	9-3/4	PM3-68A32S.6	T4-PM3-68A32S.6	PM3-68B32S.6
2	2	3	8	11-3/4	PM3-68A32S.8	T4-PM3-68A32S.8	PM3-68B32S.8

RIGHT HAND - Extended Neck - 8 Flute

D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
2	2	2	4	7-3/4	PM3-88A32S.4	T4-PM3-88A32S.4	PM3-88B32S.4
2	2	2-1/2	6	9-3/4	PM3-88A32S.6	T4-PM3-88A32S.6	PM3-88B32S.6
2	2	3	8	11-3/4	PM3-88A32S.8	T4-PM3-88A32S.8	PM3-88B32S.8





Multi-Flute Coarse Pitch Rougher - Center Cut

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S H **Material Code**: Refer to Page 261.

PM30 | 4, 5, 6, 8 Flutes | 30° | Coarse Rougher

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND - 4 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1/2	2-9/16	PM3-RS54008	T4-PM3-RS54008	PM3-RS54108
1/2	1/2	1-1/4	3-1/4	PM3-R54008	T4-PM3-R54008	PM3-R54108
1/2	1/2	2	4	PM3-R54208	T4-PM3-R54208	PM3-R54308
1/2	1/2	3	5	PM3-R54408	T4-PM3-R54408	PM3-R54508
5/8	5/8	1-5/8	3-3/4	PM3-R54010	T4-PM3-R54010	PM3-R54110
5/8	5/8	2-1/2	4-5/8	PM3-R54210	T4-PM3-R54210	PM3-R54310
3/4	3/4	3/4	3	PM3-RS54012	T4-PM3-RS54012	PM3-RS54112
3/4	3/4	1-5/8	3-7/8	PM3-R54012	T4-PM3-R54012	PM3-R54112
3/4	3/4	2-1/4	4-1/2	PM3-R54212S	T4-PM3-R54212S	PM3-R54312S
3/4	3/4	3	5-1/4	PM3-R54412	T4-PM3-R54412	PM3-R54512
3/4	3/4	4	6-1/4	PM3-R54612	T4-PM3-R54612	PM3-R54712

RIGHT HAND - 5 Flute

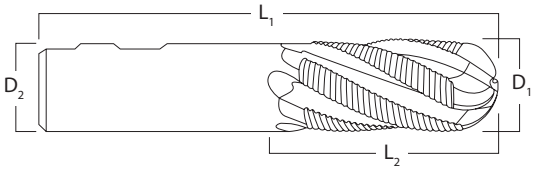
D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1	1	1	3-7/8	PM3-RS54016Y	T4-PM3-RS54016Y	PM3-RS54116Y
1	1	2	4-1/2	PM3-R54016Y	T4-PM3-R54016Y	PM3-R54116Y
1	1	3	5-1/2	PM3-R54216Y	T4-PM3-R54216Y	PM3-R54316Y
1	1	4	6-1/2	PM3-R54416Y	T4-PM3-R54416Y	PM3-R54516Y
1	1	5	7-1/2	PM3-R54416SY	T4-PM3-R54416SY	PM3-R54516SY
1	1	6	8-1/2	PM3-R54616Y	T4-PM3-R54616Y	PM3-R54716Y

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/4	1-1/4	2	4-1/2	PM3-R54020X	T4-PM3-R54020X	PM3-R54120X
1-1/4	1-1/4	3	5-1/2	PM3-R54220X	T4-PM3-R54220X	PM3-R54320X
1-1/4	1-1/4	4	6-1/2	PM3-R54420X	T4-PM3-R54420X	PM3-R54520X
1-1/4	1-1/4	5	7-1/2	PM3-R54420SX	T4-PM3-R54420SX	PM3-R54520SX
1-1/4	1-1/4	6	8-1/2	PM3-R54620X	T4-PM3-R54620X	PM3-R54720X
1-1/2	1-1/4	2	4-1/2	PM3-R54024X	T4-PM3-R54024X	PM3-R54124X
1-1/2	1-1/4	3	5-1/2	PM3-R54224X	T4-PM3-R54224X	PM3-R54324X
1-1/2	1-1/4	4	6-1/2	PM3-R54424X	T4-PM3-R54424X	PM3-R54524X
1-1/2	1-1/4	6	8-1/2	PM3-R54624X	T4-PM3-R54624X	PM3-R54724X

RIGHT HAND - 8 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
2	1-1/4	2	4-1/2	PM3-R54032Z	T4-PM3-R54032Z	PM3-R54132Z
2	2	4	7-3/4	PM3-R88004A	T4-PM3-R88004A	PM3-R88104A
2	2	6	9-3/4	PM3-R88006A	T4-PM3-R88006A	PM3-R88106A
2	2	8	11-3/4	PM3-R88008A	T4-PM3-R88008A	PM3-R88108A
2	2	10	13-3/4	PM3-R88010A	T4-PM3-R88010A	PM3-R88110A
2	2	12	15-3/4	PM3-R88012A	T4-PM3-R88012A	PM3-R88112A



Multi-Flute Fine Pitch Rougher - Center Cut

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S H **Material Code**: Refer to Page 261.

PM30 | 4, 5, 6, 8 Flutes | 30° | Fine Rougher

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND - 4 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1/2	2-9/16	PM3-FS54008	T4-PM3-FS54008	PM3-FS54108
1/2	1/2	1-1/4	3-1/4	PM3-F54008	T4-PM3-F54008	PM3-F54108
1/2	1/2	2	4	PM3-F54208	T4-PM3-F54208	PM3-F54308
1/2	1/2	3	5	PM3-F54408	T4-PM3-F54408	PM3-F54508
5/8	5/8	1-5/8	3-3/4	PM3-F54010	T4-PM3-F54010	PM3-F54110
5/8	5/8	2-1/2	4-5/8	PM3-F54210	T4-PM3-F54210	PM3-F54310
3/4	3/4	3/4	3	PM3-FS54012	T4-PM3-FS54012	PM3-FS54112
3/4	3/4	1-5/8	3-7/8	PM3-F54012	T4-PM3-F54012	PM3-F54112
3/4	3/4	2-1/4	4-1/2	PM3-F54212S	T4-PM3-F54212S	PM3-F54312S
3/4	3/4	3	5-1/4	PM3-F54412	T4-PM3-F54412	PM3-F54512
3/4	3/4	4	6-1/4	PM3-F54612	T4-PM3-F54612	PM3-F54712

RIGHT HAND - 5 Flute

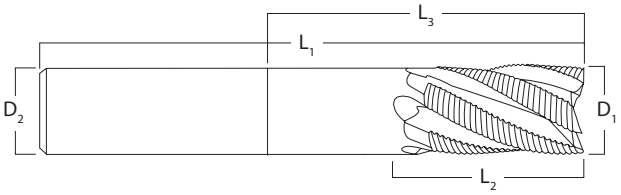
D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1	1	1	3-7/8	PM3-FS54016Y	T4-PM3-FS54016Y	PM3-FS54116Y
1	1	2	4-1/2	PM3-F54016Y	T4-PM3-F54016Y	PM3-F54116Y
1	1	3	5-1/2	PM3-F54216Y	T4-PM3-F54216Y	PM3-F54316Y
1	1	4	6-1/2	PM3-F54416Y	T4-PM3-F54416Y	PM3-F54516Y
1	1	5	7-1/2	PM3-F54416SY	T4-PM3-F54416SY	PM3-F54516SY
1	1	6	8-1/2	PM3-F54616Y	T4-PM3-F54616Y	PM3-F54716Y

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/4	1-1/4	2	4-1/2	PM3-F54020X	T4-PM3-F54020X	PM3-F54120X
1-1/4	1-1/4	3	5-1/2	PM3-F54220X	T4-PM3-F54220X	PM3-F54320X
1-1/4	1-1/4	4	6-1/2	PM3-F54420X	T4-PM3-F54420X	PM3-F54520X
1-1/4	1-1/4	5	7-1/2	PM3-F54420SX	T4-PM3-F54420SX	PM3-F54520SX
1-1/4	1-1/4	6	8-1/2	PM3-F54620X	T4-PM3-F54620X	PM3-F54720X
1-1/2	1-1/4	2	4-1/2	PM3-F54024X	T4-PM3-F54024X	PM3-F54124X
1-1/2	1-1/4	3	5-1/2	PM3-F54224X	T4-PM3-F54224X	PM3-F54324X
1-1/2	1-1/4	4	6-1/2	PM3-F54424X	T4-PM3-F54424X	PM3-F54524X
1-1/2	1-1/4	6	8-1/2	PM3-F54624X	T4-PM3-F54624X	PM3-F54724X

RIGHT HAND - 8 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
2	1-1/4	2	4-1/2	PM3-F54032Z	T4-PM3-F54032Z	PM3-F54132Z
2	2	4	7-3/4	PM3-F88004A	T4-PM3-F88004A	PM3-F88104A
2	2	6	9-3/4	PM3-F88006A	T4-PM3-F88006A	PM3-F88106A
2	2	8	11-3/4	PM3-F88008A	T4-PM3-F88008A	PM3-F88108A
2	2	10	13-3/4	PM3-F88010A	T4-PM3-F88010A	PM3-F88110A
2	2	12	15-3/4	PM3-F88012A	T4-PM3-F88012A	PM3-F88112A



Multi-Flute Fine Pitch Rougher - Extended Neck

- Available in Exxtral Plus® Coating
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats (upon request)
- Square & Ballnose End

P M K S H **Material Code**: Refer to Page 261.

PM30	5, 6, 8 Flutes	30°	Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND - Extended Neck - 5 Flute

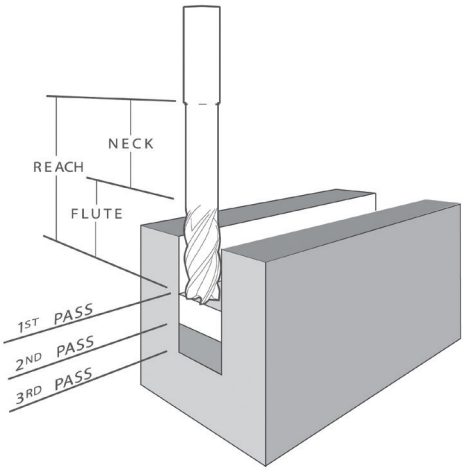
D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
3/4	3/4	1-1/2	4	6-1/4	PM3-F54A12S.4Y	T4-PM3-F54A12S.4Y	PM3-F54B12S.4Y
3/4	3/4	1-3/4	5	7-1/4	PM3-F54A12S.5Y	T4-PM3-F54A12S.5Y	PM3-F54B12S.5Y
3/4	3/4	2	6	8-1/4	PM3-F54A12S.6Y	T4-PM3-F54A12S.6Y	PM3-F54B12S.6Y
1	1	2	4	6-1/2	PM3-F54A16S.4Y	T4-PM3-F54A16S.4Y	PM3-F54B16S.4Y
1	1	2-1/2	6	8-1/2	PM3-F54A16S.6Y	T4-PM3-F54A16S.6Y	PM3-F54B16S.6Y
1	1	3	8	10-1/2	PM3-F54A16S.8Y	T4-PM3-F54A16S.8Y	PM3-F54B16S.8Y
1	1	3	10	12-1/2	PM3-F54A16S.10Y	T4-PM3-F54A16S.10Y	PM3-F54B16S.10Y

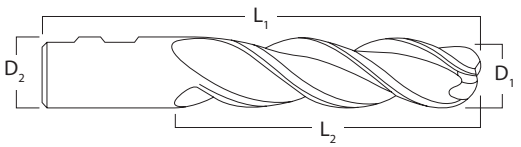
RIGHT HAND - Extended Neck - 6 Flute

D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/4	1-1/4	2	4	6-1/2	PM3-F54A20S.4X	T4-PM3-F54A20S.4X	PM3-F54B20S.4X
1-1/4	1-1/4	2-1/2	6	8-1/2	PM3-F54A20S.6X	T4-PM3-F54A20S.6X	PM3-F54B20S.6X
1-1/2	1-1/4	2	4	6-1/2	PM3-F54A24S.4X	T4-PM3-F54A24S.4X	PM3-F54B24S.4X
1-1/2	1-1/4	2-1/2	6	8-1/2	PM3-F54A24S.6X	T4-PM3-F54A24S.6X	PM3-F54B24S.6X
1-1/2	1-1/4	3	8	10-1/2	PM3-F54A24S.8X	T4-PM3-F54A24S.8X	PM3-F54B24S.8X
2	2	2	4	7-3/4	PM3-F68A32S.4	T4-PM3-F68A32S.4	PM3-F68B32S.4
2	2	2-1/2	6	9-3/4	PM3-F68A32S.6	T4-PM3-F68A32S.6	PM3-F68B32S.6
2	2	3	8	11-3/4	PM3-F68A32S.8	T4-PM3-F68A32S.8	PM3-F68B32S.8

RIGHT HAND - Extended Neck - 8 Flute

D1	D2	L2	L3	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
2	2	2	4	7-3/4	PM3-F88A32S.4	T4-PM3-F88A32S.4	PM3-F88B32S.4
2	2	2-1/2	6	9-3/4	PM3-F88A32S.6	T4-PM3-F88A32S.6	PM3-F88B32S.6
2	2	3	8	11-3/4	PM3-F88A32S.8	T4-PM3-F88A32S.8	PM3-F88B32S.8





3 Flute Finisher - Center Cut

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

PM4 | 3 Flutes | 37° | Z-Power®

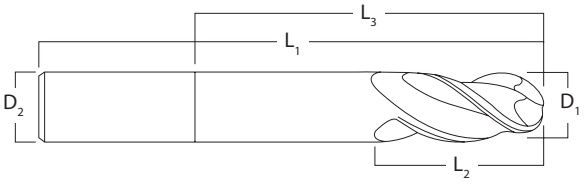
Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 227.

RIGHT HAND - 3 Flute

D1	D2	L2	L1		Z-Power®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	3-1/4	PM-33008	T6-PM-33008	PM-33108
1/2	1/2	2	4	PM-33208	T6-PM-33208	PM-33308
1/2	1/2	3	5	PM-33408	T6-PM-33408	PM-33508
1/2	1/2	4	6	PM-33608	T6-PM-33608	PM-33708
5/8	5/8	1-5/8	3-3/4	PM-33010	T6-PM-33010	PM-33110
5/8	5/8	2-1/2	4-5/8	PM-33210	T6-PM-33210	PM-33310
5/8	5/8	3	5-1/8	PM-33410	T6-PM-33410	PM-33510
5/8	5/8	4	6-1/8	PM-33610	T6-PM-33610	PM-33710
5/8	5/8	6	8-1/8	PM-33610S	T6-PM-33610S	PM-33710S
3/4	3/4	1-5/8	3-7/8	PM-33012	T6-PM-33012	PM-33112
3/4	3/4	2	4-1/4	PM-33212	T6-PM-33212	PM-33312
3/4	3/4	2-1/4	4-1/2	PM-33212S	T6-PM-33212S	PM-33312S
3/4	3/4	3	5-1/4	PM-33412	T6-PM-33412	PM-33512
3/4	3/4	4	6-1/4	PM-33612	T6-PM-33612	PM-33712
3/4	3/4	6	8-1/4	PM-33612S	T6-PM-33612S	PM-33712S
3/4	3/4	8	10-1/4	PM-33812	T6-PM-33812	PM-33912
1	1	2	4-1/2	PM-33016	T6-PM-33016	PM-33116
1	1	3	5-1/2	PM-33216	T6-PM-33216	PM-33316
1	1	4	6-1/2	PM-33416	T6-PM-33416	PM-33516
1	1	5	7-1/2	PM-33416S	T6-PM-33416S	PM-33516S
1	1	6	8-1/2	PM-33616	T6-PM-33616	PM-33716
1	1	7	9-1/2	PM-33616S	T6-PM-33616S	PM-33716S
1	1	8	10-1/2	PM-33816	T6-PM-33816	PM-33916
1	1	10	12-1/2	PM-33816S	T6-PM-33816S	PM-33916S
1-1/4	1-1/4	2	4-1/2	PM-33020	T6-PM-33020	PM-33120
1-1/4	1-1/4	3	5-1/2	PM-33220	T6-PM-33220	PM-33320
1-1/4	1-1/4	4	6-1/2	PM-33420	T6-PM-33420	PM-33520
1-1/4	1-1/4	5	7-1/2	PM-33420S	T6-PM-33420S	PM-33520S
1-1/4	1-1/4	6	8-1/2	PM-33620	T6-PM-33620	PM-33720
1-1/4	1-1/4	7	9-1/2	PM-33620S	T6-PM-33620S	PM-33720S
1-1/4	1-1/4	8	10-1/2	PM-33820	T6-PM-33820	PM-33920
1-1/4	1-1/4	10	12-1/2	PM-33820S	T6-PM-33820S	PM-33920S
1-1/2	1-1/4	2	4-1/2	PM-33024	T6-PM-33024	PM-33124
1-1/2	1-1/4	3	5-1/2	PM-33224	T6-PM-33224	PM-33324
1-1/2	1-1/4	4	6-1/2	PM-33424	T6-PM-33424	PM-33524
1-1/2	1-1/4	5	7-1/2	PM-33424S	T6-PM-33424S	PM-33524S
1-1/2	1-1/4	6	8-1/2	PM-33624	T6-PM-33624	PM-33724
1-1/2	1-1/4	7	9-1/2	PM-33624S	T6-PM-33624S	PM-33724S
1-1/2	1-1/4	8	10-1/2	PM-33824	T6-PM-33824	PM-33924
2	1-1/4	2	4-1/2	PM-33032	T6-PM-33032	PM-33132
2	1-1/4	3	5-1/2	PM-33232	T6-PM-33232	PM-33332
2	1-1/4	4	6-1/2	PM-33432	T6-PM-33432	PM-33532
2	1-1/4	5	7-1/2	PM-33432S	T6-PM-33432S	PM-33532S
2	1-1/4	6	8-1/2	PM-33632	T6-PM-33632	PM-33732
2	1-1/4	7	9-1/2	PM-33632S	T6-PM-33632S	PM-33732S
2	1-1/4	8	10-1/2	PM-33832	T6-PM-33832	PM-33932
2	2	2	5-3/4	PM-37002A	T6-PM-37002A	PM-37102A
2	2	3	6-3/4	PM-37003A	T6-PM-37003A	PM-37103A
2	2	4	7-3/4	PM-37004A	T6-PM-37004A	PM-37104A
2	2	5	8-3/4	PM-37005A	T6-PM-37005A	PM-37105A
2	2	6	9-3/4	PM-37006A	T6-PM-37006A	PM-37106A
2	2	8	11-3/4	PM-37008A	T6-PM-37008A	PM-37108A
2	2	10	13-3/4	PM-37010A	T6-PM-37010A	PM-37110A
2	2	12	15-3/4	PM-37012A	T6-PM-37012A	PM-37112A

2-1/2" & 3" Diameters Available Upon Request



3 Flute Finisher

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats (upon request)
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

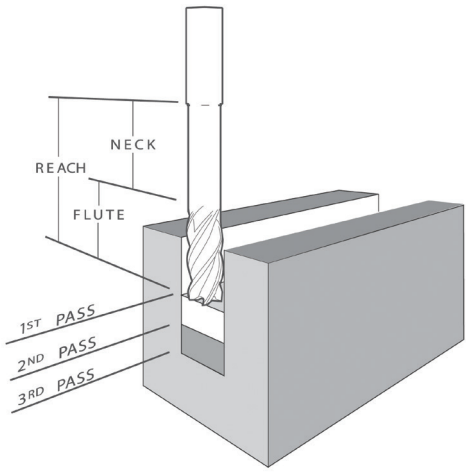
PM4 | 3 Flutes | 37° | Z-Power®

Z-Power® has excellent corrosion and adhesion resistant properties.

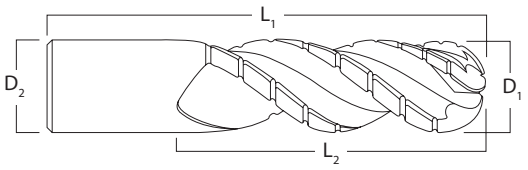
Speeds and Feeds: Refer to Page 227.

RIGHT HAND - Extended Neck - 3 Flute

D1	D2	L2	L3	L1		Z-Power®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	4	6	PM-39A08S	T6-PM-39A08S	PM-39B08S
5/8	5/8	1-1/2	5	7-1/8	PM-39A10S	T6-PM-39A10S	PM-39B10S
3/4	3/4	1-1/2	4	6-1/4	PM-39A12S.4	T6-PM-39A12S.4	PM-39B12S.4
3/4	3/4	1-3/4	5	7-1/4	PM-39A12S.5	T6-PM-39A12S.5	PM-39B12S.5
3/4	3/4	2	6	8-1/4	PM-39A12S	T6-PM-39A12S	PM-39B12S
1	1	1	2	4-1/2	PM-39A16S.2	T6-PM-39A16S.2	PM-39B16S.2
1	1	1-1/2	3	5-1/2	PM-39A16S.3	T6-PM-39A16S.3	PM-39B16S.3
1	1	2	4	6-1/2	PM-39A16S.4	T6-PM-39A16S.4	PM-39B16S.4
1	1	2-1/2	6	8-1/2	PM-39A16S.6	T6-PM-39A16S.6	PM-39B16S.6
1	1	2-3/4	7	9-1/2	PM-39A16S.7	T6-PM-39A16S.7	PM-39B16S.7
1	1	3	8	10-1/2	PM-39A16S	T6-PM-39A16S	PM-39B16S
1-1/4	1-1/4	1-1/2	3	5-1/2	PM-39A20S.3	T6-PM-39A20S.3	PM-39B20S.3
1-1/4	1-1/4	2	4	6-1/2	PM-39A20S.4	T6-PM-39A20S.4	PM-39B20S.4
1-1/4	1-1/4	2-1/2	6	8-1/2	PM-39A20S.6	T6-PM-39A20S.6	PM-39B20S.6
1-1/4	1-1/4	2-3/4	7	9-1/2	PM-39A20S.7	T6-PM-39A20S.7	PM-39B20S.7
1-1/4	1-1/4	3	8	10-1/2	PM-39A20S.8	T6-PM-39A20S.8	PM-39B20S.8
1-1/4	1-1/4	3-1/2	10	12-1/2	PM-39A20S	T6-PM-39A20S	PM-39B20S



	3 Flute PM4 Endmills for Aluminum - Speed & Feed Data					
	Uncoated - SFM (Surface Feet per Minute)			Feed/Tooth from 1/2" to 2"		
	Finish	Rough	Truncated	Finish	Rough	Truncated
Aluminum Alloys: Wrought, Solution Treated, Aged as Cast	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"
Non Ferrous Alloys: Magnesium, Copper	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"



3 Flute Truncated Rough/Finish

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats (upon Request)
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

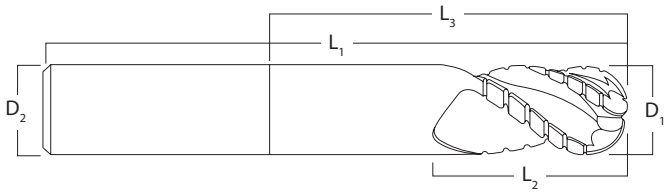
PM4 | 3 Flutes | 37° | Truncated Rougher

Z-Power® **Z-Power®** has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 229.

RIGHT HAND - 3 Flute

D1	D2	L2	L1		Z-Power®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	3-1/4	PM-TRF33008	T6-PM-TRF33008	PM-TRF33108
1/2	1/2	2	4	PM-TRF33208	T6-PM-TRF33208	PM-TRF33308
1/2	1/2	3	5	PM-TRF33408	T6-PM-TRF33408	PM-TRF33508
1/2	1/2	4	6	PM-TRF33608	T6-PM-TRF33608	PM-TRF33708
5/8	5/8	1-5/8	3-3/4	PM-TRF33010	T6-PM-TRF33010	PM-TRF33110
5/8	5/8	2-1/2	4-5/8	PM-TRF33210	T6-PM-TRF33210	PM-TRF33310
5/8	5/8	3	5-1/8	PM-TRF33410	T6-PM-TRF33410	PM-TRF33510
5/8	5/8	4	6-1/8	PM-TRF33610	T6-PM-TRF33610	PM-TRF33710
3/4	3/4	1-5/8	3-7/8	PM-TRF33012	T6-PM-TRF33012	PM-TRF33112
3/4	3/4	2	4-1/4	PM-TRF33212	T6-PM-TRF33212	PM-TRF33312
3/4	3/4	2-1/4	4-1/2	PM-TRF33212S	T6-PM-TRF33212S	PM-TRF33312S
3/4	3/4	3	5-1/4	PM-TRF33412	T6-PM-TRF33412	PM-TRF33512
3/4	3/4	4	6-1/4	PM-TRF33612	T6-PM-TRF33612	PM-TRF33712
1	1	2	4-1/2	PM-TRF33016	T6-PM-TRF33016	PM-TRF33116
1	1	3	5-1/2	PM-TRF33216	T6-PM-TRF33216	PM-TRF33316
1	1	4	6-1/2	PM-TRF33416	T6-PM-TRF33416	PM-TRF33516
1	1	6	8-1/2	PM-TRF33616	T6-PM-TRF33616	PM-TRF33716
1-1/4	1-1/4	2	4-1/2	PM-TRF33020	T6-PM-TRF33020	PM-TRF33120
1-1/4	1-1/4	3	5-1/2	PM-TRF33220	T6-PM-TRF33220	PM-TRF33320
1-1/4	1-1/4	4	6-1/2	PM-TRF33420	T6-PM-TRF33420	PM-TRF33520
1-1/4	1-1/4	6	8-1/2	PM-TRF33620	T6-PM-TRF33620	PM-TRF33720
1-1/2	1-1/4	2	4-1/2	PM-TRF33024	T6-PM-TRF33024	PM-TRF33124
1-1/2	1-1/4	3	5-1/2	PM-TRF33224	T6-PM-TRF33224	PM-TRF33324
1-1/2	1-1/4	4	6-1/2	PM-TRF33424	T6-PM-TRF33424	PM-TRF33524
1-1/2	1-1/4	6	8-1/2	PM-TRF33624	T6-PM-TRF33624	PM-TRF33724
2	1-1/4	2	4-1/2	PM-TRF33032	T6-PM-TRF33032	PM-TRF33132
2	1-1/4	3	5-1/2	PM-TRF33232	T6-PM-TRF33232	PM-TRF33332
2	1-1/4	4	6-1/2	PM-TRF33432	T6-PM-TRF33432	PM-TRF33532
2	1-1/4	6	8-1/2	PM-TRF33632	T6-PM-TRF33632	PM-TRF33732
2	2	2	5-3/4	PM-TRF37002A	T6-PM-TRF37002A	PM-TRF37102A
2	2	3	6-3/4	PM-TRF37003A	T6-PM-TRF37003A	PM-TRF37103A
2	2	4	7-3/4	PM-TRF37004A	T6-PM-TRF37004A	PM-TRF37104A
2	2	6	9-3/4	PM-TRF37006A	T6-PM-TRF37006A	PM-TRF37106A
2	2	8	11-3/4	PM-TRF37008A	T6-PM-TRF37008A	PM-TRF37108A



3 Flute Truncated Rough/Finish

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats (upon Request)
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

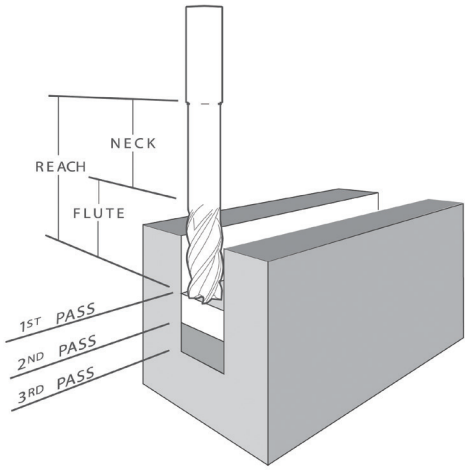
PM4 | 3 Flutes | 37° | Truncated Rougher

Z-Power® **Z-Power®** has excellent corrosion and adhesion resistant properties.

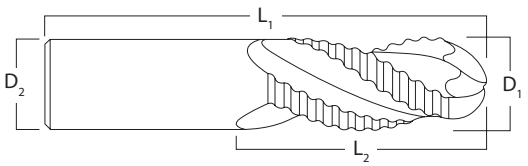
Speeds and Feeds: Refer to Page 229.

RIGHT HAND - Extended Neck - 3 Flute

D1	D2	L2	L3	L1		Z-Power®	
Cutting Dia	Shank Dia	LOC	REACH	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	4	6	PM-TRF39A08S	T6-PM-TRF39A08S	PM-TRF39B08S
5/8	5/8	1-1/2	5	7-1/8	PM-TRF39A10S	T6-PM-TRF39A10S	PM-TRF39B10S
3/4	3/4	1-1/2	4	6-1/4	PM-TRF39A12S.4	T6-PM-TRF39A12S.4	PM-TRF39B12S.4
3/4	3/4	1-3/4	5	7-1/4	PM-TRF39A12S.5	T6-PM-TRF39A12S.5	PM-TRF39B12S.5
3/4	3/4	2	6	8-1/4	PM-TRF39A12S	T6-PM-TRF39A12S	PM-TRF39B12S
1	1	1	2	4-1/2	PM-TRF39A16S.2	T6-PM-TRF39A16S.2	PM-TRF39B16S.2
1	1	1-1/2	3	5-1/2	PM-TRF39A16S.3	T6-PM-TRF39A16S.3	PM-TRF39B16S.3
1	1	2	4	6-1/2	PM-TRF39A16S.4	T6-PM-TRF39A16S.4	PM-TRF39B16S.4
1	1	2-1/2	6	8-1/2	PM-TRF39A16S.6	T6-PM-TRF39A16S.6	PM-TRF39B16S.6
1	1	2-3/4	7	9-1/2	PM-TRF39A16S.7	T6-PM-TRF39A16S.7	PM-TRF39B16S.7
1	1	3	8	10-1/2	PM-TRF39A16S	T6-PM-TRF39A16S	PM-TRF39B16S
1-1/4	1-1/4	1-1/2	3	5-1/2	PM-TRF39A20S.3	T6-PM-TRF39A20S.3	PM-TRF39B20S.3
1-1/4	1-1/4	2	4	6-1/2	PM-TRF39A20S.4	T6-PM-TRF39A20S.4	PM-TRF39B20S.4
1-1/4	1-1/4	2-1/2	6	8-1/2	PM-TRF39A20S.6	T6-PM-TRF39A20S.6	PM-TRF39B20S.6
1-1/4	1-1/4	2-3/4	7	9-1/2	PM-TRF39A20S.7	T6-PM-TRF39A20S.7	PM-TRF39B20S.7
1-1/4	1-1/4	3	8	10-1/2	PM-TRF39A20S.8	T6-PM-TRF39A20S.8	PM-TRF39B20S.8
1-1/4	1-1/4	3-1/2	10	12-1/2	PM-TRF39A20S	T6-PM-TRF39A20S	PM-TRF39B20S



	3 Flute PM4 Endmills for Aluminum - Speed & Feed Data					
	Uncoated - SFM (Surface Feet per Minute)			Feed/Tooth from 1/2" to 2"		
	Finish	Rough	Truncated	Finish	Rough	Truncated
Aluminum Alloys: Wrought, Solution Treated, Aged as Cast	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"
Non Ferrous Alloys: Magnesium, Copper	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"



3 Flute Coarse Pitch Rougher

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

PM4 | 3 Flutes | 37° | Coarse Rougher

Z-Power®

Z-Power® has excellent corrosion and adhesion resistant properties.

Speeds and Feeds: Refer to Page 230.

RIGHT HAND - 3 Flute

D1	D2	L2	L1		Z-Power®	
Cutting Dia	**Shank Dia**	**LOC**	**OAL**	**Uncoated**	**Square Coated**	**Ball End Uncoated**
1/2	1/2	1-1/4	3-1/4	PM-R33008	T6-PM-R33008	PM-R33108
1/2	1/2	2	4	PM-R33208	T6-PM-R33208	PM-R33308
1/2	1/2	3	5	PM-R33408	T6-PM-R33408	PM-R33508
1/2	1/2	4	6	PM-R33608	T6-PM-R33608	PM-R33708
5/8	5/8	1-5/8	3-3/4	PM-R33010	T6-PM-R33010	PM-R33110
5/8	5/8	2-1/2	4-5/8	PM-R33210	T6-PM-R33210	PM-R33310
5/8	5/8	3	5-1/8	PM-R33410	T6-PM-R33410	PM-R33510
5/8	5/8	4	6-1/8	PM-R33610	T6-PM-R33610	PM-R33710
3/4	3/4	1-5/8	3-7/8	PM-R33012	T6-PM-R33012	PM-R33112
3/4	3/4	2-1/4	4-1/2	PM-R33212S	T6-PM-R33212S	PM-R33312S
3/4	3/4	3	5-1/4	PM-R33412	T6-PM-R33412	PM-R33512
3/4	3/4	4	6-1/4	PM-R33612	T6-PM-R33612	PM-R33712
3/4	3/4	6	8-1/4	PM-R33612S	T6-PM-R33612S	PM-R33712S
1	1	2	4-1/2	PM-R33016	T6-PM-R33016	PM-R33116
1	1	3	5-1/2	PM-R33216	T6-PM-R33216	PM-R33316
1	1	4	6-1/2	PM-R33416	T6-PM-R33416	PM-R33516
1	1	6	8-1/2	PM-R33616	T6-PM-R33616	PM-R33716
1-1/4	1-1/4	2	4-1/2	PM-R33020	T6-PM-R33020	PM-R33120
1-1/4	1-1/4	3	5-1/2	PM-R33220	T6-PM-R33220	PM-R33320
1-1/4	1-1/4	4	6-1/2	PM-R33420	T6-PM-R33420	PM-R33520
1-1/4	1-1/4	6	8-1/2	PM-R33620	T6-PM-R33620	PM-R33720
1-1/4	1-1/4	8	10-1/2	PM-R33820	T6-PM-R33820	PM-R33920
1-1/2	1-1/4	2	4-1/2	PM-R33024	T6-PM-R33024	PM-R33124
1-1/2	1-1/4	3	5-1/2	PM-R33224	T6-PM-R33224	PM-R33324
1-1/2	1-1/4	4	6-1/2	PM-R33424	T6-PM-R33424	PM-R33524
1-1/2	1-1/4	6	8-1/2	PM-R33624	T6-PM-R33624	PM-R33724
1-1/2	1-1/4	8	10-1/2	PM-R33824	T6-PM-R33824	PM-R33924
2	1-1/4	2	4-1/2	PM-R33032	T6-PM-R33032	PM-R33132
2	1-1/4	3	5-1/2	PM-R33232	T6-PM-R33232	PM-R33332
2	1-1/4	4	6-1/2	PM-R33432	T6-PM-R33432	PM-R33532
2	1-1/4	6	8-1/2	PM-R33632	T6-PM-R33632	PM-R33732
2	2	2	5-3/4	PM-R37002A	T6-PM-R37002A	PM-R37102A
2	2	3	6-3/4	PM-R37003A	T6-PM-R37003A	PM-R37103A
2	2	4	7-3/4	PM-R37004A	T6-PM-R37004A	PM-R37104A
2	2	5	8-3/4	PM-R37005A	T6-PM-R37005A	PM-R37105A
2	2	6	9-3/4	PM-R37006A	T6-PM-R37006A	PM-R37106A
2	2	8	11-3/4	PM-R37008A	T6-PM-R37008A	PM-R37108A
2	2	10	13-3/4	PM-R37010A	T6-PM-R37010A	PM-R37110A
2	2	12	15-3/4	PM-R37012A	T6-PM-R37012A	PM-R37112A

	3 Flute PM4 Endmills for Aluminum - Speed & Feed Data					
	Uncoated - SFM (Surface Feet per Minute)			Feed/Tooth from 1/2" to 2"		
	Finish	Rough	Truncated	Finish	Rough	Truncated
Aluminum Alloys: Wrought, Solution Treated, Aged as Cast	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"
Non Ferrous Alloys: Magnesium, Copper	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"

POWDERMETAL
POLVOMETÁLICO

ADVANTAGES OF **POWDER METAL**

During machining, Powder Metal allows for increased stability at high cutting parameters. In addition, it helps meet tight tolerances and improve production rates. Furthermore, its chemical composition produces a stronger tool which minimizes chipping and permits for an extended tool life.

- Higher feeds and speeds
- Longer tool life
- Higher-cutting edge stability
- Best substrate for PVD coating

Powder Metal is made with from many small particles that are pressured, to eliminate pocket holes. This process eliminates air and space between the particles which creates a high wear resistant tool.

Español

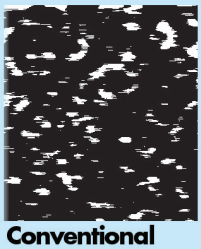
VENTAJAS DE **POLVO METÁLICO**

Durante el mecanizado, el Polvo Metálico permite una mayor estabilidad a parámetros de corte elevados. Además, ayuda a alcanzar tolerancias estrictas y mejora los índices de producción. Adicionalmente, su composición química produce una herramienta de corte más fuerte que minimiza rotura y permite una mayor vida útil.

- Velocidades y avances superior
- Herramienta de mayor duración
- Mayor filo y estabilidad
- El mejor sustrato para el recubrimiento de PVD

Polvo metálico se hace con de muchas partículas pequeñas que son presionadas, para eliminar orificios de bolsillo. Este proceso elimina el aire y el espacio entre las partículas lo que crea una herramienta de alta resistencia al desgaste.

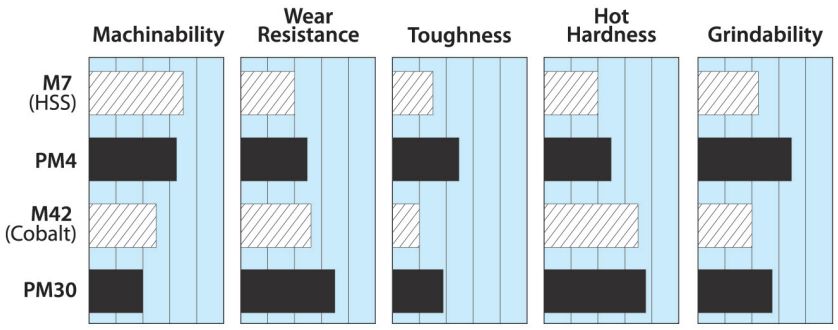
Microstructure Differences
Microestructura Diferencias



Conventional
Convencional

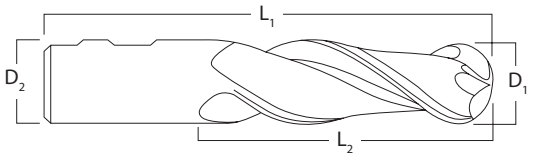
Powder Metal
Polvo de Metálico

COMPARATIVE PROPERTIES
PROPIEDADES COMPARATIVAS



Powder Metal has superior toughness, high wear-resistance and hot hardness.

Polvo Metálico tiene tenacidad superior, alta resistencia al desgaste y dureza en caliente.



2 Flute Endmill Center Cut

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

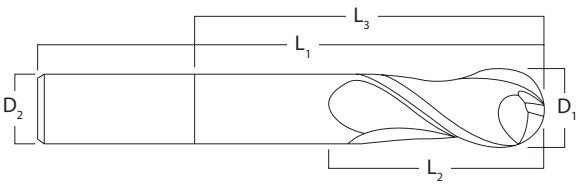
Cobalt (M42) | 2 Flutes | 35°

RIGHT HAND - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/4	3/8	1/2	2-5/16	24004	24104
1/4	3/8	1	2-13/16	24204	24304
1/4	3/8	1-1/2	3-5/16	24404	24504
1/4	3/8	2	3-3/4	24604	24704
5/16	3/8	9/16	2-5/16	24005	24105
5/16	3/8	1	2-3/4	24205	24305
5/16	3/8	1-1/2	3-1/4	24405	24505
5/16	3/8	2	3-3/4	24605	24705
3/8	3/8	9/16	2-5/16	24006	24106
3/8	3/8	1	2-3/4	24206	24306
3/8	3/8	1-1/2	3-1/4	24406	24506
3/8	3/8	3	4-3/4	24606	24706
7/16	3/8	13/16	2-1/2	24007	24107
1/2	1/2	1	3	24008	24108
1/2	1/2	1-1/4	3-1/4	24008S	24108S
1/2	1/2	1-1/2	3-1/2	24208	24308
1/2	1/2	2	4	24408	24508
1/2	1/2	3	5	24608	24708
1/2	1/2	4	6	24608S	24708S
5/8	5/8	1-5/16	3-7/16	24010	24110
5/8	5/8	1-5/8	3-3/4	24210	24310
5/8	5/8	2	4-1/8	24410	24510
5/8	5/8	3	5-1/8	24610	24710
5/8	5/8	4	6-1/8	24610S	24710S
11/16	5/8	1-5/16	3-7/16	24011	24111
3/4	3/4	1-5/16	3-9/16	24012	24112
3/4	5/8	1-5/16	3-7/16	24012.1	24112.1
3/4	3/4	1-5/8	3-7/8	24012S	24112S
3/4	3/4	1-3/4	4	24212	24312
3/4	3/4	2-1/4	4-1/2	24412	24512
3/4	3/4	3	5-1/4	24612	24712
3/4	3/4	4	6-1/4	24612S	24712S
3/4	3/4	6	8-1/4	24812	24912
7/8	7/8	1-1/2	3-3/4	24014	24114
7/8	5/8	1-1/2	3-5/8	24014.1	24114.1
7/8	7/8	2	4-1/4	24214	24314
7/8	7/8	2-1/2	4-3/4	24414	24514
7/8	7/8	3-1/2	5-3/4	24614	24714
7/8	7/8	5	7-1/4	24614S	24714S
15/16	5/8	1-1/2	3-5/8	24015.1	24115.1
15/16	3/4	1-1/2	3-3/4	24015.B	24115.B

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
15/16	7/8	1-1/2	3-3/4	24015.D	24115.D
1	5/8	1-1/2	3-5/8	24016.1	24116.1
1	1	1-5/8	4-1/8	24016	24116
1	1	2	4-1/2	24016S	24116S
1	1	2-1/4	4-3/4	24216	24316
1	1	3	5-1/2	24416	24516
1	1	4	6-1/2	24616	24716
1	1	6	8-1/2	24616S	24716S
1-1/8	1	1-5/8	4-1/8	24018	24118
1-1/8	7/8	1-5/8	3-7/8	24018.D	24118.D
1-1/8	1	2-1/4	4-3/4	24218	24318
1-1/8	1	3	5-1/2	24418	24518
1-1/4	1-1/4	1-5/8	4-1/8	24020	24120
1-1/4	1	1-5/8	4-1/8	24020.F	24120.F
1-1/4	1-1/4	2-1/4	4-3/4	24220	24320
1-1/4	1-1/4	3	5-1/2	24420	24520
1-1/4	1-1/4	4	6-1/2	24620	24720
1-1/4	1-1/4	6	8-1/2	24620S	24720S
1-3/8	1-1/4	1-5/8	4-1/8	24022	24122
1-3/8	1-1/4	2-1/4	4-3/4	24222	24322
1-3/8	1-1/4	3	5-1/2	24422	24522
1-1/2	1-1/4	1-5/8	4-1/8	24024	24124
1-1/2	1	1-5/8	4-1/8	24024.F	24124.F
1-1/2	1-1/4	2-1/4	4-3/4	24224	24324
1-1/2	1-1/4	3	5-1/2	24424	24524
1-1/2	1-1/4	4	6-1/2	24624	24724
1-1/2	1-1/4	6	8-1/2	24624S	24724S
1-1/2	1-1/4	8	10-1/2	24824	24924
1-5/8	1-1/4	1-5/8	4-1/8	24026	24126
1-5/8	1-1/4	2-1/4	4-3/4	24226	24326
1-5/8	1-1/4	3	5-1/2	24426	24526
1-3/4	1-1/4	1-5/8	4-1/8	24028	24128
1-3/4	1-1/4	2-1/4	4-3/4	24228	24328
1-3/4	1-1/4	3	5-1/2	24428	24528
1-3/4	1-1/4	4	6-1/2	24628	24728
1-7/8	1-1/4	1-5/8	4-1/8	24030	24130
1-7/8	1-1/4	3	5-1/2	24430	24530
2	1-1/4	1-5/8	4-1/8	24032	24132
2	1-1/4	2-1/4	4-3/4	24232	24332
2	1-1/4	3	5-1/2	24432	24532
2	1-1/4	4	6-1/2	24632	24732

2-1/2" & 3" Diameters Available Upon Request



2 Flute Endmill Center Cut

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

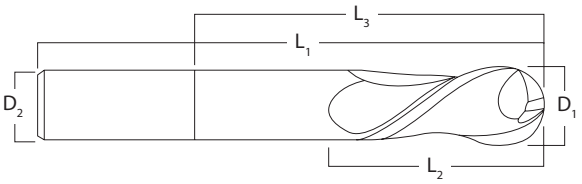
P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 2 Flutes | 35°

RIGHT HAND COBALT ENDMILLS

RIGHT HAND - Extended Neck - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	1-1/2	3-1/16	24A04	24B04
5/16	3/8	3/4	1-3/4	3-5/16	24A05	24B05
3/8	3/8	3/4	1-3/4	3-5/16	24A06	24B06
1/2	1/2	1	2-1/4	4	24A08	24B08
5/8	5/8	1-3/8	2-3/4	4-7/8	24A10	24B10
3/4	3/4	1-5/8	3-1/8	5-3/8	24A12	24B12
7/8	7/8	2	4	6	24A14	24B14
1	1	2-1/2	5	7-1/4	24A16	24B16
1-1/4	1-1/4	3	5	7-1/4	24A20	24B20



2 Flute Endmill Center Cut

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

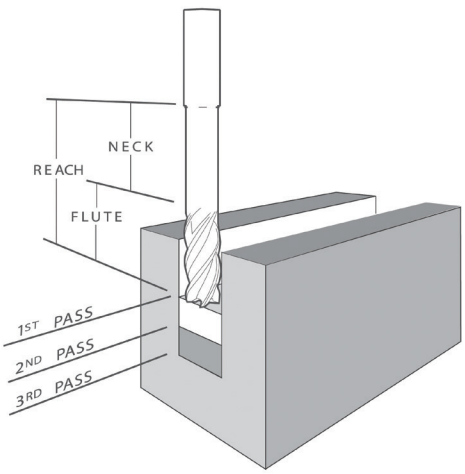
P M K S **Material Code**: Refer to Page 261.

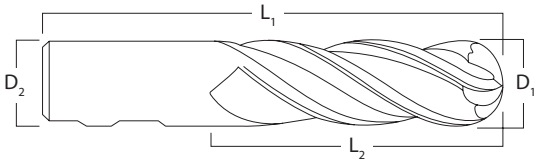
Cobalt (M42) | 2 Flutes | 35°

LEFT HAND COBALT ENDMILLS

LEFT HAND - Extended Neck - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	1-1/2	3-1/16	26A04	26B04
5/16	3/8	3/4	1-3/4	3-5/16	26A05	26B05
3/8	3/8	3/4	1-3/4	3-5/16	26A06	26B06
1/2	1/2	1	2-1/4	4	26A08	26B08
5/8	5/8	1-3/8	2-3/4	4-3/4	26A10	26B10
3/4	3/4	1-5/8	3-1/8	5-3/8	26A12	26B12
7/8	7/8	2	4	6	26A14	26B14
1	1	2-1/2	5	7-1/4	26A16	26B16
1-1/4	1-1/4	3	5	7-1/4	26A20	26B20





4 Flute Endmill Center Cut - General Purpose

- Exxtral Plus® recommended
- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

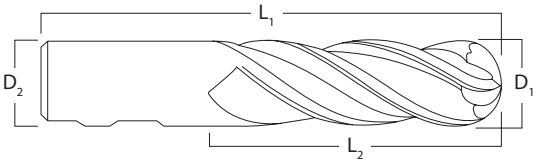
Cobalt (M42) | 4 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 4 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/4	3/8	5/8	2-7/16	54004	T4-54004	54104
1/4	3/8	1-1/4	3-1/16	54204	T4-54204	54304
1/4	3/8	1-3/4	3-9/16	54404	T4-54404	54504
1/4	3/8	2	3-3/4	54604	T4-54604	54704
1/4	3/8	2-1/2	4-1/4	54804	T4-54804	54904
5/16	3/8	3/4	2-1/2	54005	T4-54005	54105
5/16	3/8	1-3/8	3-1/8	54205	T4-54205	54305
5/16	3/8	2	3-3/4	54405	T4-54405	54505
5/16	3/8	2-1/2	4-1/4	54605	T4-54605	54705
5/16	3/8	3	4-3/4	54805	T4-54805	54905
3/8	3/8	3/4	2-1/2	54006	T4-54006	54106
3/8	3/8	1-1/2	3-1/4	54206	T4-54206	54306
3/8	3/8	2-1/2	4-1/4	54406	T4-54406	54506
3/8	3/8	3	4-3/4	54606	T4-54606	54706
3/8	3/8	4	5-3/4	54806	T4-54806	54906
1/2	3/8	1	2-11/16	54008.6	T4-54008.6	54108.6
1/2	1/2	1	3	54008.8	T4-54008.8	54108.8
1/2	1/2	1-1/4	3-1/4	54008	T4-54008	54108
1/2	1/2	2	4	54208	T4-54208	54308
1/2	1/2	3	5	54408	T4-54408	54508
1/2	1/2	4	6	54608	T4-54608	54708
1/2	1/2	5	7	54608S	T4-54608S	54708S
1/2	1/2	6	8	54808	T4-54808	54908
1/2	1/2	8	10	54808S	T4-54808S	54908S
5/8	5/8	1-5/8	3-3/4	54010	T4-54010	54110
5/8	5/8	2-1/2	4-5/8	54210	T4-54210	54310
5/8	5/8	3	5-1/8	54410	T4-54410	54510
5/8	5/8	4	6-1/8	54610	T4-54610	54710
5/8	5/8	6	8-1/8	54810	T4-54810	54910
3/4	3/4	1-5/8	3-7/8	54012	T4-54012	54112
3/4	3/4	2	4-1/4	54212	T4-54212	54312
3/4	3/4	2-1/4	4-1/2	54212S	T4-54212S	54312S
3/4	3/4	3	5-1/4	54412	T4-54412	54512
3/4	3/4	4	6-1/4	54612	T4-54612	54712
3/4	3/4	5	7-1/4	54612S	T4-54612S	54712S
3/4	3/4	6	8-1/4	54812	T4-54812	54912
3/4	3/4	8	10-1/4	54812S	T4-54812S	54912S
7/8	7/8	1-7/8	4-1/8	54014	T4-54014	54114
7/8	3/4	1-7/8	4-1/8	54014.B	T4-54014.B	54114.B
7/8	7/8	2-1/2	4-3/4	54214	T4-54214	54314
7/8	7/8	3-1/2	5-3/4	54414	T4-54414	54514
7/8	7/8	4	6-1/4	54414S	T4-54414S	54514S
7/8	7/8	5	7-1/4	54614	T4-54614	54714
7/8	7/8	6	8-1/4	54614S	T4-54614S	54714S
1	3/4	1-7/8	4-1/8	59G16	T4-59G16	59H16
1	1	1-1/2	4	54016S	T4-54016S	54116S
1	1	2	4-1/2	54016	T4-54016	54116

Continue



4 Flute Endmill Center Cut - General Purpose

- Exxtral Plus® recommended
- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

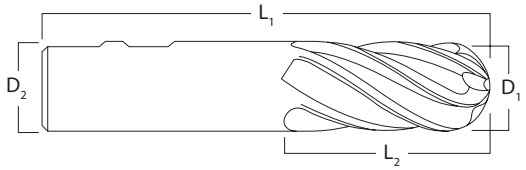
Cobalt (M42) | 4 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 4 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
1	1	3	5-1/2	54216	T4-54216	54316
1	1	4	6-1/2	54416	T4-54416	54516
1	1	5	7-1/2	54416S	T4-54416S	54516S
1	1	6	8-1/2	54616	T4-54616	54716
1	1	7	9-1/2	54616S	T4-54616S	54716S
1	1	8	10-1/2	54816	T4-54816	54916
1	1	10	12-1/2	54816S	T4-54816S	54916S
1-1/4	1-1/4	2	4-1/2	54020	T4-54020	54120
1-1/4	1-1/4	3	5-1/2	54220	T4-54220	54320
1-1/4	1-1/4	4	6-1/2	54420	T4-54420	54520
1-1/4	1-1/4	5	7-1/2	54420S	T4-54420S	54520S
1-1/4	1-1/4	6	8-1/2	54620	T4-54620	54720
1-1/4	1-1/4	7	9-1/2	54620S	T4-54620S	54720S
1-1/4	1-1/4	8	10-1/2	54820	T4-54820	54920
1-3/8	1	2	4-1/2	54022	T4-54022	54122
1-1/2	1-1/4	2	4-1/2	54024	T4-54024	54124
1-1/2	1-1/4	3	5-1/2	54224	T4-54224	54324
1-1/2	1-1/4	4	6-1/2	54424	T4-54424	54524
1-1/2	1-1/4	6	8-1/2	54624	T4-54624	54724
1-1/2	1-1/4	7	9-1/2	54624S	T4-54624S	54724S
1-1/2	1-1/4	8	10-1/2	54824	T4-54824	54924
2	1-1/4	2	4-1/2	54032	T4-54032	54132
2	1-1/4	3	5-1/2	54232	T4-54232	54332
2	1-1/4	4	6-1/2	54432	T4-54432	54532
2	2	2	5-3/4	48002A	T4-48002A	48102A
2	2	3	6-3/4	48003A	T4-48003A	48103A
2	2	4	7-3/4	48004A	T4-48004A	48104A
2	2	5	8-3/4	48005A	T4-48005A	48105A
2	2	6	9-3/4	48006A	T4-48006A	48106A
2	2	8	11-3/4	48008A	T4-48008A	48108A
2	2	10	13-3/4	48010A	T4-48010A	48110A
2	2	12	15-3/4	48012A	T4-48012A	48112A

2-1/2" & 3" Diameters Available Upon Request



6 Flute Endmill Center Cut

- Exxtral Plus® recommended
- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

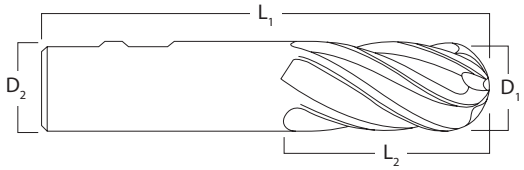
Cobalt (M42) | 6 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1/2	1/2	1-1/4	3-1/4	54008X	T4-54008X	54108X
1/2	1/2	2	4	54208X	T4-54208X	54308X
1/2	1/2	3	5	54408X	T4-54408X	54508X
1/2	1/2	4	6	54608X	T4-54608X	54708X
1/2	1/2	5	7	54608SX	T4-54608SX	54708SX
1/2	1/2	6	8	54808X	T4-54808X	54908X
1/2	1/2	8	10	54808SX	T4-54808SX	54908SX
5/8	5/8	1-5/8	3-3/4	54010X	T4-54010X	54110X
5/8	5/8	2-1/2	4-5/8	54210X	T4-54210X	54310X
5/8	5/8	3	5-1/8	54410X	T4-54410X	54510X
5/8	5/8	4	6-1/8	54610X	T4-54610X	54710X
5/8	5/8	6	8-1/8	54810X	T4-54810X	54910X
3/4	3/4	1-5/8	3-7/8	54012X	T4-54012X	54112X
3/4	3/4	2	4-1/4	54212X	T4-54212X	54312X
3/4	3/4	3	5-1/4	54412X	T4-54412X	54512X
3/4	3/4	4	6-1/4	54612X	T4-54612X	54712X
3/4	3/4	5	7-1/4	54612SX	T4-54612SX	54712SX
3/4	3/4	6	8-1/4	54812X	T4-54812X	54912X
3/4	3/4	8	10-1/4	54812SX	T4-54812SX	54912SX
7/8	7/8	1-7/8	4-1/8	54014X	T4-54014X	54114X
7/8	7/8	3-1/2	5-3/4	54414X	T4-54414X	54514X
7/8	7/8	6	8-1/4	54614SX	T4-54614SX	54714SX
1	3/4	1-7/8	4-1/8	59G16X	T4-59G16X	59H16X
1	1	2	4-1/2	54016X	T4-54016X	54116X
1	1	3	5-1/2	54216X	T4-54216X	54316X
1	1	4	6-1/2	54416X	T4-54416X	54516X
1	1	5	7-1/2	54416SX	T4-54416SX	54516SX
1	1	6	8-1/2	54616X	T4-54616X	54716X
1	1	7	9-1/2	54616SX	T4-54616SX	54716SX
1	1	8	10-1/2	54816X	T4-54816X	54916X
1	1	10	12-1/2	54816SX	T4-54816SX	54916SX
1-1/8	3/4	1-1/2	3-7/8	59G18X	T4-59G18X	59H18X
1-1/8	1	2	4-1/2	54018X	T4-54018X	54118X
1-1/8	1	3	5-1/2	54218X	T4-54218X	54318X
1-1/8	1	4	6-1/2	54418X	T4-54418X	54518X
1-1/4	3/4	1-1/2	3-7/8	59G20X	T4-59G20X	59H20X
1-1/4	1-1/4	2	4-1/2	54020X	T4-54020X	54120X
1-1/4	1-1/4	3	5-1/2	54220X	T4-54220X	54320X
1-1/4	1-1/4	4	6-1/2	54420X	T4-54420X	54520X
1-1/4	1-1/4	5	7-1/2	54420SX	T4-54420SX	54520SX
1-1/4	1-1/4	6	8-1/2	54620X	T4-54620X	54720X
1-1/4	1-1/4	7	9-1/2	54620SX	T4-54620SX	54720SX
1-1/4	1-1/4	8	10-1/2	54820X	T4-54820X	54920X
1-1/4	1-1/4	10	12-1/2	54820SX	T4-54820SX	54920SX
1-1/2	3/4	1-1/2	3-7/8	59G24X	T4-59G24X	59H24X
1-1/2	1-1/4	2	4-1/2	54024X	T4-54024X	54124X
1-1/2	1-1/4	3	5-1/2	54224X	T4-54224X	54324X
1-1/2	1-1/4	4	6-1/2	54424X	T4-54424X	54524X
1-1/2	1-1/4	5	7-1/2	54424SX	T4-54424SX	54524SX
1-1/2	1-1/4	6	8-1/2	54624X	T4-54624X	54724X

Continue



6 Flute Endmill Center Cut

- Exxtral Plus® recommended
- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

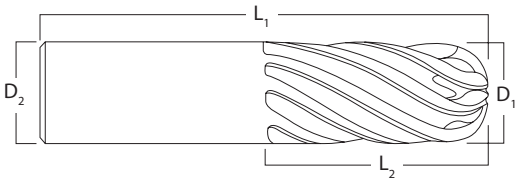
Cobalt (M42) | 6 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/2	1-1/4	7	9-1/2	54624SX	T4-54624SX	54724SX
1-1/2	1-1/4	8	10-1/2	54824X	T4-54824X	54924X
1-1/2	1-1/4	10	12-1/2	54824SX	T4-54824SX	54924SX
1-3/4	3/4	1-1/2	3-7/8	59G28X	T4-59G28X	59H28X
2	1-1/4	2	4-1/2	54032X	T4-54032X	54132X
2	1-1/4	3	5-1/2	54232X	T4-54232X	54332X
2	1-1/4	4	6-1/2	54432X	T4-54432X	54532X
2	1-1/4	6	8-1/2	54632X	T4-54632X	54732X
2	1-1/4	8	10-1/2	54832X	T4-54832X	54932X
2	2	2	5-3/4	68002A	T4-68002A	68102A
2	2	3	6-3/4	68003A	T4-68003A	68103A
2	2	4	7-3/4	68004A	T4-68004A	68104A
2	2	5	8-3/4	68005A	T4-68005A	68105A
2	2	6	9-3/4	68006A	T4-68006A	68106A
2	2	8	11-3/4	68008A	T4-68008A	68108A
2	2	10	13-3/4	68010A	T4-68010A	68110A
2	2	12	15-3/4	68012A	T4-68012A	68112A
2	2	14	17-3/4	68014A	T4-68014A	68114A

2-1/2" & 3" Diameters Available Upon Request



8 Flute Endmill Center Cut

- Exxtral Plus® recommended (up to 25% faster)
- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

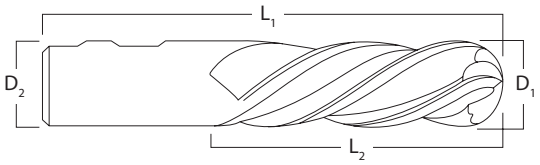
Cobalt (M42) | 8 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

RIGHT HAND - 8 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
2	3/4	2	4-1/2	59G32Z	T4-59G32Z	59H32Z
2	2	2	5-3/4	88002A	T4-88002A	88102A
2	2	3	6-3/4	88003A	T4-88003A	88103A
2	2	4	7-3/4	88004A	T4-88004A	88104A
2	2	5	8-3/4	88005A	T4-88005A	88105A
2	2	6	9-3/4	88006A	T4-88006A	88106A
2	2	8	11-3/4	88008A	T4-88008A	88108A
2	2	10	13-3/4	88010A	T4-88010A	88110A
2	2	12	15-3/4	88012A	T4-88012A	88112A
2	2	14	17-3/4	88014A	T4-88014A	88114A

2-1/2" & 3" Diameters Available Upon Request



4 Flute Endmill Center Cut

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 4 Flutes | 35°

LEFT HAND COBALT ENDMILLS

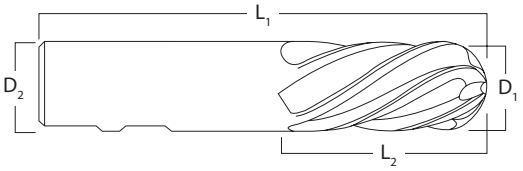
LEFT HAND - 4 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
	1/4	3/8	5/8	2-7/16	56004	56104
	1/4	3/8	1-1/4	3-1/16	56204	56304
	1/4	3/8	1-3/4	3-9/16	56404	56504
	1/4	3/8	2	3-3/4	56604	56704
	1/4	3/8	2-1/2	4-1/4	56804	56904
	5/16	3/8	3/4	2-1/2	56005	56105
	5/16	3/8	1-3/8	3-1/8	56205	56305
	5/16	3/8	2	3-3/4	56405	56505
	5/16	3/8	2-1/2	4-1/4	56605	56705
	5/16	3/8	3	4-3/4	56805	56905
	3/8	3/8	3/4	2-1/2	56006	56106
	3/8	3/8	1-1/2	3-1/4	56206	56306
	3/8	3/8	2-1/2	4-1/4	56406	56506
	3/8	3/8	2-3/4	4-1/2	56606	56706
	3/8	3/8	4	5-3/4	56806	56906
*	7/16	3/8	1	2-11/16	56007	56107
*	7/16	1/2	1-3/4	3-3/4	56207	56307
*	7/16	1/2	3	5	56407	56507
	1/2	1/2	1-1/4	3-1/4	56008	56108
	1/2	1/2	2	4	56208	56308
	1/2	1/2	3	5	56408	56508
	1/2	1/2	4	6	56608	56708
	1/2	1/2	5	7	56608S	56708S
	1/2	1/2	6	8	56808	56908
	1/2	1/2	8	10	56808S	56908S
	5/8	5/8	1-5/8	3-3/4	56010	56110
	5/8	5/8	2-1/2	4-5/8	56210	56310
	5/8	5/8	3	5-1/8	56410	56510
	5/8	5/8	4	6-1/8	56610	56710
	5/8	5/8	6	8-1/8	56810	56910
	3/4	3/4	1-5/8	3-7/8	56012	56112
	3/4	3/4	2	4-1/4	56212	56312
	3/4	3/4	2-1/4	4-1/2	56212S	56312S
	3/4	3/4	3	5-1/4	56412	56512
	3/4	3/4	4	6-1/4	56612	56712
	3/4	3/4	5	7-1/4	56612S	56712S
	3/4	3/4	6	8-1/4	56812	56912
	3/4	3/4	8	10-1/4	56812S	56912S
	7/8	7/8	1-7/8	4-1/8	56014	56114
	7/8	7/8	2-1/2	4-3/4	56214	56314

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
7/8	7/8	3-1/2	5-3/4	56414	56514
7/8	7/8	4	6-1/4	56414S	56514S
7/8	7/8	5	7-1/4	56614	56714
7/8	7/8	6	8-1/4	56614S	56714S
1	1	1	3-1/2	56016.F	56116.F
1	1	2	4-1/2	56016	56116
1	1	3	5-1/2	56216	56316
1	1	4	6-1/2	56416	56516
1	1	5	7-1/2	56416S	56516S
1	1	6	8-1/2	56616	56716
1	1	7	9-1/2	56616S	56716S
1	1	8	10-1/2	56816	56916
1-1/4	1-1/4	2	4-1/2	56020	56120
1-1/4	1-1/4	3	5-1/2	56220	56320
1-1/4	1-1/4	4	6-1/2	56420	56520
1-1/4	1-1/4	5	7-1/2	56420S	56520S
1-1/4	1-1/4	6	8-1/2	56620	56720
1-1/4	1-1/4	7	9-1/2	56620S	56720S
1-1/4	1-1/4	8	10-1/2	56820	56920
1-3/8	1	2	4-1/2	56022	56122
1-1/2	1-1/4	2	4-1/2	56024	56124
1-1/2	1-1/4	3	5-1/2	56224	56324
1-1/2	1-1/4	4	6-1/2	56424	56524
1-1/2	1-1/4	6	8-1/2	56624	56724
1-1/2	1-1/4	8	10-1/2	56824	56924
1-3/4	1-1/4	2	4-1/2	56028	56128
2	1-1/4	2	4-1/2	56032	56132
2	1-1/4	3	5-1/2	56232	56332
2	1-1/4	4	6-1/2	56432	56532
2	1-1/4	6	8-1/2	56632	56732
2	1-1/4	8	10-1/2	56832	56932
2	2	2	5-3/4	48F02A	48G02A
2	2	3	6-3/4	48F03A	48G03A
2	2	4	7-3/4	48F04A	48G04A
2	2	5	8-3/4	48F05A	48G05A
2	2	6	9-3/4	48F06A	48G06A
2	2	8	11-3/4	48F08A	48G08A
2	2	10	13-3/4	48F10A	48G10A
2	2	12	15-3/4	48F12A	48G12A
2	2	14	17-3/4	48F14A	48G14A

2-1/2" & 3" Diameters Available Upon Request

*Available While Stock Lasts.



Cobalt (M42) | 6 Flutes | 35°

LEFT HAND COBALT ENDMILLS

6 Flute Endmill Center Cut

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

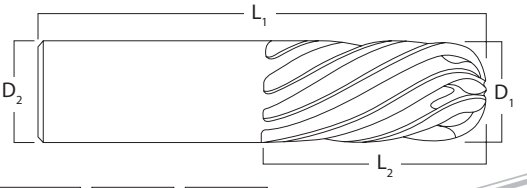
P M K S **Material Code**: Refer to Page 261.

LEFT HAND - 6 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/2	1/2	1-1/4	3-1/4	56008X	56108X
1/2	1/2	2	4	56208X	56308X
1/2	1/2	3	5	56408X	56508X
1/2	1/2	4	6	56608X	56708X
1/2	1/2	6	8	56808X	56908X
1/2	1/2	8	10	56808SX	56908SX
5/8	5/8	1-5/8	3-3/4	56010X	56110X
5/8	5/8	2-1/2	4-5/8	56210X	56310X
5/8	5/8	3	5-1/8	56410X	56510X
5/8	5/8	4	6-1/8	56610X	56710X
5/8	5/8	6	8-1/8	56810X	56910X
3/4	3/4	1-5/8	3-7/8	56012X	56112X
3/4	3/4	2	4-1/4	56212X	56312X
3/4	3/4	3	5-1/4	56412X	56512X
3/4	3/4	4	6-1/4	56612X	56712X
3/4	3/4	5	7-1/4	56612SX	56712SX
3/4	3/4	6	8-1/4	56812X	56912X
3/4	3/4	8	10-1/4	56812SX	56912SX
7/8	7/8	3-1/2	5-3/4	56414X	56514X
7/8	7/8	4	6-1/4	56414SX	56514SX
7/8	7/8	6	8-1/4	56614SX	56714SX
1	1	2	4-1/2	56016X	56116X
1	1	3	5-1/2	56216X	56316X
1	1	4	6-1/2	56416X	56516X
1	1	5	7-1/2	56416SX	56516SX
1	1	6	8-1/2	56616X	56716X
1	1	7	9-1/2	56616SX	56716SX
1	1	8	10-1/2	56816X	56916X
1	1	10	12-1/2	56816SX	56916SX
1-1/4	1-1/4	2	4-1/2	56020X	56120X

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1-1/4	1-1/4	3	5-1/2	56220X	56320X
1-1/4	1-1/4	4	6-1/2	56420X	56520X
1-1/4	1-1/4	5	7-1/2	56420SX	56520SX
1-1/4	1-1/4	6	8-1/2	56620X	56720X
1-1/4	1-1/4	7	9-1/2	56620SX	56720SX
1-1/4	1-1/4	8	10-1/2	56820X	56920X
1-1/4	1-1/4	10	12-1/2	56820SX	56920SX
1-3/8	1	2	4-1/2	56022X	56122X
1-1/2	1-1/4	2	4-1/2	56024X	56124X
1-1/2	1-1/4	3	5-1/2	56224X	56324X
1-1/2	1-1/4	4	6-1/2	56424X	56524X
1-1/2	1-1/4	5	7-1/2	56424SX	56524SX
1-1/2	1-1/4	6	8-1/2	56624X	56724X
1-1/2	1-1/4	7	9-1/2	56624SX	56724SX
1-1/2	1-1/4	8	10-1/2	56824X	56924X
1-1/2	1-1/4	10	12-1/2	56824SX	56924SX
2	1-1/4	2	4-1/2	56032X	56132X
2	1-1/4	3	5-1/2	56232X	56332X
2	1-1/4	4	6-1/2	56432X	56532X
2	1-1/4	6	8-1/2	56632X	56732X
2	1-1/4	8	10-1/2	56832X	56932X
2	2	2	5-3/4	68F02A	68G02A
2	2	3	6-3/4	68F03A	68G03A
2	2	4	7-3/4	68F04A	68G04A
2	2	5	8-3/4	68F05A	68G05A
2	2	6	9-3/4	68F06A	68G06A
2	2	8	11-3/4	68F08A	68G08A
2	2	10	13-3/4	68F10A	68G10A
2	2	12	15-3/4	68F12A	68G12A
2	2	14	17-3/4	68F14A	68G14A

2-1/2" & 3" Diameters Available Upon Request



Cobalt (M42) | 8 Flutes | 35°

LEFT HAND COBALT ENDMILLS

8 Flute Endmill Center Cut

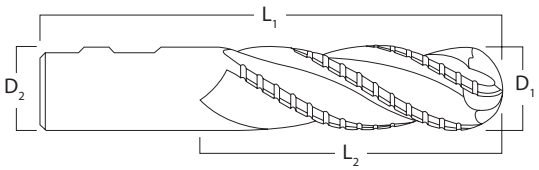
- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

LEFT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
2	2	2	5-3/4	88F02A	88G02A
2	2	3	6-3/4	88F03A	88G03A
2	2	4	7-3/4	88F04A	88G04A
2	2	5	8-3/4	88F05A	88G05A
2	2	6	9-3/4	88F06A	88G06A

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
2	2	8	11-3/4	88F08A	88G08A
2	2	10	13-3/4	88F10A	88G10A
2	2	12	15-3/4	88F12A	88G12A
2	2	14	17-3/4	88F14A	88G14A



4 Flute Roughing / Finishing

- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

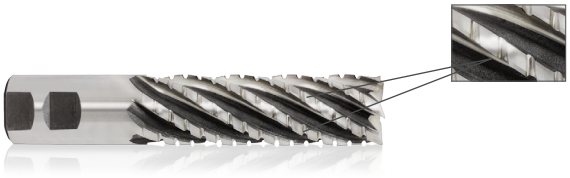
Cobalt (M42) | 4 Flutes | 35° | Truncated Rougher

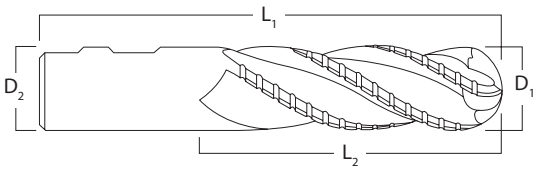
RIGHT HAND - 4 Flute

Made-to-Order

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/2	1/2	1-1/4	3-1/4	RF54008	RF54108
1/2	1/2	2	4	RF54208	RF54308
1/2	1/2	3	5	RF54408	RF54508
1/2	1/2	4	6	RF54608	RF54708
1/2	1/2	5	7	RF54608S	RF54708S
1/2	1/2	6	8	RF54808	RF54908
1/2	1/2	8	10	RF54808S	RF54908S
5/8	5/8	1-5/8	3-3/4	RF54010	RF54110
5/8	5/8	2-1/2	4-5/8	RF54210	RF54310
5/8	5/8	3	5-1/8	RF54410	RF54510
5/8	5/8	4	6-1/8	RF54610	RF54710
5/8	5/8	6	8-1/8	RF54810	RF54910
3/4	3/4	1-5/8	3-7/8	RF54012	RF54112
3/4	3/4	2	4-1/4	RF54212	RF54312
3/4	3/4	2-1/4	4-1/2	RF54212S	RF54312S
3/4	3/4	3	5-1/4	RF54412	RF54512
3/4	3/4	4	6-1/4	RF54612	RF54712
3/4	3/4	5	7-1/4	RF54612S	RF54712S
3/4	3/4	6	8-1/4	RF54812	RF54912
3/4	3/4	8	10-1/4	RF54812S	RF54912S
7/8	7/8	1-7/8	4-1/8	RF54014	RF54114
7/8	3/4	1-7/8	4-1/8	RF54014.B	RF54114.B
7/8	7/8	2-1/2	4-3/4	RF54214	RF54314
7/8	7/8	3-1/2	5-3/4	RF54414	RF54514
7/8	7/8	4	6-1/4	RF54414S	RF54514S
7/8	7/8	5	7-1/4	RF54614	RF54714
7/8	7/8	6	8-1/4	RF54614S	RF54714S
1	1	1-1/2	4	RF54016S	RF54116S
1	1	2	4-1/2	RF54016	RF54116
1	1	3	5-1/2	RF54216	RF54316
1	1	4	6-1/2	RF54416	RF54516

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1	1	5	7-1/2	RF54416S	RF54516S
1	1	6	8-1/2	RF54616	RF54716
1	1	7	9-1/2	RF54616S	RF54716S
1	1	8	10-1/2	RF54816	RF54916
1	1	10	12-1/2	RF54816S	RF54916S
1-1/4	1-1/4	2	4-1/2	RF54020	RF54120
1-1/4	1-1/4	3	5-1/2	RF54220	RF54320
1-1/4	1-1/4	4	6-1/2	RF54420	RF54520
1-1/4	1-1/4	5	7-1/2	RF54420S	RF54520S
1-1/4	1-1/4	6	8-1/2	RF54620	RF54720
1-1/4	1-1/4	7	9-1/2	RF54620S	RF54720S
1-1/4	1-1/4	8	10-1/2	RF54820	RF54920
1-3/8	1	2	4-1/2	RF54022	RF54122
1-1/2	1-1/4	2	4-1/2	RF54024	RF54124
1-1/2	1-1/4	3	5-1/2	RF54224	RF54324
1-1/2	1-1/4	4	6-1/2	RF54424	RF54524
1-1/2	1-1/4	6	8-1/2	RF54624	RF54724
1-1/2	1-1/4	7	9-1/2	RF54624S	RF54724S
1-1/2	1-1/4	8	10-1/2	RF54824	RF54924
2	1-1/4	2	4-1/2	RF54032	RF54132
2	1-1/4	3	5-1/2	RF54232	RF54332
2	1-1/4	4	6-1/2	RF54432	RF54532
2	2	2	5-3/4	RF48002A	RF48102A
2	2	3	6-3/4	RF48003A	RF48103A
2	2	4	7-3/4	RF48004A	RF48104A
2	2	5	8-3/4	RF48005A	RF48105A
2	2	6	9-3/4	RF48006A	RF48106A
2	2	8	11-3/4	RF48008A	RF48108A
2	2	10	13-3/4	RF48010A	RF48110A
2	2	12	15-3/4	RF48012A	RF48112A





6 Flute Roughing / Finishing

- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

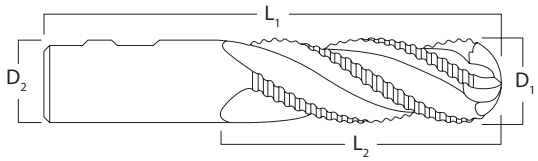
Cobalt (M42)	6 Flutes	35°	Truncated Rougher

RIGHT HAND - 6 Flute

Made-to-Order

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
3/4	3/4	1-5/8	3-7/8	RF54012X	RF54112X
3/4	3/4	2	4-1/4	RF54212X	RF54312X
3/4	3/4	3	5-1/4	RF54412X	RF54512X
3/4	3/4	4	6-1/4	RF54612X	RF54712X
3/4	3/4	5	7-1/4	RF54612SX	RF54712SX
3/4	3/4	6	8-1/4	RF54812X	RF54912X
3/4	3/4	8	10-1/4	RF54812SX	RF54912SX
7/8	7/8	1-7/8	4-1/8	RF54014X	RF54114X
7/8	7/8	3-1/2	5-3/4	RF54414X	RF54514X
7/8	7/8	6	8-1/4	RF54614SX	RF54714SX
1	1	2	4-1/2	RF54016X	RF54116X
1	1	3	5-1/2	RF54216X	RF54316X
1	1	4	6-1/2	RF54416X	RF54516X
1	1	5	7-1/2	RF54416SX	RF54516SX
1	1	6	8-1/2	RF54616X	RF54716X
1	1	7	9-1/2	RF54616SX	RF54716SX
1	1	8	10-1/2	RF54816X	RF54916X
1	1	10	12-1/2	RF54816SX	RF54916SX
1-1/8	1	2	4-1/2	RF54018X	RF54118X
1-1/8	1	3	5-1/2	RF54218X	RF54318X
1-1/8	1	4	6-1/2	RF54418X	RF54518X
1-1/4	1-1/4	2	4-1/2	RF54020X	RF54120X
1-1/4	1-1/4	3	5-1/2	RF54220X	RF54320X
1-1/4	1-1/4	4	6-1/2	RF54420X	RF54520X
1-1/4	1-1/4	5	7-1/2	RF54420SX	RF54520SX

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1-1/4	1-1/4	6	8-1/2	RF54620X	RF54720X
1-1/4	1-1/4	7	9-1/2	RF54620SX	RF54720SX
1-1/4	1-1/4	8	10-1/2	RF54820X	RF54920X
1-1/4	1-1/4	10	12-1/2	RF54820SX	RF54920SX
1-1/2	1-1/4	2	4-1/2	RF54024X	RF54124X
1-1/2	1-1/4	3	5-1/2	RF54224X	RF54324X
1-1/2	1-1/4	4	6-1/2	RF54424X	RF54524X
1-1/2	1-1/4	5	7-1/2	RF54424SX	RF54524SX
1-1/2	1-1/4	6	8-1/2	RF54624X	RF54724X
1-1/2	1-1/4	7	9-1/2	RF54624SX	RF54724SX
1-1/2	1-1/4	8	10-1/2	RF54824X	RF54924X
1-1/2	1-1/4	10	12-1/2	RF54824SX	RF54924SX
2	1-1/4	2	4-1/2	RF54032X	RF54132X
2	1-1/4	3	5-1/2	RF54232X	RF54332X
2	1-1/4	4	6-1/2	RF54432X	RF54532X
2	1-1/4	6	8-1/2	RF54632X	RF54732X
2	1-1/4	8	10-1/2	RF54832X	RF54932X
2	2	2	5-3/4	RF68002A	RF68102A
2	2	3	6-3/4	RF68005A	RF68103A
2	2	4	7-3/4	RF68004A	RF68104A
2	2	5	8-3/4	RF68005A	RF68105A
2	2	6	9-3/4	RF68006A	RF68106A
2	2	8	11-3/4	RF68008A	RF68108A
2	2	10	13-3/4	RF68010A	RF68110A
2	2	12	15-3/4	RF68012A	RF68112A



Multi-Flute Coarse Pitch Rougher

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 4, 5, 6, 8 Flutes | 30° | Coarse Rougher

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND - 4 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
	1/2	1/2	1/2	2-1/2	RS54008	T4-RS54008	RS54108
	1/2	1/2	1-1/4	3-1/4	R54008	T4-R54008	R54108
	1/2	1/2	2	4	R54208	T4-R54208	R54308
	1/2	1/2	3	5	R54408	T4-R54408	R54508
	1/2	1/2	4	6	R54608	T4-R54608	R54708
	1/2	1/2	5	7	R54608S	T4-R54608S	R54708S
	1/2	1/2	6	8	R54808	T4-R54808	R54908
	1/2	1/2	8	10	R54808S	T4-R54808S	R54908S
*	9/16	1/2	1-3/8	3-3/8	R54009	T4-R54009	R54109
	5/8	5/8	1-5/8	3-3/4	R54010	T4-R54010	R54110
	5/8	5/8	2-1/2	4-5/8	R54210	T4-R54210	R54310
	5/8	5/8	3	5-1/8	R54410	T4-R54410	R54510
	5/8	5/8	4	6-1/8	R54610	T4-R54610	R54710
	5/8	5/8	6	8-1/8	R54810	T4-R54810	R54910
	3/4	3/4	3/4	2-7/8	RS54012	T4-RS54012	RS54112
	3/4	3/4	1-5/8	3-7/8	R54012	T4-R54012	R54112
	3/4	5/8	1-5/8	3-3/4	R54012.1	T4-R54012.1	R54112.1
	3/4	3/4	2-1/4	4-1/2	R54212S	T4-R54212S	R54312S
	3/4	3/4	3	5-1/4	R54412	T4-R54412	R54512
	3/4	5/8	3	5-1/8	R54412.1	T4-R54412.1	R54512.1
	3/4	3/4	4	6-1/4	R54612	T4-R54612	R54712
	3/4	3/4	5	7-1/4	R54612S	T4-R54612S	R54712S
	3/4	3/4	6	8-1/4	R54812	T4-R54812	R54912
	3/4	3/4	8	10-1/4	R54812S	T4-R54812S	R54912S

*Available While Stock Lasts.

RIGHT HAND - 5 Flute

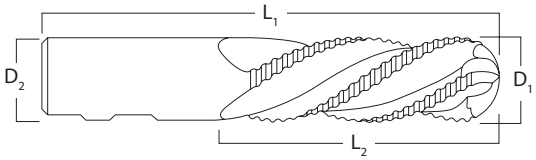
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
7/8	7/8	7/8	3-1/8	RS54014Y	T4-RS54014Y	RS54114Y
7/8	3/4	1-7/8	4-1/8	R54014.BY	T4-R54014.BY	R54114.BY
7/8	7/8	1-7/8	4-1/8	R54014Y	T4-R54014Y	R54114Y
7/8	7/8	2-1/2	4-3/4	R54214Y	T4-R54214Y	R54314Y
7/8	7/8	3-1/2	5-3/4	R54414Y	T4-R54414Y	R54514Y
7/8	7/8	6	8-1/4	R54614SY	T4-R54614SY	R54714SY
1	1	1	3-1/2	RS54016Y	T4-RS54016Y	RS54116Y
1	3/4	2	4-1/4	R54016.BY	T4-R54016.BY	R54116.BY
1	1	2	4-1/2	R54016Y	T4-R54016Y	R54116Y
1	1	3	5-1/2	R54216Y	T4-R54216Y	R54316Y
1	1	4	6-1/2	R54416Y	T4-R54416Y	R54516Y
1	1	5	7-1/2	R54416SY	T4-R54416SY	R54516SY
1	1	6	8-1/2	R54616Y	T4-R54616Y	R54716Y
1	1	7	9-1/2	R54616SY	T4-R54616SY	R54716SY
1	1	8	10-1/2	R54816Y	T4-R54816Y	R54916Y
1	1	10	12-1/2	R54816SY	T4-R54816SY	R54916SY

RIGHT HAND - 6 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/8	3/4	2	4-1/4	R54018.BX	T4-R54018.BX	R54118.BX
1-1/8	1	2	4-1/2	R54018X	T4-R54018X	R54118X
1-1/4	3/4	2	4-1/4	R54020.BX	T4-R54020.BX	R54120.BX
1-1/4	1-1/4	2	4-1/2	R54020X	T4-R54020X	R54120X
1-1/4	1-1/4	3	5-1/2	R54220X	T4-R54220X	R54320X
1-1/4	1-1/4	4	6-1/2	R54420X	T4-R54420X	R54520X
1-1/4	1-1/4	5	7-1/2	R54420SX	T4-R54420SX	R54520SX
1-1/4	1-1/4	6	8-1/2	R54620X	T4-R54620X	R54720X
1-1/4	1-1/4	7	9-1/2	R54620SX	T4-R54620SX	R54720SX
1-1/4	1-1/4	8	10-1/2	R54820X	T4-R54820X	R54920X
1-1/4	1-1/4	10	12-1/2	R54820SX	T4-R54820SX	R54920SX
1-3/8	3/4	2	4-1/4	R54022.BX	T4-R54022.BX	R54122.BX
1-1/2	3/4	2	4-1/4	R54024.BX	T4-R54024.BX	R54124.BX
1-1/2	1-1/4	2	4-1/2	R54024X	T4-R54024X	R54124X
1-1/2	1-1/4	3	5-1/2	R54224X	T4-R54224X	R54324X
1-1/2	1-1/4	4	6-1/2	R54424X	T4-R54424X	R54524X
1-1/2	1-1/4	5	7-1/2	R54424SX	T4-R54424SX	R54524SX
1-1/2	1-1/4	6	8-1/2	R54624X	T4-R54624X	R54724X
1-1/2	1-1/4	7	9-1/2	R54624SX	T4-R54624SX	R54724SX
1-1/2	1-1/4	8	10-1/2	R54824X	T4-R54824X	R54924X
1-1/2	1-1/4	10	12-1/2	R54824SX	T4-R54824SX	R54924SX
1-3/4	3/4	2	4-1/4	R54028.BX	T4-R54028.BX	R54128.BX
1-3/4	1-1/4	2	4-1/2	R54028X	T4-R54028X	R54128X
1-3/4	1-1/4	3	5-1/2	R54228X	T4-R54228X	R54328X
1-3/4	1-1/4	4-1/2	7	R54428X	T4-R54428X	R54528X
1-3/4	1-1/4	6	8-1/2	R54628X	T4-R54628X	R54728X
2	1-1/4	2	4-1/2	R54032X	T4-R54032X	R54132X
2	1-1/4	3	5-1/2	R54232X	T4-R54232X	R54332X
2	1-1/4	4	6-1/2	R54432X	T4-R54432X	R54532X
2	1-1/4	6	8-1/2	R54632X	T4-R54632X	R54732X
2	1-1/4	8	10-1/2	R54832X	T4-R54832X	R54932X
2	2	2	5-3/4	R68002A	T4-R68002A	R68102A
2	2	3	6-3/4	R68003A	T4-R68003A	R68103A
2	2	4	7-3/4	R68004A	T4-R68004A	R68104A
2	2	5	8-3/4	R68005A	T4-R68005A	R68105A
2	2	6	9-3/4	R68006A	T4-R68006A	R68106A
2	2	8	11-3/4	R68008A	T4-R68008A	R68108A
2	2	10	13-3/4	R68010A	T4-R68010A	R68110A
2	2	12	15-3/4	R68012A	T4-R68012A	R68112A

RIGHT HAND - 8 Flute

D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
2	1-1/4	2	4-1/2	R54032Z	T4-R54032Z	R54132Z
2	1-1/4	3	5-1/2	R54232Z	T4-R54232Z	R54332Z
2	1-1/4	4	6-1/2	R54432Z	T4-R54432Z	R54532Z
2	1-1/4	6	8-1/2	R54632Z	T4-R54632Z	R54732Z
2	1-1/4	8	10-1/2	R54832Z	T4-R54832Z	R54932Z
2	2	2	5-3/4	R88002A	T4-R88002A	R88102A
2	2	3	6-3/4	R88003A	T4-R88003A	R88103A
2	2	4	7-3/4	R88004A	T4-R88004A	R88104A
2	2	5	8-3/4	R88005A	T4-R88005A	R88105A
2	2	6	9-3/4	R88006A	T4-R88006A	R88106A
2	2	8	11-3/4	R88008A	T4-R88008A	R88108A
2	2	10	13-3/4	R88010A	T4-R88010A	R88110A
2	2	12	15-3/4	R88012A	T4-R88012A	R88112A



Multi-Flute Coarse Pitch Rougher - Center Cut

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 6 Flutes | 30° | Coarse Rougher

LEFT HAND COBALT ENDMILLS

LEFT HAND - 4 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
*	1/4	3/8	5/8	2-7/16	R56004	R56104
*	5/16	3/8	3/4	2-1/2	R56005	R56105
*	3/8	3/8	3/4	2-1/2	R56006	R56106
*	7/16	1/2	1-1/4	3-1/4	R56007	R56107
	1/2	1/2	1-1/4	3-1/4	R56008	R56108
	1/2	1/2	2	4	R56208	R56308
	1/2	1/2	3	5	R56408	R56508
	1/2	1/2	4	6	R56608	R56708
	1/2	1/2	5	7	R56608S	R56708S
	1/2	1/2	6	8	R56808	R56908
	1/2	1/2	8	10	R56808S	R56908S
	5/8	5/8	1-5/8	3-3/4	R56010	R56110
	5/8	5/8	2-1/2	4-5/8	R56210	R56310
	5/8	5/8	3	5-1/8	R56410	R56510
	5/8	5/8	4	6-1/8	R56610	R56710
	5/8	5/8	6	8-1/8	R56810	R56910
	3/4	3/4	1-5/8	3-7/8	R56012	R56112
	3/4	3/4	2-1/4	4-1/2	R56212S	R56312S
	3/4	3/4	3	5-1/4	R56412	R56512
	3/4	3/4	4	6-1/4	R56612	R56712
	3/4	3/4	5	7-1/4	R56612S	R56712S
	3/4	3/4	6	8-1/4	R56812	R56912
	3/4	3/4	8	10-1/4	R56812S	R56912S

*Available While Stock Lasts.

LEFT HAND - 6 Flute

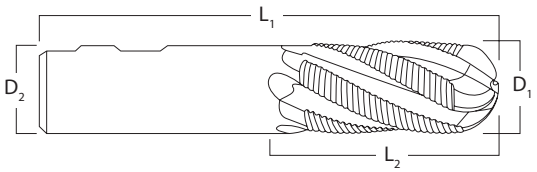
D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1-1/4	1-1/4	2	4-1/2	R56020X	R56120X
1-1/4	1-1/4	3	5-1/2	R56220X	R56320X
1-1/4	1-1/4	4	6-1/2	R56420X	R56520X
1-1/4	1-1/4	5	7-1/2	R56420SX	R56520SX
1-1/4	1-1/4	6	8-1/2	R56620X	R56720X
1-1/4	1-1/4	7	9-1/2	R56620SX	R56720SX
1-1/4	1-1/4	8	10-1/2	R56820X	R56920X
1-1/4	1-1/4	10	12-1/2	R56820SX	R56920SX
1-1/2	1-1/4	2	4-1/2	R56024X	R56124X
1-1/2	1-1/4	3	5-1/2	R56224X	R56324X
1-1/2	1-1/4	4	6-1/2	R56424X	R56524X
1-1/2	1-1/4	5	7-1/2	R56424SX	R56524SX
1-1/2	1-1/4	6	8-1/2	R56624X	R56724X
1-1/2	1-1/4	7	9-1/2	R56624SX	R56724SX
1-1/2	1-1/4	8	10-1/2	R56824X	R56924X
1-1/2	1-1/4	10	12-1/2	R56824SX	R56924SX
2	1-1/4	2	4-1/2	R56032X	R56132X
2	1-1/4	3	5-1/2	R56232X	R56332X
2	1-1/4	4	6-1/2	R56432X	R56532X
2	1-1/4	6	8-1/2	R56632X	R56732X
2	1-1/4	8	10-1/2	R56832X	R56932X
2	2	2	5-3/4	R68F02A	R68G02A
2	2	3	6-3/4	R68F03A	R68G03A
2	2	4	7-3/4	R68F04A	R68G04A
2	2	5	8-3/4	R68F05A	R68G05A
2	2	6	9-3/4	R68F06A	R68G06A
2	2	8	11-3/4	R68F08A	R68G08A

LEFT HAND - 5 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
7/8	7/8	1-7/8	4-1/8	R56014Y	R56114Y
7/8	7/8	2-1/2	4-3/4	R56214Y	R56314Y
7/8	7/8	5	7-1/4	R56614Y	R56714Y
7/8	7/8	6	8-1/4	R56614SY	R56714SY
1	1	2	4-1/2	R56016Y	R56116Y
1	1	3	5-1/2	R56216Y	R56316Y
1	1	4	6-1/2	R56416Y	R56516Y
1	1	5	7-1/2	R56416SY	R56516SY
1	1	6	8-1/2	R56616Y	R56716Y
1	1	7	9-1/2	R56616SY	R56716SY
1	1	8	10-1/2	R56816Y	R56916Y
1	1	10	12-1/2	R56816SY	R56916SY

LEFT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
2	1-1/4	2	4-1/2	R56032Z	R56132Z
2	1-1/4	3	5-1/2	R56232Z	R56332Z
2	1-1/4	4	6-1/2	R56432Z	R56532Z
2	1-1/4	6	8-1/2	R56632Z	R56732Z
2	1-1/4	8	10-1/2	R56832Z	R56932Z
2	2	2	5-3/4	R88F02A	R88G02A
2	2	3	6-3/4	R88F03A	R88G03A
2	2	4	7-3/4	R88F04A	R88G04A
2	2	5	8-3/4	R88F05A	R88G05A
2	2	6	9-3/4	R88F06A	R88G06A
2	2	8	11-3/4	R88F08A	R88G08A
2	2	10	13-3/4	R88F10A	R88G10A
2	2	12	15-3/4	R88F12A	R88G12A



4 Flute Fine Pitch Rougher

- General Purpose
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 4 Flutes | 30° | Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND COBALT ENDMILLS

RIGHT HAND - 4 Flute

	D1	D2	L2	L1		Exxtral Plus®	
	Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
*	1/4	3/8	5/8	2-7/16	F54004	T4-F54004	F54104
*	1/4	3/8	1-1/4	3-1/16	F54204	T4-F54204	F54304
*	1/4	3/8	1-3/4	3-9/16	F54404	T4-F54404	F54504
*	1/4	3/8	2	3-3/4	F54604	T4-F54604	F54704
*	1/4	3/8	2-1/2	4-1/4	F54804	T4-F54804	F54904
*	5/16	3/8	3/4	2-1/2	F54005	T4-F54005	F54105
*	5/16	3/8	1-3/8	3-1/8	F54205	T4-F54205	F54305
*	5/16	3/8	2	3-3/4	F54405	T4-F54405	F54505
*	5/16	3/8	2-1/2	4-1/4	F54605	T4-F54605	F54705
*	5/16	3/8	3	4-3/4	F54805	T4-F54805	F54905
*	3/8	3/8	3/8	2-5/32	FS54006	T4-FS54006	FS54106
*	3/8	3/8	3/4	2-1/2	F54006	T4-F54006	F54106
*	3/8	3/8	1-1/2	3-1/4	F54206	T4-F54206	F54306
*	3/8	3/8	2-1/2	4-1/4	F54406	T4-F54406	F54506
*	3/8	3/8	3	4-3/4	F54606	T4-F54606	F54706
*	3/8	3/8	4	5-3/4	F54806	T4-F54806	F54906
*	7/16	1/2	1-1/4	3-1/4	F54007	T4-F54007	F54107
*	7/16	1/2	1-3/4	3-3/4	F54207	T4-F54207	F54307
	1/2	1/2	1/2	2-1/2	FS54008	T4-FS54008	FS54108
	1/2	1/2	1-1/4	3-1/4	F54008	T4-F54008	F54108
	1/2	1/2	2	4	F54208	T4-F54208	F54308
	1/2	1/2	3	5	F54408	T4-F54408	F54508
	1/2	1/2	4	6	F54608	T4-F54608	F54708
	1/2	1/2	5	7	F54608S	T4-F54608S	F54708S
	1/2	1/2	6	8	F54808	T4-F54808	F54908
	1/2	1/2	8	10	F54808S	T4-F54808S	F54908S
*	9/16	1/2	1-3/8	3-3/8	F54009	T4-F54009	F54109
	5/8	5/8	1-5/8	3-3/4	F54010	T4-F54010	F54110
	5/8	5/8	2-1/2	4-5/8	F54210	T4-F54210	F54310
	5/8	5/8	3	5-1/8	F54410	T4-F54410	F54510
	5/8	5/8	4	6-1/8	F54610	T4-F54610	F54710
	5/8	5/8	6	8-1/8	F54810	T4-F54810	F54910
	3/4	3/4	3/4	2-7/8	FS54012	T4-FS54012	FS54112
	3/4	3/4	1-5/8	3-7/8	F54012	T4-F54012	F54112
	3/4	5/8	1-5/8	3-3/4	F54012.1	T4-F54012.1	F54112.1
	3/4	3/4	2	4-1/4	F54212	T4-F54212	F54312
	3/4	3/4	2-1/4	4-1/2	F54212S	T4-F54212S	F54312S
	3/4	3/4	3	5-1/4	F54412	T4-F54412	F54512
	3/4	3/4	4	6-1/4	F54612	T4-F54612	F54712
	3/4	3/4	5	7-1/4	F54612S	T4-F54612S	F54712S
	3/4	3/4	6	8-1/4	F54812	T4-F54812	F54912
	3/4	3/4	8	10-1/4	F54812S	T4-F54812S	F54912S

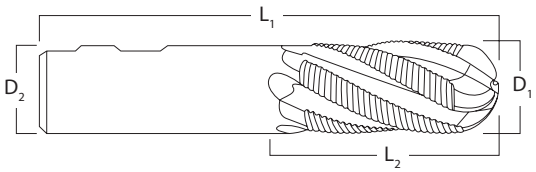
*Available While Stock Lasts.

LEFT HAND COBALT ENDMILLS

LEFT HAND - 4 Flute

D1	D2	L2	L1	Part #	Part #
Cutting Dia	Shank Dia	LOC	OAL	Square	Ball
1/2	1/2	1-1/4	3-1/4	F56008	F56108
1/2	1/2	2	4	F56208	F56308
1/2	1/2	3	5	F56408	F56508
1/2	1/2	4	6	F56608	F56708
1/2	1/2	5	7	F56608S	F56708S
1/2	1/2	6	8	F56808	F56908
1/2	1/2	8	10	F56808S	F56908S
5/8	5/8	1-5/8	3-3/4	F56010	F56110
5/8	5/8	2-1/2	4-5/8	F56210	F56310
5/8	5/8	3	5-1/8	F56410	F56510

D1	D2	L2	L1	Part #	Part #
Cutting Dia	Shank Dia	LOC	OAL	Square	Ball
5/8	5/8	4	6-1/8	F56610	F56710
5/8	5/8	6	8-1/8	F56810	F56910
3/4	3/4	1-5/8	3-7/8	F56012	F56112
3/4	3/4	2-1/4	4-1/2	F56212S	F56312S
3/4	3/4	3	5-1/4	F56412	F56512
3/4	3/4	4	6-1/4	F56612	F56712
3/4	3/4	5	7-1/4	F56612S	F56712S
3/4	3/4	6	8-1/4	F56812	F56912
3/4	3/4	8	10-1/4	F56812S	F56912S



5 Flute Fine Pitch Rougher

- General Purpose
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

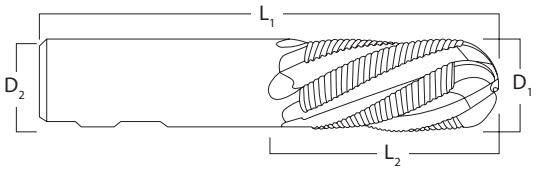
Cobalt (M42) | 5 Flutes | 30° | Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND COBALT ENDMILLS

RIGHT HAND - 5 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
7/8	3/4	1-7/8	4-1/8	F54014.BY	T4-F54014.BY	F54114.BY
7/8	7/8	7/8	3-1/8	FS54014Y	T4-FS54014Y	FS54114Y
7/8	7/8	1-7/8	4-1/8	F54014Y	T4-F54014Y	F54114Y
7/8	7/8	2-1/2	4-3/4	F54214Y	T4-F54214Y	F54314Y
7/8	7/8	3-1/2	5-3/4	F54414Y	T4-F54414Y	F54514Y
7/8	7/8	5	7-1/4	F54614Y	T4-F54614Y	F54714Y
7/8	7/8	6	8-1/4	F54614SY	T4-F54614SY	F54714SY
1	3/4	2	4-1/4	F54016.BY	T4-F54016.BY	F54116.BY
1	1	1	3-1/2	FS54016Y	T4-FS54016Y	FS54116Y
1	1	2	4-1/2	F54016Y	T4-F54016Y	F54116Y
1	1	3	5-1/2	F54216Y	T4-F54216Y	F54316Y
1	1	4	6-1/2	F54416Y	T4-F54416Y	F54516Y
1	1	5	7-1/2	F54416SY	T4-F54416SY	F54516SY
1	1	6	8-1/2	F54616Y	T4-F54616Y	F54716Y
1	1	7	9-1/2	F54616SY	T4-F54616SY	F54716SY
1	1	8	10-1/2	F54816Y	T4-F54816Y	F54916Y
1	1	10	12-1/2	F54816SY	T4-F54816SY	F54916SY



5 Flute Fine Pitch Rougher

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

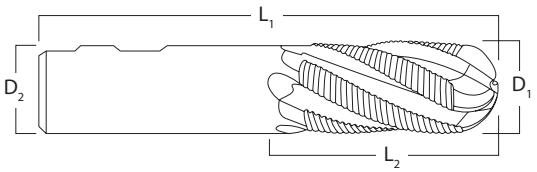
P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 5 Flutes | 30° | Fine Rough

LEFT HAND COBALT ENDMILLS

LEFT HAND - 5 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1	1	2	4-1/2	F56016Y	F56116Y
1	1	3	5-1/2	F56216Y	F56316Y
1	1	4	6-1/2	F56416Y	F56516Y
1	1	6	8-1/2	F56616Y	F56716Y
1	1	8	10-1/2	F56816Y	F56916Y
1	1	10	12-1/2	F56816SY	F56916SY



6 Flute Fine Pitch Rougher

- General Purpose
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 6 Flutes | 30° | Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND COBALT ENDMILLS

RIGHT HAND - 6 Flute

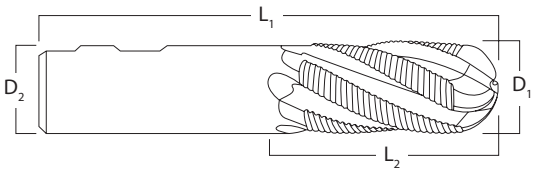
D1	D2	L2	L1		Exxtral Plus®	
Cutting Dia	Shank Dia	LOC	OAL	Uncoated	Square Coated	Ball End Uncoated
1-1/8	3/4	2	4-1/4	F54018.BX	T4-F54018.BX	F54118.BX
1-1/8	1	2	4-1/2	F54018X	T4-F54018X	F54118X
1-1/4	3/4	2	4-1/4	F54020.BX	T4-F54020.BX	F54120.BX
1-1/4	1-1/4	2	4-1/2	F54020X	T4-F54020X	F54120X
1-1/4	1-1/4	3	5-1/2	F54220X	T4-F54220X	F54320X
1-1/4	1-1/4	4	6-1/2	F54420X	T4-F54420X	F54520X
1-1/4	1-1/4	5	7-1/2	F54420SX	T4-F54420SX	F54520SX
1-1/4	1-1/4	6	8-1/2	F54620X	T4-F54620X	F54720X
1-1/4	1-1/4	7	9-1/2	F54620SX	T4-F54620SX	F54720SX
1-1/4	1-1/4	8	10-1/2	F54820X	T4-F54820X	F54920X
1-1/4	1-1/4	10	12-1/2	F54820SX	T4-F54820SX	F54920SX
1-3/8	3/4	2	4-1/4	F54022.BX	T4-F54022.BX	F54122.BX
1-1/2	3/4	2	4-1/4	F54024.BX	T4-F54024.BX	F54124.BX
1-1/2	1-1/4	2	4-1/2	F54024X	T4-F54024X	F54124X
1-1/2	1-1/4	3	5-1/2	F54224X	T4-F54224X	F54324X
1-1/2	1-1/4	4	6-1/2	F54424X	T4-F54424X	F54524X
1-1/2	1-1/4	5	7-1/2	F54424SX	T4-F54424SX	F54524SX
1-1/2	1-1/4	6	8-1/2	F54624X	T4-F54624X	F54724X
1-1/2	1-1/4	7	9-1/2	F54624SX	T4-F54624SX	F54724SX
1-1/2	1-1/4	8	10-1/2	F54824X	T4-F54824X	F54924X
1-1/2	1-1/4	10	12-1/2	F54824SX	T4-F54824SX	F54924SX
1-3/4	3/4	2	4-1/4	F54028.BX	T4-F54028.BX	F54128.BX
1-3/4	1-1/4	2	4-1/2	F54028X	T4-F54028X	F54128X
1-3/4	1-1/4	4-1/2	7	F54428X	T4-F54428X	F54528X
2	1-1/4	2	4-1/2	F54032X	T4-F54032X	F54132X
2	1-1/4	3	5-1/2	F54232X	T4-F54232X	F54332X
2	1-1/4	4	6-1/2	F54432X	T4-F54432X	F54532X
2	1-1/4	6	8-1/2	F54632X	T4-F54632X	F54732X
2	1-1/4	8	10-1/2	F54832X	T4-F54832X	F54932X
2	2	2	5-3/4	F68002A	T4-F68002A	F68102A
2	2	3	6-3/4	F68003A	T4-F68003A	F68103A
2	2	4	7-3/4	F68004A	T4-F68004A	F68104A
2	2	5	8-3/4	F68005A	T4-F68005A	F68105A
2	2	6	9-3/4	F68006A	T4-F68006A	F68106A
2	2	8	11-3/4	F68008A	T4-F68008A	F68108A
2	2	10	13-3/4	F68010A	T4-F68010A	F68110A
2	2	12	15-3/4	F68012A	T4-F68012A	F68112A

LEFT HAND COBALT ENDMILLS

LEFT HAND - 6 Flute

D1	D2	L2	L1	Part #	Part #
Cutting Dia	Shank Dia	LOC	OAL	Square	Ball
1-1/4	1-1/4	2	4-1/2	F56020X	F56120X
1-1/4	1-1/4	3	5-1/2	F56220X	F56320X
1-1/4	1-1/4	4	6-1/2	F56420X	F56520X
1-1/4	1-1/4	5	7-1/2	F56420SX	F56520SX
1-1/4	1-1/4	6	8-1/2	F56620X	F56720X
1-1/4	1-1/4	7	9-1/2	F56620SX	F56720SX
1-1/4	1-1/4	8	10-1/2	F56820X	F56920X
1-1/4	1-1/4	10	12-1/2	F56820SX	F56920SX
1-1/2	1-1/4	2	4-1/2	F56024X	F56124X
1-1/2	1-1/4	3	5-1/2	F56224X	F56324X
1-1/2	1-1/4	4	6-1/2	F56424X	F56524X
1-1/2	1-1/4	5	7-1/2	F56424SX	F56524SX

D1	D2	L2	L1	Part #	Part #
Cutting Dia	Shank Dia	LOC	OAL	Square	Ball
1-1/2	1-1/4	6	8-1/2	F56624X	F56724X
1-1/2	1-1/4	7	9-1/2	F56624SX	F56724SX
1-1/2	1-1/4	8	10-1/2	F56824X	F56924X
1-1/2	1-1/4	10	12-1/2	F56824SX	F56924SX
2	1-1/4	2	4-1/2	F56032X	F56132X
2	1-1/4	3	5-1/2	F56232X	F56332X
2	1-1/4	4	6-1/2	F56432X	F56532X
2	1-1/4	6	8-1/2	F56632X	F56732X
2	1-1/4	8	10-1/2	F56832X	F56932X
2	2	2	5-3/4	F68F02A	F68G02A
2	2	4	7-3/4	F68F04A	F68G04A
2	2	6	9-3/4	F68F06A	F68G06A



8 Flute Fine Pitch Rougher

- General Purpose
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

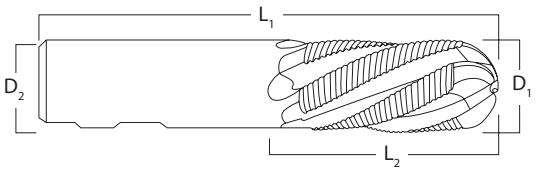
Cobalt (M42) | 8 Flutes | 30° | Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

RIGHT HAND COBALT ENDMILLS

RIGHT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated	Ball End Uncoated
2	1-1/4	2	4-1/2	F54032Z	T4-F54032Z	F54132Z
2	1-1/4	3	5-1/2	F54232Z	T4-F54232Z	F54332Z
2	1-1/4	4	6-1/2	F54432Z	T4-F54432Z	F54532Z
2	1-1/4	6	8-1/2	F54632Z	T4-F54632Z	F54732Z
2	1-1/4	8	10-1/2	F54832Z	T4-F54832Z	F54932Z
2	2	2	5-3/4	F88002A	T4-F88002A	F88102A
2	2	3	6-3/4	F88003A	T4-F88003A	F88103A
2	2	4	7-3/4	F88004A	T4-F88004A	F88104A
2	2	5	8-3/4	F88005A	T4-F88005A	F88105A
2	2	6	9-3/4	F88006A	T4-F88006A	F88106A
2	2	8	11-3/4	F88008A	T4-F88008A	F88108A
2	2	10	13-3/4	F88010A	T4-F88010A	F88110A
2	2	12	15-3/4	F88012A	T4-F88012A	F88112A



8 Flute Fine Pitch Rougher

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 8 Flutes | 30° | Fine Rough

Exxtral Plus® **Exxtral Plus®** is ideal for high-performance machining of hard materials.

LEFT HAND COBALT ENDMILLS

LEFT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
2	1-1/4	2	4-1/2	F56032Z	F56132Z
2	1-1/4	3	5-1/2	F56232Z	F56332Z
2	1-1/4	4	6-1/2	F56432Z	F56532Z
2	1-1/4	6	8-1/2	F56632Z	F56732Z
2	1-1/4	8	10-1/2	F56832Z	F56932Z
2	2	2	5-3/4	F88F02A	F88G02A
2	2	4	7-3/4	F88F04A	F88G04A
2	2	6	9-3/4	F88F06A	F88G06A

Curve Cut™

ROUGH AND FINISH ENDMILLS

TITANIUM, STAINLESS STEELS ...AND THEIR ALLOYS

Curve Cut M-MILLED

• Heavy Roughing Applications

Curve Cut G-GROUND

• Rough & Finish

Benefits

- Efficient chip evacuation
- Smooth finish on the part
- Longer tool life
- Easy to re-sharp
- Available in 4, 6, 8 Flutes (Cobalt)
- Exxtral Plus® coating recommended for optimum performance

PCT™

PRECISION CUTTING TOOLS, INC.

COBALT PAGE 250

Multi-Flute CurveCut™ Ground

- Exxtral Plus® recommended
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 4, 6, 8 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

Speeds and Feeds: Refer to Page 250.

RIGHT HAND - 4 Flute

Left-Hand Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
3/4	3/4	1-5/8	3-7/8	CC54012	T4-CC54012
3/4	3/4	2-1/4	4-1/2	CC54212S	T4-CC54212S
3/4	3/4	3	5-1/4	CC54412	T4-CC54412
3/4	3/4	4	6-1/4	CC54612	T4-CC54612
1	1	2	4-1/2	CC54016	T4-CC54016
1	1	3	5-1/2	CC54216	T4-CC54216
1	1	4	6-1/2	CC54416	T4-CC54416
1	1	6	8-1/2	CC54616	T4-CC54616
1-1/4	1-1/4	2	4-1/2	CC54020	T4-CC54020
1-1/4	1-1/4	3	5-1/2	CC54220	T4-CC54220
1-1/4	1-1/4	4	6-1/2	CC54420	T4-CC54420
1-1/2	1-1/4	2	4-1/2	CC54024	T4-CC54024
1-1/2	1-1/4	3	5-1/2	CC54224	T4-CC54224
1-1/2	1-1/4	4	6-1/2	CC54424	T4-CC54424

RIGHT HAND - 6 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
1	1	2	4-1/2	CC54016X	T4-CC54016X
1	1	3	5-1/2	CC54216X	T4-CC54216X
1	1	4	6-1/2	CC54416X	T4-CC54416X
1-1/4	1-1/4	2	4-1/2	CC54020X	T4-CC54020X
1-1/4	1-1/4	3	5-1/2	CC54220X	T4-CC54220X
1-1/4	1-1/4	4	6-1/2	CC54420X	T4-CC54420X
1-1/4	1-1/4	6	8-1/2	CC54620X	T4-CC54620X
1-1/2	1-1/4	2	4-1/2	CC54024X	T4-CC54024X
1-1/2	1-1/4	3	5-1/2	CC54224X	T4-CC54224X
1-1/2	1-1/4	4	6-1/2	CC54424X	T4-CC54424X
1-1/2	1-1/4	6	8-1/2	CC54624X	T4-CC54624X
2	2	2	5-3/4	CC68002A	T4-CC68002A
2	2	3	6-3/4	CC68003A	T4-CC68003A
2	2	4	7-3/4	CC68004A	T4-CC68004A
2	2	6	9-3/4	CC68006A	T4-CC68006A
2	2	8	11-3/4	CC68008A	T4-CC68008A

RIGHT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
2	2	3	6-3/4	CC88003A	T4-CC88003A
2	2	4	7-3/4	CC88004A	T4-CC88004A
2	2	6	9-3/4	CC88006A	T4-CC88006A

Starting Recommended Speeds & Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth (CPT) 3/4"	1"	1-1/4"	1-1/2"	2"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	40-55	75-105	.0028	.0045	.0050	.0060	.0065	1.5xD	.375xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	40-55	75-105	.0042	.0050	.0050	.0053	.0065	1.5xD	.375xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316	35-45	85-100	.0033	.0045	.0045	.0053	.0060	1.5xD	.375xD	1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	55-70	55-100	.0040	.0045	.0048	.0050	.0065	1.5xD	.375xD	1xD

For high-performance milling we recommend Exxtral Plus® Coating

Multi-Flute CurveCut™ Milled

- Exxtral Plus® recommended
- Ideal for Titanium & Stainless Steel Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

Cobalt (M42) | 4, 6, 8 Flutes | 35° | Exxtral Plus®

Exxtral Plus® is ideal for high-performance machining of hard materials.

Speeds and Feeds: Refer to Page 251.

RIGHT HAND - 4 Flute

Left-Hand Available Upon Request

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
3/4	3/4	1-5/8	3-7/8	CCM-54012	T4-CCM-54012
3/4	3/4	2-1/4	4-1/2	CCM-54212S	T4-CCM-54212S
3/4	3/4	3	5-1/4	CCM-54412	T4-CCM-54412
3/4	3/4	4	6-1/4	CCM-54612	T4-CCM-54612
1	1	2	4-1/2	CCM-54016	T4-CCM-54016
1	1	3	5-1/2	CCM-54216	T4-CCM-54216
1	1	4	6-1/2	CCM-54416	T4-CCM-54416
1	1	6	8-1/2	CCM-54616	T4-CCM-54616
1-1/4	1-1/4	2	4-1/2	CCM-54020	T4-CCM-54020
1-1/4	1-1/4	3	5-1/2	CCM-54220	T4-CCM-54220
1-1/4	1-1/4	4	6-1/2	CCM-54420	T4-CCM-54420
1-1/2	1-1/4	2	4-1/2	CCM-54024	T4-CCM-54024
1-1/2	1-1/4	3	5-1/2	CCM-54224	T4-CCM-54224
1-1/2	1-1/4	4	6-1/2	CCM-54424	T4-CCM-54424

RIGHT HAND - 6 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
1	1	2	4-1/2	CCM-54016X	T4-CCM-54016X
1	1	3	5-1/2	CCM-54216X	T4-CCM-54216X
1	1	4	6-1/2	CCM-54416X	T4-CCM-54416X
1-1/4	1-1/4	2	4-1/2	CCM-54020X	T4-CCM-54020X
1-1/4	1-1/4	3	5-1/2	CCM-54220X	T4-CCM-54220X
1-1/4	1-1/4	4	6-1/2	CCM-54420X	T4-CCM-54420X
1-1/4	1-1/4	6	8-1/2	CCM-54620X	T4-CCM-54620X
1-1/2	1-1/4	2	4-1/2	CCM-54024X	T4-CCM-54024X
1-1/2	1-1/4	3	5-1/2	CCM-54224X	T4-CCM-54224X
1-1/2	1-1/4	4	6-1/2	CCM-54424X	T4-CCM-54424X
1-1/2	1-1/4	6	8-1/2	CCM-54624X	T4-CCM-54624X
2	2	2	5-3/4	CCM-68002A	T4-CCM-68002A
2	2	3	6-3/4	CCM-68003A	T4-CCM-68003A
2	2	4	7-3/4	CCM-68004A	T4-CCM-68004A
2	2	6	9-3/4	CCM-68006A	T4-CCM-68006A
2	2	8	11-3/4	CCM-68008A	T4-CCM-68008A

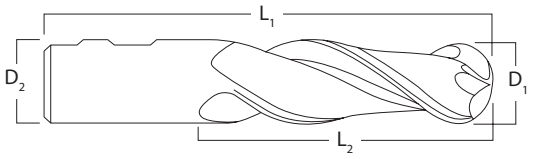
RIGHT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Uncoated	Exxtral Plus® Square Coated
2	2	3	6-3/4	CCM-88003A	T4-CCM-88003A
2	2	4	7-3/4	CCM-88004A	T4-CCM-88004A
2	2	6	9-3/4	CCM-88006A	T4-CCM-88006A

Starting Recommended Speeds & Feeds

	Material	Milling SFM (Vc) Uncoated Min-Max	Milling SFM (Vc) Coated Min-Max	Chipload Per Tooth (CPT) 3/4"	1"	1-1/4"	1-1/2"	2"	Profiling Radial (ADC)	Profiling Radial (RDC)	Slotting Axial (ADC)
P 5	Ferritic, Martensitic & PH Stainless Steels - 400's, PH Types (≤35 HRc)	40-55	75-105	.0028	.0045	.0050	.0060	.0065	1.5xD	.375xD	1xD
M 1	Austenitic Stainless Steel - Inox, 200 Series, 300 Series	40-55	75-105	.0042	.0050	.0050	.0053	.0065	1.5xD	.375xD	1xD
M 2	Austenitic Stainless Steel & Cast Stainless Steel - 310, 314, 316	35-45	85-100	.0033	.0045	.0045	.0053	.0060	1.5xD	.375xD	1xD
S 4	Titanium Alloys - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo	55-70	55-100	.0040	.0045	.0048	.0050	.0065	1.5xD	.375xD	1xD

For high-performance milling we recommend Exxtral Plus® Coating



2 Flute Endmill - Center Cut

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

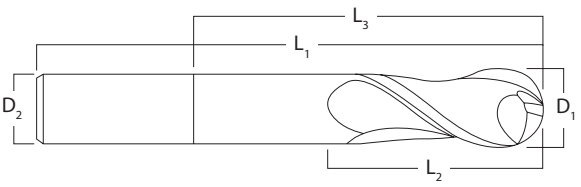
HSS (M7)	2 Flutes	30°

RIGHT HAND - 2 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
	1/4	3/8	1/2	2-5/16	21004	21104
	1/4	3/8	1	2-13/16	21204	21304
	1/4	3/8	1-1/2	3-5/16	21404	21504
	1/4	3/8	2	3-3/4	21604	21704
	5/16	3/8	9/16	2-5/16	21005	21105
	5/16	3/8	1	2-3/4	21205	21305
	5/16	3/8	1-1/2	3-1/4	21405	21505
	5/16	3/8	2	3-3/4	21605	21705
	3/8	3/8	9/16	2-5/16	21006	21106
	3/8	3/8	1	2-3/4	21206	21306
	3/8	3/8	1-1/2	3-1/4	21406	21506
	3/8	3/8	2-1/2	4-1/4	21606	21706
*	7/16	3/8	13/16	2-1/2	21007	21107
	1/2	1/2	1	3	21008	21108
	1/2	3/8	13/16	2-1/2	21008.6	21108.6
	1/2	1/2	1-1/2	3-1/2	21208	21308
	1/2	1/2	2	4	21408	21508
	1/2	1/2	3	5	21608	21708
	1/2	1/2	4	6	21608S	21708S
*	9/16	1/2	1-1/8	3-1/8	21009	21109
	5/8	5/8	1-5/16	3-7/16	21010	21110
	5/8	1/2	1-1/8	3-1/8	21010.8	21110.8
	5/8	5/8	1-5/8	3-3/4	21210	21310
	5/8	5/8	2	4-1/8	21410	21510
	5/8	5/8	3	5-1/8	21610	21710
*	11/16	5/8	1-5/16	3-7/16	21011	21111
*	11/16	1/2	1-5/16	3-5/16	21011.8	21111.8
	3/4	3/4	1-5/16	3-9/16	21012	21112
	3/4	5/8	1-5/16	3-7/16	21012.1	21112.1
	3/4	1/2	1-5/16	3-5/16	21012.8	21112.8
	3/4	3/4	1-3/4	4	21212	21312
	3/4	3/4	2-1/4	4-1/2	21412	21512
	3/4	3/4	3	5-1/4	21612	21712
*	13/16	5/8	1-1/2	3-5/8	21013.1	21113.1
	7/8	7/8	1-1/2	3-3/4	21014	21114
	7/8	5/8	1-1/2	3-5/8	21014.1	21114.1
	7/8	7/8	2	4-1/4	21214	21314
	7/8	7/8	2-1/2	4-3/4	21414	21514

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
	7/8	7/8	3	5-1/4	21614	21714
*	15/16	5/8	1-1/2	3-5/8	21015.1	21115.1
	1	1	1-5/8	4-1/8	21016	21116
	1	5/8	1-1/2	3-5/8	21016.1	21116.1
	1	1	2-1/4	4-3/4	21216	21316
	1	1	3	5-1/2	21416	21516
	1	1	4	6-1/2	21616	21716
	1-1/8	1	1-5/8	4-1/8	21018	21118
	1-1/8	1	2-1/4	4-3/4	21218	21318
	1-1/8	1	3	5-1/2	21418	21518
	1-1/4	1-1/4	1-5/8	4-1/8	21020	21120
	1-1/4	1-1/4	2-1/4	4-3/4	21220	21320
	1-1/4	1-1/4	3	5-1/2	21420	21520
	1-1/4	1-1/4	4	6-1/2	21620	21720
	1-1/4	1-1/4	6	8-1/2	21620S	21720S
	1-1/4	1-1/4	8	10-1/2	21820	21920
	1-3/8	1-1/4	1-5/8	4-1/8	21022	21122
	1-3/8	1-1/4	2-1/4	4-3/4	21222	21322
	1-3/8	1-1/4	3	5-1/2	21422	21522
	1-1/2	1-1/4	1-5/8	4-1/8	21024	21124
	1-1/2	1-1/4	2-1/4	4-3/4	21224	21324
	1-1/2	1-1/4	3	5-1/2	21424	21524
	1-1/2	1-1/4	4	6-1/2	21624	21724
	1-1/2	1-1/4	6	8-1/2	21624S	21724S
	1-1/2	1-1/4	8	10-1/2	21824	21924
	1-5/8	1-1/4	1-5/8	4-1/8	21026	21126
	1-5/8	1-1/4	2-1/4	4-3/4	21226	21326
	1-5/8	1-1/4	3	5-1/2	21426	21526
	1-3/4	1-1/4	1-5/8	4-1/8	21028	21128
	1-3/4	1-1/4	2-1/4	4-3/4	21228	21328
	1-3/4	1-1/4	3	5-1/2	21428	21528
	1-7/8	1-1/4	1-5/8	4-1/8	21030	21130
	1-7/8	1-1/4	3	5-1/2	21430	21530
	2	1-1/4	1-5/8	4-1/8	21032	21132
	2	1-1/4	2-1/4	4-3/4	21232	21332
	2	1-1/4	3	5-1/2	21432	21532
	2	1-1/4	4	6-1/2	21632	21732

*Available While Stock Lasts.
2-1/2" & 3" Diameters Available Upon Request



2 Flute Endmill - Center Cut

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

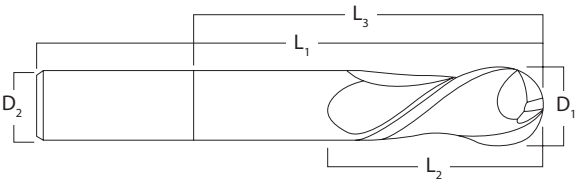
P M K S **Material Code**: Refer to Page 261.

HSS (M7) | 2 Flutes | 30°

RIGHT HAND HSS ENDMILLS

RIGHT HAND - Extended Neck - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	1-1/2	3-1/16	29A04	29B04
5/16	3/8	3/4	1-3/4	3-5/16	29A05	29B05
3/8	3/8	3/4	1-3/4	3-5/16	29A06	29B06
1/2	1/2	1	2-1/4	4	29A08	29B08
5/8	5/8	1-3/8	2-3/4	4-5/8	29A10	29B10
3/4	3/4	1-5/8	3-1/8	5-3/8	29A12	29B12
7/8	7/8	2	4	6	29A14	29B14
1	1	2-1/2	5	7-1/4	29A16	29B16
1-1/4	1-1/4	3	5	7-1/4	29A20	29B20



2 Flute Endmill - Center Cut

- General Purpose
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

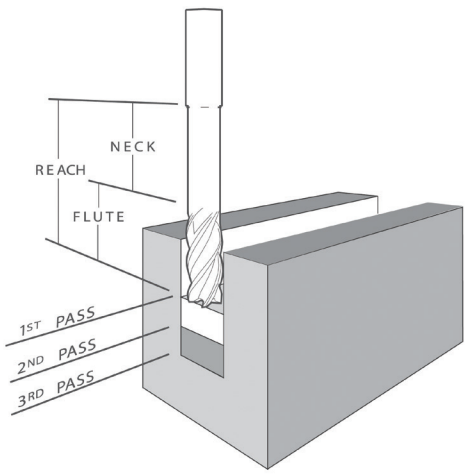
P M K S **Material Code**: Refer to Page 261.

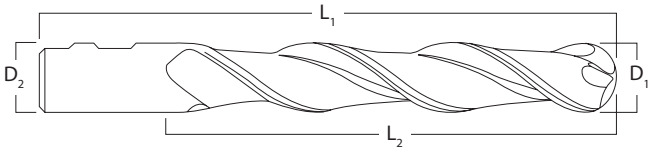
HSS (M7) | 2 Flutes | 30°

LEFT HAND HSS ENDMILLS

LEFT HAND - Extended Neck - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	1-1/2	3-1/16	28A04	28B04
5/16	3/8	3/4	1-3/4	3-5/16	28A05	28B05
3/8	3/8	3/4	1-3/4	3-5/16	28A06	28B06
1/2	1/2	1	2-1/4	4	28A08	28B08
5/8	5/8	1-3/8	2-3/4	4-5/8	28A10	28B10
3/4	3/4	1-5/8	3-1/8	5-3/8	28A12	28B12
7/8	7/8	2	4	6	28A14	28B14
1	1	2-1/2	5	7-1/4	28A16	28B16
1-1/4	1-1/4	3	5	7-1/4	28A20	28B20





2 Flute Endmill - Center Cut

- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

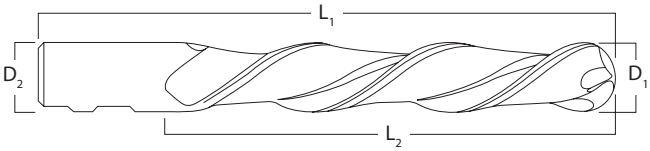
HSS (M7) | 2 Flutes | 37°

RIGHT HAND HSS ENDMILLS

RIGHT HAND - 2 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
*	1/8	3/8	3/8	2-5/16	23002	23102
*	3/16	3/8	1/2	2-3/8	23003	23103
	1/4	3/8	5/8	2-7/16	23004	23104
	1/4	3/8	1-1/4	3-1/16	23204	23304
	1/4	3/8	1-3/4	3-9/16	23404	23504
	5/16	3/8	3/4	2-1/2	23005	23105
	5/16	3/8	1-3/8	3-1/8	23205	23305
	5/16	3/8	2	3-3/4	23405	23505
	3/8	3/8	3/4	2-1/2	23006	23106
	3/8	3/8	1-1/2	3-1/4	23206	23306
	3/8	3/8	2-1/2	4-1/4	23406	23506
	7/16	3/8	1	2-11/16	23007	23107
	7/16	1/2	1-3/4	3-3/4	23207	23307
	7/16	1/2	2-3/4	4-3/4	23407	23507
	1/2	1/2	1-1/4	3-1/4	23008	23108
	1/2	1/2	2	4	23208	23308
	1/2	1/2	3	5	23408	23508
	1/2	1/2	4	6	23608	23708
	1/2	1/2	6	8	23608S	23708S
	1/2	1/2	8	10	23808	23908
	5/8	5/8	1-5/8	3-3/4	23010	23110
	5/8	5/8	2-1/2	4-5/8	23210	23310
	5/8	5/8	3	5-1/8	23410	23510
	5/8	5/8	4	6-1/8	23610	23710
	5/8	5/8	6	8-1/8	23610S	23710S
	5/8	5/8	8	10-1/8	23810	23910
	3/4	3/4	1-5/8	3-7/8	23012	23112
	3/4	3/4	2	4-1/4	23212	23312
	3/4	3/4	2-1/4	4-1/2	23212S	23312S
	3/4	3/4	3	5-1/4	23412	23512
	3/4	3/4	4	6-1/4	23612	23712
	3/4	3/4	6	8-1/4	23612S	23712S
	3/4	3/4	8	10-1/4	23812	23912
	7/8	7/8	1-7/8	4-1/8	23014	23114
	7/8	7/8	2-1/2	4-3/4	23214	23314
	7/8	7/8	3-1/2	5-3/4	23414	23514
	7/8	7/8	5	7-1/4	23614	23714
	7/8	7/8	7	9-1/4	23614S	23714S
	1	1	2	4-1/2	23016	23116
	1	1	3	5-1/2	23216	23316
	1	1	4	6-1/2	23416	23516
	1	1	5	7-1/2	23416S	23516S
	1	1	6	8-1/2	23616	23716
	1	1	7	9-1/2	23616S	23716S
	1	1	8	10-1/2	23816	23916
	1	1	10	12-1/2	23816S	23916S
	1-1/4	1-1/4	2	4-1/2	23020	23120
	1-1/4	1-1/4	3	5-1/2	23220	23320
	1-1/4	1-1/4	4	6-1/2	23420	23520
	1-1/4	1-1/4	5	7-1/2	23420S	23520S
	1-1/4	1-1/4	6	8-1/2	23620	23720
	1-1/4	1-1/4	7	9-1/2	23620S	23720S
	1-1/4	1-1/4	8	10-1/2	23820	23920
	1-1/4	1-1/4	10	12-1/2	23820S	23920S
	1-1/2	1-1/4	2	4-1/2	23024	23124
	1-1/2	1-1/4	3	5-1/2	23224	23324
	1-1/2	1-1/4	4	6-1/2	23424	23524
	1-1/2	1-1/4	5	7-1/2	23424S	23524S
	1-1/2	1-1/4	6	8-1/2	23624	23724
	1-1/2	1-1/4	7	9-1/2	23624S	23724S
	1-1/2	1-1/4	8	10-1/2	23824	23924
	1-3/4	1-1/4	2	4-1/2	23028	23128
	1-3/4	1-1/4	3	5-1/2	23228	23328
	1-3/4	1-1/4	4	6-1/2	23428	23528
	2	1-1/4	2	4-1/2	23032	23132
	2	1-1/4	3	5-1/2	23232	23332
	2	1-1/4	4	6-1/2	23432	23532
	2	1-1/4	5	7-1/2	23432S	23532S
	2	1-1/4	6	8-1/2	23632	23732
	2	1-1/4	7	9-1/2	23632S	23732S
	2	1-1/4	8	10-1/2	23832	23932
	2	2	2	5-3/4	27002A	27102A
	2	2	3	6-3/4	27003A	27103A
	2	2	4	7-3/4	27004A	27104A
	2	2	5	8-3/4	27005A	27105A
	2	2	6	9-3/4	27006A	27106A
	2	2	8	11-3/4	27008A	27108A
	2	2	10	13-3/4	27010A	27110A
	2	2	12	15-3/4	27012A	27112A

2-1/2" & 3" Diameters Available Upon Request
*Available While Stock Lasts.



2 Flute Endmill - Center Cut

- Ideal for Aluminum Alloys
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

HSS (M7) | 2 Flutes | 37°

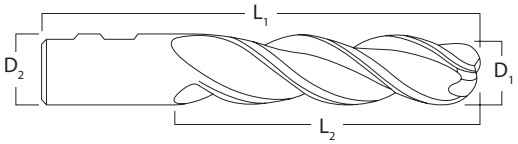
LEFT HAND HSS ENDMILLS

LEFT HAND - 2 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	2-7/16	25004	25104
1/4	3/8	1-1/4	3-1/16	25204	25304
1/4	3/8	1-3/4	3-9/16	25404	25504
5/16	3/8	3/4	2-1/2	25005	25105
5/16	3/8	1-3/8	3-1/8	25205	25305
5/16	3/8	2	3-3/4	25405	25505
3/8	3/8	3/4	2-1/2	25006	25106
3/8	3/8	1-1/2	3-1/4	25206	25306
3/8	3/8	2-1/2	4-1/4	25406	25506
7/16	3/8	1	2-11/16	25007	25107
7/16	1/2	1-3/4	3-3/4	25207	25307
7/16	1/2	2-3/4	4-3/4	25407	25507
1/2	1/2	1-1/4	3-1/4	25008	25108
1/2	1/2	2	4	25208	25308
1/2	1/2	3	5	25408	25508
1/2	1/2	4	6	25608	25708
1/2	1/2	6	8	25608S	25708S
1/2	1/2	8	10	25808	25908
5/8	5/8	1-5/8	3-3/4	25010	25110
5/8	5/8	2-1/2	4-5/8	25210	25310
5/8	5/8	3	5-1/8	25410	25510
5/8	5/8	4	6-1/8	25610	25710
5/8	5/8	6	8-1/8	25610S	25710S
5/8	5/8	8	10-1/8	25810	25910
3/4	3/4	1-5/8	3-7/8	25012	25112
3/4	3/4	2	4-1/4	25212	25312
3/4	3/4	2-1/4	4-1/2	25212S	25312S
3/4	3/4	3	5-1/4	25412	25512
3/4	3/4	4	6-1/4	25612	25712
3/4	3/4	6	8-1/4	25612S	25712S
3/4	3/4	8	10-1/4	25812	25912
7/8	7/8	1-7/8	4-1/8	25014	25114
7/8	7/8	2-1/2	4-3/4	25214	25314
7/8	7/8	3-1/2	5-3/4	25414	25514
7/8	7/8	5	7-1/4	25614	25714
7/8	7/8	7	9-1/4	25614S	25714S
1	1	2	4-1/2	25016	25116
1	1	3	5-1/2	25216	25316
1	1	4	6-1/2	25416	25516

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1	1	5	7-1/2	25416S	25516S
1	1	6	8-1/2	25616	25716
1	1	7	9-1/2	25616S	25716S
1	1	8	10-1/2	25816	25916
1	1	10	12-1/2	25816S	25916S
1-1/4	1-1/4	2	4-1/2	25020	25120
1-1/4	1-1/4	3	5-1/2	25220	25320
1-1/4	1-1/4	4	6-1/2	25420	25520
1-1/4	1-1/4	5	7-1/2	25420S	25520S
1-1/4	1-1/4	6	8-1/2	25620	25720
1-1/4	1-1/4	7	9-1/2	25620S	25720S
1-1/4	1-1/4	8	10-1/2	25820	25920
1-1/4	1-1/4	10	12-1/2	25820S	25920S
1-1/2	1-1/4	2	4-1/2	25024	25124
1-1/2	1-1/4	3	5-1/2	25224	25324
1-1/2	1-1/4	4	6-1/2	25424	25524
1-1/2	1-1/4	5	7-1/2	25424S	25524S
1-1/2	1-1/4	6	8-1/2	25624	25724
1-1/2	1-1/4	7	9-1/2	25624S	25724S
1-1/2	1-1/4	8	10-1/2	25824	25924
1-3/4	1-1/4	2	4-1/2	25028	25128
1-3/4	1-1/4	3	5-1/2	25228	25328
1-3/4	1-1/4	4	6-1/2	25428	25528
2	1-1/4	2	4-1/2	25032	25132
2	1-1/4	3	5-1/2	25232	25332
2	1-1/4	4	6-1/2	25432	25532
2	1-1/4	5	7-1/2	25432S	25532S
2	1-1/4	6	8-1/2	25632	25732
2	1-1/4	7	9-1/2	25632S	25732S
2	1-1/4	8	10-1/2	25832	25932
2	2	2	5-3/4	27F02A	27G02A
2	2	3	6-3/4	27F03A	27G03A
2	2	4	7-3/4	27F04A	27G04A
2	2	5	8-3/4	27F05A	27G05A
2	2	6	9-3/4	27F06A	27G06A
2	2	8	11-3/4	27F08A	27G08A
2	2	10	13-3/4	27F10A	27G10A
2	2	12	15-3/4	27F12A	27G12A

2-1/2" & 3" Diameters Available Upon Request



3 Flute Endmill - Center Cut

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

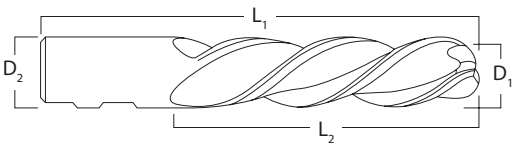
HSS (M7) | 3 Flutes | 37°

RIGHT HAND HSS ENDMILLS

RIGHT HAND - 3 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	2-7/16	33004	33104
1/4	3/8	1-1/4	3-1/16	33204	33304
1/4	3/8	1-3/4	3-9/16	33404	33504
5/16	3/8	3/4	2-1/2	33005	33105
5/16	3/8	1-3/8	3-1/8	33205	33305
5/16	3/8	2	3-3/4	33405	33505
3/8	3/8	3/4	2-1/2	33006	33106
3/8	3/8	1-1/2	3-1/4	33206	33306
3/8	3/8	2-1/2	4-1/4	33406	33506
7/16	3/8	1	2-11/16	33007	33107
7/16	1/2	1-3/4	3-3/4	33207	33307
7/16	1/2	2-3/4	4-3/4	33407	33507
1/2	1/2	1-1/4	3-1/4	33008	33108
1/2	1/2	2	4	33208	33308
1/2	1/2	3	5	33408	33508
1/2	1/2	4	6	33608	33708
1/2	1/2	6	8	33608S	33708S
1/2	1/2	8	10	33808	33908
5/8	5/8	1-5/8	3-3/4	33010	33110
5/8	5/8	2-1/2	4-5/8	33210	33310
5/8	5/8	3	5-1/8	33410	33510
5/8	5/8	4	6-1/8	33610	33710
5/8	5/8	6	8-1/8	33610S	33710S
5/8	5/8	8	10-1/8	33810	33910
3/4	3/4	1-5/8	3-7/8	33012	33112
3/4	3/4	2	4-1/4	33212	33312
3/4	3/4	2-1/4	4-1/2	33212S	33312S
3/4	3/4	3	5-1/4	33412	33512
3/4	3/4	4	6-1/4	33612	33712
3/4	3/4	6	8-1/4	33612S	33712S
3/4	3/4	8	10-1/4	33812	33912
7/8	7/8	1-7/8	4-1/8	33014	33114
7/8	7/8	2-1/2	4-3/4	33214	33314
7/8	7/8	3-1/2	5-3/4	33414	33514
7/8	7/8	4	6-1/4	33414S	33514S
7/8	7/8	5	7-1/4	33614	33714
7/8	7/8	7	9-1/4	33614S	33714S
1	1	2	4-1/2	33016	33116
1	1	3	5-1/2	33216	33316
1	1	4	6-1/2	33416	33516
1	1	5	7-1/2	33416S	33516S
1	1	6	8-1/2	33616	33716
1	1	7	9-1/2	33616S	33716S
1	1	8	10-1/2	33816	33916
1	1	10	12-1/2	33816S	33916S
1-1/4	1-1/4	2	4-1/2	33020	33120
1-1/4	1-1/4	3	5-1/2	33220	33320
1-1/4	1-1/4	4	6-1/2	33420	33520
1-1/4	1-1/4	5	7-1/2	33420S	33520S
1-1/4	1-1/4	6	8-1/2	33620	33720
1-1/4	1-1/4	7	9-1/2	33620S	33720S
1-1/4	1-1/4	8	10-1/2	33820	33920
1-1/4	1-1/4	10	12-1/2	33820S	33920S
1-1/2	1-1/4	2	4-1/2	33024	33124
1-1/2	1-1/4	3	5-1/2	33224	33324
1-1/2	1-1/4	4	6-1/2	33424	33524
1-1/2	1-1/4	5	7-1/2	33424S	33524S
1-1/2	1-1/4	6	8-1/2	33624	33724
1-1/2	1-1/4	7	9-1/2	33624S	33724S
1-1/2	1-1/4	8	10-1/2	33824	33924
1-3/4	1-1/4	2	4-1/2	33028	33128
1-3/4	1-1/4	3	5-1/2	33228	33328
1-3/4	1-1/4	4	6-1/2	33428	33528
2	1-1/4	2	4-1/2	33032	33132
2	1-1/4	3	5-1/2	33232	33332
2	1-1/4	4	6-1/2	33432	33532
2	1-1/4	5	7-1/2	33432S	33532S
2	1-1/4	6	8-1/2	33632	33732
2	1-1/4	7	9-1/2	33632S	33732S
2	1-1/4	8	10-1/2	33832	33932
2	2	2	5-3/4	37002A	37102A
2	2	3	6-3/4	37003A	37103A
2	2	4	7-3/4	37004A	37104A
2	2	5	8-3/4	37005A	37105A
2	2	6	9-3/4	37006A	37106A
2	2	8	11-3/4	37008A	37108A
2	2	10	13-3/4	37010A	37110A
2	2	12	15-3/4	37012A	37112A

2-1/2" & 3" Diameters Available Upon Request



3 Flute Endmill - Center Cut

- Ideal for Aluminum Alloys
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

HSS (M7) | 3 Flutes | 37°

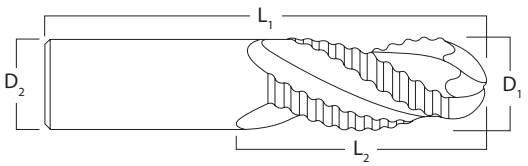
LEFT HAND HSS ENDMILLS

LEFT HAND - 3 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	2-7/16	35004	35104
1/4	3/8	1-1/4	3-1/16	35204	35304
1/4	3/8	1-3/4	3-9/16	35404	35504
5/16	3/8	3/4	2-1/2	35005	35105
5/16	3/8	1-3/8	3-1/8	35205	35305
5/16	3/8	2	3-3/4	35405	35505
3/8	3/8	3/4	2-1/2	35006	35106
3/8	3/8	1-1/2	3-1/4	35206	35306
3/8	3/8	2-1/2	4-1/4	35406	35506
7/16	3/8	1	2-11/16	35007	35107
7/16	1/2	1-3/4	3-3/4	35207	35307
7/16	1/2	2-3/4	4-3/4	35407	35507
1/2	1/2	1-1/4	3-1/4	35008	35108
1/2	1/2	2	4	35208	35308
1/2	1/2	3	5	35408	35508
1/2	1/2	4	6	35608	35708
1/2	1/2	6	8	35608S	35708S
1/2	1/2	8	10	35808	35908
5/8	5/8	1-5/8	3-3/4	35010	35110
5/8	5/8	2-1/2	4-5/8	35210	35310
5/8	5/8	3	5-1/8	35410	35510
5/8	5/8	4	6-1/8	35610	35710
5/8	5/8	6	8-1/8	35610S	35710S
5/8	5/8	8	10-1/8	35810	35910
3/4	3/4	1-5/8	3-7/8	35012	35112
3/4	3/4	2	4-1/4	35212	35312
3/4	3/4	2-1/4	4-1/2	35212S	35312S
3/4	3/4	3	5-1/4	35412	35512
3/4	3/4	4	6-1/4	35612	35712
3/4	3/4	6	8-1/4	35612S	35712S
3/4	3/4	8	10-1/4	35812	35912
7/8	7/8	1-7/8	4-1/8	35014	35114
7/8	7/8	2-1/2	4-3/4	35214	35314
7/8	7/8	3-1/2	5-3/4	35414	35514
7/8	7/8	5	7-1/4	35614	35714
7/8	7/8	7	9-1/4	35614S	35714S
1	1	2	4-1/2	35016	35116
1	1	3	5-1/2	35216	35316
1	1	4	6-1/2	35416	35516

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1	1	5	7-1/2	35416S	35516S
1	1	6	8-1/2	35616	35716
1	1	7	9-1/2	35616S	35716S
1	1	8	10-1/2	35816	35916
1	1	10	12-1/2	35816S	35916S
1-1/4	1-1/4	2	4-1/2	35020	35120
1-1/4	1-1/4	3	5-1/2	35220	35320
1-1/4	1-1/4	4	6-1/2	35420	35520
1-1/4	1-1/4	5	7-1/2	35420S	35520S
1-1/4	1-1/4	6	8-1/2	35620	35720
1-1/4	1-1/4	7	9-1/2	35620S	35720S
1-1/4	1-1/4	8	10-1/2	35820	35920
1-1/4	1-1/4	10	12-1/2	35820S	35920S
1-1/2	1-1/4	2	4-1/2	35024	35124
1-1/2	1-1/4	3	5-1/2	35224	35324
1-1/2	1-1/4	4	6-1/2	35424	35524
1-1/2	1-1/4	5	7-1/2	35424S	35524S
1-1/2	1-1/4	6	8-1/2	35624	35724
1-1/2	1-1/4	7	9-1/2	35624S	35724S
1-1/2	1-1/4	8	10-1/2	35824	35924
1-3/4	1-1/4	2	4-1/2	35028	35128
1-3/4	1-1/4	3	5-1/2	35228	35328
1-3/4	1-1/4	4	6-1/2	35428	35528
2	1-1/4	2	4-1/2	35032	35132
2	1-1/4	3	5-1/2	35232	35332
2	1-1/4	4	6-1/2	35432	35532
2	1-1/4	5	7-1/2	35432S	35532S
2	1-1/4	6	8-1/2	35632	35732
2	1-1/4	7	9-1/2	35632S	35732S
2	1-1/4	8	10-1/2	35832	35932
2	2	2	5-3/4	37F02A	37G02A
2	2	3	6-3/4	37F03A	37G03A
2	2	4	7-3/4	37F04A	37G04A
2	2	5	8-3/4	37F05A	37G05A
2	2	6	9-3/4	37F06A	37G06A
2	2	8	11-3/4	37F08A	37G08A
2	2	10	13-3/4	37F10A	37G10A
2	2	12	15-3/4	37F12A	37G12A

2-1/2" & 3" Diameters Available Upon Request



3 Flute Coarse Pitch Rougher

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

HSS (M7) | 3 Flutes | 37° | Coarse Rougher

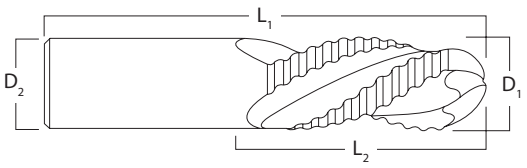
RIGHT HAND HSS ENDMILLS

RIGHT HAND - 3 Flute

	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
*	1/4	3/8	5/8	2-7/16	R33004	R33104
*	1/4	3/8	1-1/4	3-1/16	R33204	R33304
*	1/4	3/8	1-3/4	3-9/16	R33404	R33504
*	5/16	3/8	3/4	2-1/2	R33005	R33105
*	5/16	3/8	1-3/8	3-1/8	R33205	R33305
*	5/16	3/8	2	3-3/4	R33405	R33505
*	3/8	3/8	3/4	2-1/2	R33006	R33106
*	3/8	3/8	1-1/2	3-1/4	R33206	R33306
*	3/8	3/8	2-1/2	4-1/4	R33406	R33506
*	7/16	3/8	1	2-11/16	R33007	R33107
*	7/16	1/2	1-3/4	3-3/4	R33207	R33307
*	7/16	1/2	2-3/4	4-3/4	R33407	R33507
	1/2	1/2	1-1/4	3-1/4	R33008	R33108
	1/2	1/2	2	4	R33208	R33308
	1/2	1/2	3	5	R33408	R33508
	1/2	1/2	4	6	R33608	R33708
	1/2	1/2	6	8	R33608S	R33708S
	5/8	5/8	1-5/8	3-3/4	R33010	R33110
	5/8	5/8	2-1/2	4-5/8	R33210	R33310
	5/8	5/8	3	5-1/8	R33410	R33510
	5/8	5/8	4	6-1/8	R33610	R33710
	5/8	5/8	6	8-1/8	R33610S	R33710S
	3/4	3/4	1-5/8	3-7/8	R33012	R33112
	3/4	3/4	2	4-1/4	R33212	R33312
	3/4	3/4	2-1/4	4-1/2	R33212S	R33312S
	3/4	3/4	3	5-1/4	R33412	R33512
	3/4	3/4	4	6-1/4	R33612	R33712
	3/4	3/4	6	8-1/4	R33612S	R33712S
	7/8	3/4	1-7/8	4-1/8	R33014.B	R33114.B
	7/8	7/8	3-1/2	5-3/4	R33414	R33514
	7/8	7/8	5	7-1/4	R33614	R33714

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
7/8	7/8	7	9-1/4	R33614S	R33714S
1	1	2	4-1/2	R33016	R33116
1	1	3	5-1/2	R33216	R33316
1	1	4	6-1/2	R33416	R33516
1	1	6	8-1/2	R33616	R33716
1	1	8	10-1/2	R33816	R33916
1-1/4	1-1/4	2	4-1/2	R33020	R33120
1-1/4	1-1/4	3	5-1/2	R33220	R33320
1-1/4	1-1/4	4	6-1/2	R33420	R33520
1-1/4	1-1/4	5	7-1/2	R33420S	R33520S
1-1/4	1-1/4	6	8-1/2	R33620	R33720
1-1/4	1-1/4	8	10-1/2	R33820	R33920
1-1/2	1-1/4	2	4-1/2	R33024	R33124
1-1/2	1-1/4	3	5-1/2	R33224	R33324
1-1/2	1-1/4	4	6-1/2	R33424	R33524
1-1/2	1-1/4	6	8-1/2	R33624	R33724
1-1/2	1-1/4	8	10-1/2	R33824	R33924
2	1-1/4	2	4-1/2	R33032	R33132
2	1-1/4	3	5-1/2	R33232	R33332
2	1-1/4	4	6-1/2	R33432	R33532
2	1-1/4	6	8-1/2	R33632	R33732
2	1-1/4	8	10-1/2	R33832	R33932
2	2	2	5-3/4	R37002A	R37102A
2	2	3	6-3/4	R37003A	R37103A
2	2	4	7-3/4	R37004A	R37104A
2	2	5	8-3/4	R37005A	R37105A
2	2	6	9-3/4	R37006A	R37106A
2	2	8	11-3/4	R37008A	R37108A
2	2	10	13-3/4	R37010A	R37110A
2	2	12	15-3/4	R37012A	R37112A

2-1/2" & 3" Diameters Available Upon Request
* Available While Stock Lasts.



3 Flute Coarse Pitch Rougher

- Z-Power® recommended (up to 25% faster)
- Ideal for Aluminum Alloys
- Left-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

N **Material Code**: Refer to Page 261.

HSS (M7) | 3 Flutes | 37° | Coarse Rougher

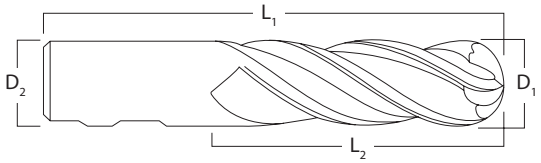
LEFT HAND HSS ENDMILLS

LEFT HAND - 3 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1/4	3/8	5/8	2-7/16	R35004	R35104
1/4	3/8	1-1/4	3-1/16	R35204	R35304
1/4	3/8	1-3/4	3-9/16	R35404	R35504
5/16	3/8	3/4	2-1/2	R35005	R35105
5/16	3/8	1-3/8	3-1/8	R35205	R35305
5/16	3/8	2	3-3/4	R35405	R35505
3/8	3/8	3/4	2-1/2	R35006	R35106
3/8	3/8	1-1/2	3-1/4	R35206	R35306
3/8	3/8	2-1/2	4-1/4	R35406	R35506
7/16	3/8	1	2-11/16	R35007	R35107
7/16	1/2	1-3/4	3-3/4	R35207	R35307
7/16	3/8	2-3/4	4-3/4	R35407	R35507
1/2	1/2	1-1/4	3-1/4	R35008	R35108
1/2	1/2	2	4	R35208	R35308
1/2	1/2	3	5	R35408	R35508
1/2	1/2	4	6	R35608	R35708
1/2	1/2	6	8	R35608S	R35708S
5/8	5/8	1-5/8	3-3/4	R35010	R35110
5/8	5/8	2-1/2	4-5/8	R35210	R35310
5/8	5/8	3	5-1/8	R35410	R35510
5/8	5/8	4	6-1/8	R35610	R35710
5/8	5/8	6	8-1/8	R35610S	R35710S
3/4	3/4	1-5/8	3-7/8	R35012	R35112
3/4	3/4	2	4-1/4	R35212	R35312
3/4	3/4	2-1/4	4-1/2	R35212S	R35312S
3/4	3/4	3	5-1/4	R35412	R35512
3/4	3/4	4	6-1/4	R35612	R35712
3/4	3/4	6	8-1/4	R35612S	R35712S

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1	1	2	4-1/2	R35016	R35116
1	1	3	5-1/2	R35216	R35316
1	1	4	6-1/2	R35416	R35516
1	1	6	8-1/2	R35616	R35716
1	1	8	10-1/2	R35616S	R35716S
1-1/4	1-1/4	2	4-1/2	R35020	R35120
1-1/4	1-1/4	3	5-1/2	R35220	R35320
1-1/4	1-1/4	4	6-1/2	R35420	R35520
1-1/4	1-1/4	6	8-1/2	R35620	R35720
1-1/4	1-1/4	8	10-1/2	R35820	R35920
1-1/2	1-1/4	2	4-1/2	R35024	R35124
1-1/2	1-1/4	3	5-1/2	R35224	R35324
1-1/2	1-1/4	4	6-1/2	R35424	R35524
1-1/2	1-1/4	6	8-1/2	R35624	R35724
1-1/2	1-1/4	8	10-1/2	R35824	R35924
2	1-1/4	2	4-1/2	R35032	R35132
2	1-1/4	3	5-1/2	R35232	R35332
2	1-1/4	4	6-1/2	R35432	R35532
2	1-1/4	6	8-1/2	R35632	R35732
2	1-1/4	8	10-1/2	R35832	R35932
2	2	2	5-3/4	R37F02A	R37G02A
2	2	3	6-3/4	R37F03A	R37G03A
2	2	4	7-3/4	R37F04A	R37G04A
2	2	5	8-3/4	R37F05A	R37G05A
2	2	6	9-3/4	R37F06A	R37G06A
2	2	8	11-3/4	R37F08A	R37G08A
2	2	10	13-3/4	R37F10A	R37G10A
2	2	12	15-3/4	R37F12A	R37G12A

2-1/2" & 3" Diameters Available Upon Request



Multi-Flute Endmill - Center Cut

- General Purpose
- Right-Hand Spiral & Cut
- Weldon Flats
- Square & Ballnose End

P M K S **Material Code**: Refer to Page 261.

HSS (M7) | 4, 6, 8 Flutes | 32½°

RIGHT HAND Discontinued **while supplies last**

RIGHT HAND - 4 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
3/16	3/8	1/2	2-3/8		52103
1/4	3/8	5/8	2-7/16		52104
5/16	3/8	3/4	2-1/2	52005	52105
5/16	3/8	1-3/8	3-1/8	52205	52305
3/8	3/8	1-1/2	3-1/4	52206	52306
3/8	3/8	2-1/2	4-1/4	52406	52506
1/2	1/2	2	4	52208	52308
5/8	5/8	1-5/8	3-3/4	52010	52110
5/8	5/8	2-1/2	4-5/8	52210	52310
5/8	5/8	3	5-1/8	52410	52510

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
3/4	3/4	1-5/8	3-7/8		52112
3/4	3/4	4	6-1/4	52612	52712
1-1/4	1-1/4	2	4-1/2	52020	52120
1-1/4	1-1/4	3	5-1/2	52220	52320
1-1/4	1-1/4	4	6-1/2	52420	52520
1-1/2	1-1/4	3	5-1/2	52224	52324
2	2	2	5-3/4	47202A	47102A
2	2	3	6-3/4	47203A	47103A
2	2	4	7-3/4		47104A

RIGHT HAND - 6 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
3/4	3/4	1-5/8	3-7/8	52012X	52112X
3/4	3/4	3	5-1/4	52412X	52512X
3/4	3/4	4	6-1/4	52612X	52712X
1	1	2	4-1/2		52116X
1	1	3	5-1/2	52216X	52316X
1	1	4	6-1/2	52416X	52516X
1-1/4	1-1/4	2	4-1/2	52020X	52120X
1-1/4	1-1/4	3	5-1/2	52220X	52320X
1-1/4	1-1/4	4	6-1/2	52420X	52520X

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
1-1/4	1-1/4	6	8-1/2	52620X	52720X
1-1/2	1-1/4	2	4-1/2	52024X	52124X
1-1/2	1-1/4	3	5-1/2	52224X	52324X
1-1/2	1-1/4	4	6-1/2		52524X
2	1-1/4	4	6-1/2	52432X	52532X
2	2	2	5-3/4	67202A	67102A
2	2	3	6-3/4	67203A	67103A
2	2	4	7-3/4	67204A	67104A
2	2	5	8-3/4		67105A

RIGHT HAND - 8 Flute

D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Part # Square	Part # Ball
2	1-1/4	2	4-1/2	52032Z	52132Z
2	1-1/4	4	6-1/2		52532Z
2	2	2	5-3/4	87202A	87102A

MATERIAL CODE

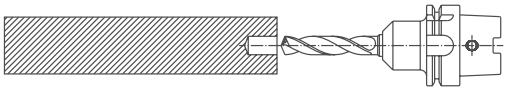
P	1	**Low-Carbon Steels** - 1000 Series (>25 HRc)
	2	**Low-Carbon Steels** - 1000 Series (<25 HRc)
	3	**Alloy Tool Steels** - 1300, 2000, 3000 (≤35 HRc)
	4	**Alloy Tool Steels** - 1300, 2000, 3000 (36-48 HRc)
	5	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (≤35 HRc)
	6	**Ferritic, Martensitic & PH Stainless Steels** - 400's, pH Types (15-5, 13-8, 17-4) (36-48 HRc)
M	1	**Austenitic Stainless Steels** - Inox, 200 Series, 300 Series and 304L
	2	**Austenitic Stainless Steels & Cast Stainless Steels** - 310, 314, 316 (<25HRc)
	3	**Duplex Steels (Austenitic & Ferritic)** - 323, 329, F55, 2205
K	1	**Gray Cast Iron**
	2	**Ductile Iron** - 60-40-18, 65-45-12 (<28HRc)
	3	**Ductile Iron** - 32510, 35018 (<38HRc)
N	1	**Wrought Aluminum Alloys**
	2	**Low-Silicon Aluminum Alloys** - Si <12.2% - 6061, 7075
	3	**High-Silicon Aluminum Alloys** - Si >12.2% - 6061, 7075
	4	**Metal Matrix Composite** - (Glass Filament Epoxy, Fiber Glass, Graphite)
	5	**Copper & Copper Alloys**
	6	**Carbon & Graphite Composites**
S	1	**Iron-Based, Heat-Resistant Alloys** - Incoloy 800-802, A-286, N-155
	2	**Nickel-Based, Cobalt-Based, Heat-Resistant Alloys** - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48 HRc)
	4	**Titanium Alloys** - Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
H	1	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRc)
	2	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRc)
	3	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRc)
	4	**Hardened Tool Steels** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

CÓDIGO DE MATERIAL

P	1	**Acero Bajo en Carbono** - Series 1000 (> 25 HRc)
	2	**Acero Bajo en Carbono** - Series 1000 (<25 HRc)
	3	**Aleación de Aceros** - 1300, 2000, 3000 (≤35 HRc)
	4	**Aleación de Aceros** - 1300, 2000, 3000 (36-48 HRc)
	5	**Ferríticos, Martensíticos y Aceros Inoxidables PH** - 400's, Tipos pH (15-5, 13-8, 17-4) (≤35 HRc)
	6	**Ferríticos, Martensíticos y Aceros Inoxidables PH** - 400's, Tipos pH (15-5, 13-8, 17-4) (36-48 HRc)
M	1	**Acero Inoxidable Austenítico** - Inox, 200 Series, 300 Series y 304L
	2	**Austenítico de Acero Fundido y Acero Inoxidable** - 310, 314, 316 (<25HRc)
	3	**Acero Duplex (Austenítico y ferrítico)** - 323, 329, F55, 2205
K	1	**Hierro Fundido Gris**
	2	**Hierro Dúctil** - 60-40-18, 65-45-12 (<28HRc)
	3	**Hierro Dúctil** - 32510, 35018 (<38HRc)
N	1	**Aleaciones de Aluminio Forjado**
	2	**Aleaciones de Aluminio Bajo en Silicón** - SI <12.2% - 6061, 7075
	3	**Aleaciones de Aluminio Alto en Silicón** - SI <12.2% - 6061, 7075
	4	**Metal Compuesto** - (Filamento de vidrio epoxi, fibra de vidrio, grafito)
	5	**Cobre y Aleaciones de Cobre**
	6	**Carbono y Composiciones de Grafito**
S	1	**Aleaciones a Base de Hierro, Aleaciones Resistentes a Altas Temperaturas** - Incoloy 800-802, A-286, N-155
	2	**Aleaciones de Níquel, Basados en Cobalto y Resistentes a Altas Temperaturas** - Haynes 188, Haynes 21, Hastelloy, Waspaloy, Inconel 625/718 (≤48 HRc)
	4	**Aleaciones de Titanio** - Puro, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRc)
H	1	**Acero Endurecido** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRc)
	2	**Acero Endurecido** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRc)
	3	**Acero Endurecido** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRc)
	4	**Acero Endurecido** - H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRc) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRc)

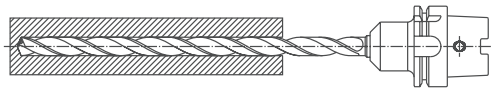
Manual for Pilot Drill

All deep-hole drills must utilize a pilot hole drill.



Utilize a pilot hole drill to a minimum pilot depth of 1 to 1.5 x D. The pilot drill must be .00078 inches (.02mm) bigger in diameter than the diameter of the long drill.

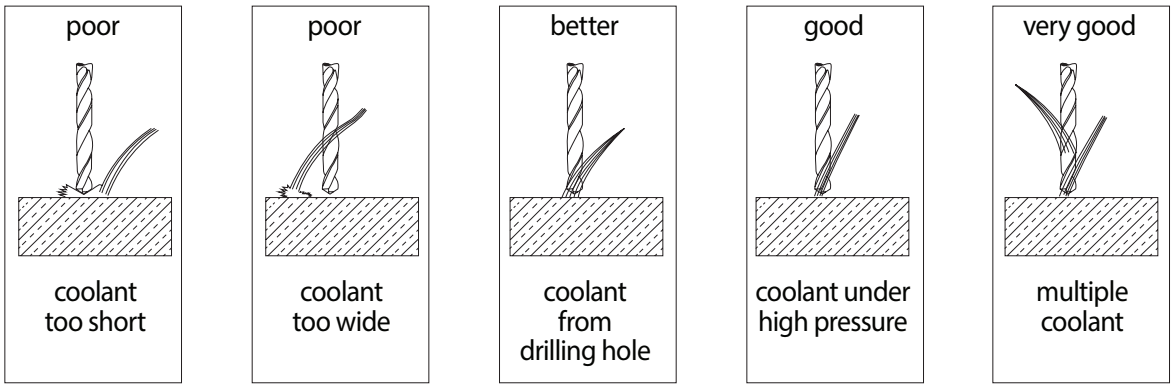
Introduce the long drill in the hole at a speed of 300 RPM.

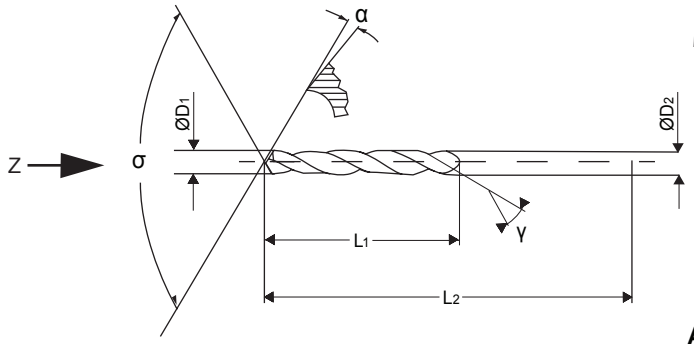


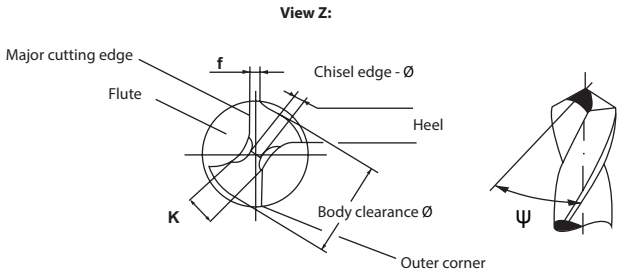
After entering the hole, increase to the recommended speed.

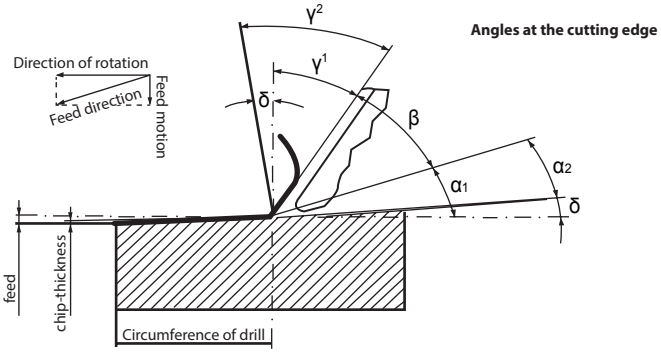
Before taking the drill out of the hole, reduce the speed back to 300 RPM and withdraw the long drill.

Coolant Fed:









Abbreviations and dimension letters

α : the clearance angle
α_1 : the clearance angle measured at the cutting corner
α_2 : the effective clearance angle of inclination
β : the tool - orthogonal wedge angle
γ : the spiral angle
γ^1 : the tool orthogonal plane on the cutting corners
γ^2 : the spiral angle on the cutting corners
δ : the advance angle of inclination
$ØD_1$: the blade diameter
$ØD_2$: the shaft diameter
f : the width of land
K : the core Ø
L_1 : the flute length
L_2 : the total length
σ : the apex angle
ψ : the chisel edge angle

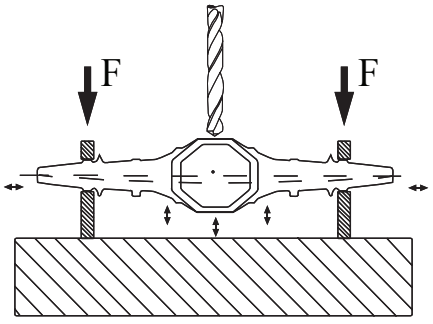
Correction Factors

The following correction factors should be used to get the most out of our drilling tools.

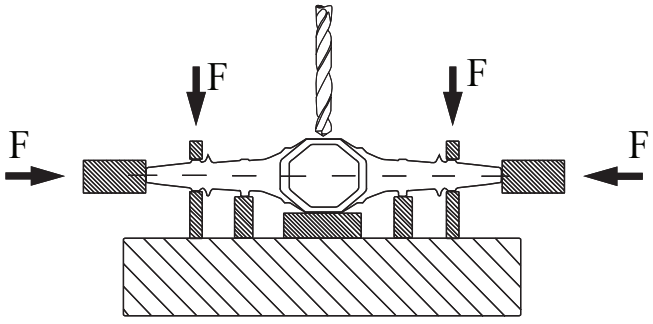
Length corrections:

drilling depth	1xD	3xD	4xD	5xD	6xD	7xD	8xD	10xD	>10xD
factor for v_c	1,2	1,0	0,95	0,9	0,85	0,8	0,75	0,7	0,6

Clamping:



Poor clamping: Since the workpiece is not protected against bending and axial slipping.



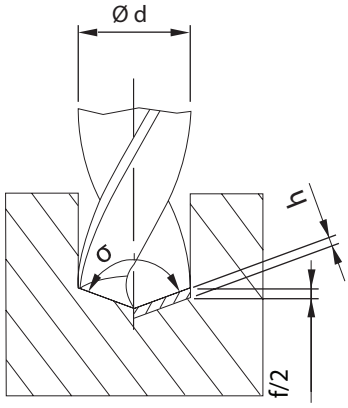
Good clamping: Since the work piece can neither bend nor slip.

Machining and Cutting Forces

the cut cross-section:	$A = \frac{d \cdot f}{2}$
the cutting force:	$F_c = A \cdot k_c \cdot f_B$
the cutting moment:	$M_c = \frac{F_c \cdot d}{4}$
the rate of metal removal:	$Q = \frac{A \cdot V_c}{2}$
the cutting performance:	$P_c = \frac{F_c \cdot v_c}{2} = Q \cdot k_c$
the rise per tooth:	$h \approx 0{,}43 \cdot f$
the specific cutting force:	$k_c = k \cdot C_1 \cdot C_2$

Legend:

F_c	cutting force
A	cut cross-section
C_1	correction factor
C_2	production technique correction factor
d	drill diameter
σ	apex angle
f	advance per rotation
h	rise per tooth
v_c	cutting speed
k_c	specific cutting force
k	specific cutting force table value
M_c	cutting momentum
Q	rate of metal removal
P_c	cutting performance
f_B	process factor (=1x cutting into the solid = 0.95 boring)

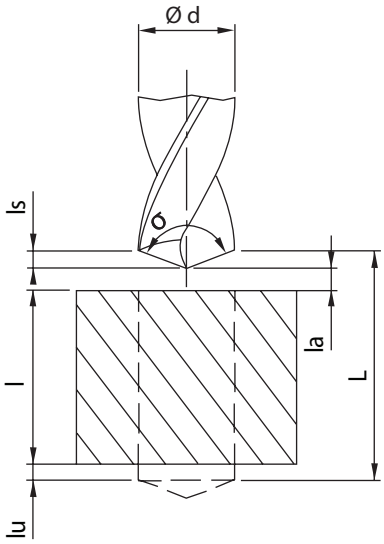


Calculating the Production Time and Application Values

main application time	$t_h = \frac{L \cdot i}{n \cdot f}$
feed path:	$L = l + l_s + l_a + l_u$
revolution:	$n = \frac{V_c \cdot 1000}{d \cdot \pi}$
cutting time:	$v_c = \frac{n \cdot \pi \cdot d}{1000}$

Legend:

t_h	application time
d	drill diameter
l	drilling depth
l_a	run-on
l_u	overrun
l_s	first cut
L	feed path
f	feed per rotation
n	revolution
v_c	cutting speed
i	number of cuts
σ	apex angle
π	Pi (=3.1416)



Drilling Cutting data formula

Cutting speed, $v_c = \frac{\pi \cdot D \cdot n}{1000}$ (*m*/min)

Spindle speed, $n = \frac{1000 \cdot vc}{\pi \cdot D}$ (rev/min)

Feed speed, $vf = f \cdot n$ (mm/min)

Feed per rev, $f = \frac{vf}{n}$ (mm/rev)

Legend:

v_c	cutting speed (m/min)
n	spindle speed (rev/min)
v_f	feed speed (mm/min)
D	drill diameter (mm)
f	feed per rev (mm/rev)

Milling Cutting data formula

SFM= $\frac{\pi \cdot D \cdot n}{1000}$ (*m* /min)

$n = \frac{1000 \cdot vc}{\pi \cdot D}$ (rev/min)

$vf = fz \cdot z \cdot n = f \cdot n$ (rev/min)

$h_m = f_z \cdot \sqrt{\frac{a_e}{D}}$ (mm) $\frac{a_e}{D} < 0,3$

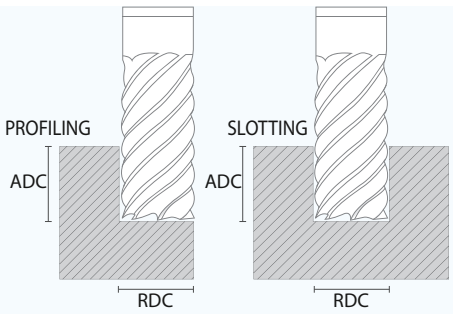
$Q = \frac{a_p \cdot ae \cdot vf}{1000}$ (cm³/min)

Legend:

v_c	cutting speed (m/min)
n	spindle speed (rev/min)
v_f	feed speed (mm/min)
a_p	axial depth of cut (mm)
a_e	radial depth of cut (mm)
f	feed per tooth (mm/tooth)
z	number of teeth
f_z	feed per tooth (mm/tooth)
D	cutter diameter (mm)
h_m	average chip thickness (mm)
Q	material removal rate (cm³/min)

Formula

SFM=	RPM / 3.82 x Dia.
RPM=	SFM x 3.82 / Dia.
FPM=	RPM x FPT x #Fl
FPT=	FPM / RPM x #Fl
IPR/FR=	FPM / RPM
MR=	ADC x RDC x FPM
HP=	FPM x RDC x ADC x PC



D = Tool Diameter
Example: 2% of Dia., when D = 1" (.02 x 1") = .020" per pass

Legend:

Dia.	Diameter of Endmill
RPM	Revolutions per Minute
FPM	Feed per Minute
FR	Feed per Revolution
RDC	Radial Depth of Cut (Width)
MR	Metal Removal Rate (Cubic inch/min)
SFM	Surface Feet per Minute
CPT	Chipload Per Tooth
IPR	Inch per Revolution
ADC	Axial Depth of Cut (Length)
#Fl	# of Effective Cutting Flutes
HP	Horsepower avail. at running RPM
PC	Power Constants for HP/CL-MR

Standard values for specific cutting force

Material	k_c 1.1 N/mm²	m_c	Specific cutting force k in N/mm² for rise per tooth h in mm								
			0,08	0,1	0,16	0,2	0,31	0,5	0,08	1,0	1,6
E295	1500	0,30	3200	2995	2600	2430	2130	1845	1605	1500	1305
C35, C45	1450	0,27	2870	2700	2380	2240	1990	1750	1540	1450	1275
C60	1690	0,22	2945	2805	2530	2410	2185	1970	1775	1690	1525
9S20	1390	0,18	2190	2105	1935	1855	1715	1575	1445	1390	1275
9SMn28	1310	0,18	2065	1985	1820	1750	1615	1485	1365	1310	1205
35S20	1420	0,17	2180	2100	1940	1865	1735	1600	1475	1420	1310
16MnCr5	1400	0,30	2985	2795	2425	2270	1990	1725	1495	1400	1215
18CrNi8	1450	0,27	2870	2700	2380	2240	1990	1750	1540	1450	1275
20MnCr5	1465	0,26	2825	2665	2360	2225	1985	1755	1555	1465	1295
34CrMo4	1550	0,28	3145	2955	2590	2430	2150	1880	1550	1550	1360
37MnSi5	1580	0,25	2970	2810	2500	2365	2115	1880	1670	1580	1405
40Mn4	1600	0,26	3085	2910	2575	2430	2170	1915	1695	1600	1415
42CrMo4	1565	0,26	3020	2850	2520	2380	2120	1875	1660	1565	1385
50CrV4	1585	0,27	3135	2950	2600	2450	2175	1910	1685	1585	1395
X210Cr12	1720	0,26	3315	3130	2770	2615	2330	2060	1825	1720	1520
EN-GJL-200	825	0,33	1900	1765	1510	1405	1215	1035	890	825	705
EN-GJL-300	900	0,42	2600	2365	1945	1740	1470	1205	990	900	740
CuZn37	1180	0,15	1725	1665	1555	1500	1405	1310	1220	1180	110
CuZn36Pb1, 5	835	0,15	1220	1180	1100	1065	995	925	865	835	780
CuZn40Pb2	500	0,32	1120	1045	900	835	725	625	535	500	430

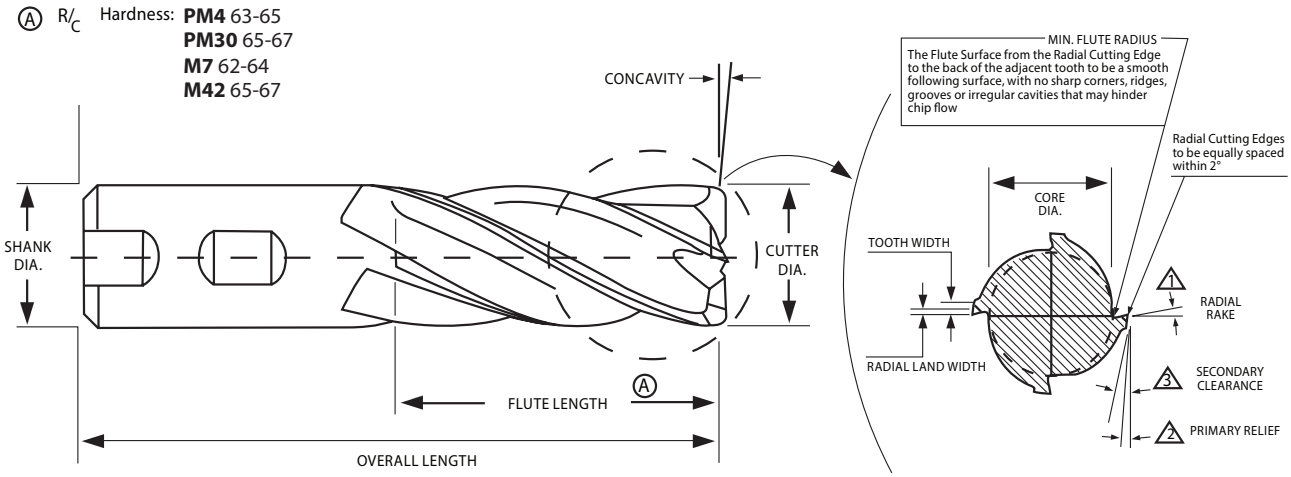


Table of Cutting Speeds – Surface Feet Per Minute (sfm)

All PCT Endmills conform to National Aeronautic Standard (N.A.S.) 986 Specifications

Cutter Diameter (Inches)	10	15	20	25	30	35	40	45	50	60	70	80	90	100
	REVOLUTIONS PER MINUTE													
1/16	611	917	1222	1528	1834	2140	2445	2751	3057	3668	4280	4891	5502	6114
3/32	407	611	815	1019	1222	1426	1630	1834	2038	2446	2853	3261	3667	4075
1/8	306	458	611	764	917	1070	1222	1375	1528	1834	2139	2445	2750	3056
5/32	244	367	489	611	733	856	978	1100	1222	1466	1711	1955	2200	2444
3/16	204	306	407	509	611	713	815	917	1019	1222	1426	1630	1834	2038
1/4	153	229	306	382	458	535	611	688	764	917	1070	1222	1376	1528
5/16	122	183	244	306	367	428	489	550	611	733	856	978	1100	1222
3/8	102	153	204	255	306	357	408	458	509	611	713	815	916	1018
7/19	87	131	175	218	262	306	349	393	437	524	611	699	786	874
1/2	76	115	153	191	229	268	306	344	382	459	535	611	688	764
9/16	68	103	137	172	204	238	272	306	340	407	475	543	611	679
5/8	61	92	122	153	184	214	245	276	306	367	428	489	552	612
11/16	55	84	112	140	167	194	222	249	278	333	389	444	500	555
3/4	51	76	102	127	153	178	203	229	254	306	357	408	458	508
13/16	47	71	95	118	142	166	190	213	237	284	332	379	427	474
7/8	44	66	87	109	131	153	175	196	219	262	306	349	392	438
1	38	57	76	96	115	134	153	172	191	229	267	306	344	382
1-1/8	34	51	68	85	102	119	136	153	170	204	238	272	306	340
1-1/4	31	46	61	76	92	107	123	137	153	183	214	245	274	306
1-3/8	28	42	56	70	83	89	111	125	139	167	195	222	250	278
1-1/2	25	38	51	64	76	89	102	115	127	153	178	204	230	254
1-3/4	22	33	44	55	66	76	88	98	109	131	153	175	196	218
2	19	29	38	48	57	67	76	86	96	115	134	153	172	191
2-1/4	17	26	34	42	51	59	68	76	86	102	119	136	153	170
2-1/2	15	23	31	38	46	54	61	69	76	92	107	122	138	153

PCT Mill Diameter Tolerances

Type	Flute	Style	Tolerance
Finishing	2 Flute 3 Flute Multiflute	Single	+.001 .000
		Double	.000 -.001
Roughing/ Finishing	3 Flute Multiflute	Single	+.003 .000
Rougher Coarse Fine	3 Flute Multiflute	Single	+.006 -.006

*All endmills have shanks –.0002 / –.0005 (except double end).

the first out l_s	
σ	l_s
80°	0,6 • d
118°	0,3 • d
130°	0,23 • d
140°	0,18 • d

cutting speed v_c in m/min	C_1
10...30	1,3
31...80	1,1
81...400	1,0
>400	0,9
production technique	C_2
milling	0,8
drilling	1,2

Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) +.00mm-.013mm
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

All PCT Endmills conform to National Aeronautic Standard (N.A.S.) 986 Specifications

Series #	No. of Flutes	Helix Angle	Material Cut	Tool Material	① Radial Rake ±2°	Prim. ±2° ②	Sec. +5°/-3° ③
PM-33, PM-37	3	37°	Aluminum, Magnesium, and Zinc Alloys.	PM4	11°	10°	25°
PM-R33, PM-R37	3	37°		PM4	20°	-	-
23, 25, 27	2	37°		M2	11°	10°	25°
33, 35, 37	3	37°		M2	11°	10°	25°
RF33, RF35	3	37°		M2	11°	10°	25°
R33, R35, R37	3	37°		M2	20°	-	-
21, 28, 29	2	30°	Steel, Brass, Bronze, Iron, Carbon, Manganese,	M2	10°	12°	25°
52, 47, 67, 87	4, 6, 8	32½°	Steel for machining material of medium hardness.	M2	10°	8°	16°
24, 26	2	35°	To machine most materials up to medium	M42	10°	10°	20°
54, 56, 59	4, 6, 8	35°	hardness; 4 - 6 flute for Titanium Base & Stainless	M42	10°	10°	20°
48, 68, 88	4, 6, 8	35°	Steel Alloys; 6 - 8 flute for Nickel Base Alloys.	M42	10°	10°	20°
RF54	4, 6, 8	35°		M42	10°	10°	-
PM3-54, PM3-88	4, 5, 6, 8	35°		PM30			
PM3-68	6	35°		PM30			
RS54, R54	3, 4, 5, 6, 8	30°	Material of medium hardness up to 32 R/c	M42	15°	-	-
R68, R88, R56	3, 4, 5, 6, 8	30°	including Aluminum Alloys, Plastics, Annealed	M42	15°	-	-
PM3-RS54	4, 5	35°	Titanium, & Non Hardenable Stainless, Alloy & Cast Steels, Brasses & Bronzes.	PM30			
FS54, F54	3, 4, 5, 6, 8	30°	Material of medium to high hardness including	M42	15°	-	-
F68, F88, F56	3, 4, 5, 6, 8	30°	Stainless & Tool Steels, Super Hi-Temp., Nickel &	M42	15°	-	-
PM3-F54	4, 5, 6, 8	35°	Titanium Alloys, Nitriding & Heat treated Cast	PM30			
PM3-FS54	4, 5	35°	Iron & Steels.	PM30			
PM3-F88	8	35°		PM30			

Tolerance Tables

above	to	H					e						f					
		5	6	7	8	9	5	6	7	8	9	10	5	6	7	8	9	10
		in µm					in µm						in µm					
1	3	4 0	6 0	10 0	14 0	25 0	-14 -18	-14 -20	-14 -24	-14 -28	-14 -39	-14 -54	-6 -10	-6 -12	-6 -16	-6 -20	-6 -31	-6 -46
3	6	5 0	8 0	12 0	18 0	30 0	-20 -25	-20 -28	-20 -32	-20 -32	-20 -50	-20 -68	-10 -15	-10 -18	-10 -22	-10 -28	-10 -40	-10 -58
6	10	6 0	9 0	15 0	22 0	36 0	-25 -31	-25 -34	-25 -40	-25 -47	-25 -61	-25 -83	-13 -19	-13 -22	-13 -28	-13 -35	-13 -49	-13 -71
10	18	8 0	11 0	18 0	27 0	43 0	-32 -40	-32 -43	-32 -50	-32 -59	-32 -75	-32 -102	-16 -24	-16 -27	-16 -34	-16 -43	-16 -59	-16 -86
18	30	9 0	13 0	21 0	33 0	52 0	-40 -49	-40 -53	-40 -61	-40 -73	-40 -92	-40 -124	-20 -29	-20 -33	-20 -41	-20 -53	-20 -72	-20 -104

above	to	h							js							m						
		5	6	7	8	9	10	11	10	11	12	13	14	15	16	3	4	5	6	7	8	9
		in µm							in µm		in µm					in µm						
1	3	0 -4	0 -6	0 -10	0 -14	0 -25	0 -40	0 -60	±20	±30	±0,05	±0,07	±0,125	±0,2	±0,2	4 2	4 2	6 2	8 2	12 2	16 2	27 2
3	6	0 -5	0 -8	0 -12	0 -18	0 -30	0 -48	0 -75	±24	±37,5	±0,06	±0,09	±0,15	±0,24	±0,275	6,5 4	8 4	9 4	12 4	16 4	22 4	34 4
6	10	0 -6	0 -9	0 -15	0 -22	0 -36	0 -58	0 -90	±29	±45	±0,075	±0,11	±0,18	±0,29	±0,45	8,5 6	10 6	12 6	15 6	21 6	28 6	42 6
10	18	0 -8	0 -11	0 -18	0 -27	0 -43	0 -70	0 -110	±35	±55	±0,09	±0,135	±0,215	±0,35	±0,55	10 7	12 7	15 7	18 7	25 7	34 7	50 7
18	30	0 -9	0 -13	0 -21	0 -33	0 -52	0 -84	0 -130	±42	±65	±0,105	±0,165	±0,126	±0,42	±0,65	12 8	14 8	17 8	21 8	29 8	41 8	60 8

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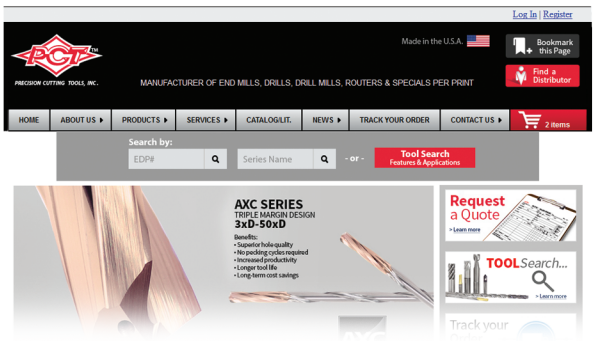

Step 2 Sign in
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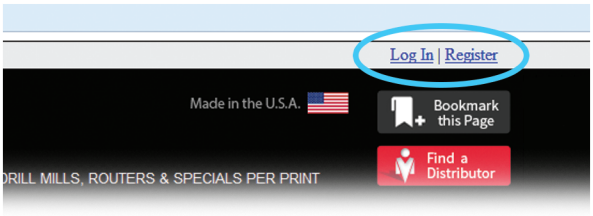
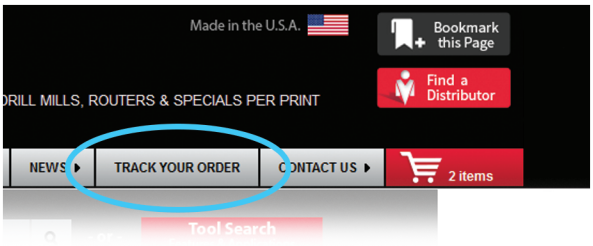
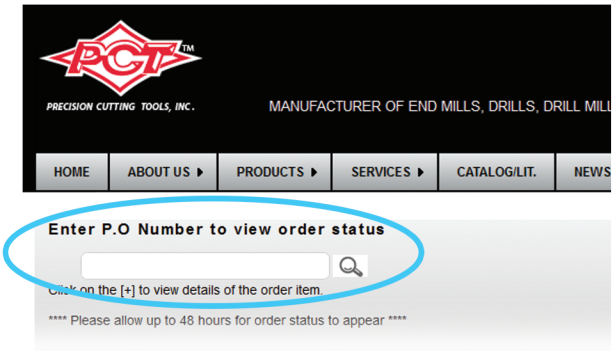


Step 3 Select "TRACK YOUR ORDER"



Step 4 To view P.O. Status type in your Purchase Order # and press "Search"



P.O. Status

Order Date	Sales Order	View Item(s) by Invoice No.	Print Invoice	Ship Via	Tracking Number
5/14/2015	00018386	15573	PDF	Ground	XXXXXXXXXXXXX

Item ID	Description	Qty Ordered	Qty Shipped	Qty Backordered
0360T60403754.IB	XXXXXXXXXXXXX-XXXXX XXXX	12	12	0
SXC2010320T9	XXXXXXXXXXXXX-XXXXX XXXX	8	8	0
AXC0320000T6	XXXXXXXXXXXXX-XXXXX XXXX	10	10	0

Click ⊞ to view your item(s)

NEW EDGECUT™

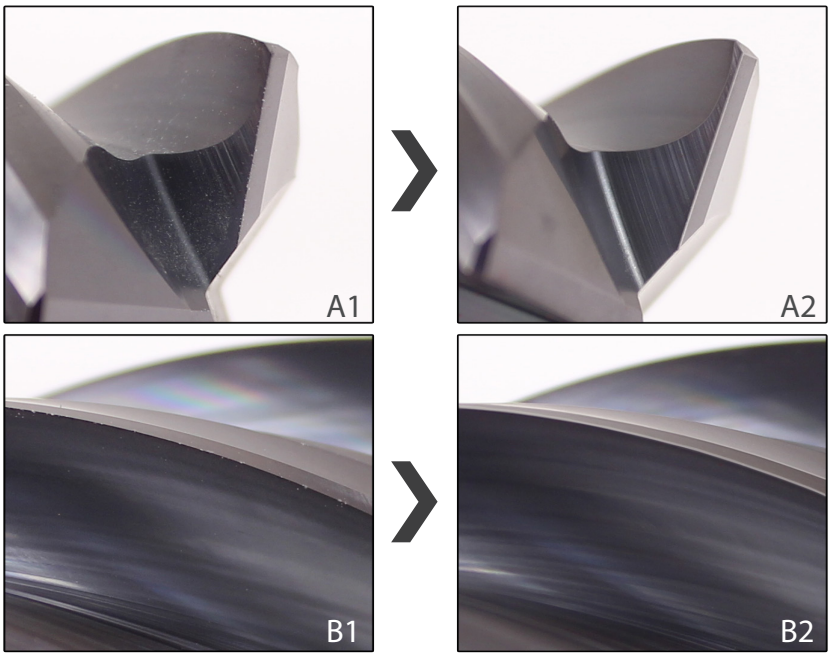
EdgeCut is a **NEW** manufacturing process for cutting tools, implemented to provide our customers with superior cutter performance. The **EdgeCut** process consists of adding a controlled radius on the cutting tool's edge (also known as honing), to create an even and stronger cutting edge. **EdgeCut** has proven to be a key factor in the success of our cutting tools. Through our extensive testing, cutters with **EdgeCut** have outperformed tools without any edge preparation.

How does EDGECUT™ Improve Performance?

An even and stronger cutting edge…

- Reduces the risk of edge chipping and cracking, resulting in a longer tool life.
- Increases coating adhesion, providing excellent chip evacuation and wear resistance.
- Dissipates stress and force focus, allowing for increased speeds and feeds.
- Provides chatter-free machining, leaving a smooth surface finish on the part.

Before → After



Benefits of EDGECUT™

- **Longer Tool Life**
- **Increased Coating Adhesion**
- **Higher Speeds & Feeds**
- **Improved Surface Finish on the part**
- **Stronger Cutting Edge**
- **Enhanced Chip Evacuation**
- **Reduced Cycle Time**

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TiCN - T2

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T4

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T7

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T8

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- Increased depth-of-cut
- Improved accuracy
- Higher speeds & feeds
- Superior surface finish on the part

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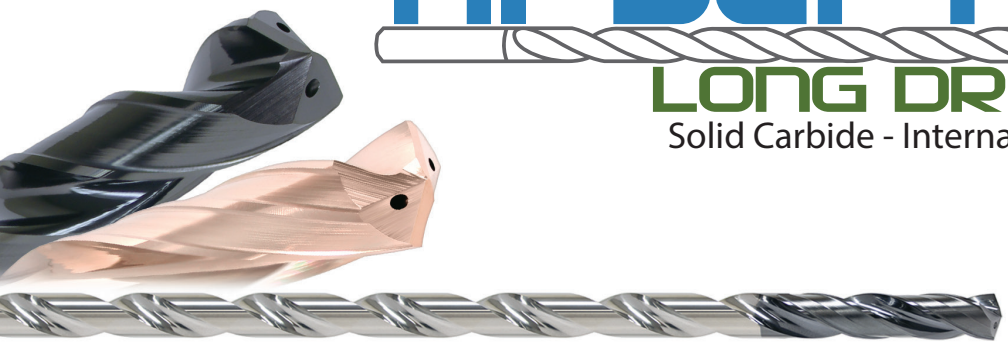

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