



Solid Carbide Milling



PRIMOLINE™

PRECISE AND PERFECT

A FOCUSED LOOK AT Solid Carbide Milling



Introducing PrimoLine from Ingersoll Cutting Tools.

This family of premium solid carbide end mills is engineered for manufacturers who recognize that higher-performing tools deliver measurable returns. PrimoLine products run faster, reach deeper, and last longer, helping shops drastically reduce cycle times, improve surface quality, and achieve more predictable results in demanding applications. Advanced geometries, premium substrates, and application-specific designs allow machinists to confidently push speeds and feeds while maintaining stability and tool life.

PrimoAlu-R and PrimoAlu-F set a new standard for extreme material removal in long-reach aluminum applications. These 3-flute, 90° solid carbide end mills utilize advanced variable pitch and variable helix geometries to virtually eliminate vibration and chatter, delivering smooth cutting including passes where the part corner radius on the wall matches the tool's radius. Coolant thru capability on diameters .250" and larger ensures efficient chip evacuation and thermal control. PrimoAlu-R supports aggressive roughing with lengths up to 6xD, while PrimoAlu-F extends to 7xD for precise long wall finishing and vibration-free milling into corners. Expect excellent surface finishes, even at extended lengths.

PrimoSS-V and PrimoSS-H provide versatility and high-efficiency when machining stainless steel. Both feature variable pitch and variable helix geometries that detune vibrations, delivering smooth cutting. Coolant thru designs are also available to enhance cutting performance. PrimoSS-V is a 4-flute end mill designed for slotting, shoulder, and finish milling. PrimoSS-H, offered in 5 and 6-flute options, is optimized for high-efficiency and trochoidal milling. Experience high metal removal rates with the combination of chip splitters, advanced geometries, and deep-reach capability to maximize productivity in stainless steels.

EXPERIENCE. QUALITY. INNOVATION.

Ingersoll offers a full line of standard metal cutting tools including milling, turning, grooving, threading, holmaking, high-precision boring and reaming, PCD form tooling, and more. Additionally, expert Ingersoll engineers take great pride in conceptualizing and manufacturing custom-engineered special tooling for unique applications.



Rockford, Illinois Campus



Qwik-Reference

Follow Ingersoll on social media for the most up-to-date company news and promotions.



QwikCuts

Scan to sign up for Ingersoll's digital newsletter.



PRIMOALUR™ **N** **4**

90° solid carbide end mills for roughing aluminum alloys

Product Overview.	5
3-Flutes, Cylindrical Shank, Coolant Thru.	8
3-Flutes, Weldon Shank, Coolant Thru.	12
Operating Guidelines.	16
Ramping Guidelines.	17

PRIMOALUF™ **N** **18**

90° solid carbide end mills for finishing aluminum alloys

Product Overview.	19
3-Flutes, Cylindrical Shank, No Coolant.	22
3-Flutes, Cylindrical Shank, Coolant Thru.	23
Operating Guidelines.	28

PRIMOSSV™ **M** **29**

90° solid carbide end mills for various stainless steel applications

Product Overview.	30
4-Flutes, Cylindrical Shank, No Coolant.	33
4-Flutes, Cylindrical Shank, Coolant Thru.	34
4-Flutes, Weldon Shank, Coolant Thru.	37
Operating Guidelines.	40
Ramping Guidelines.	43

PRIMOSSH™ **M** **44**

90° solid carbide end mills for HEM stainless steel

Product Overview.	45
5-Flutes, Cylindrical Shank, No Coolant.	48
5-Flutes, Cylindrical Shank, Coolant Thru.	49
5-Flutes, Weldon Shank, Coolant Thru.	52
6-Flutes, Cylindrical Shank, No Coolant.	55
6-Flutes, Cylindrical Shank, Coolant Thru.	56
6-Flutes, Weldon Shank, Coolant Thru.	58
Operating Guidelines.	60

ADDITIONAL INFORMATION

Weldon Flat Dimensions Reference.	61
★ Special Order End Mills.	62-63

PRIMOALUR™

MILLING - SCEN

N

Cutter Series

P3N2R-_C

Cylindrical shank

P3N2R-_W

Weldon flat shank

Geometry

3-flute, coolant thru with
a serrated cutting edge,
variable pitch, variable helix

Diameter Range

.250-1.000"

Depth of Cut

1.5xD and 2xD APMX

Grade

IN05S

Lead Angle

90°

Corner Radii

.015", .030", .060", .090",
.125", .188", .250"

Materials

■ Aluminum alloys

Premium 3-Flute, Solid Carbide 90° End Mills, Ideal for Roughing Aluminum Alloys

- » Serrated cutting edge provides unique chip management, disrupts vibrations, and reduces heat
- » Variable pitch and variable helix to assist with vibration control
- » 2x, 3x, 4x, 5x, and up to 6xD usable length maximum (LUX) provides a deep reach capability
- » Coolant thru to assist with chip control and evacuation
- » Custom tools available – see pgs 62-63



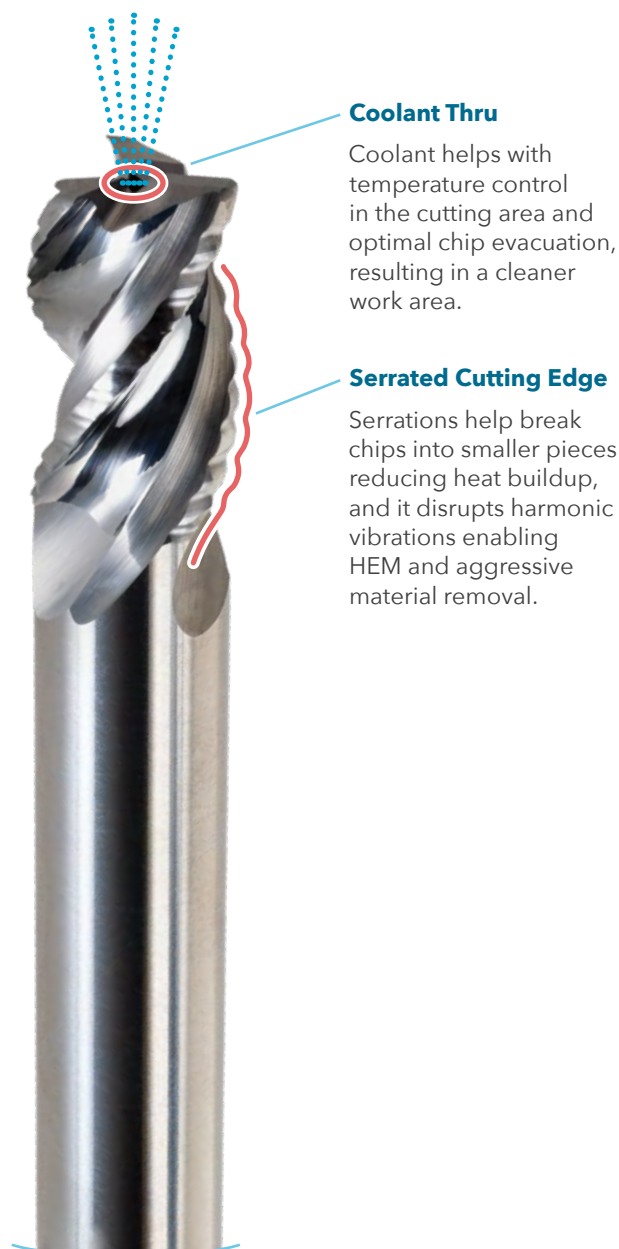
Learn
more »



PRIMOLINE™

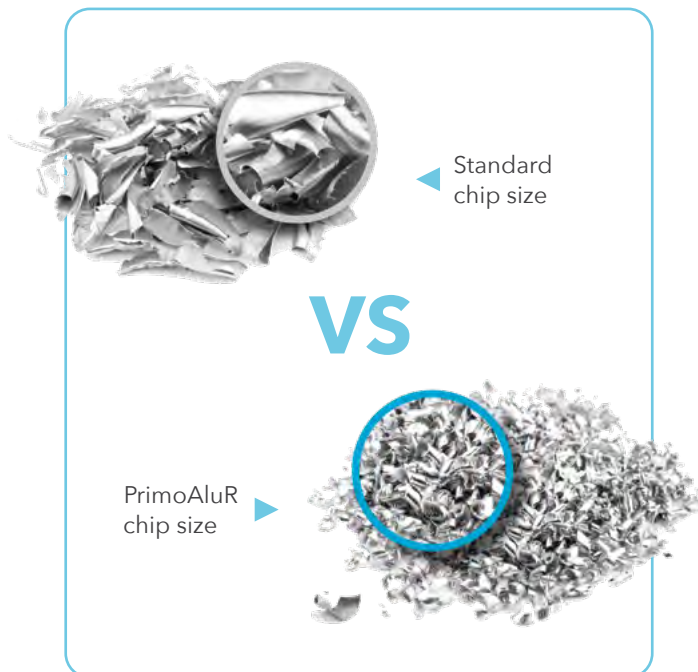
Overview

PrimoLine, Ingersoll's new, premium, solid carbide end mill product line features **PrimoAlu-R**, the robust 3-flute end mills for aluminum roughing applications.

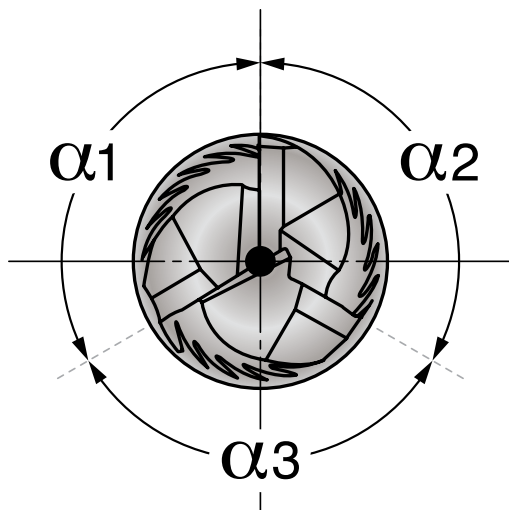


FEATURES & BENEFITS:

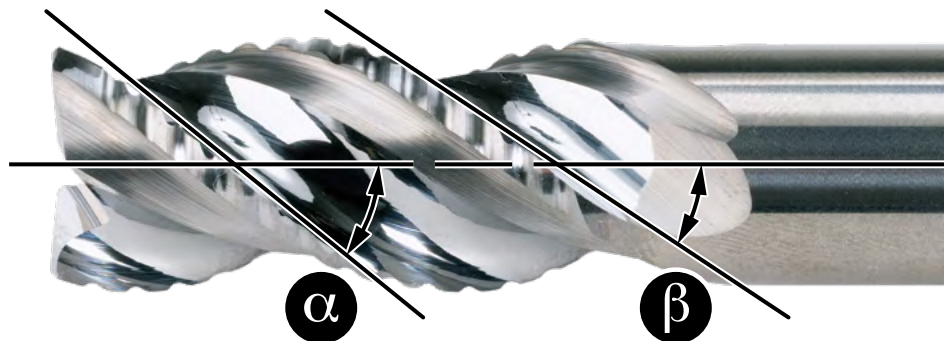
- Serrated cutting edge provides unique chip management
- Variable pitch and variable helix to assist with vibration control
- No vibration when milling into corners with the same radius as the tool
- Coolant thru to assist with chip control and evacuation
- 1.5xD and 2xD depth-of-cut (APMX)
- 2x, 3x, 4x, 5x, and up to 6xD lengths (LUX) provides a deep reach capability
- Wide variety of corner radii: .015", .030", .060", .090", .125", .188", .250" radius (RE)



Variable Pitch and Variable (Different) Helix Angles

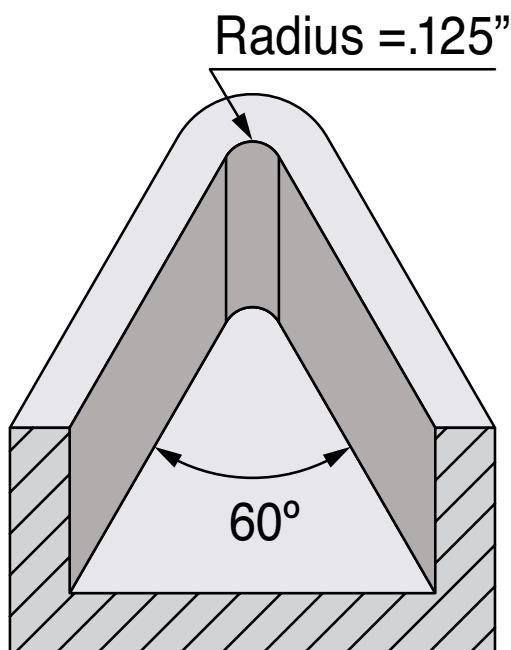


$$\alpha_1 \neq \alpha_2 \neq \alpha_3$$



$$\alpha \neq \beta$$

No Feed Reduction Needed in Extreme Cutting Conditions



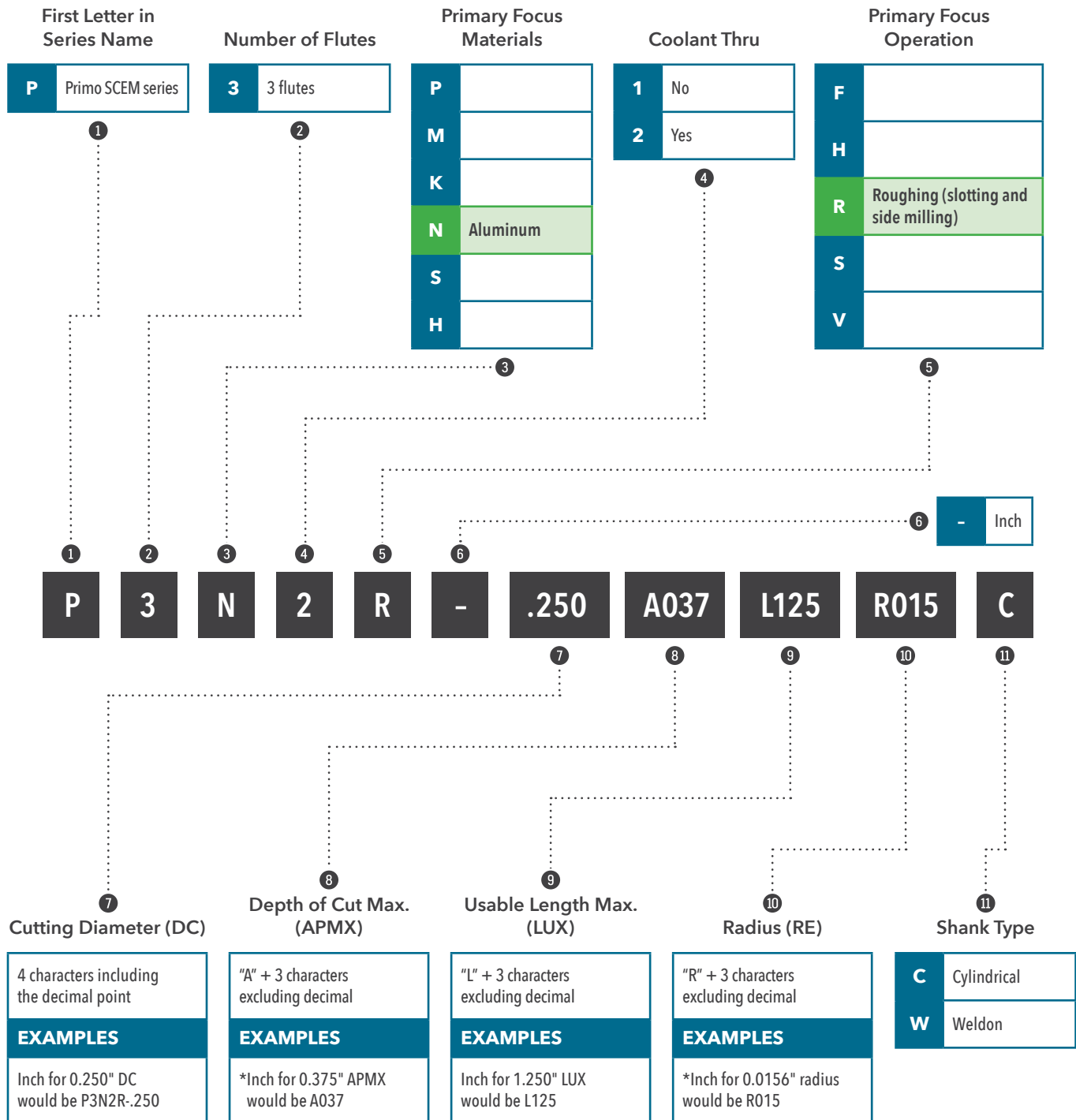
EXAMPLE

- Workpiece corner profile: Radius = .125"
- Diameter of SCEM tool: .250"

SUMMARY

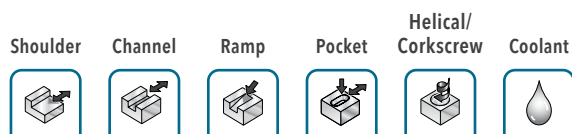
In this case, the workpiece corner profile has the same radius as the tool. There is no need to reduce the feed rate when programming movements are $\leq 90^\circ$ with **PrimoAlu SCEM**. Programming tricks that slow down the tool are not needed. **PrimoAlu's** unique design disrupts harmonic vibrations and prevents the tool from being drawn into part during full-radius engagement. Therefore, **"higher productivity"** can be achieved while providing a straight and true finish without vibration or chatter marks.

Solid Carbide End Mill (SCEM) Part Number Nomenclature

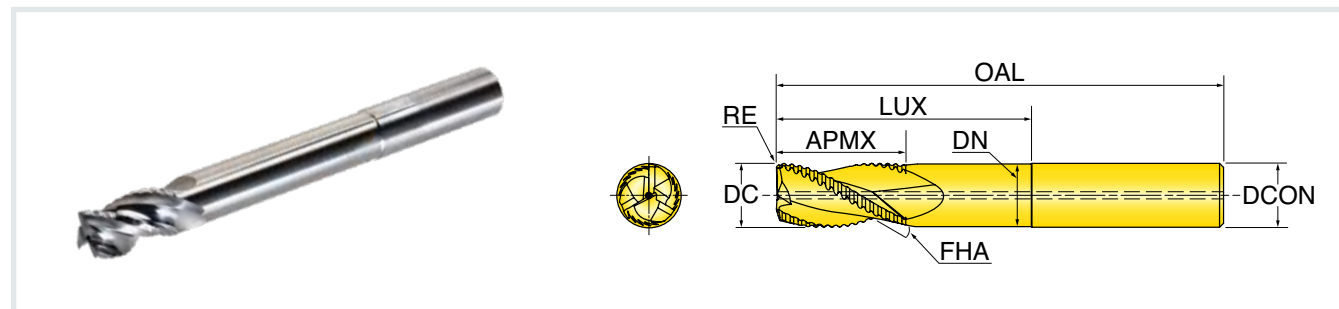


*Measurement is truncated.

Series P3N2R



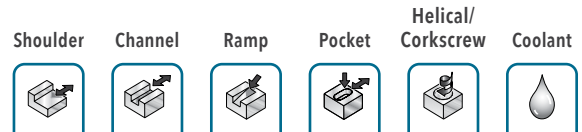
3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



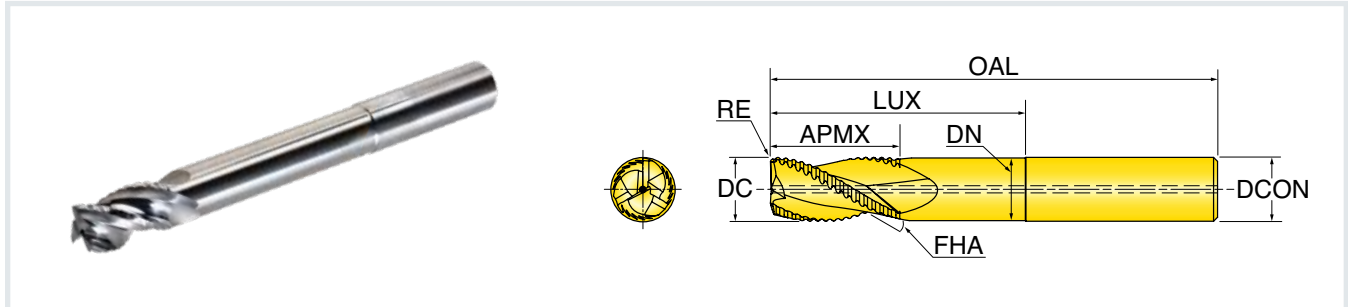
Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DN Neck Diameter	DCON Shank Diameter	RMPX Ramp Angle Max.
INCH									
P3N2R-.250A037L125R015C	0.2500	0.015	0.375	1.250	5×	2.75	0.222	0.250	3.5
P3N2R-.312A046L156R015C	0.3125	0.015	0.469	1.563	5×	3.50	0.285	0.313	3.5
P3N2R-.375A056L187R015C	0.3750	0.015	0.562	1.875	5×	3.75	0.347	0.375	3.5
P3N2R-.500A100L200R015C	0.5000	0.015	1.000	2.000	4×	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R015C	0.5000	0.015	0.750	2.500	5×	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R015C	0.5000	0.015	0.750	3.000	6×	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R030C	0.5000	0.030	1.000	2.000	4×	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R030C	0.5000	0.030	0.750	2.500	5×	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R030C	0.5000	0.030	0.750	3.000	6×	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R060C	0.5000	0.060	1.000	2.000	4×	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R060C	0.5000	0.060	0.750	2.500	5×	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R060C	0.5000	0.060	0.750	3.000	6×	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R090C	0.5000	0.090	1.000	2.000	4×	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R090C	0.5000	0.090	0.750	2.500	5×	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R090C	0.5000	0.090	0.750	3.000	6×	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R125C	0.5000	0.125	1.000	2.000	4×	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R125C	0.5000	0.125	0.750	2.500	5×	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R125C	0.5000	0.125	0.750	3.000	6×	4.88	0.472	0.500	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R *continued*



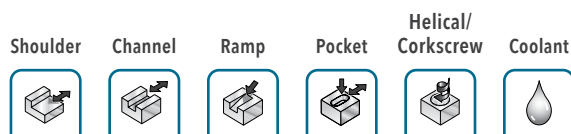
3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



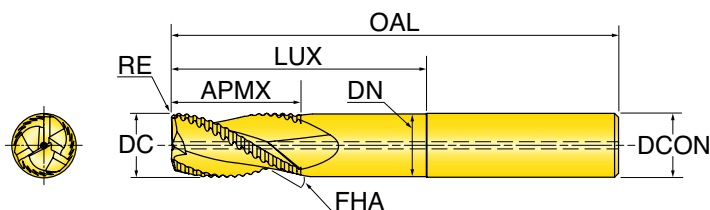
Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DN Neck Diameter	DCON Shank Diameter	RMPX Ramp Angle Max.
INCH									
P3N2R-.625A125L250R015C	0.6250	0.015	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R015C	0.6250	0.015	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R015C	0.6250	0.015	0.938	3.750	6×	5.75	0.597	0.625	4.0
P3N2R-.625A093L125R030C	0.6250	0.030	0.938	1.250	2×	3.25	0.597	0.625	4.0
P3N2R-.625A125L187R030C	0.6250	0.030	1.250	1.875	3×	4.00	0.597	0.625	4.0
P3N2R-.625A125L250R030C	0.6250	0.030	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R030C	0.6250	0.030	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R030C	0.6250	0.030	0.938	3.750	6×	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R060C	0.6250	0.060	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R060C	0.6250	0.060	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R060C	0.6250	0.060	0.938	3.750	6×	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R090C	0.6250	0.090	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R090C	0.6250	0.090	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R090C	0.6250	0.090	0.938	3.750	6×	5.75	0.597	0.625	4.0
P3N2R-.625A093L125R125C	0.6250	0.125	0.938	1.250	2×	3.25	0.597	0.625	4.0
P3N2R-.625A125L187R125C	0.6250	0.125	1.250	1.875	3×	4.00	0.597	0.625	4.0
P3N2R-.625A125L250R125C	0.6250	0.125	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R125C	0.6250	0.125	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R125C	0.6250	0.125	0.938	3.750	6×	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R188C	0.6250	0.188	1.250	2.500	4×	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R188C	0.6250	0.188	0.938	3.125	5×	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R188C	0.6250	0.188	0.938	3.750	6×	5.75	0.597	0.625	4.0

Not seeing what you're looking for? Custom tools are available – see pgs 62-63 for more info.

Series P3N2R *continued*



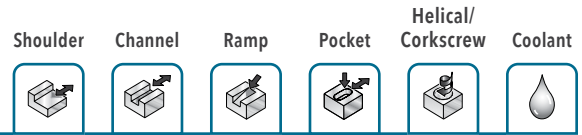
3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



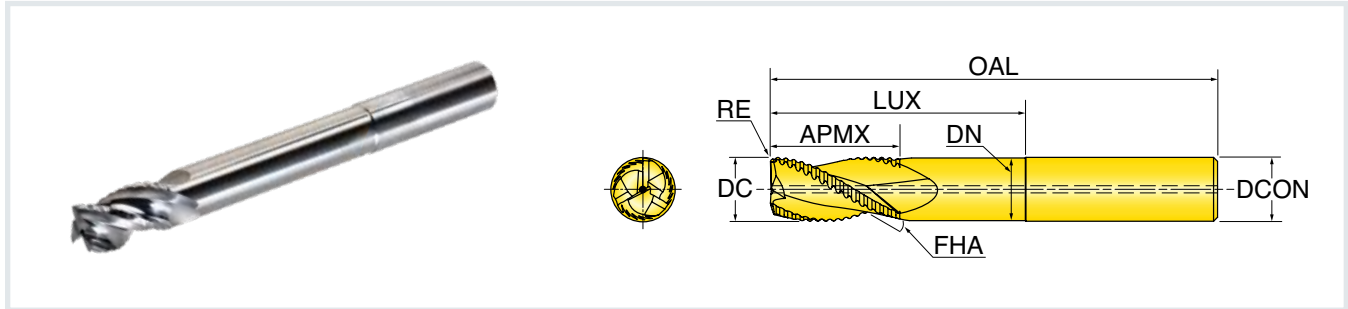
Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DN Neck Diameter	DCON Shank Diameter	RMPX Ramp Angle Max.
INCH									
P3N2R-.750A112L150R030C	0.7500	0.030	1.125	1.500	2×	3.75	0.722	0.750	4.0
P3N2R-.750A150L225R030C	0.7500	0.030	1.500	2.250	3×	4.38	0.722	0.750	4.0
P3N2R-.750A150L300R030C	0.7500	0.030	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R030C	0.7500	0.030	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R030C	0.7500	0.030	1.125	4.500	6×	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R060C	0.7500	0.060	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R060C	0.7500	0.060	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R060C	0.7500	0.060	1.125	4.500	6×	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R090C	0.7500	0.090	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R090C	0.7500	0.090	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R090C	0.7500	0.090	1.125	4.500	6×	6.75	0.722	0.750	4.0
P3N2R-.750A112L150R125C	0.7500	0.125	1.125	1.500	2×	3.75	0.722	0.750	4.0
P3N2R-.750A150L225R125C	0.7500	0.125	1.500	2.250	3×	4.38	0.722	0.750	4.0
P3N2R-.750A150L300R125C	0.7500	0.125	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R125C	0.7500	0.125	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R125C	0.7500	0.125	1.125	4.500	6×	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R188C	0.7500	0.188	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R188C	0.7500	0.188	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R188C	0.7500	0.188	1.125	4.500	6×	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R250C	0.7500	0.250	1.500	3.000	4×	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R250C	0.7500	0.250	1.125	3.750	5×	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R250C	0.7500	0.250	1.125	4.500	6×	6.75	0.722	0.750	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R *continued*



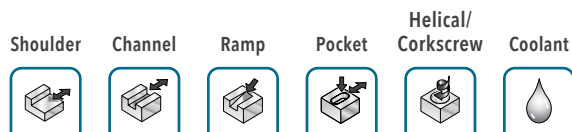
3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



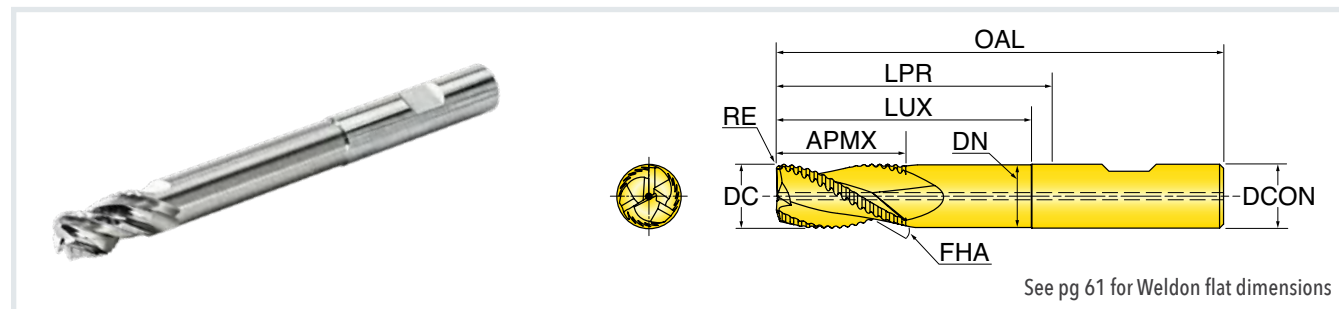
Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DN Neck Diameter	DCON Shank Diameter	RMPX Ramp Angle Max.
INCH									
P3N2R-1.00A150L200R030C	1.0000	0.030	1.500	2.000	2×	4.38	0.972	1.000	4.0
P3N2R-1.00A200L300R030C	1.0000	0.030	2.000	3.000	3×	5.38	0.972	1.000	4.0
P3N2R-1.00A200L400R030C	1.0000	0.030	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R030C	1.0000	0.030	1.500	5.000	5×	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R030C	1.0000	0.030	1.500	6.000	6×	8.38	0.972	1.000	4.0
P3N2R-1.00A200L400R060C	1.0000	0.060	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R060C	1.0000	0.060	1.500	6.000	6×	8.50	0.972	1.000	4.0
P3N2R-1.00A200L400R090C	1.0000	0.090	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R090C	1.0000	0.090	1.500	5.000	5×	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R090C	1.0000	0.090	1.500	6.000	6×	8.50	0.972	1.000	4.0
P3N2R-1.00A150L225R125C	1.0000	0.125	1.500	2.250	2×	4.63	0.972	1.000	4.0
P3N2R-1.00A200L300R125C	1.0000	0.125	2.000	3.000	3×	5.38	0.972	1.000	4.0
P3N2R-1.00A200L400R125C	1.0000	0.125	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R125C	1.0000	0.125	1.500	5.000	5×	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R125C	1.0000	0.125	1.500	6.000	6×	8.38	0.972	1.000	4.0
P3N2R-1.00A200L400R188C	1.0000	0.188	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R188C	1.0000	0.188	1.500	6.000	6×	8.50	0.972	1.000	4.0
P3N2R-1.00A200L400R250C	1.0000	0.250	2.000	4.000	4×	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R250C	1.0000	0.250	1.500	6.000	6×	8.50	0.972	1.000	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R



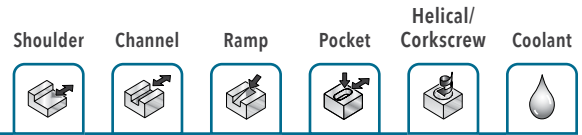
3-FLUTE SCEM 90° - WELDON WITH COOLANT



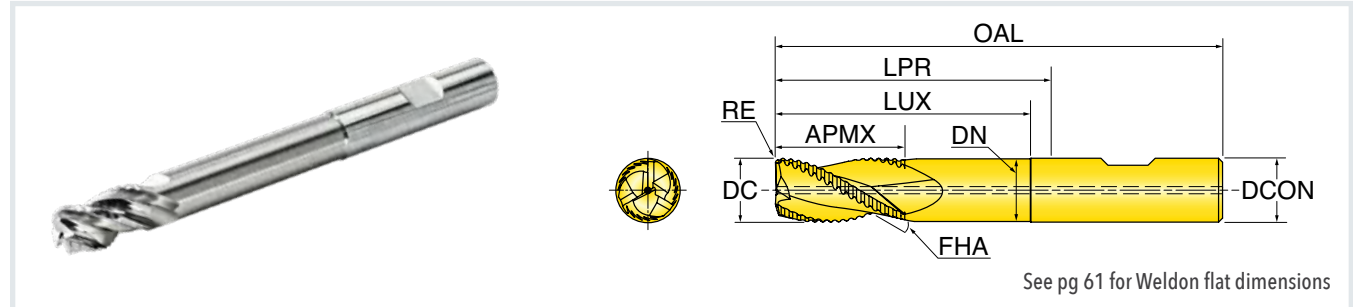
Part Number	DC Cutting Dia.	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Projection Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P3N2R-.250A037L125R015W	0.2500	0.015	0.375	1.250	5×	1.590	2.75	0.222	0.250	3.5
P3N2R-.312A046L156R015W	0.3125	0.015	0.469	1.563	5×	2.120	3.50	0.285	0.313	3.5
P3N2R-.375A056L187R015W	0.3750	0.015	0.562	1.875	5×	2.220	3.75	0.347	0.375	3.5
P3N2R-.500A100L200R015W	0.5000	0.015	1.000	2.000	4×	2.100	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R015W	0.5000	0.015	0.750	2.500	5×	2.600	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R015W	0.5000	0.015	0.750	3.000	6×	3.100	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R030W	0.5000	0.030	1.000	2.000	4×	2.100	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R030W	0.5000	0.030	0.750	2.500	5×	2.600	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R030W	0.5000	0.030	0.750	3.000	6×	3.100	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R060W	0.5000	0.060	1.000	2.000	4×	2.100	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R060W	0.5000	0.060	0.750	2.500	5×	2.600	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R060W	0.5000	0.060	0.750	3.000	6×	3.100	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R090W	0.5000	0.090	1.000	2.000	4×	2.100	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R090W	0.5000	0.090	0.750	2.500	5×	2.600	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R090W	0.5000	0.090	0.750	3.000	6×	3.100	4.88	0.472	0.500	4.0
P3N2R-.500A100L200R125W	0.5000	0.125	1.000	2.000	4×	2.100	3.88	0.472	0.500	4.0
P3N2R-.500A075L250R125W	0.5000	0.125	0.750	2.500	5×	2.600	4.38	0.472	0.500	4.0
P3N2R-.500A075L300R125W	0.5000	0.125	0.750	3.000	6×	3.100	4.88	0.472	0.500	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R *continued*



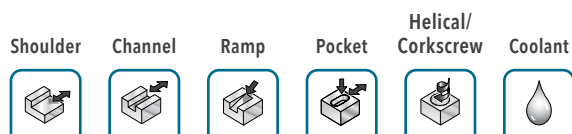
3-FLUTE SCEM 90° - WELDON WITH COOLANT



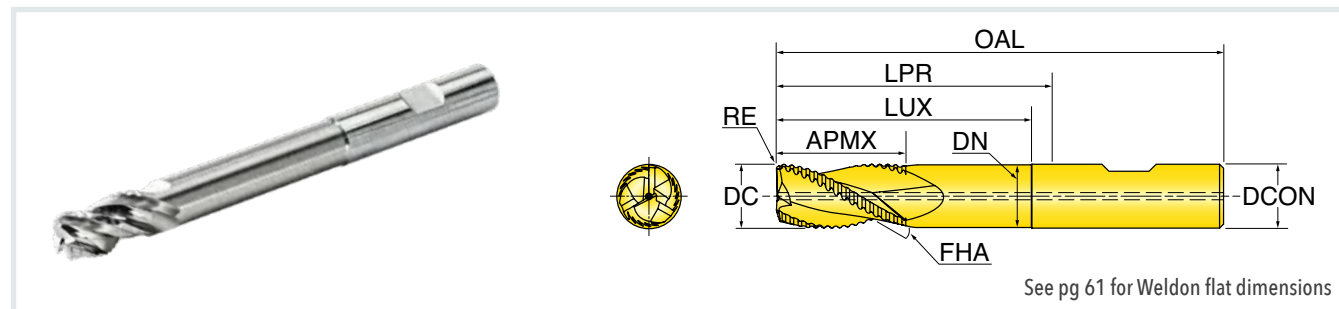
Part Number	DC Cutting Dia.	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Projection Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P3N2R-.625A125L250R015W	0.6250	0.015	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R015W	0.6250	0.015	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R015W	0.6250	0.015	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0
P3N2R-.625A093L125R030W	0.6250	0.030	0.938	1.250	2×	1.360	3.25	0.597	0.625	4.0
P3N2R-.625A125L187R030W	0.6250	0.030	1.250	1.875	3×	2.110	4.00	0.597	0.625	4.0
P3N2R-.625A125L250R030W	0.6250	0.030	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R030W	0.6250	0.030	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R030W	0.6250	0.030	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R060W	0.6250	0.060	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R060W	0.6250	0.060	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R060W	0.6250	0.060	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R090W	0.6250	0.090	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R090W	0.6250	0.090	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R090W	0.6250	0.090	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0
P3N2R-.625A093L125R125W	0.6250	0.125	0.938	1.250	2×	1.360	3.25	0.597	0.625	4.0
P3N2R-.625A125L187R125W	0.6250	0.125	1.250	1.875	3×	2.110	4.00	0.597	0.625	4.0
P3N2R-.625A125L250R125W	0.6250	0.125	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R125W	0.6250	0.125	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R125W	0.6250	0.125	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0
P3N2R-.625A125L250R188W	0.6250	0.188	1.250	2.500	4×	2.610	4.50	0.597	0.625	4.0
P3N2R-.625A093L312R188W	0.6250	0.188	0.938	3.125	5×	3.360	5.25	0.597	0.625	4.0
P3N2R-.625A093L375R188W	0.6250	0.188	0.938	3.750	6×	3.860	5.75	0.597	0.625	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R *continued*



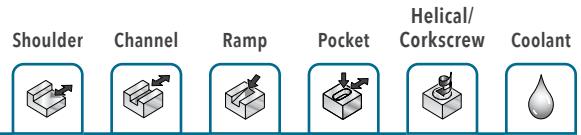
3-FLUTE SCEM 90° - WELDON WITH COOLANT



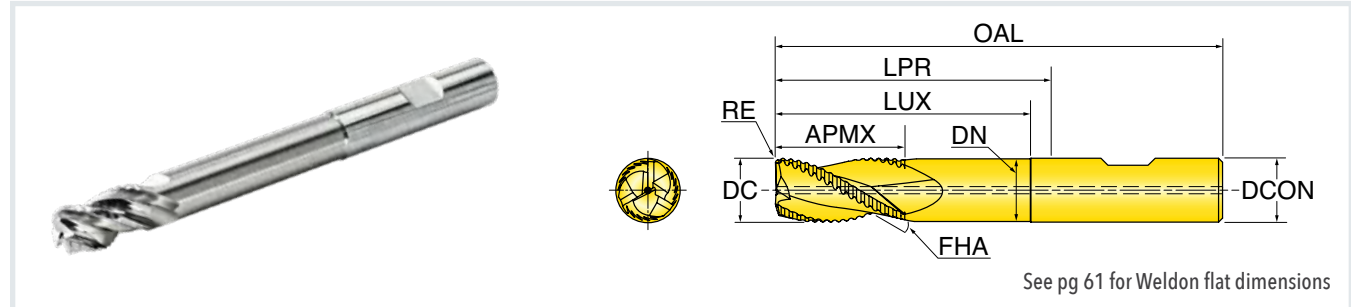
Part Number	DC Cutting Dia.	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Projection Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P3N2R-.750A112L150R030W	0.7500	0.030	1.125	1.500	2×	1.740	3.75	0.722	0.750	4.0
P3N2R-.750A150L225R030W	0.7500	0.030	1.500	2.250	3×	2.360	4.38	0.722	0.750	4.0
P3N2R-.750A150L300R030W	0.7500	0.030	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R030W	0.7500	0.030	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R030W	0.7500	0.030	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R060W	0.7500	0.060	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R060W	0.7500	0.060	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R060W	0.7500	0.060	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R090W	0.7500	0.090	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R090W	0.7500	0.090	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R090W	0.7500	0.090	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0
P3N2R-.750A112L150R125W	0.7500	0.125	1.125	1.500	2×	1.740	3.75	0.722	0.750	4.0
P3N2R-.750A150L225R125W	0.7500	0.125	1.500	2.250	3×	2.360	4.38	0.722	0.750	4.0
P3N2R-.750A150L300R125W	0.7500	0.125	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R125W	0.7500	0.125	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R125W	0.7500	0.125	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R188W	0.7500	0.188	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R188W	0.7500	0.188	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R188W	0.7500	0.188	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0
P3N2R-.750A150L300R250W	0.7500	0.250	1.500	3.000	4×	3.240	5.25	0.722	0.750	4.0
P3N2R-.750A112L375R250W	0.7500	0.250	1.125	3.750	5×	3.990	6.00	0.722	0.750	4.0
P3N2R-.750A112L450R250W	0.7500	0.250	1.125	4.500	6×	4.740	6.75	0.722	0.750	4.0

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2R *continued*



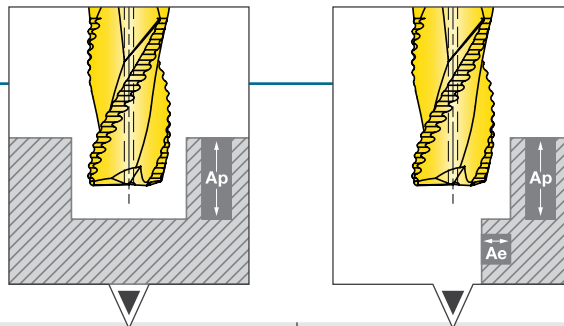
3-FLUTE SCEM 90° - WELDON WITH COOLANT



Part Number	DC Cutting Dia.	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Projection Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P3N2R-1.00A150L200R030W	1.0000	0.030	1.500	2.000	2×	2.110	4.38	0.972	1.000	4.0
P3N2R-1.00A200L300R030W	1.0000	0.030	2.000	3.000	3×	3.110	5.38	0.972	1.000	4.0
P3N2R-1.00A200L400R030W	1.0000	0.030	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R030W	1.0000	0.030	1.500	5.000	5×	5.110	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R030W	1.0000	0.030	1.500	6.000	6×	6.110	8.38	0.972	1.000	4.0
P3N2R-1.00A200L400R060W	1.0000	0.060	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R060W	1.0000	0.060	1.500	6.000	6×	6.240	8.50	0.972	1.000	4.0
P3N2R-1.00A200L400R090W	1.0000	0.090	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R090W	1.0000	0.090	1.500	5.000	5×	5.110	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R090W	1.0000	0.090	1.500	6.000	6×	6.240	8.50	0.972	1.000	4.0
P3N2R-1.00A150L225R125W	1.0000	0.125	1.500	2.250	2×	2.360	4.63	0.972	1.000	4.0
P3N2R-1.00A200L300R125W	1.0000	0.125	2.000	3.000	3×	3.110	5.38	0.972	1.000	4.0
P3N2R-1.00A200L400R125W	1.0000	0.125	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L500R125W	1.0000	0.125	1.500	5.000	5×	5.110	7.38	0.972	1.000	4.0
P3N2R-1.00A150L600R125W	1.0000	0.125	1.500	6.000	6×	6.110	8.38	0.972	1.000	4.0
P3N2R-1.00A200L400R188W	1.0000	0.188	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R188W	1.0000	0.188	1.500	6.000	6×	6.240	8.50	0.972	1.000	4.0
P3N2R-1.00A200L400R250W	1.0000	0.250	2.000	4.000	4×	4.110	6.38	0.972	1.000	4.0
P3N2R-1.00A150L600R250W	1.0000	0.250	1.500	6.000	6×	6.240	8.50	0.972	1.000	4.0

Not seeing what you're looking for? Custom tools are available – see pgs 62–63 for more info.

Operating Guidelines



Materials				Vc Cutting Speed SFM	DC Cutting Diameter (inch)	Slotting fz Feed Per Tooth (ipt)		Shoulder Milling *fz Feed Per Tooth (ipt)	
ISO	Material Group #VDI 3323	Type	Examples			Ap=1xD	**Ap=1.5xD to 2xD	Max Ap ≤ 2xD	
								Ae ≤ 0.4xD	Ae > 0.4xD
N	21-30	Aluminum alloys	7075, 6061	700-3300	.250	.0012-.0020	.0008-.0016	.0020-.0039	.0012-.0018
					.312	.0016-.0024	.0008-.0020	.0020-.0039	.0012-.0020
					.375	.0016-.0028	.0012-.0024	.0020-.0047	.0016-.0024
					.500	.0016-.0047	.0016-.0031	.0031-.0079	.0020-.0047
					.625	.0020-.0047	.0020-.0055	.0031-.0079	.0031-.0055
					.750	.0024-.0063	.0024-.0059	.0031-.0079	.0031-.0059
					1.00	.0024-.0063	.0024-.0063	.0031-.0079	.0031-.0063

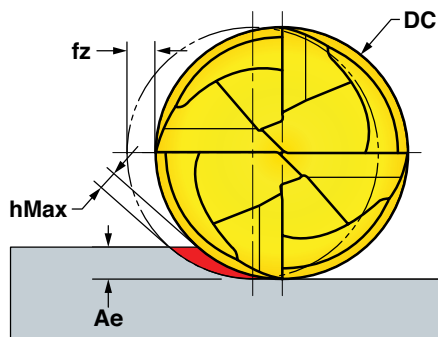
*fz = chip thinning calculations are included in the chip load above, especially when $Ae \leq .25xD$.

**Ap ≤ 1.5xD for tools .375" DC or less

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A power milling chuck, or coolant thru (CX series) holder (for tools with Weldon flats) is highly recommended, starting at .500" DC or larger. Using a weak holder impacts performance.

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

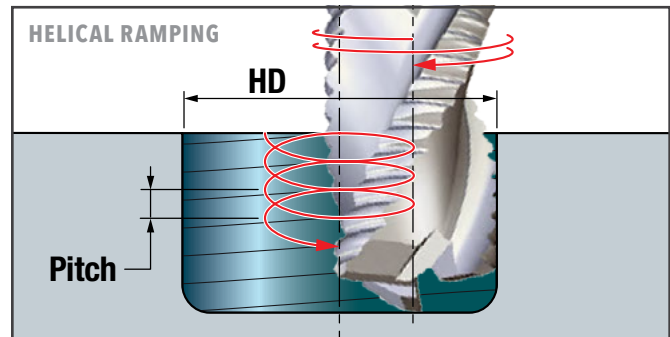
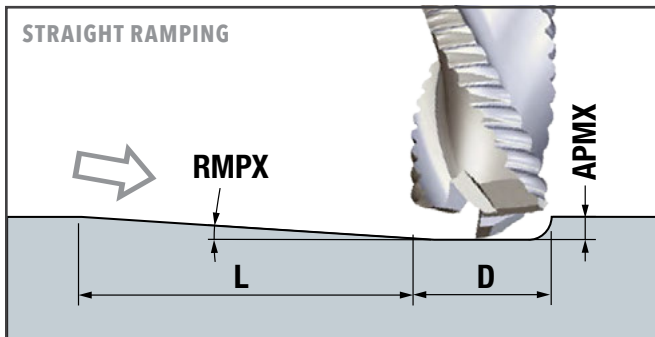
Chip Thinning



- Due to the lower radial engagement, *chip thinning* is accentuated, and a much higher feed-per-tooth (fz) can be applied in order to arrive at the true chip thickness (hMax).
- When $Ae \leq .25xD$, recommend use of **Chip Thinning Calculator** to ensure hMax is within fz range.
- If needed, Chip Thinning Calculator can be found on our website Machining App.

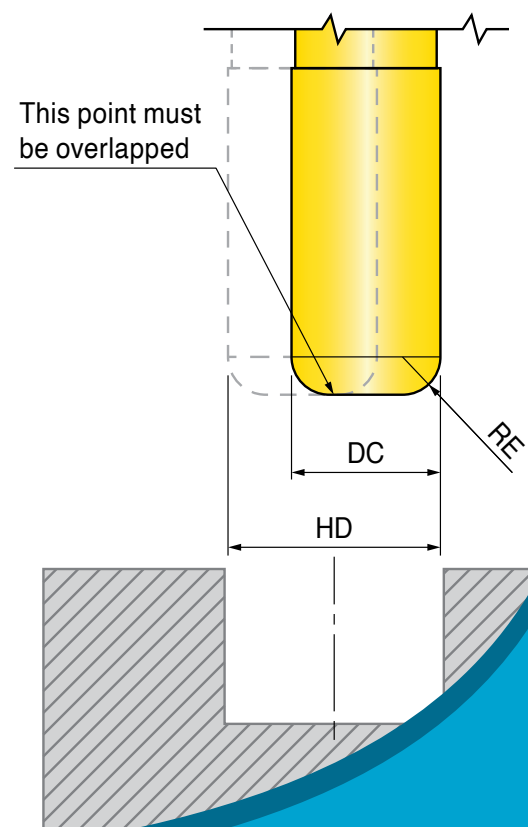


Ramping Guidelines



DC Cutter Dia.	STRAIGHT RAMPING			HELICAL RAMPING													
	RPMX Ramp Angle Max.	APMX Depth of Cut at 1.5xD	L Ramp Length Min.	HD Hole Diameter Max.							Pitch Max.						
				.015" RE	.030" RE	.060" RE	.090" RE	.125" RE	.188" RE	.250" RE	.015" RE	.030" RE	.060" RE	.090" RE	.125" RE	.188" RE	.250" RE
.250	3.5	.375	6.1	.447	-	-	-	-	-	-	.038	-	-	-	-	-	-
.312	3.5	.469	7.7	.565	-	-	-	-	-	-	.048	-	-	-	-	-	-
.375	3.5	.563	9.2	.684	-	-	-	-	-	-	.059	-	-	-	-	-	-
.500	4.0	.750	10.8	.922	.893	.836	.779	.713	-	-	.092	.086	.074	.061	.047	-	-
.625	4.0	.938	13.4	1.159	1.131	1.074	1.017	.950	.831	-	.117	.111	.098	.086	.071	.045	-
.750	4.0	1.125	16.1	1.397	1.368	1.311	1.254	1.188	1.069	.950	.142	.135	.123	.110	.096	.070	.044
1.000	4.0	1.500	21.5	-	1.843	1.786	1.729	1.663	1.544	1.425	-	.185	.172	.160	.145	.119	.093

HD = Hole Diameter Max. formula when Helical Ramping $HD = ((DC - (1 \times RE)) \times 1.9)$	
EXAMPLES	
P3N2R-.500A075L250R030C	P3N2R-.750A112L375R125W
DC = .500" with RE = .03"	DC = .750" with RE = .125"
$HD = ((DC - (1 \times RE)) \times 1.9)$	$HD = ((DC - (1 \times RE)) \times 1.9)$
$HD = ((.500 - (1 \times .03)) \times 1.9)$	$HD = ((.750 - (1 \times .125)) \times 1.9)$
HD = .893	HD = 1.188



PRIMOALUF™

MILLING - SCEN

N

Cutter Series

P3N1F

Cylindrical shank

P3N2F

Cylindrical shank
with coolant thru

Geometry

3-flute, coolant thru (Ø .250"
and larger), variable pitch,
variable helix

Diameter Range

.125-1.000"

Depth of Cut

4x, 5x, 6x, and 7xD APMX

Grade

IN05S

Lead Angle

90°

Corner Radius

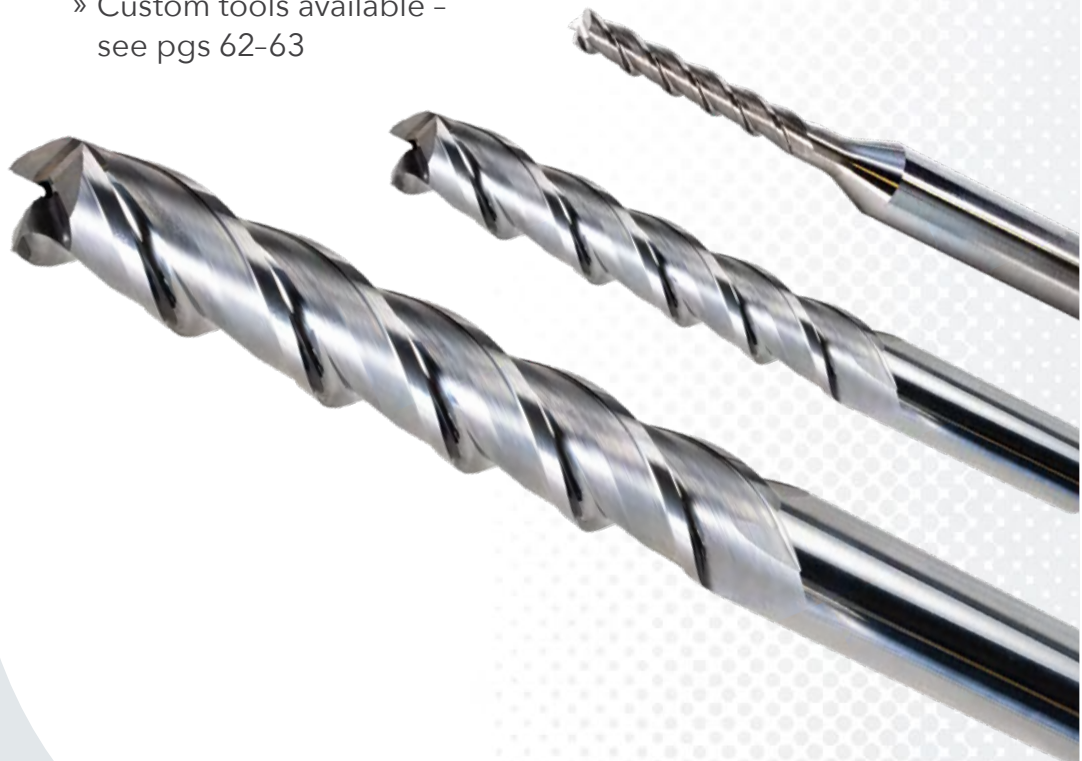
.008", .015", .030", .060",
.090", .125"

Materials

■ Aluminum alloys

Premium 3-Flute, Solid Carbide 90° End Mills, Ideal for Finishing Aluminum Alloys

- » Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications
- » 4x, 5x, 6x, and 7xD depth-of-cut (APMX) maximum provides a deep reach capability
- » No vibration when milling into corners with same radius as the tool
- » Coolant thru to assist with chip control and evacuation, and reduce heat
- » Custom tools available – see pgs 62-63



Learn
more »



PRIMOLINE™

Overview

PrimoLine, Ingersoll's new, premium, solid carbide end mill product line features **PrimoAlu-F**, the robust 3-flute end mills for aluminum pre-finishing and finishing applications.

FEATURES & BENEFITS:

- Unique geometry disrupts vibrations in long reach applications
- Variable pitch and variable helix to assist with vibration control
- No vibration when milling into corners with the same radius as the tool
- 4x, 5x, 6x, and 7xD depth-of-cut (APMX)
- Coolant thru to assist with chip control and evacuation



Coolant Thru*

Coolant helps with temperature control in the cutting area. It assists with chip evacuation resulting in a cleaner work area too.

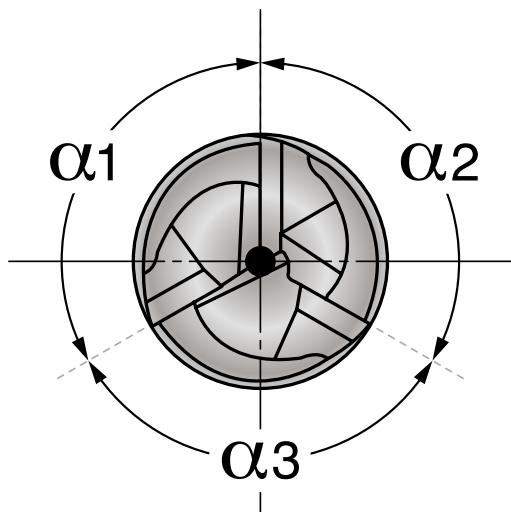
*Available on .250" DC or larger.

Unique Geometry

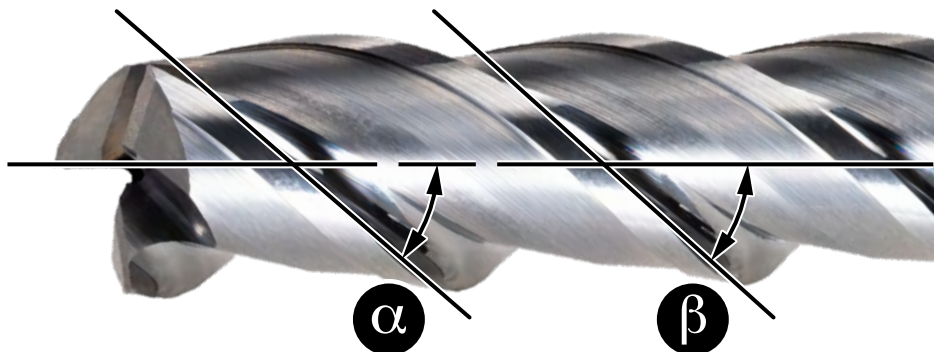
Disrupts harmonic vibrations, enabling incredible finishing results at deep depths-of-cut (APMX).



Variable Pitch and Variable (Different) Helix Angles

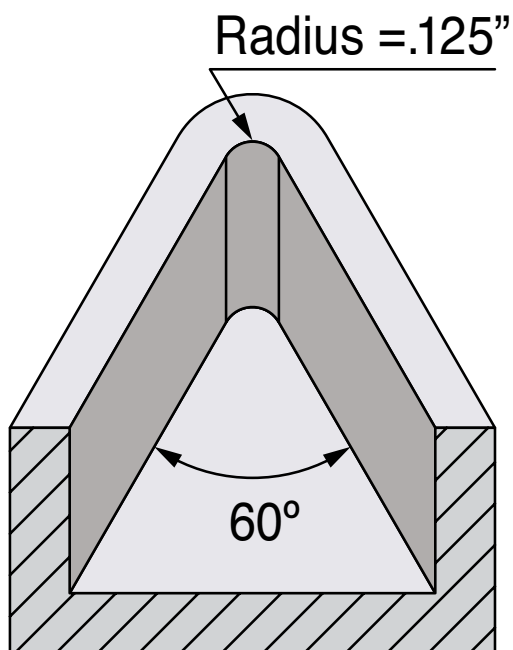


$$\alpha_1 \neq \alpha_2 \neq \alpha_3$$



$$\alpha \neq \beta$$

No Feed Reduction Needed in Extreme Cutting Conditions



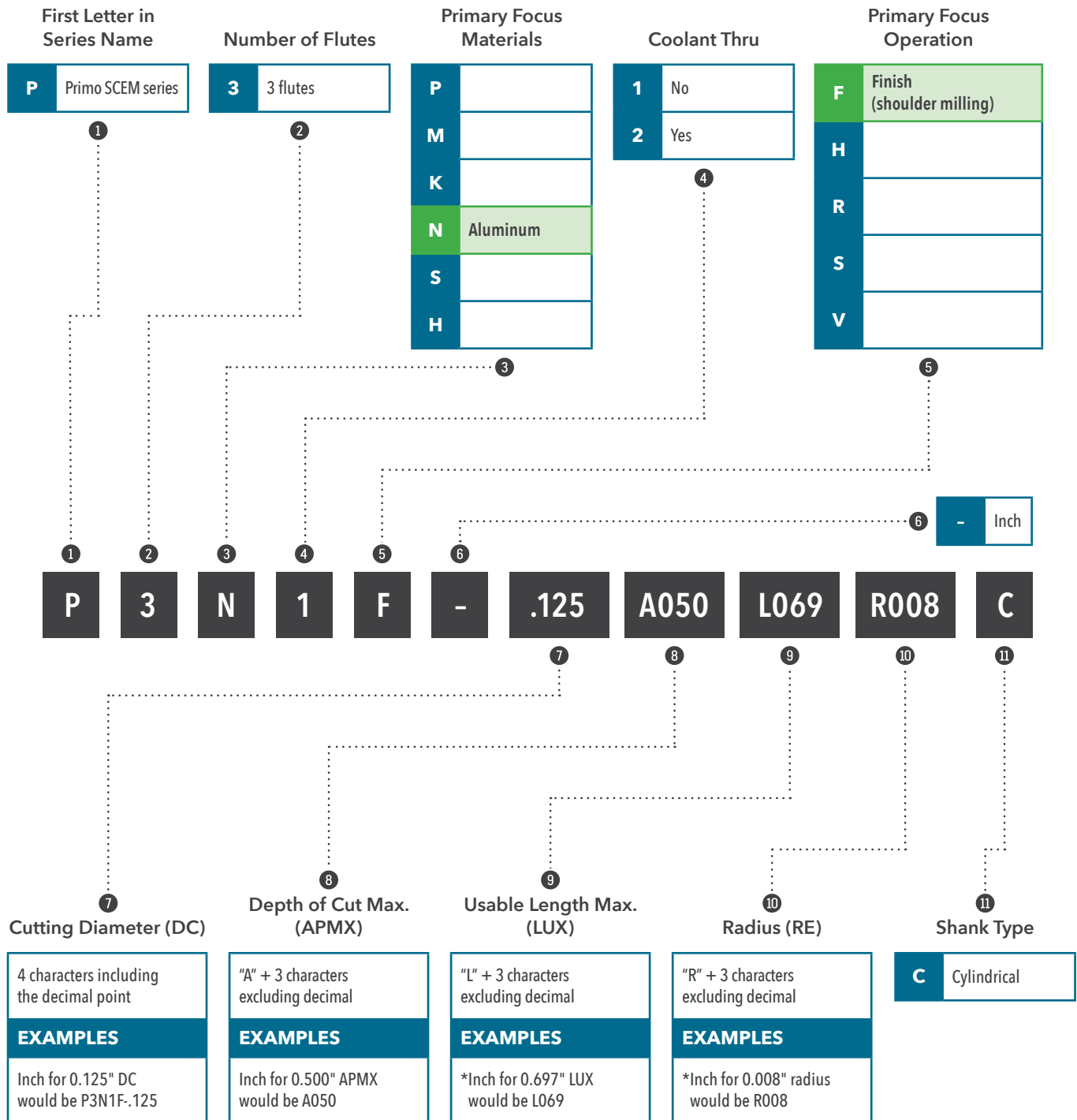
EXAMPLE

- Workpiece corner profile: Radius = .125"
- Diameter of SCEM tool: .250"

SUMMARY

In this case, the workpiece corner profile has the same radius as the tool. There is no need to reduce the feed rate when programming movements are $\leq 90^\circ$ with **PrimoAlu SCEM**. Programming tricks that slow down the tool are not needed. **PrimoAlu's** unique design disrupts harmonic vibrations and prevents the tool from being drawn into part during full-radius engagement. Therefore, **"higher productivity"** can be achieved while providing a straight and true finish without vibration or chatter marks.

Solid Carbide End Mill (SCEM) Part Number Nomenclature

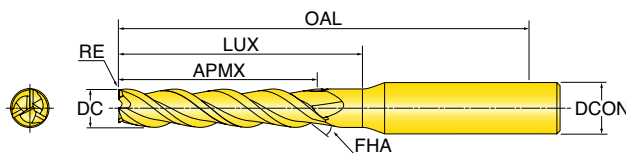


*Measurement is truncated.

Series P3N1F



3-FLUTE SCEM 90° - CYLINDRICAL



Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH							
P3N1F-.125A050L069R008C	0.1250	0.008	0.500	0.697	4×	2.50	0.250
P3N1F-.125A062L082R008C	0.1250	0.008	0.625	0.827	5×	2.63	0.250
P3N1F-.125A075L094R008C	0.1250	0.008	0.750	0.945	6×	2.75	0.250
P3N1F-.125A087L106R008C	0.1250	0.008	0.875	1.063	7×	2.88	0.250
P3N1F-.156A062L084R008C	0.1562	0.008	0.625	0.846	4×	2.63	0.250
P3N1F-.156A078L100R008C	0.1562	0.008	0.781	1.004	5×	2.75	0.250
P3N1F-.156A093L116R008C	0.1562	0.008	0.938	1.161	6×	2.88	0.250
P3N1F-.156A109L131R008C	0.1562	0.008	1.094	1.311	7×	3.00	0.250
P3N1F-.187A075L102R008C	0.1875	0.008	0.750	1.024	4×	2.75	0.250
P3N1F-.187A093L121R008C	0.1875	0.008	0.938	1.213	5×	2.88	0.250
P3N1F-.187A112L140R008C	0.1875	0.008	1.125	1.402	6×	3.13	0.250
P3N1F-.187A131L159R008C	0.1875	0.008	1.312	1.594	7×	3.25	0.250

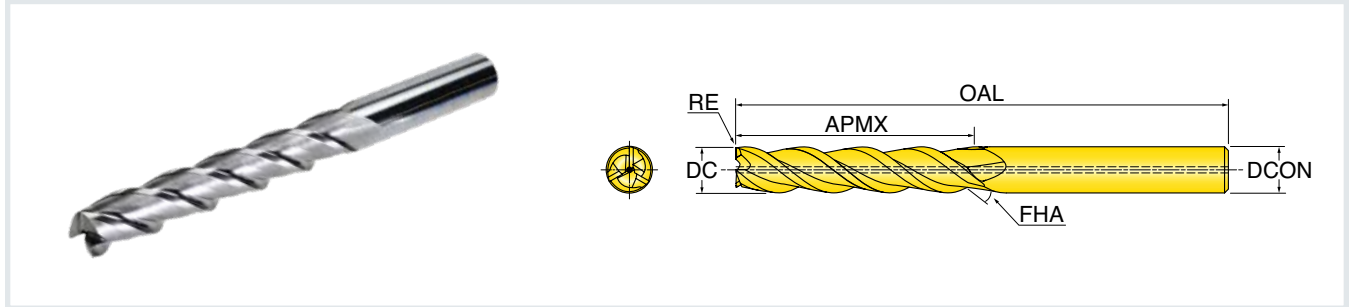
Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Shoulder Coolant



Series P3N2F

3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



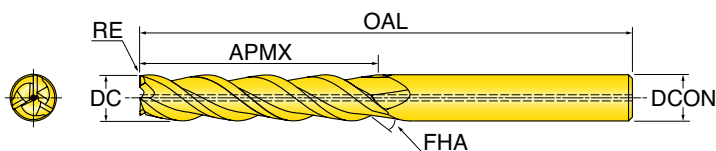
Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P3N2F-.250A100R008C	0.2500	0.008	1.000	4×	2.75	0.250
P3N2F-.250A125R008C	0.2500	0.008	1.250	5×	3.00	0.250
P3N2F-.250A150R008C	0.2500	0.008	1.500	6×	3.25	0.250
P3N2F-.250A175R008C	0.2500	0.008	1.750	7×	3.50	0.250
P3N2F-.250A100R015C	0.2500	0.015	1.000	4×	2.75	0.250
P3N2F-.250A125R015C	0.2500	0.015	1.250	5×	3.00	0.250
P3N2F-.250A150R015C	0.2500	0.015	1.500	6×	3.25	0.250
P3N2F-.250A175R015C	0.2500	0.015	1.750	7×	3.50	0.250
P3N2F-.312A125R008C	0.3125	0.008	1.250	4×	3.25	0.313
P3N2F-.312A156R008C	0.3125	0.008	1.562	5×	3.75	0.313
P3N2F-.312A187R008C	0.3125	0.008	1.875	6×	4.00	0.313
P3N2F-.312A218R008C	0.3125	0.008	2.188	7×	4.25	0.313
P3N2F-.312A125R015C	0.3125	0.015	1.250	4×	3.25	0.313
P3N2F-.312A156R015C	0.3125	0.015	1.562	5×	3.75	0.313
P3N2F-.312A187R015C	0.3125	0.015	1.875	6×	4.00	0.313
P3N2F-.312A218R015C	0.3125	0.015	2.188	7×	4.25	0.313
P3N2F-.375A150R008C	0.3750	0.008	1.500	4×	3.50	0.375
P3N2F-.375A187R008C	0.3750	0.008	1.875	5×	4.00	0.375
P3N2F-.375A225R008C	0.3750	0.008	2.250	6×	4.25	0.375
P3N2F-.375A262R008C	0.3750	0.008	2.625	7×	4.75	0.375
P3N2F-.375A150R015C	0.3750	0.015	1.500	4×	3.50	0.375
P3N2F-.375A187R015C	0.3750	0.015	1.875	5×	4.00	0.375
P3N2F-.375A225R015C	0.3750	0.015	2.250	6×	4.25	0.375
P3N2F-.375A262R015C	0.3750	0.015	2.625	7×	4.75	0.375

Not seeing what you're looking for? Custom tools are available – see pgs 62-63 for more info.



Series P3N2F *continued*

3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P3N2F-.500A200R008C	0.5000	0.008	2.000	4×	4.25	0.500
P3N2F-.500A250R008C	0.5000	0.008	2.500	5×	4.75	0.500
P3N2F-.500A300R008C	0.5000	0.008	3.000	6×	5.25	0.500
P3N2F-.500A350R008C	0.5000	0.008	3.500	7×	5.75	0.500
P3N2F-.500A200R015C	0.5000	0.015	2.000	4×	4.25	0.500
P3N2F-.500A250R015C	0.5000	0.015	2.500	5×	4.75	0.500
P3N2F-.500A300R015C	0.5000	0.015	3.000	6×	5.25	0.500
P3N2F-.500A350R015C	0.5000	0.015	3.500	7×	5.75	0.500
P3N2F-.500A200R030C	0.5000	0.030	2.000	4×	4.25	0.500
P3N2F-.500A250R030C	0.5000	0.030	2.500	5×	4.75	0.500
P3N2F-.500A300R030C	0.5000	0.030	3.000	6×	5.25	0.500
P3N2F-.500A350R030C	0.5000	0.030	3.500	7×	5.75	0.500
P3N2F-.500A200R060C	0.5000	0.060	2.000	4×	4.25	0.500
P3N2F-.500A250R060C	0.5000	0.060	2.500	5×	4.75	0.500
P3N2F-.500A300R060C	0.5000	0.060	3.000	6×	5.25	0.500
P3N2F-.500A350R060C	0.5000	0.060	3.500	7×	5.75	0.500
P3N2F-.500A200R125C	0.5000	0.125	2.000	4×	4.25	0.500
P3N2F-.500A250R125C	0.5000	0.125	2.500	5×	4.75	0.500
P3N2F-.500A300R125C	0.5000	0.125	3.000	6×	5.25	0.500
P3N2F-.500A350R125C	0.5000	0.125	3.500	7×	5.75	0.500

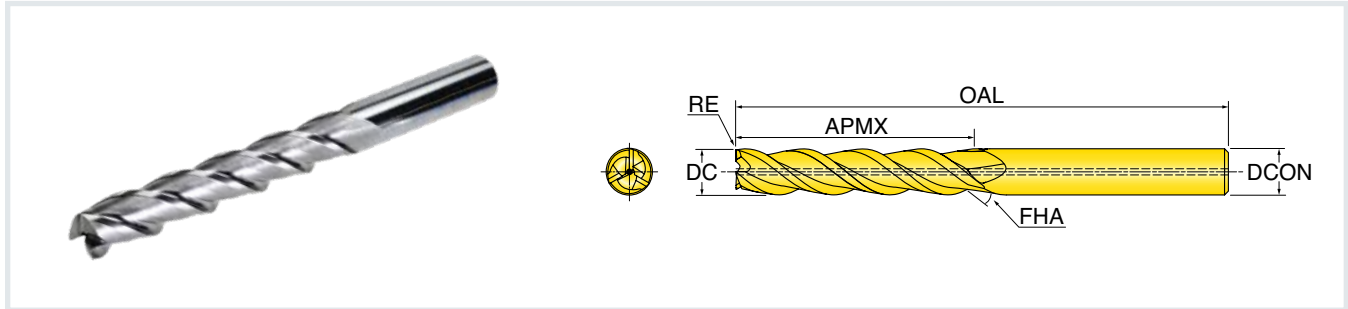
Not seeing what you're looking for? Custom tools are available – see pgs 62-63 for more info.

Shoulder Coolant



Series P3N2F *continued*

3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT

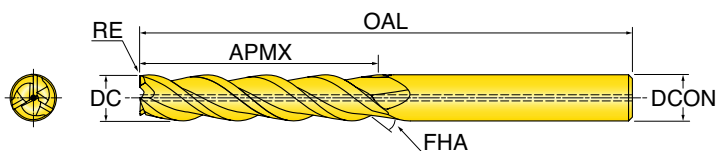


Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P3N2F-.625A250R008C	0.6250	0.008	2.500	4×	5.25	0.625
P3N2F-.625A312R008C	0.6250	0.008	3.125	5×	6.00	0.625
P3N2F-.625A375R008C	0.6250	0.008	3.750	6×	6.50	0.625
P3N2F-.625A437R008C	0.6250	0.008	4.375	7×	7.25	0.625
P3N2F-.625A250R015C	0.6250	0.015	2.500	4×	5.25	0.625
P3N2F-.625A312R015C	0.6250	0.015	3.125	5×	6.00	0.625
P3N2F-.625A375R015C	0.6250	0.015	3.750	6×	6.50	0.625
P3N2F-.625A437R015C	0.6250	0.015	4.375	7×	7.25	0.625
P3N2F-.625A250R030C	0.6250	0.030	2.500	4×	5.25	0.625
P3N2F-.625A312R030C	0.6250	0.030	3.125	5×	6.00	0.625
P3N2F-.625A375R030C	0.6250	0.030	3.750	6×	6.50	0.625
P3N2F-.625A437R030C	0.6250	0.030	4.375	7×	7.25	0.625
P3N2F-.625A250R060C	0.6250	0.060	2.500	4×	5.25	0.625
P3N2F-.625A312R060C	0.6250	0.060	3.125	5×	6.00	0.625
P3N2F-.625A375R060C	0.6250	0.060	3.750	6×	6.50	0.625
P3N2F-.625A437R060C	0.6250	0.060	4.375	7×	7.25	0.625
P3N2F-.625A250R125C	0.6250	0.125	2.500	4×	5.25	0.625
P3N2F-.625A312R125C	0.6250	0.125	3.125	5×	6.00	0.625
P3N2F-.625A375R125C	0.6250	0.125	3.750	6×	6.50	0.625
P3N2F-.625A437R125C	0.6250	0.125	4.375	7×	7.25	0.625

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P3N2F *continued*

3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P3N2F-.750A300R008C	0.7500	0.008	3.000	4×	6.00	0.750
P3N2F-.750A375R008C	0.7500	0.008	3.750	5×	6.75	0.750
P3N2F-.750A450R008C	0.7500	0.008	4.500	6×	7.50	0.750
P3N2F-.750A525R008C	0.7500	0.008	5.250	7×	8.25	0.750
P3N2F-.750A300R030C	0.7500	0.030	3.000	4×	6.00	0.750
P3N2F-.750A375R030C	0.7500	0.030	3.750	5×	6.75	0.750
P3N2F-.750A450R030C	0.7500	0.030	4.500	6×	7.50	0.750
P3N2F-.750A525R030C	0.7500	0.030	5.250	7×	8.25	0.750
P3N2F-.750A300R060C	0.7500	0.060	3.000	4×	6.00	0.750
P3N2F-.750A375R060C	0.7500	0.060	3.750	5×	6.75	0.750
P3N2F-.750A450R060C	0.7500	0.060	4.500	6×	7.50	0.750
P3N2F-.750A525R060C	0.7500	0.060	5.250	7×	8.25	0.750
P3N2F-.750A300R090C	0.7500	0.090	3.000	4×	6.00	0.750
P3N2F-.750A375R090C	0.7500	0.090	3.750	5×	6.75	0.750
P3N2F-.750A450R090C	0.7500	0.090	4.500	6×	7.50	0.750
P3N2F-.750A525R090C	0.7500	0.090	5.250	7×	8.25	0.750
P3N2F-.750A300R125C	0.7500	0.125	3.000	4×	6.00	0.750
P3N2F-.750A375R125C	0.7500	0.125	3.750	5×	6.75	0.750
P3N2F-.750A450R125C	0.7500	0.125	4.500	6×	7.50	0.750
P3N2F-.750A525R125C	0.7500	0.125	5.250	7×	8.25	0.750

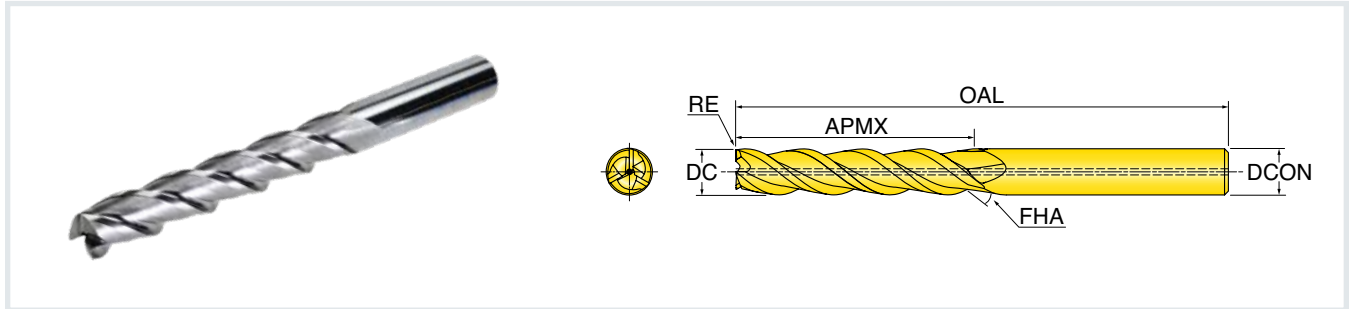
Not seeing what you're looking for? Custom tools are available – see pgs 62–63 for more info.

Shoulder Coolant



Series P3N2F *continued*

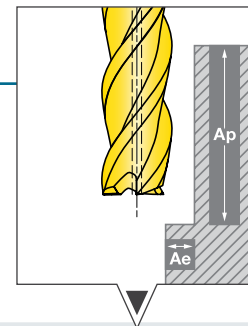
3-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



Part Number	DC Cutting Diameter	RE Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P3N2F-1.00A400R008C	1.0000	0.008	4.000	4×	7.25	1.000
P3N2F-1.00A500R008C	1.0000	0.008	5.000	5×	8.25	1.000
P3N2F-1.00A600R008C	1.0000	0.008	6.000	6×	9.25	1.000
P3N2F-1.00A700R008C	1.0000	0.008	7.000	7×	10.25	1.000
P3N2F-1.00A400R030C	1.0000	0.030	4.000	4×	7.25	1.000
P3N2F-1.00A500R030C	1.0000	0.030	5.000	5×	8.25	1.000
P3N2F-1.00A600R030C	1.0000	0.030	6.000	6×	9.25	1.000
P3N2F-1.00A700R030C	1.0000	0.030	7.000	7×	10.25	1.000
P3N2F-1.00A400R060C	1.0000	0.060	4.000	4×	7.25	1.000
P3N2F-1.00A500R060C	1.0000	0.060	5.000	5×	8.25	1.000
P3N2F-1.00A600R060C	1.0000	0.060	6.000	6×	9.25	1.000
P3N2F-1.00A700R060C	1.0000	0.060	7.000	7×	10.25	1.000
P3N2F-1.00A400R090C	1.0000	0.090	4.000	4×	7.25	1.000
P3N2F-1.00A500R090C	1.0000	0.090	5.000	5×	8.25	1.000
P3N2F-1.00A600R090C	1.0000	0.090	6.000	6×	9.25	1.000
P3N2F-1.00A700R090C	1.0000	0.090	7.000	7×	10.25	1.000
P3N2F-1.00A400R125C	1.0000	0.125	4.000	4×	7.25	1.000
P3N2F-1.00A500R125C	1.0000	0.125	5.000	5×	8.25	1.000
P3N2F-1.00A600R125C	1.0000	0.125	6.000	6×	9.25	1.000
P3N2F-1.00A700R125C	1.0000	0.125	7.000	7×	10.25	1.000

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Operating Guidelines



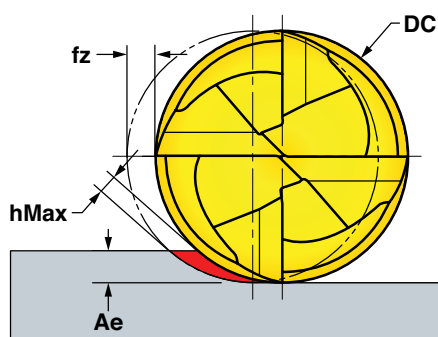
Materials				Vc Cutting Speed SFM	DC Cutting Diameter (inch)	Finish Shoulder Milling *fz Feed Per Tooth (ipt)
ISO	Material Group #VDI 3323	Type	Examples			Ap ≤ 7xD
						Ae ≤ 0.02xD
N	21-30	Aluminum alloys	7075, 6061	490-3300	.125	.0012-.0024
					.156	.0012-.0024
					.187	.0012-.0024
					.250	.0016-.0031
					.312	.0016-.0031
					.375	.0020-.0039
					.500	.0020-.0047
					.625	.0020-.0047
					.750	.0024-.0059
					1.00	.0024-.0059

*fz = chip thinning calculations are included in the chip load above, especially when $Ae \leq .25xD$.

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A coolant thru (CX series) shrink fit holder is recommended for clamping and ideal coolant flow. Using a inferior holder could impact performance.

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

Chip Thinning



- Due to the lower radial engagement, *chip thinning* is accentuated, and a much higher feed-per-tooth (fz) can be applied in order to arrive at the true chip thickness (hMax).
- When $Ae \leq .25xD$, recommend use of **Chip Thinning Calculator** to ensure hMax is within fz range.
- If needed, Chip Thinning Calculator can be found on our website Machining App.



PRIMOSS^V™

MILLING - SCRM

M

Cutter Series

P4M1V-_C

Cylindrical shank

P4M2V-_C

Cylindrical shank
with coolant thru

P4M2V-_W

Weldon flat shank
with coolant thru

Geometry

4-flute, coolant thru
(Ø .250" and larger),
variable pitch,
variable helix

Diameter Range

.125-.750"

Depth of Cut

2xD APMX and up to
4xD LUX

Grade

IN2205

(multi-layer PVD AlTiSiN)

Lead Angle

90°

Corner Radii

Sharp - .008", .015", .030",
.060", .090", .125"

Materials

■ Stainless steel

Premium 4-Flute, Solid Carbide 90° End Mills - Ideal for Various Machining Operations in Stainless Steel

- » Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications
- » 2xD depth-of-cut (APMX)
- » Up to 4xD usable length (LUX) provides a deep reach capability
- » Coolant thru to assist with chip control and evacuation, and reduce heat
- » Custom tools available - see pgs 62-63



Learn
more »



PRIMOLINE™

Overview

PrimoLine, Ingersoll's line of premium solid carbide end mills now includes **PrimoSS-V**. A new series of 4-flute end mills ideal for various machining operations in stainless steel.



Coolant Thru

Coolant helps with temperature control in the cutting area and optimal chip evacuation, resulting in a cleaner work area.

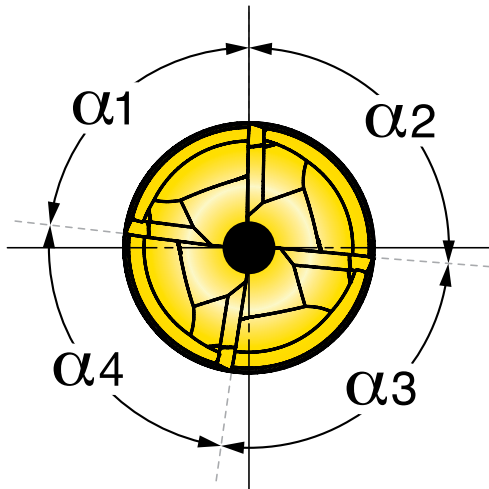
Radius to Neck Area

Unique feature reinforces the tool and provides a smooth blend point.

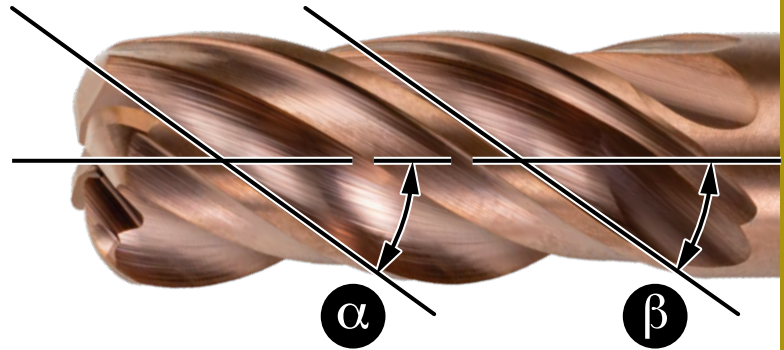
FEATURES & BENEFITS:

- Variable pitch and variable helix to assist with vibration control
- Coolant thru to assist with chip control and evacuation
- 2xD depth-of-cut (APMX)
- Up to 4xD usable length (LUX) provides a deep reach capability
- Wide variety of corner radii: .008", .015", .030", .060", .090", .125"

Variable Pitch and Variable (Different) Helix Angles



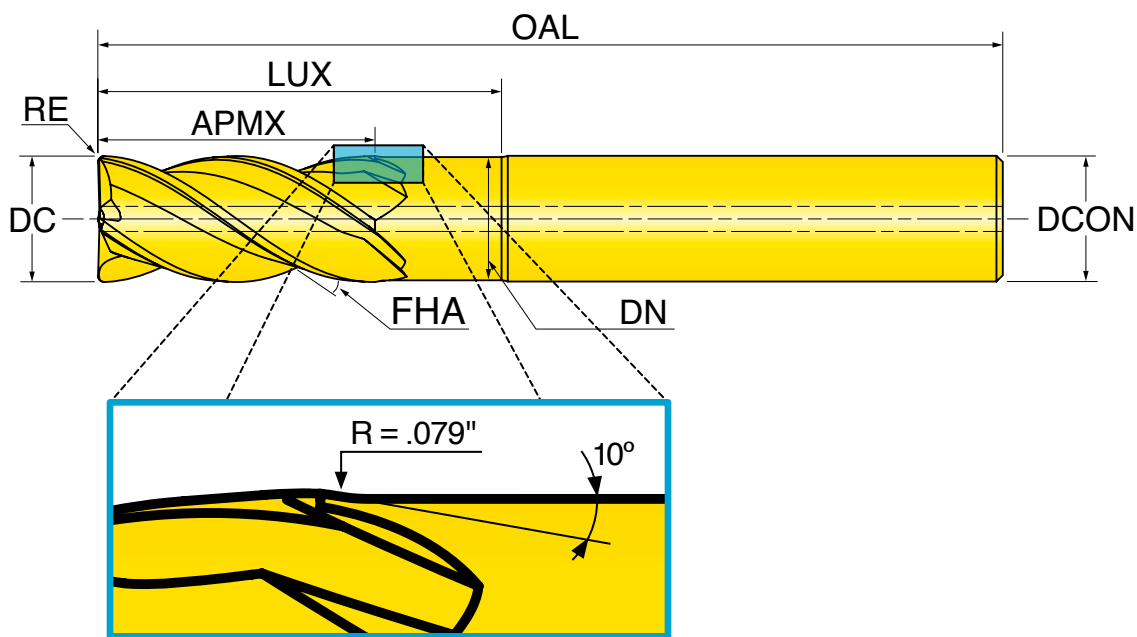
$$\alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4$$



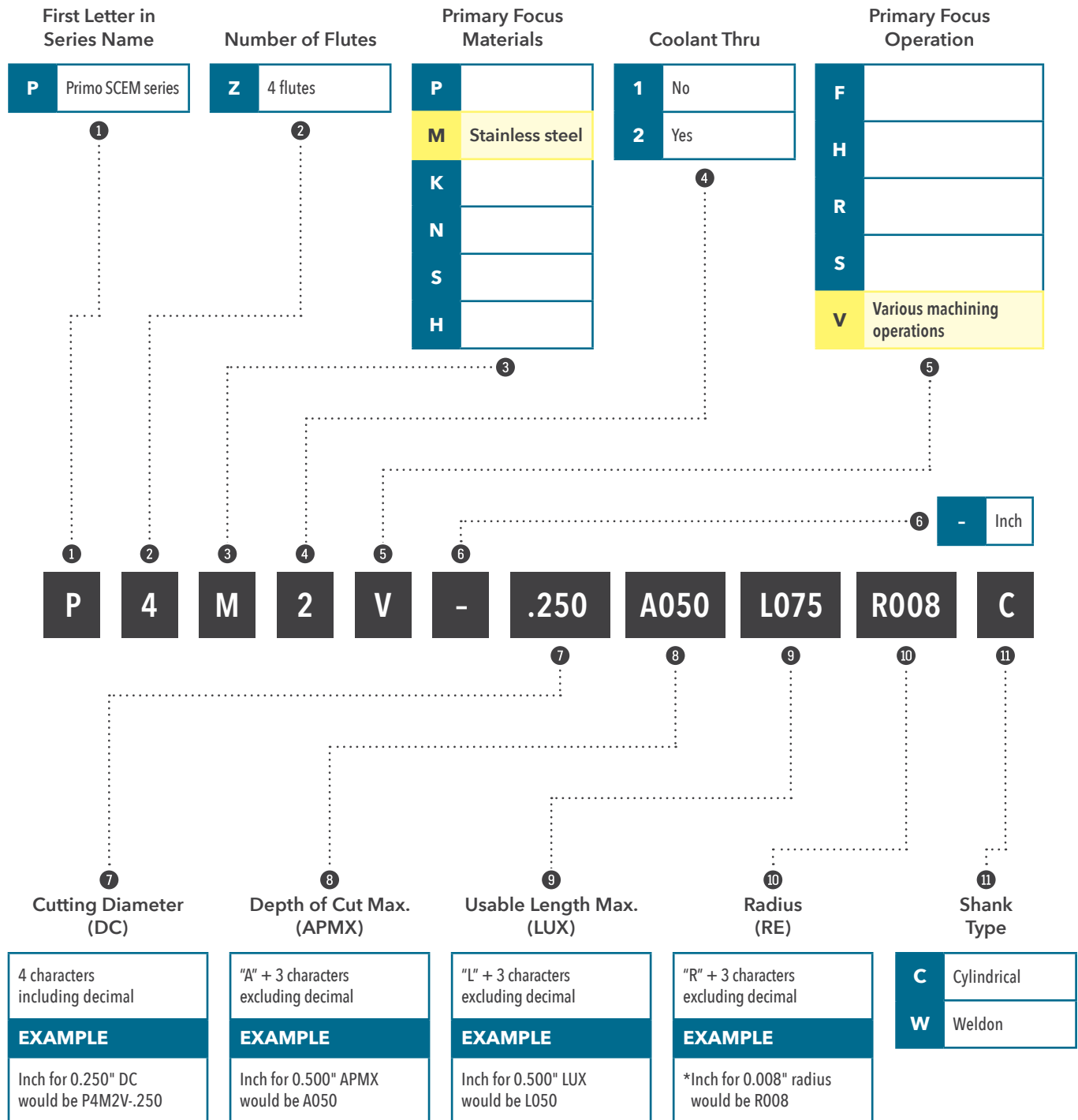
$$\alpha \neq \beta$$

Radius to Neck Feature

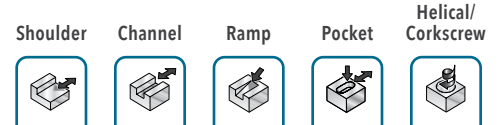
Unique feature reinforces the tool and provides a smooth transition between the diameters, resulting in less deflection and smoother surface finish.



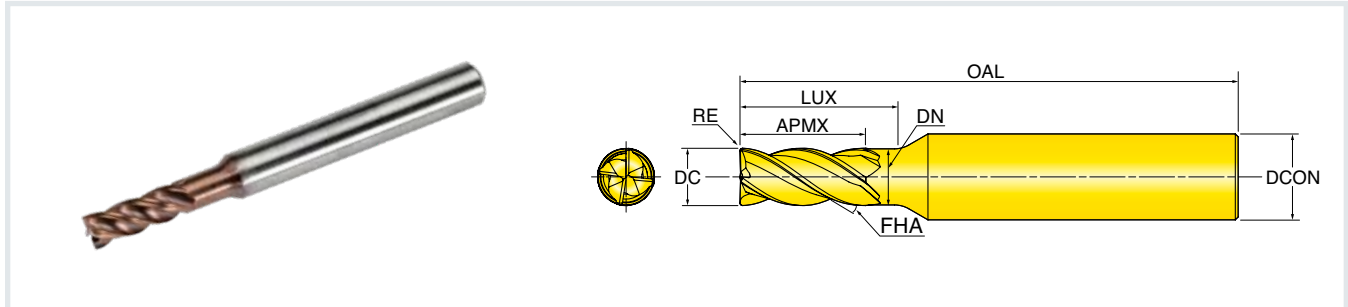
Solid Carbide End Mill (SCEM) Part Number Nomenclature



Series P4M1V



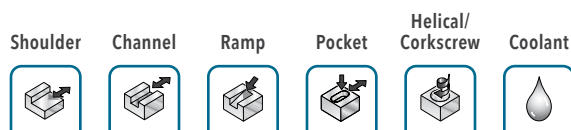
4-FLUTE SCEM 90° - CYLINDRICAL



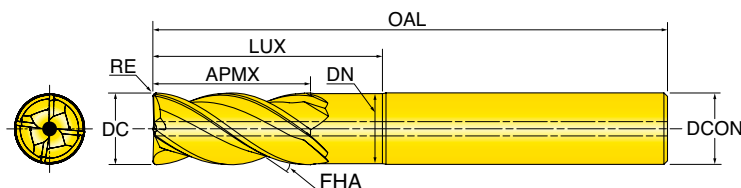
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH									
P4M1V-.125A031L037R000C	0.1250	Sharp	0.312	0.375	3×	2.00	0.121	0.250	2.0
P4M1V-.125A031L050R000C	0.1250	Sharp	0.312	0.500	4×	2.13	0.121	0.250	2.0
P4M1V-.125A031L037R008C	0.1250	0.008	0.312	0.375	3×	2.00	0.121	0.250	2.0
P4M1V-.125A031L050R008C	0.1250	0.008	0.312	0.500	4×	2.13	0.121	0.250	2.0
P4M1V-.125A031L037R015C	0.1250	0.015	0.312	0.375	3×	2.00	0.121	0.250	2.0
P4M1V-.125A031L050R015C	0.1250	0.015	0.312	0.500	4×	2.13	0.121	0.250	2.0
P4M1V-.156A039L046R000C	0.1562	Sharp	0.391	0.469	3×	2.00	0.152	0.250	2.0
P4M1V-.156A039L062R000C	0.1562	Sharp	0.391	0.625	4×	2.25	0.152	0.250	2.0
P4M1V-.156A039L046R008C	0.1562	0.008	0.391	0.469	3×	2.00	0.152	0.250	2.0
P4M1V-.156A039L062R008C	0.1562	0.008	0.391	0.625	4×	2.25	0.152	0.250	2.0
P4M1V-.156A039L046R015C	0.1562	0.015	0.391	0.469	3×	2.00	0.152	0.250	2.0
P4M1V-.156A039L062R015C	0.1562	0.015	0.391	0.625	4×	2.25	0.152	0.250	2.0
P4M1V-.187A046L056R000C	0.1875	Sharp	0.469	0.563	3×	2.13	0.184	0.250	2.0
P4M1V-.187A046L075R000C	0.1875	Sharp	0.469	0.750	4×	2.25	0.184	0.250	2.0
P4M1V-.187A046L056R008C	0.1875	0.008	0.469	0.563	3×	2.13	0.184	0.250	2.0
P4M1V-.187A046L075R008C	0.1875	0.008	0.469	0.750	4×	2.25	0.184	0.250	2.0
P4M1V-.187A046L056R015C	0.1875	0.015	0.469	0.563	3×	2.13	0.184	0.250	2.0
P4M1V-.187A046L075R015C	0.1875	0.015	0.469	0.750	4×	2.25	0.184	0.250	2.0
P4M1V-.187A046L056R030C	0.1875	0.030	0.469	0.563	3×	2.13	0.184	0.250	2.0
P4M1V-.187A046L075R030C	0.1875	0.030	0.469	0.750	4×	2.25	0.184	0.250	2.0

Not seeing what you're looking for? Custom tools are available – see pgs 62–63 for more info.

Series P4M2V



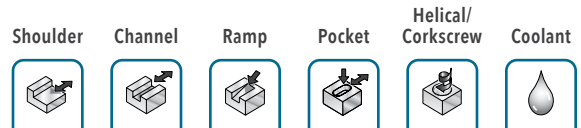
4-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



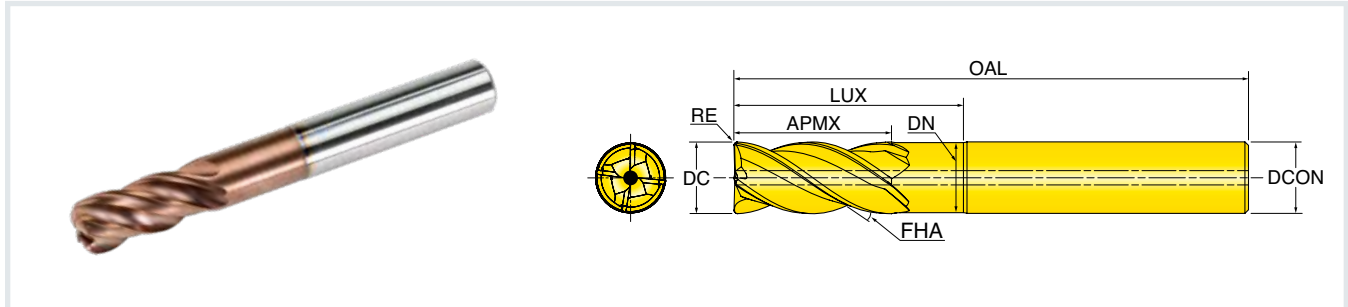
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH									
P4M2V-.250A050L075R000C	0.2500	Sharp	0.500	0.750	3×	2.25	0.246	0.250	2.0
P4M2V-.250A050L100R000C	0.2500	Sharp	0.500	1.000	4×	2.50	0.246	0.250	2.0
P4M2V-.250A050L075R008C	0.2500	0.008	0.500	0.750	3×	2.25	0.246	0.250	2.0
P4M2V-.250A050L100R008C	0.2500	0.008	0.500	1.000	4×	2.50	0.246	0.250	2.0
P4M2V-.250A050L075R015C	0.2500	0.015	0.500	0.750	3×	2.25	0.246	0.250	2.0
P4M2V-.250A050L100R015C	0.2500	0.015	0.500	1.000	4×	2.50	0.246	0.250	2.0
P4M2V-.250A050L075R030C	0.2500	0.030	0.500	0.750	3×	2.25	0.246	0.250	2.0
P4M2V-.250A050L100R030C	0.2500	0.030	0.500	1.000	4×	2.50	0.246	0.250	2.0
P4M2V-.250A050L075R060C	0.2500	0.060	0.500	0.750	3×	2.25	0.246	0.250	2.0
P4M2V-.250A050L100R060C	0.2500	0.060	0.500	1.000	4×	2.50	0.246	0.250	2.0
P4M2V-.312A062L093R000C	0.3125	Sharp	0.625	0.938	3×	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R000C	0.3125	Sharp	0.625	1.250	4×	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R008C	0.3125	0.008	0.625	0.938	3×	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R008C	0.3125	0.008	0.625	1.250	4×	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R015C	0.3125	0.015	0.625	0.938	3×	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R015C	0.3125	0.015	0.625	1.250	4×	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R030C	0.3125	0.030	0.625	0.938	3×	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R030C	0.3125	0.030	0.625	1.250	4×	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R060C	0.3125	0.060	0.625	0.938	3×	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R060C	0.3125	0.060	0.625	1.250	4×	2.75	0.305	0.313	2.5

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P4M2V *continued*



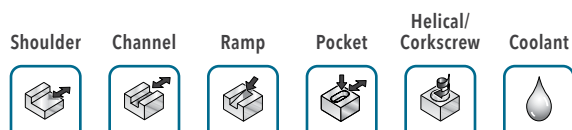
4-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



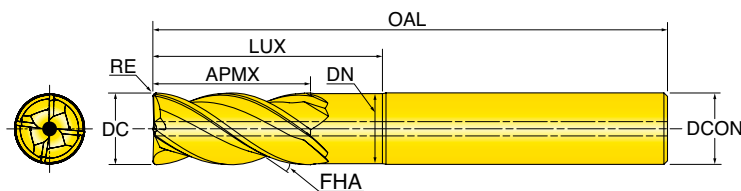
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH									
P4M2V-.375A075L112R000C	0.3750	Sharp	0.750	1.125	3×	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R000C	0.3750	Sharp	0.750	1.500	4×	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R015C	0.3750	0.015	0.750	1.125	3×	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R015C	0.3750	0.015	0.750	1.500	4×	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R030C	0.3750	0.030	0.750	1.125	3×	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R030C	0.3750	0.030	0.750	1.500	4×	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R060C	0.3750	0.060	0.750	1.125	3×	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R060C	0.3750	0.060	0.750	1.500	4×	3.25	0.367	0.375	2.5
P4M2V-.500A100L150R000C	0.5000	Sharp	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R000C	0.5000	Sharp	1.000	2.000	4×	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R015C	0.5000	0.015	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R015C	0.5000	0.015	1.000	2.000	4×	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R030C	0.5000	0.030	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R030C	0.5000	0.030	1.000	2.000	4×	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R060C	0.5000	0.060	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R060C	0.5000	0.060	1.000	2.000	4×	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R090C	0.5000	0.090	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R090C	0.5000	0.090	1.000	2.000	4×	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R125C	0.5000	0.125	1.000	1.500	3×	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R125C	0.5000	0.125	1.000	2.000	4×	3.88	0.488	0.500	3.5

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P4M2V *continued*



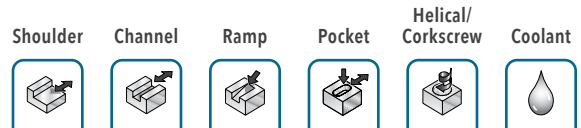
4-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



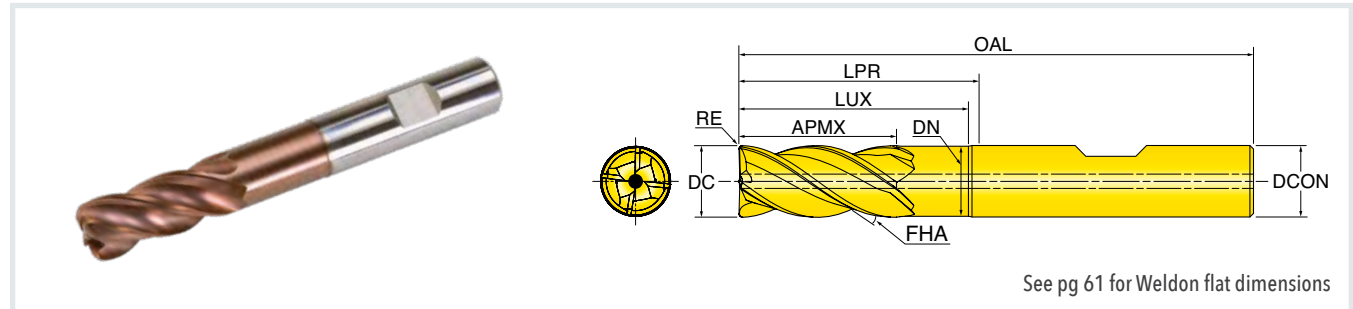
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH									
P4M2V-.625A125L187R000C	0.6250	Sharp	1.250	1.875	3×	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R000C	0.6250	Sharp	1.250	2.500	4×	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R015C	0.6250	0.015	1.250	1.875	3×	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R015C	0.6250	0.015	1.250	2.500	4×	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R030C	0.6250	0.030	1.250	1.875	3×	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R030C	0.6250	0.030	1.250	2.500	4×	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R060C	0.6250	0.060	1.250	1.875	3×	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R060C	0.6250	0.060	1.250	2.500	4×	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R125C	0.6250	0.125	1.250	1.875	3×	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R125C	0.6250	0.125	1.250	2.500	4×	4.50	0.613	0.625	3.5
P4M2V-.750A150L225R000C	0.7500	Sharp	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R000C	0.7500	Sharp	1.500	3.000	4×	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R015C	0.7500	0.015	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R015C	0.7500	0.015	1.500	3.000	4×	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R030C	0.7500	0.030	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R030C	0.7500	0.030	1.500	3.000	4×	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R060C	0.7500	0.060	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R060C	0.7500	0.060	1.500	3.000	4×	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R090C	0.7500	0.090	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R090C	0.7500	0.090	1.500	3.000	4×	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R125C	0.7500	0.125	1.500	2.250	3×	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R125C	0.7500	0.125	1.500	3.000	4×	5.13	0.738	0.750	3.5

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P4M2V

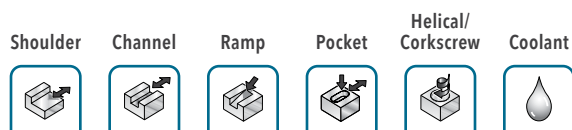


4-FLUTE SCEM 90° - WELDON WITH COOLANT

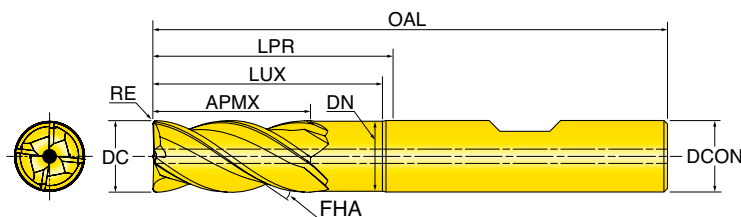


Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Proj. Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P4M2V-.312A062L093R000W	0.3125	Sharp	0.625	0.938	3×	1.120	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R000W	0.3125	Sharp	0.625	1.250	4×	1.370	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R008W	0.3125	0.008	0.625	0.938	3×	1.120	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R008W	0.3125	0.008	0.625	1.250	4×	1.370	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R015W	0.3125	0.015	0.625	0.938	3×	1.120	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R015W	0.3125	0.015	0.625	1.250	4×	1.370	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R030W	0.3125	0.030	0.625	0.938	3×	1.120	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R030W	0.3125	0.030	0.625	1.250	4×	1.370	2.75	0.305	0.313	2.5
P4M2V-.312A062L093R060W	0.3125	0.060	0.625	0.938	3×	1.120	2.50	0.305	0.313	2.5
P4M2V-.312A062L125R060W	0.3125	0.060	0.625	1.250	4×	1.370	2.75	0.305	0.313	2.5
P4M2V-.375A075L112R000W	0.3750	Sharp	0.750	1.125	3×	1.470	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R000W	0.3750	Sharp	0.750	1.500	4×	1.720	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R015W	0.3750	0.015	0.750	1.125	3×	1.470	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R015W	0.3750	0.015	0.750	1.500	4×	1.720	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R030W	0.3750	0.030	0.750	1.125	3×	1.470	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R030W	0.3750	0.030	0.750	1.500	4×	1.720	3.25	0.367	0.375	2.5
P4M2V-.375A075L112R060W	0.3750	0.060	0.750	1.125	3×	1.470	3.00	0.367	0.375	2.5
P4M2V-.375A075L150R060W	0.3750	0.060	0.750	1.500	4×	1.720	3.25	0.367	0.375	2.5

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P4M2V *continued*


4-FLUTE SCEM 90° - WELDON WITH COOLANT

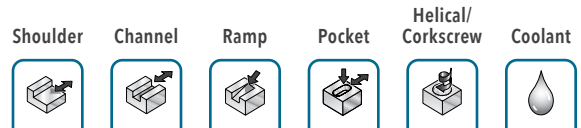


See pg 61 for Weldon flat dimensions

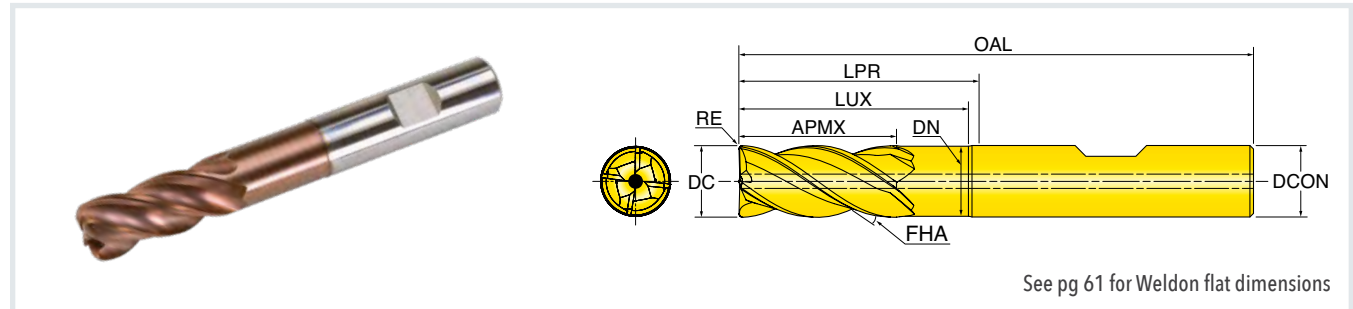
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Proj. Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P4M2V-.500A100L150R000W	0.5000	Sharp	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R000W	0.5000	Sharp	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R015W	0.5000	0.015	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R015W	0.5000	0.015	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R030W	0.5000	0.030	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R030W	0.5000	0.030	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R060W	0.5000	0.060	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R060W	0.5000	0.060	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R090W	0.5000	0.090	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R090W	0.5000	0.090	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.500A100L150R125W	0.5000	0.125	1.000	1.500	3×	1.600	3.38	0.488	0.500	3.5
P4M2V-.500A100L200R125W	0.5000	0.125	1.000	2.000	4×	2.100	3.88	0.488	0.500	3.5
P4M2V-.625A125L187R000W	0.6250	Sharp	1.250	1.875	3×	2.110	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R000W	0.6250	Sharp	1.250	2.500	4×	2.610	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R015W	0.6250	0.015	1.250	1.875	3×	2.110	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R015W	0.6250	0.015	1.250	2.500	4×	2.610	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R030W	0.6250	0.030	1.250	1.875	3×	2.110	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R030W	0.6250	0.030	1.250	2.500	4×	2.610	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R060W	0.6250	0.060	1.250	1.875	3×	2.110	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R060W	0.6250	0.060	1.250	2.500	4×	2.610	4.50	0.613	0.625	3.5
P4M2V-.625A125L187R125W	0.6250	0.125	1.250	1.875	3×	2.110	4.00	0.613	0.625	3.5
P4M2V-.625A125L250R125W	0.6250	0.125	1.250	2.500	4×	2.610	4.50	0.613	0.625	3.5

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P4M2V *continued*



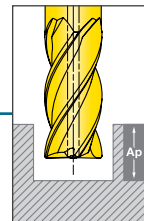
4-FLUTE SCEM 90° - WELDON WITH COOLANT



Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	LPR Proj. Length	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH										
P4M2V-.750A150L225R000W	0.7500	Sharp	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R000W	0.7500	Sharp	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R015W	0.7500	0.015	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R015W	0.7500	0.015	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R030W	0.7500	0.030	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R030W	0.7500	0.030	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R060W	0.7500	0.060	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R060W	0.7500	0.060	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R090W	0.7500	0.090	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R090W	0.7500	0.090	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5
P4M2V-.750A150L225R125W	0.7500	0.125	1.500	2.250	3×	2.490	4.50	0.738	0.750	3.5
P4M2V-.750A150L300R125W	0.7500	0.125	1.500	3.000	4×	3.110	5.13	0.738	0.750	3.5

Not seeing what you're looking for? Custom tools are available – see pgs 62-63 for more info.

Operating Guidelines • Slotting

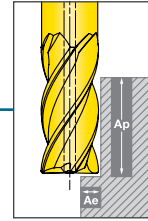


Materials				Vc Cutting Speed SFM	fz = IPT for Ap = 1xD~1.5xD								
					DC Cutting Diameter (inch)								
ISO	Material Group #VDI 3323	Type	Trade Name Examples		.125	.188	.250	.312	.375	.500	.625	.750	1.00
M	12-14	Stainless steel (austenitic & ferritic)	416, 303, 430F	295-361	.0002- .0004	.0004- .0006	.0005- .0008	.0007- .0009	.0010- .0012	.0013- .0015	.0015- .0019	.0019- .0025	.0024- .0028
		Stainless steel (austenitic & martensitic)	420, 304, 316, 440C	230-295									
		Stainless steel (PH)	15-5 PH, 17-4 PH	230-295	.0002- .0003	.0003- .0005	.0004- .0007	.0005- .0008	.0008- .0010	.0011- .0013	.0013- .0017	.0015- .0023	.0020- .0025
		Stainless steel (duplex)	Duplex 2205, 329	197-246									

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A power milling chuck, or coolant thru (CX series) holder (for tools with Weldon flats) is highly recommended, starting at .500" DC or larger. Using a weak holder impacts performance.

Operating Guidelines • Shoulder Milling

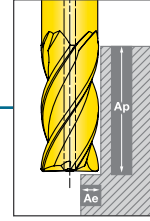


Materials				Vc Cutting Speed SFM	fz = IPT for Ae = .3xD~.4xD • Ap = 1.5xD								
					DC Cutting Diameter (inch)								
ISO	Material Group #VDI 3323	Type	Trade Name Examples		.125	.188	.250	.312	.375	.500	.625	.750	1.00
M	12-14	Stainless steel (austenitic & ferritic)	416, 303, 430F	394-426	.0002- .0004	.0004- .0006	.0005- .0008	.0007- .0009	.0010- .0012	.0013- .0015	.0015- .0019	.0019- .0025	.0030- .0034
		Stainless steel (austenitic & martensitic)	420, 304, 316, 440C	262-361									
		Stainless steel (PH)	15-5 PH, 17-4 PH	225-325	.0002- .0003	.0003- .0005	.0004- .0007	.0005- .0008	.0008- .0010	.0011- .0013	.0013- .0017	.0015- .0023	.0024- .0028
		Stainless steel (duplex)	Duplex 2205, 329	197-246									

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A power milling chuck, or coolant thru (CX series) holder (for tools with Weldon flats) is highly recommended, starting at .500" DC or larger. Using a weak holder impacts performance.

Operating Guidelines • HEM / Finish Milling



Materials				Vc Cutting Speed SFM	*fz = IPT for Ae = .05xD~.15xD • Ap = 2xD								
					DC Cutting Diameter (inch)								
ISO	Material Group #VDI 3323	Type	Trade Name Examples		.125	.188	.250	.312	.375	.500	.625	.750	1.00
M	12-14	Stainless steel (austenitic & ferritic)	416, 303, 430F	590-787	.0009- .0017	.0011- .0021	.0014- .0027	.0017- .0035	.0023- .0047	.0027- .0059	.0039- .0071	.0047- .0098	.0057- .0115
		Stainless steel (austenitic & martensitic)	420, 304, 316, 440C	415-649									
		Stainless steel (PH)	15-5 PH, 17-4 PH	375-531	.0009- .0019	.0012- .0025	.0015- .0033	.0023- .0044	.0027- .0055	.0039- .0065	.0047- .0091	.0057- .0104	.0057- .0104
		Stainless steel (duplex)	Duplex 2205, 329	197-374									

- As Ap increases to maximum 2xD and for finish milling, use fz from lower end of chart.
- When Ae < .10xD, use speed from the higher end of chart.

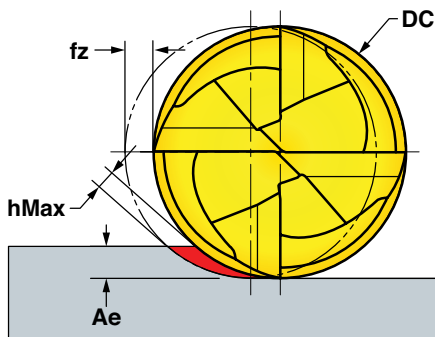
Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be

revised to optimize the tools performance.

*fz = chip thinning calculations are included in the chip load above, especially when Ae ≤ .15xD.

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A power milling chuck, or coolant thru (CX series) holder (for tools with Weldon flats) is highly recommended, starting at .500" DC or larger. Using a weak holder impacts performance.

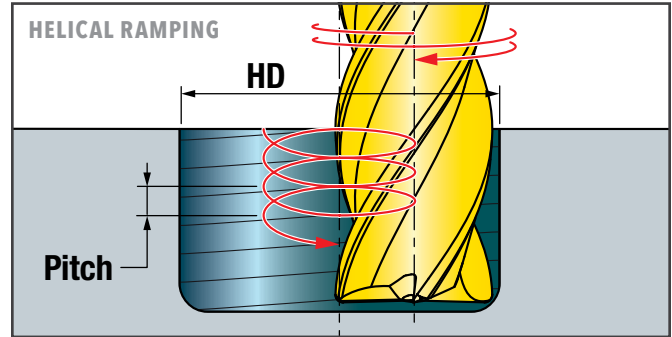
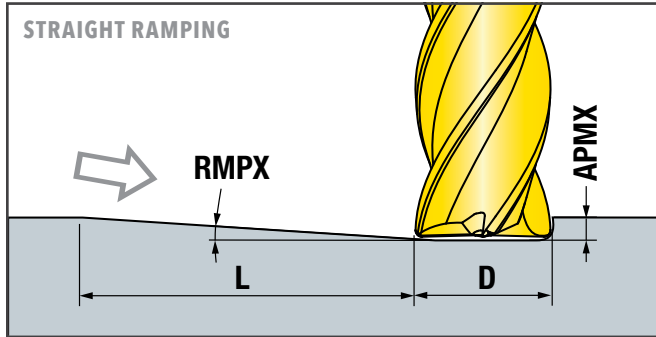
Chip Thinning



- Due to the lower radial engagement, *chip thinning* is accentuated, and a much higher feed-per-tooth (fz) can be applied in order to arrive at the true chip thickness (hMax).
- When Ae ≤ .25xD, recommend use of **Chip Thinning Calculator** to ensure hMax is within fz range.
- If needed, Chip Thinning Calculator can be found on our website Machining App.



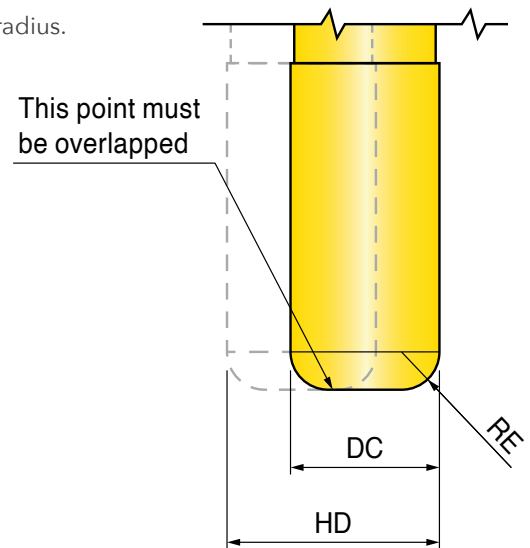
Ramping Guidelines



DC Cutter Dia.	STRAIGHT RAMPING			HELICAL RAMPING • 4-FLUTE													
	RPMX Ramp Angle Max.	APMX Depth of Cut at .75xD	L Ramp Length Min.	HD Hole Diameter Max.							Pitch Max.						
				*Sharp	*R .008"	*R .015"	R .030"	R .060"	R .090"	R .125"	*Sharp	*R .008"	*R .015"	R .030"	R .060"	R .090"	R .125"
.125	2.0	.094	2.7	.238	.222	.209	-	-	-	-	.012	.011	.009	-	-	-	-
.156	2.0	.117	3.4	.297	.282	.268	-	-	-	-	.015	.014	.012	-	-	-	-
.188	2.0	.141	4.0	.356	.341	.328	.299	-	-	-	.019	.017	.015	.012	-	-	-
.250	2.0	.188	5.4	.475	.460	.447	.418	.361	-	-	.025	.023	.022	.018	.012	-	-
.313	2.5	.234	5.4	.594	.579	.565	.537	.480	-	-	.039	.036	.035	.031	.023	-	-
.375	2.5	.281	6.4	.713	-	.684	.656	.599	-	-	.046	-	.042	.038	.031	-	-
.500	3.5	.375	6.1	.950	-	.922	.893	.836	.779	.713	.086	-	.081	.075	.064	.054	.041
.625	3.5	.469	7.7	1.188	-	1.159	1.131	1.074	-	.950	.108	-	.102	.097	.086	-	.062
.750	3.5	.563	9.2	1.425	-	1.397	1.368	1.311	1.254	1.188	.129	-	.124	.119	.108	.097	.084

*Reduce ramp angle and feed when using sharp corner and small corner radius.

HD = Hole Diameter Max. formula when Helical Ramping	
EXAMPLES	
P4M2V-.500A100L150R030C	P4M2V-.750A150L300R125W
DC = .500" with RE = .03"	DC = .750" with RE = .125"
$HD = ((DC - (1 \times RE)) \times 1.9)$	$HD = ((DC - (1 \times RE)) \times 1.9)$
$HD = ((.500 - (1 \times .03)) \times 1.9)$	$HD = ((.750 - (1 \times .125)) \times 1.9)$
HD = .893	HD = 1.188



PRIMOSS^H™

MILLING - SCEN

M

Cutter Series

P5M1H, P6M1H

Cylindrical shank

P5M2H-_C, P6M2H-_C

*Cylindrical shank
with coolant thru*

P5M2H-_W, P6M2H-_W

*Weldon flat shank
with coolant thru*

Geometry

5 and 6-flute, coolant thru
(Ø .3125" and larger),
variable pitch, variable helix

Diameter Range

.125-1.000"

Depth of Cut

2x, 3x, and 4xD APMX

Grade

IN2205
(multi-layer PVD AlTiSiN)

Lead Angle

90°

Corner Radii

.004", .008", .015", .030",
.060", .125"

Materials

■ Stainless steel

Premium 5 and 6-Flute, Solid Carbide 90° End Mills, Ideal for HEM of Stainless Steel

- » Chip splitter cutting edge provides unique chip management, disrupts vibrations, and reduces heat
- » Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications
- » 2x, 3x, and up to 4xD depth-of-cut (APMX) maximum provides a deep reach capability
- » Coolant thru to assist with chip control and evacuation, and reduce heat
- » Custom tools available - see pgs 62-63



5-Flutes



6-Flutes

Learn
more »



PRIMOLINE™

Overview

PrimoLine, Ingersoll's line of premium solid carbide end mills, now includes **PrimoSS-H**, a new series of 5 and 6-flute end mills ideal for HEM (high efficiency machining) in stainless steel.



Coolant Thru

Coolant helps with temperature control in the cutting area and optimal chip evacuation, resulting in a cleaner work area.

Chip Splitter Cutting Edge

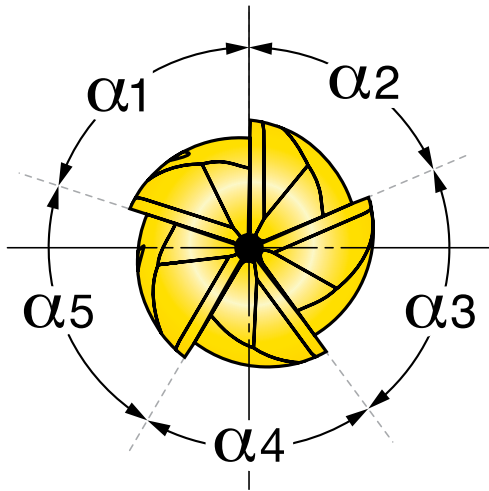
Unique flute geometry and chip splitters provide excellent chip management. Cutting chips are broken into smaller segments reducing heat buildup and disrupting harmonic vibrations while enabling HEM and aggressive material removal.

FEATURES & BENEFITS:

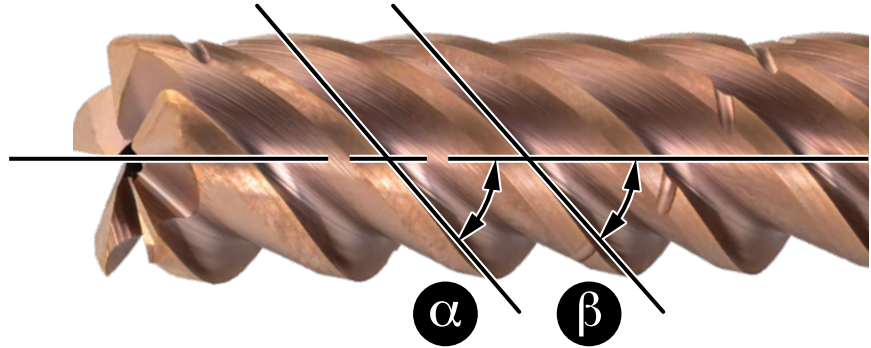
- Chip splitter cutting edge provides unique chip management
- Variable pitch and variable helix to assist with vibration control
- Coolant thru to assist with chip control and evacuation
- 2x, 3x, and up to 4xD depth-of-cut (APMX) maximum provides a deep reach capability
- Wide variety of corner radii: .004", .008", .015", .030", .060", .125"



Variable Pitch and Variable (Different) Helix Angles



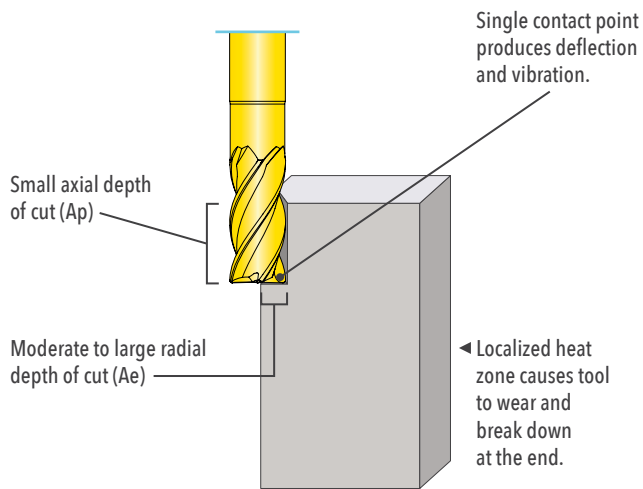
$$\alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5$$



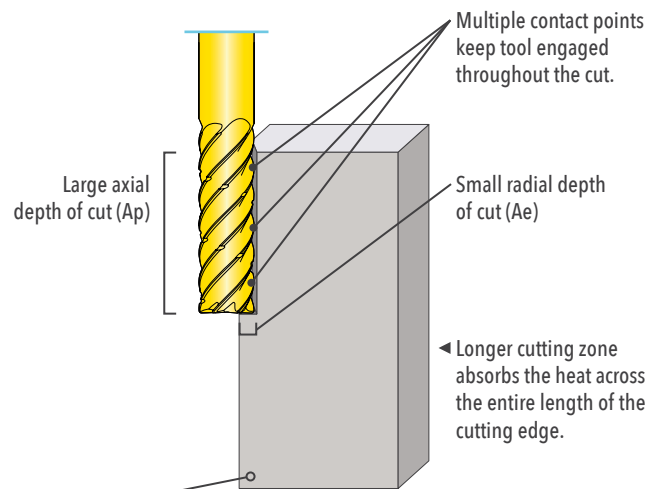
$$\alpha \neq \beta$$

Principles of High Efficiency Machining

Traditional Milling ▼

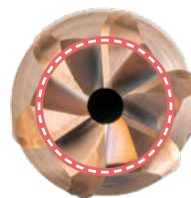


▼ HEM/Trochoidal Milling



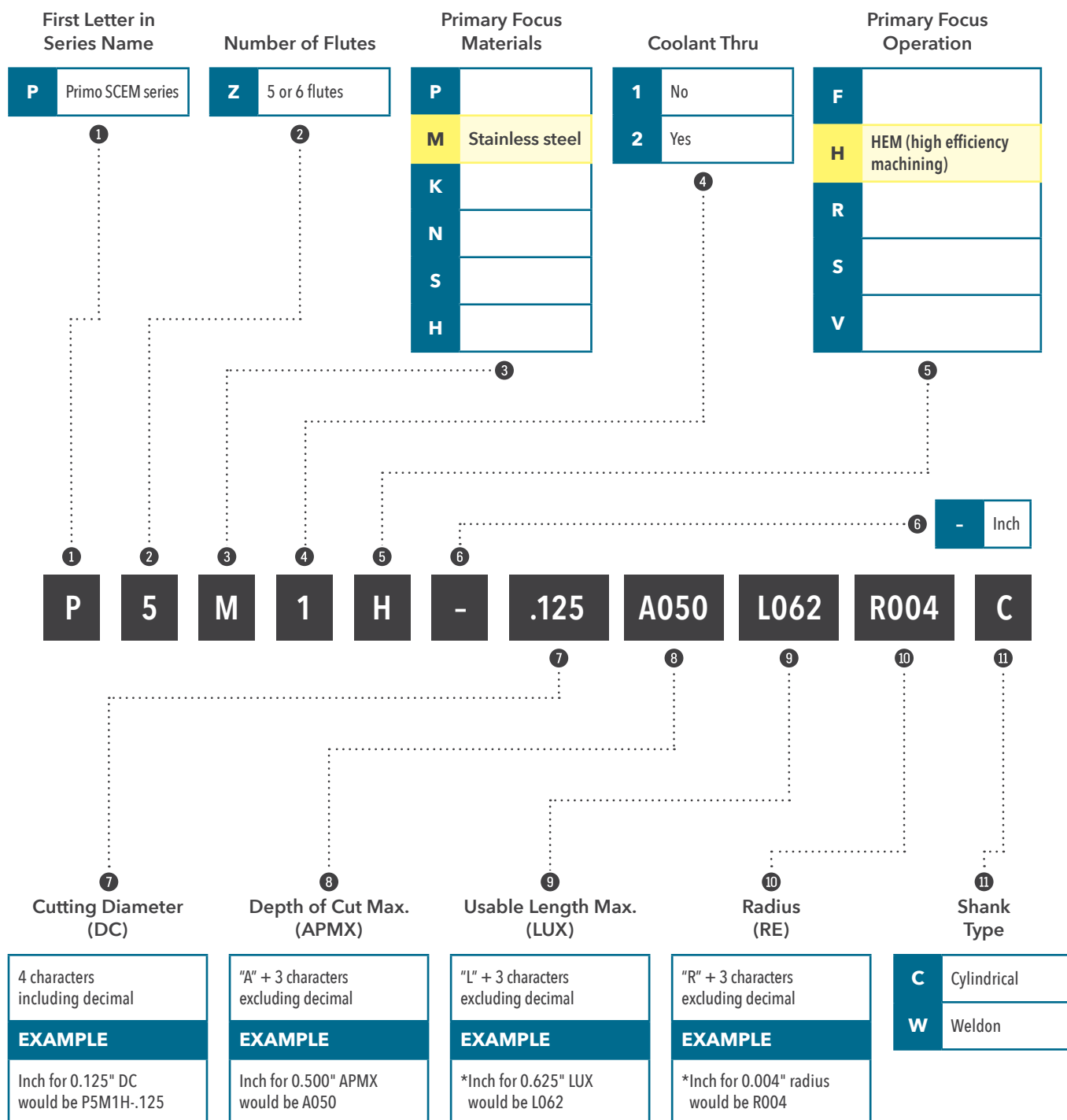
End Result

In HEM, lighter radial depths of cut permit more shallow flutes to exist on the tool. Since chip thinning is in effect, chips are smaller and readily evacuated. Therefore, the reduced flute depth (A_e) allows the core of the end mill to be larger, providing more stiffness and less bending force when fully engaged at large axial cutting depths.

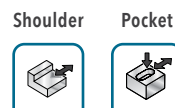


- Larger core promotes rigidity.
- Shallow flutes provide more strength behind the cutting edge while still allowing adequate space for chip evacuation.
- Variable pitch flutes with an aggressive 45.5° average helix angle that provides multi-edge engagement and stability during the cut.

Solid Carbide End Mill (SCEM) Part Number Nomenclature

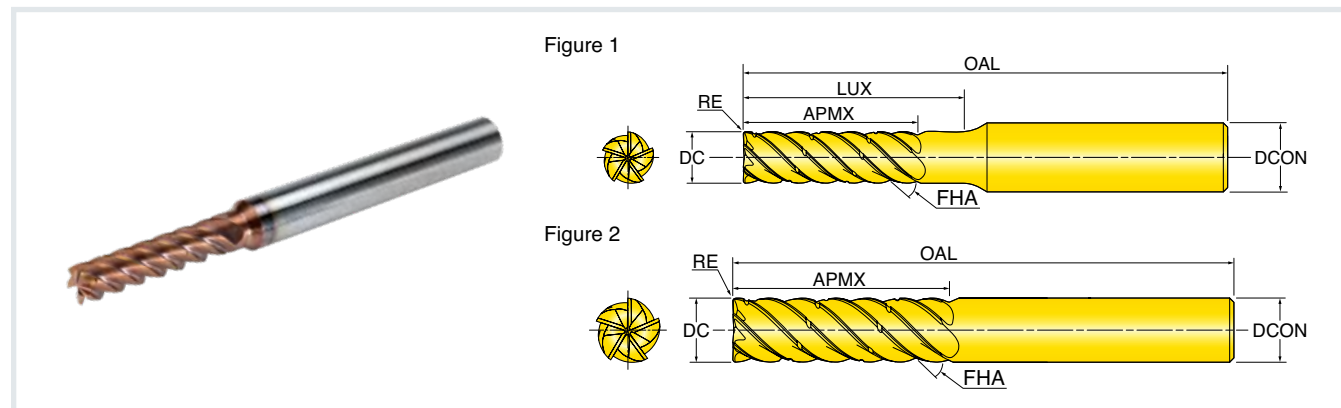


*Measurement is truncated.



Series P5M1H

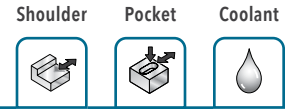
5-FLUTE SCEM 90° - CYLINDRICAL



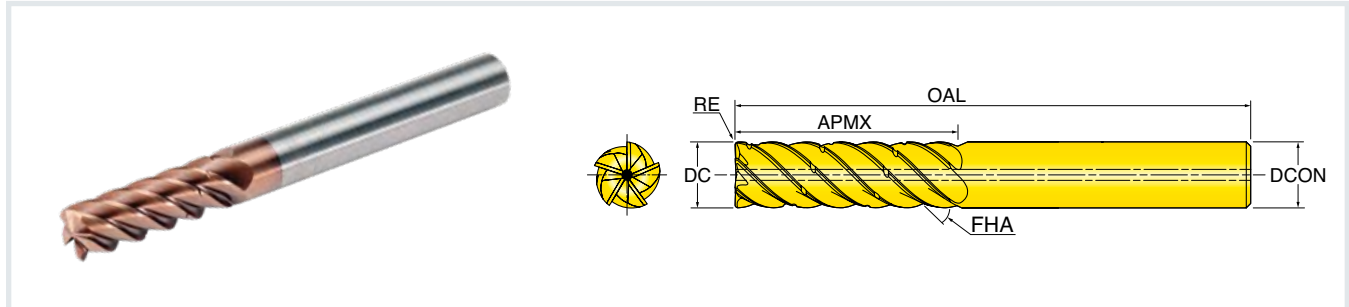
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Dia. Ratio	OAL Overall Length	DCON Shank Dia.	Figure
INCH								
P5M1H-.125A025L037R004C	0.1250	0.004	0.250	0.375	2×	2.00	0.250	1
P5M1H-.125A037L050R004C	0.1250	0.004	0.375	0.500	3×	2.25	0.250	1
P5M1H-.125A050L062R004C	0.1250	0.004	0.500	0.625	4×	2.25	0.250	1
P5M1H-.125A025L037R008C	0.1250	0.008	0.250	0.375	2×	2.00	0.250	1
P5M1H-.125A037L050R008C	0.1250	0.008	0.375	0.500	3×	2.25	0.250	1
P5M1H-.125A050L062R008C	0.1250	0.008	0.500	0.625	4×	2.25	0.250	1
P5M1H-.187A037L050R004C	0.1875	0.004	0.375	0.500	2×	2.00	0.250	1
P5M1H-.187A056L068R004C	0.1875	0.004	0.562	0.688	3×	2.25	0.250	1
P5M1H-.187A075L087R004C	0.1875	0.004	0.750	0.875	4×	2.50	0.250	1
P5M1H-.187A037L050R008C	0.1875	0.008	0.375	0.500	2×	2.00	0.250	1
P5M1H-.187A056L068R008C	0.1875	0.008	0.562	0.688	3×	2.25	0.250	1
P5M1H-.187A075L087R008C	0.1875	0.008	0.750	0.875	4×	2.50	0.250	1
P5M1H-.250A050R004C	0.2500	0.004	0.500	-	2×	2.00	0.250	2
P5M1H-.250A075R004C	0.2500	0.004	0.750	-	3×	2.25	0.250	2
P5M1H-.250A100R004C	0.2500	0.004	1.000	-	4×	2.50	0.250	2
P5M1H-.250A050R008C	0.2500	0.008	0.500	-	2×	2.00	0.250	2
P5M1H-.250A075R008C	0.2500	0.008	0.750	-	3×	2.25	0.250	2
P5M1H-.250A100R008C	0.2500	0.008	1.000	-	4×	2.50	0.250	2
P5M1H-.250A050R015C	0.2500	0.015	0.500	-	2×	2.00	0.250	2
P5M1H-.250A075R015C	0.2500	0.015	0.750	-	3×	2.25	0.250	2
P5M1H-.250A100R015C	0.2500	0.015	1.000	-	4×	2.50	0.250	2
P5M1H-.250A050R030C	0.2500	0.030	0.500	-	2×	2.00	0.250	2
P5M1H-.250A075R030C	0.2500	0.030	0.750	-	3×	2.25	0.250	2
P5M1H-.250A100R030C	0.2500	0.030	1.000	-	4×	2.50	0.250	2

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H



5-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P5M2H-.312A062R008C	0.3125	0.008	0.625	2×	2.50	0.313
P5M2H-.312A093R008C	0.3125	0.008	0.938	3×	2.75	0.313
P5M2H-.312A125R008C	0.3125	0.008	1.250	4×	3.00	0.313
P5M2H-.312A062R015C	0.3125	0.015	0.625	2×	2.50	0.313
P5M2H-.312A093R015C	0.3125	0.015	0.938	3×	2.75	0.313
P5M2H-.312A125R015C	0.3125	0.015	1.250	4×	3.00	0.313
P5M2H-.312A062R030C	0.3125	0.030	0.625	2×	2.50	0.313
P5M2H-.312A093R030C	0.3125	0.030	0.938	3×	2.75	0.313
P5M2H-.312A125R030C	0.3125	0.030	1.250	4×	3.00	0.313
P5M2H-.375A075R008C	0.3750	0.008	0.750	2×	2.75	0.375
P5M2H-.375A112R008C	0.3750	0.008	1.125	3×	3.25	0.375
P5M2H-.375A150R008C	0.3750	0.008	1.500	4×	3.50	0.375
P5M2H-.375A075R015C	0.3750	0.015	0.750	2×	2.75	0.375
P5M2H-.375A112R015C	0.3750	0.015	1.125	3×	3.25	0.375
P5M2H-.375A150R015C	0.3750	0.015	1.500	4×	3.50	0.375
P5M2H-.375A075R030C	0.3750	0.030	0.750	2×	2.75	0.375
P5M2H-.375A112R030C	0.3750	0.030	1.125	3×	3.25	0.375
P5M2H-.375A150R030C	0.3750	0.030	1.500	4×	3.50	0.375
P5M2H-.500A100R008C	0.5000	0.008	1.000	2×	3.00	0.500
P5M2H-.500A150R008C	0.5000	0.008	1.500	3×	3.50	0.500
P5M2H-.500A200R008C	0.5000	0.008	2.000	4×	4.00	0.500
P5M2H-.500A100R015C	0.5000	0.015	1.000	2×	3.00	0.500
P5M2H-.500A150R015C	0.5000	0.015	1.500	3×	3.50	0.500
P5M2H-.500A200R015C	0.5000	0.015	2.000	4×	4.00	0.500
P5M2H-.500A100R030C	0.5000	0.030	1.000	2×	3.00	0.500
P5M2H-.500A150R030C	0.5000	0.030	1.500	3×	3.50	0.500
P5M2H-.500A200R030C	0.5000	0.030	2.000	4×	4.00	0.500
P5M2H-.500A100R060C	0.5000	0.060	1.000	2×	3.00	0.500
P5M2H-.500A150R060C	0.5000	0.060	1.500	3×	3.50	0.500
P5M2H-.500A200R060C	0.5000	0.060	2.000	4×	4.00	0.500

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H *continued*

Shoulder



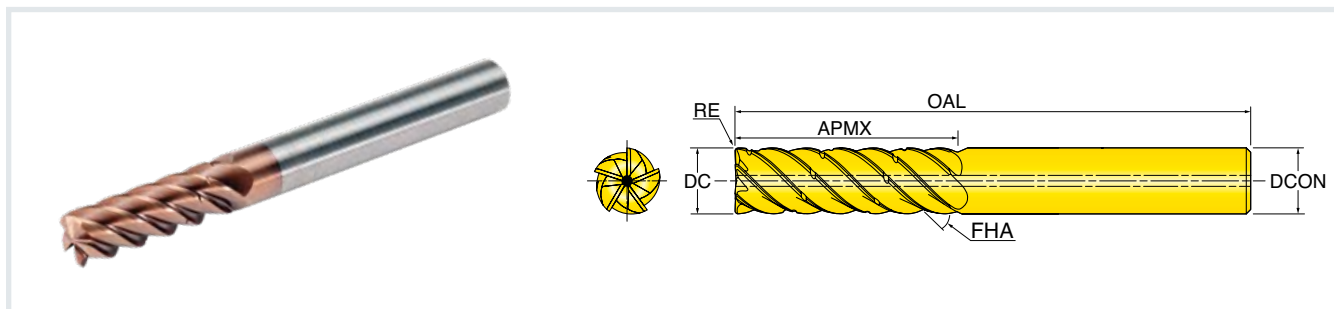
Pocket



Coolant



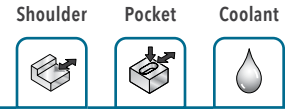
5-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



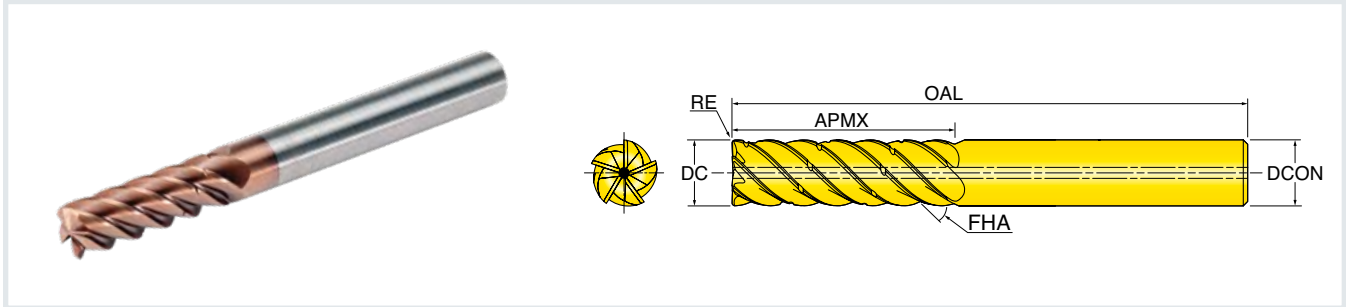
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P5M2H-.625A125R015C	0.6250	0.015	1.250	2×	3.50	0.625
P5M2H-.625A187R015C	0.6250	0.015	1.875	3×	4.25	0.625
P5M2H-.625A250R015C	0.6250	0.015	2.500	4×	5.00	0.625
P5M2H-.625A125R030C	0.6250	0.030	1.250	2×	3.50	0.625
P5M2H-.625A187R030C	0.6250	0.030	1.875	3×	4.25	0.625
P5M2H-.625A250R030C	0.6250	0.030	2.500	4×	5.00	0.625
P5M2H-.625A125R060C	0.6250	0.060	1.250	2×	3.50	0.625
P5M2H-.625A187R060C	0.6250	0.060	1.875	3×	4.25	0.625
P5M2H-.625A250R060C	0.6250	0.060	2.500	4×	5.00	0.625
P5M2H-.625A125R125C	0.6250	0.125	1.250	2×	3.50	0.625
P5M2H-.625A187R125C	0.6250	0.125	1.875	3×	4.25	0.625
P5M2H-.625A250R125C	0.6250	0.125	2.500	4×	5.00	0.625
P5M2H-.750A150R015C	0.7500	0.015	1.500	2×	4.00	0.750
P5M2H-.750A225R015C	0.7500	0.015	2.250	3×	5.00	0.750
P5M2H-.750A300R015C	0.7500	0.015	3.000	4×	5.75	0.750
P5M2H-.750A150R030C	0.7500	0.030	1.500	2×	4.00	0.750
P5M2H-.750A225R030C	0.7500	0.030	2.250	3×	5.00	0.750
P5M2H-.750A300R030C	0.7500	0.030	3.000	4×	5.75	0.750
P5M2H-.750A150R060C	0.7500	0.060	1.500	2×	4.00	0.750
P5M2H-.750A225R060C	0.7500	0.060	2.250	3×	5.00	0.750
P5M2H-.750A300R060C	0.7500	0.060	3.000	4×	5.75	0.750
P5M2H-.750A150R125C	0.7500	0.125	1.500	2×	4.00	0.750
P5M2H-.750A225R125C	0.7500	0.125	2.250	3×	5.00	0.750
P5M2H-.750A300R125C	0.7500	0.125	3.000	4×	5.75	0.750

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H *continued*



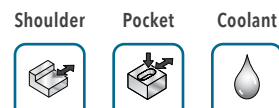
5-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



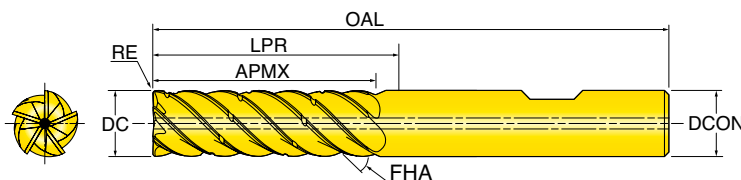
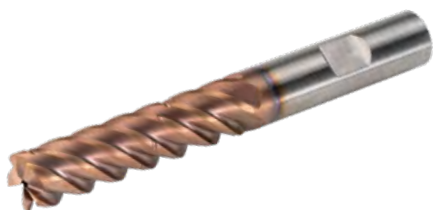
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P5M2H-1.00A200R015C	1.0000	0.015	2.000	2×	4.50	1.000
P5M2H-1.00A300R015C	1.0000	0.015	3.000	3×	5.50	1.000
P5M2H-1.00A400R015C	1.0000	0.015	4.000	4×	6.50	1.000
P5M2H-1.00A200R030C	1.0000	0.030	2.000	2×	4.50	1.000
P5M2H-1.00A300R030C	1.0000	0.030	3.000	3×	5.50	1.000
P5M2H-1.00A400R030C	1.0000	0.030	4.000	4×	6.50	1.000
P5M2H-1.00A200R060C	1.0000	0.060	2.000	2×	4.50	1.000
P5M2H-1.00A300R060C	1.0000	0.060	3.000	3×	5.50	1.000
P5M2H-1.00A400R060C	1.0000	0.060	4.000	4×	6.50	1.000
P5M2H-1.00A200R125C	1.0000	0.125	2.000	2×	4.50	1.000
P5M2H-1.00A300R125C	1.0000	0.125	3.000	3×	5.50	1.000
P5M2H-1.00A400R125C	1.0000	0.125	4.000	4×	6.50	1.000

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H



5-FLUTE SCEM 90° - WELDON WITH COOLANT



See pg 61 for Weldon flat dimensions

Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	LPR Projection Length	OAL Overall Length	DCON Shank Diameter
INCH							
P5M2H-.312A062R008W	0.3125	0.008	0.625	2×	1.120	2.50	0.313
P5M2H-.312A093R008W	0.3125	0.008	0.938	3×	1.370	2.75	0.313
P5M2H-.312A125R008W	0.3125	0.008	1.250	4×	1.620	3.00	0.313
P5M2H-.312A062R015W	0.3125	0.015	0.625	2×	1.120	2.50	0.313
P5M2H-.312A093R015W	0.3125	0.015	0.938	3×	1.370	2.75	0.313
P5M2H-.312A125R015W	0.3125	0.015	1.250	4×	1.620	3.00	0.313
P5M2H-.312A062R030W	0.3125	0.030	0.625	2×	1.120	2.50	0.313
P5M2H-.312A093R030W	0.3125	0.030	0.938	3×	1.370	2.75	0.313
P5M2H-.312A125R030W	0.3125	0.030	1.250	4×	1.620	3.00	0.313
P5M2H-.375A075R008W	0.3750	0.008	0.750	2×	1.220	2.75	0.375
P5M2H-.375A112R008W	0.3750	0.008	1.125	3×	1.720	3.25	0.375
P5M2H-.375A150R008W	0.3750	0.008	1.500	4×	1.970	3.50	0.375
P5M2H-.375A075R015W	0.3750	0.015	0.750	2×	1.220	2.75	0.375
P5M2H-.375A112R015W	0.3750	0.015	1.125	3×	1.720	3.25	0.375
P5M2H-.375A150R015W	0.3750	0.015	1.500	4×	1.970	3.50	0.375
P5M2H-.375A075R030W	0.3750	0.030	0.750	2×	1.220	2.75	0.375
P5M2H-.375A112R030W	0.3750	0.030	1.125	3×	1.720	3.25	0.375
P5M2H-.375A150R030W	0.3750	0.030	1.500	4×	1.970	3.50	0.375
P5M2H-.500A100R008W	0.5000	0.008	1.000	2×	1.230	3.00	0.500
P5M2H-.500A150R008W	0.5000	0.008	1.500	3×	1.730	3.50	0.500
P5M2H-.500A200R008W	0.5000	0.008	2.000	4×	2.230	4.00	0.500
P5M2H-.500A100R015W	0.5000	0.015	1.000	2×	1.230	3.00	0.500
P5M2H-.500A150R015W	0.5000	0.015	1.500	3×	1.730	3.50	0.500
P5M2H-.500A200R015W	0.5000	0.015	2.000	4×	2.230	4.00	0.500
P5M2H-.500A100R030W	0.5000	0.030	1.000	2×	1.230	3.00	0.500
P5M2H-.500A150R030W	0.5000	0.030	1.500	3×	1.730	3.50	0.500
P5M2H-.500A200R030W	0.5000	0.030	2.000	4×	2.230	4.00	0.500
P5M2H-.500A100R060W	0.5000	0.060	1.000	2×	1.230	3.00	0.500
P5M2H-.500A150R060W	0.5000	0.060	1.500	3×	1.730	3.50	0.500
P5M2H-.500A200R060W	0.5000	0.060	2.000	4×	2.230	4.00	0.500

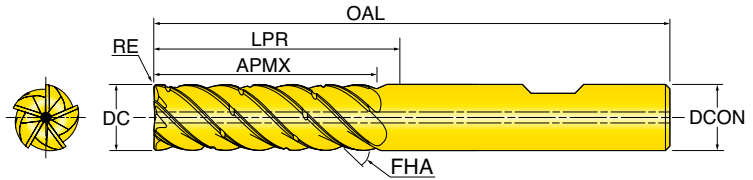
Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H *continued*

Shoulder Pocket Coolant



5-FLUTE SCEM 90° - WELDON WITH COOLANT

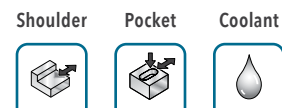


See pg 61 for Weldon flat dimensions

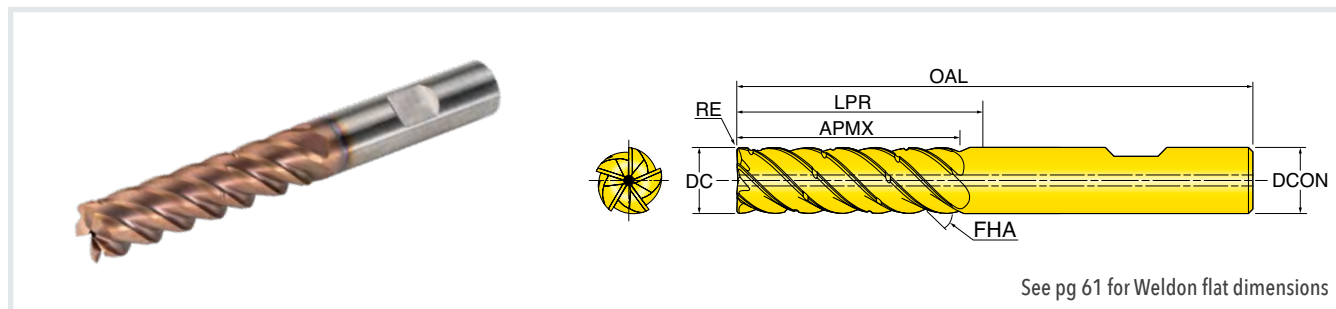
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	LPR Projection Length	OAL Overall Length	DCON Shank Diameter
INCH							
P5M2H-.625A125R015W	0.6250	0.015	1.250	2×	1.610	3.50	0.625
P5M2H-.625A187R015W	0.6250	0.015	1.875	3×	2.360	4.25	0.625
P5M2H-.625A250R015W	0.6250	0.015	2.500	4×	3.110	5.00	0.625
P5M2H-.625A125R030W	0.6250	0.030	1.250	2×	1.610	3.50	0.625
P5M2H-.625A187R030W	0.6250	0.030	1.875	3×	2.360	4.25	0.625
P5M2H-.625A250R030W	0.6250	0.030	2.500	4×	3.110	5.00	0.625
P5M2H-.625A125R060W	0.6250	0.060	1.250	2×	1.610	3.50	0.625
P5M2H-.625A187R060W	0.6250	0.060	1.875	3×	2.360	4.25	0.625
P5M2H-.625A250R060W	0.6250	0.060	2.500	4×	3.110	5.00	0.625
P5M2H-.625A125R125W	0.6250	0.125	1.250	2×	1.610	3.50	0.625
P5M2H-.625A187R125W	0.6250	0.125	1.875	3×	2.360	4.25	0.625
P5M2H-.625A250R125W	0.6250	0.125	2.500	4×	3.110	5.00	0.625
P5M2H-.750A150R015W	0.7500	0.015	1.500	2×	1.990	4.00	0.750
P5M2H-.750A225R015W	0.7500	0.015	2.250	3×	2.990	5.00	0.750
P5M2H-.750A300R015W	0.7500	0.015	3.000	4×	3.740	5.75	0.750
P5M2H-.750A150R030W	0.7500	0.030	1.500	2×	1.990	4.00	0.750
P5M2H-.750A225R030W	0.7500	0.030	2.250	3×	2.990	5.00	0.750
P5M2H-.750A300R030W	0.7500	0.030	3.000	4×	3.740	5.75	0.750
P5M2H-.750A150R060W	0.7500	0.060	1.500	2×	1.990	4.00	0.750
P5M2H-.750A225R060W	0.7500	0.060	2.250	3×	2.990	5.00	0.750
P5M2H-.750A300R060W	0.7500	0.060	3.000	4×	3.740	5.75	0.750
P5M2H-.750A150R125W	0.7500	0.125	1.500	2×	1.990	4.00	0.750
P5M2H-.750A225R125W	0.7500	0.125	2.250	3×	2.990	5.00	0.750
P5M2H-.750A300R125W	0.7500	0.125	3.000	4×	3.740	5.75	0.750

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P5M2H *continued*

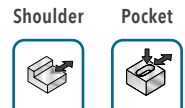


5-FLUTE SCEM 90° - WELDON WITH COOLANT



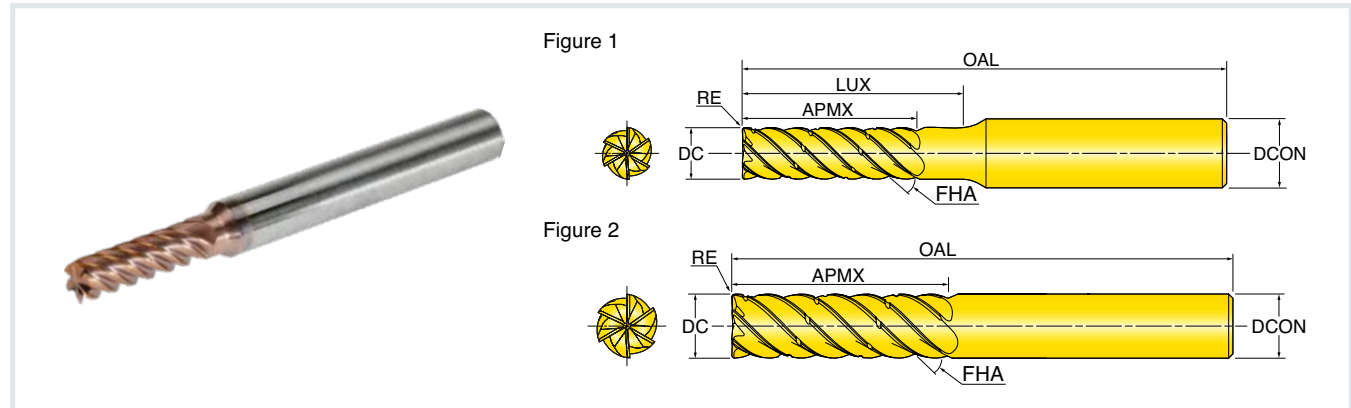
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	LPR Projection Length	OAL Overall Length	DCON Shank Diameter
INCH							
P5M2H-1.00A200R015W	1.0000	0.015	2.000	2×	2.240	4.50	1.000
P5M2H-1.00A300R015W	1.0000	0.015	3.000	3×	3.240	5.50	1.000
P5M2H-1.00A400R015W	1.0000	0.015	4.000	4×	4.240	6.50	1.000
P5M2H-1.00A200R030W	1.0000	0.030	2.000	2×	2.240	4.50	1.000
P5M2H-1.00A300R030W	1.0000	0.030	3.000	3×	3.240	5.50	1.000
P5M2H-1.00A400R030W	1.0000	0.030	4.000	4×	4.240	6.50	1.000
P5M2H-1.00A200R060W	1.0000	0.060	2.000	2×	2.240	4.50	1.000
P5M2H-1.00A300R060W	1.0000	0.060	3.000	3×	3.240	5.50	1.000
P5M2H-1.00A400R060W	1.0000	0.060	4.000	4×	4.240	6.50	1.000
P5M2H-1.00A200R125W	1.0000	0.125	2.000	2×	2.240	4.50	1.000
P5M2H-1.00A300R125W	1.0000	0.125	3.000	3×	3.240	5.50	1.000
P5M2H-1.00A400R125W	1.0000	0.125	4.000	4×	4.240	6.50	1.000

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.



Series P6M1H

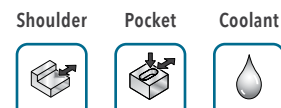
6-FLUTE SCRM 90° - CYLINDRICAL



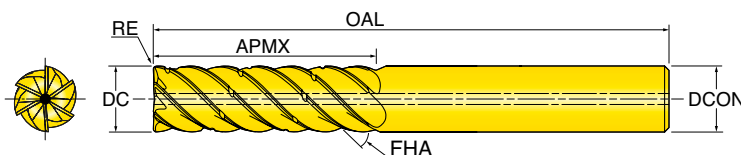
Part Number	DC Cutting Dia.	RE Corner Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Dia.	Figure
INCH								
P6M1H-.125A025L037R004C	0.1250	0.004	0.250	0.375	2×	2.00	0.250	1
P6M1H-.125A037L050R004C	0.1250	0.004	0.375	0.500	3×	2.25	0.250	1
P6M1H-.125A050L062R004C	0.1250	0.004	0.500	0.625	4×	2.25	0.250	1
P6M1H-.125A025L037R008C	0.1250	0.008	0.250	0.375	2×	2.00	0.250	1
P6M1H-.125A037L050R008C	0.1250	0.008	0.375	0.500	3×	2.25	0.250	1
P6M1H-.125A050L062R008C	0.1250	0.008	0.500	0.625	4×	2.25	0.250	1
P6M1H-.187A037L050R004C	0.1875	0.004	0.375	0.500	2×	2.00	0.250	1
P6M1H-.187A056L068R004C	0.1875	0.004	0.562	0.688	3×	2.25	0.250	1
P6M1H-.187A075L087R004C	0.1875	0.004	0.750	0.875	4×	2.50	0.250	1
P6M1H-.187A037L050R008C	0.1875	0.008	0.375	0.500	2×	2.00	0.250	1
P6M1H-.187A056L068R008C	0.1875	0.008	0.562	0.688	3×	2.25	0.250	1
P6M1H-.187A075L087R008C	0.1875	0.008	0.750	0.875	4×	2.25	0.250	1
P6M1H-.250A050R004C	0.2500	0.004	0.500	-	2×	2.00	0.250	2
P6M1H-.250A075R004C	0.2500	0.004	0.750	-	3×	2.25	0.250	2
P6M1H-.250A100R004C	0.2500	0.004	1.000	-	4×	2.50	0.250	2
P6M1H-.250A050R008C	0.2500	0.008	0.500	-	2×	2.00	0.250	2
P6M1H-.250A075R008C	0.2500	0.008	0.750	-	3×	2.25	0.250	2
P6M1H-.250A100R008C	0.2500	0.008	1.000	-	4×	2.50	0.250	2
P6M1H-.250A050R015C	0.2500	0.015	0.500	-	2×	2.00	0.250	2
P6M1H-.250A075R015C	0.2500	0.015	0.750	-	3×	2.25	0.250	2
P6M1H-.250A100R015C	0.2500	0.015	1.000	-	4×	2.50	0.250	2
P6M1H-.250A050R030C	0.2500	0.030	0.500	-	2×	2.00	0.250	2
P6M1H-.250A075R030C	0.2500	0.030	0.750	-	3×	2.25	0.250	2
P6M1H-.250A100R030C	0.2500	0.030	1.000	-	4×	2.50	0.250	2

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P6M2H



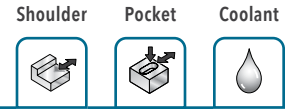
6-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



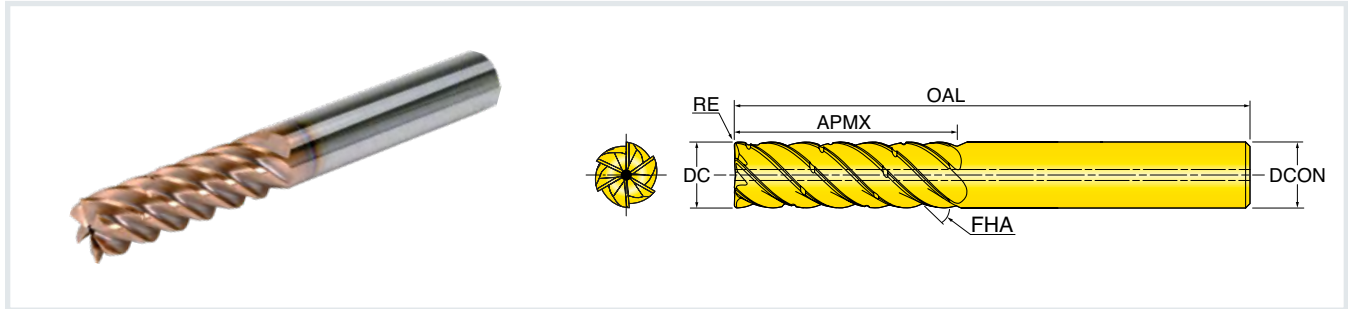
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P6M2H-.312A062R008C	0.3125	0.008	0.625	2×	2.50	0.313
P6M2H-.312A093R008C	0.3125	0.008	0.938	3×	2.75	0.313
P6M2H-.312A125R008C	0.3125	0.008	1.250	4×	3.25	0.313
P6M2H-.312A062R015C	0.3125	0.015	0.625	2×	2.50	0.313
P6M2H-.312A093R015C	0.3125	0.015	0.938	3×	2.75	0.313
P6M2H-.312A125R015C	0.3125	0.015	1.250	4×	3.25	0.313
P6M2H-.312A062R030C	0.3125	0.030	0.625	2×	2.50	0.313
P6M2H-.312A093R030C	0.3125	0.030	0.938	3×	2.75	0.313
P6M2H-.312A125R030C	0.3125	0.030	1.250	4×	3.25	0.313
P6M2H-.375A075R008C	0.3750	0.008	0.750	2×	2.75	0.375
P6M2H-.375A112R008C	0.3750	0.008	1.125	3×	3.25	0.375
P6M2H-.375A150R008C	0.3750	0.008	1.500	4×	3.50	0.375
P6M2H-.375A075R015C	0.3750	0.015	0.750	2×	2.75	0.375
P6M2H-.375A112R015C	0.3750	0.015	1.125	3×	3.25	0.375
P6M2H-.375A150R015C	0.3750	0.015	1.500	4×	3.50	0.375
P6M2H-.375A075R030C	0.3750	0.030	0.750	2×	2.75	0.375
P6M2H-.375A112R030C	0.3750	0.030	1.125	3×	3.25	0.375
P6M2H-.375A150R030C	0.3750	0.030	1.500	4×	3.50	0.375
P6M2H-.500A100R008C	0.5000	0.008	1.000	2×	3.25	0.500
P6M2H-.500A150R008C	0.5000	0.008	1.500	3×	3.75	0.500
P6M2H-.500A200R008C	0.5000	0.008	2.000	4×	4.25	0.500
P6M2H-.500A100R015C	0.5000	0.015	1.000	2×	3.25	0.500
P6M2H-.500A150R015C	0.5000	0.015	1.500	3×	3.75	0.500
P6M2H-.500A200R015C	0.5000	0.015	2.000	4×	4.25	0.500
P6M2H-.500A100R030C	0.5000	0.030	1.000	2×	3.25	0.500
P6M2H-.500A150R030C	0.5000	0.030	1.500	3×	3.75	0.500
P6M2H-.500A200R030C	0.5000	0.030	2.000	4×	4.25	0.500
P6M2H-.500A100R060C	0.5000	0.060	1.000	2×	3.25	0.500
P6M2H-.500A150R060C	0.5000	0.060	1.500	3×	3.75	0.500
P6M2H-.500A200R060C	0.5000	0.060	2.000	4×	4.25	0.500

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P6M2H *continued*



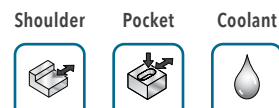
6-FLUTE SCEM 90° - CYLINDRICAL WITH COOLANT



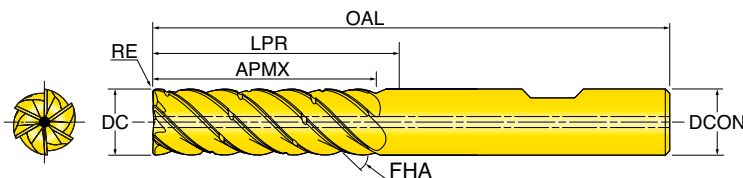
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	OAL Overall Length	DCON Shank Diameter
INCH						
P6M2H-.625A125R015C	0.6250	0.015	1.250	2×	3.75	0.625
P6M2H-.625A187R015C	0.6250	0.015	1.875	3×	4.25	0.625
P6M2H-.625A250R015C	0.6250	0.015	2.500	4×	5.00	0.625
P6M2H-.625A125R030C	0.6250	0.030	1.250	2×	3.75	0.625
P6M2H-.625A187R030C	0.6250	0.030	1.875	3×	4.25	0.625
P6M2H-.625A250R030C	0.6250	0.030	2.500	4×	5.00	0.625
P6M2H-.625A125R060C	0.6250	0.060	1.250	2×	3.75	0.625
P6M2H-.625A187R060C	0.6250	0.060	1.875	3×	4.25	0.625
P6M2H-.625A250R060C	0.6250	0.060	2.500	4×	5.00	0.625
P6M2H-.625A125R125C	0.6250	0.125	1.250	2×	3.75	0.625
P6M2H-.625A187R125C	0.6250	0.125	1.875	3×	4.25	0.625
P6M2H-.625A250R125C	0.6250	0.125	2.500	4×	5.00	0.625
P6M2H-.750A150R015C	0.7500	0.015	1.500	2×	4.25	0.750
P6M2H-.750A225R015C	0.7500	0.015	2.250	3×	5.00	0.750
P6M2H-.750A300R015C	0.7500	0.015	3.000	4×	5.75	0.750
P6M2H-.750A150R030C	0.7500	0.030	1.500	2×	4.25	0.750
P6M2H-.750A225R030C	0.7500	0.030	2.250	3×	5.00	0.750
P6M2H-.750A300R030C	0.7500	0.030	3.000	4×	5.75	0.750
P6M2H-.750A150R060C	0.7500	0.060	1.500	2×	4.25	0.750
P6M2H-.750A225R060C	0.7500	0.060	2.250	3×	5.00	0.750
P6M2H-.750A300R060C	0.7500	0.060	3.000	4×	5.75	0.750
P6M2H-.750A150R125C	0.7500	0.125	1.500	2×	4.25	0.750
P6M2H-.750A225R125C	0.7500	0.125	2.250	3×	5.00	0.750
P6M2H-.750A300R125C	0.7500	0.125	3.000	4×	5.75	0.750

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P6M2H



6-FLUTE SCEM 90° - WELDON WITH COOLANT

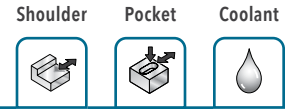


See pg 61 for Weldon flat dimensions

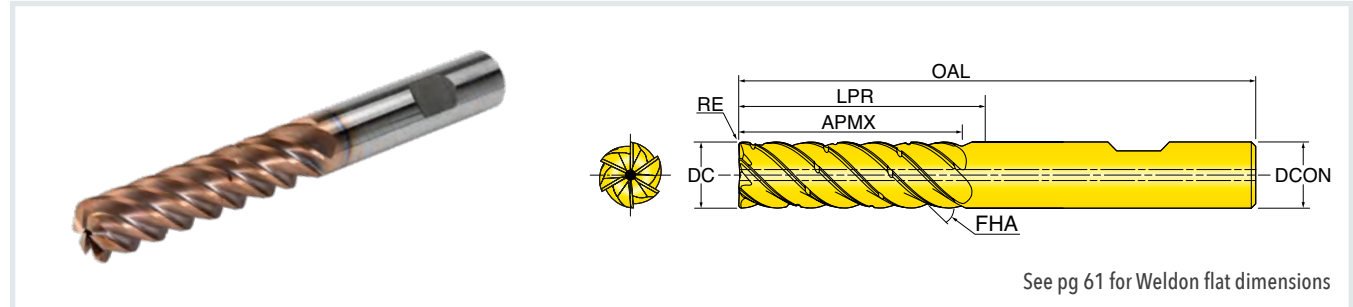
Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	LPR Projection Length	OAL Overall Length	DCON Shank Diameter
INCH							
P6M2H-.312A062R008W	0.3125	0.008	0.625	2×	1.120	2.50	0.313
P6M2H-.312A093R008W	0.3125	0.008	0.938	3×	1.370	2.75	0.313
P6M2H-.312A125R008W	0.3125	0.008	1.250	4×	1.870	3.25	0.313
P6M2H-.312A062R015W	0.3125	0.015	0.625	2×	1.120	2.50	0.313
P6M2H-.312A093R015W	0.3125	0.015	0.938	3×	1.370	2.75	0.313
P6M2H-.312A125R015W	0.3125	0.015	1.250	4×	1.870	3.25	0.313
P6M2H-.312A062R030W	0.3125	0.030	0.625	2×	1.120	2.50	0.313
P6M2H-.312A093R030W	0.3125	0.030	0.938	3×	1.370	2.75	0.313
P6M2H-.312A125R030W	0.3125	0.030	1.250	4×	1.870	3.25	0.313
P6M2H-.375A075R008W	0.3750	0.008	0.750	2×	1.220	2.75	0.375
P6M2H-.375A112R008W	0.3750	0.008	1.125	3×	1.720	3.25	0.375
P6M2H-.375A150R008W	0.3750	0.008	1.500	4×	1.970	3.50	0.375
P6M2H-.375A075R015W	0.3750	0.015	0.750	2×	1.220	2.75	0.375
P6M2H-.375A112R015W	0.3750	0.015	1.125	3×	1.720	3.25	0.375
P6M2H-.375A150R015W	0.3750	0.015	1.500	4×	1.970	3.50	0.375
P6M2H-.375A075R030W	0.3750	0.030	0.750	2×	1.220	2.75	0.375
P6M2H-.375A112R030W	0.3750	0.030	1.125	3×	1.720	3.25	0.375
P6M2H-.375A150R030W	0.3750	0.030	1.500	4×	1.970	3.50	0.375
P6M2H-.500A100R008W	0.5000	0.008	1.000	2×	1.480	3.25	0.500
P6M2H-.500A150R008W	0.5000	0.008	1.500	3×	1.980	3.75	0.500
P6M2H-.500A200R008W	0.5000	0.008	2.000	4×	2.480	4.25	0.500
P6M2H-.500A100R015W	0.5000	0.015	1.000	2×	1.480	3.25	0.500
P6M2H-.500A150R015W	0.5000	0.015	1.500	3×	1.980	3.75	0.500
P6M2H-.500A200R015W	0.5000	0.015	2.000	4×	2.480	4.25	0.500
P6M2H-.500A100R030W	0.5000	0.030	1.000	2×	1.480	3.25	0.500
P6M2H-.500A150R030W	0.5000	0.030	1.500	3×	1.980	3.75	0.500
P6M2H-.500A200R030W	0.5000	0.030	2.000	4×	2.480	4.25	0.500
P6M2H-.500A100R060W	0.5000	0.060	1.000	2×	1.480	3.25	0.500
P6M2H-.500A150R060W	0.5000	0.060	1.500	3×	1.980	3.75	0.500
P6M2H-.500A200R060W	0.5000	0.060	2.000	4×	2.480	4.25	0.500

Not seeing what you're looking for? Custom tools are available - see pgs 62-63 for more info.

Series P6M2H *continued*



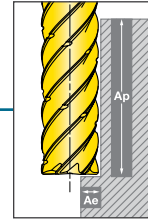
6-FLUTE SCEM 90° - WELDON WITH COOLANT



Part Number	DC Cutting Diameter	RE Corner Radius	APMX Depth of Cut Max.	ULDR Usable Length Diameter Ratio	LPR Projection Length	OAL Overall Length	DCON Shank Diameter
INCH							
P6M2H-.625A125R015W	0.6250	0.015	1.250	2×	1.860	3.75	0.625
P6M2H-.625A187R015W	0.6250	0.015	1.875	3×	2.360	4.25	0.625
P6M2H-.625A250R015W	0.6250	0.015	2.500	4×	3.110	5.00	0.625
P6M2H-.625A125R030W	0.6250	0.030	1.250	2×	1.860	3.75	0.625
P6M2H-.625A187R030W	0.6250	0.030	1.875	3×	2.360	4.25	0.625
P6M2H-.625A250R030W	0.6250	0.030	2.500	4×	3.110	5.00	0.625
P6M2H-.625A125R060W	0.6250	0.060	1.250	2×	1.860	3.75	0.625
P6M2H-.625A187R060W	0.6250	0.060	1.875	3×	2.360	4.25	0.625
P6M2H-.625A250R060W	0.6250	0.060	2.500	4×	3.110	5.00	0.625
P6M2H-.625A125R125W	0.6250	0.125	1.250	2×	1.860	3.75	0.625
P6M2H-.625A187R125W	0.6250	0.125	1.875	3×	2.360	4.25	0.625
P6M2H-.625A250R125W	0.6250	0.125	2.500	4×	3.110	5.00	0.625
P6M2H-.750A150R015W	0.7500	0.015	1.500	2×	2.240	4.25	0.750
P6M2H-.750A225R015W	0.7500	0.015	2.250	3×	2.990	5.00	0.750
P6M2H-.750A300R015W	0.7500	0.015	3.000	4×	3.740	5.75	0.750
P6M2H-.750A150R030W	0.7500	0.030	1.500	2×	2.240	4.25	0.750
P6M2H-.750A225R030W	0.7500	0.030	2.250	3×	2.990	5.00	0.750
P6M2H-.750A300R030W	0.7500	0.030	3.000	4×	3.740	5.75	0.750
P6M2H-.750A150R060W	0.7500	0.060	1.500	2×	2.240	4.25	0.750
P6M2H-.750A225R060W	0.7500	0.060	2.250	3×	2.990	5.00	0.750
P6M2H-.750A300R060W	0.7500	0.060	3.000	4×	3.740	5.75	0.750
P6M2H-.750A150R125W	0.7500	0.125	1.500	2×	2.240	4.25	0.750
P6M2H-.750A225R125W	0.7500	0.125	2.250	3×	2.990	5.00	0.750
P6M2H-.750A300R125W	0.7500	0.125	3.000	4×	3.740	5.75	0.750

Not seeing what you're looking for? Custom tools are available – see pgs 62-63 for more info.

Operating Guidelines • HEM/Trochoidal Milling



Materials				Vc Cutting Speed SFM	*fz = IPT for Ae = .05xD~.15xD • Ap = 2xD								
ISO	Material Group #VDI 3323	Type	Trade Name Examples		DC Cutting Diameter (inch)								
					.125	.188	.250	.313	.375	.500	.625	.750	1.00
M	12-14	Stainless steel (austenitic & ferritic)	416, 303, 430F	590-787	.0009- .0017	.0011- .0021	.0014- .0027	.0017- .0035	.0023- .0047	.0027- .0059	.0039- .0071	.0047- .0098	.0057- .0115
		Stainless steel (austenitic & martensitic)	420, 304, 316, 440C	415-649									
		Stainless steel (PH)	15-5 PH, 17-4 PH	375-531	.0007- .0015	.0009- .0019	.0012- .0025	.0015- .0033	.0023- .0044	.0027- .0055	.0039- .0065	.0047- .0091	.0057- .0104
		Stainless steel (duplex)	Duplex 2205, 329	197-374									

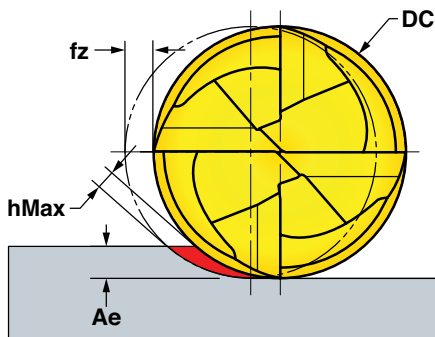
- As Ap increases to maximum 4xD, use fz from lower end of chart.
- When Ae < .10xD, use speed from the higher end of chart.

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may necessitate adjustments in speed or feed. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

*fz = chip thinning calculations are included in the chip load above, especially when Ae ≤ .15xD.

- High pressure coolant is highly recommended, as it will provide optimal chip evacuation and performance.
- A power milling chuck, or coolant thru (CX series) holder (for tools with Weldon flats) is highly recommended, starting at .500" DC or larger. Using a weak holder impacts performance.

Chip Thinning



- Due to the lower radial engagement, *chip thinning* is accentuated, and a much higher feed-per-tooth (fz) can be applied in order to arrive at the true chip thickness (hMax).
- When Ae ≤ .25xD, recommend use of **Chip Thinning Calculator** to ensure hMax is within fz range.
- If needed, Chip Thinning Calculator can be found on our website Machining App.



Weldon Flat Dimensions

Fig. 1
Standard

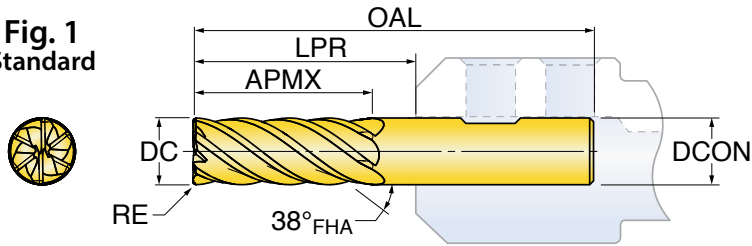
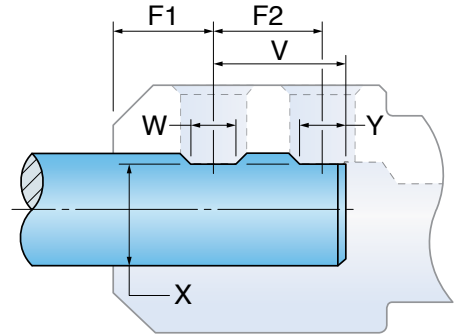
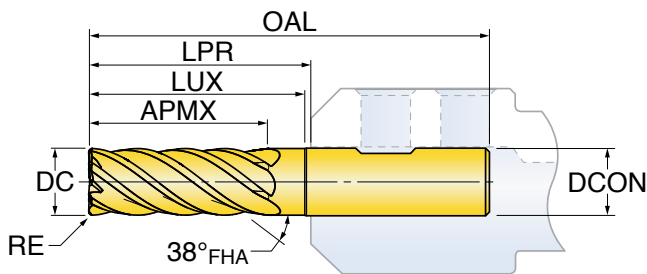


Fig. 2
Necked



DCON Diameter	Modified Weldon Flat Dimensions (inch)				F1 Nose to Center of 1st Flat	F2 1st Flat to 2nd Flat
	V	W	X	Y		
.125	-	-	-	-	.38	-
.187	-	-	-	-	.50	-
.250	.781	.187	.207	-	.38	-
.312	.781	.250	.267	-	.60	-
.375	.781	.280	.325	-	.75	-
.437	-	-	-	-	.75	-
.500	.891	.330	.440	-	.88	-
.625	.953	.400	.560	-	.94	-
.750	1.015	.455	.675	-	1.00	-
.875	1.015	.455	.810	.500	1.00	.866
1.000	1.141	.515	.925	.500	1.12	1.000
1.250	1.141	.515	1.156	.500	1.12	1.000



Qualifying Product Lines

PRIMOALUR™

3-FLUTE, 90° SCEMS
Ideal for Roughing Aluminum Alloys

N

- Serrated cutting edge provides unique chip management, disrupts vibrations, and reduces heat.
- Variable pitch and variable helix to assist with vibration control.
- Deep reach capability.



PRIMOALUF™

3-FLUTE, 90° SCEMS
Ideal for Finishing Aluminum Alloys

N

- Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications.
- Deep reach capability.
- No vibration when milling into corners with same radius as tool.



PRIMOSSV™

4-FLUTE, 90° SCEMS
Ideal for Various Stainless Steel Operations

M

- Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications.
- Deep reach capability.



PRIMOSSH™

5 AND 6-FLUTE, 90° SCEMS
Ideal for HEM of Stainless Steel

M

- Chip splitter cutting edge provides unique chip management, disrupts vibrations, and reduces heat.
- Unique geometry with variable pitch and variable helix disrupts vibrations in long reach applications.
- Deep reach capability.



SPECIAL ORDER Solid Carbide Milling

PRIMOALUR™

Member IMC Group
Ingersoll
Cutting Tools

JOB-103 | 06/2026 | Page 1/1

► 3-Flute SCEMs For Roughing Aluminum Alloys

1 INSTRUCTIONS

Option 1: Fill out this form digitally, save, and email to your local Ingersoll rep.

Option 2: Print form, hand-write your responses, and return to your local Ingersoll rep.

2 CONTACT INFORMATION ►

NOTE: If needed, include workpiece and/or application drawings for your rep to clarify intended use.

Date _____

Contact Name _____

Company _____

Industry _____

Phone _____

Email _____

Ingersoll / Distributor Rep _____

3 TOOL SPECIFICATIONS ▼ All tools feature coolant thru

Item	Workpiece Material	Quantity Required	Units	DC Cutting Dia.	RE Radius	APMX Depth of Cut Max.	LUX Usable Length Max.	OAL Overall Length	DN Neck Dia.	DCON Shank Dia.	Shank Style
1			☐ inch ☐ mm								☐ Cylindrical ☐ Weldon ☐ LockSFeed*
2			☐ inch ☐ mm								☐ Cylindrical ☐ Weldon ☐ LockSFeed*
3			☐ inch ☐ mm								☐ Cylindrical ☐ Weldon ☐ LockSFeed*
4			☐ inch ☐ mm								☐ Cylindrical ☐ Weldon ☐ LockSFeed*
5			☐ inch ☐ mm								☐ Cylindrical ☐ Weldon ☐ LockSFeed*

Additional Notes ► _____

*Compatible with **SAFE-LOCK™** HAMMER

▲ Example form



Custom Tools Built to Your Specifications

Get exactly what you need to get the job done right with special order PrimoLine solid carbide end mills.

Choose one of the four PrimoLine products and complete the corresponding fillable form found at www.ingersoll-imc.com/product-lines/primo-line (or scan/tap/click the QR code at the bottom) with the tool specifications you're looking for. Then submit the form along with any relevant workpiece and/or application drawings to your Ingersoll or distributor representative.

WHAT CAN BE CUSTOMIZED?

- Units - inch or mm
- Cutting diameter (DC)
- Radius (RE)
- Depth of cut max. (APMX)
- Usable length max. (LUX)
- Overall length (OAL)
- Neck diameter (DN)
- Shank diameter (DCON)
- Coolant thru is standard for most diameters
- Shank style (cylindrical, Weldon, or LockSFeed)

Get started with your order!
SCAN/TAP/CLICK ►





Ingersoll Cutting Tools North America

USA

Marketing & Technology Center
845 South Lyford Road
Rockford, IL 61108-2749 USA
815-387-6600
info@ingersoll-imc.com
ingersoll-imc.com

Canada

Ingersoll Cutting Tools Canada
845 South Lyford Road
Rockford, IL 61108-2749 USA
800-892-6859
info@ingersoll-imc.com
ingersoll-imc.com

México

Ingersoll Cutting Tools de México
Blvd. José Musa de León 2127
Col. Los Pinos
Saltillo, Coa 25198
52-844-485-3220
info@ingersoll-imc.com
ingersoll-imc.com

