

# CUTTING TOOLS

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## We have all your Cutting Tools in stock and ready for shipment

We have the right cutting tools such as solid carbide end mills, hand reamers, carbide reamers and ejector pin counterbores to assist in the final machining of your mold. To properly machine a mold, you need the right tools for the job.

- 80% core Ball nose
- 4 Flute Square end
- 3 Flute Corner Radius
- 2 Flute Square End
- Counterbores
- Reamers



## 80% Core 2 Flute Coated Solid Carbide End Mills - Ball Nose

- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 -.0015
- Eliminates rough finish commonly left by typical 4 flute tools

80% core geometry offers added strength and excellent rigidity for profile milling and contouring applications. The result is less push, reduced chatter, and improved chip extraction which produces excellent finishes in valleys and pockets. Designed for hard metal milling up to 58 HRc.



SPECIFICATIONS	
End Style	Ball Nose
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	2

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 4			
80-2125P	1/8	1/2	1/8
80-2187P	3/16	3/4	3/16
80-2250P	1/4	3/4	1/4
80-2312P	5/16	3/4	5/16
80-2375P	3/8	7/8	3/8
80-2500P	1/2	1	1/2
Overall Length: 6			
80-2126P	1/8	1/2	1/8
80-2188P	3/16	3/4	3/16
80-2251P	1/4	3/4	1/4
80-2313P	5/16	3/4	5/16
80-2376P	3/8	7/8	3/8
80-2501P	1/2	1	1/2
Overall Length: 8			
80-2377P	3/8	7/8	3/8
80-2502P	1/2	1	1/2
Overall Length: 12			
80-2503P	1/2	1	1/2

## 80% Core Metric 2 Flute Coated Solid Carbide End Mills - Ball Nose



- Metric Sizes from 6mm - 12mm
- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.000 - .038 mm
- Eliminates rough finish commonly left by typical 4 flute tools

80% core geometry offers added strength and excellent rigidity for profile milling and contouring applications. The result is less push, reduced chatter, and improved chip extraction which produces excellent finishes in valleys and pockets. Designed for hard metal milling up to 58 HRc.

SPECIFICATIONS	
End Style	Ball Nose
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Metric
No. of Flutes	2

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 100 mm			
80-2236P	6 mm	18 mm	6 mm
80-2315P	8 mm	20 mm	8 mm
80-2393P	10 mm	22 mm	10 mm
80-2472P	12 mm	25 mm	12 mm
Overall Length: 150 mm			
80-2237P	6 mm	18 mm	6 mm
80-2316P	8 mm	20 mm	8 mm
80-2394P	10 mm	22 mm	10 mm
80-2473P	12 mm	25 mm	12 mm

## 80% Core 2 Flute Coated Solid Carbide End Mills - Ball Nose Profile

- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Eliminates rough finish commonly left by typical 4 flute tools
- Larger shank with 3° draft angles, gives extra reach with added strength

80% core geometry offers added strength and excellent rigidity for profile milling and contouring applications. The result is less push, reduced chatter, and improved chip extraction which produces excellent finishes in valleys and pockets. Designed for hard metal milling up to 58 HRC.



SPECIFICATIONS	
End Style	Ball Nose
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	2
Overall Length	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
82-2032P	1/32	1/16	1/4
82-2062P	1/16	1/8	1/4
82-2093P	3/32	3/16	1/4
82-2125P	1/8	1/4	1/4
82-2126P	1/8	1/4	3/8
82-2187P	3/16	3/8	3/8
82-2250P	1/4	1/2	3/8
82-2312P	5/16	5/8	3/8
82-2375P	3/8	3/4	1/2
82-2437P	7/16	7/8	1/2

## 80% Core 2 Flute Coated Solid Carbide End Mills - Corner Radius



- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Eliminates rough finish commonly left by typical 4 flute tools

80% core geometry offers added strength and excellent rigidity for profile milling and contouring applications. The result is less push, reduced chatter, and improved chip extraction which produces excellent finishes in valleys and pockets. Designed for hard metal milling up to 58 HRc.

SPECIFICATIONS	
End Style	Corner Radius
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	2

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 4				
81-2187P	3/16	3/4	3/16	0.020
81-2250P	1/4	3/4	1/4	0.030
81-2375P	3/8	7/8	3/8	0.030
81-2500P	1/2	1	1/2	0.030
Overall Length: 6				
81-2188P	3/16	3/4	3/16	0.020
81-2251P	1/4	3/4	1/4	0.030
81-2376P	3/8	7/8	3/8	0.030
81-2501P	1/2	1	1/2	0.030
Overall Length: 8				
81-2502P	1/2	1	1/2	0.030
Overall Length: 12				
81-2503P	1/2	1	1/2	0.030

## Variable 4 Flute Coated Solid Carbide End Mills - Square End

- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Ideal for hard to machine materials such as P-20, Stainless Steel and pre-heat treated metals up to 45 HRc

The unique high performance variable helix flute geometry reduces harmonics and diminishes chatter so higher feed rates can be obtained. The versatility of this tool helps you to save time by reducing tool changes. Use this tool to replace the typical old fashioned 4 flute end mills.



SPECIFICATIONS	
End Style	Square End
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 1-1/2			
90-4125SCP	1/8	1/2	1/8
Overall Length: 2			
90-4093SCP	3/32	1/2	3/32
90-4156SCP	5/32	5/8	5/32
90-4187SCP	3/16	5/8	3/16
Overall Length: 2-1/2			
90-4250SCP	1/4	3/4	1/4

## Variable 4 Flute Coated Solid Carbide End Mills - Corner Radius



- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Ideal for hard to machine materials such as P-20, Stainless Steel and pre-heat treated metals up to 45 HRc

The unique high performance variable helix flute geometry reduces harmonics and diminishes chatter so higher feed rates can be obtained. The versatility of this tool helps you to save time by reducing tool changes. Use this tool to replace the typical old fashioned 4 flute end mills.

SPECIFICATIONS	
End Style	Corner Radius
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 1-1/2				
90-4125P	1/8	1/2	1/8	0.015
Overall Length: 2				
90-4126P	1/8	3/4	1/8	0.015
90-4187P	3/16	5/8	3/16	0.020
Overall Length: 2-1/2				
90-4188P	3/16	3/4	3/16	0.020
90-4250P	1/4	3/4	1/4	0.020
90-4312P	5/16	7/8	5/16	0.020
90-4375P	3/8	7/8	3/8	0.030
Overall Length: 2-3/4				
90-4437P	7/16	1	7/16	0.030
Overall Length: 3				
90-4251P	1/4	1 1/8	1/4	0.020
90-4313P	5/16	1 1/8	5/16	0.020
90-4376P	3/8	1 1/8	3/8	0.030
90-4500P	1/2	1	1/2	0.030

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## Variable 4 Flute Coated Solid Carbide End Mills - Corner Radius

- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Ideal for hard to machine materials such as P-20, Stainless Steel and pre-heat treated metals up to 45 HRC

The unique high performance variable helix flute geometry reduces harmonics and diminishes chatter so higher feed rates can be obtained. The versatility of this tool helps you to save time by reducing tool changes. Use this tool to replace the typical old fashioned 4 flute end mills.



SPECIFICATIONS	
End Style	Corner Radius
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 3-1/2				
90-4625P	5/8	1-1/4	5/8	0.030
Overall Length: 4				
90-4438P	7/16	2	7/16	0.030
90-4501P	1/2	2	1/2	0.030
90-4750P	3/4	1-1/2	3/4	0.030
90-4100P	1	1-1/2	1	0.030
Overall Length: 5				
90-4626P	5/8	2-1/4	5/8	0.030
90-4751P	3/4	2-1/4	3/4	0.030
90-4101P	1	2-1/4	1	0.030
Overall Length: 6				
90-4752P	3/4	3	3/4	0.030
90-4102P	1	3	1	0.030
Overall Length: 7				
90-4103P	1	4	1	0.030

## Variable 4 Flute Coated Solid Carbide End Mills - Corner Radius Extended Reach



- Extra long shanks for hard to reach machining
- AlTiN Coated for longer tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Ideal for hard to machine materials such as P-20, Stainless Steel and pre-heat treated metals up to 45 HRc

The unique high performance variable helix flute geometry reduces harmonics and diminishes chatter so higher feed rates can be obtained. The versatility of this tool helps you to save time by reducing tool changes. Use this tool to replace the typical old fashioned 4 flute end mills.

SPECIFICATIONS	
End Style	Corner Radius
Fractional Size	1/8 OS
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	AlTiN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 4				
90-4125-4P	1/8	1/2	1/8	0.020
90-4187-4P	3/16	5/8	3/16	0.020
90-4250-4P	1/4	3/4	1/4	0.020
90-4312-4P	5/16	7/8	5/16	0.020
90-4375-4P	3/8	7/8	3/8	0.020
Overall Length: 5				
90-4500-4P	5/32	1-1/2	1/4	0.007
Overall Length: 6				
90-4507-060P	1/2	1	1/2	0.060

## Extended Reach 4 Flute Coated Solid Carbide End Mills - Ball Nose

- Extra long shanks for hard to reach machining
- TiAlN Coated for extended tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +0.0000 - .0015
- Shorter flute length for maximum strength
- 30° helix general purpose ball nose

These extended reach tools add extra length to normal diameters for deeper cuts.



SPECIFICATIONS	
End Style	Ball Nose
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	TiAlN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 4			
51-4125P	1/8	1/2	1/8
51-4187P	3/16	5/8	3/16
51-4250P	1/4	3/4	1/4
51-4312P	5/16	7/8	5/16
51-4375P	3/8	7/8	3/8
51-4500P	1/2	1	1/2
Overall Length: 6			
51-4126P	1/8	1/2	1/8
51-4188P	3/16	5/8	3/16
51-4251P	1/4	3/4	1/4
51-4313P	5/16	7/8	5/16
51-4376P	3/8	7/8	3/8
51-4501P	1/2	1	1/2
51-4626P	5/8	1-1/4	5/8
51-4751P	3/4	1-1/2	3/4

## Extended Reach 4 Flute Coated Solid Carbide End Mills - Square End



- Extra long shanks for hard to reach machining
- TiAlN Coated for extended tool life
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Shorter flute length for maximum strength
- 30° helix general purpose Square End

These extended reach tools add extra length to normal diameters for deeper cuts.

SPECIFICATIONS	
End Style	Square End
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	TiAlN
Unit of Measure	Inch
No. of Flutes	4

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 4			
41-4125P	1/8	1/2	1/8
41-4187P	3/16	5/8	3/16
41-4250P	1/4	3/4	1/4
41-4312P	5/16	7/8	5/16
41-4375P	3/8	7/8	3/8
41-4500P	1/2	1	1/2
Overall Length: 6			
41-4126P	1/8	1/2	1/8
41-4188P	3/16	5/8	3/16
41-4251P	1/4	3/4	1/4
41-4313P	5/16	7/8	5/16
41-4376P	3/8	7/8	3/8
41-4501P	1/2	1	1/2
41-4626P	5/8	1-1/4	5/8
41-4751P	3/4	1-1/2	3/4

## Variable 3 Flute Coated Solid Carbide End Mills - Corner Radius (For Machining Aluminum)

- Hard Carbon Coating out performs TIN, TiCN and ZRN in aluminum and nonferrous applications
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Small corner radius for added strength
- Ideal for spindle speeds above 5000 rpm



Have the need for Speed? Take this Variable 3 flute tool and run through aluminum like a hot knife through butter. These high performance tools have a new hydrogen free coating that out performs TIN, TiCN and ZRN in aluminum and nonferrous applications. This tool will not adhere to aluminum.

SPECIFICATIONS	
End Style	Corner Radius
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	Hard Carbon
Unit of Measure	Inch
No. of Flutes	3

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 1-1/2				
42-3125P	1/8	1/2	1/8	0.007
Overall Length: 2				
42-3126P	1/8	3/4	1/8	0.007
42-3187P	3/16	5/8	3/16	0.010
Overall Length: 2-1/2				
42-3188P	3/16	3/4	3/16	0.010
42-3250P	1/4	3/4	1/4	0.010
42-3312P	5/16	7/8	5/16	0.010
42-3375P	3/8	7/8	3/8	0.010
Overall Length: 3				
42-3127P	1/8	1	1/8	0.007
42-3189P	3/16	1-1/8	3/16	0.010
42-3251P	1/4	1-1/8	1/4	0.010
42-3313P	5/16	1-1/8	5/16	0.010
42-3376P	3/8	1-1/8	3/8	0.010
42-3500P	1/2	1-1/4	1/2	0.010

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## Variable 3 Flute Coated Solid Carbide End Mills - Corner Radius (For Machining Aluminum)



- Hard Carbon Coating out performs TiN, TiCN and ZRN in aluminum and nonferrous applications
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Designed for rough cut and finish milling
- Small corner radius for added strength
- Ideal for spindle speeds above 5000 rpm

Have the need for Speed? Take this Variable 3 flute tool and run through aluminum like a hot knife through butter. These high performance tools have a new hydrogen free coating that out performs TiN, TiCN and ZRN in aluminum and nonferrous applications. This tool will not adhere to aluminum.

SPECIFICATIONS	
End Style	Corner Radius
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Coating	Hard Carbon
Unit of Measure	Inch
No. of Flutes	3

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER	CORNER RADIUS
Overall Length: 3-1/2				
42-3625P	5/8	1-1/4	5/8	0.010
Overall Length: 4				
42-3252P	1/4	1 1/2	1/4	0.010
42-3314P	5/16	1 3/4	5/16	0.010
42-3377P	3/8	1 3/4	3/8	0.010
42-3501P	1/2	2	1/2	0.010
42-3750P	3/4	1 1/2	3/4	0.010
42-3100P	1	1 1/2	1	0.010
Overall Length: 5				
42-3626P	5/8	2 1/4	5/8	0.010
42-3751P	3/4	2 1/4	3/4	0.010
42-3101P	1	2 1/4	1	0.010
Overall Length: 6				
42-3502P	1/2	3	1/2	0.010
42-3627P	5/8	3	5/8	0.010
42-3752P	3/4	3	3/4	0.010
42-3102P	1	3	1	0.010

## Extended Reach 2 Flute Solid Carbide End Mills - Ball Nose (For Machining Aluminum)

- Extra long shanks for hard to reach machining
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +0.0000 - .0015
- Shorter flute length for maximum strength
- 30° helix general purpose ball nose

Great for cutting Aluminum, these extended reach tools add extra length to normal diameters for deeper cuts.



SPECIFICATIONS	
End Style	Ball Nose
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Unit of Measure	Inch
No. of Flutes	2

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 4			
50-2125P	1/8	1/2	1/8
50-2187P	3/16	5/8	3/16
50-2250P	1/4	3/4	1/4
50-2312P	5/16	7/8	5/16
50-2375P	3/8	7/8	3/8
50-2500P	1/2	1	1/2
Overall Length: 6			
50-2126P	1/8	1/2	1/8
50-2188P	3/16	5/8	3/16
50-2251P	1/4	3/4	1/4
50-2313P	5/16	7/8	5/16
50-2376P	3/8	7/8	3/8
50-2501P	1/2	1	1/2
50-2626P	5/8	1 1/4	5/8
50-2751P	3/4	1 1/2	3/4
Overall Length: 8			
50-2377P	3/8	7/8	3/8
50-2502P	1/2	1	1/2
Overall Length: 10			
50-2503P	1/2	1	1/2
Overall Length: 12			
50-2504P	1/2	1	1/2

## Extended Reach 2 Flute Solid Carbide End Mills - Square End (For Machining Aluminum)



- Extra long shanks for hard to reach machining
- Premium micro grain carbide
- H6 Shank tolerance for heat shrink applications
- Cutting diameter tolerance +.0000 - .0015
- Shorter flute length for maximum strength
- 30° helix general purpose square end

Great for cutting Aluminum, these extended reach tools add extra length to normal diameters for deeper cuts.

SPECIFICATIONS	
End Style	Square End
Material Type	Solid Carbide
Shank Diameter Tolerance	H6
Unit of Measure	Inch
No. of Flutes	2

CATALOG NO.	FLUTE DIAMETER	FLUTE LENGTH	SHANK DIAMETER
Overall Length: 4			
40-2125P	1/8	1/2	1/8
40-2187P	3/16	5/8	3/16
40-2250P	1/4	3/4	1/4
40-2312P	5/16	7/8	5/16
40-2375P	3/8	7/8	3/8
40-2500P	1/2	1	1/2
Overall Length: 6			
40-2126P	1/8	1/2	1/8
40-2188P	3/16	5/8	3/16
40-2251P	1/4	3/4	1/4
40-2313P	5/16	7/8	5/16
40-2376P	3/8	7/8	3/8
40-2501P	1/2	1	1/2
40-2626P	5/8	1 1/4	5/8
40-2751P	3/4	1 1/2	3/4
Overall Length: 8			
40-2377P	3/8	7/8	3/8
40-2502P	1/2	1	1/2
Overall Length: 10			
40-2503P	1/2	1	1/2
Overall Length: 12			
40-2504P	1/2	1	1/2

## Ejector Pin Counterbores

- Angled Pilot for easy pickup of holes
- Built in 45° Chamfer provides clearance for radius under Ejector Pin head
- Manufactured from high speed steel with precision ground cutting edges for even chip load and fast smooth chip clearance
- Pilot diameter on counterbore tool is .002" - .004" under the corresponding ejector pin body diameter.

Ejector Pin Counterbores are manufactured from high speed steel and allow for the drilling of ejector pin holes in the ejector retainer plate. The built in chamfer provides clearance for the radius under the ejector pin head. Holes are easily picked up due to the angled pilot design of each counterbore.



SPECIFICATIONS	
Material Type	High Speed Steel
Unit of Measure	Inch

CATALOG NO.	EJECTOR PIN BODY DIAMETER	OVERALL LENGTH	COUNTERBORE BODY DIAMETER	SHANK DIAMETER	PILOT LENGTH
ECB-9	1/8	2-5/8	9/32	1/4	3/16
ECB-11	5/32	2-3/4	5/16	1/4	3/16
ECB-13	3/16	3-1/4	13/32	3/8	3/16
ECB-15	7/32	3-3/8	7/16	3/8	1/4
ECB-17	1/4	3-9/16	15/32	7/16	1/4
ECB-19	9/32	3-9/16	15/32	7/16	1/4
ECB-21	5/16	3-7/8	17/32	1/2	5/16
ECB-23	11/32	4-1/4	19/32	1/2	5/16
ECB-25	3/8	4-1/2	21/32	5/8	5/16
ECB-29	7/16	4-3/4	23/32	5/8	5/16
ECB-33	1/2	5-1/8	25/32	5/8	5/16
ECB-37	5/8	5-5/8	29/32	5/8	5/16
ECB-41	3/4	6-1/4	1-1/32	5/8	5/16
ECB-47	1	6-1/4	1-9/32	3/4	5/16

## Carbide Reamers



- Designed to work with PCS Oversized Ejector Pins
- Straight flute
- Extra long shank for easy access to holes within a deep cavity
- Four or six flutes to check size precisely
- Extra long flute lengths for greater hole straightness
- Shank diameters smaller than reamer diameter to avoid seizing

PCS Carbide Reamers are manufactured from micro-grain carbide. These reamers are available on-size or .005 oversize. Extra long shanks and flute lengths come standard, providing a more precise hole.

### SPECIFICATIONS

Material Type	Micro-Grain Carbide
Corner Radius	0.007
Unit of Measure	Inch

CATALOG NO.	FRACTIONAL SIZE	DECIMAL SIZE +.0002 -.0000	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	SHANK DIAMETER +.0000 -.0005
Standard Oversize .005: 0						
RC-5	1/16	0.0625	4	1/2	4	0.0570
RC-7	3/32	0.0938	4	3/4	4	0.0880
RC-9	1/8	0.1250	4	7/8	4	0.1200
RC-11	5/32	0.1562	6	1	4	0.1510
RC-13	3/16	0.1875	6	1	4-1/2	0.1820
RC-15	7/32	0.2188	6	1-1/8	5	0.2130
RC-17	1/4	0.2500	6	1-1/8	5	0.2450
RC-21	5/16	0.3125	6	1-3/8	5	0.3070
RC-25	3/8	0.3750	4	1-1/2	5	0.1250
RC-33	1/2	0.5000	3	1 3/4	10	0.1560
Standard Oversize .005: 1						
ROS-4	3/64 OS	0.0517	4	1/2	4	0.0460
ROS-5	1/16 OS	0.0673	4	1/2	4	0.0620
ROS-6	5-64 OS	0.0829	4	1/2	4	0.0770
ROS-7	3/32 OS	0.0986	4	3/4	4	0.0930
ROS-9	1/8 OS	0.1298	4	7/8	4	0.1250
ROS-10	9/64 OS	0.1454	6	1	4	0.1400
ROS-11	5/32 OS	0.1610	6	1	4	0.1550
ROS-13	3/16 OS	0.1923	6	1	4-1/2	0.1870
ROS-15	7/32 OS	0.2236	6	1-1/8	5	0.2180
ROS-16	15/64 OS	0.2394	4	1-1/2	5	0.1250
ROS-17	1/4 OS	0.2548	6	1-1/8	5	0.2490
ROS-21	5/16 OS	0.3173	6	1-3/8	5	0.3120
ROS-25	3/8 OS	0.3798	6	1-1/2	5	0.3740
ROS-33	1/2 OS	0.5050	4	1-1/2	5	0.1250

## Sprue Bushing Reamers (Hand & Machine)

- High speed steel
- Left hand spiral, right hand cut
- 2° 23' 13" included angle
- 1/2" taper per foot
- Hand reamer for finishing (HR-1 & HR-2)
- Machine reamer for roughing (MR-1 & MR-2)

PCS Sprue Bushing Reamers are manufactured from high-speed steel. Both Machine and Hand Reamers are available with a left hand spiral, right hand cut. Machine reamers should be used for rough work while finish work should be done using a hand reamer.



SPECIFICATIONS	
Material Type	High Speed Steel
Taper per Ft.	1/2
Unit of Measure	Inch

CATALOG NO.	NO. OF FLUTES	SMALL END DIAMETER	LARGE END DIAMETER	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH
Description: Hand Reamer						
HR-1	4	7/64	3/8	5/16	6	8
HR-2	6	13/64	5/8	1/2	10-1/2	12-5/8
Description: Machine Reamer						
MR-1	3	7/64	3/8	5/16	6	8
MR-2	3	13/64	5/8	1/2	10-1/2	12-5/8

## Conversion Chart

FRACTION	DECIMAL	MM
1/64	0.0156	0.3968
1/32	0.0312	0.7937
3/64	0.0468	1.1906
1/16	0.0625	1.5875
5/64	0.0781	1.9843
3/32	0.0937	2.3812
7/64	0.1093	2.7781
1/8	0.1250	3.1750
9/64	0.1406	3.5718
5/32	0.1562	3.9687
11/64	0.1718	4.3656
3/16	0.1875	4.7625
13/64	0.2031	5.1593
7/32	0.2187	5.5562
15/64	0.2343	5.9531
1/4	0.2500	6.3500
17/64	0.2656	6.7468
9/32	0.2812	7.1437
19/64	0.2968	7.5406
5/16	0.3125	7.9375
21/64	0.3281	8.3343
11/32	0.3437	8.7312
23/64	0.3593	9.1281
3/8	0.3750	9.5250
25/64	0.3906	9.9218
13/32	0.4062	10.3187
27/64	0.4218	10.7156
7/16	0.4375	11.1250
29/64	0.4531	11.5093
15/32	0.4687	11.9062
31/64	0.4843	12.3031
1/2	0.5000	12.7000
33/64	0.5156	13.0968
17/32	0.5312	13.4937
35/64	0.5468	13.8906
9/16	0.5625	14.2875
37/64	0.5781	14.6843
19/32	0.5937	15.0812
39/64	0.6093	15.4781
5/8	0.6250	15.8750
41/64	0.6406	16.2718
21/32	0.6562	16.6687
43/64	0.6718	17.0656
11/16	0.6875	17.4625
45/64	0.7031	17.8593
23/32	0.7187	18.2562
47/64	0.7343	18.6531
3/4	0.7500	19.0500
49/64	0.7656	19.4468
25/32	0.7812	19.8437
51/64	0.7968	20.2406
13/16	0.8125	20.6375
53/64	0.8281	21.0343
27/32	0.8437	21.4312
55/64	0.8593	21.8281
7/8	0.8750	22.2250
57/64	0.8906	22.6218
29/32	0.9062	23.0187
59/64	0.9218	23.4156
15/16	0.9375	23.8125
61/64	0.9531	24.2093
31/32	0.9687	24.6062
63/64	0.9843	25.0031
1	1.0000	25.4000