LEXINGTON

CUTTER, INC.

YOUR VALUE ADDED PARTNER

2026

QUALITY CARBIDE & CARBIDE TIPPED
CUTTING TOOLS



PROUDLY
MADE IN THE UNITED STATES
&
DISTRIBUTED AROUND THE WORLD

LEXINGTON CUTTER RETIPPING & RESHARPENING SERVICES

RETIPPING SERVICE

Lexington Cutter will retip and resharpen carbide tipped cutting tools manufactured by Lexington or equivalent tools made by other manufacturers. The tool types listed in the table below are eligible for retipping.
12 or More Pieces List Price Less 40%
6-11 Pieces List Price Less 35%
2 - 5 Pieces List Price Less 30%



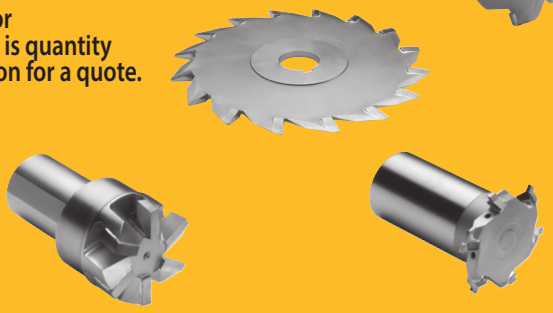
RESHARPENING SERVICE

Lexington Cutter will resharpen carbide tipped cutting tools manufactured by Lexington or equivalent tools made by other manufacturers. The tool types listed below are eligible for resharpening.
Shank Tools List Price Less 60%
Arbor Hole Tools List Price Less 45%
5 Piece Minimum on Resharpening



SPECIALS RETIPPING & RESHARPENING SERVICE

Lexington Cutter offers retipping and resharpening services on special carbide tipped cutting tools manufactured by Lexington or other manufacturers. Specials need to be quoted, and the pricing is quantity based. Send your special carbide tipped cutting tools to Lexington for a quote.



All tools need to be inspected by Lexington to determine if they are elegible to be retipped or resharpened. Pricing is based on the number of tools elegible after inspection.

TYPE	ELIGIBLE CARBIDE TIPPED TOOLS
3704	High Performance Keyseat Cutters for Aluminum
3700	Straight Tooth Keyseat Cutters for Non-Ferrous & Cast Iron
3701	Staggered Tooth Keyseat Cutters for Non-Ferrous & Cast Iron
3702	Straight Tooth Keyseat Cutters for Steel
3703	Staggered Tooth Keyseat Cutters for Steel
3730	45° Chamfer Milling Cutters for Non-Ferrous & Cast Iron
3731	45° Chamfer Milling Cutters for Steel
3732	60° Chamfer Milling Cutters for Non-Ferrous & Cast Iron
3733	60° Chamfer Milling Cutters for Steel
3746	60° Double Angle Cutters for Non-Ferrous & Cast Iron (Shank)
3747	60° Double Angle Cutters for Steel (Shank)
3748	90° Double Angle Cutters for Non-Ferrous & Cast Iron (Shank)
3749	90° Double Angle Cutters for Steel (Shank)
3718	Radius Cutters for Non-Ferrous & Cast Iron
3719	Radius Cutters for Steel
3720	T-Slot Cutters for Non-Ferrous & Cast Iron
3721	T-Slot Cutters for Steel
3734	45° Dovetail Cutters for Non-Ferrous & Cast Iron
3735	45° Dovetail Cutters for Steel
3736	60° Dovetail Cutters for Non-Ferrous & Cast Iron
3737	60° Dovetail Cutters for Steel
3550	Slitting Saws Coarse Tooth for Non-Ferrous
3552	Slitting Saws Coarse Tooth for Cast Iron
3554	Slitting Saws Coarse Tooth for Steel
3558	Slitting Saws Coarse Tooth for Stainless
3551	Slitting Saws Standard Tooth for Non-Ferrous

TYPE	ELIGIBLE CARBIDE TIPPED TOOLS
3553	Slitting Saws Standard Tooth for Cast Iron
3556	Slitting Saws Standard Tooth for Steel
3559	Slitting Saws Standard Tooth for Stainless
3540	Side Milling Cutter for Non-Ferrous
3541	Side Milling Cutter for Cast Iron
3542	Side Milling Cutter for Steel
3543	Side Milling Cutter for Stainless
3547	Side Milling Cutter Staggered Tooth General Purpose
3714	45° Right Single Angle Cutter (Arbor Hole Type)
3716	45° Left Single Angle Cutter (Arbor Hole Type)
3724	60° Right Single Angle Cutter (Arbor Hole Type)
3726	60° Left Single Angle Cutter (Arbor Hole Type)
3750	45° Double Angle Cutter (Arbor Hole Type)
3752	60° Double Angle Cutter (Arbor Hole Type)
3754	90° Double Angle Cutter (Arbor Hole Type)
3530	Shell Mill for Non-Ferrous
3531	Shell Mill for Cast Iron
3532	Shell Mill for Steel
3740	Corner Rounding End Mill for Non-Ferrous
3741	Corner Rounding End Mill for Steel
3308	End Mills for Steel 6° Right Spiral Flutes
3350	End Mills for Steel 15° Right Spiral Flutes
3302	End Mills for NF & Cast Iron 2 Straight Flutes Radial Edged
3304	End Mills for NF & Cast Iron 4/6 Straight Flutes Radial Edged
3306	End Mills for NF & Cast Iron 6° Right Spiral Flutes Radial Edged
3375	End Mills for NF & Cast Iron 15° Right Spiral Flutes Radial Edged

LEXINGTON CUTTER, INC. • sales@lexingtoncutter.com • Phone 800-882-2627 • Fax 800-882-3637

Made in U.S.A.

SELECTING THE CORRECT LEXINGTON TOOL

LEXINGTON CUTTER'S carbide tipped tools are designed with the appropriate carbide grade and tool geometry for each material classification.

Follow the steps below to select the best tool types for maximum performance.

1. Determine classification of material being machined using table below.
2. Determine family of tool needed (i.e., drills, reamers, end mills, etc.).
3. Using the color coded index on the following pages, find the family of tool needed and the correct material classification column.
4. The index shows the tool types and page numbers for the recommended tools.
5. Turn to the page to find: sizes, tolerances, EDP numbers and prices.

CLASSIFICATION	MATERIAL	EXAMPLES
NON-FERROUS (SOFT)	ALUMINUM ALLOY - CAST ALUMINUM ALLOY - WROUGHT MAGNESIUM ALLOY LEAD ALLOY NON-METAL AND PLASTIC ZINC ALLOY - DIE CAST	308.0, 356.0, 360.0, 380.0, 390.0, 514.0 3003, 4032, 5052, 6061, 7075 AM60A, AZ21A, AZ91B-C, K1A Alloys 7, 8, 13, 15, 1Sb, 4Sb, 6Sb, 8Sb, 9Sb Bakelite, Nylon, Polystyrene, PVC AC41A, AG40A, AMS4803, ZDC NO. 7
NON-FERROUS (HARD)	ALUMINUM BRONZE BRASS ALLOY - LEADED AND FREE CUTTING BRASS ALLOY - YELLOW, RED, NAVAL COMMERCIAL BRONZE (LEADED) NICKEL SILVER COPPER ALLOY - TOUGH	614, 952-958 340, 342, 353, 360, 370, 485 268, 270, 464-467 314 745-770, 973-978 110, 170, 172, 175, 280, 425, 610, 655
CAST IRON	DUCTILE CAST IRON - AUSTENITIC FERRITIC FERRITIC - PEARLITIC PEARLITIC - MARTENSITIC MARTENSITIC GRAY CAST IRON MALLEABLE CAST IRON - FERRITIC OR PEARLITIC	D-2, D-2B, D-2C, D-2M, D-3, D-3A, D-4, D-5 60-40-18, 65-45-12, D4018, D4512 80-55-06, D5506 100-70-03, D7003 120-90-02, DQ&T 20, 25, 30, 35, 40, 45, 50, 55 32510, 35018, 45008, M3210, M4504
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - WROUGHT LOW AND MEDIUM CARBON STEEL - FREE MACHINING LOW CARBON STEEL - CAST LEADED LOW CARBON LEADED MEDIUM CARBON MEDIUM CARBON STEEL - CAST	1005-1029, 1030-1050 1108-1119, 1132-1151, 1211-1215 1010, 1020 10L18, 11L17, 12L13-12L15 10L45, 10L50, 11L37, 11L44 1030, 1040, 1050
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACH. MEDIUM AND HIGH CARBON ALLOY STEEL - LEADED STAINLESS STEEL - 300 SERIES (FREE MACH.)* STAINLESS STEEL - 400 SERIES STAINLESS STEEL - 400 SERIES (FREE MACH.)	4320, 4340, 4620, 5015, 8620, 9310 4140, 4142Se, 4145Te, 4150, 86L20 41L30, 41L40, 41L50 303, 303MA, 303Pb, 303 PLUS X, 303Se 409, 410, 420, 430, 436 416, 416Se, 420F, 430F, 440F
HIGH STRENGTH STEELS	ARMOR PLATE HIGH CARBON ALLOY STEEL HIGH STRENGTH STEEL - WROUGHT MARAGING STEEL NITRIDING STEEL TOOL STEEL	HY-80, HY-100, HY-180, MIL-S-12560 50100, 51100, 52100 300M, 4330V, 98BV40, HP 9-4-20 Grades 200, 250, 300, 350, HY 230 Nitralloy 125, 135, 135 Modified, 230 Series A2, D2, H13, M50, P20, S7, W1
HIGH TEMPERATURE ALLOYS	IRON BASE ALLOY NICKEL BASE ALLOY STAINLESS STEEL - 300 SERIES STAINLESS STEEL - PH SERIES TITANIUM ALLOY	A-286, Discaloy, Incoloy 800-802 Hastelloy C, Inconel 600, 625, 718, 825 302, 304, 309, 314, 316, 300, 347, 385 15-5PH, 16-6PH, 17-4PH, AM-350 Ti-6Al-4V, Ti-10V-2Fe-3Al, 98.9, 99.5

Lexington's tool selection is based on materials most common to condition. Special heat treatments or processing may change the material's machining characteristics. This guide is a suggested starting point for tool selection.

*When milling free machining 300 series stainless steel, use cast iron classification.

LEXINGTON CUTTER TOOL INDEX

MILLING CUTTERS - ARBOR TYPE	Tool Type	Fractional Page	Metric Page	TOOL SELECTOR: Non-Ferrous Soft	Non-Ferrous Hard	Cast Iron	Low Carbon Steel	Med Strength Steels	High Strength Steels	High Temp. Alloys	CROSS REFERENCE: Cleveland	Fullerton	Gaylee	Morse	NYTD	Niagara	RTW (Greenfield)	Union
Double Angle Cutter - 45° Included	3750	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Double Angle Cutter - 60° Included	3752	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Double Angle Cutter - 90° Included	3754	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Shell Mill Cutter - Cast Iron	3531	27				■			■		772	-	-	5859	-	4900	-	5690
Shell Mill Cutter - Non-Ferrous	3530	27		■	■						773	-	-	5858	-	4920	-	5694
Shell Mill Cutter - Steel	3532	27					■	■	■		771	-	-	5860	-	4910	-	5692
Side Milling Cutter - Cast Iron	3541	26				■					-	-	-	5862	-	1590	-	5400
Side Milling Cutter - Non-Ferrous	3540	26		■	■						-	-	-	5861	-	1630	-	5404
Side Milling Cutter - Stainless Steel	3543	26								■	-	-	-	5849	-	-	-	-
Side Milling Cutter - Steel	3542	26					■	■	■		-	-	-	5863	-	1550	-	5401
Side Milling Cutter - Staggered Tooth - General Purpose	3547	15		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Single Angle Cutter - 45° Left	3716	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Single Angle Cutter - 45° Right	3714	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Single Angle Cutter - 60° Left	3726	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Single Angle Cutter - 60° Right	3724	27		■	■	■	■	■			-	-	-	-	-	-	-	-
Slitting Saw - Coarse Tooth - Cast Iron	3552	16				■					-	-	CCI	5847	-	4240	-	5406
Slitting Saw - Coarse Tooth - Non-Ferrous	3550	16		■	■						-	-	CNF	5846	-	4690	-	5407
Slitting Saw - Coarse Tooth - Stainless Steel	3558	16								■	-	-	GSS	5850	-	4260	-	-
Slitting Saw - Coarse Tooth - Steel	3554	16					■	■	■		-	-	CST	5848	-	4220	-	5405
Slitting Saw - Standard Tooth - Cast Iron	3553	17				■					1361	-	GPP	-	-	-	-	-
Slitting Saw - Standard Tooth - Non-Ferrous	3551	17		■	■						1361	-	GPP	-	-	-	-	-
Slitting Saw - Standard Tooth - Stainless Steel	3559	17-21								■	-	-	GSS	-	-	-	-	-
Slitting Saw - Standard Tooth - Steel	3556	17, 22-25					■	■	■		1360	-	STL	-	-	-	-	-
MILLING CUTTERS - SHANK TYPE				**TOOL SELECTOR**							**CROSS REFERENCE**							
Chamfer Cutter - 45° Single Angle - Non-Ferrous & Cast Iron	3730	12		■	■	■				■	-	-	-	-	-	-	-	-
Chamfer Cutter - 45° Single Angle - Steel	3731	12					■	■	■		-	-	-	-	-	-	-	-
Chamfer Cutter - 60° Single Angle - Non-Ferrous & Cast Iron	3732	12		■	■	■				■	-	-	-	-	-	-	-	-
Chamfer Cutter - 60° Single Angle - Steel	3733	12					■	■	■		-	-	-	-	-	-	-	-
Chamfer Cutter - 60° Double Angle - Non-Ferrous & Cast Iron	3746	12		■	■	■				■	-	-	-	-	-	-	-	-
Chamfer Cutter - 60° Double Angle - Steel	3747	12					■	■	■		-	-	-	-	-	-	-	-
Chamfer Cutter - 90° Double Angle - Non-Ferrous & Cast Iron	3748	12		■	■	■				■	-	-	-	-	-	-	-	-
Chamfer Cutter - 90° Double Angle - Steel	3749	12					■	■	■		-	-	-	-	-	-	-	-
Dovetail Cutter - 45° Single Angle - Non-Ferrous & Cast Iron	3734	13		■	■	■				■	-	-	-	-	-	-	-	-
Dovetail Cutter - 45° Single Angle - Steel	3735	13					■	■	■		-	-	-	-	-	-	-	-
Dovetail Cutter - 60° Single Angle - Non-Ferrous & Cast Iron	3736	13		■	■	■				■	-	-	-	-	-	-	-	-
Dovetail Cutter - 60° Single Angle - Steel	3737	13					■	■	■		-	-	-	-	-	-	-	-
Keyseat Cutter - High Performance - Aluminum	3704	7		■							-	-	-	-	-	-	-	-
Keyseat Cutter - Staggered Tooth - Non-Ferrous & Cast Iron	3701	9		■	■	■				■	-	-	-	-	-	-	-	-
Keyseat Cutter - Staggered Tooth - Steel	3703	11					■	■	■		-	-	-	-	-	-	-	-
Keyseat Cutter - Straight Tooth - Non-Ferrous & Cast Iron	3700	8		■	■	■				■	-	-	-	-	-	CB444	-	-
Keyseat Cutter - Straight Tooth - Steel	3702	10					■	■	■		-	-	-	-	-	-	-	-
Radius Cutter - Non-Ferrous & Cast Iron	3718	12		■	■	■				■	-	-	-	-	-	-	-	-
Radius Cutter - Steel	3719	12					■	■	■		-	-	-	-	-	-	-	-
T-Slot Cutter - Non-Ferrous & Cast Iron	3720	13		■	■	■				■	-	-	-	-	-	-	-	-
T-Slot Cutter - Steel	3721	13					■	■	■		-	-	-	-	-	-	-	-
END MILLS				**TOOL SELECTOR**							**CROSS REFERENCE**							
6° Right Spiral Flutes - Non-Ferrous & Cast Iron	3306	30		■	■	■				■	766	60RS-	-	5921	-	4700	RSEM	5682
6° Right Spiral Flutes - Steel	3308	28					■	■	■		-	60RSS	-	-	4736	-	-	-
15° Right Spiral Flutes - Non-Ferrous & Cast Iron	3375	30		■	■	■				■	-	-	-	5692	4737	4840	HLS	5002
15° Right Spiral Flutes - Steel	3350	28					■	■	■		-	60GSS	-	5960	4733	4820	HES	5001
Center Cutting - 25° Right Spiral Flutes - Non-Ferrous & Cast Iron	3318	29		■	■	■				■	-	60CS	-	5966	-	-	-	-
Center Cutting - Straight Flutes (3) - Non-Ferrous & Cast Iron	3314	29		■	■	■					-	60SK	-	5935	-	4800	SKM	5689
Center Cutting - Straight Flutes (3) - Steel	3312	29					■	■	■		-	60SKS	-	5936	-	4780	-	5688
Corner Rounding - Non-Ferrous & Cast Iron	3740	29		■	■	■				■	-	-	-	-	-	-	-	-
Corner Rounding - Steel	3741	29					■	■	■		-	-	-	-	-	-	-	-
Straight Flutes (2) - Non-Ferrous & Cast Iron	3302	30			■	■					765	60TF	-	5923	4732	4700	TFEM	5680
Straight Flutes (4/6) - Non-Ferrous & Cast Iron	3304	30			■	■					765	60EM	-	5925	4734	4750	EM	5680
COUNTERBORES				**TOOL SELECTOR**							**CROSS REFERENCE**							
3-4 Spiral Flutes - Straight Shank - Non-Ferrous & Cast Iron	3514	34	35	■	■	■				■	-	779	-	-	-	5779	SSC	5470
3-4 Spiral Flutes - Straight Shank - Steel	3510	38	39				■	■	■		-	-	-	-	-	-	FAC	-
3-4 Spiral Flutes - Taper Shank - Non-Ferrous & Cast Iron	3516	36	37	■	■	■				■	-	778	-	-	-	5780	TSC	5471
3-4 Spiral Flutes - Taper Shank - Steel	3511	38	39				■	■	■		-	-	-	-	-	-	TAC	-
4 Spiral Flutes - Straight Shank - Non-Ferrous & Cast Iron	3512	34	35	■	■	■				■	-	-	-	-	-	-	-	-

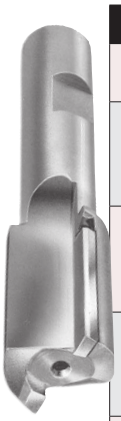
LEXINGTON CUTTER TOOL INDEX

COUNTERBORES	Tool Type	Fractional Page	Metric Page	TOOL SELECTOR: Non-Ferrous Soft	Non-Ferrous Hard	Cast Iron	Low Carbon Steel	Med. Strength Steels	High Strength Steels	High Temp. Alloys	CROSS REFERENCE: CJT	Cleveland	Fullerton	IMCO	Metcut	Morse	RTW (Greenfield)	Union
4 Spiral Flutes - Taper Shank - Non-Ferrous & Cast Iron	3518	36	37								-	-	-	-	-	-	-	-
Aircraft - Reduced Shank - 3 Flutes	3522	40									-	-	-	-	-	-	-	-
Capscrew	3513,15	33	33								-	-	-	-	-	-	-	-
Pilots - Interchangeable	3500	32									-	Yes	-	-	410	776	Yes	4704
Pin Drive - Non-Ferrous & Cast Iron	3573	42									-	-	-	-	200	-	-	-
Pin Drive - Steel	3574	42									-	-	-	-	-	-	-	-
Radial Drive -Non-Ferrous & Cast Iron	3577	41																
Radial Drive -Steel	3578	41																
Stub Taper Shank - Non-Ferrous & Cast Iron	3575	43									-	-	-	-	210	-	-	-
Stub Taper Shank - Steel	3576	43									-	-	-	-	-	-	-	-
REAMERS				**TOOL SELECTOR**							**CROSS REFERENCE**							
CNC Stub / Screw Machine - Straight or Left Spiral Flutes	3430,40	86	87								-	4701	50SML	8250	-	5669	SML	-
Coolant - Left Spiral Flutes - Through Hole - Cast Iron	3428	108									-	-	-	-	-	-	-	-
Coolant - Left Spiral Flutes - Through Hole - Non-Ferrous	3427	108									-	-	-	-	-	-	-	-
Coolant - Left Spiral Flutes - Through Hole - Steel	3429	108									-	-	-	-	-	-	-	-
Coolant - Left Spiral Flutes - Through Hole - h6 Shank - Cast Iron	3428h6	101	101								-	-	-	-	-	-	-	-
Coolant - Left Spiral Flutes - Through Hole - h6 Shank - Non-Ferrous	3427h6	101	101								-	-	-	-	-	-	-	-
Coolant - Left Spiral Flutes - Through Hole - h6 Shank - Steel	3429h6	101	101								-	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - Cast Iron	3413	107									453	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - Non-Ferrous	3411	107									453	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - Steel	3415	107									453	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - h6 Shank - Cast Iron	3413h6	100	100								-	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - h6 Shank - Non-Ferrous	3411h6	100	100								-	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Blind Hole - h6 Shank - Steel	3415h6	100	100								-	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Cross Pin Hole Shank	3490	109									-	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Through Hole - Cast Iron	3418	106									453A	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Through Hole - Non-Ferrous	3417	106									453A	-	-	-	-	-	-	-
Coolant - Right Spiral Flutes - Through Hole - Steel	3419	106									453A	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - Cast Iron	3424	104	105								452	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - Non-Ferrous	3414	104	105								452	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - Steel	3434	104	105								452	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - h6 Shank - Cast Iron	3424h6	98	98								-	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - h6 Shank - Non-Ferrous	3414h6	98	98								-	-	-	-	-	-	-	-
Coolant - Straight Flutes - Blind Hole - h6 Shank - Steel	3434h6	98	98								-	-	-	-	-	-	-	-
Coolant - Straight Flutes - Through Hole - Cast Iron	3426	102	103								452A	-	-	-	-	-	-	-
Coolant - Straight Flutes - Through Hole - Non-Ferrous	3416	102	103								452A	-	-	-	-	-	-	-
Coolant - Straight Flutes - Through Hole - Steel	3435	102	103								452A	-	-	-	-	-	-	-
Coolant - Straight Flutes - Through Hole - h6 Shank - Cast Iron	3426h6	99	99															
Coolant - Straight Flutes - Through Hole - h6 Shank - Non-Ferrous	3416h6	99	99															
Coolant - Straight Flutes - Through Hole - h6 Shank - Steel	3435h6	99	99															
Dowel Pin Size - Regular & Jobbers Drill Length	3476,77	57									450	-	-	8003	-	-	-	-
Dowel Pin Size - Straight Flute Long Carbide - Straight Shank - Steel	3486	75									-	-	-	-	-	-	-	-
Expansion - Straight Flute Long Carbide - Straight Shank	3465	82	83								490	-	50ES	8500	-	5733	ESR	5531
Expansion - Straight Flute Long Carbide - Taper Shank	3467	84	85								495	-	50ET	8510	-	5734	ETR	5532
NAS 897 - Expansion - Straight Shank - Cast Iron	3466	88									-	704	-	-	-	-	-	-
NAS 897 - Expansion - Straight Shank - Non-Ferrous	3464	88									-	704	-	-	-	-	-	-
NAS 897 - Expansion - Straight Shank - Steel	3468	88									-	704	-	-	-	-	-	-
NAS 897 - Left Spiral Flute Long Carbide - Straight Shank - Cast Iron	3483	95									-	-	-	-	-	-	-	-
NAS 897 - Left Spiral Flute Long Carbide - Straight Shank - Non-Ferrous	3482	95									-	-	-	-	-	-	-	-
NAS 897 - Left Spiral Flute Long Carbide - Straight Shank - Steel	3484	95									-	-	-	-	-	-	-	-
NAS 897 - Left Spiral Flutes - Straight Shank - Cast Iron	3437	97									-	4709	-	-	-	-	-	-
NAS 897 - Left Spiral Flutes - Straight Shank - Non-Ferrous	3433	97									-	4709	-	-	-	-	-	-
NAS 897 - Left Spiral Flutes - Straight Shank - Steel	3439	97									-	4709	-	-	-	-	-	-
NAS 897 - Right Spiral Flute Long Carbide - Straight Shank - Cast Iron	3443	94									-	-	-	-	-	-	-	-
NAS 897 - Right Spiral Flute Long Carbide - Straight Shank - Non-Ferrous	3442	94									-	-	-	-	-	-	-	-
NAS 897 - Right Spiral Flute Long Carbide - Straight Shank - Steel	3444	94									-	-	-	-	-	-	-	-
NAS 897 - Right Spiral Flutes - Straight Shank - Cast Iron	3436	96									-	4711	-	-	-	-	-	-
NAS 897 - Right Spiral Flutes - Straight Shank - Non-Ferrous	3432	96									-	4711	-	-	-	-	-	-
NAS 897 - Right Spiral Flutes - Straight Shank - Steel	3438	96									-	4711	-	-	-	-	-	-
NAS 897 - Straight Flute Long Carbide - Straight Shank - Cast Iron	3458	92	93								-	-	-	-	-	-	-	-
NAS 897 - Straight Flute Long Carbide - Straight Shank - Non-Ferrous	3457	92	93								-	-	-	-	-	-	-	-
NAS 897 - Straight Flute Long Carbide - Straight Shank - Steel	3459	92	93								-	-	-	-	-	-	-	-
NAS 897 - Straight Flutes - Straight Shank - Cast Iron	3408	90	91								-	4703	-	-	-	-	-	-

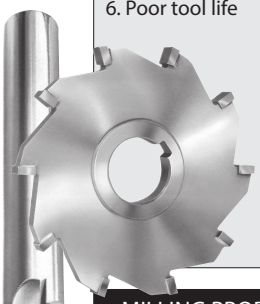
LEXINGTON CUTTER TOOL INDEX

REAMERS - Cont.	Tool Type	Fractional Page	Metric Page	Non-Ferrous Soft	Non-Ferrous Hard	Cast Iron	Low Carbon Steel	Med. Strength Steels	High Strength Steels	High Temp. Alloys	CIT	Cleveland	Fullerton	IMCO	Metcut	Morse	RTW (Greenfield)	Union
				TOOL SELECTOR							CROSS REFERENCE							
NAS 897 - Straight Flutes - Straight Shank - Non-Ferrous	3407	90	91	■	■						-	4703	-	-	-	-	-	-
NAS 897 - Straight Flutes - Straight Shank - Steel	3409	90	91				■	■	■	■	-	4703	-	-	-	-	-	-
NAS 897 - Straight Flutes - Taper Shank - Cast Iron	3473	89			■	■	■				-	4715	-	-	-	-	-	-
NAS 897 - Straight Flutes - Taper Shank - Non-Ferrous	3472	89		■	■						-	4715	-	-	-	-	-	-
NAS 897 - Straight Flutes - Taper Shank - Steel	3474	89					■	■	■	■	-	4715	-	-	-	-	-	-
Over & Under Size - Regular & Jobbers Drill Length	3478,79	57		■	■	■	■		■		-	-	-	8002	-	-	-	-
Over & Under Size - Straight Flute Long Carbide - Straight Shank - Steel	3488	75					■	■			-	-	-	-	-	-	-	-
Semi-Finished	ALL	65		■	■	■	■	■	■	■	-	-	-	Yes	-	Yes	Yes	-
Shell Reamer - Arbors	3481	110		■	■	■	■	■	■	■								
Shell Reamer - Left Spiral Flutes	3441	110		■	■	■	■	■	■	■								
Shell Reamer - Straight Flutes	3431	111		■	■	■	■	■	■	■	-	-	-	-	-	5625	-	5910
Solid Carbide - Left Spiral Flutes	3822, 23	47		■	■	■	■	■	■	■	-	-	1410L	-	-	-	-	-
Solid Carbide - Right Spiral Flutes	3812, 13	47		■	■	■	■	■	■	■	-	1711	1410R	-	-	-	1200R	-
Solid Carbide - Straight Flutes - Short Series	3804	50-54	50	■	■	■	■	■	■	■	-	1730	1400	R10	5661	-	1200	5760
Solid Carbide - Straight Flutes - .0005 Increments	3804	51-54	50	■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Solid Carbide - Straight Flutes - Cast Iron & Steel	3802	46				■	■	■	■	■	-	1730	1410	-	-	-	1200	-
Solid Carbide - Straight Flutes - Non-Ferrous	3803	46		■	■						-	1730	1410	-	-	-	1200	-
Solid Carbide - Straight Flutes - Wire & Letter	3804	50		■	■	■	■	■	■	■	-	-	1400	R10	-	-	-	-
Solid Carbide - Coolant - Left Spiral Flutes - Through Hole	3828,29	49		■	■	■	■	■	■	■								
Solid Carbide - Coolant - Right Spiral Flutes - Blind Hole	3816,17	49		■	■	■	■	■	■	■								
Solid Carbide - Coolant - Straight Flutes - Blind Hole	3806, 07	48		■	■	■	■	■	■	■								
Solid Carbide - Coolant - Straight Flutes - Through Hole	3808, 09	48		■	■	■	■	■	■	■								
Solid Carbide Head - Left Spiral Flutes - Cast Iron & Steel	3820	45, 47				■	■	■	■	■	-	-	1450L	-	-	-	-	-
Solid Carbide Head - Left Spiral Flutes - Non-Ferrous	3821	45, 47		■	■						-	-	1450L	-	-	-	-	-
Solid Carbide Head - Right Spiral Flutes - Cast Iron & Steel	3810	45, 47				■	■	■	■	■	-	-	1450R	-	-	-	1300R	-
Solid Carbide Head - Right Spiral Flutes - Non-Ferrous	3811	45, 47		■	■						-	-	1450R	-	-	-	1300R	-
Solid Carbide Head - Straight Flutes - Cast Iron & Steel	3800	44, 46				■	■	■	■	■	-	-	1450	9500	-	-	1300	-
Solid Carbide Head - Straight Flutes - Non-Ferrous	3801	44, 46		■	■						-	-	1450	9500	-	-	1300	-
Spiral Flutes Left - Straight Shank & Taper Shank	3420, 22	79, 81	80	■	■	■	■	■	■	■	-	-	50SL	8030	5651	-	SLSR	5960
Spiral Flutes Right - Straight Shank & Taper Shank	3410, 12	78, 81	80	■	■	■	■	■	■	■	470	-	50SR	8020	5653	-	SRSR	5961
Step Reamer - Left Spiral Flutes	All	120		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Step Reamer - Right Spiral Flutes	All	119		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Step Reamer - Straight Flutes	All	118		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Straight Flute Long Carbide - Straight Shank	3450	68	69	■	■	■	■	■	■		480	-	50SF	8100	5659	-	SFR	-
Straight Flute Long Carbide - Straight Shank - .0005 Increments	3450	70-72		■	■	■	■	■	■		-	-	-	-	-	-	-	-
Straight Flute Long Carbide - Straight Shank - Steel	3480	74-75	73				■	■	■		-	-	-	-	-	-	-	-
Straight Flute Long Carbide - Taper Shank	3452	76	77	■	■	■	■	■	■		-	-	-	8110	5660	-	TFR	-
Straight Flutes - Straight Shank	3400	58-59	60	■	■	■	■	■	■		450	4703	50SS	RT10	5655	-	SSR	5950
Straight Flutes - Straight Shank - .0005 Increments	3400	61-64		■	■	■	■	■	■		-	-	-	RT10	-	-	-	-
Straight Flutes - Straight Shank - Jobbers Drill Length	3401	56		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Straight Flutes - Taper Shank	3402	66	67	■	■	■	■	■	■		-	4715	50TS	8010	5656	-	TSR	5955
Variable Length - Coolant - Left Spiral Flute Long Carbide	All	117		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Variable Length - Coolant - Right Spiral Flute Long Carbide	All	115		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Variable Length - Coolant - Straight Flute Long Carbide	All	113		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Variable Length - Left Spiral Flute Long Carbide	All	116		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Variable Length - Right Spiral Flute Long Carbide	All	114		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Variable Length - Straight Flute Long Carbide	All	112		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Wire & Letter - Straight Flutes - Straight Shank	3400	59		■	■	■	■	■	■		-	-	-	-	-	-	-	-
DRILLS				TOOL SELECTOR							CROSS REFERENCE							
Aircraft Extension - 6" & 12" OAL	3610,11	123		■	■	■					129	-	-	-	-	-	-	-
Core Drill - 4 Flutes - Straight Shank - Non-Ferrous & Cast Iron	3620	124	125	■	■	■				■	-	-	-	-	5456	-	-	-
Core Drill - 4 Flutes - Straight Shank - Steel	3621	126	127				■	■	■		-	-	-	-	-	-	-	-
Core Drill - 4 Flutes - Taper Shank - Non-Ferrous & Cast Iron	3622	124	125	■	■	■				■	410	2738	-	8850	5454	-	CD	5592
Core Drill - 4 Flutes - Taper Shank - Steel	3623	126	127				■	■	■		-	-	-	-	-	-	-	-
Jobbers Length Twist - 118° Point	3600	122		■	■	■					120	2727	40CT	DT20	5330	D444	CTD	5249
Jobbers Length Twist - 135° Split Point	3601	122			■	■					125	-	-	-	-	-	-	-
Silver & Deming - 118° Point	3616	121		■	■	■					163	-	-	-	-	-	-	-
MISCELLANEOUS				TOOL SELECTOR							CROSS REFERENCE							
COUNTERSINKS	All	28		■	■	■	■	■	■	■	-	791/793	-	-	-	-	-	-
SINGLE POINTS	All	128-129		■	■	■	■	■	■	■	-	-	-	-	-	-	-	-
Coating Guide		133																
Specials Quote Forms		15, 130																
Problem Solving Guide		5																

CARBIDE TIPPED TOOL PROBLEM SOLVING GUIDE



DRILLING PROBLEMS	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
1. Rough finish	Dull cutting edge Wrong feeds & speeds	Resharpen to original tool geometry. Increase speed — also try reduced feed.
2. Excessive cutting edge wear	Wrong feeds & speeds Rough cutting edge Insufficient coolant	Increase feed (should always be over .001" per tooth) — especially when machining ductile or free machining materials. Also try reduced speed. Lightly hone cutting edge with fine grit diamond hone. Increase coolant flow — review type of coolant.
3. Chipped cutting edge	Poor chip removal Recutting work hardened chips Vibration Incorrect carbide grade	Use tool with larger flute space — larger diameter or fewer flutes. Increase coolant flow. Increase rigidity of set-up, especially worn tool holders or arbors. Change to tougher carbide grade.
4. Chatter marks	Insufficient machine horsepower Vibration	Use tool with fewer flutes as correct speeds & feeds must be maintained. Consider climb milling. User larger diameter cutter. Resharpen tool with more clearance.
5. Glazed finish	Feed to light Dull cutting edge Insufficient clearance	Increase feed. Resharpen tool to original geometry. Resharpen tool with more clearance.
6. Poor tool life	Excessive cratering Milling abrasive material Milling hard material Insufficient chip room Milling surface scale Delayed resharpening Thermal cracked carbide	Increase speed or decrease feed. Change to harder grade of carbide. Decrease speed and increase feed. Increase coolant flow. Climb milling better than conventional milling. Reduce speed — rigidity very important. Use larger diameter tool. Conventional milling better than climb milling. Prompt resharpening to original geometry will increase total tool life. Maintain adequate coolant flow at all times. Climb milling is cooler than conventional milling.



MILLING PROBLEMS	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
1. Chipped cutting edge	Excessive feed Excessive lip relief Variation Thermal cracked carbide	Reduce feed. Reduce lip relief to provide smaller chisel angle. Frequently a worn drill bushing — REPLACE. Maintain adequate coolant flow at all times.
2. Short tool life	Drill dwelling Only one lip cutting	Maintain adequate feed at all times. Regrind with equal lip heights and chisel in center.
3. Drill walks or drifts	Unequal lip heights Worn drilling bushing	Regrind with equal lip heights and chisel in center. Replace drill bushing.
4. Oversized holes	Unequal lip heights Excessive lip relief Worn drill bushing	Regrind with equal lip heights and chisel in center. Reduce lip relief to provide smaller chisel angle. Replace drill bushing.
5. Rough finish	Dull cutting Inadequate coolant	Regrind with fine grit diamond wheel. Review type of coolant and maintain adequate flow.



REAMING PROBLEMS	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
1. Poor finish	Unequal chamfers Incorrect margins Excessive spindle runout Chatter Insufficient cutting action	Regrind reamer with equal chamfer height. Regrind reamer with correct margin for material being machined. Increase reamer back taper (to lose size faster). Increase speed and reduce feed rate. Use power feed unless material is hard. Use right or left spiral fluted reamer. Grind secondary lead angle immediately behind 45° chamfer. Specify reamer with positive radial rake to reduce cutting pressure — may produce slightly larger diameter holes.
2. Oversized holes or tapered holes or bell mouthed holes	Misalignment Incorrect feed and/or speed	Use bushing — .0002"/.0003" over reamer diameter. If hole location varies, use floating reamer holder. Increase reamer back taper (to lose size faster). Verify correct feeds & speeds.
3. Excessive tool wear	Insufficient stock removal Excessive reaming pressure Misalignment	Decrease previous operation drill size to allow more material for removal by reamer — leave 2% - 3% of tool diameter for cast iron and more stock for non-ferrous materials. Decrease feed rate. Reduce stock to be removed by increasing previous operation drill size — leave 2% - 3% of the tool diameter. See solution for "Misalignment" in #2 above.
4. Crooked holes	Drill walking or incorrect sharpening	Correct previous drilling operation — reamer will follow the drilled hole. Increase reamer attack angle (chamfer) to 120° - 180° included angle.
5. Tool breakage	Excessive reaming pressure Misalignment	See solution for "Excessive reaming pressure" in #3 above. See solution for "Misalignment" in #2 above.

FEEDS & SPEEDS CHART FOR KEYSEATS - CARBIDE TIPPED

Feeds & speeds are a starting recommendation for catalog standards only. Factors such as machine, fixture and tooling rigidity, horse-power available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations. (Series 3700, 3701, 3702, & 3703 Keyseat Cutters)

IPM is based on catalog standards only using the mid SFPM and a 0.002 IPT chip load as a starting point. For all other conditions use the following formulas to calculate RPM and IPM from the ranges listed in the material group and brinell harness section as a starting point.

RPM=SFPM*3.82/Cutter Diameter
IPM=IPT*RPM*#Teeth



CLASSIFICATION	MATERIAL	BRINELL	SPEED IN SFPM	FEED RATE IPT	KEYSEAT CUTTER DIAMETER								
					½	⅝	¾	⅞	1	1 ⅛	1 ¼	1 ⅜	1 ½
					IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM	IPM
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150**	1200+	.002-.010	110	88	73	63	73	65	59	53	49
	MAGNESIUM ALLOY	50-90**	1000+	.002-.010	92	73	61	52	61	54	49	44	41
	LEAD ALLOY	10-20**	-	-	-	-	-	-	-	-	-	-	-
	NON-METAL AND PLASTIC	-	1500+	.002-.006	138	110	92	79	92	81	73	67	61
	ZINC ALLOY - DIE CAST	80-100	750-1000	.002-.006	80	64	53	46	53	48	43	39	36
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	200-600	.002-.006	37	29	24	21	24	22	20	18	16
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	400-550	.002-.006	44	35	29	25	29	26	23	21	19
	NICKEL SILVER	10-100Rb	200-400	.002-.006	28	22	18	16	18	16	15	13	12
	COPPER ALLOY - TOUGH	40-200**	200-500	.002-.006	32	26	21	18	21	19	17	16	14
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	75-150	.002-.004	10	8	7	6	7	6	6	5	5
	DUCTILE CAST IRON - FERRITIC	140-270	200-400	.002-.007	28	22	18	16	18	16	15	13	12
	DUCTILE CAST IRON - MARTENSITIC	270-440	150-350	.002-.007	23	18	15	13	15	14	12	11	10
	GRAY - PEARLITIC	220-320	150-300	.002-.007	21	17	14	12	14	12	11	10	9
	GRAY - FERRITIC	110-240	220-410	.002-.006	29	23	19	17	19	17	15	14	13
	MALLEABLE CAST IRON - MARTENSITIC	200-320	130-300	.002-.004	20	16	13	11	13	12	11	10	9
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	200-500	.001-.005	32	26	21	18	21	19	17	16	14
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	200-400	.001-.005	28	22	18	16	18	16	15	13	12
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	200-400	.001-.005	28	22	18	16	18	16	15	13	12
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	130-330	.001-.005	21	17	14	12	14	12	11	10	9
	STAINLESS STEEL - 400 SERIES	135-325	135-375	.002-.005	24	19	16	14	16	14	13	12	11
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	250-500	.002-.005	34	28	23	20	23	20	18	17	15
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	75-200	.001-.004	13	28	23	20	23	20	18	17	15
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	50-150	.001-.004	9	7	6	5	6	5	5	4	4
	STAINLESS STEEL - 300 SERIES	135-375	75-175	.001-.004	11	9	8	7	8	7	6	6	5
	STAINLESS STEEL - PH SERIES	150-440	75-175	.001-.004	11	9	8	7	8	7	6	6	5
	TITANIUM ALLOY	110-380	75-200	.002-.006	13	10	8	7	8	7	7	6	6

**500kg

CARBIDE TIPPED HIGH PERFORMANCE KEYSEAT CUTTERS FOR ALUMINUM



Up to 1½" diameter: ½" shank.
1¾" diameter thru 2½": ¾" shank.
Face width tolerance: +.0005"/-.0005".
Tool diameter tolerance: +.020"/+.015".

TYPE 3704 - HIGH PERFORMANCE - FOR ALUMINUM

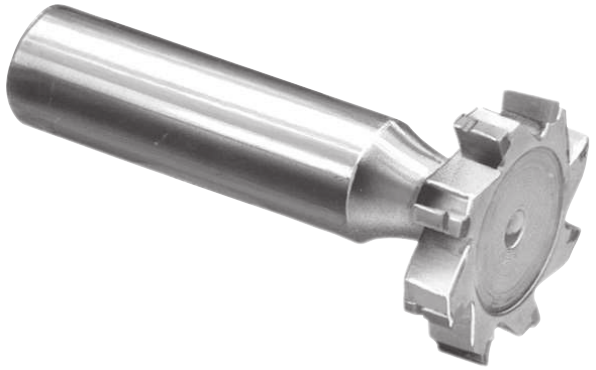
Carbide tips brazed to hardened alloy steel bodies.

Designed specifically for the aluminum industry. Tools have a high volume flute capacity for higher speeds and feeds and better finishes. The tool geometry includes clearance for cutting on all three surfaces. Used for milling, slotting, grooving, snap rings, and O-rings. Also used in circular interpolation of spot facing, back spot facing, and counterboring. Starting point for aluminum slotting: 1K - 4K SFPM, .002 - .008 IPT. Reduce SFPM and IPT by 25% for widths under .0938.

AMERICAN STANDARD NO.	TOOL DIAM.	WIDTH	NO. OF TEETH	NECK DIAM.	OAL	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE
-	5/8	1/16	2	.160	2 1/16	37042002	$154.90	.0575 - .0787
305	5/8	3/32	2	.191	2 3/32	37040305	154.90	.0788 - .1099
405	5/8	1/8	2	.223	2 1/8	37040405	154.90	.1100 - .1400
505	5/8	5/32	2	.252	2 5/32	37040505	154.90	.1401 - .1713
605	5/8	3/16	2	.279	2 3/16	37040605	154.90	.1714 - .2025
-	5/8	7/32	2	.342	2 7/32	37042007	154.90	.2026 - .2339
-	5/8	1/4	2	.342	2 1/4	37042008	154.90	.2340 - .2650
-	3/4	1/16	2	.160	2 1/16	37042402	162.60	.0575 - .0787
-	3/4	3/32	2	.191	2 3/32	37042403	162.60	.0788 - .1099
406	3/4	1/8	2	.217	2 1/8	37040406	162.60	.1100 - .1400
506	3/4	5/32	2	.246	2 5/32	37040506	162.60	.1401 - .1713
606	3/4	3/16	2	.279	2 3/16	37040606	162.60	.1714 - .2025
-	3/4	7/32	2	.342	2 7/32	37042407	162.60	.2026 - .2339
806	3/4	1/4	2	.342	2 1/4	37040806	162.60	.2340 - .2650
-	7/8	1/16	2	.160	2 1/16	37042802	174.35	.0575 - .0787
-	7/8	3/32	2	.191	2 3/32	37042803	174.35	.0788 - .1099
-	7/8	1/8	2	.217	2 1/8	37042804	174.35	.1100 - .1400
507	7/8	5/32	2	.246	2 5/32	37040507	174.35	.1401 - .1713
607	7/8	3/16	2	.279	2 3/16	37040607	174.35	.1714 - .2025
707	7/8	7/32	2	.312	2 7/32	37040707	174.35	.2026 - .2339
807	7/8	1/4	2	.342	2 1/4	37040807	174.35	.2340 - .2650
-	1	3/32	2	.191	2 3/32	37043203	183.95	.0788 - .1088
-	1	1/8	2	.217	2 1/8	37043204	183.95	.1089 - .1400
-	1	5/32	2	.246	2 5/32	37043205	183.95	.1401 - .1713
608	1	3/16	2	.279	2 3/16	37040608	183.95	.1714 - .2025
708	1	7/32	2	.312	2 7/32	37040708	183.95	.2026 - .2339
808	1	1/4	2	.342	2 1/4	37040808	183.95	.2340 - .2650
-	1	9/32	2	.401	2 9/32	37043209	183.95	.2651 - .2968
1008	1	5/16	2	.401	2 5/16	37041008	183.95	.2969 - .3281
-	1	11/32	2	.467	2 11/32	37043211	183.95	.3282 - .3593
1208	1	3/8	2	.467	2 3/8	37041208	183.95	.3594 - .3900
-	1 1/8	3/32	2	.217	2 3/32	37043603	183.95	.0788 - .1088
-	1 1/8	1/8	2	.246	2 1/8	37043604	183.95	.1089 - .1400
-	1 1/8	5/32	2	.279	2 5/32	37043605	183.95	.1401 - .1713
609	1 1/8	3/16	2	.312	2 3/16	37040609	183.95	.1714 - .2025
709	1 1/8	7/32	2	.342	2 7/32	37040709	183.95	.2026 - .2339
809	1 1/8	1/4	2	.374	2 1/4	37040809	183.95	.2340 - .2650
-	1 1/8	9/32	2	.435	2 9/32	37043609	183.95	.2651 - .2968
1009	1 1/8	5/16	2	.435	2 5/16	37041009	183.95	.2969 - .3281
-	1 1/8	11/32	2	.467	2 11/32	37043611	183.95	.3282 - .3593
-	1 1/8	3/8	2	.467	2 3/8	37043612	183.95	.3594 - .3900
-	1 1/4	3/32	3	.217	2 3/32	37044003	193.60	.0788 - .1088
-	1 1/4	1/8	3	.246	2 1/8	37044004	193.60	.1089 - .1400
-	1 1/4	5/32	3	.279	2 5/32	37044005	193.60	.1401 - .1713
610	1 1/4	3/16	3	.312	2 3/16	37040610	193.60	.1714 - .2025
710	1 1/4	7/32	3	.342	2 7/32	37040710	193.60	.2026 - .2339
810	1 1/4	1/4	3	.374	2 1/4	37040810	193.60	.2340 - .2650
-	1 1/4	9/32	3	.435	2 9/32	37044009	193.60	.2651 - .2968
1010	1 1/4	5/16	3	.435	2 5/16	37041010	193.60	.2969 - .3281
-	1 1/4	11/32	3	.467	2 11/32	37044011	193.60	.3282 - .3593
1210	1 1/4	3/8	3	.467	2 3/8	37041210	193.60	.3594 - .3900

AMERICAN STANDARD NO.	TOOL DIAM.	WIDTH	NO. OF TEETH	NECK DIAM.	OAL	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE
-	1 3/8	3/32	3	.312	2 3/32	37044403	$213.00	.0788 - .1088
-	1 3/8	1/8	3	.342	2 1/8	37044404	213.00	.1089 - .1400
-	1 3/8	5/32	3	.374	2 5/32	37044405	213.00	.1401 - .1713
-	1 3/8	3/16	3	.401	2 3/16	37044406	213.00	.1714 - .2025
-	1 3/8	7/32	3	.401	2 7/32	37044407	213.00	.2026 - .2339
811	1 3/8	1/4	3	.401	2 1/4	37040811	213.00	.2340 - .2650
-	1 3/8	9/32	3	.467	2 9/32	37044409	213.00	.2651 - .2968
1011	1 3/8	5/16	3	.467	2 5/16	37041011	213.00	.2969 - .3281
-	1 3/8	11/32	3	.467	2 11/32	37044411	213.00	.3282 - .3593
1211	1 3/8	3/8	3	.467	2 3/8	37041211	213.00	.3594 - .3900
-	1 1/2	3/32	3	.435	2 3/32	37044803	242.10	.0788 - .1088
-	1 1/2	1/8	3	.435	2 1/8	37044804	242.10	.1089 - .1400
-	1 1/2	5/32	3	.435	2 5/32	37044805	242.10	.1401 - .1713
-	1 1/2	3/16	3	.435	2 3/16	37044806	242.10	.1714 - .2025
-	1 1/2	7/32	3	.435	2 7/32	37044807	242.10	.2026 - .2339
812	1 1/2	1/4	3	.435	2 1/4	37040812	242.10	.2340 - .2650
-	1 1/2	9/32	3	.467	2 9/32	37044809	242.10	.2651 - .2968
1012	1 1/2	5/16	3	.467	2 5/16	37041012	242.10	.2969 - .3281
-	1 1/2	11/32	3	.467	2 11/32	37044811	242.10	.3282 - .3593
1212	1 1/2	3/8	3	.467	2 3/8	37041212	290.45	.3594 - .3900
-	1 1/2	13/32	3	.467	2 13/32	37044813	290.45	.3901 - .4219
-	1 1/2	7/16	3	.467	2 7/16	37044814	290.45	.4220 - .4531
-	1 1/2	15/32	3	.467	2 15/32	37044815	290.45	.4532 - .4843
-	1 1/2	1/2	3	.467	2 1/2	37044816	290.45	.4844 - .5150
-	1 3/4	1/8	4	.718	3 1/8	37045604	267.20	.1089 - .1400
-	1 3/4	5/32	4	.718	3 5/32	37045605	267.20	.1401 - .1713
-	1 3/4	3/16	4	.718	3 3/16	37045606	267.20	.1714 - .2025
-	1 3/4	7/32	4	.718	3 7/32	37045607	267.20	.2026 - .2339
-	1 3/4	1/4	4	.718	3 1/4	37045608	267.20	.2340 - .2650
-	1 3/4	9/32	4	.718	3 9/32	37045609	267.20	.2651 - .2968
-	1 3/4	5/16	4	.718	3 5/16	37045610	267.20	.2969 - .3281
-	1 3/4	11/32	4	.718	3 11/32	37045611	267.20	.3282 - .3593
-	1 3/4	3/8	4	.718	3 3/8	37045612	313.75	.3594 - .3900
-	1 3/4	13/32	4	.718	3 13/32	37045613	313.75	.3901 - .4219
-	1 3/4	7/16	4	.718	3 7/16	37045614	313.75	.4220 - .4531
-	1 3/4	15/32	4	.718	3 15/32	37045615	313.75	.4532 - .4843
-	1 3/4	1/2	4	.718	3 1/2	37045616	313.75	.4844 - .5150
-	2	1/8	4	.718	3 1/8	37046404	309.80	.1089 - .1400
-	2	5/32	4	.718	3 5/32	37046405	309.80	.1401 - .1713
-	2	3/16	4	.718	3 3/16	37046406	309.80	.1714 - .2025
-	2	7/32	4	.718	3 7/32	37046407	309.80	.2026 - .2339
-	2	1/4	4	.718	3 1/4	37046408	309.80	.2340 - .2650
-	2	9/32	4	.718	3 9/32	37046409	309.80	.2651 - .2968
-	2	5/16	4	.718	3 5/16	37046410	309.80	.2969 - .3281
-	2	11/32	4	.718	3 11/32	37046411	309.80	.3282 - .3593
-	2	3/8	4	.718	3 3/8	37046412	358.30	.3594 - .3900
-	2	13/32	4	.718	3 13/32	37046413	358.30	.3901 - .4219
-	2	7/16	4	.718	3 7/16	37046414	358.30	.4220 - .4531
-	2	15/32	4	.718	3 15/32	37046415	358.30	.4532 - .4843
-	2	1/2	4	.718	3 1/2	37046416	358.30	.4844 - .5150
-	-	-	-	-	-	-	-	-

CARBIDE TIPPED STRAIGHT TOOTH KEYSEAT CUTTERS FOR NON-FERROUS & CAST IRON



TYPE 3700 - STRAIGHT TOOTH

Carbide tips brazed to hardened alloy steel bodies.

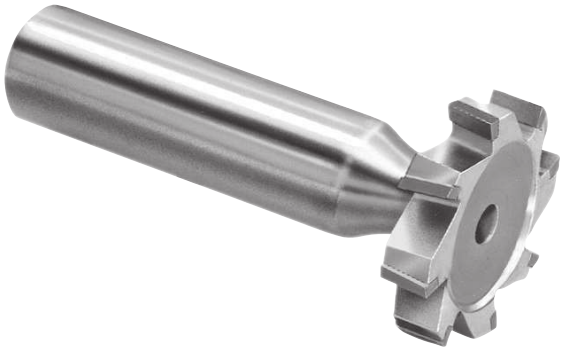
Fast cutting to close tolerance with longer tool life. For milling slots in cast iron, non-ferrous metals, plastics and non-metals. Chip breakers are on all cutters 5⁄32" and greater width. Decimal size cutters DO NOT have chip breakers.

Tool diameter tolerance: +.020"/+.015".
Face width tolerance: +.0000"/- .0005".
Straight shank: ½" diameter, 2" long.

AMERICAN STANDARD NO.	TOOL DIAM.	NO. OF TEETH	WIDTH	NECK DIAM.	OVERALL LENGTH	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
									1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
204	½	6	1⁄16	.130	2 1⁄16	37000204	$161.10	.0575 - .0787	$217.00	$192.85	$184.85	$181.00	$176.95	$173.50
304	½	6	3⁄32	.160	2 3⁄32	37000304	161.10	.0788 - .1088	217.00	192.85	184.85	181.00	176.95	173.50
404	½	6	1⁄8	.191	2 1⁄8	37000404	161.10	.1089 - .1400	217.00	192.85	184.85	181.00	176.95	173.50
305	5⁄8	6	3⁄32	.191	2 3⁄32	37000305	166.95	.0788 - .1088	223.05	198.90	190.85	186.85	182.85	179.55
405	5⁄8	6	1⁄8	.223	2 1⁄8	37000405	166.95	.1089 - .1400	223.05	198.90	190.85	186.85	182.85	179.55
505	5⁄8	6	5⁄32	.252	2 5⁄32	37000505	166.95	.1401 - .1713	223.05	198.90	190.85	186.85	182.85	179.55
605	5⁄8	6	3⁄16	.279	2 3⁄16	37000605	166.95	.1714 - .2025	223.05	198.90	190.85	186.85	182.85	179.55
406	¾	6	1⁄8	.217	2 1⁄8	37000406	174.20	.1100 - .1400	230.70	206.55	198.40	194.65	190.55	187.20
506	¾	6	5⁄32	.246	2 5⁄32	37000506	174.20	.1401 - .1713	230.70	206.55	198.40	194.65	190.55	187.20
606	¾	6	3⁄16	.279	2 3⁄16	37000606	174.20	.1714 - .2025	230.70	206.55	198.40	194.65	190.55	187.20
-	¾	6	7⁄32	.342	2 7⁄32	37002407	198.35	.2026 - .2339	230.70	206.55	198.40	194.65	190.55	187.20
806	¾	6	¼	.342	2 ¼	37000806	174.20	.2340 - .2650	239.75	214.65	206.20	202.25	198.05	194.55
507	⅞	6	5⁄32	.246	2 5⁄32	37000507	182.45	.1401 - .1713	239.25	215.20	207.05	203.35	199.20	195.80
607	⅞	6	3⁄16	.279	2 3⁄16	37000607	182.45	.1714 - .2025	239.25	215.20	207.05	203.35	199.20	195.80
707	⅞	6	7⁄32	.312	2 7⁄32	37000707	182.45	.2026 - .2339	239.25	215.20	207.05	203.35	199.20	195.80
807	⅞	6	¼	.342	2 ¼	37000807	182.45	.2340 - .2650	239.25	215.20	207.05	203.35	199.20	195.80
608	1	8	3⁄16	.279	2 3⁄16	37000608	205.90	.1714 - .2025	263.80	239.75	231.50	227.70	223.60	220.35
708	1	8	7⁄32	.312	2 7⁄32	37000708	205.90	.2026 - .2339	263.80	239.75	231.50	227.70	223.60	220.35
808	1	8	¼	.342	2 ¼	37000808	205.90	.2340 - .2650	263.80	239.75	231.50	227.70	223.60	220.35
-	1	8	9⁄32	.401	2 9⁄32	37003209	234.30	.2651 - .2968	263.80	239.75	231.50	227.70	223.60	220.35
1008	1	8	5⁄16	.401	2 5⁄16	37001008	205.90	.2969 - .3281	263.80	239.75	231.50	227.70	223.60	220.35
-	1	8	11⁄32	.467	2 11⁄32	37003211	234.30	.3282 - .3593	274.15	249.15	240.55	236.60	232.40	229.00
1208	1	8	⅜	.467	2 ⅜	37001208	205.90	.3594 - .3900	274.15	249.15	240.55	236.60	232.40	229.00
609	1 ⅛	8	3⁄16	.312	2 3⁄16	37000609	216.15	.1714 - .2025	274.60	250.60	242.45	238.60	234.50	231.20
709	1 ⅛	8	7⁄32	.342	2 7⁄32	37000709	216.15	.2026 - .2339	274.60	250.60	242.45	238.60	234.50	231.20
809	1 ⅛	8	¼	.374	2 ¼	37000809	216.15	.2340 - .2650	274.60	250.60	242.45	238.60	234.50	231.20
-	1 ⅛	8	9⁄32	.435	2 9⁄32	37003609	246.10	.2651 - .2968	274.60	250.60	242.45	238.60	234.50	231.20
1009	1 ⅛	8	5⁄16	.435	2 5⁄16	37001009	216.15	.2969 - .3281	285.35	260.45	252.00	248.00	243.65	240.25
610	1 ¼	8	3⁄16	.312	2 3⁄16	37000610	226.90	.1714 - .2025	285.95	261.95	253.85	249.90	245.85	242.45
710	1 ¼	8	7⁄32	.342	2 7⁄32	37000710	226.90	.2026 - .2339	285.95	261.95	253.85	249.90	245.85	242.45
810	1 ¼	8	¼	.374	2 ¼	37000810	226.90	.2340 - .2650	285.95	261.95	253.85	249.90	245.85	242.45
-	1 ¼	8	9⁄32	.435	2 9⁄32	37004009	258.35	.2651 - .2968	285.95	261.95	253.85	249.90	245.85	242.45
1010	1 ¼	8	5⁄16	.435	2 5⁄16	37001010	226.90	.2969 - .3281	285.95	261.95	253.85	249.90	245.85	242.45
-	1 ¼	8	11⁄32	.467	2 11⁄32	37004011	258.35	.3282 - .3593	297.15	272.25	263.80	259.70	255.45	252.00
1210	1 ¼	8	⅜	.467	2 ⅜	37001210	226.90	.3594 - .3900	297.15	272.25	263.80	259.70	255.45	252.00
811	1 ⅜	8	¼	.401	2 ¼	37000811	238.50	.2340 - .2650	297.95	273.90	265.80	261.95	257.75	254.55
-	1 ⅜	8	9⁄32	.467	2 9⁄32	37004409	271.40	.2651 - .2968	297.95	273.90	265.80	261.95	257.75	254.55
1011	1 ⅜	8	5⁄16	.467	2 5⁄16	37001011	238.50	.2969 - .3281	297.95	273.90	265.80	261.95	257.75	254.55
-	1 ⅜	8	11⁄32	.467	2 11⁄32	37004411	271.40	.3282 - .3593	309.65	284.65	276.25	272.25	267.85	264.50
1211	1 ⅜	8	⅜	.467	2 ⅜	37001211	238.50	.3594 - .3900	309.65	284.65	276.25	272.25	267.85	264.50
812	1 ½	8	¼	.435	2 ¼	37000812	250.40	.2340 - .2650	310.40	286.40	278.30	274.45	270.25	267.05
-	1 ½	8	9⁄32	.467	2 9⁄32	37004809	285.10	.2651 - .2968	310.40	286.40	278.30	274.45	270.25	267.05
1012	1 ½	8	5⁄16	.467	2 5⁄16	37001012	250.40	.2969 - .3281	310.40	286.40	278.30	274.45	270.25	267.05
-	1 ½	8	11⁄32	.467	2 11⁄32	37004811	285.10	.3282 - .3593	322.55	297.60	289.25	285.20	280.85	277.50
1212	1 ½	8	⅜	.467	2 ⅜	37001212	250.40	.3594 - .3900	322.55	297.60	289.25	285.20	280.85	277.50
-	1 ½	8	13⁄32	.467	2 13⁄32	37004813	285.10	.3901 - .4219	322.55	297.60	289.25	285.20	280.85	277.50
-	1 ½	8	7⁄16	.467	2 7⁄16	37004814	285.10	.4220 - .4531	322.55	297.60	289.25	285.20	280.85	277.50
-	1 ½	8	15⁄32	.467	2 15⁄32	37004815	285.10	.4532 - .4843	322.55	297.60	289.25	285.20	280.85	277.50
-	1 ½	8	½	.467	2 ½	37004816	285.10	.4844 - .5150	322.55	297.60	289.25	285.20	280.85	277.50

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED STAGGERED TOOTH KEYSEAT CUTTERS FOR NON-FERROUS & CAST IRON



TYPE 3701 - STAGGERED TOOTH

Carbide tips brazed to hardened alloy steel bodies.

Alternate 10° right and left axial rake. For milling slots in cast iron, non-ferrous metals, plastics and non-metals.

Tool diameter tolerance: +.020"/+.015".
Face width tolerance: +.0000"/- .0005".
Straight shank: ½" diameter, 2" long.

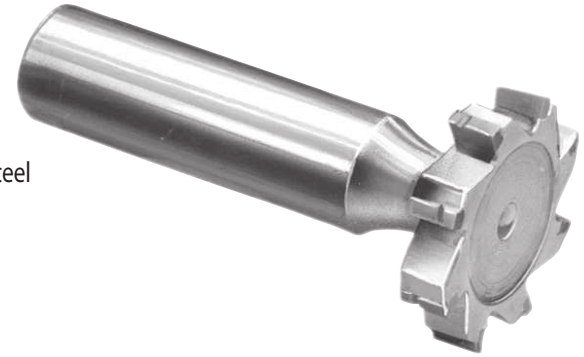
AMERICAN STANDARD NO.	TOOL DIAM.	NO. OF TEETH	WIDTH	NECK DIAM.	OVERALL LENGTH	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
									1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
204	½	6	1/16	.130	2 1/16	37010204	$189.55	.0575 - .0787	$246.75	$222.70	$214.55	$210.75	$206.55	$203.35
304	½	6	3/32	.160	2 3/32	37010304	189.55	.0788 - .1088	246.75	222.70	214.55	210.75	206.55	203.35
404	½	6	1/8	.191	2 1/8	37010404	189.55	.1089 - .1400	246.75	222.70	214.55	210.75	206.55	203.35
305	5/8	6	3/32	.191	2 3/32	37010305	196.35	.0788 - .1088	253.90	229.85	221.70	217.75	213.70	210.40
405	5/8	6	1/8	.223	2 1/8	37010405	196.35	.1089 - .1400	253.90	229.85	221.70	217.75	213.70	210.40
505	5/8	6	5/32	.252	2 5/32	37010505	196.35	.1401 - .1713	253.90	229.85	221.70	217.75	213.70	210.40
605	5/8	6	3/16	.279	2 3/16	37010605	196.35	.1714 - .2025	253.90	229.85	221.70	217.75	213.70	210.40
406	¾	6	1/8	.217	2 1/8	37010406	205.15	.1100 - .1400	263.10	239.05	230.90	226.90	223.00	219.70
506	¾	6	5/32	.246	2 5/32	37010506	205.15	.1401 - .1713	263.10	239.05	230.90	226.90	223.00	219.70
606	¾	6	3/16	.279	2 3/16	37010606	205.15	.1714 - .2025	263.10	239.05	230.90	226.90	223.00	219.70
-	¾	6	7/32	.342	2 7/32	37012407	233.50	.2026 - .2339	273.45	248.40	239.95	235.80	231.75	228.30
806	¾	6	¼	.342	2 ¼	37010806	205.15	.2340 - .2650	263.10	239.05	230.90	226.90	223.00	219.70
507	⅞	6	5/32	.246	2 5/32	37010507	214.55	.1401 - .1713	272.90	248.75	240.75	236.85	232.70	229.50
607	⅞	6	3/16	.279	2 3/16	37010607	214.55	.1714 - .2025	272.90	248.75	240.75	236.85	232.70	229.50
707	⅞	6	7/32	.312	2 7/32	37010707	214.55	.2026 - .2339	272.90	248.75	240.75	236.85	232.70	229.50
807	⅞	6	¼	.342	2 ¼	37010807	214.55	.2340 - .2650	272.90	248.75	240.75	236.85	232.70	229.50
608	1	8	3/16	.279	2 3/16	37010608	242.05	.1714 - .2025	301.80	277.60	269.60	265.70	261.55	258.40
708	1	8	7/32	.312	2 7/32	37010708	242.05	.2026 - .2339	301.80	277.60	269.60	265.70	261.55	258.40
808	1	8	¼	.342	2 ¼	37010808	242.05	.2340 - .2650	301.80	277.60	269.60	265.70	261.55	258.40
-	1	8	9/32	.401	2 9/32	37013209	275.60	.2651 - .2968	313.65	288.50	280.20	276.10	271.80	268.55
1008	1	8	5/16	.401	2 5/16	37011008	242.05	.2969 - .3281	301.80	277.60	269.60	265.70	261.55	258.40
-	1	8	11/32	.467	2 11/32	37013211	275.60	.3282 - .3593	313.65	288.50	280.20	276.10	271.80	268.55
1208	1	8	3/8	.467	2 3/8	37011208	242.05	.3594 - .3900	301.80	277.60	269.60	265.70	261.55	258.40
609	1 1/8	8	3/16	.312	2 3/16	37010609	254.20	.1714 - .2025	314.35	290.25	282.15	278.30	274.30	270.90
709	1 1/8	8	7/32	.342	2 7/32	37010709	254.20	.2026 - .2339	314.35	290.25	282.15	278.30	274.30	270.90
809	1 1/8	8	¼	.374	2 ¼	37010809	254.20	.2340 - .2650	314.35	290.25	282.15	278.30	274.30	270.90
-	1 1/8	8	9/32	.435	2 9/32	37013609	289.25	.2651 - .2968	326.70	301.60	293.25	289.25	285.10	281.50
1009	1 1/8	8	5/16	.435	2 5/16	37011009	254.20	.2969 - .3281	314.35	290.25	282.15	278.30	274.30	270.90
610	1 ¼	8	3/16	.312	2 3/16	37010610	266.95	.1714 - .2025	327.75	303.65	295.65	291.65	287.45	284.25
710	1 ¼	8	7/32	.342	2 7/32	37010710	266.95	.2026 - .2339	327.75	303.65	295.65	291.65	287.45	284.25
810	1 ¼	8	¼	.374	2 ¼	37010810	266.95	.2340 - .2650	327.75	303.65	295.65	291.65	287.45	284.25
-	1 ¼	8	9/32	.435	2 9/32	37014009	303.75	.2651 - .2968	340.60	315.55	307.25	303.10	298.75	295.40
1010	1 ¼	8	5/16	.435	2 5/16	37011010	266.95	.2969 - .3281	327.75	303.65	295.65	291.65	287.45	284.25
-	1 ¼	8	11/32	.467	2 11/32	37014011	303.75	.3282 - .3593	340.60	315.55	307.25	303.10	298.75	295.40
1210	1 ¼	8	3/8	.467	2 3/8	37011210	266.95	.3594 - .3900	327.75	303.65	295.65	291.65	287.45	284.25
811	1 3/8	8	¼	.401	2 ¼	37010811	280.40	.2340 - .2650	341.95	317.95	309.80	305.80	301.80	298.45
-	1 3/8	8	9/32	.467	2 9/32	37014409	319.20	.2651 - .2968	355.35	330.40	321.95	317.80	313.65	310.15
1011	1 3/8	8	5/16	.467	2 5/16	37011011	280.40	.2969 - .3281	341.95	317.95	309.80	305.80	301.80	298.45
-	1 3/8	8	11/32	.467	2 11/32	37014411	319.20	.3282 - .3593	355.35	330.40	321.95	317.80	313.65	310.15
1211	1 3/8	8	3/8	.467	2 3/8	37011211	280.40	.3594 - .3900	341.95	317.95	309.80	305.80	301.80	298.45
812	1 ½	8	¼	.435	2 ¼	37010812	294.50	.2340 - .2650	356.55	332.50	324.45	320.65	316.45	313.15
-	1 ½	8	9/32	.467	2 9/32	37014809	335.25	.2651 - .2968	370.55	345.55	337.15	333.25	328.85	325.45
1012	1 ½	8	5/16	.467	2 5/16	37011012	294.50	.2969 - .3281	356.55	332.50	324.45	320.65	316.45	313.15
-	1 ½	8	11/32	.467	2 11/32	37014811	335.25	.3282 - .3593	370.55	345.55	337.15	333.25	328.85	325.45
1212	1 ½	8	3/8	.467	2 3/8	37011212	294.50	.3594 - .3900	356.55	332.50	324.45	320.65	316.45	313.15
-	1 ½	8	13/32	.467	2 13/32	37014813	335.25	.3901 - .4219	370.55	345.55	337.15	333.25	328.85	325.45
-	1 ½	8	7/16	.467	2 7/16	37014814	335.25	.4220 - .4531	370.55	345.55	337.15	333.25	328.85	325.45
-	1 ½	8	15/32	.467	2 15/32	37014815	335.25	.4532 - .4843	370.55	345.55	337.15	333.25	328.85	325.45
-	1 ½	8	½	.467	2 ½	37014816	335.25	.4844 - .5150	370.55	345.55	337.15	333.25	328.85	325.45

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED STRAIGHT TOOTH KEYSEAT CUTTERS FOR STEEL

TYPE 3702 - STRAIGHT TOOTH



Carbide tips brazed to hardened alloy steel bodies.

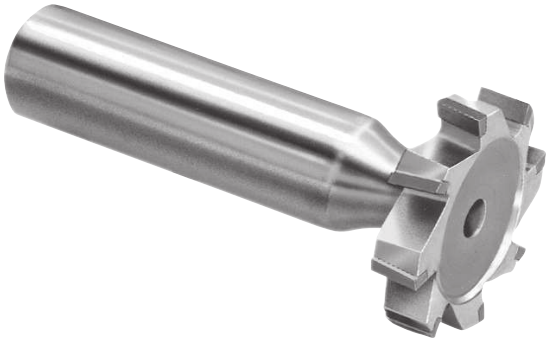
Fast cutting to close tolerance with longer tool life. For milling slots in steel and steel alloys. Chip breakers are on all cutters 5/32" and greater width. Decimal size cutters DO NOT have chip breakers.

Tool diameter tolerance: +.020"/+.015".
Face width tolerance: +.0000"/- .0005".
Straight shank: ½" diameter, 2" long.

AMERICAN STANDARD NO.	TOOL DIAM.	NO. OF TEETH	WIDTH	NECK DIAM.	OVERALL LENGTH	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
									1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
204	½	6	1/16	.130	2 1/16	37020204	$193.45	.0575 - .0787	$255.25	$229.00	$220.10	$215.90	$211.40	$207.75
304	½	6	3/32	.160	2 3/32	37020304	193.45	.0788 - .1088	255.25	229.00	220.10	215.90	211.40	207.75
404	½	6	1/8	.191	2 1/8	37020404	193.45	.1089 - .1400	255.25	229.00	220.10	215.90	211.40	207.75
305	5/8	6	3/32	.191	2 3/32	37020305	200.40	.0788 - .1088	262.35	236.10	227.35	223.05	218.65	215.05
405	5/8	6	1/8	.223	2 1/8	37020405	200.40	.1089 - .1400	262.35	236.10	227.35	223.05	218.65	215.05
505	5/8	6	5/32	.252	2 5/32	37020505	200.40	.1401 - .1713	262.35	236.10	227.35	223.05	218.65	215.05
605	5/8	6	3/16	.279	2 3/16	37020605	200.40	.1714 - .2025	262.35	236.10	227.35	223.05	218.65	215.05
406	¾	6	1/8	.217	2 1/8	37020406	209.15	.1100 - .1400	271.70	245.45	236.55	232.25	227.80	224.25
506	¾	6	5/32	.246	2 5/32	37020506	209.15	.1401 - .1713	271.70	245.45	236.55	232.25	227.80	224.25
606	¾	6	3/16	.279	2 3/16	37020606	209.15	.1714 - .2025	271.70	245.45	236.55	232.25	227.80	224.25
-	¾	6	7/32	.342	2 7/32	37022407	229.05	.2026 - .2339	271.70	245.45	236.55	232.25	227.80	224.25
806	¾	6	¼	.342	2 ¼	37020806	209.15	.2340 - .2650	271.70	245.45	236.55	232.25	227.80	224.25
507	⅞	6	5/32	.246	2 5/32	37020507	219.10	.1401 - .1713	282.05	255.70	246.80	242.55	238.20	234.45
607	⅞	6	3/16	.279	2 3/16	37020607	219.10	.1714 - .2025	282.05	255.70	246.80	242.55	238.20	234.45
707	⅞	6	7/32	.312	2 7/32	37020707	219.10	.2026 - .2339	282.05	255.70	246.80	242.55	238.20	234.45
807	⅞	6	¼	.342	2 ¼	37020807	219.10	.2340 - .2650	282.05	255.70	246.80	242.55	238.20	234.45
608	1	8	3/16	.279	2 3/16	37020608	247.15	.1714 - .2025	311.25	285.15	276.15	272.00	267.55	264.00
708	1	8	7/32	.312	2 7/32	37020708	247.15	.2026 - .2339	311.25	285.15	276.15	272.00	267.55	264.00
808	1	8	¼	.342	2 ¼	37020808	247.15	.2340 - .2650	311.25	285.15	276.15	272.00	267.55	264.00
-	1	8	9/32	.401	2 9/32	37023209	270.70	.2651 - .2968	311.25	285.15	276.15	272.00	267.55	264.00
1008	1	8	5/16	.401	2 5/16	37021008	247.15	.2969 - .3281	311.25	285.15	276.15	272.00	267.55	264.00
-	1	8	11/32	.467	2 11/32	37023211	270.70	.3282 - .3593	311.25	285.15	276.15	272.00	267.55	264.00
1208	1	8	3/8	.467	2 3/8	37021208	247.15	.3594 - .3900	311.25	285.15	276.15	272.00	267.55	264.00
609	1 1/8	8	3/16	.312	2 3/16	37020609	259.55	.1714 - .2025	324.40	298.20	289.25	285.15	280.60	276.90
709	1 1/8	8	7/32	.342	2 7/32	37020709	259.55	.2026 - .2339	324.40	298.20	289.25	285.15	280.60	276.90
809	1 1/8	8	¼	.374	2 ¼	37020809	259.55	.2340 - .2650	324.40	298.20	289.25	285.15	280.60	276.90
-	1 1/8	8	9/32	.435	2 9/32	37023609	284.25	.2651 - .2968	324.40	298.20	289.25	285.15	280.60	276.90
1009	1 1/8	8	5/16	.435	2 5/16	37021009	259.55	.2969 - .3281	324.40	298.20	289.25	285.15	280.60	276.90
610	1 ¼	8	3/16	.312	2 3/16	37020610	272.45	.1714 - .2025	338.00	311.65	302.90	298.60	294.15	290.55
710	1 ¼	8	7/32	.342	2 7/32	37020710	272.45	.2026 - .2339	338.00	311.65	302.90	298.60	294.15	290.55
810	1 ¼	8	¼	.374	2 ¼	37020810	272.45	.2340 - .2650	338.00	311.65	302.90	298.60	294.15	290.55
-	1 ¼	8	9/32	.435	2 9/32	37024009	298.45	.2651 - .2968	338.00	311.65	302.90	298.60	294.15	290.55
1010	1 ¼	8	5/16	.435	2 5/16	37021010	272.45	.2969 - .3281	338.00	311.65	302.90	298.60	294.15	290.55
-	1 ¼	8	11/32	.467	2 11/32	37024011	298.45	.3282 - .3593	338.00	311.65	302.90	298.60	294.15	290.55
1210	1 ¼	8	3/8	.467	2 3/8	37021210	272.45	.3594 - .3900	338.00	311.65	302.90	298.60	294.15	290.55
811	1 3/8	8	¼	.401	2 ¼	37020811	286.25	.2340 - .2650	352.60	326.20	317.35	313.00	308.50	304.95
-	1 3/8	8	9/32	.467	2 9/32	37024409	313.40	.2651 - .2968	352.60	326.20	317.35	313.00	308.50	304.95
1011	1 3/8	8	5/16	.467	2 5/16	37021011	286.25	.2969 - .3281	352.60	326.20	317.35	313.00	308.50	304.95
-	1 3/8	8	11/32	.467	2 11/32	37024411	313.40	.3282 - .3593	352.60	326.20	317.35	313.00	308.50	304.95
1211	1 3/8	8	3/8	.467	2 3/8	37021211	286.25	.3594 - .3900	352.60	326.20	317.35	313.00	308.50	304.95
812	1 ½	8	¼	.435	2 ¼	37020812	300.50	.2340 - .2650	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	9/32	.467	2 9/32	37024809	329.15	.2651 - .2968	367.45	341.25	332.40	328.20	323.60	320.15
1012	1 ½	8	5/16	.467	2 5/16	37021012	300.50	.2969 - .3281	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	11/32	.467	2 11/32	37024811	329.15	.3282 - .3593	367.45	341.25	332.40	328.20	323.60	320.15
1212	1 ½	8	3/8	.467	2 3/8	37021212	300.50	.3594 - .3900	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	13/32	.467	2 13/32	37024813	329.15	.3901 - .4219	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	7/16	.467	2 7/16	37024814	329.15	.4220 - .4531	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	15/32	.467	2 15/32	37024815	329.15	.4532 - .4843	367.45	341.25	332.40	328.20	323.60	320.15
-	1 ½	8	½	.467	2 ½	37024816	329.15	.4844 - .5150	367.45	341.25	332.40	328.20	323.60	320.15

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED STAGGERED TOOTH KEYSEAT CUTTERS FOR STEEL



TYPE 3703 - STAGGERED TOOTH

Carbide tips brazed to hardened alloy steel bodies.

Alternate 10° right and left axial rake. For milling slots in steel and steel alloys.

Tool diameter tolerance: +.020"/+.015".
Face width tolerance: +.0000"/- .0005".
Straight shank: ½" diameter, 2" long.

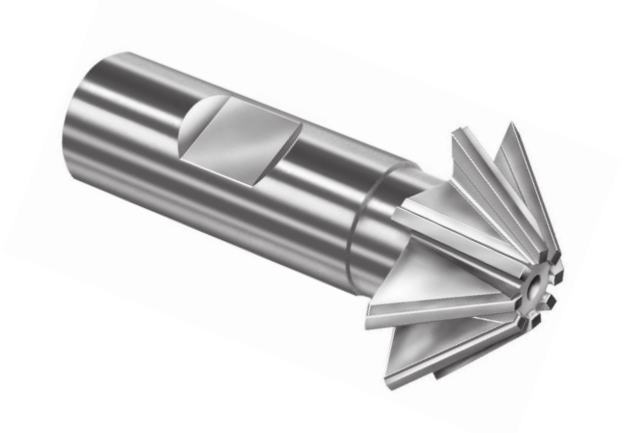
AMERICAN STANDARD NO.	TOOL DIAM.	NO. OF TEETH	WIDTH	NECK DIAM.	OVERALL LENGTH	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
									1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
204	½	6	1/16	.130	2 1/16	37030204	$227.55	.0575 - .0787	$290.95	$264.65	$255.85	$251.55	$247.15	$243.60
304	½	6	3/32	.160	2 3/32	37030304	227.55	.0788 - .1088	290.95	264.65	255.85	251.55	247.15	243.60
404	½	6	1/8	.191	2 1/8	37030404	227.55	.1089 - .1400	290.95	264.65	255.85	251.55	247.15	243.60
305	5/8	6	3/32	.191	2 3/32	37030305	235.60	.0788 - .1088	299.40	273.20	264.35	260.15	255.70	252.05
405	5/8	6	1/8	.223	2 1/8	37030405	235.60	.1089 - .1400	299.40	273.20	264.35	260.15	255.70	252.05
505	5/8	6	5/32	.252	2 5/32	37030505	235.60	.1401 - .1713	299.40	273.20	264.35	260.15	255.70	252.05
605	5/8	6	3/16	.279	2 3/16	37030605	235.60	.1714 - .2025	299.40	273.20	264.35	260.15	255.70	252.05
406	¾	6	1/8	.217	2 1/8	37030406	246.25	.1100 - .1400	310.55	284.35	275.50	271.30	266.65	263.10
506	¾	6	5/32	.246	2 5/32	37030506	246.25	.1401 - .1713	310.55	284.35	275.50	271.30	266.65	263.10
606	¾	6	3/16	.279	2 3/16	37030606	246.25	.1714 - .2025	310.55	284.35	275.50	271.30	266.65	263.10
-	¾	6	7/32	.342	2 7/32	37032407	269.65	.2026 - .2339	310.55	284.35	275.50	271.30	266.65	263.10
806	¾	6	¼	.342	2 ¼	37030806	246.25	.2340 - .2650	310.55	284.35	275.50	271.30	266.65	263.10
507	⅞	6	5/32	.246	2 5/32	37030507	257.60	.1401 - .1713	322.30	296.15	287.25	282.80	278.40	275.05
607	⅞	6	3/16	.279	2 3/16	37030607	257.60	.1714 - .2025	322.30	296.15	287.25	282.80	278.40	275.05
707	⅞	6	7/32	.312	2 7/32	37030707	257.60	.2026 - .2339	322.30	296.15	287.25	282.80	278.40	275.05
807	⅞	6	¼	.342	2 ¼	37030807	257.60	.2340 - .2650	322.30	296.15	287.25	282.80	278.40	275.05
608	1	8	3/16	.279	2 3/16	37030608	290.55	.1714 - .2025	356.85	330.70	321.80	317.60	313.10	309.55
708	1	8	7/32	.312	2 7/32	37030708	290.55	.2026 - .2339	356.85	330.70	321.80	317.60	313.10	309.55
808	1	8	¼	.342	2 ¼	37030808	290.55	.2340 - .2650	356.85	330.70	321.80	317.60	313.10	309.55
-	1	8	9/32	.401	2 9/32	37033209	318.40	.2651 - .2968	356.85	330.70	321.80	317.60	313.10	309.55
1008	1	8	5/16	.401	2 5/16	37031008	290.55	.2969 - .3281	356.85	330.70	321.80	317.60	313.10	309.55
-	1	8	11/32	.467	2 11/32	37033211	318.40	.3282 - .3593	356.85	330.70	321.80	317.60	313.10	309.55
1208	1	8	3/8	.467	2 3/8	37031208	290.55	.3594 - .3900	356.85	330.70	321.80	317.60	313.10	309.55
609	1 1/8	8	3/16	.312	2 3/16	37030609	304.95	.1714 - .2025	372.05	345.70	336.95	332.70	328.35	324.55
709	1 1/8	8	7/32	.342	2 7/32	37030709	304.95	.2026 - .2339	372.05	345.70	336.95	332.70	328.35	324.55
809	1 1/8	8	¼	.374	2 ¼	37030809	304.95	.2340 - .2650	372.05	345.70	336.95	332.70	328.35	324.55
-	1 1/8	8	9/32	.435	2 9/32	37033609	333.95	.2651 - .2968	372.05	345.70	336.95	332.70	328.35	324.55
1009	1 1/8	8	5/16	.435	2 5/16	37031009	304.95	.2969 - .3281	372.05	345.70	336.95	332.70	328.35	324.55
610	1 ¼	8	3/16	.312	2 3/16	37030610	320.40	.1714 - .2025	388.05	361.80	353.05	348.80	344.45	340.75
710	1 ¼	8	7/32	.342	2 7/32	37030710	320.40	.2026 - .2339	388.05	361.80	353.05	348.80	344.45	340.75
810	1 ¼	8	¼	.374	2 ¼	37030810	320.40	.2340 - .2650	388.05	361.80	353.05	348.80	344.45	340.75
-	1 ¼	8	9/32	.435	2 9/32	37034009	350.95	.2651 - .2968	388.05	361.80	353.05	348.80	344.45	340.75
1010	1 ¼	8	5/16	.435	2 5/16	37031010	320.40	.2969 - .3281	388.05	361.80	353.05	348.80	344.45	340.75
-	1 ¼	8	11/32	.467	2 11/32	37034011	350.95	.3282 - .3593	388.05	361.80	353.05	348.80	344.45	340.75
1210	1 ¼	8	3/8	.467	2 3/8	37031210	320.40	.3594 - .3900	388.05	361.80	353.05	348.80	344.45	340.75
811	1 3/8	8	¼	.401	2 ¼	37030811	336.70	.2340 - .2650	405.15	378.95	369.95	365.80	361.35	357.70
-	1 3/8	8	9/32	.467	2 9/32	37034409	368.65	.2651 - .2968	405.15	378.95	369.95	365.80	361.35	357.70
1011	1 3/8	8	5/16	.467	2 5/16	37031011	336.70	.2969 - .3281	405.15	378.95	369.95	365.80	361.35	357.70
-	1 3/8	8	11/32	.467	2 11/32	37034411	368.65	.3282 - .3593	405.15	378.95	369.95	365.80	361.35	357.70
1211	1 3/8	8	3/8	.467	2 3/8	37031211	336.70	.3594 - .3900	405.15	378.95	369.95	365.80	361.35	357.70
812	1 ½	8	¼	.435	2 ¼	37030812	353.50	.2340 - .2650	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	9/32	.467	2 9/32	37034809	387.10	.2651 - .2968	422.80	396.50	387.70	383.45	378.95	375.55
1012	1 ½	8	5/16	.467	2 5/16	37031012	353.50	.2969 - .3281	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	11/32	.467	2 11/32	37034811	387.10	.3282 - .3593	422.80	396.50	387.70	383.45	378.95	375.55
1212	1 ½	8	3/8	.467	2 3/8	37031212	353.50	.3594 - .3900	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	13/32	.467	2 13/32	37034813	387.10	.3901 - .4219	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	7/16	.467	2 7/16	37034814	387.10	.4220 - .4531	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	15/32	.467	2 15/32	37034815	387.10	.4532 - .4843	422.80	396.50	387.70	383.45	378.95	375.55
-	1 ½	8	½	.467	2 ½	37034816	387.10	.4844 - .5150	422.80	396.50	387.70	383.45	378.95	375.55

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED CHAMFER MILLING CUTTERS

SINGLE ANGLE CUTTERS



TYPE 3730 - 45° - FOR NON-FERROUS & CAST IRON
TYPE 3731 - 45° - FOR STEEL

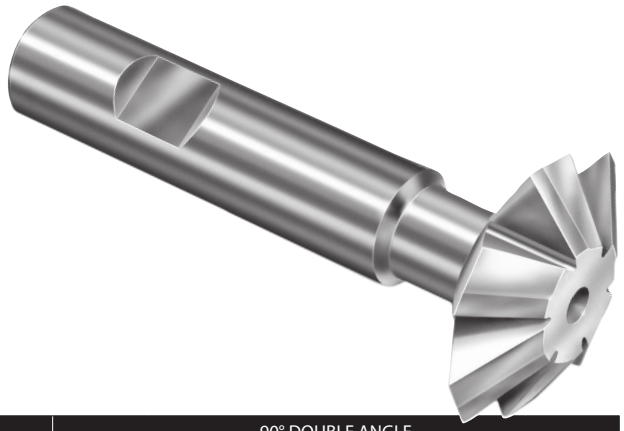
TYPE 3732 - 60° - FOR NON-FERROUS & CAST IRON
TYPE 3733 - 60° - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies. Right hand cut. Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.
Tool diameter tolerance: +.015"/-.000".

TOOL DIAMETER	SHANK DIAMETER	NO. OF TEETH	OVERALL LENGTH	45° ANGLE					60° ANGLE				
				CUTTER WIDTH	TYPE 3730 EDP NO.	PRICE EACH	TYPE 3731 EDP NO.	PRICE EACH	CUTTER WIDTH	TYPE 3732 EDP NO.	PRICE EACH	TYPE 3733 EDP NO.	PRICE EACH
½	⅜	4	2 ⅛	⅛	373016	$291.05	373116	$320.00	7/32	373216	$291.05	373316	$320.00
¾	⅜	6	2 ⅛	3/16	373024	313.75	373124	345.00	5/16	373224	313.75	373324	345.00
1	½	6	2 ½	5/16	373032	368.15	373132	404.80	7/16	373232	368.15	373332	404.80
1 ½	¾	8	2 ¾	½	373048	466.50	373148	513.40	⅝	373248	466.50	373348	513.40

DOUBLE ANGLE CUTTERS



TYPE 3746 - 60° - FOR NON-FERROUS & CAST IRON
TYPE 3747 - 60° - FOR STEEL

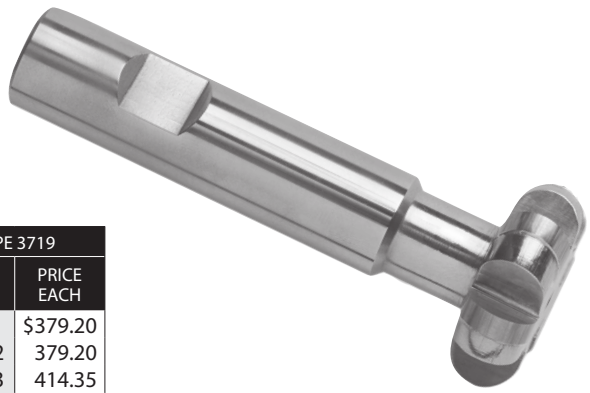
TYPE 3748 - 90° - FOR NON-FERROUS & CAST IRON
TYPE 3749 - 90° - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies. Right hand cut. Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.
Tool diameter tolerance: +.015"/-.000"; Corner radius: .010" - .020".

TOOL DIAMETER	SHANK DIAMETER	NO. OF TEETH	60° DOUBLE ANGLE						90° DOUBLE ANGLE					
			OVERALL LENGTH	CUTTER WIDTH	TYPE 3746 EDP NO.	PRICE EACH	TYPE 3747 EDP NO.	PRICE EACH	OVERALL LENGTH	CUTTER WIDTH	TYPE 3748 EDP NO.	PRICE EACH	TYPE 3749 EDP NO.	PRICE EACH
¾	⅜	6	2 ⅜	3/16	374624	$276.30	374724	$304.00	2 ⅜	¼	374824	$276.30	374924	$304.00
1	½	6	2 27/32	5/16	374632	326.30	374732	359.05	2 29/32	⅜	374832	326.30	374932	359.05
1 ⅜	⅝	6	3 7/32	7/16	374644	377.95	374744	415.90	3 9/32	½	374844	377.95	374944	415.90
1 ½	⅝	6	3 ⅜	½	374648	397.05	374748	436.70	3 7/16	9/16	374848	397.05	374948	436.70
1 ⅞	¾	6	3 25/32	⅝	374660	602.85	374760	663.20	3 25/32	⅝	374860	602.85	374960	663.20
2 ¼	⅞	6	4 5/32	¾	374672	816.00	374772	897.55	4 5/32	¾	374872	816.00	374972	897.55

CARBIDE TIPPED RADIUS CUTTERS



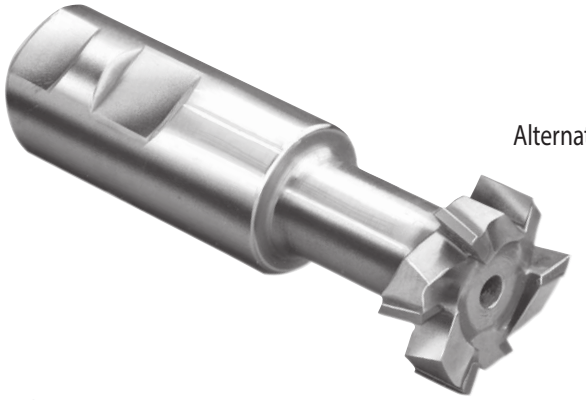
TYPE 3718 - FOR NON-FERROUS & CAST IRON
TYPE 3719 - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies. Right hand cut. Convex radius. Straight shank with Weldon flats.

CUTTER RADIUS	TOOL DIAM.	SHANK DIAM.	NO. OF TEETH	CUTTER WIDTH	OVERALL LENGTH	TYPE 3718		TYPE 3719	
						EDP NO.	PRICE EACH	EDP NO.	PRICE EACH
1/32	¾	½	6	1/16	3	371801	$344.70	371901	$379.20
1/16	¾	½	6	⅛	3	371802	344.70	371902	379.20
3/32	⅞	½	6	3/16	3	371803	376.90	371903	414.35
⅛	1 ¼	¾	6	¼	3 ½	371804	410.10	371904	451.25
5/32	1 5/16	¾	6	5/16	3 ½	371805	472.00	371905	519.15
3/16	1 ⅜	¾	6	⅜	3 ½	371806	499.45	371906	549.45
¼	1 ½	¾	6	½	4	371808	517.00	371908	568.80

Tool diameter tolerance: +.005"/-.000".
Tool radius tolerance thru ⅛" radius: +.001"/-.001".
over ⅛" radius: +.002"/-.002".

CARBIDE TIPPED T-SLOT CUTTERS



TYPE 3720 - FOR NON-FERROUS & CAST IRON

Carbide tips brazed to hardened alloy steel bodies.

Alternate 10° right and left axial rake. Straight shank with drive flats. Used to machine cast iron and non-ferrous materials.

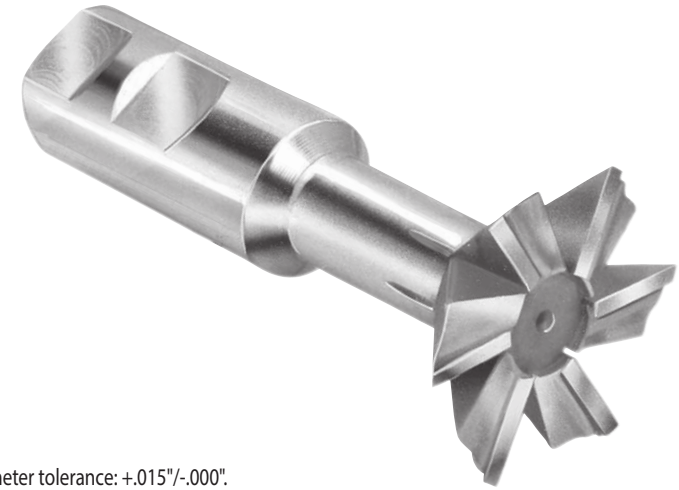
TYPE 3721 - FOR STEEL

Same as Type 3720 above, except carbide grade and geometry appropriate for cutting steel.

Tool diameter tolerance: +.000"/-.010".

BOLT DIAMETER	TOOL DIAMETER	SHANK DIAMETER	CUTTER WIDTH	NECK DIAMETER	UNDERCUT LENGTH	NO. OF TEETH	OVERALL LENGTH	TYPE 3720 EDP NO.	PRICE EACH	TYPE 3721 EDP NO.	PRICE EACH
1/4	9/16	1/2	15/64	17/64	35/64	6	2 19/32	372008	$237.90	372108	$256.95
5/16	21/32	1/2	17/64	21/64	39/64	6	2 11/16	372010	235.00	372110	253.80
3/8	25/32	3/4	21/64	13/32	55/64	6	3 1/4	372012	295.80	372112	319.55
1/2	31/32	3/4	25/64	17/32	63/64	6	3 7/16	372016	321.60	372116	347.30
5/8	1 1/4	1	31/64	21/32	1 9/64	6	3 15/16	372020	426.80	372120	461.15
3/4	1 15/32	1	5/8	25/32	1 1/2	6	4 7/16	372024	477.00	372124	515.10
1	1 27/32	1 1/4	53/64	1 1/32	1 43/64	8	4 13/16	372032	680.95	372132	735.55
1 1/4	2 7/32	1 1/4	1 3/32	1 7/32	1 31/32	8	5 3/8	372040	859.30	372140	928.15
1 1/2	2 21/32	1 1/4	1 11/32	1 17/32	2 1/8	8	5 29/32	372048	995.15	372148	1074.80

CARBIDE TIPPED DOVETAIL CUTTERS



TYPE 3734 - 45° SINGLE ANGLE FOR NON-FERROUS & CAST IRON
TYPE 3735 - 45° SINGLE ANGLE FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

45° single angle with right hand cut. Straight shank with drive flats.

TYPE 3736 - 60° SINGLE ANGLE FOR NON-FERROUS & CAST IRON
TYPE 3737 - 60° SINGLE ANGLE FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

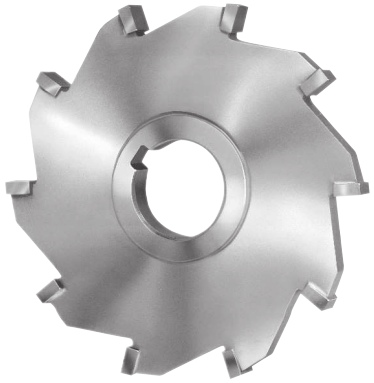
60° single angle with right hand cut. Straight shank with drive flats.

Tool diameter tolerance: +.015"/-.000".
Corner radius: .015" - .020".

TOOL DIAMETER	SHANK DIAMETER	NECK DIAMETER	NO. OF TEETH	OVERALL LENGTH	45° SINGLE ANGLE					60° SINGLE ANGLE				
					CUTTER WIDTH	TYPE 3734 EDP NO.	PRICE EACH	TYPE 3735 EDP NO.	PRICE EACH	CUTTER WIDTH	TYPE 3736 EDP NO.	PRICE EACH	TYPE 3737 EDP NO.	PRICE EACH
1/2	3/8	3/16	3	2 1/8	5/32	373416	$238.25	373516	$241.85	7/32	373616	$238.25	373716	$241.85
3/4	3/8	1/4	3	2 1/4	1/4	373424	257.00	373524	260.60	1/4	373624	257.00	373724	260.60
1	1/2	3/8	4	2 1/2	5/16	373432	274.95	373532	278.95	3/8	373632	274.95	373732	278.95
1 1/4	5/8	1/2	4	2 3/4	3/8	373440	312.60	373540	317.00	1/2	373640	312.60	373740	317.00
1 1/2	3/4	1/2	4	3 1/4	1/2	373448	365.15	373548	370.45	5/8	373648	365.15	373748	370.45
2	1	3/4	6	4 1/4	5/8	373464	586.75	373564	595.10	3/4	373664	586.75	373764	595.10
2 1/2	1 1/4	1	6	4 3/8	3/4	373480	793.55	373580	804.65	7/8	373680	793.55	373780	804.65
3	1 1/4	1	6	4 1/2	1	373496	935.65	373596	949.15	1 1/8	373696	935.65	373796	949.15

FEEDS & SPEEDS CHART FOR MILLS & SAWS - CARBIDE TIPPED

Feeds & speeds are a starting recommendation only. Factors such as machine, fixture and tooling rigidity, horsepower available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations.



RPM=SFPM*3.82/Cutter Diameter
IPM=IPT*RPM*#Teeth

CLASSIFICATION	MATERIAL	BRINELL	SURFACE FEET PER MINUTE (SFPM)	INCHES PER TOOTH (IPT)
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150*	1000-2000	.004-.008
	MAGNESIUM ALLOY	50-90*	750-1500	.004-.008
	LEAD ALLOY	10-20*	300-1000	.004-.008
	NON-METAL AND PLASTIC	-	1500-3000	.004-.008
	ZINC ALLOY - DIE CAST	80-100	750-1500	.005-.010
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	200-600	.003-.006
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	400-800	.004-.008
	NICKEL SILVER	10-100Rb	200-400	.003-.006
	COPPER ALLOY - TOUGH	40-200*	200-500	.004-.008
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	75-150	.002-.004
	DUCTILE CAST IRON - FERRITIC	140-270	250-400	.003-.006
	DUCTILE CAST IRON - MARTENSITIC	270-400	200-300	.003-.006
	GRAY - PEARLITIC	220-320	120-300	.002-.004
	GRAY - FERRITIC	110-240	250-425	.003-.006
	MALLEABLE CAST IRON - MARTENSITIC	200-320	130-225	.002-.004
	MALLEABLE CAST IRON - FERRITIC & PEARLITIC	110-240	200-400	.003-.006
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	250-500	.003-.006
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	200-400	.002-.004
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	200-400	.002-.004
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	150-300	.002-.005
	STAINLESS STEEL - 400 SERIES	135-325	200-400	.003-.006
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	250-500	.003-.006
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	75-150	.002-.004
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	50-150	.002-.004
	STAINLESS STEEL - 300 SERIES	135-375	75-150	.002-.004
	STAINLESS STEEL - PH SERIES	150-440	75-150	.002-.004
	TITANIUM ALLOY	110-380	100-200	.002-.004

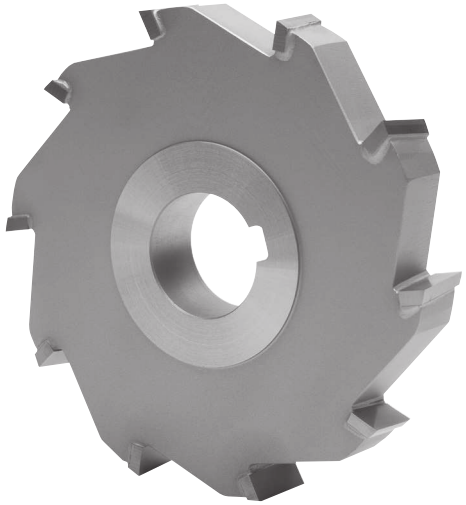
*500kg

CARBIDE TIPPED SIDE MILLING CUTTERS STAGGERED TOOTH

TYPE 3547 - GENERAL PURPOSE

Carbide tips brazed to alloy steel bodies.

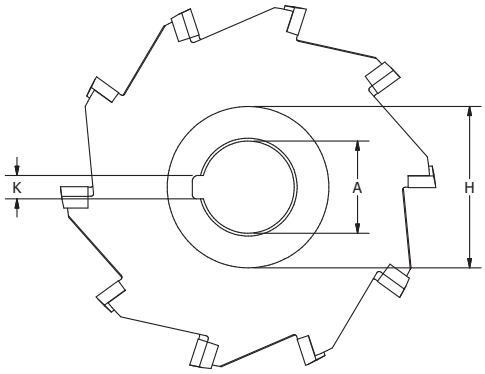
Positive radial rake and alternating right and left hand 5° axial rake make this an excellent choice for general purpose milling including aluminum, cast iron, composites, stainless steel, steel, and titanium up to 363 Brinell (39Rc). Staggered tooth design produces a free cutting tool and promotes chip evacuation. Carbide extends across the entire length of each tooth.

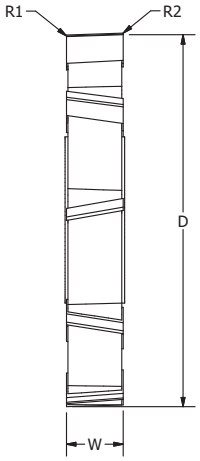


ALL TYPES:
Tool diameter tolerance: +1⁄16"/-.000".
Face width tolerance: +.001"/- .000".
Arbor hole tolerance: +.001"/-.000".
Sharpened on all 3 cutting edges.

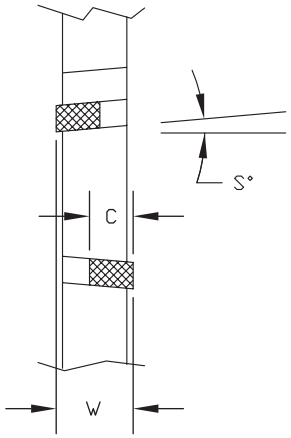
TOOL DIAM.	WIDTH		TYPE 3547 FOR STAINLESS STEEL			
	FRAC.	DEC.	NO. OF TEETH	1"ARBOR EDP NO.	1¼"ARBOR EDP NO.	PRICE EACH
3	3⁄16	.1875	8	354710	-	$665.50
3	1⁄4	.2500	8	354712	-	681.35
3	5⁄16	.3125	8	354714	-	687.40
3	3⁄8	.3750	8	354716	-	690.15
3	1⁄2	.5000	8	354718	-	711.60
3	5⁄8	.6250	8	354720	-	761.80
4	3⁄16	.1875	10	354722	-	723.05
4	1⁄4	.2500	10	354724	-	732.10
4	5⁄16	.3125	10	354726	-	740.90
4	3⁄8	.3750	10	354728	-	749.85
4	1⁄2	.5000	10	354730	-	760.35
4	5⁄8	.6250	10	354732	-	774.55
4	3⁄4	.7500	10	354734	-	783.30
6	1⁄4	.2500	14	-	354750	939.95
6	5⁄16	.3125	14	-	354752	947.10
6	3⁄8	.3750	14	-	354754	948.40
6	1⁄2	.5000	14	-	354756	960.80
6	5⁄8	.6250	14	-	354758	966.25
6	3⁄4	.7500	14	-	354760	997.75
6	1	1.0000	14	-	354762	1068.25

For a material specific design and/or other types of staggered tooth cutters use the form and diagrams below for a quote.

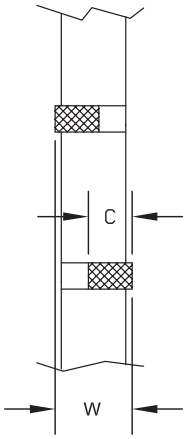




Herringbone Stagger with Full Width Carbide



Herringbone Stagger with Partial Width Carbide



Straight Stagger with Partial Width Carbide

Name _____ **Phone** _____
Company _____ **Fax** _____
Full Address _____

SPECIAL CARBIDE TIPPED STAGGERED TOOTH CUTTER ORDERING INFORMATION

D= _____ Cutter Diameter
W= _____ Cutter Width
A= _____ Arbor Hole Diameter
K= _____ Keyway Size
H= _____ Hub Diameter

R1= _____ Radius/Chamfer (Left Side Top Coming)
R2= _____ Radius/Chamfer (Right Side Top Coming)
C= _____ Carbide Length (If Partial Width Carbide)
S= _____ Axial Rake Angle
N= _____ # of Teeth

_____ Material Cutting
_____ Quantities

☐ Herringbone Stagger - Full Width Carbide
☐ Herringbone Stagger - Partial Width Carbide
☐ Straight Stagger - Partial Width Carbide

CARBIDE TIPPED SLITTING SAWS - COARSE TOOTH

TYPE 3550 - FOR NON-FERROUS

Carbide tips brazed to alloy steel bodies.

For machining aluminum, magnesium, zinc, brass, bronze, plastics and non-metals.

TYPE 3552 - FOR CAST IRON

Carbide tips brazed to alloy steel bodies.

For machining most materials, especially cast iron and malleable iron.

TYPE 3554 - FOR STEEL

Carbide tips brazed to alloy steel bodies.

Steel cutting grade of carbide for machining most steels.

TYPE 3558 - FOR STAINLESS STEEL

Carbide tips brazed to alloy steel bodies.

High number of teeth for machining of stainless steel and related alloy steels. AISI type 200 thru 350 stainless steels.



ALL TYPES (page 16 & 17):
Tool diameter tolerance: +1/16"/-.000".
Face width tolerance: +.001"/- .000".
Arbor hole tolerance: +.001"/-.000".
Sharpened on all 3 cutting edges.

TOOL DIAM.	WIDTH		ARBOR HOLE	TYPE 3550 FOR NON-FERROUS			TYPE 3552 FOR CAST IRON			TYPE 3554 FOR STEEL			TYPE 3558 FOR STAINLESS STEEL		
	FRAC.	DECIMAL		NO. OF TEETH	EDP NO.	PRICE EACH	NO. OF TEETH	EDP NO.	PRICE EACH	NO. OF TEETH	EDP NO.	PRICE EACH	NO. OF TEETH	EDP NO.	PRICE EACH
3	3/32	.0938	1	6	355032	$266.50	6	355232	$306.70	8	355432	$304.05	8	355832	$284.90
3	1/8	.1250	1	6	355034	274.50	6	355234	324.75	8	355434	340.35	8	355834	295.80
3	3/16	.1875	1	6	355036	285.35	6	355236	343.55	8	355436	343.55	8	355836	307.20
3	1/4	.2500	1	6	355037	194.10	6	355237	281.60	8	355437	281.60	8	355837	338.05
3	5/16	.3125	1	6	355031	203.90	6	355231	281.60	8	355431	281.60	8	355831	338.05
3	3/8	.3750	1	6	355038	207.85	6	355238	286.20	8	355438	286.20	8	355838	343.55
4	3/32	.0938	1	6	355042	327.15	8	355242	393.20	8	355442	393.20	10	355842	409.90
4	1/8	.1250	1	6	355044	336.90	8	355244	398.50	8	355444	398.50	10	355844	415.05
4	3/16	.1875	1	6	355046	341.85	8	355246	429.40	8	355446	429.40	10	355846	420.80
4	1/4	.2500	1	6	355047	249.40	8	355247	364.60	8	355447	364.60	10	355847	437.80
4	5/16	.3125	1	6	355041	256.45	8	355241	378.80	8	355441	378.80	10	355841	454.30
4	3/8	.3750	1	6	355048	263.20	8	355248	392.50	8	355448	392.50	10	355848	471.00
4	3/8	.3750	1 1/4	6	355049	263.20	8	355249	392.50	8	355449	392.50	10	355849	471.00
5	3/32	.0938	1	8	355052	353.95	10	355252	527.90	10	355452	527.90	12	355852	557.15
5	1/8	.1250	1	8	355054	353.95	10	355254	567.80	10	355454	567.80	12	355854	568.80
5	3/16	.1875	1	-	-	-	10	355256	639.25	10	355456	639.25	12	355856	591.50
6	1/8	.1250	1 1/4	8	355063	482.05	12	355263	693.00	12	355463	693.00	14	355863	665.40
6	3/16	.1875	1 1/4	8	355065	635.30	12	355265	715.85	12	355465	715.85	14	355865	682.55
6	1/4	.2500	1 1/4	8	355067	658.05	12	355267	730.80	12	355467	730.80	14	355867	693.70
8	1/8	.1250	1 1/4	10	355083	616.25	-	-	-	-	-	-	-	-	-
8	3/16	.1875	1 1/4	-	-	-	16	355285	985.10	16	355485	985.10	-	-	-
8	1/4	.2500	1 1/4	-	-	-	16	355287	1022.75	16	355487	1022.75	-	-	-

CARBIDE TIPPED SLITTING SAWS - STANDARD TOOTH



TYPE 3551 - FOR NON-FERROUS

Similar to our Type 3550

Except designed with more teeth for better finishes.

TYPE 3553 - FOR CAST IRON

Similar to our Type 3552

Except designed with more teeth for better finishes.

TYPE 3556 - FOR STEEL

Similar to our Type 3554

Except designed with more teeth for better finishes.

TYPE 3559 - FOR STAINLESS STEEL

Similar to our Type 3558

Except designed with more teeth for better finishes.

TOOL DIAM.	WIDTH		TYPE 3551 FOR NON-FERROUS				TYPE 3553 FOR CAST IRON				TYPE 3556 FOR STEEL				TYPE 3559 FOR STAINLESS STEEL			
	FRAC.	DEC.	NO. OF TEETH	1"ARBOR EDP NO.	1¼"ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1"ARBOR EDP NO.	1¼"ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1"ARBOR EDP NO.	1¼"ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1"ARBOR EDP NO.	1¼"ARBOR EDP NO.	PRICE EACH
3	1/16	.0625	12	355198	-	$419.90	12	355398	-	$419.90	16	355698	-	$502.00	12	355998	-	$472.25
3	5/64	.0781	12	355100	-	496.55	12	355300	-	496.55	16	355600	-	607.05	12	355900	-	528.95
3	3/32	.0938	12	355102	-	419.90	12	355302	-	419.90	16	355602	-	502.00	12	355902	-	472.25
3	7/64	.1094	12	355104	-	418.30	12	355304	-	418.30	16	355604	-	463.35	12	355904	-	450.80
3	1/8	.1250	12	355106	355107	337.55	12	355306	355307	337.55	16	355606	-	419.80	12	355906	355907	430.55
3	5/32	.1562	12	355108	-	402.35	12	355308	-	402.35	16	355608	-	440.90	12	355908	-	440.90
3	3/16	.1875	12	355109	-	359.80	12	355309	-	359.80	16	355609	-	462.20	12	355909	-	451.45
3	7/32	.2188	12	355110	-	416.20	12	355310	-	416.20	16	355610	-	483.35	12	355910	-	465.80
3	1/4	.2500	12	355111	-	437.65	12	355311	-	437.65	16	355611	-	504.75	12	355911	-	479.85
3	5/16	.3125	12	355112	-	479.85	12	355312	-	479.85	16	355612	-	553.35	12	355912	-	525.65
3	3/8	.3750	12	355113	-	522.20	12	355313	-	522.20	16	355613	-	602.15	12	355913	-	575.05
3	7/16	.4375	-	-	-	-	-	-	-	-	16	355614	-	669.15	12	355914	-	624.85
3	1/2	.5000	-	-	-	-	-	-	-	-	16	355615	-	743.60	12	355915	-	674.35
4	1/16	.0625	14	355116	355117	488.85	14	355316	-	488.85	20	355616	-	607.05	14	355916	355917	537.10
4	5/64	.0781	14	355118	355119	577.50	14	355318	355319	577.50	20	355618	355619	664.25	14	355918	355919	615.40
4	3/32	.0938	14	355120	355121	488.85	14	355320	355321	488.85	20	355620	355621	607.05	14	355920	355921	537.10
4	7/64	.1094	14	355122	355123	499.20	14	355322	355323	499.20	20	355622	355623	574.10	14	355922	355923	636.75
4	1/8	.1250	14	355124	355125	440.90	14	355324	355325	440.90	20	355624	355625	536.25	14	355924	355925	536.25
4	5/32	.1562	14	355126	355127	500.85	14	355326	355327	500.85	20	355626	355627	576.20	14	355926	355927	550.40
4	3/16	.1875	14	355128	355129	469.40	14	355328	355329	469.40	20	355628	355629	578.65	14	355928	355929	567.90
4	7/32	.2188	14	355130	355131	532.70	14	355330	355331	532.70	20	355630	355631	612.65	14	355930	355931	585.85
4	1/4	.2500	14	355132	355133	543.05	14	355332	355333	543.05	20	355632	355633	620.65	14	355932	355933	599.85
4	5/16	.3125	14	355134	355135	585.85	14	355334	355335	585.85	20	355634	355635	673.45	14	355934	355935	642.15
4	3/8	.3750	14	355136	355137	628.00	14	355336	355337	628.00	20	355636	355637	722.20	14	355936	355937	691.40
4	7/16	.4375	-	-	-	-	-	-	-	-	20	355638	-	802.35	14	355938	-	741.20
4	1/2	.5000	-	-	-	-	-	-	-	-	20	355640	-	891.75	14	355940	-	790.85
5	5/64	.0781	16	355142	355143	715.35	16	355342	355343	715.35	24	355642	355643	822.55	16	355942	355943	758.30
5	3/32	.0938	16	355144	355145	590.20	16	355344	355345	590.20	24	355644	355645	828.30	16	355944	355945	650.30
5	7/64	.1094	16	355146	355147	671.90	16	355346	355347	671.90	24	355646	355647	772.85	16	355946	355947	715.35
5	1/8	.1250	16	355148	355149	545.20	16	355348	355349	545.20	24	355648	355649	670.15	16	355948	355949	631.50
5	5/32	.1562	16	355150	355151	596.20	16	355350	355351	596.20	24	355650	355651	685.50	16	355950	355951	652.35
5	3/16	.1875	16	355152	355153	610.60	16	355352	355353	610.60	24	355652	355653	733.75	16	355952	355953	687.95
5	7/32	.2188	16	355154	355155	656.10	16	355354	355355	656.10	24	355654	355655	754.60	16	355954	355955	723.25
5	1/4	.2500	16	355156	355157	684.40	16	355356	355357	684.40	24	355656	355657	787.10	16	355956	355957	758.40
5	5/16	.3125	16	355158	355159	744.20	16	355358	355359	744.20	24	355658	355659	856.05	16	355958	355959	818.40
5	3/8	.3750	16	355160	355161	804.30	16	355360	355361	804.30	24	355660	355661	924.85	16	355960	355961	881.95
5	7/16	.4375	-	-	-	-	-	-	-	-	24	355662	-	1027.70	16	355962	-	931.60
5	1/2	.5000	-	-	-	-	-	-	-	-	24	355664	-	1141.95	16	355964	-	981.25
6	5/64	.0781	18	355166	355167	804.20	18	355366	355367	804.20	28	355666	355667	924.80	18	355966	355967	852.75
6	3/32	.0938	18	355168	355169	716.20	18	355368	355369	716.20	28	355668	355669	847.20	18	355968	355969	785.30
6	7/64	.1094	18	355170	355171	806.95	18	355370	355371	806.95	28	355670	355671	928.00	18	355970	355971	855.65
6	1/8	.1250	18	355172	355173	682.65	18	355372	355373	682.65	28	355672	355673	888.90	18	355972	355973	807.80
6	5/32	.1562	18	355174	355175	772.35	18	355374	355375	772.35	28	355674	355675	888.55	18	355974	355975	843.05
6	3/16	.1875	18	355176	355177	747.85	18	355376	355377	747.85	28	355676	355677	953.15	18	355976	355977	878.25
6	7/32	.2188	18	355178	355179	843.05	18	355378	355379	843.05	28	355678	355679	969.55	18	355978	355979	913.65
6	1/4	.2500	18	355180	355181	878.40	18	355380	355381	878.40	28	355680	355681	1036.40	18	355980	355981	962.35
6	5/16	.3125	18	355182	355183	913.80	18	355382	355383	913.80	28	355682	355683	1050.85	18	355982	355983	1005.40
6	3/8	.3750	18	355184	355185	948.85	18	355384	355385	948.85	28	355684	355685	1091.25	18	355984	355985	1044.05
6	7/16	.4375	-	-	-	-	-	-	-	-	28	355690	-	1212.35	18	355990	-	1093.70
6	1/2	.5000	-	-	-	-	-	-	-	-	28	355692	-	1347.10	18	355992	-	1143.45
8	1/8	.1250	24	-	355186	1133.35	24	-	355386	1133.35	24	-	355686	1198.10	24	-	355986	1198.10
8	5/32	.1562	24	-	355187	1146.85	24	-	355387	1146.85	24	-	355687	1211.70	24	-	355987	1211.70
8	3/16	.1875	24	-	355188	1160.35	24	-	355388	1160.35	24	-	355688	1225.10	24	-	355988	1225.10
8	1/4	.2500	24	-	355189	1230.30	24	-	355389	1230.30	24	-	355689	1295.25	24	-	355989	1295.25

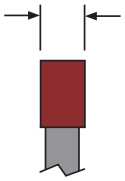
3" CARBIDE TIPPED MILLING CUTTERS GENERAL PURPOSE

TYPE 3559 - GENERAL PURPOSE



Width grinds between .0600" and .5312"

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH - FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
3	.0600-.0703	.0555	355998D	$580.55	$538.55	$531.40	$527.60	$525.35	$472.25
3	.0704-.0859	.0711	355900D	637.40	595.40	588.15	584.40	581.95	528.95
3	.0860-.1015	.0867	355902D	580.55	538.55	531.40	527.60	525.35	472.25
3	.1016-.1171	.1024	355904D	559.10	517.30	509.95	506.10	503.80	450.80
3	.1172-.1406	.1180	355906D	538.95	496.90	489.55	485.75	483.50	430.55
3	.1407-.1718	.1562	355908D	549.35	507.50	500.15	496.40	494.15	440.90
3	.1719-.2031	.1875	355909D	559.95	517.85	510.50	506.80	504.60	451.45
3	.2032-.2343	.2188	355910D	574.10	532.35	525.00	521.15	518.85	465.80
3	.2344-.2812	.2500	355911D	588.45	546.50	539.00	535.15	533.00	479.85
3	.2813-.3437	.3125	355912D	634.15	592.20	584.85	581.15	578.85	525.65
3	.3438-.4062	.3750	355913D	683.25	641.40	634.15	630.15	627.90	575.05
3	.4063-.4687	.4375	355914D	733.00	691.15	683.85	680.05	677.75	624.85
3	.4688-.5312	.5000	355915D	783.00	740.80	733.55	729.80	727.65	674.35



Width Grind

Cutter Notes (All cutters on page)

- 12 Teeth
- C-2(m) Carbide
- 5° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 363 Brinell (39Rc)

Corner Radius or Chamfer on ONE Side

Radius Notes

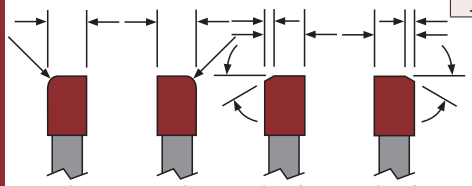
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

Chamfer Notes

- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED WITH RADIUS OR CHAMFER					
				1 PC	2 PC	3 PC	4 PC	5 PC	6 PC
3	.0600-.0703	.0555	355998R1	$608.90	$546.95	$538.55	$534.55	$532.05	$530.70
3	.0704-.0859	.0711	355900R1	665.80	603.70	595.40	591.20	588.65	587.45
3	.0860-.1015	.0867	355902R1	608.90	546.95	538.55	534.55	532.05	530.70
3	.1016-.1171	.1024	355904R1	587.60	525.50	517.30	513.10	510.40	509.10
3	.1172-.1406	.1180	355906R1	567.30	505.10	496.90	492.70	490.25	488.70
3	.1407-.1718	.1562	355908R1	577.65	515.60	507.50	503.15	500.70	499.20
3	.1719-.2031	.1875	355909R1	588.35	526.05	517.85	513.70	511.35	509.90
3	.2032-.2343	.2188	355910R1	602.40	540.60	532.35	527.90	525.50	524.00
3	.2344-.2812	.2500	355911R1	616.65	554.55	546.50	542.15	539.70	538.25
3	.2813-.3437	.3125	355912R1	662.40	600.50	592.20	587.90	585.55	583.90
3	.3438-.4062	.3750	355913R1	711.85	649.70	641.40	637.20	634.65	633.35
3	.4063-.4687	.4375	355914R1	761.45	699.45	691.15	686.95	684.40	683.05
3	.4688-.5312	.5000	355915R1	811.20	749.10	740.80	736.75	734.00	732.75

Specify side for radius or chamfer

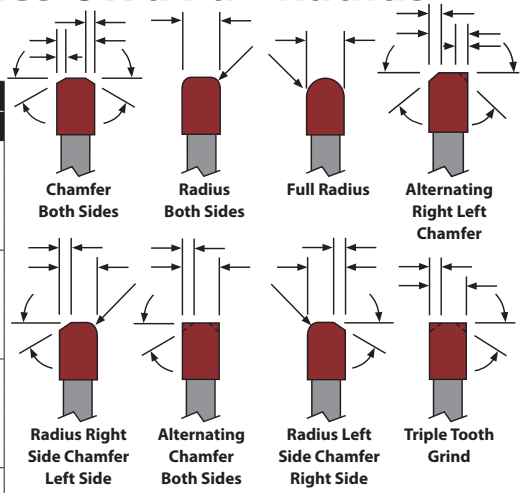


Radius Left Side | **Radius Right Side** | **Chamfer Left Side** | **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%

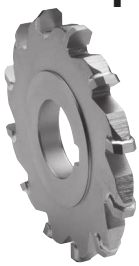
TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED WITH RADII, CHAMFERS, OR COMBINATION					
				1 PC	2 PC	3 PC	4 PC	5 PC	6 PC
3	.0600-.0703	.0555	355998R2	$624.10	$555.35	$546.20	$541.30	$538.45	$537.10
3	.0704-.0859	.0711	355900R2	680.95	611.95	603.00	598.20	595.20	593.65
3	.0860-.1015	.0867	355902R2	624.10	555.35	546.20	541.30	538.45	537.10
3	.1016-.1171	.1024	355904R2	602.95	533.80	524.75	520.05	517.15	515.55
3	.1172-.1406	.1180	355906R2	582.45	513.55	504.35	499.70	496.75	495.30
3	.1407-.1718	.1562	355908R2	592.95	523.90	514.95	510.20	507.35	505.75
3	.1719-.2031	.1875	355909R2	603.30	534.55	525.45	520.60	517.75	516.30
3	.2032-.2343	.2188	355910R2	617.90	548.75	539.75	535.00	532.10	530.70
3	.2344-.2812	.2500	355911R2	631.85	562.85	553.80	549.05	546.20	544.65
3	.2813-.3437	.3125	355912R2	677.65	608.70	599.50	594.90	592.10	590.60
3	.3438-.4062	.3750	355913R2	727.05	658.05	648.85	644.10	641.25	639.80
3	.4063-.4687	.4375	355914R2	776.55	707.80	698.65	693.75	691.10	689.45
3	.4688-.5312	.5000	355915R2	826.35	757.60	748.35	743.65	740.75	739.20



Chamfer Both Sides | **Radius Both Sides** | **Full Radius** | **Alternating Right Left Chamfer**

Radius Right Side Chamfer Left Side | **Alternating Chamfer Both Sides** | **Radius Left Side Chamfer Right Side** | **Triple Tooth Grind**

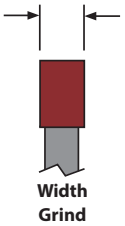
4" CARBIDE TIPPED MILLING CUTTERS GENERAL PURPOSE



TYPE 3559 - GENERAL PURPOSE

Width grinds between .0600" and .5312"

Cutter Notes (All cutters on page)
- 14 Teeth
- C-2(m) Carbide
- 5° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 363 Brinell (39Rc)



Width Grind

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355916D	$664.70	$616.65	$607.85	$603.30	$600.55	$537.15
4	.0704 - .0859	.0701	355918D	743.10	694.90	686.10	681.55	678.95	615.40
4	.0860 - .1015	.0858	355920D	664.70	616.65	607.85	603.30	600.55	537.15
4	.1016 - .1171	.1014	355922D	764.60	716.35	707.65	703.25	700.35	636.75
4	.1172 - .1406	.1170	355924D	664.10	615.75	606.85	602.30	599.80	536.25
4	.1407 - .1718	.1562	355926D	678.05	629.90	621.10	616.65	613.80	550.40
4	.1719 - .2031	.1875	355928D	695.50	647.40	638.55	634.20	631.35	567.90
4	.2032 - .2343	.2188	355930D	713.55	665.30	656.45	652.00	649.05	585.75
4	.2344 - .2812	.2500	355932D	727.65	679.25	670.55	666.00	663.20	599.85
4	.2813 - .3437	.3125	355934D	769.70	721.50	712.70	708.15	705.40	642.15
4	.3438 - .4062	.3750	355936D	819.25	771.00	762.30	757.70	754.75	691.40
4	.4063 - .4687	.4375	355938D	868.90	820.75	811.90	807.35	804.45	741.20
4	.4688 - .5312	.5000	355940D	918.75	870.30	861.60	857.00	854.35	790.85

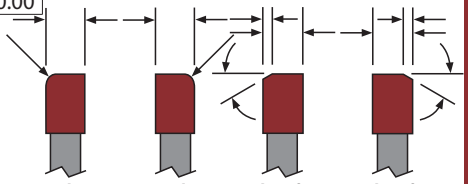
Corner Radius or Chamfer on ONE Side

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355916R1	$695.45	$625.70	$615.95	$610.75	$607.85	$606.20
4	.0704 - .0859	.0701	355918R1	773.70	703.90	694.20	689.00	686.10	684.40
4	.0860 - .1015	.0858	355920R1	695.45	625.70	615.95	610.75	607.85	606.20
4	.1016 - .1171	.1014	355922R1	795.40	725.40	715.70	710.70	707.65	705.95
4	.1172 - .1406	.1170	355924R1	694.70	624.85	615.05	609.90	606.85	605.30
4	.1407 - .1718	.1562	355926R1	708.70	638.70	629.15	624.10	621.10	619.40
4	.1719 - .2031	.1875	355928R1	726.35	656.45	646.70	641.55	638.55	636.80
4	.2032 - .2343	.2188	355930R1	744.20	674.30	664.50	659.50	656.45	654.75
4	.2344 - .2812	.2500	355932R1	758.20	688.25	678.50	673.45	670.55	668.85
4	.2813 - .3437	.3125	355934R1	800.45	730.45	720.80	715.75	712.70	710.95
4	.3438 - .4062	.3750	355936R1	849.75	779.90	770.10	765.05	762.30	760.45
4	.4063 - .4687	.4375	355938R1	899.55	829.80	819.85	814.95	811.90	810.20
4	.4688 - .5312	.5000	355940R1	949.30	879.55	869.80	864.70	861.60	860.00

Specify side for radius or chamfer

Radius Notes
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

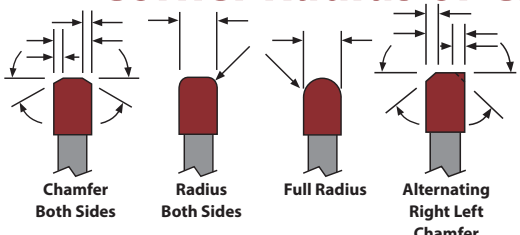
Chamfer Notes
- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted



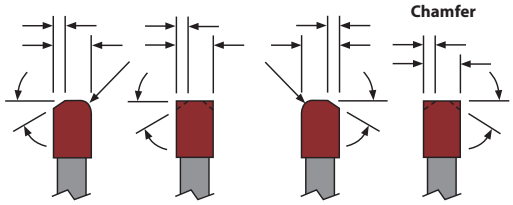
Radius Left Side **Radius Right Side** **Chamfer Left Side** **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%



Chamfer Both Sides **Radius Both Sides** **Full Radius** **Alternating Right Left Chamfer**

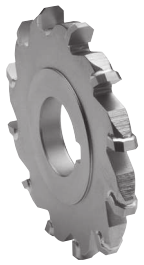


Radius Right Side Chamfer Left Side **Alternating Chamfer Both Sides** **Radius Left Side Chamfer Right Side** **Triple Tooth Grind**

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355916R2	$711.85	$634.75	$623.95	$618.40	$615.05	$613.30
4	.0704 - .0859	.0701	355918R2	789.80	712.90	702.20	696.60	693.15	691.40
4	.0860 - .1015	.0858	355920R2	711.85	634.75	623.95	618.40	615.05	613.30
4	.1016 - .1171	.1014	355922R2	811.40	734.55	723.60	718.20	714.75	712.90
4	.1172 - .1406	.1170	355924R2	710.80	633.75	623.00	617.50	614.20	612.30
4	.1407 - .1718	.1562	355926R2	724.95	648.00	637.10	631.60	628.05	626.30
4	.1719 - .2031	.1875	355928R2	742.60	665.50	654.75	649.05	645.70	644.00
4	.2032 - .2343	.2188	355930R2	760.35	683.25	672.60	667.10	663.70	661.95
4	.2344 - .2812	.2500	355932R2	774.25	697.35	686.65	680.95	677.65	675.75
4	.2813 - .3437	.3125	355934R2	816.55	739.60	728.80	723.25	719.80	718.15
4	.3438 - .4062	.3750	355936R2	866.05	788.95	778.25	772.70	769.40	767.50
4	.4063 - .4687	.4375	355938R2	915.75	838.80	828.05	822.40	818.95	817.40
4	.4688 - .5312	.5000	355940R2	965.50	888.60	877.65	872.10	868.75	866.85

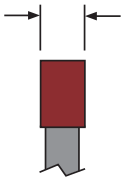
5" CARBIDE TIPPED MILLING CUTTERS GENERAL PURPOSE

TYPE 3559 - GENERAL PURPOSE



Width grinds between .0704" and .5312"

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355942D	$888.90	$839.45	$830.50	$826.00	$823.30	$758.30
5	.0860 - .1015	.0848	355944D	781.05	731.70	722.90	718.20	715.45	650.30
5	.1016 - .1171	.1004	355946D	845.75	796.60	787.50	783.05	780.20	715.35
5	.1172 - .1406	.1160	355948D	762.30	712.70	703.90	699.20	696.50	631.50
5	.1407 - .1718	.1562	355950D	783.15	733.75	724.95	720.15	717.35	652.35
5	.1719 - .2031	.1875	355952D	818.55	769.25	760.35	755.75	752.95	687.95
5	.2032 - .2343	.2188	355954D	853.95	804.45	795.65	790.95	788.20	723.25
5	.2344 - .2812	.2500	355956D	889.00	839.55	830.80	826.15	823.45	758.40
5	.2813 - .3437	.3125	355958D	948.85	899.55	890.65	886.00	883.30	818.40
5	.3438 - .4062	.3750	355960D	1012.40	963.10	954.30	949.60	946.80	881.95
5	.4063 - .4687	.4375	355962D	1062.15	1013.00	1004.10	999.45	996.55	931.60
5	.4688 - .5312	.5000	355964D	1112.05	1062.70	1053.70	1049.20	1046.35	981.25



Width Grind

Cutter Notes (All cutters on page)

- 16 Teeth
- C-2(m) Carbide
- 5° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 363 Brinell (39Rc)

Corner Radius or Chamfer on ONE Side

Radius Notes

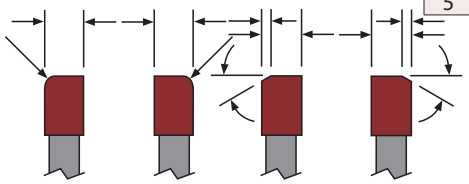
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

Chamfer Notes

- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355942R1	$919.90	$848.50	$838.65	$833.35	$830.20	$828.65
5	.0860 - .1015	.0848	355944R1	812.20	740.75	730.80	725.70	722.50	720.80
5	.1016 - .1171	.1004	355946R1	876.90	805.65	795.65	790.50	787.25	785.65
5	.1172 - .1406	.1160	355948R1	793.10	721.80	712.00	706.80	703.65	702.05
5	.1407 - .1718	.1562	355950R1	814.20	742.75	732.85	727.80	724.50	723.05
5	.1719 - .2031	.1875	355952R1	849.50	778.30	768.25	763.20	760.15	758.40
5	.2032 - .2343	.2188	355954R1	884.85	813.55	803.70	798.60	795.40	793.70
5	.2344 - .2812	.2500	355956R1	920.05	848.90	838.80	833.70	830.50	828.80
5	.2813 - .3437	.3125	355958R1	979.95	908.55	898.65	893.45	890.50	888.75
5	.3438 - .4062	.3750	355960R1	1043.50	972.25	962.20	957.05	954.15	952.40
5	.4063 - .4687	.4375	355962R1	1093.35	1022.05	1012.00	1006.85	1003.75	1002.05
5	.4688 - .5312	.5000	355964R1	1143.00	1071.80	1061.85	1056.75	1053.40	1051.80

Specify side for radius or chamfer

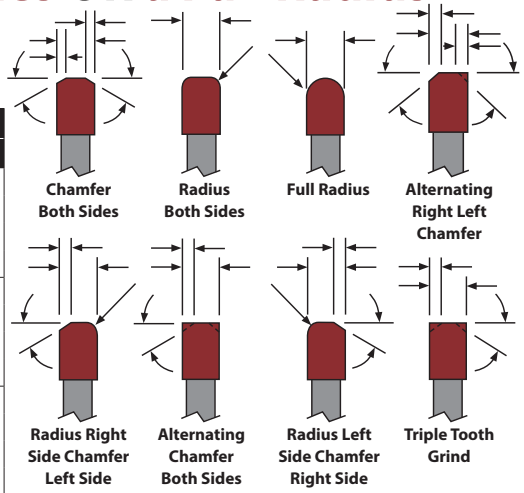


Radius Left Side | **Radius Right Side** | **Chamfer Left Side** | **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%

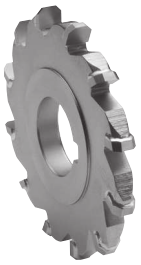
TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355942R2	$952.20	$866.70	$854.65	$848.45	$844.70	$842.75
5	.0860 - .1015	.0848	355944R2	844.45	758.75	746.90	740.65	736.90	735.00
5	.1016 - .1171	.1004	355946R2	909.20	823.60	811.65	805.45	801.85	799.75
5	.1172 - .1406	.1160	355948R2	825.50	739.90	728.00	721.65	718.15	716.05
5	.1407 - .1718	.1562	355950R2	846.45	760.85	748.95	742.75	739.05	736.90
5	.1719 - .2031	.1875	355952R2	881.95	796.40	784.30	778.25	774.45	772.55
5	.2032 - .2343	.2188	355954R2	917.05	831.80	819.70	813.55	809.90	807.90
5	.2344 - .2812	.2500	355956R2	952.40	866.75	854.70	848.65	845.15	843.05
5	.2813 - .3437	.3125	355958R2	1012.15	926.70	914.80	908.45	904.70	902.80
5	.3438 - .4062	.3750	355960R2	1075.95	990.25	978.45	972.10	968.40	966.55
5	.4063 - .4687	.4375	355962R2	1125.75	1040.00	1027.95	1021.95	1018.20	1016.25
5	.4688 - .5312	.5000	355964R2	1175.35	1089.80	1077.95	1071.80	1067.90	1065.90



Chamfer Both Sides | **Radius Both Sides** | **Full Radius** | **Alternating Right Left Chamfer**

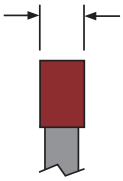
Radius Right Side Chamfer Left Side | **Alternating Chamfer Both Sides** | **Radius Left Side Chamfer Right Side** | **Triple Tooth Grind**

6" CARBIDE TIPPED MILLING CUTTERS GENERAL PURPOSE



TYPE 3559 - GENERAL PURPOSE

Width grinds between .0704" and .5312"



Width Grind

Cutter Notes (All cutters on page)
- 18 Teeth
- C-2(m) Carbide
- 5° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 363 Brinell (39Rc)

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355966D	989.15	937.60	928.30	923.50	920.50	852.75
6	.0860 - .1015	.0838	355968D	921.65	870.15	860.80	856.05	852.95	785.30
6	.1016 - .1171	.0994	355970D	992.10	940.65	931.15	926.30	923.50	855.65
6	.1172 - .1406	.1150	355972D	943.95	892.60	883.30	878.40	875.50	807.80
6	.1407 - .1718	.1562	355974D	979.20	928.00	918.65	913.75	910.85	843.05
6	.1719 - .2031	.1875	355976D	1014.70	963.10	954.05	948.85	945.95	878.25
6	.2032 - .2343	.2188	355978D	1049.95	998.45	989.15	984.25	981.25	913.65
6	.2344 - .2812	.2500	355980D	1098.70	1047.35	1037.85	1033.00	1030.25	962.35
6	.2813 - .3437	.3125	355982D	1141.80	1090.25	1081.00	1076.10	1073.25	1005.40
6	.3438 - .4062	.3750	355984D	1180.50	1128.80	1119.65	1114.70	1111.80	1043.95
6	.4063 - .4687	.4375	355990D	1230.10	1178.55	1169.35	1164.40	1161.50	1093.70
6	.4688 - .5312	.5000	355992D	1279.85	1228.40	1219.05	1214.20	1211.30	1143.45

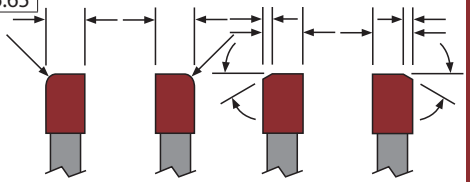
Corner Radius or Chamfer on ONE Side

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355966R1	$1020.65	$946.65	$936.20	$931.00	$927.60	$925.95
6	.0860 - .1015	.0838	355968R1	953.20	879.10	868.75	863.45	860.25	858.55
6	.1016 - .1171	.0994	355970R1	1023.75	949.55	939.10	933.75	930.45	928.85
6	.1172 - .1406	.1150	355972R1	975.75	901.55	891.15	885.75	882.60	880.85
6	.1407 - .1718	.1562	355974R1	1011.10	937.05	926.45	921.35	917.95	916.20
6	.1719 - .2031	.1875	355976R1	1046.35	972.25	961.90	956.45	953.20	951.60
6	.2032 - .2343	.2188	355978R1	1081.60	1007.55	997.30	991.60	988.65	986.85
6	.2344 - .2812	.2500	355980R1	1130.45	1056.40	1045.95	1040.70	1037.30	1035.55
6	.2813 - .3437	.3125	355982R1	1173.45	1099.30	1089.05	1083.70	1080.40	1078.55
6	.3438 - .4062	.3750	355984R1	1212.00	1138.00	1127.60	1122.15	1119.00	1117.35
6	.4063 - .4687	.4375	355990R1	1261.75	1187.85	1177.40	1172.05	1168.70	1167.05
6	.4688 - .5312	.5000	355992R1	1311.65	1237.45	1227.00	1221.70	1218.60	1216.65

Specify side for radius or chamfer

Radius Notes
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

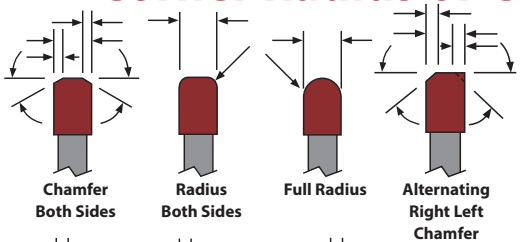
Chamfer Notes
- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted



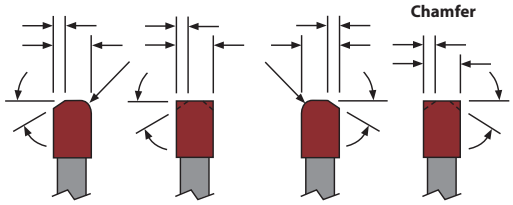
Radius Left Side | **Radius Right Side** | **Chamfer Left Side** | **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%



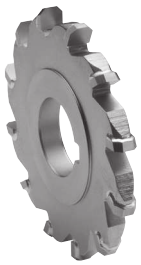
Chamfer Both Sides | **Radius Both Sides** | **Full Radius** | **Alternating Right Left Chamfer**



Radius Right Side Chamfer Left Side | **Alternating Chamfer Both Sides** | **Radius Left Side Chamfer Right Side** | **Triple Tooth Grind**

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355966R2	$1053.15	$964.70	$952.40	$945.95	$942.05	$939.90
6	.0860 - .1015	.0838	355968R2	985.55	897.25	884.85	878.50	874.65	872.45
6	.1016 - .1171	.0994	355970R2	1056.15	967.65	955.20	948.85	944.95	942.95
6	.1172 - .1406	.1150	355972R2	1008.20	919.80	907.30	900.95	897.10	894.95
6	.1407 - .1718	.1562	355974R2	1043.45	955.00	942.65	936.20	932.35	930.30
6	.1719 - .2031	.1875	355976R2	1078.55	990.25	977.90	971.60	967.80	965.65
6	.2032 - .2343	.2188	355978R2	1113.90	1025.65	1013.25	1006.85	1002.95	1000.90
6	.2344 - .2812	.2500	355980R2	1162.80	1074.35	1062.00	1055.55	1051.65	1049.70
6	.2813 - .3437	.3125	355982R2	1205.70	1117.50	1105.05	1098.70	1094.80	1092.70
6	.3438 - .4062	.3750	355984R2	1244.25	1156.05	1143.70	1137.35	1133.40	1131.45
6	.4063 - .4687	.4375	355990R2	1294.15	1205.70	1193.45	1187.10	1183.15	1181.10
6	.4688 - .5312	.5000	355992R2	1343.90	1255.55	1243.20	1236.90	1233.05	1230.90

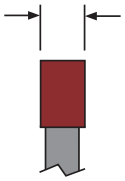
3" CARBIDE TIPPED MILLING CUTTERS FOR STEEL



TYPE 3556 - FOR STEEL

Width grinds between .0600" and .5312"

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH - FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
3	.0600-.0703	.0555	355698D	$611.65	$570.35	$562.70	$558.85	$556.50	$502.00
3	.0704-.0859	.0711	355600D	716.50	675.30	667.70	664.00	661.55	607.05
3	.0860-.1015	.0867	355602D	611.65	570.35	562.70	558.85	556.50	502.00
3	.1016-.1171	.1024	355604D	572.65	531.25	523.75	520.05	517.55	463.35
3	.1172-.1406	.1180	355606D	529.20	487.95	480.45	476.75	474.10	419.80
3	.1407-.1718	.1562	355608D	550.50	509.20	501.65	497.85	495.30	440.90
3	.1719-.2031	.1875	355609D	571.65	530.40	522.85	519.05	516.55	462.20
3	.2032-.2343	.2188	355610D	592.80	551.55	544.15	540.15	537.95	483.35
3	.2344-.2812	.2500	355611D	614.25	572.90	565.35	561.70	559.10	504.75
3	.2813-.3437	.3125	355612D	662.95	621.50	614.05	610.30	607.75	553.40
3	.3438-.4062	.3750	355613D	711.85	670.55	662.95	659.10	656.65	602.15
3	.4063-.4687	.4375	355614D	778.55	737.20	729.80	726.05	723.50	669.15
3	.4688-.5312	.5000	355615D	852.95	811.65	804.20	800.45	797.95	743.60



Width Grind

Cutter Notes (All cutters on page)

- 16 Teeth
- C-5 Carbide
- 0° - 3° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 475 Brinell (50Rc)

Corner Radius or Chamfer on ONE Side

Radius Notes

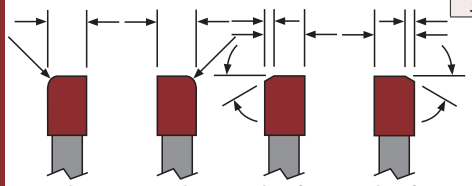
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

Chamfer Notes

- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED WITH RADIUS OR CHAMFER					
				1 PC	2 PC	3 PC	4 PC	5 PC	6 PC
3	.0600-.0703	.0555	355698R1	$639.25	$578.80	$570.35	$565.90	$563.20	$561.90
3	.0704-.0859	.0711	355600R1	744.25	683.80	675.35	670.90	668.30	667.00
3	.0860-.1015	.0867	355602R1	639.25	578.80	570.35	565.90	563.20	561.90
3	.1016-.1171	.1024	355604R1	600.40	539.85	531.40	527.05	524.50	522.90
3	.1172-.1406	.1180	355606R1	556.95	496.45	488.05	483.65	481.00	479.50
3	.1407-.1718	.1562	355608R1	578.10	517.70	509.25	504.95	502.05	500.85
3	.1719-.2031	.1875	355609R1	599.40	538.95	530.55	526.05	523.50	522.15
3	.2032-.2343	.2188	355610R1	620.65	560.10	551.65	547.30	544.65	543.20
3	.2344-.2812	.2500	355611R1	641.95	581.40	572.95	568.75	565.90	564.55
3	.2813-.3437	.3125	355612R1	690.55	630.00	621.55	617.20	614.60	613.30
3	.3438-.4062	.3750	355613R1	739.30	679.05	670.60	666.15	663.40	662.10
3	.4063-.4687	.4375	355614R1	806.35	745.80	737.45	733.00	730.45	729.15
3	.4688-.5312	.5000	355615R1	880.80	820.30	811.90	807.50	804.75	803.60

Specify side for radius or chamfer

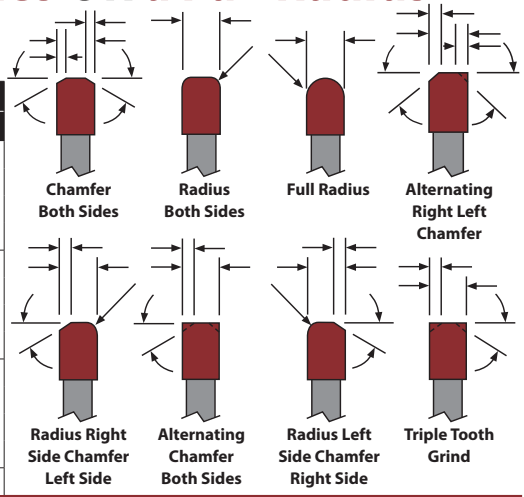


Radius Left Side | Radius Right Side | Chamfer Left Side | Chamfer Right Side

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%

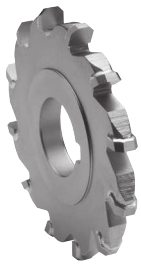
TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED WITH RADII, CHAMFERS, OR COMBINATION					
				1 PC	2 PC	3 PC	4 PC	5 PC	6 PC
3	.0600-.0703	.0555	355698R2	$654.45	$587.45	$577.85	$572.95	$570.20	$568.65
3	.0704-.0859	.0711	355600R2	759.60	692.40	682.85	678.05	675.15	673.45
3	.0860-.1015	.0867	355602R2	654.45	587.45	577.85	572.95	570.20	568.65
3	.1016-.1171	.1024	355604R2	615.60	548.45	538.95	534.10	531.20	529.65
3	.1172-.1406	.1180	355606R2	572.25	504.95	495.55	490.70	487.70	486.10
3	.1407-.1718	.1562	355608R2	593.35	526.05	516.75	512.00	508.95	507.40
3	.1719-.2031	.1875	355609R2	614.60	547.45	538.10	533.25	530.20	528.75
3	.2032-.2343	.2188	355610R2	636.05	568.75	559.15	554.40	551.50	549.75
3	.2344-.2812	.2500	355611R2	657.20	589.90	580.45	575.65	572.65	571.20
3	.2813-.3437	.3125	355612R2	705.85	638.55	629.15	624.25	621.30	619.80
3	.3438-.4062	.3750	355613R2	754.60	687.30	678.05	673.30	670.40	668.70
3	.4063-.4687	.4375	355614R2	821.60	754.40	745.05	740.20	737.15	735.60
3	.4688-.5312	.5000	355615R2	896.05	828.65	819.45	814.65	811.55	810.05



Chamfer Both Sides | Radius Both Sides | Full Radius | Alternating Right Left Chamfer

Radius Right Side Chamfer Left Side | Alternating Chamfer Both Sides | Radius Left Side Chamfer Right Side | Triple Tooth Grind

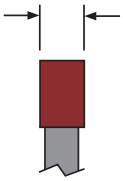
4" CARBIDE TIPPED MILLING CUTTERS FOR STEEL



TYPE 3556 - FOR STEEL

Width grinds between .0600" and .5312"

Cutter Notes (All cutters on page)
- 20 Teeth
- C-5 Carbide
- 5° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 475 Brinell (50Rc)



Width Grind

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355616D	$736.40	$688.55	$679.60	$674.90	$672.15	$607.05
4	.0704 - .0859	.0701	355618D	793.35	745.65	736.70	732.00	729.30	664.25
4	.0860 - .1015	.0858	355620D	736.40	688.55	679.60	674.90	672.15	607.05
4	.1016 - .1171	.1014	355622D	703.40	655.65	646.70	642.00	639.20	574.10
4	.1172 - .1406	.1170	355624D	665.40	617.65	608.70	604.10	601.30	536.15
4	.1407 - .1718	.1562	355626D	705.40	657.65	648.75	644.00	641.35	576.25
4	.1719 - .2031	.1875	355628D	707.70	660.05	651.00	646.40	643.50	578.40
4	.2032 - .2343	.2188	355630D	741.80	694.20	685.15	680.50	677.80	612.75
4	.2344 - .2812	.2500	355632D	749.95	702.20	693.15	688.55	685.85	620.65
4	.2813 - .3437	.3125	355634D	802.60	755.00	745.95	741.35	738.60	673.45
4	.3438 - .4062	.3750	355636D	851.45	803.75	794.85	790.20	787.20	722.20
4	.4063 - .4687	.4375	355638D	931.60	883.85	875.05	870.20	867.45	802.35
4	.4688 - .5312	.5000	355640D	1020.75	973.15	964.10	959.50	956.75	891.75

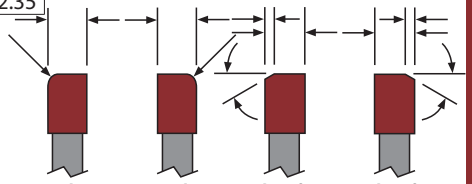
Corner Radius or Chamfer on ONE Side

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355616R1	$766.10	$697.65	$687.95	$682.65	$679.50	$677.80
4	.0704 - .0859	.0701	355618R1	823.35	755.00	745.05	739.65	736.70	734.90
4	.0860 - .1015	.0858	355620R1	766.10	697.65	687.95	682.65	679.50	677.80
4	.1016 - .1171	.1014	355622R1	733.10	664.80	654.95	649.75	646.60	644.95
4	.1172 - .1406	.1170	355624R1	695.30	627.00	617.05	611.80	608.60	607.05
4	.1407 - .1718	.1562	355626R1	735.40	667.00	657.10	651.85	648.75	647.00
4	.1719 - .2031	.1875	355628R1	737.55	669.25	659.35	654.00	650.90	649.25
4	.2032 - .2343	.2188	355630R1	771.85	703.50	693.55	688.25	685.15	683.55
4	.2344 - .2812	.2500	355632R1	779.75	711.25	701.50	696.35	693.05	691.45
4	.2813 - .3437	.3125	355634R1	832.40	764.35	754.15	749.00	745.95	744.20
4	.3438 - .4062	.3750	355636R1	881.30	812.95	802.85	797.70	794.65	792.85
4	.4063 - .4687	.4375	355638R1	961.50	893.15	883.30	878.10	874.80	873.25
4	.4688 - .5312	.5000	355640R1	1050.65	982.40	972.40	967.15	964.05	962.35

Specify side for radius or chamfer

Radius Notes
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

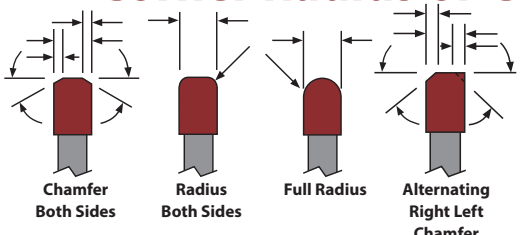
Chamfer Notes
- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted



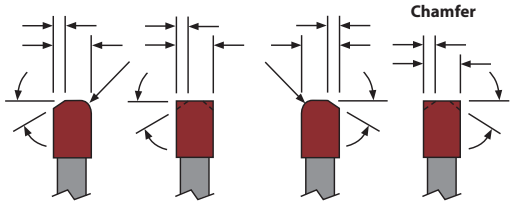
Radius Left Side **Radius Right Side** **Chamfer Left Side** **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%



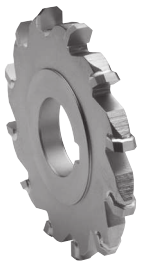
Chamfer Both Sides **Radius Both Sides** **Full Radius** **Alternating Right Left Chamfer**



Radius Right Side Chamfer Left Side **Alternating Chamfer Both Sides** **Radius Left Side Chamfer Right Side** **Triple Tooth Grind**

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
4	.0600 - .0703	.0545	355616R2	$782.35	$707.00	$696.15	$690.40	$686.85	$685.00
4	.0704 - .0859	.0701	355618R2	839.45	764.35	753.40	747.40	744.05	742.15
4	.0860 - .1015	.0858	355620R2	782.35	707.00	696.15	690.40	686.85	685.00
4	.1016 - .1171	.1014	355622R2	749.40	674.20	663.10	657.45	653.90	652.05
4	.1172 - .1406	.1170	355624R2	711.70	636.25	625.30	619.50	616.05	614.25
4	.1407 - .1718	.1562	355626R2	751.65	676.30	665.30	659.50	656.05	654.20
4	.1719 - .2031	.1875	355628R2	753.95	678.45	667.40	661.95	658.35	656.45
4	.2032 - .2343	.2188	355630R2	788.20	712.70	701.90	696.00	692.55	690.60
4	.2344 - .2812	.2500	355632R2	795.95	720.65	709.80	703.95	700.45	698.65
4	.2813 - .3437	.3125	355634R2	848.90	773.55	762.50	756.70	753.45	751.30
4	.3438 - .4062	.3750	355636R2	897.50	822.20	811.20	805.45	802.05	800.25
4	.4063 - .4687	.4375	355638R2	977.80	902.40	891.30	885.70	882.30	880.40
4	.4688 - .5312	.5000	355640R2	1066.95	991.55	980.65	974.90	971.55	969.60

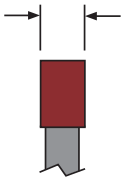
5" CARBIDE TIPPED MILLING CUTTERS FOR STEEL



TYPE 3556 - FOR STEEL

Width grinds between .0704" and .5312"

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355642D	$954.50	$905.85	$896.90	$892.00	$889.15	$822.55
5	.0860 - .1015	.0848	355644D	960.40	911.60	902.55	897.80	894.90	828.30
5	.1016 - .1171	.1004	355646D	904.70	856.10	847.05	842.15	839.30	772.85
5	.1172 - .1406	.1160	355648D	802.20	753.55	744.25	739.50	736.70	670.15
5	.1407 - .1718	.1562	355650D	817.65	768.95	759.75	755.00	752.15	685.50
5	.1719 - .2031	.1875	355652D	865.85	817.10	807.95	803.15	800.30	733.75
5	.2032 - .2343	.2188	355654D	886.75	838.10	828.65	824.00	821.25	754.60
5	.2344 - .2812	.2500	355656D	919.10	870.35	861.25	856.55	853.75	787.10
5	.2813 - .3437	.3125	355658D	987.95	939.35	930.15	925.40	922.40	856.05
5	.3438 - .4062	.3750	355660D	1057.10	1008.35	999.00	994.40	991.40	924.95
5	.4063 - .4687	.4375	355662D	1159.85	1111.05	1101.90	1097.00	1094.35	1027.70
5	.4688 - .5312	.5000	355664D	1274.00	1225.15	1216.15	1211.30	1208.60	1141.95



Width Grind

Cutter Notes (All cutters on page)

- 24 Teeth
- C-5 Carbide
- 1° - 3° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 475 Brinell (50Rc)

Corner Radius or Chamfer on ONE Side

Radius Notes

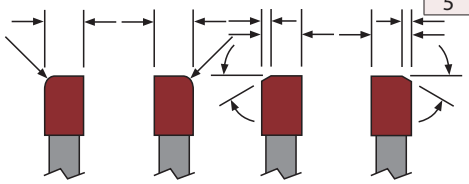
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

Chamfer Notes

- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355642R1	$984.90	$915.10	$905.00	$899.65	$896.50	$894.80
5	.0860 - .1015	.0848	355644R1	990.70	921.05	910.85	905.55	902.30	900.55
5	.1016 - .1171	.1004	355646R1	935.15	865.30	855.10	849.80	846.75	845.15
5	.1172 - .1406	.1160	355648R1	832.35	762.65	752.45	747.25	744.05	742.35
5	.1407 - .1718	.1562	355650R1	847.90	778.25	768.05	762.65	759.60	757.75
5	.1719 - .2031	.1875	355652R1	896.05	826.35	816.25	810.95	807.80	806.05
5	.2032 - .2343	.2188	355654R1	916.95	847.30	837.00	831.90	828.50	826.90
5	.2344 - .2812	.2500	355656R1	949.55	879.80	869.50	864.25	861.00	859.25
5	.2813 - .3437	.3125	355658R1	1018.30	948.55	938.50	933.20	930.00	928.30
5	.3438 - .4062	.3750	355660R1	1087.45	1017.55	1007.25	1001.95	998.75	997.20
5	.4063 - .4687	.4375	355662R1	1190.00	1120.40	1110.10	1104.90	1101.75	1100.00
5	.4688 - .5312	.5000	355664R1	1304.20	1234.50	1224.25	1219.05	1215.90	1214.05

Specify side for radius or chamfer

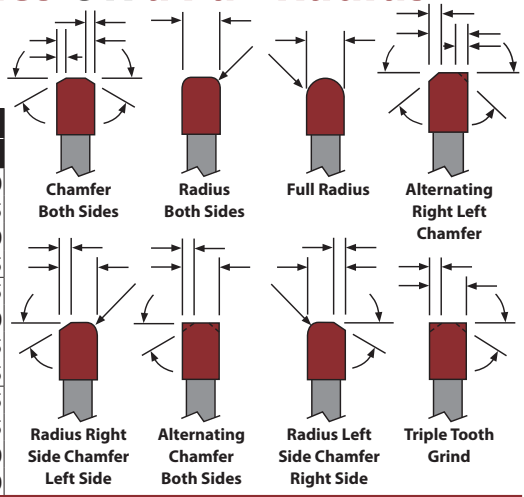


Radius Left Side **Radius Right Side** **Chamfer Left Side** **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

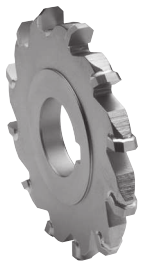
- Alternating Chamfers add 5%

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
5	.0704 - .0859	.0691	355642R2	$1017.30	$933.60	$921.55	$915.10	$911.35	$909.30
5	.0860 - .1015	.0848	355644R2	1023.20	939.50	927.30	920.80	916.95	915.05
5	.1016 - .1171	.1004	355646R2	967.55	883.85	871.65	865.25	861.40	859.50
5	.1172 - .1406	.1160	355648R2	864.90	781.20	769.05	762.60	758.75	756.75
5	.1407 - .1718	.1562	355650R2	880.40	796.80	784.50	778.05	774.25	772.25
5	.1719 - .2031	.1875	355652R2	928.55	844.85	832.65	826.35	822.55	820.40
5	.2032 - .2343	.2188	355654R2	949.55	865.85	853.75	847.20	843.40	841.25
5	.2344 - .2812	.2500	355656R2	981.90	898.20	886.00	879.70	875.80	873.75
5	.2813 - .3437	.3125	355658R2	1050.85	967.15	954.90	948.45	944.70	942.65
5	.3438 - .4062	.3750	355660R2	1119.65	1036.10	1023.80	1017.40	1013.60	1011.65
5	.4063 - .4687	.4375	355662R2	1222.50	1139.00	1126.70	1120.25	1116.35	1114.40
5	.4688 - .5312	.5000	355664R2	1336.70	1253.05	1240.75	1234.45	1230.70	1228.60



Chamfer Both Sides **Radius Both Sides** **Full Radius** **Alternating Right Left Chamfer** **Radius Right Side Chamfer Left Side** **Alternating Chamfer Both Sides** **Radius Left Side Chamfer Right Side** **Triple Tooth Grind**

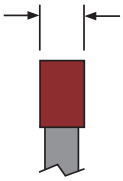
6" CARBIDE TIPPED MILLING CUTTERS FOR STEEL



TYPE 3556 - FOR STEEL

Width grinds between .0704" and .5312"

Cutter Notes (All cutters on page)
- 28 Teeth
- C-5 Carbide
- 1° - 3° Positve Radial Rake
- Width Tolerance: +.001"/-.000"
- OD tolerance: +.0313"/-.000"
- 1" Arbor hole +.001"/-.000"
- ANSI standard keyway dimensions
- Add 5% to grind the hub width thinner
- Add 5% to match OD's on cutter sets within .001"
- Not designed to be used on heat treated materials greater than 475 Brinell (50Rc)



Width Grind

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355666D	$1072.80	$1019.30	$1008.85	$1003.50	$1000.30	$924.80
6	.0860 - .1015	.0838	355668D	995.20	941.80	931.35	925.95	922.80	847.20
6	.1016 - .1171	.0994	355670D	1076.00	1022.50	1012.10	1006.70	1003.45	928.00
6	.1172 - .1406	.1150	355672D	1037.00	983.50	973.15	967.65	964.50	888.90
6	.1407 - .1718	.1562	355674D	1036.55	982.90	972.55	967.15	963.95	888.55
6	.1719 - .2031	.1875	355676D	1101.25	1047.80	1037.45	1032.00	1028.70	953.15
6	.2032 - .2343	.2188	355678D	1117.55	1064.05	1053.70	1048.35	1045.05	969.55
6	.2344 - .2812	.2500	355680D	1184.55	1130.90	1120.55	1115.20	1111.95	1036.40
6	.2813 - .3437	.3125	355682D	1198.90	1145.30	1134.90	1129.50	1126.20	1050.85
6	.3438 - .4062	.3750	355684D	1239.35	1185.60	1175.20	1169.75	1166.60	1091.25
6	.4063 - .4687	.4375	355690D	1360.55	1306.95	1296.60	1291.00	1287.95	1212.35
6	.4688 - .5312	.5000	355692D	1495.15	1441.70	1431.35	1425.75	1422.70	1347.10

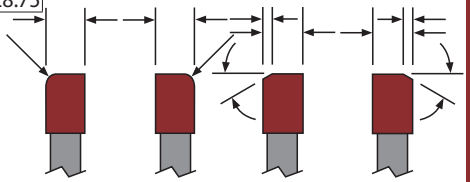
Corner Radius or Chamfer on ONE Side

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355666R1	$1104.85	$1029.40	$1018.00	$1011.85	$1008.35	$1006.40
6	.0860 - .1015	.0838	355668R1	1027.10	951.90	940.40	934.35	930.70	928.75
6	.1016 - .1171	.0994	355670R1	1107.90	1032.55	1021.05	1015.15	1011.55	1009.55
6	.1172 - .1406	.1150	355672R1	1068.80	993.60	982.10	976.05	972.45	970.45
6	.1407 - .1718	.1562	355674R1	1068.50	993.15	981.65	975.60	972.00	970.15
6	.1719 - .2031	.1875	355676R1	1133.20	1057.85	1046.35	1040.20	1036.75	1034.85
6	.2032 - .2343	.2188	355678R1	1149.60	1074.25	1062.70	1056.75	1053.15	1051.20
6	.2344 - .2812	.2500	355680R1	1216.45	1141.10	1129.50	1123.60	1120.00	1118.00
6	.2813 - .3437	.3125	355682R1	1230.90	1155.40	1144.00	1138.00	1134.40	1132.45
6	.3438 - .4062	.3750	355684R1	1271.10	1195.75	1184.25	1178.35	1174.65	1172.65
6	.4063 - .4687	.4375	355690R1	1392.40	1316.90	1305.50	1299.45	1295.90	1293.95
6	.4688 - .5312	.5000	355692R1	1527.10	1451.65	1440.25	1434.20	1430.50	1428.75

Specify side for radius or chamfer

Radius Notes
- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is ½ the width of the cutter
- A non-tangent radii must be quoted

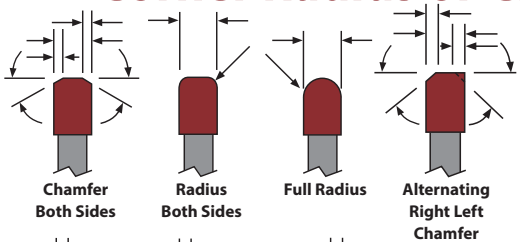
Chamfer Notes
- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off of the OD
- Maximum chamfer is the LESSER of ⅓ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: +/- ½°
- Chamfers greater than 45° must be quoted



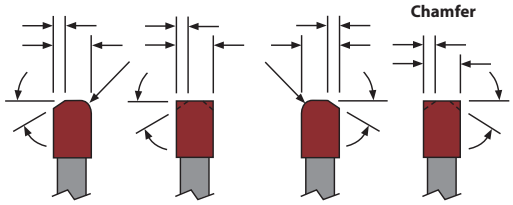
Radius Left Side | **Radius Right Side** | **Chamfer Left Side** | **Chamfer Right Side**

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

- Alternating Chamfers add 5%



Chamfer Both Sides | **Radius Both Sides** | **Full Radius** | **Alternating Right Left Chamfer**



Radius Right Side Chamfer Left Side | **Alternating Chamfer Both Sides** | **Radius Left Side Chamfer Right Side** | **Triple Tooth Grind**

TOOL DIAM.	DECIMAL SIZE WIDTH RANGE	HUB WIDTH	1"ARBOR EDP NO.	PRICE EACH FINISHED TO DECIMAL WIDTH					
				1 PC	2 PC	3 PC	4 PC	5PC	6PC
6	.0704 - .0859	.0681	355666R2	$1139.40	$1049.55	$1035.70	$1028.70	$1024.45	$1022.15
6	.0860 - .1015	.0838	355668R2	1061.85	971.90	958.20	951.05	946.80	944.55
6	.1016 - .1171	.0994	355670R2	1142.55	1052.65	1039.00	1031.70	1027.65	1025.20
6	.1172 - .1406	.1150	355672R2	1103.55	1013.60	999.90	992.70	988.65	986.25
6	.1407 - .1718	.1562	355674R2	1103.05	1013.25	999.60	992.30	988.10	985.80
6	.1719 - .2031	.1875	355676R2	1167.85	1078.00	1064.15	1057.10	1052.80	1050.40
6	.2032 - .2343	.2188	355678R2	1184.15	1094.35	1080.55	1073.40	1069.25	1066.90
6	.2344 - .2812	.2500	355680R2	1250.95	1161.10	1147.55	1140.25	1136.05	1133.65
6	.2813 - .3437	.3125	355682R2	1265.50	1175.60	1161.85	1154.75	1150.50	1148.15
6	.3438 - .4062	.3750	355684R2	1305.75	1215.90	1202.20	1194.90	1190.85	1188.30
6	.4063 - .4687	.4375	355690R2	1426.90	1337.10	1323.35	1316.25	1312.00	1309.70
6	.4688 - .5312	.5000	355692R2	1561.75	1471.85	1458.10	1451.00	1446.75	1444.40

CARBIDE TIPPED SIDE MILLING CUTTERS

TYPE 3540 - FOR NON-FERROUS

Carbide tips brazed to alloy steel bodies.

High feed rates can be achieved due to the large flute capacity. For milling aluminum, magnesium, zinc, brass, bronze, plastics and non-metals.

TYPE 3541 - FOR CAST IRON

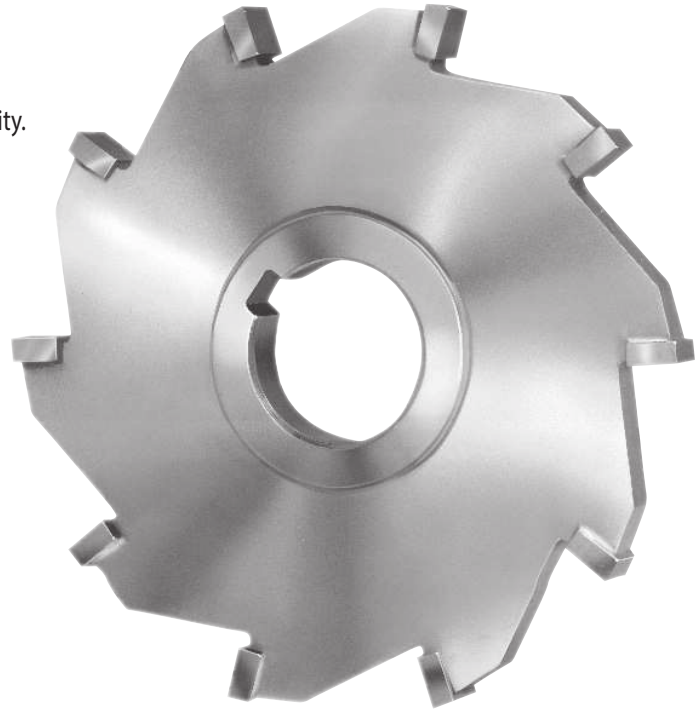
Carbide tips brazed to alloy steel bodies.

Increased number of teeth with large flute capacity permit higher metal removal at moderate speeds and feeds.

TYPE 3542 - FOR STEEL

Carbide tips brazed to alloy steel bodies.

Steel cutting grade of carbide permits the heavy chip loads for milling steel.



TYPE 3543 - FOR STAINLESS STEEL

Carbide tips brazed to alloy steel bodies.

High number of teeth for milling of stainless steel and related alloy steels. AISI type 200 thru 350 stainless steels.

ALL TYPES:
Tool diameter tolerance: +1/16"/-.000".
Face width tolerance: +.001"/- .000".
Arbor hole tolerance: +.001"/-.000".
Sharpened on all 3 cutting edges.

TOOL DIAM.	WIDTH		TYPE 3540 FOR NON-FERROUS				TYPE 3541 FOR CAST IRON				TYPE 3542 FOR STEEL				TYPE 3543 FOR STAINLESS STEEL			
	FRAC.	DEC.	NO. OF TEETH	1" ARBOR EDP NO.	1¼" ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1" ARBOR EDP NO.	1¼" ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1" ARBOR EDP NO.	1¼" ARBOR EDP NO.	PRICE EACH	NO. OF TEETH	1" ARBOR EDP NO.	1¼" ARBOR EDP NO.	PRICE EACH
3	1/4	.2500	4	354030	-	$224.75	6	354130	-	$281.15	6	354230	-	$277.55	8	354330	-	$346.25
3	5/16	.3125	4	354031	-	235.95	6	354131	-	282.40	6	354231	-	281.30	8	354331	-	362.80
3	3/8	.3750	4	354032	-	244.50	6	354132	-	287.90	6	354232	-	284.90	8	354332	-	367.60
3	7/16	.4375	4	354033	-	254.55	6	354133	-	311.35	6	354233	-	317.70	-	-	-	-
3	1/2	.5000	4	354034	-	266.90	6	354134	-	324.25	6	354234	-	321.95	8	354334	-	411.05
4	1/4	.2500	4	354040	-	292.90	8	354140	-	363.15	8	354240	-	365.45	10	354340	-	432.90
4	5/16	.3125	4	354041	-	301.25	8	354141	-	375.35	8	354241	-	388.10	10	354341	-	454.85
4	3/8	.3750	4	354042	354043	309.15	8	354142	354143	394.35	8	354242	354243	388.10	10	354342	354343	464.95
4	7/16	.4375	4	354074	-	310.50	8	354174	-	402.40	8	354274	-	399.65	10	354374	-	504.90
4	1/2	.5000	4	354044	354045	310.50	8	354144	354145	415.65	8	354244	354245	413.55	10	354344	354345	508.75
4	9/16	.5625	4	354094	-	337.55	8	354194	-	427.15	8	354294	-	434.00	-	-	-	-
4	5/8	.6250	4	354046	354047	362.25	8	354146	354147	462.90	8	354246	354247	507.35	10	354346	354347	535.70
4	3/4	.7500	4	354048	354049	405.85	8	354148	354149	462.90	8	354248	354249	513.70	10	354348	354349	551.75
5	1/4	.2500	6	354050	-	409.15	10	354150	-	480.90	10	354250	-	481.15	-	-	-	-
5	5/16	.3125	-	-	-	-	10	354151	-	480.90	10	354251	-	481.15	-	-	-	-
5	3/8	.3750	-	-	-	-	10	-	354153	492.50	10	-	354253	505.10	-	-	-	-
5	7/16	.4375	6	-	354075	425.65	10	-	354175	494.95	10	-	354275	521.35	-	-	-	-
5	1/2	.5000	6	354054	354055	430.70	10	354154	354155	525.45	10	354254	354255	521.55	12	354354	354355	584.40
5	9/16	.5625	6	-	354095	444.55	10	-	354195	534.40	10	-	354295	544.50	-	-	-	-
5	5/8	.6250	6	-	354057	467.65	10	-	354157	568.80	10	-	354257	639.10	12	-	354357	638.25
5	3/4	.7500	6	354058	354059	498.55	10	354158	354159	644.00	10	354258	354259	707.35	12	354358	354359	715.75
5	1	1.0000	6	-	354015	499.35	10	-	354115	700.90	10	-	354215	746.05	-	-	-	-
6	3/8	.3750	6	354062	-	439.05	12	-	354163	605.10	12	-	354263	639.25	-	-	-	-
6	1/2	.5000	6	354064	354065	480.90	12	354164	354165	642.55	12	354264	354265	658.35	14	354364	354365	751.70
6	5/8	.6250	6	-	354067	526.95	12	-	354167	702.25	12	-	354267	716.20	14	-	354367	757.75
6	3/4	.7500	6	354068	354069	606.05	12	354168	354169	787.90	12	354268	354269	815.85	14	354368	354369	817.70
6	1	1.0000	6	-	354016	694.70	12	-	354116	796.15	12	-	354216	832.35	-	-	-	-
				1¼" ARBOR	1½" ARBOR			1¼" ARBOR	1½" ARBOR			1¼" ARBOR	1½" ARBOR			1¼" ARBOR	1½" ARBOR	
8	3/4	.7500	8	354088	354089	788.40	12	354188	354189	826.90	12	354288	354289	857.80	14	354388	-	876.70
8	1	1.0000	8	354080	354081	855.65	12	354180	354181	861.80	12	354280	354281	892.80	-	-	-	-

CARBIDE TIPPED ANGLE CUTTERS



(Left hand shown)

SINGLE ANGLE CUTTERS

TYPE 3714 - 45° RIGHT
TYPE 3716 - 45° LEFT

TYPE 3724 - 60° RIGHT
TYPE 3726 - 60° LEFT

Carbide tips brazed to hardened alloy steel bodies. General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH	RIGHT 45° TYPE 3714 EDP NO.	LEFT 45° TYPE 3716 EDP NO.	RIGHT 60° TYPE 3724 EDP NO.	LEFT 60° TYPE 3726 EDP NO.	ALL TYPES PRICE
3	½	1	8	371408	371608	372408	372608	$701.60
4	½	1 ¼	10	371416	371616	372416	372616	868.20
4	¾	1 ¼	10	371424	371624	372424	372624	941.90

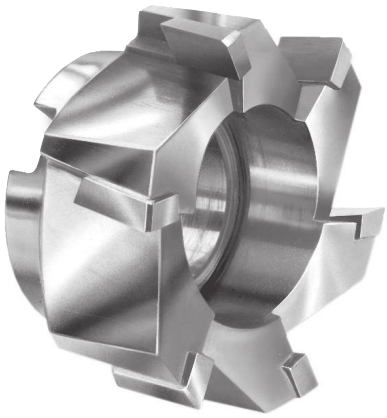


DOUBLE ANGLE CUTTERS

TYPE 3750 - 45° DOUBLE
TYPE 3752 - 60° DOUBLE
TYPE 3754 - 90° DOUBLE

Carbide tips brazed to hardened alloy steel bodies. General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH	45° TYPE 3750 EDP NO.	60° TYPE 3752 EDP NO.	90° TYPE 3754 EDP NO.	ALL TYPES PRICE
2 ¾	½	1	8	-	375207	375407	$590.65
3	½	1	8	375008	375208	375408	736.60
4	½	1 ¼	10	375016	375216	375416	911.60
4	¾	1 ¼	10	375024	375224	375424	988.85
4	1	1 ¼	10	-	375232	375432	1157.25



CARBIDE TIPPED SHELL MILL CUTTERS

Carbide tips brazed to alloy steel bodies.

TYPE 3530 - FOR NON-FERROUS

Large, open right hand spiral flutes aid in chip removal.

TYPE 3531 - FOR CAST IRON

Open flutes for machining cast iron, soft cast iron and malleable iron.

TYPE 3532 - FOR STEEL

Large, open left hand spiral flutes absorb impact shock.

ALL TYPES ON THIS PAGE:
Tool diameter tolerance: +1/16"/-.000".
Arbor hole tolerance: +.001"/-.000".

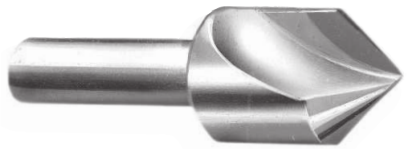
TOOL DIAMETER	ARBOR HOLE	CARBIDE LENGTH	OVERALL LENGTH	DRIVE SLOTS		TYPE 3530 FOR NON-FERROUS			TYPE 3531 FOR CAST IRON			TYPE 3532 FOR STEEL		
				WIDTH	DEPTH	NO. OF TEETH	EDP NO.	PRICE EACH	NO. OF TEETH	EDP NO.	PRICE EACH	NO. OF TEETH	EDP NO.	PRICE EACH
1 ¼	½	½	1	¼	5/32	4	353024	$336.05	4	353124	$336.05	4	353224	$349.50
1 ½	½	½	1 ⅛	¼	5/32	4	353026	349.90	4	353126	349.90	4	353226	363.85
1 ¾	¾	½	1 ¼	5/16	3/16	4	353028	436.00	4	353128	436.00	4	353228	453.30
2	¾	⅝	1 ⅜	5/16	3/16	4	353032	457.85	4	353132	487.20	4	353232	506.60
2 ¼	1	⅝	1 ½	⅜	7/32	6	353036	483.65	6	353136	527.45	6	353236	548.50
2 ½	1	⅝	1 ⅝	⅜	7/32	6	353040	509.25	6	353140	574.90	6	353240	574.90
2 ¾	1	⅝	1 ⅝	⅜	7/32	6	353044	537.40	6	353144	603.10	6	353244	603.10
3	1 ¼	¾	1 ¾	½	9/32	6	353048	589.05	6	353148	655.90	6	353248	655.90
3 ½	1 ¼	¾	1 ⅞	½	9/32	6	353056	721.10	8	353156	771.35	6	353256	815.40
4	1 ½	¾	2 ¼	⅝	⅜	6	353064	906.15	8	353164	954.30	6	353264	1012.95

CARBIDE TIPPED COUNTERSINKS

SINGLE FLUTE COUNTERSINKS
TYPE 3561 - 60°
TYPE 3581 - 82°
TYPE 3591 - 90°
TYPE 3584 - 100°

Carbide tips brazed to hardened alloy steel bodies.

The single flute design with a positive rake assures burr-free holes and chatterless operation. Not recommended for portable hand tool use — see three flute types.



TOOL DIAM.	SHANK DIAM.	MINIMUM CUTTING DIAM.	60° ANGLE TYPE 3561 EDP NO.	82° ANGLE TYPE 3581 EDP NO.	90° ANGLE TYPE 3591 EDP NO.	100° ANGLE TYPE 3584 EDP NO.	ALL TYPES PRICE
¼	3⁄16	1⁄16	356108	358108	359108	358408	$110.75
3⁄8	¼	5⁄64	356112	358112	359112	358412	110.75
½	3⁄8	3⁄32	356116	358116	359116	358416	131.55
¾	½	⅛	356124	358124	359124	358424	164.50
1	½	⅛	356132	358132	359132	358432	214.85
1 ¼	½	5⁄32	356140	358140	359140	358440	273.40
1 ½	½	3⁄16	356148	358148	359148	358448	306.50

THREE FLUTE COUNTERSINKS
TYPE 3563 - 60°
TYPE 3583 - 82°
TYPE 3590 - 90°
TYPE 3585 - 100°

Carbide tips brazed to hardened alloy steel bodies.

The three flute design tends to center the tool in portable tool use and results in longer tool life.



TOOL DIAM.	SHANK DIAM.	MINIMUM CUTTING DIAM.	60° ANGLE TYPE 3563 EDP NO.	82° ANGLE TYPE 3583 EDP NO.	90° ANGLE TYPE 3590 EDP NO.	100° ANGLE TYPE 3585 EDP NO.	ALL TYPES PRICE
¼	3⁄16	5⁄64	356308	358308	359008	358508	$121.85
3⁄8	¼	7⁄64	356312	358312	359012	358512	121.85
½	3⁄8	9⁄64	356316	358316	359016	358516	144.70
5⁄8	3⁄8	9⁄64	356320	358320	359020	358520	152.25
¾	½	3⁄16	356324	358324	359024	358524	183.05
7⁄8	½	3⁄16	356328	358328	359028	358528	209.80
1	½	¼	356332	358332	359032	358532	228.80
1 ¼	½	5⁄16	356340	358340	359040	358540	284.60
1 ½	½	3⁄8	356348	358348	359048	358548	331.95

CARBIDE TIPPED END MILLS - FOR STEEL

TYPE 3350 - 15° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

For milling all types of steel. The large capacity of the 15° spiral flutes permits faster chip removal while allowing smoother finishes. The high spiral provides longer tool life.



ALL TYPES:
Radial edged tool diameter tolerance: +.002"/-.000".
Shank diameter tolerance: -.0001"/-.0005".
Straight shanks with drive flats.
All End Mills are radial edged.

TOOL DIAMETER		SHANK DIAM.	CARB. TIP LEN.	OVER ALL LEN.	TYPE 3350 - 15° RIGHT SPIRAL		
DECIMAL	FRAC.				NO. OF FLTS.	EDP NO.	PRICE EACH
.7500	¾	⅝	1 ¼	3 ⅜	4	335025	231.70
.8125	13⁄16	⅝	1 ½	3 ⅝	4	335026	250.05
.8750	⅞	⅝	1 ½	3 ⅝	4	335028	265.30
.9375	15⁄16	⅞	1 ½	3 ¾	4	335031	393.05
1.0000	1	1	1 ½	4	6	335033	372.20
1.1250	1 ⅛	1	1 ¾	4 ¼	6	335036	438.00
1.2500	1 ¼	1	1 ¾	4 ¼	6	335040	502.00
1.5000	1 ½	1 ¼	2	4 ½	6	335048	577.65
1.7500	1 ¾	1 ¼	2	4 ½	8	335056	821.40
2.0000	2	1 ¼	2	4 ½	8	335064	927.60

TYPE 3308 - 6° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Spiral flutes help remove chips, permitting faster speeds and higher feed rate. Produces better finish.



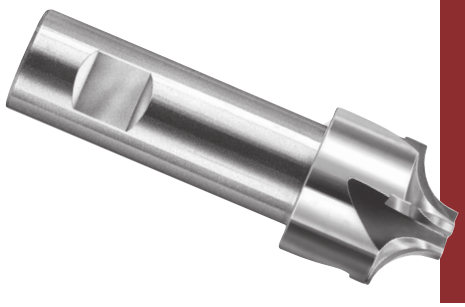
RADIAL EDGED END MILLS:
These tools are manufactured with a precise .002" to .003" radial edge on the periphery, thus eliminating the need to hand hone the feathered edge. This small margin results in a stronger cutting edge and minimizes edge chipping for longer tool life.

TOOL DIAMETER		SHANK DIAM.	CARB. TIP LEN.	OVER ALL LEN.	TYPE 3308 6° SPIRAL FLUTES		
DEC.	FRAC.				NO. OF FLTS.	TYPE 3308 RIGHT EDP NO.	BOTH TYPES PRICE
1.0000	1	⅞	1 ¼	4	6	330832	$293.80
1.1250	1 ⅛	1	1 ¼	4 ¼	6	330836	311.60
1.2500	1 ¼	1	1 ¼	4 ¼	6	330840	376.60
1.5000	1 ½	1 ¼	1 ½	4 ½	6	330848	458.00

CARBIDE TIPPED CORNER ROUNDING END MILLS

TYPE 3740 - FOR NON-FERROUS & CAST IRON
TYPE 3741 - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies. All sizes have three flutes and are used to mill round corners on square edges.



CIRCLE RADIUS	TOOL DIAM.	SHANK DIAM.	END DIAM.	CARBIDE LENGTH	OVERALL LENGTH	TYPE 3740		TYPE 3741	
						EDP NO.	PRICE EACH	EDP NO.	PRICE EACH
1/16	7/16	3/8	17/64	13/32	2 3/4	374002	$218.30	374102	$235.95
3/32	1/2	3/8	17/64	13/32	2 3/4	374003	218.30	374103	235.95
1/8	5/8	1/2	19/64	13/32	3	374004	226.05	374104	244.00
5/32	3/4	1/2	23/64	13/32	3	374005	239.75	374105	258.85
3/16	7/8	3/4	13/32	13/32	3 1/4	374006	253.65	374106	273.85
1/4	1	3/4	13/32	15/32	3 1/4	374008	289.05	374108	312.10
5/16	1 1/8	7/8	13/32	19/32	3 1/2	374010	296.95	374110	320.70
3/8	1 1/4	7/8	13/32	25/32	3 3/4	374012	308.45	374112	333.20
7/16	1 3/8	1	13/32	7/8	4	374014	343.55	374114	371.05
1/2	1 1/2	1	13/32	1	4	374016	382.25	374116	413.05
5/8	2	1 1/4	21/32	1 7/32	4 1/4	374020	470.50	374120	508.20

CARBIDE TIPPED CENTER CUTTING END MILLS

TYPE 3318 - 25° RIGHT SPIRAL FLUTES - FOR NON-FERROUS & CAST IRON

Flute long carbide tips brazed to hardened alloy steel bodies.



TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	CARBIDE TIP LENGTH	OVER ALL LEN.	TYPE 3318 - 25° RIGHT SPIRAL	
DECIMAL	FRAC.					EDP NO.	PRICE EACH
.5000	1/2	1/2	2	1	3	331816	$303.05
.6250	5/8	5/8	2	1 1/4	3 3/8	331820	338.70
.7500	3/4	3/4	2	1 1/4	3 3/8	331824	358.95
.8750	7/8	7/8	2	1 1/2	3 3/4	331828	394.80
1.0000	1	1	2	1 1/2	4	331832	453.60
1.2500	1 1/4	1 1/4	2	1 3/4	4 1/4	331840	616.65
1.5000	1 1/2	1 1/2	2	2	4 3/4	331848	719.50

TYPE 3314 - THREE STRAIGHT FLUTES - FOR NON-FERROUS & CAST IRON
TYPE 3312 - THREE STRAIGHT FLUTES - FOR STEEL

Flute long carbide tips brazed to hardened alloy steel bodies.



ALL TYPES:
One flute is center cutting.
Straight shanks with drive flats.
Tool diameter tolerance: +.002"/-.000".
For plunge and side cut milling at moderate feeds and speeds.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	CARBIDE TIP LENGTH	OVERALL LENGTH	TYPE 3314 - FOR NON-FERR. & C.I.		TYPE 3312 - FOR STEEL	
DECIMAL	FRAC.					EDP NO.	PRICE EACH	EDP NO.	PRICE EACH
.3750	3/8	3/8	3	1/2	2 1/2	331412	$181.20	331212	$188.35
.4375	7/16	3/8	3	3/4	2 1/2	331414	185.25	331214	192.55
.5000	1/2	1/2	3	3/4	3	331416	190.15	331216	197.30
.5625	9/16	1/2	3	3/4	3	331418	197.45	331218	205.10
.6250	5/8	5/8	3	3/4	3 1/4	331420	231.10	331220	239.85
.7500	3/4	5/8	3	3/4	3 3/8	331424	241.85	331224	251.20
.8750	7/8	7/8	3	3/4	3 3/4	331428	282.30	331228	293.20
1.0000	1	7/8	3	3/4	3 3/4	331432	310.15	331232	322.10
1.1250	1 1/8	1	3	3/4	4	331436	332.20	331236	344.75
1.2500	1 1/4	1	3	3/4	4	331440	384.85	331240	399.80
1.5000	1 1/2	1 1/4	3	3/4	4	331448	457.60	331248	475.25

CARBIDE TIPPED END MILLS - FOR NON-FERROUS & CAST IRON

TYPE 3302 - TWO STRAIGHT FLUTES - RADIAL EDGED

Flute long carbide tips brazed to hardened alloy steel bodies.

Large flute capacity for easier chip removal.

TYPE 3304 - FOUR/SIX STRAIGHT FLUTES - RADIAL EDGED

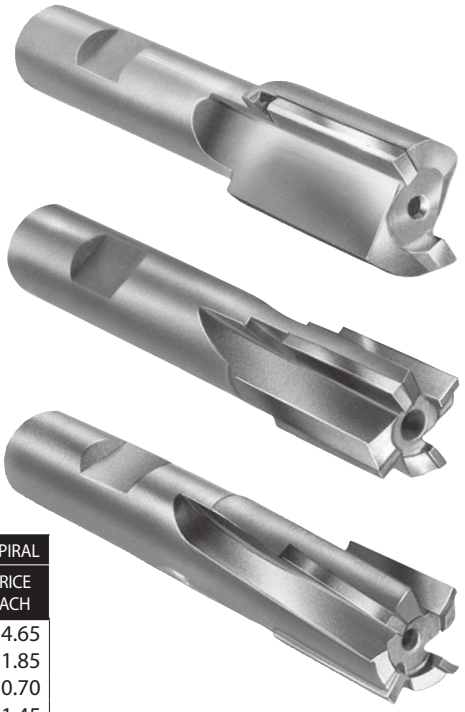
Flute long carbide tips brazed to hardened alloy steel bodies.

Best when machine horsepower allows a higher capacity end mill.

TYPE 3306 - 6° RIGHT SPIRAL FLUTES - RADIAL EDGED

Flute long carbide tips brazed to hardened alloy steel bodies.

Spiral flutes help remove chips, permitting faster speeds and heavier feeds. Produces better finish.



TOOL DIAMETER		SHANK DIAM.	CARB. TIP LEN.	OVER ALL LEN.	TYPE 3302 - STR. FLTS.			TYPE 3304 - FOUR/SIX STR. FLTS.			TYPE 3306 - 6° RIGHT SPIRAL		
DECIMAL	FRAC.				NO. OF FLTS.	EDP NO.	PRICE EACH	NO. OF FLTS.	EDP NO.	PRICE EACH	NO. OF FLTS.	EDP NO.	PRICE EACH
.5000	½	½	1	3 ¼	2	330216	112.45	4	330416	114.60	2	330616	114.65
.6250	⅝	½	1	3 ⅜	2	330220	124.25	4	330420	134.65	4	330620	131.85
.7500	¾	⅝	1	3 ⅝	2	330224	139.60	4	330424	138.65	4	330624	150.70
.8750	⅞	⅝	1 ¼	4	2	330228	169.80	4	330428	163.80	4	330628	201.45
1.0000	1	⅞	1 ¼	4	2	330232	182.25	4	330432	189.25	4	330632	232.70
1.1250	1 ⅛	1	1 ¼	4 ¼	-	-	-	4	330436	214.60	-	-	-
1.2500	1 ¼	1	1 ¼	4 ¼	2	330240	225.60	4	330440	241.35	4	330640	296.65
1.5000	1 ½	1 ¼	1 ½	4 ½	2	330248	279.40	4	330448	311.20	4	330648	367.15
1.7500	1 ¾	1 ¼	1 ½	4 ½	-	-	-	6	330456	401.10	-	-	-
2.0000	2	1 ¼	1 ½	4 ½	-	-	-	6	330464	462.10	-	-	-

TYPE 3375 - 15° RIGHT SPIRAL FLUTES - RADIAL EDGED

Flute long carbide tips brazed to hardened alloy steel bodies.

For milling primarily cast iron and malleable iron. However, they can be used on other materials *except steel*. The large capacity of the 15° spiral flutes permits faster chip removal while allowing smoother finishes. Also the high spiral provides longer tool life.

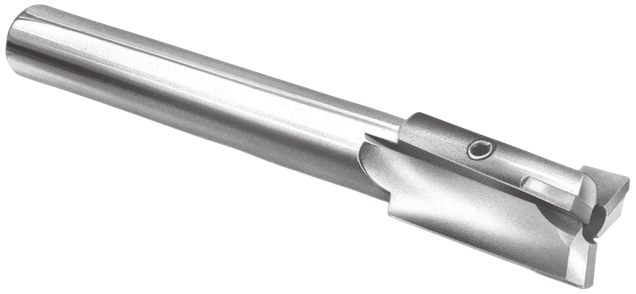
TOOL DIAMETER		SHANK DIAM.	CARB. TIP LEN.	OVER ALL LEN.	TYPE 3375 - 15° RIGHT SPIRAL		
DECIMAL	FRAC.				NO. OF FLUTES	EDP NO.	PRICE EACH
.5000	½	⅜	1	3	2	337516	$165.95
.5000	½	½	1	3	2	337517	165.95
.5625	9⁄16	½	1	3	2	337518	178.45
.6250	⅝	½	1 ¼	3 ¼	2	337520	191.80
.6250	⅝	⅝	1 ¼	3 ⅜	2	337521	191.80
.6875	11⁄16	½	1 ¼	3 ¼	2	337522	200.00
.6875	11⁄16	⅝	1 ¼	3 ⅜	2	337523	200.00
.7500	¾	½	1 ¼	3 ¼	2	337524	213.45
.7500	¾	⅝	1 ¼	3 ⅜	2	337525	213.45
.8125	13⁄16	⅝	1 ½	3 ⅝	2	337526	230.40
.8750	⅞	⅝	1 ½	3 ⅝	2	337528	244.60
.8750	⅞	⅞	1 ½	3 ¾	2	337529	244.60
.9375	15⁄16	⅝	1 ½	3 ¾	3	337530	362.15
.9375	15⁄16	⅞	1 ½	3 ¾	3	337531	362.15
1.0000	1	⅞	1 ½	3 ¾	3	337532	342.80
1.0000	1	1	1 ½	4	3	337533	342.80
1.1250	1 ⅛	1	1 ¾	4 ¼	3	337536	403.70
1.2500	1 ¼	1	1 ¾	4 ¼	4	337540	462.65
1.3750	1 ⅜	1	1 ¾	4 ¼	4	337544	540.25
1.5000	1 ½	1 ¼	2	4 ½	4	337548	532.35
1.6250	1 ⅝	1 ¼	2	4 ½	4	337552	651.05
1.7500	1 ¾	1 ¼	2	4 ½	4	337556	694.30
1.8750	1 ⅞	1 ¼	2	4 ½	4	337560	742.65
2.0000	2	1 ¼	2	4 ½	8	337564	784.45



ALL TYPES:
Radial edged tool diameter tolerance: +.002"/-.000".
Shank diameter tolerance: -.0001"/-.0005".
Straight shanks with drive flats.

RADIAL EDGED END MILLS:
These tools are manufactured with a precise .002" to .003" radial edge on the periphery, thus eliminating the need to hand hone the feathered edge. This small margin results in a stronger cutting edge and minimizes edge chipping for longer tool life.

FEEDS & SPEEDS CHART FOR COUNTERBORES



Feeds & speeds are a starting recommendation only. Factors such as machine, fixture and tooling rigidity, horsepower available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations.

RPM=SFPM*3.82/Cutter Diameter

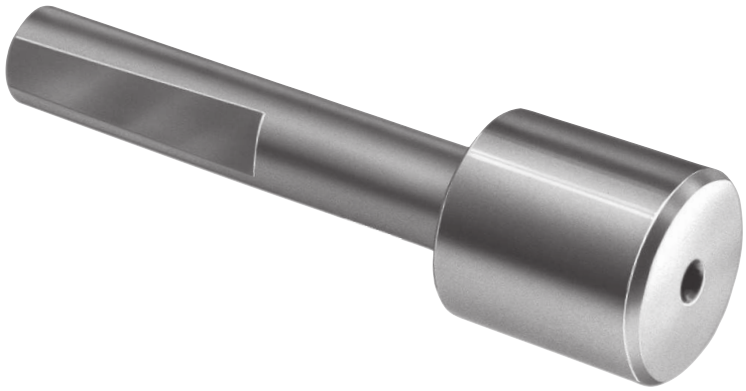
CLASSIFICATION	MATERIAL	COUNTERBORING		FEED RATE (INCHES PER REVOLUTION) FINISHED HOLE DIAMETER IN INCHES					
		BRINELL	SFPM	¼	½	¾	1	1 ½	2
NON-FERROUS (SOFT)	ALUMINUM ALLOY - WROUGHT	30-150*	750-900	.006	.006	.007	.007	.009	.010
	MAGNESIUM ALLOY	50-90*	875-1000	.006	.006	.007	.007	.009	.010
	LEAD	10-20*	875-1000	.006	.006	.007	.007	.009	.010
	NON-METAL AND PLASTIC	-	700-1200	.006	.006	.007	.007	.009	.010
	ZINC ALLOY - DIE CAST	80-100	700-850	.005	.005	.006	.006	.007	.009
NON-FERROUS (HARD)	ALUMINUM BRONZE	40-175	700-850	.006	.006	.007	.007	.009	.010
	BRASS ALLOY - LEADED AND FREE CUTTING	10-100Rb	850-1000	.006	.006	.007	.007	.009	.010
	CHROMIUM - NICKEL	10-100Rb	75-85	.003	.003	.003	.003	.004	.005
	COPPER ALLOY - TOUGH	40-200*	275-350	.005	.005	.006	.006	.007	.009
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120-275	85-110	.002	.002	.002	.002	.003	.004
	DUCTILE CAST IRON - FERRITIC	140-270	200-250	.006	.006	.007	.007	.009	.010
	DUCTILE CAST IRON - MARTENSITIC	270-400	75-95	.002	.002	.002	.002	.003	.004
	GRAY - PEARLITIC	220-320	125-200	.004	.004	.004	.005	.006	.007
	GRAY - FERRITIC	110-240	200-250	.004	.004	.004	.005	.006	.007
	MALLEABLE CAST IRON - MARTENSITIC	200-320	60-85	.004	.004	.004	.005	.006	.007
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100-250	200-250	.006	.006	.007	.007	.009	.010
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100-375	150-200	.006	.006	.007	.007	.009	.010
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100-275	145-185	.004	.004	.004	.005	.006	.007
	LOW AND MEDIUM CARBON ALLOY STEEL	85-375	130-165	.004	.004	.004	.005	.006	.007
	STAINLESS STEEL - 400 SERIES	135-325	150-200	.003	.003	.003	.003	.004	.005
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135-275	155-205	.003	.003	.003	.003	.004	.005
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175-400	90-135	.002	.002	.002	.002	.003	.003
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140-300	40-65	.002	.002	.002	.002	.003	.003
	STAINLESS STEEL - 300 SERIES	135-375	150-300	.003	.003	.003	.003	.004	.005
	STAINLESS STEEL - PH SERIES	150-440	115-175	.003	.003	.003	.003	.004	.005
	TITANIUM ALLOY	110-380	125-175	.002	.002	.002	.002	.003	.003

INTERCHANGEABLE COUNTERBORE PILOTS

TYPE 3500 - CARBON STEEL - SHORT SHANK

For use with our carbide tipped counterbores (pages 34-43).

The shank diameter must be the same as the pilot hole diameter in the counterbore. The pilot head diameter is always larger than the shank diameter and is determined by part to be machined.



PILOT HEAD DIAMETER	TOLERANCE
1/8" THRU 1/4"	-.001"/-.002"
OVER 1/4" THRU 7/8"	-.003"/-.004"
OVER 7/8" THRU 1 1/4"	-.005"/-.006"
OVER 1 1/4"	-.006"/-.007"

Shank diameter tolerance: +.0000"/-.0005".

PILOT HEAD DIAMETER		SHANK DIAMETER									ALL TYPES PRICE	PRICE EACH - PILOT HEAD DIAMETER FINISHED TO DECIMAL SIZE					
DEC.	FRAC.	3/32 .0938 EDP NO.	1/8 .1250 EDP NO.	5/32 .1562 EDP NO.	3/16 .1875 EDP NO.	1/4 .2500 EDP NO.	5/16 .3125 EDP NO.	3/8 .3750 EDP NO.	7/16 .4375 EDP NO.	1/2 .5000 EDP NO.		1 PC.	2 PC.	3 PC.	4 PC.	5-7	8+
.1250	1/8	350104	-	-	-	-	-	-	-	-	$42.55	$169.20	$105.90	$84.85	$74.50	$63.70	$54.90
.1562	5/32	350105	350205	-	-	-	-	-	-	-	34.60	161.05	97.95	76.80	66.10	55.70	46.90
.1875	3/16	350106	350206	350306	-	-	-	-	-	-	35.30	161.70	98.55	77.50	67.00	56.30	47.55
.2188	7/32	350107	350207	350307	350407	-	-	-	-	-	39.90	166.45	103.20	82.05	71.75	61.10	52.30
.2500	1/4	350108	350208	350308	350408	-	-	-	-	-	39.90	166.45	103.20	82.05	71.75	61.10	52.30
.2812	9/32	350109	350209	350309	350409	350509	-	-	-	-	42.55	169.20	105.90	84.85	74.50	63.70	54.90
.3125	5/16	350110	350210	350310	350410	350510	-	-	-	-	42.55	169.20	105.90	84.85	74.50	63.70	54.90
.3438	11/32	350111	350211	350311	350411	350511	350611	-	-	-	42.55	169.20	105.90	84.85	74.50	63.70	54.90
.3750	3/8	-	350212	350312	350412	350512	350612	-	-	-	46.90	173.55	110.30	89.10	78.55	68.05	59.45
.4062	13/32	-	350213	350313	350413	350513	350613	-	-	-	46.90	173.55	110.30	89.10	78.55	68.05	59.45
.4375	7/16	-	350214	350314	350414	350514	350614	350714	-	-	48.10	174.50	111.30	90.30	79.75	69.25	60.40
.4688	15/32	-	350215	-	350415	350515	350615	-	-	-	48.10	174.50	111.30	90.30	79.75	69.25	60.40
.5000	1/2	-	350216	-	350416	350516	350616	350716	350816	-	54.90	181.65	118.30	97.10	87.00	76.15	67.50
.5312	17/32	-	350217	-	350417	350517	350617	-	350817	-	64.05	190.60	127.45	106.45	95.90	85.25	76.60
.5625	9/16	-	350218	-	350418	350518	350618	350718	350818	350918	71.90	198.60	135.30	114.10	103.95	93.25	84.50
.5938	19/32	-	350219	-	-	350519	350619	-	350819	350919	79.10	205.60	142.30	121.15	110.60	100.05	91.40
.6250	5/8	-	350220	-	350420	350520	350620	350720	350820	350920	79.10	205.60	142.30	121.15	110.60	100.05	91.40
.6562	21/32	-	-	-	350421	350521	350621	-	350821	-	80.90	207.50	144.15	123.00	112.75	102.15	93.30
.6875	11/16	-	-	-	350422	350522	350622	350722	350822	350922	80.90	207.50	144.15	123.00	112.75	102.15	93.30
.7188	23/32	-	-	-	-	350523	350623	-	350823	350923	91.70	218.10	154.90	133.85	123.40	112.75	104.10
.7500	3/4	-	-	-	350424	350524	350624	350724	350824	350924	91.70	218.10	154.90	133.85	123.40	112.75	104.10
.7812	25/32	-	-	-	-	350525	350625	-	350825	350925	102.95	229.65	166.30	145.20	135.05	124.20	115.45
.8125	13/16	-	-	-	350426	350526	350626	350726	350826	350926	102.95	229.65	166.30	145.20	135.05	124.20	115.45
.8438	27/32	-	-	-	-	350527	-	-	-	-	113.95	240.50	177.30	156.25	145.55	135.10	126.35
.8750	7/8	-	-	-	350428	350528	350628	350728	350828	350928	113.95	240.50	177.30	156.25	145.55	135.10	126.35
.9375	15/16	-	-	-	350430	350530	350630	350730	350830	350930	120.25	246.75	183.45	162.40	151.95	141.25	132.65
1.0000	1	-	-	-	350432	350532	350632	350732	350832	350932	124.40	250.90	187.65	166.45	156.25	145.45	136.85
1.0625	1 1/16	-	-	-	-	-	350634	350734	350834	350934	128.95	255.50	192.10	171.00	160.45	150.10	141.25
1.1250	1 1/8	-	-	-	-	-	350636	350736	350836	350936	155.40	282.05	218.70	197.45	187.25	176.40	167.85
1.1875	1 3/16	-	-	-	-	-	350638	350738	350838	350938	160.25	286.60	223.30	202.30	191.95	181.25	172.55
1.2500	1 1/4	-	-	-	-	-	350640	350740	350840	350940	168.75	295.40	232.20	210.90	200.85	189.85	181.25
1.3125	1 5/16	-	-	-	-	-	-	350742	350842	350942	177.65	304.20	241.10	220.00	209.60	198.80	190.05
1.3750	1 3/8	-	-	-	-	-	350644	350744	350844	350944	193.95	320.90	257.55	236.45	225.90	215.30	206.65
1.4375	1 7/16	-	-	-	-	-	-	350746	350846	350946	196.40	323.00	259.65	238.50	228.20	217.35	208.80
1.5000	1 1/2	-	-	-	-	-	-	-	350848	350948	198.80	325.65	262.30	241.15	230.50	220.15	211.40
1.5625	1 9/16	-	-	-	-	-	-	-	350850	350950	201.20	328.15	264.90	243.75	233.15	222.60	213.85
1.6250	1 5/8	-	-	-	-	-	-	-	-	350952	203.40	329.90	266.75	245.50	235.15	224.40	216.00
1.6875	1 11/16	-	-	-	-	-	-	-	-	350954	206.20	332.55	269.35	248.15	237.85	227.00	218.55
1.7500	1 3/4	-	-	-	-	-	-	-	350856	350956	209.30	335.70	272.45	251.35	241.10	230.25	221.60
1.8750	1 7/8	-	-	-	-	-	-	-	-	350960	252.00	379.05	315.65	294.50	284.00	273.40	264.90
2.0000	2	-	-	-	-	-	-	-	-	350964	252.00	379.05	315.65	294.50	284.00	273.40	264.90

CARBIDE TIPPED CAPSCREW COUNTERBORES

TYPE 3513 - STRAIGHT SHANK - FOR NON-FERROUS & CAST IRON
TYPE 3515 - STRAIGHT SHANK - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies. Right spiral smooth flutes. Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined. The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

Decimal sizes available upon request.



TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	TYPE 3513 - NON-FERR/CI		PRICE EACH	TYPE 3515 - STEEL		PRICE EACH
DECIMAL	SCREW SIZE					NO. OF FLUTES	EDP NO.		NO. OF FLUTES	EDP NO.	
.3820	1/4	.2500	.3125	5/16	5 5/8	3	35132500	$148.75	3	35152500	$163.60
.3980	1/4	.2650	.3125	5/16	5 5/8	3	35132650	165.25	3	35152650	181.85
.4140	1/4	.2810	.3125	5/16	5 5/8	3	35132810	165.25	3	35152810	181.85
.4750	5/16	.3125	.3750	3/8	6 1/8	3	35133125	166.30	3	35153125	183.10
.4910	5/16	.3280	.3750	3/8	6 1/8	3	35133280	166.30	3	35153280	183.10
.5070	5/16	.3430	.3750	3/8	6 1/8	3	35133430	166.30	3	35153430	183.10
.5720	3/8	.3750	.5000	1/2	6 1/2	3	35133750	187.55	3	35153750	206.35
.5880	3/8	.3900	.5000	1/2	6 1/2	3	35133900	187.55	3	35153900	206.35
.6040	3/8	.4060	.5000	1/2	6 1/2	3	35134060	187.55	3	35154060	206.35
.6630	7/16	.4375	.5000	1/2	7	3	35134375	181.25	3	35154375	199.35
.6790	7/16	.4530	.5000	1/2	7	3	35134530	181.25	3	35154530	199.35
.6950	7/16	.4680	.5000	1/2	7	3	35134680	181.25	3	35154680	199.35
.7570	1/2	.5000	.5000	1/2	7 1/2	3	35135000	205.50	3	35155000	226.15
.7730	1/2	.5150	.5000	1/2	7 1/2	3	35135150	205.50	3	35155150	226.15
.7890	1/2	.5310	.5000	1/2	7 1/2	3	35135310	205.50	3	35155310	226.15
.8510	9/16	.5625	.5625	5/8	7 5/8	3	35135625	198.60	3	35155625	218.55
.8670	9/16	.5780	.5625	5/8	7 5/8	3	35135780	198.60	3	35155780	218.55
.8830	9/16	.5930	.5625	5/8	7 5/8	3	35135930	198.60	3	35155930	218.55
.9450	5/8	.6250	.6250	5/8	7 5/8	3	35136250	226.45	3	35156250	249.15
.9610	5/8	.6400	.6250	5/8	7 5/8	3	35136400	226.45	3	35156400	249.15
.9770	5/8	.6560	.6250	5/8	7 5/8	3	35136560	226.45	3	35156560	249.15
1.1330	3/4	.7500	.7500	3/4	7 3/4	3	35137500	223.25	3	35157500	245.50
1.1490	3/4	.7650	.7500	3/4	7 3/4	3	35137650	223.25	3	35157650	245.50
1.1650	3/4	.7810	.7500	3/4	7 3/4	3	35137810	223.25	3	35157810	245.50
1.3220	7/8	.8750	.8750	7/8	8 1/8	4	35138750	248.15	4	35158750	273.05
1.3380	7/8	.8910	.8750	7/8	8 1/8	4	35138910	248.15	4	35158910	273.05
1.3540	7/8	.9060	.8750	7/8	8 1/8	4	35139060	248.15	4	35159060	273.05
1.5100	1	1.0000	1.0000	1	8 1/2	4	35130000	284.15	4	35150000	312.55
1.5260	1	1.0150	1.0000	1	8 1/2	4	35130156	284.15	4	35150156	312.55
1.5420	1	1.0310	1.0000	1	8 1/2	4	35130313	284.15	4	35150313	312.55

TYPE 3513 - STRAIGHT SHANK - FOR NON-FERROUS & CAST IRON - METRIC
TYPE 3515 - STRAIGHT SHANK - FOR STEEL - METRIC

Same as above except metric sizes.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	TYPE 3513 - NON-FERR/CI		PRICE EACH	TYPE 3515 - STEEL		PRICE EACH
SCREW SIZE mm	DECIMAL					NO. OF FLUTES	EDP NO.		NO. OF FLUTES	EDP NO.	
5	.3543	5.5	9/32	5/16	5 5/8	3	3513055	$164.80	3	3515055	$181.25
6	.4134	6.5	5/16	5/16	5 5/8	3	3513065	173.95	3	3515065	191.40
8	.5315	8.5	3/8	1/2	6 1/2	3	3513085	206.65	3	3515085	227.20
10	.6496	10.5	1/2	1/2	7	3	3513105	224.75	3	3515105	247.15
12	.7283	12.5	1/2	1/2	7 1/2	3	3513125	210.85	3	3515125	231.75
14	.8465	14.5	9/16	5/8	7 5/8	3	3513145	245.90	3	3515145	270.25
16	.9646	16.5	5/8	5/8	7 5/8	3	3513165	256.85	3	3515165	282.50
20	1.2008	20.5	3/4	7/8	8	3	3513205	238.20	3	3515205	262.00

CARBIDE TIPPED COUNTERBORES FOR NON-FERROUS & CAST IRON

TYPE 3512 - STRAIGHT SHANK - FOUR FLUTES
TYPE 3514 - STRAIGHT SHANK - THREE/FOUR FLUTES

Carbide tips brazed to hardened alloy steel bodies. Right spiral smooth flutes. Interchangeable pilot type.

Tools are designed with appropriate carbide grade and tool geometry for machining non-ferrous, cast iron and non-metals.



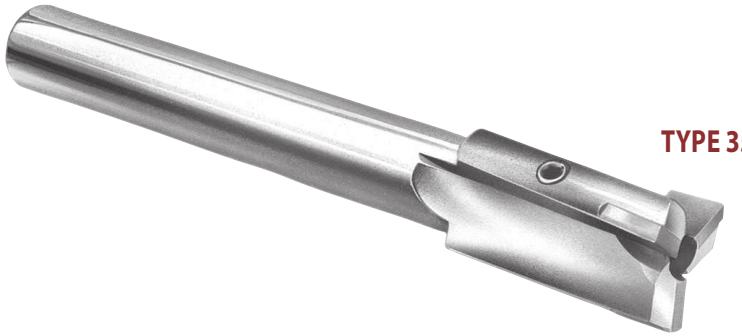
Tool diameter tolerance: +.001"/-.000".
Shank diameter tolerance: +.0000"/- .0005".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	SHANK DIAM.	OVER ALL LEN.	TYPE 3512		TYPE 3514		BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.					NO. OF FLTS.	EDP NO.	NO. OF FLTS.	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	1/4	.114	3/32	15/64	3 13/16	-	-	3	351408	$127.95	.2381 - .2530	$200.15	$164.10	$152.05	$146.00	$139.85	$134.90
.2812	9/32	.114	3/32	17/64	3 13/16	-	-	3	351409	156.40	.2531 - .2840	228.40	192.55	180.45	174.50	168.50	163.45
.3125	5/16	.114	3/32	19/64	3 13/16	-	-	3	351410	133.40	.2841 - .3150	201.10	167.35	156.15	150.45	144.75	140.05
.3438	11/32	.114	3/32	5/16	3 13/16	-	-	3	351411	168.90	.3151 - .3470	236.60	202.65	191.40	185.85	180.10	175.30
.3750	3/8	.182	5/32	5/16	4 1/16	-	-	3	351412	141.45	.3471 - .3780	204.05	172.75	162.35	157.20	151.90	147.70
.4062	13/32	.182	5/32	3/8	4 1/16	-	-	3	351413	159.55	.3781 - .4090	222.05	190.90	180.40	175.20	169.95	165.70
.4375	7/16	.182	5/32	3/8	4 1/16	-	-	3	351414	145.20	.4091 - .4410	207.70	176.40	165.95	161.05	155.55	151.35
.4688	15/32	.228	3/16	7/16	4 5/16	-	-	3	351415	177.25	.4411 - .4720	239.75	208.40	198.25	193.05	187.55	183.35
.5000	1/2	.228	3/16	7/16	4 5/16	4	351216	3	351416	161.20	.4721 - .5030	223.60	192.20	182.05	176.75	171.55	167.30
.5312	17/32	.228	3/16	1/2	4 5/16	4	351217	3	351417	182.35	.5031 - .5340	244.95	213.80	203.30	198.25	192.80	188.50
.5625	9/16	.228	3/16	1/2	4 5/16	4	351218	3	351418	165.90	.5341 - .5660	228.40	197.05	186.70	181.45	176.25	171.85
.5938	19/32	.228	3/16	1/2	5 1/8	4	351219	3	351419	184.30	.5661 - .5970	246.75	215.55	205.15	200.00	194.60	190.40
.6250	5/8	.228	3/16	1/2	5 1/8	4	351220	3	351420	167.60	.5971 - .6280	229.95	198.60	188.25	183.20	177.80	173.60
.6562	21/32	.228	3/16	1/2	5 1/8	4	351221	3	351421	195.00	.6281 - .6590	257.45	226.40	215.90	210.70	205.50	201.10
.6875	11/16	.228	3/16	1/2	5 1/8	4	351222	3	351422	177.40	.6591 - .6910	239.90	208.65	198.30	193.15	187.95	183.40
.7188	23/32	.290	1/4	1/2	5 3/8	4	351223	3	351423	199.65	.6911 - .7220	262.00	230.85	220.45	215.45	210.00	205.80
.7500	3/4	.290	1/4	1/2	5 3/8	4	351224	3	351424	181.35	.7221 - .7530	243.95	212.75	202.25	197.05	191.85	187.40
.7812	25/32	.290	1/4	5/8	5 3/8	4	351225	3	351425	204.00	.7531 - .7840	266.30	235.00	224.75	219.50	214.15	209.95
.8125	13/16	.290	1/4	5/8	5 3/8	4	351226	3	351426	185.20	.7841 - .8160	247.65	216.35	206.00	200.75	195.70	191.40
.8438	27/32	.290	1/4	3/4	5 3/8	4	351227	3	351427	215.95	.8161 - .8470	278.45	247.10	236.90	231.65	226.45	222.05
.8750	7/8	.290	1/4	3/4	5 3/8	4	351228	3	351428	196.35	.8471 - .8780	258.85	227.65	217.30	212.05	206.80	202.45
.9062	29/32	.290	1/4	3/4	6 1/8	4	351229	3	351429	220.30	.8781 - .9090	282.85	251.60	241.15	236.10	230.80	226.50
.9375	15/16	.290	1/4	3/4	6 1/8	4	351230	3	351430	200.40	.9091 - .9410	263.00	231.65	221.25	216.10	210.75	206.50
.9688	31/32	.353	5/16	3/4	6 3/8	4	351231	3	351431	226.75	.9411 - .9720	289.10	257.90	247.50	242.35	237.15	232.90
1.0000	1	.353	5/16	3/4	6 3/8	4	351232	3	351432	206.10	.9721 - 1.0030	268.75	237.30	226.85	221.75	216.50	212.15
1.0625	1 1/16	.353	5/16	3/4	6 3/8	4	351234	3	351434	208.25	1.0031 - 1.0660	270.90	239.45	229.05	224.15	218.70	214.40
1.1250	1 1/8	.353	5/16	1	6 3/8	4	351236	3	351436	213.80	1.0661 - 1.1280	276.10	244.95	234.65	229.25	224.15	219.75
1.1875	1 3/16	.353	5/16	1	6 3/8	4	351238	3	351438	223.15	1.1281 - 1.1905	285.55	254.45	244.00	238.85	233.50	229.25
1.2500	1 1/4	.426	3/8	1	6 5/8	-	-	4	351440	248.50	1.1906 - 1.2530	316.20	282.45	271.10	265.60	259.70	255.30
1.3125	1 5/16	.426	3/8	1	6 5/8	-	-	4	351442	268.15	1.2531 - 1.3155	336.15	302.25	290.80	285.30	279.50	274.95
1.3750	1 3/8	.426	3/8	1	6 5/8	-	-	4	351444	282.30	1.3156 - 1.3780	349.95	316.00	304.65	299.05	293.50	288.75
1.4375	1 7/16	.426	3/8	1 1/4	7 7/8	-	-	4	351446	309.35	1.3781 - 1.4405	382.90	346.10	333.85	327.65	321.65	316.45
1.5000	1 1/2	.426	3/8	1 1/4	7 7/8	-	-	4	351448	357.65	1.4406 - 1.5030	434.00	395.65	383.05	376.90	370.35	365.05
1.5625	1 9/16	.489	7/16	1 1/4	8 1/8	-	-	4	351450	368.15	1.5031 - 1.5660	444.65	406.35	393.55	387.25	380.85	375.70
1.6250	1 5/8	.489	7/16	1 1/4	8 1/8	-	-	4	351452	375.85	1.5661 - 1.6280	452.35	414.05	401.50	395.15	388.70	383.45
1.6875	1 11/16	.489	7/16	1 1/4	8 1/8	-	-	4	351454	449.75	1.6281 - 1.6910	532.05	490.90	477.10	470.25	463.40	457.65
1.7500	1 3/4	.489	7/16	1 1/4	8 1/8	-	-	4	351456	449.75	1.6911 - 1.7530	532.05	490.90	477.10	470.25	463.40	457.65
1.8125	1 13/16	.489	7/16	1 1/2	8 1/8	-	-	4	351458	532.35	1.7531 - 1.8160	614.80	573.65	559.95	553.20	546.00	540.45
1.8750	1 7/8	.489	7/16	1 1/2	8 1/8	-	-	4	351460	532.35	1.8161 - 1.8780	614.80	573.65	559.95	553.20	546.00	540.45
1.9375	1 15/16	.489	7/16	1 1/2	8 1/8	-	-	4	351462	581.75	1.8781 - 1.9410	664.35	623.15	609.35	602.40	595.55	589.90
2.0000	2	.551	1/2	1 1/2	8 3/8	-	-	4	351464	581.75	1.9411 - 2.0030	664.35	623.15	609.35	602.40	595.55	589.90

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED COUNTERBORES FOR NON-FERROUS & CAST IRON

METRIC



TYPE 3512 - STRAIGHT SHANK - FOUR FLUTES
TYPE 3514 - STRAIGHT SHANK - THREE/FOUR FLUTES

Detailed description, tolerances, and fractional sizes on page 34. Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAM.		MIN. CUT DIAM.	PILOT HOLE DIAM.	SHANK DIAM.	OVER ALL LEN.	TYPE 3512		TYPE 3514		BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH					NO. OF FLTS.	EDP NO.	NO. OF FLTS.	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
6.0	.2362	.114	3/32	15/64	3 13/16	-	-	3	3514060	$152.05	6.000 - 6.426	$205.85	$169.75	$157.80	$152.05	$145.95	$141.10	$133.90
6.5	.2559	.114	3/32	17/64	3 13/16	-	-	3	3514065	180.45	6.427 - 7.214	234.30	198.30	186.25	180.45	174.45	169.55	162.35
7.0	.2756	.114	3/32	17/64	3 13/16	-	-	3	3514070	180.45	-	-	-	-	-	-	-	-
7.5	.2953	.114	3/32	19/64	3 13/16	-	-	3	3514075	156.15	7.215 - 8.001	206.65	172.75	161.40	156.15	150.35	145.80	139.00
8.0	.3150	.114	3/32	19/64	3 13/16	-	-	3	3514080	156.15	-	-	-	-	-	-	-	-
8.5	.3346	.114	3/32	5/16	3 13/16	-	-	3	3514085	191.40	8.002 - 8.814	242.05	208.10	196.75	191.40	185.65	181.00	174.50
9.0	.3543	.182	5/32	5/16	4 1/16	-	-	3	3514090	162.35	8.815 - 9.601	209.00	177.75	167.35	162.35	157.15	152.75	146.70
9.5	.3740	.182	5/32	5/16	4 1/16	-	-	3	3514095	162.35	-	-	-	-	-	-	-	-
10.0	.3937	.182	5/32	3/8	4 1/16	-	-	3	3514100	180.40	9.602 - 10.389	227.00	195.85	185.45	180.40	175.15	170.95	164.85
10.5	.4134	.182	5/32	3/8	4 1/16	-	-	3	3514105	165.95	10.390 - 11.201	212.75	181.35	171.00	165.95	160.80	156.45	150.35
11.0	.4331	.182	5/32	3/8	4 1/16	-	-	3	3514110	165.95	-	-	-	-	-	-	-	-
11.5	.4528	.228	3/16	7/16	4 5/16	-	-	3	3514115	198.25	11.202 - 11.989	244.60	213.50	203.15	198.25	192.80	188.50	182.35
12.0	.4724	.228	3/16	7/16	4 5/16	4	3512120	3	3514120	182.05	11.990 - 12.776	228.60	197.45	187.05	182.05	176.70	172.50	166.20
12.5	.4921	.228	3/16	7/16	4 5/16	4	3512125	3	3514125	182.05	-	-	-	-	-	-	-	-
13.0	.5118	.228	3/16	1/2	4 5/16	4	3512130	3	3514130	203.30	12.777 - 13.564	249.85	218.60	208.20	203.30	197.90	193.70	187.40
13.5	.5315	.228	3/16	1/2	4 5/16	4	3512135	3	3514135	203.30	-	-	-	-	-	-	-	-
14.0	.5512	.228	3/16	1/2	4 5/16	4	3512140	3	3514140	186.70	13.565 - 14.376	233.40	202.15	191.80	186.70	181.35	177.15	171.00
14.5	.5709	.228	3/16	1/2	5 1/8	4	3512145	3	3514145	205.15	14.377 - 15.164	251.80	220.45	210.00	205.15	199.85	195.60	189.35
15.0	.5906	.228	3/16	1/2	5 1/8	4	3512150	3	3514150	205.15	-	-	-	-	-	-	-	-
15.5	.6102	.228	3/16	1/2	5 1/8	4	3512155	3	3514155	188.25	15.165 - 15.951	234.90	203.90	193.40	188.25	183.10	178.80	172.70
16.0	.6299	.228	3/16	1/2	5 1/8	4	3512160	3	3514160	215.90	15.952 - 16.739	262.45	231.20	220.80	215.90	210.65	206.30	200.25
16.5	.6496	.228	3/16	1/2	5 1/8	4	3512165	3	3514165	215.90	-	-	-	-	-	-	-	-
17.0	.6693	.228	3/16	1/2	5 1/8	4	3512170	3	3514170	198.30	16.740 - 17.551	244.95	213.80	203.30	198.30	193.05	188.65	182.50
17.5	.6890	.228	3/16	1/2	5 1/8	4	3512175	3	3514175	198.30	-	-	-	-	-	-	-	-
18.0	.7087	.290	1/4	1/2	5 3/8	4	3512180	3	3514180	220.45	17.552 - 18.339	267.20	235.90	225.45	220.45	215.25	210.90	204.75
18.5	.7283	.290	1/4	1/2	5 3/8	4	3512185	3	3514185	202.25	18.340 - 19.126	248.80	217.70	207.25	202.25	196.90	192.55	186.55
19.0	.7480	.290	1/4	1/2	5 3/8	4	3512190	3	3514190	202.25	-	-	-	-	-	-	-	-
19.5	.7677	.290	1/4	5/8	5 3/8	4	3512195	3	3514195	224.75	19.127 - 19.914	271.25	240.15	229.75	224.75	219.45	215.10	209.00
20.0	.7874	.290	1/4	5/8	5 3/8	4	3512200	3	3514200	206.00	19.915 - 20.726	252.65	221.55	211.05	206.00	200.70	196.55	190.40
20.5	.8071	.290	1/4	5/8	5 3/8	4	3512205	3	3514205	206.00	-	-	-	-	-	-	-	-
21.0	.8268	.290	1/4	3/4	5 3/8	4	3512210	3	3514210	236.90	20.727 - 21.514	283.45	252.30	242.00	236.90	231.50	227.20	221.15
21.5	.8465	.290	1/4	3/4	5 3/8	4	3512215	3	3514215	236.90	-	-	-	-	-	-	-	-
22.0	.8661	.290	1/4	3/4	5 3/8	4	3512220	3	3514220	217.30	21.515 - 22.301	263.90	232.70	222.20	217.30	211.95	207.70	201.60
22.5	.8858	.290	1/4	3/4	6 1/8	4	3512225	3	3514225	241.15	22.302 - 23.089	287.85	256.60	246.20	241.15	235.90	231.65	225.45
23.0	.9055	.290	1/4	3/4	6 1/8	4	3512230	3	3514230	241.15	-	-	-	-	-	-	-	-
23.5	.9252	.290	1/4	3/4	6 1/8	4	3512235	3	3514235	221.25	23.090 - 23.901	267.90	236.65	226.40	221.25	215.95	211.70	205.60
24.0	.9449	.353	5/16	3/4	6 3/8	4	3512240	3	3514240	247.50	23.902 - 24.689	294.15	263.05	252.55	247.50	242.25	238.15	231.75
24.5	.9646	.353	5/16	3/4	6 3/8	4	3512245	3	3514245	247.50	-	-	-	-	-	-	-	-
25.0	.9843	.353	5/16	3/4	6 3/8	4	3512250	3	3514250	226.85	24.690 - 25.476	273.65	242.35	232.05	226.85	221.70	217.55	211.40
25.5	1.0039	.353	5/16	3/4	6 3/8	4	3512255	3	3514255	229.05	25.477 - 27.076	275.75	244.50	234.15	229.05	223.85	219.65	213.50
26.0	1.0236	.353	5/16	3/4	6 3/8	4	3512260	3	3514260	229.05	-	-	-	-	-	-	-	-
27.0	1.0630	.353	5/16	3/4	6 3/8	4	3512270	3	3514270	229.05	-	-	-	-	-	-	-	-
28.0	1.1024	.353	5/16	1	6 3/8	4	3512280	3	3514280	234.65	27.077 - 28.651	281.25	249.85	239.40	234.65	229.05	224.90	218.70
29.0	1.1417	.353	5/16	1	6 3/8	4	3512290	3	3514290	244.00	28.652 - 30.239	290.50	259.50	249.00	244.00	238.75	234.65	228.40
30.0	1.1811	.353	5/16	1	6 3/8	4	3512300	3	3514300	244.00	-	-	-	-	-	-	-	-
31.0	1.2205	.426	3/8	1	6 5/8	-	-	4	3514310	271.10	30.240 - 31.826	321.70	287.85	276.55	271.10	265.35	260.70	254.15
32.0	1.2598	.426	3/8	1	6 5/8	-	-	4	3514320	290.80	31.827 - 33.414	341.45	307.50	296.30	290.80	285.20	280.55	273.85
33.0	1.2992	.426	3/8	1	6 5/8	-	-	4	3514330	290.80	-	-	-	-	-	-	-	-
34.0	1.3386	.426	3/8	1	6 5/8	-	-	4	3514340	304.65	33.415 - 35.001	355.20	321.60	310.05	304.65	298.90	294.20	287.55
35.0	1.3780	.426	3/8	1	6 5/8	-	-	4	3514350	304.65	-	-	-	-	-	-	-	-
36.0	1.4173	.426	3/8	1 1/4	7 7/8	-	-	4	3514360	333.85	35.002 - 36.589	388.80	352.10	339.65	333.85	327.45	322.55	315.40
37.0	1.4567	.426	3/8	1 1/4	7 7/8	-	-	4	3514370	369.20	36.590 - 38.176	424.20	387.40	375.20	369.20	363.00	357.90	350.75
38.0	1.4961	.426	3/8	1 1/4	7 7/8	-	-	4	3514380	369.20	-	-	-	-	-	-	-	-

CARBIDE TIPPED COUNTERBORES FOR NON-FERROUS & CAST IRON

TYPE 3518 - TAPER SHANK - FOUR FLUTES
TYPE 3516 - TAPER SHANK - THREE/FOUR FLUTES

Carbide tips brazed to hardened alloy steel bodies. Right spiral smooth flutes. Interchangeable pilot type.

Tools are designed with appropriate carbide grade and tool geometry for machining non-ferrous, cast iron and non-metals.



Tool diameter tolerance: +.001"/-.000".
Shank diameter tolerance: +.0000"/-.0005".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	MORSE TAPER	OVER ALL LEN.	TYPE 3518		TYPE 3516		BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.					NO. OF FLTS.	EDP NO.	NO. OF FLTS.	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	¼	.114	3⁄32	1	3 13⁄16	-	-	3	351608	$155.20	.2381 - .2530	$230.10	$192.70	$180.20	$174.00	$167.70	$162.55
.2812	9⁄32	.114	3⁄32	1	3 13⁄16	-	-	3	351609	186.90	.2531 - .2840	261.50	224.00	211.55	205.50	199.35	193.90
.3125	5⁄16	.114	3⁄32	1	3 13⁄16	-	-	3	351610	159.55	.2841 - .3150	229.80	194.60	183.05	177.25	171.15	166.40
.3438	11⁄32	.114	3⁄32	1	3 13⁄16	-	-	3	351611	196.65	.3151 - .3470	266.90	231.65	219.80	214.15	208.20	203.40
.3750	3⁄8	.182	5⁄32	1	4 1⁄16	-	-	3	351612	164.70	.3471 - .3780	229.30	197.05	186.20	180.95	175.55	171.10
.4062	13⁄32	.182	5⁄32	1	4 1⁄16	-	-	3	351613	186.05	.3781 - .4090	250.80	218.40	207.70	202.25	196.85	192.35
.4375	7⁄16	.182	5⁄32	1	4 1⁄16	-	-	3	351614	169.10	.4091 - .4410	233.80	201.55	190.60	185.45	179.95	175.55
.4688	15⁄32	.228	3⁄16	1	4 5⁄16	-	-	3	351615	205.40	.4411 - .4720	270.15	237.70	226.85	221.60	216.25	211.75
.5000	½	.228	3⁄16	1	4 5⁄16	4	351816	3	351616	186.70	.4721 - .5030	251.65	219.15	208.20	203.15	197.45	193.05
.5312	17⁄32	.228	3⁄16	1	4 5⁄16	4	351817	3	351617	209.10	.5031 - .5340	273.85	241.45	230.65	225.35	219.80	215.45
.5625	9⁄16	.228	3⁄16	1	4 5⁄16	4	351818	3	351618	190.20	.5341 - .5660	254.95	222.55	211.90	206.35	201.05	196.65
.5938	19⁄32	.228	3⁄16	2	5 1⁄8	4	351819	3	351619	214.85	.5661 - .5970	279.70	247.25	236.55	231.05	225.75	221.20
.6250	5⁄8	.228	3⁄16	2	5 1⁄8	4	351820	3	351620	195.30	.5971 - .6280	259.90	227.70	216.85	211.70	205.95	201.60
.6562	21⁄32	.228	3⁄16	2	5 1⁄8	4	351821	3	351621	226.80	.6281 - .6590	291.60	259.30	248.35	243.20	237.60	233.15
.6875	11⁄16	.228	3⁄16	2	5 1⁄8	4	351822	3	351622	205.95	.6591 - .6910	270.95	238.35	227.70	222.30	216.85	212.40
.7188	23⁄32	.290	¼	2	5 3⁄8	4	351823	3	351623	230.60	.6911 - .7220	295.35	263.00	252.20	246.95	241.35	237.00
.7500	¾	.290	¼	2	5 3⁄8	4	351824	3	351624	209.65	.7221 - .7530	274.25	242.00	231.05	225.90	220.30	215.65
.7812	25⁄32	.290	¼	2	5 3⁄8	4	351825	3	351625	234.55	.7531 - .7840	299.20	266.90	255.90	250.65	245.20	240.80
.8125	13⁄16	.290	¼	2	5 3⁄8	4	351826	3	351626	213.15	.7841 - .8160	277.90	245.55	234.85	229.30	224.00	219.50
.8438	27⁄32	.290	¼	2	5 3⁄8	4	351827	3	351627	246.40	.8161 - .8470	311.35	279.00	268.15	262.90	257.45	253.00
.8750	7⁄8	.290	¼	2	5 3⁄8	4	351828	3	351628	224.15	.8471 - .8780	288.90	256.50	245.85	240.30	234.90	230.45
.9062	29⁄32	.290	¼	3	6 1⁄8	4	351829	3	351629	253.25	.8781 - .9090	317.95	285.55	274.95	269.35	264.05	259.65
.9375	15⁄16	.290	¼	3	6 1⁄8	4	351830	3	351630	230.15	.9091 - .9410	295.00	262.55	251.80	246.35	241.15	236.60
.9688	31⁄32	.353	5⁄16	3	6 3⁄8	4	351831	3	351631	259.15	.9411 - .9720	323.80	291.55	280.70	275.40	269.80	265.30
1.0000	1	.353	5⁄16	3	6 3⁄8	4	351832	3	351632	244.45	.9721 - 1.0030	311.70	278.10	266.90	261.45	255.55	251.00
1.0625	1 1⁄16	.353	5⁄16	3	6 3⁄8	4	351834	3	351634	247.65	1.0031 - 1.0660	314.70	281.25	270.05	264.55	258.70	254.15
1.1250	1 1⁄8	.353	5⁄16	3	6 3⁄8	4	351836	3	351636	255.50	1.0661 - 1.1280	322.75	289.30	277.75	272.35	266.70	262.10
1.1875	1 3⁄16	.353	5⁄16	3	6 3⁄8	4	351838	3	351638	264.10	1.1281 - 1.1905	331.60	297.85	286.50	281.10	275.40	270.85
1.2500	1 ¼	.426	3⁄8	3	6 5⁄8	-	-	4	351640	293.70	1.1906 - 1.2530	366.50	330.10	317.95	312.05	305.90	300.80
1.3125	1 5⁄16	.426	3⁄8	3	6 5⁄8	-	-	4	351642	314.70	1.2531 - 1.3155	387.95	351.10	339.15	333.05	327.05	321.95
1.3750	1 3⁄8	.426	3⁄8	3	6 5⁄8	-	-	4	351644	329.90	1.3156 - 1.3780	402.70	366.30	354.15	348.05	342.15	337.00
1.4375	1 7⁄16	.426	3⁄8	4	7 7⁄8	-	-	4	351646	367.00	1.3781 - 1.4405	446.25	406.65	393.20	386.75	380.10	374.65
1.5000	1 ½	.426	3⁄8	4	7 7⁄8	-	-	4	351648	406.75	1.4406 - 1.5030	486.10	446.55	433.30	426.70	420.15	414.70
1.5625	1 9⁄16	.489	7⁄16	4	8 1⁄8	-	-	4	351650	437.10	1.5031 - 1.5660	520.15	478.75	464.95	458.00	451.10	445.40
1.6250	1 5⁄8	.489	7⁄16	4	8 1⁄8	-	-	4	351652	444.90	1.5661 - 1.6280	527.85	486.55	472.70	465.80	458.80	453.25
1.6875	1 11⁄16	.489	7⁄16	4	8 1⁄8	-	-	4	351654	532.35	1.6281 - 1.6910	622.10	577.35	562.45	555.05	547.35	541.25
1.7500	1 ¾	.489	7⁄16	4	8 1⁄8	-	-	4	351656	532.35	1.6911 - 1.7530	622.10	577.35	562.45	555.05	547.35	541.25
1.8125	1 13⁄16	.489	7⁄16	4	8 1⁄8	-	-	4	351658	630.15	1.7531 - 1.8160	719.75	675.00	660.05	652.60	645.00	638.75
1.8750	1 7⁄8	.489	7⁄16	4	8 1⁄8	-	-	4	351660	630.15	1.8161 - 1.8780	719.75	675.00	660.05	652.60	645.00	638.75
1.9375	1 15⁄16	.489	7⁄16	4	8 1⁄8	-	-	4	351662	688.45	1.8781 - 1.9410	778.25	733.40	718.25	711.00	703.50	697.25
2.0000	2	.551	½	4	8 3⁄8	-	-	4	351664	688.45	1.9411 - 2.0030	778.25	733.40	718.25	711.00	703.50	697.25

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED COUNTERBORES FOR NON-FERROUS & CAST IRON

METRIC



TYPE 3518 - TAPER SHANK - FOUR FLUTES
TYPE 3516 - TAPER SHANK - THREE/FOUR FLUTES

Detailed description, tolerances, and fractional sizes on page 36. Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAM.		MIN. CUT DIAM.	PILOT HOLE DIAM.	MORSE TAPER	OVER ALL LEN.	TYPE 3518		TYPE 3516		BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH					NO. OF FLTS.	EDP NO.	NO. OF FLTS.	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
6.0	.2362	.114	3/32	1	3 13/16	-	-	3	3516060	$180.20	6.000 - 6.426	$236.10	$198.60	$186.20	$180.20	$173.95	$168.70	$161.40
6.5	.2559	.114	3/32	1	3 13/16	-	-	3	3516065	211.55	6.427 - 7.214	267.40	230.10	217.55	211.55	205.40	200.25	192.85
7.0	.2756	.114	3/32	1	3 13/16	-	-	3	3516070	211.55	-	-	-	-	-	-	-	-
7.5	.2953	.114	3/32	1	3 13/16	-	-	3	3516075	183.05	7.215 - 8.001	235.50	200.35	188.50	183.05	177.05	172.05	165.25
8.0	.3150	.114	3/32	1	3 13/16	-	-	3	3516080	183.05	-	-	-	-	-	-	-	-
8.5	.3346	.114	3/32	1	3 13/16	-	-	3	3516085	219.80	8.002 - 8.814	272.50	237.30	225.75	219.80	214.05	209.25	202.25
9.0	.3543	.182	5/32	1	4 1/16	-	-	3	3516090	186.20	8.815 - 9.601	234.70	202.25	191.45	186.20	180.75	176.25	169.95
9.5	.3740	.182	5/32	1	4 1/16	-	-	3	3516095	186.20	-	-	-	-	-	-	-	-
10.0	.3937	.182	5/32	1	4 1/16	-	-	3	3516100	207.70	9.602 - 10.389	255.90	223.65	212.95	207.70	202.00	197.55	191.40
10.5	.4134	.182	5/32	1	4 1/16	-	-	3	3516105	190.60	10.390 - 11.201	239.10	206.70	195.95	190.60	185.20	180.75	174.30
11.0	.4331	.182	5/32	1	4 1/16	-	-	3	3516110	190.60	-	-	-	-	-	-	-	-
11.5	.4528	.228	3/16	1	4 5/16	-	-	3	3516115	226.85	11.202 - 11.989	275.40	243.05	232.20	226.85	221.55	216.95	210.50
12.0	.4724	.228	3/16	1	4 5/16	4	3518120	3	3516120	208.20	11.990 - 12.776	256.85	224.30	213.50	208.20	203.05	198.45	192.10
12.5	.4921	.228	3/16	1	4 5/16	4	3518125	3	3516125	208.20	-	-	-	-	-	-	-	-
13.0	.5118	.228	3/16	1	4 5/16	4	3518130	3	3516130	230.65	12.777 - 13.564	279.15	246.90	235.85	230.65	225.25	220.80	214.40
13.5	.5315	.228	3/16	1	4 5/16	4	3518135	3	3516135	230.65	-	-	-	-	-	-	-	-
14.0	.5512	.228	3/16	1	4 5/16	4	3518140	3	3516140	211.90	13.565 - 14.376	260.35	227.85	216.95	211.90	206.10	201.75	195.45
14.5	.5709	.228	3/16	2	5 1/8	4	3518145	3	3516145	236.55	14.377 - 15.164	284.95	252.35	241.50	236.55	231.00	226.45	220.15
15.0	.5906	.228	3/16	2	5 1/8	4	3518150	3	3516150	236.55	-	-	-	-	-	-	-	-
15.5	.6102	.228	3/16	2	5 1/8	4	3518155	3	3516155	216.85	15.165 - 15.951	265.25	232.90	222.05	216.85	211.45	207.05	200.60
16.0	.6299	.228	3/16	2	5 1/8	4	3518160	3	3516160	248.35	15.952 - 16.739	296.85	264.30	253.55	248.35	243.05	238.35	232.20
16.5	.6496	.228	3/16	2	5 1/8	4	3518165	3	3516165	248.35	-	-	-	-	-	-	-	-
17.0	.6693	.228	3/16	2	5 1/8	4	3518170	3	3516170	227.70	16.740 - 17.551	276.00	243.60	232.90	227.70	222.20	217.70	211.45
17.5	.6890	.228	3/16	2	5 1/8	4	3518175	3	3516175	227.70	-	-	-	-	-	-	-	-
18.0	.7087	.290	1/4	2	5 3/8	4	3518180	3	3516180	252.20	17.552 - 18.339	300.50	268.15	257.45	252.20	246.90	242.20	235.85
18.5	.7283	.290	1/4	2	5 3/8	4	3518185	3	3516185	231.05	18.340 - 19.126	279.50	247.10	236.25	231.05	225.75	221.20	214.85
19.0	.7480	.290	1/4	2	5 3/8	4	3518190	3	3516190	231.05	-	-	-	-	-	-	-	-
19.5	.7677	.290	1/4	2	5 3/8	4	3518195	3	3516195	255.90	19.127 - 19.914	304.45	271.95	261.40	255.90	250.60	246.10	239.75
20.0	.7874	.290	1/4	2	5 3/8	4	3518200	3	3516200	234.85	19.915 - 20.726	283.20	250.80	239.90	234.85	229.25	224.90	218.55
20.5	.8071	.290	1/4	2	5 3/8	4	3518205	3	3516205	234.85	-	-	-	-	-	-	-	-
21.0	.8268	.290	1/4	2	5 3/8	4	3518210	3	3516210	268.15	20.727 - 21.514	316.75	284.20	273.40	268.15	262.80	258.30	251.85
21.5	.8465	.290	1/4	2	5 3/8	4	3518215	3	3516215	268.15	-	-	-	-	-	-	-	-
22.0	.8661	.290	1/4	2	5 3/8	4	3518220	3	3516220	245.85	21.515 - 22.301	294.00	261.75	251.00	245.85	240.15	235.75	229.30
22.5	.8858	.290	1/4	3	6 1/8	4	3518225	3	3516225	274.95	22.302 - 23.089	323.25	290.90	280.00	274.95	269.30	264.90	258.45
23.0	.9055	.290	1/4	3	6 1/8	4	3518230	3	3516230	274.95	-	-	-	-	-	-	-	-
23.5	.9252	.290	1/4	3	6 1/8	4	3518235	3	3516235	251.80	23.090 - 23.901	300.25	267.80	257.05	251.80	246.25	242.00	235.55
24.0	.9449	.353	5/16	3	6 3/8	4	3518240	3	3516240	280.70	23.902 - 24.689	329.15	296.65	285.80	280.70	275.30	270.85	264.30
24.5	.9646	.353	5/16	3	6 3/8	4	3518245	3	3516245	280.70	-	-	-	-	-	-	-	-
25.0	.9843	.353	5/16	3	6 3/8	4	3518250	3	3516250	257.25	24.690 - 25.476	305.55	273.20	262.35	257.25	251.70	247.25	241.10
25.5	1.0039	.353	5/16	3	6 3/8	4	3518255	3	3516255	270.05	25.477 - 27.076	320.30	286.50	275.40	270.05	264.30	259.70	253.10
26.0	1.0236	.353	5/16	3	6 3/8	4	3518260	3	3516260	270.05	-	-	-	-	-	-	-	-
27.0	1.0630	.353	5/16	3	6 3/8	4	3518270	3	3516270	270.05	-	-	-	-	-	-	-	-
28.0	1.1024	.353	5/16	3	6 3/8	4	3518280	3	3516280	277.75	27.077 - 28.651	328.15	294.55	283.35	277.75	272.15	267.75	260.95
29.0	1.1417	.353	5/16	3	6 3/8	4	3518290	3	3516290	286.50	28.652 - 30.239	336.90	303.30	292.05	286.50	281.00	276.45	269.80
30.0	1.1811	.353	5/16	3	6 3/8	4	3518300	3	3516300	286.50	-	-	-	-	-	-	-	-
31.0	1.2205	.426	3/8	3	6 5/8	-	-	4	3516310	317.95	30.240 - 31.826	372.45	336.00	323.80	317.95	311.90	306.95	299.60
32.0	1.2598	.426	3/8	3	6 5/8	-	-	4	3516320	339.15	31.827 - 33.414	393.80	357.20	345.05	339.15	333.00	328.10	320.80
33.0	1.2992	.426	3/8	3	6 5/8	-	-	4	3516330	339.15	-	-	-	-	-	-	-	-
34.0	1.3386	.426	3/8	3	6 5/8	-	-	4	3516340	354.15	33.415 - 35.001	408.80	372.20	359.95	354.15	347.95	343.15	335.70
35.0	1.3780	.426	3/8	3	6 5/8	-	-	4	3516350	354.15	-	-	-	-	-	-	-	-
36.0	1.4173	.426	3/8	4	7 7/8	-	-	4	3516360	393.20	35.002 - 36.589	452.55	412.95	399.70	393.20	386.70	381.45	373.40
37.0	1.4567	.426	3/8	4	7 7/8	-	-	4	3516370	433.30	36.590 - 38.176	492.45	452.90	439.60	433.30	426.65	421.10	413.40
38.0	1.4961	.426	3/8	4	7 7/8	-	-	4	3516380	433.30	-	-	-	-	-	-	-	-

CARBIDE TIPPED COUNTERBORES FOR STEEL

TYPE 3510 - STRAIGHT SHANK - THREE/FOUR FLUTES
TYPE 3511 - TAPER SHANK - THREE/FOUR FLUTES

Carbide tips brazed to hardened alloy steel bodies. Right spiral smooth flutes. Interchangeable pilot type.

Tools are designed with appropriate carbide grade and tool geometry for machining steel and steel alloys.



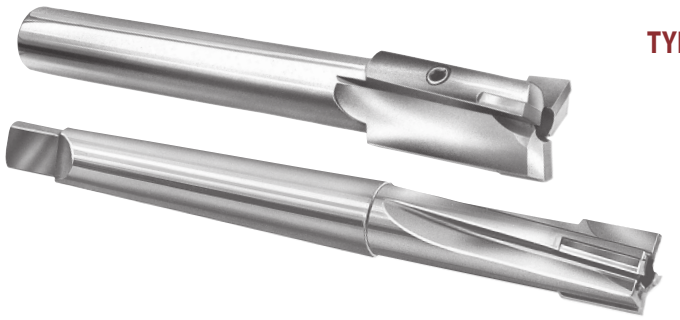
Tool diameter tolerance: +.001"/-.000".
Shank diameter tolerance: +.0000"/-.0005".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	NO. OF FLUTES	OVER ALL LEN.	STRAIGHT SHANK TYPE 3510		TAPER SHANK TYPE 3511		BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.					SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	1/4	.114	3/32	3	3 13/16	15/64	351008	1	351108	$155.20	.2381 - .2530	$230.10	$192.70	$180.20	$174.00	$167.70	$162.55
.2812	9/32	.114	3/32	3	3 13/16	17/64	351009	1	351109	186.90	.2531 - .2840	261.50	224.00	211.55	205.50	199.35	193.90
.3125	5/16	.114	3/32	3	3 13/16	19/64	351010	1	351110	159.55	.2841 - .3150	229.80	194.60	183.05	177.25	171.15	166.40
.3438	11/32	.114	3/32	3	3 13/16	5/16	351011	1	351111	196.65	.3151 - .3470	266.90	231.65	219.80	214.15	208.20	203.40
.3750	3/8	.182	5/32	3	4 1/16	5/16	351012	1	351112	164.70	.3471 - .3780	229.30	197.05	186.20	180.95	175.55	171.10
.4062	13/32	.182	5/32	3	4 1/16	3/8	351013	1	351113	186.05	.3781 - .4090	250.80	218.40	207.70	202.25	196.85	192.35
.4375	7/16	.182	5/32	3	4 1/16	3/8	351014	1	351114	169.10	.4091 - .4410	233.80	201.55	190.60	185.45	179.95	175.55
.4688	15/32	.228	3/16	3	4 5/16	7/16	351015	1	351115	205.40	.4411 - .4720	270.15	237.70	226.85	221.60	216.25	211.75
.5000	1/2	.228	3/16	3	4 5/16	7/16	351016	1	351116	186.70	.4721 - .5030	251.65	219.15	208.20	203.15	197.45	193.05
.5312	17/32	.228	3/16	3	4 5/16	1/2	351017	1	351117	201.60	.5031 - .5340	263.95	232.80	222.40	217.30	211.95	207.70
.5625	9/16	.228	3/16	3	4 5/16	1/2	351018	1	351118	183.25	.5341 - .5660	245.85	214.40	204.10	198.75	193.70	189.35
.5938	19/32	.228	3/16	3	5 1/8	1/2	351019	2	351119	207.05	.5661 - .5970	269.45	238.30	227.85	222.65	217.55	213.10
.6250	5/8	.228	3/16	3	5 1/8	1/2	351020	2	351120	188.15	.5971 - .6280	250.65	219.45	209.00	204.00	198.50	194.30
.6562	21/32	.228	3/16	3	5 1/8	1/2	351021	2	351121	218.55	.6281 - .6590	281.00	249.75	239.35	234.15	228.90	224.75
.6875	11/16	.228	3/16	3	5 1/8	1/2	351022	2	351122	198.50	.6591 - .6910	261.10	229.80	219.45	214.15	209.00	204.60
.7188	23/32	.290	1/4	3	5 3/8	1/2	351023	2	351123	222.20	.6911 - .7220	284.70	253.45	243.10	237.95	232.70	228.40
.7500	3/4	.290	1/4	3	5 3/8	1/2	351024	2	351124	201.95	.7221 - .7530	264.30	233.05	222.65	217.65	212.15	207.95
.7812	25/32	.290	1/4	3	5 3/8	5/8	351025	2	351125	225.95	.7531 - .7840	288.35	257.25	246.75	241.45	236.30	232.05
.8125	13/16	.290	1/4	3	5 3/8	5/8	351026	2	351126	205.50	.7841 - .8160	267.90	236.65	226.40	221.15	215.90	211.55
.8438	27/32	.290	1/4	3	5 3/8	3/4	351027	2	351127	237.50	.8161 - .8470	300.15	268.85	258.45	253.25	248.15	243.75
.8750	7/8	.290	1/4	3	5 3/8	3/4	351028	2	351128	215.95	.8471 - .8780	278.45	247.10	236.90	231.65	226.45	222.05
.9062	29/32	.290	1/4	3	6 1/8	3/4	351029	3	351129	244.00	.8781 - .9090	306.40	275.15	264.90	259.65	254.45	250.20
.9375	15/16	.290	1/4	3	6 1/8	3/4	351030	3	351130	221.75	.9091 - .9410	284.20	253.00	242.55	237.35	232.25	228.00
.9688	31/32	.353	5/16	3	6 3/8	3/4	351031	3	351131	249.60	.9411 - .9720	312.05	280.85	270.40	265.30	259.85	255.70
1.0000	1	.353	5/16	3	6 3/8	3/4	351032	3	351132	235.55	.9721 - 1.0030	300.45	268.05	257.25	251.85	246.20	242.00
1.0625	1 1/16	.353	5/16	3	6 3/8	3/4	351034	3	351134	238.70	1.0031 - 1.0660	303.30	270.95	260.10	254.80	249.35	245.00
1.1250	1 1/8	.353	5/16	3	6 3/8	1	351036	3	351136	246.10	1.0661 - 1.1280	311.10	278.65	267.80	262.45	256.90	252.55
1.1875	1 3/16	.353	5/16	3	6 3/8	1	351038	3	351138	254.50	1.1281 - 1.1905	319.55	287.05	276.15	270.90	265.30	260.95
1.2500	1 1/4	.426	3/8	4	6 5/8	1	351040	3	351140	283.10	1.1906 - 1.2530	353.20	318.00	306.40	300.70	294.70	289.85
1.3125	1 5/16	.426	3/8	4	6 5/8	1	351042	3	351142	303.30	1.2531 - 1.3155	373.75	338.50	326.90	320.95	315.20	310.30
1.3750	1 3/8	.426	3/8	4	6 5/8	1	351044	3	351144	317.85	1.3156 - 1.3780	388.10	352.95	341.30	335.50	329.50	324.65
1.4375	1 7/16	.426	3/8	4	7 7/8	1 1/4	351046	4	351146	353.50	1.3781 - 1.4405	430.10	391.95	379.00	372.80	366.30	361.00
1.5000	1 1/2	.426	3/8	4	7 7/8	1 1/4	351048	4	351148	406.75	1.4406 - 1.5030	486.10	446.55	433.30	426.70	420.15	414.70
1.5625	1 9/16	.489	7/16	4	8 1/8	1 1/4	351050	4	351150	437.10	1.5031 - 1.5660	520.15	478.75	464.95	458.00	451.10	445.40
1.6250	1 5/8	.489	7/16	4	8 1/8	1 1/4	351052	4	351152	444.90	1.5661 - 1.6280	527.85	486.55	472.70	465.80	458.80	453.25
1.6875	1 11/16	.489	7/16	4	8 1/8	1 1/4	351054	4	351154	532.35	1.6281 - 1.6910	622.10	577.35	562.45	555.05	547.35	541.25
1.7500	1 3/4	.489	7/16	4	8 1/8	1 1/4	351056	4	351156	532.35	1.6911 - 1.7530	622.10	577.35	562.45	555.05	547.35	541.25
1.8125	1 13/16	.489	7/16	4	8 1/8	1 1/2	351058	4	351158	630.15	1.7531 - 1.8160	719.75	675.00	660.05	652.60	645.00	638.75
1.8750	1 7/8	.489	7/16	4	8 1/8	1 1/2	351060	4	351160	630.15	1.8161 - 1.8780	719.75	675.00	660.05	652.60	645.00	638.75
1.9375	1 15/16	.489	7/16	4	8 1/8	1 1/2	351062	4	351162	688.45	1.8781 - 1.9410	778.25	733.40	718.25	711.00	703.50	697.25
2.0000	2	.551	1/2	4	8 3/8	1 1/2	351064	4	351164	688.45	1.9411 - 2.0030	778.25	733.40	718.25	711.00	703.50	697.25

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED COUNTERBORES FOR STEEL

METRIC



TYPE 3510 - STRAIGHT SHANK - THREE/FOUR FLUTES
TYPE 3511 - TAPER SHANK - THREE/FOUR FLUTES

Detailed description, tolerances, and fractional sizes on page 38. Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAM.		MIN. CUT DIAM.	PILOT HOLE DIAM.	NO. OF FLTS.	OVER ALL LEN.	STRAIGHT SHANK TYPE 3510		TAPER SHANK TYPE 3511		BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH					SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
6.0	.2362	.114	3/32	3	3 13/16	15/64	3510060	1	3511060	$180.20	6.000 - 6.426	$236.10	$198.60	$186.20	$180.20	$173.95	$168.70	$161.40
6.5	.2559	.114	3/32	3	3 13/16	17/64	3510065	1	3511065	211.55	6.427 - 7.214	267.40	230.10	217.55	211.55	205.40	200.25	192.85
7.0	.2756	.114	3/32	3	3 13/16	17/64	3510070	1	3511070	211.55	-	-	-	-	-	-	-	-
7.5	.2953	.114	3/32	3	3 13/16	19/64	3510075	1	3511075	183.05	7.215 - 8.001	235.50	200.35	188.50	183.05	177.05	172.05	165.25
8.0	.3150	.114	3/32	3	3 13/16	19/64	3510080	1	3511080	183.05	-	-	-	-	-	-	-	-
8.5	.3346	.114	3/32	3	3 13/16	5/16	3510085	1	3511085	219.80	8.002 - 8.814	272.50	237.30	225.75	219.80	214.05	209.25	202.25
9.0	.3543	.182	5/32	3	4 1/16	5/16	3510090	1	3511090	186.20	8.815 - 9.601	234.70	202.25	191.45	186.20	180.75	176.25	169.95
9.5	.3740	.182	5/32	3	4 1/16	5/16	3510095	1	3511095	186.20	-	-	-	-	-	-	-	-
10.0	.3937	.182	5/32	3	4 1/16	3/8	3510100	1	3511100	207.70	9.602 - 10.389	255.90	223.65	212.95	207.70	202.00	197.55	191.40
10.5	.4134	.182	5/32	3	4 1/16	3/8	3510105	1	3511105	190.60	10.390 - 11.201	239.10	206.70	195.95	190.60	185.20	180.75	174.30
11.0	.4331	.182	5/32	3	4 1/16	3/8	3510110	1	3511110	190.60	-	-	-	-	-	-	-	-
11.5	.4528	.228	3/16	3	4 5/16	7/16	3510115	1	3511115	226.85	11.202 - 11.989	275.40	243.05	232.20	226.85	221.55	216.95	210.50
12.0	.4724	.228	3/16	3	4 5/16	7/16	3510120	1	3511120	208.20	11.990 - 12.776	256.85	224.30	213.50	208.20	203.05	198.45	192.10
12.5	.4921	.228	3/16	3	4 5/16	7/16	3510125	1	3511125	208.20	-	-	-	-	-	-	-	-
13.0	.5118	.228	3/16	3	4 5/16	1/2	3510130	1	3511130	222.40	12.777 - 13.564	269.00	237.85	227.30	222.40	217.15	212.85	206.65
13.5	.5315	.228	3/16	3	4 5/16	1/2	3510135	1	3511135	222.40	-	-	-	-	-	-	-	-
14.0	.5512	.228	3/16	3	4 5/16	1/2	3510140	1	3511140	204.10	13.565 - 14.376	250.75	219.50	209.10	204.10	198.65	194.45	188.30
14.5	.5709	.228	3/16	3	5 1/8	1/2	3510145	2	3511145	227.85	14.377 - 15.164	274.55	243.30	232.90	227.85	222.60	218.20	212.10
15.0	.5906	.228	3/16	3	5 1/8	1/2	3510150	2	3511150	227.85	-	-	-	-	-	-	-	-
15.5	.6102	.228	3/16	3	5 1/8	1/2	3510155	2	3511155	209.00	15.165 - 15.951	255.65	224.40	214.00	209.00	203.90	199.50	193.40
16.0	.6299	.228	3/16	3	5 1/8	1/2	3510160	2	3511160	209.00	15.952 - 16.739	255.65	224.40	214.00	209.00	203.90	199.50	193.40
16.5	.6496	.228	3/16	3	5 1/8	1/2	3510165	2	3511165	239.35	-	-	-	-	-	-	-	-
17.0	.6693	.228	3/16	3	5 1/8	1/2	3510170	2	3511170	219.45	16.740 - 17.551	266.00	234.85	224.40	219.45	214.05	209.80	203.90
17.5	.6890	.228	3/16	3	5 1/8	1/2	3510175	2	3511175	219.45	-	-	-	-	-	-	-	-
18.0	.7087	.290	1/4	3	5 3/8	1/2	3510180	2	3511180	243.10	17.552 - 18.339	289.65	258.45	248.15	243.10	237.85	233.45	227.30
18.5	.7283	.290	1/4	3	5 3/8	1/2	3510185	2	3511185	222.65	18.340 - 19.126	269.35	238.20	227.70	222.65	217.55	213.10	207.05
19.0	.7480	.290	1/4	3	5 3/8	1/2	3510190	2	3511190	222.65	-	-	-	-	-	-	-	-
19.5	.7677	.290	1/4	3	5 3/8	5/8	3510195	2	3511195	246.75	19.127 - 19.914	293.50	262.00	251.80	246.75	241.35	237.15	231.00
20.0	.7874	.290	1/4	3	5 3/8	5/8	3510200	2	3511200	226.40	19.915 - 20.726	272.95	241.80	231.20	226.40	221.05	216.60	210.65
20.5	.8071	.290	1/4	3	5 3/8	5/8	3510205	2	3511205	226.40	-	-	-	-	-	-	-	-
21.0	.8268	.290	1/4	3	5 3/8	3/4	3510210	2	3511210	258.45	20.727 - 21.514	305.15	273.85	263.50	258.45	253.20	248.80	242.60
21.5	.8465	.290	1/4	3	5 3/8	3/4	3510215	2	3511215	258.45	-	-	-	-	-	-	-	-
22.0	.8661	.290	1/4	3	5 3/8	3/4	3510220	2	3511220	236.90	21.515 - 22.301	283.45	252.30	242.00	236.90	231.50	227.20	221.15
22.5	.8858	.290	1/4	3	6 1/8	3/4	3510225	3	3511225	264.90	22.302 - 23.089	311.55	280.30	269.80	264.90	259.55	255.45	249.15
23.0	.9055	.290	1/4	3	6 1/8	3/4	3510230	3	3511230	264.90	-	-	-	-	-	-	-	-
23.5	.9252	.290	1/4	3	6 1/8	3/4	3510235	3	3511235	242.55	23.090 - 23.901	289.30	257.95	247.65	242.55	237.30	233.05	226.85
24.0	.9449	.353	5/16	3	6 3/8	3/4	3510240	3	3511240	270.40	23.902 - 24.689	317.05	285.90	275.40	270.40	265.25	260.95	254.75
24.5	.9646	.353	5/16	3	6 3/8	3/4	3510245	3	3511245	270.40	-	-	-	-	-	-	-	-
25.0	.9843	.353	5/16	3	6 3/8	3/4	3510250	3	3511250	247.75	24.690 - 25.476	294.50	263.20	252.75	247.75	242.40	238.30	232.20
25.5	1.0039	.353	5/16	3	6 3/8	3/4	3510255	3	3511255	260.10	25.477 - 27.076	308.50	276.15	265.30	260.10	254.75	250.30	243.90
26.0	1.0236	.353	5/16	3	6 3/8	3/4	3510260	3	3511260	260.10	-	-	-	-	-	-	-	-
27.0	1.0630	.353	5/16	3	6 3/8	3/4	3510270	3	3511270	260.10	-	-	-	-	-	-	-	-
28.0	1.1024	.353	5/16	3	6 3/8	1	3510280	3	3511280	267.80	27.077 - 28.651	316.20	283.80	273.00	267.80	262.35	257.90	251.60
29.0	1.1417	.353	5/16	3	6 3/8	1	3510290	3	3511290	276.15	28.652 - 30.239	324.60	292.20	281.45	276.15	270.85	266.30	259.85
30.0	1.1811	.353	5/16	3	6 3/8	1	3510300	3	3511300	276.15	-	-	-	-	-	-	-	-
31.0	1.2205	.426	3/8	4	6 5/8	1	3510310	3	3511310	306.40	30.240 - 31.826	358.95	323.75	312.05	306.40	300.50	295.80	288.75
32.0	1.2598	.426	3/8	4	6 5/8	1	3510320	3	3511320	326.90	31.827 - 33.414	379.40	344.25	332.45	326.90	320.90	316.05	309.20
33.0	1.2992	.426	3/8	4	6 5/8	1	3510330	3	3511330	326.90	-	-	-	-	-	-	-	-
34.0	1.3386	.426	3/8	4	6 5/8	1	3510340	3	3511340	341.30	33.415 - 35.001	393.95	358.70	347.00	341.30	335.45	330.55	323.55
35.0	1.3780	.426	3/8	4	6 5/8	1	3510350	3	3511350	341.30	-	-	-	-	-	-	-	-
36.0	1.4173	.426	3/8	4	7 7/8	1 1/4	3510360	4	3511360	379.00	35.002 - 36.589	436.05	397.95	385.20	379.00	372.55	367.35	359.80
37.0	1.4567	.426	3/8	4	7 7/8	1 1/4	3510370	4	3511370	417.60	36.590 - 38.176	474.60	436.40	423.55	417.60	411.20	405.85	398.45
38.0	1.4961	.426	3/8	4	7 7/8	1 1/4	3510380	4	3511380	417.60	-	-	-	-	-	-	-	-

CARBIDE TIPPED AIRCRAFT/REDUCED SHANK COUNTERBORES

TYPE 3522 - STRAIGHT SHANK - THREE FLUTES

Carbide tips brazed to alloy steel bodies. Polished flutes.

For counterboring and spotfacing composites, non-metals, and non-ferrous materials used in airframe manufacturing.



Tool diameter tolerance: +.001"/-.000".
Shank diameter tolerance: +.0000"/- .001".
Corner radius: 1/64".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	NO. OF FLUTES	SMALL SHANK DIAM.	OVER ALL LENGTH	EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.									1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	1/4	.125	3/32	3	1/4	2 3/8	352208	$103.20	.2381 - .2530	$175.40	$139.50	$127.25	$121.50	$115.45	$110.40
.2812	9/32	.125	3/32	3	1/4	2 3/8	352209	103.30	.2531 - .2840	175.65	139.60	127.45	121.65	115.50	110.55
.3125	5/16	.125	3/32	3	1/4	2 3/8	352210	106.00	.2841 - .3150	178.35	142.05	130.00	124.05	118.00	113.10
.3438	11/32	.125	3/32	3	1/4	2 3/8	352211	108.10	.3151 - .3470	180.45	144.15	132.25	126.20	120.20	115.30
.3750	3/8	.125	3/32	3	1/4	2 3/8	352212	108.45	.3471 - .3780	180.65	144.50	132.60	126.55	120.35	115.50
.4062	13/32	.156	1/8	3	1/4	2 3/4	352213	123.25	.3781 - .4090	195.35	159.55	147.20	141.45	135.30	130.50
.4375	7/16	.156	1/8	3	1/4	2 3/4	352214	132.85	.4091 - .4410	205.10	168.90	157.10	150.90	145.05	139.95
.4688	15/32	.156	1/8	3	1/4	2 3/4	352215	135.10	.4411 - .4720	207.35	171.15	159.20	153.35	147.15	142.15
.5000	1/2	.156	1/8	3	1/4	2 3/4	352216	136.70	.4721 - .5030	209.10	172.90	160.80	154.85	148.75	143.80
.5312	17/32	.156	1/8	3	1/4	2 3/4	352217	137.50	.5031 - .5340	209.70	173.55	161.50	155.55	149.40	144.50
.5625	9/16	.156	1/8	3	1/4	2 3/4	352218	138.05	.5341 - .5660	210.30	174.25	162.10	156.15	150.15	145.10
.5938	19/32	.156	1/8	3	1/4	2 3/4	352219	138.75	.5661 - .5970	211.20	175.00	163.10	157.10	150.85	145.90
.6250	5/8	.156	1/8	3	1/4	2 3/4	352220	140.35	.5971 - .6280	212.50	176.60	164.45	158.60	152.45	147.35
.6562	21/32	.219	3/16	3	1/4	2 3/4	352221	155.90	.6281 - .6590	228.15	192.00	180.10	174.25	168.00	163.15
.6875	11/16	.219	3/16	3	1/4	2 3/4	352222	163.80	.6591 - .6910	236.05	200.00	187.90	182.00	175.70	170.85
.7188	23/32	.219	3/16	3	1/4	2 3/4	352223	169.35	.6911 - .7220	241.35	205.50	193.35	187.55	181.30	176.55
.7500	3/4	.219	3/16	3	1/4	2 3/4	352224	171.50	.7221 - .7530	243.60	207.60	195.35	189.65	183.45	178.55
.7812	25/32	.219	3/16	3	1/4	2 3/4	352225	172.05	.7531 - .7840	244.45	208.25	196.30	190.20	184.15	179.20
.8125	13/16	.219	3/16	3	1/4	2 3/4	352226	173.60	.7841 - .8160	246.10	209.80	197.75	191.80	185.80	180.75
.8438	27/32	.219	3/16	3	1/4	2 3/4	352227	174.95	.8161 - .8470	247.15	210.75	198.80	192.90	186.90	182.00
.8750	7/8	.219	3/16	3	1/4	2 3/4	352228	176.60	.8471 - .8780	248.70	212.50	200.70	194.65	188.50	183.60
.9062	29/32	.219	3/16	3	1/4	2 3/4	352229	177.65	.8781 - .9090	250.05	213.90	201.95	195.95	189.75	184.85
.9375	15/16	.219	3/16	3	1/4	2 3/4	352230	179.35	.9091 - .9410	251.70	215.60	203.55	197.60	191.65	186.40
.9688	31/32	.219	3/16	3	1/4	2 3/4	352231	180.65	.9411 - .9720	252.85	216.70	204.90	198.75	192.70	187.75
1.0000	1	.219	3/16	3	1/4	2 3/4	352232	181.25	.9721 - 1.0030	253.55	217.35	205.15	199.35	193.15	188.25
1.0625	1 1/16	.219	3/16	3	3/8	2 3/4	352234	231.35	1.0031 - 1.0660	303.45	267.25	255.50	249.35	243.20	238.30
1.1250	1 1/8	.219	3/16	3	3/8	2 3/4	352236	246.75	1.0661 - 1.1280	318.90	282.85	270.95	264.95	258.80	253.80
1.1875	1 3/16	.219	3/16	3	3/8	2 3/4	352238	249.95	1.1281 - 1.1905	322.15	286.10	274.05	268.10	262.00	257.05
1.2500	1 1/4	.281	1/4	3	3/8	2 3/4	352240	254.50	1.1906 - 1.2530	327.05	290.70	278.55	272.70	266.85	261.75
1.3125	1 5/16	.281	1/4	3	3/8	2 3/4	352242	259.30	1.2531 - 1.3155	331.45	295.35	283.45	277.50	271.20	266.30
1.3750	1 3/8	.281	1/4	3	3/8	2 3/4	352244	262.20	1.3156 - 1.3780	334.65	298.70	286.50	280.50	274.45	269.35
1.4375	1 7/16	.281	1/4	3	3/8	2 3/4	352246	265.35	1.3781 - 1.4405	337.80	301.55	289.65	283.65	277.55	272.60
1.5000	1 1/2	.281	1/4	3	3/8	2 3/4	352248	279.45	1.4406 - 1.5030	354.25	316.90	304.35	298.25	291.85	286.80
1.5625	1 9/16	.343	5/16	3	1/2	3 1/16	352250	310.80	1.5031 - 1.5660	385.70	348.40	335.85	329.75	323.45	318.45
1.6250	1 5/8	.343	5/16	3	1/2	3 1/16	352252	314.85	1.5661 - 1.6280	389.90	352.45	340.15	333.90	327.45	322.20
1.6875	1 11/16	.343	5/16	3	1/2	3 1/16	352254	319.00	1.6281 - 1.6910	394.05	356.65	344.20	338.05	331.75	326.55
1.7500	1 3/4	.343	5/16	3	1/2	3 1/16	352256	324.05	1.6911 - 1.7530	398.95	361.35	348.90	342.70	336.50	331.40
1.8125	1 13/16	.343	5/16	3	1/2	3 1/16	352258	327.90	1.7531 - 1.8160	402.10	364.70	352.25	346.10	339.55	334.55
1.8750	1 7/8	.343	5/16	3	1/2	3 1/16	352260	330.20	1.8161 - 1.8780	405.25	367.70	355.10	349.15	342.70	337.55
1.9375	1 15/16	.343	5/16	3	1/2	3 1/16	352262	364.40	1.8781 - 1.9410	439.40	401.80	389.35	383.20	376.80	371.75
2.0000	2	.343	5/16	3	1/2	3 1/16	352264	453.40	1.9411 - 2.0030	528.65	491.20	478.65	472.50	466.05	460.80

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED RADIAL DRIVE COUNTERBORES



TYPE 3577 - FOR NON-FERROUS & CAST IRON

Carbide tips brazed to hardened alloy steel bodies.

Tools are designed with appropriate carbide grade and tool geometry for machining non-ferrous, cast iron and non-metals.

TYPE 3578 - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

Tools are designed with appropriate carbide grade and tool geometry for machining steel and steel alloys.

Both types have 10° right spiral smooth flutes and accept only short shank pilots (see page 32).

Body length = 1 ½"
Tool diameter tolerance: +.001"/-.000".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	RADIAL DRIVE SIZE	LARGE SHANK DIAM.	NO. OF FLTS.	OVER ALL LENGTH	N-F/C.I. TYPE 3577 EDP NO.	STEEL TYPE 3578 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.											1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.5000	½	.219	3⁄16	RB	5⁄8	3	2 7⁄8	357716	357816	$295.25	.4721 - .5030	$431.70	$363.70	$340.85	$329.55	$318.15	$308.75
.5625	9⁄16	.219	3⁄16	RB	5⁄8	3	2 7⁄8	357718	357818	295.25	.5341 - .5660	431.70	363.70	340.85	329.55	318.15	308.75
.6250	5⁄8	.219	3⁄16	RB	5⁄8	3	2 7⁄8	357720	357820	295.25	.5971 - .6280	431.70	363.70	340.85	329.55	318.15	308.75
.6875	11⁄16	.297	¼	RB	5⁄8	3	2 7⁄8	357722	357822	295.25	.6591 - .6910	431.70	363.70	340.85	329.55	318.15	308.75
.7500	¾	.297	¼	RB	5⁄8	4	2 7⁄8	357724	357824	295.25	.7221 - .7530	431.70	363.70	340.85	329.55	318.15	308.75
.8125	13⁄16	.297	¼	RB	5⁄8	4	2 7⁄8	357726	357826	300.95	.7841 - .8160	437.35	369.25	346.30	335.30	323.80	314.30
.8750	7⁄8	.297	¼	RB	5⁄8	4	2 7⁄8	357728	357828	300.95	.8471 - .8780	437.35	369.25	346.30	335.30	323.80	314.30
.9375	15⁄16	.297	¼	RB	5⁄8	4	2 7⁄8	357730	357830	318.55	.9091 - .9410	455.00	386.75	363.95	352.65	341.30	331.95
1.0000	1	.297	¼	RB	5⁄8	4	2 7⁄8	357732	357832	318.55	.9721 - 1.0030	455.00	386.75	363.95	352.65	341.30	331.95
1.0000	1	.359	5⁄16	RC	¾	4	2 7⁄8	357733	357833	324.25	.9721 - 1.0030	460.60	392.35	369.55	358.35	346.85	337.45
1.0625	1 1⁄16	.359	5⁄16	RC	¾	4	2 7⁄8	357734	357834	324.25	1.0031 - 1.0660	460.60	392.35	369.55	358.35	346.85	337.45
1.1250	1 1⁄8	.359	5⁄16	RC	¾	4	2 7⁄8	357736	357836	324.25	1.0661 - 1.1280	460.60	392.35	369.55	358.35	346.85	337.45
1.1875	1 3⁄16	.359	5⁄16	RC	¾	4	2 7⁄8	357738	357838	346.85	1.1281 - 1.1905	483.30	415.05	392.35	381.10	369.75	360.35
1.2500	1 ¼	.359	5⁄16	RC	¾	4	2 7⁄8	357740	357840	346.85	1.1906 - 1.2530	483.30	415.05	392.35	381.10	369.75	360.35
1.3125	1 5⁄16	.359	5⁄16	RC	¾	4	2 7⁄8	357742	357842	346.85	1.2531 - 1.3155	483.30	415.05	392.35	381.10	369.75	360.35
1.3750	1 3⁄8	.359	5⁄16	RC	¾	4	2 7⁄8	357744	357844	346.85	1.3156 - 1.3780	483.30	415.05	392.35	381.10	369.75	360.35
1.3750	1 3⁄8	.359	5⁄16	RE	1	4	3	357745	357845	376.25	1.3151 - 1.3780	512.45	444.45	421.70	410.40	398.85	389.50
1.5000	1 ½	.359	5⁄16	RE	1	4	3	357748	357848	422.10	1.4406 - 1.5030	558.60	490.50	467.75	456.45	445.15	435.60
1.5000	1 ½	.484	7⁄16	RF	1 1⁄8	4	3 1⁄16	357749	357849	439.40	1.4406 - 1.5030	576.05	507.65	484.95	473.70	462.30	452.85
1.6250	1 5⁄8	.359	5⁄16	RE	1	4	3	357752	357852	439.40	1.5661 - 1.6280	576.05	507.65	484.95	473.70	462.30	452.85
1.6250	1 5⁄8	.484	7⁄16	RF	1 1⁄8	4	3 1⁄16	357753	357853	451.30	1.5661 - 1.6280	587.70	519.60	496.85	485.65	474.30	464.80
1.7500	1 ¾	.484	7⁄16	RF	1 1⁄8	6	3 1⁄16	357756	357856	554.90	1.6911 - 1.7530	691.30	623.05	600.40	589.10	577.80	568.35
1.8750	1 7⁄8	.484	7⁄16	RF	1 1⁄8	6	3 1⁄16	357760	357860	584.10	1.8161 - 1.8780	720.50	652.40	629.65	618.30	606.85	597.40
2.0000	2	.484	7⁄16	RF	1 1⁄8	6	3 1⁄16	357764	357864	636.15	1.9411 - 2.0030	772.80	704.40	681.60	670.40	659.05	649.55
2.0000	2	.563	½	RJ	1 3⁄8	6	3 1⁄16	357765	357865	636.15	1.9411 - 2.0030	772.80	704.40	681.60	670.40	659.05	649.55
2.1250	2 1⁄8	.563	½	RJ	1 3⁄8	6	3 1⁄16	357768	357868	653.40	2.0661 - 2.1280	789.90	721.90	699.00	687.90	676.40	666.95
2.2500	2 ¼	.563	½	RJ	1 3⁄8	6	3 1⁄16	357772	357872	682.10	2.1906 - 2.2530	818.60	750.40	727.65	716.40	704.95	695.60
2.3750	2 3⁄8	.563	½	RJ	1 3⁄8	6	3 1⁄16	357776	357876	719.95	2.3156 - 2.3780	861.65	790.80	767.15	755.70	743.55	733.60
2.5000	2 ½	.563	½	RJ	1 3⁄8	6	3 1⁄16	357780	357880	750.35	2.4406 - 2.5030	892.10	821.25	797.50	785.90	774.20	764.20
2.6250	2 5⁄8	.563	½	RJ	1 3⁄8	6	3 1⁄16	357784	357884	767.55	2.5661 - 2.6280	909.45	838.60	814.75	803.25	791.40	781.60
2.7500	2 ¾	.563	½	RS	1 ¾	6	3 1⁄8	357788	357888	780.00	2.6911 - 2.7530	921.50	850.90	827.20	815.50	803.80	793.95
2.8750	2 7⁄8	.563	½	RS	1 ¾	6	3 1⁄8	357792	357892	822.10	2.8161 - 2.8780	963.85	893.00	869.35	857.55	845.75	835.95
3.0000	3	.563	½	RS	1 ¾	6	3 1⁄8	357796	357896	882.05	2.9411 - 3.0030	1023.60	952.85	929.25	917.55	905.80	895.95

CARBIDE TIPPED PIN DRIVE COUNTERBORES

TYPE 3573 - FOR NON-FERROUS & CAST IRON

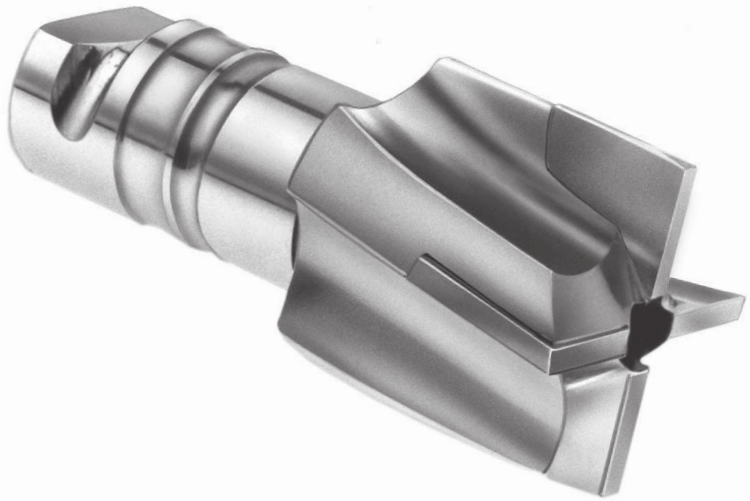
Carbide tips brazed to hardened alloy steel bodies.

Tools are designed with appropriate carbide grade and tool geometry for machining non-ferrous, cast iron and non-metals.

TYPE 3574 - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

Tools are designed with appropriate carbide grade and tool geometry for machining steel and steel alloys.



Both types have 10° right spiral smooth flutes and accept short or long threaded shank pilots. For short shank pilots, see page 32. For long threaded shank pilots, contact us for price and availability. Pin drive shanks can also be used in straight shank holders or collets.

Tool diameter tolerance: +.001"/-.000".
Body length: 1 ⅜".

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	PIN DRIVE NO.	SHANK DIAM.	NO. OF FLTS.	OVER ALL LENGTH	N-F/C.I. TYPE 3573 EDP NO.	STEEL TYPE 3574 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.											1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.5000	½	.2188	.1875	1	9/16	3	2 7/8	357316	357416	$283.65	.4721 - .5030	$420.15	$351.90	$328.95	$317.80	$306.30	$296.80
.5625	9/16	.2188	.1875	1	9/16	3	2 7/8	357318	357418	283.65	.5341 - .5660	420.15	351.90	328.95	317.80	306.30	296.80
.6250	5/8	.2188	.1875	1	9/16	3	2 7/8	357320	357420	283.65	.5971 - .6280	420.15	351.90	328.95	317.80	306.30	296.80
.6875	11/16	.2969	.2500	1	9/16	3	2 7/8	357322	357422	266.40	.6591 - .6910	402.90	334.65	312.00	300.85	289.40	279.80
.7500	¾	.2969	.2500	1	9/16	3	2 7/8	357324	357424	266.40	.7221 - .7530	402.90	334.65	312.00	300.85	289.40	279.80
.8125	13/16	.2969	.2500	1	9/16	4	2 7/8	357326	357426	266.40	.7841 - .8160	402.90	334.65	312.00	300.85	289.40	279.80
.8750	7/8	.2969	.2500	1	9/16	4	2 7/8	357328	357428	266.40	.8471 - .8780	402.90	334.65	312.00	300.85	289.40	279.80
.9375	15/16	.2969	.2500	1	9/16	4	2 7/8	357330	357430	272.45	.9091 - .9410	409.00	340.85	318.00	306.90	295.25	285.80
1.0000	1	.2969	.2500	1	9/16	4	2 7/8	357332	357432	277.55	.9721 - 1.0030	414.00	345.85	322.85	311.65	300.25	290.80
1.0625	1 1/16	.2969	.2500	1	9/16	4	2 7/8	357334	357434	306.90	1.0031 - 1.0660	443.15	375.15	352.40	341.10	329.55	320.20
1.0625	1 1/16	.3594	.3125	2	7/8	4	3	357335	357435	324.25	1.0031 - 1.0660	460.60	392.35	369.55	358.35	346.85	337.45
1.1250	1 1/8	.2969	.2500	1	9/16	4	2 7/8	357336	357436	306.90	1.0661 - 1.1280	443.15	375.15	352.40	341.10	329.55	320.20
1.1250	1 1/8	.3594	.3125	2	7/8	4	3	357337	357437	324.25	1.0661 - 1.1280	460.60	392.35	369.55	358.35	346.85	337.45
1.1875	1 3/16	.3594	.3125	2	7/8	4	3	357338	357438	336.00	1.1281 - 1.1905	472.65	404.40	381.55	370.25	358.90	349.50
1.2500	1 ¼	.3594	.3125	2	7/8	4	3	357340	357440	336.00	1.1906 - 1.2530	472.65	404.40	381.55	370.25	358.90	349.50
1.3125	1 5/16	.3594	.3125	2	7/8	4	3	357342	357442	341.30	1.2531 - 1.3155	477.90	409.70	386.75	375.50	364.15	354.75
1.3750	1 3/8	.3594	.3125	2	7/8	4	3	357344	357444	341.30	1.3156 - 1.3780	477.90	409.70	386.75	375.50	364.15	354.75
1.4375	1 7/16	.3594	.3125	2	7/8	4	3	357346	357446	358.55	1.3781 - 1.4405	494.90	426.85	403.95	392.75	381.30	371.85
1.5000	1 ½	.3594	.3125	2	7/8	4	3	357348	357448	376.25	1.4406 - 1.5030	512.45	444.45	421.70	410.40	398.85	389.50
1.5625	1 9/16	.3594	.3125	2	7/8	4	3	357350	357450	404.55	1.5031 - 1.5660	541.05	472.80	450.10	438.70	427.40	417.90
1.6250	1 5/8	.3594	.3125	2	7/8	4	3	357352	357452	422.10	1.5661 - 1.6280	558.60	490.50	467.75	456.45	445.15	435.60
1.6875	1 11/16	.3594	.3125	2	7/8	4	3	357354	357454	439.40	1.6281 - 1.6910	576.05	507.65	484.95	473.70	462.30	452.85
1.7500	1 ¾	.3594	.3125	2	7/8	4	3	357356	357456	462.85	1.6911 - 1.7530	599.15	530.95	508.25	496.95	485.65	476.20
1.7500	1 ¾	.4844	.4375	3	1 ¼	6	3 1/16	357357	357457	526.75	1.6911 - 1.7530	663.40	595.15	572.25	561.00	549.70	540.25
1.8750	1 7/8	.4844	.4375	3	1 ¼	6	3 1/16	357360	357460	526.75	1.8161 - 1.8780	663.40	595.15	572.25	561.00	549.70	540.25
2.0000	2	.4844	.4375	3	1 ¼	6	3 1/16	357364	357464	596.25	1.9411 - 2.0030	732.60	664.60	641.70	630.65	618.95	609.50
2.1250	2 1/8	.4844	.4375	3	1 ¼	6	3 1/16	357368	357468	612.90	2.0661 - 2.1280	749.20	681.10	658.30	647.00	635.65	626.20
2.2500	2 ¼	.4844	.4375	3	1 ¼	6	3 1/16	357372	357472	636.15	2.1906 - 2.2530	772.80	704.40	681.60	670.40	659.05	649.55
2.3750	2 3/8	.4844	.4375	3	1 ¼	6	3 1/16	357376	357476	713.80	2.3156 - 2.3780	855.55	784.55	761.10	749.35	737.50	727.70
2.5000	2 ½	.5625	.5000	3	1 ¼	6	3 1/16	357380	357480	767.55	2.4406 - 2.5030	909.45	838.60	814.75	803.25	791.40	781.60
2.7500	2 ¾	.5625	.5000	3	1 ¼	6	3 1/16	357388	357488	852.20	2.6911 - 2.7530	993.85	923.00	899.30	887.60	875.75	866.05
3.0000	3	.5625	.5000	3	1 ¼	6	3 1/16	357396	357496	900.25	2.9411 - 3.0030	1042.10	971.25	947.60	935.90	924.15	914.25

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED STUB TAPER SHANK COUNTERBORES

TYPE 3575 - FOR NON-FERROUS & CAST IRON

Carbide tips brazed to hardened alloy steel bodies.

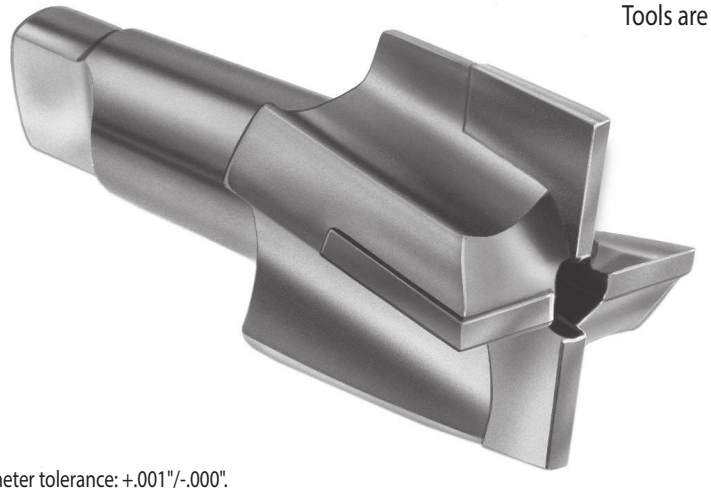
Tools are designed with appropriate carbide grade and tool geometry for machining non-ferrous, cast iron and non-metals.

TYPE 3576 - FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

Tools are designed with appropriate carbide grade and tool geometry for machining steel and steel alloys.

Both types have 10° right spiral smooth flutes and accept only short shank pilots (see page 32).



Tool diameter tolerance: +.001"/-.000".
Stub taper dimensions conform to ASME/ANSI B5.10 specifications.
Body length = 1 ¼" thru 1.9410" tool diameter.
= 1 ½" above 1.9410" tool diameter.

TOOL DIAMETER		MIN. CUT DIAM.	PILOT HOLE DIAM.	STUB TAPER NO.	NO. OF FLTS.	OVER ALL LENGTH	N-F/C.I. TYPE 3575 EDP NO.	STEEL TYPE 3576 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.										1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.5000	½	.2188	.1875	1	3	2 9⁄16	357516	357616	329.70	.4721 - .5030	$455.20	$392.65	$371.50	$361.20	$350.65	$342.00
.5625	9⁄16	.2188	.1875	1	3	2 9⁄16	357518	357618	329.70	.5341 - .5660	455.20	392.65	371.50	361.20	350.65	342.00
.6250	5⁄8	.2188	.1875	1	3	2 9⁄16	357520	357620	329.70	.5971 - .6280	455.20	392.65	371.50	361.20	350.65	342.00
.6875	11⁄16	.2188	.1875	1	3	2 9⁄16	357522	357622	329.70	.6591 - .6910	455.20	392.65	371.50	361.20	350.65	342.00
.7500	¾	.2969	.2500	2	4	2 7⁄8	357524	357624	308.90	.7221 - .7530	434.40	371.90	350.85	340.55	330.05	321.30
.8125	13⁄16	.2969	.2500	2	4	2 7⁄8	357526	357626	308.90	.7841 - .8160	434.40	371.90	350.85	340.55	330.05	321.30
.8750	7⁄8	.2969	.2500	2	4	2 7⁄8	357528	357628	308.90	.8471 - .8780	434.40	371.90	350.85	340.55	330.05	321.30
.9375	15⁄16	.2969	.2500	2	4	2 7⁄8	357530	357630	297.90	.9091 - .9410	423.55	360.80	339.85	329.55	319.00	310.40
1.0000	1	.3594	.3125	2	4	2 7⁄8	357532	357632	297.90	.9721 - 1.0030	423.55	360.80	339.85	329.55	319.00	310.40
1.0625	1 1⁄16	.3594	.3125	2	4	2 7⁄8	357534	357634	297.90	1.0031 - 1.0660	423.55	360.80	339.85	329.55	319.00	310.40
1.1250	1 1⁄8	.3594	.3125	2	4	2 7⁄8	357536	357636	297.90	1.0661 - 1.1280	423.55	360.80	339.85	329.55	319.00	310.40
1.1875	1 3⁄16	.3594	.3125	2	4	2 7⁄8	357538	357638	308.90	1.1281 - 1.1905	434.40	371.90	350.85	340.55	330.05	321.30
1.2500	1 ¼	.3594	.3125	2	4	2 7⁄8	357540	357640	308.90	1.1906 - 1.2530	434.40	371.90	350.85	340.55	330.05	321.30
1.3125	1 5⁄16	.3594	.3125	2	4	2 7⁄8	357542	357642	313.90	1.2531 - 1.3155	439.45	376.75	355.75	345.25	334.95	326.20
1.3750	1 3⁄8	.3594	.3125	2	4	2 7⁄8	357544	357644	345.95	1.3156 - 1.3780	471.40	408.85	387.80	377.45	367.00	358.35
1.4375	1 7⁄16	.3594	.3125	2	4	2 7⁄8	357546	357646	377.85	1.3781 - 1.4405	503.35	440.65	419.65	409.20	398.70	389.85
1.5000	1 ½	.3594	.3125	2	4	2 7⁄8	357548	357648	409.45	1.4406 - 1.5030	535.15	472.30	451.50	441.05	430.65	421.80
1.5625	1 9⁄16	.4844	.4375	3	6	3 3⁄16	357550	357650	436.05	1.5031 - 1.5660	561.70	498.80	477.95	467.80	457.15	448.55
1.6250	1 5⁄8	.4844	.4375	3	6	3 3⁄16	357552	357652	489.50	1.5661 - 1.6280	614.80	552.15	531.25	520.85	510.15	501.60
1.6875	1 11⁄16	.4844	.4375	3	6	3 3⁄16	357554	357654	531.65	1.6281 - 1.6910	657.25	594.50	573.60	563.30	552.80	544.05
1.7500	1 ¾	.4844	.4375	3	6	3 3⁄16	357556	357656	574.30	1.6911 - 1.7530	699.70	637.15	616.20	605.85	595.20	586.65
1.8125	1 13⁄16	.4844	.4375	3	6	3 3⁄16	357558	357658	606.40	1.7531 - 1.8160	732.00	669.35	648.15	638.00	627.50	618.80
1.8750	1 7⁄8	.4844	.4375	3	6	3 3⁄16	357560	357660	638.10	1.8161 - 1.8780	763.65	700.85	679.90	669.50	658.90	650.25
1.9375	1 15⁄16	.4844	.4375	3	6	3 3⁄16	357562	357662	670.30	1.8781 - 1.9410	795.85	732.95	712.20	701.75	691.30	682.45
2.0000	2	.5625	.5000	4	6	3 ¾	357564	357664	701.80	1.9411 - 2.0030	827.25	764.80	743.75	733.45	722.95	714.15
2.1250	2 1⁄8	.5625	.5000	4	6	3 ¾	357568	357668	723.15	2.0661 - 2.1280	848.75	785.95	764.95	754.65	744.25	735.50
2.2500	2 ¼	.5625	.5000	4	6	3 ¾	357572	357672	744.15	2.1906 - 2.2530	869.60	806.95	785.90	775.60	764.95	756.35
2.3750	2 3⁄8	.5625	.5000	4	6	3 ¾	357576	357676	800.25	2.3156 - 2.3780	930.30	865.20	843.65	832.85	822.00	813.05
2.5000	2 ½	.5625	.5000	4	6	3 ¾	357580	357680	828.05	2.4406 - 2.5030	958.45	893.25	871.55	860.85	849.95	840.85
2.7500	2 ¾	.5625	.5000	4	6	3 ¾	357588	357688	872.05	2.6911 - 2.7530	1002.25	937.10	915.30	904.70	893.85	884.80
3.0000	3	.5625	.5000	4	6	3 ¾	357596	357696	916.10	2.9411 - 3.0030	1046.15	981.25	959.40	948.65	937.70	928.85

SOLID CARBIDE HEAD REAMERS

TYPE 3801 - STRAIGHT STEEL SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3800 - STRAIGHT STEEL SHANK - STRAIGHT FLUTES - FOR CAST IRON & STEEL

Solid carbide head brazed to hardened alloy steel shank on tool diameters .1911" and larger.
Solid carbide head and shank on diameters .1910" and below.
Tool geometry appropriate for material being machined.

We recommend our Carbide Tipped Reamers Type 3480 (page 74) or Type 3459 (page 93) for better performance when reaming cast steels and tough steel alloys. The carbide grade and tool geometry are appropriate for these materials. Diameters 7/64" and below provided with male centers.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".

For closer tool diameter tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLUTES	LENGTH		NON-FERR. TYPE 3801 EDP NO.	C.I./STEEL TYPE 3800 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
* -	-	.0800	4	¾	3	-	380099	-	.0811 - .0890	$183.90	$135.95	$119.35	$112.00	$103.50	$97.30
*.0938	3/32	.0880	4	¾	3	-	380006	$87.85	.0891 - .0970	183.90	135.95	119.35	112.00	103.50	97.30
*.1094	7/64	.0943	4	⅞	3 ½	-	380007	87.85	.0971 - .1120	183.90	135.95	119.35	112.00	103.50	97.30
*.1250	⅛	.1099	4	⅞	3 ½	380108	380008	87.85	.1121 - .1280	183.90	135.95	119.35	112.00	103.50	97.30
*.1406	9/64	.1255	4	⅞	3 ½	380109	380009	100.45	.1281 - .1435	196.55	148.40	132.10	124.50	116.40	109.75
*.1562	5/32	.1411	4	1	4	380110	380010	103.35	.1436 - .1590	199.35	151.30	134.90	127.50	119.10	112.95
*.1719	11/64	.1567	4	1	4	380111	380011	116.45	.1591 - .1750	212.30	164.50	148.40	140.60	132.40	126.00
*.1875	3/16	.1724	4	1 ⅛	4 ½	380112	380012	119.00	.1751 - .1910	215.10	166.95	150.60	143.15	134.85	128.60
.2031	13/64	.1880	6	1 ¼	5	380113	380013	126.70	-	-	-	-	-	-	-
.2188	7/32	.1880	6	1 ¼	5	380114	380014	126.70	.1911 - .2210	222.80	174.85	158.70	150.85	142.70	136.40
.2344	15/64	.2193	6	1 ½	6	380115	380015	134.85	-	-	-	-	-	-	-
.2500	¼	.2193	6	1 ½	6	380116	380016	134.85	.2211 - .2530	230.90	182.70	166.80	159.15	150.60	144.40
.2656	17/64	.2505	6	1 ½	6	380117	380017	145.00	-	-	-	-	-	-	-
.2812	9/32	.2505	6	1 ½	6	380118	380018	145.00	.2531 - .2840	240.90	193.05	176.85	169.20	161.10	154.55
.2969	19/64	.2817	6	1 ⅝	6	380119	380019	150.85	-	-	-	-	-	-	-
.3125	5/16	.2817	6	1 ⅝	6	380120	380020	150.85	.2841 - .3150	246.85	198.90	182.70	175.15	166.95	160.30
.3281	21/64	.3130	6	1 ⅝	6	380121	380021	161.60	-	-	-	-	-	-	-
.3438	11/32	.3130	6	1 ⅝	6	380122	380022	161.60	.3151 - .3470	257.45	209.40	193.10	185.40	177.35	171.05
.3594	23/64	.3443	6	1 ¾	7	380123	380023	173.80	-	-	-	-	-	-	-
.3750	⅜	.3443	6	1 ¾	7	380124	380024	173.80	.3471 - .3780	269.50	221.45	205.35	197.90	189.60	183.20
.3906	25/64	.3755	6	1 ¾	7	380125	380025	198.45	-	-	-	-	-	-	-
.4062	13/32	.3755	6	1 ¾	7	380126	380026	198.45	.3781 - .4090	294.45	246.30	230.45	222.70	214.40	207.90
.4219	27/64	.4067	6	1 ¾	7	380127	380027	210.95	-	-	-	-	-	-	-
.4375	7/16	.4067	6	1 ¾	7	380128	380028	210.95	.4091 - .4410	306.70	258.45	242.65	235.10	226.70	220.05
.4531	29/64	.4380	6	1 ¾	8	380129	380029	223.55	-	-	-	-	-	-	-
.4688	15/32	.4380	6	1 ¾	8	380130	380030	223.55	.4411 - .4720	319.55	271.35	255.30	247.80	239.55	232.95
.4844	31/64	.4693	6	1 ¾	8	380131	380031	239.95	-	-	-	-	-	-	-
.5000	½	.4693	6	1 ¾	8	380132	380032	239.95	.4721 - .5030	336.10	287.90	271.60	264.05	255.75	249.45
.5156	33/64	.5005	6	1 ⅞	9	380133	380033	309.55	-	-	-	-	-	-	-
.5312	17/32	.5005	6	1 ⅞	9	380134	380034	309.55	.5031 - .5340	405.40	357.35	341.45	333.70	325.40	318.85
.5469	35/64	.5005	6	1 ⅞	9	380135	380035	365.40	-	-	-	-	-	-	-
.5625	9/16	.5005	6	1 ⅞	9	380136	380036	358.75	.5341 - .5660	453.00	405.45	389.70	382.40	374.25	368.05
.5781	37/64	.5630	6	1 ⅞	9	380137	380037	407.05	-	-	-	-	-	-	-
.5938	19/32	.5630	6	1 ⅞	9	380138	380038	407.05	.5661 - .5970	501.40	454.10	438.30	430.70	422.70	416.30
.6094	39/64	.5630	6	1 ⅞	9	380139	380039	411.70	-	-	-	-	-	-	-
.6250	⅝	.5630	6	1 ⅞	9	380140	380040	411.70	.5971 - .6280	505.75	458.40	443.10	435.40	427.45	420.90
.6562	21/32	.6255	6	2	9 ½	380142	380042	595.50	.6281 - .6590	685.10	640.30	625.25	618.10	611.25	604.25
.6875	11/16	.6255	6	2	9 ½	380144	380044	595.50	.6591 - .6910	685.10	640.30	625.25	618.10	611.25	604.25
.7188	23/32	.6880	6	2	9 ½	380146	380046	670.25	.6911 - .7220	759.75	714.70	699.90	692.65	686.00	678.90
.7500	¾	.6880	6	2	9 ½	380148	380048	670.25	.7221 - .7530	759.75	714.70	699.90	692.65	686.00	678.90
.7812	25/32	.7505	8	2	10	380150	380050	744.00	.7531 - .7840	833.50	788.55	773.70	766.50	759.60	752.50
.8125	13/16	.7817	8	2	10	380152	380052	811.75	.7841 - .8160	901.35	856.25	841.50	834.30	827.50	820.50
.8438	27/32	.8130	8	2	10	380154	380054	856.10	.8161 - .8470	945.60	900.75	885.75	878.70	871.70	864.75
.8750	⅞	.8440	8	2	10	380156	380056	838.05	.8471 - .8780	927.65	882.70	867.80	860.65	853.75	846.75
.9062	29/32	.8755	8	2	10	380158	380058	980.70	.8781 - .9090	1070.30	1025.25	1010.45	1003.25	996.35	989.45
.9375	15/16	.9067	8	2	10	380160	380060	1030.90	.9091 - .9410	1120.35	1075.55	1060.50	1053.35	1046.50	1039.50
.9688	31/32	.9380	8	2	10	380162	380062	1079.85	.9411 - .9720	1169.35	1124.45	1109.50	1102.40	1095.50	1088.40
1.0000	1	.9693	8	2	10	380164	380064	1120.45	.9721 - 1.0030	1210.10	1165.15	1150.20	1143.00	1136.25	1129.25

*Solid carbide head and shank (.0811" - .1910" tool diameters). **Quantities of 15 or more: price of fractional size in same size range.

SOLID CARBIDE HEAD SPIRAL REAMERS

TYPE 3811 - STRAIGHT STEEL SHANK - RIGHT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3810 - STRAIGHT STEEL SHANK - RIGHT SPIRAL FLUTES - FOR CAST IRON & STEEL

Solid carbide head brazed to hardened alloy steel shank on tool diameters of .1911" and larger. Tool geometry appropriate for material being machined.

Ground with spiral flutes for reaming blind holes with interruptions such as keyways, slots or intersecting holes.



TYPE 3821 - STRAIGHT STEEL SHANK - LEFT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3820 - STRAIGHT STEEL SHANK - LEFT SPIRAL FLUTES - FOR CAST IRON & STEEL

Same as Types 3810 & 3811, except left spiral flutes. Used in through holes only.



ALL TYPES ON THIS PAGE:

Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		RIGHT SPIRAL		LEFT SPIRAL		ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.			FLT	OAL	NON-FERR. TYPE 3811 EDP NO.	C.I./STEEL TYPE 3810 EDP NO.	NON-FERR. TYPE 3821 EDP NO.	C.I./STEEL TYPE 3820 EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.1250	1/8*	.1099	4	7/8	3 1/2	381108	381008	382108	382008	$89.70	.1121 - .1280	$170.20	$130.05	$116.20	$109.90	$102.90	$97.65
.1406	9/64*	.1255	4	7/8	3 1/2	381109	381009	382109	382009	102.40	.1281 - .1435	182.90	142.60	129.05	122.75	115.95	110.40
.1562	5/32*	.1411	4	1	4	381110	381010	382110	382010	105.90	.1436 - .1590	186.20	145.80	132.20	125.90	118.85	113.50
.1719	11/64*	.1567	4	1	4	381111	381011	382111	382011	130.80	.1591 - .1750	219.60	175.25	160.20	153.30	145.80	140.00
.1875	3/16*	.1724	4	1 1/8	4 1/2	381112	381012	382112	382012	133.70	.1751 - .1910	222.10	177.95	162.90	156.00	148.50	142.35
.2031	13/64	.1880	6	1 1/4	5	381113	381013	382113	382013	142.35	-	-	-	-	-	-	-
.2188	7/32	.1880	6	1 1/4	5	381114	381014	382114	382014	154.55	.1911 - .2210	250.50	202.45	186.45	178.95	170.30	163.95
.2344	15/64	.2193	6	1 1/2	6	381115	381015	382115	382015	164.65	-	-	-	-	-	-	-
.2500	1/4	.2193	6	1 1/2	6	381116	381016	382116	382016	164.65	.2211 - .2530	260.55	212.30	196.55	188.55	180.25	173.85
.2656	17/64	.2505	6	1 1/2	6	381117	381017	382117	382017	176.85	-	-	-	-	-	-	-
.2812	9/32	.2505	6	1 1/2	6	381118	381018	382118	382018	176.85	.2531 - .2840	272.80	224.90	208.50	201.00	192.65	186.45
.2969	19/64	.2817	6	1 5/8	6	381119	381019	382119	382019	184.35	-	-	-	-	-	-	-
.3125	5/16	.2817	6	1 5/8	6	381120	381020	382120	382020	184.35	.2841 - .3150	280.20	232.15	216.10	208.35	200.05	193.65
.3281	21/64	.3130	6	1 5/8	6	381121	381021	382121	382021	196.80	-	-	-	-	-	-	-
.3438	11/32	.3130	6	1 5/8	6	381122	381022	382122	382022	196.80	.3151 - .3470	292.60	244.80	228.45	220.85	212.55	206.35
.3594	23/64	.3443	6	1 3/4	7	381123	381023	382123	382023	212.00	-	-	-	-	-	-	-
.3750	3/8	.3443	6	1 3/4	7	381124	381024	382124	382024	212.00	.3471 - .3780	307.55	259.45	243.60	236.15	227.75	221.05
.3906	25/64	.3755	6	1 3/4	7	381125	381025	382125	382025	242.20	-	-	-	-	-	-	-
.4062	13/32	.3755	6	1 3/4	7	381126	381026	382126	382026	242.20	.3781 - .4090	338.00	289.80	273.90	266.10	258.10	251.40
.4219	27/64	.4067	6	1 3/4	7	381127	381027	382127	382027	256.90	-	-	-	-	-	-	-
.4375	7/16	.4067	6	1 3/4	7	381128	381028	382128	382028	256.90	.4091 - .4410	352.80	304.60	288.75	281.05	272.80	266.25
.4531	29/64	.4380	6	1 3/4	8	381129	381029	382129	382029	272.65	-	-	-	-	-	-	-
.4688	15/32	.4380	6	1 3/4	8	381130	381030	382130	382030	272.65	.4411 - .4720	368.45	320.45	304.40	296.70	288.65	282.00
.4844	31/64	.4693	6	1 3/4	8	381131	381031	382131	382031	292.45	-	-	-	-	-	-	-
.5000	1/2	.4693	6	1 3/4	8	381132	381032	382132	382032	292.45	.4721 - .5030	388.40	340.40	324.35	316.55	308.60	301.95
.5156	33/64	.5005	6	1 7/8	9	381133	381033	382133	382033	347.65	-	-	-	-	-	-	-
.5312	17/32	.5005	6	1 7/8	9	381134	381034	382134	382034	341.25	.5031 - .5340	428.30	384.65	370.05	363.10	355.80	350.10
.5469	35/64	.5005	6	1 7/8	9	381135	381035	382135	382035	403.10	-	-	-	-	-	-	-
.5625	9/16	.5005	6	1 7/8	9	381136	381036	382136	382036	403.10	.5341 - .5660	490.20	446.45	431.90	424.90	417.40	411.50
.5781	37/64	.5630	6	1 7/8	9	381137	381037	382137	382037	457.35	-	-	-	-	-	-	-
.5938	19/32	.5630	6	1 7/8	9	381138	381038	382138	382038	457.35	.5661 - .5970	544.05	500.75	486.25	479.25	471.80	466.00
.6094	39/64	.5630	6	1 7/8	9	381139	381039	382139	382039	462.60	-	-	-	-	-	-	-
.6250	5/8	.5630	6	1 7/8	9	381140	381040	382140	382040	462.60	.5971 - .6280	549.70	506.20	491.40	484.55	477.15	471.10
.6562	21/32	.6255	6	2	9 1/2	381142	381042	382142	382042	669.90	.6281 - .6590	770.70	720.10	703.30	695.10	687.55	679.50
.6875	11/16	.6255	6	2	9 1/2	381144	381044	382144	382044	669.90	.6591 - .6910	770.70	720.10	703.30	695.10	687.55	679.50
.7188	23/32	.6880	6	2	9 1/2	381146	381046	382146	382046	753.75	.6911 - .7220	854.60	803.70	787.00	779.10	771.25	763.25
.7500	3/4	.6880	6	2	9 1/2	381148	381048	382148	382048	753.75	.7221 - .7530	854.60	803.70	787.00	779.10	771.25	763.25
.7812	25/32	.7505	8	2	10	381150	381050	382150	382050	836.70	.7531 - .7840	937.30	886.80	869.95	861.90	854.00	846.30
.8125	13/16	.7817	8	2	10	381152	381052	382152	382052	912.80	.7841 - .8160	1013.60	962.95	946.25	938.10	930.30	922.40
.8438	27/32	.8130	8	2	10	381154	381054	382154	382054	962.50	.8161 - .8470	1063.30	1012.90	996.00	988.05	980.25	972.30
.8750	7/8	.8440	8	2	10	381156	381056	382156	382056	942.45	.8471 - .8780	1043.25	992.75	975.90	967.75	960.15	952.25
.9062	29/32	.8755	8	2	10	381158	381058	382158	382058	1102.95	.8781 - .9090	1203.65	1153.25	1136.20	1128.15	1120.35	1112.55
.9375	15/16	.9067	8	2	10	381160	381060	382160	382060	1159.20	.9091 - .9410	1259.90	1209.40	1192.60	1184.50	1176.70	1169.00
.9688	31/32	.9380	8	2	10	381162	381062	382162	382062	1214.25	.9411 - .9720	1314.95	1264.40	1247.75	1239.50	1231.85	1224.10
1.0000	1	.9693	8	2	10	381164	381064	382164	382064	1260.00	.9721 - 1.0030	1360.80	1310.25	1293.60	1285.65	1277.65	1270.00

*Solid carbide head and shank (.0811" - .1910" tool diameters). **Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

SOLID CARBIDE CHUCKING REAMERS

TYPE 3801 - LONG LENGTH - STRAIGHT SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3800 - LONG LENGTH - STRAIGHT SHANK - STRAIGHT FLUTES - FOR CAST IRON & STEEL

Extended length series solid carbide chucking reamers. Tool geometry appropriate for material being machined.



Tool diameter tolerance +.0002"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLUTES	LENGTH		NON-FERR. TYPE 3801 EDP NO.	C.I./STEEL TYPE 3800 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
* -	-	.0800	4	¾	3	-	380099	-	.0811 - .0890	$183.90	$135.95	$119.35	$112.00	$103.50	$97.30
*.0938	3/32	.0880	4	¾	3	-	380006	$87.85	.0891 - .0970	183.90	135.95	119.35	112.00	103.50	97.30
*.1094	7/64	.0943	4	⅞	3 ½	-	380007	87.85	.0971 - .1120	183.90	135.95	119.35	112.00	103.50	97.30
.1250	⅛	.1099	4	⅞	3 ½	380108	380008	87.85	.1121 - .1280	183.90	135.95	119.35	112.00	103.50	97.30
.1406	9/64	.1255	4	⅞	3 ½	380109	380009	100.45	.1281 - .1435	196.55	148.40	132.10	124.50	116.40	109.75
.1562	5/32	.1411	4	1	4	380110	380010	103.35	.1436 - .1590	199.35	151.30	134.90	127.50	119.10	112.95
.1719	11/64	.1567	4	1	4	380111	380011	116.45	.1591 - .1750	212.30	164.50	148.40	140.60	132.40	126.00
.1875	3/16	.1724	4	1 ⅛	4 ½	380112	380012	119.00	.1751 - .1910	215.10	166.95	150.60	143.15	134.85	128.60

*Provided with male centers

**Quantities of 15 or more: price of fractional size in same size range.

TYPE 3803 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3802 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR CAST IRON & STEEL

Short series sold carbide head and shank. Tool geometry appropriate for material being machined.

For stocked general purpose reamers in decimal sizes and .0005" increments (Type 3804), see pages 51-54.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

DECIMAL SIZE RANGE	MAX. SHANK DIAMETER	NO. OF FLUTES	LENGTH		NON-FERR. TYPE 3803 EDP NO.	C.I./STEEL TYPE 3802 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
			FLUTE	OAL			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
*.0591 - .0660	.0580	4	⅜	1 ½	-	380204	$178.10	$110.90	$88.40	$77.90	$66.25	$57.15	$44.05
*.0661 - .0740	.0650	4	½	1 ¾	-	380245	178.70	111.30	89.00	78.30	66.75	57.75	44.65
*.0741 - .0810	.0730	4	½	1 ¾	-	380205	179.00	111.60	89.10	78.70	66.95	58.15	44.75
*.0811 - .0890	.0800	4	½	2	-	380255	179.90	112.90	90.40	79.80	68.35	59.25	46.05
*.0891 - .0970	.0880	4	½	2	-	380206	181.20	113.80	91.50	80.80	69.45	59.95	47.15
*.0971 - .1120	.0943	4	⅝	2 ¼	380307	380207	181.90	114.40	92.10	81.40	69.95	60.95	47.75
.1121 - .1280	.1099	4	⅝	2 ¼	380308	380208	185.10	117.70	95.20	84.70	72.95	63.95	50.95
.1281 - .1435	.1255	4	¾	2 ½	380309	380209	186.30	119.10	96.50	86.10	74.45	65.45	52.25
.1436 - .1590	.1411	4	¾	2 ½	380310	380210	189.50	122.10	99.70	89.10	77.80	68.45	55.35
.1591 - .1750	.1567	4	⅞	2 ¾	380311	380211	196.70	129.35	106.80	96.30	84.80	75.80	62.45
.1751 - .1910	.1724	4	⅞	2 ¾	380312	380212	201.40	134.05	111.60	101.10	89.30	80.60	67.25
.1911 - .2210	.1880	6	1	3	380314	380214	209.70	142.45	120.00	109.40	98.10	88.90	75.80
.2211 - .2530	.2193	6	1	3	380316	380216	223.90	156.75	134.25	123.80	112.20	103.10	90.10
.2531 - .2840	.2505	6	1 ⅛	3 ¼	380318	380218	240.65	173.25	150.85	140.25	128.75	119.70	106.60
.2841 - .3150	.2817	6	1 ⅛	3 ¼	380320	380220	258.95	191.70	168.95	158.65	147.15	138.05	124.90
.3151 - .3470	.3130	6	1 ¼	3 ½	380322	380222	286.10	218.90	196.50	185.90	174.45	164.95	152.25
.3471 - .3780	.3443	6	1 ¼	3 ½	380324	380224	289.50	222.50	200.20	189.50	178.00	168.75	155.65
.3781 - .4090	.3755	6	1 ⅜	3 ¾	380326	380226	313.60	246.35	223.90	213.10	201.70	192.70	179.50
.4091 - .4410	.4067	6	1 ⅜	3 ¾	380328	380228	316.30	249.05	226.65	216.00	204.50	195.40	182.20
.4411 - .4720	.4380	6	1 ½	4	380330	380230	335.55	268.35	245.75	235.25	223.70	214.70	201.50
.4721 - .5150	.4693	6	1 ½	4	380332	380232	354.25	287.00	264.35	253.95	242.45	233.45	220.20

*Provided with male centers

SOLID CARBIDE SPIRAL CHUCKING REAMERS

TYPE 3811 - LONG LENGTH - RIGHT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3810 - LONG LENGTH - RIGHT SPIRAL FLUTES - FOR CAST IRON & STEEL

TYPE 3821 - LONG LENGTH - LEFT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3820 - LONG LENGTH - LEFT SPIRAL FLUTES - FOR CAST IRON & STEEL

Extended length series. Ground with spiral flutes for reaming holes with interruptions such as keyways, slots or intersecting holes. Left spiral flutes should not be used on blind holes.



Tool diameter tolerance: +.0002"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

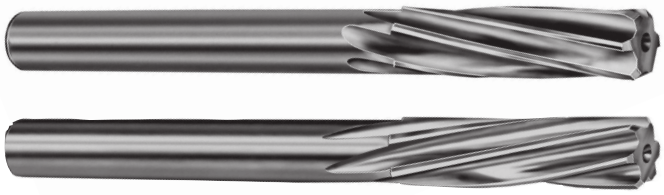
TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		RIGHT SPIRAL		LEFT SPIRAL		ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.			FLT	OAL	NON-FERR. TYPE 3811 EDP NO.	C.I./STEEL TYPE 3810 EDP NO.	NON-FERR. TYPE 3821 EDP NO.	C.I./STEEL TYPE 3820 EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1250	1/8	.1099	4	7/8	3 1/2	381108	381008	382108	382008	$89.70	.1121 - .1280	$170.20	$130.05	$116.20	$109.90	$102.90	$97.65
.1406	9/64	.1255	4	7/8	3 1/2	381109	381009	382109	382009	102.40	.1281 - .1435	182.90	142.60	129.05	122.75	115.95	110.40
.1562	5/32	.1411	4	1	4	381110	381010	382110	382010	105.90	.1436 - .1590	186.20	145.80	132.20	125.90	118.85	113.50
.1719	11/64	.1567	4	1	4	381111	381011	382111	382011	130.80	.1591 - .1750	219.60	175.25	160.20	153.30	145.80	140.00
.1875	3/16	.1724	4	1 1/8	4 1/2	381112	381012	382112	382012	133.70	.1751 - .1910	222.10	177.95	162.90	156.00	148.50	142.35

*Quantities of 15 or more: price of fractional size in same size range.

TYPE 3813 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3812 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - FOR CAST IRON & STEEL

TYPE 3823 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3822 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - FOR CAST IRON & STEEL

Short length solid carbide head and shank. Ground with spiral flutes for reaming holes with interruptions such as keyways, slots or intersecting holes. Left spiral flutes should not be used on blind holes.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

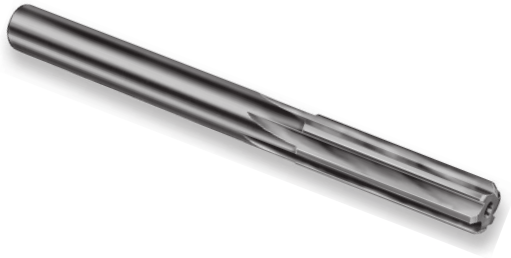
DECIMAL SIZE RANGE	MAX. SHANK DIAM.	NO. OF FLTS.	FLT. LEN.	OVER ALL LEN.	RIGHT SPIRAL		LEFT SPIRAL		PRICE EACH - FINISHED TO DECIMAL SIZE						
					NON-FERR. TYPE 3813 EDP NO.	C.I./STEEL TYPE 3812 EDP NO.	NON-FERR. TYPE 3823 EDP NO.	C.I./STEEL TYPE 3822 EDP NO.	1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
* .0971 - .1120	.0943	4	5/8	2 1/4	381307	381207	382307	382207	$188.70	$120.80	$98.10	$87.40	$75.60	$66.25	$52.95
.1121 - .1280	.1099	4	5/8	2 1/4	381308	381208	382308	382208	192.30	124.20	101.50	90.90	79.00	69.85	56.65
.1281 - .1435	.1255	4	3/4	2 1/2	381309	381209	382309	382209	203.50	132.35	108.40	97.00	84.90	75.30	61.05
.1436 - .1590	.1411	4	3/4	2 1/2	381310	381210	382310	382210	207.30	135.95	112.00	100.80	88.60	78.80	65.05
.1591 - .1750	.1567	4	7/8	2 3/4	381311	381211	382311	382211	215.70	144.35	120.30	109.00	96.90	87.10	73.05
.1751 - .1910	.1724	4	7/8	2 3/4	381312	381212	382312	382212	221.00	149.85	125.75	114.40	102.20	92.50	78.60
.1911 - .2210	.1880	6	1	3	381314	381214	382314	382214	241.85	167.05	142.05	130.15	117.30	107.10	92.50
.2211 - .2530	.2193	6	1	3	381316	381216	382316	382216	259.55	184.40	159.35	147.75	134.85	124.90	110.40
.2531 - .2840	.2505	6	1 1/8	3 1/4	381318	381218	382318	382218	279.90	205.00	180.00	168.35	155.25	145.45	130.75
.2841 - .3150	.2817	6	1 1/8	3 1/4	381320	381220	382320	382220	301.90	227.25	202.10	190.30	177.60	167.35	152.65
.3151 - .3470	.3130	6	1 1/4	3 1/2	381322	381222	382322	382222	335.35	260.65	235.45	223.70	210.80	200.50	186.00
.3471 - .3780	.3443	6	1 1/4	3 1/2	381324	381224	382324	382224	339.95	265.05	240.05	228.05	215.40	205.20	190.60
.3781 - .4090	.3755	6	1 3/8	3 3/4	381326	381226	382326	382226	349.25	274.35	249.25	237.45	224.60	214.50	200.00
.4091 - .4410	.4067	6	1 3/8	3 3/4	381328	381228	382328	382228	352.25	277.20	252.15	240.45	227.55	217.40	202.90
.4411 - .4720	.4380	6	1 1/2	4	381330	381230	382330	382230	373.55	298.70	273.75	262.05	249.15	239.05	224.30
.4721 - .5150	.4693	6	1 1/2	4	381332	381232	382332	382232	394.30	319.40	294.50	282.80	269.75	259.65	245.05

SOLID CARBIDE COOLANT FED CHUCKING REAMERS

TYPE 3807 - STRAIGHT SHANK - STRAIGHT FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3806 - STRAIGHT SHANK - STRAIGHT FLUTES - BLIND HOLES - FOR CAST IRON & STEEL

Short length series solid carbide coolant fed chucking reamers.

Center coolant feeding hole for flushing chips back towards shank.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

CENTER FED COOLANT

DECIMAL SIZE RANGE	MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3807 EDP NO.	C.I./STEEL TYPE 3806 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
			FLUTE	OAL			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.1121 - .1280	.1099	4	⅝	2 ¼	380708	380608	$338.05	$292.90	$277.60	$270.45	$262.45	$256.55	$247.55
.1281 - .1435	.1255	4	¾	2 ½	380709	380609	340.45	294.90	280.20	272.75	265.05	258.85	249.95
.1436 - .1590	.1411	4	¾	2 ½	380710	380610	341.75	296.50	281.50	274.25	266.25	260.25	251.45
.1591 - .1750	.1567	4	⅞	2 ¾	380711	380611	344.95	300.00	284.90	277.50	269.65	263.65	254.85
.1751 - .1910	.1724	4	⅞	2 ¾	380712	380612	359.05	313.50	298.70	291.30	283.60	277.40	268.65
.1911 - .2210	.1880	6	1	3	380714	380614	364.35	319.00	303.90	296.50	288.90	282.70	274.05
.2211 - .2530	.2193	6	1	3	380716	380616	370.75	325.55	310.50	303.10	295.00	289.30	280.30
.2531 - .2840	.2505	6	1 ⅛	3 ¼	380718	380618	381.30	336.05	321.10	313.50	305.80	299.80	290.70
.2841 - .3150	.2817	6	1 ⅛	3 ¼	380720	380620	390.10	344.75	329.75	322.50	314.70	308.70	299.80
.3151 - .3470	.3130	6	1 ¼	3 ½	380722	380622	401.00	355.55	340.55	332.95	325.55	319.30	310.50
.3471 - .3780	.3443	6	1 ¼	3 ½	380724	380624	413.10	367.65	352.75	345.55	337.65	331.45	322.70
.3781 - .4090	.3755	6	1 ⅜	3 ¾	380726	380626	432.15	386.80	371.95	364.55	356.75	350.75	341.75

TYPE 3809 - STRAIGHT SHANK - STRAIGHT FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3808 - STRAIGHT SHANK - STRAIGHT FLUTES - THROUGH HOLES - FOR CAST IRON & STEEL

Short length series solid carbide coolant fed chucking reamers.

Coolant feeding hole in each flute for flushing chips forward through the hole being reamed.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

FLUTE FED COOLANT

DECIMAL SIZE RANGE	MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3809 EDP NO.	C.I./STEEL TYPE 3808 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
			FLUTE	OAL			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.1121 - .1280	.1099	4	⅝	2 ¼	380908	380808	$478.30	$433.05	$417.90	$410.70	$402.70	$396.90	$388.00
.1281 - .1435	.1255	4	¾	2 ½	380909	380809	454.35	409.00	394.10	386.50	379.00	372.75	363.85
.1436 - .1590	.1411	4	¾	2 ½	380910	380810	483.00	437.65	422.80	415.30	407.60	401.40	392.50
.1591 - .1750	.1567	4	⅞	2 ¾	380911	380811	487.10	441.85	426.85	419.70	411.80	405.60	396.90
.1751 - .1910	.1724	4	⅞	2 ¾	380912	380812	490.20	444.95	429.75	422.60	414.60	408.60	399.80
.1911 - .2210	.1880	6	1	3	380914	380814	589.10	543.75	528.65	521.30	513.60	507.70	498.60
.2211 - .2530	.2193	6	1	3	380916	380816	596.40	550.85	536.15	528.55	520.80	514.70	505.80
.2531 - .2840	.2505	6	1 ⅛	3 ¼	380918	380818	609.10	563.65	548.85	541.45	533.75	527.45	518.50
.2841 - .3150	.2817	6	1 ⅛	3 ¼	380920	380820	619.10	574.05	558.95	551.55	543.75	537.45	528.65
.3151 - .3470	.3130	6	1 ¼	3 ½	380922	380822	658.55	613.30	598.40	590.80	583.20	577.10	568.05
.3471 - .3780	.3443	6	1 ¼	3 ½	380924	380824	672.65	627.25	612.40	604.80	597.20	590.90	582.20
.3781 - .4090	.3755	6	1 ⅜	3 ¾	380926	380826	695.70	650.35	635.25	627.95	620.10	614.00	605.20

SOLID CARBIDE COOLANT FED CHUCKING REAMERS

TYPE 3817 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3816 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR CAST IRON & STEEL

Short length series solid carbide coolant fed chucking reamers.

Center coolant feeding hole for flushing chips back towards shank.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

CENTER FED COOLANT

DECIMAL SIZE RANGE	MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3817 EDP NO.	C.I./STEEL TYPE 3816 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
			FLUTE	OAL			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.1121 - .1280	.1099	4	5/8	2 1/4	381708	381608	$346.75	$301.10	$286.30	$278.80	$271.05	$265.05	$255.85
.1281 - .1435	.1255	4	3/4	2 1/2	381709	381609	348.85	303.70	288.60	281.30	273.15	267.45	258.55
.1436 - .1590	.1411	4	3/4	2 1/2	381710	381610	350.35	305.00	290.30	282.70	274.75	268.85	259.85
.1591 - .1750	.1567	4	7/8	2 3/4	381711	381611	353.75	308.40	293.50	286.10	278.30	272.05	263.15
.1751 - .1910	.1724	4	7/8	2 3/4	381712	381612	367.45	322.10	307.00	299.80	291.90	285.90	277.20
.1911 - .2210	.1880	6	1	3	381714	381614	372.65	327.35	312.30	304.80	297.20	291.00	282.10
.2211 - .2530	.2193	6	1	3	381716	381616	379.20	333.85	318.80	311.10	303.70	297.50	288.60
.2531 - .2840	.2505	6	1 1/8	3 1/4	381718	381618	389.50	344.45	329.45	322.00	314.00	307.90	299.10
.2841 - .3150	.2817	6	1 1/8	3 1/4	381720	381620	398.40	353.15	338.15	330.95	322.90	316.70	307.90
.3151 - .3470	.3130	6	1 1/4	3 1/2	381722	381622	409.30	364.25	348.95	341.65	334.05	327.95	319.00
.3471 - .3780	.3443	6	1 1/4	3 1/2	381724	381624	424.10	378.50	363.55	356.35	348.45	342.35	333.75
.3781 - .4090	.3755	6	1 3/8	3 3/4	381726	381626	443.35	398.20	383.00	375.70	367.75	361.85	353.05

TYPE 3829 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3828 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR CAST IRON & STEEL

Short length series solid carbide coolant fed chucking reamers.

Coolant feeding hole in each flute for flushing chips forward through the hole being reamed.

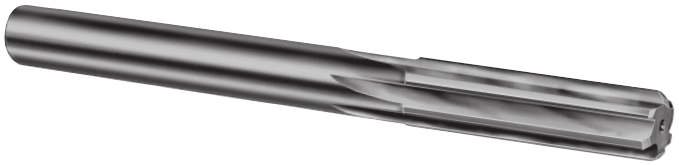


Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".
For closer tool diameter tolerance pricing, see page 56.

FLUTE FED COOLANT

DECIMAL SIZE RANGE	MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3829 EDP NO.	C.I./STEEL TYPE 3828 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
			FLUTE	OAL			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.1121 - .1280	.1099	4	5/8	2 1/4	382908	382808	$547.15	$501.80	$486.90	$479.60	$471.55	$465.45	$456.65
.1281 - .1435	.1255	4	3/4	2 1/2	382909	382809	550.15	504.80	489.80	482.70	474.55	468.45	459.65
.1436 - .1590	.1411	4	3/4	2 1/2	382910	382810	551.75	506.40	491.60	484.00	476.30	470.15	461.25
.1591 - .1750	.1567	4	7/8	2 3/4	382911	382811	555.65	510.30	495.20	488.00	480.10	474.15	465.25
.1751 - .1910	.1724	4	7/8	2 3/4	382912	382812	558.15	512.90	498.10	490.40	482.90	476.70	467.85
.1911 - .2210	.1880	6	1	3	382914	382814	721.80	676.70	661.55	654.05	646.15	640.45	631.55
.2211 - .2530	.2193	6	1	3	382916	382816	721.20	676.00	660.95	653.75	645.75	639.55	630.95
.2531 - .2840	.2505	6	1 1/8	3 1/4	382918	382818	733.85	688.70	673.35	666.15	658.25	652.35	643.55
.2841 - .3150	.2817	6	1 1/8	3 1/4	382920	382820	744.15	698.90	683.90	676.70	668.85	662.55	653.85
.3151 - .3470	.3130	6	1 1/4	3 1/2	382922	382822	783.40	738.25	723.00	715.70	707.90	701.90	692.90
.3471 - .3780	.3443	6	1 1/4	3 1/2	382924	382824	797.50	752.45	737.35	729.85	722.10	716.10	707.30
.3781 - .4090	.3755	6	1 3/8	3 3/4	382926	382826	821.10	775.45	760.65	753.15	745.55	739.35	730.65

SOLID CARBIDE CHUCKING REAMERS



TYPE 3804 - STRAIGHT SHANK
STRAIGHT FLUTES - SHORT SERIES

For dimensional details for .0591" and above, see Types 3802/3803 on page 46.
For additional solid carbide reamer sizes (including wire #52-70), see page 51-54.
For reamer tolerances, see page 46. For closer tolerance pricing, see page 56.

TOOL DIAMETER				EDP NO.	PRICE EACH
DECIMAL	FRAC.	WIRE LETTER	mm		
.0312	*1/32			380402	$54.95
.0394			*1.0	3804010	52.55
.0433			*1.1	3804011	57.85
.0469	*3/64			380403	58.15
.0472			*1.2	3804012	58.15
.0512			*1.3	3804013	58.15
.0551			*1.4	3804014	58.15
.0591			1.5	3804015	51.55
.0625	1/16			380404	53.05
.0630			1.6	3804016	57.75
.0669			1.7	3804017	58.35
.0670		51		38040670	58.35
.0700		50		38040700	58.35
.0709			1.8	3804018	58.35
.0730		49		38040730	58.35
.0748			1.9	3804019	58.35
.0760		48		38040760	58.35
.0781	5/64			380405	58.35
.0785		47		38040785	58.45
.0787			2.0	3804020	53.85
.0810		46		38040810	58.45
.0820		45		38040820	58.85
.0827			2.1	3804021	58.85
.0860		44		38040860	58.85
.0866			2.2	3804022	58.85
.0890		43		38040890	59.75
.0906			2.3	3804023	59.75
.0935		42		38040935	59.95
.0938	3/32			380406	55.35
.0945			2.4	3804024	59.95
.0960		41		38040960	61.25
.0980		40		38040980	61.25
.0984			2.5	3804025	55.85
.0995		39		38040995	61.75
.1015		38		38041015	61.75
.1024			2.6	3804026	61.95
.1040		37		38041040	65.65
.1063			2.7	3804027	62.35
.1065		36		38041065	62.35
.1094	7/64			380407	64.25
.1100		35		38041100	64.25
.1102			2.8	3804028	64.25
.1110		34		38041110	65.35
.1130		33		38041130	66.15
.1142			2.9	3804029	66.15
.1160		32		38041160	66.15
.1181			3.0	3804030	61.25
.1200		31		38041200	66.45
.1220			3.1	3804031	66.45
.1250	1/8			380408	61.25
.1260			3.2	3804032	66.45
.1285		30		38041285	66.55
.1299			3.3	3804033	66.55
.1339			3.4	3804034	66.55
.1360		29		38041360	66.55
.1378			3.5	3804035	61.95
.1405		28		38041405	67.45
.1406	9/64			380409	69.75
.1417			3.6	3804036	70.45
.1440		27		38041440	70.45

TOOL DIAMETER				EDP NO.	PRICE EACH
DECIMAL	FRAC.	WIRE LETTER	mm		
.1457			3.7	3804037	$71.45
.1470		26		38041470	72.65
.1495		25		38041495	72.95
.1496			3.8	3804038	76.80
.1520		24		38041520	72.95
.1535			3.9	3804039	76.10
.1540		23		38041540	76.10
.1562	5/32			380410	71.85
.1570		22		38041570	78.70
.1575			4.0	3804040	71.85
.1590		21		38041590	80.70
.1610		20		38041610	81.70
.1614			4.1	3804041	81.70
.1654			4.2	3804042	82.20
.1660		19		38041660	82.20
.1693			4.3	3804043	83.00
.1695		18		38041695	83.00
.1719	11/64			380411	84.70
.1730		17		38041730	84.70
.1732			4.4	3804044	84.70
.1770		16		38041770	86.70
.1772			4.5	3804045	78.70
.1800		15		38041800	87.10
.1811			4.6	3804046	88.20
.1820		14		38041820	88.40
.1850		13	4.7	3804047	89.00
.1875	3/16			380412	85.30
.1890		12	4.8	3804048	93.70
.1910		11		38041910	94.90
.1929			4.9	3804049	94.90
.1935		10		38041935	95.50
.1960		9		38041960	98.90
.1969			5.0	3804050	90.30
.1990		8		38041990	99.40
.2008			5.1	3804051	102.60
.2010		7		38042010	102.60
.2031	13/64			380413	102.60
.2040		6		38042040	102.60
.2047			5.2	3804052	102.60
.2055		5		38042055	102.60
.2087			5.3	3804053	102.60
.2090		4		38042090	107.80
.2126			5.4	3804054	102.60
.2130		3		38042130	102.60
.2165			5.5	3804055	93.70
.2188	7/32			380414	93.50
.2205			5.6	3804056	114.30
.2210		2		38042210	114.30
.2244			5.7	3804057	118.70
.2280		1		38042280	120.10
.2283			5.8	3804058	120.10
.2323			5.9	3804059	120.10
.2340		A		38042340	120.10
.2344	15/64			380415	120.10
.2362			6.0	3804060	111.30
.2380		B		38042380	122.50
.2402			6.1	3804061	122.50
.2420		C		38042420	122.50
.2441			6.2	3804062	122.50
.2460		D		38042460	122.50

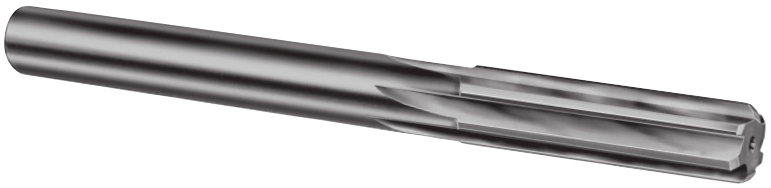
TOOL DIAMETER				EDP NO.	PRICE EACH
DECIMAL	FRAC.	WIRE LETTER	mm		
.2480			6.3	3804063	$122.50
.2500	1/4	E		380416	111.30
.2520			6.4	3804064	134.95
.2559			6.5	3804065	134.85
.2570		F		38042570	134.85
.2598			6.6	3804066	141.55
.2610		G		38042610	134.85
.2638			6.7	3804067	141.55
.2656	17/64			380417	134.85
.2660		H		38042660	134.85
.2677			6.8	3804068	141.55
.2717			6.9	3804069	141.55
.2720		I		38042720	134.85
.2756			7.0	3804070	123.00
.2770		J		38042770	134.85
.2795			7.1	3804071	153.55
.2810		K		38042810	146.15
.2812	9/32			380418	133.75
.2835			7.2	3804072	165.95
.2874			7.3	3804073	165.95
.2900		L		38042900	158.25
.2913			7.4	3804074	165.95
.2950		M		38042950	158.25
.2953			7.5	3804075	158.25
.2969	19/64			380419	158.25
.2992			7.6	3804076	173.15
.3020		N		38043020	164.85
.3031			7.7	3804077	173.15
.3071			7.8	3804078	173.15
.3110			7.9	3804079	173.15
.3125	5/16			380420	150.75
.3150			8.0	3804080	150.75
.3160		O		38043160	173.15
.3189			8.1	3804081	184.20
.3228			8.2	3804082	184.20
.3230		P		38043230	175.30
.3268			8.3	3804083	210.70
.3281	21/64			380421	200.50
.3307			8.4	3804084	210.70
.3320		Q		38043320	200.50
.3346			8.5	3804085	200.50
.3386			8.6	3804086	210.70
.3390		R		38043390	200.50
.3425			8.7	3804087	210.70
.3438	11/32			380422	200.50
.3465			8.8	3804088	211.70
.3480		S		38043480	201.50
.3504			8.9	3804089	211.70
.3543			9.0	3804090	185.30
.3580		T		38043580	202.40
.3583			9.1	3804091	213.60
.3594	23/64			380423	203.30
.3622			9.2	3804092	216.20
.3661			9.3	3804093	216.20
.3680		U		38043680	205.90
.3701			9.4	3804094	217.30
.3740			9.5	3804095	207.10
.3750	3/8			380424	189.60
.3770		V		38043770	246.05
.3780			9.6	3804096	258.55

*Dimensions thru .0590": # of flutes = 4; flute length = 3/8" (except for .0312" & .0394" tool diameters, flute length = 1/4"); OAL = 1 1/2".

SOLID CARBIDE DECIMAL SIZE CHUCKING REAMERS

TYPE 3804 - SOLID CARBIDE - STRAIGHT FLUTES - SHORT LENGTH
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .0280" THRU .1475"

Short length solid carbide head and shank. Tool geometry appropriate for material being machined. For fractional, wire and letter sizes, see page 50.



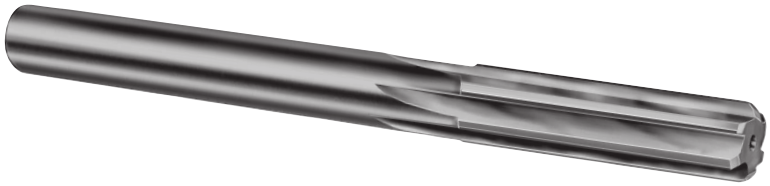
Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.0280	38040280	$59.55	.0520	38040520	$58.15	.0760	38040760	$58.35	.1000	38041000	$64.75	.1240	38041240	$69.95
.0285	38040285	62.95	.0525	38040525	61.25	.0765	38040765	61.25	.1005	38041005	64.75	.1245	38041245	69.95
.0290	38040290	62.95	.0530	38040530	61.25	.0770	38040770	61.25	.1010	38041010	64.75	.1250	380408	61.25
.0295	38040295	59.55	.0535	38040535	61.25	.0775	38040775	61.25	.1015	38041015	61.75	.1255	38041255	69.95
.0300	38040300	62.95	.0540	38040540	61.25	.0780	38040780	61.25	.1020	38041020	65.35	.1260	3804032	66.45
.0305	38040305	62.95	.0545	38040545	61.25	.0785	38040785	58.45	.1025	38041025	65.65	.1265	38041265	70.15
.0310	38040310	59.55	.0550	38040550	58.15	.0790	38040790	61.55	.1030	38041030	65.65	.1270	38041270	70.15
.0315	3804008	59.55	.0555	38040555	61.25	.0795	38040795	61.55	.1035	38041035	65.65	.1275	38041275	70.15
.0320	38040320	59.55	.0560	38040560	61.25	.0800	38040800	61.55	.1040	38041040	65.65	.1280	38041280	66.55
.0325	38040325	62.95	.0565	38040565	61.25	.0805	38040805	61.55	.1045	38041045	65.65	.1285	38041285	66.55
.0330	38040330	59.55	.0570	38040570	61.25	.0810	38040810	58.45	.1050	38041050	65.65	.1290	38041290	70.15
.0335	38040335	59.55	.0575	38040575	61.25	.0815	38040815	61.75	.1055	38041055	65.65	.1295	38041295	70.15
.0340	38040340	60.75	.0580	38040580	61.25	.0820	38040820	58.85	.1060	38041060	65.65	.1300	38041300	70.15
.0345	38040345	60.75	.0585	38040585	61.25	.0825	38040825	61.75	.1065	38041065	62.35	.1305	38041305	70.15
.0350	38040350	57.85	.0590	38040590	53.45	.0830	38040830	61.75	.1070	38041070	66.55	.1310	38041310	70.15
.0355	38040355	60.75	.0595	38040595	56.35	.0835	38040835	61.75	.1075	38041075	66.55	.1315	38041315	70.15
.0360	38040360	57.85	.0600	38040600	60.95	.0840	38040840	61.75	.1080	38041080	66.55	.1320	38041320	70.15
.0365	38040365	60.75	.0605	38040605	60.95	.0845	38040845	61.75	.1085	38041085	67.45	.1325	38041325	70.15
.0370	38040370	57.85	.0610	38040610	57.75	.0850	38040850	61.75	.1090	38041090	67.45	.1330	38041330	70.15
.0375	38040375	60.75	.0615	38040615	60.95	.0855	38040855	61.75	.1095	38041095	67.45	.1335	38041335	70.15
.0380	38040380	57.85	.0620	38040620	60.95	.0860	38040860	58.85	.1100	38041100	64.25	.1340	38041340	70.15
.0385	38040385	60.75	.0625	380404	53.05	.0865	38040865	61.75	.1105	38041105	68.45	.1345	38041345	70.15
.0390	38040390	57.85	.0630	3804016	57.75	.0870	38040870	61.75	.1110	38041110	65.35	.1350	38041350	70.15
.0395	38040395	60.75	.0635	38040635	57.75	.0875	38040875	61.75	.1115	38041115	69.75	.1355	38041355	70.15
.0400	38040400	57.85	.0640	38040640	60.95	.0880	38040880	61.75	.1120	38041120	69.75	.1360	38041360	66.55
.0405	38040405	60.75	.0645	38040645	60.95	.0885	38040885	61.75	.1125	38041125	69.75	.1365	38041365	70.15
.0410	38040410	57.85	.0650	38040650	61.25	.0890	38040890	59.75	.1130	38041130	66.15	.1370	38041370	70.15
.0415	38040415	60.75	.0655	38040655	61.25	.0895	38040895	63.25	.1135	38041135	69.75	.1375	38041375	70.15
.0420	38040420	57.85	.0660	38040660	61.25	.0900	38040900	63.25	.1140	38041140	69.75	.1380	38041380	71.45
.0425	38040425	60.75	.0665	38040665	61.25	.0905	38040905	63.25	.1145	38041145	69.75	.1385	38041385	71.45
.0430	38040430	57.85	.0670	38040670	58.35	.0910	38040910	63.55	.1150	38041150	69.75	.1390	38041390	71.45
.0435	38040435	61.25	.0675	38040675	61.25	.0915	38040915	63.55	.1155	38041155	69.75	.1395	38041395	71.45
.0440	38040440	61.25	.0680	38040680	61.25	.0920	38040920	63.55	.1160	38041160	66.15	.1400	38041400	71.45
.0445	38040445	61.25	.0685	38040685	61.25	.0925	38040925	59.95	.1165	38041165	69.75	.1405	38041405	67.45
.0450	38040450	61.25	.0690	38040690	61.25	.0930	38040930	63.55	.1170	38041170	69.75	.1410	38041410	74.15
.0455	38040455	61.25	.0695	38040695	61.25	.0935	38040935	59.95	.1175	38041175	69.75	.1415	38041415	74.15
.0460	38040460	61.25	.0700	38040700	58.35	.0940	38040940	63.55	.1180	38041180	69.75	.1420	38041420	74.15
.0465	38040465	58.15	.0705	38040705	61.25	.0945	3804024	59.95	.1185	38041185	69.95	.1425	38041425	74.15
.0470	38040470	61.25	.0710	38040710	61.25	.0950	38040950	64.25	.1190	38041190	69.95	.1430	38041430	74.15
.0475	38040475	61.25	.0715	38040715	61.25	.0955	38040955	64.25	.1195	38041195	69.95	.1435	38041435	74.15
.0480	38040480	61.25	.0720	38040720	61.25	.0960	38040960	61.25	.1200	38041200	66.45	.1440	38041440	70.45
.0485	38040485	61.25	.0725	38040725	61.25	.0965	38040965	61.25	.1205	38041205	69.95	.1445	38041445	74.45
.0490	38040490	61.25	.0730	38040730	58.35	.0970	38040970	64.25	.1210	38041210	69.95	.1450	38041450	74.55
.0495	38040495	61.25	.0735	38040735	61.25	.0975	38040975	64.25	.1215	38041215	69.95	.1455	38041455	74.55
.0500	38040500	61.25	.0740	38040740	61.25	.0980	38040980	61.25	.1220	3804031	66.45	.1460	38041460	76.60
.0505	38040505	61.25	.0745	38040745	61.25	.0985	38040985	64.75	.1225	38041225	69.95	.1465	38041465	76.60
.0510	38040510	61.25	.0750	38040750	61.25	.0990	38040990	64.75	.1230	38041230	69.95	.1470	38041470	72.65
.0515	38040515	61.25	.0755	38040755	61.25	.0995	38040995	61.75	.1235	38041235	69.95	.1475	38041475	76.60

SOLID CARBIDE DECIMAL SIZE CHUCKING REAMERS

TYPE 3804 - SOLID CARBIDE - STRAIGHT FLUTES - SHORT LENGTH
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .1480" THRU .2675"

Short length solid carbide head and shank. Tool geometry appropriate for material being machined.
For fractional, wire and letter sizes, see page 50.



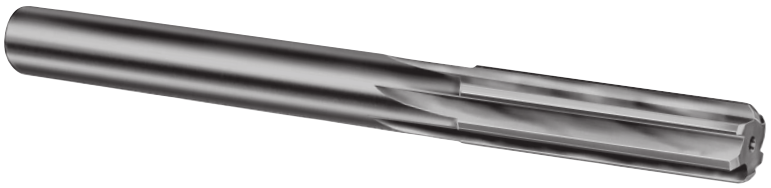
Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.1480	38041480	$76.80	.1720	38041720	$89.00	.1960	38041960	$98.90	.2200	38042200	$120.50	.2440	38042440	$128.65
.1485	38041485	76.80	.1725	38041725	89.00	.1965	38041965	103.60	.2205	3804056	114.30	.2445	38042445	128.65
.1490	38041490	76.80	.1730	38041730	84.70	.1970	38041970	104.80	.2210	38042210	114.30	.2450	38042450	128.65
.1495	38041495	72.95	.1735	38041735	90.30	.1975	38041975	104.80	.2215	38042215	125.35	.2455	38042455	128.65
.1500	38041500	76.80	.1740	38041740	90.30	.1980	38041980	104.80	.2220	38042220	125.35	.2460	38042460	122.50
.1505	38041505	76.80	.1745	38041745	90.30	.1985	38041985	104.80	.2225	38042225	125.35	.2465	38042465	128.65
.1510	38041510	76.80	.1750	38041750	90.30	.1990	38041990	99.40	.2230	38042230	125.35	.2470	38042470	128.65
.1515	38041515	76.80	.1755	38041755	91.10	.1995	38041995	107.80	.2235	38042235	125.35	.2475	38042475	128.65
.1520	38041520	72.95	.1760	38041760	91.10	.2000	38042000	107.80	.2240	38042240	125.35	.2480	3804063	122.50
.1525	38041525	80.10	.1765	38041765	91.10	.2005	38042005	107.80	.2245	38042245	125.35	.2485	38042485	128.65
.1530	38041530	80.10	.1770	38041770	86.70	.2010	38042010	102.60	.2250	38042250	125.35	.2490	38042490	128.65
.1535	3804039	76.10	.1775	38041775	91.50	.2015	38042015	107.80	.2255	38042255	125.35	.2495	38042495	128.65
.1540	38041540	76.10	.1780	38041780	91.50	.2020	38042020	107.80	.2260	38042260	125.35	.2500	380416	111.30
.1545	38041545	80.10	.1785	38041785	91.50	.2025	38042025	107.80	.2265	38042265	126.65	.2505	38042505	128.65
.1550	38041550	80.10	.1790	38041790	91.50	.2030	38042030	107.80	.2270	38042270	126.65	.2510	38042510	128.65
.1555	38041555	76.10	.1795	38041795	91.50	.2035	38042035	107.80	.2275	38042275	126.65	.2515	38042515	128.65
.1560	38041560	80.10	.1800	38041800	87.10	.2040	38042040	102.60	.2280	38042280	120.10	.2520	3804064	134.95
.1565	38041565	82.90	.1805	38041805	92.10	.2045	38042045	107.80	.2285	38042285	126.65	.2525	38042525	134.95
.1570	38041570	78.70	.1810	38041810	92.20	.2050	38042050	107.80	.2290	38042290	126.65	.2530	38042530	128.65
.1575	3804040	71.85	.1815	38041815	92.80	.2055	38042055	102.60	.2295	38042295	126.65	.2535	38042535	142.05
.1580	38041580	84.70	.1820	38041820	88.40	.2060	38042060	107.80	.2300	38042300	126.65	.2540	38042540	142.05
.1585	38041585	84.70	.1825	38041825	93.30	.2065	38042065	107.80	.2305	38042305	126.65	.2545	38042545	142.05
.1590	38041590	80.70	.1830	38041830	93.30	.2070	38042070	107.80	.2310	38042310	126.65	.2550	38042550	142.05
.1595	38041595	86.10	.1835	38041835	93.50	.2075	38042075	107.80	.2315	38042315	126.65	.2555	38042555	142.05
.1600	38041600	86.10	.1840	38041840	93.50	.2080	38042080	107.80	.2320	38042320	126.65	.2560	38042560	142.05
.1605	38041605	86.10	.1845	38041845	93.50	.2085	38042085	107.80	.2325	38042325	126.65	.2565	38042565	142.05
.1610	38041610	81.70	.1850	3804047	89.00	.2090	38042090	107.80	.2330	38042330	126.65	.2570	38042570	134.85
.1615	38041615	86.10	.1855	38041855	98.40	.2095	38042095	107.80	.2335	38042335	126.65	.2575	38042575	142.05
.1620	38041620	86.10	.1860	38041860	98.40	.2100	38042100	107.80	.2340	38042340	120.10	.2580	38042580	142.05
.1625	38041625	86.10	.1865	38041865	98.40	.2105	38042105	107.80	.2345	38042345	126.65	.2585	38042585	142.05
.1630	38041630	86.10	.1870	38041870	93.70	.2110	38042110	107.80	.2350	38042350	126.65	.2590	38042590	142.05
.1635	38041635	86.30	.1875	380412	85.30	.2115	38042115	107.80	.2355	38042355	126.65	.2595	38042595	142.05
.1640	38041640	86.10	.1880	38041880	98.70	.2120	38042120	107.80	.2360	38042360	126.65	.2600	38042600	142.05
.1645	38041645	86.10	.1885	38041885	98.70	.2125	38042125	107.80	.2365	38042365	128.65	.2605	38042605	142.05
.1650	38041650	86.10	.1890	3804048	93.70	.2130	38042130	102.60	.2370	38042370	128.65	.2610	38042610	134.85
.1655	38041655	86.10	.1895	38041895	99.70	.2135	38042135	107.80	.2375	38042375	128.65	.2615	38042615	142.05
.1660	38041660	82.20	.1900	38041900	99.70	.2140	38042140	107.80	.2380	38042380	122.50	.2620	38042620	142.05
.1665	38041665	87.10	.1905	38041905	99.70	.2145	38042145	107.80	.2385	38042385	128.65	.2625	38042625	142.05
.1670	38041670	87.10	.1910	38041910	94.90	.2150	38042150	107.80	.2390	38042390	128.65	.2630	38042630	142.05
.1675	38041675	87.10	.1915	38041915	99.90	.2155	38042155	107.80	.2395	38042395	128.65	.2635	38042635	142.05
.1680	38041680	87.10	.1920	38041920	99.90	.2160	38042160	107.80	.2400	38042400	128.65	.2640	38042640	142.05
.1685	38041685	87.10	.1925	38041925	99.90	.2165	3804055	93.70	.2405	38042405	128.65	.2645	38042645	142.05
.1690	38041690	87.10	.1930	38041930	101.00	.2170	38042170	107.80	.2410	38042410	128.65	.2650	38042650	142.05
.1695	38041695	83.00	.1935	38041935	95.50	.2175	38042175	107.80	.2415	38042415	128.65	.2655	38042655	142.05
.1700	38041700	89.00	.1940	38041940	101.00	.2180	38042180	107.80	.2420	38042420	122.50	.2660	38042660	134.85
.1705	38041705	89.00	.1945	38041945	101.00	.2185	38042185	102.60	.2425	38042425	128.65	.2665	38042665	142.05
.1710	38041710	89.00	.1950	38041950	103.60	.2190	38042190	120.50	.2430	38042430	128.65	.2670	38042670	142.05
.1715	38041715	89.00	.1955	38041955	103.60	.2195	38042195	120.50	.2435	38042435	128.65	.2675	38042675	142.05

SOLID CARBIDE DECIMAL SIZE CHUCKING REAMERS

TYPE 3804 - SOLID CARBIDE - STRAIGHT FLUTES - SHORT LENGTH
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .2680" THRU .3875"

Short length solid carbide head and shank. Tool geometry appropriate for material being machined. For fractional, wire and letter sizes, see page 50.



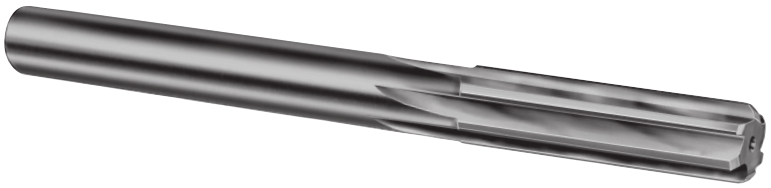
Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.2680	38042680	$142.05	.2920	38042920	$166.45	.3160	38043160	$173.15	.3400	38043400	$211.20	.3640	38043640	$216.50
.2685	38042685	142.05	.2925	38042925	166.45	.3165	38043165	184.30	.3405	38043405	211.20	.3645	38043645	216.50
.2690	38042690	142.05	.2930	38042930	166.45	.3170	38043170	184.30	.3410	38043410	211.20	.3650	38043650	216.50
.2695	38042695	142.05	.2935	38042935	166.45	.3175	38043175	184.30	.3415	38043415	211.20	.3655	38043655	216.50
.2700	38042700	142.05	.2940	38042940	166.45	.3180	38043180	184.30	.3420	38043420	211.20	.3660	38043660	216.50
.2705	38042705	142.05	.2945	38042945	166.45	.3185	38043185	184.30	.3425	3804087	210.70	.3665	38043665	216.50
.2710	38042710	142.05	.2950	38042950	158.25	.3190	38043190	184.30	.3430	38043430	211.20	.3670	38043670	216.50
.2715	38042715	142.05	.2955	38042955	166.45	.3195	38043195	184.30	.3435	38043435	211.20	.3675	38043675	216.50
.2720	38042720	134.85	.2960	38042960	166.45	.3200	38043200	184.30	.3440	38043440	211.70	.3680	38043680	205.90
.2725	38042725	142.05	.2965	38042965	166.45	.3205	38043205	184.30	.3445	38043445	211.70	.3685	38043685	218.70
.2730	38042730	142.05	.2970	38042970	173.15	.3210	38043210	184.30	.3450	38043450	211.70	.3690	38043690	219.10
.2735	38042735	142.05	.2975	38042975	173.15	.3215	38043215	184.30	.3455	38043455	211.70	.3695	38043695	218.70
.2740	38042740	142.05	.2980	38042980	173.15	.3220	38043220	184.30	.3460	38043460	211.70	.3700	38043700	218.70
.2745	38042745	142.05	.2985	38042985	173.15	.3225	38043225	184.30	.3465	3804088	211.70	.3705	38043705	218.70
.2750	38042750	142.05	.2990	38042990	173.15	.3230	38043230	175.30	.3470	38043470	211.70	.3710	38043710	218.70
.2755	38042755	142.05	.2995	38042995	173.15	.3235	38043235	184.30	.3475	38043475	211.70	.3715	38043715	218.70
.2760	38042760	142.05	.3000	38043000	173.15	.3240	38043240	211.20	.3480	38043480	201.50	.3720	38043720	218.70
.2765	38042765	142.05	.3005	38043005	173.15	.3245	38043245	211.20	.3485	38043485	211.70	.3725	38043725	218.70
.2770	38042770	134.85	.3010	38043010	173.15	.3250	38043250	211.20	.3490	38043490	211.70	.3730	38043730	218.70
.2775	38042775	142.05	.3015	38043015	173.15	.3255	38043255	211.20	.3495	38043495	211.70	.3735	38043735	218.70
.2780	38042780	153.75	.3020	38043020	164.85	.3260	38043260	211.20	.3500	38043500	211.70	.3740	3804095	207.10
.2785	38042785	153.75	.3025	38043025	173.15	.3265	38043265	211.20	.3505	38043505	211.70	.3745	38043745	218.70
.2790	38042790	153.75	.3030	38043030	173.15	.3270	38043270	211.20	.3510	38043510	211.70	.3750	380424	189.60
.2795	3804071	153.55	.3035	38043035	173.15	.3275	38043275	211.20	.3515	38043515	211.70	.3755	38043755	259.25
.2800	38042800	153.75	.3040	38043040	173.15	.3280	38043280	211.20	.3520	38043520	211.70	.3760	38043760	259.45
.2805	38042805	153.75	.3045	38043045	173.15	.3285	38043285	211.20	.3525	38043525	211.70	.3765	38043765	259.25
.2810	38042810	146.15	.3050	38043050	173.15	.3290	38043290	211.20	.3530	38043530	211.70	.3770	38043770	246.05
.2815	38042815	153.75	.3055	38043055	173.15	.3295	38043295	211.20	.3535	38043535	211.70	.3775	38043775	259.25
.2820	38042820	166.45	.3060	38043060	173.15	.3300	38043300	211.20	.3540	38043540	211.70	.3780	3804096	258.55
.2825	38042825	166.45	.3065	38043065	173.15	.3305	38043305	211.20	.3545	38043545	211.70	.3785	38043785	259.25
.2830	38042830	166.45	.3070	38043070	173.15	.3310	38043310	203.90	.3550	38043550	212.60	.3790	38043790	259.25
.2835	3804072	165.95	.3075	38043075	173.15	.3315	38043315	211.20	.3555	38043555	212.60	.3795	38043795	259.25
.2840	38042840	166.45	.3080	38043080	173.15	.3320	38043320	200.50	.3560	38043560	212.60	.3800	38043800	259.25
.2845	38042845	166.45	.3085	38043085	173.15	.3325	38043325	211.20	.3565	38043565	212.60	.3805	38043805	259.25
.2850	38042850	166.45	.3090	38043090	173.15	.3330	38043330	211.20	.3570	38043570	212.60	.3810	38043810	259.25
.2855	38042855	166.45	.3095	38043095	173.15	.3335	38043335	211.20	.3575	38043575	212.60	.3815	38043815	259.25
.2860	38042860	166.45	.3100	38043100	173.15	.3340	38043340	211.20	.3580	38043580	202.40	.3820	38043820	259.25
.2865	38042865	166.45	.3105	38043105	173.15	.3345	38043345	211.20	.3585	38043585	212.60	.3825	38043825	259.25
.2870	38042870	166.45	.3110	3804079	173.15	.3350	38043350	211.20	.3590	38043590	214.30	.3830	38043830	259.25
.2875	38042875	166.45	.3115	38043115	173.15	.3355	38043355	211.20	.3595	38043595	216.50	.3835	38043835	259.25
.2880	38042880	166.45	.3120	38043120	173.15	.3360	38043360	211.20	.3600	38043600	216.50	.3840	38043840	259.25
.2885	38042885	166.45	.3125	380420	150.75	.3365	38043365	211.20	.3605	38043605	216.50	.3845	38043845	259.25
.2890	38042890	166.45	.3130	38043130	173.15	.3370	38043370	211.20	.3610	38043610	216.50	.3850	38043850	259.25
.2895	38042895	166.45	.3135	38043135	173.15	.3375	38043375	211.20	.3615	38043615	216.50	.3855	38043855	259.25
.2900	38042900	158.25	.3140	38043140	173.15	.3380	38043380	211.20	.3620	38043620	216.50	.3860	38043860	246.75
.2905	38042905	166.45	.3145	38043145	173.15	.3385	38043385	211.20	.3625	38043625	216.50	.3865	38043865	272.45
.2910	38042910	166.45	.3150	3804080	150.75	.3390	38043390	200.50	.3630	38043630	216.50	.3870	38043870	272.45
.2915	38042915	166.45	.3155	38043155	173.15	.3395	38043395	211.20	.3635	38043635	216.50	.3875	38043875	272.45

SOLID CARBIDE DECIMAL SIZE CHUCKING REAMERS

TYPE 3804 - SOLID CARBIDE - STRAIGHT FLUTES - SHORT LENGTH
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .3880" THRU .5150"

Short length solid carbide head and shank. Tool geometry appropriate for material being machined.
For fractional, wire and letter sizes, see page 50.



Tool diameter tolerance thru .2500": +.0002"/-.0000".
over .2500": +.0003"/-.0000".
Shank diameter tolerance: +.0000"/-.0010".

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.3880	38043880	$272.45	.4135	38044135	$279.80	.4390	38044390	$306.40	.4645	38044645	$306.40	.4910	38044910	$333.35
.3885	38043885	272.45	.4140	38044140	279.80	.4395	38044395	306.40	.4650	38044650	306.40	.4915	38044915	333.35
.3890	38043890	272.45	.4145	38044145	279.80	.4400	38044400	306.40	.4655	38044655	306.40	.4920	38044920	333.35
.3895	38043895	272.45	.4150	38044150	279.80	.4405	38044405	306.40	.4660	38044660	306.40	.4925	38044925	333.35
.3900	38043900	272.45	.4155	38044155	279.80	.4410	38044410	306.40	.4665	38044665	306.40	.4930	38044930	333.35
.3905	38043905	272.45	.4160	38044160	279.80	.4415	38044415	306.40	.4670	38044670	306.40	.4935	38044935	333.35
.3910	38043910	272.45	.4165	38044165	279.80	.4420	38044420	306.40	.4675	38044675	306.40	.4940	38044940	333.35
.3915	38043915	272.45	.4170	38044170	279.80	.4425	38044425	306.40	.4680	38044680	306.40	.4945	38044945	333.35
.3920	38043920	272.45	.4175	38044175	279.80	.4430	38044430	306.40	.4685	3804119	306.40	.4950	38044950	333.35
.3925	38043925	272.45	.4180	38044180	279.80	.4435	38044435	306.40	.4690	38044690	306.40	.4955	38044955	333.35
.3930	38043930	272.45	.4185	38044185	279.80	.4440	38044440	306.40	.4695	38044695	306.40	.4960	38044960	333.35
.3935	38043935	272.45	.4190	38044190	279.80	.4445	38044445	306.40	.4700	38044700	306.40	.4965	38044965	333.35
.3940	38043940	272.45	.4195	38044195	279.80	.4450	38044450	306.40	.4705	38044705	306.40	.4970	38044970	333.35
.3945	38043945	272.45	.4200	38044200	279.80	.4455	38044455	306.40	.4710	38044710	306.40	.4975	38044975	333.35
.3950	38043950	272.45	.4205	38044205	279.80	.4460	38044460	306.40	.4715	38044715	306.40	.4980	38044980	333.35
.3955	38043955	272.45	.4210	38044210	279.80	.4465	38044465	306.40	.4720	38044720	306.40	.4985	38044985	333.35
.3960	38043960	272.45	.4215	38044215	279.80	.4470	38044470	306.40	.4725	38044725	333.35	.4990	38044990	333.35
.3965	38043965	272.45	.4220	38044220	279.80	.4475	38044475	306.40	.4730	38044730	333.35	.4995	38044995	315.20
.3970	38043970	259.45	.4225	38044225	279.80	.4480	38044480	306.40	.4735	38044735	333.35	.5000	380432	315.20
.3975	38043975	272.45	.4230	38044230	279.80	.4485	38044485	306.40	.4740	38044740	333.35	.5005	38045005	395.70
.3980	38043980	272.45	.4235	38044235	279.80	.4490	38044490	306.40	.4745	38044745	333.35	.5010	38045010	395.70
.3985	38043985	272.45	.4240	38044240	279.80	.4495	38044495	306.40	.4750	38044750	333.35	.5015	38045015	395.70
.3990	38043990	272.45	.4245	38044245	279.80	.4500	38044500	306.40	.4755	38044755	333.35	.5020	38045020	395.70
.3995	38043995	272.45	.4250	38044250	279.80	.4505	38044505	306.40	.4760	38044760	333.35	.5025	38045025	395.70
.4000	38044000	272.45	.4255	38044255	279.80	.4510	38044510	306.40	.4765	38044765	333.35	.5030	38045030	395.70
.4005	38044005	272.45	.4260	38044260	279.80	.4515	38044515	306.40	.4770	38044770	333.35	.5035	38045035	395.70
.4010	38044010	272.45	.4265	38044265	279.80	.4520	38044520	306.40	.4775	38044775	333.35	.5040	38045040	395.70
.4015	38044015	272.45	.4270	38044270	279.80	.4525	38044525	306.40	.4780	38044780	333.35	.5045	38045045	395.70
.4020	38044020	272.45	.4275	38044275	279.80	.4530	38044530	306.40	.4785	38044785	333.35	.5050	38045050	395.70
.4025	38044025	272.45	.4280	38044280	279.80	.4535	38044535	306.40	.4790	38044790	333.35	.5055	38045055	395.70
.4030	38044030	272.45	.4285	38044285	279.80	.4540	38044540	306.40	.4795	38044795	333.35	.5060	38045060	395.70
.4035	38044035	272.45	.4290	38044290	279.80	.4545	38044545	306.40	.4800	38044800	333.35	.5065	38045065	395.70
.4040	38044040	259.45	.4295	38044295	279.80	.4550	38044550	306.40	.4805	38044805	333.35	.5070	38045070	395.70
.4045	38044045	272.45	.4300	38044300	279.80	.4555	38044555	306.40	.4810	38044810	333.35	.5075	38045075	395.70
.4050	38044050	272.45	.4305	38044305	279.80	.4560	38044560	306.40	.4815	38044815	333.35	.5080	38045080	395.70
.4055	3804103	272.45	.4310	38044310	279.80	.4565	38044565	306.40	.4820	38044820	333.35	.5085	38045085	395.70
.4060	38044060	272.45	.4315	38044315	279.80	.4570	38044570	306.40	.4835	38044835	333.35	.5090	38045090	395.70
.4065	38044065	272.45	.4320	38044320	279.80	.4575	38044575	306.40	.4840	38044840	333.35	.5095	38045095	395.70
.4070	38044070	272.45	.4325	38044325	279.80	.4580	38044580	306.40	.4845	38044845	333.35	.5100	38045100	395.70
.4075	38044075	272.45	.4330	38044330	279.80	.4585	38044585	306.40	.4850	38044850	333.35	.5105	38045105	395.70
.4080	38044080	272.45	.4335	38044335	279.80	.4590	38044590	306.40	.4855	38044855	333.35	.5110	38045110	395.70
.4085	38044085	272.45	.4340	38044340	279.80	.4595	38044595	306.40	.4860	38044860	333.35	.5115	38045115	395.70
.4090	38044090	272.45	.4345	38044345	279.80	.4600	38044600	306.40	.4865	38044865	333.35	.5120	38045120	395.70
.4095	38044095	272.45	.4350	38044350	279.80	.4605	38044605	306.40	.4870	38044870	333.35	.5125	38045125	395.70
.4100	38044100	272.45	.4355	38044355	279.80	.4610	38044610	306.40	.4875	38044875	333.35	.5130	38045130	395.70
.4105	38044105	272.45	.4360	38044360	279.80	.4615	38044615	306.40	.4880	38044880	333.35	.5135	38045135	395.70
.4110	38044110	272.45	.4365	38044365	279.80	.4620	38044620	306.40	.4885	38044885	333.35	.5140	38045140	395.70
.4115	38044115	272.45	.4370	3804111	279.80	.4625	38044625	306.40	.4890	38044890	333.35	.5145	38045145	395.70
.4120	38044120	272.45	.4375	380428	266.25	.4630	38044630	306.40	.4895	38044895	333.35	.5150	38045150	395.70
.4125	38044125	272.45	.4380	38044380	306.40	.4635	38044635	306.40	.4900	38044900	333.35	-	-	-
.4130	38044130	259.45	.4385	38044385	306.40	.4640	38044640	306.40	.4905	38044905	333.35	-	-	-

FEEDS & SPEEDS CHARTS FOR REAMERS - CARBIDE TIPPED

Feeds & speeds are a starting recommendation only. Factors such as machine, fixture and tooling rigidity, horsepower available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations.



IPM=RPM*IPR
RPM=SFPM*3.82/Cutter Diameter

CLASSIFICATION	MATERIAL	BRINELL	SPEED IN SFPM	FEED RATE (INCHES PER REVOLUTION)					HOLE DIAMETER IN INCHES			
			GENERAL PURPOSE (G.P.)	1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2
NON-FERROUS (SOFT)	ALUMINUM ALLOY - CAST WROUGHT	30 - 150*	150 - 250	.004	.006	.008	.011	.012	.013	.016	.019	.020
	MAGNESIUM ALLOY	50 - 90*	130 - 190	.005	.010	.012	.015	.016	.017	.020	.022	.025
	LEAD ALLOY	10 - 20*	150 - 250	.002	.006	.008	.012	.014	.015	.018	.021	.022
	NON-METAL AND PLASTIC	-	90 - 250	.004	.005	.007	.008	.009	.012	.014	.016	.018
	ZINC ALLOY - DIE CAST	80 - 100	140 - 210	.005	.007	.008	.010	.011	.012	.015	.018	.020
NON-FERROUS (HARD)	ALUMINUM BRONZE	40 - 175	50 - 90	.004	.006	.010	.012	.014	.016	.018	.020	.022
	BRASS ALLOY - LEADED AND FREE CUTTING	10 - 100Rb	100 - 250	.005	.008	.011	.015	.017	.018	.020	.022	.025
	NICKEL SILVER	10 - 100Rb	50 - 90	.004	.006	.008	.010	.011	.012	.014	.015	.016
	COPPER ALLOY - TOUGH	40 - 200*	50 - 90	.005	.006	.008	.010	.011	.012	.014	.016	.017
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120 - 275	45 - 70	.004	.006	.007	.008	.010	.013	.015	.018	.020
	DUCTILE CAST IRON - FERRITIC	140 - 270	50 - 90	.004	.005	.008	.010	.012	.014	.017	.020	.023
	DUCTILE CAST IRON - MARTENSITIC	270 - 400	35 - 60	.004	.006	.007	.008	.009	.010	.012	.014	.016
	GRAY - PEARLITIC	220 - 320	45 - 70	.004	.006	.008	.009	.010	.012	.014	.018	.020
	GRAY - FERRITIC	120 - 220	65 - 135	.005	.008	.010	.011	.013	.016	.020	.022	.025
	MALLEABLE CAST IRON - MARTENSITIC	200 - 320	45 - 70	.004	.006	.008	.010	.012	.013	.015	.018	.025
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100 - 250	70 - 100	.005	.008	.010	.012	.014	.015	.020	.025	.030
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100 - 375	30 - 85	.004	.008	.009	.011	.013	.015	.018	.020	.022
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100 - 275	65 - 100	.005	.008	.010	.015	.017	.018	.022	.025	.027
	LOW AND MEDIUM CARBON ALLOY STEEL	85 - 375	40 - 85	.005	.010	.012	.015	.018	.020	.025	.027	.030
	STAINLESS STEEL - 400 SERIES	135 - 325	40 - 90	.003	.005	.006	.007	.008	.008	.010	.011	.012
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135 - 275	65 - 100	.004	.006	.007	.008	.009	.009	.010	.011	.012
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175 - 400	35 - 70	.004	.006	.007	.008	.009	.010	.011	.012	.013
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140 - 300	15 - 85	.003	.005	.005	.005	.006	.007	.008	.010	.012
	STAINLESS STEEL - 300 SERIES	135 - 375	40 - 75	.003	.004	.005	.006	.006	.007	.008	.009	.010
	STAINLESS STEEL - PH SERIES	150 - 440	35 - 70	.003	.004	.004	.005	.006	.007	.008	.009	.010
	TITANIUM ALLOY	110 - 380	30 - 45	.004	.006	.008	.010	.011	.011	.012	.013	.014

CLASSIFICATION	MATERIAL	BRINELL	SPEED IN SFPM	FEED RATE (INCHES PER REVOLUTION)					HOLE DIAMETER IN INCHES			
			COOLANT FED (C.F.)	1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2
NON-FERROUS (SOFT)	ALUMINUM ALLOY - CAST WROUGHT	30 - 150*	200 - 300	–	.008	.010	.013	.015	.017	.021	.022	.024
	MAGNESIUM ALLOY	50 - 90*	150 - 250	–	.012	.015	.018	.019	.020	.024	.026	.028
	LEAD ALLOY	10 - 20*	200 - 300	–	.008	.010	.016	.017	.018	.022	.024	.026
	NON-METAL AND PLASTIC	-	125 - 300	–	.006	.008	.009	.010	.014	.016	.018	.020
	ZINC ALLOY - DIE CAST	80 - 100	170 - 240	–	.009	.011	.013	.014	.016	.020	.022	.025
NON-FERROUS (HARD)	ALUMINUM BRONZE	40 - 175	70 - 105	–	.008	.013	.015	.016	.018	.021	.024	.028
	BRASS ALLOY - LEADED AND FREE CUTTING	10 - 100Rb	125 - 300	–	.010	.014	.020	.022	.024	.026	.028	.032
	NICKEL SILVER	10 - 100Rb	70 - 190	–	.007	.010	.012	.013	.014	.017	.018	.018
	COPPER ALLOY - TOUGH	40 - 200*	70 - 105	–	.008	.010	.013	.014	.016	.018	.019	.020
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120 - 275	65 - 100	–	.008	.009	.011	.014	.016	.018	.020	.025
	DUCTILE CAST IRON - FERRITIC	140 - 270	70 - 105	–	.007	.010	.012	.015	.017	.022	.024	.027
	DUCTILE CAST IRON - MARTENSITIC	270 - 400	50 - 85	–	.008	.009	.010	.011	.013	.014	.017	.019
	GRAY - PEARLITIC	220 - 320	55 - 100	–	.008	.010	.012	.014	.015	.018	.020	.026
	GRAY - FERRITIC	120 - 220	95 - 190	–	.010	.013	.014	.017	.020	.024	.028	.030
	MALLEABLE CAST IRON - MARTENSITIC	200 - 320	65 - 100	–	.008	.010	.012	.014	.015	.020	.023	.030
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100 - 250	100 - 150	–	.012	.014	.016	.018	.020	.025	.030	.035
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100 - 375	40 - 110	–	.009	.011	.013	.015	.017	.022	.024	.026
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100 - 275	90 - 135	–	.010	.012	.018	.020	.022	.025	.027	.030
	LOW AND MEDIUM CARBON ALLOY STEEL	85 - 375	65 - 100	–	.012	.015	.018	.022	.024	.028	.030	.033
	STAINLESS STEEL - 400 SERIES	135 - 325	50 - 100	–	.007	.007	.008	.009	.009	.012	.014	.015
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135 - 275	90 - 135	–	.008	.009	.010	.011	.012	.013	.013	.014
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175 - 400	50 - 100	–	.007	.008	.009	.011	.012	.014	.015	.016
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140 - 300	20 - 115	–	.006	.007	.007	.008	.008	.010	.012	.015
	STAINLESS STEEL - 300 SERIES	135 - 375	60 - 90	–	.006	.007	.008	.008	.009	.010	.011	.012
	STAINLESS STEEL - PH SERIES	150 - 440	50 - 90	–	.006	.006	.007	.008	.009	.010	.012	.014
	TITANIUM ALLOY	110 - 380	40 - 60	–	.008	.010	.013	.014	.014	.016	.016	.018

CARBIDE TIPPED JOBBERS DRILL LENGTH REAMERS

TYPE 3401 - STRAIGHT SHANK - STRAIGHT FLUTES



Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Used for all general types of reaming, including low carbon steel, cast iron, non-ferrous metals and non-metals. These shorter length reamers provide increased rigidity and should be used in applications requiring jobbers length drills.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1562	5/32	.151	4	1	1/2	3 1/8	340105	$106.00	.1560 - .1769	$169.35	$137.75	$127.00	$122.00	$116.55	$112.35
.1719	11/64	.151	4	1	1/2	3 1/4	34011719	106.00	-	-	-	-	-	-	-
.1875	3/16	11/64	4	1 1/8	1/2	3 1/2	340106	102.50	.1770 - .2040	164.10	133.30	122.90	117.95	112.85	108.70
.2031	13/64	11/64	4	1 1/8	1/2	3 5/8	34012031	103.25	-	-	-	-	-	-	-
.2188	7/32	13/64	4	1 1/4	1/2	3 3/4	340107	102.50	.2041 - .2210	164.10	133.30	122.90	117.95	112.85	108.70
.2344	15/64	7/32	4	1 1/2	1/2	3 7/8	34012344	103.25	.2211 - .2380	164.85	134.20	123.50	118.70	113.55	109.20
.2500	1/4	15/64	4	1 1/2	1/2	4	340108	102.50	.2381 - .2530	164.10	133.30	122.90	117.95	112.85	108.70
.2656	17/64	15/64	4	1 1/2	1/2	4 1/8	34012656	104.60	-	-	-	-	-	-	-
.2812	9/32	15/64	4	1 1/2	1/2	4 1/4	340109	103.95	.2531 - .2840	165.50	134.70	124.40	119.40	114.10	109.95
.2969	19/64	9/32	4	1 1/2	1/2	4 3/8	34012969	104.60	-	-	-	-	-	-	-
.3125	5/16	9/32	4	1 1/2	1/2	4 1/2	340110	103.95	.2841 - .3150	165.50	134.70	124.40	119.40	114.10	109.95
.3281	21/64	9/32	4	1 1/2	5/8	4 5/8	34013281	107.65	-	-	-	-	-	-	-
.3438	11/32	9/32	4	1 1/2	5/8	4 3/4	340111	106.55	.3151 - .3470	167.95	137.20	126.90	122.00	116.70	112.50
.3594	23/64	5/16	4	1 3/4	5/8	4 7/8	34013594	107.65	-	-	-	-	-	-	-
.3750	3/8	5/16	4	1 3/4	5/8	5	340112	97.85	.3471 - .3780	154.20	125.95	116.25	111.85	107.15	103.25
.3906	25/64	5/16	4	1 3/4	5/8	5 1/8	34013906	111.80	-	-	-	-	-	-	-
.4062	13/32	5/16	4	1 3/4	5/8	5 1/4	340113	109.90	.3781 - .4090	171.55	140.65	130.35	125.60	120.05	116.00
.4219	27/64	3/8	4	1 3/4	5/8	5 3/8	34014219	111.80	-	-	-	-	-	-	-
.4375	7/16	3/8	4	1 3/4	5/8	5 1/2	340114	114.75	.4091 - .4410	176.25	145.45	135.10	130.15	124.90	120.80
.4531	29/64	3/8	4	1 3/4	5/8	5 5/8	34014531	119.20	-	-	-	-	-	-	-
.4688	15/32	3/8	4	1 3/4	5/8	5 3/4	340115	119.90	.4411 - .4720	181.35	150.65	140.30	135.40	130.05	125.95
.4844	31/64	7/16	6	2	5/8	5 7/8	34014844	127.00	-	-	-	-	-	-	-
.5000	1/2	7/16	6	2	5/8	6	340116	134.60	.4721 - .5030	202.35	168.35	157.15	151.75	145.80	141.20
.5156	33/64	7/16	6	2	5/8	6 5/8	34015156	143.00	-	-	-	-	-	-	-
.5312	17/32	7/16	6	2	5/8	6 5/8	340117	143.00	.5031 - .5340	210.75	176.75	165.50	160.10	154.30	149.80
.5469	35/64	7/16	6	2	5/8	6 5/8	34015469	143.00	-	-	-	-	-	-	-
.5625	9/16	7/16	6	2	5/8	6 5/8	340118	143.00	.5341 - .5660	210.75	176.75	165.50	160.10	154.30	149.80
.5781	37/64	7/16	6	2	5/8	6 5/8	34015781	146.95	-	-	-	-	-	-	-
.5938	19/32	7/16	6	2	5/8	7 1/8	340119	146.95	.5661 - .5970	214.90	180.95	169.60	164.10	158.20	153.85
.6094	39/64	9/16	6	2 1/4	5/8	7 1/8	34016094	146.95	-	-	-	-	-	-	-
.6250	5/8	9/16	6	2 1/4	5/8	7 1/8	340120	146.95	.5971 - .6280	214.90	180.95	169.60	164.10	158.20	153.85
.6406	41/64	9/16	6	2 1/4	5/8	7 1/8	34016406	148.80	-	-	-	-	-	-	-
.6562	21/32	9/16	6	2 1/4	5/8	7 1/8	340121	148.80	.6281 - .6590	216.60	182.85	171.35	165.90	160.10	155.45
.6719	43/64	9/16	6	2 1/4	5/8	7 5/8	34016719	148.80	-	-	-	-	-	-	-
.6875	11/16	9/16	6	2 1/4	5/8	7 5/8	340122	148.80	.6591 - .6910	216.60	182.85	171.35	165.90	160.10	155.45
.7031	45/64	9/16	6	2 1/4	5/8	7 5/8	34017031	154.00	-	-	-	-	-	-	-
.7188	23/32	9/16	6	2 1/4	5/8	7 5/8	340123	154.00	.6911 - .7220	221.70	187.95	176.55	171.00	165.25	160.60
.7344	47/64	5/8	6	2 1/2	3/4	7 5/8	34017344	154.00	-	-	-	-	-	-	-
.7500	3/4	5/8	6	2 1/2	3/4	8	340124	154.00	.7221 - .7530	221.70	187.95	176.55	171.00	165.25	160.60

*Quantities of 15 or more: price of fractional size in same size range.

REAMER EXPEDITE FEES

REAMER DIAMETER	SERVICE	FEE
Up to 1.0000"	24 Hour	$105.00
Up to 1.0000"	48 Hour	70.00
Over 1.0000"	48 Hour	105.00
Over 1.0000"	72 Hour	70.00

Order must be recieved by 3:00 PM EST (Exceptions may apply)
18 pieces max per diameter, 4 diameters max per order, 1 fee per diameter
Does NOT apply to types 3401, 3431, 3441, 3490, or Variable Length Reamers
Does NOT require air shipment of the product

REAMER TOLERANCES & CLOSER TOLERANCE PRICING

TOOL TYPE	TOOL DIAMETER TOLERANCES		CLOSER TOLERANCE PRICING		
			.0001"	.0002"	.0003"
3480, NAS 897 EXCLUDING COOLANT	.0000" THRU .5000"	+.0002"/-.0000"	$4.20	-	-
	.5001" THRU .7500"	+.0003"/-.0000"	4.20	$1.40	-
	.7501" AND UP	+.0004"/-.0000"	7.00	4.20	$1.40
ALL OTHER REAMERS	.0000" THRU 1.5000"	+.0003"/-.0000"	4.20	1.40	-
	1.5001" AND UP	+.0004"/-.0000"	7.00	4.20	1.40

TOOL TYPE	SHANK DIAMETER TOLERANCES (BASED ON TOOL DIAMETER)	
NAS 897 & COOLANT	UP TO 23/32"	+.0000"/-.0010"
	OVER 23/32"	+.0000"/-.0015"
ALL OTHER REAMERS	ALL SIZES -.0005"/-.0015"	

CARBIDE TIPPED OVER & UNDER SIZE REAMERS

TYPE 3479 - JOBBERS DRILL LENGTH STRAIGHT SHANK & FLUTES

These precision ground carbide tipped reamers are very convenient for finishing accurate holes in most materials.

Same specifications as Type 3401 (pg. 56).

Tool diameter tolerance: +.0002"/-.0000".

TOOL DIAMETER	SHANK DIAM.	NO. OF FLUTES	LENGTH			TYPE 3479 EDP NO.	PRICE EACH
			FLT	CARB	OAL		
.1865	11/64	4	1 1/8	1/2	3 1/2	347918	$103.25
.1885	11/64	4	1 1/8	1/2	3 1/2	347919	103.25
.2490	15/64	4	1 1/2	1/2	4	347924	103.25
.2510	15/64	4	1 1/2	1/2	4	347925	103.25
.3115	9/32	4	1 1/2	1/2	4 1/2	347931	104.60
.3135	9/32	4	1 1/2	1/2	4 1/2	347932	104.60
.3740	5/16	4	1 3/4	5/8	5	347937	107.65
.3760	5/16	4	1 3/4	5/8	5	347938	107.65
.4365	3/8	4	1 3/4	5/8	5 1/2	347943	119.20
.4385	3/8	4	1 3/4	5/8	5 1/2	347944	119.20
.4990	7/16	6	2	5/8	6	347949	127.00
.5010	7/16	6	2	5/8	6	347950	127.00

CARBIDE TIPPED DOWEL PIN SIZE REAMERS

TYPE 3477 - JOBBERS DRILL LENGTH STRAIGHT SHANK & FLUTES

These precision ground carbide tipped reamers accurately finish holes in most materials resulting in properly fitting dowel pins. Should be used in pairs of .0005" and .0020" under the fractional size. Note special undersize tolerance.

Same specifications as Type 3401 (pg. 56).

Tool diameter tolerance: +.0000"/-.0002".

TOOL DIAMETER	SHANK DIAM.	NO. OF FLUTES	LENGTH			TYPE 3477 EDP NO.	PRICE EACH
			FLT	CARB	OAL		
.1855	11/64	4	1 1/8	1/2	3 1/2	347717	$103.25
.1870	11/64	4	1 1/8	1/2	3 1/2	347718	103.25
.2480	15/64	4	1 1/2	1/2	4	347723	103.25
.2495	15/64	4	1 1/2	1/2	4	347724	103.25
.3105	9/32	4	1 1/2	1/2	4 1/2	347730	104.60
.3120	9/32	4	1 1/2	1/2	4 1/2	347731	104.60
.3730	5/16	4	1 3/4	5/8	5	347736	107.65
.3745	5/16	4	1 3/4	5/8	5	347737	107.65
.4355	3/8	4	1 3/4	5/8	5 1/2	347742	119.20
.4370	3/8	4	1 3/4	5/8	5 1/2	347743	119.20
.4980	7/16	6	2	5/8	6	347748	127.00
.4995	7/16	6	2	5/8	6	347749	127.00

TYPE 3478 - REGULAR LENGTH STRAIGHT SHANK & FLUTES

These precision ground carbide tipped reamers are very convenient for finishing accurate holes in most materials.

Same specifications as Type 3400 (pg. 58).

Tool diameter tolerance: +.0002"/-.0000".

TOOL DIAMETER	SHANK DIAM.	NO. OF FLUTES	LENGTH			TYPE 3478 EDP NO.	PRICE EACH
			FLT	CARB	OAL		
.1865	11/64	4	1 1/8	1/2	4 1/2	347818	$82.95
.1885	11/64	4	1 1/8	1/2	4 1/2	347819	82.95
.2490	15/64	4	1 1/2	1/2	6	347824	82.95
.2510	15/64	4	1 1/2	1/2	6	347825	82.95
.3115	9/32	4	1 1/2	1/2	6	347831	84.75
.3135	9/32	4	1 1/2	1/2	6	347832	84.75
.3740	5/16	4	1 3/4	5/8	7	347837	87.90
.3760	5/16	4	1 3/4	5/8	7	347838	87.90
.4365	3/8	4	1 3/4	5/8	7	347843	98.30
.4385	3/8	4	1 3/4	5/8	7	347844	98.30
.4990	7/16	6	2	5/8	8	347849	107.65
.5010	7/16	6	2	5/8	8	347850	107.65
.6240	9/16	6	2 1/4	5/8	9	347862	129.15
.6260	9/16	6	2 1/4	5/8	9	347863	129.15
.7490	5/8	6	2 1/2	3/4	9 1/2	347874	136.15
.7510	5/8	6	2 1/2	3/4	9 1/2	347875	136.15
.8740	3/4	6	2 5/8	3/4	10	347886	144.60
.8760	3/4	6	2 5/8	3/4	10	347887	150.10
.9990	7/8	8	2 3/4	3/4	10 1/2	347898	178.30
1.0010	7/8	8	2 3/4	3/4	10 1/2	347899	170.85

TYPE 3476 - REGULAR LENGTH STRAIGHT SHANK & FLUTES

These precision ground carbide tipped reamers accurately finish holes in most materials resulting in properly fitting dowel pins. Should be used in pairs of .0005" and .0020" under the fractional size. Note special undersize tolerance.

Same specifications as Type 3400 (pg. 58).

Tool diameter tolerance: +.0000"/-.0002".

TOOL DIAMETER	SHANK DIAM.	NO. OF FLUTES	LENGTH			TYPE 3476 EDP NO.	PRICE EACH
			FLT	CARB	OAL		
.1855	11/64	4	1 1/8	1/2	4 1/2	347617	$82.95
.1870	11/64	4	1 1/8	1/2	4 1/2	347618	82.95
.2480	15/64	4	1 1/2	1/2	6	347623	82.95
.2495	15/64	4	1 1/2	1/2	6	347624	82.95
.3105	9/32	4	1 1/2	1/2	6	347630	84.75
.3120	9/32	4	1 1/2	1/2	6	347631	84.75
.3730	5/16	4	1 3/4	5/8	7	347636	87.90
.3745	5/16	4	1 3/4	5/8	7	347637	87.90
.4355	3/8	4	1 3/4	5/8	7	347642	98.30
.4370	3/8	4	1 3/4	5/8	7	347643	98.30
.4980	7/16	6	2	5/8	8	347648	107.65
.4995	7/16	6	2	5/8	8	347649	107.65
CASED SET OF ABOVE 12 REAMERS						347600	1034.90

CARBIDE TIPPED REGULAR LENGTH CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Used for all general types of reaming, including low carbon steels, cast iron, non-ferrous metals and non-metals.



For metric sizes, see page 60.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1562	5/32	.151	4	1	½	4	340005	$71.80	.1560 - .1769	$135.80	$103.30	$92.90	$87.80	$82.30	$78.05
.1719	11/64	.151	4	1	½	4	34001719	71.80	-	-	-	-	-	-	-
.1875	3/16	11/64	4	1 1/8	½	4 ½	340006	65.95	.1770 - .2040	127.45	96.60	86.50	81.35	76.15	71.95
.1875	3/16	11/64	4	1 ¼	½	5	340086	69.70	.1770 - .2040	131.40	100.50	90.45	85.25	80.00	75.90
.2031	13/64	11/64	4	1 1/8	½	4 ½	34002031	69.70	-	-	-	-	-	-	-
.2188	7/32	13/64	4	1 ¼	½	5	340007	65.95	.2041 - .2210	127.45	96.60	86.50	81.35	76.15	71.95
.2344	15/64	7/32	4	1 ½	½	6	34002344	69.70	.2211 - .2380	131.40	100.50	90.45	85.25	80.00	75.90
.2500	¼	15/64	4	1 ½	½	6	340008	65.95	.2381 - .2530	127.45	96.60	86.50	81.35	76.15	71.95
.2656	17/64	15/64	4	1 ½	½	6	34002656	71.35	-	-	-	-	-	-	-
.2812	9/32	15/64	4	1 ½	½	6	340009	67.40	.2531 - .2840	128.95	98.15	87.85	82.90	77.50	73.35
.2969	19/64	9/32	4	1 ½	½	6	34002969	71.35	-	-	-	-	-	-	-
.3125	5/16	9/32	4	1 ½	½	6	340010	67.40	.2841 - .3150	128.95	98.15	87.85	82.90	77.50	73.35
.3281	21/64	9/32	4	1 ½	5/8	6	34003281	74.05	-	-	-	-	-	-	-
.3438	11/32	9/32	4	1 ½	5/8	6	340011	69.65	.3151 - .3470	131.30	100.40	90.10	85.20	79.95	75.75
.3594	23/64	5/16	4	1 ¾	5/8	7	34003594	74.05	-	-	-	-	-	-	-
.3750	3/8	5/16	4	1 ¾	5/8	7	340012	69.65	.3471 - .3780	131.30	100.40	90.10	85.20	79.95	75.75
.3906	25/64	5/16	4	1 ¾	5/8	7	34003906	77.75	-	-	-	-	-	-	-
.4062	13/32	5/16	4	1 ¾	5/8	7	340013	73.20	.3781 - .4090	134.70	103.90	93.50	88.60	83.25	79.25
.4219	27/64	3/8	4	1 ¾	5/8	7	34004219	82.80	-	-	-	-	-	-	-
.4375	7/16	3/8	4	1 ¾	5/8	7	340014	78.20	.4091 - .4410	139.65	108.85	98.35	93.50	88.15	84.15
.4531	29/64	3/8	4	1 ¾	5/8	7	34004531	84.05	-	-	-	-	-	-	-
.4688	15/32	3/8	4	1 ¾	5/8	7	340015	79.25	.4411 - .4720	140.85	109.90	99.55	94.55	89.40	85.20
.4844	31/64	7/16	6	2	5/8	8	34004844	90.85	-	-	-	-	-	-	-
.5000	½	7/16	6	2	5/8	8	340016	94.20	.4721 - .5030	162.05	128.15	116.70	111.35	105.40	100.80
.5156	33/64	7/16	6	2	5/8	8	34005156	102.50	-	-	-	-	-	-	-
.5312	17/32	7/16	6	2	5/8	8	340017	102.50	.5031 - .5340	170.45	136.50	125.10	119.65	113.75	109.20
.5469	35/64	7/16	6	2	5/8	8	34005469	102.50	-	-	-	-	-	-	-
.5625	9/16	7/16	6	2	5/8	8	340018	102.50	.5341 - .5660	170.45	136.50	125.10	119.65	113.75	109.20
.5781	37/64	7/16	6	2	5/8	8	34005781	106.70	-	-	-	-	-	-	-
.5938	19/32	7/16	6	2	5/8	8	340019	106.70	.5661 - .5970	174.60	140.50	129.15	123.90	117.90	113.55
.6094	39/64	9/16	6	2 ¼	5/8	9	34006094	106.70	-	-	-	-	-	-	-
.6250	5/8	9/16	6	2 ¼	5/8	9	340020	106.70	.5971 - .6280	174.60	140.50	129.15	123.90	117.90	113.55
.6406	41/64	9/16	6	2 ¼	5/8	9	34006406	108.65	-	-	-	-	-	-	-
.6562	21/32	9/16	6	2 ¼	5/8	9	340021	108.65	.6281 - .6590	176.25	142.15	130.95	125.65	119.70	115.20
.6719	43/64	9/16	6	2 ¼	5/8	9	34006719	108.65	-	-	-	-	-	-	-
.6875	11/16	9/16	6	2 ¼	5/8	9	340022	108.65	.6591 - .6910	176.25	142.15	130.95	125.65	119.70	115.20
.7031	45/64	9/16	6	2 ¼	5/8	9	34007031	113.70	-	-	-	-	-	-	-
.7188	23/32	9/16	6	2 ¼	5/8	9	340023	113.70	.6911 - .7220	181.35	147.65	136.15	130.75	124.90	120.35
.7344	47/64	5/8	6	2 ½	¾	9 ½	34007344	113.70	-	-	-	-	-	-	-
.7500	¾	5/8	6	2 ½	¾	9 ½	340024	113.70	.7221 - .7530	181.35	147.65	136.15	130.75	124.90	120.35

*Quantities of 15 or more: price of fractional size in same size range.

CONTINUED FROM PAGE 58 - TYPE 3400 FRACTIONAL

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.7656	49/64	5/8	6	2 1/2	3/4	9 1/2	34007656	$117.30	-	-	-	-	-	-	-
.7812	25/32	5/8	6	2 1/2	3/4	9 1/2	340025	117.30	.7531 - .7840	$185.10	$151.15	$139.85	$134.55	$128.60	$124.05
.7969	51/64	5/8	6	2 1/2	3/4	9 1/2	34007969	117.30	-	-	-	-	-	-	-
.8125	13/16	5/8	6	2 1/2	3/4	9 1/2	340026	117.30	.7841 - .8160	185.10	151.15	139.85	134.55	128.60	124.05
.8281	53/64	5/8	6	2 1/2	3/4	9 1/2	34008281	122.10	-	-	-	-	-	-	-
.8438	27/32	5/8	6	2 1/2	3/4	9 1/2	340027	122.10	.8161 - .8470	189.90	155.90	144.60	139.10	133.30	128.75
.8594	55/64	3/4	6	2 5/8	3/4	10	34008594	122.10	-	-	-	-	-	-	-
.8750	7/8	3/4	6	2 5/8	3/4	10	340028	126.70	.8471 - .8780	196.90	161.85	150.10	144.50	138.25	133.50
.8906	57/64	3/4	6	2 5/8	3/4	10	34008906	147.65	-	-	-	-	-	-	-
.9062	29/32	3/4	6	2 5/8	3/4	10	340029	147.65	.8781 - .9090	217.90	182.55	170.95	165.35	159.20	154.40
.9219	59/64	3/4	8	2 5/8	3/4	10	34009219	147.65	-	-	-	-	-	-	-
.9375	15/16	3/4	8	2 5/8	3/4	10	340030	147.65	.9091 - .9410	217.90	182.55	170.95	165.35	159.20	154.40
.9531	61/64	3/4	8	2 5/8	3/4	10	34009531	154.65	-	-	-	-	-	-	-
.9688	31/32	3/4	8	2 5/8	3/4	10	340031	154.65	.9411 - .9720	225.10	189.75	178.20	172.55	166.30	161.55
.9844	63/64	7/8	8	2 3/4	3/4	10 1/2	34009844	154.65	-	-	-	-	-	-	-
1.0000	1	7/8	8	2 3/4	3/4	10 1/2	340032	154.65	.9721 - 1.0030	225.10	189.75	178.20	172.55	166.30	161.55
1.0625	1 1/16	7/8	8	2 3/4	3/4	10 1/2	340034	159.95	1.0031 - 1.0660	227.50	193.70	182.30	177.05	171.15	166.55
1.1250	1 1/8	7/8	8	2 7/8	7/8	11	340036	172.85	1.0661 - 1.1280	240.40	206.65	195.45	190.05	184.05	179.60
1.1875	1 3/16	1	8	2 7/8	7/8	11	340038	181.85	1.1281 - 1.1905	249.20	215.45	204.10	198.65	193.05	188.30
1.2500	1 1/4	1	8	3	7/8	11 1/2	340040	192.15	1.1906 - 1.2530	259.70	226.05	214.55	209.25	203.40	198.75
1.3125	1 5/16	1	8	3	7/8	11 1/2	340042	202.25	1.2531 - 1.3155	269.65	235.85	224.40	219.25	213.30	208.90
1.3750	1 3/8	1	8	3 1/4	7/8	12	340044	214.55	1.3156 - 1.3780	281.80	248.30	237.00	231.55	225.90	221.35
1.4375	1 7/16	1 1/4	8	3 1/4	7/8	12	340046	239.05	1.3781 - 1.4405	306.60	272.85	261.50	256.15	250.30	245.85
1.5000	1 1/2	1 1/4	8	3 1/2	7/8	12 1/2	340048	252.75	1.4406 - 1.5030	320.20	286.45	275.05	269.80	263.95	259.35
1.5625	1 9/16	1 1/4	8	3 1/2	7/8	12 1/2	340050	375.40	1.5031 - 1.5660	442.80	409.10	397.80	392.35	386.70	382.00
1.6250	1 5/8	1 1/4	8	3 3/4	7/8	13	340052	388.30	1.5661 - 1.6280	455.55	421.95	410.60	405.25	399.40	394.85
1.6875	1 11/16	1 1/4	8	3 3/4	7/8	13	340054	436.65	1.6281 - 1.6910	504.20	470.45	459.15	453.80	448.05	443.50
1.7500	1 3/4	1 1/4	10	4	7/8	13 1/2	340056	436.65	1.6911 - 1.7530	504.20	470.45	459.15	453.80	448.05	443.50
1.8125	1 13/16	1 1/2	10	4	7/8	13 1/2	340058	436.65	1.7531 - 1.8160	504.20	470.45	459.15	453.80	448.05	443.50
1.8750	1 7/8	1 1/2	10	4 1/4	7/8	14	340060	457.65	1.8161 - 1.8780	525.00	491.25	479.85	474.55	468.70	464.05
1.9375	1 15/16	1 1/2	10	4 1/4	7/8	14	340062	457.65	1.8781 - 1.9410	525.00	491.25	479.85	474.55	468.70	464.05
2.0000	2	1 1/2	12	4 1/4	7/8	14	340064	457.65	1.9411 - 2.0030	525.00	491.25	479.85	474.55	468.70	464.05

***Quantities of 15 or more: price of fractional size in same size range.**

WIRE & LETTER SIZES

For reamer tolerances, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH
WIRE LETTER	DECIMAL			FLT	CARB	OAL		
22	.1570	.151	4	1	1/2	4	34001570	$92.90
21	.1590	.151	4	1	1/2	4	34001590	92.90
20	.1610	.151	4	1	1/2	4	34001610	92.90
19	.1660	.151	4	1	1/2	4	34001660	92.90
18	.1695	.151	4	1	1/2	4	34001695	92.90
17	.1730	.151	4	1	1/2	4	34001730	92.90
16	.1770	11/64	4	1 1/8	1/2	4 1/2	34001770	86.50
15	.1800	11/64	4	1 1/8	1/2	4 1/2	34001800	86.50
14	.1820	11/64	4	1 1/8	1/2	4 1/2	34001820	86.50
13	.1850	11/64	4	1 1/8	1/2	4 1/2	3400047	86.50
12	.1890	11/64	4	1 1/8	1/2	4 1/2	3400048	86.50
11	.1910	11/64	4	1 1/8	1/2	4 1/2	34001910	86.50
10	.1935	11/64	4	1 1/8	1/2	4 1/2	34001935	86.50
9	.1960	11/64	4	1 1/8	1/2	4 1/2	34001960	86.50
8	.1990	11/64	4	1 1/8	1/2	4 1/2	34001990	86.50
7	.2010	11/64	4	1 1/8	1/2	4 1/2	34002010	86.50
6	.2040	11/64	4	1 1/8	1/2	4 1/2	34002040	86.50
5	.2055	13/64	4	1 1/4	1/2	5	34002055	86.50
4	.2090	13/64	4	1 1/4	1/2	5	34002090	86.50
3	.2130	13/64	4	1 1/4	1/2	5	34002130	86.50
2	.2210	13/64	4	1 1/4	1/2	5	34002210	86.50
1	.2280	7/32	4	1 1/2	1/2	6	34002280	90.45
A	.2340	7/32	4	1 1/2	1/2	6	34002340	90.45
B	.2380	7/32	4	1 1/2	1/2	6	34002380	90.45

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH
WIRE LETTER	DECIMAL			FLT	CARB	OAL		
C	.2420	15/64	4	1 1/2	1/2	6	34002420	$86.50
D	.2460	15/64	4	1 1/2	1/2	6	34002460	86.50
E	.2500	15/64	4	1 1/2	1/2	6	340008	65.95
F	.2570	15/64	4	1 1/2	1/2	6	34002570	87.85
G	.2610	15/64	4	1 1/2	1/2	6	34002610	87.85
H	.2660	15/64	4	1 1/2	1/2	6	34002660	87.85
I	.2720	15/64	4	1 1/2	1/2	6	34002720	87.85
J	.2770	15/64	4	1 1/2	1/2	6	34002770	87.85
K	.2810	15/64	4	1 1/2	1/2	6	34002810	87.85
L	.2900	9/32	4	1 1/2	1/2	6	34002900	87.85
M	.2950	9/32	4	1 1/2	1/2	6	34002950	87.85
N	.3020	9/32	4	1 1/2	1/2	6	34003020	87.85
O	.3160	9/32	4	1 1/2	1/2	6	34003160	90.10
P	.3230	9/32	4	1 1/2	1/2	6	34003230	90.10
Q	.3320	9/32	4	1 1/2	1/2	6	34003320	90.10
R	.3390	9/32	4	1 1/2	1/2	6	34003390	90.10
S	.3480	5/16	4	1 3/4	5/8	7	34003480	90.10
T	.3580	5/16	4	1 3/4	5/8	7	34003580	90.10
U	.3680	5/16	4	1 3/4	5/8	7	34003680	90.10
V	.3770	5/16	4	1 3/4	5/8	7	34003770	90.10
W	.3860	5/16	4	1 3/4	5/8	7	34003860	93.50
X	.3970	5/16	4	1 3/4	5/8	7	34003970	93.50
Y	.4040	5/16	4	1 3/4	5/8	7	34004040	93.50
Z	.4130	3/8	4	1 3/4	5/8	7	34004130	98.35

METRIC

CARBIDE TIPPED REGULAR LENGTH CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES

Detailed description and fractional sizes on pages 58 & 59. Tolerances on page 56. Tool diameter in millimeters with all other dimensions in inches.



TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.0	.1575	.151	4	1	½	4	3400040	$92.90	3.962 - 4.493	$140.35	$108.85	$98.20	$92.95	$87.80	$83.15	$77.30
4.5	.1772	11/64	4	1 1/8	½	4 ½	3400045	86.50	4.494 - 5.182	132.65	102.00	91.75	86.65	81.35	77.20	71.25
5.0	.1969	11/64	4	1 1/8	½	4 ½	3400050	86.50	-	-	-	-	-	-	-	-
5.5	.2165	13/64	4	1 ¼	½	5	3400055	86.50	5.183 - 5.613	132.65	102.00	91.75	86.65	81.35	77.20	71.25
6.0	.2362	7/32	4	1 ½	½	6	3400060	90.45	5.614 - 6.045	136.65	105.90	95.50	90.60	85.25	81.00	75.10
6.3	.2480	15/64	4	1 ½	½	6	3400063	86.50	6.046 - 6.426	132.65	102.00	91.75	86.65	81.35	77.20	71.25
6.5	.2559	15/64	4	1 ½	½	6	3400065	87.85	6.427 - 7.214	134.25	103.30	93.10	88.00	82.90	78.45	72.60
7.0	.2756	15/64	4	1 ½	½	6	3400070	87.85	-	-	-	-	-	-	-	-
7.5	.2953	9/32	4	1 ½	½	6	3400075	87.85	7.215 - 8.001	134.25	103.30	93.10	88.00	82.90	78.45	72.60
8.0	.3150	9/32	4	1 ½	½	6	3400080	87.85	-	-	-	-	-	-	-	-
8.5	.3346	9/32	4	1 ½	⅝	6	3400085	90.10	8.002 - 8.814	136.55	105.75	95.40	90.45	85.20	80.90	74.95
9.0	.3543	5/16	4	1 ¾	⅝	7	3400090	90.10	8.815 - 9.601	136.55	105.75	95.40	90.45	85.20	80.90	74.95
9.5	.3740	5/16	4	1 ¾	⅝	7	347837	87.90	-	-	-	-	-	-	-	-
10.0	.3937	5/16	4	1 ¾	⅝	7	3400100	93.50	9.602 - 10.389	139.85	109.05	98.90	93.80	88.60	84.40	78.40
10.5	.4134	⅜	4	1 ¾	⅝	7	3400105	98.35	10.390 - 11.201	144.75	114.05	103.80	98.65	93.50	89.30	83.25
11.0	.4331	⅜	4	1 ¾	⅝	7	3400110	98.35	-	-	-	-	-	-	-	-
11.5	.4528	⅜	4	1 ¾	⅝	7	3400115	99.55	11.202 - 11.989	145.90	115.20	104.85	99.95	94.55	90.45	84.55
12.0	.4724	7/16	6	2	⅝	8	3400120	116.70	11.990 - 12.776	167.70	133.75	122.50	117.10	111.35	106.60	100.10
12.5	.4921	7/16	6	2	⅝	8	3400125	116.70	-	-	-	-	-	-	-	-
13.0	.5118	7/16	6	2	⅝	8	3400130	125.10	12.777 - 13.564	176.00	142.10	130.85	125.25	119.65	114.85	108.45
13.5	.5315	7/16	6	2	⅝	8	3400135	125.10	-	-	-	-	-	-	-	-
14.0	.5512	7/16	6	2	⅝	8	3400140	125.10	13.565 - 14.376	176.00	142.10	130.85	125.25	119.65	114.85	108.45
14.5	.5709	7/16	6	2	⅝	8	3400145	129.15	14.377 - 15.164	180.20	146.30	134.90	129.45	123.90	119.15	112.50
15.0	.5906	7/16	6	2	⅝	8	3400150	129.15	-	-	-	-	-	-	-	-
15.5	.6102	9/16	6	2 ¼	⅝	9	3400155	129.15	15.165 - 15.951	180.20	146.30	134.90	129.45	123.90	119.15	112.50
16.0	.6299	9/16	6	2 ¼	⅝	9	3400160	130.95	15.952 - 16.739	182.15	148.20	136.70	131.20	125.65	120.90	114.25
16.5	.6496	9/16	6	2 ¼	⅝	9	3400165	130.95	-	-	-	-	-	-	-	-
17.0	.6693	9/16	6	2 ¼	⅝	9	3400170	130.95	16.740 - 17.551	182.15	148.20	136.70	131.20	125.65	120.90	114.25
17.5	.6890	9/16	6	2 ¼	⅝	9	3400175	130.95	-	-	-	-	-	-	-	-
18.0	.7087	9/16	6	2 ¼	⅝	9	3400180	136.15	17.552 - 18.339	187.10	153.30	141.95	136.50	130.75	126.00	119.40
18.5	.7283	⅝	6	2 ½	¾	9 ½	3400185	136.15	18.340 - 19.126	187.10	153.30	141.95	136.50	130.75	126.00	119.40
19.0	.7480	⅝	6	2 ½	¾	9 ½	3400190	136.15	-	-	-	-	-	-	-	-
19.5	.7677	⅝	6	2 ½	¾	9 ½	3400195	139.85	19.127 - 19.914	190.75	157.15	145.75	140.05	134.55	129.70	123.25
20.0	.7874	⅝	6	2 ½	¾	9 ½	3400200	139.85	19.915 - 20.726	190.75	157.15	145.75	140.05	134.55	129.70	123.25
20.5	.8071	⅝	6	2 ½	¾	9 ½	3400205	139.85	-	-	-	-	-	-	-	-
21.0	.8268	⅝	6	2 ½	¾	9 ½	3400210	144.60	20.727 - 21.514	195.60	161.55	150.35	144.75	139.10	134.55	128.05
21.5	.8465	⅝	6	2 ½	¾	9 ½	3400215	144.60	-	-	-	-	-	-	-	-
22.0	.8661	¾	6	2 ⅝	¾	10	3400220	144.60	21.515 - 22.301	195.60	161.55	150.35	144.75	139.10	134.55	128.05
22.5	.8858	¾	6	2 ⅝	¾	10	3400225	170.95	22.302 - 23.089	223.80	188.65	176.90	171.15	165.35	160.45	153.60
23.0	.9055	¾	6	2 ⅝	¾	10	3400230	170.95	-	-	-	-	-	-	-	-
23.5	.9252	¾	8	2 ⅝	¾	10	3400235	170.95	23.090 - 23.901	223.80	188.65	176.90	171.15	165.35	160.45	153.60
24.0	.9449	¾	8	2 ⅝	¾	10	3400240	178.20	23.902 - 24.689	231.00	195.80	184.05	178.35	172.55	167.65	160.80
24.5	.9646	¾	8	2 ⅝	¾	10	3400245	178.20	-	-	-	-	-	-	-	-
25.0	.9843	⅞	8	2 ¾	¾	10 ½	3400250	178.20	24.690 - 25.476	231.00	195.80	184.05	178.35	172.55	167.65	160.80
25.5	1.0039	⅞	8	2 ¾	¾	10 ½	3400255	182.30	25.477 - 27.076	233.15	199.45	188.15	182.55	177.05	172.50	165.70
26.0	1.0236	⅞	8	2 ¾	¾	10 ½	3400260	182.30	-	-	-	-	-	-	-	-
27.0	1.0630	⅞	8	2 ¾	¾	10 ½	3400270	182.30	-	-	-	-	-	-	-	-
28.0	1.1024	⅞	8	2 ⅞	⅞	11	3400280	195.45	27.077 - 28.651	246.05	212.40	201.05	195.60	190.05	185.30	178.80
29.0	1.1417	1	8	2 ⅞	⅞	11	3400290	204.10	28.652 - 30.239	254.80	221.35	209.80	204.40	198.65	194.10	187.55
30.0	1.1811	1	8	2 ⅞	⅞	11	3400300	204.10	-	-	-	-	-	-	-	-
31.0	1.2205	1	8	3	⅞	11 ½	3400310	214.55	30.240 - 31.826	265.30	231.65	220.35	214.90	209.25	204.60	198.25
32.0	1.2598	1	8	3	⅞	11 ½	3400320	224.40	31.827 - 33.414	275.30	241.80	230.30	224.90	219.25	214.40	207.90
33.0	1.2992	1	8	3	⅞	11 ½	3400330	224.40	-	-	-	-	-	-	-	-
34.0	1.3386	1	8	3 ¼	⅞	12	3400340	237.00	33.415 - 35.001	287.55	254.10	242.60	237.25	231.55	226.80	220.35
35.0	1.3780	1	8	3 ¼	⅞	12	3400350	237.00	-	-	-	-	-	-	-	-
36.0	1.4173	1 ¼	8	3 ¼	⅞	12	3400360	261.50	35.002 - 36.589	312.25	278.55	267.25	261.65	256.15	251.35	245.00
37.0	1.4567	1 ¼	8	3 ½	⅞	12 ½	3400370	275.05	36.590 - 38.176	325.90	292.20	280.85	275.40	269.80	265.10	258.65

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .1560" THRU .3055"

For fractional, wire, letter sizes and dimensions, see pages 58 & 59.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.1560	34001560	$92.90	.1860	34001860	$86.50	.2160	34002160	$86.50	.2460	34002460	$86.50	.2760	34002760	$87.85
.1565	34001565	92.90	.1865	347818	82.95	.2165	3400055	86.50	.2465	34002465	86.50	.2765	34002765	87.85
.1570	34001570	92.90	.1870	34001870	86.50	.2170	34002170	86.50	.2470	34002470	86.50	.2770	34002770	87.85
.1575	3400040	92.90	.1875	340006	65.95	.2175	34002175	86.50	.2475	34002475	86.50	.2775	34002775	87.85
.1580	34001580	92.90	.1880	34001880	86.50	.2180	34002180	86.50	.2480	3400063	86.50	.2780	34002780	87.85
.1585	34001585	92.90	.1885	347819	82.95	.2185	34002185	86.50	.2485	34002485	86.50	.2785	34002785	87.85
.1590	34001590	92.90	.1890	3400048	86.50	.2190	34002190	86.50	.2490	347824	82.95	.2790	34002790	87.85
.1595	34001595	92.90	.1895	34001895	86.50	.2195	34002195	86.50	.2495	34002495	86.50	.2795	3400071	87.85
.1600	34001600	92.90	.1900	34001900	86.50	.2200	34002200	86.50	.2500	340008	65.95	.2800	34002800	87.85
.1605	34001605	92.90	.1905	34001905	86.50	.2205	3400056	86.50	.2505	34002505	86.50	.2805	34002805	87.85
.1610	34001610	92.90	.1910	34001910	86.50	.2210	34002210	86.50	.2510	347825	82.95	.2810	34002810	87.85
.1615	34001615	92.90	.1915	34001915	86.50	.2215	34002215	90.45	.2515	34002515	86.50	.2815	34002815	87.85
.1620	34001620	92.90	.1920	34001920	86.50	.2220	34002220	90.45	.2520	3400064	86.50	.2820	34002820	87.85
.1625	34001625	92.90	.1925	34001925	86.50	.2225	34002225	90.45	.2525	34002525	86.50	.2825	34002825	87.85
.1630	34001630	92.90	.1930	34001930	86.50	.2230	34002230	90.45	.2530	34002530	86.50	.2830	34002830	87.85
.1635	34001635	92.90	.1935	34001935	86.50	.2235	34002235	90.45	.2535	34002535	87.85	.2835	3400072	87.85
.1640	34001640	92.90	.1940	34001940	86.50	.2240	34002240	90.45	.2540	34002540	87.85	.2840	34002840	87.85
.1645	34001645	92.90	.1945	34001945	86.50	.2245	34002245	90.45	.2545	34002545	87.85	.2845	34002845	87.85
.1650	34001650	92.90	.1950	34001950	86.50	.2250	34002250	90.45	.2550	34002550	87.85	.2850	34002850	87.85
.1655	34001655	92.90	.1955	34001955	86.50	.2255	34002255	90.45	.2555	34002555	87.85	.2855	34002855	87.85
.1660	34001660	92.90	.1960	34001960	86.50	.2260	34002260	90.45	.2560	34002560	87.85	.2860	34002860	87.85
.1665	34001665	92.90	.1965	34001965	86.50	.2265	34002265	90.45	.2565	34002565	87.85	.2865	34002865	87.85
.1670	34001670	92.90	.1970	34001970	86.50	.2270	34002270	90.45	.2570	34002570	87.85	.2870	34002870	87.85
.1675	34001675	92.90	.1975	34001975	86.50	.2275	34002275	90.45	.2575	34002575	87.85	.2875	34002875	87.85
.1680	34001680	92.90	.1980	34001980	86.50	.2280	34002280	90.45	.2580	34002580	87.85	.2880	34002880	87.85
.1685	34001685	92.90	.1985	34001985	86.50	.2285	34002285	90.45	.2585	34002585	87.85	.2885	34002885	87.85
.1690	34001690	92.90	.1990	34001990	86.50	.2290	34002290	90.45	.2590	34002590	87.85	.2890	34002890	87.85
.1695	34001695	92.90	.1995	34001995	86.50	.2295	34002295	90.45	.2595	34002595	87.85	.2895	34002895	87.85
.1700	34001700	92.90	.2000	34002000	86.50	.2300	34002300	90.45	.2600	34002600	87.85	.2900	34002900	87.85
.1705	34001705	92.90	.2005	34002005	86.50	.2305	34002305	90.45	.2605	34002605	87.85	.2905	34002905	87.85
.1710	34001710	92.90	.2010	34002010	86.50	.2310	34002310	90.45	.2610	34002610	87.85	.2910	34002910	87.85
.1715	34001715	92.90	.2015	34002015	86.50	.2315	34002315	90.45	.2615	34002615	87.85	.2915	34002915	87.85
.1720	34001720	92.90	.2020	34002020	86.50	.2320	34002320	90.45	.2620	34002620	87.85	.2920	34002920	87.85
.1725	34001725	92.90	.2025	34002025	86.50	.2325	34002325	90.45	.2625	34002625	87.85	.2925	34002925	87.85
.1730	34001730	92.90	.2030	34002030	86.50	.2330	34002330	90.45	.2630	34002630	87.85	.2930	34002930	87.85
.1735	34001735	92.90	.2035	34002035	86.50	.2335	34002335	90.45	.2635	34002635	87.85	.2935	34002935	87.85
.1740	34001740	92.90	.2040	34002040	86.50	.2340	34002340	90.45	.2640	34002640	87.85	.2940	34002940	87.85
.1745	34001745	92.90	.2045	34002045	86.50	.2345	34002345	90.45	.2645	34002645	87.85	.2945	34002945	87.85
.1750	34001750	92.90	.2050	34002050	86.50	.2350	34002350	90.45	.2650	34002650	87.85	.2950	34002950	87.85
.1755	34001755	92.90	.2055	34002055	86.50	.2355	34002355	90.45	.2655	34002655	87.85	.2955	34002955	87.85
.1760	34001760	92.90	.2060	34002060	86.50	.2360	34002360	90.45	.2660	34002660	87.85	.2960	34002960	87.85
.1765	34001765	92.90	.2065	34002065	86.50	.2365	34002365	90.45	.2665	34002665	87.85	.2965	34002965	87.85
.1770	34001770	86.50	.2070	34002070	86.50	.2370	34002370	90.45	.2670	34002670	87.85	.2970	34002970	87.85
.1775	34001775	86.50	.2075	34002075	86.50	.2375	34002375	90.45	.2675	34002675	87.85	.2975	34002975	87.85
.1780	34001780	86.50	.2080	34002080	86.50	.2380	34002380	90.45	.2680	34002680	87.85	.2980	34002980	87.85
.1785	34001785	86.50	.2085	34002085	86.50	.2385	34002385	86.50	.2685	34002685	87.85	.2985	34002985	87.85
.1790	34001790	86.50	.2090	34002090	86.50	.2390	34002390	86.50	.2690	34002690	87.85	.2990	34002990	87.85
.1795	34001795	86.50	.2095	34002095	86.50	.2395	34002395	86.50	.2695	34002695	87.85	.2995	34002995	87.85
.1800	34001800	86.50	.2100	34002100	86.50	.2400	34002400	86.50	.2700	34002700	87.85	.3000	34003000	87.85
.1805	34001805	86.50	.2105	34002105	86.50	.2405	34002405	86.50	.2705	34002705	87.85	.3005	34003005	87.85
.1810	34001810	86.50	.2110	34002110	86.50	.2410	34002410	86.50	.2710	34002710	87.85	.3010	34003010	87.85
.1815	34001815	86.50	.2115	34002115	86.50	.2415	34002415	86.50	.2715	34002715	87.85	.3015	34003015	87.85
.1820	34001820	86.50	.2120	34002120	86.50	.2420	34002420	86.50	.2720	34002720	87.85	.3020	34003020	87.85
.1825	34001825	86.50	.2125	34002125	86.50	.2425	34002425	86.50	.2725	34002725	87.85	.3025	34003025	87.85
.1830	34001830	86.50	.2130	34002130	86.50	.2430	34002430	86.50	.2730	34002730	87.85	.3030	34003030	87.85
.1835	34001835	86.50	.2135	34002135	86.50	.2435	34002435	86.50	.2735	34002735	87.85	.3035	34003035	87.85
.1840	34001840	86.50	.2140	34002140	86.50	.2440	34002440	86.50	.2740	34002740	87.85	.3040	34003040	87.85
.1845	34001845	86.50	.2145	34002145	86.50	.2445	34002445	86.50	.2745	34002745	87.85	.3045	34003045	87.85
.1850	3400047	86.50	.2150	34002150	86.50	.2450	34002450	86.50	.2750	34002750	87.85	.3050	34003050	87.85
.1855	34001855	86.50	.2155	34002155	86.50	.2455	34002455	86.50	.2755	34002755	87.85	.3055	34003055	87.85

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .3060" THRU .4555"

For fractional, wire, letter sizes and dimensions, see pages 58 & 59.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.3060	34003060	$87.85	.3360	34003360	$90.10	.3660	34003660	$90.10	.3960	34003960	$93.50	.4260	34004260	$98.35
.3065	34003065	87.85	.3365	34003365	90.10	.3665	34003665	90.10	.3965	34003965	93.50	.4265	34004265	98.35
.3070	34003070	87.85	.3370	34003370	90.10	.3670	34003670	90.10	.3970	34003970	93.50	.4270	34004270	98.35
.3075	34003075	87.85	.3375	34003375	90.10	.3675	34003675	90.10	.3975	34003975	93.50	.4275	34004275	98.35
.3080	34003080	87.85	.3380	34003380	90.10	.3680	34003680	90.10	.3980	34003980	93.50	.4280	34004280	98.35
.3085	34003085	87.85	.3385	34003385	90.10	.3685	34003685	90.10	.3985	34003985	93.50	.4285	34004285	98.35
.3090	34003090	87.85	.3390	34003390	90.10	.3690	34003690	90.10	.3990	34003990	93.50	.4290	34004290	98.35
.3095	34003095	87.85	.3395	34003395	90.10	.3695	34003695	90.10	.3995	34003995	93.50	.4295	34004295	98.35
.3100	34003100	87.85	.3400	34003400	90.10	.3700	34003700	90.10	.4000	34004000	93.50	.4300	34004300	98.35
.3105	34003105	87.85	.3405	34003405	90.10	.3705	34003705	90.10	.4005	34004005	93.50	.4305	34004305	98.35
.3110	3400079	87.85	.3410	34003410	90.10	.3710	34003710	90.10	.4010	34004010	93.50	.4310	34004310	98.35
.3115	347831	84.75	.3415	34003415	90.10	.3715	34003715	90.10	.4015	34004015	93.50	.4315	34004315	98.35
.3120	34003120	87.85	.3420	34003420	90.10	.3720	34003720	90.10	.4020	34004020	93.50	.4320	34004320	98.35
.3125	340010	67.40	.3425	3400087	90.10	.3725	34003725	90.10	.4025	34004025	93.50	.4325	34004325	98.35
.3130	34003130	87.85	.3430	34003430	90.10	.3730	34003730	90.10	.4030	34004030	93.50	.4330	34004330	98.35
.3135	347832	84.75	.3435	34003435	90.10	.3735	34003735	90.10	.4035	34004035	93.50	.4335	34004335	98.35
.3140	34003140	87.85	.3440	34003440	90.10	.3740	347837	87.90	.4040	34004040	93.50	.4340	34004340	98.35
.3145	34003145	87.85	.3445	34003445	90.10	.3745	34003745	90.10	.4045	34004045	93.50	.4345	34004345	98.35
.3150	3400080	87.85	.3450	34003450	90.10	.3750	340012	69.65	.4050	34004050	93.50	.4350	34004350	98.35
.3155	34003155	90.10	.3455	34003455	90.10	.3755	34003755	90.10	.4055	3400103	93.50	.4355	34004355	98.35
.3160	34003160	90.10	.3460	34003460	90.10	.3760	347838	87.90	.4060	34004060	93.50	.4360	34004360	98.35
.3165	34003165	90.10	.3465	3400088	90.10	.3765	34003765	90.10	.4065	34004065	93.50	.4365	347843	98.30
.3170	34003170	90.10	.3470	34003470	90.10	.3770	34003770	90.10	.4070	34004070	93.50	.4370	3400111	98.35
.3175	34003175	90.10	.3475	34003475	90.10	.3775	34003775	90.10	.4075	34004075	93.50	.4375	340014	78.20
.3180	34003180	90.10	.3480	34003480	90.10	.3780	3400096	90.10	.4080	34004080	93.50	.4380	34004380	98.35
.3185	34003185	90.10	.3485	34003485	90.10	.3785	34003785	93.50	.4085	34004085	93.50	.4385	347844	98.30
.3190	34003190	90.10	.3490	34003490	90.10	.3790	34003790	93.50	.4090	34004090	93.50	.4390	34004390	98.35
.3195	34003195	90.10	.3495	34003495	90.10	.3795	34003795	93.50	.4095	34004095	98.35	.4395	34004395	98.35
.3200	34003200	90.10	.3500	34003500	90.10	.3800	34003800	93.50	.4100	34004100	98.35	.4400	34004400	98.35
.3205	34003205	90.10	.3505	34003505	90.10	.3805	34003805	93.50	.4105	34004105	98.35	.4405	34004405	98.35
.3210	34003210	90.10	.3510	34003510	90.10	.3810	34003810	93.50	.4110	34004110	98.35	.4410	34004410	98.35
.3215	34003215	90.10	.3515	34003515	90.10	.3815	34003815	93.50	.4115	34004115	98.35	.4415	34004415	99.55
.3220	34003220	90.10	.3520	34003520	90.10	.3820	34003820	93.50	.4120	34004120	98.35	.4420	34004420	99.55
.3225	34003225	90.10	.3525	34003525	90.10	.3825	34003825	93.50	.4125	34004125	98.35	.4425	34004425	99.55
.3230	34003230	90.10	.3530	34003530	90.10	.3830	34003830	93.50	.4130	34004130	98.35	.4430	34004430	99.55
.3235	34003235	90.10	.3535	34003535	90.10	.3835	34003835	93.50	.4135	34004135	98.35	.4435	34004435	99.55
.3240	34003240	90.10	.3540	34003540	90.10	.3840	34003840	93.50	.4140	34004140	98.35	.4440	34004440	99.55
.3245	34003245	90.10	.3545	34003545	90.10	.3845	34003845	93.50	.4145	34004145	98.35	.4445	34004445	99.55
.3250	34003250	90.10	.3550	34003550	90.10	.3850	34003850	93.50	.4150	34004150	98.35	.4450	34004450	99.55
.3255	34003255	90.10	.3555	34003555	90.10	.3855	34003855	93.50	.4155	34004155	98.35	.4455	34004455	99.55
.3260	34003260	90.10	.3560	34003560	90.10	.3860	34003860	93.50	.4160	34004160	98.35	.4460	34004460	99.55
.3265	34003265	90.10	.3565	34003565	90.10	.3865	34003865	93.50	.4165	34004165	98.35	.4465	34004465	99.55
.3270	34003270	90.10	.3570	34003570	90.10	.3870	34003870	93.50	.4170	34004170	98.35	.4470	34004470	99.55
.3275	34003275	90.10	.3575	34003575	90.10	.3875	34003875	93.50	.4175	34004175	98.35	.4475	34004475	99.55
.3280	34003280	90.10	.3580	34003580	90.10	.3880	34003880	93.50	.4180	34004180	98.35	.4480	34004480	99.55
.3285	34003285	90.10	.3585	34003585	90.10	.3885	34003885	93.50	.4185	34004185	98.35	.4485	34004485	99.55
.3290	34003290	90.10	.3590	34003590	90.10	.3890	34003890	93.50	.4190	34004190	98.35	.4490	34004490	99.55
.3295	34003295	90.10	.3595	34003595	90.10	.3895	34003895	93.50	.4195	34004195	98.35	.4495	34004495	99.55
.3300	34003300	90.10	.3600	34003600	90.10	.3900	34003900	93.50	.4200	34004200	98.35	.4500	34004500	99.55
.3305	34003305	90.10	.3605	34003605	90.10	.3905	34003905	93.50	.4205	34004205	98.35	.4505	34004505	99.55
.3310	34003310	90.10	.3610	34003610	90.10	.3910	34003910	93.50	.4210	34004210	98.35	.4510	34004510	99.55
.3315	34003315	90.10	.3615	34003615	90.10	.3915	34003915	93.50	.4215	34004215	98.35	.4515	34004515	99.55
.3320	34003320	90.10	.3620	34003620	90.10	.3920	34003920	93.50	.4220	34004220	98.35	.4520	34004520	99.55
.3325	34003325	90.10	.3625	34003625	90.10	.3925	34003925	93.50	.4225	34004225	98.35	.4525	34004525	99.55
.3330	34003330	90.10	.3630	34003630	90.10	.3930	34003930	93.50	.4230	34004230	98.35	.4530	34004530	99.55
.3335	34003335	90.10	.3635	34003635	90.10	.3935	34003935	93.50	.4235	34004235	98.35	.4535	34004535	99.55
.3340	34003340	90.10	.3640	34003640	90.10	.3940	34003940	93.50	.4240	34004240	98.35	.4540	34004540	99.55
.3345	34003345	90.10	.3645	34003645	90.10	.3945	34003945	93.50	.4245	34004245	98.35	.4545	34004545	99.55
.3350	34003350	90.10	.3650	34003650	90.10	.3950	34003950	93.50	.4250	34004250	98.35	.4550	34004550	99.55
.3355	34003355	90.10	.3655	34003655	90.10	.3955	34003955	93.50	.4255	34004255	98.35	.4555	34004555	99.55

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .4560" THRU .6055"

For fractional, wire and letter sizes, see pages 58 & 59.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.4560	34004560	$99.55	.4860	34004860	$116.70	.5160	34005160	$125.10	.5460	34005460	$125.10	.5760	34005760	$129.15
.4565	34004565	99.55	.4865	34004865	116.70	.5165	34005165	125.10	.5465	34005465	125.10	.5765	34005765	129.15
.4570	34004570	99.55	.4870	34004870	116.70	.5170	34005170	125.10	.5470	34005470	125.10	.5770	34005770	129.15
.4575	34004575	99.55	.4875	34004875	116.70	.5175	34005175	125.10	.5475	34005475	125.10	.5775	34005775	129.15
.4580	34004580	99.55	.4880	34004880	116.70	.5180	34005180	125.10	.5480	34005480	125.10	.5780	34005780	129.15
.4585	34004585	99.55	.4885	34004885	116.70	.5185	34005185	125.10	.5485	34005485	125.10	.5785	34005785	129.15
.4590	34004590	99.55	.4890	34004890	116.70	.5190	34005190	125.10	.5490	34005490	125.10	.5790	34005790	129.15
.4595	34004595	99.55	.4895	34004895	116.70	.5195	34005195	125.10	.5495	34005495	125.10	.5795	34005795	129.15
.4600	34004600	99.55	.4900	34004900	116.70	.5200	34005200	125.10	.5500	34005500	125.10	.5800	34005800	129.15
.4605	34004605	99.55	.4905	34004905	116.70	.5205	34005205	125.10	.5505	34005505	125.10	.5805	34005805	129.15
.4610	34004610	99.55	.4910	34004910	116.70	.5210	34005210	125.10	.5510	34005510	125.10	.5810	34005810	129.15
.4615	34004615	99.55	.4915	34004915	116.70	.5215	34005215	125.10	.5515	34005515	125.10	.5815	34005815	129.15
.4620	34004620	99.55	.4920	34004920	116.70	.5220	34005220	125.10	.5520	34005520	125.10	.5820	34005820	129.15
.4625	34004625	99.55	.4925	34004925	116.70	.5225	34005225	125.10	.5525	34005525	125.10	.5825	34005825	129.15
.4630	34004630	99.55	.4930	34004930	116.70	.5230	34005230	125.10	.5530	34005530	125.10	.5830	34005830	129.15
.4635	34004635	99.55	.4935	34004935	116.70	.5235	34005235	125.10	.5535	34005535	125.10	.5835	34005835	129.15
.4640	34004640	99.55	.4940	34004940	116.70	.5240	34005240	125.10	.5540	34005540	125.10	.5840	34005840	129.15
.4645	34004645	99.55	.4945	34004945	116.70	.5245	34005245	125.10	.5545	34005545	125.10	.5845	34005845	129.15
.4650	34004650	99.55	.4950	34004950	116.70	.5250	34005250	125.10	.5550	34005550	125.10	.5850	34005850	129.15
.4655	34004655	99.55	.4955	34004955	116.70	.5255	34005255	125.10	.5555	34005555	125.10	.5855	34005855	129.15
.4660	34004660	99.55	.4960	34004960	116.70	.5260	34005260	125.10	.5560	34005560	125.10	.5860	34005860	129.15
.4665	34004665	99.55	.4965	34004965	116.70	.5265	34005265	125.10	.5565	34005565	125.10	.5865	34005865	129.15
.4670	34004670	99.55	.4970	34004970	116.70	.5270	34005270	125.10	.5570	34005570	125.10	.5870	34005870	129.15
.4675	34004675	99.55	.4975	34004975	116.70	.5275	34005275	125.10	.5575	34005575	125.10	.5875	34005875	129.15
.4680	34004680	99.55	.4980	34004980	116.70	.5280	34005280	125.10	.5580	34005580	125.10	.5880	34005880	129.15
.4685	3400119	99.55	.4985	34004985	116.70	.5285	34005285	125.10	.5585	34005585	125.10	.5885	34005885	129.15
.4690	34004690	99.55	.4990	347849	107.65	.5290	34005290	125.10	.5590	34005590	125.10	.5890	34005890	129.15
.4695	34004695	99.55	.4995	34004995	116.70	.5295	34005295	125.10	.5595	34005595	125.10	.5895	34005895	129.15
.4700	34004700	99.55	.5000	340016	94.20	.5300	34005300	125.10	.5600	34005600	125.10	.5900	34005900	129.15
.4705	34004705	99.55	.5005	34005005	116.70	.5305	34005305	125.10	.5605	34005605	125.10	.5905	34005905	129.15
.4710	34004710	99.55	.5010	347850	107.65	.5310	34005310	125.10	.5610	34005610	125.10	.5910	34005910	129.15
.4715	34004715	99.55	.5015	34005015	116.70	.5315	3400135	125.10	.5615	34005615	125.10	.5915	34005915	129.15
.4720	34004720	99.55	.5020	34005020	116.70	.5320	34005320	125.10	.5620	34005620	125.10	.5920	34005920	129.15
.4725	34004725	116.70	.5025	34005025	116.70	.5325	34005325	125.10	.5625	340018	102.50	.5925	34005925	129.15
.4730	34004730	116.70	.5030	34005030	116.70	.5330	34005330	125.10	.5630	3400143	125.10	.5930	34005930	129.15
.4735	34004735	116.70	.5035	34005035	125.10	.5335	34005335	125.10	.5635	34005635	125.10	.5935	34005935	129.15
.4740	34004740	116.70	.5040	34005040	125.10	.5340	34005340	125.10	.5640	34005640	125.10	.5940	34005940	129.15
.4745	34004745	116.70	.5045	34005045	125.10	.5345	34005345	125.10	.5645	34005645	125.10	.5945	3400151	129.15
.4750	34004750	116.70	.5050	34005050	125.10	.5350	34005350	125.10	.5650	34005650	125.10	.5950	34005950	129.15
.4755	34004755	116.70	.5055	34005055	125.10	.5355	34005355	125.10	.5655	34005655	125.10	.5955	34005955	129.15
.4760	34004760	116.70	.5060	34005060	125.10	.5360	34005360	125.10	.5660	34005660	125.10	.5960	34005960	129.15
.4765	34004765	116.70	.5065	34005065	125.10	.5365	34005365	125.10	.5665	34005665	129.15	.5965	34005965	129.15
.4770	34004770	116.70	.5070	34005070	125.10	.5370	34005370	125.10	.5670	34005670	129.15	.5970	34005970	129.15
.4775	34004775	116.70	.5075	34005075	125.10	.5375	34005375	125.10	.5675	34005675	129.15	.5975	34005975	129.15
.4780	34004780	116.70	.5080	34005080	125.10	.5380	34005380	125.10	.5680	34005680	129.15	.5980	34005980	129.15
.4785	34004785	116.70	.5085	34005085	125.10	.5385	34005385	125.10	.5685	34005685	129.15	.5985	34005985	129.15
.4790	34004790	116.70	.5090	34005090	125.10	.5390	34005390	125.10	.5690	34005690	129.15	.5990	34005990	129.15
.4795	34004795	116.70	.5095	34005095	125.10	.5395	34005395	125.10	.5695	34005695	129.15	.5995	34005995	129.15
.4800	34004800	116.70	.5100	34005100	125.10	.5400	34005400	125.10	.5700	34005700	129.15	.6000	34006000	129.15
.4805	34004805	116.70	.5105	34005105	125.10	.5405	34005405	125.10	.5705	34005705	129.15	.6005	34006005	129.15
.4810	34004810	116.70	.5110	34005110	125.10	.5410	34005410	125.10	.5710	34005710	129.15	.6010	34006010	129.15
.4815	34004815	116.70	.5115	34005115	125.10	.5415	34005415	125.10	.5715	34005715	129.15	.6015	34006015	129.15
.4820	34004820	116.70	.5120	34005120	125.10	.5420	34005420	125.10	.5720	34005720	129.15	.6020	34006020	129.15
.4825	34004825	116.70	.5125	34005125	125.10	.5425	34005425	125.10	.5725	34005725	129.15	.6025	34006025	129.15
.4830	34004830	116.70	.5130	34005130	125.10	.5430	34005430	125.10	.5730	34005730	129.15	.6030	34006030	129.15
.4835	34004835	116.70	.5135	34005135	125.10	.5435	34005435	125.10	.5735	34005735	129.15	.6035	34006035	129.15
.4840	34004840	116.70	.5140	34005140	125.10	.5440	34005440	125.10	.5740	34005740	129.15	.6040	34006040	129.15
.4845	34004845	116.70	.5145	34005145	125.10	.5445	34005445	125.10	.5745	34005745	129.15	.6045	34006045	129.15
.4850	34004850	116.70	.5150	34005150	125.10	.5450	34005450	125.10	.5750	34005750	129.15	.6050	34006050	129.15
.4855	34004855	116.70	.5155	34005155	125.10	.5455	34005455	125.10	.5755	34005755	129.15	.6055	34006055	129.15

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3400 - STRAIGHT SHANK - STRAIGHT FLUTES
STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS)
THIS PAGE .6060" THRU .7555"

For fractional, wire and letter sizes, see pages 58 & 59.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.6060	34006060	$129.15	.6360	34006360	$130.95	.6660	34006660	$130.95	.6960	34006960	$136.15	.7260	34007260	$136.15
.6065	34006065	129.15	.6365	34006365	130.95	.6665	34006665	130.95	.6965	34006965	136.15	.7265	34007265	136.15
.6070	34006070	129.15	.6370	34006370	130.95	.6670	34006670	130.95	.6970	34006970	136.15	.7270	34007270	136.15
.6075	34006075	129.15	.6375	34006375	130.95	.6675	34006675	130.95	.6975	34006975	136.15	.7275	34007275	136.15
.6080	34006080	129.15	.6380	34006380	130.95	.6680	34006680	130.95	.6980	34006980	136.15	.7280	34007280	136.15
.6085	34006085	129.15	.6385	34006385	130.95	.6685	34006685	130.95	.6985	34006985	136.15	.7285	34007285	136.15
.6090	34006090	129.15	.6390	34006390	130.95	.6690	34006690	130.95	.6990	34006990	136.15	.7290	34007290	136.15
.6095	34006095	129.15	.6395	34006395	130.95	.6695	34006695	130.95	.6995	34006995	136.15	.7295	34007295	136.15
.6100	34006100	129.15	.6400	34006400	130.95	.6700	34006700	130.95	.7000	34007000	136.15	.7300	34007300	136.15
.6105	34006105	129.15	.6405	34006405	130.95	.6705	34006705	130.95	.7005	34007005	136.15	.7305	34007305	136.15
.6110	34006110	129.15	.6410	34006410	130.95	.6710	34006710	130.95	.7010	34007010	136.15	.7310	34007310	136.15
.6115	34006115	129.15	.6415	34006415	130.95	.6715	34006715	130.95	.7015	34007015	136.15	.7315	34007315	136.15
.6120	34006120	129.15	.6420	34006420	130.95	.6720	34006720	130.95	.7020	34007020	136.15	.7320	34007320	136.15
.6125	34006125	129.15	.6425	34006425	130.95	.6725	34006725	130.95	.7025	34007025	136.15	.7325	34007325	136.15
.6130	34006130	129.15	.6430	34006430	130.95	.6730	34006730	130.95	.7030	34007030	136.15	.7330	34007330	136.15
.6135	34006135	129.15	.6435	34006435	130.95	.6735	34006735	130.95	.7035	34007035	136.15	.7335	34007335	136.15
.6140	34006140	129.15	.6440	34006440	130.95	.6740	34006740	130.95	.7040	34007040	136.15	.7340	34007340	136.15
.6145	34006145	129.15	.6445	34006445	130.95	.6745	34006745	130.95	.7045	34007045	136.15	.7345	34007345	136.15
.6150	34006150	129.15	.6450	34006450	130.95	.6750	34006750	130.95	.7050	34007050	136.15	.7350	34007350	136.15
.6155	34006155	129.15	.6455	34006455	130.95	.6755	34006755	130.95	.7055	34007055	136.15	.7355	34007355	136.15
.6160	34006160	129.15	.6460	34006460	130.95	.6760	34006760	130.95	.7060	34007060	136.15	.7360	34007360	136.15
.6165	34006165	129.15	.6465	34006465	130.95	.6765	34006765	130.95	.7065	34007065	136.15	.7365	34007365	136.15
.6170	34006170	129.15	.6470	34006470	130.95	.6770	34006770	130.95	.7070	34007070	136.15	.7370	34007370	136.15
.6175	34006175	129.15	.6475	34006475	130.95	.6775	34006775	130.95	.7075	34007075	136.15	.7375	34007375	136.15
.6180	34006180	129.15	.6480	34006480	130.95	.6780	34006780	130.95	.7080	34007080	136.15	.7380	34007380	136.15
.6185	34006185	129.15	.6485	34006485	130.95	.6785	34006785	130.95	.7085	34007085	136.15	.7385	34007385	136.15
.6190	34006190	129.15	.6490	34006490	130.95	.6790	34006790	130.95	.7090	34007090	136.15	.7390	34007390	136.15
.6195	34006195	129.15	.6495	34006495	130.95	.6795	34006795	130.95	.7095	34007095	136.15	.7395	34007395	136.15
.6200	34006200	129.15	.6500	34006500	130.95	.6800	34006800	130.95	.7100	34007100	136.15	.7400	34007400	136.15
.6205	34006205	129.15	.6505	34006505	130.95	.6805	34006805	130.95	.7105	34007105	136.15	.7405	34007405	136.15
.6210	34006210	129.15	.6510	34006510	130.95	.6810	34006810	130.95	.7110	34007110	136.15	.7410	34007410	136.15
.6215	34006215	129.15	.6515	34006515	130.95	.6815	34006815	130.95	.7115	34007115	136.15	.7415	34007415	136.15
.6220	3400158	129.15	.6520	34006520	130.95	.6820	34006820	130.95	.7120	34007120	136.15	.7420	34007420	136.15
.6225	34006225	129.15	.6525	34006525	130.95	.6825	34006825	130.95	.7125	34007125	136.15	.7425	34007425	136.15
.6230	34006230	129.15	.6530	34006530	130.95	.6830	34006830	130.95	.7130	34007130	136.15	.7430	34007430	136.15
.6235	34006235	129.15	.6535	3400166	130.95	.6835	34006835	130.95	.7135	34007135	136.15	.7435	34007435	136.15
.6240	347862	129.15	.6540	34006540	130.95	.6840	34006840	130.95	.7140	34007140	136.15	.7440	34007440	136.15
.6245	34006245	129.15	.6545	34006545	130.95	.6845	34006845	130.95	.7145	34007145	136.15	.7445	34007445	136.15
.6250	340020	106.70	.6550	34006550	130.95	.6850	3400174	130.95	.7150	34007150	136.15	.7450	34007450	136.15
.6255	34006255	129.15	.6555	34006555	130.95	.6855	34006855	130.95	.7155	34007155	136.15	.7455	34007455	136.15
.6260	347863	129.15	.6560	34006560	130.95	.6860	34006860	130.95	.7160	34007160	136.15	.7460	34007460	136.15
.6265	34006265	129.15	.6565	34006565	130.95	.6865	34006865	130.95	.7165	3400182	136.15	.7465	34007465	136.15
.6270	34006270	129.15	.6570	34006570	130.95	.6870	34006870	130.95	.7170	34007170	136.15	.7470	34007470	136.15
.6275	34006275	129.15	.6575	3400167	130.95	.6875	340022	108.65	.7175	34007175	136.15	.7475	34007475	136.15
.6280	34006280	129.15	.6580	34006580	130.95	.6880	34006880	130.95	.7180	34007180	136.15	.7480	3400190	136.15
.6285	34006285	130.95	.6585	34006585	130.95	.6885	34006885	130.95	.7185	34007185	136.15	.7485	34007485	136.15
.6290	34006290	130.95	.6590	34006590	130.95	.6890	3400175	130.95	.7190	34007190	136.15	.7490	347874	136.15
.6295	34006295	130.95	.6595	34006595	130.95	.6895	34006895	130.95	.7195	34007195	136.15	.7495	34007495	136.15
.6300	34006300	130.95	.6600	34006600	130.95	.6900	34006900	130.95	.7200	34007200	136.15	.7500	340024	113.70
.6305	34006305	130.95	.6605	34006605	130.95	.6905	34006905	130.95	.7205	3400183	136.15	.7505	34007505	136.15
.6310	34006310	130.95	.6610	34006610	130.95	.6910	34006910	130.95	.7210	34007210	136.15	.7510	347875	136.15
.6315	34006315	130.95	.6615	34006615	130.95	.6915	34006915	136.15	.7215	34007215	136.15	.7515	34007515	136.15
.6320	34006320	130.95	.6620	34006620	130.95	.6920	34006920	136.15	.7220	34007220	136.15	.7520	3400191	136.15
.6325	34006325	130.95	.6625	34006625	130.95	.6925	34006925	136.15	.7225	34007225	136.15	.7525	34007525	136.15
.6330	34006330	130.95	.6630	34006630	130.95	.6930	34006930	136.15	.7230	34007230	136.15	.7530	34007530	136.15
.6335	34006335	130.95	.6635	34006635	130.95	.6935	34006935	136.15	.7235	34007235	136.15	.7535	34007535	139.85
.6340	34006340	130.95	.6640	34006640	130.95	.6940	34006940	136.15	.7240	34007240	136.15	.7540	34007540	139.85
.6345	34006345	130.95	.6645	34006645	130.95	.6945	34006945	136.15	.7245	34007245	136.15	.7545	34007545	139.85
.6350	34006350	130.95	.6650	34006650	130.95	.6950	34006950	136.15	.7250	34007250	136.15	.7550	34007550	139.85
.6355	34006355	130.95	.6655	34006655	130.95	.6955	34006955	136.15	.7255	34007255	136.15	.7555	34007555	139.85

CARBIDE TIPPED SEMI-FINISHED REAMERS

Semi-finished reamers are furnished with a tool diameter above the largest diameter indicated in the size range column below.

Before semi-finished reamers can be used, the tool diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-finished reamers are used by regrind shops or distributors and users with regrind facilities.

For detailed description of each specific type, see page indicated in table below.

Call for pricing on Types 3420 & 3467 semi-finished reamers.



SEMI-FINISHED TOOL DIAMETER RANGE	TYPE 3400 PAGE 62		TYPE 3402 PAGE 70		TYPE 3410 PAGE 82		TYPE 3430 PAGE 90	TYPE 3440 PAGE 90	BOTH TYPES PRICE	TYPE 3450 PAGE 72		TYPE 3465 PAGE 86	
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	EDP NO.	EDP NO.		EDP NO.	PRICE EACH	EDP NO.	PRICE EACH
.1770 - .2040	340006SF	$56.15	-	-	341006SF	$79.05	343006SF	344006SF	$73.20	345006SF	$67.15	-	-
.2041 - .2210	340007SF	56.15	-	-	341007SF	79.05	343007SF	344007SF	73.20	345007SF	67.15	-	-
.2211 - .2380	34002344SF	59.20	-	-	34102344SF	79.05	34302344SF	34402344SF	73.20	34502344SF	67.15	-	-
.2381 - .2530	340008SF	56.15	340208SF	$64.75	341008SF	79.05	343008SF	344008SF	73.20	345008SF	67.15	-	-
.2531 - .2840	340009SF	57.20	340209SF	65.80	341009SF	79.25	343009SF	344009SF	73.20	345009SF	68.65	-	-
.2841 - .3150	340010SF	57.20	340210SF	65.80	341010SF	79.25	343010SF	344010SF	84.90	345010SF	68.65	346510SF	$103.60
.3151 - .3470	340011SF	59.15	340211SF	68.10	341011SF	87.10	343011SF	344011SF	85.80	345011SF	71.05	346511SF	103.60
.3471 - .3780	340012SF	54.25	340212SF	62.70	341012SF	87.90	343012SF	344012SF	92.95	345012SF	71.05	346512SF	96.95
.3781 - .4090	340013SF	62.10	340213SF	71.45	341013SF	91.90	343013SF	344013SF	94.20	345013SF	74.50	346513SF	102.75
.4091 - .4410	340014SF	66.15	340214SF	76.15	341014SF	95.50	343014SF	344014SF	111.80	345014SF	80.70	346514SF	102.75
.4411 - .4720	340015SF	67.40	340215SF	78.35	341015SF	101.50	343015SF	344015SF	111.80	345015SF	87.10	346515SF	109.00
.4721 - .5030	340016SF	80.20	340216SF	92.10	341016SF	105.35	343016SF	344016SF	122.15	345016SF	93.45	346516SF	109.00
.5031 - .5340	340017SF	87.10	340217SF	99.55	341017SF	108.65	343017SF	344017SF	122.15	345017SF	95.85	346517SF	111.80
.5341 - .5660	340018SF	87.10	340218SF	99.55	341018SF	108.65	343018SF	344018SF	128.95	345018SF	95.85	346518SF	111.80
.5661 - .5970	340019SF	90.65	340219SF	104.15	341019SF	111.80	343019SF	344019SF	128.95	345019SF	99.80	346519SF	116.70
.5971 - .6280	340020SF	90.65	340220SF	104.15	341020SF	111.80	343020SF	344020SF	132.35	345020SF	99.80	346520SF	116.70
.6281 - .6590	340021SF	92.20	340221SF	106.20	341021SF	114.85	343021SF	344021SF	132.35	345021SF	101.50	346521SF	127.60
.6591 - .6910	340022SF	92.20	340222SF	106.20	341022SF	122.45	343022SF	344022SF	138.45	345022SF	101.50	346522SF	127.60
.6911 - .7220	340023SF	96.55	340223SF	111.00	341023SF	124.10	343023SF	344023SF	138.45	345023SF	106.20	346523SF	132.50
.7221 - .7530	340024SF	96.55	340224SF	111.00	341024SF	126.05	343024SF	344024SF	141.95	345024SF	106.20	346524SF	132.50
.7531 - .7840	340025SF	99.95	340225SF	114.30	341025SF	129.20	343025SF	344025SF	141.95	345025SF	109.70	346525SF	142.85
.7841 - .8160	340026SF	99.95	340226SF	114.30	341026SF	129.20	343026SF	344026SF	154.20	345026SF	109.70	346526SF	142.85
.8161 - .8470	340027SF	103.90	340227SF	119.35	341027SF	136.30	343027SF	344027SF	154.20	345027SF	114.10	346527SF	148.25
.8471 - .8780	340028SF	107.65	340228SF	123.90	341028SF	141.45	343028SF	344028SF	168.55	345028SF	118.60	346528SF	153.95
.8781 - .9090	340029SF	125.80	340229SF	145.25	341029SF	164.85	343029SF	344029SF	168.55	345029SF	137.95	346529SF	163.80
.9091 - .9410	340030SF	125.80	340230SF	145.25	341030SF	164.85	343030SF	344030SF	185.50	345030SF	137.95	346530SF	163.80
.9411 - .9720	340031SF	131.60	340231SF	151.15	341031SF	172.75	343031SF	344031SF	185.50	345031SF	144.60	346531SF	170.10
.9721 - 1.0030	340032SF	131.60	340232SF	151.15	341032SF	172.75	343032SF	344032SF	194.75	345032SF	144.60	346532SF	170.10
1.0031 - 1.0660	340034SF	135.85	340234SF	207.90	341034SF	185.45	343034SF	344034SF	194.75	345034SF	149.75	346534SF	186.55
1.0661 - 1.1280	340036SF	147.05	340236SF	221.40	341036SF	191.15	343036SF	344036SF	227.85	345036SF	161.85	346536SF	186.55
1.1281 - 1.1905	340038SF	154.40	340238SF	234.70	341038SF	200.75	343038SF	344038SF	237.60	345038SF	169.25	346538SF	203.50
1.1906 - 1.2530	340040SF	163.25	340240SF	260.70	341040SF	212.75	343040SF	344040SF	278.45	345040SF	197.70	346540SF	203.50
1.2531 - 1.3155	340042SF	171.80	340242SF	281.25	341042SF	235.05	343042SF	344042SF	278.45	345042SF	197.70	346542SF	225.75
1.3156 - 1.3780	340044SF	182.30	340244SF	292.40	341044SF	257.75	343044SF	344044SF	282.30	345044SF	200.55	346544SF	236.25
1.3781 - 1.4405	340046SF	203.30	340246SF	298.60	341046SF	273.00	343046SF	344046SF	329.15	345046SF	221.55	346546SF	279.00
1.4406 - 1.5030	340048SF	214.90	340248SF	313.30	341048SF	288.40	343048SF	344048SF	395.30	345048SF	266.05	346548SF	287.35

CARBIDE TIPPED CHUCKING REAMERS

TYPE 3402 - TAPER SHANK - STRAIGHT FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Used for all general types of reaming including low carbon steels, cast iron, non-ferrous metals and non-metals.



For metric sizes, see page 71.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MORSE TAPER	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	¼	1	4	1 ½	½	6	340208	$75.95	.2381 - .2530	$137.40	$106.70	$96.45	$91.50	$86.45	$82.20
.2812	9/32	1	4	1 ½	½	6	340209	77.40	.2531 - .2840	138.95	108.10	97.95	92.90	87.80	83.35
.3125	5/16	1	4	1 ½	½	6	340210	77.40	.2841 - .3150	138.95	108.10	97.95	92.90	87.80	83.35
.3438	11/32	1	4	1 ½	⅝	6	340211	80.35	.3151 - .3470	141.90	111.00	100.60	95.70	90.60	86.50
.3750	⅜	1	4	1 ¾	⅝	7	340212	73.65	.3471 - .3780	130.15	101.85	92.25	87.90	83.00	79.25
.4062	13/32	1	4	1 ¾	⅝	7	340213	84.20	.3781 - .4090	145.80	114.85	104.60	99.80	94.45	90.30
.4375	7/16	1	4	1 ¾	⅝	7	340214	89.65	.4091 - .4410	151.15	120.35	109.95	105.15	99.95	95.55
.4688	15/32	1	4	1 ¾	⅝	7	340215	92.00	.4411 - .4720	153.60	122.80	112.40	107.50	102.25	98.15
.5000	½	1	6	2	⅝	8	340216	108.45	.4721 - .5030	176.10	142.10	130.85	125.60	119.65	115.15
.5312	17/32	1	6	2	⅝	8	340217	117.10	.5031 - .5340	184.85	150.80	139.45	134.20	128.25	123.50
.5625	9/16	1	6	2	⅝	8	340218	117.10	.5341 - .5660	184.85	150.80	139.45	134.20	128.25	123.50
.5938	19/32	1	6	2	⅝	8	340219	122.70	.5661 - .5970	190.45	156.45	145.10	139.70	133.75	129.35
.6250	⅝	2	6	2 ¼	⅝	9	340220	122.70	.5971 - .6280	190.45	156.45	145.10	139.70	133.75	129.35
.6562	21/32	2	6	2 ¼	⅝	9	340221	124.90	.6281 - .6590	192.55	158.70	147.35	141.95	136.15	131.45
.6875	11/16	2	6	2 ¼	⅝	9	340222	124.90	.6591 - .6910	192.55	158.70	147.35	141.95	136.15	131.45
.7188	23/32	2	6	2 ¼	⅝	9	340223	130.55	.6911 - .7220	198.40	164.30	152.95	147.70	141.90	137.20
.7500	¾	2	6	2 ½	¾	9 ½	340224	130.55	.7221 - .7530	198.40	164.30	152.95	147.70	141.90	137.20
.7812	25/32	2	6	2 ½	¾	9 ½	340225	134.60	.7531 - .7840	202.35	168.35	157.15	151.75	145.80	141.20
.8125	13/16	2	6	2 ½	¾	9 ½	340226	134.60	.7841 - .8160	202.35	168.35	157.15	151.75	145.80	141.20
.8438	27/32	2	6	2 ½	¾	9 ½	340227	140.40	.8161 - .8470	208.10	174.10	162.90	157.45	151.75	146.95
.8750	⅞	2	6	2 ⅝	¾	10	340228	145.80	.8471 - .8780	215.95	180.90	169.00	163.25	157.35	152.55
.9062	29/32	2	6	2 ⅝	¾	10	340229	170.95	.8781 - .9090	241.15	205.85	194.20	188.50	182.50	177.75
.9375	15/16	3	8	2 ⅝	¾	10	340230	170.95	.9091 - .9410	241.15	205.85	194.20	188.50	182.50	177.75
.9688	31/32	3	8	2 ⅝	¾	10	340231	178.20	.9411 - .9720	248.35	213.10	201.20	195.70	189.70	184.95
1.0000	1	3	8	2 ¾	¾	10 ½	340232	178.20	.9721 - 1.0030	248.35	213.10	201.20	195.70	189.70	184.95
1.0625	1 1/16	3	8	2 ¾	¾	10 ½	340234	244.50	1.0031 - 1.0660	312.05	278.30	267.05	261.60	255.70	251.15
1.1250	1 ⅛	3	8	2 ⅞	⅞	11	340236	260.60	1.0661 - 1.1280	328.00	294.00	282.85	277.40	271.80	267.20
1.1875	1 3/16	3	8	2 ⅞	⅞	11	340238	276.00	1.1281 - 1.1905	343.55	309.55	298.40	292.80	287.05	282.60
1.2500	1 ¼	4	8	3	⅞	11 ½	340240	306.65	1.1906 - 1.2530	374.15	340.35	329.05	323.55	317.85	313.25
1.3125	1 5/16	4	8	3	⅞	11 ½	340242	330.75	1.2531 - 1.3155	398.00	364.35	352.95	347.60	341.80	337.25
1.3750	1 ⅜	4	8	3 ¼	⅞	12	340244	344.00	1.3156 - 1.3780	411.45	377.65	366.40	361.00	355.10	350.85
1.4375	1 7/16	4	8	3 ¼	⅞	12	340246	351.10	1.3781 - 1.4405	418.65	384.95	373.45	368.20	362.25	357.75
1.5000	1 ½	4	8	3 ½	⅞	12 ½	340248	368.60	1.4406 - 1.5030	436.05	402.50	391.10	385.70	379.80	375.25
1.5625	1 9/16	4	8	3 ½	⅞	12 ½	340250	397.95	1.5031 - 1.5660	465.35	431.60	420.20	414.90	409.10	404.55
1.6250	1 ⅝	4	8	3 ¾	⅞	13	340252	411.60	1.5661 - 1.6280	479.15	445.40	434.00	428.60	422.95	418.25
1.6875	1 11/16	4	8	3 ¾	⅞	13	340254	462.90	1.6281 - 1.6910	530.40	496.50	485.45	479.85	474.25	469.70
1.7500	1 ¾	4	10	4	⅞	13 ½	340256	462.90	1.6911 - 1.7530	530.40	496.50	485.45	479.85	474.25	469.70
1.8125	1 13/16	4	10	4	⅞	13 ½	340258	462.90	1.7531 - 1.8160	530.40	496.50	485.45	479.85	474.25	469.70
1.8750	1 ⅞	4	10	4 ¼	⅞	14	340260	485.10	1.8161 - 1.8780	552.45	518.70	507.35	501.90	496.30	491.60
1.9375	1 15/16	4	10	4 ¼	⅞	14	340262	485.10	1.8781 - 1.9410	552.45	518.70	507.35	501.90	496.30	491.60
2.0000	2	4	12	4 ¼	⅞	14	340264	485.10	1.9411 - 2.0030	552.45	518.70	507.35	501.90	496.30	491.60

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CHUCKING REAMERS

METRIC



TYPE 3402 - TAPER SHANK - STRAIGHT FLUTES

Detailed description and fractional sizes on page 66.
Tolerances on page 56. Tool diameter in millimeters with all other dimensions in inches.

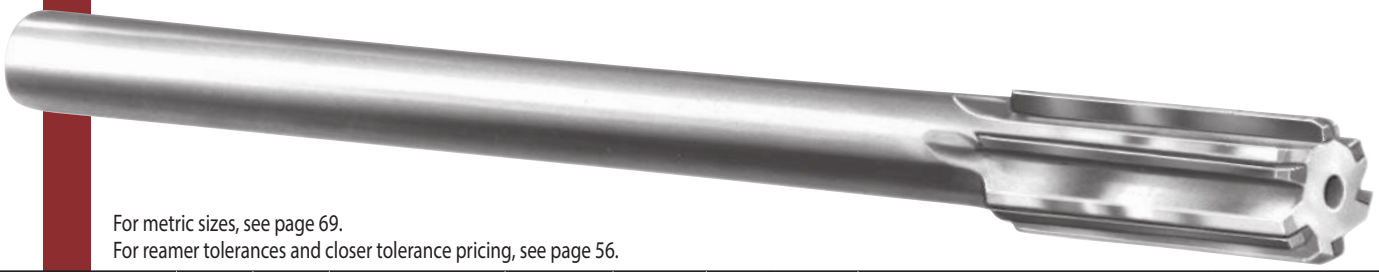
TOOL DIAMETER		MORSE TAPER	NO. OF FLTS.	LENGTH			EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
6.0	.2362	1	4	1 ½	½	6	3402060	$96.45	6.000 - 6.426	$142.85	$112.00	$101.80	$96.60	$91.50	$87.10	$81.20
6.5	.2559	1	4	1 ½	½	6	3402065	97.95	6.427 - 7.214	144.15	113.55	103.20	98.15	92.90	88.60	82.80
7.0	.2756	1	4	1 ½	½	6	3402070	97.95	-	-	-	-	-	-	-	-
7.5	.2953	1	4	1 ½	½	6	3402075	97.95	7.215 - 8.001	144.15	113.55	103.20	98.15	92.90	88.60	82.80
8.0	.3150	1	4	1 ½	½	6	3402080	97.95	-	-	-	-	-	-	-	-
8.5	.3346	1	4	1 ½	⅝	6	3402085	100.60	8.002 - 8.814	146.95	116.20	106.00	100.80	95.70	91.50	85.55
9.0	.3543	1	4	1 ¾	⅝	7	3402090	92.25	8.815 - 9.601	134.80	106.70	97.35	92.70	87.90	84.05	78.45
9.5	.3740	1	4	1 ¾	⅝	7	3402095	92.25	-	-	-	-	-	-	-	-
10.0	.3937	1	4	1 ¾	⅝	7	3402100	104.60	9.602 - 10.389	150.85	120.10	109.90	104.85	99.80	95.40	89.60
10.5	.4134	1	4	1 ¾	⅝	7	3402105	109.95	10.390 - 11.201	156.40	125.80	115.30	110.40	105.15	100.75	95.05
11.0	.4331	1	4	1 ¾	⅝	7	3402110	109.95	-	-	-	-	-	-	-	-
11.5	.4528	1	4	1 ¾	⅝	7	3402115	112.40	11.202 - 11.989	158.70	128.15	117.65	112.75	107.50	103.25	97.45
12.0	.4724	1	6	2	⅝	8	3402120	130.85	11.990 - 12.776	181.65	148.10	136.65	131.05	125.60	120.80	114.10
12.5	.4921	1	6	2	⅝	8	3402125	130.85	-	-	-	-	-	-	-	-
13.0	.5118	1	6	2	⅝	8	3402130	139.45	12.777 - 13.564	190.45	156.60	145.25	139.70	134.20	129.35	122.80
13.5	.5315	1	6	2	⅝	8	3402135	139.45	-	-	-	-	-	-	-	-
14.0	.5512	1	6	2	⅝	8	3402140	139.45	13.565 - 14.376	190.45	156.60	145.25	139.70	134.20	129.35	122.80
14.5	.5709	1	6	2	⅝	8	3402145	145.10	14.377 - 15.164	196.00	162.25	150.85	145.45	139.70	134.90	128.45
15.0	.5906	1	6	2	⅝	8	3402150	145.10	-	-	-	-	-	-	-	-
15.5	.6102	2	6	2 ¼	⅝	9	3402155	145.10	15.165 - 15.951	196.00	162.25	150.85	145.45	139.70	134.90	128.45
16.0	.6299	2	6	2 ¼	⅝	9	3402160	147.35	15.952 - 16.739	198.40	164.35	153.25	147.70	141.95	137.20	130.75
16.5	.6496	2	6	2 ¼	⅝	9	3402165	147.35	-	-	-	-	-	-	-	-
17.0	.6693	2	6	2 ¼	⅝	9	3402170	147.35	16.740 - 17.551	198.40	164.35	153.25	147.70	141.95	137.20	130.75
17.5	.6890	2	6	2 ¼	⅝	9	3402175	147.35	-	-	-	-	-	-	-	-
18.0	.7087	2	6	2 ¼	⅝	9	3402180	152.95	17.552 - 18.339	204.05	170.10	158.95	153.30	147.70	142.95	136.50
18.5	.7283	2	6	2 ½	¾	9 ½	3402185	152.95	18.340 - 19.126	204.05	170.10	158.95	153.30	147.70	142.95	136.50
19.0	.7480	2	6	2 ½	¾	9 ½	3402190	152.95	-	-	-	-	-	-	-	-
19.5	.7677	2	6	2 ½	¾	9 ½	3402195	157.15	19.127 - 19.914	207.95	174.10	162.90	157.35	151.75	146.85	140.40
20.0	.7874	2	6	2 ½	¾	9 ½	3402200	157.15	19.915 - 20.726	207.95	174.10	162.90	157.35	151.75	146.85	140.40
20.5	.8071	2	6	2 ½	¾	9 ½	3402205	157.15	-	-	-	-	-	-	-	-
21.0	.8268	2	6	2 ½	¾	9 ½	3402210	162.90	20.727 - 21.514	213.90	180.10	168.65	163.10	157.45	152.65	146.25
21.5	.8465	2	6	2 ½	¾	9 ½	3402215	162.90	-	-	-	-	-	-	-	-
22.0	.8661	2	6	2 ⅝	¾	10	3402220	162.90	21.515 - 22.301	213.90	180.10	168.65	163.10	157.45	152.65	146.25
22.5	.8858	2	6	2 ⅝	¾	10	3402225	194.20	22.302 - 23.089	247.10	212.05	200.25	194.40	188.50	183.45	176.90
23.0	.9055	2	6	2 ⅝	¾	10	3402230	194.20	-	-	-	-	-	-	-	-
23.5	.9252	3	8	2 ⅝	¾	10	3402235	194.20	23.090 - 23.901	247.10	212.05	200.25	194.40	188.50	183.45	176.90
24.0	.9449	3	8	2 ⅝	¾	10	3402240	201.20	23.902 - 24.689	254.40	219.30	207.25	201.60	195.70	190.75	184.05
24.5	.9646	3	8	2 ⅝	¾	10	3402245	201.20	-	-	-	-	-	-	-	-
25.0	.9843	3	8	2 ¾	¾	10 ½	3402250	201.20	24.690 - 25.476	254.40	219.30	207.25	201.60	195.70	190.75	184.05
25.5	1.0039	3	8	2 ¾	¾	10 ½	3402255	267.05	25.477 - 27.076	317.80	284.00	272.85	267.25	261.60	256.90	250.60
26.0	1.0236	3	8	2 ¾	¾	10 ½	3402260	267.05	-	-	-	-	-	-	-	-
27.0	1.0630	3	8	2 ¾	¾	10 ½	3402270	267.05	-	-	-	-	-	-	-	-
28.0	1.1024	3	8	2 ⅞	⅞	11	3402280	282.85	27.077 - 28.651	333.55	299.90	288.60	283.15	277.40	272.85	266.30
29.0	1.1417	3	8	2 ⅞	⅞	11	3402290	298.40	28.652 - 30.239	349.00	315.40	304.20	298.60	292.80	288.35	281.70
30.0	1.1811	3	8	2 ⅞	⅞	11	3402300	298.40	-	-	-	-	-	-	-	-
31.0	1.2205	4	8	3	⅞	11 ½	3402310	329.05	30.240 - 31.826	379.75	346.20	334.90	329.20	323.55	318.85	312.40
32.0	1.2598	4	8	3	⅞	11 ½	3402320	352.95	31.827 - 33.414	403.60	370.15	358.75	353.20	347.60	342.80	336.50
33.0	1.2992	4	8	3	⅞	11 ½	3402330	352.95	-	-	-	-	-	-	-	-
34.0	1.3386	4	8	3 ¼	⅞	12	3402340	366.40	33.415 - 35.001	417.05	383.45	372.20	366.60	361.00	356.30	349.95
35.0	1.3780	4	8	3 ¼	⅞	12	3402350	366.40	-	-	-	-	-	-	-	-
36.0	1.4173	4	8	3 ¼	⅞	12	3402360	373.45	35.002 - 36.589	424.35	390.55	379.40	373.85	368.20	363.45	356.95
37.0	1.4567	4	8	3 ½	⅞	12 ½	3402370	391.10	36.590 - 38.176	441.85	408.15	396.75	391.35	385.70	380.95	374.65
38.0	1.4961	4	8	3 ½	⅞	12 ½	3402380	391.10	-	-	-	-	-	-	-	-
39.0	1.5354	4	8	3 ½	⅞	12 ½	3402390	420.20	38.177 - 39.776	471.05	437.35	426.00	420.55	414.90	410.05	403.60
40.0	1.5748	4	8	3 ¾	⅞	13	3402400	434.00	39.777 - 41.351	484.75	451.15	439.80	434.30	428.60	423.90	417.35
41.0	1.6142	4	8	3 ¾	⅞	13	3402410	434.00	-	-	-	-	-	-	-	-

CARBIDE TIPPED CHUCKING REAMERS

TYPE 3450 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Used for all general types of reaming including low carbon steels, cast iron, non-ferrous metals and non-metals. Designed with flute long carbide for deep hole reaming. Smaller sizes available in solid carbide. See pages 46 through 52.



For metric sizes, see page 69.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	11/64	4	1 1/2	6	345006	$78.90	.1770 - .2040	$142.10	$110.45	$100.10	$94.90	$89.40	$85.05
.2188	7/32	13/64	4	1 1/2	6	345007	78.90	.2041 - .2210	142.10	110.45	100.10	94.90	89.40	85.05
.2344	15/64	7/32	4	1 1/2	6	34502344	78.90	.2211 - .2380	142.10	110.45	100.10	94.90	89.40	85.05
.2500	1/4	15/64	4	1 1/2	6	345008	78.90	.2381 - .2530	142.10	110.45	100.10	94.90	89.40	85.05
.2812	9/32	15/64	4	1 1/2	6	345009	80.70	.2531 - .2840	143.85	112.15	101.55	96.55	91.00	86.85
.3125	5/16	9/32	4	1 1/2	6	345010	80.70	.2841 - .3150	143.85	112.15	101.55	96.55	91.00	86.85
.3438	11/32	9/32	4	1 1/2	6	345011	83.45	.3151 - .3470	146.80	115.20	104.35	99.45	94.10	89.75
.3750	3/8	5/16	4	1 3/4	7	345012	83.45	.3471 - .3780	146.80	115.20	104.35	99.45	94.10	89.75
.4062	13/32	5/16	4	1 3/4	7	345013	87.80	.3781 - .4090	150.85	119.35	108.70	103.75	98.20	93.85
.4375	7/16	3/8	4	1 3/4	7	345014	94.90	.4091 - .4410	158.15	126.35	115.70	110.80	105.35	101.10
.4688	15/32	3/8	4	1 3/4	7	345015	102.40	.4411 - .4720	165.70	134.20	123.35	118.30	112.90	108.70
.5000	1/2	7/16	6	2	8	345016	109.70	.4721 - .5030	177.50	143.55	132.35	126.85	121.10	116.25
.5312	17/32	7/16	6	2	8	345017	112.85	.5031 - .5340	180.65	146.70	135.40	129.80	124.05	119.40
.5625	9/16	7/16	6	2	8	345018	112.85	.5341 - .5660	180.65	146.70	135.40	129.80	124.05	119.40
.5938	19/32	7/16	6	2	8	345019	117.25	.5661 - .5970	185.00	150.90	139.70	134.45	128.45	123.95
.6250	5/8	9/16	6	2	9	345020	117.25	.5971 - .6280	185.00	150.90	139.70	134.45	128.45	123.95
.6562	21/32	9/16	6	2	9	345021	119.35	.6281 - .6590	187.10	153.25	141.90	136.50	130.55	126.00
.6875	11/16	9/16	6	2	9	345022	119.35	.6591 - .6910	187.10	153.25	141.90	136.50	130.55	126.00
.7188	23/32	9/16	6	2	9	345023	124.90	.6911 - .7220	192.55	158.70	147.35	141.95	136.15	131.45
.7500	3/4	5/8	6	2	9 1/2	345024	124.90	.7221 - .7530	192.55	158.70	147.35	141.95	136.15	131.45
.7812	25/32	5/8	6	2	9 1/2	345025	129.15	.7531 - .7840	196.85	163.05	151.75	146.25	140.40	135.80
.8125	13/16	5/8	6	2	9 1/2	345026	129.15	.7841 - .8160	196.85	163.05	151.75	146.25	140.40	135.80
.8438	27/32	5/8	6	2	9 1/2	345027	134.45	.8161 - .8470	202.15	168.00	156.65	151.35	145.60	140.90
.8750	7/8	3/4	6	2 1/4	10	345028	139.45	.8471 - .8780	209.70	174.60	162.75	157.10	150.90	146.25
.9062	29/32	3/4	6	2 1/4	10	345029	162.25	.8781 - .9090	232.55	197.40	185.50	179.95	173.95	169.10
.9375	15/16	3/4	8	2 1/4	10	345030	162.25	.9091 - .9410	232.55	197.40	185.50	179.95	173.95	169.10
.9688	31/32	3/4	8	2 1/4	10	345031	169.95	.9411 - .9720	240.30	205.10	193.40	187.75	181.65	176.90
1.0000	1	7/8	8	2 1/4	10 1/2	345032	169.95	.9721 - 1.0030	240.30	205.10	193.40	187.75	181.65	176.90
1.0625	1 1/16	7/8	8	2 1/4	10 1/2	345034	175.90	1.0031 - 1.0660	243.40	209.50	198.30	192.80	187.10	182.50
1.1250	1 1/8	7/8	8	2 1/4	11	345036	190.40	1.0661 - 1.1280	257.65	224.15	212.75	207.25	201.45	196.85
1.1875	1 3/16	1	8	2 1/4	11	345038	199.15	1.1281 - 1.1905	266.50	232.80	221.55	216.10	210.30	205.80
1.2500	1 1/4	1	8	2 1/2	11 1/2	345040	232.55	1.1906 - 1.2530	299.90	266.20	254.80	249.40	243.60	239.05
1.3125	1 5/16	1	8	2 1/2	11 1/2	345042	232.55	1.2531 - 1.3155	299.90	266.20	254.80	249.40	243.60	239.05
1.3750	1 3/8	1	8	2 1/2	12	345044	235.90	1.3156 - 1.3780	303.30	269.65	258.25	252.85	247.10	242.40
1.4375	1 7/16	1 1/4	8	2 1/2	12	345046	260.70	1.3781 - 1.4405	328.15	294.15	283.10	277.60	271.90	267.25
1.5000	1 1/2	1 1/4	8	2 1/2	12 1/2	345048	312.90	1.4406 - 1.5030	380.30	346.45	335.30	329.90	324.10	319.60
1.5625	1 9/16	1 1/4	8	2 1/2	12 1/2	345050	413.05	1.5031 - 1.5660	480.40	446.65	435.40	430.00	424.25	419.70
1.6250	1 5/8	1 1/4	8	2 3/4	13	345052	427.15	1.5661 - 1.6280	494.55	460.60	449.40	444.20	438.25	433.80
1.6875	1 11/16	1 1/4	8	2 3/4	13	345054	468.85	1.6281 - 1.6910	536.40	502.75	491.45	485.95	480.20	475.80
1.7500	1 3/4	1 1/4	10	3	13 1/2	345056	468.85	1.6911 - 1.7530	536.40	502.75	491.45	485.95	480.20	475.80
1.8125	1 13/16	1 1/2	10	3	13 1/2	345058	479.85	1.7531 - 1.8160	547.40	513.65	502.10	496.95	491.10	486.55
1.8750	1 7/8	1 1/2	10	3 1/4	14	345060	503.25	1.8161 - 1.8780	570.55	536.85	525.70	520.25	514.30	509.90
1.9375	1 15/16	1 1/2	10	3 1/4	14	345062	533.60	1.8781 - 1.9410	600.95	567.05	555.85	550.50	544.75	540.10
2.0000	2	1 1/2	12	3 1/4	14	345064	533.60	1.9411 - 2.0030	600.95	567.05	555.85	550.50	544.75	540.10

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CHUCKING REAMERS

METRIC

TYPE 3450 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE

Detailed description and fractional sizes on page 68. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.



TOOL DIAMETER		SHANK DIAM.	NO. OF FLTS.	LENGTH		EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	11/64	4	1 ½	6	3450045	$100.10	4.494 - 5.182	$147.65	$116.00	$105.35	$100.15	$94.90	$90.45	$84.40
5.0	.1969	11/64	4	1 ½	6	3450050	100.10	-	-	-	-	-	-	-	-
5.5	.2165	13/64	4	1 ½	6	3450055	100.10	5.183 - 5.613	147.65	116.00	105.35	100.15	94.90	90.45	84.40
6.0	.2362	7/32	4	1 ½	6	3450060	100.10	5.614 - 6.045	147.65	116.00	105.35	100.15	94.90	90.45	84.40
6.3	.2480	15/64	4	1 ½	6	3450063	100.10	6.046 - 6.426	147.65	116.00	105.35	100.15	94.90	90.45	84.40
6.5	.2559	15/64	4	1 ½	6	3450065	101.55	6.427 - 7.214	149.05	117.60	106.95	101.80	96.55	92.00	86.10
7.0	.2756	15/64	4	1 ½	6	3450070	101.55	-	-	-	-	-	-	-	-
7.5	.2953	9/32	4	1 ½	6	3450075	101.55	7.215 - 8.001	149.05	117.60	106.95	101.80	96.55	92.00	86.10
8.0	.3150	9/32	4	1 ½	6	3450080	101.55	-	-	-	-	-	-	-	-
8.5	.3346	9/32	4	1 ½	6	3450085	104.35	8.002 - 8.814	152.05	120.70	109.90	104.80	99.45	95.15	88.95
9.0	.3543	5/16	4	1 ¾	7	3450090	104.35	8.815 - 9.601	152.05	120.70	109.90	104.80	99.45	95.15	88.95
9.5	.3740	5/16	4	1 ¾	7	3450095	104.35	-	-	-	-	-	-	-	-
10.0	.3937	5/16	4	1 ¾	7	3450100	108.70	9.602 - 10.389	156.30	124.80	114.05	108.90	103.75	99.25	93.10
10.5	.4134	3/8	4	1 ¾	7	3450105	115.70	10.390 - 11.201	163.50	131.65	121.15	116.05	110.80	106.35	100.25
11.0	.4331	3/8	4	1 ¾	7	3450110	115.70	-	-	-	-	-	-	-	-
11.5	.4528	3/8	4	1 ¾	7	3450115	123.35	11.202 - 11.989	171.00	139.45	128.95	123.75	118.30	113.90	107.85
12.0	.4724	7/16	6	2	8	3450120	132.35	11.990 - 12.776	183.20	149.45	138.05	132.50	126.85	122.10	115.55
12.5	.4921	7/16	6	2	8	3450125	132.35	-	-	-	-	-	-	-	-
13.0	.5118	7/16	6	2	8	3450130	135.40	12.777 - 13.564	186.35	152.45	141.10	135.50	129.80	125.10	118.65
13.5	.5315	7/16	6	2	8	3450135	135.40	-	-	-	-	-	-	-	-
14.0	.5512	7/16	6	2	8	3450140	135.40	13.565 - 14.376	186.35	152.45	141.10	135.50	129.80	125.10	118.65
14.5	.5709	7/16	6	2	8	3450145	139.70	14.377 - 15.164	190.70	156.80	145.60	139.95	134.45	129.55	123.15
15.0	.5906	7/16	6	2	8	3450150	139.70	-	-	-	-	-	-	-	-
15.5	.6102	9/16	6	2	9	3450155	139.70	15.165 - 15.951	190.70	156.80	145.60	139.95	134.45	129.55	123.15
16.0	.6299	9/16	6	2	9	3450160	141.90	15.952 - 16.739	192.65	159.05	147.70	142.05	136.50	131.60	125.10
16.5	.6496	9/16	6	2	9	3450165	141.90	-	-	-	-	-	-	-	-
17.0	.6693	9/16	6	2	9	3450170	141.90	16.740 - 17.551	192.65	159.05	147.70	142.05	136.50	131.60	125.10
17.5	.6890	9/16	6	2	9	3450175	141.90	-	-	-	-	-	-	-	-
18.0	.7087	9/16	6	2	9	3450180	147.35	17.552 - 18.339	198.40	164.35	153.25	147.70	141.95	137.20	130.75
18.5	.7283	5/8	6	2	9 ½	3450185	147.35	18.340 - 19.126	198.40	164.35	153.25	147.70	141.95	137.20	130.75
19.0	.7480	5/8	6	2	9 ½	3450190	147.35	-	-	-	-	-	-	-	-
19.5	.7677	5/8	6	2	9 ½	3450195	151.75	19.127 - 19.914	202.60	168.90	157.45	151.90	146.25	141.45	134.90
20.0	.7874	5/8	6	2	9 ½	3450200	151.75	19.915 - 20.726	202.60	168.90	157.45	151.90	146.25	141.45	134.90
20.5	.8071	5/8	6	2	9 ½	3450205	151.75	-	-	-	-	-	-	-	-
21.0	.8268	5/8	6	2	9 ½	3450210	156.65	20.727 - 21.514	207.85	173.95	162.55	157.15	151.35	146.70	140.05
21.5	.8465	5/8	6	2	9 ½	3450215	156.65	-	-	-	-	-	-	-	-
22.0	.8661	¾	6	2 ¼	10	3450220	156.65	21.515 - 22.301	207.85	173.95	162.55	157.15	151.35	146.70	140.05
22.5	.8858	¾	6	2 ¼	10	3450225	185.50	22.302 - 23.089	238.50	203.40	191.65	185.80	179.95	174.95	168.05
23.0	.9055	¾	6	2 ¼	10	3450230	185.50	-	-	-	-	-	-	-	-
23.5	.9252	¾	8	2 ¼	10	3450235	185.50	23.090 - 23.901	238.50	203.40	191.65	185.80	179.95	174.95	168.05
24.0	.9449	¾	8	2 ¼	10	3450240	193.40	23.902 - 24.689	246.10	211.20	199.30	193.55	187.75	182.90	176.10
24.5	.9646	¾	8	2 ¼	10	3450245	193.40	-	-	-	-	-	-	-	-
25.0	.9843	⅞	8	2 ¼	10 ½	3450250	193.40	24.690 - 25.476	246.10	211.20	199.30	193.55	187.75	182.90	176.10
25.5	1.0039	⅞	8	2 ¼	10 ½	3450255	198.30	25.477 - 27.076	249.00	215.40	204.05	198.50	192.80	188.15	181.65
26.0	1.0236	⅞	8	2 ¼	10 ½	3450260	198.30	-	-	-	-	-	-	-	-
27.0	1.0630	⅞	8	2 ¼	10 ½	3450270	198.30	-	-	-	-	-	-	-	-
28.0	1.1024	⅞	8	2 ¼	11	3450280	212.75	27.077 - 28.651	263.50	229.80	218.40	213.00	207.25	202.60	196.00
29.0	1.1417	1	8	2 ¼	11	3450290	221.55	28.652 - 30.239	272.10	238.70	227.30	221.70	216.10	211.40	205.05
30.0	1.1811	1	8	2 ¼	11	3450300	221.55	-	-	-	-	-	-	-	-
31.0	1.2205	1	8	2 ½	11 ½	3450310	254.80	30.240 - 31.826	305.60	271.95	260.70	255.30	249.40	244.60	238.30
32.0	1.2598	1	8	2 ½	11 ½	3450320	254.80	31.827 - 33.414	305.60	271.95	260.70	255.30	249.40	244.60	238.30
33.0	1.2992	1	8	2 ½	11 ½	3450330	254.80	-	-	-	-	-	-	-	-
34.0	1.3386	1	8	2 ½	12	3450340	258.25	33.415 - 35.001	309.10	275.40	264.05	258.65	252.85	248.30	241.85
35.0	1.3780	1	8	2 ½	12	3450350	258.25	-	-	-	-	-	-	-	-
36.0	1.4173	1 ¼	8	2 ½	12	3450360	283.10	35.002 - 36.589	333.70	300.15	288.75	283.20	277.60	272.95	266.35
37.0	1.4567	1 ¼	8	2 ½	12 ½	3450370	335.30	36.590 - 38.176	385.85	352.30	341.05	335.50	329.90	325.15	318.65
38.0	1.4961	1 ¼	8	2 ½	12 ½	3450380	335.30	-	-	-	-	-	-	-	-

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3450 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS) THIS PAGE .1770" THRU .3265"

For fractional, wire, letter sizes and dimensions, see pages 68.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.1770	34501770	$100.10	.2070	34502070	$100.10	.2370	34502370	$100.10	.2670	34502670	$101.55	.2970	34502970	$101.55
.1775	34501775	100.10	.2075	34502075	100.10	.2375	34502375	100.10	.2675	34502675	101.55	.2975	34502975	101.55
.1780	34501780	100.10	.2080	34502080	100.10	.2380	34502380	100.10	.2680	34502680	101.55	.2980	34502980	101.55
.1785	34501785	100.10	.2085	34502085	100.10	.2385	34502385	100.10	.2685	34502685	101.55	.2985	34502985	101.55
.1790	34501790	100.10	.2090	34502090	100.10	.2390	34502390	100.10	.2690	34502690	101.55	.2990	34502990	101.55
.1795	34501795	100.10	.2095	34502095	100.10	.2395	34502395	100.10	.2695	34502695	101.55	.2995	34502995	101.55
.1800	34501800	100.10	.2100	34502100	100.10	.2400	34502400	100.10	.2700	34502700	101.55	.3000	34503000	101.55
.1805	34501805	100.10	.2105	34502105	100.10	.2405	34502405	100.10	.2705	34502705	101.55	.3005	34503005	101.55
.1810	34501810	100.10	.2110	34502110	100.10	.2410	34502410	100.10	.2710	34502710	101.55	.3010	34503010	101.55
.1815	34501815	100.10	.2115	34502115	100.10	.2415	34502415	100.10	.2715	34502715	101.55	.3015	34503015	101.55
.1820	34501820	100.10	.2120	34502120	100.10	.2420	34502420	100.10	.2720	34502720	101.55	.3020	34503020	101.55
.1825	34501825	100.10	.2125	34502125	100.10	.2425	34502425	100.10	.2725	34502725	101.55	.3025	34503025	101.55
.1830	34501830	100.10	.2130	34502130	100.10	.2430	34502430	100.10	.2730	34502730	101.55	.3030	34503030	101.55
.1835	34501835	100.10	.2135	34502135	100.10	.2435	34502435	100.10	.2735	34502735	101.55	.3035	34503035	101.55
.1840	34501840	100.10	.2140	34502140	100.10	.2440	34502440	100.10	.2740	34502740	101.55	.3040	34503040	101.55
.1845	34501845	100.10	.2145	34502145	100.10	.2445	34502445	100.10	.2745	34502745	101.55	.3045	34503045	101.55
.1850	3450047	100.10	.2150	34502150	100.10	.2450	34502450	100.10	.2750	34502750	101.55	.3050	34503050	101.55
.1855	34501855	100.10	.2155	34502155	100.10	.2455	34502455	100.10	.2755	34502755	101.55	.3055	34503055	101.55
.1860	34501860	100.10	.2160	34502160	100.10	.2460	34502460	100.10	.2760	34502760	101.55	.3060	34503060	101.55
.1865	34501865	100.10	.2165	3450055	100.10	.2465	34502465	100.10	.2765	34502765	101.55	.3065	34503065	101.55
.1870	34501870	100.10	.2170	34502170	100.10	.2470	34502470	100.10	.2770	34502770	101.55	.3070	34503070	101.55
.1875	345006	78.90	.2175	34502175	100.10	.2475	34502475	100.10	.2775	34502775	101.55	.3075	34503075	101.55
.1880	34501880	100.10	.2180	34502180	100.10	.2480	3450063	100.10	.2780	34502780	101.55	.3080	34503080	101.55
.1885	34501885	100.10	.2185	34502185	100.10	.2485	34502485	100.10	.2785	34502785	101.55	.3085	34503085	101.55
.1890	3450048	100.10	.2190	34502190	100.10	.2490	34502490	100.10	.2790	34502790	101.55	.3090	34503090	101.55
.1895	34501895	100.10	.2195	34502195	100.10	.2495	34502495	100.10	.2795	3450071	101.55	.3095	34503095	101.55
.1900	34501900	100.10	.2200	34502200	100.10	.2500	345008	78.90	.2800	34502800	101.55	.3100	34503100	101.55
.1905	34501905	100.10	.2205	3450056	100.10	.2505	34502505	100.10	.2805	34502805	101.55	.3105	34503105	101.55
.1910	34501910	100.10	.2210	34502210	100.10	.2510	34502510	100.10	.2810	34502810	101.55	.3110	3450079	101.55
.1915	34501915	100.10	.2215	34502215	100.10	.2515	34502515	100.10	.2815	34502815	101.55	.3115	34503115	101.55
.1920	34501920	100.10	.2220	34502220	100.10	.2520	3450064	100.10	.2820	34502820	101.55	.3120	34503120	101.55
.1925	34501925	100.10	.2225	34502225	100.10	.2525	34502525	100.10	.2825	34502825	101.55	.3125	345010	80.70
.1930	34501930	100.10	.2230	34502230	100.10	.2530	34502530	100.10	.2830	34502830	101.55	.3130	34503130	101.55
.1935	34501935	100.10	.2235	34502235	100.10	.2535	34502535	101.55	.2835	3450072	101.55	.3135	34503135	101.55
.1940	34501940	100.10	.2240	34502240	100.10	.2540	34502540	101.55	.2840	34502840	101.55	.3140	34503140	101.55
.1945	34501945	100.10	.2245	34502245	100.10	.2545	34502545	101.55	.2845	34502845	101.55	.3145	34503145	101.55
.1950	34501950	100.10	.2250	34502250	100.10	.2550	34502550	101.55	.2850	34502850	101.55	.3150	3450080	101.55
.1955	34501955	100.10	.2255	34502255	100.10	.2555	34502555	101.55	.2855	34502855	101.55	.3155	34503155	104.35
.1960	34501960	100.10	.2260	34502260	100.10	.2560	34502560	101.55	.2860	34502860	101.55	.3160	34503160	104.35
.1965	34501965	100.10	.2265	34502265	100.10	.2565	34502565	101.55	.2865	34502865	101.55	.3165	34503165	104.35
.1970	34501970	100.10	.2270	34502270	100.10	.2570	34502570	101.55	.2870	34502870	101.55	.3170	34503170	104.35
.1975	34501975	100.10	.2275	34502275	100.10	.2575	34502575	101.55	.2875	34502875	101.55	.3175	34503175	104.35
.1980	34501980	100.10	.2280	34502280	100.10	.2580	34502580	101.55	.2880	34502880	101.55	.3180	34503180	104.35
.1985	34501985	100.10	.2285	34502285	100.10	.2585	34502585	101.55	.2885	34502885	101.55	.3185	34503185	104.35
.1990	34501990	100.10	.2290	34502290	100.10	.2590	34502590	101.55	.2890	34502890	101.55	.3190	34503190	104.35
.1995	34501995	100.10	.2295	34502295	100.10	.2595	34502595	101.55	.2895	34502895	101.55	.3195	34503195	104.35
.2000	34502000	100.10	.2300	34502300	100.10	.2600	34502600	101.55	.2900	34502900	101.55	.3200	34503200	104.35
.2005	34502005	100.10	.2305	34502305	100.10	.2605	34502605	101.55	.2905	34502905	101.55	.3205	34503205	104.35
.2010	34502010	100.10	.2310	34502310	100.10	.2610	34502610	101.55	.2910	34502910	101.55	.3210	34503210	104.35
.2015	34502015	100.10	.2315	34502315	100.10	.2615	34502615	101.55	.2915	34502915	101.55	.3215	34503215	104.35
.2020	34502020	100.10	.2320	34502320	100.10	.2620	34502620	101.55	.2920	34502920	101.55	.3220	34503220	104.35
.2025	34502025	100.10	.2325	34502325	100.10	.2625	34502625	101.55	.2925	34502925	101.55	.3225	34503225	104.35
.2030	34502030	100.10	.2330	34502330	100.10	.2630	34502630	101.55	.2930	34502930	101.55	.3230	34503230	104.35
.2035	34502035	100.10	.2335	34502335	100.10	.2635	34502635	101.55	.2935	34502935	101.55	.3235	34503235	104.35
.2040	34502040	100.10	.2340	34502340	100.10	.2640	34502640	101.55	.2940	34502940	101.55	.3240	34503240	104.35
.2045	34502045	100.10	.2345	34502345	100.10	.2645	34502645	101.55	.2945	34502945	101.55	.3245	34503245	104.35
.2050	34502050	100.10	.2350	34502350	100.10	.2650	34502650	101.55	.2950	34502950	101.55	.3250	34503250	104.35
.2055	34502055	100.10	.2355	34502355	100.10	.2655	34502655	101.55	.2955	34502955	101.55	.3255	34503255	104.35
.2060	34502060	100.10	.2360	34502360	100.10	.2660	34502660	101.55	.2960	34502960	101.55	.3260	34503260	104.35
.2065	34502065	100.10	.2365	34502365	100.10	.2665	34502665	101.55	.2965	34502965	101.55	.3265	34503265	104.35

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3450 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS) THIS PAGE .3270" THRU .4765"

For fractional, wire, letter sizes and dimensions, see pages 68.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.3270	34503270	$104.35	.3570	34503570	$104.35	.3870	34503870	$108.70	.4170	34504170	$115.70	.4470	34504470	$123.50
.3275	34503275	104.35	.3575	34503575	104.35	.3875	34503875	108.70	.4175	34504175	115.70	.4475	34504475	123.50
.3280	34503280	104.35	.3580	34503580	104.35	.3880	34503880	108.70	.4180	34504180	115.70	.4480	34504480	123.50
.3285	34503285	104.35	.3585	34503585	104.35	.3885	34503885	108.70	.4185	34504185	115.70	.4485	34504485	123.50
.3290	34503290	104.35	.3590	34503590	104.35	.3890	34503890	108.70	.4190	34504190	115.70	.4490	34504490	123.50
.3295	34503295	104.35	.3595	34503595	104.35	.3895	34503895	108.70	.4195	34504195	115.70	.4495	34504495	123.50
.3300	34503300	104.35	.3600	34503600	104.35	.3900	34503900	108.70	.4200	34504200	115.70	.4500	34504500	123.50
.3305	34503305	104.35	.3605	34503605	104.35	.3905	34503905	108.70	.4205	34504205	115.70	.4505	34504505	123.50
.3310	34503310	104.35	.3610	34503610	104.35	.3910	34503910	108.70	.4210	34504210	115.70	.4510	34504510	123.50
.3315	34503315	104.35	.3615	34503615	104.35	.3915	34503915	108.70	.4215	34504215	115.70	.4515	34504515	123.50
.3320	34503320	104.35	.3620	34503620	104.35	.3920	34503920	108.70	.4220	34504220	115.70	.4520	34504520	123.50
.3325	34503325	104.35	.3625	34503625	104.35	.3925	34503925	108.70	.4225	34504225	115.70	.4525	34504525	123.50
.3330	34503330	104.35	.3630	34503630	104.35	.3930	34503930	108.70	.4230	34504230	115.70	.4530	34504530	123.50
.3335	34503335	104.35	.3635	34503635	104.35	.3935	34503935	108.70	.4235	34504235	115.70	.4535	34504535	123.50
.3340	34503340	104.35	.3640	34503640	104.35	.3940	34503940	108.70	.4240	34504240	115.70	.4540	34504540	123.50
.3345	34503345	104.35	.3645	34503645	104.35	.3945	34503945	108.70	.4245	34504245	115.70	.4545	34504545	123.50
.3350	34503350	104.35	.3650	34503650	104.35	.3950	34503950	108.70	.4250	34504250	115.70	.4550	34504550	123.50
.3355	34503355	104.35	.3655	34503655	104.35	.3955	34503955	108.70	.4255	34504255	115.70	.4555	34504555	123.50
.3360	34503360	104.35	.3660	34503660	104.35	.3960	34503960	108.70	.4260	34504260	115.70	.4560	34504560	123.50
.3365	34503365	104.35	.3665	34503665	104.35	.3965	34503965	108.70	.4265	34504265	115.70	.4565	34504565	123.50
.3370	34503370	104.35	.3670	34503670	104.35	.3970	34503970	108.70	.4270	34504270	115.70	.4570	34504570	123.50
.3375	34503375	104.35	.3675	34503675	104.35	.3975	34503975	108.70	.4275	34504275	115.70	.4575	34504575	123.50
.3380	34503380	104.35	.3680	34503680	104.35	.3980	34503980	108.70	.4280	34504280	115.70	.4580	34504580	123.50
.3385	34503385	104.35	.3685	34503685	104.35	.3985	34503985	108.70	.4285	34504285	115.70	.4585	34504585	123.50
.3390	34503390	104.35	.3690	34503690	104.35	.3990	34503990	108.70	.4290	34504290	115.70	.4590	34504590	123.50
.3395	34503395	104.35	.3695	34503695	104.35	.3995	34503995	108.70	.4295	34504295	115.70	.4595	34504595	123.50
.3400	34503400	104.35	.3700	34503700	104.35	.4000	34504000	108.70	.4300	34504300	115.70	.4600	34504600	123.50
.3405	34503405	104.35	.3705	34503705	104.35	.4005	34504005	108.70	.4305	34504305	115.70	.4605	34504605	123.50
.3410	34503410	104.35	.3710	34503710	104.35	.4010	34504010	108.70	.4310	34504310	115.70	.4610	34504610	123.50
.3415	34503415	104.35	.3715	34503715	104.35	.4015	34504015	108.70	.4315	34504315	115.70	.4615	34504615	123.50
.3420	34503420	104.35	.3720	34503720	104.35	.4020	34504020	108.70	.4320	34504320	115.70	.4620	34504620	123.50
.3425	3450087	104.35	.3725	34503725	104.35	.4025	34504025	108.70	.4325	34504325	115.70	.4625	34504625	123.50
.3430	34503430	104.35	.3730	34503730	104.35	.4030	34504030	108.70	.4330	34504330	115.70	.4630	34504630	123.50
.3435	34503435	104.35	.3735	34503735	104.35	.4035	34504035	108.70	.4335	34504335	115.70	.4635	34504635	123.50
.3440	34503440	104.35	.3740	3450095	104.35	.4040	34504040	108.70	.4340	34504340	115.70	.4640	34504640	123.50
.3445	34503445	104.35	.3745	34503745	104.35	.4045	34504045	108.70	.4345	34504345	115.70	.4645	34504645	123.50
.3450	34503450	104.35	.3750	345012	83.45	.4050	34504050	108.70	.4350	34504350	115.70	.4650	34504650	123.50
.3455	34503455	104.35	.3755	34503755	104.35	.4055	3450103	108.70	.4355	34504355	115.70	.4655	34504655	123.50
.3460	34503460	104.35	.3760	34503760	104.35	.4060	34504060	108.70	.4360	34504360	115.70	.4660	34504660	123.50
.3465	3450088	104.35	.3765	34503765	104.35	.4065	34504065	108.70	.4365	34504365	115.70	.4665	34504665	123.50
.3470	34503470	104.35	.3770	34503770	104.35	.4070	34504070	108.70	.4370	3450111	115.70	.4670	34504670	123.50
.3475	34503475	104.35	.3775	34503775	104.35	.4075	34504075	108.70	.4375	345014	94.90	.4675	34504675	123.50
.3480	34503480	104.35	.3780	3450096	104.35	.4080	34504080	108.70	.4380	34504380	115.70	.4680	34504680	123.50
.3485	34503485	104.35	.3785	34503785	108.70	.4085	34504085	108.70	.4385	34504385	115.70	.4685	3450119	123.50
.3490	34503490	104.35	.3790	34503790	108.70	.4090	34504090	108.70	.4390	34504390	115.70	.4690	34504690	123.50
.3495	34503495	104.35	.3795	34503795	108.70	.4095	34504095	115.70	.4395	34504395	115.70	.4695	34504695	123.50
.3500	34503500	104.35	.3800	34503800	108.70	.4100	34504100	115.70	.4400	34504400	115.70	.4700	34504700	123.50
.3505	34503505	104.35	.3805	34503805	108.70	.4105	34504105	115.70	.4405	34504405	115.70	.4705	34504705	123.50
.3510	34503510	104.35	.3810	34503810	108.70	.4110	34504110	115.70	.4410	34504410	115.70	.4710	34504710	123.50
.3515	34503515	104.35	.3815	34503815	108.70	.4115	34504115	115.70	.4415	34504415	123.50	.4715	34504715	123.50
.3520	34503520	104.35	.3820	34503820	108.70	.4120	34504120	115.70	.4420	34504420	123.50	.4720	34504720	123.50
.3525	34503525	104.35	.3825	34503825	108.70	.4125	34504125	115.70	.4425	34504425	123.50	.4725	34504725	132.45
.3530	34503530	104.35	.3830	34503830	108.70	.4130	34504130	115.70	.4430	34504430	123.50	.4730	34504730	132.45
.3535	34503535	104.35	.3835	34503835	108.70	.4135	34504135	115.70	.4435	34504435	123.50	.4735	34504735	132.45
.3540	34503540	104.35	.3840	34503840	108.70	.4140	34504140	115.70	.4440	34504440	123.50	.4740	34504740	132.45
.3545	34503545	104.35	.3845	34503845	108.70	.4145	34504145	115.70	.4445	34504445	123.50	.4745	34504745	132.45
.3550	34503550	104.35	.3850	34503850	108.70	.4150	34504150	115.70	.4450	34504450	123.50	.4750	34504750	132.45
.3555	34503555	104.35	.3855	34503855	108.70	.4155	34504155	115.70	.4455	34504455	123.50	.4755	34504755	132.45
.3560	34503560	104.35	.3860	34503860	108.70	.4160	34504160	115.70	.4460	34504460	123.50	.4760	34504760	132.45
.3565	34503565	104.35	.3865	34503865	108.70	.4165	34504165	115.70	.4465	34504465	123.50	.4765	34504765	132.45

CARBIDE TIPPED DECIMAL SIZE CHUCKING REAMERS

TYPE 3450 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE STANDARD DECIMAL DIAMETER REAMERS (.0005" INCREMENTS) THIS PAGE .4770" THRU .6265"

For fractional, wire, letter sizes and dimensions, see pages 68.

DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH	DECIMAL SIZE	EDP NO.	PRICE EACH
.4770	34504770	$132.45	.5070	34505070	$135.40	.5370	34505370	$135.40	.5670	34505670	$139.70	.5970	34505970	$139.70
.4775	34504775	132.45	.5075	34505075	135.40	.5375	34505375	135.40	.5675	34505675	139.70	.5975	34505975	139.70
.4780	34504780	132.45	.5080	34505080	135.40	.5380	34505380	135.40	.5680	34505680	139.70	.5980	34505980	139.70
.4785	34504785	132.45	.5085	34505085	135.40	.5385	34505385	135.40	.5685	34505685	139.70	.5985	34505985	139.70
.4790	34504790	132.45	.5090	34505090	135.40	.5390	34505390	135.40	.5690	34505690	139.70	.5990	34505990	139.70
.4795	34504795	132.45	.5095	34505095	135.40	.5395	34505395	135.40	.5695	34505695	139.70	.5995	34505995	139.70
.4800	34504800	132.45	.5100	34505100	135.40	.5400	34505400	135.40	.5700	34505700	139.70	.6000	34506000	139.70
.4805	34504805	132.45	.5105	34505105	135.40	.5405	34505405	135.40	.5705	34505705	139.70	.6005	34506005	139.70
.4810	34504810	132.45	.5110	34505110	135.40	.5410	34505410	135.40	.5710	34505710	139.70	.6010	34506010	139.70
.4815	34504815	132.45	.5115	34505115	135.40	.5415	34505415	135.40	.5715	34505715	139.70	.6015	34506015	139.70
.4820	34504820	132.45	.5120	34505120	135.40	.5420	34505420	135.40	.5720	34505720	139.70	.6020	34506020	139.70
.4825	34504825	132.45	.5125	34505125	135.40	.5425	34505425	135.40	.5725	34505725	139.70	.6025	34506025	139.70
.4830	34504830	132.45	.5130	34505130	135.40	.5430	34505430	135.40	.5730	34505730	139.70	.6030	34506030	139.70
.4835	34504835	132.45	.5135	34505135	135.40	.5435	34505435	135.40	.5735	34505735	139.70	.6035	34506035	139.70
.4840	34504840	132.45	.5140	34505140	135.40	.5440	34505440	135.40	.5740	34505740	139.70	.6040	34506040	139.70
.4845	34504845	132.45	.5145	34505145	135.40	.5445	34505445	135.40	.5745	34505745	139.70	.6045	34506045	139.70
.4850	34504850	132.45	.5150	34505150	135.40	.5450	34505450	135.40	.5750	34505750	139.70	.6050	34506050	139.70
.4855	34504855	132.45	.5155	34505155	135.40	.5455	34505455	135.40	.5755	34505755	139.70	.6055	34506055	139.70
.4860	34504860	132.45	.5160	34505160	135.40	.5460	34505460	135.40	.5760	34505760	139.70	.6060	34506060	139.70
.4865	34504865	132.45	.5165	34505165	135.40	.5465	34505465	135.40	.5765	34505765	139.70	.6065	34506065	139.70
.4870	34504870	132.45	.5170	34505170	135.40	.5470	34505470	135.40	.5770	34505770	139.70	.6070	34506070	139.70
.4875	34504875	132.45	.5175	34505175	135.40	.5475	34505475	135.40	.5775	34505775	139.70	.6075	34506075	139.70
.4880	34504880	132.45	.5180	34505180	135.40	.5480	34505480	135.40	.5780	34505780	139.70	.6080	34506080	139.70
.4885	34504885	132.45	.5185	34505185	135.40	.5485	34505485	135.40	.5785	34505785	139.70	.6085	34506085	139.70
.4890	34504890	132.45	.5190	34505190	135.40	.5490	34505490	135.40	.5790	34505790	139.70	.6090	34506090	139.70
.4895	34504895	132.45	.5195	34505195	135.40	.5495	34505495	135.40	.5795	34505795	139.70	.6095	34506095	139.70
.4900	34504900	132.45	.5200	34505200	135.40	.5500	34505500	135.40	.5800	34505800	139.70	.6100	34506100	139.70
.4905	34504905	132.45	.5205	34505205	135.40	.5505	34505505	135.40	.5805	34505805	139.70	.6105	34506105	139.70
.4910	34504910	132.45	.5210	34505210	135.40	.5510	34505510	135.40	.5810	34505810	139.70	.6110	34506110	139.70
.4915	34504915	132.45	.5215	34505215	135.40	.5515	34505515	135.40	.5815	34505815	139.70	.6115	34506115	139.70
.4920	34504920	132.45	.5220	34505220	135.40	.5520	34505520	135.40	.5820	34505820	139.70	.6120	34506120	139.70
.4925	34504925	132.45	.5225	34505225	135.40	.5525	34505525	135.40	.5825	34505825	139.70	.6125	34506125	139.70
.4930	34504930	132.45	.5230	34505230	135.40	.5530	34505530	135.40	.5830	34505830	139.70	.6130	34506130	139.70
.4935	34504935	132.45	.5235	34505235	135.40	.5535	34505535	135.40	.5835	34505835	139.70	.6135	34506135	139.70
.4940	34504940	132.45	.5240	34505240	135.40	.5540	34505540	135.40	.5840	34505840	139.70	.6140	34506140	139.70
.4945	34504945	132.45	.5245	34505245	135.40	.5545	34505545	135.40	.5845	34505845	139.70	.6145	34506145	139.70
.4950	34504950	132.45	.5250	34505250	135.40	.5550	34505550	135.40	.5850	34505850	139.70	.6150	34506150	139.70
.4955	34504955	132.45	.5255	34505255	135.40	.5555	34505555	135.40	.5855	34505855	139.70	.6155	34506155	139.70
.4960	34504960	132.45	.5260	34505260	135.40	.5560	34505560	135.40	.5860	34505860	139.70	.6160	34506160	139.70
.4965	34504965	132.45	.5265	34505265	135.40	.5565	34505565	135.40	.5865	34505865	139.70	.6165	34506165	139.70
.4970	34504970	132.45	.5270	34505270	135.40	.5570	34505570	135.40	.5870	34505870	139.70	.6170	34506170	139.70
.4975	34504975	132.45	.5275	34505275	135.40	.5575	34505575	135.40	.5875	34505875	139.70	.6175	34506175	139.70
.4980	34504980	132.45	.5280	34505280	135.40	.5580	34505580	135.40	.5880	34505880	139.70	.6180	34506180	139.70
.4985	34504985	132.45	.5285	34505285	135.40	.5585	34505585	135.40	.5885	34505885	139.70	.6185	34506185	139.70
.4990	34504990	132.45	.5290	34505290	135.40	.5590	34505590	135.40	.5890	34505890	139.70	.6190	34506190	139.70
.4995	34504995	132.45	.5295	34505295	135.40	.5595	34505595	135.40	.5895	34505895	139.70	.6195	34506195	139.70
.5000	345016	109.70	.5300	34505300	135.40	.5600	34505600	135.40	.5900	34505900	139.70	.6200	34506200	139.70
.5005	34505005	132.45	.5305	34505305	135.40	.5605	34505605	135.40	.5905	34505905	139.70	.6205	34506205	139.70
.5010	34505010	132.45	.5310	34505310	135.40	.5610	34505610	135.40	.5910	34505910	139.70	.6210	34506210	139.70
.5015	34505015	132.45	.5315	3450135	135.40	.5615	34505615	135.40	.5915	34505915	139.70	.6215	34506215	139.70
.5020	34505020	132.45	.5320	34505320	135.40	.5620	34505620	135.40	.5920	34505920	139.70	.6220	3450158	139.70
.5025	34505025	132.45	.5325	34505325	135.40	.5625	345018	112.85	.5925	34505925	139.70	.6225	34506225	139.70
.5030	34505030	132.45	.5330	34505330	135.40	.5630	3450143	135.40	.5930	34505930	139.70	.6230	34506230	139.70
.5035	34505035	135.40	.5335	34505335	135.40	.5635	34505635	135.40	.5935	34505935	139.70	.6235	34506235	139.70
.5040	34505040	135.40	.5340	34505340	135.40	.5640	34505640	135.40	.5940	34505940	139.70	.6240	34506240	139.70
.5045	34505045	135.40	.5345	34505345	135.40	.5645	34505645	135.40	.5945	3450151	139.70	.6245	34506245	139.70
.5050	34505050	135.40	.5350	34505350	135.40	.5650	34505650	135.40	.5950	34505950	139.70	.6250	345020	117.25
.5055	34505055	135.40	.5355	34505355	135.40	.5655	34505655	135.40	.5955	34505955	139.70	.6255	34506255	139.70
.5060	34505060	135.40	.5360	34505360	135.40	.5660	34505660	135.40	.5960	34505960	139.70	.6260	3450159	139.70
.5065	34505065	135.40	.5365	34505365	135.40	.5665	34505665	139.70	.5965	34505965	139.70	.6265	34506265	139.70

CARBIDE TIPPED CHUCKING REAMERS FOR STEEL

METRIC

TYPE 3480 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE



Detailed description and fractional sizes on page 74. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	.1704	4	1 ⅛	4 ½	3480045	$115.55	4.494 - 4.696	$163.15	$131.60	$121.10	$116.00	$110.60	$106.25	$100.15
5.0	.1969	.1805	4	1 ⅛	4 ½	3480050	115.55	4.697 - 5.182	163.15	131.60	121.10	116.00	110.60	106.25	100.15
5.5	.2165	.2075	4	1 ¼	5	3480055	115.55	5.183 - 5.613	163.15	131.60	121.10	116.00	110.60	106.25	100.15
6.0	.2362	.2265	4	1 ½	6	3480060	115.55	5.614 - 6.045	163.15	131.60	121.10	116.00	110.60	106.25	100.15
-	.2480	.2405	4	1 ½	6	3480063	-	6.046 - 6.426	163.15	131.60	121.10	116.00	110.60	106.25	100.15
6.5	.2559	.2485	4	1 ½	6	3480065	117.65	6.427 - 7.214	165.35	133.65	123.15	117.90	112.75	108.20	102.25
7.0	.2756	.2485	4	1 ½	6	3480070	117.65	-	-	-	-	-	-	-	-
7.5	.2953	.2792	4	1 ½	6	3480075	117.65	7.215 - 8.001	165.35	133.65	123.15	117.90	112.75	108.20	102.25
8.0	.3150	.2792	4	1 ½	6	3480080	117.65	-	-	-	-	-	-	-	-
8.5	.3346	.2792	4	1 ½	6	3480085	121.15	8.002 - 8.814	168.90	137.20	126.55	121.40	116.15	111.80	105.65
9.0	.3543	.3105	4	1 ¾	7	3480090	121.15	8.815 - 9.601	168.90	137.20	126.55	121.40	116.15	111.80	105.65
9.5	.3740	.3105	4	1 ¾	7	3480095	121.15	-	-	-	-	-	-	-	-
10.0	.3937	.3105	4	1 ¾	7	3480100	126.15	9.602 - 10.389	173.65	142.10	131.45	126.35	121.10	116.70	110.60
10.5	.4134	.3730	6	1 ¾	7	3480105	142.85	10.390 - 11.201	190.45	158.95	148.25	143.10	137.85	133.35	127.25
11.0	.4331	.3730	6	1 ¾	7	3480110	142.85	-	-	-	-	-	-	-	-
11.5	.4528	.3730	6	1 ¾	7	3480115	144.05	11.202 - 11.989	191.75	159.95	149.45	144.20	138.95	134.60	128.45
12.0	.4724	.4355	6	2	8	3480120	154.30	11.990 - 12.776	205.25	171.50	160.10	154.40	148.80	144.15	137.75
12.5	.4921	.4355	6	2	8	3480125	154.30	-	-	-	-	-	-	-	-
13.0	.5118	.4355	6	2	8	3480130	157.90	12.777 - 13.564	209.10	175.15	163.80	158.20	152.55	147.85	141.40
13.5	.5315	.4355	6	2	8	3480135	157.90	-	-	-	-	-	-	-	-
14.0	.5512	.4355	6	2	8	3480140	157.90	13.565 - 14.376	209.10	175.15	163.80	158.20	152.55	147.85	141.40
14.5	.5709	.4355	6	2	8	3480145	163.10	14.377 - 15.164	214.05	180.25	169.00	163.50	157.65	152.95	146.60
15.0	.5906	.4355	6	2	8	3480150	163.10	-	-	-	-	-	-	-	-
15.5	.6102	.5615	6	2 ¼	9	3480155	163.10	15.165 - 15.951	214.05	180.25	169.00	163.50	157.65	152.95	146.60
16.0	.6299	.5615	6	2 ¼	9	3480160	165.70	15.952 - 16.739	216.85	183.05	171.65	166.05	160.35	155.60	149.05
16.5	.6496	.5615	6	2 ¼	9	3480165	165.70	-	-	-	-	-	-	-	-
17.0	.6693	.5615	6	2 ¼	9	3480170	165.70	16.740 - 17.551	216.85	183.05	171.65	166.05	160.35	155.60	149.05
17.5	.6890	.5615	6	2 ¼	9	3480175	165.70	-	-	-	-	-	-	-	-
18.0	.7087	.5615	6	2 ¼	9	3480180	172.50	17.552 - 18.339	223.25	189.35	178.20	172.60	166.95	162.10	155.60
18.5	.7283	.6245	6	2 ½	9 ½	3480185	172.50	18.340 - 19.126	223.25	189.35	178.20	172.60	166.95	162.10	155.60
19.0	.7480	.6245	6	2 ½	9 ½	3480190	172.50	-	-	-	-	-	-	-	-
19.5	.7677	.6245	6	2 ½	9 ½	3480195	177.40	19.127 - 19.914	228.50	194.60	183.20	177.65	171.85	167.30	160.80
20.0	.7874	.6245	6	2 ½	9 ½	3480200	177.40	19.915 - 20.726	228.50	194.60	183.20	177.65	171.85	167.30	160.80
20.5	.8071	.6245	6	2 ½	9 ½	3480205	177.40	-	-	-	-	-	-	-	-
21.0	.8268	.6245	6	2 ½	9 ½	3480210	183.45	20.727 - 21.514	234.80	200.75	189.35	183.90	178.30	173.55	167.15
21.5	.8465	.6245	6	2 ½	9 ½	3480215	183.45	-	-	-	-	-	-	-	-
22.0	.8661	.7495	6	2 ⅝	10	3480220	183.45	21.515 - 22.301	234.80	200.75	189.35	183.90	178.30	173.55	167.15
22.5	.8858	.7495	6	2 ⅝	10	3480225	218.00	22.302 - 23.089	270.95	235.85	224.20	218.35	212.40	207.60	200.70
23.0	.9055	.7495	6	2 ⅝	10	3480230	218.00	-							
23.5	.9252	.7495	8	2 ⅝	10	3480235	218.00	23.090 - 23.901	270.95	235.85	224.20	218.35	212.40	207.60	200.70
24.0	.9449	.7495	8	2 ⅝	10	3480240	227.35	23.902 - 24.689	280.40	245.30	233.50	227.70	221.70	216.95	210.00
24.5	.9646	.7495	8	2 ⅝	10	3480245	227.35	-	-	-	-	-	-	-	-
25.0	.9843	.8745	8	2 ¾	10 ½	3480250	227.35	24.690 - 25.476	280.40	245.30	233.50	227.70	221.70	216.95	210.00
25.5	1.0039	.8745	8	2 ¾	10 ½	3480255	233.45	25.477 - 27.076	284.00	250.60	239.05	233.65	228.00	223.25	216.85
26.0	1.0236	.8745	8	2 ¾	10 ½	3480260	233.45	-	-	-	-	-	-	-	-
27.0	1.0630	.8745	8	2 ¾	10 ½	3480270	233.45	-	-	-	-	-	-	-	-
28.0	1.1024	.8745	8	2 ⅞	11	3480280	250.80	27.077 - 28.651	301.50	268.05	256.60	251.00	245.50	240.75	234.15
29.0	1.1417	.9995	8	2 ⅞	11	3480290	272.70	28.652 - 30.239	323.35	289.80	278.45	272.95	267.25	262.55	256.15
30.0	1.1811	.9995	8	2 ⅞	11	3480300	272.70	-	-	-	-	-	-	-	-
31.0	1.2205	.9995	8	3	11 ½	3480310	301.20	30.240 - 31.826	352.10	318.45	307.15	301.50	295.95	291.20	284.90
32.0	1.2598	.9995	8	3	11 ½	3480320	301.20	31.827 - 33.414	352.10	318.45	307.15	301.50	295.95	291.20	284.90
33.0	1.2992	.9995	8	3	11 ½	3480330	301.20	-	-	-	-	-	-	-	-
34.0	1.3386	.9995	8	3 ¼	12	3480340	305.50	33.415 - 35.001	356.10	322.55	311.30	305.70	300.15	295.35	288.90
35.0	1.3780	.9995	8	3 ¼	12	3480350	305.50	-	-	-	-	-	-	-	-
36.0	1.4173	.9995	8	3 ¼	12	3480360	335.15	35.002 - 36.589	385.75	352.25	340.70	335.45	329.75	325.10	318.55
37.0	1.4567	1.2495	8	3 ½	12 ½	3480370	397.95	36.590 - 38.176	448.65	414.95	403.60	398.10	392.40	387.95	381.50
38.0	1.4961	1.2495	8	3 ½	12 ½	3480380	397.95	-	-	-	-	-	-	-	-

CARBIDE TIPPED CHUCKING REAMERS FOR STEEL

TYPE 3480 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies.
Straight polished flutes.

Designed and manufactured for reaming accurate holes in steel, tough steel alloys and cast steels. Steel grade carbide is used in a full flute design with special steel cutting geometry that results in excellent performance and maximum tool life. Fast cutting to close tolerance.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	.1805	4	1 1/8	4 1/2	348006	$94.55	.1770 - .2040	$157.90	$126.20	$115.55	$110.60	$105.20	$100.80
.2031	13/64	.1805	4	1 1/8	4 1/2	34802031	94.55	-	-	-	-	-	-	-
.2188	7/32	.2075	4	1 1/4	5	348007	94.55	.2041 - .2210	157.90	126.20	115.55	110.60	105.20	100.80
.2344	15/64	.2265	4	1 1/2	6	34802344	94.55	.2211 - .2380	157.90	126.20	115.55	110.60	105.20	100.80
.2500	1/4	.2405	4	1 1/2	6	348008	94.55	.2381 - .2530	157.90	126.20	115.55	110.60	105.20	100.80
.2656	17/64	.2485	4	1 1/2	6	34802656	96.65	-	-	-	-	-	-	-
.2812	9/32	.2485	4	1 1/2	6	348009	96.65	.2531 - .2840	159.95	128.40	117.65	112.75	107.25	103.10
.2969	19/64	.2792	4	1 1/2	6	34802969	96.65	-	-	-	-	-	-	-
.3125	5/16	.2792	4	1 1/2	6	348010	96.65	.2841 - .3150	159.95	128.40	117.65	112.75	107.25	103.10
.3281	21/64	.2792	4	1 1/2	6	34803281	100.25	-	-	-	-	-	-	-
.3438	11/32	.2792	4	1 1/2	6	348011	100.25	.3151 - .3470	163.60	131.65	121.15	116.15	110.80	106.55
.3594	23/64	.3105	4	1 3/4	7	34803594	100.25	-	-	-	-	-	-	-
.3750	3/8	.3105	4	1 3/4	7	348012	100.25	.3471 - .3780	163.60	131.65	121.15	116.15	110.80	106.55
.3906	25/64	.3105	4	1 3/4	7	34803906	105.20	-	-	-	-	-	-	-
.4062	13/32	.3105	4	1 3/4	7	348013	105.20	.3781 - .4090	168.35	136.70	126.15	121.10	115.55	111.35
.4219	27/64	.3730	6	1 3/4	7	34804219	121.85	-	-	-	-	-	-	-
.4375	7/16	.3730	6	1 3/4	7	348014	121.85	.4091 - .4410	185.10	153.35	142.85	137.85	132.45	128.15
.4531	29/64	.3730	6	1 3/4	7	34804531	122.90	-	-	-	-	-	-	-
.4688	15/32	.3730	6	1 3/4	7	348015	122.90	.4411 - .4720	186.35	154.40	144.05	138.95	133.40	129.20
.4844	31/64	.4355	6	2	8	34804844	131.65	-	-	-	-	-	-	-
.5000	1/2	.4355	6	2	8	348016	131.65	.4721 - .5030	199.55	165.60	154.30	148.80	143.00	138.55
.5156	33/64	.4355	6	2	8	34805156	135.50	-	-	-	-	-	-	-
.5312	17/32	.4355	6	2	8	348017	135.50	.5031 - .5340	203.30	169.35	157.90	152.55	146.80	142.10
.5469	35/64	.4355	6	2	8	34805469	135.50	-	-	-	-	-	-	-
.5625	9/16	.4355	6	2	8	348018	135.50	.5341 - .5660	203.30	169.35	157.90	152.55	146.80	142.10
.5781	37/64	.4355	6	2	8	34805781	140.65	-	-	-	-	-	-	-
.5938	19/32	.4355	6	2	8	348019	140.65	.5661 - .5970	208.40	174.60	163.10	157.65	151.90	147.35
.6094	39/64	.5615	6	2 1/4	9	34806094	140.65	-	-	-	-	-	-	-
.6250	5/8	.5615	6	2 1/4	9	348020	140.65	.5971 - .6280	208.40	174.60	163.10	157.65	151.90	147.35
.6406	41/64	.5615	6	2 1/4	9	34806406	143.30	-	-	-	-	-	-	-
.6562	21/32	.5615	6	2 1/4	9	348021	143.30	.6281 - .6590	211.20	177.15	165.70	160.35	154.40	150.00
.6719	43/64	.5615	6	2 1/4	9	34806719	143.30	-	-	-	-	-	-	-

*Quantities of 15 or more: price of fractional size in same size range.

CONTINUED FROM PAGE 74 - TYPE 3480 FRACTIONAL

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.6875	11/16	.5615	6	2 1/4	9	348022	$143.30	.6591 - .6910	$211.20	$177.15	$165.70	$160.35	154.40	$150.00
.7031	45/64	.5615	6	2 1/4	9	34807031	149.85	-	-	-	-	-	-	-
.7188	23/32	.5615	6	2 1/4	9	348023	149.85	.6911 - .7220	217.65	183.45	172.50	166.95	161.15	156.45
.7344	47/64	.6245	6	2 1/2	9 1/2	34807344	149.85	-	-	-	-	-	-	-
.7500	3/4	.6245	6	2 1/2	9 1/2	348024	149.85	.7221 - .7530	217.65	183.45	172.50	166.95	161.15	156.45
.7656	49/64	.6245	6	2 1/2	9 1/2	34807656	155.10	-	-	-	-	-	-	-
.7812	25/32	.6245	6	2 1/2	9 1/2	348025	155.10	.7531 - .7840	222.65	188.70	177.40	171.85	166.20	161.50
.7969	51/64	.6245	6	2 1/2	9 1/2	34807969	155.10	-	-	-	-	-	-	-
.8125	13/16	.6245	6	2 1/2	9 1/2	348026	155.10	.7841 - .8160	222.65	188.70	177.40	171.85	166.20	161.50
.8281	53/64	.6245	6	2 1/2	9 1/2	34808281	161.30	-	-	-	-	-	-	-
.8438	27/32	.6245	6	2 1/2	9 1/2	348027	161.30	.8161 - .8470	228.90	194.80	183.45	178.30	172.55	167.80
.8594	55/64	.7495	6	2 5/8	10	34808594	161.30	-	-	-	-	-	-	-
.8750	7/8	.7495	6	2 5/8	10	348028	167.35	.8471 - .8780	237.50	202.35	190.55	184.95	178.85	174.10
.8906	57/64	.7495	6	2 5/8	10	34808906	194.75	-	-	-	-	-	-	-
.9062	29/32	.7495	6	2 5/8	10	348029	194.75	.8781 - .9090	265.15	229.95	218.00	212.40	206.35	201.60
.9219	59/64	.7495	8	2 5/8	10	34809219	194.75	-	-	-	-	-	-	-
.9375	15/16	.7495	8	2 5/8	10	348030	194.75	.9091 - .9410	265.15	229.95	218.00	212.40	206.35	201.60
.9531	61/64	.7495	8	2 5/8	10	34809531	204.10	-	-	-	-	-	-	-
.9688	31/32	.7495	8	2 5/8	10	348031	204.10	.9411 - .9720	274.45	239.35	227.35	221.70	215.65	210.90
.9844	63/64	.8745	8	2 3/4	10 1/2	34809844	204.10	-	-	-	-	-	-	-
1.0000	1	.8745	8	2 3/4	10 1/2	348032	204.10	.9721 - 1.0030	274.45	239.35	227.35	221.70	215.65	210.90
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	348034	211.05	1.0031 - 1.0660	278.45	244.50	233.45	228.00	222.20	217.70
1.1250	1 1/8	.8745	8	2 7/8	11	348036	228.60	1.0661 - 1.1280	295.95	262.15	250.80	245.50	239.75	235.05
1.1875	1 3/16	.9995	8	2 7/8	11	348038	250.30	1.1281 - 1.1905	317.80	283.90	272.70	267.25	261.50	256.90
1.2500	1 1/4	.9995	8	3	11 1/2	348040	279.00	1.1906 - 1.2530	346.35	312.55	301.20	295.95	290.15	285.55
1.3125	1 5/16	.9995	8	3	11 1/2	348042	279.00	1.2531 - 1.3155	346.35	312.55	301.20	295.95	290.15	285.55
1.3750	1 3/8	.9995	8	3 1/4	12	348044	283.15	1.3156 - 1.3780	350.40	316.75	305.50	300.15	294.15	289.80
1.4375	1 7/16	.9995	8	3 1/4	12	348046	312.85	1.3781 - 1.4405	380.10	346.35	335.15	329.75	323.80	319.55
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	348048	375.60	1.4406 - 1.5030	442.95	409.15	397.95	392.40	386.80	382.20

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED OVER & UNDER SIZE REAMERS FOR STEEL

TYPE 3488 - STRAIGHT SHANK STRAIGHT FLUTE LONG CARBIDE

These precision ground carbide tipped reamers are very convenient for finishing accurate holes in most steels.

Tool diameter tolerance: +.0002"/-.0000".

TOOL DIAMETER	MAX SHANK DIAM.	NO. OF FLUTES	LENGTH		TYPE 3488 EDP NO.	PRICE EACH
			FLUTE	OVERALL		
.1865	.1805	4	1 1/8	4 1/2	348818	$118.30
.1885	.1805	4	1 1/8	4 1/2	348819	118.30
.2490	.2405	4	1 1/2	6	348824	118.30
.2510	.2405	4	1 1/2	6	348825	118.30
.3115	.2792	4	1 1/2	6	348831	120.40
.3135	.2792	4	1 1/2	6	348832	120.40
.3740	.3105	4	1 3/4	7	348837	123.95
.3760	.3105	4	1 3/4	7	348838	123.95
.4365	.3730	6	1 3/4	7	348843	145.60
.4385	.3730	6	1 3/4	7	348844	145.60
.4990	.4355	6	2	8	348849	157.20
.5010	.4355	6	2	8	348850	157.20
CASED SET OF ABOVE 12 REAMERS					348800	1489.30

CARBIDE TIPPED DOWEL PIN SIZE REAMERS FOR STEEL

TYPE 3486 - STRAIGHT SHANK STRAIGHT FLUTE LONG CARBIDE

These precision ground carbide tipped reamers accurately finish dowel pin holes in most steels. Should be used in pairs .0005" and .0020" under the fractional size. Note special undersize tolerance.

Tool diameter tolerance: +.0000"/-.0002".

TOOL DIAMETER	MAX SHANK DIAM.	NO. OF FLUTES	LENGTH		TYPE 3486 EDP NO.	PRICE EACH
			FLUTE	OVERALL		
.1855	.1805	4	1 1/8	4 1/2	348617	$118.30
.1870	.1805	4	1 1/8	4 1/2	348618	118.30
.2480	.2405	4	1 1/2	6	348623	118.30
.2495	.2405	4	1 1/2	6	348624	118.30
.3105	.2792	4	1 1/2	6	348630	120.40
.3120	.2792	4	1 1/2	6	348631	120.40
.3730	.3105	4	1 3/4	7	348636	123.95
.3745	.3105	4	1 3/4	7	348637	123.95
.4355	.3730	6	1 3/4	7	348642	145.60
.4370	.3730	6	1 3/4	7	348643	145.60
.4980	.4355	6	2	8	348648	157.20
.4995	.4355	6	2	8	348649	157.20
CASED SET OF ABOVE 12 REAMERS					348600	1489.30

CARBIDE TIPPED CHUCKING REAMERS

TYPE 3452 - TAPER SHANK - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Used for all general reaming. Designed with flute long carbide for deep hole reaming.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MORSE TAPER	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	1/4	1	4	1 1/2	6	345208	$90.85	.2381 - .2530	$154.15	$122.45	$111.80	$106.70	$101.35	$96.95
.2812	9/32	1	4	1 1/2	6	345209	92.00	.2531 - .2840	155.40	123.75	113.00	107.95	102.50	98.30
.3125	5/16	1	4	1 1/2	6	345210	92.00	.2841 - .3150	155.40	123.75	113.00	107.95	102.50	98.30
.3438	11/32	1	4	1 1/2	6	345211	94.15	.3151 - .3470	157.45	125.85	115.20	109.95	104.60	100.30
.3750	3/8	1	4	1 3/4	7	345212	95.20	.3471 - .3780	158.50	126.85	116.15	111.10	105.65	101.50
.4062	13/32	1	4	1 3/4	7	345213	100.25	.3781 - .4090	163.60	131.65	121.15	116.15	110.80	106.55
.4375	7/16	1	4	1 3/4	7	345214	106.75	.4091 - .4410	170.05	138.45	127.80	122.80	117.30	113.00
.4688	15/32	1	4	1 3/4	7	345215	109.00	.4411 - .4720	172.50	140.50	130.05	124.95	119.55	115.30
.5000	1/2	1	6	2	8	345216	117.60	.4721 - .5030	185.20	151.35	139.95	134.60	128.75	124.25
.5312	17/32	1	6	2	8	345217	128.75	.5031 - .5340	196.65	162.55	151.15	145.80	139.95	135.40
.5625	9/16	1	6	2	8	345218	128.75	.5341 - .5660	196.65	162.55	151.15	145.80	139.95	135.40
.5938	19/32	1	6	2	8	345219	134.70	.5661 - .5970	202.45	168.55	157.20	151.85	145.95	141.40
.6250	5/8	2	6	2	9	345220	134.70	.5971 - .6280	202.45	168.55	157.20	151.85	145.95	141.40
.6562	21/32	2	6	2	9	345221	137.20	.6281 - .6590	205.10	171.00	159.55	154.30	148.40	143.90
.6875	11/16	2	6	2	9	345222	137.20	.6591 - .6910	205.10	171.00	159.55	154.30	148.40	143.90
.7188	23/32	2	6	2	9	345223	139.10	.6911 - .7220	207.05	172.90	161.50	156.25	150.35	145.80
.7500	3/4	2	6	2	9 1/2	345224	143.55	.7221 - .7530	211.40	177.40	166.05	160.60	154.65	150.30
.7812	25/32	2	6	2	9 1/2	345225	144.70	.7531 - .7840	212.50	178.55	167.25	161.55	155.90	151.35
.8125	13/16	2	6	2	9 1/2	345226	148.10	.7841 - .8160	215.65	181.65	170.50	165.15	159.25	154.55
.8438	27/32	2	6	2	9 1/2	345227	154.40	.8161 - .8470	222.40	188.30	176.90	171.65	165.70	161.30
.8750	7/8	2	6	2 1/4	10	345228	160.45	.8471 - .8780	230.80	195.50	183.45	178.20	171.85	167.35
.9062	29/32	2	6	2 1/4	10	345229	180.65	.8781 - .9090	250.90	215.65	204.05	198.40	192.15	187.55
.9375	15/16	3	8	2 1/4	10	345230	187.95	.9091 - .9410	258.00	222.90	211.20	205.50	199.45	194.75
.9688	31/32	3	8	2 1/4	10	345231	195.60	.9411 - .9720	266.00	230.80	218.90	213.30	207.20	202.60
1.0000	1	3	8	2 1/4	10 1/2	345232	195.60	.9721 - 1.0030	266.00	230.80	218.90	213.30	207.20	202.60
1.0625	1 1/16	3	8	2 1/4	10 1/2	345234	268.10	1.0031 - 1.0660	335.50	301.55	290.35	285.10	279.25	274.60
1.1250	1 1/8	3	8	2 1/4	11	345236	288.75	1.0661 - 1.1280	356.10	322.40	311.20	305.70	299.90	295.35
1.1875	1 3/16	3	8	2 1/4	11	345238	310.30	1.1281 - 1.1905	377.65	343.85	332.55	327.10	321.60	316.80
1.2500	1 1/4	4	8	2 1/2	11 1/2	345240	329.75	1.1906 - 1.2530	397.05	363.30	352.10	346.50	340.70	336.30
1.3125	1 5/16	4	8	2 1/2	11 1/2	345242	372.25	1.2531 - 1.3155	439.65	406.00	394.45	389.35	383.45	378.90
1.3750	1 3/8	4	8	2 1/2	12	345244	425.40	1.3156 - 1.3780	492.75	459.05	447.65	442.25	436.45	431.90
1.4375	1 7/16	4	8	2 1/2	12	345246	443.95	1.3781 - 1.4405	511.40	477.70	466.35	461.15	455.15	450.50
1.5000	1 1/2	4	8	2 1/2	12 1/2	345248	462.50	1.4406 - 1.5030	529.90	496.30	484.95	479.50	473.70	469.05

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CHUCKING REAMERS

METRIC

TYPE 3452 - TAPER SHANK - STRAIGHT FLUTE LONG CARBIDE

Detailed description and fractional sizes on page 76. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.



TOOL DIAMETER		MORSE TAPER	NO. OF FLTS.	LENGTH		EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
6.0	.2362	1	4	1 ½	6	3452060	$111.80	6.000 - 6.426	$159.40	$127.80	$117.25	$112.00	$106.70	$102.35	$96.25
6.5	.2559	1	4	1 ½	6	3452065	113.00	6.427 - 7.214	160.60	129.15	118.60	113.45	107.95	103.75	97.50
7.0	.2756	1	4	1 ½	6	3452070	113.00	-	-	-	-	-	-	-	-
7.5	.2953	1	4	1 ½	6	3452075	113.00	7.215 - 8.001	160.60	129.15	118.60	113.45	107.95	103.75	97.50
8.0	.3150	1	4	1 ½	6	3452080	113.00	-	-	-	-	-	-	-	-
8.5	.3346	1	4	1 ½	6	3452085	115.20	8.002 - 8.814	162.80	131.20	120.70	115.45	109.95	105.65	99.55
9.0	.3543	1	4	1 ¾	7	3452090	116.15	8.815 - 9.601	163.80	132.35	121.50	116.25	111.10	106.70	100.50
9.5	.3740	1	4	1 ¾	7	3452095	116.15	-	-	-	-	-	-	-	-
10.0	.3937	1	4	1 ¾	7	3452100	121.15	9.602 - 10.389	168.90	137.20	126.55	121.40	116.15	111.80	105.65
10.5	.4134	1	4	1 ¾	7	3452105	127.80	10.390 - 11.201	175.30	143.85	133.30	128.15	122.80	118.30	112.35
11.0	.4331	1	4	1 ¾	7	3452110	127.80	-	-	-	-	-	-	-	-
11.5	.4528	1	4	1 ¾	7	3452115	130.05	11.202 - 11.989	177.65	145.95	135.45	130.35	124.95	120.70	114.30
12.0	.4724	1	6	2	8	3452120	139.95	11.990 - 12.776	191.05	157.20	145.80	140.30	134.60	129.80	123.35
12.5	.4921	1	6	2	8	3452125	139.95	-	-	-	-	-	-	-	-
13.0	.5118	1	6	2	8	3452130	151.15	12.777 - 13.564	202.25	168.35	157.15	151.70	145.80	141.10	134.60
13.5	.5315	1	6	2	8	3452135	151.15	-	-	-	-	-	-	-	-
14.0	.5512	1	6	2	8	3452140	151.15	13.565 - 14.376	202.25	168.35	157.15	151.70	145.80	141.10	134.60
14.5	.5709	1	6	2	8	3452145	157.20	14.377 - 15.164	208.10	174.50	163.05	157.45	151.85	146.95	140.50
15.0	.5906	1	6	2	8	3452150	157.20	-	-	-	-	-	-	-	-
15.5	.6102	2	6	2	9	3452155	157.20	15.165 - 15.951	208.10	174.50	163.05	157.45	151.85	146.95	140.50
16.0	.6299	2	6	2	9	3452160	159.55	15.952 - 16.739	210.70	176.75	165.50	159.95	154.30	149.75	143.00
16.5	.6496	2	6	2	9	3452165	159.55	-	-	-	-	-	-	-	-
17.0	.6693	2	6	2	9	3452170	159.55	16.740 - 17.551	210.70	176.75	165.50	159.95	154.30	149.75	143.00
17.5	.6890	2	6	2	9	3452175	159.55	-	-	-	-	-	-	-	-
18.0	.7087	2	6	2	9	3452180	161.50	17.552 - 18.339	212.75	178.80	167.60	161.90	156.25	151.70	144.90
18.5	.7283	2	6	2	9 ½	3452185	166.05	18.340 - 19.126	217.15	183.20	171.80	166.25	160.60	155.90	149.45
19.0	.7480	2	6	2	9 ½	3452190	166.05	-	-	-	-	-	-	-	-
19.5	.7677	2	6	2	9 ½	3452195	167.25	19.127 - 19.914	218.10	184.45	172.90	167.60	161.55	157.15	150.45
20.0	.7874	2	6	2	9 ½	3452200	170.50	19.915 - 20.726	221.55	187.55	176.25	170.80	165.15	160.35	153.95
20.5	.8071	2	6	2	9 ½	3452205	170.50	-	-	-	-	-	-	-	-
21.0	.8268	2	6	2	9 ½	3452210	176.90	20.727 - 21.514	228.00	194.20	182.90	177.25	171.65	166.95	160.35
21.5	.8465	2	6	2	9 ½	3452215	176.90	-	-	-	-	-	-	-	-
22.0	.8661	2	6	2 ¼	10	3452220	176.90	21.515 - 22.301	228.00	194.20	182.90	177.25	171.65	166.95	160.35
22.5	.8858	2	6	2 ¼	10	3452225	204.05	22.302 - 23.089	256.85	221.70	209.95	204.20	198.40	193.50	186.90
23.0	.9055	2	6	2 ¼	10	3452230	204.05	-	-	-	-	-	-	-	-
23.5	.9252	3	8	2 ¼	10	3452235	211.20	23.090 - 23.901	264.05	228.90	217.30	211.40	205.50	200.60	193.85
24.0	.9449	3	8	2 ¼	10	3452240	218.90	23.902 - 24.689	271.90	236.65	225.00	219.30	213.30	208.40	201.60
24.5	.9646	3	8	2 ¼	10	3452245	218.90	-	-	-	-	-	-	-	-
25.0	.9843	3	8	2 ¼	10 ½	3452250	218.90	24.690 - 25.476	271.90	236.65	225.00	219.30	213.30	208.40	201.60
25.5	1.0039	3	8	2 ¼	10 ½	3452255	290.35	25.477 - 27.076	341.25	307.50	296.10	290.70	285.10	280.40	274.00
26.0	1.0236	3	8	2 ¼	10 ½	3452260	290.35	-	-	-	-	-	-	-	-
27.0	1.0630	3	8	2 ¼	10 ½	3452270	290.35	-	-	-	-	-	-	-	-
28.0	1.1024	3	8	2 ¼	11	3452280	311.20	27.077 - 28.651	361.85	328.25	316.80	311.35	305.70	301.00	294.65
29.0	1.1417	3	8	2 ¼	11	3452290	332.55	28.652 - 30.239	383.30	349.70	338.30	332.90	327.10	322.55	316.05
30.0	1.1811	3	8	2 ¼	11	3452300	332.55	-	-	-	-	-	-	-	-
31.0	1.2205	4	8	2 ½	11 ½	3452310	352.10	30.240 - 31.826	402.70	369.20	357.75	352.30	346.50	341.90	335.50
32.0	1.2598	4	8	2 ½	11 ½	3452320	394.45	31.827 - 33.414	445.40	411.60	400.45	394.85	389.35	384.50	377.95
33.0	1.2992	4	8	2 ½	11 ½	3452330	394.45	-	-	-	-	-	-	-	-
34.0	1.3386	4	8	2 ½	12	3452340	447.65	33.415 - 35.001	498.40	464.80	453.45	448.05	442.25	437.65	431.15
35.0	1.3780	4	8	2 ½	12	3452350	447.65	-	-	-	-	-	-	-	-
36.0	1.4173	4	8	2 ½	12	3452360	466.35	35.002 - 36.589	517.00	483.35	472.15	466.55	461.15	456.20	449.55
37.0	1.4567	4	8	2 ½	12 ½	3452370	484.95	36.590 - 38.176	535.70	501.90	490.65	485.40	479.50	474.95	468.50
38.0	1.4961	4	8	2 ½	12 ½	3452380	484.95	-	-	-	-	-	-	-	-

CARBIDE TIPPED RIGHT SPIRAL CHUCKING REAMERS

TYPE 3410 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Right spiral polished flutes.

Designed and manufactured for maximum tool life. Right spiral flutes have greater chip clearing ability for use with ductile materials, highly abrasive materials or blind holes. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.



For metric sizes, see page 80.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	11/64	4	1 1/8	1/2	4 1/2	341006	$92.90	.1770 - .2040	$153.25	$122.90	$112.85	$107.95	$102.75	$98.90
.2188	7/32	13/64	4	1 1/4	1/2	5	341007	92.90	.2041 - .2210	153.25	122.90	112.85	107.95	102.75	98.90
.2344	15/64	7/32	4	1 1/2	1/2	6	34102344	92.90	.2211 - .2380	153.25	122.90	112.85	107.95	102.75	98.90
.2500	1/4	15/64	4	1 1/2	1/2	6	341008	92.90	.2381 - .2530	153.25	122.90	112.85	107.95	102.75	98.90
.2812	9/32	15/64	4	1 1/2	1/2	6	341009	93.25	.2531 - .2840	153.35	123.20	113.00	108.20	103.10	99.05
.3125	5/16	9/32	4	1 1/2	1/2	6	341010	93.25	.2841 - .3150	153.35	123.20	113.00	108.20	103.10	99.05
.3438	11/32	9/32	4	1 1/2	5/8	6	341011	102.50	.3151 - .3470	162.80	132.50	122.45	117.65	112.50	108.55
.3750	3/8	5/16	4	1 3/4	5/8	7	341012	103.45	.3471 - .3780	163.75	133.50	123.35	118.70	113.60	109.50
.4062	13/32	5/16	4	1 3/4	5/8	7	341013	108.10	.3781 - .4090	168.50	138.25	128.15	123.25	118.00	114.05
.4375	7/16	3/8	4	1 3/4	5/8	7	341014	112.50	.4091 - .4410	172.70	142.50	132.45	127.60	122.45	118.35
.4688	15/32	3/8	4	1 3/4	5/8	7	341015	119.35	.4411 - .4720	179.70	149.45	139.45	134.55	129.45	125.15
.5000	1/2	7/16	6	2	5/8	8	341016	123.95	.4721 - .5030	185.65	154.55	144.25	139.45	134.20	129.90
.5312	17/32	7/16	6	2	5/8	8	341017	127.60	.5031 - .5340	189.55	158.50	148.20	143.15	137.95	133.70
.5625	9/16	7/16	6	2	5/8	8	341018	127.60	.5341 - .5660	189.55	158.50	148.20	143.15	137.95	133.70
.5938	19/32	7/16	6	2	5/8	8	341019	131.45	.5661 - .5970	193.35	162.35	151.90	146.95	141.70	137.40
.6250	5/8	9/16	6	2 1/4	5/8	9	341020	131.45	.5971 - .6280	193.35	162.35	151.90	146.95	141.70	137.40
.6562	21/32	9/16	6	2 1/4	5/8	9	341021	135.25	.6281 - .6590	197.20	166.20	155.70	150.80	145.30	141.40
.6875	11/16	9/16	6	2 1/4	5/8	9	341022	144.05	.6591 - .6910	205.80	174.80	164.45	159.45	154.20	150.10
.7188	23/32	9/16	6	2 1/4	5/8	9	341023	145.95	.6911 - .7220	207.85	176.75	166.40	161.50	156.25	151.95
.7500	3/4	5/8	6	2 1/2	3/4	9 1/2	341024	148.25	.7221 - .7530	210.05	179.15	168.75	163.80	158.50	154.30
.7812	25/32	5/8	6	2 1/2	3/4	9 1/2	341025	151.95	.7531 - .7840	214.00	183.05	172.60	167.65	162.35	158.15
.8125	13/16	5/8	6	2 1/2	3/4	9 1/2	341026	151.95	.7841 - .8160	214.00	183.05	172.60	167.65	162.35	158.15
.8438	27/32	5/8	6	2 1/2	3/4	9 1/2	341027	160.35	.8161 - .8470	222.40	191.25	180.95	176.00	170.60	166.40
.8750	7/8	3/4	6	2 5/8	3/4	10	341028	166.40	.8471 - .8780	230.65	198.50	187.55	182.55	177.05	172.70
.9062	29/32	3/4	6	2 5/8	3/4	10	341029	193.85	.8781 - .9090	258.00	225.95	215.25	210.00	204.45	200.25
.9375	15/16	3/4	8	2 5/8	3/4	10	341030	193.85	.9091 - .9410	258.00	225.95	215.25	210.00	204.45	200.25
.9688	31/32	3/4	8	2 5/8	3/4	10	341031	203.30	.9411 - .9720	267.60	235.35	224.75	219.45	213.90	209.70
1.0000	1	7/8	8	2 3/4	3/4	10 1/2	341032	203.30	.9721 - 1.0030	267.60	235.35	224.75	219.45	213.90	209.70
1.0625	1 1/16	7/8	8	2 3/4	3/4	10 1/2	341034	218.10	1.0031 - 1.0660	282.40	250.20	239.45	234.15	228.70	224.40
1.1250	1 1/8	7/8	8	2 7/8	7/8	11	341036	224.90	1.0661 - 1.1280	288.95	256.90	246.10	241.00	235.50	231.20
1.1875	1 3/16	1	8	2 7/8	7/8	11	341038	236.30	1.1281 - 1.1905	300.45	268.25	257.55	252.35	246.95	242.55
1.2500	1 1/4	1	8	3	7/8	11 1/2	341040	250.10	1.1906 - 1.2530	314.30	282.10	271.30	266.20	260.70	256.50
1.3125	1 5/16	1	8	3	7/8	11 1/2	341042	276.65	1.2531 - 1.3155	341.05	308.85	297.85	292.90	287.35	283.10
1.3750	1 3/8	1	8	3 1/4	7/8	12	341044	303.25	1.3156 - 1.3780	367.35	335.30	324.50	319.50	313.80	309.55
1.4375	1 7/16	1 1/4	8	3 1/4	7/8	12	341046	321.15	1.3781 - 1.4405	385.40	353.20	342.45	337.45	331.85	327.45
1.5000	1 1/2	1 1/4	8	3 1/2	7/8	12 1/2	341048	339.35	1.4406 - 1.5030	403.50	371.30	360.70	355.25	350.00	345.60

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED LEFT SPIRAL CHUCKING REAMERS

TYPE 3420 - STRAIGHT SHANK - LEFT SPIRAL FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Left spiral polished flutes.

Designed and manufactured for maximum tool life. Left spiral flutes should only be used on through holes for heat treated steels, hard cast iron and other hard materials. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.



For metric sizes, see page 80.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	11/64	4	1 1/8	1/2	4 1/2	342006	$92.90	.1770 - .2040	$153.25	$122.90	$112.85	$107.95	$102.75	$98.90
.2188	7/32	13/64	4	1 1/4	1/2	5	342007	92.90	.2041 - .2210	153.25	122.90	112.85	107.95	102.75	98.90
.2344	15/64	7/32	4	1 1/2	1/2	6	34202344	92.90	.2211 - .2380	153.25	122.90	112.85	107.95	102.75	98.90
.2500	1/4	15/64	4	1 1/2	1/2	6	342008	92.90	.2381 - .2530	153.25	122.90	112.85	107.95	102.75	98.90
.2812	9/32	15/64	4	1 1/2	1/2	6	342009	93.25	.2531 - .2840	153.35	123.20	113.00	108.20	103.10	99.05
.3125	5/16	9/32	4	1 1/2	1/2	6	342010	93.25	.2841 - .3150	153.35	123.20	113.00	108.20	103.10	99.05
.3438	11/32	9/32	4	1 1/2	5/8	6	342011	102.50	.3151 - .3470	162.80	132.50	122.45	117.65	112.50	108.55
.3750	3/8	5/16	4	1 3/4	5/8	7	342012	103.45	.3471 - .3780	163.75	133.50	123.35	118.70	113.60	109.50
.4062	13/32	5/16	4	1 3/4	5/8	7	342013	108.10	.3781 - .4090	168.50	138.25	128.15	123.25	118.00	114.05
.4375	7/16	3/8	4	1 3/4	5/8	7	342014	112.50	.4091 - .4410	172.70	142.50	132.45	127.60	122.45	118.35
.4688	15/32	3/8	4	1 3/4	5/8	7	342015	119.35	.4411 - .4720	179.70	149.45	139.45	134.55	129.45	125.15
.5000	1/2	7/16	6	2	5/8	8	342016	123.95	.4721 - .5030	185.65	154.55	144.25	139.45	134.20	129.90
.5312	17/32	7/16	6	2	5/8	8	342017	127.60	.5031 - .5340	189.55	158.50	148.20	143.15	137.95	133.70
.5625	9/16	7/16	6	2	5/8	8	342018	127.60	.5341 - .5660	189.55	158.50	148.20	143.15	137.95	133.70
.5938	19/32	7/16	6	2	5/8	8	342019	131.45	.5661 - .5970	193.35	162.35	151.90	146.95	141.70	137.40
.6250	5/8	9/16	6	2 1/4	5/8	9	342020	131.45	.5971 - .6280	193.35	162.35	151.90	146.95	141.70	137.40
.6562	21/32	9/16	6	2 1/4	5/8	9	342021	135.25	.6281 - .6590	197.20	166.20	155.70	150.80	145.30	141.40
.6875	11/16	9/16	6	2 1/4	5/8	9	342022	144.05	.6591 - .6910	205.80	174.80	164.45	159.45	154.20	150.10
.7188	23/32	9/16	6	2 1/4	5/8	9	342023	145.95	.6911 - .7220	207.85	176.75	166.40	161.50	156.25	151.95
.7500	3/4	5/8	6	2 1/2	3/4	9 1/2	342024	148.25	.7221 - .7530	210.05	179.15	168.75	163.80	158.50	154.30
.7812	25/32	5/8	6	2 1/2	3/4	9 1/2	342025	151.95	.7531 - .7840	214.00	183.05	172.60	167.65	162.35	158.15
.8125	13/16	5/8	6	2 1/2	3/4	9 1/2	342026	151.95	.7841 - .8160	214.00	183.05	172.60	167.65	162.35	158.15
.8438	27/32	5/8	6	2 1/2	3/4	9 1/2	342027	160.35	.8161 - .8470	222.40	191.25	180.95	176.00	170.60	166.40
.8750	7/8	3/4	6	2 5/8	3/4	10	342028	166.40	.8471 - .8780	230.65	198.50	187.55	182.55	177.05	172.70
.9062	29/32	3/4	6	2 5/8	3/4	10	342029	193.85	.8781 - .9090	258.00	225.95	215.25	210.00	204.45	200.25
.9375	15/16	3/4	8	2 5/8	3/4	10	342030	193.85	.9091 - .9410	258.00	225.95	215.25	210.00	204.45	200.25
.9688	31/32	3/4	8	2 5/8	3/4	10	342031	203.30	.9411 - .9720	267.60	235.35	224.75	219.45	213.90	209.70
1.0000	1	7/8	8	2 3/4	3/4	10 1/2	342032	203.30	.9721 - 1.0030	267.60	235.35	224.75	219.45	213.90	209.70
1.0625	1 1/16	7/8	8	2 3/4	3/4	10 1/2	342034	218.10	1.0031 - 1.0660	282.40	250.20	239.45	234.15	228.70	224.40
1.1250	1 1/8	7/8	8	2 7/8	7/8	11	342036	224.90	1.0661 - 1.1280	288.95	256.90	246.10	241.00	235.50	231.20
1.1875	1 3/16	1	8	2 7/8	7/8	11	342038	236.30	1.1281 - 1.1905	300.45	268.25	257.55	252.35	246.95	242.55
1.2500	1 1/4	1	8	3	7/8	11 1/2	342040	250.10	1.1906 - 1.2530	314.30	282.10	271.30	266.20	260.70	256.50
1.3125	1 5/16	1	8	3	7/8	11 1/2	342042	276.65	1.2531 - 1.3155	341.05	308.85	297.85	292.90	287.35	283.10
1.3750	1 3/8	1	8	3 1/4	7/8	12	342044	303.25	1.3156 - 1.3780	367.35	335.30	324.50	319.50	313.80	309.55
1.4375	1 7/16	1 1/4	8	3 1/4	7/8	12	342046	321.15	1.3781 - 1.4405	385.40	353.20	342.45	337.45	331.85	327.45
1.5000	1 1/2	1 1/4	8	3 1/2	7/8	12 1/2	342048	339.35	1.4406 - 1.5030	403.50	371.30	360.70	355.25	350.00	345.60

*Quantities of 15 or more: price of fractional size in same size range.

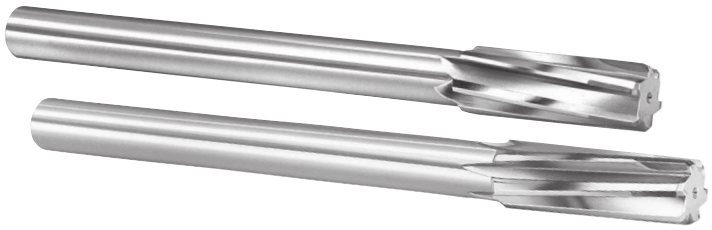
Made in U.S.A.

METRIC

CARBIDE TIPPED SPIRAL CHUCKING REAMERS

TYPE 3410- STRAIGHT SHANK - RIGHT SPIRAL FLUTES
TYPE 3420 - STRAIGHT SHANK - LEFT SPIRAL FLUTES

Detailed description and fractional sizes on pages 78 & 79. Tolerances on page 60. Tool diameter in millimeters with all other dimensions in inches.



TOOL DIAMETER		SHANK DIAM.	NO. OF FLTS.	LENGTH			RIGHT SPIRAL TYPE 3410 EDP NO.	LEFT SPIRAL TYPE 3420 EDP NO.	BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	CARB	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	11/64	4	1 1/8	1/2	4 1/2	3410045	3420045	$112.85	4.494 - 5.182	$158.15	$128.15	$117.95	$113.00	$107.95	$103.90	$98.20
5.0	.1969	11/64	4	1 1/8	1/2	4 1/2	3410050	3420050	112.85	-	-	-	-	-	-	-	-
5.5	.2165	13/64	4	1 1/4	1/2	5	3410055	3420055	112.85	5.183 - 5.613	158.15	128.15	117.95	113.00	107.95	103.90	98.20
6.0	.2362	7/32	4	1 1/2	1/2	6	3410060	3420060	112.85	5.614 - 6.045	158.15	128.15	117.95	113.00	107.95	103.90	98.20
-	.2480	15/64	4	1 1/2	1/2	6	3410063	3420063	-	6.046 - 6.426	158.15	128.15	117.95	113.00	107.95	103.90	98.20
6.5	.2559	15/64	4	1 1/2	1/2	6	3410065	3420065	113.00	6.427 - 7.214	158.35	128.40	118.30	113.45	108.20	104.10	98.35
7.0	.2756	15/64	4	1 1/2	1/2	6	3410070	3420070	113.00	-	-	-	-	-	-	-	-
7.5	.2953	9/32	4	1 1/2	1/2	6	3410075	3420075	113.00	7.215 - 8.001	158.35	128.40	118.30	113.45	108.20	104.10	98.35
8.0	.3150	9/32	4	1 1/2	1/2	6	3410080	3420080	113.00	-	-	-	-	-	-	-	-
8.5	.3346	9/32	4	1 1/2	5/8	6	3410085	3420085	122.45	8.002 - 8.814	167.70	137.75	127.60	122.80	117.65	113.60	107.65
9.0	.3543	5/16	4	1 3/4	5/8	7	3410090	3420090	123.35	8.815 - 9.601	168.75	138.65	128.50	123.50	118.70	114.30	108.70
9.5	.3740	5/16	4	1 3/4	5/8	7	3410095	3420095	123.35	-	-	-	-	-	-	-	-
10.0	.3937	5/16	4	1 3/4	5/8	7	3410100	3420100	128.15	9.602 - 10.389	173.55	143.45	133.35	128.40	123.25	119.15	113.45
10.5	.4134	3/8	4	1 3/4	5/8	7	3410105	3420105	132.45	10.390 - 11.201	177.75	147.75	137.60	132.60	127.60	123.35	117.65
11.0	.4331	3/8	4	1 3/4	5/8	7	3410110	3420110	132.45	-	-	-	-	-	-	-	-
11.5	.4528	3/8	4	1 3/4	5/8	7	3410115	3420115	139.45	11.202 - 11.989	184.80	154.55	144.60	139.60	134.55	130.35	124.55
12.0	.4724	7/16	6	2	5/8	8	3410120	3420120	144.25	11.990 - 12.776	190.75	160.10	149.75	144.60	139.45	135.10	129.15
12.5	.4921	7/16	6	2	5/8	8	3410125	3420125	144.25	-	-	-	-	-	-	-	-
13.0	.5118	7/16	6	2	5/8	8	3410130	3420130	148.20	12.777 - 13.564	194.65	163.80	153.45	148.40	143.15	138.95	133.05
13.5	.5315	7/16	6	2	5/8	8	3410135	3420135	148.20	-	-	-	-	-	-	-	-
14.0	.5512	7/16	6	2	5/8	8	3410140	3420140	148.20	13.565 - 14.376	194.65	163.80	153.45	148.40	143.15	138.95	133.05
14.5	.5709	7/16	6	2	5/8	8	3410145	3420145	151.90	14.377 - 15.164	198.45	167.65	157.20	152.05	146.95	142.80	136.70
15.0	.5906	7/16	6	2	5/8	8	3410150	3420150	151.90	-	-	-	-	-	-	-	-
15.5	.6102	9/16	6	2 1/4	5/8	9	3410155	3420155	151.90	15.165 - 15.951	198.45	167.65	157.20	152.05	146.95	142.80	136.70
16.0	.6299	9/16	6	2 1/4	5/8	9	3410160	3420160	155.70	15.952 - 16.739	202.25	171.35	161.15	155.90	150.80	146.65	140.55
16.5	.6496	9/16	6	2 1/4	5/8	9	3410165	3420165	155.70	-	-	-	-	-	-	-	-
17.0	.6693	9/16	6	2 1/4	5/8	9	3410170	3420170	164.45	16.740 - 17.551	210.90	180.10	169.75	164.70	159.45	155.25	149.15
17.5	.6890	9/16	6	2 1/4	5/8	9	3410175	3420175	164.45	-	-	-	-	-	-	-	-
18.0	.7087	9/16	6	2 1/4	5/8	9	3410180	3420180	166.40	17.552 - 18.339	213.00	182.15	171.80	166.75	161.50	157.20	151.35
18.5	.7283	5/8	6	2 1/2	3/4	9 1/2	3410185	3420185	168.75	18.340 - 19.126	215.25	184.50	174.00	168.90	163.80	159.45	153.60
19.0	.7480	5/8	6	2 1/2	3/4	9 1/2	3410190	3420190	168.75	-	-	-	-	-	-	-	-
19.5	.7677	5/8	6	2 1/2	3/4	9 1/2	3410195	3420195	172.60	19.127 - 19.914	219.25	188.25	177.80	172.75	167.65	163.25	157.45
20.0	.7874	5/8	6	2 1/2	3/4	9 1/2	3410200	3420200	172.60	19.915 - 20.726	219.25	188.25	177.80	172.75	167.65	163.25	157.45
20.5	.8071	5/8	6	2 1/2	3/4	9 1/2	3410205	3420205	172.60	-	-	-	-	-	-	-	-
21.0	.8268	5/8	6	2 1/2	3/4	9 1/2	3410210	3420210	180.95	20.727 - 21.514	227.50	196.65	186.25	181.25	176.00	171.70	165.60
21.5	.8465	5/8	6	2 1/2	3/4	9 1/2	3410215	3420215	180.95	-	-	-	-	-	-	-	-
22.0	.8661	3/4	6	2 5/8	3/4	10	3410220	3420220	180.95	21.515 - 22.301	227.50	196.65	186.25	181.25	176.00	171.70	165.60
22.5	.8858	3/4	6	2 5/8	3/4	10	3410225	3420225	215.25	22.302 - 23.089	263.50	231.50	220.55	215.45	210.00	205.60	199.45
23.0	.9055	3/4	6	2 5/8	3/4	10	3410230	3420230	215.25	-	-	-	-	-	-	-	-
23.5	.9252	3/4	8	2 5/8	3/4	10	3410235	3420235	215.25	23.090 - 23.901	263.50	231.50	220.55	215.45	210.00	205.60	199.45
24.0	.9449	3/4	8	2 5/8	3/4	10	3410240	3420240	224.75	23.902 - 24.689	272.95	240.80	230.10	224.90	219.45	214.95	208.95
24.5	.9646	3/4	8	2 5/8	3/4	10	3410245	3420245	224.75	-	-	-	-	-	-	-	-
25.0	.9843	7/8	8	2 3/4	3/4	10 1/2	3410250	3420250	224.75	24.690 - 25.476	272.95	240.80	230.10	224.90	219.45	214.95	208.95
25.5	1.0039	7/8	8	2 3/4	3/4	10 1/2	3410255	3420255	239.45	25.477 - 27.076	287.75	255.70	245.05	239.75	234.15	229.90	223.65
26.0	1.0236	7/8	8	2 3/4	3/4	10 1/2	3410260	3420260	239.45	-	-	-	-	-	-	-	-
27.0	1.0630	7/8	8	2 3/4	3/4	10 1/2	3410270	3420270	239.45	-	-	-	-	-	-	-	-
28.0	1.1024	7/8	8	2 7/8	7/8	11	3410280	3420280	246.10	27.077 - 28.651	294.50	262.45	251.80	246.40	241.00	236.55	230.30
29.0	1.1417	1	8	2 7/8	7/8	11	3410290	3420290	257.55	28.652 - 30.239	305.95	273.85	263.15	257.90	252.35	247.95	241.85
30.0	1.1811	1	8	2 7/8	7/8	11	3410300	3420300	257.55	-	-	-	-	-	-	-	-
31.0	1.2205	1	8	3	7/8	11 1/2	3410310	3420310	271.30	30.240 - 31.826	319.60	287.55	276.85	271.60	266.20	261.65	255.65
32.0	1.2598	1	8	3	7/8	11 1/2	3410320	3420320	297.85	31.827 - 33.414	346.30	314.30	303.45	298.25	292.90	288.55	282.25
33.0	1.2992	1	8	3	7/8	11 1/2	3410330	3420330	297.85	-	-	-	-	-	-	-	-
34.0	1.3386	1	8	3 1/4	7/8	12	3410340	3420340	324.50	33.415 - 35.001	372.90	340.70	330.05	324.80	319.50	314.85	308.85
35.0	1.3780	1	8	3 1/4	7/8	12	3410350	3420350	324.50	-	-	-	-	-	-	-	-
36.0	1.4173	1 1/4	8	3 1/4	7/8	12	3410360	3420360	342.45	35.002 - 36.589	390.80	358.75	347.95	342.70	337.45	332.90	326.70
37.0	1.4567	1 1/4	8	3 1/2	7/8	12 1/2	3410370	3420370	360.70	36.590 - 38.176	408.80	376.90	366.15	360.85	355.25	351.00	344.75
38.0	1.4961	1 1/4	8	3 1/2	7/8	12 1/2	3410380	3420380	360.70	-	-	-	-	-	-	-	-

CARBIDE TIPPED SPIRAL CHUCKING REAMERS

DISCONTINUED - WHILE SUPPLIES LAST

TYPE 3412 - TAPER SHANK - RIGHT SPIRAL FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Right spiral polished flutes.

Designed and manufactured for maximum tool life. Right spiral flutes have greater chip clearing ability for use with ductile materials, highly abrasive materials or blind holes. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.



DISCONTINUED - WHILE SUPPLIES LAST

TYPE 3422 - TAPER SHANK - LEFT SPIRAL FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Left spiral polished flutes.

Designed and manufactured for maximum tool life. Left spiral flutes should only be used on through holes for heat treated steels, hard cast iron and other hard materials. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MORSE TAPER	NO. OF FLUTES	LENGTH			RT. SPIRAL TYPE 3412 EDP NO.	LEFT SPIRAL TYPE 3422 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	¼	1	4	1 ½	½	6	341208	342208	$97.45	.2381 - .2530	$156.65	$126.90	$117.10	$112.35	$107.25	$103.25
.2812	9/32	1	4	1 ½	½	6	341209	342209	97.45	.2531 - .2840	156.65	126.90	117.10	112.35	107.25	103.25
.3125	5/16	1	4	1 ½	½	6	341210	342210	99.55	.2841 - .3150	159.05	129.15	119.20	114.30	109.40	105.35
.3438	11/32	1	4	1 ½	⅝	6	341211	-	101.35	.3151 - .3470	160.50	130.85	121.05	116.15	111.10	107.15
.3750	⅜	1	4	1 ¾	⅝	7	341212	342212	102.70	.3471 - .3780	162.10	132.50	122.45	117.75	112.70	108.70
.4062	13/32	1	4	1 ¾	⅝	7	341213	342213	107.65	.3781 - .4090	167.25	137.35	127.45	122.80	117.60	113.70
.4375	7/16	1	4	1 ¾	⅝	7	341214	342214	112.40	.4091 - .4410	171.70	142.05	132.10	127.25	122.15	118.15
.4688	15/32	1	4	1 ¾	⅝	7	341215	342215	116.95	.4411 - .4720	176.10	146.30	136.50	131.60	126.55	122.70
.5000	½	1	6	2	⅝	8	341216	342216	134.60	.4721 - .5030	197.75	166.05	155.45	150.45	145.10	140.85
.5312	17/32	1	6	2	⅝	8	341217	342217	138.20	.5031 - .5340	201.45	169.70	159.20	154.15	148.60	144.25
.5625	9/16	1	6	2	⅝	8	-	342218	138.20	.5341 - .5660	201.45	169.70	159.20	154.15	148.60	144.25
.5938	19/32	1	6	2	⅝	8	341219	342219	143.55	.5661 - .5970	206.85	175.00	164.50	159.45	154.15	149.85
.6250	⅝	2	6	2 ¼	⅝	9	341220	-	143.55	.5971 - .6280	206.85	175.00	164.50	159.45	154.15	149.85
.6875	11/16	2	6	2 ¼	⅝	9	341222	342222	157.50	.6591 - .6910	220.80	189.00	178.55	173.55	167.95	163.80
.7500	¾	2	6	2 ½	¾	9 ½	341224	342224	166.65	.7221 - .7530	229.80	198.30	187.40	182.50	177.05	172.75
.8125	13/16	2	6	2 ½	¾	9 ½	341226	342226	173.60	.7841 - .8160	236.95	205.15	194.45	189.55	184.05	179.75
.8750	⅞	2	6	2 ⅝	¾	10	341228	342228	186.95	.8471 - .8780	252.55	219.50	208.65	203.40	197.75	193.40
.9375	15/16	3	8	2 ⅝	¾	10	341230	342230	217.35	.9091 - .9410	283.10	250.20	239.05	233.80	228.15	223.80
1.0000	1	3	8	2 ¾	¾	10 ½	341232	342232	224.90	.9721 - 1.0030	290.45	257.55	246.60	241.35	235.75	231.35

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED EXPANSION CHUCKING REAMERS

TYPE 3465 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips braze to one piece alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Expansion reamers are recommended for reaming abrasive materials and as the diameter wears down, the reamers can be expanded many times by tightening the end adjusting screw and regrinding to its original size. Expansion reamers should not be considered as adjustable for use in producing holes of several sizes.

TOOL DIAMETER	MINIMUM EXPANSION
5/16" - 15/32"	.006"
1/2" - 31/32"	.010"
1" - 1 1/2"	.013"
1 9/16" - 2 1/2"	.015"



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3125	5/16	9/32	4	1	6	346510	$121.65	.2841 - .3150	$185.00	$153.30	$142.50	$137.75	$132.35	$128.05
.3438	11/32	9/32	4	1	6	346511	121.65	.3151 - .3470	185.00	153.30	142.50	137.75	132.35	128.05
.3750	3/8	5/16	4	1	7	346512	114.05	.3471 - .3780	173.55	143.70	133.65	129.00	123.95	119.90
.4062	13/32	5/16	4	1	7	346513	121.10	.3781 - .4090	180.25	150.65	140.65	135.85	130.85	126.85
.4375	7/16	3/8	4	1	7	346514	121.10	.4091 - .4410	180.25	150.65	140.65	135.85	130.85	126.85
.4688	15/32	3/8	4	1	7	346515	128.40	.4411 - .4720	187.40	157.80	148.00	143.15	138.20	134.25
.5000	1/2	7/16	6	1	8	346516	128.40	.4721 - .5030	187.40	157.80	148.00	143.15	138.20	134.25
.5312	17/32	7/16	6	1	8	346517	131.45	.5031 - .5340	190.90	161.20	151.15	146.60	141.40	137.35
.5625	9/16	7/16	6	1 1/8	8	346518	131.45	.5341 - .5660	190.90	161.20	151.15	146.60	141.40	137.35
.5938	19/32	7/16	6	1 1/8	8	346519	137.25	.5661 - .5970	196.65	166.95	157.10	152.25	147.05	143.10
.6250	5/8	9/16	6	1 1/4	9	346520	137.25	.5971 - .6280	196.65	166.95	157.10	152.25	147.05	143.10
.6562	21/32	9/16	6	1 1/4	9	346521	150.15	.6281 - .6590	209.30	179.70	169.75	165.15	159.95	155.90
.6875	11/16	9/16	6	1 1/4	9	346522	150.15	.6591 - .6910	209.30	179.70	169.75	165.15	159.95	155.90
.7188	23/32	9/16	6	1 1/4	9	346523	155.60	.6911 - .7220	215.10	185.20	175.20	170.60	165.50	161.50
.7500	3/4	5/8	6	1 3/8	9 1/2	346524	155.60	.7221 - .7530	215.10	185.20	175.20	170.60	165.50	161.50
.7812	25/32	5/8	6	1 3/8	9 1/2	346525	167.80	.7531 - .7840	227.20	197.45	187.30	182.85	177.65	173.65
.8125	13/16	5/8	6	1 3/8	9 1/2	346526	167.80	.7841 - .8160	227.20	197.45	187.30	182.85	177.65	173.65
.8438	27/32	5/8	6	1 3/8	9 1/2	346527	174.50	.8161 - .8470	233.65	204.05	194.10	189.30	184.30	180.20
.8750	7/8	3/4	6	1 1/2	10	346528	181.00	.8471 - .8780	242.35	211.70	201.20	196.55	191.15	187.05
.9062	29/32	3/4	6	1 1/2	10	346529	192.65	.8781 - .9090	254.25	223.30	213.10	208.20	202.85	198.65
.9375	15/16	3/4	8	1 1/2	10	346530	192.65	.9091 - .9410	254.25	223.30	213.10	208.20	202.85	198.65
.9688	31/32	3/4	8	1 1/2	10	346531	200.25	.9411 - .9720	261.60	230.85	220.45	215.60	210.30	206.10
1.0000	1	7/8	8	1 5/8	10 1/2	346532	200.25	.9721 - 1.0030	261.60	230.85	220.45	215.60	210.30	206.10
1.0312	1 1/32	7/8	8	1 5/8	10 1/2	346533	219.40	-	-	-	-	-	-	-
1.0625	1 1/16	7/8	8	1 5/8	10 1/2	346534	219.40	1.0031 - 1.0660	280.85	250.10	239.75	234.85	229.60	225.35
1.0938	1 3/32	7/8	8	1 3/4	11	346535	219.40	-	-	-	-	-	-	-
1.1250	1 1/8	7/8	8	1 3/4	11	346536	219.40	1.0661 - 1.1280	280.85	250.10	239.75	234.85	229.60	225.35
1.1875	1 3/16	1	8	1 3/4	11	346538	239.40	1.1281 - 1.1905	300.95	270.05	259.70	254.80	249.40	245.50
1.2500	1 1/4	1	8	1 7/8	11 1/2	346540	239.40	1.1906 - 1.2530	300.95	270.05	259.70	254.80	249.40	245.50
1.3125	1 5/16	1	8	1 7/8	11 1/2	346542	265.30	1.2531 - 1.3155	326.95	296.10	285.90	280.85	275.60	271.60
1.3750	1 3/8	1	8	2	12	346544	277.90	1.3156 - 1.3780	339.45	308.50	298.25	293.60	288.00	283.90
1.4375	1 7/16	1 1/4	8	2	12	346546	328.35	1.3781 - 1.4405	394.05	361.15	350.05	344.75	339.15	334.90
1.5000	1 1/2	1 1/4	8	2 1/8	12 1/2	346548	337.95	1.4406 - 1.5030	403.60	370.60	359.80	354.70	348.90	344.40
1.5625	1 9/16	1 1/4	8	2 1/8	12 1/2	346550	443.85	1.5031 - 1.5660	509.40	476.75	465.50	460.20	454.70	450.25
1.6250	1 5/8	1 1/4	8	2 1/4	13	346552	443.85	1.5661 - 1.6280	509.40	476.75	465.50	460.20	454.70	450.25
1.6875	1 11/16	1 1/4	8	2 1/4	13	346554	491.55	1.6281 - 1.6910	557.20	524.30	513.40	508.05	502.60	497.90
1.7500	1 3/4	1 1/4	10	2 3/8	13 1/2	346556	491.55	1.6911 - 1.7530	557.20	524.30	513.40	508.05	502.60	497.90
1.8125	1 13/16	1 1/2	10	2 3/8	13 1/2	346558	582.20	1.7531 - 1.8160	647.65	614.75	603.80	598.50	592.95	588.50
1.8750	1 7/8	1 1/2	10	2 1/2	14	346560	582.20	1.8161 - 1.8780	647.65	614.75	603.80	598.50	592.95	588.50
1.9375	1 15/16	1 1/2	10	2 1/2	14	346562	636.00	1.8781 - 1.9410	701.45	668.70	657.65	652.25	646.85	642.30
2.0000	2	1 1/2	12	2 1/2	14	346564	636.00	1.9411 - 2.0030	701.45	668.70	657.65	652.25	646.85	642.30
2.1250	2 1/8	1 1/2	12	2 3/4	14 1/2	346568	1032.90	2.0031 - 2.1280	1098.65	1065.75	1054.70	1049.60	1043.90	1039.30
2.2500	2 1/4	1 3/4	12	2 3/4	14 1/2	346572	1109.45	2.1281 - 2.2530	1174.80	1142.10	1131.05	1125.80	1120.20	1115.75
2.3750	2 3/8	1 3/4	12	3	15	346576	1148.00	2.2531 - 2.3780	1213.75	1180.90	1169.75	1164.45	1158.90	1154.45
2.5000	2 1/2	1 3/4	12	3	15	346580	1148.00	2.3781 - 2.5030	1213.75	1180.90	1169.75	1164.45	1158.90	1154.45

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED EXPANSION CHUCKING REAMERS

METRIC



TYPE 3465 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE

Detailed description and fractional sizes on page 82. Tolerances on page 56. Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		SHANK DIAM.	NO. OF FLTS.	LENGTH		EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
7.5	.2953	9/32	4	1	6	3465075	$142.50	7.215 - 8.001	$190.40	$158.70	$148.10	$143.00	$137.75	$133.30	127.10
8.0	.3150	9/32	4	1	6	3465080	142.50	-	-	-	-	-	-	-	-
8.5	.3346	9/32	4	1	6	3465085	142.50	8.002 - 8.814	190.40	158.70	148.10	143.00	137.75	133.30	127.10
9.0	.3543	5/16	4	1	7	3465090	133.65	8.815 - 9.601	178.45	148.75	138.75	134.20	129.00	124.95	119.20
9.5	.3740	5/16	4	1	7	3465095	133.65	-	-	-	-	-	-	-	-
10.0	.3937	5/16	4	1	7	3465100	140.65	9.602 - 10.389	185.20	155.60	145.80	140.90	135.85	131.65	126.15
10.5	.4134	3/8	4	1	7	3465105	140.65	10.390 - 11.201	185.20	155.60	145.80	140.90	135.85	131.65	126.15
11.0	.4331	3/8	4	1	7	3465110	140.65	-	-	-	-	-	-	-	-
11.5	.4528	3/8	4	1	7	3465115	148.00	11.202 - 11.989	192.50	163.05	152.95	148.20	143.15	139.00	133.35
12.0	.4724	7/16	6	1	8	3465120	148.00	11.990 - 12.776	192.50	163.05	152.95	148.20	143.15	139.00	133.35
12.5	.4921	7/16	6	1	8	3465125	148.00	-	-	-	-	-	-	-	-
13.0	.5118	7/16	6	1	8	3465130	151.15	12.777 - 13.564	195.85	166.25	156.30	151.55	146.60	142.30	136.65
13.5	.5315	7/16	6	1	8	3465135	151.15	-	-	-	-	-	-	-	-
14.0	.5512	7/16	6	1 1/8	8	3465140	151.15	13.565 - 14.376	195.85	166.25	156.30	151.55	146.60	142.30	136.65
14.5	.5709	7/16	6	1 1/8	8	3465145	157.10	14.377 - 15.164	201.60	171.85	162.05	157.20	152.25	148.10	142.30
15.0	.5906	7/16	6	1 1/8	8	3465150	157.10	-	-	-	-	-	-	-	-
15.5	.6102	9/16	6	1 1/4	9	3465155	157.10	15.165 - 15.951	201.60	171.85	162.05	157.20	152.25	148.10	142.30
16.0	.6299	9/16	6	1 1/4	9	3465160	169.75	15.952 - 16.739	214.35	184.85	174.85	169.95	165.15	161.05	155.25
16.5	.6496	9/16	6	1 1/4	9	3465165	169.75	-	-	-	-	-	-	-	-
17.0	.6693	9/16	6	1 1/4	9	3465170	169.75	16.740 - 17.551	214.35	184.85	174.85	169.95	165.15	161.05	155.25
17.5	.6890	9/16	6	1 1/4	9	3465175	169.75	-	-	-	-	-	-	-	-
18.0	.7087	9/16	6	1 1/4	9	3465180	175.20	17.552 - 18.339	220.10	190.40	180.40	175.70	170.60	166.55	160.80
18.5	.7283	5/8	6	1 3/8	9 1/2	3465185	175.20	18.340 - 19.126	220.10	190.40	180.40	175.70	170.60	166.55	160.80
19.0	.7480	5/8	6	1 3/8	9 1/2	3465190	175.20	-	-	-	-	-	-	-	-
19.5	.7677	5/8	6	1 3/8	9 1/2	3465195	187.30	19.127 - 19.914	232.20	202.60	192.50	187.55	182.85	178.65	172.85
20.0	.7874	5/8	6	1 3/8	9 1/2	3465200	187.30	19.915 - 20.726	232.20	202.60	192.50	187.55	182.85	178.65	172.85
20.5	.8071	5/8	6	1 3/8	9 1/2	3465205	187.30	-	-	-	-	-	-	-	-
21.0	.8268	5/8	6	1 3/8	9 1/2	3465210	194.10	20.727 - 21.514	238.70	209.10	199.10	194.30	189.30	185.10	179.40
21.5	.8465	5/8	6	1 3/8	9 1/2	3465215	194.10	-	-	-	-	-	-	-	-
22.0	.8661	3/4	6	1 1/2	10	3465220	194.10	21.515 - 22.301	238.70	209.10	199.10	194.30	189.30	185.10	179.40
22.5	.8858	3/4	6	1 1/2	10	3465225	213.10	22.302 - 23.089	259.35	228.70	218.35	213.30	208.20	204.00	197.90
23.0	.9055	3/4	6	1 1/2	10	3465230	213.10	-	-	-	-	-	-	-	-
23.5	.9252	3/4	8	1 1/2	10	3465235	213.10	23.090 - 23.901	259.35	228.70	218.35	213.30	208.20	204.00	197.90
24.0	.9449	3/4	8	1 1/2	10	3465240	220.45	23.902 - 24.689	266.85	236.10	225.90	220.70	215.60	211.25	205.40
24.5	.9646	3/4	8	1 1/2	10	3465245	220.45	-	-	-	-	-	-	-	-
25.0	.9843	7/8	8	1 5/8	10 1/2	3465250	220.45	24.690 - 25.476	266.85	236.10	225.90	220.70	215.60	211.25	205.40
25.5	1.0039	7/8	8	1 5/8	10 1/2	3465255	239.75	25.477 - 27.076	286.10	255.45	245.00	239.90	234.85	230.60	224.55
26.0	1.0236	7/8	8	1 5/8	10 1/2	3465260	239.75	-	-	-	-	-	-	-	-
27.0	1.0630	7/8	8	1 5/8	10 1/2	3465270	239.75	-	-	-	-	-	-	-	-
28.0	1.1024	7/8	8	1 3/4	11	3465280	239.75	27.077 - 28.651	286.10	255.45	245.00	239.90	234.85	230.60	224.55
29.0	1.1417	1	8	1 3/4	11	3465290	259.70	28.652 - 30.239	306.05	275.30	265.10	259.85	254.80	250.65	244.50
30.0	1.1811	1	8	1 3/4	11	3465300	259.70	-	-	-	-	-	-	-	-
31.0	1.2205	1	8	1 7/8	11 1/2	3465310	259.70	30.240 - 31.826	306.05	275.30	265.10	259.85	254.80	250.65	244.50
32.0	1.2598	1	8	1 7/8	11 1/2	3465320	285.90	31.827 - 33.414	332.10	301.30	291.15	286.10	280.85	276.65	270.85
33.0	1.2992	1	8	1 7/8	11 1/2	3465330	285.90	-	-	-	-	-	-	-	-
34.0	1.3386	1	8	2	12	3465340	298.25	33.415 - 35.001	344.55	313.80	303.45	298.60	293.60	289.05	283.15
35.0	1.3780	1	8	2	12	3465350	298.25	-	-	-	-	-	-	-	-
36.0	1.4173	1 1/4	8	2	12	3465360	350.05	35.002 - 36.589	399.40	366.65	355.80	350.35	344.75	340.35	334.05
37.0	1.4567	1 1/4	8	2 1/8	12 1/2	3465370	359.80	36.590 - 38.176	409.15	376.55	365.45	359.95	354.70	350.00	343.70
38.0	1.4961	1 1/4	8	2 1/8	12 1/2	3465380	359.80	-	-	-	-	-	-	-	-
39.0	1.5354	1 1/4	8	2 1/8	12 1/2	3465390	465.50	38.177 - 39.776	515.00	482.15	471.10	465.80	460.20	455.55	449.40
40.0	1.5748	1 1/4	8	2 1/4	13	3465400	465.50	39.777 - 41.351	515.00	482.15	471.10	465.80	460.20	455.55	449.40
41.0	1.6142	1 1/4	8	2 1/4	13	3465410	465.50	-	-	-	-	-	-	-	-
42.0	1.6535	1 1/4	8	2 1/4	13	3465420	513.40	41.352 - 42.951	562.65	529.90	519.00	513.65	508.05	503.50	497.05
43.0	1.6929	1 1/4	10	2 3/8	13 1/2	3465430	513.40	42.952 - 44.526	562.65	529.90	519.00	513.65	508.05	503.50	497.05
44.0	1.7323	1 1/4	10	2 3/8	13 1/2	3465440	513.40	-	-	-	-	-	-	-	-

CARBIDE TIPPED EXPANSION CHUCKING REAMERS

TYPE 3467 - TAPER SHANK - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece alloy steel bodies. Straight polished flutes.

Designed and manufactured for maximum tool life. Expansion reamers are recommended for reaming abrasive materials and as the diameter wears down, the reamers can be expanded many times by tightening the end adjusting screw and regrinding to its original size. Expansion reamers should not be considered as adjustable for use in producing holes of several sizes.

TOOL DIAMETER	MINIMUM EXPANSION
5/16" - 15/32"	.006"
1/2" - 31/32"	.010"
1" - 1 1/2"	.013"
1 9/16" - 2 1/2"	.015"



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MORSE TAPER	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3125	5/16	1	4	1	6	346710	$137.05	.2841 - .3150	$200.40	$168.65	$158.15	$152.95	$147.70	$143.30
.3438	11/32	1	4	1	6	346711	137.05	.3151 - .3470	200.40	168.65	158.15	152.95	147.70	143.30
.3750	3/8	1	4	1	7	346712	128.50	.3471 - .3780	187.95	158.15	148.20	143.50	138.45	134.45
.4062	13/32	1	4	1	7	346713	132.50	.3781 - .4090	191.80	162.05	152.05	147.35	142.15	138.25
.4375	7/16	1	4	1	7	346714	132.50	.4091 - .4410	191.80	162.05	152.05	147.35	142.15	138.25
.4688	15/32	1	4	1	7	346715	138.95	.4411 - .4720	198.40	168.65	158.60	153.95	148.75	144.75
.5000	1/2	1	6	1	8	346716	138.95	.4721 - .5030	198.40	168.65	158.60	153.95	148.75	144.75
.5312	17/32	1	6	1	8	346717	143.15	.5031 - .5340	202.60	172.75	162.90	158.15	152.95	148.95
.5625	9/16	1	6	1 1/8	8	346718	143.15	.5341 - .5660	202.60	172.75	162.90	158.15	152.95	148.95
.5938	19/32	1	6	1 1/8	8	346719	148.95	.5661 - .5970	208.25	178.65	168.75	163.95	159.05	154.90
.6250	5/8	2	6	1 1/4	9	346720	148.95	.5971 - .6280	208.25	178.65	168.75	163.95	159.05	154.90
.6562	21/32	2	6	1 1/4	9	346721	167.70	.6281 - .6590	227.00	197.20	187.25	182.55	177.50	173.60
.6875	11/16	2	6	1 1/4	9	346722	167.70	.6591 - .6910	227.00	197.20	187.25	182.55	177.50	173.60
.7188	23/32	2	6	1 1/4	9	346723	168.00	.6911 - .7220	227.50	197.80	187.95	183.20	177.85	174.00
.7500	3/4	2	6	1 3/8	9 1/2	346724	168.00	.7221 - .7530	227.50	197.80	187.95	183.20	177.85	174.00
.7812	25/32	2	6	1 3/8	9 1/2	346725	180.55	.7531 - .7840	239.90	210.05	200.35	195.60	190.40	186.40
.8125	13/16	2	6	1 3/8	9 1/2	346726	180.55	.7841 - .8160	239.90	210.05	200.35	195.60	190.40	186.40
.8438	27/32	2	6	1 3/8	9 1/2	346727	188.15	.8161 - .8470	247.45	217.70	207.85	203.00	197.90	193.85
.8750	7/8	2	6	1 1/2	10	346728	195.35	.8471 - .8780	256.70	226.05	215.60	210.75	205.40	201.10
.9062	29/32	2	6	1 1/2	10	346729	206.50	.8781 - .9090	268.05	237.25	226.80	221.90	216.60	212.50
.9375	15/16	3	8	1 1/2	10	346730	206.50	.9091 - .9410	268.05	237.25	226.80	221.90	216.60	212.50
.9688	31/32	3	8	1 1/2	10	346731	214.00	.9411 - .9720	275.40	244.50	234.15	229.30	224.20	219.80
1.0000	1	3	8	1 5/8	10 1/2	346732	214.00	.9721 - 1.0030	275.40	244.50	234.15	229.30	224.20	219.80
1.0312	1 1/32	3	8	1 5/8	10 1/2	346733	234.00	-	-	-	-	-	-	-
1.0625	1 1/16	3	8	1 5/8	10 1/2	346734	234.00	1.0031 - 1.0660	295.90	264.90	254.50	249.60	244.35	240.15
1.0938	1 3/32	3	8	1 3/4	11	346735	234.00	-	-	-	-	-	-	-
1.1250	1 1/8	3	8	1 3/4	11	346736	234.00	1.0661 - 1.1280	295.90	264.90	254.50	249.60	244.35	240.15
1.1875	1 3/16	3	8	1 3/4	11	346738	263.25	1.1281 - 1.1905	324.80	293.95	283.70	278.80	273.55	269.35
1.2500	1 1/4	4	8	1 7/8	11 1/2	346740	266.90	1.1906 - 1.2530	328.35	297.65	287.35	282.45	277.00	272.95
1.3125	1 5/16	4	8	1 7/8	11 1/2	346742	291.75	1.2531 - 1.3155	353.20	322.40	312.05	307.25	302.05	297.70
1.3750	1 3/8	4	8	2	12	346744	319.60	1.3156 - 1.3780	380.95	350.20	340.00	335.00	329.75	325.50
1.4375	1 7/16	4	8	2	12	346746	358.75	1.3781 - 1.4405	424.35	391.45	380.50	375.20	369.55	365.20
1.5000	1 1/2	4	8	2 1/8	12 1/2	346748	371.40	1.4406 - 1.5030	437.15	404.20	393.05	388.00	382.25	377.80
1.5625	1 9/16	4	8	2 1/8	12 1/2	346750	510.35	1.5031 - 1.5660	576.10	543.15	532.20	526.95	521.20	516.75
1.6250	1 5/8	4	8	2 1/4	13	346752	510.35	1.5661 - 1.6280	576.10	543.15	532.20	526.95	521.20	516.75
1.6875	1 11/16	4	8	2 1/4	13	346754	565.25	1.6281 - 1.6910	631.00	598.10	587.00	581.70	576.15	571.70
1.7500	1 3/4	4	10	2 3/8	13 1/2	346756	565.25	1.6911 - 1.7530	631.00	598.10	587.00	581.70	576.15	571.70
1.8125	1 13/16	4	10	2 3/8	13 1/2	346758	669.20	1.7531 - 1.8160	734.95	702.15	691.20	685.85	680.10	675.80
1.8750	1 7/8	4	10	2 1/2	14	346760	669.20	1.8161 - 1.8780	734.95	702.15	691.20	685.85	680.10	675.80
1.9375	1 15/16	4	10	2 1/2	14	346762	731.50	1.8781 - 1.9410	796.95	764.05	753.00	747.90	742.15	737.95
2.0000	2	4	12	2 1/2	14	346764	731.50	1.9411 - 2.0030	796.95	764.05	753.00	747.90	742.15	737.95
2.1250	2 1/8	5	12	2 3/4	14 1/2	346768	1095.00	2.0031 - 2.1280	1160.60	1127.85	1116.70	1111.55	1106.00	1101.40
2.2500	2 1/4	5	12	2 3/4	14 1/2	346772	1175.85	2.1281 - 2.2530	1241.65	1208.70	1197.85	1192.40	1186.85	1182.50
2.3750	2 3/8	5	12	3	15	346776	1216.80	2.2531 - 2.3780	1282.35	1249.70	1238.50	1233.45	1227.75	1223.30
2.5000	2 1/2	5	12	3	15	346780	1216.80	2.3781 - 2.5030	1282.35	1249.70	1238.50	1233.45	1227.75	1223.30

CARBIDE TIPPED EXPANSION CHUCKING REAMERS

METRIC

TYPE 3467 - TAPER SHANK - STRAIGHT FLUTE LONG CARBIDE



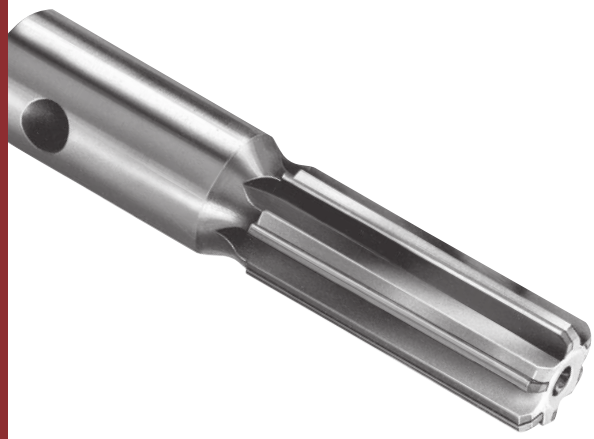
Detailed description and fractional sizes on page 84. Tolerances on page 56. Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MORSE TAPER	NO. OF FLTS.	LENGTH		EDP NO.	PRICE EACH	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVERALL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
7.5	.2953	1	4	1	6	3467075	$158.15	7.215 - 8.001	$205.75	$174.10	$163.60	$158.35	$152.95	$148.60	$142.45
8.0	.3150	1	4	1	6	3467080	158.15	-	-	-	-	-	-	-	-
8.5	.3346	1	4	1	6	3467085	158.15	8.002 - 8.814	205.75	174.10	163.60	158.35	152.95	148.60	142.45
9.0	.3543	1	4	1	7	3467090	148.20	8.815 - 9.601	192.80	163.15	153.30	148.40	143.50	139.35	133.50
9.5	.3740	1	4	1	7	3467095	148.20	-	-	-	-	-	-	-	-
10.0	.3937	1	4	1	7	3467100	152.05	9.602 - 10.389	196.70	167.25	157.20	152.30	147.35	143.15	137.40
10.5	.4134	1	4	1	7	3467105	152.05	10.390 - 11.201	196.70	167.25	157.20	152.30	147.35	143.15	137.40
11.0	.4331	1	4	1	7	3467110	152.05	-	-	-	-	-	-	-	-
11.5	.4528	1	4	1	7	3467115	158.60	11.202 - 11.989	203.30	173.65	163.80	159.05	153.95	149.85	144.05
12.0	.4724	1	6	1	8	3467120	158.60	11.990 - 12.776	203.30	173.65	163.80	159.05	153.95	149.85	144.05
12.5	.4921	1	6	1	8	3467125	158.60	-	-	-	-	-	-	-	-
13.0	.5118	1	6	1	8	3467130	162.90	12.777 - 13.564	207.60	177.80	167.85	163.10	158.15	154.15	148.25
13.5	.5315	1	6	1	8	3467135	162.90	-	-	-	-	-	-	-	-
14.0	.5512	1	6	1 ⅛	8	3467140	162.90	13.565 - 14.376	207.60	177.80	167.85	163.10	158.15	154.15	148.25
14.5	.5709	1	6	1 ⅛	8	3467145	168.75	14.377 - 15.164	213.30	183.60	173.80	169.00	163.95	159.75	154.20
15.0	.5906	1	6	1 ⅛	8	3467150	168.75	-	-	-	-	-	-	-	-
15.5	.6102	2	6	1 ¼	9	3467155	168.75	15.165 - 15.951	213.30	183.60	173.80	169.00	163.95	159.75	154.20
16.0	.6299	2	6	1 ¼	9	3467160	187.25	15.952 - 16.739	232.05	202.35	192.35	187.40	182.55	178.55	172.75
16.5	.6496	2	6	1 ¼	9	3467165	187.25	-	-	-	-	-	-	-	-
17.0	.6693	2	6	1 ¼	9	3467170	187.25	16.740 - 17.551	232.05	202.35	192.35	187.40	182.55	178.55	172.75
17.5	.6890	2	6	1 ¼	9	3467175	187.25	-	-	-	-	-	-	-	-
18.0	.7087	2	6	1 ¼	9	3467180	187.95	17.552 - 18.339	232.55	202.85	193.05	188.15	183.20	179.00	173.40
18.5	.7283	2	6	1 ⅜	9 ½	3467185	187.95	18.340 - 19.126	232.55	202.85	193.05	188.15	183.20	179.00	173.40
19.0	.7480	2	6	1 ⅜	9 ½	3467190	187.95	-	-	-	-	-	-	-	-
19.5	.7677	2	6	1 ⅜	9 ½	3467195	200.35	19.127 - 19.914	244.95	215.40	205.40	200.55	195.60	191.40	185.65
20.0	.7874	2	6	1 ⅜	9 ½	3467200	200.35	19.915 - 20.726	244.95	215.40	205.40	200.55	195.60	191.40	185.65
20.5	.8071	2	6	1 ⅜	9 ½	3467205	200.35	-	-	-	-	-	-	-	-
21.0	.8268	2	6	1 ⅜	9 ½	3467210	207.85	20.727 - 21.514	252.35	222.80	212.95	207.95	203.00	198.75	193.35
21.5	.8465	2	6	1 ⅜	9 ½	3467215	207.85	-	-	-	-	-	-	-	-
22.0	.8661	2	6	1 ½	10	3467220	207.85	21.515 - 22.301	252.35	222.80	212.95	207.95	203.00	198.75	193.35
22.5	.8858	2	6	1 ½	10	3467225	226.80	22.302 - 23.089	273.20	242.35	232.20	227.00	221.90	217.70	211.75
23.0	.9055	2	6	1 ½	10	3467230	226.80	-	-	-	-	-	-	-	-
23.5	.9252	3	8	1 ½	10	3467235	226.80	23.090 - 23.901	273.20	242.35	232.20	227.00	221.90	217.70	211.75
24.0	.9449	3	8	1 ½	10	3467240	234.15	23.902 - 24.689	280.65	250.05	239.70	234.70	229.30	225.10	219.30
24.5	.9646	3	8	1 ½	10	3467245	234.15	-	-	-	-	-	-	-	-
25.0	.9843	3	8	1 ⅝	10 ½	3467250	234.15	24.690 - 25.476	280.65	250.05	239.70	234.70	229.30	225.10	219.30
25.5	1.0039	3	8	1 ⅝	10 ½	3467255	254.50	25.477 - 27.076	300.95	270.15	259.75	254.80	249.60	245.50	239.45
26.0	1.0236	3	8	1 ⅝	10 ½	3467260	254.50	-	-	-	-	-	-	-	-
27.0	1.0630	3	8	1 ⅝	10 ½	3467270	254.50	-	-	-	-	-	-	-	-
28.0	1.1024	3	8	1 ¾	11	3467280	254.50	27.077 - 28.651	300.95	270.15	259.75	254.80	249.60	245.50	239.45
29.0	1.1417	3	8	1 ¾	11	3467290	283.70	28.652 - 30.239	330.00	299.30	288.95	283.90	278.80	274.45	268.45
30.0	1.1811	3	8	1 ¾	11	3467300	283.70	-	-	-	-	-	-	-	-
31.0	1.2205	4	8	1 ⅞	11 ½	3467310	287.35	30.240 - 31.826	333.70	302.90	292.60	287.50	282.45	278.10	272.10
32.0	1.2598	4	8	1 ⅞	11 ½	3467320	312.05	31.827 - 33.414	358.35	327.60	317.45	312.35	307.25	302.90	297.00
33.0	1.2992	4	8	1 ⅞	11 ½	3467330	312.05	-	-	-	-	-	-	-	-
34.0	1.3386	4	8	2	12	3467340	340.00	33.415 - 35.001	386.20	355.65	345.25	340.25	335.00	330.75	324.80
35.0	1.3780	4	8	2	12	3467350	340.00	-	-	-	-	-	-	-	-
36.0	1.4173	4	8	2	12	3467360	380.50	35.002 - 36.589	429.80	397.05	386.00	380.75	375.20	370.50	364.40
37.0	1.4567	4	8	2 ⅛	12 ½	3467370	393.05	36.590 - 38.176	442.70	409.80	398.95	393.55	388.00	383.45	377.00
38.0	1.4961	4	8	2 ⅛	12 ½	3467380	393.05	-	-	-	-	-	-	-	-
39.0	1.5354	4	8	2 ⅛	12 ½	3467390	532.20	38.177 - 39.776	581.50	548.75	537.95	532.35	526.95	522.35	516.10
40.0	1.5748	4	8	2 ¼	13	3467400	532.20	39.777 - 41.351	581.50	548.75	537.95	532.35	526.95	522.35	516.10
41.0	1.6142	4	8	2 ¼	13	3467410	532.20	-	-	-	-	-	-	-	-
42.0	1.6535	4	8	2 ¼	13	3467420	587.00	41.352 - 42.951	636.45	603.70	592.75	587.45	581.70	577.35	570.80
43.0	1.6929	4	10	2 ⅜	13 ½	3467430	587.00	42.952 - 44.526	636.45	603.70	592.75	587.45	581.70	577.35	570.80
44.0	1.7323	4	10	2 ⅜	13 ½	3467440	587.00	-	-	-	-	-	-	-	-

CARBIDE TIPPED CNC STUB/SCREW MACHINE REAMERS

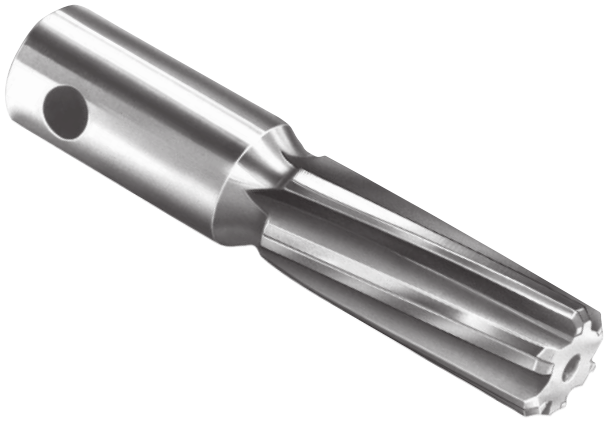
TYPE 3430 - STRAIGHT FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Polished flutes permit high volume chip load.



TYPE 3440 - LEFT SPIRAL FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Left spiral flutes tend to bridge interruptions. Used in through holes only.



BOTH TYPES:
Pin cross hole permits use in floating holders.
For reamer tolerances and closer tolerance pricing, see page 56

TOOL DIAMETER		SHANK DIAM.	PIN HOLE DIAM.	NO. OF FLUTES	LENGTH		STRAIGHT TYPE 3430 EDP NO.	LEFT SPIRAL TYPE 3440 EDP NO.	BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.				FLT	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.1875	3/16	1/4	3/32	4	1*	2 1/4	343006	344006	$86.10	.1770 - .2040	$149.15	$117.60	$106.95	$102.00	$96.55	$92.20
.2188	7/32	1/4	3/32	4	1*	2 1/4	343007	344007	86.10	.2041 - .2210	149.15	117.60	106.95	102.00	96.55	92.20
.2344	15/64	1/4	3/32	4	1*	2 1/4	34302344	34402344	86.10	.2211 - .2380	149.15	117.60	106.95	102.00	96.55	92.20
.2500	1/4	1/4	3/32	4	1*	2 1/4	343008	344008	86.10	.2381 - .2530	149.15	117.60	106.95	102.00	96.55	92.20
.2812	9/32	3/8	1/8	4	1*	2 1/4	343009	344009	86.10	.2531 - .2840	149.15	117.60	106.95	102.00	96.55	92.20
.3125	5/16	3/8	1/8	4	1	2 1/4	343010	344010	100.10	.2841 - .3150	163.15	131.45	121.05	116.00	110.45	106.25
.3438	11/32	3/8	1/8	4	1 1/4	2 1/2	343011	344011	100.80	.3151 - .3470	164.10	132.50	121.85	116.95	111.35	107.15
.3750	3/8	3/8	1/8	4	1 1/4	2 1/2	343012	344012	109.50	.3471 - .3780	172.70	141.05	130.50	125.25	119.90	115.55
.4062	13/32	1/2	3/16	4	1 1/4	2 1/2	343013	344013	111.00	.3781 - .4090	174.30	142.45	132.00	126.90	121.40	117.25
.4375	7/16	1/2	3/16	4	1 1/4	2 1/2	343014	344014	131.40	.4091 - .4410	194.65	163.05	152.30	147.35	141.95	137.75
.4688	15/32	1/2	3/16	4	1 1/4	2 1/2	343015	344015	131.40	.4411 - .4720	194.65	163.05	152.30	147.35	141.95	137.75
.5000	1/2	1/2	3/16	4	1 1/4	2 1/2	343016	344016	143.85	.4721 - .5030	208.90	176.25	165.40	160.30	154.55	150.30
.5312	17/32	5/8	1/4	6	1 1/2	3	343017	344017	143.85	.5031 - .5340	208.90	176.25	165.40	160.30	154.55	150.30
.5625	9/16	5/8	1/4	6	1 1/2	3	343018	344018	151.70	.5341 - .5660	216.35	183.95	172.90	167.85	162.25	157.80
.5938	19/32	5/8	1/4	6	1 1/2	3	343019	344019	151.70	.5661 - .5970	216.35	183.95	172.90	167.85	162.25	157.80
.6250	5/8	5/8	1/4	6	1 1/2	3	343020	344020	155.60	.5971 - .6280	220.55	188.10	177.15	171.85	166.30	162.05
.6562	21/32	5/8	1/4	6	1 1/2	3	343021	344021	155.60	.6281 - .6590	220.55	188.10	177.15	171.85	166.30	162.05
.6875	11/16	5/8	1/4	6	1 1/2	3	343022	344022	162.90	.6591 - .6910	227.70	195.30	184.45	179.15	173.60	169.25
.7188	23/32	3/4	5/16	6	1 1/2	3	343023	344023	162.90	.6911 - .7220	227.70	195.30	184.45	179.15	173.60	169.25
.7500	3/4	3/4	5/16	6	1 1/2	3	343024	344024	167.15	.7221 - .7530	231.75	199.45	188.50	183.25	177.75	173.45
.7812	25/32	3/4	5/16	6	1 1/2	3	343025	344025	167.15	.7531 - .7840	231.75	199.45	188.50	183.25	177.75	173.45
.8125	13/16	3/4	5/16	6	1 1/2	3	343026	344026	181.35	.7841 - .8160	246.25	213.90	202.85	197.75	192.15	187.95
.8438	27/32	3/4	5/16	6	1 1/2	3	343027	344027	181.35	.8161 - .8470	246.25	213.90	202.85	197.75	192.15	187.95
.8750	7/8	3/4	5/16	6	1 1/2	3	343028	344028	198.30	.8471 - .8780	265.65	231.70	220.45	215.10	209.30	204.80
.9062	29/32	3/4	5/16	6	1 1/2	3	343029	344029	198.30	.8781 - .9090	265.65	231.70	220.45	215.10	209.30	204.80
.9375	15/16	3/4	5/16	6	1 1/2	3	343030	344030	218.35	.9091 - .9410	285.60	252.00	240.65	235.25	229.60	225.00
.9688	31/32	3/4	5/16	8	1 1/2	3	343031	344031	218.35	.9411 - .9720	285.60	252.00	240.65	235.25	229.60	225.00
1.0000	1	3/4	5/16	8	1 1/2	3	343032	344032	228.95	.9721 - 1.0030	296.40	262.80	251.35	246.05	240.15	235.70
1.0625	1 1/16	3/4	5/16	8	1 1/2	3	343034	344034	228.95	1.0031 - 1.0660	296.40	262.80	251.35	246.05	240.15	235.70
1.1250	1 1/8	3/4	5/16	8	1 1/2	3	343036	344036	268.10	1.0661 - 1.1280	335.50	301.55	290.35	285.10	279.25	274.60
1.1875	1 3/16	3/4	5/16	8	1 1/2	3	343038	344038	279.45	1.1281 - 1.1905	347.00	313.20	301.75	296.40	290.70	286.10
1.2500	1 1/4	3/4	5/16	8	1 1/2	3	343040	344040	327.40	1.1906 - 1.2530	394.85	361.15	349.95	344.40	338.75	334.10
1.3125	1 5/16	3/4	5/16	8	1 1/2	3	343042	344042	327.40	1.2531 - 1.3155	394.85	361.15	349.95	344.40	338.75	334.10
1.3750	1 3/8	3/4	5/16	8	1 1/2	3	343044	344044	332.15	1.3156 - 1.3780	399.50	365.70	354.70	349.10	343.55	338.95
1.4375	1 7/16	3/4	5/16	8	1 1/2	3	343046	344046	387.15	1.3781 - 1.4405	454.70	420.85	409.65	404.20	398.45	393.95
1.5000	1 1/2	3/4	5/16	8	1 1/2	3	343048	344048	464.95	1.4406 - 1.5030	532.35	498.75	487.40	482.00	476.05	471.50

*1/2" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CNC STUB/SCREW MACHINE REAMERS

METRIC



TYPE 3430 - STRAIGHT FLUTE LONG CARBIDE
TYPE 3440 - LEFT SPIRAL FLUTE LONG CARBIDE

Detailed description and fractional sizes on page 86. Tool diameter in millimeters with all other dimensions in inches.

For reamer tolerances and closer tolerance pricing, see page 60.

TOOL DIAMETER		SHANK DIAM.	PIN HOLE DIAM.	NO. OF FLUTES	LENGTH		STRAIGHT TYPE 3430 EDP NO.	LEFT SPIRAL TYPE 3440 EDP NO.	BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH				FLT	OAL					1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	¼	3⁄32	4	1*	2 ¼	3430045	3440045	$106.95	4.494 - 5.182	$154.40	$122.90	$112.40	$107.25	$102.00	$97.50	$91.50
5.0	.1969	¼	3⁄32	4	1*	2 ¼	3430050	3440050	106.95	-	-	-	-	-	-	-	-
5.5	.2165	¼	3⁄32	4	1*	2 ¼	3430055	3440055	106.95	5.183 - 5.613	154.40	122.90	112.40	107.25	102.00	97.50	91.50
6.0	.2362	¼	3⁄32	4	1*	2 ¼	3430060	3440060	106.95	5.614 - 6.045	154.40	122.90	112.40	107.25	102.00	97.50	91.50
-	-	¼	3⁄32	4	1*	2 ¼	3430063	3440063	-	6.046 - 6.426	154.40	122.90	112.40	107.25	102.00	97.50	91.50
6.5	.2559	⅜	⅛	4	1*	2 ¼	3430065	3440065	106.95	6.427 - 7.214	154.40	122.90	112.40	107.25	102.00	97.50	91.50
7.0	.2756	⅜	⅛	4	1*	2 ¼	3430070	3440070	106.95	-	-	-	-	-	-	-	-
7.5	.2953	⅜	⅛	4	1	2 ¼	3430075	3440075	121.05	7.215 - 8.001	168.55	137.00	126.35	121.15	116.00	111.45	105.40
8.0	.3150	⅜	⅛	4	1	2 ¼	3430080	3440080	121.05	-	-	-	-	-	-	-	-
8.5	.3346	⅜	⅛	4	1 ¼	2 ½	3430085	3440085	121.85	8.002 - 8.814	169.45	137.95	127.25	122.10	116.95	112.40	106.35
9.0	.3543	⅜	⅛	4	1 ¼	2 ½	3430090	3440090	130.50	8.815 - 9.601	177.85	146.60	135.80	130.70	125.25	121.05	114.85
9.5	.3740	⅜	⅛	4	1 ¼	2 ½	3430095	3440095	130.50	-	-	-	-	-	-	-	-
10.0	.3937	½	3⁄16	4	1 ¼	2 ½	3430100	3440100	132.00	9.602 - 10.389	179.60	148.00	137.25	132.35	126.90	122.50	116.25
10.5	.4134	½	3⁄16	4	1 ¼	2 ½	3430105	3440105	152.30	10.390 - 11.201	200.15	168.35	157.65	152.65	147.35	143.00	136.85
11.0	.4331	½	3⁄16	4	1 ¼	2 ½	3430110	3440110	152.30	-	-	-	-	-	-	-	-
11.5	.4528	½	3⁄16	4	1 ¼	2 ½	3430115	3440115	152.30	11.202 - 11.989	200.15	168.35	157.65	152.65	147.35	143.00	136.85
12.0	.4724	½	3⁄16	4	1 ¼	2 ½	3430120	3440120	165.40	11.990 - 12.776	214.15	181.65	170.95	165.60	160.30	155.60	149.45
12.5	.4921	½	3⁄16	4	1 ¼	2 ½	3430125	3440125	165.40	-	-	-	-	-	-	-	-
13.0	.5118	⅝	¼	6	1 ½	3	3430130	3440130	165.40	12.777 - 13.564	214.15	181.65	170.95	165.60	160.30	155.60	149.45
13.5	.5315	⅝	¼	6	1 ½	3	3430135	3440135	165.40	-	-	-	-	-	-	-	-
14.0	.5512	⅝	¼	6	1 ½	3	3430140	3440140	172.90	13.565 - 14.376	221.90	189.55	178.65	173.45	167.85	163.25	157.15
14.5	.5709	⅝	¼	6	1 ½	3	3430145	3440145	172.90	14.377 - 15.164	221.90	189.55	178.65	173.45	167.85	163.25	157.15
15.0	.5906	⅝	¼	6	1 ½	3	3430150	3440150	172.90	-	-	-	-	-	-	-	-
15.5	.6102	⅝	¼	6	1 ½	3	3430155	3440155	177.15	15.165 - 15.951	226.05	193.70	182.85	177.40	171.85	167.60	161.30
16.0	.6299	⅝	¼	6	1 ½	3	3430160	3440160	177.15	15.952 - 16.739	226.05	193.70	182.85	177.40	171.85	167.60	161.30
16.5	.6496	⅝	¼	6	1 ½	3	3430165	3440165	177.15	-	-	-	-	-	-	-	-
17.0	.6693	⅝	¼	6	1 ½	3	3430170	3440170	184.45	16.740 - 17.551	233.15	200.75	189.90	184.65	179.15	174.70	168.35
17.5	.6890	⅝	¼	6	1 ½	3	3430175	3440175	184.45	-	-	-	-	-	-	-	-
18.0	.7087	¾	5⁄16	6	1 ½	3	3430180	3440180	184.45	17.552 - 18.339	233.15	200.75	189.90	184.65	179.15	174.70	168.35
18.5	.7283	¾	5⁄16	6	1 ½	3	3430185	3440185	188.50	18.340 - 19.126	237.30	204.80	194.10	188.70	183.25	178.80	172.60
19.0	.7480	¾	5⁄16	6	1 ½	3	3430190	3440190	188.50	-	-	-	-	-	-	-	-
19.5	.7677	¾	5⁄16	6	1 ½	3	3430195	3440195	188.50	19.127 - 19.914	237.30	204.80	194.10	188.70	183.25	178.80	172.60
20.0	.7874	¾	5⁄16	6	1 ½	3	3430200	3440200	202.85	19.915 - 20.726	251.85	219.45	208.65	203.30	197.75	193.35	187.05
20.5	.8071	¾	5⁄16	6	1 ½	3	3430205	3440205	202.85	-	-	-	-	-	-	-	-
21.0	.8268	¾	5⁄16	6	1 ½	3	3430210	3440210	202.85	20.727 - 21.514	251.85	219.45	208.65	203.30	197.75	193.35	187.05
21.5	.8465	¾	5⁄16	6	1 ½	3	3430215	3440215	202.85	-	-	-	-	-	-	-	-
22.0	.8661	¾	5⁄16	6	1 ½	3	3430220	3440220	212.50	21.515 - 22.301	261.45	228.95	218.00	212.85	207.25	202.80	196.65
22.5	.8858	¾	5⁄16	6	1 ½	3	3430225	3440225	220.45	22.302 - 23.089	271.20	237.60	226.40	220.70	215.10	210.65	204.05
23.0	.9055	¾	5⁄16	6	1 ½	3	3430230	3440230	220.45	-	-	-	-	-	-	-	-
23.5	.9252	¾	5⁄16	6	1 ½	3	3430235	3440235	240.65	23.090 - 23.901	291.35	257.65	246.40	241.00	235.25	230.60	224.20
24.0	.9449	¾	5⁄16	8	1 ½	3	3430240	3440240	240.65	23.902 - 24.689	291.35	257.65	246.40	241.00	235.25	230.60	224.20
24.5	.9646	¾	5⁄16	8	1 ½	3	3430245	3440245	240.65	-	-	-	-	-	-	-	-
25.0	.9843	¾	5⁄16	8	1 ½	3	3430250	3440250	251.35	24.690 - 25.476	302.25	268.40	257.30	251.80	246.05	241.35	234.90
25.5	1.0039	¾	5⁄16	8	1 ½	3	3430255	3440255	251.35	25.477 - 27.076	302.25	268.40	257.30	251.80	246.05	241.35	234.90
26.0	1.0236	¾	5⁄16	8	1 ½	3	3430260	3440260	251.35	-	-	-	-	-	-	-	-
27.0	1.0630	¾	5⁄16	8	1 ½	3	3430270	3440270	251.35	-	-	-	-	-	-	-	-
28.0	1.1024	¾	5⁄16	8	1 ½	3	3430280	3440280	290.35	27.077 - 28.651	341.25	307.50	296.10	290.70	285.10	280.40	274.00
29.0	1.1417	¾	5⁄16	8	1 ½	3	3430290	3440290	301.75	28.652 - 30.239	341.25	307.50	296.10	290.70	285.10	280.40	274.00
30.0	1.1811	¾	5⁄16	8	1 ½	3	3430300	3440300	301.75	-	-	-	-	-	-	-	-
31.0	1.2205	¾	5⁄16	8	1 ½	3	3430310	3440310	349.95	30.240 - 31.826	400.55	366.80	355.75	350.05	344.40	339.70	333.25
32.0	1.2598	¾	5⁄16	8	1 ½	3	3430320	3440320	349.95	31.827 - 33.414	400.55	366.80	355.75	350.05	344.40	339.70	333.25
33.0	1.2992	¾	5⁄16	8	1 ½	3	3430330	3440330	349.95	-	-	-	-	-	-	-	-
34.0	1.3386	¾	5⁄16	8	1 ½	3	3430340	3440340	354.70	33.415 - 35.001	405.25	371.50	360.20	354.85	349.10	344.40	337.95
35.0	1.3780	¾	5⁄16	8	1 ½	3	3430350	3440350	354.70	-	-	-	-	-	-	-	-
36.0	1.4173	¾	5⁄16	8	1 ½	3	3430360	3440360	409.65	35.002 - 36.589	460.20	426.65	415.30	409.80	404.20	399.40	393.00
37.0	1.4567	¾	5⁄16	8	1 ½	3	3430370	3440370	487.40	36.590 - 38.176	538.15	504.55	493.15	487.70	482.00	477.20	470.75
38.0	1.4961	¾	5⁄16	8	1 ½	3	3430380	3440380	487.40	-	-	-	-	-	-	-	-

*½" carbide length.

Made in U.S.A.

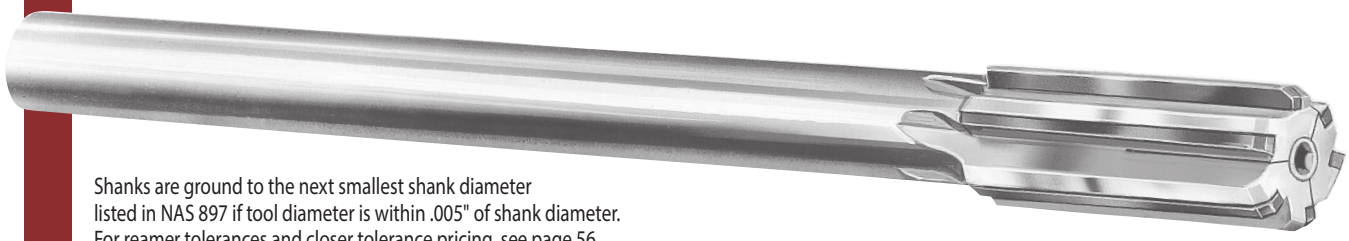
CARBIDE TIPPED NAS 897 EXPANSION CHUCKING REAMERS

TYPE 3464 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3466 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3468 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece alloy steel bodies. Straight polished flutes. Tool geometry and carbide grade appropriate for material being machined.

NAS 897 expansion reamers manufactured to national aerospace standards 897 C. Designed and manufactured for maximum tool life. Expansion reamers are recommended for reaming abrasive materials and as the diameter wears down, the reamer can be expanded many times by tightening the end adjusting screw and regrinding to its original size. Expansion reamers should not be considered adjustable for use in producing holes of several sizes.

TOOL DIAMETER	MINIMUM EXPANSION
5⁄16" - 15⁄32"	.006"
1⁄2" - 31⁄32"	.010"
1" - 1 1⁄2"	.013"
1 9⁄16" - 2 1⁄2"	.015"



Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3464 EDP NO.	CAST IRON TYPE 3466 EDP NO.	STEEL TYPE 3468 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT.	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3125	5⁄16	.2792	4	1	6	346410	346610	346810	$145.95	.2841 - .3150	$209.25	$177.65	$167.15	$161.90	$156.45	$152.25
.3438	11⁄32	.2792	4	1	6	346411	346611	346811	145.95	.3151 - .3470	209.25	177.65	167.15	161.90	156.45	152.25
.3750	3⁄8	.3105	4	1	7	346412	346612	346812	137.95	.3471 - .3780	197.05	167.60	157.50	152.75	147.75	143.70
.4062	13⁄32	.3105	4	1	7	346413	346613	346813	145.25	.3781 - .4090	204.45	174.85	164.90	160.30	155.20	150.90
.4375	7⁄16	.3730	6	1	7	346414	346614	346814	145.25	.4091 - .4410	204.45	174.85	164.90	160.30	155.20	150.90
.4688	15⁄32	.3730	6	1	7	346415	346615	346815	153.95	.4411 - .4720	213.15	183.40	173.60	168.90	163.80	159.60
.5000	1⁄2	.4355	6	1	8	346416	346616	346816	153.95	.4721 - .5030	213.15	183.40	173.60	168.90	163.80	159.60
.5312	17⁄32	.4355	6	1	8	346417	346617	346817	157.80	.5031 - .5340	217.35	187.30	177.50	172.75	167.70	163.80
.5625	9⁄16	.4355	6	1 1⁄8	8	346418	346618	346818	157.80	.5341 - .5660	217.35	187.30	177.50	172.75	167.70	163.80
.5938	19⁄32	.4355	6	1 1⁄8	8	346419	346619	346819	164.80	.5661 - .5970	223.85	194.30	184.45	179.60	174.60	170.50
.6250	5⁄8	.5615	6	1 1⁄4	9	346420	346620	346820	164.80	.5971 - .6280	223.85	194.30	184.45	179.60	174.60	170.50
.6562	21⁄32	.5615	6	1 1⁄4	9	346421	346621	346821	180.10	.6281 - .6590	239.40	209.65	199.65	194.80	189.90	186.05
.6875	11⁄16	.5615	6	1 1⁄4	9	346422	346622	346822	180.10	.6591 - .6910	239.40	209.65	199.65	194.80	189.90	186.05
.7188	23⁄32	.5615	6	1 1⁄4	9	346423	346623	346823	186.95	.6911 - .7220	246.20	216.35	206.50	201.90	196.70	192.55
.7500	3⁄4	.6245	6	1 3⁄8	9 1⁄2	346424	346624	346824	186.95	.7221 - .7530	246.20	216.35	206.50	201.90	196.70	192.55
.7812	25⁄32	.6245	6	1 3⁄8	9 1⁄2	346425	346625	346825	201.45	.7531 - .7840	260.75	231.00	221.15	216.30	211.25	207.20
.8125	13⁄16	.6245	6	1 3⁄8	9 1⁄2	346426	346626	346826	201.45	.7841 - .8160	260.75	231.00	221.15	216.30	211.25	207.20
.8438	27⁄32	.6245	6	1 3⁄8	9 1⁄2	346427	346627	346827	209.25	.8161 - .8470	268.75	238.85	228.90	224.20	219.25	215.25
.8750	7⁄8	.7495	6	1 1⁄2	10	346428	346628	346828	217.30	.8471 - .8780	278.80	247.95	237.50	232.70	227.35	223.25
.9062	29⁄32	.7495	6	1 1⁄2	10	346429	346629	346829	231.20	.8781 - .9090	292.65	261.85	251.60	246.75	241.35	237.25
.9375	15⁄16	.7495	8	1 1⁄2	10	346430	346630	346830	231.20	.9091 - .9410	292.65	261.85	251.60	246.75	241.35	237.25
.9688	31⁄32	.7495	8	1 1⁄2	10	346431	346631	346831	240.10	.9411 - .9720	301.55	270.90	260.60	255.65	250.30	246.10
1.0000	1	.8745	8	1 5⁄8	10 1⁄2	346432	346632	346832	240.10	.9721 - 1.0030	301.55	270.90	260.60	255.65	250.30	246.10
1.0312	1 1⁄32	.8745	8	1 5⁄8	10 1⁄2	346433	346633	346833	263.20	-	-	-	-	-	-	-
1.0625	1 1⁄16	.8745	8	1 5⁄8	10 1⁄2	346434	346634	346834	263.20	1.0031 - 1.0660	324.65	293.85	283.65	278.65	273.30	269.30
1.0938	1 3⁄32	.8745	8	1 3⁄4	11	346435	346635	346835	263.20	-	-	-	-	-	-	-
1.1250	1 1⁄8	.8745	8	1 3⁄4	11	346436	346636	346836	263.20	1.0661 - 1.1280	324.65	293.85	283.65	278.65	273.30	269.30
1.1875	1 3⁄16	.9995	8	1 3⁄4	11	346438	346638	346838	287.35	1.1281 - 1.1905	348.90	317.95	307.60	302.75	297.45	293.60
1.2500	1 1⁄4	.9995	8	1 7⁄8	11 1⁄2	346440	346640	346840	287.35	1.1906 - 1.2530	348.90	317.95	307.60	302.75	297.45	293.60
1.3125	1 5⁄16	.9995	8	1 7⁄8	11 1⁄2	346442	346642	346842	317.25	1.2531 - 1.3155	378.75	347.90	337.60	332.80	327.40	323.25
1.3750	1 3⁄8	.9995	8	2	12	346444	346644	346844	333.35	1.3156 - 1.3780	395.10	364.35	353.90	349.00	343.75	339.50
1.4375	1 7⁄16	.9995	8	2	12	346446	346646	346846	392.90	1.3781 - 1.4405	458.55	425.65	414.75	409.55	403.70	399.30
1.5000	1 1⁄2	1.2495	8	2 1⁄8	12 1⁄2	346448	346648	346848	403.95	1.4406 - 1.5030	469.75	436.65	425.75	420.55	414.90	410.50
1.5625	1 9⁄16	1.2495	8	2 1⁄8	12 1⁄2	346450	346650	346850	530.80	1.5031 - 1.5660	596.40	563.70	552.60	547.25	541.75	537.20
1.6250	1 5⁄8	1.2495	8	2 1⁄4	13	346452	346652	346852	530.80	1.5661 - 1.6280	596.40	563.70	552.60	547.25	541.75	537.20
1.6875	1 11⁄16	1.2495	8	2 1⁄4	13	346454	346654	346854	587.70	1.6281 - 1.6910	653.50	620.60	609.70	604.25	598.55	594.35
1.7500	1 3⁄4	1.2495	10	2 3⁄8	13 1⁄2	346456	346656	346856	587.70	1.6911 - 1.7530	653.50	620.60	609.70	604.25	598.55	594.35
1.8125	1 13⁄16	1.4995	10	2 3⁄8	13 1⁄2	346458	346658	346858	696.00	1.7531 - 1.8160	761.60	728.65	717.85	712.60	706.95	702.45
1.8750	1 7⁄8	1.4995	10	2 1⁄2	14	346460	346660	346860	696.00	1.8161 - 1.8780	761.60	728.65	717.85	712.60	706.95	702.45
1.9375	1 15⁄16	1.4995	10	2 1⁄2	14	346462	346662	346862	760.60	1.8781 - 1.9410	826.05	793.25	782.20	777.00	771.35	767.00
2.0000	2	1.4995	12	2 1⁄2	14	346464	346664	346864	760.60	1.9411 - 2.0030	826.05	793.25	782.20	777.00	771.35	767.00

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 CHUCKING REAMERS

TYPE 3472 - TAPER SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3473 - TAPER SHANK - STRAIGHT FLUTES - FOR CAST IRON
TYPE 3474 - TAPER SHANK - STRAIGHT FLUTES - FOR STEEL

Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with partial flute length carbide. Tool geometry and carbide grade appropriate for material being machined.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MORSE TAPER NO.	NO. OF FLTS.	LENGTH			NON-FERR. TYPE 3472 EDP NO.	CAST IRON TYPE 3473 EDP NO.	STEEL TYPE 3474 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.			FLT	CARB	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.2500	1/4	1	4	1 1/2	1/2	6	347208	347308	347408	$91.30	.2381 - .2530	$152.75	$122.00	$111.65	$106.70	$101.55	$97.45
.2812	9/32	1	4	1 1/2	1/2	6	347209	347309	347409	92.80	.2531 - .2840	154.30	123.40	113.10	108.20	103.10	98.90
.3125	5/16	1	4	1 1/2	1/2	6	347210	347310	347410	92.80	.2841 - .3150	154.30	123.40	113.10	108.20	103.10	98.90
.3438	11/32	1	4	1 1/2	5/8	6	347211	347311	347411	95.55	.3151 - .3470	157.20	126.35	116.05	111.10	105.90	101.80
.3750	3/8	1	4	1 3/4	5/8	7	347212	347312	347412	88.40	.3471 - .3780	144.75	116.55	107.15	102.50	97.85	93.85
.4062	13/32	1	4	1 3/4	5/8	7	347213	347313	347413	101.10	.3781 - .4090	162.55	131.65	121.40	116.55	111.35	107.25
.4375	7/16	1	6	1 3/4	5/8	7	347214	347314	347414	107.60	.4091 - .4410	169.25	138.45	128.15	123.15	117.75	113.70
.4688	15/32	1	6	1 3/4	5/8	7	347215	347315	347415	110.55	.4411 - .4720	172.00	141.20	130.95	126.00	120.80	116.55
.5000	1/2	1	6	2	5/8	8	347216	347316	347416	126.55	.4721 - .5030	194.30	160.35	148.95	143.55	137.85	133.20
.5312	17/32	1	6	2	5/8	8	347217	347317	347417	134.55	.5031 - .5340	202.25	168.05	156.80	151.70	145.75	141.10
.5625	9/16	1	6	2	5/8	8	347218	347318	347418	134.55	.5341 - .5660	202.25	168.05	156.80	151.70	145.75	141.10
.5938	19/32	1	6	2	5/8	8	347219	347319	347419	143.00	.5661 - .5970	210.75	176.75	165.50	160.10	154.30	149.80
.6250	5/8	2	6	2 1/4	5/8	9	347220	347320	347420	143.00	.5971 - .6280	210.75	176.75	165.50	160.10	154.30	149.80
.6562	21/32	2	6	2 1/4	5/8	9	347221	347321	347421	145.45	.6281 - .6590	213.15	179.20	167.80	162.35	156.60	151.95
.6875	11/16	2	6	2 1/4	5/8	9	347222	347322	347422	145.45	.6591 - .6910	213.15	179.20	167.80	162.35	156.60	151.95
.7188	23/32	2	6	2 1/4	5/8	9	347223	347323	347423	151.15	.6911 - .7220	219.10	185.00	173.65	168.05	162.35	157.80
.7500	3/4	2	6	2 1/2	3/4	9 1/2	347224	347324	347424	151.15	.7221 - .7530	219.10	185.00	173.65	168.05	162.35	157.80
.7812	25/32	2	6	2 1/2	3/4	9 1/2	347225	347325	347425	154.65	.7531 - .7840	222.60	188.65	177.25	171.80	166.05	161.40
.8125	13/16	2	6	2 1/2	3/4	9 1/2	347226	347326	347426	154.65	.7841 - .8160	222.60	188.65	177.25	171.80	166.05	161.40
.8438	27/32	2	6	2 1/2	3/4	9 1/2	347227	347327	347427	162.25	.8161 - .8470	230.10	196.00	184.85	179.35	173.55	169.00
.8750	7/8	2	6	2 5/8	3/4	10	347228	347328	347428	168.50	.8471 - .8780	238.75	203.50	191.80	186.15	180.05	175.20
.9062	29/32	2	6	2 5/8	3/4	10	347229	347329	347429	205.05	.8781 - .9090	275.30	240.10	228.15	222.65	216.50	211.95
.9375	15/16	3	8	2 5/8	3/4	10	347230	347330	347430	205.05	.9091 - .9410	275.30	240.10	228.15	222.65	216.50	211.95
.9688	31/32	3	8	2 5/8	3/4	10	347231	347331	347431	210.90	.9411 - .9720	281.40	246.05	234.15	228.70	222.65	217.90
1.0000	1	3	8	2 3/4	3/4	10 1/2	347232	347332	347432	210.90	.9721 - 1.0030	281.40	246.05	234.15	228.70	222.65	217.90
1.0625	1 1/16	3	8	2 3/4	3/4	10 1/2	347234	347334	347434	260.60	1.0031 - 1.0660	328.00	294.00	282.85	277.40	271.80	267.20
1.1250	1 1/8	3	8	2 7/8	7/8	11	347236	347336	347436	276.65	1.0661 - 1.1280	344.00	310.30	298.85	293.70	287.75	283.20
1.1875	1 3/16	3	8	2 7/8	7/8	11	347238	347338	347438	302.40	1.1281 - 1.1905	369.80	336.00	324.65	319.55	313.60	309.10
1.2500	1 1/4	4	8	3	7/8	11 1/2	347240	347340	347440	328.35	1.1906 - 1.2530	396.00	362.05	350.90	345.40	339.65	335.15
1.3125	1 5/16	4	8	3	7/8	11 1/2	347242	347342	347442	347.00	1.2531 - 1.3155	414.40	380.60	369.25	363.85	358.10	353.50
1.3750	1 3/8	4	8	3 1/4	7/8	12	347244	347344	347444	365.45	1.3156 - 1.3780	432.80	399.05	387.75	382.25	376.65	372.05
1.4375	1 7/16	4	8	3 1/4	7/8	12	347246	347346	347446	386.25	1.3781 - 1.4405	453.80	420.00	408.75	403.40	397.60	393.00
1.5000	1 1/2	4	8	3 1/2	7/8	12 1/2	347248	347348	347448	407.10	1.4406 - 1.5030	474.40	440.70	429.30	423.90	418.20	413.65
1.5625	1 9/16	4	8	3 1/2	7/8	12 1/2	347250	347350	347450	477.40	1.5031 - 1.5660	544.90	511.00	499.75	494.50	488.65	484.10
1.6250	1 5/8	4	8	3 3/4	7/8	13	347252	347352	347452	494.15	1.5661 - 1.6280	561.45	527.60	516.40	510.80	505.10	500.70
1.6875	1 11/16	4	8	3 3/4	7/8	13	347254	347354	347454	555.65	1.6281 - 1.6910	623.00	589.35	577.85	572.60	566.85	562.15
1.7500	1 3/4	4	10	4	7/8	13 1/2	347256	347356	347456	555.65	1.6911 - 1.7530	623.00	589.35	577.85	572.60	566.85	562.15
1.8125	1 13/16	4	10	4	7/8	13 1/2	347258	347358	347458	555.65	1.7531 - 1.8160	623.00	589.35	577.85	572.60	566.85	562.15
1.8750	1 7/8	4	10	4 1/4	7/8	14	347260	347360	347460	582.20	1.8161 - 1.8780	649.60	615.70	604.30	599.15	593.25	588.70
1.9375	1 15/16	4	10	4 1/4	7/8	14	347262	347362	347462	582.20	1.8781 - 1.9410	649.60	615.70	604.30	599.15	593.25	588.70
2.0000	2	4	12	4 1/4	7/8	14	347264	347364	347464	582.20	1.9411 - 2.0030	649.60	615.70	604.30	599.15	593.25	588.70

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 CHUCKING REAMERS

TYPE 3407 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3408 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR CAST IRON
TYPE 3409 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR STEEL

Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with partial flute length carbide. Tool geometry and carbide grade appropriate for material being machined.



For reamer tolerances and closer tolerance pricing, see page 56.
Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH			NON-FERR. TYPE 3407 EDP NO.	CAST IRON TYPE 3408 EDP NO.	STEEL TYPE 3409 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.			FLT	CARB	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1562	5/32	.1510	4	1	1/2	4	340705	340805	340905	$86.45	.1560 - .1769	$149.75	$117.75	$107.25	$102.25	$96.65	$92.45
.1875	3/16	.1805	4	1 1/8	1/2	4 1/2	340706	340806	340906	79.25	.1770 - .2040	140.85	109.90	99.55	94.55	89.40	85.20
.2188	7/32	.2075	4	1 1/4	1/2	5	340707	340807	340907	79.25	.2041 - .2210	140.85	109.90	99.55	94.55	89.40	85.20
.2344	15/64	.2265	4	1 1/2	1/2	6	34072344	34082344	34092344	84.05	.2211 - .2380	145.60	114.75	104.30	99.45	94.15	90.00
.2500	1/4	.2405	4	1 1/2	1/2	6	340708	340808	340908	79.75	.2381 - .2530	141.20	110.45	100.15	95.20	89.80	85.75
.2812	9/32	.2485	4	1 1/2	1/2	6	340709	340809	340909	81.20	.2531 - .2840	142.95	112.00	101.80	96.65	91.50	87.15
.3125	5/16	.2792	4	1 1/2	1/2	6	340710	340810	340910	81.20	.2841 - .3150	142.95	112.00	101.80	96.65	91.50	87.15
.3125	5/16	.2792	6	1 1/2	1/2	6	340790	340890	340990	89.40	.2841 - .3150	150.85	120.05	109.70	104.85	99.55	95.40
.3438	11/32	.2792	4	1 1/2	5/8	6	340711	340811	340911	84.40	.3151 - .3470	145.90	115.15	104.80	99.95	94.50	90.45
.3438	11/32	.2792	6	1 1/2	5/8	6	340791	340891	340991	92.70	.3151 - .3470	154.20	123.35	113.00	108.10	102.75	98.65
.3750	3/8	.3105	4	1 3/4	5/8	7	340712	340812	340912	77.40	.3471 - .3780	133.75	105.55	96.20	91.70	86.80	82.95
.3750	3/8	.3105	6	1 3/4	5/8	7	340792	340892	340992	84.90	.3471 - .3780	141.45	113.10	103.80	99.25	94.35	90.60
.4062	13/32	.3105	4	1 3/4	5/8	7	340713	340813	340913	88.40	.3781 - .4090	150.00	119.15	108.85	103.90	98.40	94.45
.4062	13/32	.3105	6	1 3/4	5/8	7	340793	340893	340993	94.20	.3781 - .4090	155.80	124.95	114.75	109.70	104.35	100.30
.4375	7/16	.3730	6	1 3/4	5/8	7	340714	340814	340914	94.20	.4091 - .4410	155.80	124.95	114.75	109.70	104.35	100.30
.4688	15/32	.3730	6	1 3/4	5/8	7	340715	340815	340915	95.55	.4411 - .4720	157.20	126.35	116.05	111.10	105.90	101.80
.5000	1/2	.4355	6	2	5/8	8	340716	340816	340916	113.00	.4721 - .5030	180.95	146.85	135.50	130.15	124.30	119.70
.5312	17/32	.4355	6	2	5/8	8	340717	340817	340917	123.15	.5031 - .5340	190.75	156.80	145.60	140.05	134.45	129.70
.5625	9/16	.4355	6	2	5/8	8	340718	340818	340918	123.15	.5341 - .5660	190.75	156.80	145.60	140.05	134.45	129.70
.5938	19/32	.4355	6	2	5/8	8	340719	340819	340919	128.15	.5661 - .5970	195.85	161.90	150.45	145.10	139.35	134.70
.6250	5/8	.5615	6	2 1/4	5/8	9	340720	340820	340920	128.15	.5971 - .6280	195.85	161.90	150.45	145.10	139.35	134.70
.6562	21/32	.5615	6	2 1/4	5/8	9	340721	340821	340921	130.35	.6281 - .6590	198.25	164.10	152.65	147.35	141.45	137.00
.6875	11/16	.5615	6	2 1/4	5/8	9	340722	340822	340922	130.35	.6591 - .6910	198.25	164.10	152.65	147.35	141.45	137.00
.7188	23/32	.5615	6	2 1/4	5/8	9	340723	340823	340923	136.50	.6911 - .7220	204.20	170.10	158.95	153.35	147.70	143.00
.7500	3/4	.6245	6	2 1/2	3/4	9 1/2	340724	340824	340924	136.50	.7221 - .7530	204.20	170.10	158.95	153.35	147.70	143.00
.7812	25/32	.6245	6	2 1/2	3/4	9 1/2	340725	340825	340925	140.85	.7531 - .7840	208.65	174.70	163.25	157.80	151.95	147.65
.8125	13/16	.6245	6	2 1/2	3/4	9 1/2	340726	340826	340926	140.85	.7841 - .8160	208.65	174.70	163.25	157.80	151.95	147.65
.8438	27/32	.6245	6	2 1/2	3/4	9 1/2	340727	340827	340927	146.60	.8161 - .8470	214.15	180.25	169.00	163.60	157.65	153.25
.8750	7/8	.7495	6	2 5/8	3/4	10	340728	340828	340928	151.95	.8471 - .8780	222.40	187.10	175.20	169.75	163.80	159.05
.9062	29/32	.7495	6	2 5/8	3/4	10	340729	340829	340929	177.05	.8781 - .9090	247.40	212.10	200.40	194.75	188.65	183.90
.9375	15/16	.7495	8	2 5/8	3/4	10	340730	340830	340930	177.05	.9091 - .9410	247.40	212.10	200.40	194.75	188.65	183.90
.9688	31/32	.7495	8	2 5/8	3/4	10	340731	340831	340931	185.45	.9411 - .9720	255.70	220.45	208.80	203.00	196.90	192.15
1.0000	1	.8745	8	2 3/4	3/4	10 1/2	340732	340832	340932	185.45	.9721 - 1.0030	255.70	220.45	208.80	203.00	196.90	192.15
1.0625	1 1/16	.8745	8	2 3/4	3/4	10 1/2	340734	340834	340934	192.00	1.0031 - 1.0660	259.35	225.75	214.35	208.95	203.05	198.60
1.1250	1 1/8	.8745	8	2 7/8	7/8	11	340736	340836	340936	207.60	1.0661 - 1.1280	274.95	241.15	229.95	224.40	218.70	214.15
1.1875	1 3/16	.9995	8	2 7/8	7/8	11	340738	340838	340938	218.10	1.1281 - 1.1905	285.55	251.85	240.50	235.05	229.30	224.90
1.2500	1 1/4	.9995	8	3	7/8	11 1/2	340740	340840	340940	230.60	1.1906 - 1.2530	298.00	264.30	252.85	247.50	241.85	237.25
1.3125	1 5/16	.9995	8	3	7/8	11 1/2	340742	340842	340942	242.60	1.2531 - 1.3155	310.10	276.50	265.10	259.70	253.80	249.25
1.3750	1 3/8	.9995	8	3 1/4	7/8	12	340744	340844	340944	257.45	1.3156 - 1.3780	325.00	291.15	279.70	274.45	268.45	264.05
1.4375	1 7/16	.9995	8	3 1/4	7/8	12	340746	340846	340946	286.95	1.3781 - 1.4405	354.55	320.55	309.35	304.10	298.05	293.70
1.5000	1 1/2	1.2495	8	3 1/2	7/8	12 1/2	340748	340848	340948	303.30	1.4406 - 1.5030	370.80	337.05	325.65	320.40	314.50	309.95

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 CHUCKING REAMERS

METRIC

TYPE 3407 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR NON-FERROUS
TYPE 3408 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR CAST IRON
TYPE 3409 - STRAIGHT SHANK - STRAIGHT FLUTES - FOR STEEL



Detailed description and fractional sizes on page 90. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH			NON-FERR. TYPE 3407 EDP NO.	CAST IRON TYPE 3408 EDP NO.	STEEL TYPE 3409 EDP NO.	ALL TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	CARB	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.0	.1575	.1510	4	1	½	4	3407040	3408040	3409040	$107.25	3.962 - 4.493	$154.90	$123.25	$112.75	$107.50	$102.25	$97.95	$91.75
4.5	.1772	.1704	4	1 ⅛	½	4 ½	3407045	3408045	3409045	99.55	4.494 - 4.696	145.90	115.20	104.85	99.95	94.55	90.45	84.55
5.0	.1969	.1805	4	1 ⅛	½	4 ½	3407050	3408050	3409050	99.55	4.697 - 5.182	145.90	115.20	104.85	99.95	94.55	90.45	84.55
5.5	.2165	.2075	4	1 ¼	½	5	3407055	3408055	3409055	99.55	5.183 - 5.613	145.90	115.20	104.85	99.95	94.55	90.45	84.55
6.0	.2362	.2265	4	1 ½	½	6	3407060	3408060	3409060	104.30	5.614 - 6.045	150.70	120.00	109.60	104.60	99.45	95.20	89.30
-	-	.2405	4	1 ½	½	6	3407063	3408063	3409063	-	6.046 - 6.426	146.60	115.70	105.35	100.30	95.20	90.95	84.90
6.5	.2559	.2485	4	1 ½	½	6	3407065	3408065	3409065	101.80	6.427 - 7.214	148.10	117.30	106.95	102.00	96.65	92.45	86.65
7.0	.2756	.2485	4	1 ½	½	6	3407070	3408070	3409070	101.80	-	-	-	-	-	-	-	-
7.5	.2953	.2792	4	1 ½	½	6	3407075	3408075	3409075	101.80	7.215 - 8.001	148.10	117.30	106.95	102.00	96.65	92.45	86.65
7.5	.2953	.2792	6	1 ½	½	6	3407078	3408078	3409078	109.70	7.215 - 8.001	156.25	125.60	115.15	109.95	104.85	100.50	94.55
8.0	.3150	.2792	4	1 ½	½	6	3407080	3408080	3409080	101.80	-	-	-	-	-	-	-	-
8.0	.3150	.2792	6	1 ½	½	6	3407083	3408083	3409083	109.70	-	-	-	-	-	-	-	-
8.5	.3346	.2792	4	1 ½	⅝	6	3407085	3408085	3409085	104.80	8.002 - 8.814	150.90	120.35	109.95	105.05	99.95	95.50	89.65
8.5	.3346	.2792	6	1 ½	⅝	6	3407088	3408088	3409088	113.00	8.002 - 8.814	159.40	128.60	118.30	113.45	108.10	103.90	98.05
9.0	.3543	.3105	4	1 ¾	⅝	7	3407090	3408090	3409090	96.20	8.815 - 9.601	138.60	110.45	100.80	96.30	91.70	87.80	82.30
9.0	.3543	.3105	6	1 ¾	⅝	7	3407093	3408093	3409093	103.80	8.815 - 9.601	146.25	117.95	108.65	103.95	99.25	95.25	89.80
9.5	.3740	.3105	4	1 ¾	⅝	7	3407095	3408095	3409095	96.20	-	-	-	-	-	-	-	-
9.5	.3740	.3105	6	1 ¾	⅝	7	3407098	3408098	3409098	103.80	-	-	-	-	-	-	-	-
10.0	.3937	.3105	4	1 ¾	⅝	7	3407100	3408100	3409100	108.85	9.602 - 10.389	155.20	124.40	114.05	109.00	103.90	99.55	93.75
10.0	.3937	.3105	6	1 ¾	⅝	7	3407103	3408103	3409103	114.75	9.602 - 10.389	161.15	130.35	120.00	114.85	109.70	105.40	99.55
10.5	.4134	.3730	6	1 ¾	⅝	7	3407105	3408105	3409105	114.75	10.390 - 11.201	161.15	130.35	120.00	114.85	109.70	105.40	99.55
11.0	.4331	.3730	6	1 ¾	⅝	7	3407110	3408110	3409110	114.75	-	-	-	-	-	-	-	-
11.5	.4528	.3730	6	1 ¾	⅝	7	3407115	3408115	3409115	116.05	11.202 - 11.989	162.35	131.60	121.30	116.20	111.10	106.75	100.80
12.0	.4724	.4355	6	2	⅝	8	3407120	3408120	3409120	135.50	11.990 - 12.776	186.55	152.65	141.40	135.80	130.15	125.60	119.05
12.5	.4921	.4355	6	2	⅝	8	3407125	3408125	3409125	135.50	-	-	-	-	-	-	-	-
13.0	.5118	.4355	6	2	⅝	8	3407130	3408130	3409130	145.60	12.777 - 13.564	196.65	162.80	151.35	145.80	140.05	135.40	128.95
13.5	.5315	.4355	6	2	⅝	8	3407135	3408135	3409135	145.60	-	-	-	-	-	-	-	-
14.0	.5512	.4355	6	2	⅝	8	3407140	3408140	3409140	145.60	13.565 - 14.376	196.65	162.80	151.35	145.80	140.05	135.40	128.95
14.5	.5709	.4355	6	2	⅝	8	3407145	3408145	3409145	150.45	14.377 - 15.164	201.60	167.70	156.40	150.80	145.10	140.40	133.75
15.0	.5906	.4355	6	2	⅝	8	3407150	3408150	3409150	150.45	-	-	-	-	-	-	-	-
15.5	.6102	.5615	6	2 ¼	⅝	9	3407155	3408155	3409155	150.45	15.165 - 15.951	201.60	167.70	156.40	150.80	145.10	140.40	133.75
16.0	.6299	.5615	6	2 ¼	⅝	9	3407160	3408160	3409160	152.65	15.952 - 16.739	203.90	169.90	158.60	152.95	147.35	142.50	136.15
16.5	.6496	.5615	6	2 ¼	⅝	9	3407165	3408165	3409165	152.65	-	-	-	-	-	-	-	-
17.0	.6693	.5615	6	2 ¼	⅝	9	3407170	3408170	3409170	152.65	16.740 - 17.551	203.90	169.90	158.60	152.95	147.35	142.50	136.15
17.5	.6890	.5615	6	2 ¼	⅝	9	3407175	3408175	3409175	152.65	-	-	-	-	-	-	-	-
18.0	.7087	.5615	6	2 ¼	⅝	9	3407180	3408180	3409180	158.95	17.552 - 18.339	209.80	176.00	164.80	159.20	153.35	148.75	142.10
19.0	.7480	.6245	6	2 ½	¾	9 ½	3407190	3408190	3409190	158.95	18.340 - 19.126	209.80	176.00	164.80	159.20	153.35	148.75	142.10
19.5	.7677	.6245	6	2 ½	¾	9 ½	3407195	3408195	3409195	163.25	19.127 - 19.914	214.15	180.40	169.10	163.60	157.80	153.25	146.70
20.0	.7874	.6245	6	2 ½	¾	9 ½	3407200	3408200	3409200	163.25	19.915 - 20.726	214.15	180.40	169.10	163.60	157.80	153.25	146.70
21.0	.8268	.6245	6	2 ½	¾	9 ½	3407210	3408210	3409210	169.00	20.727 - 21.514	219.80	186.20	174.80	169.25	163.60	158.95	152.30
22.0	.8661	.7495	6	2 ⅝	¾	10	3407220	3408220	3409220	169.00	21.515 - 22.301	219.80	186.20	174.80	169.25	163.60	158.95	152.30
23.0	.9055	.7495	6	2 ⅝	¾	10	3407230	3408230	3409230	200.40	22.302 - 23.089	253.20	218.10	206.35	200.60	194.75	189.75	183.20
23.5	.9252	.7495	8	2 ⅝	¾	10	3407235	3408235	3409235	200.40	23.090 - 23.901	253.20	218.10	206.35	200.60	194.75	189.75	183.20
24.0	.9449	.7495	8	2 ⅝	¾	10	3407240	3408240	3409240	208.80	23.902 - 24.689	261.60	226.50	214.85	209.00	203.00	198.30	191.45
25.0	.9843	.8745	8	2 ¾	¾	10 ½	3407250	3408250	3409250	208.80	24.690 - 25.476	261.60	226.50	214.85	209.00	203.00	198.30	191.45
26.0	1.0236	.8745	8	2 ¾	¾	10 ½	3407260	3408260	3409260	214.35	25.477 - 27.076	265.10	231.50	220.20	214.55	208.95	204.20	197.75
27.0	1.0630	.8745	8	2 ¾	¾	10 ½	3407270	3408270	3409270	214.35	-	-	-	-	-	-	-	-
28.0	1.1024	.8745	8	2 ⅞	⅞	11	3407280	3408280	3409280	229.95	27.077 - 28.651	280.55	247.05	235.70	230.10	224.40	219.75	213.30
29.0	1.1417	.9995	8	2 ⅞	⅞	11	3407290	3408290	3409290	240.50	28.652 - 30.239	291.20	257.55	246.20	240.75	235.05	230.45	224.15
30.0	1.1811	.9995	8	2 ⅞	⅞	11	3407300	3408300	3409300	240.50	-	-	-	-	-	-	-	-
31.0	1.2205	.9995	8	3	⅞	11 ½	3407310	3408310	3409310	252.85	30.240 - 31.826	303.45	270.05	258.85	253.20	247.50	242.75	236.30
32.0	1.2598	.9995	8	3	⅞	11 ½	3407320	3408320	3409320	265.10	31.827 - 33.414	315.75	282.10	270.90	265.30	259.70	254.95	248.45
33.0	1.2992	.9995	8	3	⅞	11 ½	3407330	3408330	3409330	265.10	-	-	-	-	-	-	-	-
34.0	1.3386	.9995	8	3 ¼	⅞	12	3407340	3408340	3409340	279.70	33.415 - 35.001	330.55	296.95	285.55	280.20	274.45	269.80	263.20
35.0	1.3780	.9995	8	3 ¼	⅞	12	3407350	3408350	3409350	279.70	-	-	-	-	-	-	-	-
36.0	1.4173	.9995	8	3 ¼	⅞	12	3407360	3408360	3409360	309.35	35.002 - 36.589	359.95	326.40	315.20	309.55	304.10	299.30	292.75
37.0	1.4567	1.2495	8	3 ½	⅞	12 ½	3407370	3408370	3409370	325.65	36.590 - 38.176	376.60	342.70	331.60	326.05	320.40	315.70	309.20

CARBIDE TIPPED NAS 897 CHUCKING REAMERS

TYPE 3457 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3458 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3459 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with flute length carbide. Tool geometry and carbide grade appropriate for material being machined.
For step reamers, see page 118. For longer overall length reamers, see page 112.



For reamer tolerances and closer tolerance pricing, see page 56.
Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3457 EDP NO.	CAST IRON TYPE 3458 EDP NO.	STEEL TYPE 3459 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	.1805	4	1 1/8	4 1/2	345706	345806	345906	$94.55	.1770 - .2040	$157.90	$126.20	$115.55	$110.60	$105.20	$100.80
.2188	7/32	.2075	4	1 1/4	5	345707	345807	345907	94.55	.2041 - .2210	157.90	126.20	115.55	110.60	105.20	100.80
.2344	15/64	.2265	4	1 1/2	6	34572344	34582344	34592344	94.55	.2211 - .2380	157.90	126.20	115.55	110.60	105.20	100.80
.2500	1/4	.2405	4	1 1/2	6	345708	345808	345908	94.55	.2381 - .2530	157.90	126.20	115.55	110.60	105.20	100.80
.2812	9/32	.2485	4	1 1/2	6	345709	345809	345909	96.65	.2531 - .2840	159.95	128.40	117.65	112.75	107.25	103.10
.3125	5/16	.2792	4	1 1/2	6	345710	345810	345910	96.65	.2841 - .3150	159.95	128.40	117.65	112.75	107.25	103.10
.3438	11/32	.2792	4	1 1/2	6	345711	345811	345911	100.25	.3151 - .3470	163.60	131.65	121.15	116.15	110.80	106.55
.3750	3/8	.3105	4	1 3/4	7	345712	345812	345912	100.25	.3471 - .3780	163.60	131.65	121.15	116.15	110.80	106.55
.4062	13/32	.3105	4	1 3/4	7	345713	345813	345913	105.20	.3781 - .4090	168.35	136.70	126.15	121.10	115.55	111.35
.4375	7/16	.3730	6	1 3/4	7	345714	345814	345914	113.80	.4091 - .4410	177.05	145.45	134.75	129.70	124.30	120.00
.4688	15/32	.3730	6	1 3/4	7	345715	345815	345915	122.90	.4411 - .4720	186.35	154.40	144.05	138.95	133.40	129.20
.5000	1/2	.4355	6	2	8	345716	345816	345916	131.65	.4721 - .5030	199.55	165.60	154.30	148.80	143.00	138.55
.5312	17/32	.4355	6	2	8	345717	345817	345917	135.50	.5031 - .5340	203.30	169.35	157.90	152.55	146.80	142.10
.5625	9/16	.4355	6	2	8	345718	345818	345918	135.50	.5341 - .5660	203.30	169.35	157.90	152.55	146.80	142.10
.5938	19/32	.4355	6	2	8	345719	345819	345919	140.65	.5661 - .5970	208.40	174.60	163.10	157.65	151.90	147.35
.6250	5/8	.5615	6	2 1/4	9	345720	345820	345920	140.65	.5971 - .6280	208.40	174.60	163.10	157.65	151.90	147.35
.6562	21/32	.5615	6	2 1/4	9	345721	345821	345921	143.30	.6281 - .6590	211.20	177.15	165.70	160.35	154.40	150.00
.6875	11/16	.5615	6	2 1/4	9	345722	345822	345922	143.30	.6591 - .6910	211.20	177.15	165.70	160.35	154.40	150.00
.7188	23/32	.5615	6	2 1/4	9	345723	345823	345923	149.85	.6911 - .7220	217.65	183.45	172.50	166.95	161.15	156.45
.7500	3/4	.6245	6	2 1/2	9 1/2	345724	345824	345924	149.85	.7221 - .7530	217.65	183.45	172.50	166.95	161.15	156.45
.7812	25/32	.6245	6	2 1/2	9 1/2	345725	345825	345925	155.10	.7531 - .7840	222.65	188.70	177.40	171.85	166.20	161.50
.8125	13/16	.6245	6	2 1/2	9 1/2	345726	345826	345926	155.10	.7841 - .8160	222.65	188.70	177.40	171.85	166.20	161.50
.8438	27/32	.6245	6	2 1/2	9 1/2	345727	345827	345927	161.30	.8161 - .8470	228.90	194.80	183.45	178.30	172.55	167.80
.8750	7/8	.7495	6	2 5/8	10	345728	345828	345928	167.35	.8471 - .8780	237.50	202.35	190.55	184.95	178.85	174.10
.9062	29/32	.7495	6	2 5/8	10	345729	345829	345929	194.75	.8781 - .9090	265.15	229.95	218.00	212.40	206.35	201.60
.9375	15/16	.7495	8	2 5/8	10	345730	345830	345930	194.75	.9091 - .9410	265.15	229.95	218.00	212.40	206.35	201.60
.9688	31/32	.7495	8	2 5/8	10	345731	345831	345931	204.10	.9411 - .9720	274.45	239.35	227.35	221.70	215.65	210.90
1.0000	1	.8745	8	2 3/4	10 1/2	345732	345832	345932	204.10	.9721 - 1.0030	274.45	239.35	227.35	221.70	215.65	210.90
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	345734	345834	345934	211.05	1.0031 - 1.0660	278.45	244.50	233.45	228.00	222.20	217.70
1.1250	1 1/8	.8745	8	2 7/8	11	345736	345836	345936	228.60	1.0661 - 1.1280	295.95	262.15	250.80	245.50	239.75	235.05
1.1875	1 3/16	.9995	8	2 7/8	11	345738	345838	345938	238.90	1.1281 - 1.1905	306.40	272.70	261.40	256.00	250.20	245.55
1.2500	1 1/4	.9995	8	3	11 1/2	345740	345840	345940	258.25	1.1906 - 1.2530	325.65	292.05	280.55	275.30	269.45	264.90
1.3125	1 5/16	.9995	8	3	11 1/2	345742	345842	345942	265.35	1.2531 - 1.3155	332.90	299.20	287.75	282.45	276.65	272.00
1.3750	1 3/8	.9995	8	3 1/4	12	345744	345844	345944	283.15	1.3156 - 1.3780	350.40	316.75	305.50	300.15	294.15	289.80
1.4375	1 7/16	.9995	8	3 1/4	12	345746	345846	345946	306.60	1.3781 - 1.4405	374.00	340.25	328.95	323.45	317.80	313.20
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	345748	345848	345948	315.50	1.4406 - 1.5030	382.90	349.10	337.80	332.45	326.75	322.15
1.5625	1 9/16	1.2495	8	3 1/2	12 1/2	345750	345850	345950	495.55	1.5031 - 1.5660	563.10	529.40	518.05	512.55	506.80	502.10
1.6250	1 5/8	1.2495	8	3 1/2	13	345752	345852	345952	512.45	1.5661 - 1.6280	580.10	546.35	535.00	529.60	523.75	519.25
1.6875	1 11/16	1.2495	8	3 1/2	13	345754	345854	345954	562.75	1.6281 - 1.6910	630.30	596.60	585.20	579.90	574.00	569.45
1.7500	1 3/4	1.2495	10	3 1/2	13 1/2	345756	345856	345956	562.75	1.6911 - 1.7530	630.30	596.60	585.20	579.90	574.00	569.45
1.8125	1 13/16	1.4995	10	3 1/2	13 1/2	345758	345858	345958	575.95	1.7531 - 1.8160	643.35	609.70	598.35	592.95	587.00	582.60
1.8750	1 7/8	1.4995	10	3 1/2	14	345760	345860	345960	604.05	1.8161 - 1.8780	671.50	637.70	626.30	621.10	615.30	610.70
1.9375	1 15/16	1.4995	10	3 1/2	14	345762	345862	345962	640.30	1.8781 - 1.9410	707.75	673.95	662.70	657.35	651.55	647.00
2.0000	2	1.4995	12	3 1/2	14	345764	345864	345964	639.30	1.9411 - 2.0030	706.95	673.05	661.90	656.45	650.65	646.10
2.1250	2 1/8	1.4995	12	3 1/2	14 1/2	345768	345868	345968	1187.90	2.0031 - 2.1280	1255.45	1221.65	1210.30	1205.10	1199.10	1194.60
2.2500	2 1/4	1.7495	12	3 1/2	14 1/2	345772	345872	345972	1275.80	2.1281 - 2.2530	1343.35	1309.55	1298.35	1293.05	1287.10	1282.70
2.3750	2 3/8	1.7495	12	3 1/2	15	345776	345876	345976	1320.20	2.2531 - 2.3780	1387.70	1353.85	1342.55	1337.30	1331.40	1326.90
2.5000	2 1/2	1.7495	12	3 1/2	15	345780	345880	345980	1320.20	2.3781 - 2.5030	1387.70	1353.85	1342.55	1337.30	1331.40	1326.90

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 CHUCKING REAMERS

METRIC

TYPE 3457 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3458 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3459 - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR STEEL



Detailed description and fractional sizes on page 94. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3457 EDP NO.	CAST IRON TYPE 3458 EDP NO.	STEEL TYPE 3459 EDP NO.	ALL TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLUTE	OVER-ALL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	.1704	4	1 ⅛	4 ½	3457045	3458045	3459045	$115.55	4.494 - 4.696	$163.15	$131.60	$121.10	$116.00	$110.60	$106.25	$100.15
5.0	.1969	.1805	4	1 ⅛	4 ½	3457050	3458050	3459050	115.55	4.697 - 5.182	163.15	131.60	121.10	116.00	110.60	106.25	100.15
5.5	.2165	.2075	4	1 ¼	5	3457055	3458055	3459055	115.55	5.183 - 5.613	163.15	131.60	121.10	116.00	110.60	106.25	100.15
6.0	.2362	.2265	4	1 ½	6	3457060	3458060	3459060	115.55	5.614 - 6.045	163.15	131.60	121.10	116.00	110.60	106.25	100.15
-	-	.2405	4	1 ½	6	3457063	3458063	3459063	-	6.046 - 6.426	163.15	131.60	121.10	116.00	110.60	106.25	100.15
6.5	.2559	.2485	4	1 ½	6	3457065	3458065	3459065	117.65	6.427 - 7.214	165.35	133.65	123.15	117.90	112.75	108.20	102.25
7.0	.2756	.2485	4	1 ½	6	3457070	3458070	3459070	117.65	-	-	-	-	-	-	-	-
7.5	.2953	.2792	4	1 ½	6	3457075	3458075	3459075	117.65	7.215 - 8.001	165.35	133.65	123.15	117.90	112.75	108.20	102.25
8.0	.3150	.2792	4	1 ½	6	3457080	3458080	3459080	117.65	-	-	-	-	-	-	-	-
8.5	.3346	.2792	4	1 ½	6	3457085	3458085	3459085	121.15	8.002 - 8.814	168.90	137.20	126.55	121.40	116.15	111.80	105.65
9.0	.3543	.3105	4	1 ¾	7	3457090	3458090	3459090	121.15	8.815 - 9.601	168.90	137.20	126.55	121.40	116.15	111.80	105.65
9.5	.3740	.3105	4	1 ¾	7	3457095	3458095	3459095	121.15	-	-	-	-	-	-	-	-
10.0	.3937	.3105	4	1 ¾	7	3457100	3458100	3459100	126.15	9.602 - 10.389	173.65	142.10	131.45	126.35	121.10	116.70	110.60
10.5	.4134	.3730	6	1 ¾	7	3457105	3458105	3459105	134.75	10.390 - 11.201	182.35	150.80	140.30	134.90	129.70	125.25	119.35
11.0	.4331	.3730	6	1 ¾	7	3457110	3458110	3459110	134.75	-	-	-	-	-	-	-	-
11.5	.4528	.3730	6	1 ¾	7	3457115	3458115	3459115	144.05	11.202 - 11.989	191.75	159.95	149.45	144.20	138.95	134.60	128.45
12.0	.4724	.4355	6	2	8	3457120	3458120	3459120	154.30	11.990 - 12.776	205.25	171.50	160.10	154.40	148.80	144.15	137.75
12.5	.4921	.4355	6	2	8	3457125	3458125	3459125	154.30	-	-	-	-	-	-	-	-
13.0	.5118	.4355	6	2	8	3457130	3458130	3459130	157.90	12.777 - 13.564	209.10	175.15	163.80	158.20	152.55	147.85	141.40
13.5	.5315	.4355	6	2	8	3457135	3458135	3459135	157.90	-	-	-	-	-	-	-	-
14.0	.5512	.4355	6	2	8	3457140	3458140	3459140	157.90	13.565 - 14.376	209.10	175.15	163.80	158.20	152.55	147.85	141.40
14.5	.5709	.4355	6	2	8	3457145	3458145	3459145	163.10	14.377 - 15.164	214.05	180.25	169.00	163.50	157.65	152.95	146.60
15.0	.5906	.4355	6	2	8	3457150	3458150	3459150	163.10	-	-	-	-	-	-	-	-
15.5	.6102	.5615	6	2 ¼	9	3457155	3458155	3459155	163.10	15.165 - 15.951	214.05	180.25	169.00	163.50	157.65	152.95	146.60
16.0	.6299	.5615	6	2 ¼	9	3457160	3458160	3459160	165.70	15.952 - 16.739	216.85	183.05	171.65	166.05	160.35	155.60	149.05
16.5	.6496	.5615	6	2 ¼	9	3457165	3458165	3459165	165.70	-	-	-	-	-	-	-	-
17.0	.6693	.5615	6	2 ¼	9	3457170	3458170	3459170	165.70	16.740 - 17.551	216.85	183.05	171.65	166.05	160.35	155.60	149.05
17.5	.6890	.5615	6	2 ¼	9	3457175	3458175	3459175	165.70	-	-	-	-	-	-	-	-
18.0	.7087	.5615	6	2 ¼	9	3457180	3458180	3459180	172.50	17.552 - 18.339	223.25	189.35	178.20	172.60	166.95	162.10	155.60
18.5	.7283	.6245	6	2 ½	9 ½	3457185	3458185	3459185	172.50	18.340 - 19.126	223.25	189.35	178.20	172.60	166.95	162.10	155.60
19.0	.7480	.6245	6	2 ½	9 ½	3457190	3458190	3459190	172.50	-	-	-	-	-	-	-	-
19.5	.7677	.6245	6	2 ½	9 ½	3457195	3458195	3459195	177.40	19.127 - 19.914	228.50	194.60	183.20	177.65	171.85	167.30	160.80
20.0	.7874	.6245	6	2 ½	9 ½	3457200	3458200	3459200	177.40	19.915 - 20.726	228.50	194.60	183.20	177.65	171.85	167.30	160.80
20.5	.8071	.6245	6	2 ½	9 ½	3457205	3458205	3459205	177.40	-	-	-	-	-	-	-	-
21.0	.8268	.6245	6	2 ½	9 ½	3457210	3458210	3459210	183.45	20.727 - 21.514	234.80	200.75	189.35	183.90	178.30	173.55	167.15
21.5	.8465	.6245	6	2 ½	9 ½	3457215	3458215	3459215	183.45	-	-	-	-	-	-	-	-
22.0	.8661	.7495	6	2 ⅝	10	3457220	3458220	3459220	183.45	21.515 - 22.301	234.80	200.75	189.35	183.90	178.30	173.55	167.15
22.5	.8858	.7495	6	2 ⅝	10	3457225	3458225	3459225	218.00	22.302 - 23.089	270.95	235.85	224.20	218.35	212.40	207.60	200.70
23.0	.9055	.7495	6	2 ⅝	10	3457230	3458230	3459230	218.00	-	-	-	-	-	-	-	-
23.5	.9252	.7495	8	2 ⅝	10	3457235	3458235	3459235	218.00	23.090 - 23.901	270.95	235.85	224.20	218.35	212.40	207.60	200.70
24.0	.9449	.7495	8	2 ⅝	10	3457240	3458240	3459240	227.35	23.902 - 24.689	280.40	245.30	233.50	227.70	221.70	216.95	210.00
24.5	.9646	.7495	8	2 ⅝	10	3457245	3458245	3459245	227.35	-	-	-	-	-	-	-	-
25.0	.9843	.8745	8	2 ¾	10 ½	3457250	3458250	3459250	227.35	24.690 - 25.476	280.40	245.30	233.50	227.70	221.70	216.95	210.00
25.5	1.0039	.8745	8	2 ¾	10 ½	3457255	3458255	3459255	233.45	25.477 - 27.076	284.00	250.60	239.05	233.65	228.00	223.25	216.85
26.0	1.0236	.8745	8	2 ¾	10 ½	3457260	3458260	3459260	233.45	-	-	-	-	-	-	-	-
27.0	1.0630	.8745	8	2 ¾	10 ½	3457270	3458270	3459270	233.45	-	-	-	-	-	-	-	-
28.0	1.1024	.8745	8	2 ⅞	11	3457280	3458280	3459280	250.80	27.077 - 28.651	301.50	268.05	256.60	251.00	245.50	240.75	234.15
29.0	1.1417	.9995	8	2 ⅞	11	3457290	3458290	3459290	261.40	28.652 - 30.239	312.05	278.45	267.20	261.60	256.00	251.15	244.60
30.0	1.1811	.9995	8	2 ⅞	11	3457300	3458300	3459300	261.40	-	-	-	-	-	-	-	-
31.0	1.2205	.9995	8	3	11 ½	3457310	3458310	3459310	280.55	30.240 - 31.826	331.45	297.70	286.45	280.85	275.30	270.40	264.05
32.0	1.2598	.9995	8	3	11 ½	3457320	3458320	3459320	287.75	31.827 - 33.414	338.50	304.85	293.70	288.05	282.45	277.70	271.20
33.0	1.2992	.9995	8	3	11 ½	3457330	3458330	3459330	287.75	-	-	-	-	-	-	-	-
34.0	1.3386	.9995	8	3 ¼	12	3457340	3458340	3459340	305.50	33.415 - 35.001	356.10	322.55	311.30	305.70	300.15	295.35	288.90
35.0	1.3780	.9995	8	3 ¼	12	3457350	3458350	3459350	305.50	-	-	-	-	-	-	-	-
36.0	1.4173	.9995	8	3 ¼	12	3457360	3458360	3459360	328.95	35.002 - 36.589	379.55	346.00	334.60	329.15	323.45	318.70	312.35
37.0	1.4567	1.2495	8	3 ½	12 ½	3457370	3458370	3459370	337.80	36.590 - 38.176	388.65	354.90	343.70	338.05	332.45	327.65	321.35
38.0	1.4961	1.2495	8	3 ½	12 ½	3457380	3458380	3459380	337.80	-	-	-	-	-	-	-	-

CARBIDE TIPPED NAS 897 RIGHT SPIRAL CHUCKING REAMERS

TYPE 3442 - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3443 - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3444 - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Right spiral polished flutes.

Right spiral flutes have a greater chip clearing ability for use with ductile materials, highly abrasive materials or blind holes. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with flute long carbide. Tool geometry and carbide grade appropriate for material being machined.

For step reamers, see page 119. For longer overall length reamers, see page 114.



Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For reamer tolerances and closer tolerance pricing, see page 60.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3442 EDP NO.	CAST IRON TYPE 3443 EDP NO.	STEEL TYPE 3444 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3125	5/16	.2792	4	1 ½	6	344210	344310	344410	$120.40	.2841 - .3150	$179.70	$150.10	$140.05	$135.40	$130.35	$126.20
.3438	11/32	.2792	4	1 ½	6	344211	344311	344411	132.65	.3151 - .3470	192.00	162.25	152.30	147.70	142.45	138.55
.3750	3/8	.3105	4	1 ¾	7	344212	344312	344412	133.75	.3471 - .3780	193.35	163.50	153.45	148.75	143.70	139.70
.4062	13/32	.3105	4	1 ¾	7	344213	344313	344413	139.85	.3781 - .4090	199.10	169.45	159.45	154.65	149.80	145.75
.4375	7/16	.3730	6	1 ¾	7	344214	344314	344414	145.25	.4091 - .4410	204.45	174.85	164.90	160.30	155.20	150.90
.4688	15/32	.3730	6	1 ¾	7	344215	344315	344415	154.40	.4411 - .4720	213.85	184.05	174.10	169.45	164.30	160.35
.5000	½	.4355	6	2	8	344216	344316	344416	166.65	.4721 - .5030	229.80	198.30	187.40	182.50	177.05	172.75
.5312	17/32	.4355	6	2	8	344217	344317	344417	171.50	.5031 - .5340	234.80	202.85	192.20	187.25	182.05	177.65
.5625	9/16	.4355	6	2	8	344218	344318	344418	171.50	.5341 - .5660	234.80	202.85	192.20	187.25	182.05	177.65
.5938	19/32	.4355	6	2	8	344219	344319	344419	176.55	.5661 - .5970	239.75	207.95	197.45	192.20	186.95	182.55
.6250	5/8	.5615	6	2 ¼	9	344220	344320	344420	176.55	.5971 - .6280	239.75	207.95	197.45	192.20	186.95	182.55
.6562	21/32	.5615	6	2 ¼	9	344221	344321	344421	182.15	.6281 - .6590	245.30	213.50	202.85	197.90	192.50	188.25
.6875	11/16	.5615	6	2 ¼	9	344222	344322	344422	193.35	.6591 - .6910	256.55	224.90	214.15	209.15	203.90	199.50
.7188	23/32	.5615	6	2 ¼	9	344223	344323	344423	196.20	.6911 - .7220	259.55	227.70	217.30	212.10	206.80	202.45
.7500	¾	.6245	6	2 ½	9 ½	344224	344324	344424	199.15	.7221 - .7530	262.35	230.80	220.15	215.25	209.70	205.50
.7812	25/32	.6245	6	2 ½	9 ½	344225	344325	344425	204.45	.7531 - .7840	267.80	236.10	225.35	220.30	214.95	210.70
.8125	13/16	.6245	6	2 ½	9 ½	344226	344326	344426	204.45	.7841 - .8160	267.80	236.10	225.35	220.30	214.95	210.70
.8438	27/32	.6245	6	2 ½	9 ½	344227	344327	344427	215.55	.8161 - .8470	278.80	247.05	236.40	231.50	226.05	221.70
.8750	7/8	.7495	6	2 5/8	10	344228	344328	344428	223.65	.8471 - .8780	289.30	256.50	245.40	240.15	234.70	230.10
.9062	29/32	.7495	6	2 5/8	10	344229	344329	344429	260.60	.8781 - .9090	326.25	293.50	282.30	277.00	271.60	267.05
.9375	15/16	.7495	8	2 5/8	10	344230	344330	344430	260.60	.9091 - .9410	326.25	293.50	282.30	277.00	271.60	267.05
.9688	31/32	.7495	8	2 5/8	10	344231	344331	344431	273.20	.9411 - .9720	339.00	306.05	295.05	289.85	284.15	279.70
1.0000	1	.8745	8	2 ¾	10 ½	344232	344332	344432	273.20	.9721 - 1.0030	339.00	306.05	295.05	289.85	284.15	279.70
1.0625	1 1/16	.8745	8	2 ¾	10 ½	344234	344334	344434	321.15	1.0031 - 1.0660	387.05	353.90	342.85	337.75	332.10	327.60
1.1250	1 1/8	.8745	8	2 7/8	11	344236	344336	344436	331.10	1.0661 - 1.1280	396.75	363.85	352.80	347.70	342.15	337.60
1.1875	1 3/16	.9995	8	2 7/8	11	344238	344338	344438	347.95	1.1281 - 1.1905	413.75	380.80	370.00	364.55	358.95	354.70
1.2500	1 ¼	.9995	8	3	11 ½	344240	344340	344440	368.25	1.1906 - 1.2530	434.00	401.15	390.20	384.95	379.10	374.85
1.3125	1 5/16	.9995	8	3	11 ½	344242	344342	344442	407.55	1.2531 - 1.3155	473.25	440.45	429.30	424.20	418.45	413.90
1.3750	1 3/8	.9995	8	3 ¼	12	344244	344344	344444	446.55	1.3156 - 1.3780	512.10	479.20	468.45	462.90	457.40	452.95
1.4375	1 7/16	.9995	8	3 ¼	12	344246	344346	344446	473.15	1.3781 - 1.4405	538.50	505.75	494.75	489.65	484.05	479.50
1.5000	1 ½	1.2495	8	3 ½	12 ½	344248	344348	344448	499.75	1.4406 - 1.5030	565.40	532.50	521.35	516.40	510.50	506.25

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 LEFT SPIRAL CHUCKING REAMERS

TYPE 3482 - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3483 - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3484 - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Left spiral polished flutes.

Left spiral flutes should only be used on through holes and very hard materials. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with flute long carbide. Tool geometry and carbide grade appropriate for material being machined.

For step reamers, see page 120. For longer overall length reamers, see page 116.



Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3482 EDP NO.	CAST IRON TYPE 3483 EDP NO.	STEEL TYPE 3484 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3125	5/16	.2792	4	1 1/2	6	348210	348310	348410	$128.45	.2841 - .3150	$191.80	$159.95	$149.45	$144.25	$138.95	$134.70
.3438	11/32	.2792	4	1 1/2	6	348211	348311	348411	141.45	.3151 - .3470	204.75	172.95	162.45	157.45	151.95	147.75
.3750	3/8	.3105	4	1 3/4	7	348212	348312	348412	142.85	.3471 - .3780	206.00	174.50	163.80	158.70	153.30	148.95
.4062	13/32	.3105	4	1 3/4	7	348213	348313	348413	149.05	.3781 - .4090	212.40	180.90	170.05	165.15	159.55	155.40
.4375	7/16	.3730	6	1 3/4	7	348214	348314	348414	155.10	.4091 - .4410	218.10	186.55	175.90	170.95	165.40	161.30
.4688	15/32	.3730	6	1 3/4	7	348215	348315	348415	164.85	.4411 - .4720	228.15	196.35	185.65	180.90	175.20	171.00
.5000	1/2	.4355	6	2	8	348216	348316	348416	171.00	.4721 - .5030	236.10	203.50	192.55	187.30	181.65	177.40
.5312	17/32	.4355	6	2	8	348217	348317	348417	176.00	.5031 - .5340	241.00	208.25	197.55	192.20	186.90	182.35
.5625	9/16	.4355	6	2	8	348218	348318	348418	176.00	.5341 - .5660	241.00	208.25	197.55	192.20	186.90	182.35
.5938	19/32	.4355	6	2	8	348219	348319	348419	181.25	.5661 - .5970	246.10	213.50	202.65	197.55	192.00	187.40
.6250	5/8	.5615	6	2 1/4	9	348220	348320	348420	181.25	.5971 - .6280	246.10	213.50	202.65	197.55	192.00	187.40
.6562	21/32	.5615	6	2 1/4	9	348221	348321	348421	186.95	.6281 - .6590	251.85	219.40	208.25	203.30	197.70	193.35
.6875	11/16	.5615	6	2 1/4	9	348222	348322	348422	198.45	.6591 - .6910	263.25	230.85	219.80	214.90	209.15	204.75
.7188	23/32	.5615	6	2 1/4	9	348223	348323	348423	201.60	.6911 - .7220	266.35	233.80	223.00	217.75	212.15	207.90
.7500	3/4	.6245	6	2 1/2	9 1/2	348224	348324	348424	204.45	.7221 - .7530	269.45	237.00	226.05	220.80	215.40	210.90
.7812	25/32	.6245	6	2 1/2	9 1/2	348225	348325	348425	209.95	.7531 - .7840	274.95	242.35	231.50	226.45	220.70	216.30
.8125	13/16	.6245	6	2 1/2	9 1/2	348226	348326	348426	209.95	.7841 - .8160	274.95	242.35	231.50	226.45	220.70	216.30
.8438	27/32	.6245	6	2 1/2	9 1/2	348227	348327	348427	221.35	.8161 - .8470	286.25	253.60	242.60	237.50	232.05	227.65
.8750	7/8	.7495	6	2 5/8	10	348228	348328	348428	229.75	.8471 - .8780	297.00	263.20	252.00	246.60	240.75	236.25
.9062	29/32	.7495	6	2 5/8	10	348229	348329	348429	267.60	.8781 - .9090	334.95	301.15	289.85	284.60	278.65	274.20
.9375	15/16	.7495	8	2 5/8	10	348230	348330	348430	267.60	.9091 - .9410	334.95	301.15	289.85	284.60	278.65	274.20
.9688	31/32	.7495	8	2 5/8	10	348231	348331	348431	280.55	.9411 - .9720	347.95	314.30	303.10	297.65	291.85	287.35
1.0000	1	.8745	8	2 3/4	10 1/2	348232	348332	348432	280.55	.9721 - 1.0030	347.95	314.30	303.10	297.65	291.85	287.35
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	348234	348334	348434	329.90	1.0031 - 1.0660	397.20	363.45	352.25	346.65	341.05	336.50
1.1250	1 1/8	.8745	8	2 7/8	11	348236	348336	348436	340.15	1.0661 - 1.1280	407.45	373.75	362.25	356.95	351.10	346.50
1.1875	1 3/16	.9995	8	2 7/8	11	348238	348338	348438	357.40	1.1281 - 1.1905	424.70	391.10	379.75	374.30	368.50	363.95
1.2500	1 1/4	.9995	8	3	11 1/2	348240	348340	348440	378.40	1.1906 - 1.2530	445.60	411.95	400.55	395.15	389.40	384.95
1.3125	1 5/16	.9995	8	3	11 1/2	348242	348342	348442	418.45	1.2531 - 1.3155	485.85	452.00	440.80	435.45	429.60	425.20
1.3750	1 3/8	.9995	8	3 1/4	12	348244	348344	348444	458.50	1.3156 - 1.3780	525.85	492.25	480.85	475.30	469.70	464.95
1.4375	1 7/16	.9995	8	3 1/4	12	348246	348346	348446	485.75	1.3781 - 1.4405	553.20	519.25	508.05	502.75	496.95	492.40
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	348248	348348	348448	513.10	1.4406 - 1.5030	580.45	546.75	535.65	529.95	524.30	519.90

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 RIGHT SPIRAL CHUCKING REAMERS

TYPE 3432 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3436 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - FOR CAST IRON
TYPE 3438 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - FOR STEEL

Carbide tips brazed to one piece hardened alloy steel bodies. Right spiral polished flutes.

Right spiral flutes have a greater chip clearing ability for use in blind holes. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with partial flute length carbide. Tool geometry and carbide grade appropriate for material being machined.



Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLTS.	LENGTH			NON-FERR. TYPE 3432 EDP NO.	CAST IRON TYPE 3436 EDP NO.	STEEL TYPE 3438 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	CARB	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3/16	.1805	4	1 1/8	1/2	4 1/2	343206	343606	343806	$100.15	.1770 - .2040	$159.45	$129.80	$119.70	$115.15	$109.90	$106.00
.2188	7/32	.2075	4	1 1/4	1/2	5	343207	343607	343807	100.15	.2041 - .2210	159.45	129.80	119.70	115.15	109.90	106.00
.2344	15/64	.2265	4	1 1/2	1/2	6	34322344	34362344	34382344	100.15	.2211 - .2380	159.45	129.80	119.70	115.15	109.90	106.00
.2500	1/4	.2405	4	1 1/2	1/2	6	343208	343608	343808	100.15	.2381 - .2530	159.45	129.80	119.70	115.15	109.90	106.00
.2812	9/32	.2485	4	1 1/2	1/2	6	343209	343609	343809	100.30	.2531 - .2840	159.60	130.05	120.05	115.45	110.30	106.25
.3125	5/16	.2792	4	1 1/2	1/2	6	343210	343610	343810	100.30	.2841 - .3150	159.60	130.05	120.05	115.45	110.30	106.25
.3438	11/32	.2792	4	1 1/2	5/8	6	343211	343611	343811	110.60	.3151 - .3470	169.90	140.30	130.35	125.65	120.40	116.25
.3750	3/8	.3105	4	1 3/4	5/8	7	343212	343612	343812	111.60	.3471 - .3780	170.85	141.10	131.20	126.50	121.30	117.30
.4062	13/32	.3105	4	1 3/4	5/8	7	343213	343613	343813	116.55	.3781 - .4090	175.85	146.00	136.20	131.40	126.35	122.35
.4375	7/16	.3730	6	1 3/4	5/8	7	343214	343614	343814	121.10	.4091 - .4410	180.25	150.65	140.65	135.85	130.85	126.85
.4688	15/32	.3730	6	1 3/4	5/8	7	343215	343615	343815	128.75	.4411 - .4720	188.15	158.35	148.40	143.70	138.60	134.70
.5000	1/2	.4355	6	2	5/8	8	343216	343616	343816	138.65	.4721 - .5030	201.95	170.10	159.55	154.40	149.05	144.75
.5312	17/32	.4355	6	2	5/8	8	343217	343617	343817	142.85	.5031 - .5340	206.00	174.50	163.80	158.70	153.30	148.95
.5625	9/16	.4355	6	2	5/8	8	343218	343618	343818	142.85	.5341 - .5660	206.00	174.50	163.80	158.70	153.30	148.95
.5938	19/32	.4355	6	2	5/8	8	343219	343619	343819	147.20	.5661 - .5970	210.50	178.80	168.00	163.10	157.55	153.35
.6250	5/8	.5615	6	2 1/4	5/8	9	343220	343620	343820	147.20	.5971 - .6280	210.50	178.80	168.00	163.10	157.55	153.35
.6562	21/32	.5615	6	2 1/4	5/8	9	343221	343621	343821	151.75	.6281 - .6590	214.90	183.20	172.60	167.60	162.05	157.65
.6875	11/16	.5615	6	2 1/4	5/8	9	343222	343622	343822	161.30	.6591 - .6910	224.40	192.65	182.20	177.05	171.65	167.35
.7188	23/32	.5615	6	2 1/4	5/8	9	343223	343623	343823	163.75	.6911 - .7220	226.80	195.30	184.65	179.60	174.10	169.90
.7500	3/4	.6245	6	2 1/2	3/4	9 1/2	343224	343624	343824	165.95	.7221 - .7530	229.25	197.55	186.95	182.05	176.55	172.15
.7812	25/32	.6245	6	2 1/2	3/4	9 1/2	343225	343625	343825	170.50	.7531 - .7840	233.75	202.00	191.45	186.40	181.00	176.70
.8125	13/16	.6245	6	2 1/2	3/4	9 1/2	343226	343626	343826	170.50	.7841 - .8160	233.75	202.00	191.45	186.40	181.00	176.70
.8438	27/32	.6245	6	2 1/2	3/4	9 1/2	343227	343627	343827	179.60	.8161 - .8470	242.60	211.20	200.55	195.50	190.05	185.65
.8750	7/8	.7495	6	2 5/8	3/4	10	343228	343628	343828	186.35	.8471 - .8780	252.00	219.25	208.10	202.80	197.20	192.65
.9062	29/32	.7495	6	2 5/8	3/4	10	343229	343629	343829	217.15	.8781 - .9090	282.65	249.75	238.75	233.65	228.00	223.60
.9375	15/16	.7495	8	2 5/8	3/4	10	343230	343630	343830	217.15	.9091 - .9410	282.65	249.75	238.75	233.65	228.00	223.60
.9688	31/32	.7495	8	2 5/8	3/4	10	343231	343631	343831	227.70	.9411 - .9720	293.50	260.55	249.35	244.25	238.50	233.95
1.0000	1	.8745	8	2 3/4	3/4	10 1/2	343232	343632	343832	227.70	.9721 - 1.0030	293.50	260.55	249.35	244.25	238.50	233.95
1.0625	1 1/16	.8745	8	2 3/4	3/4	10 1/2	343234	343634	343834	244.30	1.0031 - 1.0660	309.95	277.00	266.05	260.80	255.30	250.75
1.1250	1 1/8	.8745	8	2 7/8	7/8	11	343236	343636	343836	251.85	1.0661 - 1.1280	317.65	284.60	273.65	268.25	262.80	258.25
1.1875	1 3/16	.9995	8	2 7/8	7/8	11	343238	343638	343838	264.60	1.1281 - 1.1905	330.20	297.35	286.35	281.25	275.40	270.95
1.2500	1 1/4	.9995	8	3	7/8	11 1/2	343240	343640	343840	280.20	1.1906 - 1.2530	345.95	312.95	302.05	296.60	291.05	286.60
1.3125	1 5/16	.9995	8	3	7/8	11 1/2	343242	343642	343842	309.95	1.2531 - 1.3155	375.60	342.65	331.80	326.55	320.90	316.45
1.3750	1 3/8	.9995	8	3 1/4	7/8	12	343244	343644	343844	339.45	1.3156 - 1.3780	405.15	372.25	361.25	355.95	350.35	346.00
1.4375	1 7/16	.9995	8	3 1/4	7/8	12	343246	343646	343846	359.80	1.3781 - 1.4405	425.40	392.40	381.55	376.30	370.50	366.15
1.5000	1 1/2	1.2495	8	3 1/2	7/8	12 1/2	343248	343648	343848	380.05	1.4406 - 1.5030	445.60	412.80	401.65	396.50	390.80	386.35

*Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED NAS 897 LEFT SPIRAL CHUCKING REAMERS

TYPE 3433 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - FOR NON-FERROUS
TYPE 3437 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - FOR CAST IRON
TYPE 3439 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - FOR STEEL

Carbide tips brazed to one piece hardened alloy steel bodies. Left spiral polished flutes.

Left spiral flutes should only be used on through holes and very hard materials. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.

NAS 897 chucking reamers manufactured to national aerospace standards 897 C with partial flute length carbide. Tool geometry and carbide grade appropriate for material being machined.



Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.

For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX SHANK DIAM.	NO. OF FLTS.	LENGTH			NON-FERR. TYPE 3433 EDP NO.	CAST IRON TYPE 3437 EDP NO.	STEEL TYPE 3439 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT.	CARB.	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.1875	3⁄16	.1805	4	1 1⁄8	1⁄2	4 1⁄2	343306	343706	343906	$106.75	.1770 - .2040	$170.05	$138.45	$127.80	$122.80	$117.30	$113.00
.2188	7⁄32	.2075	4	1 1⁄4	1⁄2	5	343307	343707	343907	106.75	.2041 - .2210	170.05	138.45	127.80	122.80	117.30	113.00
.2344	15⁄64	.2265	4	1 1⁄2	1⁄2	6	34332344	34372344	34392344	106.75	.2211 - .2380	170.05	138.45	127.80	122.80	117.30	113.00
.2500	1⁄4	.2405	4	1 1⁄2	1⁄2	6	343308	343708	343908	106.75	.2381 - .2530	170.05	138.45	127.80	122.80	117.30	113.00
.2812	9⁄32	.2485	4	1 1⁄2	1⁄2	6	343309	343709	343909	107.15	.2531 - .2840	170.45	138.65	128.15	122.90	117.60	113.45
.3125	5⁄16	.2792	4	1 1⁄2	1⁄2	6	343310	343710	343910	107.15	.2841 - .3150	170.45	138.65	128.15	122.90	117.60	113.45
.3438	11⁄32	.2792	4	1 1⁄2	5⁄8	6	343311	343711	343911	117.90	.3151 - .3470	181.25	149.75	138.95	133.75	128.45	124.25
.3750	3⁄8	.3105	4	1 3⁄4	5⁄8	7	343312	343712	343912	119.05	.3471 - .3780	182.30	150.65	139.95	134.80	129.45	125.10
.4062	13⁄32	.3105	4	1 3⁄4	5⁄8	7	343313	343713	343913	124.30	.3781 - .4090	187.40	155.90	145.25	140.30	134.75	130.55
.4375	7⁄16	.3730	6	1 3⁄4	5⁄8	7	343314	343714	343914	129.15	.4091 - .4410	192.20	160.60	150.10	145.10	139.50	135.40
.4688	15⁄32	.3730	6	1 3⁄4	5⁄8	7	343315	343715	343915	137.25	.4411 - .4720	200.60	169.00	158.35	153.30	147.85	143.55
.5000	1⁄2	.4355	6	2	5⁄8	8	343316	343716	343916	142.30	.4721 - .5030	207.25	174.80	163.85	158.70	153.25	148.75
.5312	17⁄32	.4355	6	2	5⁄8	8	343317	343717	343917	146.70	.5031 - .5340	211.55	179.00	168.00	163.05	157.45	152.95
.5625	9⁄16	.4355	6	2	5⁄8	8	343318	343718	343918	146.70	.5341 - .5660	211.55	179.00	168.00	163.05	157.45	152.95
.5938	19⁄32	.4355	6	2	5⁄8	8	343319	343719	343919	151.15	.5661 - .5970	216.10	183.40	172.70	167.60	161.90	157.50
.6250	5⁄8	.5615	6	2 1⁄4	5⁄8	9	343320	343720	343920	151.15	.5971 - .6280	216.10	183.40	172.70	167.60	161.90	157.50
.6562	21⁄32	.5615	6	2 1⁄4	5⁄8	9	343321	343721	343921	155.60	.6281 - .6590	220.55	188.10	177.15	171.85	166.30	162.05
.6875	11⁄16	.5615	6	2 1⁄4	5⁄8	9	343322	343722	343922	165.50	.6591 - .6910	230.45	197.90	187.05	181.65	176.25	171.80
.7188	23⁄32	.5615	6	2 1⁄4	5⁄8	9	343323	343723	343923	167.95	.6911 - .7220	232.95	200.40	189.55	184.45	178.80	174.50
.7500	3⁄4	.6245	6	2 1⁄2	3⁄4	9 1⁄2	343324	343724	343924	170.45	.7221 - .7530	235.35	202.80	192.00	186.90	181.25	176.75
.7812	25⁄32	.6245	6	2 1⁄2	3⁄4	9 1⁄2	343325	343725	343925	175.00	.7531 - .7840	240.10	207.40	196.65	191.40	185.85	181.35
.8125	13⁄16	.6245	6	2 1⁄2	3⁄4	9 1⁄2	343326	343726	343926	175.00	.7841 - .8160	240.10	207.40	196.65	191.40	185.85	181.35
.8438	27⁄32	.6245	6	2 1⁄2	3⁄4	9 1⁄2	343327	343727	343927	184.45	.8161 - .8470	249.35	216.85	205.80	200.70	195.00	190.70
.8750	7⁄8	.7495	6	2 5⁄8	3⁄4	10	343328	343728	343928	191.40	.8471 - .8780	258.85	225.00	213.50	208.25	202.45	197.80
.9062	29⁄32	.7495	6	2 5⁄8	3⁄4	10	343329	343729	343929	222.90	.8781 - .9090	290.20	256.55	245.30	239.80	233.95	229.60
.9375	15⁄16	.7495	8	2 5⁄8	3⁄4	10	343330	343730	343930	222.90	.9091 - .9410	290.20	256.55	245.30	239.80	233.95	229.60
.9688	31⁄32	.7495	8	2 5⁄8	3⁄4	10	343331	343731	343931	233.75	.9411 - .9720	301.15	267.40	256.15	250.75	245.00	240.40
1.0000	1	.8745	8	2 3⁄4	3⁄4	10 1⁄2	343332	343732	343932	233.75	.9721 - 1.0030	301.15	267.40	256.15	250.75	245.00	240.40
1.0625	1 1⁄16	.8745	8	2 3⁄4	3⁄4	10 1⁄2	343334	343734	343934	250.80	1.0031 - 1.0660	318.10	284.60	273.05	267.80	262.00	257.45
1.1250	1 1⁄8	.8745	8	2 7⁄8	7⁄8	11	343336	343736	343936	258.65	1.0661 - 1.1280	326.05	292.20	280.85	275.45	269.80	265.25
1.1875	1 3⁄16	.9995	8	2 7⁄8	7⁄8	11	343338	343738	343938	271.80	1.1281 - 1.1905	339.10	305.35	293.95	288.60	282.85	278.30
1.2500	1 1⁄4	.9995	8	3	7⁄8	11 1⁄2	343340	343740	343940	287.55	1.1906 - 1.2530	354.95	321.35	309.95	304.65	298.75	294.15
1.3125	1 5⁄16	.9995	8	3	7⁄8	11 1⁄2	343342	343742	343942	318.10	1.2531 - 1.3155	385.70	352.05	340.55	335.30	329.30	325.00
1.3750	1 3⁄8	.9995	8	3 1⁄4	7⁄8	12	343344	343744	343944	348.60	1.3156 - 1.3780	416.10	382.20	370.85	365.55	359.80	355.10
1.4375	1 7⁄16	.9995	8	3 1⁄4	7⁄8	12	343346	343746	343946	369.45	1.3781 - 1.4405	436.65	402.90	391.85	386.25	380.60	375.95
1.5000	1 1⁄2	1.2495	8	3 1⁄2	7⁄8	12 1⁄2	343348	343748	343948	390.30	1.4406 - 1.5030	457.65	423.80	412.50	407.25	401.45	396.75

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED h6 SHANK REAMER - CENTER FED COOLANT

TYPE 3414h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3424h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3434h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes. Material specific geometry and carbide grade for the ultimate in performance and tool life.

Full length center coolant fed hole rapidly flushes chips along the flute and out of the hole preventing recutting of chips and providing superior finishes. Precision ground axially aligned diameters for accuracy.



Tool diameter tolerance: +.0002"/-.0000".
Shank diameter tolerance thru .3750": +.0000"/-.0003".
over .3750": +.0000"/-.0004".

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	NON-FERR. TYPE 3414h6 EDP NO.	CAST IRON TYPE 3424h6 EDP NO.	STEEL TYPE 3434h6 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3471 - .3780	.3125	4	1 ¾	5	341412h6	342412h6	343412h6	$394.25	$351.70	$337.55	$330.75	$323.35	$317.80
.3781 - .4090	.3125	4	1 ¾	5	341413h6	342413h6	343413h6	395.10	352.80	338.65	331.80	324.60	318.65
.4091 - .4410	.3750	6	1 ¾	5	341414h6	342414h6	343414h6	398.45	355.90	341.60	335.00	327.45	321.95
.4411 - .4720	.3750	6	1 ¾	5	341415h6	342415h6	343415h6	401.10	358.70	344.40	337.60	330.25	324.65
.4721 - .5030	.4375	6	2	6	341416h6	342416h6	343416h6	404.75	362.25	348.05	341.40	334.05	328.30
.5031 - .5340	.4375	6	2	6	341417h6	342417h6	343417h6	411.65	369.25	355.10	348.45	341.25	335.45
.5341 - .5660	.4375	6	2	6	341418h6	342418h6	343418h6	416.55	374.15	359.85	353.15	345.95	340.15
.5661 - .5970	.4375	6	2	6	341419h6	342419h6	343419h6	423.45	380.85	366.60	360.00	352.80	347.05
.5971 - .6280	.5625	6	2 ¼	6	341420h6	342420h6	343420h6	429.80	387.40	373.25	366.40	359.15	353.45
.6281 - .6590	.5625	6	2 ¼	6	341421h6	342421h6	343421h6	466.70	424.35	410.00	403.50	396.15	390.40
.6591 - .6910	.5625	6	2 ¼	6	341422h6	342422h6	343422h6	474.55	432.20	417.95	411.25	403.70	398.10
.6911 - .7220	.5625	6	2 ¼	6	341423h6	342423h6	343423h6	491.25	449.05	434.75	427.90	420.70	414.90
.7221 - .7530	.6250	6	2 ½	6	341424h6	342424h6	343424h6	491.25	449.05	434.75	427.90	420.70	414.90
.7531 - .7840	.6250	6	2 ½	6	341425h6	342425h6	343425h6	503.35	461.00	446.75	439.95	432.75	426.95
.7841 - .8160	.6250	6	2 ½	6	341426h6	342426h6	343426h6	503.35	461.00	446.75	439.95	432.75	426.95
.8161 - .8470	.6250	6	2 ½	6	341427h6	342427h6	343427h6	517.70	475.15	461.15	454.25	446.90	441.05
.8471 - .8780	.7500	6	2 ⅝	6	341428h6	342428h6	343428h6	534.40	491.95	477.75	471.05	463.75	458.00
.8781 - .9090	.7500	6	2 ⅝	6	341429h6	342429h6	343429h6	584.10	541.75	527.50	520.75	513.45	507.70
.9091 - .9410	.7500	8	2 ⅝	6	341430h6	342430h6	343430h6	584.10	541.75	527.50	520.75	513.45	507.70
.9411 - .9720	.7500	8	2 ⅝	6	341431h6	342431h6	343431h6	585.95	543.50	529.40	522.60	515.25	509.45
.9721 - 1.0030	.8750	8	2 ¾	6	341432h6	342432h6	343432h6	585.95	543.50	529.40	522.60	515.25	509.45

METRIC

CARBIDE TIPPED h6 SHANK REAMER - CENTER FED COOLANT

TYPE 3414h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3424h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3434h6 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR STEEL

Tool diameter tolerance: +.0051mm/-.0000mm.
Shank diameter tolerance thru 10mm: +.0000mm/-.0076mm.
over 10mm: +.0000mm/-.0102mm.

METRIC SIZE RANGE (mm)	SHANK DIAMETER (mm)	NO. OF FLUTES	FLUTE LENGTH (mm)	OVERALL LENGTH (mm)	NON-FERR. TYPE 3414h6 EDP NO.	CAST IRON TYPE 3424h6 EDP NO.	STEEL TYPE 3434h6 EDP NO.	PRICE EACH - FINISHED TO METRIC SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
8.815 - 9.601	8	4	45	127	3414095h6	3424095h6	3434095h6	$401.30	$358.95	$344.70	$337.75	$330.75	$324.80
9.602 - 10.389	8	4	45	127	3414100h6	3424100h6	3434100h6	402.35	360.00	345.95	338.95	331.80	325.80
10.390 - 11.201	10	6	45	127	3414110h6	3424110h6	3434110h6	405.30	363.25	349.00	342.15	335.00	329.05
11.202 - 12.000	10	6	45	127	3414120h6	3424120h6	3434120h6	408.15	366.05	351.70	344.70	337.60	331.80
12.001 - 12.875	10	6	51	153	3414125h6	3424125h6	3434125h6	411.65	369.75	355.20	348.45	341.40	335.45
12.876 - 13.565	12	6	51	153	3414135h6	3424135h6	3434135h6	418.90	376.80	362.40	355.65	348.45	342.45
13.566 - 14.376	12	6	51	153	3414140h6	3424140h6	3434140h6	423.55	381.30	367.15	360.10	353.15	347.20
14.377 - 15.164	12	6	51	153	3414150h6	3424150h6	3434150h6	430.55	388.15	374.15	367.15	360.00	354.05
15.165 - 16.100	14	6	57	153	3414160h6	3424160h6	3434160h6	436.95	394.80	380.50	373.45	366.40	360.50
16.101 - 16.740	14	6	57	153	3414165h6	3424165h6	3434165h6	473.85	431.50	417.25	410.50	403.50	397.55
16.741 - 17.551	14	6	57	153	3414175h6	3424175h6	3434175h6	481.60	439.55	425.30	418.25	411.25	405.25
17.552 - 18.340	14	6	57	153	3414180h6	3424180h6	3434180h6	498.40	456.35	442.00	435.20	427.90	422.05
18.341 - 19.250	16	6	64	153	3414190h6	3424190h6	3434190h6	498.40	456.35	442.00	435.20	427.90	422.05
19.251 - 20.126	16	6	64	153	3414200h6	3424200h6	3434200h6	502.60	459.90	445.85	438.95	431.70	425.90
20.127 - 21.127	16	6	64	153	3414210h6	3424210h6	3434210h6	516.65	474.25	460.05	453.25	445.95	440.25
21.128 - 22.127	20	6	64	153	3414220h6	3424220h6	3434220h6	516.65	474.25	460.05	453.25	445.95	440.25
22.128 - 23.127	20	6	67	153	3414230h6	3424230h6	3434230h6	582.90	540.40	526.35	519.40	512.25	506.45
23.128 - 24.127	20	8	67	153	3414240h6	3424240h6	3434240h6	584.85	542.35	528.20	521.35	514.15	508.35
24.128 - 25.127	20	8	70	153	3414250h6	3424250h6	3434250h6	584.85	542.35	528.20	521.35	514.15	508.35

*Quantities of 15 or more: call for pricing.

CARBIDE TIPPED h6 SHANK REAMER - FLUTE FED COOLANT

TYPE 3416h6- STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3426h6 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3435h6 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes. Material specific geometry and carbide grade for the ultimate in performance and tool life.

Coolant fed hole in each flute rapidly flushes chips forward ahead of the reamer to help break chips and provide superior finishes. Precision ground axially aligned diameters for accuracy.



Tool diameter tolerance: +.0002"/-.0000".
Shank diameter tolerance thru .3750": +.0000"/-.0003".
over .3750": +.0000"/-.0004".

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	NON-FERR. TYPE 3416h6 EDP NO.	CAST IRON TYPE 3426h6 EDP NO.	STEEL TYPE 3435h6 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3471 - .3780	.3125	4	1 ¾	5	341612h6	342612h6	343512h6	$396.90	$354.55	$340.35	$333.55	$326.40	$320.45
.3781 - .4090	.3125	4	1 ¾	5	341613h6	342613h6	343513h6	404.75	362.25	348.05	341.40	334.05	328.30
.4091 - .4410	.3750	6	1 ¾	5	341614h6	342614h6	343514h6	412.30	370.10	355.90	349.10	341.90	336.15
.4411 - .4720	.3750	6	1 ¾	5	341615h6	342615h6	343515h6	412.30	370.10	355.90	349.10	341.90	336.15
.4721 - .5030	.4375	6	2	6	341616h6	342616h6	343516h6	412.30	370.10	355.90	349.10	341.90	336.15
.5031 - .5340	.4375	6	2	6	341617h6	342617h6	343517h6	431.35	389.00	374.85	368.15	360.80	355.05
.5341 - .5660	.4375	6	2	6	341618h6	342618h6	343518h6	436.25	393.95	379.55	372.80	365.55	359.85
.5661 - .5970	.4375	6	2	6	341619h6	342619h6	343519h6	439.60	397.05	382.90	375.95	368.70	363.25
.5971 - .6280	.5625	6	2 ¼	6	341620h6	342620h6	343520h6	439.60	397.05	382.90	375.95	368.70	363.25
.6281 - .6590	.5625	6	2 ¼	6	341621h6	342621h6	343521h6	478.10	435.70	421.20	414.70	407.35	401.60
.6591 - .6910	.5625	6	2 ¼	6	341622h6	342622h6	343522h6	478.10	435.70	421.20	414.70	407.35	401.60
.6911 - .7220	.5625	6	2 ¼	6	341623h6	342623h6	343523h6	505.05	462.50	448.35	441.70	434.20	428.60
.7221 - .7530	.6250	6	2 ½	6	341624h6	342624h6	343524h6	505.05	462.50	448.35	441.70	434.20	428.60
.7531 .7840	.6250	6	2 ½	6	341625h6	342625h6	343525h6	506.80	464.15	450.15	443.25	435.95	430.30
.7841 .8160	.6250	6	2 ½	6	341626h6	342626h6	343526h6	506.80	464.15	450.15	443.25	435.95	430.30
.8161 .8470	.6250	6	2 ½	6	341627h6	342627h6	343527h6	519.35	477.00	462.75	456.05	448.70	442.90
.8471 .8780	.7500	6	2 ⅝	6	341628h6	342628h6	343528h6	536.20	493.65	479.50	472.70	465.50	459.75
.8781 .9090	.7500	6	2 ⅝	6	341629h6	342629h6	343529h6	591.80	549.35	535.10	528.35	521.10	515.25
.9091 .9410	.7500	8	2 ⅝	6	341630h6	342630h6	343530h6	603.40	560.85	546.75	540.00	532.65	526.95
.9411 .9720	.7500	8	2 ⅝	6	341631h6	342631h6	343531h6	603.40	560.85	546.75	540.00	532.65	526.95
.9721 1.0030	.8750	8	2 ¾	6	341632h6	342632h6	343532h6	603.40	560.85	546.75	540.00	532.65	526.95

CARBIDE TIPPED h6 SHANK REAMER - FLUTE FED COOLANT METRIC

TYPE 3416h6- STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3426h6 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3435h6 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR STEEL

Tool diameter tolerance: +.0051mm/-.0000mm.
Shank diameter tolerance thru 10mm: +.0000mm/-.0076mm.
over 10mm: +.0000mm/-.0102mm.

METRIC SIZE RANGE (mm)	SHANK DIAMETER (mm)	NO. OF FLUTES	FLUTE LENGTH (mm)	OVERALL LENGTH (mm)	NON-FERR. TYPE 3416h6 EDP NO.	CAST IRON TYPE 3426h6 EDP NO.	STEEL TYPE 3435h6 EDP NO.	PRICE EACH - FINISHED TO METRIC SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
8.815 - 9.601	8	4	45	127	3416095h6	3426095h6	3435095h6	$403.95	$361.75	$347.50	$340.55	$333.55	$327.45
9.602 - 10.389	8	4	45	127	3416100h6	3426100h6	3435100h6	411.65	369.75	355.20	348.45	341.40	335.45
10.390 - 11.201	10	6	45	127	3416110h6	3426110h6	3435110h6	419.50	377.35	363.25	356.10	349.10	343.20
11.202 - 12.000	10	6	45	127	3416120h6	3426120h6	3435120h6	419.50	377.35	363.25	356.10	349.10	343.20
12.001 - 12.875	10	6	51	153	3416125h6	3426125h6	3435125h6	419.50	377.35	363.25	356.10	349.10	343.20
12.876 - 13.565	12	6	51	153	3416135h6	3426135h6	3435135h6	438.35	396.20	381.90	375.20	368.15	362.05
13.566 - 14.376	12	6	51	153	3416140h6	3426140h6	3435140h6	443.25	401.10	387.05	380.05	372.80	367.10
14.377 - 15.164	12	6	51	153	3416150h6	3426150h6	3435150h6	446.75	404.40	390.20	383.20	375.95	370.30
15.165 - 16.100	14	6	57	153	3416160h6	3426160h6	3435160h6	446.75	404.40	390.20	383.20	375.95	370.30
16.101 - 16.740	14	6	57	153	3416165h6	3426165h6	3435165h6	485.40	442.80	428.60	421.80	414.70	408.75
16.741 - 17.551	14	6	57	153	3416175h6	3426175h6	3435175h6	485.40	442.80	428.60	421.80	414.70	408.75
17.552 - 18.340	14	6	57	153	3416180h6	3426180h6	3435180h6	512.10	469.75	455.40	448.70	441.70	435.75
18.341 - 19.250	16	6	64	153	3416190h6	3426190h6	3435190h6	512.10	469.75	455.40	448.70	441.70	435.75
19.251 - 20.126	16	6	64	153	3416200h6	3426200h6	3435200h6	505.90	463.45	449.25	442.60	435.35	429.40
20.127 - 21.127	16	6	64	153	3416210h6	3426210h6	3435210h6	518.50	475.95	461.70	455.05	447.70	442.00
21.128 - 22.127	20	6	64	153	3416220h6	3426220h6	3435220h6	518.50	475.95	461.70	455.05	447.70	442.00
22.128 - 23.127	20	6	67	153	3416230h6	3426230h6	3435230h6	590.75	548.30	534.05	527.40	520.10	514.15
23.128 - 24.127	20	8	67	153	3416240h6	3426240h6	3435240h6	602.35	560.00	545.70	539.00	531.65	525.90
24.128 - 25.127	20	8	70	153	3416250h6	3426250h6	3435250h6	602.35	560.00	545.70	539.00	531.65	525.90

*Quantities of 15 or more: call for pricing.

Made in U.S.A.

CARBIDE TIPPED h6 SHANK REAMER - CENTER FED COOLANT

TYPE 3411h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3413h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3415h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Right spiral flutes.
Material specific geometry and carbide grade for the ultimate in performance and tool life.

Full length center coolant fed hole rapidly flushes chips along the flute and out of the hole preventing recutting of chips and providing superior finishes. Precision ground axially aligned diameters for accuracy.

Tool diameter tolerance: +.0002"/-.0000".
Shank diameter tolerance thru .3750": +.0000"/-.0003".
over .3750": +.0000"/-.0004".

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	NON-FERR. TYPE 3411h6 EDP NO.	CAST IRON TYPE 3413h6 EDP NO.	STEEL TYPE 3415h6 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3471 .3780	.3125	4	1 ¾	5	341112h6	341312h6	341512h6	$401.85	$359.65	$345.40	$338.65	$331.40	$325.50
.3781 .4090	.3125	4	1 ¾	5	341113h6	341313h6	341513h6	402.85	360.35	346.30	339.50	332.15	326.55
.4091 .4410	.3750	6	1 ¾	5	341114h6	341314h6	341514h6	406.30	363.65	349.50	342.70	335.50	329.75
.4411 .4720	.3750	6	1 ¾	5	341115h6	341315h6	341515h6	409.15	366.60	352.50	345.80	338.50	332.70
.4721 .5030	.4375	6	2	6	341116h6	341316h6	341516h6	421.95	379.40	365.25	358.40	351.10	345.40
.5031 .5340	.4375	6	2	6	341117h6	341317h6	341517h6	434.20	391.85	377.50	370.80	363.45	357.70
.5341 .5660	.4375	6	2	6	341118h6	341318h6	341518h6	434.20	391.85	377.50	370.80	363.45	357.70
.5661 .5970	.4375	6	2	6	341119h6	341319h6	341519h6	448.05	405.50	391.35	384.60	377.30	371.50
.5971 .6280	.5625	6	2 ¼	6	341120h6	341320h6	341520h6	448.05	405.50	391.35	384.60	377.30	371.50
.6281 .6590	.5625	6	2 ¼	6	341121h6	341321h6	341521h6	495.25	452.85	438.60	431.85	424.50	418.75
.6591 .6910	.5625	6	2 ¼	6	341122h6	341322h6	341522h6	495.25	452.85	438.60	431.85	424.50	418.75
.6911 .7220	.5625	6	2 ¼	6	341123h6	341323h6	341523h6	513.05	470.45	456.35	449.45	442.25	436.45
.7221 .7530	.6250	6	2 ½	6	341124h6	341324h6	341524h6	486.50	444.00	429.80	423.10	415.80	410.00
.7531 .7840	.6250	6	2 ½	6	341125h6	341325h6	341525h6	546.20	503.70	489.60	482.85	475.50	469.75
.7841 .8160	.6250	6	2 ½	6	341126h6	341326h6	341526h6	552.10	509.60	495.40	488.65	481.30	475.60
.8161 .8470	.6250	6	2 ½	6	341127h6	341327h6	341527h6	560.75	518.35	504.05	497.35	490.05	484.35
.8471 .8780	.7500	6	2 ⅝	6	341128h6	341328h6	341528h6	586.80	544.45	530.20	523.55	516.20	510.35
.8781 .9090	.7500	6	2 ⅝	6	341129h6	341329h6	341529h6	616.70	574.30	560.05	553.35	546.05	540.10
.9091 .9410	.7500	8	2 ⅝	6	341130h6	341330h6	341530h6	642.05	599.50	585.25	578.60	571.25	565.60
.9411 .9720	.7500	8	2 ⅝	6	341131h6	341331h6	341531h6	643.70	601.25	587.00	580.30	572.95	567.30
.9721 1.0030	.8750	8	2 ¾	6	341132h6	341332h6	341532h6	644.70	602.05	587.95	581.20	573.85	568.10

METRIC

CARBIDE TIPPED h6 SHANK REAMER - CENTER FED COOLANT

TYPE 3411h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3413h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3415h6 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR STEEL

Tool diameter tolerance: +.0051mm/-.0000mm.
Shank diameter tolerance thru 10mm: +.0000mm/-.0076mm.
over 10mm: +.0000mm/-.0102mm.

METRIC SIZE RANGE (mm)	SHANK DIAMETER (mm)	NO. OF FLUTES	FLUTE LENGTH (mm)	OVERALL LENGTH (mm)	NON-FERR. TYPE 3411h6 EDP NO.	CAST IRON TYPE 3413h6 EDP NO.	STEEL TYPE 3415h6 EDP NO.	PRICE EACH - FINISHED TO METRIC SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
8.815 - 9.601	8	4	45	127	3411095h6	3413095h6	3415095h6	$401.85	$359.65	$345.40	$338.65	$331.40	$325.50
9.602 - 10.389	8	4	45	127	3411100h6	3413100h6	3415100h6	402.85	360.35	346.30	339.50	332.15	326.55
10.390 - 11.201	10	6	45	127	3411110h6	3413110h6	3415110h6	406.30	363.65	349.50	342.70	335.50	329.75
11.202 - 12.000	10	6	45	127	3411120h6	3413120h6	3415120h6	421.95	379.40	365.25	358.40	351.10	345.40
12.001 - 12.875	10	6	51	153	3411125h6	3413125h6	3415125h6	434.20	391.85	377.50	370.80	363.45	357.70
12.876 - 13.565	12	6	51	153	3411135h6	3413135h6	3415135h6	434.20	391.85	377.50	370.80	363.45	357.70
13.566 - 14.376	12	6	51	153	3411140h6	3413140h6	3415140h6	434.20	391.85	377.50	370.80	363.45	357.70
14.377 - 15.164	12	6	51	153	3411150h6	3413150h6	3415150h6	448.05	405.50	391.35	384.60	377.30	371.50
15.165 - 16.100	14	6	57	153	3411160h6	3413160h6	3415160h6	495.25	452.85	438.60	431.85	424.50	418.75
16.101 - 16.740	14	6	57	153	3411165h6	3413165h6	3415165h6	495.25	452.85	438.60	431.85	424.50	418.75
16.741 - 17.551	14	6	57	153	3411175h6	3413175h6	3415175h6	495.25	452.85	438.60	431.85	424.50	418.75
17.552 - 18.340	14	6	57	153	3411180h6	3413180h6	3415180h6	513.05	470.45	456.35	449.45	442.25	436.45
18.341 - 19.250	16	6	64	153	3411190h6	3413190h6	3415190h6	546.20	503.70	489.60	482.85	475.50	469.75
19.251 - 20.126	16	6	64	153	3411200h6	3413200h6	3415200h6	552.10	509.60	495.40	488.65	481.30	475.60
20.127 - 21.127	16	6	64	153	3411210h6	3413210h6	3415210h6	560.75	518.35	504.05	497.35	490.05	484.35
21.128 - 22.127	20	6	64	153	3411220h6	3413220h6	3415220h6	586.80	544.45	530.20	523.55	516.20	510.35
22.128 - 23.127	20	6	67	153	3411230h6	3413230h6	3415230h6	642.05	599.50	585.25	578.60	571.25	565.60
23.128 - 24.127	20	8	67	153	3411240h6	3413240h6	3415240h6	643.70	601.25	587.00	580.30	572.95	567.30
24.128 - 25.127	20	8	70	153	3411250h6	3413250h6	3415250h6	644.70	602.05	587.95	581.20	573.85	568.10

*Quantities of 15 or more: call for pricing.

CARBIDE TIPPED h6 SHANK REAMER - FLUTE FED COOLANT

TYPE 3427h6- STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3428h6 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3429h6 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Left spiral flutes. Material specific geometry and carbide grade for the ultimate in performance and tool life.

Coolant fed hole in each flute rapidly flushes chips forward ahead of the reamer to help break chips and provide superior finishes. Precision ground axially aligned diameters for accuracy.

Tool diameter tolerance: +.0002"/-.0000".
Shank diameter tolerance thru .3750": +.0000"/-.0003".
over .3750": +.0000"/-.0004".

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	OVERALL LENGTH	NON-FERR. TYPE 3427h6 EDP NO.	CAST IRON TYPE 3428h6 EDP NO.	STEEL TYPE 3429h6 EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3471 - .3780	.3125	4	1 ¾	5	342712h6	342812h6	342912h6	$478.40	$435.80	$421.80	$414.90	$407.60	$401.75
.3781 - .4090	.3125	4	1 ¾	5	342713h6	342813h6	342913h6	479.90	437.55	423.35	416.55	409.30	403.50
.4091 - .4410	.3750	6	1 ¾	5	342714h6	342814h6	342914h6	483.55	441.00	426.95	420.15	412.85	407.10
.4411 - .4720	.3750	6	1 ¾	5	342715h6	342815h6	342915h6	487.25	444.65	430.55	423.65	416.35	410.60
.4721 - .5030	.4375	6	2	6	342716h6	342816h6	342916h6	492.30	449.75	435.70	428.75	421.45	415.80
.5031 - .5340	.4375	6	2	6	342717h6	342817h6	342917h6	500.85	458.20	444.20	437.35	430.10	424.35
.5341 - .5660	.4375	6	2	6	342718h6	342818h6	342918h6	506.85	464.50	450.25	443.50	436.05	430.50
.5661 - .5970	.4375	6	2	6	342719h6	342819h6	342919h6	515.60	473.25	459.05	452.40	444.90	439.20
.5971 - .6280	.5625	6	2 ¼	6	342720h6	342820h6	342920h6	523.65	481.10	466.95	460.20	452.95	447.15
.6281 - .6590	.5625	6	2 ¼	6	342721h6	342821h6	342921h6	570.70	528.20	514.10	507.35	500.00	494.35
.6591 - .6910	.5625	6	2 ¼	6	342722h6	342822h6	342922h6	580.80	538.25	523.95	517.30	510.10	504.20
.6911 - .7220	.5625	6	2 ¼	6	342723h6	342823h6	342923h6	591.20	548.65	534.60	527.75	520.45	514.85
.7221 - .7530	.6250	6	2 ½	6	342724h6	342824h6	342924h6	602.00	559.60	545.35	538.45	531.25	525.50
.7531 - .7840	.6250	6	2 ½	6	342725h6	342825h6	342925h6	610.75	568.35	554.20	547.40	540.05	534.30
.7841 - .8160	.6250	6	2 ½	6	342726h6	342826h6	342926h6	617.20	574.70	560.55	553.75	546.55	540.80
.8161 - .8470	.6250	6	2 ½	6	342727h6	342827h6	342927h6	626.85	584.35	570.30	563.50	556.10	550.40
.8471 - .8780	.7500	6	2 ⅝	6	342728h6	342828h6	342928h6	656.65	614.20	599.95	593.20	585.90	580.10
.8781 - .9090	.7500	6	2 ⅝	6	342729h6	342829h6	342929h6	690.40	647.85	633.65	627.00	619.55	613.90
.9091 - .9410	.7500	8	2 ⅝	6	342730h6	342830h6	342930h6	719.75	677.45	663.10	656.25	648.95	643.30
.9411 - .9720	.7500	8	2 ⅝	6	342731h6	342831h6	342931h6	721.30	679.00	664.65	657.95	650.65	644.85
.9721 - 1.0030	.8750	8	2 ¾	6	342732h6	342832h6	342932h6	722.20	679.65	665.50	658.70	651.55	645.70

CARBIDE TIPPED h6 SHANK REAMER - FLUTE FED COOLANT METRIC

TYPE 3427h6- STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3428h6 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3429h6 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR STEEL

Tool diameter tolerance: +.0051mm/-.0000mm.
Shank diameter tolerance thru 10mm: +.0000mm/-.0076mm.
over 10mm: +.0000mm/-.0102mm.

METRIC SIZE RANGE (mm)	SHANK DIAMETER (mm)	NO. OF FLUTES	FLUTE LENGTH (mm)	OVERALL LENGTH (mm)	NON-FERR. TYPE 3427h6 EDP NO.	CAST IRON TYPE 3428h6 EDP NO.	STEEL TYPE 3429h6 EDP NO.	PRICE EACH - FINISHED TO METRIC SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
8.815 9.601	8	4	45	127	3427095h6	3428095h6	3429095h6	$478.40	$435.80	$421.80	$414.90	$407.60	$401.75
9.602 10.389	8	4	45	127	3427100h6	3428100h6	3429100h6	479.90	437.55	423.35	416.55	409.30	403.50
10.390 11.201	10	6	45	127	3427110h6	3428110h6	3429110h6	483.55	441.00	426.95	420.15	412.85	407.10
11.202 12.000	10	6	45	127	3427120h6	3428120h6	3429120h6	492.30	449.75	435.70	428.75	421.45	415.80
12.001 12.875	10	6	51	153	3427125h6	3428125h6	3429125h6	500.85	458.20	444.20	437.35	430.10	424.35
12.876 13.565	12	6	51	153	3427135h6	3428135h6	3429135h6	506.85	464.50	450.25	443.50	436.05	430.50
13.566 14.376	12	6	51	153	3427140h6	3428140h6	3429140h6	506.85	464.50	450.25	443.50	436.05	430.50
14.377 15.164	12	6	51	153	3427150h6	3428150h6	3429150h6	515.60	473.25	459.05	452.40	444.90	439.20
15.165 16.100	14	6	57	153	3427160h6	3428160h6	3429160h6	570.70	528.20	514.10	507.35	500.00	494.35
16.101 16.740	14	6	57	153	3427165h6	3428165h6	3429165h6	580.80	538.25	523.95	517.30	510.10	504.20
16.741 17.551	14	6	57	153	3427175h6	3428175h6	3429175h6	580.80	538.25	523.95	517.30	510.10	504.20
17.552 18.340	14	6	57	153	3427180h6	3428180h6	3429180h6	591.20	548.65	534.60	527.75	520.45	514.85
18.341 19.250	16	6	64	153	3427190h6	3428190h6	3429190h6	610.75	568.35	554.20	547.40	540.05	534.30
19.251 20.126	16	6	64	153	3427200h6	3428200h6	3429200h6	617.20	574.70	560.55	553.75	546.55	540.80
20.127 21.127	16	6	64	153	3427210h6	3428210h6	3429210h6	626.85	584.35	570.30	563.50	556.10	550.40
21.128 22.127	20	6	64	153	3427220h6	3428220h6	3429220h6	656.65	614.20	599.95	593.20	585.90	580.10
22.128 23.127	20	6	67	153	3427230h6	3428230h6	3429230h6	719.75	677.45	663.10	656.25	648.95	643.30
23.128 24.127	20	8	67	153	3427240h6	3428240h6	3429240h6	721.30	679.00	664.65	657.95	650.65	644.85
24.128 25.127	20	8	70	153	3427250h6	3428250h6	3429250h6	722.20	679.65	665.50	658.70	651.55	645.70

*Quantities of 15 or more: call for pricing.

Made in U.S.A.

CARBIDE TIPPED FLUTE FED COOLANT REAMERS

TYPE 3416 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3426 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3435 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR STEEL

Flute long carbide tips (.2841" tool diameter and larger) brazed to one piece hardened alloy steel bodies. Straight polished flutes.

Coolant feeding hole in each flute for flushing chips forward through the hole being reamed. Tool geometry and carbide grade appropriate for material being machined. For longer overall length reamers, see page 113.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3416 EDP NO.	CAST IRON TYPE 3426 EDP NO.	STEEL TYPE 3435 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.1875	3⁄16	.1805	4	1 1⁄4*	5	341606	342606	343506	$225.10	.1770 - .2040	$292.80	$259.05	$247.50	$242.15	$236.30	$231.65
.2031	13⁄64	.1805	4	1 1⁄4*	5	34162031	34262031	34352031	225.10	-	-	-	-	-	-	-
.2188	7⁄32	.2075	4	1 1⁄4*	5	341607	342607	343507	225.10	.2041 - .2210	292.80	259.05	247.50	242.15	236.30	231.65
.2344	15⁄64	.2265	4	1 1⁄2*	6	34162344	34262344	34352344	225.10	.2211 - .2380	292.80	259.05	247.50	242.15	236.30	231.65
.2500	1⁄4	.2405	4	1 1⁄2*	6	341608	342608	343508	225.10	.2381 - .2530	292.80	259.05	247.50	242.15	236.30	231.65
.2656	17⁄64	.2485	4	1 1⁄2*	6	34162656	34262656	34352656	230.15	-	-	-	-	-	-	-
.2812	9⁄32	.2485	4	1 1⁄2*	6	341609	342609	343509	230.15	.2531 - .2840	298.00	264.05	252.65	247.15	241.35	236.95
.2969	19⁄64	.2792	4	1 1⁄2	6	34162969	34262969	34352969	249.75	-	-	-	-	-	-	-
.3125	5⁄16	.2792	4	1 1⁄2	6	341610	342610	343510	249.75	.2841 - .3150	317.65	283.50	272.10	266.85	261.10	256.50
.3281	21⁄64	.2792	4	1 1⁄2	6	34163281	34263281	34353281	249.75	-	-	-	-	-	-	-
.3438	11⁄32	.2792	4	1 1⁄2	6	341611	342611	343511	249.75	.3151 - .3470	317.65	283.50	272.10	266.85	261.10	256.50
.3594	23⁄64	.3105	4	1 3⁄4	7	34163594	34263594	34353594	249.75	-	-	-	-	-	-	-
.3750	3⁄8	.3105	4	1 3⁄4	7	341612	342612	343512	249.75	.3471 - .3780	317.65	283.50	272.10	266.85	261.10	256.50
.3906	25⁄64	.3105	4	1 3⁄4	7	34163906	34263906	34353906	255.85	-	-	-	-	-	-	-
.4062	13⁄32	.3105	4	1 3⁄4	7	341613	342613	343513	255.85	.3781 - .4090	323.75	289.85	278.55	273.00	267.25	262.55
.4219	27⁄64	.3730	6	1 3⁄4	7	34164219	34264219	34354219	262.15	-	-	-	-	-	-	-
.4375	7⁄16	.3730	6	1 3⁄4	7	341614	342614	343514	262.15	.4091 - .4410	330.00	296.05	284.75	279.25	273.55	268.85
.4531	29⁄64	.3730	6	1 3⁄4	7	34164531	34264531	34354531	262.15	-	-	-	-	-	-	-
.4688	15⁄32	.3730	6	1 3⁄4	7	341615	342615	343515	262.15	.4411 - .4720	330.00	296.05	284.75	279.25	273.55	268.85
.4844	31⁄64	.4355	6	2	8	34164844	34264844	34354844	262.15	-	-	-	-	-	-	-
.5000	1⁄2	.4355	6	2	8	341616	342616	343516	262.15	.4721 - .5030	330.00	296.05	284.75	279.25	273.55	268.85
.5156	33⁄64	.4355	6	2	8	34165156	34265156	34355156	277.35	-	-	-	-	-	-	-
.5312	17⁄32	.4355	6	2	8	341617	342617	343517	277.35	.5031 - .5340	345.05	311.20	299.90	294.50	288.55	284.00
.5625	9⁄16	.4355	6	2	8	341618	342618	343518	281.35	.5341 - .5660	349.00	315.20	303.60	298.25	292.40	287.85
.5938	19⁄32	.4355	6	2	8	341619	342619	343519	283.80	.5661 - .5970	351.55	317.75	306.30	300.85	295.05	290.45
.6250	5⁄8	.5615	6	2 1⁄4	9	341620	342620	343520	283.80	.5971 - .6280	351.55	317.75	306.30	300.85	295.05	290.45
.6562	21⁄32	.5615	6	2 1⁄4	9	341621	342621	343521	314.60	.6281 - .6590	382.55	348.45	337.05	331.75	325.80	321.35
.6875	11⁄16	.5615	6	2 1⁄4	9	341622	342622	343522	314.60	.6591 - .6910	382.55	348.45	337.05	331.75	325.80	321.35
.7188	23⁄32	.5615	6	2 1⁄4	9	341623	342623	343523	336.20	.6911 - .7220	403.95	370.10	358.75	353.30	347.40	342.80
.7500	3⁄4	.6245	6	2 1⁄2	9 1⁄2	341624	342624	343524	336.20	.7221 - .7530	403.95	370.10	358.75	353.30	347.40	342.80
.7812	25⁄32	.6245	6	2 1⁄2	9 1⁄2	341625	342625	343525	336.20	.7531 - .7840	403.95	370.10	358.75	353.30	347.40	342.80
.8125	13⁄16	.6245	6	2 1⁄2	9 1⁄2	341626	342626	343526	336.20	.7841 - .8160	403.95	370.10	358.75	353.30	347.40	342.80
.8438	27⁄32	.6245	6	2 1⁄2	9 1⁄2	341627	342627	343527	346.35	.8161 - .8470	414.05	380.30	368.70	363.35	357.65	352.85
.8750	7⁄8	.7495	6	2 5⁄8	10	341628	342628	343528	359.50	.8471 - .8780	429.80	394.45	382.70	377.00	371.15	366.30
.9062	29⁄32	.7495	6	2 5⁄8	10	341629	342629	343529	403.55	.8781 - .9090	473.85	438.70	426.95	421.20	415.05	410.50
.9375	15⁄16	.7495	8	2 5⁄8	10	341630	342630	343530	413.05	.9091 - .9410	483.20	448.05	436.25	430.65	424.50	419.85
.9688	31⁄32	.7495	8	2 5⁄8	10	341631	342631	343531	413.05	.9411 - .9720	483.20	448.05	436.25	430.65	424.50	419.85
1.0000	1	.8745	8	2 3⁄4	10 1⁄2	341632	342632	343532	413.05	.9721 - 1.0030	483.20	448.05	436.25	430.65	424.50	419.85
1.0625	1 1⁄16	.8745	8	2 3⁄4	10 1⁄2	341634	342634	343534	436.65	1.0031 - 1.0660	507.00	472.00	460.10	454.45	448.40	443.80
1.1250	1 1⁄8	.8745	8	2 7⁄8	11	341636	342636	343536	438.60	1.0661 - 1.1280	508.95	473.60	461.70	456.20	450.25	445.40
1.1875	1 3⁄16	.9995	8	2 7⁄8	11	341638	342638	343538	456.70	1.1281 - 1.1905	527.05	491.70	479.85	474.40	468.45	463.70
1.2500	1 1⁄4	.9995	8	3	11 1⁄2	341640	342640	343540	462.55	1.1906 - 1.2530	533.10	497.75	485.95	480.40	474.40	469.70
1.3125	1 5⁄16	.9995	8	3	11 1⁄2	341642	342642	343542	475.95	1.2531 - 1.3155	546.35	511.00	499.25	493.50	487.55	482.85
1.3750	1 3⁄8	.9995	8	3 1⁄4	12	341644	342644	343544	495.25	1.3156 - 1.3780	565.60	530.20	518.55	512.95	506.85	501.95
1.4375	1 7⁄16	.9995	8	3 1⁄4	12	341646	342646	343546	510.60	1.3781 - 1.4405	581.15	545.70	534.10	528.50	522.35	517.70
1.5000	1 1⁄2	1.2495	8	3 1⁄2	12 1⁄2	341648	342648	343548	527.75	1.4406 - 1.5030	598.15	562.95	551.20	545.50	539.50	534.75
1.5625	1 9⁄16	1.2495	8	3 1⁄2	12 1⁄2	341650	342650	343550	593.30	1.5031 - 1.5660	660.45	626.85	615.60	610.35	604.40	600.05
1.6250	1 5⁄8	1.2495	8	3 1⁄2	13	341652	342652	343552	652.40	1.5661 - 1.6280	719.45	686.00	674.60	669.35	663.45	659.10
1.6875	1 11⁄16	1.2495	8	3 1⁄2	13	341654	342654	343554	663.75	1.6281 - 1.6910	730.80	697.25	686.00	680.70	674.75	670.45
1.7500	1 3⁄4	1.2495	10	3 1⁄2	13 1⁄2	341656	342656	343556	725.35	1.6911 - 1.7530	792.40	758.80	747.45	742.30	736.55	731.90
1.8125	1 13⁄16	1.4995	10	3 1⁄2	13 1⁄2	341658	342658	343558	755.30	1.7531 - 1.8160	822.30	788.85	777.50	772.10	766.35	761.95
1.8750	1 7⁄8	1.4995	10	3 1⁄2	14	341660	342660	343560	795.20	1.8161 - 1.8780	862.35	828.65	817.45	812.20	806.25	801.85
1.9375	1 15⁄16	1.4995	10	3 1⁄2	14	341662	342662	343562	846.00	1.8781 - 1.9410	913.00	879.55	868.15	862.80	857.00	852.65
2.0000	2	1.4995	12	3 1⁄2	14	341664	342664	343564	876.70	1.9411 - 2.0030	943.75	910.20	898.95	893.70	887.65	883.40

*½" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED FLUTE FED COOLANT REAMERS

METRIC



TYPE 3416 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3426 - STRAIGHT SHANK & FLUTES- THROUGH HOLES - FOR CAST IRON
TYPE 3435 - STRAIGHT SHANK & FLUTES - THROUGH HOLES - FOR STEEL

Detailed description and fractional sizes on page 102. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3416 EDP NO.	CAST IRON TYPE 3426 EDP NO.	STEEL TYPE 3435 EDP NO.	ALL TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	.1704	4	1 ¼*	5	3416045	3426045	3435045	$247.50	4.494 - 4.696	$298.60	$264.75	$253.45	$247.95	$242.15	$237.35	$230.85
5.0	.1969	.1805	4	1 ¼*	5	3416050	3426050	3435050	247.50	4.697 - 5.182	298.60	264.75	253.45	247.95	242.15	237.35	230.85
5.5	.2165	.2075	4	1 ¼*	5	3416055	3426055	3435055	247.50	5.183 - 5.613	298.60	264.75	253.45	247.95	242.15	237.35	230.85
6.0	.2362	.2265	4	1 ½*	6	3416060	3426060	3435060	247.50	5.614 - 6.045	298.60	264.75	253.45	247.95	242.15	237.35	230.85
-	-	.2405	4	1 ½*	6	3416063	3426063	3435063	-	6.046 - 6.426	298.60	264.75	253.45	247.95	242.15	237.35	230.85
6.5	.2559	.2485	4	1 ½*	6	3416065	3426065	3435065	252.65	6.427 - 7.214	303.60	269.80	258.45	252.85	247.15	242.40	236.10
7.0	.2756	.2485	4	1 ½*	6	3416070	3426070	3435070	252.65	-	-	-	-	-	-	-	-
7.5	.2953	.2792	4	1 ½	6	3416075	3426075	3435075	272.10	7.215 - 8.001	323.20	289.40	278.05	272.60	266.85	262.00	255.65
8.0	.3150	.2792	4	1 ½	6	3416080	3426080	3435080	272.10	-	-	-	-	-	-	-	-
8.5	.3346	.2792	4	1 ½	6	3416085	3426085	3435085	272.10	8.002 - 8.814	323.20	289.40	278.05	272.60	266.85	262.00	255.65
9.0	.3543	.3105	4	1 ¾	7	3416090	3426090	3435090	272.10	8.815 - 9.601	323.20	289.40	278.05	272.60	266.85	262.00	255.65
9.5	.3740	.3105	4	1 ¾	7	3416095	3426095	3435095	272.10	-	-	-	-	-	-	-	-
10.0	.3937	.3105	4	1 ¾	7	3416100	3426100	3435100	278.55	9.602 - 10.389	329.30	295.80	284.20	278.65	273.00	268.15	261.75
10.5	.4134	.3730	6	1 ¾	7	3416105	3426105	3435105	284.75	10.390 - 11.201	335.60	302.05	290.45	284.95	279.25	274.55	268.05
11.0	.4331	.3730	6	1 ¾	7	3416110	3426110	3435110	284.75	-	-	-	-	-	-	-	-
11.5	.4528	.3730	6	1 ¾	7	3416115	3426115	3435115	284.75	11.202 - 11.989	335.60	302.05	290.45	284.95	279.25	274.55	268.05
12.0	.4724	.4355	6	2	8	3416120	3426120	3435120	284.75	11.990 - 12.776	335.60	302.05	290.45	284.95	279.25	274.55	268.05
12.5	.4921	.4355	6	2	8	3416125	3426125	3435125	284.75	-	-	-	-	-	-	-	-
13.0	.5118	.4355	6	2	8	3416130	3426130	3435130	299.90	12.777 - 13.564	350.85	316.90	305.60	300.15	294.50	289.65	283.20
13.5	.5315	.4355	6	2	8	3416135	3426135	3435135	299.90	-	-	-	-	-	-	-	-
14.0	.5512	.4355	6	2	8	3416140	3426140	3435140	303.60	13.565 - 14.376	354.75	320.90	309.55	304.10	298.25	293.70	287.05
14.5	.5709	.4355	6	2	8	3416145	3426145	3435145	306.30	14.377 - 15.164	357.40	323.45	312.05	306.45	300.85	296.10	289.65
15.0	.5906	.4355	6	2	8	3416150	3426150	3435150	306.30	-	-	-	-	-	-	-	-
15.5	.6102	.5615	6	2 ¼	9	3416155	3426155	3435155	306.30	15.165 - 15.951	357.40	323.45	312.05	306.45	300.85	296.10	289.65
16.0	.6299	.5615	6	2 ¼	9	3416160	3426160	3435160	337.05	15.952 - 16.739	388.10	354.25	342.80	337.40	331.75	326.95	320.40
16.5	.6496	.5615	6	2 ¼	9	3416165	3426165	3435165	337.05	-	-	-	-	-	-	-	-
17.0	.6693	.5615	6	2 ¼	9	3416170	3426170	3435170	337.05	16.740 - 17.551	388.10	354.25	342.80	337.40	331.75	326.95	320.40
17.5	.6890	.5615	6	2 ¼	9	3416175	3426175	3435175	337.05	-	-	-	-	-	-	-	-
18.0	.7087	.5615	6	2 ¼	9	3416180	3426180	3435180	358.75	17.552 - 18.339	409.70	375.75	364.50	358.95	353.30	348.60	342.25
18.5	.7283	.6245	6	2 ½	9 ½	3416185	3426185	3435185	358.75	18.340 - 19.126	409.70	375.75	364.50	358.95	353.30	348.60	342.25
19.0	.7480	.6245	6	2 ½	9 ½	3416190	3426190	3435190	358.75	-	-	-	-	-	-	-	-
19.5	.7677	.6245	6	2 ½	9 ½	3416195	3426195	3435195	358.75	19.127 - 19.914	409.70	375.75	364.50	358.95	353.30	348.60	342.25
20.0	.7874	.6245	6	2 ½	9 ½	3416200	3426200	3435200	358.75	19.915 - 20.726	409.70	375.75	364.50	358.95	353.30	348.60	342.25
20.5	.8071	.6245	6	2 ½	9 ½	3416205	3426205	3435205	358.75	-	-	-	-	-	-	-	-
21.0	.8268	.6245	6	2 ½	9 ½	3416210	3426210	3435210	368.70	20.727 - 21.514	419.85	386.00	374.70	369.20	363.35	358.75	352.25
21.5	.8465	.6245	6	2 ½	9 ½	3416215	3426215	3435215	368.70	-	-	-	-	-	-	-	-
22.0	.8661	.7495	6	2 ⅝	10	3416220	3426220	3435220	368.70	21.515 - 22.301	419.85	386.00	374.70	369.20	363.35	358.75	352.25
22.5	.8858	.7495	6	2 ⅝	10	3416225	3426225	3435225	426.95	22.302 - 23.089	479.80	444.65	432.95	427.15	421.20	416.30	409.70
23.0	.9055	.7495	6	2 ⅝	10	3416230	3426230	3435230	426.95	-	-	-	-	-	-	-	-
23.5	.9252	.7495	8	2 ⅝	10	3416235	3426235	3435235	436.25	23.090 - 23.901	489.15	454.10	442.25	436.45	430.65	425.65	418.95
24.0	.9449	.7495	8	2 ⅝	10	3416240	3426240	3435240	436.25	23.902 - 24.689	489.15	454.10	442.25	436.45	430.65	425.65	418.95
24.5	.9646	.7495	8	2 ⅝	10	3416245	3426245	3435245	436.25	-	-	-	-	-	-	-	-
25.0	.9843	.8745	8	2 ¾	10 ½	3416250	3426250	3435250	436.25	24.690 - 25.476	489.15	454.10	442.25	436.45	430.65	425.65	418.95
25.5	1.0039	.8745	8	2 ¾	10 ½	3416255	3426255	3435255	460.10	25.477 - 27.076	513.05	477.95	466.25	460.25	454.45	449.45	442.80
26.0	1.0236	.8745	8	2 ¾	10 ½	3416260	3426260	3435260	460.10	-	-	-	-	-	-	-	-
27.0	1.0630	.8745	8	2 ¾	10 ½	3416270	3426270	3435270	460.10	-	-	-	-	-	-	-	-
28.0	1.1024	.8745	8	2 ⅞	11	3416280	3426280	3435280	461.80	27.077 - 28.651	514.85	479.70	467.90	462.20	456.20	451.35	444.55
29.0	1.1417	.9995	8	2 ⅞	11	3416290	3426290	3435290	479.85	28.652 - 30.239	533.05	497.75	485.95	480.20	474.40	469.50	462.55
30.0	1.1811	.9995	8	2 ⅞	11	3416300	3426300	3435300	479.85	-	-	-	-	-	-	-	-
31.0	1.2205	.9995	8	3	11 ½	3416310	3426310	3435310	485.95	30.240 - 31.826	538.95	503.80	492.15	486.30	480.40	475.50	468.70
32.0	1.2598	.9995	8	3	11 ½	3416320	3426320	3435320	499.25	31.827 - 33.414	552.15	517.00	505.35	499.60	493.50	488.75	481.95
33.0	1.2992	.9995	8	3	11 ½	3416330	3426330	3435330	499.25	-	-	-	-	-	-	-	-
34.0	1.3386	.9995	8	3 ¼	12	3416340	3426340	3435340	518.55	33.415 - 35.001	571.40	536.25	524.60	518.75	512.95	508.00	501.20
35.0	1.3780	.9995	8	3 ¼	12	3416350	3426350	3435350	518.55	-	-	-	-	-	-	-	-
36.0	1.4173	.9995	8	3 ¼	12	3416360	3426360	3435360	534.10	35.002 - 36.589	586.90	551.75	540.05	534.30	528.50	523.60	516.75
37.0	1.4567	1.2495	8	3 ½	12 ½	3416370	3426370	3435370	551.20	36.590 - 38.176	604.10	568.95	557.20	551.55	545.50	540.75	533.80
38.0	1.4961	1.2495	8	3 ½	12 ½	3416380	3426380	3435380	551.20	-	-	-	-	-	-	-	-

*½" carbide length.

Made in U.S.A.

CARBIDE TIPPED CENTER FED COOLANT REAMERS

TYPE 3414 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3424 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3434 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR STEEL

Flute long carbide tips (.2841" tool diameter and larger) brazed to one piece hardened alloy steel bodies. Straight polished flutes.

For length center coolant feeding hole for flushing chips back towards shank. Tool geometry and carbide grade appropriate for material being machined.

For reamer tolerances and closer tolerance pricing, see page 56.



TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3414 EDP NO.	CAST IRON TYPE 3424 EDP NO.	STEEL TYPE 3434 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.1875	3/16	.1805	4	1 1/4*	5	341406	342406	343406	$216.95	.1770 - .2040	$284.75	$250.75	$239.35	$233.95	$228.15	$223.60
.2031	13/64	.1805	4	1 1/4*	5	34142031	34242031	34342031	216.95	-	-	-	-	-	-	-
.2188	7/32	.2075	4	1 1/4*	5	341407	342407	343407	216.95	.2041 - .2210	284.75	250.75	239.35	233.95	228.15	223.60
.2344	15/64	.2265	4	1 1/2*	6	34142344	34242344	34342344	216.95	.2211 - .2380	284.75	250.75	239.35	233.95	228.15	223.60
.2500	1/4	.2405	4	1 1/2*	6	341408	342408	343408	216.95	.2381 - .2530	284.75	250.75	239.35	233.95	228.15	223.60
.2656	17/64	.2485	4	1 1/2*	6	34142656	34242656	34342656	230.15	-	-	-	-	-	-	-
.2812	9/32	.2485	4	1 1/2*	6	341409	342409	343409	230.15	.2531 - .2840	298.00	264.05	252.65	247.15	241.35	236.95
.2969	19/64	.2792	4	1 1/2	6	34142969	34242969	34342969	243.20	-	-	-	-	-	-	-
.3125	5/16	.2792	4	1 1/2	6	341410	342410	343410	243.20	.2841 - .3150	311.10	276.90	265.60	259.90	254.40	249.75
.3281	21/64	.2792	4	1 1/2	6	34143281	34243281	34343281	245.05	-	-	-	-	-	-	-
.3438	11/32	.2792	4	1 1/2	6	341411	342411	343411	245.05	.3151 - .3470	312.85	278.80	267.60	262.00	256.35	251.80
.3594	23/64	.3105	4	1 3/4	7	34143594	34243594	34343594	247.50	-	-	-	-	-	-	-
.3750	3/8	.3105	4	1 3/4	7	341412	342412	343412	247.50	.3471 - .3780	315.40	281.40	270.05	264.55	258.70	254.25
.3906	25/64	.3105	4	1 3/4	7	34143906	34243906	34343906	248.35	-	-	-	-	-	-	-
.4062	13/32	.3105	4	1 3/4	7	341413	342413	343413	248.35	.3781 - .4090	316.05	282.30	270.90	265.35	259.65	254.85
.4219	27/64	.3730	6	1 3/4	7	34144219	34244219	34344219	250.80	-	-	-	-	-	-	-
.4375	7/16	.3730	6	1 3/4	7	341414	342414	343414	250.80	.4091 - .4410	318.65	284.75	273.20	267.95	262.00	257.55
.4531	29/64	.3730	6	1 3/4	7	34144531	34244531	34344531	253.00	-	-	-	-	-	-	-
.4688	15/32	.3730	6	1 3/4	7	341415	342415	343415	253.00	.4411 - .4720	320.90	286.95	275.45	270.15	264.20	259.70
.4844	31/64	.4355	6	2	8	34144844	34244844	34344844	255.85	-	-	-	-	-	-	-
.5000	1/2	.4355	6	2	8	341416	342416	343416	255.85	.4721 - .5030	323.75	289.85	278.55	273.00	267.25	262.55
.5156	33/64	.4355	6	2	8	34145156	34245156	34345156	261.65	-	-	-	-	-	-	-
.5312	17/32	.4355	6	2	8	341417	342417	343417	261.65	.5031 - .5340	329.30	295.45	284.15	278.65	272.95	268.15
.5625	9/16	.4355	6	2	8	341418	342418	343418	265.35	.5341 - .5660	333.20	299.20	287.85	282.50	276.65	272.00
.5938	19/32	.4355	6	2	8	341419	342419	343419	270.95	.5661 - .5970	338.75	304.70	293.50	288.05	282.30	277.60
.6250	5/8	.5615	6	2 1/4	9	341420	342420	343420	276.10	.5971 - .6280	343.85	309.80	298.60	292.95	287.35	282.65
.6562	21/32	.5615	6	2 1/4	9	341421	342421	343421	305.60	.6281 - .6590	373.40	339.45	328.00	322.75	316.80	312.25
.6875	11/16	.5615	6	2 1/4	9	341422	342422	343422	311.80	.6591 - .6910	379.55	345.80	334.20	329.00	323.05	318.50
.7188	23/32	.5615	6	2 1/4	9	341423	342423	343423	325.20	.6911 - .7220	393.00	359.15	347.85	342.35	336.55	331.85
.7500	3/4	.6245	6	2 1/2	9 1/2	341424	342424	343424	325.20	.7221 - .7530	393.00	359.15	347.85	342.35	336.55	331.85
.7812	25/32	.6245	6	2 1/2	9 1/2	341425	342425	343425	334.95	.7531 - .7840	402.65	368.60	357.40	352.05	346.10	341.45
.8125	13/16	.6245	6	2 1/2	9 1/2	341426	342426	343426	334.95	.7841 - .8160	402.65	368.60	357.40	352.05	346.10	341.45
.8438	27/32	.6245	6	2 1/2	9 1/2	341427	342427	343427	346.35	.8161 - .8470	414.05	380.30	368.70	363.35	357.65	352.85
.8750	7/8	.7495	6	2 5/8	10	341428	342428	343428	359.50	.8471 - .8780	429.80	394.45	382.70	377.00	371.15	366.30
.9062	29/32	.7495	6	2 5/8	10	341429	342429	343429	399.15	.8781 - .9090	469.50	434.20	422.30	416.90	410.70	406.05
.9375	15/16	.7495	8	2 5/8	10	341430	342430	343430	399.15	.9091 - .9410	469.50	434.20	422.30	416.90	410.70	406.05
.9688	31/32	.7495	8	2 5/8	10	341431	342431	343431	400.70	.9411 - .9720	471.05	435.80	424.20	418.45	412.25	407.60
1.0000	1	.8745	8	2 3/4	10 1/2	341432	342432	343432	400.70	.9721 - 1.0030	471.05	435.80	424.20	418.45	412.25	407.60
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	341434	342434	343434	412.10	1.0031 - 1.0660	482.45	447.15	435.40	429.80	423.55	418.95
1.1250	1 1/8	.8745	8	2 7/8	11	341436	342436	343436	426.35	1.0661 - 1.1280	496.70	461.50	449.45	443.95	437.90	433.15
1.1875	1 3/16	.9995	8	2 7/8	11	341438	342438	343438	456.70	1.1281 - 1.1905	527.05	491.70	479.85	474.40	468.45	463.70
1.2500	1 1/4	.9995	8	3	11 1/2	341440	342440	343440	462.55	1.1906 - 1.2530	533.10	497.75	485.95	480.40	474.40	469.70
1.3125	1 5/16	.9995	8	3	11 1/2	341442	342442	343442	475.95	1.2531 - 1.3155	546.35	511.00	499.25	493.50	487.55	482.85
1.3750	1 3/8	.9995	8	3 1/4	12	341444	342444	343444	495.25	1.3156 - 1.3780	565.60	530.20	518.55	512.95	506.85	501.95
1.4375	1 7/16	.9995	8	3 1/4	12	341446	342446	343446	510.60	1.3781 - 1.4405	581.15	545.70	534.10	528.50	522.35	517.70
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	341448	342448	343448	527.75	1.4406 - 1.5030	598.15	562.95	551.20	545.50	539.50	534.75
1.5625	1 9/16	1.2495	8	3 1/2	12 1/2	341450	342450	343450	561.90	1.5031 - 1.5660	629.00	595.40	584.20	578.85	572.95	568.70
1.6250	1 5/8	1.2495	8	3 1/2	13	341452	342452	343452	615.30	1.5661 - 1.6280	682.10	648.70	637.50	631.95	626.20	621.90
1.6875	1 11/16	1.2495	8	3 1/2	13	341454	342454	343454	628.20	1.6281 - 1.6910	695.30	661.85	650.60	645.10	639.30	634.90
1.7500	1 3/4	1.2495	10	3 1/2	13 1/2	341456	342456	343456	688.05	1.6911 - 1.7530	755.10	721.50	710.20	704.95	699.10	694.70
1.8125	1 13/16	1.4995	10	3 1/2	13 1/2	341458	342458	343458	716.05	1.7531 - 1.8160	783.25	749.65	738.45	732.95	727.15	722.90
1.8750	1 7/8	1.4995	10	3 1/2	14	341460	342460	343460	756.00	1.8161 - 1.8780	823.05	789.40	778.35	772.95	767.15	762.60
1.9375	1 15/16	1.4995	10	3 1/2	14	341462	342462	343462	801.50	1.8781 - 1.9410	868.50	835.05	823.75	818.45	812.65	808.15
2.0000	2	1.4995	12	3 1/2	14	341464	342464	343464	832.30	1.9411 - 2.0030	899.45	865.95	854.65	849.30	843.45	839.00

*½" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CENTER FED COOLANT REAMERS

METRIC



TYPE 3414 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3424 - STRAIGHT SHANK & FLUTES- BLIND HOLES - FOR CAST IRON
TYPE 3434 - STRAIGHT SHANK & FLUTES - BLIND HOLES - FOR STEEL

Detailed description and fractional sizes on page 104. Tolerances on page 56.
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3414 EDP NO.	CAST IRON TYPE 3424 EDP NO.	STEEL TYPE 3434 EDP NO.	ALL TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
4.5	.1772	.1704	4	1 ¼*	5	3414045	3424045	3434045	$239.35	4.494 - 4.696	$290.35	$256.55	$245.15	$239.75	$233.95	$229.25	$222.65
5.0	.1969	.1805	4	1 ¼*	5	3414050	3424050	3434050	239.35	4.697 - 5.182	290.35	256.55	245.15	239.75	233.95	229.25	222.65
5.5	.2165	.2075	4	1 ¼*	5	3414055	3424055	3434055	239.35	5.183 - 5.613	290.35	256.55	245.15	239.75	233.95	229.25	222.65
6.0	.2362	.2265	4	1 ½*	6	3414060	3424060	3434060	239.35	5.614 - 6.045	290.35	256.55	245.15	239.75	233.95	229.25	222.65
-	-	.2405	4	1 ½*	6	3414063	3424063	3434063	-	6.046 - 6.426	290.35	256.55	245.15	239.75	233.95	229.25	222.65
6.5	.2559	.2485	4	1 ½*	6	3414065	3424065	3434065	252.65	6.427 - 7.214	303.60	269.80	258.45	252.85	247.15	242.40	236.10
7.0	.2756	.2485	4	1 ½*	6	3414070	3424070	3434070	252.65	-	-	-	-	-	-	-	-
7.5	.2953	.2792	4	1 ½	6	3414075	3424075	3434075	265.60	7.215 - 8.001	316.55	282.65	271.45	265.95	259.90	255.55	248.80
8.0	.3150	.2792	4	1 ½	6	3414080	3424080	3434080	265.60	-	-	-	-	-	-	-	-
8.5	.3346	.2792	4	1 ½	6	3414085	3424085	3434085	267.60	8.002 - 8.814	318.50	284.75	273.20	267.80	262.00	257.40	250.80
9.0	.3543	.3105	4	1 ¾	7	3414090	3424090	3434090	270.05	8.815 - 9.601	320.95	287.20	275.75	270.20	264.55	259.75	253.45
9.5	.3740	.3105	4	1 ¾	7	3414095	3424095	3434095	270.05	-	-	-	-	-	-	-	-
10.0	.3937	.3105	4	1 ¾	7	3414100	3424100	3434100	270.90	9.602 - 10.389	321.80	288.05	276.65	271.10	265.35	260.70	254.25
10.5	.4134	.3730	6	1 ¾	7	3414105	3424105	3434105	273.20	10.390 - 11.201	324.25	290.45	279.15	273.65	267.95	263.20	256.60
11.0	.4331	.3730	6	1 ¾	7	3414110	3424110	3434110	273.20	-	-	-	-	-	-	-	-
11.5	.4528	.3730	6	1 ¾	7	3414115	3424115	3434115	275.45	11.202 - 11.989	326.60	292.65	281.40	275.75	270.15	265.35	259.05
12.0	.4724	.4355	6	2	8	3414120	3424120	3434120	278.55	11.990 - 12.776	329.30	295.80	284.20	278.65	273.00	268.15	261.75
12.5	.4921	.4355	6	2	8	3414125	3424125	3434125	278.55	-	-	-	-	-	-	-	-
13.0	.5118	.4355	6	2	8	3414130	3424130	3434130	284.15	12.777 - 13.564	335.15	301.30	289.95	284.25	278.65	274.00	267.60
13.5	.5315	.4355	6	2	8	3414135	3424135	3434135	284.15	-	-	-	-	-	-	-	-
14.0	.5512	.4355	6	2	8	3414140	3424140	3434140	287.85	13.565 - 14.376	338.95	305.00	293.80	288.25	282.50	277.70	271.20
14.5	.5709	.4355	6	2	8	3414145	3424145	3434145	293.50	14.377 - 15.164	344.40	310.50	299.20	293.80	288.05	283.35	276.70
15.0	.5906	.4355	6	2	8	3414150	3424150	3434150	293.50	-	-	-	-	-	-	-	-
15.5	.6102	.5615	6	2 ¼	9	3414155	3424155	3434155	298.60	15.165 - 15.951	349.50	315.75	304.35	298.75	292.95	288.40	281.75
16.0	.6299	.5615	6	2 ¼	9	3414160	3424160	3434160	328.00	15.952 - 16.739	379.05	345.25	333.90	328.35	322.75	317.95	311.35
16.5	.6496	.5615	6	2 ¼	9	3414165	3424165	3434165	328.00	-	-	-	-	-	-	-	-
17.0	.6693	.5615	6	2 ¼	9	3414170	3424170	3434170	334.20	16.740 - 17.551	385.35	351.45	340.25	334.60	329.00	324.15	317.75
17.5	.6890	.5615	6	2 ¼	9	3414175	3424175	3434175	334.20	-	-	-	-	-	-	-	-
18.0	.7087	.5615	6	2 ¼	9	3414180	3424180	3434180	347.85	17.552 - 18.339	398.70	365.05	353.50	347.95	342.35	337.55	331.10
18.5	.7283	.6245	6	2 ½	9 ½	3414185	3424185	3434185	347.85	18.340 - 19.126	398.70	365.05	353.50	347.95	342.35	337.55	331.10
19.0	.7480	.6245	6	2 ½	9 ½	3414190	3424190	3434190	347.85	-	-	-	-	-	-	-	-
19.5	.7677	.6245	6	2 ½	9 ½	3414195	3424195	3434195	357.40	19.127 - 19.914	408.30	374.55	363.25	357.65	352.05	347.20	340.60
20.0	.7874	.6245	6	2 ½	9 ½	3414200	3424200	3434200	357.40	19.915 - 20.726	408.30	374.55	363.25	357.65	352.05	347.20	340.60
20.5	.8071	.6245	6	2 ½	9 ½	3414205	3424205	3434205	357.40	-	-	-	-	-	-	-	-
21.0	.8268	.6245	6	2 ½	9 ½	3414210	3424210	3434210	368.70	20.727 - 21.514	419.85	386.00	374.70	369.20	363.35	358.75	352.25
21.5	.8465	.6245	6	2 ½	9 ½	3414215	3424215	3434215	368.70	-	-	-	-	-	-	-	-
22.0	.8661	.7495	6	2 ⅝	10	3414220	3424220	3434220	368.70	21.515 - 22.301	419.85	386.00	374.70	369.20	363.35	358.75	352.25
22.5	.8858	.7495	6	2 ⅝	10	3414225	3424225	3434225	422.30	22.302 - 23.089	475.30	440.25	428.45	422.65	416.90	412.00	405.15
23.0	.9055	.7495	6	2 ⅝	10	3414230	3424230	3434230	422.30	-	-	-	-	-	-	-	-
23.5	.9252	.7495	8	2 ⅝	10	3414235	3424235	3434235	422.30	23.090 - 23.901	475.30	440.25	428.45	422.65	416.90	412.00	405.15
24.0	.9449	.7495	8	2 ⅝	10	3414240	3424240	3434240	424.20	23.902 - 24.689	477.00	441.85	430.10	424.35	418.45	413.55	406.70
24.5	.9646	.7495	8	2 ⅝	10	3414245	3424245	3434245	424.20	-	-	-	-	-	-	-	-
25.0	.9843	.8745	8	2 ¾	10 ½	3414250	3424250	3434250	424.20	24.690 - 25.476	477.00	441.85	430.10	424.35	418.45	413.55	406.70
25.5	1.0039	.8745	8	2 ¾	10 ½	3414255	3424255	3434255	435.40	25.477 - 27.076	488.25	453.20	441.50	435.70	429.80	424.95	418.10
26.0	1.0236	.8745	8	2 ¾	10 ½	3414260	3424260	3434260	435.40	-	-	-	-	-	-	-	-
27.0	1.0630	.8745	8	2 ¾	10 ½	3414270	3424270	3434270	435.40	-	-	-	-	-	-	-	-
28.0	1.1024	.8745	8	2 ⅞	11	3414280	3424280	3434280	449.45	27.077 - 28.651	502.65	467.40	455.55	449.90	443.95	439.10	432.30
29.0	1.1417	.9995	8	2 ⅞	11	3414290	3424290	3434290	479.85	28.652 - 30.239	533.05	497.75	485.95	480.20	474.40	469.50	462.55
30.0	1.1811	.9995	8	2 ⅞	11	3414300	3424300	3434300	479.85	-	-	-	-	-	-	-	-
31.0	1.2205	.9995	8	3	11 ½	3414310	3424310	3434310	485.95	30.240 - 31.826	538.95	503.80	492.15	486.30	480.40	475.50	468.70
32.0	1.2598	.9995	8	3	11 ½	3414320	3424320	3434320	499.25	31.827 - 33.414	552.15	517.00	505.35	499.60	493.50	488.75	481.95
33.0	1.2992	.9995	8	3	11 ½	3414330	3424330	3434330	499.25	-	-	-	-	-	-	-	-
34.0	1.3386	.9995	8	3 ¼	12	3414340	3424340	3434340	518.55	33.415 - 35.001	571.40	536.25	524.60	518.75	512.95	508.00	501.20
35.0	1.3780	.9995	8	3 ¼	12	3414350	3424350	3434350	518.55	-	-	-	-	-	-	-	-
36.0	1.4173	.9995	8	3 ¼	12	3414360	3424360	3434360	534.10	35.002 - 36.589	586.90	551.75	540.05	534.30	528.50	523.60	516.75
37.0	1.4567	1.2495	8	3 ½	12 ½	3414370	3424370	3434370	551.20	36.590 - 38.176	604.10	568.95	557.20	551.55	545.50	540.75	533.80
38.0	1.4961	1.2495	8	3 ½	12 ½	3414380	3424380	3434380	551.20	-	-	-	-	-	-	-	-

*½" carbide length.

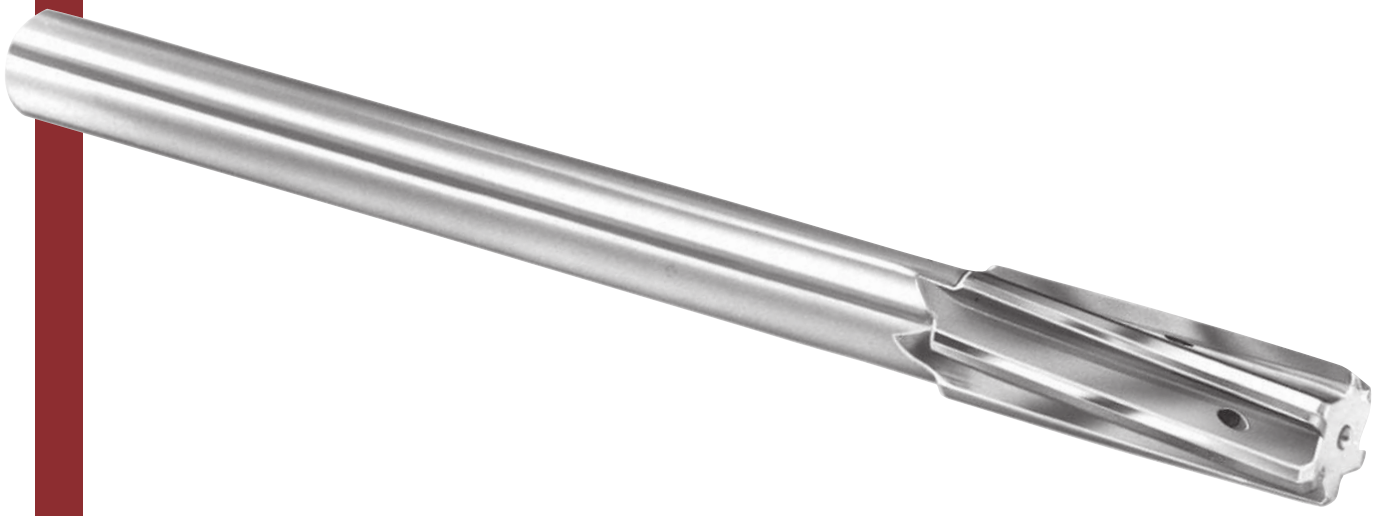
Made in U.S.A.

CARBIDE TIPPED RIGHT SPIRAL FLUTE FED COOLANT REAMERS

TYPE 3417 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3418 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3419 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - THROUGH HOLES - FOR STEEL

Flute long carbide tips (.2841" tool diameter and larger) brazed to one piece hardened alloy steel bodies.
Right spiral flutes.

Coolant feeding hole in each flute for flushing chips forward through the hole being reamed.
Tool geometry and carbide grade appropriate for material being machined.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3417 EDP NO.	CAST IRON TYPE 3418 EDP NO.	STEEL TYPE 3419 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.2500	1/4	.2405	4	1 1/2*	6	341708	341808	341908	$238.70	.2381 - .2530	$306.40	$272.60	$261.15	$255.70	$250.05	$245.30
.2812	9/32	.2485	4	1 1/2*	6	341709	341809	341909	253.20	.2531 - .2840	320.95	287.05	275.60	270.20	264.45	259.75
.3125	5/16	.2792	4	1 1/2	6	341710	341810	341910	267.60	.2841 - .3150	335.30	301.30	289.95	284.70	278.65	274.20
.3438	11/32	.2792	4	1 1/2	6	341711	341811	341911	269.65	.3151 - .3470	337.40	303.40	292.05	286.65	280.70	276.45
.3750	3/8	.3105	4	1 3/4	7	341712	341812	341912	272.15	.3471 - .3780	340.25	306.10	294.70	289.40	283.50	279.00
.4062	13/32	.3105	4	1 3/4	7	341713	341813	341913	273.05	.3781 - .4090	340.85	306.95	295.80	290.20	284.25	279.80
.4375	7/16	.3730	6	1 3/4	7	341714	341814	341914	276.00	.4091 - .4410	343.75	309.75	298.50	292.90	287.20	282.60
.4688	15/32	.3730	6	1 3/4	7	341715	341815	341915	278.55	.4411 - .4720	346.30	312.25	300.85	295.45	289.65	285.10
.5000	1/2	.4355	6	2	8	341716	341816	341916	281.55	.4721 - .5030	349.30	315.50	304.20	298.70	292.80	288.35
.5312	17/32	.4355	6	2	8	341717	341817	341917	291.95	.5031 - .5340	359.75	325.65	314.35	309.10	303.10	298.60
.5625	9/16	.4355	6	2	8	341718	341818	341918	291.95	.5341 - .5660	359.75	325.65	314.35	309.10	303.10	298.60
.5938	19/32	.4355	6	2	8	341719	341819	341919	303.45	.5661 - .5970	371.30	337.40	325.90	320.60	314.65	310.10
.6250	5/8	.5615	6	2 1/4	9	341720	341820	341920	303.45	.5971 - .6280	371.30	337.40	325.90	320.60	314.65	310.10
.6562	21/32	.5615	6	2 1/4	9	341721	341821	341921	342.80	.6281 - .6590	410.60	376.80	365.40	359.85	354.05	349.50
.6875	11/16	.5615	6	2 1/4	9	341722	341822	341922	342.80	.6591 - .6910	410.60	376.80	365.40	359.85	354.05	349.50
.7188	23/32	.5615	6	2 1/4	9	341723	341823	341923	357.75	.6911 - .7220	425.55	391.50	380.50	374.90	369.20	364.50
.7500	3/4	.6245	6	2 1/2	9 1/2	341724	341824	341924	357.75	.7221 - .7530	425.55	391.50	380.50	374.90	369.20	364.50
.7812	25/32	.6245	6	2 1/2	9 1/2	341725	341825	341925	385.55	.7531 - .7840	453.25	419.30	408.05	402.65	396.75	392.30
.8125	13/16	.6245	6	2 1/2	9 1/2	341726	341826	341926	390.30	.7841 - .8160	458.10	424.20	412.80	407.45	401.50	396.90
.8438	27/32	.6245	6	2 1/2	9 1/2	341727	341827	341927	397.65	.8161 - .8470	465.50	431.50	420.05	414.70	408.80	404.30
.8750	7/8	.7495	6	2 5/8	10	341728	341828	341928	419.00	.8471 - .8780	489.50	454.25	442.45	436.65	430.70	425.90
.9062	29/32	.7495	6	2 5/8	10	341729	341829	341929	443.95	.8781 - .9090	514.20	479.15	467.30	461.65	455.55	450.95
.9375	15/16	.7495	8	2 5/8	10	341730	341830	341930	465.35	.9091 - .9410	535.70	500.35	488.45	483.05	477.00	472.20
.9688	31/32	.7495	8	2 5/8	10	341731	341831	341931	466.55	.9411 - .9720	536.90	501.75	489.80	484.20	478.15	473.50
1.0000	1	.8745	8	2 3/4	10 1/2	341732	341832	341932	467.30	.9721 - 1.0030	537.80	502.60	490.55	484.95	479.00	474.25
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	341734	341834	341934	538.95	1.0031 - 1.0660	609.20	574.00	562.15	556.55	550.55	545.70
1.1250	1 1/8	.8745	8	2 7/8	11	341736	341836	341936	541.25	1.0661 - 1.1280	611.60	576.25	564.55	558.90	552.95	548.10
1.1875	1 3/16	.9995	8	2 7/8	11	341738	341838	341938	563.70	1.1281 - 1.1905	633.70	598.50	586.80	581.20	575.25	570.45
1.2500	1 1/4	.9995	8	3	11 1/2	341740	341840	341940	571.00	1.1906 - 1.2530	641.35	606.05	594.35	588.70	582.60	577.85
1.3125	1 5/16	.9995	8	3	11 1/2	341742	341842	341942	587.50	1.2531 - 1.3155	657.80	622.60	610.60	605.10	599.15	594.35
1.3750	1 3/8	.9995	8	3 1/4	12	341744	341844	341944	610.95	1.3156 - 1.3780	681.60	646.30	634.35	628.90	622.85	618.05
1.4375	1 7/16	.9995	8	3 1/4	12	341746	341846	341946	630.15	1.3781 - 1.4405	700.65	665.35	653.60	648.00	642.05	637.20
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	341748	341848	341948	651.40	1.4406 - 1.5030	721.65	686.65	674.65	669.05	663.05	658.30

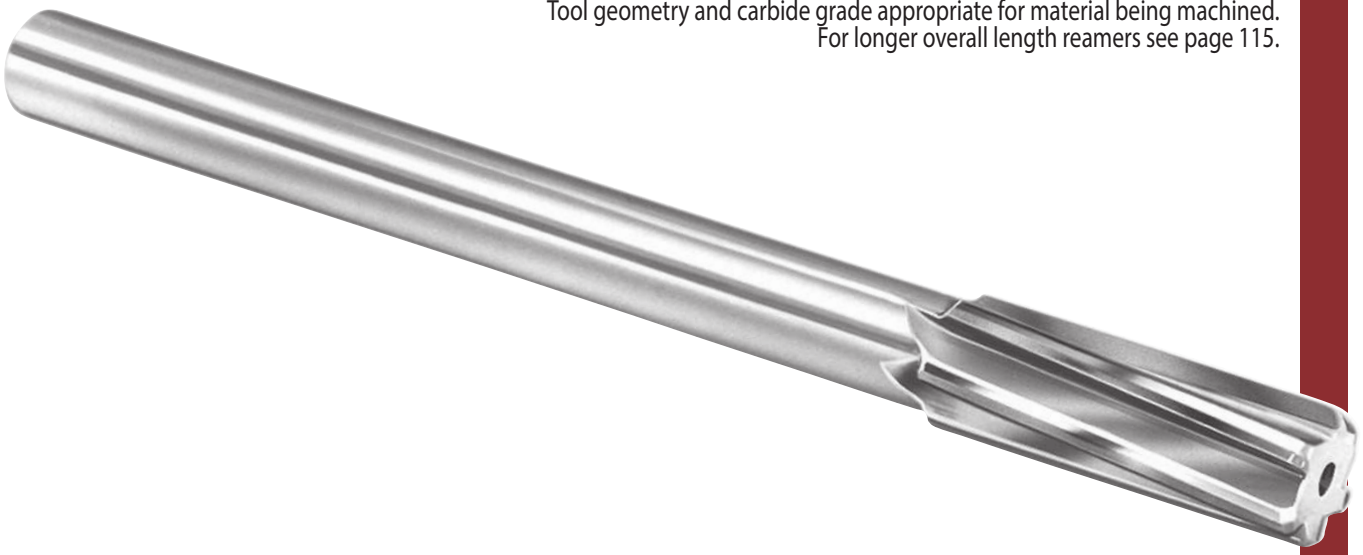
*1/2" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED RIGHT SPIRAL CENTER FED COOLANT REAMERS

TYPE 3411 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR NON-FERROUS
TYPE 3413 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR CAST IRON
TYPE 3415 - STRAIGHT SHANK - RIGHT SPIRAL FLUTES - BLIND HOLES - FOR STEEL

Flute long carbide tips (.2841" tool diameter and larger) brazed to one piece hardened alloy steel bodies. Right spiral flutes.

Full length center coolant feeding hole for flushing chips back towards shank.
Tool geometry and carbide grade appropriate for material being machined.
For longer overall length reamers see page 115.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3411 EDP NO.	CAST IRON TYPE 3413 EDP NO.	STEEL TYPE 3415 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.2500	¼	.2405	4	1 ½*	6	341108	341308	341508	$222.80	.2381 - .2530	$285.95	$254.40	$243.75	$238.70	$233.15	$228.90
.2812	9/32	.2485	4	1 ½*	6	341109	341309	341509	227.85	.2531 - .2840	288.90	258.35	248.15	243.30	238.15	233.80
.3125	5/16	.2792	4	1 ½	6	341110	341310	341510	249.75	.2841 - .3150	312.95	281.35	270.60	265.60	259.90	255.80
.3438	11/32	.2792	4	1 ½	6	341111	341311	341511	251.60	.3151 - .3470	314.80	283.20	272.70	267.60	262.00	257.75
.3750	⅜	.3105	4	1 ¾	7	341112	341312	341512	254.25	.3471 - .3780	317.45	285.60	275.10	270.15	264.75	260.55
.4062	13/32	.3105	4	1 ¾	7	341113	341313	341513	254.85	.3781 - .4090	318.10	286.60	276.00	270.90	265.35	261.15
.4375	7/16	.3730	6	1 ¾	7	341114	341314	341514	257.55	.4091 - .4410	320.90	289.05	278.55	273.55	268.05	263.90
.4688	15/32	.3730	6	1 ¾	7	341115	341315	341515	259.75	.4411 - .4720	323.20	291.35	280.85	275.75	270.25	266.05
.5000	½	.4355	6	2	8	341116	341316	341516	270.00	.4721 - .5030	334.95	302.35	291.35	286.25	280.65	276.45
.5312	17/32	.4355	6	2	8	341117	341317	341517	279.70	.5031 - .5340	344.60	312.05	301.15	296.05	290.45	286.10
.5625	9/16	.4355	6	2	8	341118	341318	341518	279.70	.5341 - .5660	344.60	312.05	301.15	296.05	290.45	286.10
.5938	19/32	.4355	6	2	8	341119	341319	341519	290.80	.5661 - .5970	355.90	323.25	312.35	307.30	301.55	297.20
.6250	⅝	.5615	6	2 ¼	9	341120	341320	341520	290.80	.5971 - .6280	355.90	323.25	312.35	307.30	301.55	297.20
.6562	21/32	.5615	6	2 ¼	9	341121	341321	341521	328.65	.6281 - .6590	393.55	361.15	350.05	344.80	339.35	335.00
.6875	11/16	.5615	6	2 ¼	9	341122	341322	341522	328.65	.6591 - .6910	393.55	361.15	350.05	344.80	339.35	335.00
.7188	23/32	.5615	6	2 ¼	9	341123	341323	341523	342.80	.6911 - .7220	407.95	375.35	364.50	359.40	353.65	349.15
.7500	¾	.6245	6	2 ½	9 ½	341124	341324	341524	322.05	.7221 - .7530	383.20	352.50	342.35	337.40	332.15	328.00
.7812	25/32	.6245	6	2 ½	9 ½	341125	341325	341525	369.55	.7531 - .7840	434.40	401.80	391.10	385.75	380.30	375.75
.8125	13/16	.6245	6	2 ½	9 ½	341126	341326	341526	374.00	.7841 - .8160	438.95	406.40	395.55	390.40	384.95	380.60
.8438	27/32	.6245	6	2 ½	9 ½	341127	341327	341527	380.95	.8161 - .8470	446.20	413.55	402.65	397.30	391.95	387.45
.8750	⅞	.7495	6	2 ⅝	10	341128	341328	341528	401.60	.8471 - .8780	468.85	435.40	423.90	418.65	412.80	408.30
.9062	29/32	.7495	6	2 ⅝	10	341129	341329	341529	425.45	.8781 - .9090	492.85	459.15	447.85	442.60	436.60	432.20
.9375	15/16	.7495	8	2 ⅝	10	341130	341330	341530	445.90	.9091 - .9410	513.40	479.50	468.45	462.85	456.95	452.50
.9688	31/32	.7495	8	2 ⅝	10	341131	341331	341531	447.15	.9411 - .9720	514.45	480.85	469.50	463.95	458.20	453.80
1.0000	1	.8745	8	2 ¾	10 ½	341132	341332	341532	447.85	.9721 - 1.0030	515.25	481.45	470.20	464.80	459.05	454.45
1.0625	1 1/16	.8745	8	2 ¾	10 ½	341134	341334	341534	460.25	1.0031 - 1.0660	527.65	494.15	482.65	477.20	471.45	466.95
1.1250	1 ⅛	.8745	8	2 ⅞	11	341136	341336	341536	476.20	1.0661 - 1.1280	543.85	509.95	498.75	493.30	487.55	483.05
1.1875	1 3/16	.9995	8	2 ⅞	11	341138	341338	341538	510.25	1.1281 - 1.1905	577.65	544.05	532.55	527.40	521.30	516.75
1.2500	1 ¼	.9995	8	3	11 ½	341140	341340	341540	516.75	1.1906 - 1.2530	584.20	550.50	539.20	533.80	528.00	523.60
1.3125	1 5/16	.9995	8	3	11 ½	341142	341342	341542	531.80	1.2531 - 1.3155	599.20	565.40	554.05	548.65	543.00	538.30
1.3750	1 ⅜	.9995	8	3 ¼	12	341144	341344	341544	553.40	1.3156 - 1.3780	620.90	587.00	575.60	570.45	564.55	560.00
1.4375	1 7/16	.9995	8	3 ¼	12	341146	341346	341546	570.55	1.3781 - 1.4405	638.05	604.25	592.95	587.60	581.70	577.35
1.5000	1 ½	1.2495	8	3 ½	12 ½	341148	341348	341548	589.90	1.4406 - 1.5030	657.30	623.70	612.30	606.75	601.10	596.60

*½" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED LEFT SPIRAL COOLANT REAMERS

TYPE 3427 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR NON-FERROUS
TYPE 3428 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR CAST IRON
TYPE 3429 - STRAIGHT SHANK - LEFT SPIRAL FLUTES - THROUGH HOLES - FOR STEEL

Flute long carbide tips (.2841" tool diameter and larger) brazed to one piece hardened alloy steel bodies.
Left spiral flutes.

Coolant feeding hole in each flute for flushing chips forward through the hole being reamed.
Tool geometry and carbide grade appropriate for material being machined.
For longer overall length reamers, see page 117.



For reamer tolerances and closer tolerance pricing, see page 56.

TOOL DIAMETER		MAX. SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3427 EDP NO.	CAST IRON TYPE 3428 EDP NO.	STEEL TYPE 3429 EDP NO.	ALL TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.			FLT	OAL						1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.2500	1/4	.2405	4	1 1/2*	6	342708	342808	342908	$276.00	.2381 - .2530	$343.75	$309.75	$298.50	$292.90	$287.20	$282.60
.2812	9/32	.2485	4	1 1/2*	6	342709	342809	342909	292.65	.2531 - .2840	360.35	326.60	315.30	309.75	304.10	299.40
.3125	5/16	.2792	4	1 1/2	6	342710	342810	342910	309.25	.2841 - .3150	376.95	342.85	331.75	326.25	320.40	315.85
.3438	11/32	.2792	4	1 1/2	6	342711	342811	342911	311.65	.3151 - .3470	379.20	345.30	334.05	328.65	322.85	318.10
.3750	3/8	.3105	4	1 3/4	7	342712	342812	342912	314.65	.3471 - .3780	382.60	348.60	337.25	331.80	325.90	321.60
.4062	13/32	.3105	4	1 3/4	7	342713	342813	342913	316.00	.3781 - .4090	383.80	349.95	338.50	333.15	327.10	322.75
.4375	7/16	.3730	6	1 3/4	7	342714	342814	342914	318.90	.4091 - .4410	386.80	352.80	341.45	336.15	330.35	325.65
.4688	15/32	.3730	6	1 3/4	7	342715	342815	342915	321.80	.4411 - .4720	389.50	355.75	344.35	338.95	333.15	328.45
.5000	1/2	.4355	6	2	8	342716	342816	342916	325.90	.4721 - .5030	393.90	359.80	348.45	342.85	337.25	332.70
.5312	17/32	.4355	6	2	8	342717	342817	342917	332.80	.5031 - .5340	400.55	366.50	355.20	349.95	344.00	339.45
.5625	9/16	.4355	6	2	8	342718	342818	342918	337.55	.5341 - .5660	405.35	371.40	360.00	354.75	348.80	344.35
.5938	19/32	.4355	6	2	8	342719	342819	342919	344.60	.5661 - .5970	412.30	378.55	367.15	361.75	355.95	351.35
.6250	5/8	.5615	6	2 1/4	9	342720	342820	342920	351.05	.5971 - .6280	418.80	384.95	373.45	368.15	362.25	357.70
.6562	21/32	.5615	6	2 1/4	9	342721	342821	342921	388.80	.6281 - .6590	456.60	422.60	411.25	405.85	400.05	395.35
.6875	11/16	.5615	6	2 1/4	9	342722	342822	342922	396.60	.6591 - .6910	464.50	430.55	419.00	413.75	407.95	403.40
.7188	23/32	.5615	6	2 1/4	9	342723	342823	342923	405.15	.6911 - .7220	472.85	438.90	427.50	422.10	416.30	411.65
.7500	3/4	.6245	6	2 1/2	9 1/2	342724	342824	342924	413.75	.7221 - .7530	481.45	447.65	436.05	430.85	424.95	420.40
.7812	25/32	.6245	6	2 1/2	9 1/2	342725	342825	342925	420.85	.7531 - .7840	488.45	454.70	443.10	437.85	431.90	427.40
.8125	13/16	.6245	6	2 1/2	9 1/2	342726	342826	342926	425.90	.7841 - .8160	493.50	459.75	448.35	442.90	437.15	432.45
.8438	27/32	.6245	6	2 1/2	9 1/2	342727	342827	342927	433.60	.8161 - .8470	501.60	467.60	456.10	450.75	444.85	440.45
.8750	7/8	.7495	6	2 5/8	10	342728	342828	342928	457.25	.8471 - .8780	527.60	492.40	480.55	474.95	468.80	463.95
.9062	29/32	.7495	6	2 5/8	10	342729	342829	342929	484.10	.8781 - .9090	554.45	519.10	507.45	501.85	495.90	491.10
.9375	15/16	.7495	8	2 5/8	10	342730	342830	342930	507.80	.9091 - .9410	578.00	542.90	531.00	525.40	519.25	514.65
.9688	31/32	.7495	8	2 5/8	10	342731	342831	342931	509.10	.9411 - .9720	579.30	544.20	532.30	526.70	520.60	515.90
1.0000	1	.8745	8	2 3/4	10 1/2	342732	342832	342932	509.80	.9721 - 1.0030	580.10	544.90	533.10	527.45	521.30	516.55
1.0625	1 1/16	.8745	8	2 3/4	10 1/2	342734	342834	342934	538.95	1.0031 - 1.0660	609.20	574.00	562.15	556.55	550.55	545.70
1.1250	1 1/8	.8745	8	2 7/8	11	342736	342836	342936	541.25	1.0661 - 1.1280	611.60	576.25	564.55	558.90	552.95	548.10
1.1875	1 3/16	.9995	8	2 7/8	11	342738	342838	342938	563.70	1.1281 - 1.1905	633.70	598.50	586.80	581.20	575.25	570.45
1.2500	1 1/4	.9995	8	3	11 1/2	342740	342840	342940	571.00	1.1906 - 1.2530	641.35	606.05	594.35	588.70	582.60	577.85
1.3125	1 5/16	.9995	8	3	11 1/2	342742	342842	342942	587.50	1.2531 - 1.3155	657.80	622.60	610.60	605.10	599.15	594.35
1.3750	1 3/8	.9995	8	3 1/4	12	342744	342844	342944	610.95	1.3156 - 1.3780	681.60	646.30	634.35	628.90	622.85	618.05
1.4375	1 7/16	.9995	8	3 1/4	12	342746	342846	342946	630.15	1.3781 - 1.4405	700.65	665.35	653.60	648.00	642.05	637.20
1.5000	1 1/2	1.2495	8	3 1/2	12 1/2	342748	342848	342948	651.40	1.4406 - 1.5030	721.65	686.65	674.65	669.05	663.05	658.30

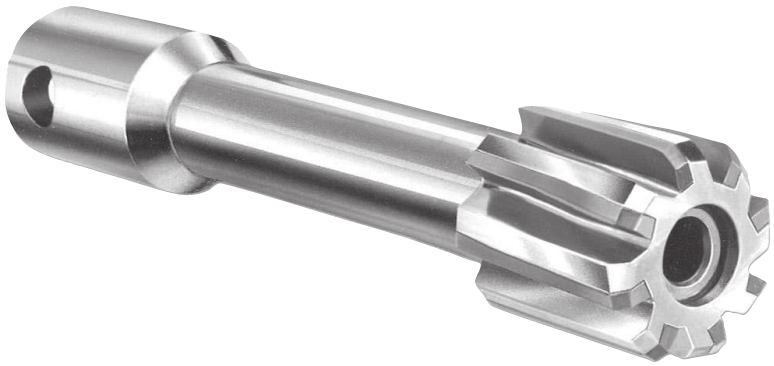
*1/2" carbide length. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED COOLANT REAMERS

TYPE 3490 - RIGHT SPIRAL FLUTE LONG CARBIDE

Flute long carbide tips brazed to one piece hardened alloy steel bodies.

Similar to Barber-Colman/Metcut OFC reamer. Full length coolant hole. Right spiral polished flutes: 2° to 5°. Positive face rake angles (behind center). Shank cross hole for use in floating holder. Designed and manufactured to cut smooth accurate holes and maximize tool life.



Tool diameter tolerance: +.0003"/-.0000".
For closer tolerance pricing, see page 56.

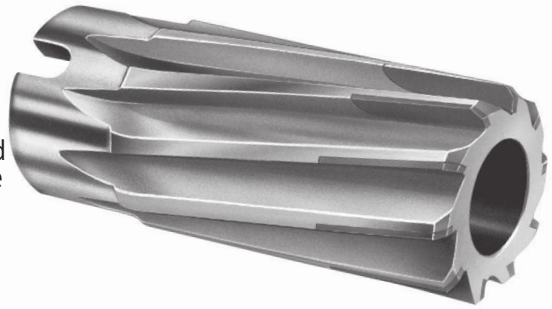
TOOL DIAMETER		SHANK DIAM.	SHANK LEN.	NO. OF FLUTES	LENGTH		EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.				FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.3750	3/8	3/8	3/4	6	1/2	2 1/2	349012	$210.75	.3181 - .3800	$340.60	$275.45	$253.80	$243.45	$232.25	$223.50
.4062	13/32	3/8	3/4	6	1/2	2 5/8	349013	213.90	.3801 - .4090	343.75	278.65	256.85	246.40	235.35	226.65
.4375	7/16	3/8	3/4	6	1/2	2 5/8	349014	213.90	.4091 - .4410	343.75	278.65	256.85	246.40	235.35	226.65
.4688	15/32	5/8	1	6	5/8	3 1/2	349015	219.65	.4411 - .4720	349.60	284.60	262.90	252.35	241.15	232.45
.5000	1/2	5/8	1	6	5/8	3 1/2	349016	219.65	.4721 - .5050	349.60	284.60	262.90	252.35	241.15	232.45
.5625	9/16	5/8	1	6	3/4	3 3/4	349018	240.15	.5051 - .5660	370.10	304.85	283.20	272.85	261.65	252.85
.6250	5/8	5/8	1	6	3/4	3 3/4	349020	240.15	.5661 - .6300	370.10	304.85	283.20	272.85	261.65	252.85
.6875	11/16	5/8	1	6	3/4	4 1/4	349022	266.35	.6301 - .6910	396.35	331.30	309.55	299.05	288.00	279.15
.7500	3/4	5/8	1	6	3/4	4 1/4	349024	266.35	.6911 - .7550	396.35	331.30	309.55	299.05	288.00	279.15
.8125	13/16	5/8	1	6	7/8	4 3/4	349026	281.00	.7551 - .8160	410.95	346.00	324.10	313.65	302.55	293.85
.8750	7/8	5/8	1	6	7/8	4 3/4	349028	291.60	.8161 - .8800	426.60	358.95	336.30	325.50	314.10	304.85
.9375	15/16	1	1 1/2	8	1	5 1/2	349030	349.50	.8801 - .9410	484.35	416.90	394.25	383.45	371.90	362.80
1.0000	1	1	1 1/2	8	1	5 1/2	349032	349.50	.9411 - 1.0050	484.35	416.90	394.25	383.45	371.90	362.80
1.0625	1 1/16	1	1 1/2	8	1 1/4	6	349034	386.80	1.0051 - 1.0660	527.45	456.90	433.45	422.10	410.00	400.55
1.1250	1 1/8	1	1 1/2	8	1 1/4	6	349036	386.80	1.0661 - 1.1300	527.45	456.90	433.45	422.10	410.00	400.55
1.1875	1 3/16	1	1 1/2	8	1 1/4	6	349038	396.35	1.1301 - 1.1900	537.10	466.55	442.95	431.70	419.80	410.05
1.2500	1 1/4	1	1 1/2	8	1 1/4	6	349040	396.35	1.1901 - 1.2550	537.10	466.55	442.95	431.70	419.80	410.05
1.3125	1 5/16	1	1 1/2	8	1 1/4	6	349042	425.05	1.2551 - 1.3155	565.75	495.25	471.50	460.25	448.30	438.85
1.3750	1 3/8	1	1 1/2	8	1 1/4	6	349044	425.05	1.3156 - 1.3800	565.75	495.25	471.50	460.25	448.30	438.85
1.4375	1 7/16	1	1 1/2	8	1 1/4	6	349046	453.45	1.3801 - 1.4405	594.30	523.65	500.00	488.90	476.90	467.30
1.5000	1 1/2	1	1 1/2	8	1 1/4	6	349048	453.45	1.4406 - 1.5050	594.30	523.65	500.00	488.90	476.90	467.30
1.5625	1 9/16	1	1 1/2	10	1 1/4	6	349050	475.60	1.5051 - 1.5660	616.35	545.70	522.25	511.00	498.90	489.50
1.6250	1 5/8	1	1 1/2	10	1 1/4	6	349052	475.60	1.5661 - 1.6300	616.35	545.70	522.25	511.00	498.90	489.50
1.6875	1 11/16	1	1 1/2	10	1 1/4	6	349054	504.20	1.6301 - 1.6910	644.90	574.40	550.90	539.70	527.60	518.05
1.7500	1 3/4	1	1 1/2	10	1 1/4	6	349056	504.20	1.6911 - 1.7550	644.90	574.40	550.90	539.70	527.60	518.05
1.8125	1 13/16	1	1 1/2	10	1 1/4	6	349058	529.55	1.7551 - 1.8160	670.40	599.75	576.15	564.95	552.95	543.25
1.8750	1 7/8	1	1 1/2	10	1 1/4	6	349060	529.55	1.8161 - 1.8800	670.40	599.75	576.15	564.95	552.95	543.25
1.9375	1 15/16	1	1 1/2	10	1 1/4	6	349062	555.05	1.8801 - 1.9410	695.45	625.05	601.45	590.30	578.05	568.80
2.0000	2	1	1 1/2	10	1 1/4	6	349064	555.05	1.9411 - 2.0150	695.45	625.05	601.45	590.30	578.05	568.80

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED LEFT SPIRAL SHELL REAMERS

TYPE 3441 - LEFT SPIRAL FLUTES



Carbide tips brazed to one piece hardened alloy steel bodies.

Similar to type 3431 on page 111 except with left spiral flutes for use on thru holes only. Left spiral flutes should only be used on through holes and very hard materials. Finishes are much better as spiral flutes tend to bridge interruptions such as keyways, slots or intersecting holes.

Arbor hole tapered ⅛" per foot with drive slots.
Tool diameter tolerance thru 1": +.0001"/+.0005".
over 1": +.0002"/+.0006".

TOOL DIAMETER		HOLE DIAM. LG. END	FITS ARBOR NO.	NO. OF FLTS.	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.				FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.7500	¾	⅜	4	6	1 ¾	1	2 ¼	344124	$407.70	.7221 - .7530	$537.60	$472.65	$450.80	$440.50	$429.30	$420.50
.7812	25/32	⅜	4	6	1 ¾	1	2 ¼	344125	415.65	.7531 - .7840	545.45	480.55	458.55	448.30	437.15	428.45
.8125	13/16	½	5	6	1 15/16	1	2 ½	344126	415.65	.7841 - .8160	545.45	480.55	458.55	448.30	437.15	428.45
.8750	⅞	½	5	6	1 15/16	1	2 ½	344128	464.75	.8161 - .8780	599.40	532.00	509.25	498.55	487.00	477.80
.9375	15/16	½	5	8	1 15/16	1	2 ½	344130	464.75	.8781 - .9410	599.40	532.00	509.25	498.55	487.00	477.80
1.0000	1	½	5	8	1 15/16	1	2 ½	344132	472.90	.9411 - 1.0030	607.65	540.10	517.50	506.85	495.25	486.10
1.0625	1 1/16	⅝	6	8	2 ⅛	1	2 ¾	344134	487.70	1.0031 - 1.0660	622.45	555.05	532.30	521.55	509.95	500.90
1.1250	1 ⅛	⅝	6	8	2 ⅛	1	2 ¾	344136	497.85	1.0661 - 1.1280	632.60	565.05	542.50	531.80	520.25	511.00
1.1875	1 3/16	⅝	6	8	2 ⅛	1 ⅛	2 ¾	344138	506.10	1.1281 - 1.1905	641.15	573.30	550.60	540.05	528.50	519.25
1.2500	1 ¼	⅝	6	8	2 ⅛	1 ⅛	2 ¾	344140	539.20	1.1906 - 1.2530	673.95	606.55	583.85	573.10	561.70	552.45
1.3125	1 5/16	¾	7	8	2 ¼	1 ⅛	3	344142	547.70	1.2531 - 1.3155	682.50	614.75	592.25	581.50	569.95	560.75
1.3750	1 ⅜	¾	7	8	2 ¼	1 ⅛	3	344144	564.15	1.3156 - 1.3780	699.00	631.45	608.85	598.10	586.45	577.45
1.4375	1 7/16	¾	7	8	2 ¼	1 ⅛	3	344146	580.80	1.3781 - 1.4405	715.60	648.00	625.45	614.60	603.05	593.75
1.5000	1 ½	¾	7	8	2 ¼	1 ⅛	3	344148	605.65	1.4406 - 1.5030	740.55	672.85	650.30	639.65	627.90	618.95
1.5625	1 9/16	¾	7	10	2 ¼	1 ⅛	3	344150	701.25	1.5031 - 1.5660	842.05	771.55	747.90	736.70	724.70	715.00
1.6250	1 ⅝	¾	7	10	2 ¼	1 ⅛	3	344152	735.75	1.5661 - 1.6280	876.45	806.10	782.40	771.10	759.15	749.40
1.6875	1 11/16	1	8	10	2 ¾	1 ⅛	3 ½	344154	796.20	1.6281 - 1.6910	937.10	866.55	842.95	831.90	819.70	810.20
1.7500	1 ¾	1	8	10	2 ¾	1 ⅛	3 ½	344156	796.20	1.6911 - 1.7530	937.10	866.55	842.95	831.90	819.70	810.20
1.8125	1 13/16	1	8	10	2 ¾	1 ⅛	3 ½	344158	856.50	1.7531 - 1.8160	997.10	926.45	902.95	891.80	879.70	870.10
1.8750	1 ⅞	1	8	10	2 ¾	1 ⅛	3 ½	344160	856.50	1.8161 - 1.8780	997.10	926.45	902.95	891.80	879.70	870.10
1.9375	1 15/16	1	8	10	2 ¾	1 ⅛	3 ½	344162	917.70	1.8781 - 1.9410	1058.40	987.75	964.30	953.00	940.85	931.35
2.0000	2	1	8	10	2 ¾	1 ⅛	3 ½	344164	917.70	1.9411 - 2.0030	1058.40	987.75	964.30	953.00	940.85	931.35
2.0625	2 1/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344166	986.80	2.0031 - 2.0660	1127.50	1057.05	1033.35	1022.15	1010.25	1000.65
2.1250	2 ⅛	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344168	986.80	2.0661 - 2.1280	1127.50	1057.05	1033.35	1022.15	1010.25	1000.65
2.1875	2 3/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344170	1073.45	2.1281 - 2.1905	1214.00	1143.45	1119.95	1108.80	1096.60	1087.15
2.2500	2 ¼	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344172	1073.45	2.1906 - 2.2530	1214.00	1143.45	1119.95	1108.80	1096.60	1087.15
2.3125	2 5/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344174	1134.15	2.2531 - 2.3155	1274.85	1204.35	1180.70	1169.55	1157.30	1147.95
2.3750	2 ⅜	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344176	1134.15	2.3156 - 2.3780	1274.85	1204.35	1180.70	1169.55	1157.30	1147.95
2.4375	2 7/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344178	1194.60	2.3781 - 2.4405	1335.25	1264.85	1241.40	1229.90	1217.85	1208.35
2.5000	2 ½	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	344180	1194.60	2.4406 - 2.5030	1335.25	1264.85	1241.40	1229.90	1217.85	1208.35
2.5625	2 9/16	1 ½	10	14	3 ⅛	1 ⅛	4	344182	1311.40	2.5031 - 2.5660	1452.10	1381.60	1357.95	1346.95	1334.75	1325.30
2.6250	2 ⅝	1 ½	10	14	3 ⅛	1 ⅛	4	344184	1360.05	2.5661 - 2.6280	1500.80	1430.30	1406.85	1395.60	1383.55	1373.95

*Quantities of 15 or more: price of fractional size in same size range.

SHELL REAMER ARBORS



STRAIGHT SHANK

TYPE 3481 -SHELL REAMER ARBORS

Hardened and ground steel bodies.

Shell reamer arbors for types 3441 and 3431.



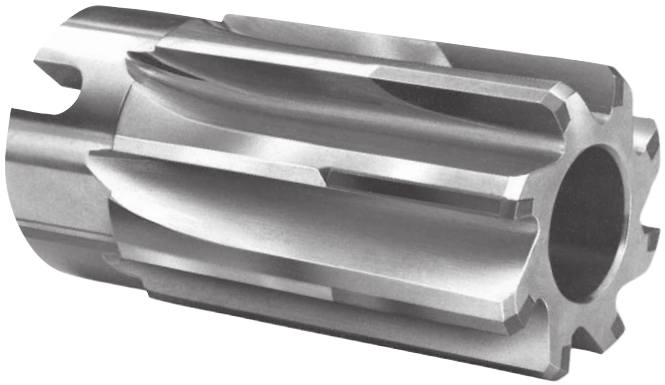
TAPER SHANK

ARBOR NO.	FITS REAMER TOOL DIAM.	OAL	STRAIGHT SHANK			TAPER SHANK		
			SHANK DIAM.	TYPE 3481 EDP NO.	PRICE EACH	TAPER SHANK NO.	TYPE 3481 EDP NO.	PRICE EACH
4	.7221 - .7840	9	½	348104	$199.15	2	348114	$237.50
5	.7841 - 1.0030	9 ½	⅝	348105	222.20	2	348115	283.50
6	1.0031 - 1.2530	10	¾	348106	245.30	3	348116	306.45
7	1.2531 - 1.6280	11	⅞	348107	268.15	3	348117	337.25
8	1.6281 - 2.0030	12	1 ⅛	348108	298.85	4	348118	375.60
9	2.0031 - 2.5030	13	1 ⅜	348109	360.10	4	348119	421.45
10	2.5031 - 3.0030	14	1 ⅝	348110	468.30	5	348120	534.75

CARBIDE TIPPED SHELL REAMERS

TYPE 3431 - STRAIGHT FLUTES

Carbide tips brazed to one piece hardened alloy steel bodies. Straight polished flutes.



Shell reamers are used with an arbor which is tapered to fit the hole in the reamer. Drive slot in the reamer engage lugs on the arbor to supplement the rotational drive from the tapered arbor. The space between the reamer's drive end and the arbor collar permits easy removal of the shell reamer by prying. For shell reamer arbors (straight or taper shank), see page 110.

Arbor hole tapered ⅛" per foot with drive slots.
Tool diameter tolerance thru 1": +.0001"/+.0005".
over 1": +.0002"/+.0006".

TOOL DIAMETER		HOLE DIAM. LG. END	FITS ARBOR NO.	NO. OF FLTS.	LENGTH			EDP NO.	PRICE EACH	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DECIMAL	FRAC.				FLT	CARB	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14*
.7500	¾	⅜	4	6	1 ¾	1	2 ¼	343124	$313.65	.7221 - .7530	$443.75	$378.65	$356.80	$346.35	$335.30	$326.60
.7812	25/32	⅜	4	6	1 ¾	1	2 ¼	343125	319.75	.7531 - .7840	449.75	384.60	363.00	352.50	341.40	332.70
.8125	13/16	½	5	6	1 15/16	1	2 ½	343126	319.75	.7841 - .8160	449.75	384.60	363.00	352.50	341.40	332.70
.8750	⅞	½	5	6	1 15/16	1	2 ½	343128	357.40	.8161 - .8780	492.30	424.60	401.85	391.35	379.75	370.50
.9375	15/16	½	5	8	1 15/16	1	2 ½	343130	357.40	.8781 - .9410	492.30	424.60	401.85	391.35	379.75	370.50
1.0000	1	½	5	8	1 15/16	1	2 ½	343132	363.85	.9411 - 1.0030	498.75	431.15	408.60	397.80	386.20	377.00
1.0625	1 1/16	⅝	6	8	2 ⅛	1	2 ¾	343134	376.65	1.0031 - 1.0660	511.40	443.85	421.05	410.50	398.95	389.70
1.1250	1 ⅛	⅝	6	8	2 ⅛	1	2 ¾	343136	382.90	1.0661 - 1.1280	517.70	450.25	427.50	416.90	405.25	396.20
1.1875	1 3/16	⅝	6	8	2 ⅛	1 ⅛	2 ¾	343138	389.40	1.1281 - 1.1905	523.95	456.70	434.00	423.35	411.60	402.65
1.2500	1 ¼	⅝	6	8	2 ⅛	1 ⅛	2 ¾	343140	414.90	1.1906 - 1.2530	549.65	482.15	459.60	448.70	437.30	428.10
1.3125	1 5/16	¾	7	8	2 ¼	1 ⅛	3	343142	421.05	1.2531 - 1.3155	555.95	488.45	465.85	455.15	443.75	434.40
1.3750	1 ⅜	¾	7	8	2 ¼	1 ⅛	3	343144	433.95	1.3156 - 1.3780	568.80	501.15	478.65	467.75	456.20	447.15
1.4375	1 7/16	¾	7	8	2 ¼	1 ⅛	3	343146	446.75	1.3781 - 1.4405	581.50	514.00	491.45	480.75	468.85	460.05
1.5000	1 ½	¾	7	8	2 ¼	1 ⅛	3	343148	465.85	1.4406 - 1.5030	600.80	533.20	510.50	499.75	488.20	479.15
1.5625	1 9/16	¾	7	10	2 ¼	1 ⅛	3	343150	539.40	1.5031 - 1.5660	680.05	609.70	585.95	574.65	562.60	553.20
1.6250	1 ⅝	¾	7	10	2 ¼	1 ⅛	3	343152	565.90	1.5661 - 1.6280	706.80	636.30	612.55	601.30	589.35	579.80
1.6875	1 11/16	1	8	10	2 ¾	1 ⅛	3 ½	343154	612.65	1.6281 - 1.6910	753.55	682.90	659.35	648.05	636.10	626.65
1.7500	1 ¾	1	8	10	2 ¾	1 ⅛	3 ½	343156	612.65	1.6911 - 1.7530	753.55	682.90	659.35	648.05	636.10	626.65
1.8125	1 13/16	1	8	10	2 ¾	1 ⅛	3 ½	343158	659.20	1.7531 - 1.8160	799.75	729.40	705.80	694.60	682.50	672.90
1.8750	1 ⅞	1	8	10	2 ¾	1 ⅛	3 ½	343160	659.20	1.8161 - 1.8780	799.75	729.40	705.80	694.60	682.50	672.90
1.9375	1 15/16	1	8	10	2 ¾	1 ⅛	3 ½	343162	705.95	1.8781 - 1.9410	846.45	776.00	752.50	741.35	729.25	719.75
2.0000	2	1	8	10	2 ¾	1 ⅛	3 ½	343164	705.95	1.9411 - 2.0030	846.45	776.00	752.50	741.35	729.25	719.75
2.0625	2 1/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343166	759.15	2.0031 - 2.0660	899.80	829.45	805.70	794.55	782.40	773.00
2.1250	2 ⅛	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343168	759.15	2.0661 - 2.1280	899.80	829.45	805.70	794.55	782.40	773.00
2.1875	2 3/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343170	825.65	2.1281 - 2.1905	966.40	895.85	872.25	861.00	849.10	839.35
2.2500	2 ¼	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343172	825.65	2.1906 - 2.2530	966.40	895.85	872.25	861.00	849.10	839.35
2.3125	2 5/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343174	872.25	2.2531 - 2.3155	1013.10	942.50	918.95	907.60	895.65	886.05
2.3750	2 ⅜	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343176	872.25	2.3156 - 2.3780	1013.10	942.50	918.95	907.60	895.65	886.05
2.4375	2 7/16	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343178	919.05	2.3781 - 2.4405	1059.75	989.25	965.65	954.40	942.35	932.75
2.5000	2 ½	1 ¼	9	12	2 ⅞	1 ⅛	3 ¾	343180	919.05	2.4406 - 2.5030	1059.75	989.25	965.65	954.40	942.35	932.75
2.5625	2 9/16	1 ½	10	14	3 ⅛	1 ⅛	4	343182	1008.75	2.5031 - 2.5660	1149.45	1079.00	1055.40	1044.10	1032.10	1022.55
2.6250	2 ⅝	1 ½	10	14	3 ⅛	1 ⅛	4	343184	1046.20	2.5661 - 2.6280	1186.85	1116.20	1092.90	1081.45	1069.55	1059.95
2.6875	2 11/16	1 ½	10	14	3 ⅛	1 ⅛	4	343186	1086.80	2.6281 - 2.6910	1227.45	1157.10	1133.45	1122.30	1110.15	1100.60
2.7500	2 ¾	1 ½	10	14	3 ⅛	1 ⅛	4	343188	1124.60	2.6911 - 2.7530	1265.30	1194.75	1171.15	1160.05	1147.95	1138.35
2.8125	2 13/16	1 ½	10	14	3 ⅛	1 ⅛	4	343190	1164.10	2.7531 - 2.8160	1304.75	1234.40	1210.80	1199.50	1187.50	1178.05
2.8750	2 ⅞	1 ½	10	14	3 ⅛	1 ⅛	4	343192	1210.80	2.8161 - 2.8780	1351.30	1281.05	1257.25	1246.20	1234.10	1224.60
2.9375	2 15/16	1 ½	10	14	3 ⅛	1 ⅛	4	343194	1257.55	2.8781 - 2.9410	1398.20	1327.60	1304.05	1293.05	1280.95	1271.35
3.0000	3	1 ½	10	14	3 ⅛	1 ⅛	4	343196	1304.15	2.9411 - 3.0030	1444.80	1374.40	1350.80	1339.80	1327.55	1318.10

*Quantities of 15 or more: price of fractional size in same size range.

Made in U.S.A.

CARBIDE TIPPED VARIABLE LENGTH REAMERS

TYPE 3457EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3458EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3459EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR STEEL

Same as types 3457, 3458, and 3459 on page 92 except with variable overall lengths. When ordering, specify desired length within overall length range. Eliminates need to special order reamers, saving time and money. These reamers have a controlled shank.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3457EL EDP NO.	CAST IRON TYPE 3458EL EDP NO.	STEEL TYPE 3459EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.1121 - .1280 *	.1099	4	1 ½	345704EL	345804EL	345904EL	2 9/32 - 6	$651.15	$570.25	$543.15	$530.35	$516.60	$505.50
.1281 - .1435 *	.1255	4	1 ½	3457045EL	3458045EL	3459045EL	2 17/32 - 6 ½	653.45	572.65	545.65	532.55	518.50	507.80
.1436 - .1590 *	.1411	4	1 ½	345705EL	345805EL	345905EL	2 17/32 - 7	664.35	583.40	556.25	543.25	529.55	518.40
.1591 - .1750 *	.1567	4	1 ½	3457055EL	3458055EL	3459055EL	2 25/32 - 8	676.90	595.80	568.85	555.95	542.05	531.15
.1751 - .1910 *	.1724	4	1 ½	345706EL	345806EL	345906EL	4 17/32 - 9	694.80	613.90	586.60	574.05	559.85	549.05
.1911 - .2210 *	.1880	4	1 ½	345707EL	345807EL	345907EL	5 1/32 - 10	718.00	637.55	610.30	597.50	583.50	572.65
.2211 - .2530 *	.2193	4	1 ½	345708EL	345808EL	345908EL	6 1/32 - 12	764.65	683.70	656.75	643.85	630.05	619.10
.2531 - .2840 *	.2505	4	1 ½	345709EL	345809EL	345909EL	6 1/32 - 12	804.50	723.60	696.70	683.50	669.85	658.65
.2841 - .3150	.2792	4	1 ½	345710EL	345810EL	345910EL	6 1/32 - 12	399.20	342.65	323.75	314.65	305.00	297.45
.3151 - .3470	.2792	4	1 ½	345711EL	345811EL	345911EL	6 1/32 - 12	399.20	342.65	323.75	314.65	305.00	297.45
.3471 - .3780	.3105	4	1 ¾	345712EL	345812EL	345912EL	7 1/32 - 14	412.25	355.80	336.90	327.65	318.00	310.40
.3781 - .4090	.3105	4	1 ¾	345713EL	345813EL	345913EL	7 1/32 - 14	412.25	355.80	336.90	327.65	318.00	310.40
.4091 - .4410	.3730	6	1 ¾	345714EL	345814EL	345914EL	7 1/32 - 14	425.40	368.70	349.95	340.70	331.10	323.45
.4411 - .4720	.3730	6	1 ¾	345715EL	345815EL	345915EL	7 1/32 - 14	425.40	368.70	349.95	340.70	331.10	323.45
.4721 - .5030	.4355	6	2	345716EL	345816EL	345916EL	8 1/32 - 16	434.20	377.50	358.70	349.60	340.00	332.30
.5031 - .5340	.4355	6	2	345717EL	345817EL	345917EL	8 1/32 - 16	434.20	377.50	358.70	349.60	340.00	332.30
.5341 - .5660	.4355	6	2	345718EL	345818EL	345918EL	8 1/32 - 16	442.25	385.65	366.65	357.70	347.95	340.40
.5661 - .5970	.4355	6	2	345719EL	345819EL	345919EL	8 1/32 - 16	442.25	385.65	366.65	357.70	347.95	340.40
.5971 - .6280	.5615	6	2 ¼	345720EL	345820EL	345920EL	9 1/32 - 18	451.55	395.00	375.95	367.10	357.40	349.70
.6281 - .6590	.5615	6	2 ¼	345721EL	345821EL	345921EL	9 1/32 - 18	451.55	395.00	375.95	367.10	357.40	349.70
.6591 - .6910	.5615	6	2 ¼	345722EL	345822EL	345922EL	9 1/32 - 18	452.90	396.25	377.30	368.25	358.70	351.00
.6911 - .7220	.5615	6	2 ¼	345723EL	345823EL	345923EL	9 1/32 - 18	452.90	396.25	377.30	368.25	358.70	351.00
.7221 - .7530	.6245	6	2 ½	345724EL	345824EL	345924EL	9 17/32 - 18	486.10	429.45	410.50	401.60	392.00	384.25
.7531 - .7840	.6245	6	2 ½	345725EL	345825EL	345925EL	9 17/32 - 18	589.90	536.00	517.85	509.40	500.15	492.95
.7841 - .8160	.6245	6	2 ½	345726EL	345826EL	345926EL	9 17/32 - 18	608.65	554.75	536.70	528.20	519.00	511.65
.8161 - .8470	.6245	6	2 ½	345727EL	345827EL	345927EL	9 17/32 - 18	615.70	561.80	543.70	535.15	526.00	518.75
.8471 - .8780	.7495	6	2 ⅝	345728EL	345828EL	345928EL	10 1/32 - 18	628.80	574.70	556.70	548.30	539.00	531.65
.8781 - .9090	.7495	6	2 ⅝	345729EL	345829EL	345929EL	10 1/32 - 18	655.20	601.25	583.25	574.65	565.45	558.20
.9091 - .9410	.7495	8	2 ⅝	345730EL	345830EL	345930EL	10 1/32 - 18	661.85	607.75	589.75	581.20	571.95	564.85
.9411 - .9720	.7495	8	2 ⅝	345731EL	345831EL	345931EL	10 1/32 - 18	668.10	614.20	596.10	587.60	578.35	571.05
.9721 - 1.0030	.8745	8	2 ¾	345732EL	345832EL	345932EL	10 17/32 - 18	683.60	629.80	611.65	603.20	593.80	586.60

*Solid Carbide

CARBIDE TIPPED VARIABLE LENGTH COOLANT REAMERS

TYPE 3416EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - THROUGH HOLES - FOR NON-FERROUS
TYPE 3426EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - THROUGH HOLES - FOR CAST IRON
TYPE 3435EL - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - THROUGH HOLES - FOR STEEL

Same as types 3416, 3426, and 3435 on page 102 except with variable overall lengths. When ordering, specify desired length within overall length range. Eliminates need to special order reamers, saving time and money. These reamers have a controlled shank and coolant through the flutes.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3416EL EDP NO.	CAST IRON TYPE 3426EL EDP NO.	STEEL TYPE 3435EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.1751 - .1910 *	.1724	4	1 ½	341606EL	342606EL	343506EL	4 17/32 - 9	$831.25	$750.35	$723.20	$710.40	$696.70	$685.50
.1911 - .2210 *	.1880	4	1 ½	341607EL	342607EL	343507EL	5 1/32 - 10	863.25	782.30	755.05	742.35	728.55	717.60
.2211 - .2530 *	.2193	4	1 ½	341608EL	342608EL	343508EL	6 1/32 - 12	959.05	878.30	851.05	838.15	824.10	813.40
.2531 - .2840 *	.2505	4	1 ½	341609EL	342609EL	343509EL	6 1/32 - 12	1005.70	924.60	897.60	884.70	870.65	859.75
.2841 - .3150	.2792	4	1 ½	341610EL	342610EL	343510EL	6 1/32 - 12	520.10	463.45	444.50	435.45	425.65	418.10
.3151 - .3470	.2792	4	1 ½	341611EL	342611EL	343511EL	6 1/32 - 12	520.10	463.45	444.50	435.45	425.65	418.10
.3471 - .3780	.3105	4	1 ¾	341612EL	342612EL	343512EL	7 1/32 - 14	530.20	473.60	454.85	445.85	435.95	428.45
.3781 - .4090	.3105	4	1 ¾	341613EL	342613EL	343513EL	7 1/32 - 14	530.20	473.60	454.85	445.85	435.95	428.45
.4091 - .4410	.3730	6	1 ¾	341614EL	342614EL	343514EL	7 1/32 - 14	532.50	475.85	456.90	447.95	438.15	430.65
.4411 - .4720	.3730	6	1 ¾	341615EL	342615EL	343515EL	7 1/32 - 14	532.50	475.85	456.90	447.95	438.15	430.65
.4721 - .5030	.4355	6	2	341616EL	342616EL	343516EL	8 1/32 - 16	579.25	522.60	503.70	494.60	484.95	477.35
.5031 - .5340	.4355	6	2	341617EL	342617EL	343517EL	8 1/32 - 16	579.25	522.60	503.70	494.60	484.95	477.35
.5341 - .5660	.4355	6	2	341618EL	342618EL	343518EL	8 1/32 - 16	583.30	526.75	507.80	498.75	489.10	481.30
.5661 - .5970	.4355	6	2	341619EL	342619EL	343519EL	8 1/32 - 16	583.30	526.75	507.80	498.75	489.10	481.30
.5971 - .6280	.5615	6	2 ¼	341620EL	342620EL	343520EL	9 1/32 - 18	594.80	538.25	519.25	510.25	500.55	492.95
.6281 - .6590	.5615	6	2 ¼	341621EL	342621EL	343521EL	9 1/32 - 18	594.80	538.25	519.25	510.25	500.55	492.95
.6591 - .6910	.5615	6	2 ¼	341622EL	342622EL	343522EL	9 1/32 - 18	601.25	544.65	525.75	516.65	506.95	499.40
.6911 - .7220	.5615	6	2 ¼	341623EL	342623EL	343523EL	9 1/32 - 18	601.25	544.65	525.75	516.65	506.95	499.40
.7221 - .7530	.6245	6	2 ½	341624EL	342624EL	343524EL	9 17/32 - 18	626.00	569.40	550.50	541.30	531.65	523.95
.7531 - .7840	.6245	6	2 ½	341625EL	342625EL	343525EL	9 17/32 - 18	713.50	659.45	641.50	632.85	623.75	616.40
.7841 - .8160	.6245	6	2 ½	341626EL	342626EL	343526EL	9 17/32 - 18	739.05	685.15	667.15	658.50	649.25	642.05
.8161 - .8470	.6245	6	2 ½	341627EL	342627EL	343527EL	9 17/32 - 18	746.00	692.10	673.95	665.40	656.10	648.85
.8471 - .8780	.7495	6	2 ⅝	341628EL	342628EL	343528EL	10 1/32 - 18	750.55	696.65	678.65	670.05	660.85	653.60
.8781 - .9090	.7495	6	2 ⅝	341629EL	342629EL	343529EL	10 1/32 - 18	779.75	725.95	707.75	699.25	690.00	682.80
.9091 - .9410	.7495	8	2 ⅝	341630EL	342630EL	343530EL	10 1/32 - 18	793.10	739.20	721.20	712.60	703.45	696.15
.9411 - .9720	.7495	8	2 ⅝	341631EL	342631EL	343531EL	10 1/32 - 18	797.50	743.70	725.55	717.00	707.70	700.40
.9721 - 1.0030	.8745	8	2 ¾	341632EL	342632EL	343532EL	10 17/32 - 18	820.40	766.50	748.60	739.90	730.65	723.40

*Solid Carbide

Made in U.S.A.

CARBIDE TIPPED VARIABLE LENGTH REAMERS

TYPE 3442EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3443EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3444EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Same as types 3442, 3443, and 3444 on page 94 except with variable overall lengths.
When ordering, specify desired length within overall length range.
Eliminates need to special order reamers, saving time and money.
These reamers have a controlled shank.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3442EL EDP NO.	CAST IRON TYPE 3443EL EDP NO.	STEEL TYPE 3444EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.2211 - .2530 *	.2193	4	1 ½	344208EL	344308EL	344408EL	6 1⁄32 - 12	$917.40	$820.40	$788.10	$772.65	$756.05	$742.75
.2531 - .2840 *	.2505	4	1 ½	344209EL	344309EL	344409EL	6 1⁄32 - 12	965.45	868.15	835.85	820.30	803.70	790.70
.2841 - .3150	.2792	4	1 ½	344210EL	344310EL	344410EL	6 1⁄32 - 12	479.15	411.25	388.65	377.65	366.10	356.85
.3151 - .3470	.2792	4	1 ½	344211EL	344311EL	344411EL	6 1⁄32 - 12	479.15	411.25	388.65	377.65	366.10	356.85
.3471 - .3780	.3105	4	1 ¾	344212EL	344312EL	344412EL	7 1⁄32 - 14	494.75	426.95	404.20	393.20	381.70	372.55
.3781 - .4090	.3105	4	1 ¾	344213EL	344313EL	344413EL	7 1⁄32 - 14	494.75	426.95	404.20	393.20	381.70	372.55
.4091 - .4410	.3730	6	1 ¾	344214EL	344314EL	344414EL	7 1⁄32 - 14	510.45	442.70	419.85	408.95	397.25	388.15
.4411 - .4720	.3730	6	1 ¾	344215EL	344315EL	344415EL	7 1⁄32 - 14	510.45	442.70	419.85	408.95	397.25	388.15
.4721 - .5030	.4355	6	2	344216EL	344316EL	344416EL	8 1⁄32 - 16	521.10	453.10	430.50	419.50	407.95	398.70
.5031 - .5340	.4355	6	2	344217EL	344317EL	344417EL	8 1⁄32 - 16	521.10	453.10	430.50	419.50	407.95	398.70
.5341 - .5660	.4355	6	2	344218EL	344318EL	344418EL	8 1⁄32 - 16	530.80	462.75	440.00	429.25	417.70	408.40
.5661 - .5970	.4355	6	2	344219EL	344319EL	344419EL	8 1⁄32 - 16	530.80	462.75	440.00	429.25	417.70	408.40
.5971 - .6280	.5615	6	2 ¼	344220EL	344320EL	344420EL	9 1⁄32 - 18	542.00	473.95	451.20	440.60	428.75	419.80
.6281 - .6590	.5615	6	2 ¼	344221EL	344321EL	344421EL	9 1⁄32 - 18	542.00	473.95	451.20	440.60	428.75	419.80
.6591 - .6910	.5615	6	2 ¼	344222EL	344322EL	344422EL	9 1⁄32 - 18	543.25	475.50	452.85	442.05	430.50	421.20
.6911 - .7220	.5615	6	2 ¼	344223EL	344323EL	344423EL	9 1⁄32 - 18	543.25	475.50	452.85	442.05	430.50	421.20
.7221 - .7530	.6245	6	2 ½	344224EL	344324EL	344424EL	9 17⁄32 - 18	583.40	515.50	492.75	481.90	470.25	461.25
.7531 - .7840	.6245	6	2 ½	344225EL	344325EL	344425EL	9 17⁄32 - 18	672.55	607.75	586.05	576.05	564.90	556.10
.7841 - .8160	.6245	6	2 ½	344226EL	344326EL	344426EL	9 17⁄32 - 18	691.80	627.20	605.50	595.30	584.20	575.45
.8161 - .8470	.6245	6	2 ½	344227EL	344327EL	344427EL	9 17⁄32 - 18	698.75	634.20	612.45	602.20	591.20	582.45
.8471 - .8780	.7495	6	2 ⅝	344228EL	344328EL	344428EL	10 1⁄32 - 18	701.45	636.70	615.30	605.00	593.80	585.05
.8781 - .9090	.7495	6	2 ⅝	344229EL	344329EL	344429EL	10 1⁄32 - 18	725.00	660.30	638.55	628.45	617.35	608.60
.9091 - .9410	.7495	8	2 ⅝	344230EL	344330EL	344430EL	10 1⁄32 - 18	749.30	684.80	663.05	652.75	641.70	633.00
.9411 - .9720	.7495	8	2 ⅝	344231EL	344331EL	344431EL	10 1⁄32 - 18	753.75	689.10	667.40	657.30	646.15	637.50
.9721 - 1.0030	.8745	8	2 ¾	344232EL	344332EL	344432EL	10 17⁄32 - 18	781.25	716.65	694.95	684.90	673.75	664.95

CARBIDE TIPPED VARIABLE LENGTH COOLANT REAMERS

TYPE 3411EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - BLIND HOLES - FOR NON-FERROUS
TYPE 3413EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - BLIND HOLES - FOR CAST IRON
TYPE 3415EL - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - BLIND HOLES - FOR STEEL

Same as types 3411, 3413, and 3415 on page 107 except with variable overall lengths. When ordering, specify desired length within overall length range. Eliminates need to special order reamers, saving time and money. These reamers have a controlled shank and coolant through the end of the tool.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3411EL EDP NO.	CAST IRON TYPE 3413EL EDP NO.	STEEL TYPE 3415EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.2211 - .2530 *	.2193	4	1 ½	341108EL	341308EL	341508EL	6 1/32 - 12	$1150.75	$1053.65	$1021.40	$1005.90	$989.00	$976.20
.2531 - .2840 *	.2505	4	1 ½	341109EL	341309EL	341509EL	6 1/32 - 12	1206.60	1109.60	1076.90	1061.55	1044.85	1031.75
.2841 - .3150	.2792	4	1 ½	341110EL	341310EL	341510EL	6 1/32 - 12	623.90	555.95	533.35	522.55	510.70	501.75
.3151 - .3470	.2792	4	1 ½	341111EL	341311EL	341511EL	6 1/32 - 12	623.90	555.95	533.35	522.55	510.70	501.75
.3471 - .3780	.3105	4	1 ¾	341112EL	341312EL	341512EL	7 1/32 - 14	636.35	568.35	545.50	534.80	523.30	514.10
.3781 - .4090	.3105	4	1 ¾	341113EL	341313EL	341513EL	7 1/32 - 14	636.35	568.35	545.50	534.80	523.30	514.10
.4091 - .4410	.3730	6	1 ¾	341114EL	341314EL	341514EL	7 1/32 - 14	638.90	571.05	548.40	537.45	525.85	516.65
.4411 - .4720	.3730	6	1 ¾	341115EL	341315EL	341515EL	7 1/32 - 14	638.90	571.05	548.40	537.45	525.85	516.65
.4721 - .5030	.4355	6	2	341116EL	341316EL	341516EL	8 1/32 - 16	695.05	627.20	604.30	593.60	581.90	572.90
.5031 - .5340	.4355	6	2	341117EL	341317EL	341517EL	8 1/32 - 16	695.05	627.20	604.30	593.60	581.90	572.90
.5341 - .5660	.4355	6	2	341118EL	341318EL	341518EL	8 1/32 - 16	700.00	631.90	609.35	598.50	586.80	577.65
.5661 - .5970	.4355	6	2	341119EL	341319EL	341519EL	8 1/32 - 16	700.00	631.90	609.35	598.50	586.80	577.65
.5971 - .6280	.5615	6	2 ¼	341120EL	341320EL	341520EL	9 1/32 - 18	713.85	645.80	623.05	612.35	600.80	591.50
.6281 - .6590	.5615	6	2 ¼	341121EL	341321EL	341521EL	9 1/32 - 18	713.85	645.80	623.05	612.35	600.80	591.50
.6591 - .6910	.5615	6	2 ¼	341122EL	341322EL	341522EL	9 1/32 - 18	721.50	653.65	631.00	620.20	608.45	599.35
.6911 - .7220	.5615	6	2 ¼	341123EL	341323EL	341523EL	9 1/32 - 18	721.50	653.65	631.00	620.20	608.45	599.35
.7221 - .7530	.6245	6	2 ½	341124EL	341324EL	341524EL	9 17/32 - 18	751.15	683.25	660.50	649.80	638.10	629.10
.7531 - .7840	.6245	6	2 ½	341125EL	341325EL	341525EL	9 17/32 - 18	758.40	693.70	672.15	661.85	650.65	642.05
.7841 - .8160	.6245	6	2 ½	341126EL	341326EL	341526EL	9 17/32 - 18	783.25	718.40	697.00	686.65	675.50	666.80
.8161 - .8470	.6245	6	2 ½	341127EL	341327EL	341527EL	9 17/32 - 18	790.25	725.55	703.90	693.65	682.55	673.90
.8471 - .8780	.7495	6	2 ⅝	341128EL	341328EL	341528EL	10 1/32 - 18	792.80	728.15	706.65	696.30	685.10	676.50
.8781 - .9090	.7495	6	2 ⅝	341129EL	341329EL	341529EL	10 1/32 - 18	821.25	756.50	734.95	724.50	713.50	704.90
.9091 - .9410	.7495	8	2 ⅝	341130EL	341330EL	341530EL	10 1/32 - 18	846.30	781.60	759.90	749.65	738.55	729.90
.9411 - .9720	.7495	8	2 ⅝	341131EL	341331EL	341531EL	10 1/32 - 18	850.70	786.10	764.55	754.10	743.05	734.45
.9721 - 1.0030	.8745	8	2 ¾	341132EL	341332EL	341532EL	10 17/32 - 18	884.30	819.65	797.95	787.55	776.50	767.95

*Solid Carbide

Made in U.S.A.

CARBIDE TIPPED VARIABLE LENGTH REAMERS

TYPE 3482EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3483EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3484EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Same as types 3482, 3483, and 3484 on page 95 except with variable overall lengths.
When ordering, specify desired length within overall length range.
Eliminates need to special order reamers, saving time and money.
These reamers have a controlled shank.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3482EL EDP NO.	CAST IRON TYPE 3483EL EDP NO.	STEEL TYPE 3484EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.2211 - .2530 *	.2193	4	1 ½	348208EL	348308EL	348408EL	6 1⁄32 - 12	$917.40	$820.40	$788.10	$772.65	$756.05	$742.75
.2531 - .2840 *	.2505	4	1 ½	348209EL	348309EL	348409EL	6 1⁄32 - 12	965.45	868.15	835.85	820.30	803.70	790.70
.2841 - .3150	.2792	4	1 ½	348210EL	348310EL	348410EL	6 1⁄32 - 12	479.15	411.25	388.65	377.65	366.10	356.85
.3151 - .3470	.2792	4	1 ½	348211EL	348311EL	348411EL	6 1⁄32 - 12	479.15	411.25	388.65	377.65	366.10	356.85
.3471 - .3780	.3105	4	1 ¾	348212EL	348312EL	348412EL	7 1⁄32 - 14	494.75	426.95	404.20	393.20	381.70	372.55
.3781 - .4090	.3105	4	1 ¾	348213EL	348313EL	348413EL	7 1⁄32 - 14	494.75	426.95	404.20	393.20	381.70	372.55
.4091 - .4410	.3730	6	1 ¾	348214EL	348314EL	348414EL	7 1⁄32 - 14	510.45	442.70	419.85	408.95	397.25	388.15
.4411 - .4720	.3730	6	1 ¾	348215EL	348315EL	348415EL	7 1⁄32 - 14	510.45	442.70	419.85	408.95	397.25	388.15
.4721 - .5030	.4355	6	2	348216EL	348316EL	348416EL	8 1⁄32 - 16	521.10	453.10	430.50	419.50	407.95	398.70
.5031 - .5340	.4355	6	2	348217EL	348317EL	348417EL	8 1⁄32 - 16	521.10	453.10	430.50	419.50	407.95	398.70
.5341 - .5660	.4355	6	2	348218EL	348318EL	348418EL	8 1⁄32 - 16	530.80	462.75	440.00	429.25	417.70	408.40
.5661 - .5970	.4355	6	2	348219EL	348319EL	348419EL	8 1⁄32 - 16	530.80	462.75	440.00	429.25	417.70	408.40
.5971 - .6280	.5615	6	2 ¼	348220EL	348320EL	348420EL	9 1⁄32 - 18	542.00	473.95	451.20	440.60	428.75	419.80
.6281 - .6590	.5615	6	2 ¼	348221EL	348321EL	348421EL	9 1⁄32 - 18	542.00	473.95	451.20	440.60	428.75	419.80
.6591 - .6910	.5615	6	2 ¼	348222EL	348322EL	348422EL	9 1⁄32 - 18	543.25	475.50	452.85	442.05	430.50	421.20
.6911 - .7220	.5615	6	2 ¼	348223EL	348323EL	348423EL	9 1⁄32 - 18	543.25	475.50	452.85	442.05	430.50	421.20
.7221 - .7530	.6245	6	2 ½	348224EL	348324EL	348424EL	9 17⁄32 - 18	583.40	515.50	492.75	481.90	470.25	461.25
.7531 - .7840	.6245	6	2 ½	348225EL	348325EL	348425EL	9 17⁄32 - 18	672.55	607.75	586.05	576.05	564.90	556.10
.7841 - .8160	.6245	6	2 ½	348226EL	348326EL	348426EL	9 17⁄32 - 18	691.80	627.20	605.50	595.30	584.20	575.45
.8161 - .8470	.6245	6	2 ½	348227EL	348327EL	348427EL	9 17⁄32 - 18	698.75	634.20	612.45	602.20	591.20	582.45
.8471 - .8780	.7495	6	2 ⅝	348228EL	348328EL	348428EL	10 1⁄32 - 18	701.45	636.70	615.30	605.00	593.80	585.05
.8781 - .9090	.7495	6	2 ⅝	348229EL	348329EL	348429EL	10 1⁄32 - 18	725.00	660.30	638.55	628.45	617.35	608.60
.9091 - .9410	.7495	8	2 ⅝	348230EL	348330EL	348430EL	10 1⁄32 - 18	749.30	684.80	663.05	652.75	641.70	633.00
.9411 - .9720	.7495	8	2 ⅝	348231EL	348331EL	348431EL	10 1⁄32 - 18	753.75	689.10	667.40	657.30	646.15	637.50
.9721 - 1.0030	.8745	8	2 ¾	348232EL	348332EL	348432EL	10 17⁄32 - 18	781.25	716.65	694.95	684.90	673.75	664.95

CARBIDE TIPPED VARIABLE LENGTH COOLANT REAMERS

TYPE 3427EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - THROUGH HOLES - FOR NON-FERROUS
TYPE 3428EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - THROUGH HOLES - FOR CAST IRON
TYPE 3429EL - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - THROUGH HOLES - FOR STEEL

Same as types 3427, 3428, and 3429 on page 108 except with variable overall lengths.
When ordering, specify desired length within overall length range.
Eliminates need to special order reamers, saving time and money.
These reamers have a controlled shank and coolant through the flutes.



For reamer tolerances and closer tolerance pricing, see page 56.

DECIMAL SIZE RANGE	SHANK DIAMETER	NO. OF FLUTES	FLUTE LENGTH	NON-FERR. TYPE 3427EL EDP NO.	CAST IRON TYPE 3428EL EDP NO.	STEEL TYPE 3429EL EDP NO.	OVERALL LENGTH RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
								1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14
.2211 - .2530 *	.2193	4	1 ½	342708EL	342808EL	342908EL	6 1/32 - 12	$1150.75	$1053.65	$1021.40	$1005.90	$989.00	$976.20
.2531 - .2840 *	.2505	4	1 ½	342709EL	342809EL	342909EL	6 1/32 - 12	1206.60	1109.60	1076.90	1061.55	1044.85	1031.75
.2841 - .3150	.2792	4	1 ½	342710EL	342810EL	342910EL	6 1/32 - 12	623.90	555.95	533.35	522.55	510.70	501.75
.3151 - .3470	.2792	4	1 ½	342711EL	342811EL	342911EL	6 1/32 - 12	623.90	555.95	533.35	522.55	510.70	501.75
.3471 - .3780	.3105	4	1 ¾	342712EL	342812EL	342912EL	7 1/32 - 14	636.35	568.35	545.50	534.80	523.30	514.10
.3781 - .4090	.3105	4	1 ¾	342713EL	342813EL	342913EL	7 1/32 - 14	636.35	568.35	545.50	534.80	523.30	514.10
.4091 - .4410	.3730	6	1 ¾	342714EL	342814EL	342914EL	7 1/32 - 14	638.90	571.05	548.40	537.45	525.85	516.65
.4411 - .4720	.3730	6	1 ¾	342715EL	342815EL	342915EL	7 1/32 - 14	638.90	571.05	548.40	537.45	525.85	516.65
.4721 - .5030	.4355	6	2	342716EL	342816EL	342916EL	8 1/32 - 16	695.05	627.20	604.30	593.60	581.90	572.90
.5031 - .5340	.4355	6	2	342717EL	342817EL	342917EL	8 1/32 - 16	695.05	627.20	604.30	593.60	581.90	572.90
.5341 - .5660	.4355	6	2	342718EL	342818EL	342918EL	8 1/32 - 16	700.00	631.90	609.35	598.50	586.80	577.65
.5661 - .5970	.4355	6	2	342719EL	342819EL	342919EL	8 1/32 - 16	700.00	631.90	609.35	598.50	586.80	577.65
.5971 - .6280	.5615	6	2 ¼	342720EL	342820EL	342920EL	9 1/32 - 18	713.85	645.80	623.05	612.35	600.80	591.50
.6281 - .6590	.5615	6	2 ¼	342721EL	342821EL	342921EL	9 1/32 - 18	713.85	645.80	623.05	612.35	600.80	591.50
.6591 - .6910	.5615	6	2 ¼	342722EL	342822EL	342922EL	9 1/32 - 18	721.50	653.65	631.00	620.20	608.45	599.35
.6911 - .7220	.5615	6	2 ¼	342723EL	342823EL	342923EL	9 1/32 - 18	721.50	653.65	631.00	620.20	608.45	599.35
.7221 - .7530	.6245	6	2 ½	342724EL	342824EL	342924EL	9 17/32 - 18	751.15	683.25	660.50	649.80	638.10	629.10
.7531 - .7840	.6245	6	2 ½	342725EL	342825EL	342925EL	9 17/32 18	793.10	728.40	706.95	696.50	685.30	676.75
.7841 - .8160	.6245	6	2 ½	342726EL	342826EL	342926EL	9 17/32 18	819.75	755.15	733.55	723.15	712.10	703.50
.8161 - .8470	.6245	6	2 ½	342727EL	342827EL	342927EL	9 17/32 18	826.75	762.25	740.55	730.15	719.10	710.55
.8471 - .8780	.7495	6	2 ⅝	342728EL	342828EL	342928EL	10 1/32 18	829.20	764.60	743.05	732.70	721.50	712.95
.8781 - .9090	.7495	6	2 ⅝	342729EL	342829EL	342929EL	10 1/32 18	859.95	795.40	773.70	763.35	752.20	743.70
.9091 - .9410	.7495	8	2 ⅝	342730EL	342830EL	342930EL	10 1/32 18	885.15	820.45	798.90	788.50	777.50	768.90
.9411 - .9720	.7495	8	2 ⅝	342731EL	342831EL	342931EL	10 1/32 18	889.50	824.80	803.25	792.90	781.85	773.15
.9721 - 1.0030	.8745	8	2 ¾	342732EL	342832EL	342932EL	10 17/32 18	925.20	860.60	838.95	828.50	817.45	808.90

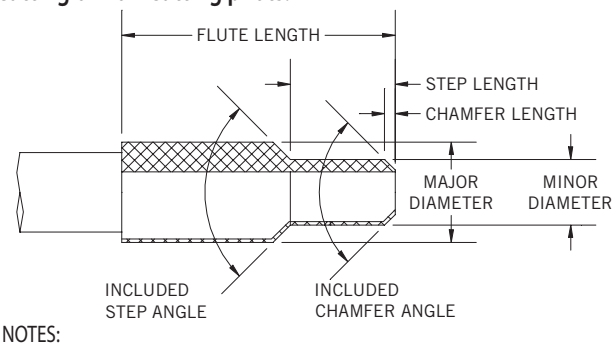
*Solid Carbide

Made in U.S.A.

CARBIDE TIPPED STRAIGHT STEP REAMERS

TYPE 3457ST - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3458ST - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3459ST - STRAIGHT SHANK - STRAIGHT FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece alloy steel bodies. Straight polished flutes. Available with cutting or non-cutting pilots.



FILL IN BLANKS BELOW FOR ORDERING:

MAJOR DIAM. _____ (+.0003"/-.0000")

MINOR DIAM. CUTTING _____ (+.0003"/-.0000")

MINOR DIAM. NON-CUTTING _____ (+.000"/-.001")

STEP LENGTH _____ (+.005"/-.005")

INCL. STEP ANGLE _____

INCL. CHAMFER ANGLE _____

CHAMFER LENGTH _____

NOTES:

1. Order must indicate if pilot is cutting or non-cutting and identify material being machined.
2. The difference between major and minor diameter shall not exceed 6%, and must fall within dimensions shown for that particular tool.
3. Non-cutting pilot diameters may be smaller than cutting diameter range, but not less than non-cutting pilot minimum diameter dimension shown.
4. It is recommended that stock removal of 3% be the basis for selecting each cutting diameter.

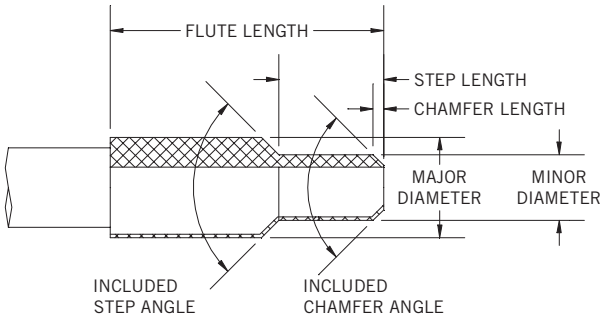
Shank diameter tolerance thru 23/32" tool diameter: +.0000"/-.0010".
over 23/32" tool diameter: +.0000"/-.0015".
Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For closer tolerance pricing per tool diameter, see page 56.

MAJOR AND MINOR CUTTING DIAMETER RANGE	NON-CUT PILOT MIN. DIAM.	MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3457ST EDP NO.	CAST IRON TYPE 3458ST EDP NO.	STEEL TYPE 3459ST EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
				FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.1770 - .2040	.1660	.1805	4	1 1/8	4 1/2	345706ST	345806ST	345906ST	$254.40	$190.90	$169.70	$159.55	$148.75	$140.30	$127.80
.2041 - .2210	.1920	.2075	4	1 1/4	5	345707ST	345807ST	345907ST	254.40	190.90	169.70	159.55	148.75	140.30	127.80
.2211 - .2380	.2080	.2265	4	1 1/2	6	34572344ST	34582344ST	34592344ST	254.40	190.90	169.70	159.55	148.75	140.30	127.80
.2381 - .2530	.2240	.2405	4	1 1/2	6	345708ST	345808ST	345908ST	254.40	190.90	169.70	159.55	148.75	140.30	127.80
.2531 - .2840	.2380	.2485	4	1 1/2	6	345709ST	345809ST	345909ST	257.30	193.75	172.60	162.45	151.75	143.10	130.70
.2841 - .3150	.2670	.2792	4	1 1/2	6	345710ST	345810ST	345910ST	257.30	193.75	172.60	162.45	151.75	143.10	130.70
.3151 - .3470	.2960	.2792	4	1 1/2	6	345711ST	345811ST	345911ST	261.75	198.45	177.15	167.25	156.30	147.75	135.40
.3471 - .3780	.3260	.3105	4	1 3/4	7	345712ST	345812ST	345912ST	261.75	198.45	177.15	167.25	156.30	147.75	135.40
.3781 - .4090	.3550	.3105	4	1 3/4	7	345713ST	345813ST	345913ST	268.40	205.15	183.95	173.80	163.05	154.35	142.05
.4091 - .4410	.3850	.3730	6	1 3/4	7	345714ST	345814ST	345914ST	280.30	216.85	195.60	185.45	174.70	166.05	153.85
.4411 - .4720	.4150	.3730	6	1 3/4	7	345715ST	345815ST	345915ST	292.40	229.05	207.90	197.75	186.95	178.35	165.95
.4721 - .5030	.4440	.4355	6	2	8	345716ST	345816ST	345916ST	313.30	245.40	222.65	211.95	200.35	191.15	177.80
.5031 - .5340	.4730	.4355	6	2	8	345717ST	345817ST	345917ST	318.50	250.65	227.85	217.15	205.40	196.20	183.05
.5341 - .5660	.5020	.4355	6	2	8	345718ST	345818ST	345918ST	318.50	250.65	227.85	217.15	205.40	196.20	183.05
.5661 - .5970	.5320	.4355	6	2	8	345719ST	345819ST	345919ST	325.50	257.65	234.90	224.15	212.50	203.30	190.05
.5971 - .6280	.5610	.5615	6	2 1/4	9	345720ST	345820ST	345920ST	325.50	257.65	234.90	224.15	212.50	203.30	190.05
.6281 - .6590	.5900	.5615	6	2 1/4	9	345721ST	345821ST	345921ST	329.05	261.15	238.35	227.50	215.95	206.80	193.55
.6591 - .6910	.6200	.5615	6	2 1/4	9	345722ST	345822ST	345922ST	329.05	261.15	238.35	227.50	215.95	206.80	193.55
.6911 - .7220	.6500	.5615	6	2 1/4	9	345723ST	345823ST	345923ST	337.60	269.80	247.10	236.30	224.75	215.55	202.25
.7221 - .7530	.6790	.6245	6	2 1/2	9 1/2	345724ST	345824ST	345924ST	337.60	269.80	247.10	236.30	224.75	215.55	202.25
.7531 - .7840	.7080	.6245	6	2 1/2	9 1/2	345725ST	345825ST	345925ST	344.60	276.70	254.15	243.30	231.55	222.55	209.15
.7841 - .8160	.7370	.6245	6	2 1/2	9 1/2	345726ST	345826ST	345926ST	344.60	276.70	254.15	243.30	231.55	222.55	209.15
.8161 - .8470	.7670	.6245	6	2 1/2	9 1/2	345727ST	345827ST	345927ST	352.85	285.10	262.35	251.60	239.90	230.80	217.55
.8471 - .8780	.7970	.7495	6	2 5/8	10	345728ST	345828ST	345928ST	366.30	295.90	272.15	261.10	249.00	239.45	225.75
.8781 - .9090	.8260	.7495	6	2 5/8	10	345729ST	345829ST	345929ST	403.55	333.15	309.45	298.40	286.25	276.70	263.00
.9091 - .9410	.8550	.7495	8	2 5/8	10	345730ST	345830ST	345930ST	403.55	333.15	309.45	298.40	286.25	276.70	263.00
.9411 - .9720	.8850	.7495	8	2 5/8	10	345731ST	345831ST	345931ST	416.15	345.60	322.05	310.80	298.70	289.10	275.40
.9721 - 1.0030	.9140	.8745	8	2 3/4	10 1/2	345732ST	345832ST	345932ST	416.15	345.60	322.05	310.80	298.70	289.10	275.40
1.0031 - 1.0660	.9430	.8745	8	2 3/4	10 1/2	345734ST	345834ST	345934ST	419.70	352.10	329.30	318.65	307.15	298.00	284.90
1.0661 - 1.1280	1.0020	.8745	8	2 7/8	11	345736ST	345836ST	345936ST	443.10	375.70	353.15	342.45	330.80	321.70	308.40
1.1281 - 1.1905	1.0610	.9995	8	2 7/8	11	345738ST	345838ST	345938ST	457.40	389.70	367.15	356.45	344.75	335.65	322.55
1.1906 - 1.2530	1.1200	.9995	8	3	11 1/2	345740ST	345840ST	345940ST	483.50	416.10	393.20	382.60	371.15	361.95	348.80
1.2531 - 1.3155	1.1780	.9995	8	3	11 1/2	345742ST	345842ST	345942ST	493.15	425.55	402.90	392.30	380.75	371.50	358.35
1.3156 - 1.3780	1.2370	.9995	8	3 1/4	12	345744ST	345844ST	345944ST	517.00	449.40	426.95	416.15	404.55	395.35	382.20
1.3781 - 1.4405	1.2960	.9995	8	3 1/4	12	345746ST	345846ST	345946ST	548.50	480.90	458.20	447.50	435.90	426.95	413.65
1.4406 - 1.5030	1.3550	1.2495	8	3 1/2	12 1/2	345748ST	345848ST	345948ST	560.70	493.15	470.60	459.85	448.30	439.10	425.90

CARBIDE TIPPED RIGHT SPIRAL STEP REAMERS

TYPE 3442ST - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3443ST - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3444ST - STRAIGHT SHANK - RIGHT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Right spiral polished flutes. Available with cutting or non-cutting pilots.



FILL IN BLANKS BELOW FOR ORDERING:

MAJOR DIAM. _____ (+.0003"/-.0000")

MINOR DIAM. CUTTING _____ (+.0003"/-.0000")

MINOR DIAM. NON-CUTTING _____ (+.000"/-.001")

STEP LENGTH _____ (+.005"/-.005")

INCL. STEP ANGLE _____

INCL. CHAMFER ANGLE _____

CHAMFER LENGTH _____

NOTES:

1. Order must indicate if pilot is cutting or non-cutting and identify material being machined.
2. The difference between major and minor diameter shall not exceed 6%, and must fall within dimensions shown for that particular tool.
3. Non-cutting pilot diameters may be smaller than cutting diameter range, but not less than non-cutting pilot minimum diameter dimension shown.
4. It is recommended that stock removal of 3% be the basis for selecting each cutting diameter.

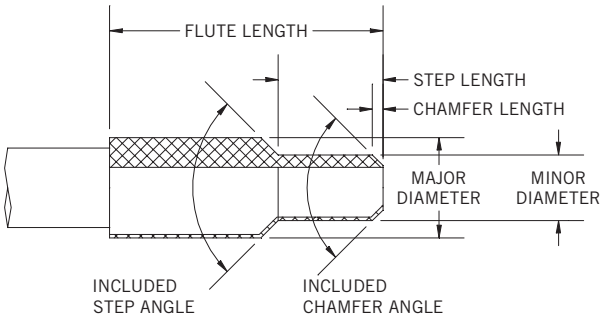
Shank diameter tolerance thru 23/32" tool diameter: +.0000"/-.0010".
over 23/32" tool diameter: +.0000"/-.0015".
Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For closer tolerance pricing per tool diameter, see page 56.

MAJOR AND MINOR CUTTING DIAMETER RANGE	NON-CUT PILOT MIN. DIAM.	MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3442ST EDP NO.	CAST IRON TYPE 3443ST EDP NO.	STEEL TYPE 3444ST EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
				FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.2841 - .3150	.2670	.2792	4	1 ½	6	344210ST	344310ST	344410ST	$281.35	$221.70	$201.95	$192.35	$182.30	$174.30	$162.55
.3151 - .3470	.2960	.2792	4	1 ½	6	344211ST	344311ST	344411ST	297.80	238.30	218.35	209.00	198.65	190.75	179.15
.3471 - .3780	.3260	.3105	4	1 ¾	7	344212ST	344312ST	344412ST	299.40	240.10	220.15	210.70	200.55	192.35	180.95
.3781 - .4090	.3550	.3105	4	1 ¾	7	344213ST	344313ST	344413ST	307.45	248.00	228.15	218.60	208.40	200.55	188.80
.4091 - .4410	.3850	.3730	6	1 ¾	7	344214ST	344314ST	344414ST	314.65	255.45	235.35	225.95	215.65	207.85	196.00
.4411 - .4720	.4150	.3730	6	1 ¾	7	344215ST	344315ST	344415ST	327.10	267.80	247.95	238.35	228.35	220.20	208.65
.4721 - .5030	.4440	.4355	6	2	8	344216ST	344316ST	344416ST	351.35	288.00	266.70	256.60	245.90	237.25	224.90
.5031 - .5340	.4730	.4355	6	2	8	344217ST	344317ST	344417ST	357.90	294.55	273.30	263.20	252.35	243.90	231.50
.5341 - .5660	.5020	.4355	6	2	8	344218ST	344318ST	344418ST	357.90	294.55	273.30	263.20	252.35	243.90	231.50
.5661 - .5970	.5320	.4355	6	2	8	344219ST	344319ST	344419ST	364.65	301.40	280.30	270.15	259.30	250.75	238.30
.5971 - .6280	.5610	.5615	6	2 ¼	9	344220ST	344320ST	344420ST	364.65	301.40	280.30	270.15	259.30	250.75	238.30
.6281 - .6590	.5900	.5615	6	2 ¼	9	344221ST	344321ST	344421ST	372.20	309.10	287.55	277.60	266.70	258.25	245.90
.6591 - .6910	.6200	.5615	6	2 ¼	9	344222ST	344322ST	344422ST	387.60	324.15	302.90	292.80	282.10	273.55	261.10
.6911 - .7220	.6500	.5615	6	2 ¼	9	344223ST	344323ST	344423ST	391.45	328.15	306.95	296.85	285.95	277.40	265.15
.7221 - .7530	.6790	.6245	6	2 ½	9 ½	344224ST	344324ST	344424ST	395.35	332.10	310.80	300.80	289.95	281.40	268.85
.7531 - .7840	.7080	.6245	6	2 ½	9 ½	344225ST	344325ST	344425ST	402.55	339.15	317.95	308.00	297.00	288.55	276.10
.7841 - .8160	.7370	.6245	6	2 ½	9 ½	344226ST	344326ST	344426ST	402.55	339.15	317.95	308.00	297.00	288.55	276.10
.8161 - .8470	.7670	.6245	6	2 ½	9 ½	344227ST	344327ST	344427ST	417.60	354.25	333.05	322.90	311.90	303.45	291.05
.8471 - .8780	.7970	.7495	6	2 ⅝	10	344228ST	344328ST	344428ST	433.30	367.65	345.50	335.15	323.75	314.95	302.10
.8781 - .9090	.8260	.7495	6	2 ⅝	10	344229ST	344329ST	344429ST	483.05	417.15	395.15	384.70	373.45	364.55	351.55
.9091 - .9410	.8550	.7495	8	2 ⅝	10	344230ST	344330ST	344430ST	483.05	417.15	395.15	384.70	373.45	364.55	351.55
.9411 - .9720	.8850	.7495	8	2 ⅝	10	344231ST	344331ST	344431ST	500.20	434.40	412.50	401.80	390.65	381.85	369.05
.9721 - 1.0030	.9140	.8745	8	2 ¾	10 ½	344232ST	344332ST	344432ST	500.20	434.40	412.50	401.80	390.65	381.85	369.05
1.0031 - 1.0660	.9430	.8745	8	2 ¾	10 ½	344234ST	344334ST	344434ST	564.90	499.10	477.05	466.55	455.30	446.55	433.60
1.0661 - 1.1280	1.0020	.8745	8	2 ⅞	11	344236ST	344336ST	344436ST	578.35	512.45	490.50	480.05	468.70	459.90	446.95
1.1281 - 1.1905	1.0610	.9995	8	2 ⅞	11	344238ST	344338ST	344438ST	601.25	535.65	513.45	503.00	491.70	483.00	470.05
1.1906 - 1.2530	1.1200	.9995	8	3	11 ½	344240ST	344340ST	344440ST	628.25	562.60	540.60	529.95	518.85	509.95	497.00
1.2531 - 1.3155	1.1780	.9995	8	3	11 ½	344242ST	344342ST	344442ST	681.60	615.70	593.65	583.30	571.90	563.10	550.25
1.3156 - 1.3780	1.2370	.9995	8	3 ¼	12	344244ST	344344ST	344444ST	733.95	668.15	646.30	635.75	624.40	615.60	602.90
1.3781 - 1.4405	1.2960	.9995	8	3 ¼	12	344246ST	344346ST	344446ST	769.80	703.90	682.00	671.50	660.30	651.40	638.55
1.4406 - 1.5030	1.3550	1.2495	8	3 ½	12 ½	344248ST	344348ST	344448ST	806.00	740.30	718.20	707.75	696.50	687.75	674.65

CARBIDE TIPPED LEFT SPIRAL STEP REAMERS

TYPE 3482ST - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR NON-FERROUS
TYPE 3483ST - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR CAST IRON
TYPE 3484ST - STRAIGHT SHANK - LEFT SPIRAL FLUTE LONG CARBIDE - FOR STEEL

Flute long carbide tips brazed to one piece hardened alloy steel bodies. Left spiral polished flutes. Available with cutting or non-cutting pilots.



FILL IN BLANKS BELOW FOR ORDERING:

MAJOR DIAM. _____ (+.0003"/-.0000")

MINOR DIAM. CUTTING _____ (+.0003"/-.0000")

MINOR DIAM. NON-CUTTING _____ (+.000"/-.001")

STEP LENGTH _____ (+.005"/-.005")

INCL. STEP ANGLE _____

INCL. CHAMFER ANGLE _____

CHAMFER LENGTH _____

NOTES:

1. Order must indicate if pilot is cutting or non-cutting and identify material being machined.
2. The difference between major and minor diameter shall not exceed 6%, and must fall within dimensions shown for that particular tool.
3. Non-cutting pilot diameters may be smaller than cutting diameter range, but not less than non-cutting pilot minimum diameter dimension shown.
4. It is recommended that stock removal of 3% be the basis for selecting each cutting diameter.

Shank diameter tolerance thru 23/32" tool diameter: +.0000"/-.0010".
over 23/32" tool diameter: +.0000"/-.0015".
Shanks are ground to the next smallest shank diameter listed in NAS 897 if tool diameter is within .005" of shank diameter.
For closer tolerance pricing per tool diameter, see page 56.

MAJOR AND MINOR CUTTING DIAMETER RANGE	NON-CUT PILOT MIN. DIAM.	MAX SHANK DIAM.	NO. OF FLTS.	LENGTH		NON-FERR. TYPE 3482ST EDP NO.	CAST IRON TYPE 3483ST EDP NO.	STEEL TYPE 3484ST EDP NO.	PRICE EACH - FINISHED TO DECIMAL SIZE						
				FLT	OAL				1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
.2841 - .3150	.2670	.2792	4	1 ½	6	348210ST	348310ST	348410ST	$299.95	$236.60	$215.45	$205.25	$194.40	$185.85	$173.55
.3151 - .3470	.2960	.2792	4	1 ½	6	348211ST	348311ST	348411ST	317.75	254.25	232.95	222.90	212.05	203.50	191.05
.3471 - .3780	.3260	.3105	4	1 ¾	7	348212ST	348312ST	348412ST	319.50	255.85	234.85	224.75	213.85	205.25	192.80
.3781 - .4090	.3550	.3105	4	1 ¾	7	348213ST	348313ST	348413ST	327.90	264.45	243.40	233.15	222.40	213.85	201.45
.4091 - .4410	.3850	.3730	6	1 ¾	7	348214ST	348314ST	348414ST	335.60	272.15	251.00	241.10	230.10	221.60	209.15
.4411 - .4720	.4150	.3730	6	1 ¾	7	348215ST	348315ST	348415ST	349.00	285.55	264.30	254.40	243.45	234.90	222.55
.4721 - .5030	.4440	.4355	6	2	8	348216ST	348316ST	348416ST	360.80	295.80	273.85	263.55	252.35	243.60	230.85
.5031 - .5340	.4730	.4355	6	2	8	348217ST	348317ST	348417ST	367.55	302.45	280.65	270.20	259.30	250.40	237.50
.5341 - .5660	.5020	.4355	6	2	8	348218ST	348318ST	348418ST	367.55	302.45	280.65	270.20	259.30	250.40	237.50
.5661 - .5970	.5320	.4355	6	2	8	348219ST	348319ST	348419ST	374.65	309.55	287.55	277.35	266.20	257.45	244.50
.5971 - .6280	.5610	.5615	6	2 ¼	9	348220ST	348320ST	348420ST	374.65	309.55	287.55	277.35	266.20	257.45	244.50
.6281 - .6590	.5900	.5615	6	2 ¼	9	348221ST	348321ST	348421ST	382.25	317.10	295.45	285.10	273.85	265.15	252.35
.6591 - .6910	.6200	.5615	6	2 ¼	9	348222ST	348322ST	348422ST	397.95	332.90	311.15	300.80	289.50	280.70	268.05
.6911 - .7220	.6500	.5615	6	2 ¼	9	348223ST	348323ST	348423ST	401.85	337.05	315.30	304.70	293.80	284.95	272.00
.7221 - .7530	.6790	.6245	6	2 ½	9 ½	348224ST	348324ST	348424ST	406.05	340.85	319.05	308.85	297.70	288.90	276.15
.7531 - .7840	.7080	.6245	6	2 ½	9 ½	348225ST	348325ST	348425ST	413.40	348.30	326.60	316.05	304.85	296.10	283.45
.7841 - .8160	.7370	.6245	6	2 ½	9 ½	348226ST	348326ST	348426ST	413.40	348.30	326.60	316.05	304.85	296.10	283.45
.8161 - .8470	.7670	.6245	6	2 ½	9 ½	348227ST	348327ST	348427ST	428.70	363.65	341.90	331.45	320.40	311.65	298.85
.8471 - .8780	.7970	.7495	6	2 ⅝	10	348228ST	348328ST	348428ST	444.85	377.35	354.85	344.00	332.45	323.35	310.10
.8781 - .9090	.8260	.7495	6	2 ⅝	10	348229ST	348329ST	348429ST	496.00	428.40	405.85	395.10	383.45	374.30	361.15
.9091 - .9410	.8550	.7495	8	2 ⅝	10	348230ST	348330ST	348430ST	496.00	428.40	405.85	395.10	383.45	374.30	361.15
.9411 - .9720	.8850	.7495	8	2 ⅝	10	348231ST	348331ST	348431ST	513.75	446.25	423.50	412.80	401.30	392.15	378.90
.9721 - 1.0030	.9140	.8745	8	2 ¾	10 ½	348232ST	348332ST	348432ST	513.75	446.25	423.50	412.80	401.30	392.15	378.90
1.0031 - 1.0660	.9430	.8745	8	2 ¾	10 ½	348234ST	348334ST	348434ST	579.95	512.45	489.80	479.15	467.60	458.50	445.05
1.0661 - 1.1280	1.0020	.8745	8	2 ⅞	11	348236ST	348336ST	348436ST	593.65	526.35	503.65	492.85	481.30	472.20	459.05
1.1281 - 1.1905	1.0610	.9995	8	2 ⅞	11	348238ST	348338ST	348438ST	617.35	549.70	527.40	516.45	504.90	495.95	482.50
1.1906 - 1.2530	1.1200	.9995	8	3	11 ½	348240ST	348340ST	348440ST	645.10	577.65	555.10	544.30	532.70	523.65	510.35
1.2531 - 1.3155	1.1780	.9995	8	3	11 ½	348242ST	348342ST	348442ST	699.80	632.30	609.70	598.90	587.45	578.05	564.95
1.3156 - 1.3780	1.2370	.9995	8	3 ¼	12	348244ST	348344ST	348444ST	753.70	686.30	663.45	652.75	641.25	631.95	618.95
1.3781 - 1.4405	1.2960	.9995	8	3 ¼	12	348246ST	348346ST	348446ST	790.45	723.05	700.30	689.50	678.00	668.90	655.75
1.4406 - 1.5030	1.3550	1.2495	8	3 ½	12 ½	348248ST	348348ST	348448ST	827.70	759.90	737.25	726.65	715.00	705.95	692.85

FEEDS & SPEEDS CHARTS FOR DRILLS - CARBIDE TIPPED

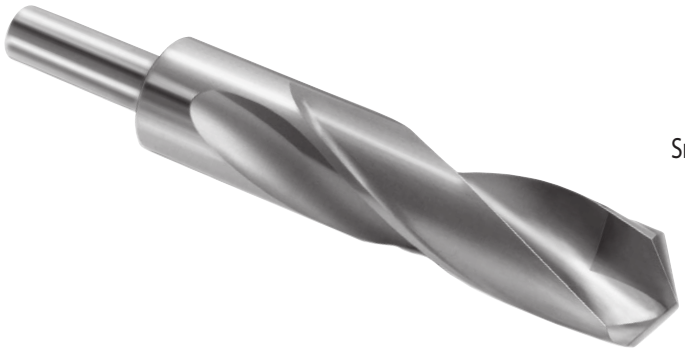
Feeds & speeds are a starting recommendation only. Factors such as machine, fixture and tooling rigidity, horsepower available, coolant application and others will affect the performance significantly. Please read machine operators instructions and use all safety shields and glasses before performing these operations.



IPM=RPM*IPR
RPM=SFPM*3.82/Drill Diameter

CLASSIFICATION	MATERIAL	BRINELL	SPEED IN SFPM	FEED RATE (INCHES PER REVOLUTION)					HOLE DIAMETER IN INCHES			
			GENERAL PURPOSE (G.P.)	1/8	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2
NON-FERROUS (SOFT)	ALUMINUM ALLOY - CAST WROUGHT	30 - 150*	250-350	.003	.005	.007	.008	.010	.011	.014	.017	.019
	MAGNESIUM ALLOY	50 - 90*	300-400	.003	.005	.006	.007	.008	.009	.013	.015	.016
	LEAD ALLOY	10 - 20*	350-450	.003	.005	.006	.007	.008	.009	.013	.015	.017
	NON-METAL AND PLASTIC	-	175-450	.002	.004	.005	.005	.006	.008	.009	.010	.012
	ZINC ALLOY - DIE CAST	80 - 100	300-400	.003	.005	.007	.009	.011	.012	.014	.016	.018
NON-FERROUS (HARD)	ALUMINUM BRONZE	40 - 175	125-190	.002	.005	.007	.008	.009	.010	.012	.014	.016
	BRASS ALLOY - LEADED AND FREE CUTTING	10 - 100Rb	225-400	.003	.005	.007	.008	.009	.010	.012	.014	.016
	NICKEL SILVER	10 - 100Rb	125-190	.002	.005	.007	.008	.009	.010	.012	.014	.016
	COPPER ALLOY - TOUGH	40 - 200*	125-190	.002	.005	.007	.008	.009	.010	.012	.014	.016
CAST IRON	DUCTILE CAST IRON - AUSTENITIC	120 - 275	–	–	–	–	–	–	–	–	–	–
	DUCTILE CAST IRON - FERRITIC	140 - 270	150-225	.002	.004	.006	.008	.010	.012	.014	.016	.018
	DUCTILE CAST IRON - MARTENSITIC	270 - 400	–	–	–	–	–	–	–	–	–	–
	GRAY - PEARLITIC	220 - 320	130-225	.002	.004	.006	.007	.009	.010	.013	.016	.018
	GRAY - FERRITIC	120 - 220	125-190	.002	.005	.008	.009	.010	.011	.012	.014	.016
	MALLEABLE CAST IRON - MARTENSITIC	200 - 320	100-150	.002	.004	.006	.007	.008	.010	.012	.014	.016
LOW CARBON STEELS	LOW AND MEDIUM CARBON STEEL - FREE MACHINING	100 - 250	125-175	.003	.004	.008	.010	.012	.014	.017	.018	.019
	LOW AND MEDIUM CARBON STEEL - WROUGHT	100 - 375	–	–	–	–	–	–	–	–	–	–
MEDIUM STRENGTH STEELS	LOW AND MEDIUM CARBON ALLOY STEEL - FREE MACHINING	100 - 275	–	–	–	–	–	–	–	–	–	–
	LOW AND MEDIUM CARBON ALLOY STEEL	85 - 375	–	–	–	–	–	–	–	–	–	–
	STAINLESS STEEL - 400 SERIES	135 - 325	–	–	–	–	–	–	–	–	–	–
	STAINLESS STEEL - 400 SERIES FREE MACHINING	135 - 275	100-150	.002	.004	.005	.006	.007	.008	.010	.012	.014
HIGH STRENGTH STEELS	HIGH STRENGTH STEEL - WROUGHT & TOOL STEEL	175 - 400	–	–	–	–	–	–	–	–	–	–
HIGH TEMP. ALLOYS	HIGH TEMP ALLOYS NICKEL & IRON BASE ALLOY	140 - 300	–	–	–	–	–	–	–	–	–	–
	STAINLESS STEEL - 300 SERIES	135 - 375	–	–	–	–	–	–	–	–	–	–
	STAINLESS STEEL - PH SERIES	150 - 440	–	–	–	–	–	–	–	–	–	–
	TITANIUM ALLOY	110 - 380	–	–	–	–	–	–	–	–	–	–

CARBIDE TIPPED SILVER & DEMING DRILLS



TYPE 3616 - 118° POINT

Carbide tip brazed to hardened tool steel bodies.

Smooth flutes for effective chip flow. Precision ground to insure concentricity of tip & body. For drilling cast iron, non-ferrous metals and non-metals. Shank size of ½" x 2 ¼" allows larger diameter drills to be used in ½" and larger drill chucks. (Not usually recommended for steel.)

For drill tolerances, see page 123.

TOOL DIAMETER		LENGTH		118° POINT	
DECIMAL	FRAC.	FLUTE	OVERALL	TYPE 3616 EDP NO.	PRICE EACH
.5000	1/2	3 1/8	6	361632	$108.50
.5312	17/32	3 1/8	6	361634	158.70
.5625	9/16	3 1/8	6	361636	164.50
.5938	19/32	3 1/8	6	361638	171.10
.6250	5/8	3 1/8	6	361640	190.20
.6562	21/32	3 1/8	6	361642	206.15
.6875	11/16	3 1/8	6	361644	214.15
.7188	23/32	3 1/8	6	361646	222.20
.7500	3/4	3 1/8	6	361648	232.80
.7812	25/32	3 1/8	6	361650	256.60
.8125	13/16	3 1/8	6	361652	257.30
.8438	27/32	3 1/8	6	361654	257.30
.8750	7/8	3 1/8	6	361656	267.75

TOOL DIAMETER		LENGTH		118° POINT	
DECIMAL	FRAC.	FLUTE	OVERALL	TYPE 3616 EDP NO.	PRICE EACH
.9062	29/32	3 1/8	6	361658	$274.10
.9375	15/16	3 1/8	6	361660	276.90
.9688	31/32	3 1/8	6	361662	286.25
1.0000	1	3 1/8	6	361664	292.40
1.0312	1 1/32	3 1/8	6	361666	282.15
1.0625	1 1/16	3 1/8	6	361668	306.10
1.0938	1 3/32	3 1/8	6	361670	313.30
1.1250	1 1/8	3 1/8	6	361672	319.55
1.1562	1 5/32	3 1/8	6	361674	387.80
1.1875	1 3/16	3 1/8	6	361676	394.80
1.2188	1 7/32	3 1/8	6	361678	414.45
1.2500	1 1/4	3 1/8	6	361680	378.50
-	-	-	-	-	-

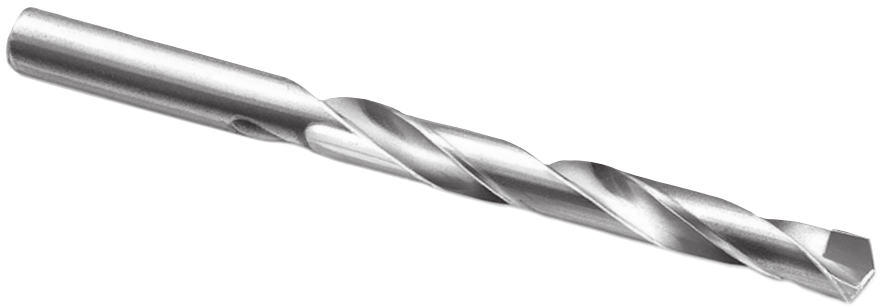
*500kg

CARBIDE TIPPED JOBBERS LENGTH TWIST DRILLS

TYPE 3600 - JOBBERS LENGTH - 118° POINT
TYPE 3601 - JOBBERS LENGTH - 135° SPLIT POINT

Carbide tip brazed to hardened tool steel bodies.

Smooth flutes for effective chip flow. Precision ground to insure concentricity of tip & body. For drilling cast iron, non-ferrous metals and non-metals. (Not usually recommended for drilling steel.)



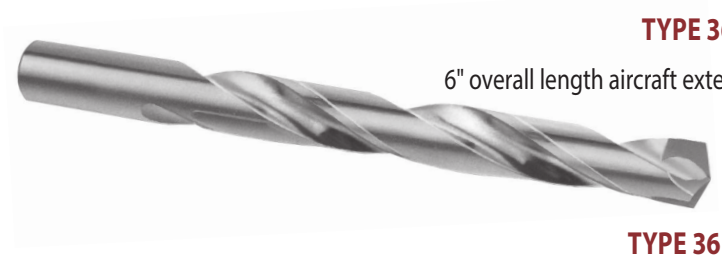
Overall length tolerance: +¼"/-⅛".
For drill tolerances, see page 123.

TOOL DIAMETER			LENGTH		118° POINT		135° POINT	
DECIMAL	FRAC.	WIRE LETTER	FLUTE	OVER-ALL	TYPE 3600 EDP NO.	PRICE EACH	TYPE 3601 EDP NO.	PRICE EACH
.0980		*40	1	2	360240	$36.75	-	-
.0995		*39	1 ¼	2 ¼	360239	36.75	-	-
.1015		*38	1 ¼	2 ¼	360238	36.75	-	-
.1040		*37	1 ¼	2 ¼	360237	36.75	-	-
.1065		*36	1 ¼	2 ¼	360236	36.75	-	-
.1094	*7/64		1 ¼	2 ¼	360007	36.75	-	-
.1100		*35	1 ¼	2 ¼	360235	36.75	-	-
.1110		*34	1 ¼	2 ¼	360234	36.75	-	-
.1130		*33	1 ¼	2 ¼	360233	36.75	-	-
.1160		32	1 ⅝	2 ¾	360232	29.70	-	-
.1200		31	1 ⅝	2 ¾	360231	26.90	-	-
.1250	⅛		1 ⅝	2 ¾	360008	27.50	360108	32.05
.1285		30	1 ⅝	2 ¾	360230	28.00	360330	32.60
.1360		29	1 ¾	2 ⅞	360229	29.05	360329	33.55
.1405		28	1 ¾	2 ⅞	360228	29.25	360328	34.15
.1406	9/64		1 ¾	2 ⅞	360009	29.70	360109	34.65
.1440		27	1 ⅞	3	360227	30.10	360327	34.85
.1470		26	1 ⅞	3	360226	27.85	360326	32.60
.1495		25	1 ⅞	3	360225	27.85	360325	32.60
.1520		24	2	3 ⅛	360224	30.10	360324	34.85
.1540		23	2	3 ⅛	360223	29.25	360323	34.15
.1562	5/32		2	3 ⅛	360010	29.10	360110	34.15
.1570		22	2	3 ⅛	360222	32.20	360322	37.80
.1590		21	2 ⅛	3 ¼	360221	31.00	360321	36.10
.1610		20	2 ⅛	3 ¼	360220	31.80	360320	36.75
.1660		19	2 ⅛	3 ¼	360219	31.80	360319	36.75
.1695		18	2 ⅛	3 ¼	360218	31.80	360318	36.75
.1719	11/64		2 ⅛	3 ¼	360011	31.80	360111	36.75
.1730		17	2 3/16	3 ⅜	360217	31.80	360317	36.75
.1770		16	2 3/16	3 ⅜	360216	31.00	360316	36.10
.1800		15	2 3/16	3 ⅜	360215	32.20	360315	37.80
.1820		14	2 3/16	3 ⅜	360214	31.00	360314	36.10
.1850		13	2 5/16	3 ½	360213	34.15	360313	36.10
.1875	3/16		2 5/16	3 ½	360012	31.00	360112	36.10
.1890		12	2 5/16	3 ½	360212	35.75	360312	37.80
.1910		11	2 5/16	3 ½	360211	32.95	360311	38.10
.1935		10	2 7/16	3 ⅝	360210	32.20	360310	37.80
.1960		9	2 7/16	3 ⅝	360209	$32.95	360309	$38.10
.1990		8	2 7/16	3 ⅝	360208	32.95	360308	38.10
.2010		7	2 7/16	3 ⅝	360207	32.95	360307	38.10
.2031	13/64		2 7/16	3 ⅝	360013	34.10	360113	39.20
.2040		6	2 ½	3 ¾	360206	33.75	360306	39.15
.2055		5	2 ½	3 ¾	360205	34.10	360305	38.10
.2090		4	2 ½	3 ¾	360204	33.75	360304	39.15
.2130		3	2 ½	3 ¾	360203	34.10	360303	38.10
.2188	7/32		2 ½	3 ¾	360014	34.10	360114	39.20
.2210		2	2 ⅝	3 ⅞	360202	35.50	360302	41.00
.2280		1	2 ⅝	3 ⅞	360201	34.80	360301	40.40
.2344	15/64		2 ⅝	3 ⅞	360015	36.55	360115	42.55
.2500	¼	E	2 ¾	4	360016	36.55	360116	42.55
.2656	17/64		2 ⅞	4 ⅛	360017	40.75	360117	46.60
.2812	9/32		2 15/16	4 ¼	360018	43.25	360118	49.90
.2969	19/64		3 1/16	4 ⅜	360019	47.80	360119	55.30
.3125	5/16		3 3/16	4 ½	360020	46.75	360120	54.20
.3281	21/64		3 5/16	4 ⅝	360021	49.55	360121	57.55
.3438	11/32		3 7/16	4 ¾	360022	49.55	360122	57.55
.3594	23/64		3 ½	4 ⅞	360023	52.80	360123	61.30
.3750	⅜		3 ⅝	5	360024	52.80	360124	61.30
.3906	25/64		3 ¾	5 ⅛	360025	57.35	360125	66.80
.4062	13/32		3 ⅞	5 ¼	360026	57.35	360126	66.80
.4219	27/64		3 15/16	5 ⅜	360027	62.35	360127	72.45
.4375	7/16		4 1/16	5 ½	360028	62.35	360128	72.45
.4531	29/64		4 3/16	5 ⅝	360029	71.80	360129	83.10
.4688	15/32		4 5/16	5 ¾	360030	70.05	360130	81.20
.4844	31/64		4 ⅜	5 ⅞	360031	78.55	360131	90.95
.5000	½		4 ½	6	360032	86.15	360132	90.95
.5312	17/32		4 13/16	6 ⅝	360034	112.30	360134	130.50
.5625	9/16		4 13/16	6 ⅝	360036	113.35	360136	131.60
.5938	19/32		5 3/16	7 ⅛	360038	121.60	360138	141.35
.6250	⅝		5 3/16	7 ⅛	360040	137.90	360140	159.90
.6562	21/32		5 3/16	7 ⅛	360042	140.30	360142	162.70
.6875	11/16		5 ⅝	7 ⅝	360044	142.95	360144	165.85
.7188	23/32		5 ⅝	7 ⅝	360046	168.75	360146	187.45
.7500	¾		5 13/16	8	360048	172.15	360148	191.45

CARBIDE TIPPED AIRCRAFT EXTENSION DRILLS

TYPE 3610 - 135° SPLIT POINT - 6" OVERALL LENGTH

6" overall length aircraft extension drill. 135° split point per NAS 907 specifications.



TYPE 3611 - 135° SPLIT POINT - 12" OVERALL LENGTH

Same as Type 3610 above, except 12" overall length.



BOTH TYPES: For drilling holes where reach is normally not accessible with jobbers or taper length drills. Feeds should be light to medium range. Not recommended for deep hole applications or for drilling steel.

TOOL DIAMETER			FLUTE LENGTH	6" OVERALL LENGTH		12" OVERALL LENGTH	
DECIMAL	FRAC.	WIRE LETTER		TYPE 3610 EDP NO.	PRICE EACH	TYPE 3611 EDP NO.	PRICE EACH
.1250	1/8		1 5/8	361008	36.10	361108	42.55
.1285		30	1 5/8	361230	49.15	361330	57.75
.1360		29	1 3/4	361229	50.70	361329	59.70
.1405		28	1 3/4	361228	51.50	361328	60.75
.1406	9/64		1 3/4	361009	39.20	361109	46.05
.1440		27	1 7/8	361227	52.80	361327	61.90
.1470		26	1 7/8	361226	51.50	361326	60.75
.1495		25	1 7/8	361225	51.50	361325	60.75
.1520		24	2	361224	52.80	361324	61.90
.1540		23	2	361223	51.50	361323	60.75
.1562	5/32		2	361010	38.35	361110	45.30
.1570		22	2	361222	56.30	361322	66.30
.1590		21	2 1/8	361221	54.60	361321	64.40
.1610		20	2 1/8	361220	56.05	361320	65.80
.1660		19	2 1/8	361219	56.05	361319	65.80
.1695		18	2 1/8	361218	56.05	361318	65.80
.1719	11/64		2 1/8	361011	42.05	361111	49.30
.1730		17	2 3/16	361217	56.05	361317	65.80
.1770		16	2 3/16	361216	54.60	361316	64.40
.1800		15	2 3/16	361215	56.30	361315	66.30
.1820		14	2 3/16	361214	54.60	361314	64.40
.1850		13	2 5/16	361213	54.60	361313	64.40
.1875	3/16		2 5/16	361012	40.90	361112	48.30
.1890		12	2 5/16	361212	57.00	361312	66.90
.1910		11	2 5/16	361211	57.55	361311	67.95
.1935		10	2 7/16	361210	57.00	361310	66.90
.1960		9	2 7/16	361209	57.55	361309	67.95
.1990		8	2 7/16	361208	57.55	361308	67.95

TOOL DIAMETER			FLUTE LENGTH	6" OVERALL LENGTH		12" OVERALL LENGTH	
DECIMAL	FRAC.	WIRE LETTER		TYPE 3610 EDP NO.	PRICE EACH	TYPE 3611 EDP NO.	PRICE EACH
.2010		7	2 7/16	361207	57.55	361307	67.95
.2031	13/64		2 7/16	361013	44.85	361113	52.80
.2040		6	2 1/2	361206	59.20	361306	69.80
.2055		5	2 1/2	361205	57.55	361305	67.95
.2090		4	2 1/2	361204	54.20	361304	63.75
.2130		3	2 1/2	361203	57.55	361303	67.95
.2188	7/32		2 1/2	361014	44.85	361114	52.80
.2210		2	2 5/8	361202	56.70	361302	66.70
.2280		1	2 5/8	361201	56.05	361301	65.80
.2344	15/64		2 5/8	361015	48.30	361115	56.75
.2500	1/4	E	2 3/4	361016	48.30	361116	56.75
.2656	17/64		2 7/8	361017	51.50	361117	60.75
.2812	9/32		2 15/16	361018	51.50	361118	60.75
.2969	19/64		3 1/16	361019	56.05	361119	65.80
.3125	5/16		3 3/16	361020	56.05	361120	65.80
.3281	21/64		3 5/16	361021	59.50	361121	70.05
.3438	11/32		3 7/16	361022	59.50	361122	70.05
.3594	23/64		3 1/2	361023	63.50	361123	74.40
.3750	3/8		3 5/8	361024	63.50	361124	74.40
.3906	25/64		3 3/4	361025	65.10	361125	76.70
.4062	13/32		3 7/8	361026	64.25	361126	75.55
.4219	27/64		3 15/16	361027	70.55	361127	83.15
.4375	7/16		4 1/16	361028	70.55	361128	83.15
.4531	29/64		4 3/16	361029	81.15	361129	95.55
.4688	15/32		4 5/16	361030	79.50	361130	93.50
.4844	31/64		4 3/8	361031	89.25	361131	105.00
.5000	1/2		4 1/2	361032	89.25	361132	105.00
-	-	-	-	-	-	-	-

DRILL TOLERANCES & STANDARDS

DRILL DIAMETER RANGE (INCH)	DRILL DIAMETER TOLERANCES	SHANK DIAMETER TOLERANCES	INCLUDED ANGLE	LIP HEIGHT T.I.V.
THRU 1/8"	+.0000"/-.0005"	-.0000"/-.0025"	+5°/-5°	.0020"
OVER 1/8" THRU 1/4"	+.0000"/-.0007"	-.0005"/-.0030"	+5°/-5°	.0030"
OVER 1/4" THRU 1/2"	+.0000"/-.0010"	-.0005"/-.0045"	+5°/-5°	.0040"
OVER 1/2" THRU 1"	+.0000"/-.0012"	-.0005"/-.0030"	+3°/-3°	.0050"
OVER 1" THRU 1 1/2"	+.0000"/-.0015"	-.0005"/-.0030"	+3°/-3°	.0060"

ALL DIMENSIONAL & ELEMENT TOLERANCES CONFORM TO ONE OR MORE OF THE FOLLOWING STANDARDS, UNLESS OTHERWISE SPECIFIED ON SELECTED TYPES:

- ASME/ANSI B94.11M
- ISO - INTERNATIONAL STANDARDS ORGANIZATION
- NAS 907 - NATIONAL AEROSPACE STANDARDS
- USCTI - UNITED STATES CUTTING TOOL INSTITUTE

CARBIDE TIPPED CORE DRILLS FOR NON-FERROUS & CAST IRON

TYPE 3620 - FOUR SPIRAL FLUTES - STRAIGHT SHANK

TYPE 3622 - FOUR SPIRAL FLUTES - TAPER SHANK

Carbide tips brazed to hardened tool steel bodies. Right spiral flutes with 118° included chamfer angle.

Core drills, with increased flute capacity, remove more material from a cored or cast hole than a reamer. This often eliminates a final reaming or boring operation. Types 3620 and 3622 core drills are specifically designed for cast iron, non-ferrous and high temperature alloy applications. For steel applications, refer to Types 3621 and 3623 on pages 126 & 127.



Tool and shank diameter tolerances: +.000"/-.001".

TOOL DIAMETER		MIN. CUT DIAM.	LENGTH			TYPE 3620		TYPE 3622		BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.		FLT	CARB	OAL	SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.3750	3/8*	.262	3 1/2	5/8	6 3/4	3/8	362012	1	362212	$174.80	.3471 - .3780	$238.65	$206.50	$195.85	$190.75	$185.20	$181.10
.4062	13/32*	.284	3 5/8	5/8	7	13/32	362013	1	362213	174.80	.3781 - .4090	238.65	206.50	195.85	190.75	185.20	181.10
.4375	7/16*	.306	3 7/8	3/4	7 1/4	7/16	362014	1	362214	174.80	.4091 - .4410	238.65	206.50	195.85	190.75	185.20	181.10
.4688	15/32*	.328	4 1/8	3/4	7 1/2	15/32	362015	1	362215	174.80	.4411 - .4720	238.65	206.50	195.85	190.75	185.20	181.10
.5000	1/2	.350	4 3/8	3/4	8 1/4	1/2	362016	2	362216	174.80	.4721 - .5030	238.65	206.50	195.85	190.75	185.20	181.10
.5312	17/32	.372	4 3/8	3/4	8 1/4	17/32	362017	2	362217	175.40	.5031 - .5340	239.45	207.40	196.65	191.65	186.15	181.65
.5625	9/16	.394	4 3/8	3/4	8 1/4	9/16	362018	2	362218	175.40	.5341 - .5660	239.45	207.40	196.65	191.65	186.15	181.65
.5938	19/32	.416	4 3/8	3/4	8 1/4	19/32	362019	2	362219	184.25	.5661 - .5970	248.15	216.10	205.50	200.35	194.80	190.60
.6250	5/8	.438	4 3/8	3/4	8 1/4	5/8	362020	2	362220	184.25	.5971 - .6280	248.15	216.10	205.50	200.35	194.80	190.60
.6562	21/32	.459	4 3/8	3/4	8 1/4	21/32	362021	2	362221	186.35	.6281 - .6590	250.30	218.35	207.70	202.45	197.20	192.80
.6875	11/16	.481	4 3/8	7/8	8 1/4	11/16	362022	2	362222	188.10	.6591 - .6910	252.00	220.10	209.15	204.10	198.65	194.30
.7188	23/32	.503	4 3/8	7/8	8 1/4	23/32	362023	2	362223	188.10	.6911 - .7220	252.00	220.10	209.15	204.10	198.65	194.30
.7500	3/4	.525	4 3/8	7/8	8 1/4	3/4	362024	2	362224	188.10	.7221 - .7530	252.00	220.10	209.15	204.10	198.65	194.30
.7812	25/32	.547	4 3/8	7/8	8 1/4	25/32	362025	2	362225	192.15	.7531 - .7840	256.00	224.15	213.35	208.25	202.85	198.50
.8125	13/16	.569	4 7/8	7/8	9 1/2	13/16	362026	3	362226	197.55	.7841 - .8160	261.50	229.60	218.70	213.80	208.05	204.00
.8438	27/32	.591	4 7/8	7/8	9 1/2	27/32	362027	3	362227	208.05	.8161 - .8470	272.00	240.10	229.30	224.20	218.70	214.40
.8750	7/8	.612	4 7/8	7/8	9 1/2	7/8	362028	3	362228	208.05	.8471 - .8780	272.00	240.10	229.30	224.20	218.70	214.40
.9062	29/32	.634	4 7/8	7/8	9 1/2	29/32	362029	3	362229	209.30	.8781 - .9090	273.30	241.35	230.60	225.45	220.15	215.65
.9375	15/16	.656	4 7/8	7/8	9 1/2	15/16	362030	3	362230	209.30	.9091 - .9410	273.30	241.35	230.60	225.45	220.15	215.65
.9688	31/32	.678	4 7/8	7/8	9 1/2	31/32	362031	3	362231	217.30	.9411 - .9720	281.00	249.00	238.35	233.40	227.70	223.50
1.0000	1	.700	4 7/8	7/8	9 1/2	1	362032	3	362232	221.25	.9721 - 1.0030	285.20	253.20	242.25	237.30	231.75	227.50
1.0312	1 1/32	.722	4 7/8	7/8	9 1/2	1 1/32	362033	3	362233	223.15	1.0031 - 1.0340	286.95	254.80	244.30	239.05	233.75	229.30
1.0625	1 1/16	.744	4 7/8	7/8	9 1/2	1 1/16	362034	3	362234	226.15	1.0341 - 1.0660	290.15	258.00	247.40	242.20	236.65	232.45
1.0938	1 3/32	.766	4 7/8	1	10 1/2	1 3/32	362035	4	362235	263.50	1.0661 - 1.0970	327.25	295.35	284.60	279.50	274.05	269.70
1.1250	1 1/8	.787	4 7/8	1	10 1/2	1 1/8	362036	4	362236	263.50	1.0971 - 1.1280	327.25	295.35	284.60	279.50	274.05	269.70
1.1562	1 5/32	.809	4 7/8	1	10 1/2	1 5/32	362037	4	362237	287.55	1.1281 - 1.1590	351.45	319.55	308.85	303.75	298.25	293.85
1.1875	1 3/16	.831	4 7/8	1	10 1/2	1 3/16	362038	4	362238	295.95	1.1591 - 1.1905	359.80	328.00	317.05	312.05	306.60	302.35
1.2188	1 7/32	.853	4 7/8	1	10 1/2	1 7/32	362039	4	362239	297.00	1.1906 - 1.2220	360.90	328.95	318.35	313.10	307.50	303.30
1.2500	1 1/4	.875	4 7/8	1	10 1/2	1 1/4	362040	4	362240	298.25	1.2221 - 1.2530	362.20	330.10	319.50	314.30	308.85	304.45
1.2812	1 9/32	.897	4 7/8	1	10 1/2	1 9/32	362041	4	362241	319.55	1.2531 - 1.2840	383.45	351.35	340.70	335.50	330.10	325.70
1.3125	1 5/16	.919	4 7/8	1	10 1/2	1 5/16	362042	4	362242	328.35	1.2841 - 1.3150	392.35	360.35	349.50	344.55	339.00	334.60
1.3438	1 11/32	.940	4 7/8	1	10 1/2	1 11/32	362043	4	362243	335.30	1.3151 - 1.3470	399.20	367.20	356.45	351.35	346.00	341.45
1.3750	1 3/8	.962	4 7/8	1	10 1/2	1 3/8	362044	4	362244	343.50	1.3471 - 1.3780	407.35	375.35	364.55	359.50	354.05	349.60
1.4062	1 13/32	.984	4 7/8	1	10 1/2	1 13/32	362045	4	362245	351.20	1.3781 - 1.4090	415.15	383.25	372.40	367.30	361.85	357.55
1.4375	1 7/16	1.006	4 7/8	1	10 1/2	1 7/16	362046	4	362246	361.50	1.4091 - 1.4410	425.45	393.55	382.70	377.65	372.20	367.90
1.4688	1 15/32	1.025	4 7/8	1	10 1/2	1 15/32	362047	4	362247	372.25	1.4411 - 1.4720	436.05	404.20	393.55	388.35	382.75	378.65
1.5000	1 1/2	1.050	4 7/8	1	10 1/2	1 1/2	362048	4	362248	380.40	1.4721 - 1.5030	444.20	412.10	401.50	396.35	390.80	386.70

*3 flutes. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CORE DRILLS FOR NON-FERROUS & CAST IRON

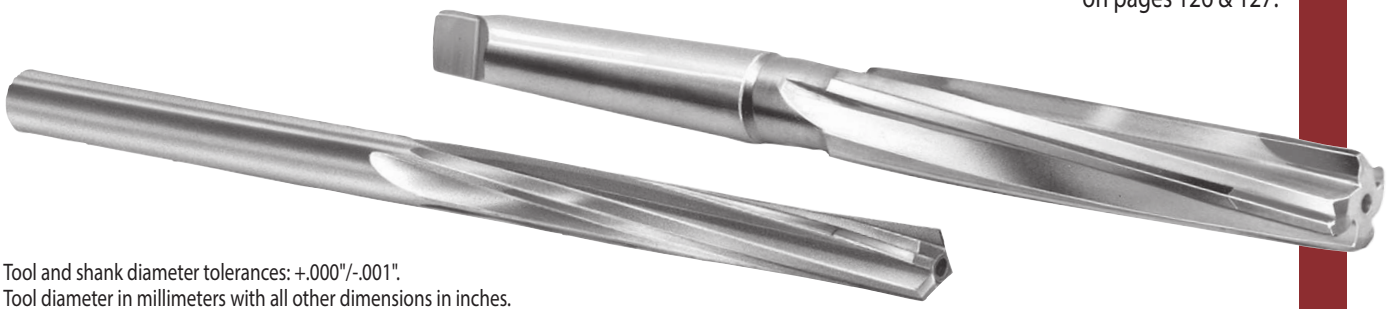
METRIC

TYPE 3620 - FOUR SPIRAL FLUTES - STRAIGHT SHANK

TYPE 3622 - FOUR SPIRAL FLUTES - TAPER SHANK

Carbide tips brazed to hardened tool steel bodies. Right spiral flutes with 118° included chamfer angle.

Core drills, with increased flute capacity, remove more material from a cored or cast hole than a reamer. This often eliminates a final reaming or boring operation. Types 3620 and 3622 core drills are specifically designed for cast iron, non-ferrous and high temperature alloy applications. For steel applications, refer to Types 3621 and 3623 on pages 126 & 127.



Tool and shank diameter tolerances: +.000"/-.001".
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MIN. CUT DIAM.	LENGTH			TYPE 3620		TYPE 3622		BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH		FLT	CARB	OAL	SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
9.0*	.3543	.262	3 ½	⅝	6 ¾	⅜	3620090	1	3622090	$195.85	8.815-9.601	$243.95	$212.10	$201.20	$196.00	$190.75	$186.25	$180.10
10.0*	.3937	.284	3 ⅝	⅝	7	13/32	3620100	1	3622100	195.85	9.602-10.389	243.95	212.10	201.20	196.00	190.75	186.25	180.10
11.0*	.4331	.306	3 ⅞	¾	7 ¼	7/16	3620110	1	3622110	195.85	10.390-11.201	243.95	212.10	201.20	196.00	190.75	186.25	180.10
-*	-	.328	4 ⅛	¾	7 ½	15/32	3620119	1	3622119	-	11.202-11.989	243.95	212.10	201.20	196.00	190.75	186.25	180.10
12.0	.4724	.350	4 ⅜	¾	8 ¼	½	3620120	2	3622120	195.85	11.990-12.776	243.95	212.10	201.20	196.00	190.75	186.25	180.10
13.0	.5118	.372	4 ⅜	¾	8 ¼	17/32	3620130	2	3622130	196.65	12.777-13.564	244.60	212.95	202.15	197.05	191.65	187.20	181.10
14.0	.5512	.394	4 ⅜	¾	8 ¼	9/16	3620140	2	3622140	196.65	13.565-14.376	244.60	212.95	202.15	197.05	191.65	187.20	181.10
15.0	.5906	.416	4 ⅜	¾	8 ¼	19/32	3620150	2	3622150	205.50	14.377-15.164	253.55	221.60	210.90	205.75	200.35	195.85	189.70
-	-	.438	4 ⅜	¾	8 ¼	⅝	3620159	2	3622159	-	15.165-15.951	253.55	221.60	210.90	205.75	200.35	195.85	189.70
16.0	.6299	.459	4 ⅜	¾	8 ¼	21/32	3620160	2	3622160	207.70	15.952-16.739	255.80	223.80	213.10	207.90	202.45	197.90	192.00
17.0	.6693	.481	4 ⅜	⅞	8 ¼	11/16	3620170	2	3622170	209.15	16.740-17.551	257.40	225.35	214.55	209.30	204.10	199.55	193.50
18.0	.7087	.503	4 ⅜	⅞	8 ¼	23/32	3620180	2	3622180	209.15	17.552-18.339	257.40	225.35	214.55	209.30	204.10	199.55	193.50
19.0	.7480	.525	4 ⅜	⅞	8 ¼	¾	3620190	2	3622190	209.15	18.340-19.126	257.40	225.35	214.55	209.30	204.10	199.55	193.50
-	-	.547	4 ⅜	⅞	8 ¼	25/32	3620199	2	3622199	-	19.127-19.914	261.50	229.75	219.10	213.80	208.25	204.00	197.70
20.0	.7874	.569	4 ⅞	⅞	9 ½	13/16	3620200	3	3622200	218.70	19.915-20.726	266.85	235.00	224.20	219.15	213.80	209.15	203.05
21.0	.8268	.591	4 ⅞	⅞	9 ½	27/32	3620210	3	3622210	229.30	20.727-21.514	277.50	245.50	234.85	229.75	224.20	219.80	213.80
22.0	.8661	.612	4 ⅞	⅞	9 ½	⅞	3620220	3	3622220	229.30	21.515-22.301	277.50	245.50	234.85	229.75	224.20	219.80	213.80
23.0	.9055	.634	4 ⅞	⅞	9 ½	29/32	3620230	3	3622230	230.60	22.302-23.089	278.65	246.90	236.25	230.80	225.45	221.20	214.95
-	-	.656	4 ⅞	⅞	9 ½	15/16	3620239	3	3622239	-	23.090-23.901	278.65	246.90	236.25	230.80	225.45	221.20	214.95
24.0	.9449	.678	4 ⅞	⅞	9 ½	31/32	3620240	3	3622240	238.35	23.902-24.689	286.45	254.50	243.90	238.65	233.40	228.70	222.60
25.0	.9843	.700	4 ⅞	⅞	9 ½	1	3620250	3	3622250	242.25	24.690-25.476	290.50	258.65	247.95	242.60	237.30	232.90	226.75
26.0	1.0236	.722	4 ⅞	⅞	9 ½	1 1/32	3620260	3	3622260	244.30	25.477-26.264	292.25	260.45	249.75	244.45	239.05	234.80	228.50
27.0	1.0630	.744	4 ⅞	⅞	9 ½	1 1/16	3620270	3	3622270	247.40	26.265-27.076	295.60	263.55	252.75	247.65	242.20	237.85	231.70
-	-	.766	4 ⅞	1	10 ½	1 3/32	3620279	4	3622279	-	27.077-27.864	332.70	300.80	290.15	284.75	279.50	275.05	269.00
28.0	1.1024	.787	4 ⅞	1	10 ½	1 ⅛	3620280	4	3622280	284.60	27.865-28.651	332.70	300.80	290.15	284.75	279.50	275.05	269.00
29.0	1.1417	.809	4 ⅞	1	10 ½	1 5/32	3620290	4	3622290	308.85	28.652-29.439	356.85	325.10	314.30	309.10	303.75	299.20	292.95
30.0	1.1811	.831	4 ⅞	1	10 ½	1 3/16	3620300	4	3622300	317.05	29.440-30.239	365.25	333.25	322.75	317.25	312.05	307.50	301.50
31.0	1.2205	.853	4 ⅞	1	10 ½	1 7/32	3620310	4	3622310	318.35	30.240-31.039	366.30	334.30	323.75	318.50	313.10	308.50	302.45
-	-	.875	4 ⅞	1	10 ½	1 ¼	3620319	4	3622319	-	31.040-31.826	367.35	335.50	325.00	319.70	314.30	309.80	303.75
32.0	1.2598	.897	4 ⅞	1	10 ½	1 9/32	3620320	4	3622320	340.70	31.827-32.614	388.90	356.85	346.20	341.05	335.50	331.10	325.10
33.0	1.2992	.919	4 ⅞	1	10 ½	1 5/16	3620330	4	3622330	349.50	32.615-33.401	397.60	365.60	354.95	349.70	344.55	340.15	333.95
34.0	1.3386	.940	4 ⅞	1	10 ½	1 11/32	3620340	4	3622340	356.45	33.402-34.214	404.75	372.80	362.05	356.80	351.35	347.00	340.85
35.0	1.3780	.962	4 ⅞	1	10 ½	1 ⅜	3620350	4	3622350	364.55	34.215-35.001	412.85	380.80	370.15	364.85	359.50	354.95	349.00
-	-	.984	4 ⅞	1	10 ½	1 13/32	3620359	4	3622359	-	35.002-35.789	420.50	388.80	377.80	372.80	367.30	362.95	356.80
36.0	1.4173	1.006	4 ⅞	1	10 ½	1 7/16	3620360	4	3622360	382.70	35.790-36.601	430.85	398.95	388.30	382.90	377.65	373.25	367.15
37.0	1.4567	1.025	4 ⅞	1	10 ½	1 15/32	3620370	4	3622370	393.55	36.602-37.389	441.55	409.70	398.95	393.80	388.35	383.90	377.70
38.0	1.4961	1.050	4 ⅞	1	10 ½	1 ½	3620380	4	3622380	401.50	37.390-38.176	449.45	417.70	407.00	401.65	396.35	391.95	385.70

*3 flutes.

Made in U.S.A.

CARBIDE TIPPED CORE DRILLS FOR STEEL

TYPE 3621 - FOUR SPIRAL FLUTES - STRAIGHT SHANK

TYPE 3623 - FOUR SPIRAL FLUTES - TAPER SHANK

Carbide tips brazed to hardened tool steel bodies. Right spiral flutes with 118° included chamfer angle.

Core drills, with increased flute capacity, remove more material from a cored or cast hole than a reamer. This often eliminates a final reaming or boring operation. Types 3621 and 3623 core drills are specifically designed for steel applications. For cast iron non-ferrous and high temperature alloy applications, refer to Types 3620 and 3622 on pages 124 and 125.



Tool and shank diameter tolerances: +.000"/-.001".

TOOL DIAMETER		MIN. CUT DIAM.	LENGTH			TYPE 3621		TYPE 3623		BOTH TYPES PRICE	DECIMAL SIZE RANGE	PRICE EACH - FINISHED TO DECIMAL SIZE					
DEC.	FRAC.		FLT	CARB	OAL	SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14**
.3750	3/8*	.262	3 1/2	5/8	6 3/4	3/8	362112	1	362312	$192.35	.3471 - .3780	$256.35	224.20	213.50	$208.40	$203.00	$198.65
.4062	13/32*	.284	3 5/8	5/8	7	13/32	362113	1	362313	192.35	.3781 - .4090	256.35	224.20	213.50	208.40	203.00	198.65
.4375	7/16*	.306	3 7/8	3/4	7 1/4	7/16	362114	1	362314	192.35	.4091 - .4410	256.35	224.20	213.50	208.40	203.00	198.65
.4688	15/32*	.328	4 1/8	3/4	7 1/2	15/32	362115	1	362315	192.35	.4411 - .4720	256.35	224.20	213.50	208.40	203.00	198.65
.5000	1/2	.350	4 3/8	3/4	8 1/4	1/2	362116	2	362316	192.35	.4721 - .5030	256.35	224.20	213.50	208.40	203.00	198.65
.5312	17/32	.372	4 3/8	3/4	8 1/4	17/32	362117	2	362317	193.05	.5031 - .5340	256.85	225.00	214.15	209.10	203.55	199.35
.5625	9/16	.394	4 3/8	3/4	8 1/4	9/16	362118	2	362318	193.05	.5341 - .5660	256.85	225.00	214.15	209.10	203.55	199.35
.5938	19/32	.416	4 3/8	3/4	8 1/4	19/32	362119	2	362319	202.85	.5661 - .5970	266.70	234.80	223.85	219.10	213.35	209.10
.6250	5/8	.438	4 3/8	3/4	8 1/4	5/8	362120	2	362320	202.85	.5971 - .6280	266.70	234.80	223.85	219.10	213.35	209.10
.6562	21/32	.459	4 3/8	3/4	8 1/4	21/32	362121	2	362321	205.15	.6281 - .6590	269.00	236.90	226.15	221.20	215.60	211.25
.6875	11/16	.481	4 3/8	7/8	8 1/4	11/16	362122	2	362322	206.90	.6591 - .6910	270.85	238.70	228.05	222.90	217.55	213.10
.7188	23/32	.503	4 3/8	7/8	8 1/4	23/32	362123	2	362323	206.90	.6911 - .7220	270.85	238.70	228.05	222.90	217.55	213.10
.7500	3/4	.525	4 3/8	7/8	8 1/4	3/4	362124	2	362324	206.90	.7221 - .7530	270.85	238.70	228.05	222.90	217.55	213.10
.7812	25/32	.547	4 3/8	7/8	8 1/4	25/32	362125	2	362325	211.25	.7531 - .7840	275.10	243.30	232.45	227.35	221.75	217.65
.8125	13/16	.569	4 7/8	7/8	9 1/2	13/16	362126	3	362326	217.35	.7841 - .8160	281.25	249.25	238.50	233.50	228.00	223.60
.8438	27/32	.591	4 7/8	7/8	9 1/2	27/32	362127	3	362327	228.95	.8161 - .8470	292.80	260.80	250.10	245.05	239.70	235.25
.8750	7/8	.612	4 7/8	7/8	9 1/2	7/8	362128	3	362328	228.95	.8471 - .8780	292.80	260.80	250.10	245.05	239.70	235.25
.9062	29/32	.634	4 7/8	7/8	9 1/2	29/32	362129	3	362329	230.30	.8781 - .9090	294.20	262.35	251.60	246.40	241.10	236.60
.9375	15/16	.656	4 7/8	7/8	9 1/2	15/16	362130	3	362330	230.30	.9091 - .9410	294.20	262.35	251.60	246.40	241.10	236.60
.9688	31/32	.678	4 7/8	7/8	9 1/2	31/32	362131	3	362331	238.75	.9411 - .9720	302.60	270.85	259.90	254.80	249.55	245.20
1.0000	1	.700	4 7/8	7/8	9 1/2	1	362132	3	362332	243.45	.9721 - 1.0030	307.30	275.40	264.60	259.55	254.15	249.75
1.0312	1 1/32	.722	4 7/8	7/8	9 1/2	1 1/32	362133	3	362333	245.30	1.0031 - 1.0340	309.20	277.05	266.35	261.45	255.85	251.60
1.0625	1 1/16	.744	4 7/8	7/8	9 1/2	1 1/16	362134	3	362334	248.65	1.0341 - 1.0660	312.55	280.55	269.80	264.65	259.35	254.80
1.0938	1 3/32	.766	4 7/8	1	10 1/2	1 3/32	362135	4	362335	289.80	1.0661 - 1.0970	353.50	321.65	310.80	305.90	300.30	295.95
1.1250	1 1/8	.787	4 7/8	1	10 1/2	1 1/8	362136	4	362336	302.75	1.0971 - 1.1280	366.80	334.90	324.10	318.85	313.55	309.20
1.1562	1 5/32	.809	4 7/8	1	10 1/2	1 5/32	362137	4	362337	316.45	1.1281 - 1.1590	380.40	348.30	337.55	332.45	326.90	322.75
1.1875	1 3/16	.831	4 7/8	1	10 1/2	1 3/16	362138	4	362338	325.50	1.1591 - 1.1905	389.40	357.55	346.80	341.60	336.30	331.95
1.2188	1 7/32	.853	4 7/8	1	10 1/2	1 7/32	362139	4	362339	326.75	1.1906 - 1.2220	390.65	358.75	347.95	342.80	337.45	333.15
1.2500	1 1/4	.875	4 7/8	1	10 1/2	1 1/4	362140	4	362340	328.10	1.2221 - 1.2530	391.95	359.80	349.15	344.20	338.65	334.25
1.2812	1 9/32	.897	4 7/8	1	10 1/2	1 9/32	362141	4	362341	351.35	1.2531 - 1.2840	415.25	383.30	372.45	367.35	362.05	357.65
1.3125	1 5/16	.919	4 7/8	1	10 1/2	1 5/16	362142	4	362342	361.15	1.2841 - 1.3150	425.05	393.05	382.40	377.30	371.85	367.35
1.3438	1 11/32	.940	4 7/8	1	10 1/2	1 11/32	362143	4	362343	368.85	1.3151 - 1.3470	432.80	400.80	390.20	385.05	379.40	375.25
1.3750	1 3/8	.962	4 7/8	1	10 1/2	1 3/8	362144	4	362344	377.70	1.3471 - 1.3780	441.65	409.70	398.95	393.90	388.35	383.95
1.4062	1 13/32	.984	4 7/8	1	10 1/2	1 13/32	362145	4	362345	386.70	1.3781 - 1.4090	450.40	418.45	407.70	402.65	397.20	392.85
1.4375	1 7/16	1.006	4 7/8	1	10 1/2	1 7/16	362146	4	362346	397.80	1.4091 - 1.4410	461.70	429.50	418.90	413.85	408.45	403.95
1.4688	1 15/32	1.025	4 7/8	1	10 1/2	1 15/32	362147	4	362347	409.65	1.4411 - 1.4720	473.55	441.50	430.70	425.65	420.05	415.80
1.5000	1 1/2	1.050	4 7/8	1	10 1/2	1 1/2	362148	4	362348	418.20	1.4721 - 1.5030	482.15	450.15	439.55	434.35	429.10	424.60

*3 flutes. **Quantities of 15 or more: price of fractional size in same size range.

CARBIDE TIPPED CORE DRILLS FOR STEEL

METRIC

TYPE 3621 - FOUR SPIRAL FLUTES - STRAIGHT SHANK

TYPE 3623 - FOUR SPIRAL FLUTES - TAPER SHANK

Carbide tips brazed to hardened tool steel bodies. Right spiral flutes with 118° included chamfer angle.

Core drills, with increased flute capacity, remove more material from a cored or cast hole than a reamer. This often eliminates a final reaming or boring operation. Types 3621 and 3623 core drills are specifically designed for steel applications. For cast iron, non-ferrous and high temperature alloy applications, refer to Types 3620 and 3622 on pages 124 & 125.



Tool and shank diameter tolerances: +.000"/-.001".
Tool diameter in millimeters with all other dimensions in inches.

TOOL DIAMETER		MIN. CUT DIAM.	LENGTH			TYPE 3621		TYPE 3623		BOTH TYPES PRICE	METRIC SIZE RANGE	PRICE EACH - FINISHED TO METRIC SIZE						
mm	INCH		FLT	CARB	OAL	SHANK DIAM.	EDP NO.	MORSE TAPER	EDP NO.			1 PC.	2 PC.	3 PC.	4 PC.	5-7	8-14	15+
9.0*	.3543	.262	3 ½	⅝	6 ¾	⅜	3621090	1	3623090	$213.50	8.815 - 9.601	$261.60	$229.80	$219.15	$213.85	$208.40	$204.05	$197.75
10.0*	.3937	.284	3 ⅝	⅝	7	13/32	3621100	1	3623100	213.50	9.602 - 10.389	261.60	229.80	219.15	213.85	208.40	204.05	197.75
11.0*	.4331	.306	3 ⅞	¾	7 ¼	7/16	3621110	1	3623110	213.50	10.390 - 11.201	261.60	229.80	219.15	213.85	208.40	204.05	197.75
-*	-	.328	4 ⅛	¾	7 ½	15/32	3621119	1	3623119	-	11.202 - 11.989	261.60	229.80	219.15	213.85	208.40	204.05	197.75
12.0	.4724	.350	4 ⅜	¾	8 ¼	½	3621120	2	3623120	213.50	11.990 - 12.776	261.60	229.80	219.15	213.85	208.40	204.05	197.75
13.0	.5118	.372	4 ⅜	¾	8 ¼	17/32	3621130	2	3623130	214.15	12.777 - 13.564	262.35	230.30	219.50	214.40	209.10	204.45	198.50
14.0	.5512	.394	4 ⅜	¾	8 ¼	9/16	3621140	2	3623140	214.15	13.565 - 14.376	262.35	230.30	219.50	214.40	209.10	204.45	198.50
15.0	.5906	.416	4 ⅜	¾	8 ¼	19/32	3621150	2	3623150	223.85	14.377 - 15.164	272.00	240.15	229.60	224.20	219.10	214.40	208.25
-	-	.438	4 ⅜	¾	8 ¼	⅝	3621159	2	3623159	-	15.165 - 15.951	272.00	240.15	229.60	224.20	219.10	214.40	208.25
16.0	.6299	.459	4 ⅜	¾	8 ¼	21/32	3621160	2	3623160	226.15	15.952 - 16.739	274.25	242.25	231.70	226.45	221.20	216.60	210.50
17.0	.6693	.481	4 ⅜	⅞	8 ¼	11/16	3621170	2	3623170	228.05	16.740 - 17.551	276.15	244.30	233.65	228.35	222.90	218.40	212.40
18.0	.7087	.503	4 ⅜	⅞	8 ¼	23/32	3621180	2	3623180	228.05	17.552 - 18.339	276.15	244.30	233.65	228.35	222.90	218.40	212.40
19.0	.7480	.525	4 ⅜	⅞	8 ¼	¾	3621190	2	3623190	228.05	18.340 - 19.126	276.15	244.30	233.65	228.35	222.90	218.40	212.40
-	-	.547	4 ⅜	⅞	8 ¼	25/32	3621199	2	3623199	-	19.127 - 19.914	280.55	248.65	238.15	232.70	227.35	222.90	216.85
20.0	.7874	.569	4 ⅞	⅞	9 ½	13/16	3621200	3	3623200	238.50	19.915 - 20.726	286.50	254.65	243.95	238.70	233.50	228.95	222.65
21.0	.8268	.591	4 ⅞	⅞	9 ½	27/32	3621210	3	3623210	250.10	20.727 - 21.514	298.25	266.30	255.65	250.30	245.05	240.50	234.55
22.0	.8661	.612	4 ⅞	⅞	9 ½	⅞	3621220	3	3623220	250.10	21.515 - 22.301	298.25	266.30	255.65	250.30	245.05	240.50	234.55
23.0	.9055	.634	4 ⅞	⅞	9 ½	29/32	3621230	3	3623230	251.60	22.302 - 23.089	299.65	267.90	256.90	251.85	246.40	242.05	235.85
-	-	.656	4 ⅞	⅞	9 ½	15/16	3621239	3	3623239	-	23.090 - 23.901	299.65	267.90	256.90	251.85	246.40	242.05	235.85
24.0	.9449	.678	4 ⅞	⅞	9 ½	31/32	3621240	3	3623240	259.90	23.902 - 24.689	308.20	276.30	265.65	260.35	254.80	250.40	244.35
25.0	.9843	.700	4 ⅞	⅞	9 ½	1	3621250	3	3623250	264.60	24.690 - 25.476	312.75	280.70	270.15	264.75	259.55	254.85	248.80
26.0	1.0236	.722	4 ⅞	⅞	9 ½	1 1/32	3621260	3	3623260	266.35	25.477 - 26.264	314.65	282.60	271.90	266.70	261.45	256.85	250.80
27.0	1.0630	.744	4 ⅞	⅞	9 ½	1 1/16	3621270	3	3623270	269.80	26.265 - 27.076	318.00	286.10	275.40	270.15	264.65	260.35	254.25
-	-	.766	4 ⅞	1	10 ½	1 3/32	3621279	4	3623279	-	27.077 - 27.864	359.05	327.05	316.45	311.15	305.90	301.20	295.20
28.0	1.1024	.787	4 ⅞	1	10 ½	1 ⅛	3621280	4	3623280	324.10	27.865 - 28.651	372.20	340.35	329.50	324.45	318.85	314.65	308.35
29.0	1.1417	.809	4 ⅞	1	10 ½	1 5/32	3621290	4	3623290	337.55	28.652 - 29.439	385.65	353.85	342.95	337.80	332.45	328.10	321.85
30.0	1.1811	.831	4 ⅞	1	10 ½	1 3/16	3621300	4	3623300	346.80	29.440 - 30.239	395.00	363.00	352.45	347.05	341.60	337.20	331.10
31.0	1.2205	.853	4 ⅞	1	10 ½	1 7/32	3621310	4	3623310	347.95	30.240 - 31.039	396.05	364.35	353.45	348.30	342.80	338.60	332.30
-	-	.875	4 ⅞	1	10 ½	1 ¼	3621319	4	3623319	-	31.040 - 31.826	397.25	365.40	354.75	349.45	344.20	339.50	333.35
32.0	1.2598	.897	4 ⅞	1	10 ½	1 9/32	3621320	4	3623320	372.45	31.827 - 32.614	420.85	388.90	377.95	372.90	367.35	363.00	356.85
33.0	1.2992	.919	4 ⅞	1	10 ½	1 5/16	3621330	4	3623330	382.40	32.615 - 33.401	430.50	398.60	387.80	382.60	377.30	372.90	366.60
34.0	1.3386	.940	4 ⅞	1	10 ½	1 11/32	3621340	4	3623340	390.20	33.402 - 34.214	438.05	406.35	395.55	390.40	385.05	380.60	374.35
35.0	1.3780	.962	4 ⅞	1	10 ½	1 ⅜	3621350	4	3623350	398.95	34.215 - 35.001	447.15	415.15	404.55	399.20	393.90	389.35	383.30
-	-	.984	4 ⅞	1	10 ½	1 13/32	3621359	4	3623359	-	35.002 - 35.789	455.75	423.85	413.20	407.95	402.65	398.10	392.00
36.0	1.4173	1.006	4 ⅞	1	10 ½	1 7/16	3621360	4	3623360	418.90	35.790 - 36.601	467.10	435.20	424.40	419.25	413.85	409.55	403.35
37.0	1.4567	1.025	4 ⅞	1	10 ½	1 15/32	3621370	4	3623370	430.70	36.602 - 37.389	478.75	446.95	436.05	431.05	425.65	421.20	415.05
38.0	1.4961	1.050	4 ⅞	1	10 ½	1 ½	3621380	4	3623380	439.55	37.390 - 38.176	487.50	455.55	444.90	439.65	434.35	430.00	423.65

*3 flutes.

Made in U.S.A.

SINGLE POINT TOOLS WITH PREMIUM CARBIDE GRADE

TYPE 3980 - SILVER SHANK
883 / PREMIUM C2 CARBIDE GRADE

Carbide tip brazed to steel bodies. For machining non-ferrous materials and cast iron.

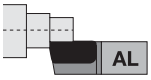


0° SIDE CUTTING EDGE ANGLE
For machining to a square shoulder.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
AR-4	398AR04	$18.90	393AR04	$13.80	¼	¼	2	12
AR-5	398AR05	16.75	393AR05	14.70	5⁄16	5⁄16	2 ¼	12
AR-6	398AR06	17.00	393AR06	15.00	⅜	⅜	2 ½	12
AR-8	398AR08	15.70	393AR08	15.70	½	½	3 ½	12
AR-10	398AR10	23.40	393AR10	21.65	⅝	⅝	4	12
AR-12	398AR12	29.95	393AR12	26.80	¾	¾	4 ½	12
AR-16	398AR16	54.95	393AR16	53.55	1	1	7	6



For turning to a square shoulder



TYPE 3930 - GOLD SHANK
370 / PREMIUM C5-C6 CARBIDE GRADE

Carbide tip brazed to steel bodies. For machining most steels.



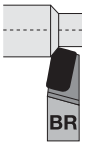
0° SIDE CUTTING EDGE ANGLE
For machining to a square shoulder.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
AL-4	398AL04	$18.90	393AL04	$13.80	¼	¼	2	12
AL-5	398AL05	16.75	393AL05	14.70	5⁄16	5⁄16	2 ¼	12
AL-6	398AL06	17.00	393AL06	15.00	⅜	⅜	2 ½	12
AL-8	398AL08	15.70	393AL08	15.70	½	½	3 ½	12
AL-10	398AL10	22.05	393AL10	21.65	⅝	⅝	4	12
AL-12	398AL12	28.55	393AL12	28.30	¾	¾	4 ½	12
AL-16	398AL16	55.70	393AL16	55.70	1	1	7	6

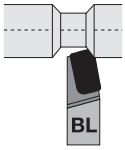


15° SIDE CUTTING EDGE ANGLE
For interrupted or irregular cuts.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
BR-4	398BR04	$18.90	393BR04	$13.80	¼	¼	2	12
BR-5	398BR05	16.75	393BR05	14.70	5⁄16	5⁄16	2 ¼	12
BR-6	398BR06	17.00	393BR06	15.00	⅜	⅜	2 ½	12
BR-7	398BR07	18.40	393BR07	16.30	7⁄16	7⁄16	3	12
BR-8	398BR08	15.70	393BR08	15.70	½	½	3 ½	12
BR-10	398BR10	23.40	393BR10	21.65	⅝	⅝	4	12
BR-12	398BR12	29.95	393BR12	26.80	¾	¾	4 ½	12
BR-16	398BR16	54.95	393BR16	53.55	1	1	7	6



For turning where square shoulder is not required





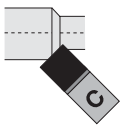
15° SIDE CUTTING EDGE ANGLE
For interrupted or irregular cuts.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
BL-4	398BL04	$18.90	393BL04	$13.80	¼	¼	2	12
BL-5	398BL05	16.75	393BL05	14.70	5⁄16	5⁄16	2 ¼	12
BL-6	398BL06	17.00	393BL06	15.00	⅜	⅜	2 ½	12
BL-7	398BL07	18.40	393BL07	16.30	7⁄16	7⁄16	3	12
BL-8	398BL08	15.70	393BL08	15.70	½	½	3 ½	12
BL-10	398BL10	22.05	393BL10	21.65	⅝	⅝	4	12
BL-12	398BL12	28.55	393BL12	28.30	¾	¾	4 ½	12
BL-16	398BL16	55.70	393BL16	55.70	1	1	7	6

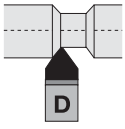


0° SQUARE NOSE
No nose radius.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
C-4	398C04	$12.45	393C04	$12.45	¼	¼	2	12
C-5	398C05	13.70	393C05	13.25	5⁄16	5⁄16	2 ¼	12
C-6	398C06	17.80	393C06	14.70	⅜	⅜	2 ½	12
C-7	398C07	13.60	393C07	18.75	7⁄16	7⁄16	3	12
C-8	398C08	21.85	393C08	20.25	½	½	3 ½	12
C-10	398C10	24.55	393C10	26.80	⅝	⅝	4	12
C-12	398C12	33.95	393C12	38.50	¾	¾	4 ½	12
C-16	398C16	70.40	393C16	67.60	1	1	7	6



For undercutting and chamfering



For chamfering



40° SIDE CUTTING EDGE ANGLE
80° pointed nose.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
D-4	398D04	$11.55	393D04	$11.55	¼	¼	2	12
D-5	398D05	13.45	393D05	13.80	5⁄16	5⁄16	2 ¼	12
D-6	398D06	13.70	393D06	14.75	⅜	⅜	2 ½	12
D-7	398D07	18.75	-	-	7⁄16	7⁄16	3	12
D-8	398D08	18.00	393D08	19.10	½	½	3 ½	12
D-10	398D10	25.20	393D10	28.00	⅝	⅝	4	12
D-12	398D12	36.10	393D12	31.70	¾	¾	4 ½	12
D-16	398D16	53.60	393D16	55.45	1	1	7	6

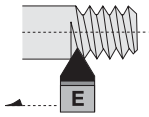
*Some sizes not available in premium grade carbide. Prices subject to change.

SINGLE POINT TOOLS WITH PREMIUM CARBIDE GRADE

TYPE 3980 - SILVER SHANK
883 / PREMIUM C2 CARBIDE GRADE

Carbide tip brazed to steel bodies. For machining non-ferrous materials and cast iron.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
E-4	398E04	$11.55	393E04	$11.55	¼	¼	2	12
E-5	398E05	12.65	393E05	12.65	5⁄16	5⁄16	2 ¼	12
E-6	398E06	13.15	393E06	12.80	⅜	⅜	2 ½	12
E-7	398E07	20.35	393E07	24.45	7⁄16	7⁄16	3	12
E-8	398E08	30.15	393E08	16.25	½	½	3 ½	12
E-10	398E10	25.05	393E10	22.75	⅝	⅝	4	12
E-12	398E12	31.15	393E12	31.50	¾	¾	4 ½	12
E-16	398E16	54.60	393E16	52.50	1	1	7	6



For universal threading, 30° chamfering, notching or undercutting

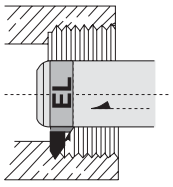


60° INCLUDED ANGLE
30° SIDE CUTTING EDGE ANGLE
For threading, chamfering, notching, or undercutting.

TYPE 3930 - GOLD SHANK
370 / PREMIUM C5-C6 CARBIDE GRADE

Carbide tip brazed to steel bodies. For machining most steels.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
EL-4	398EL04	$16.60	393EL04	$11.55	¼	¼	2	12
EL-5	398EL05	16.60	393EL05	15.90	5⁄16	5⁄16	2 ¼	12
EL-6	398EL06	16.60	393EL06	16.10	⅜	⅜	2 ½	12
EL-8	398EL08	25.85	393EL08	28.35	½	½	3 ½	12
EL-10	398EL10	28.15	393EL10	31.00	⅝	⅝	4	12
EL-12	398EL12	30.45	393EL12	33.05	¾	¾	4 ½	12

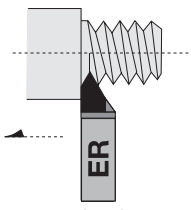


Bore threading to a shoulder in a 90° bar



30° SIDE CUTTING EDGE ANGLE
Offset for threading or boring to shoulder.

TOOL TYPE & SIZE NO.	883 / PREMIUM C2*		370 / PREMIUM C5-C6*		SHANK DIMENSION			STD. PKG. QTY.
	EDP NO.	PRICE EACH	EDP NO.	PRICE EACH	W	H	L	
ER-4	398ER04	$14.40	393ER04	$11.55	¼	¼	2	12
ER-5	398ER05	14.40	393ER05	12.90	5⁄16	5⁄16	2 ¼	12
ER-6	398ER06	14.65	393ER06	13.25	⅜	⅜	2 ½	12
ER-8	398ER08	25.85	393ER08	25.85	½	½	3 ½	12
ER-10	398ER10	28.15	393ER10	28.15	⅝	⅝	4	12
ER-12	398ER12	30.45	393ER12	33.05	¾	¾	4 ½	12



Cutting threads to shoulder



30° SIDE CUTTING EDGE ANGLE
Offset for threading or boring to shoulder.

*Some sizes not available in premium grade carbide. Prices subject to change.

CARBIDE TIPPED SPECIALS QUOTE FORM - FAX TO 941-739-2827

LEXINGTON MANUFACTURES QUALITY SPECIALS TO MEET OUR CUSTOMERS' NEEDS.
BELOW IS INFORMATION NEEDED TO QUOTE SPECIALS. Email: quotes@lexingtoncutter.com

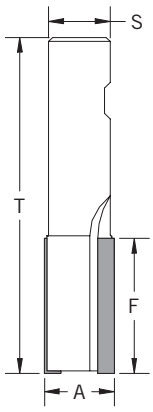
Name _____ Phone _____

Company _____ Fax _____

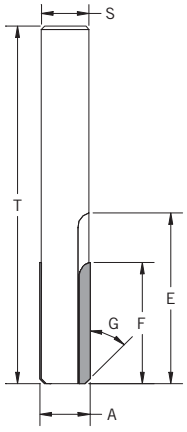
Full Address _____

Material Being Cut _____ Quantities _____

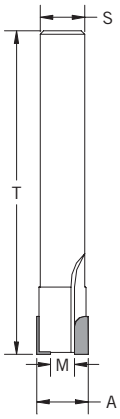
CARBIDE TIPPED - SHANK TYPE TOOLS



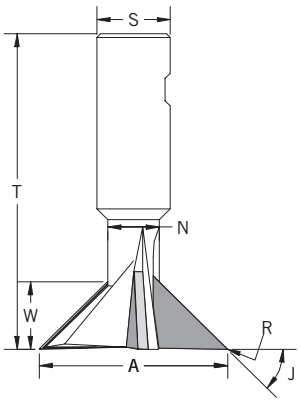
❑END MILL



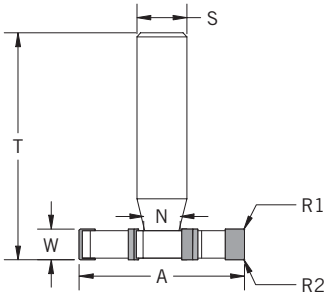
❑REAMER



❑COUNTERBORE



❑DOVETAIL



❑KEYSEAT

BODY OF TOOL

T= _____ Overall Length S= _____ Shank Diameter A= _____ Major Diameter

G= _____ °Chamfer Angle

FLUTES

E= _____ Flute Length F= _____ Carbide Length

❑ Straight Flutes
Number of Flutes _____

❑Right Hand Cutting
❑Right Hand Spiral _____°

❑ Left Hand Cutting
❑Left Hand Spiral _____°

IF PILOTED Head Diam._____ Head Length _____ M= Min. Cutting Diam._____

IF STEP REAMER (Also see pages 104-106) Minor Diam._____ Step Length _____ Step Angle _____°

IF KEYSEAT W= _____ Width ❑ Straight Tooth R1= _____ Radius/Chamfer

N= _____ Neck Diameter ❑ Staggered Tooth R2= _____ Radius/Chamfer

IF DOVETAIL

N= _____ Neck Diam. J= _____° Angle R= _____ Radius W= _____ Width

CARBIDE TIPPED - ARBOR TYPE TOOLS

D= _____ Cutter Diameter

W= _____ Cutter Width

A= _____ Arbor Hole Diam.

N= _____ # of Teeth

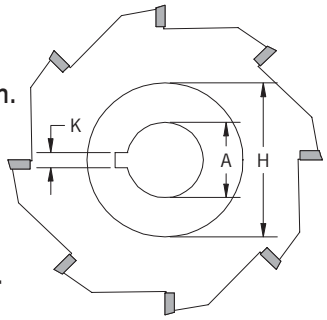
H= _____ Hub Diameter

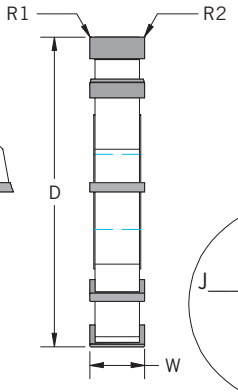
K= _____ Keyway Size

R1= _____ Radius/Chamfer

R2= _____ Radius/Chamfer

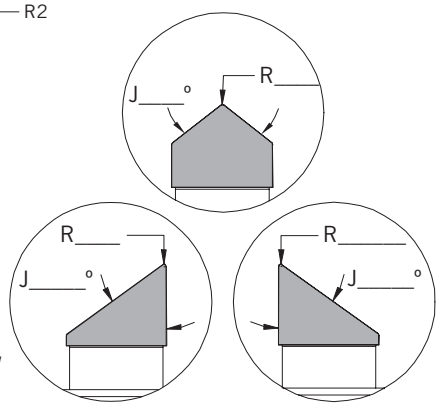
❑ Straight Tooth
❑ Straight Stagger
❑ Herringbone Stagger





❑MILLING CUTTER

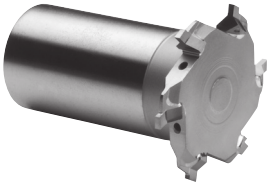
❑SLITTING SAW



❑ANGLE CUTTER
(Fill in "J" & "R")

NOTE: Standard tool tolerances as stated in this catalog will be applied unless another tolerance is specified.

DESIGN AND MANUFACTURING OF SPECIAL CUTTING TOOLS

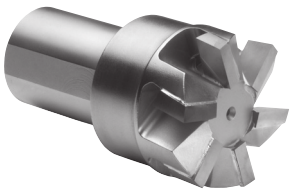


QUOTE FROM PRINT

Lexington Cutter will provide you with expedited quotes for specials from your tooling prints. Whether a complex blueprint or a simple sketch our staff will analyze your drawing and provide your quote typically within 1-2 business days.

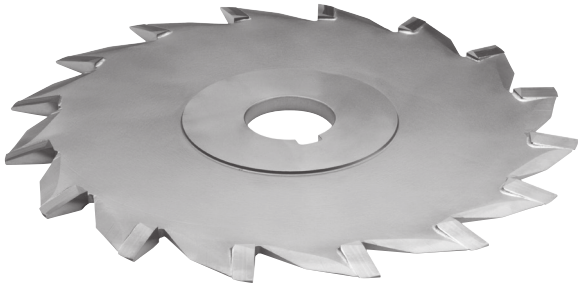


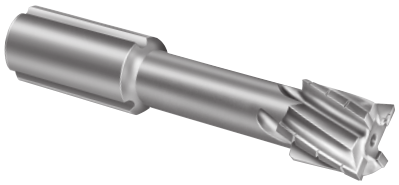




QUOTE FROM DESCRIPTION

Many quotes for specials are supplied by description alone. These are normally standard tools with one or more non-standard features. Cutting diameter or width, shank diameter or length, chamfer or radii, arbor hole or locator pin, are just a few examples that can be accurately quoted by description.







QUOTE THROUGH DESIGN AND BUILD

Lexington Cutter's qualified staff can provide you with application support to recommend, design, and manufacture the right tool for your new or existing application. Provide us with a conceptdrawing of your new or existing application and we can work with you to develop or improve your current process. Often combination or step tools can be designed to eliminate steps and increase productivity. Our commitment to application specific tooling will place you a cut ahead of the competition.

ISO 9001:2008 REGISTERED FOR DESIGN AND DEVELOPMENT OF CUTTING TOOLS



Lexington Cutter is committed to continuous improvement in order to provide the necessary tools, equipment, and working environment to deliver high quality products that meet or exceed the expectations of our customers. Our factory houses over 100 machines tooled for the production of standard and specialty tooling. Lexington combines many well known manufacturing techniques such as Setup Reduction, Total Quality Management, Lean Production, Poka-Yoke, and Cellular Manufacturing into a production environment that thrives on high quality and continuous improvement.

INDEX BY TOOL TYPE NUMBER

The first 4 digits of the EDP number represent the Type of the tool. The remaining digits represent the size of the tool. Within each Type of tool are different sizes that have the same basic function and design. If you know the Type of the tool you are looking for, this table will take you to the page where you can find it. Types in this chart that are bold are new products for our main catalog.

TOOL TYPE	METRIC PAGE	FRAC. PAGE
END MILLS		
3302		30
3304		30
3306		30
3308		28
3312		29
3314		29
3318		29
3350		28
3375		30
REAMERS		
3400	60	58-64
3401		56
3402	67	66
3407	91	90
3408	91	90
3409	91	90
3410	80	78
3411		107
3411h6	100	100
3411EL		115
3412		81
3413		107
3413h6	100	100
3413EL		115
3414	105	104
3414h6	98	98
3415		107
3415h6	100	100
3415EL		115
3416	103	102
3416h6	99	99
3416EL		113
3417		106
3418		106
3419		106
3420	80	79
3422		81
3424	105	104
3424h6	98	98
3426	103	102
3426h6	99	99
3426EL		113
3427		108
3427h6	101	101
3427EL		117
3428		108
3428h6	101	101
3428EL		117

TOOL TYPE	METRIC PAGE	FRAC. PAGE
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3429		108
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3429EL		117
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3431		111
3432		96
3433		97
3434	105	104
3434h6	98	98
3435	103	102
3435h6	99	99
3435EL		113
3436		96
3437		97
3438		96
3439		97
3440	87	86
3441		110
3442		94
3442ST		119
3442EL		114
3443		94
3443ST		119
3443EL		114
3444		94
3444ST		119
3444EL		114
3450	69	68-72
3452	77	76
3457	93	92
3457ST		118
3457EL		112
3458	93	92
3458ST		118
3458EL		112
3459	93	92
3459ST		118
3459EL		112
3464		88
3465	83	82
3466		88
3467	85	84
3468		88
3472		89
3473		89
3474		89
3476		57
3476 Set		57

TOOL TYPE	METRIC PAGE	FRAC. PAGE
REAMERS (CONT.)		
3477		57
3478		57
3479		57
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3481		110
3482		95
3482ST		120
3482EL		116
3483		95
3483ST		120
3483EL		116
3484		95
3484ST		120
3484EL		116
3486		75
3488		75
3490		109
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3510	39	38
3511	39	38
3512	35	34
3513	33	33
3514	35	34
3515	33	33
3516	37	36
3518	37	36
3522		40
F & S Counterbore		31
SHELL MILLS		
3530		27
3531		27
3532		27
MILLING CUTTERS		
3540		26
3541		26
3542		26
3543		26
3547		15
SLITTING SAWS		
3550		16
3551		17
3552		16
3553		17
3554		16
3556		17, 22-25

TOOL TYPE	METRIC PAGE	FRAC. PAGE
SLITTING SAWS (CONT.)		
3558		16
3559		17-21
F & S Mills & Saws		
COUNTERSINKS		
3561		28
3563		28
COUNTERBORES		
3573		42
3574		42
3575		43
3576		43
3577		41
3578		41
COUNTERSINKS		
3581		28
3583		28
3584		28
3585		28
3590		28
3591		28
DRILLS		
3600		122
3601		122
3610		123
3611		123
3616		121
3620	125	124
3621	127	126
3622	125	124
3623	127	126
F & S Drills		121
KEYSEAT CUTTERS		
3700		8
3701		9
3702		10
3703		11
3704		7
F & S Keyseats		6
45˚ ANGLE CUTTERS		
3714		27
3716		27
RADIUS CUTTERS		
3718		12
3719		12
T-SLOT CUTTERS		
3720		13
3721		13
60˚ ANGLE CUTTERS		
3724		27

TOOL TYPE	METRIC PAGE	FRAC. PAGE
60˚ ANGLE CUTTERS (CONT.)		
3726		27
CHAMFER CUTTERS		
3730		12
3731		12
3732		12
3733		12
DOVETAIL CUTTERS		
3734		13
3735		13
3736		13
3737		13
CORNER ROUNDING		
3740		29
3741		29
DOUBLE ANGLE CUTTERS		
3746		12
3747		12
3748		12
3749		12
3750		27
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3754		27
SOLID CARBIDE		
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3803		46
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3807		48
3808		48
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3813		47
3816		49
3817		49
3820		45, 47
3821		45, 47
3822		47
3823		47
3828		49
3829		49
SINGLE POINTS		
3930		128-129
3980		128-129
Specials Quote Form		130
Coating Guide		133

COATINGS FOR LEXINGTON CARBIDE TIPPED TOOLS

TiN - TITANIUM NITRIDE

TiN - Titanium Nitride coating is still the most popular coating and provides the highest adhesion and ductility characteristics of any coating we offer. Hard (81 Rc), smooth, and with high thermal stability (550° C) TiN is an excellent choice for general purpose drilling, reaming, counterboring and milling a wide variety of materials.

TECHNICAL DATA

Hardness (Vickers):	2300
Max. Service Temperature:	525° C (975° F)
Friction Coefficient:	.50
Thickness	2-4 microns
Surface Roughness (R_aµM):	.20

TiCN - TITANIUM CARBONITRIDE

TiCN - Titanium Carbonitride has a higher hardness (87 Rc) than TiN and has greater lubricity. TiCN should be used in applications where tool temperature can be controlled due to the relatively low oxidation temperature (400° C). Excellent resistance to wear and edge build-up in drilling, reaming, and wet milling applications with non-ferrous materials and cast iron.

TECHNICAL DATA

Hardness (Vickers):	3000
Max. Service Temperature:	400° C (750° F)
Friction Coefficient:	.40
Thickness	2-4 microns
Surface Roughness (R_aµM):	.17

AlTiN - ALUM. TITANIUM NITRIDE

AlTiN - Aluminum Titanium Nitride is an excellent choice when machining abrasive and high temperature applications over 800° C. It creates a hard aluminum oxide layer during the cutting process. Recommended for use when counterboring, drilling, milling, and reaming in all of our material classifications except Non-Ferrous.

TECHNICAL DATA

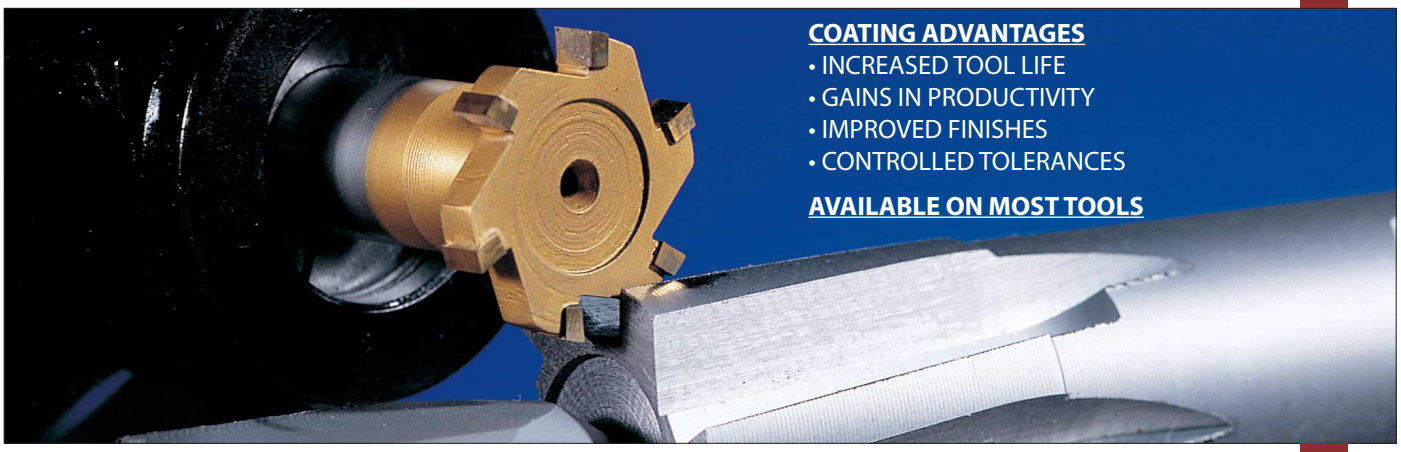
Hardness (Vickers):	3600
Max. Service Temperature:	750° C (1380° F)
Friction Coefficient:	.60
Thickness	2-4 microns
Surface Roughness (R_aµM):	.30

ZrN - ZIRCONIUM NITRIDE

ZrN - Zirconium Nitride is an excellent choice when machining plastics and non-ferrous materials. Very reliable coating when moderate temperatures are generated at the cutting edge. This coating offers a higher service temperature than TiCN.

TECHNICAL DATA

Hardness (Vickers):	2500
Max. Service Temperature:	600° C (1110° F)
Friction Coefficient:	.50
Thickness	2-4 microns
Surface Roughness (R_aµM):	.20



COATING ADVANTAGES

- INCREASED TOOL LIFE
- GAINS IN PRODUCTIVITY
- IMPROVED FINISHES
- CONTROLLED TOLERANCES

AVAILABLE ON MOST TOOLS

WHY DO COATINGS WORK? COATINGS PROVIDE:

1. Thermal Insulation: - Coatings deflect heat back into the chip which reduces tool temperature & increases tool life.
2. Mechanical Strength - Coatings resist abrasion and protect the carbide tip from wear.
3. Chemical Resistance - Coatings protect and stabilize the carbide substrate under chemically reactive conditions.

MATERIAL CLASSIFICATION	DRILLING	REAMING	COUNTERBORING		MILLING	
	WET	WET	WET	DRY	WET	DRY
NON-FERROUS - SOFT	ZrN	TiCN/ZrN	ZrN	ZrN	ZrN	ZrN
NON-FERROUS - HARD	ZrN	TiCN/ZrN	ZrN	ZrN	ZrN	ZrN
CAST IRON	AlTiN	TiCN/AlTiN	AlTiN	AlTiN	AlTiN	AlTiN
LOW CARBON STEELS	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN
MEDIUM STRENGTH STEELS	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN
HIGH STRENGTH STEELS	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN
HIGH TEMPERATURE ALLOYS	AlTiN	AlTiN	AlTiN	*	AlTiN	*

*High Temperature Alloys should not be machined dry.

The coatings in the table at left represent first choice recommendations. Only after a trial run can you be certain that a specific coating is best. Lexington Cutter, Inc. uses coating service companies that allow a low temperature Physical Vapor Deposition (PVD) process specially designed for carbide tipped tools. Tools that are coated by someone other than through Lexington Cutter, Inc. will not be warranted.

LIMITED WARRANTY

Lexington Cutter, Inc. reserves the right to make any changes on the specifications, prices, or tolerances without notice.

WARNING - Because cutting tools may shatter or break, government regulations require the use of safety glasses and other safety equipment at all times in the vicinity of cutting tool use. Grinding of solid carbide or carbide tipped tools will produce carbide and braze dust that may be hazardous to your health. Use adequate ventilation and read the applicable "Material Safety Data Sheets."

LIMITED WARRANTY: Lexington Cutter, Inc. does not give any warranty on its products except as follows: Lexington Cutter, Inc. warrants to original equipment manufacturers, distributors and industrial and commercial users of its products that each new product manufactured or supplied by Lexington Cutter, Inc. shall be free from defects in material and workmanship. Lexington Cutter, Inc.'s sole obligation under this warranty is limited to furnishing, without additional charge, a replacement for, or at its option, repairing or issuing credit for any such product which shall within one year from the date of sale by Lexington Cutter, Inc. be returned freight prepaid to Lexington Cutter, Inc. and which upon inspection is determined by Lexington Cutter, Inc. to be defective in materials or workmanship. The provisions of this warranty shall not apply to any product which has been subjected to misuse; improper operating conditions, machine setup or application of cutting fluid; or which has been repaired or altered if such repair or alteration in the judgment of Lexington Cutter, Inc. would adversely affect performance of the product. Complete written information with respect to all such matters, including operating condition, machine setup, cutting fluid, cutting speed and feed rate, must be furnished to Lexington Cutter, Inc. as a prerequisite to its consideration of any claim or complaint under this warranty.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Lexington Cutter, Inc. shall have no liability or responsibility on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair provided herein. IN NO EVENT SHALL LEXINGTON CUTTER, INC. BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Lexington Cutter, Inc. makes no other warranty, expressed or implied, except the warranty against defects in material and workmanship set forth above; and Lexington Cutter, Inc. neither assumes nor authorizes any other person or entity to assume for it any other obligation or liability in connection with any of its products.



NO MINIMUM ORDER
95% OF TOOLS IN STOCK
METRICS STOCKED
SPECIALS QUOTED
SOLD THROUGH INDUSTRIAL DISTRIBUTORS
NO RESTOCKING CHARGE ON STANDARDS WITHIN ONE YEAR
SAME DAY SHIPPING ON ORDERS RECEIVED BEFORE NOON EST
ISA MEMBER
USCTI MEMBER



FOUR TIME AMERICAN EAGLE AWARD WINNER
INCLUDING VALUE ADDED MANUFACTURER
PROUDLY MANUFACTURED IN THE USA & DISTRIBUTED AROUND THE WORLD

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YOUR VALUE ADDED PARTNER



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