

TOOL RECONDITIONING PROGRAM

REGRIND ONLY: 1 WEEK; REGRIND & COATING: 2 WEEKS

OVER 70 YEARS OF TOOL GRINDING EXPERIENCE

It's obvious regrinding, reconditioning and re-coating cutting tools results in a reduction of overall tooling costs. Conical and Global Cutting Tools has a history of regrinding tools to near original specifications, restoring the end mill to as good as new, regardless of its original manufacturer. Our experienced staff is here to help find the right solution for your tooling needs.

Prices vary and are based on coating and diameter size. It does not matter how badly the tool may be damaged, we can regrind nearly any end mill, regardless of condition. By the off chance we cannot recondition an end mill to customer required specification, we will recycle the tooling, unless otherwise noted.

We will sharpen or recondition any tool, regardless of original manufacturer. Sharpening is normally limited to outside diameter primary land and end work only, while reconditioning may apply where excessive chipping or breakage exists and larger stock amounts must be removed. Most any tool can be resharpened, however, when normal re-sharpening is not sufficient, reconditioning may be needed.



GENERAL INFORMATION

The operational life of a tool depends on how excessively a dull tool has been used. Continued use of a dull end mill after it's reasonable life expectancy will require additional stock removal to make it usable again or cause the tool to break while in use. In general, resharpening is required when wear is visible on the top cutting edge, excess heat is generated or vibrations create an audible increase in noise.

For cost-effective regrinding, we suggest 1/4" in diameter end mills and above to justify setup costs. For optimal performance, regrinding or reconditioning is imperative before excessive deterioration of the tool is evident.

At the end of the production run, cutting tools should be removed from the machine and examined. Deteriorated or chipped end mills may need to be re-fluted to restore proper flute structure and radial rake. Cavities and chips on the cutting edge will result in built up edge and will usually cause breakage of carbide end mills. After numerous regrinds, the tool will lose its effectiveness. Rake angle and flute depth is diminished and the end mill is no longer able to be reconditioned.

Regrinding reduces the diameter of the end mill and causes the radial rake angle and hook to recede. In general, reducing the diameter by the below equations can still maintain effectiveness by up to 80% of the original tool.

DIAMETER	OPERATIONAL LIFE		LIGHT RECONDITION		HEAVY RECONDITION	
	PERCENT	DIAMETER	REMOVAL AMOUNT	# OF REGRINDS	REMOVAL AMOUNT	# OF REGRINDS
.250	15.00%	.213	.005	7	.020	1
.375	14.00%	.323	.005	10	.020	2
.500	13.00%	.435	.005	13	.020	3
.625	12.00%	.550	.005	15	.020	3
.750	11.00%	.668	.005	16	.020	4
1.000	10.00%	.900	.005	20	.020	5
>1.250	8.00%	>1.150	.005	>20	.020	>5



No minimum order. Typical turnaround is 1 week for standard, uncoated tools. For high performance, specialty or coated tools allow approximately 2 weeks for delivery. Pricing listed is for 2 to 5 flute tools for resharpener services only. Tools which require extensive reconditioning, re-ending, re-fluting or exceptional service requirements may have an additional charge.

DIAMETER		LENGTH OF CUT	GENERAL PURPOSE - UNCOATED				GENERAL PURPOSE - COATED				HIGH PERFORMANCE - COATED			
INCH RANGE	METRIC RANGE		SQUARE END		C.R. / BALL END		SQUARE END		C.R. / BALL END		SQUARE END		C.R. / BALL END	
			QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE	QTY	PRICE
Up to 0.250	Up to 6.0	Up to 2.0 x D		9.95		12.85		12.95		16.75		16.75		19.25
		2.1 x D - 3.5 x D		10.95		14.15		13.95		18.05		18.05		20.75
		Over 3.5 x D		11.95		15.45		14.95		19.35		19.35		22.25
0.251 - 0.313	6.0 - 8.0	Up to 2.0 x D		11.35		14.15		14.35		17.85		18.65		21.35
		2.1 x D - 3.5 x D		12.55		15.65		15.55		19.35		20.15		23.15
		Over 3.5 x D		13.65		17.05		16.65		20.75		21.55		24.75
0.314 - 0.375	8.0 - 9.5	Up to 2.0 x D		13.05		16.25		16.55		20.65		20.85		23.95
		2.1 x D - 3.5 x D		14.35		17.85		17.85		22.25		22.45		25.75
		Over 3.5 x D		15.65		19.55		19.15		23.85		24.05		27.65
0.376 - 0.438	9.5 - 11.0	Up to 2.0 x D		14.95		18.65		18.95		23.65		23.85		27.35
		2.1 x D - 3.5 x D		16.45		20.55		20.45		25.55		25.75		29.55
		Over 3.5 x D		17.95		22.35		21.95		27.35		27.65		31.75
0.439 - 0.500	11.0 - 12.5	Up to 2.0 x D		17.15		21.35		22.15		27.65		27.85		31.95
		2.1 x D - 3.5 x D		18.85		23.55		23.85		29.75		30.05		34.55
		Over 3.5 x D		20.55		25.65		25.55		31.85		32.15		36.95
0.501 - 0.563	12.5 - 14.0	Up to 2.0 x D		19.65		24.55		25.15		31.35		31.65		36.35
		2.1 x D - 3.5 x D		21.65		27.05		27.15		33.85		34.15		39.25
		Over 3.5 x D		23.55		29.35		29.05		36.25		36.55		41.95
0.564 - 0.625	14.0 - 16.0	Up to 2.0 x D		22.55		28.15		28.55		35.65		35.95		41.25
		2.1 x D - 3.5 x D		24.85		31.05		30.85		38.55		38.85		44.65
		Over 3.5 x D		27.05		33.75		33.05		41.25		41.55		47.75
0.626 - 0.688	16.0 - 17.5	Up to 2.0 x D		25.85		32.25		31.85		39.75		40.05		46.05
		2.1 x D - 3.5 x D		28.55		35.65		34.55		43.15		43.45		49.95
		Over 3.5 x D		31.05		38.75		37.05		46.25		46.65		53.55
0.689 - 0.750	17.5 - 19.0	Up to 2.0 x D		29.65		37.05		36.15		45.15		45.45		52.25
		2.1 x D - 3.5 x D		32.75		40.85		39.25		49.05		49.45		56.85
		Over 3.5 x D		35.65		44.55		42.15		52.65		53.05		60.95
0.751 - 0.875	19.0 - 22.0	Up to 2.0 x D		34.95		43.65		42.95		53.65		54.05		62.15
		2.1 x D - 3.5 x D		38.55		48.15		46.55		58.15		58.65		67.35
		Over 3.5 x D		42.05		52.55		50.05		62.55		63.05		72.45
0.876 - 1.000	22.0 - 25.0	Up to 2.0 x D		41.15		51.35		51.15		63.85		64.35		73.95
		2.1 x D - 3.5 x D		45.45		56.75		55.45		69.25		69.85		80.25
		Over 3.5 x D		49.55		61.85		59.55		74.35		74.95		86.15

SPECIALTY CUTTING TOOLS

SPECIAL INSTRUCTIONS

Quantity	Manufacturer, Tool Number & Description

Damaged end mills beyond repair will be recycled unless otherwise selected.

☐ Recycle
 ☐ Return
 ☐ Replace

Damaged end mills beyond repair will be recycled unless otherwise selected:

☐ Recycle ☐ Return ☐ Replace

SHIP TO:

RETURN TO (CUSTOMER)

BILL TO (DISTRIBUTOR):

Global Cutting Tools / Conical Cutting Tools
Regrinding Department
3890 Buchanan Ave SW
Grand Rapids, MI 49548

Purchase Order: _____

Purchase Order: _____

Contact: _____

Contact: info@hugoboss.com

Company: _____

Company: _____

Address: _____

Address: _____

RETURN SHIPPING:☐ UPS - Next Day Air ☐ UPS - 2 Day Air

☐ UPS - 3 Day Air ☐ UPS - Ground

Phone / Fax: _____

Phone / Fax: _____

☐ Pre Pay & Add ☐ Collect #:

Email: _____

Email: