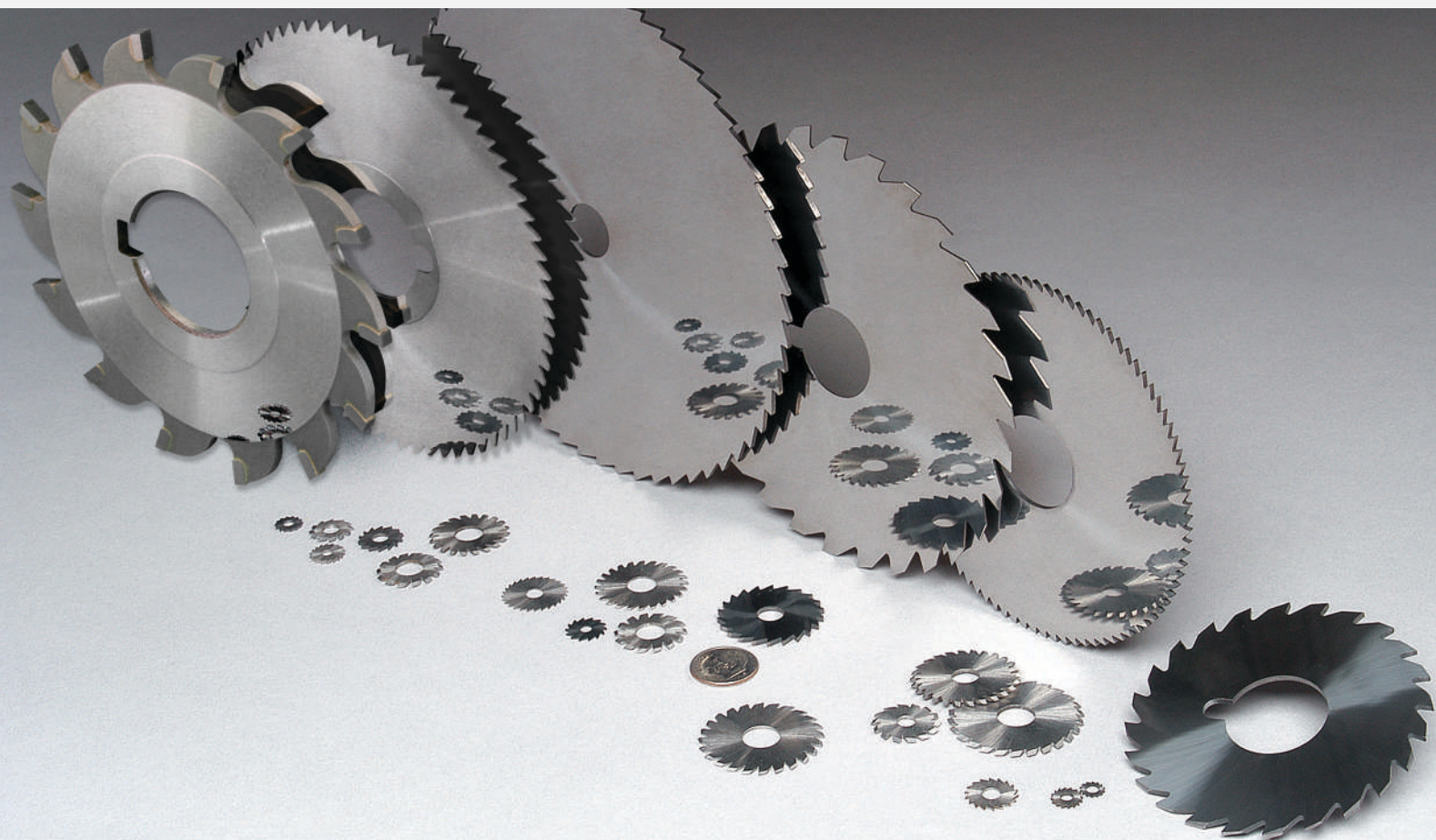




SAWS

HIGH SPEED STEEL / SOLID CARBIDE / CARBIDE TIPPED

Cut-Off | Slotting / Slitting | Screw Slotting | Jeweler's | Joyal®
Copper Notching & Slitting | Mica Undercutting





OVER 100 YEARS OF SERVICE.

Martindale Electric Co. started in the electric motor maintenance tool manufacturing business in 1913. From the start, we put emphasis on quality materials and workmanship — and on dedicated customer service.

Our approach worked. We prospered and grew. Gradually, we added new products to our line, including mica undercutting saw blades. This saw blade line eventually grew to what it is today.

Martindale is stocked and staffed to promptly meet your sawing needs. Each and every employee adheres to the standards of product quality and customer service that has kept us the one stop shop for circular saw blades and electric motor repair tools for more than 100 years!



Saw Tolerances

Martindale Precision blades have precision tolerances, without hub and keyways as standards

MARTINDALE PRECISION		
Tolerances	H.S.S.	Solid Carbide
O.D.	±.005	±.005
I.D.	+.001 / -.000	+.001 / -.000
Thickness	±.001	±.0005
Hub	None (available on request)	
Keyway	None (available on request)	

Closer tolerances available

Gaylee Saws/Bitner Tooling is a leading manufacturer of industrial carbide, carbide tipped, and high speed steel saws and cutters.

Our position as a premier manufacturer of carbide thin saws is the result of years of extensive experience and service in the industrial tooling market. Originally founded in 1947, the Gaylee Corporation became an integral part of Martindale Electric Co. in 2017.

Products from Gaylee Saws/Bitner Tooling represent an extensive array of carbide saws, manufactured to limits of accuracy and tolerances unsurpassed by most tool manufacturers.

Whether as stocked standards, modified specials, or precision custom designed full specials, Gaylee saws and cutters are your solution to costly 'problem jobs' and your everyday sawing and cutting operations.

Saw Tolerances

Gaylee Premium blades have tighter tolerances. Hubs and keyways are standard on O.D.'s 2" and greater.

GAYLEE PREMIUM		
Tolerances	Solid Carbide	Carbide Tipped
O.D.	+0.005 / -.000	+0.015 / -.000
I.D.	+0.0005 / -.0000	+0.0005 / -.0000
Thickness	+0.0005 / -.0000	+0.0010 / -.0000
Hub	≥ 2" O.D.	
Keyway	≥ 2" O.D.	

Closer tolerances available

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HIGH SPEED STEEL SCREW SLOTting SAWS

Used for slitting, slotting, and cut off operations (e.g. slotting screw heads).



**SAWS AVAILABLE IN M-42
MATERIAL, UPON REQUEST**

▶ High Speed Steel

▶ Ground Teeth

▶ No Land

▶ Rake Angle On Center

▶ Hollow Ground

▶ Metric Available

▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .001$

• *Closer tolerances available upon request.*

NOTE:

- Other diameters from 1/4" to 6" are also available, as well as other hole sizes, numbers of teeth, rake angles and bevels.
- Cutting stainless steel requires more side clearance — specify "for stainless" when ordering.
- Specify number of teeth when ordering.

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.

STANDARD SAWS										
THICKNESS		O.D.	1-3/4"	2-1/4"	2-3/4"		3"	4"	5"	6"
B&S GAGE NO. AND FRACTION	DECIMAL	HOLE	5/8"	5/8"	3/4"	1"	1"	1"	1"	1"
		NO. OF TEETH	64, 90	60	72	36, 44 56, 72	36, 44 56, 72	60, 72 90	60, 72 90, 110	72, 90 120
24	.020"		OSSA020 __	OSSB02060	OSPEC0002	OSSC020 __	OSSD020 __	OSSE020 __		
23	.023"		OSSA023 __	OSSB02360	OSPEC0417	OSSC023 __	OSSD023 __	OSSE023 __		
22	.025"		OSSA025 __	OSSB02560	OSPEC0416	OSSC025 __	OSSD025 __	OSSE025 __		
21	.028"		OSSA028 __	OSSB02860	OSPEC0396	OSSC028 __	OSSD028 __	OSSE028 __		
1/32"	.031"		OSSA031 __	OSSB03160	OSPEC2864	OSSC031 __	OSSD031 __	OSSE031 __		
20	.032"		OSSA032 __	OSSB03260	OSPEC0021	OSSC032 __	OSSD032 __	OSSE032 __		
19	.036"		OSSA036 __	OSSB03660	OSPEC0415	OSSC036 __	OSSD036 __	OSSE036 __		
18	.040"		OSSA040 __	OSSB04060	OSPEC0414	OSSC040 __	OSSD040 __	OSSE040 __	OSSF040 __	OSSG040 __
17	.045"		OSSA045 __	OSSB04560	OSPEC0109	OSSC045 __	OSSD045 __	OSSE045 __	OSSF045 __	OSSG045 __
3/64"	.047"		OSSA047 __	OSSB04760	OSPEC4478	OSSC047 __	OSSD047 __	OSSE047 __	OSSF047 __	OSSG047 __
16	.051"		OSSA051 __	OSSB05160	OSPEC0075	OSSC051 __	OSSD051 __	OSSE051 __	OSSF051 __	OSSG051 __
15	.057"		OSSA057 __	OSSB05760	OSPEC0246	OSSC057 __	OSSD057 __	OSSE057 __	OSSF057 __	OSSG057 __
1/16"	.062"		OSSA062 __	OSSB06260	OSPEC4037	OSSC062 __	OSSD062 __	OSSE062 __	OSSF062 __	OSSG062 __
14	.064"		OSSA064 __	OSSB06460	OSPEC0143	OSSC064 __	OSSD064 __	OSSE064 __	OSSF064 __	OSSG064 __
13	.072"		OSSA072 __	OSSB07260	OSPEC0413	OSSC072 __	OSSD072 __	OSSE072 __	OSSF072 __	OSSG072 __
5/64"	.078"			OSSB07860	OSPEC1806	OSSC078 __	OSSD078 __	OSSE078 __	OSSF078 __	OSSG078 __
12	.081"			OSSB08160	OSPEC0412	OSSC081 __	OSSD081 __	OSSE081 __	OSSF081 __	OSSG081 __
11	.091"			OSSB09160	OSPEC0022	OSSC091 __	OSSD091 __	OSSE091 __	OSSF091 __	OSSG091 __
3/32"	.094"			OSSB09460	OSPEC0839	OSSC094 __	OSSD094 __	OSSE094 __	OSSF094 __	OSSG094 __
10	.102"			OSSB10260	OSPEC0090	OSSC102 __	OSSD102 __	OSSE102 __	OSSF102 __	OSSG102 __
7/64"	.109"			OSSB10960	OSPEC4479	OSSC109 __	OSSD109 __	OSSE109 __	OSSF109 __	OSSG109 __
9	.114"			OSSB11460	OSPEC0411	OSSC114 __	OSSD114 __	OSSE114 __	OSSF114 __	OSSG114 __
1/8"	.125"			OSSB12560	OSPEC0581	OSSC125 __	OSSD125 __	OSSE125 __	OSSF125 __	OSSG125 __
8	.128"				OSPEC3685	OSSC128 __	OSSD128 __	OSSE128 __	OSSF128 __	OSSG128 __
9/64"	.141"				OSPEC4477	OSSC141 __	OSSD141 __	OSSE141 __	OSSF141 __	OSSG141 __
7	.144"				OSPEC4476	OSSC144 __	OSSD144 __	OSSE144 __	OSSF144 __	OSSG144 __
5/32"	.156"				OSPEC0510	OSSC156 __	OSSD156 __	OSSE156 __	OSSF156 __	OSSG156 __
6	.162"				OSPEC4475	OSSC162 __	OSSD162 __	OSSE162 __	OSSF162 __	OSSG162 __
11/64"	.172"				OSPEC4474	OSSC172 __	OSSD172 __	OSSE172 __	OSSF172 __	OSSG172 __
5	.182"				OSPEC4473	OSSC182 __	OSSD182 __	OSSE182 __	OSSF182 __	OSSG182 __
3/16"	.187"				OSPEC4472	OSSC187 __	OSSD187 __	OSSE187 __	OSSF187 __	OSSG187 __

• Add number of teeth to catalog number when ordering, where indicated, e.g., 1-3/4" O.D. x .072" thick x 5/8" I.D., 64 tooth cutter
OSSA072 __ becomes OSSA07264.

HIGH SPEED STEEL METAL SLITTING SAWS

Used for deep slotting of steel and cast iron, as well as brass, aluminum, and other non-ferrous materials. Has a stronger tooth and gives a better finish with less burr than non-landed saws.



▶ High Speed Steel

▶ Ground Teeth

▶ Landed

▶ Rake Angle On Center

▶ Hollow Ground

▶ Metric Available

▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• *Closer tolerances available upon request.*

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.

NOTE:

- *Intermediate thicknesses available.*
- *We'll gladly quote on other sizes, rake angles, tooth styles, hole sizes — just send us your print or sample saw.*
- *Teeth can be alternately beveled if chips tend to stick in slot.*

STANDARD SAWS							
THICKNESS		O.D.	2-1/2"	3"	4"	5"	6"
FRACTION	DECIMAL	HOLE	7/8"	1"	1"	1"	1"
		NO. OF TEETH	28	30	36	44	50
1/32"	.0312"		OMSLH0312	OMSLD0312	OMSLE0312		
3/64"	.0468"		OMSLH0468	OMSLD0468	OMSLE0468	OMSLF0468	OMSLG0468
1/16"	.0625"		OMSLH0625	OMSLD0625	OMSLE0625	OMSLF0625	OMSLG0625
3/32"	.0937"		OMSLH0937	OMSLD0937	OMSLE0937	OMSLF0937	OMSLG0937
1/8"	.1250"		OMSLH1250	OMSLD1250	OMSLE1250	OMSLF1250	OMSLG1250
5/32"	.1562"			OMSLD1562	OMSLE1562	OMSLF1562	OMSLG1562
3/16"	.1875"				OMSLE1875	OMSLF1875	OMSLG1875

HIGH SPEED STEEL JEWELER'S SLOTTING SAWS

Used for thin materials and smaller workpieces. Fine tooth pitch reduces shock load per tooth and leaves better surface finish and less bur than saws with coarse tooth pitch.

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.



- ▶ High Speed Steel
- ▶ Ground Teeth
- ▶ No Land
- ▶ Rake Angle On Center
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .001$

• Closer tolerances available upon request.

STANDARD SAWS									
THICKNESS		O.D.	1-3/4"	2"	2-1/2"	3"		4"	
B&S GAGE NO. AND FRACTION	DECIMAL	HOLE	1/2"	1/2"	1/2"	1/2" *	1"	1/2" *	1"
		NO. OF TEETH*	132, 160	110, 152	140, 190	170, 224	170, 224	224, 300	224, 300
32	.008"		OJA008__	OJJ008__	OJH008__				
30	.010"		OJA010__	OJJ010__	OJH010__	OJD010__H	OJD010__	OJE010__H	OJE010__
28	.012"		OJA012__	OJJ012__	OJH012__	OJD012__H	OJD012__	OJE012__H	OJE012__
27	.014"		OJA014__	OJJ014__	OJH014__	OJD014__H	OJD014__	OJE014__H	OJE014__
26	.016"		OJA016__	OJJ016__	OJH016__	OJD016__H	OJD016__	OJE016__H	OJE016__
25	.018"		OJA018__	OJJ018__	OJH018__	OJD018__H	OJD018__	OJE018__H	OJE018__
24	.020"		OJA020__	OJJ020__	OJH020__	OJD020__H	OJD020__	OJE020__H	OJE020__
23	.023"		OJA023__	OJJ023__	OJH023__	OJD023__H	OJD023__	OJE023__H	OJE023__
22	.025"		OJA025__	OJJ025__	OJH025__	OJD025__H	OJD025__	OJE025__H	OJE025__
21	.028"		OJA028__	OJJ028__	OJH028__	OJD028__H	OJD028__	OJE028__H	OJE028__
20	.032"		OJA032__	OJJ032__	OJH032__	OJD032__H	OJD032__	OJE032__H	OJE032__
19	.036"		OJA036__	OJJ036__	OJH036__	OJD036__H	OJD036__	OJE036__H	OJE036__
18	.040"		OJA040__	OJJ040__	OJH040__	OJD040__H	OJD040__	OJE040__H	OJE040__
17	.045"		OJA045__	OJJ045__	OJH045__	OJD045__H	OJD045__	OJE045__H	OJE045__
3/64"	.047"		OJA047__	OJJ047__	OJH047__	OJD047__H	OJD047__	OJE047__H	OJE047__
16	.051"		OJA051__	OJJ051__	OJH051__	OJD051__H	OJD051__	OJE051__H	OJE051__
15	.057"		OJA057__	OJJ057__	OJH057__	OJD057__H	OJD057__	OJE057__H	OJE057__

• Add number of teeth to catalog number when ordering, e.g., 1-3/4" O.D. x .057" thick x 1/2" I.D., 132 tooth cutter OJA057__ becomes OJA057132.

• Keyways provided on .020" thickness and up

HIGH SPEED STEEL COPPER SLITTING / RISER SLOTING SAWS

Used for cutting rolled aluminum, copper, and other nonferrous materials – materials that produce long, stringy chips.



Alternately beveled teeth (see sketch) produce chips of less than the width of the slot being cut, eliminating the tendency of chips to clog.

- ▶ High Speed Steel
- ▶ Ground Teeth
- ▶ Landed with Alternate Bevel
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• Closer tolerances available upon request.

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.

NOTE:

- Other diameters, hole sizes, thicknesses, number of teeth, etc., also available on application.

STANDARD SAWS							
THICKNESS		O.D.	2-1/2"	3"	4"	5"	6"
FRACTION	DECIMAL	HOLE	7/8"	1"	1"	1"	1"
		NO. OF TEETH	20	24	26	32	36
1/32"	.0312"		OSMFH0312	OSMFD0312	OSMFE0312		
3/64"	.0468"		OSMFH0468	OSMFD0468	OSMFE0468	OSMFF0468	OSMFG0468
1/16"	.0625"		OSMFH0625	OSMFD0625	OSMFE0625	OSMFF0625	OSMFG0625
3/32"	.0937"		OSMFH0937	OSMFD0937	OSMFE0937	OSMFF0937	OSMFG0937
1/8"	.1250"		OSMFH1250	OSMFD1250	OSMFE1250	OSMFF1250	OSMFG1250
5/32"	.1562"			OSMFD1562	OSMFE1562	OSMFF1562	OSMFG1562
3/16"	.1875"				OSMFE1875	OSMFF1875	OSMFG1875

HIGH SPEED STEEL PRECISION RISER SLOTTING / COPPER SLITTING SAWS / (JOYAL®)

Used for slotting copper commutator risers and other materials that produce long, stringy chips.



- ▶ High Speed Steel
- ▶ Ground Teeth
- ▶ Landed with Alternate Bevel
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $+.0000 / -.0002$

• Closer tolerances available upon request.



Alternately beveled teeth (see sketch) produce chips of less than the width of the slot being cut, eliminating the tendency of chips to clog.

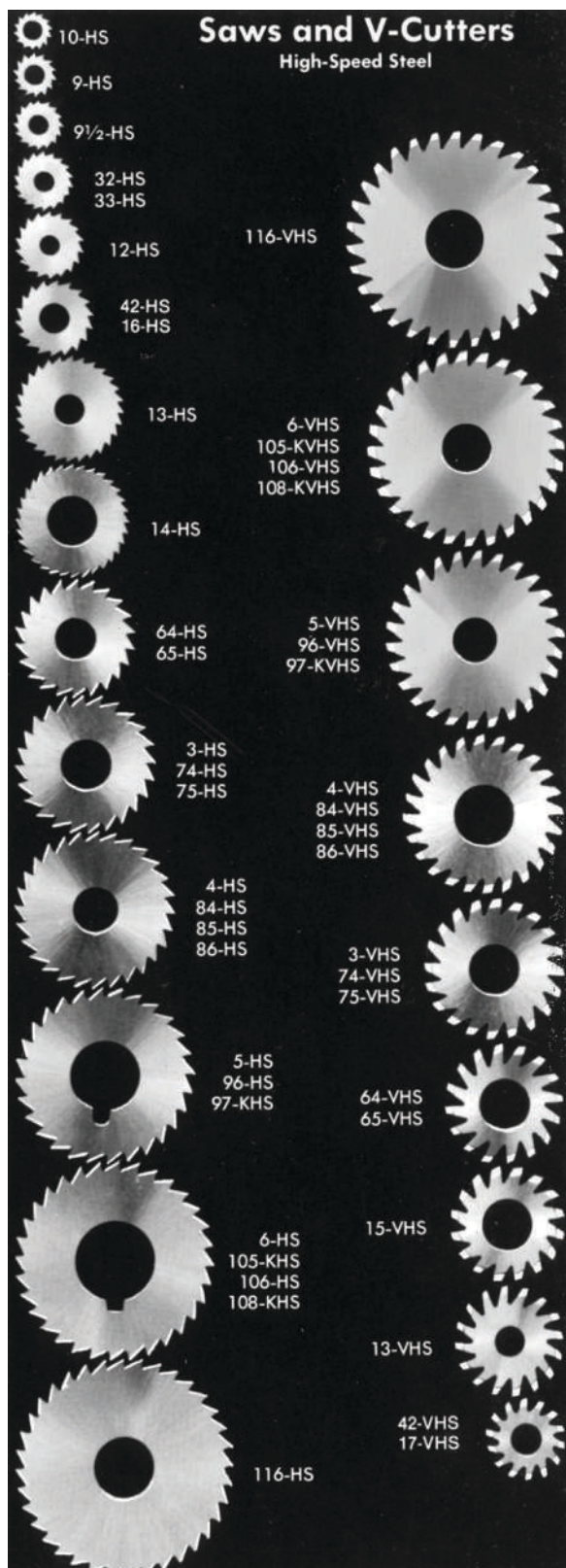
This style of saw is for commutator riser slotting and other nonferrous applications.

These saws are precision ground on all surfaces. Ground teeth have zero rake and an alternate bevel.

TYPE	O.D.	I.D.	TEETH	SPECIFY THICKNESS *	CATALOG NUMBER
W-75-20FAB	7/8"	5/16"	20	(.010 - .069)	OW7520_ _ _
W-105-30FAB	1-1/4"	5/16"	30	(.010 - .069)	OW10530_ _ _

- Add thickness to catalog number when ordering, e.g., 7/8" O.D. x .057" thick x 5/16" I.D., 20 tooth cutter OW7520_ _ _ becomes OW752005Z.
- Specify Thicknesses when ordering.

HIGH SPEED STEEL UNDERCUTTING SAWS



▶ High Speed Steel

▶ No Land

▶ Rake Angle On Center

▶ Hollow Ground

▶ Metric Available

▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .001$

• *Closer tolerances available upon request.*

GENERAL

Martindale Undercutting Saws and V-Cutters are available in High Speed Steel or Tungsten-Carbide. Both types are carefully designed as to tooth form, hollow grind, hardness, etc., and are manufactured to close tolerances in our own plant.

While used primarily for undercutting mica and slotting risers of commutators, Martindale Undercutting Saws and V-cutters are also used for cutting steel, aluminum, plastics, and other materials not requiring set teeth.

Undercutting differs from ordinary machining in that, instead of shearing, it is a combination of crushing, grinding, and conveying. Mica is very abrasive and varies in hardness, making necessary the very best design and production controls in the manufacture of undercutting saws.

HIGH SPEED STEEL SAWS and V-CUTTERS

These can be used on either portable or stationary equipment with spindle speeds of 1,500 to 3,500 r.p.m.

(See Martindale Mica Undercutter catalog section for appropriate machinery)

SAWS ("U"-Slot)

Saws available in these standard thicknesses:

.015"	.023"	.028"	.035"	.043"	.053"	.060"
.018"	.025"	.030"	.038"	.045"	.055"	.063"
.020"	.026"	.032"	.040"	.050"	.058"	.065"

Other thicknesses available upon request.

Be sure to specify thicknesses.

TYPE NUMBER	O.D.	HOLE	NO. TEETH	CATALOG NUMBER
10-HS	1/4"	1/8"	14	HSMS10_ _ _
9-HS	9/32"	1/8"	14	HSMS9_ _ _
9-1/2-HS	5/16"	1/8"	16	HSMS9.5_ _ _
32-HS	3/8"	1/8"	18	HSMS32_ _ _
33-HS	3/8"	3/16"	18	HSMS33_ _ _
12-HS	7/16"	1/8"	18	HSMS12_ _ _
42-HS	1/2"	1/8"	18	HSMS42_ _ _
16-HS	1/2"	3/16"	18	HSMS16_ _ _
13-HS	11/16"	3/16"	28	HSMS13_ _ _
14-HS	23/32"	5/16"	32	HSMS14_ _ _
64-HS	3/4"	1/4"	22	HSMS64_ _ _
65-HS	3/4"	5/16"	22	HSMS65_ _ _
74-HS	7/8"	1/4"	24	HSMS74_ _ _
3-HS	7/8"	9/32"	24	HSMS3_ _ _
75-HS	7/8"	5/16"	24	HSMS75_ _ _
25-MM	25mm	7mm	28	HSMM25_ _ _
84-HS	1"	1/4"	28	HSMS84_ _ _
4-HS	1"	9/32"	28	HSMS4_ _ _
85-HS	1"	5/16"	28	HSMS85_ _ _
86-HS	1"	3/8"	28	HSMS86_ _ _
5-HS	1-1/8"	9/32"	28	HSMS5_ _ _
96-HS	1-1/8"	3/8"	28	HSMS96_ _ _
97-KHS	1-1/8"	7/16"	28	HSMS97K_ _ _
6-HS	1-1/4"	9/32"	32	HSMS6_ _ _
105-KHS	1-1/4"	5/16"	32	HSMS105K_ _ _
106-HS	1-1/4"	3/8"	32	HSMS106_ _ _
108-KHS	1-1/4"	1/2"	32	HSMS108K_ _ _
116-HS	1-3/8"	3/8"	36	HSMS116_ _ _

- **Add thickness to catalog number** when ordering, e.g., 1/4" O.D. x .015" thick x 1/8" I.D., 14 tooth cutter HSMS10_ _ _ becomes HSMS10Q15.

V-CUTTERS ("V"-Slot)

These cutters are all .045" thick and stocked with 40°, 50°, and 60° angles between cutting edges. 40° V-cutters are for thin mica, 50° for medium mica, 60° for thick mica. See Commutator Undercutting section under Cutting Recommendations for Circular Saws for details.

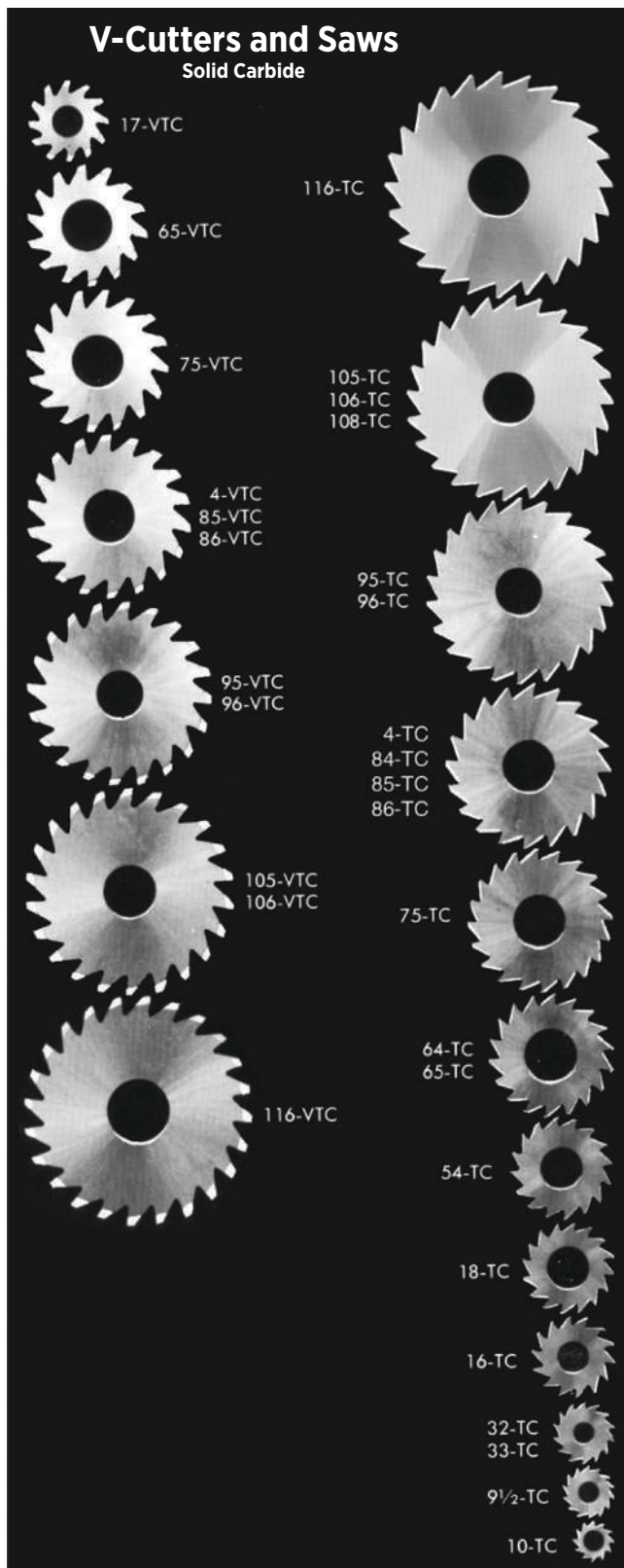
Be sure to specify included angle: 40°, 50°, or 60°.

Non-standard thicknesses and angles available upon request.

TYPE NUMBER	O.D.	HOLE	NO. TEETH	CATALOG NUMBER
42-VHS	1/2"	1/8"	12	HSMSV42_ _
17-VHS	1/2"	3/16"	12	HSMSV17_ _
13-VHS	11/16"	3/16"	14	HSMSV13_ _
15-VHS	23/32"	5/16"	14	HSMSV15_ _
64-VHS	3/4"	1/4"	14	HSMSV64_ _
65-VHS	3/4"	5/16"	14	HSMSV65_ _
74-VHS	7/8"	1/4"	18	HSMSV74_ _
3-VHS	7/8"	9/32"	18	HSMSV3_ _
75-VHS	7/8"	5/16"	18	HSMSV75_ _
25-VMM	25mm	7mm	22	HSMMV25_ _
84-VHS	1"	1/4"	22	HSMSV84_ _
4-VHS	1"	9/32"	22	HSMSV4_ _
85-VHS	1"	5/16"	22	HSMSV85_ _
86-VHS	1"	3/8"	22	HSMSV86_ _
5-VHS	1-1/8"	9/32"	24	HSMSV5_ _
96-VHS	1-1/8"	3/8"	24	HSMSV96_ _
97-KVHS	1-1/8"	7/16"	24	HSMSV97K_ _
6-VHS	1-1/4"	9/32"	24	HSMSV6_ _
105-KVHS	1-1/4"	5/16"	24	HSMSV105K_ _
106-VHS	1-1/4"	3/8"	24	HSMSV106_ _
108-KVHS	1-1/4"	1/2"	24	HSMSV108K_ _
116-VHS	1-3/8"	3/8"	26	HSMSV116_ _

- **Add included angle to catalog number** when ordering, e.g., 1/2" O.D. x .045" thick x 1/8" I.D., 12 tooth cutter with 40° included angle HSMSV42_ _ becomes HSMSV4240.

SOLID CARBIDE UNDERCUTTING SAWS



▶ Carbide, 10% Micro Grain

▶ Landed

▶ Rake Angle On Center

▶ Hollow Ground

▶ Metric Available

▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• *Closer tolerances available upon request.*

SOLID CARBIDE SAWS and V-CUTTERS

The teeth of solid carbide saws and V-cutters have a slight land to give strength to the cutting edge. Saws are hollow ground for clearance, V-cutters have ample radial relief. When carbide saws are used on non-Martindale equipment, steel supporting washers may be used to provide additional support and reduce breakage. Appropriate spindle speed depends on the application, see Cutting Recommendations section. Martindale carbide saw blades are harder and more brittle than high speed steel saws, and should not be subjected to applications where shock may shorten the service life. Best for use on rigid stationary equipment. Please refer to Martindale Undercutters catalog section for Undercutters recommended for use with these saws.

SAWS ("U"-Slot)

Standard thickness ranges:

O.D.	THICKNESS
1/4" - 9/16"	.010" to .045"
5/8" - 1-3/8"	.010" to .065"

Other thicknesses available on request.

Be sure to specify thicknesses.

TYPE NUMBER	O.D.	HOLE	NO. TEETH	CATALOG NUMBER
10-TC	1/4"	1/8"	12	TUNS10_ _ _
9-1/2-TC	5/16"	1/8"	14	TUNS9.5_ _ _
32-TC	3/8"	1/8"	14	TUNS32_ _ _
33-TC	3/8"	3/16"	14	TUNS33_ _ _
12-TC	7/16"	1/8"	14	TUNS12_ _ _
42-TC	1/2"	1/8"	14	TUNS42_ _ _
16-TC	1/2"	3/16"	14	TUNS16_ _ _
18-TC	9/16"	1/4"	16	TUNS18_ _ _
54-TC	5/8"	1/4"	16	TUNS54_ _ _
64-TC	3/4"	1/4"	18	TUNS64_ _ _
65-TC	3/4"	5/16"	18	TUNS65_ _ _
75-TC	7/8"	5/16"	20	TUNS75_ _ _
4-TC	1"	9/32"	20	TUNS4_ _ _ _
84-TC	1"	1/4"	20	TUNS84_ _ _
85-TC	1"	5/16"	20	TUNS85_ _ _
86-TC	1"	3/8"	20	TUNS86_ _ _
95-TC	1-1/8"	5/16"	22	TUNS95_ _ _
96-TC	1-1/8"	3/8"	22	TUNS96_ _ _
105-TC	1-1/4"	5/16"	24	TUNS105_ _ _
106-TC	1-1/4"	3/8"	24	TUNS106_ _ _
108-TC	1-1/4"	1/2"	24	TUNS108_ _ _
116-TC	1-3/8"	3/8"	24	TUNS116_ _ _

- **Add thickness to catalog number** when ordering, e.g., 1/4" O.D. x .015" thick x 1/8" I.D., 12 tooth cutter TUNS10_ _ _ becomes TUNS10015.

COMPOUND-LAND SAWS

The compound-land feature, sketched at right, is available on solid carbide "U"-slot saws 9/16" O.D. and up (#18-TC thru #116-TC). Because of this feature, each tooth cuts only 50% of full slot width, resulting in better chip clearance, cooler operation and production increases of up to 60% over the square-toothed Saw. To order, **add thickness and "CL" to Catalog Number** shown above, i.e., TUNS75065CL.



V-CUTTERS ("V"-Slot)

Standard thickness ranges:

O.D.	THICKNESS
1/2"	.030" to .045"
3/4" - 1-3/8"	.030" to .065"

These cutters are provided with 40°, 50°, or 60° included angles as standards. 40° V-cutters are for thin mica, 50° for medium mica, and 60° for thick mica. See Commutator Undercutting section under Cutting Recommendations for Circular Saws for details.

Be sure to specify thickness and included angle: 40°, 50°, or 60°.
Non-standard thicknesses and angles available upon request.

TYPE NUMBER	O.D.	HOLE	NO. TEETH	CATALOG NUMBER
42-VTC	1/2"	1/8"	12	TUNSV42_ _ _ _ _
17-VTC	1/2"	3/16"	12	TUNSV17_ _ _ _ _
65-VTC	3/4"	5/16"	14	TUNSV65_ _ _ _ _
75-VTC	7/8"	5/16"	16	TUNSV75_ _ _ _ _
4-VTC	1"	9/32"	18	TUNSV4_ _ _ _ _
85-VTC	1"	5/16"	18	TUNSV85_ _ _ _ _
86-VTC	1"	3/8"	18	TUNSV86_ _ _ _ _
95-VTC	1-1/8"	5/16"	20	TUNSV95_ _ _ _ _
96-VTC	1-1/8"	3/8"	20	TUNSV96_ _ _ _ _
105-VTC	1-1/4"	5/16"	22	TUNSV105_ _ _ _ _
106-VTC	1-1/4"	3/8"	22	TUNSV106_ _ _ _ _
116-VTC	1-3/8"	3/8"	22	TUNSV116_ _ _ _ _

- **Add thickness and included angle to catalog number** when ordering, e.g., 1/2" O.D. x .045" thick x 1/8" I.D., 12 tooth cutter with 40° included angle TUNSV42_ _ _ _ _ becomes TUNSSV4204540.

SOLID CARBIDE METAL WORKING SAWS

Carbide, harder and more wear resistant than High Speed Steel, provides longer tool life and decreased cycle times.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• *Closer tolerances available upon request.*

SPECIALS

An almost endless number of variations from the tooth types and specifications shown can be furnished to suit your exact needs and at comparable prices. Let us know your particular Carbide Metal-Working Saw Blade requirements so we can quote price and delivery.

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.

STANDARD SAWS

THICKNESS RANGE	O.D.	1-1/2"	1-3/4"	1-3/4"	2"	2"	2-1/4"	2-1/4"	2-1/2"	2-3/4"	3"	4"	5"	6"
	HOLE	1/2"	1/2"	7/8"	1/2"	1"	5/8"	1"	1"	1"	1"	1"	1"	1"
	NO. OF TEETH	36	38	38	40	40	44	44	48	60	72	80	100	120
.010" - .019"		X1I____	X1A____	X1AA____	X1J____	X1JJ____	X1B____	X1BB____	X1H____	X1C____	X1D____			
.020" - .030"		X2I____	X2A____	X2AA____	X2J____	X2JJ____	X2B____	X2BB____	X2H____	X2C____	X2D____	X2E____		
.031" - .050"		X3I____	X3A____	X3AA____	X3J____	X3JJ____	X3B____	X3BB____	X3H____	X3C____	X3D____	X3E____	X3F____	X3G____
.051" - .070"		X4I____	X4A____	X4AA____	X4J____	X4JJ____	X4B____	X4BB____	X4H____	X4C____	X4D____	X4E____	X4F____	X4G____
.071" - .090"		X5I____	X5A____	X5AA____	X5J____	X5JJ____	X5B____	X5BB____	X5H____	X5C____	X5D____	X5E____	X5F____	X5G____
.091" - .110"		X6I____	X6A____	X6AA____	X6J____	X6JJ____	X6B____	X6BB____	X6H____	X6C____	X6D____	X6E____	X6F____	X6G____
.111" - .130"		X7I____	X7A____	X7AA____	X7J____	X7JJ____	X7B____	X7BB____	X7H____	X7C____	X7D____	X7E____	X7F____	X7G____
.131" - .150"		X8I____	X8A____	X8AA____	X8J____	X8JJ____	X8B____	X8BB____	X8H____	X8C____	X8D____	X8E____	X8F____	X8G____
.151" - .170"		X9I____	X9A____	X9AA____	X9J____	X9JJ____	X9B____	X9BB____	X9H____	X9C____	X9D____	X9E____	X9F____	X9G____
.171" - .190"		X10I____	X10A____	X10AA____	X10J____	X10JJ____	X10B____	X10BB____	X10H____	X10C____	X10D____	X10E____	X10F____	X10G____
.191" - .210"		X11I____	X11A____	X11AA____	X11J____	X11JJ____	X11B____	X11BB____	X11H____	X11C____	X11D____	X11E____	X11F____	X11G____
.211" - .230"		X12I____	X12A____	X12AA____	X12J____	X12JJ____	X12B____	X12BB____	X12H____	X12C____	X12D____	X12E____	X12F____	X12G____
.231" - .250"		X13I____	X13A____	X13AA____	X13J____	X13JJ____	X13B____	X13BB____	X13H____	X13C____	X13D____	X13E____	X13F____	X13G____

• Add thickness to catalog number when ordering, e.g., 1-1/2" O.D. x .014" thick x 1/2" I.D., 36 tooth cutter X1I____ becomes X1I014.

SOLID CARBIDE COPPER SLITTING / RISER SLOTING SAWS

Used for cutting rolled aluminum and copper – materials that produce long, stringy chips.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed with Alternate Bevel
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• Closer tolerances available upon request.



Alternately beveled teeth (see sketch) produce chips of less than the width of the slot being cut, eliminating the tendency of chips to clog.

NOTE:

- Other diameters, hole sizes, thicknesses, number of teeth, etc., also available on application.

RESHARPENING SERVICE

- Complete resharpening service is available.

COATING SERVICE

- TiN, TiCN and other surface coatings are available.

STANDARD SAWS							
THICKNESS		O.D.	2-1/2"	3"	4"	5"	6"
FRACTION	DECIMAL	HOLE	7/8"	1"	1"	1"	1"
		NO. OF TEETH	20	24	26	32	36
1/32"	.0312"		XSMFH0312	XSMFD0312	XSMFE0312		
3/64"	.0468"		XSMFH0468	XSMFD0468	XSMFE0468	XSMFF0468	XSMFG0468
1/16"	.0625"		XSMFH0625	XSMFD0625	XSMFE0625	XSMFF0625	XSMFG0625
3/32"	.0937"		XSMFH0937	XSMFD0937	XSMFE0937	XSMFF0937	XSMFG0937
1/8"	.1250"		XSMFH1250	XSMFD1250	XSMFE1250	XSMFF1250	XSMFG1250
5/32"	.1562"			XSMFD1562	XSMFE1562	XSMFF1562	XSMFG1562
3/16"	.1875"				XSMFE1875	XSMFF1875	XSMFG1875

SOLID CARBIDE PRECISION RISER SLOTTING / COPPER SLITTING SAWS / (JOYAL®)

Used for slotting copper commutator risers and other materials that produce long, stringy chips.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed with Alternate Bevel
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $+.0000 / -.0002$

• Closer tolerances available upon request.



Alternately beveled teeth (see sketch) produce chips of less than the width of the slot being cut, eliminating the tendency of chips to clog.

These saws are precision ground on all surfaces; dimensions are shown under the actual size illustrations at right. Formed teeth are on center, with a 15° back-off and 45° alternate bevel which is 1/3 the width of the tooth. Saws are hollow-ground to provide clearance between the periphery and the hole.

O.D.	I.D.	TEETH	SPECIFY THICKNESS *	CATALOG NUMBER
7/8"	5/16"	18	.010 - .069	TUNSW7518_ _ _
1-1/4"	5/16"	22	.010 - .069	TUNSW10522_ _ _

- Add thickness to catalog number when ordering, e.g., 7/8" O.D. x .014" thick x 5/16" I.D., 18 tooth cutter TUNSW7518_ _ _ becomes TUNSW7518014.
- Specify thicknesses when ordering.

SOLID CARBIDE CUT-OFF SAWS

Used for rotary cut-off applications

- ▶ Carbide, 10% Micro Grain
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005$
I.D. $+.001 / -.000$
Thickness $\pm .0005$

• *Closer tolerances available upon request.*

**AVAILABLE IN HIGH SPEED
STEEL UPON REQUEST.**

RESHARPENING SERVICE

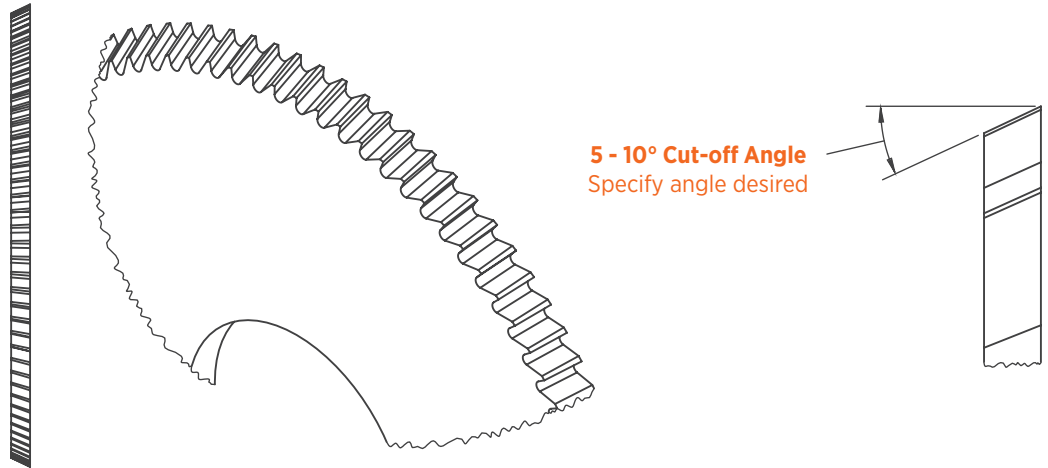
- Complete resharpening service is available.

COATING SERVICE

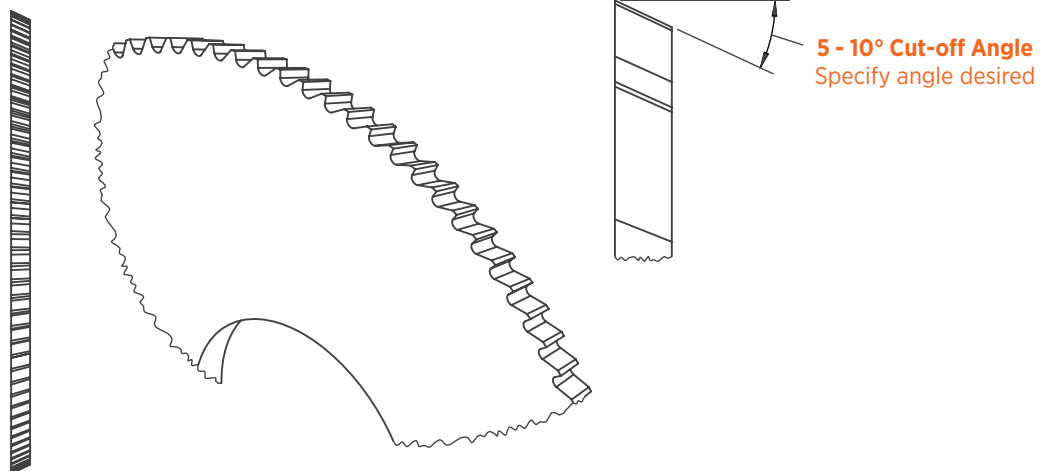
- TiN, TiCN and other surface coatings are available.



**REGULAR:
HIGH SIDE RIGHT (HSR),
TOP TEETH COMING (TTC)**



**REVERSE:
HIGH SIDE LEFT (HSL),
TOP TEETH COMING (TTC)**



STANDARD SAWS					
THICKNESS	O.D.	3"	3-1/2"	4"	4-1/4"
	HOLE	1"	1"	1"	1"
	NO. OF TEETH	90, 120	90, 120	90, 120	90, 120
.032"		XSAD032_ [R or L] _ PG	XSAK032_ [R or L] _ PG	XSAE032_ [R or L] _ PG	XSAO032_ [R or L] _ PG
.045"		XSAD045_ [R or L] _ PG	XSAK045_ [R or L] _ PG	XSAE045_ [R or L] _ PG	XSAO045_ [R or L] _ PG
.064"		XSAD064_ [R or L] _ PG	XSAK064_ [R or L] _ PG	XSAE064_ [R or L] _ PG	XSAO064_ [R or L] _ PG

- Add no. of teeth, high side of shear angle (R/L), and degree of angle to catalog number when ordering, e.g., 3" O.D. x .064" thick x 1" I.D., 90 tooth cutter with 7° high side right shear angle XSAD064_ [R or L] _ PG becomes XSAD06490R7PG
- Please refer to all shear angles TOP TOOTH COMING only.

SOLID CARBIDE GAYLEE SAW OVERVIEW

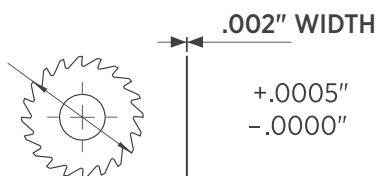
Designed and manufactured to your exact specifications.



- ▶ Solid Carbide Saws as **thin** as .0020"
- ▶ As **thick** as 1.000"
- ▶ O.D.'s: .250" to 7.500"
(6.35mm to 190mm)
- ▶ **Tighter than standard tolerances are available**
- ▶ All solid carbide saws 2" diameter and larger are manufactured with a standard hub and round key.

EXTREME THINNESS

Gaylee Saws solid carbide saws can be manufactured as thin as .0020" (a human hair is about .0040" thick!). This extreme miniaturization is made possible through our numerous years of experience, a dedicated team of saw-makers unparalleled the world over, and our service-oriented approach to meeting your cutting tool requirements. From saws to cutting knives to slitters, slotters and cutters...we're prepared to work with you on your specific application.



EXTREME PRECISION AND MINIATURIZATION

The miniature saw shown on the left above has an O.D. of $\frac{3}{4}$ " with 18 precision teeth. The saw shown on the right has an O.D. of $\frac{1}{2}$ " with 14 precision teeth. Gaylee takes pride in producing precision saws unsurpassed by any other manufacturer for your application.



Solid carbide cutters for outstanding performance

- Manufactured with dish toward arbor hole
- Avoids dragging in cut, reduces side friction
- Helpful in deep cuts, cutting copper and certain plastics, and where parts tend to compress on saw blade from cutting pressure
- Excellent choice for individual and gang slotting of tough steels, cast irons and exotic non-ferrous and non-metallic materials such as fiberglass, epoxies and composites
- Permits a far greater number of teeth than is possible with carbide tipped saws
- Allows reduced chip load, higher speeds and feeds, and improved quality of the finished cut

Gaylee solid carbide saws are precision made

- Titanium Nitride (TiN) coating and other surface treatments can be added to all GAYLEE SAWS cutters for superior cutting performance and finish
- Provides up to 8 times increase in tool life in many materials
- Cutters with an O.D. of 2" or larger are stocked with standard hubs and keyways to give you the highest performance
- Cutters may be ordered without hubs or keyways



Gaylee precision solid carbide saws provide the ultimate combination of:

- Maximum cutting speeds for minimum cost per unit of production and maximum output
- Maximum tool life (up to 100 times the life of high speed steel), giving dramatic savings in machine downtime, regrinding and tool costs
- Maximum precision and finish of cut (generally bur-free)
- Maximum precision saw tolerances

SOLID CARBIDE SAWS

24 HOUR SHIPMENT



24 HOUR SHIPMENT

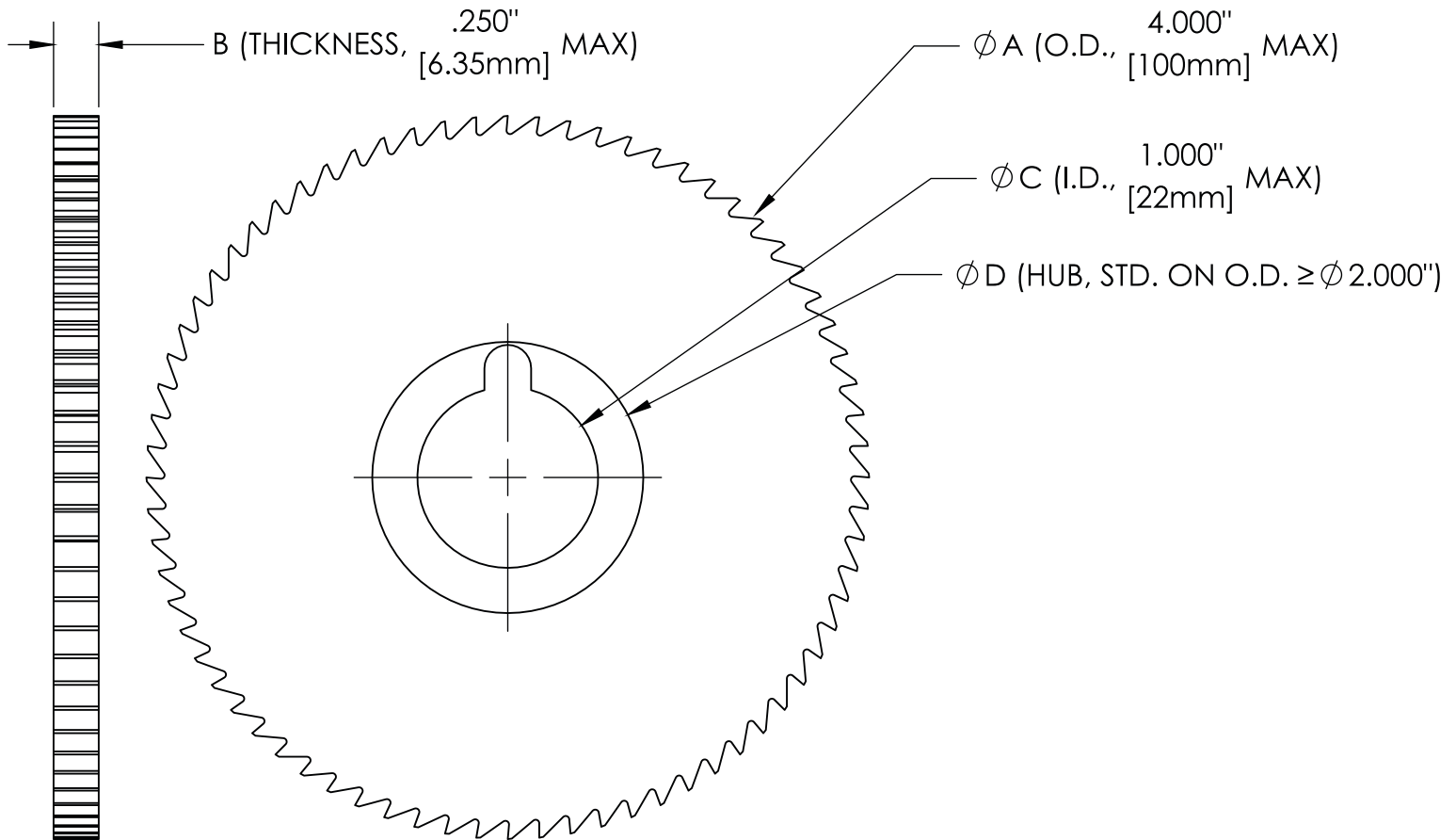
OF PREMIUM QUALITY SOLID CARBIDE SAWS

OVERALL SPECIFICATIONS FOR 24-HOUR SHIPMENT

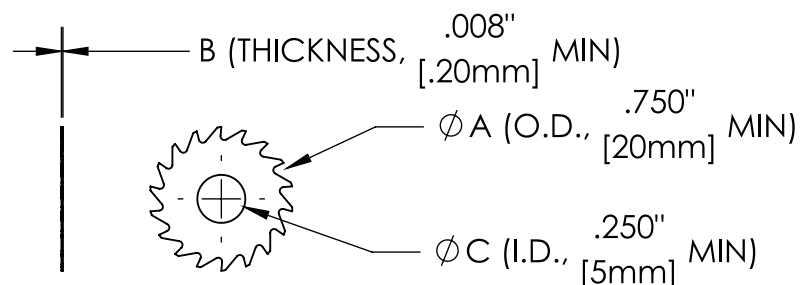
		SIZE RANGE	TOLERANCE
ØA Outside Diameter	INCH	Ø.750" - Ø4.000"	+.005" / -.000"
	METRIC	Ø20mm - Ø100mm	+.13mm / -.000mm
B Thickness	INCH	.0080" - .2500"	+.0005" / -.0000"
	METRIC	.20mm - 6.35mm	+.013mm / -.0000mm
ØC Arbor Hole Sizes	INCH	1/4", 5/16", 3/8", 1/2", 5/8", 7/8", 1"	+.0005" / -.0000"
	METRIC	5mm, 8mm, 10mm, 13mm, 16mm, 22mm	+.013mm / -.0000mm
ØD Hub	INCH	Standard on O.D. ≥ Ø2.000", size based on I.D.	
	METRIC	Standard on O.D. ≥ Ø50.4mm, size based on I.D.	

- Up to 6 pieces in 24 hours
- Unsurpassed accuracy and tolerances provide consistent, dependable performance
- Standard square tooth configurations available
- Martindale/Gaylee tool designers will be pleased to assist with your specific needs

MAXIMUM



MINIMUM



SOLID CARBIDE SAWS

Designed and manufactured to your exact specifications.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $\pm .005 / -.000$
I.D. $\pm .0005 / -.0000$
Thickness $\pm .0005 / -.0000$
T.I.R. (side runout) $\leq .0005$

• Closer tolerances available

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
3/4"	1/4"	1/32	0.0313	0.794	18	GCNH15000
		3/64	0.0469	1.191	18	GCNH15005
		1/16	0.0625	1.588	18	GCNH15010
1"	3/8"		0.0080	0.203	20	GCNH15100
			0.0100	0.254	20	GCNH15105
			0.0120	0.305	20	GCNH15110
			0.0140	0.356	20	GCNH15115
		1/64	0.0156	0.397	20	GCNH15120
			0.0180	0.457	20	GCNH15125
			0.0200	0.508	20	GCNH15130
			0.0230	0.584	20	GCNH15135
			0.0250	0.635	20	GCNH15140
			0.0280	0.711	20	GCNH15145
			0.0300	0.762	20	GCNH15150
		1/32	0.0313	0.794	20	GCNH15155
			0.0350	0.889	20	GCNH15160
			0.0394	1.000	20	GCNH15165
			0.0400	1.016	20	GCNH15170
		3/64	0.0469	1.191	20	GCNH15175
			0.0500	1.270	20	GCNH15180
			0.0510	1.295	20	GCNH15185

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
1"	3/8"		0.0600	1.524	20	GCNH15190
		1/16	0.0625	1.588	20	GCNH15195
			0.0700	1.778	20	GCNH15200
		5/64	0.0781	1.984	20	GCNH15205
			0.0787	2.000	20	GCNH15210
			0.0800	2.032	20	GCNH15215
			0.0900	2.286	20	GCNH15220
		3/32	0.0938	2.381	20	GCNH15225
			0.1000	2.540	20	GCNH15230
			0.1100	2.794	20	GCNH15235
			0.1181	3.000	20	GCNH15240
			0.1200	3.048	20	GCNH15245
		1/8	0.1250	3.175	20	GCNH15250
			0.1300	3.302	20	GCNH15255
			0.1400	3.556	20	GCNH15260
			0.1500	3.810	20	GCNH15265
		5/32	0.1563	3.969	20	GCNH15270
			0.1575	4.000	20	GCNH15275
			0.1600	4.064	20	GCNH15280
			0.1700	4.318	20	GCNH15285
			0.1800	4.572	20	GCNH15290
		3/16	0.1875	4.763	20	GCNH15295
			0.1900	4.826	20	GCNH15300
			0.1969	5.000	20	GCNH15305
			0.2000	5.080	20	GCNH15310
			0.2100	5.334	20	GCNH15315
		7/32	0.2188	5.556	20	GCNH15320
			0.2200	5.588	20	GCNH15325
			0.2300	5.842	20	GCNH15330
			0.2362	6.000	20	GCNH15335
			0.2400	6.096	20	GCNH15340
		1/4	0.2500	6.350	20	GCNH15345

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
1 1/4"	5/16"	1/32	0.0313	0.794	24	GCNH15400
		3/64	0.0469	1.191	24	GCNH15405
		1/16	0.0625	1.588	24	GCNH15410
		3/32	0.0938	2.381	24	GCNH15415
		1/8	0.1250	3.175	24	GCNH15420
	1/2"	1/32	0.0313	0.794	24	GCNH15450
		3/64	0.0469	1.191	24	GCNH15455
		1/16	0.0625	1.588	24	GCNH15460
		3/32	0.0938	2.381	24	GCNH15465
		1/8	0.1250	3.175	24	GCNH15470
	1 1/2"	1/32	0.0313	0.794	32	GCNH15500
		3/64	0.0469	1.191	32	GCNH15505
		1/16	0.0625	1.588	32	GCNH15510
		3/32	0.0938	2.381	32	GCNH15515
		1/8	0.1250	3.175	32	GCNH15520
1 3/4"	1/2"	1/32	0.0313	0.794	36	GCNH15600
		3/64	0.0469	1.191	36	GCNH15605
		1/16	0.0625	1.588	36	GCNH15610
	5/8"	1/32	0.0313	0.794	36	GCNH15700
		3/64	0.0469	1.191	36	GCNH15705
		1/16	0.0625	1.588	36	GCNH15710

SOLID CARBIDE SAWS

Designed and manufactured to your exact specifications.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances: O.D. $+.005 / -.000$
I.D. $+.0005 / -.0000$
Thickness $+.0005 / -.0000$
T.I.R. (side runout) $\leq .0005$

• Closer tolerances available

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
2"	1/2"		0.0080	0.203	36	GCWH16000
			0.0100	0.254	36	GCWH16005
			0.0120	0.305	36	GCWH16010
			0.0140	0.356	36	GCWH16015
		1/64	0.0156	0.397	36	GCWH16020
			0.0180	0.457	36	GCWH16025
			0.0200	0.508	36	GCWH16030
			0.0230	0.584	36	GCWH16035
			0.0250	0.635	36	GCWH16040
			0.0280	0.711	36	GCWH16045
			0.0300	0.762	36	GCWH16050
		1/32	0.0313	0.794	36	GCWH16055
			0.0350	0.889	36	GCWH16060
			0.0394	1.000	36	GCWH16065
			0.0400	1.016	36	GCWH16070
		3/64	0.0469	1.191	36	GCWH16075
			0.0500	1.270	36	GCWH16080
			0.0510	1.295	36	GCWH16085
			0.0600	1.524	36	GCWH16090
		1/16	0.0625	1.588	36	GCWH16095
			0.0700	1.778	36	GCWH16100

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
2"	1/2"	5/64	0.0781	1.984	36	GCWH16105
			0.0787	2.000	36	GCWH16110
			0.0800	2.032	36	GCWH16115
			0.0900	2.286	36	GCWH16120
		3/32	0.0938	2.381	36	GCWH16125
			0.1000	2.540	36	GCWH16130
			0.1100	2.794	36	GCWH16135
			0.1181	3.000	36	GCWH16140
			0.1200	3.048	36	GCWH16145
		1/8	0.1250	3.175	36	GCWH16150
			0.1300	3.302	36	GCWH16155
			0.1400	3.556	36	GCWH16160
			0.1500	3.810	36	GCWH16165
		5/32	0.1563	3.969	36	GCWH16170
			0.1575	4.000	36	GCWH16175
			0.1600	4.064	36	GCWH16180
			0.1700	4.318	36	GCWH16185
			0.1800	4.572	36	GCWH16190
		3/16	0.1875	4.763	36	GCWH16195
			0.1900	4.826	36	GCWH16200
			0.1969	5.000	36	GCWH16205
			0.2000	5.080	36	GCWH16210
			0.2100	5.334	36	GCWH16215
		7/32	0.2188	5.556	36	GCWH16220
			0.2200	5.588	36	GCWH16225
			0.2300	5.842	36	GCWH16230
			0.2362	6.000	36	GCWH16235
			0.2400	6.096	36	GCWH16240
		1/4	0.2500	6.350	36	GCWH16245
	1"	1/16	0.0625	1.588	24	GCWH20536
		3/32	0.0938	2.381	24	GCWH20537
		1/8	0.1250	3.175	24	GCWH20538
		1/32	0.0313	0.794	36	GCWH16500
		3/64	0.0469	1.191	36	GCWH16505
		1/16	0.0625	1.588	36	GCWH16510
		3/32	0.0938	2.381	36	GCWH16515
		1/8	0.1250	3.175	36	GCWH16520
		3/16	0.1875	4.763	36	GCWH16525
		1/4	0.2500	6.350	36	GCWH16530
		1/16	0.0625	1.588	48	GCWH20539
		3/32	0.0938	2.381	48	GCWH20540
		1/8	0.1250	3.175	48	GCWH20541

SOLID CARBIDE SAWS

Designed and manufactured to your exact specifications.



► Carbide, 10% Micro Grain

► Landed

► Positive Rake Angle

► Hollow Ground

► Metric Available

► Tolerances:

O.D. +.005 / -.000

I.D. +.0005 / -.0000

Thickness +.0005 / -.0000

T.I.R. (side runout) ≤ .0005

• *Closer tolerances available*

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
2 1/4"	1/2"	1/32	0.0313	0.794	40	GCWH17000
		3/64	0.0469	1.191	40	GCWH17005
		1/16	0.0625	1.588	40	GCWH17010
		3/32	0.0938	2.381	40	GCWH17015
		1/8	0.1250	3.175	40	GCWH17020
		5/32	0.1563	3.969	40	GCWH17025
	5/8"	1/16	0.0625	1.588	28	GCWH20542
		3/32	0.0938	2.381	28	GCWH20543
		1/8	0.1250	3.175	28	GCWH20544
		1/16	0.0625	1.588	56	GCWH20545
		3/32	0.0938	2.381	56	GCWH20546
		1/8	0.1250	3.175	56	GCWH20547
	1"	1/32	0.0313	0.794	40	GCWH17500
		3/64	0.0469	1.191	40	GCWH17505
		1/16	0.0625	1.588	40	GCWH17510
		3/32	0.0938	2.381	40	GCWH17515
		1/8	0.1250	3.175	40	GCWH17520
		5/32	0.1563	3.969	40	GCWH17525
2 1/2"	5/8"		0.0080	0.203	48	GCWH18000
			0.0100	0.254	48	GCWH18005
			0.0120	0.305	48	GCWH18010
			0.0140	0.356	48	GCWH18015
		1/64	0.0156	0.397	48	GCWH18020
			0.0180	0.457	48	GCWH18025
			0.0200	0.508	48	GCWH18030
			0.0230	0.584	48	GCWH18035
			0.0250	0.635	48	GCWH18040
			0.0280	0.711	48	GCWH18045
			0.0300	0.762	48	GCWH18050
		1/32	0.0313	0.794	48	GCWH18055
			0.0350	0.889	48	GCWH18060
			0.0394	1.000	48	GCWH18065
			0.0400	1.016	48	GCWH18070
		3/64	0.0469	1.191	48	GCWH18075
			0.0500	1.270	48	GCWH18080
			0.0510	1.295	48	GCWH18085
			0.0600	1.524	48	GCWH18090
		1/16	0.0625	1.588	48	GCWH18095
			0.0700	1.778	48	GCWH18100
		5/64	0.0781	1.984	48	GCWH18105
			0.0787	2.000	48	GCWH18110
			0.0800	2.032	48	GCWH18115

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
2 1/2"	5/8"		0.0900	2.286	48	GCWH18120
		3/32	0.0938	2.381	48	GCWH18125
			0.1000	2.540	48	GCWH18130
			0.1100	2.794	48	GCWH18135
			0.1181	3.000	48	GCWH18140
			0.1200	3.048	48	GCWH18145
		1/8	0.1250	3.175	48	GCWH18150
			0.1300	3.302	48	GCWH18155
			0.1400	3.556	48	GCWH18160
			0.1500	3.810	48	GCWH18165
		5/32	0.1563	3.969	48	GCWH18170
			0.1575	4.000	48	GCWH18175
			0.1600	4.064	48	GCWH18180
			0.1700	4.318	48	GCWH18185
			0.1800	4.572	48	GCWH18190
		3/16	0.1875	4.763	48	GCWH18195
			0.1900	4.826	48	GCWH18200
			0.1969	5.000	48	GCWH18205
			0.2000	5.080	48	GCWH18210
			0.2100	5.334	48	GCWH18215
		7/32	0.2188	5.556	48	GCWH18220
			0.2200	5.588	48	GCWH18225
			0.2300	5.842	48	GCWH18230
			0.2362	6.000	48	GCWH18235
			0.2400	6.096	48	GCWH18240
		1/4	0.2500	6.350	48	GCWH18245
	1"	1/16	0.0625	1.588	28	GCWH20548
		3/32	0.0938	2.381	28	GCWH20549
		1/8	0.1250	3.175	28	GCWH20550
		5/32	0.1563	3.969	28	GCWH20551
		1/32	0.0313	0.794	48	GCWH18500
		3/64	0.0469	1.191	48	GCWH18505
		1/16	0.0625	1.588	48	GCWH18510
		3/32	0.0938	2.381	48	GCWH18515
		1/8	0.1250	3.175	48	GCWH18520
		5/32	0.1563	3.969	48	GCWH18525
		3/16	0.1875	4.763	48	GCWH18530
		1/4	0.2500	6.350	48	GCWH18535
		1/16	0.0625	1.588	56	GCWH20552
		3/32	0.0938	2.381	56	GCWH20553
		1/8	0.1250	3.175	56	GCWH20554
		5/32	0.1563	3.969	56	GCWH20555

SOLID CARBIDE SAWS

Designed and manufactured to your exact specifications.



- ▶ Carbide, 10% Micro Grain
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground
- ▶ Metric Available
- ▶ Tolerances:
 - O.D. +.005 / -.000
 - I.D. +.0005 / -.0000
 - Thickness +.0005 / -.0000
 - T.I.R. (side runout) ≤ .0005
 - *Closer tolerances available*

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
2 3/4"	1"	1/16	0.0625	1.588	30	GCWH20556
		3/32	0.0938	2.381	30	GCWH20557
		1/8	0.1250	3.175	30	GCWH20558
		5/32	0.1563	3.969	30	GCWH20559
			0.0080	0.203	60	GCWH19000
			0.0100	0.254	60	GCWH19005
			0.0120	0.305	60	GCWH19010
			0.0140	0.356	60	GCWH19015
		1/64	0.0156	0.397	60	GCWH19020
			0.0180	0.457	60	GCWH19025
			0.0200	0.508	60	GCWH19030
			0.0230	0.584	60	GCWH19035
			0.0250	0.635	60	GCWH19040
			0.0280	0.711	60	GCWH19045
			0.0300	0.762	60	GCWH19050
		1/32	0.0313	0.794	60	GCWH19055
			0.0350	0.889	60	GCWH19060
			0.0394	1.000	60	GCWH19065
			0.0400	1.016	60	GCWH19070
		3/64	0.0469	1.191	60	GCWH19075
			0.0500	1.270	60	GCWH19080
			0.0510	1.295	60	GCWH19085
			0.0600	1.524	60	GCWH19090
		1/16	0.0625	1.588	60	GCWH19095
			0.0700	1.778	60	GCWH19100
		5/64	0.0781	1.984	60	GCWH19105
			0.0787	2.000	60	GCWH19110
			0.0800	2.032	60	GCWH19115
			0.0900	2.286	60	GCWH19120
		3/32	0.0938	2.381	60	GCWH19125
			0.1000	2.540	60	GCWH19130
			0.1100	2.794	60	GCWH19135
			0.1181	3.000	60	GCWH19140
			0.1200	3.048	60	GCWH19145
		1/8	0.1250	3.175	60	GCWH19150
			0.1300	3.302	60	GCWH19155
			0.1400	3.556	60	GCWH19160
			0.1500	3.810	60	GCWH19165
		5/32	0.1563	3.969	60	GCWH19170

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG CNH NUMBER
		FRACTION	DECIMAL	MM		
2 3/4"	1"		0.1575	4.000	60	GCWH19175
			0.1600	4.064	60	GCWH19180
			0.1700	4.318	60	GCWH19185
			0.1800	4.572	60	GCWH19190
		3/16	0.1875	4.763	60	GCWH19195
			0.1900	4.826	60	GCWH19200
			0.1969	5.000	60	GCWH19205
			0.2000	5.080	60	GCWH19210
			0.2100	5.334	60	GCWH19215
		7/32	0.2188	5.556	60	GCWH19220
			0.2200	5.588	60	GCWH19225
			0.2300	5.842	60	GCWH19230
			0.2362	6.000	60	GCWH19235
			0.2400	6.096	60	GCWH19240
		1/4	0.2500	6.350	60	GCWH19245
3"	1"	1/16	0.0625	1.588	30	GCWH20560
		3/32	0.0938	2.381	30	GCWH20561
		1/8	0.1250	3.175	30	GCWH20562
		5/32	0.1563	3.969	30	GCWH20563
		1/32	0.0313	0.794	60	GCWH20000
		3/64	0.0469	1.191	60	GCWH20005
		1/16	0.0625	1.588	60	GCWH20010
		3/32	0.0938	2.381	60	GCWH20015
		1/8	0.1250	3.175	60	GCWH20020
		5/32	0.1563	3.969	60	GCWH20025
		3/16	0.1875	4.763	60	GCWH20030
		1/4	0.2500	6.350	60	GCWH20035
4"	1"	1/16	0.0625	1.588	36	GCWH20564
		3/32	0.0938	2.381	36	GCWH20565
		1/8	0.1250	3.175	36	GCWH20566
		5/32	0.1563	3.969	36	GCWH20567
		1/4	0.2500	6.350	36	GCWH20568
		1/32	0.0313	0.794	72	GCWH20500
		3/64	0.0469	1.191	72	GCWH20505
		1/16	0.0625	1.588	72	GCWH20510
		3/32	0.0938	2.381	72	GCWH20515
		1/8	0.1250	3.175	72	GCWH20520
		5/32	0.1563	3.969	72	GCWH20525
		3/16	0.1875	4.763	72	GCWH20530
		1/4	0.2500	6.350	72	GCWH20535

CARBIDE TIPPED SAWS OVERVIEW



Designed and manufactured to your exact specifications.

- ▶ Carbide Tipped
- ▶ Ground Teeth
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground with Side Clearance
- ▶ Metric Available
- ▶ Tolerances: O.D. $+0.015 / -0.000$
I.D. $+0.0005 / -0.0000$
Thickness $+0.0010 / -0.0000$
T.I.R. (side runout) $\leq .0005$

• *Closer tolerances available*

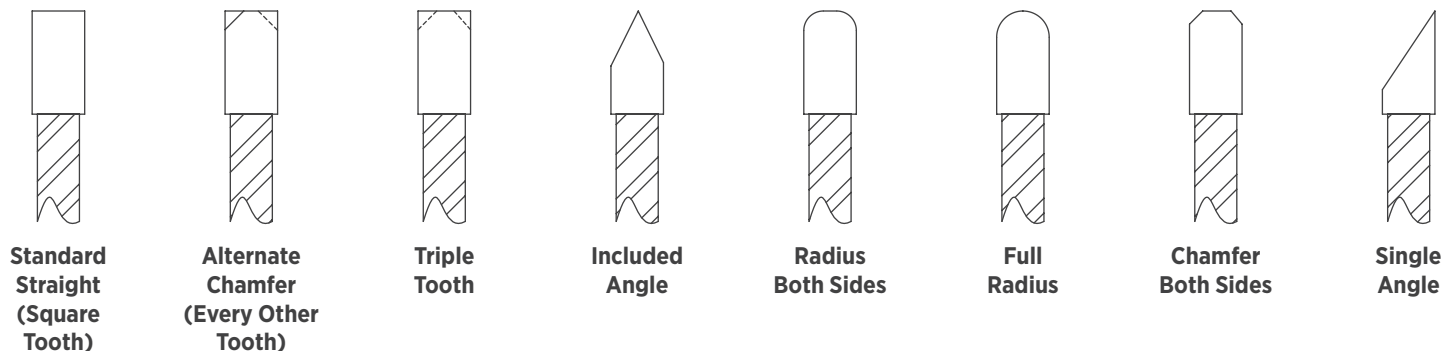
UNPARALLELED PRECISION AND QUALITY CONTROL

Thorough inspection and quality control at every step of production insure that every Gaylee Saw is absolutely true to your specifications. These same standards are applied to repair and re-sharpen your Gaylee Saws. We'll even repair and re-sharpen competitors saws too. Our unmatched reputation has been built upon years of dedication to superior quality tooling...a reputation that's used as a standard to which others are measured.



CARBIDE TIPPED TOOTH FORMS (PROFILE GROUND)

All Gaylee standard carbide tipped saws are straight tooth (i.e., square tooth). However, a wide variety of profile ground modified tooth forms can be provided upon request, for example:



SAW MODIFICATIONS

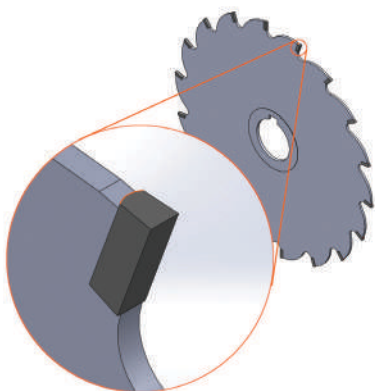
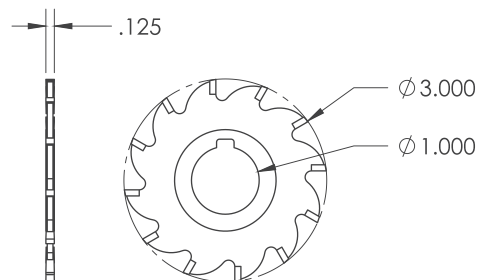
Gaylee can modify standard carbide tipped saws and cutters to meet many special job cutting requirements.

Modified standard cutters usually offer substantial savings over specialty manufactured tools. Pricing on modified standard cutters is based on quantities and the degree of modifications required. Call us to discuss the many modifications possible, depending on your application.

CUTTING WIDTH OR THICKNESS

Saws are manufactured to the exact thickness needed.

- Standard saws can be precision ground to any exact width between .040" and .375".
- Metric widths can be provided between 1.0mm and 9.5mm.



CIRCULAR SEAT ADDS STRENGTH TO TIP BRAZE

The Gaylee Saws circular seat provides mechanical strength, as well as a greater brazing area for the carbide tip, which insures it being held securely to the steel body.

CARBIDE TIPPED SAWS COARSE TOOTH

Coarse tooth cutters ideal for use on non-ferrous materials such as:
Aluminum – Copper – Plastics – Hard Rubber – Bakelite – Fiber



- ▶ Carbide Tipped
- ▶ Ground Teeth
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground with Side Clearance
- ▶ Metric Available
- ▶ Tolerances: O.D. $+0.015 / -0.000$
I.D. $+0.0005 / -0.0000$
Thickness $+0.0010 / -0.0000$
T.I.R. (side runout) ≤ 0.0005
 - Closer tolerances available

Economical cutters for roughing and short-run cutting of cast iron, non-ferrous metals, and non-metallics.

These cutters are designed for slotting, milling, and cut-off applications. Tool geometry is designed to be suitable for work materials listed. All cutters have optimal dish, side clearance, and T.I.R. for free-cutting action with reduced friction. Gaylee carbide tipped saws allow maximum durability due to the hardened tool steel saw body that supports the topgrade carbide inserts.

NOTE:

Coarse-tooth cutters are the lowest priced carbide tipped tools made by Gaylee Saws. Cost savings are achieved entirely by use of a minimum number of teeth. These cutters are manufactured with the same premium quality materials and craftsmanship found in our Standard Tooth Cutters. Coarse-tooth cutters on this page are the most economical tools in short-run applications. For improved surface finish, longer tool life, and more economical long-run performance, we recommend the General Purpose Standard Carbide Tipped Saws.

COARSE TOOTH CUTTERS FOR USE ON NON-FERROUS MATERIALS such as:

Aluminum – Copper – Plastics – Hard Rubber – Bakelite – Fiber

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
3"	1"	1/4	0.2500	6.350	4	GCCT12000
		5/16	0.3125	7.938	4	GCCT12005
		3/8	0.3750	9.525	4	GCCT12010
4"	1"	3/32	0.0938	2.381	6	GCCT12015
		1/8	0.1250	3.175	6	GCCT12020
		3/16	0.1875	4.763	6	GCCT12025
		1/4	0.2500	6.350	6	GCCT12030
		5/16	0.3125	7.938	6	GCCT12035
		3/8	0.3750	9.525	6	GCCT12040
	1 1/4"	3/8	0.3750	9.525	6	GCCT12045
6"	1 1/4"	1/8	0.1250	3.175	8	GCCT12050
8"	1 1/4"	1/8	0.1250	3.175	10	GCCT12055

COARSE TOOTH CUTTERS FOR USE ON CAST IRON

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
3"	1"	1/4	0.2500	6.350	6	GCCT12200
		5/16	0.3125	7.938	6	GCCT12205
		3/8	0.3750	9.525	6	GCCT12210
4"	1"	1/8	0.1250	3.175	8	GCCT12215
		3/16	0.1875	4.763	8	GCCT12220
		1/4	0.2500	6.350	8	GCCT12225
		5/16	0.3125	7.938	8	GCCT12230
		3/8	0.3750	9.525	8	GCCT12235
	1 1/4"	3/8	0.3750	9.525	8	GCCT12240
6"	1 1/4"	1/8	0.1250	3.175	12	GCCT12245
		3/16	0.1875	4.763	12	GCCT12250
		1/4	0.2500	6.350	12	GCCT12255
8"	1 1/4"	3/16	0.1875	4.763	16	GCCT12260
		1/4	0.2500	6.350	16	GCCT12265

CARBIDE TIPPED SAWS

GENERAL PURPOSE

General purpose cutters ideal for use on materials such as:

Aluminum – Cast Iron – Brass – Copper – Plastics – Hard Rubber – Bakelite – Fiber – Non-Metallic
– Malleable Iron – Other Non-Ferrous Metals – Composites – Multi-Purpose Use



▶ Carbide Tipped

▶ Ground Teeth

▶ Landed

▶ Positive Rake Angle

▶ Hollow Ground with Side Clearance

▶ Metric Available

▶ Tolerances: O.D. $+0.015 / -0.000$

I.D. $+0.0005 / -0.0000$

Thickness $+0.0010 / -0.0000$

T.I.R. (side runout) $\leq .0005$

• *Closer tolerances available*

Designed for slitting, slotting, milling, and cut-off applications, these precision cutting tools are of the highest quality construction. All cutters have both dish and side clearance for free-cutting action. Contact Gaylee Saws with your specific requirements.

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
3"	1"	3/64	0.0469	1.191	12	GCCT10000
		1/16	0.0625	1.588	12	GCCT10005
		5/64	0.0781	1.984	12	GCCT10010
		3/32	0.0938	2.381	12	GCCT10015
		7/64	0.1094	2.778	12	GCCT10020
		1/8	0.1250	3.175	12	GCCT10025
		5/32	0.1563	3.969	12	GCCT10030
		3/16	0.1875	4.763	12	GCCT10035
		7/32	0.2188	5.556	12	GCCT10040
		1/4	0.2500	6.350	12	GCCT10045
		5/16	0.3125	7.938	12	GCCT10050
		3/8	0.3750	9.525	12	GCCT10055
4"	1 1/4"	1/8	0.1250	3.175	12	GCCT10060
	5/8"	1/16	0.0625	1.588	14	GCCT10075
	1"	3/64	0.0469	1.191	14	GCCT10065
		3/64	0.0469	1.191	30	GCCT10070

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			NUMBER OF TEETH	CATALOG NUMBER
		FRACTION	DECIMAL	MM		
4"	1"	1/16	0.0625	1.588	14	GCCT10080
		1/16	0.0625	1.588	20	GCCT10085
		5/64	0.0781	1.984	14	GCCT10090
		3/32	0.0938	2.381	14	GCCT10095
		7/64	0.1094	2.778	14	GCCT10100
		1/8	0.1250	3.175	14	GCCT10105
		1/8	0.1250	3.175	20	GCCT10110
		5/32	0.1563	3.969	14	GCCT10115
		3/16	0.1875	4.763	14	GCCT10120
		7/32	0.2188	5.556	14	GCCT10125
		1/4	0.2500	6.350	14	GCCT10130
		5/16	0.3125	7.938	14	GCCT10135
		3/8	0.3750	9.525	14	GCCT10140
		3/64	0.0469	1.191	14	GCCT10145
4"	1 1/4"	1/16	0.0625	1.588	14	GCCT10150
		5/64	0.0781	1.984	14	GCCT10155
		3/32	0.0938	2.381	14	GCCT10160
		7/64	0.1094	2.778	14	GCCT10165
		1/8	0.1250	3.175	14	GCCT10170
		5/32	0.1563	3.969	14	GCCT10175
		3/16	0.1875	4.763	14	GCCT10180
		7/32	0.2188	5.556	14	GCCT10185
		1/4	0.2500	6.350	14	GCCT10190
		5/16	0.3125	7.938	14	GCCT10195
		3/8	0.3750	9.525	14	GCCT10200
		3/64	0.0469	1.191	16	GCCT10205
		1/16	0.0625	1.588	16	GCCT10210
		5/64	0.0781	1.984	16	GCCT10215
5"	1"	3/32	0.0938	2.381	16	GCCT10220
		7/64	0.1094	2.778	16	GCCT10225
		1/8	0.1250	3.175	16	GCCT10230
		5/32	0.1563	3.969	16	GCCT10235
		3/16	0.1875	4.763	16	GCCT10240
		7/32	0.2188	5.556	16	GCCT10245
		1/4	0.2500	6.350	16	GCCT10250
		5/16	0.3125	7.395	16	GCCT10255
		3/8	0.3750	9.525	16	GCCT10260
	1 1/4"	3/64	0.0469	1.191	16	GCCT10265
		1/16	0.0625	1.588	16	GCCT10270
		5/64	0.0781	1.984	16	GCCT10275
5"	1"	3/64	0.0469	1.191	18	GCCT10325
		1/16	0.0625	1.588	18	GCCT10330
		5/64	0.0781	1.984	18	GCCT10335
		3/32	0.0938	2.381	18	GCCT10340
		7/64	0.1094	2.778	18	GCCT10345
		1/8	0.1250	3.175	18	GCCT10350
		5/32	0.1563	3.969	18	GCCT10355
		3/16	0.1875	4.763	18	GCCT10360
		7/32	0.2188	5.556	18	GCCT10365
		1/4	0.2500	6.350	18	GCCT10370
		5/16	0.3125	7.938	18	GCCT10375
		3/8	0.3750	9.525	18	GCCT10380
	1 1/4"	3/64	0.0469	1.191	18	GCCT10385
		1/16	0.0625	1.588	18	GCCT10390
		5/64	0.0781	1.984	18	GCCT10395
		3/32	0.0938	2.381	18	GCCT10400
		7/64	0.1094	2.778	18	GCCT10405
		1/8	0.1250	3.175	18	GCCT10410
		5/32	0.1563	3.969	18	GCCT10415
		3/16	0.1875	4.763	18	GCCT10420
6"	1"	7/32	0.2188	5.556	18	GCCT10425
		1/4	0.2500	6.350	18	GCCT10430
		5/16	0.3125	7.938	18	GCCT10435
		3/8	0.3750	9.525	18	GCCT10440
	1 1/4"	1/8	0.1250	3.175	24	GCCT10445
		5/32	0.1563	3.969	24	GCCT10450
		3/16	0.1875	4.763	24	GCCT10455
		1/4	0.2500	6.350	24	GCCT10460
	1"	1/8	0.1250	3.175	72	GCCT10465
		1/8	0.1250	3.175	32	GCCT10470
8"	1 1/4"	3/16	0.1875	4.763	32	GCCT10475

CARBIDE TIPPED SAWS STAINLESS STEEL

Ideal for use on all AISI Types 200-350 Austenitic Stainless Steels (milder grades), these saws feature a harder carbide grade than our coarse tooth and general purpose saws.



► Carbide Tipped

► Ground Teeth

► Landed

► Positive Rake Angle

► Hollow Ground with Side Clearance

► Metric Available

► Tolerances:

O.D. + .015 / -.000

I.D. +.0005 / -.0000

Thickness +.0010 / -.0000

T.I.R. (side runout) ≤ .0005

• Closer tolerances available

These cutters are designed for slitting, slotting, milling, and cut-off applications. Tooth geometry is designed for stainless steel, AISI types 200 through 350. All cutters have both dish and side clearance for free-cutting action. Carbide tips are the best quality and grade of carbide.

NOTE:

For stainless steels other than AISI Types 200 through 350, we recommend using Steel Cutting saws and cutters.

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			COARSE TOOTH		STANDARD TOOTH	
		FRACTION	DECIMAL	MM	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER
3"	1"	3/64	0.0469	1.191			12	GCCT10500
		1/16	0.0625	1.588			12	GCCT10505
		5/64	0.0781	1.984			12	GCCT10510
		3/32	0.0938	2.381	8	GCCT12400	12	GCCT10515
		7/64	0.1094	2.778			12	GCCT10520
		1/8	0.1250	3.175	8	GCCT12405	12	GCCT10525
		5/32	0.1563	3.969			12	GCCT10530
		3/16	0.1875	4.763	8	GCCT12410	12	GCCT10535
		7/32	0.2188	5.556			12	GCCT10540
		1/4	0.2500	6.350	8	GCCT12415	12	GCCT10545
		5/16	0.3125	7.938	8	GCCT12420	12	GCCT10550
		3/8	0.3750	9.525	8	GCCT12425	12	GCCT10555
4"	1 1/4"	1/8	0.1250	3.175			12	GCCT10560
	5/8"	1/16	0.0625	1.588			14	GCCT10575
	1"	3/64	0.0469	1.191			14	GCCT10565
		3/64	0.0469	1.191			30	GCCT10570
		1/16	0.0625	1.588			14	GCCT10580
		1/16	0.0625	1.588			20	GCCT10585
		5/64	0.0781	1.984			14	GCCT10590
		3/32	0.0938	2.381	10	GCCT12430	14	GCCT10595
		7/64	0.1094	2.778			14	GCCT10600
		1/8	0.1250	3.175	10	GCCT12435	14	GCCT10605
		1/8	0.1250	3.175			20	GCCT10610
		5/32	0.1563	3.969			14	GCCT10615
		3/16	0.1875	4.763	10	GCCT12440	14	GCCT10620
		7/32	0.2188	5.556			14	GCCT10625
		1/4	0.2500	6.350	10	GCCT12445	14	GCCT10630
		5/16	0.3125	7.938	10	GCCT12450	14	GCCT10635
		3/8	0.3750	9.525	10	GCCT12455	14	GCCT10640
	1 1/4"	3/64	0.0469	1.191			14	GCCT10645
		1/16	0.0625	1.588			14	GCCT10650
		5/64	0.0781	1.984			14	GCCT10655
		3/32	0.0938	2.381			14	GCCT10660
		7/64	0.1094	2.778			14	GCCT10665
		1/8	0.1250	3.175			14	GCCT10670
		5/32	0.1563	3.969			14	GCCT10675
		3/16	0.1875	4.763			14	GCCT10680
		7/32	0.2188	5.556			14	GCCT10685
		1/4	0.2500	6.350			14	GCCT10690
		5/16	0.3125	7.938			14	GCCT10695
		3/8	0.3750	9.525	10	GCCT12460	14	GCCT10700

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			COARSE TOOTH		STANDARD TOOTH	
		FRACTION	DECIMAL	MM	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER
5"	1"	3/64	0.0469	1.191			16	GCCT10705
		1/16	0.0625	1.588			16	GCCT10710
		5/64	0.0781	1.984			16	GCCT10715
		3/32	0.0938	2.381	12	GCCT12465	16	GCCT10720
		7/64	0.1094	2.778			16	GCCT10725
		1/8	0.1250	3.175	12	GCCT12470	16	GCCT10730
		5/32	0.1563	3.969			16	GCCT10735
		3/16	0.1875	4.763	12	GCCT12475	16	GCCT10740
		7/32	0.2188	5.556			16	GCCT10745
		1/4	0.2500	6.350			16	GCCT10750
	1 1/4"	5/16	0.3125	7.938			16	GCCT10755
		3/8	0.3750	9.525			16	GCCT10760
		3/64	0.0469	1.191			16	GCCT10765
		1/16	0.0625	1.588			16	GCCT10770
		5/64	0.0781	1.984			16	GCCT10775
		3/32	0.0938	2.381			16	GCCT10780
		7/64	0.1094	2.778			16	GCCT10785
		1/8	0.1250	3.175			16	GCCT10790
		5/32	0.1563	3.969			16	GCCT10795
		3/16	0.1875	4.763			16	GCCT10800
6"	1"	7/32	0.2188	5.556			16	GCCT10805
		1/4	0.2500	6.350			16	GCCT10810
		5/16	0.3125	7.938			16	GCCT10815
		3/8	0.3750	9.525			16	GCCT10820
	1 1/4"	3/64	0.0469	1.191			18	GCCT10825
		1/16	0.0625	1.588			18	GCCT10830
		5/64	0.0781	1.984			18	GCCT10835
		3/32	0.0938	2.381			18	GCCT10840
		7/64	0.1094	2.778			18	GCCT10845
		1/8	0.1250	3.175			18	GCCT10850
		5/32	0.1563	3.969			18	GCCT10855
		3/16	0.1875	4.763			18	GCCT10860
		7/32	0.2188	5.556			18	GCCT10865
		1/4	0.2500	6.350			18	GCCT10870
8"	1"	5/16	0.3125	7.938			18	GCCT10875
		3/8	0.3750	9.525			18	GCCT10880
	1 1/4"	3/64	0.0469	1.191			18	GCCT10885
		1/16	0.0625	1.588			18	GCCT10890
		5/64	0.0781	1.984			18	GCCT10895
		3/32	0.0938	2.381			18	GCCT10900
		7/64	0.1094	2.778			18	GCCT10905
		1/8	0.1250	3.175	14	GCCT12480	18	GCCT10910
		5/32	0.1563	3.969			18	GCCT10915
		3/16	0.1875	4.763	14	GCCT12485	18	GCCT10920
		7/32	0.2188	5.556			18	GCCT10925
		1/4	0.2500	6.350	14	GCCT12490	18	GCCT10930
10"	1"	5/16	0.3125	7.938			18	GCCT10935
		3/8	0.3750	9.525			18	GCCT10940
	1 1/4"	1/8	0.1250	3.175			24	GCCT10945
		5/32	0.1563	3.969			24	GCCT10950
		3/16	0.1875	4.763			24	GCCT10955
		1/4	0.2500	6.350			24	GCCT10960
	1"	1/8	0.1250	3.175			72	GCCT10495
		1/8	0.1250	3.175			32	GCCT10970
		3/16	0.1875	4.763			32	GCCT10975

CARBIDE TIPPED SAWS STEEL CUTTING

Ideal for use on most steel cutting applications.



Steel cutting carbide tipped saws are specifically designed for slitting, slotting, milling, and cut-off of steel workpieces. Carbide tips are of premium quality steel-cutting grade. All cutters have both dish and side clearance for free-cutting action. These are precision cutting tools, with tool geometry to maximize steel cutting performance. Standard number of teeth has been significantly increased to meet steel-cutting demands.

- ▶ Carbide Tipped
- ▶ Ground Teeth
- ▶ Landed
- ▶ Positive Rake Angle
- ▶ Hollow Ground with Side Clearance
- ▶ Metric Available
- ▶ Tolerances: O.D. $+0.015 / -0.000$
I.D. $+0.0005 / -0.0000$
Thickness $+0.0010 / -0.0000$
T.I.R. (side runout) $\leq .0005$

• Closer tolerances available

NOTE:

On Stainless Steel AISI Types 200 through 350, order Stainless Steel Cutting saws and cutters. For all other types of Stainless Steel, order Steel Cutting cutters from this page.

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			COARSE TOOTH		MEDIUM TOOTH		STANDARD TOOTH	
		FRACTION	DECIMAL	MM	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER
3"	1"	3/64	0.0469	1.191					16	GCCT11000
		1/16	0.0625	1.588			12	GCCT13000	16	GCCT11005
		5/64	0.0781	1.984					16	GCCT11010
		3/32	0.0938	2.381			12	GCCT13005	16	GCCT11015
		1/8	0.1250	3.175			12	GCCT13010	16	GCCT11020
		5/32	0.1563	3.969			12	GCCT13015	16	GCCT11025
		3/16	0.1875	4.763			12	GCCT13020	16	GCCT11030
		7/32	0.2188	5.556					16	GCCT11035
		1/4	0.2500	6.350	6	GCCT12600			16	GCCT11040
		5/16	0.3125	7.938	6	GCCT12605				
		3/8	0.3750	9.525	6	GCCT12610				

SAW DIAMETER	ARBOR HOLE DIAMETER	SAW WIDTH			COARSE TOOTH		MEDIUM TOOTH		STANDARD TOOTH	
		FRACTION	DECIMAL	MM	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER	NUMBER OF TEETH	CATALOG NUMBER
4"	1"	1/16	0.0625	1.588			14	GCCT13025	20	GCCT11045
		3/32	0.0938	2.381			14	GCCT13030	20	GCCT11050
		1/8	0.1250	3.175	8	GCCT12615	14	GCCT13035	20	GCCT11055
		3/16	0.1875	4.763	8	GCCT12620	14	GCCT13040	20	GCCT11060
		1/4	0.2500	6.350	8	GCCT12625			20	GCCT11065
		5/16	0.3125	7.938	8	GCCT12630				
		3/8	0.3750	9.525	8	GCCT12635				
	1 1/4"	1/8	0.1250	3.175					20	GCCT11070
		3/16	0.1875	4.763					20	GCCT11075
		1/4	0.2500	6.350	8	GCCT12640			20	GCCT11080
		3/8	0.3750	9.525	8	GCCT12645				
5"	1"	1/16	0.0625	1.588			16	GCCT13045	24	GCCT11085
		3/32	0.0938	2.381			16	GCCT13050	24	GCCT11090
		1/8	0.1250	3.175			16	GCCT13055	24	GCCT11095
		3/16	0.1875	4.763			16	GCCT13060	24	GCCT11100
	1 1/4"	3/32	0.0938	2.381					24	GCCT11105
		1/8	0.1250	3.175					24	GCCT11110
		3/16	0.1875	4.763			16	GCCT13065	24	GCCT11115
6"	1"	1/16	0.0625	1.588			18	GCCT13070	28	GCCT11120
		3/32	0.0938	2.381			18	GCCT13075	28	GCCT11125
		1/8	0.1250	3.175			18	GCCT13080	28	GCCT11130
		3/16	0.1875	4.763			18	GCCT13085	28	GCCT11135
	1 1/4"	1/16	0.0625	1.588			18	GCCT13090	28	GCCT11140
		3/32	0.0938	2.381			18	GCCT13095	28	GCCT11145
		1/8	0.1250	3.175	16	GCCT12650	18	GCCT13100	28	GCCT11150
		3/16	0.1875	4.763	16	GCCT12655	18	GCCT13105	28	GCCT11155
		1/4	0.2500	6.350	16	GCCT12660	18	GCCT13110	28	GCCT11160
8"	1 1/4"	3/16	0.1875	4.763	16	GCCT12665				
		1/4	0.2500	6.350	16	GCCT12670				

CUSTOM TOOLING CAPABILITIES

MODIFIED & SPECIAL SAWS

Gaylee Saws can modify standard cutters in this catalog to meet your special job requirements.

Most modified standard saws can be shipped much sooner than fully customized saws. In addition, modified standard cutters usually offer substantial cost savings over specialty manufactured tools. If your application requires a modified or special cutter, as much information as possible concerning your specific application needs to be supplied.

- Saw diameter
- Saw thickness
- Number of teeth
- Keyway dimension and type
- Work material
- Depth of cut
- Tolerance required
- Form to be generated
- Arbor (hole) size
- Slot width
- Hub width and diameter
- Machine used
- Rockwell or brinell hardness of workpiece
- Detail of present cutter used
- Results obtained from present cutter
- Speeds - RPM
- Feeds (SFM, CPI and/or IPR)
- Special tooth configuration
- Are saws used in gang configuration?

EMAIL or FAX your sketch/print showing your part and/or saw now in use, or send a sample saw. See Saw Blade Application Data Sheet.

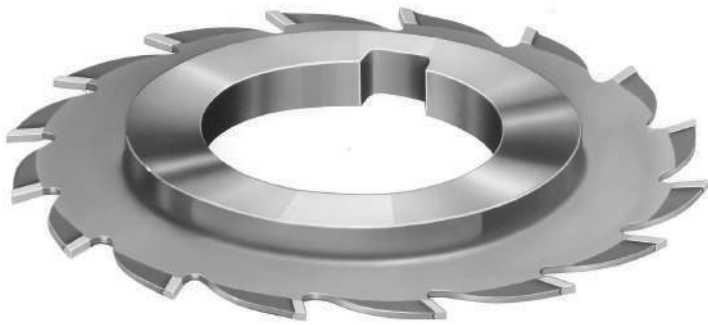
HIGH SPEED STEEL SPECIALS



Side Milling Cutters

- Straight Tooth
- Staggered Tooth

Keyseat Cutters



SAWS WITH HUB / INTEGRAL SPACER FOR PRECISION SET-UPS

For precision single or gang saw set-ups. Hub / integral spacer is part of saw itself, allowing no room for dirt, chips, or swarf to accumulate. Made to your specific requirements for utmost precision spacing in single or gang sawing, slotting, and slitting. Hubs can be thinner, same size, or thicker than cutting width.

Available in both solid carbide and carbide tipped saws.

MILLING SAW SETS

- Circular Saw Gangs for high precision
- Tight tolerances multiple cutting
- Slitting or slotting operations in a single pass

Contact us with your application details.



BITNER TOOLING TECHNOLOGIES

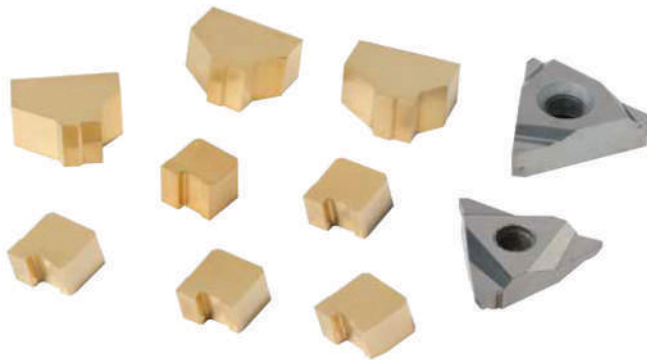
SPECIAL PURPOSE, APPLICATION SPECIFIC TOOLING

Ready to meet your most diverse custom cutting tool requirements.

Bitner Tooling Technologies, a Martindale / Gaylee brand, designs and manufactures tools with strict attention to detail and quantity. All these products are custom manufactured to meet customer specific cutting tool requirements.

- Special Drills
- Special Reamers
- Special End Mills
- Milling Cutters
- Precision Hobs
- Form Tools
- Turning Tools
- Subland Tooling
- Circular Form Tools
- Recess Cutters
- Dovetail Form and Shave Tooling
- Multi-Diameter Tooling
- Coolant Thru Drills
- Cut-Off Tools
- Insert Style Tooling
- Special Tools for complex or demanding metal removal operations.

Please contact customer service with specifications and drawings for pricing and delivery



DOVETAIL FORM TOOLS AND CUSTOM TOOLING

- Bitner Tooling has decades of experience in the precision manufacturing of tool bits, dovetail blanks and dovetail form tools.
- Engineered to exact specifications and cutting requirements.
- High speed steel or carbide.
- Wide array of high quality tool bits for numerous applications.
- Customized tooling can be designed and manufactured from your tool, tool print or part print.



SPECIAL DRILLS

- Subland Drills
- Subland Core Drills
- Chipbreaker Drills
- Step Drills
- Step Core Drills
- Coolant Thru Drills
- Deep Hole Drills
- Multiple Flute Drills
- Double and Triple Margin Drills
- Multi-Diameter Drills
- Parabolic Flute Drills
- Drill Reamers
- Special Drill Points and Coatings
- Custom/Blueprint Special Drill



SPECIAL REAMERS

- Step Drill Reamers
- Subland Drill Reamers
- Step Reamers
- Line Reamers
- Jobber Reamers
- Chucking Reamers
- Piloted Reamers
- Reamers with Lube Grooves
- Multi-Diameter Reamers
- Tapered Reamers
- Straight, Tapered, Squared Shanks
- Custom/Blueprint Special Reamers

RESHARPEN, REGASH, AND RETIP

We not only re-sharpen and recondition our own saws and cutters, we will re-sharpen, re-gash and re-tip our competitors cutters.

At Martindale/Gaylee Saws, we not only manufacture premium saw blades and cutters, we offer reshaping and reconditioning services to ensure your tools are in optimal condition to maximize production. Our highly experienced team will inspect your saws and cutters to determine exactly what work is required, and will provide you with pricing and delivery for your approval prior to proceeding.

Return blades for reshaping to:

Martindale Electric Co.
1375 Hird Avenue
Cleveland, OH 44107
ATTN: Reshape Dept.

Include your name, company name, address, and phone number or email address, along with minimum usable outer diameter and thickness.

Saws and cutters will be reshaped and/or reconditioned regardless of manufacturer.

HIGH SPEED STEEL AND SOLID CARBIDE SAWS

High speed steel and solid carbide saws can be reshaped numerous times before needing to be re-gashed, at which time teeth can be reground. Only limitation is minimum diameter acceptable for your application.



Solid carbide saw with dull, worn teeth.

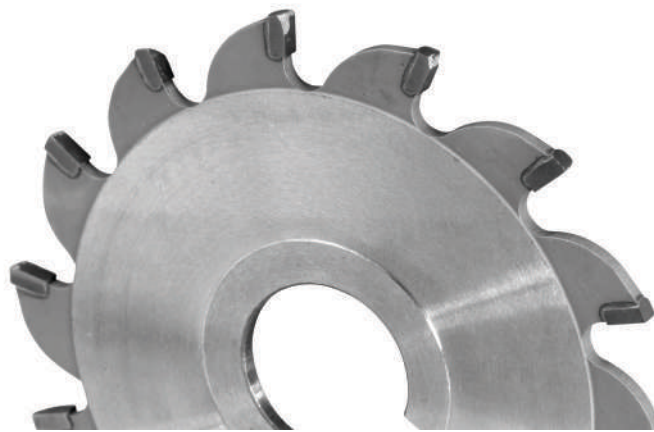


Solid carbide saw with sharpened and reconditioned teeth provides maximum cutting capability.

CARBIDE TIPPED SAWS

Carbide tipped saws can be resharpened numerous times before needing to be retipped. If a tip is chipped or shattered, it can be replaced.

Many times, tools received are too damaged to justify resharpening. If this is the case, we will notify you if blade can be retipped, or will make recommendations for a replacement.



Carbide Tipped saw with worn, broken carbide inserts.



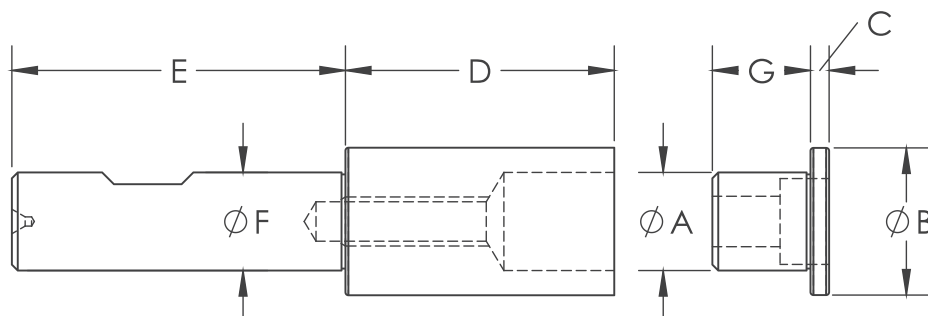
Carbide Tipped saw after retipping and reshaping in optimum condition.

SAW ARBORS

STUB ARBORS FOR SAWS



- ▶ High accuracy, general purpose slitting/sawing applications
- ▶ Vibration absorbing design
- ▶ Weldon shanks
- ▶ Deep sleeve design allows extra support and less slippage of saw/cutter
- ▶ Hardened and ground to .002" concentricity. Tighter tolerances (to .0004") available.



GENERAL PURPOSE SERIES

General purpose slitting/slotting saw arbors. Hardened all over (58/60 Rc) for added toughness on cutter locating surfaces and shanks. Shanks ground to within .001" T.I.R. of cutter location diameter. Extra long, strong body with protective black oxide finish. Super low profile on caps allows cutter to reach areas inaccessible with conventional arbors. Stout plug: extra support, less vibration. Weldon style shanks.



GOLD STAR PRECISION SERIES

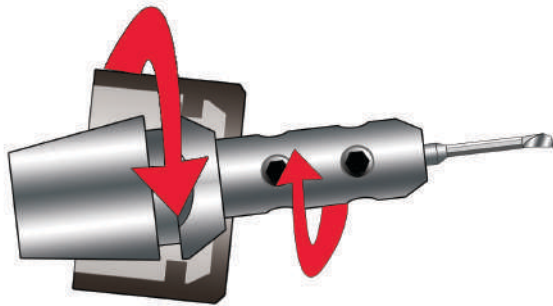
Martindale now offers a Gold Series reach arbor. These arbors are heat treated and ground to .0004" T.I.R. concentricity and squareness. They are engineered for use with carbide cutters or where accuracy is a must. This VIBRA-CORE design, along with the deep low profile caps, gives extra support and less vibration.



Ø A	B	C	D	E	Ø F	G	GENERAL PURPOSE CATALOG NUMBER	GOLD SERIES CATALOG NUMBER
.250	.500	.080	1.000	1.700	.500	.300	ARBR0250	ARBR0250P
.375	.630	.080	1.180	1.700	.500	.400	ARBR0375	ARBR0375P
.500	.750	.100	1.370	1.700	.500	.500	ARBR0500	ARBR0500P
.625	1.000	.120	1.500	2.030	.750	.600	ARBR0625	ARBR0625P
1.000	1.500	.160	1.750	2.030	.750	.700	ARBR1000	ARBR1000P
1.250	1.750	.220	2.000	2.030	.750	.800	ARBR1250	ARBR1250P

SAW ARBORS

TI-LOC® SAW ARBORS WITH INTEGRATED ER TAPER

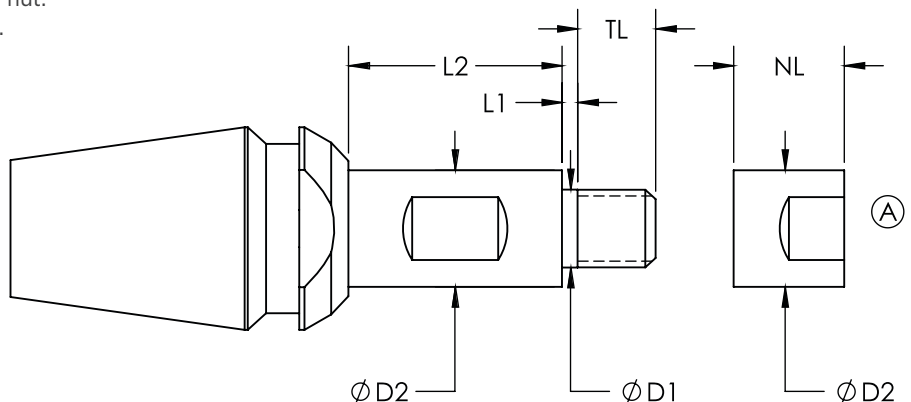


Twist and snap into any ER clamping nut.
No special holding nuts required.

Taper integrated tooling for advanced productivity

- ▶ Can be used in any machine that has ER collet live tooling.
- ▶ ER 16 taper arbors serve as their own collet, eliminating need for two-piece arbor system.
- ▶ One piece design adds rigidity of set-up and improves total indicated runoff (TIR).
- ▶ Less expensive & more cost effective than comparable two-piece arbor systems.

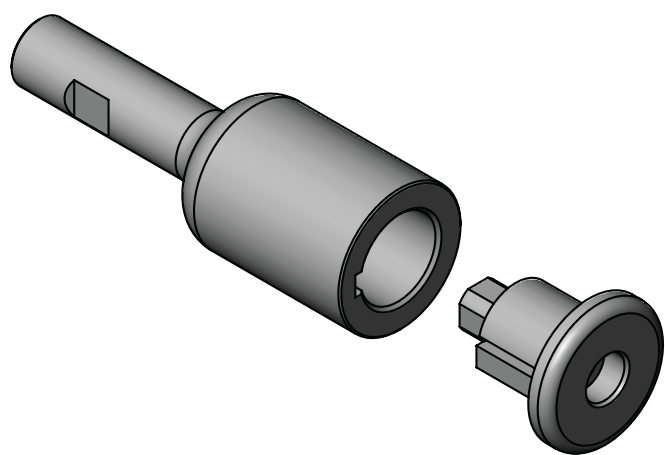
• Recommended Maximum Saw Thickness ~ .080"



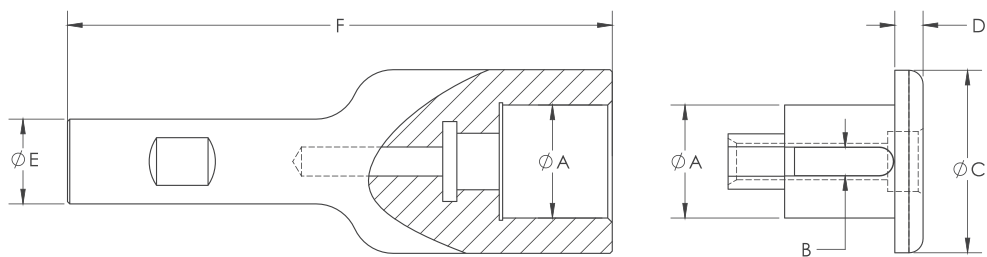
TAPER	Ø D1	Ø D2	L1	L2	NL	TL	CATALOG NUMBER
ER11	.125"	6.4mm	1.27mm	10mm	5mm	5mm	ARBR318064100
ER11	.125"	6.4mm	1.27mm	14mm	5mm	5mm	ARBR318064140
ER11	.125"	6.4mm	1.27mm	19mm	5mm	5mm	ARBR318064190
ER11	.125"	6.4mm	1.27mm	25mm	5mm	5mm	ARBR318064250
ER11	.187"	8mm	1.27mm	10mm	5mm	6.35mm	ARBR476080100
ER11	.187"	8mm	1.27mm	14mm	5mm	6.35mm	ARBR476080140
ER11	.187"	8mm	1.27mm	19mm	5mm	6.35mm	ARBR476080190
ER11	.187"	8mm	1.27mm	25mm	5mm	6.35mm	ARBR476080250
ER11	5mm	8mm	1.27mm	10mm	5mm	6.35mm	ARBR500080100
ER11	5mm	8mm	1.27mm	14mm	5mm	6.35mm	ARBR500080140
ER11	5mm	8mm	1.27mm	19mm	5mm	6.35mm	ARBR500080190
ER11	5mm	8mm	1.27mm	25mm	5mm	6.35mm	ARBR500080250
ER11	6mm	8mm	1.27mm	10mm	6.35mm	8mm	ARBR500080100
ER11	6mm	8mm	1.27mm	14mm	6.35mm	8mm	ARBR500080140
ER11	6mm	8mm	1.27mm	19mm	6.35mm	8mm	ARBR500080190
ER16	.125"	6.35mm	1.27mm	18mm	6.35mm	6.5mm	ARBR318064250
ER16	.125"	6.35mm	1.27mm	24mm	6.35mm	6.5mm	ARBR318064320
ER16	.187"	9.53mm	1.27mm	18mm	6.35mm	6.5mm	ARBR476095250
ER16	.187"	9.53mm	1.27mm	24mm	6.35mm	6.5mm	ARBR476095320
ER16	5mm	9.5mm	1.27mm	18mm	6.35mm	6.5mm	ARBR500095180
ER16	5mm	9.5mm	1.27mm	24mm	6.35mm	6.5mm	ARBR500095240
ER16	6mm	9.53mm	1.27mm	18mm	6.35mm	6.5mm	ARBR600095180
ER16	6mm	9.53mm	1.27mm	24mm	6.35mm	6.5mm	ARBR600095240
ER16	.250"	9.53mm	1.27mm	18mm	6.35mm	6.5mm	ARBR635095250
ER16	.250"	9.53mm	1.27mm	24mm	6.35mm	6.5mm	ARBR635095320
ER16	.312"	10mm	1.27mm	18mm	6.35mm	6.5mm	ARBR794100250
ER16	.312"	10mm	1.27mm	24mm	6.35mm	6.5mm	ARBR794100320
ER16	8mm	10mm	1.27mm	18mm	6.35mm	6.5mm	ARBR800100180
ER16	8mm	10mm	1.27mm	24mm	6.35mm	6.5mm	ARBR800100240
ER20	.125"	6.35mm	1.27mm	18mm	6.35mm	6.5mm	ARBR318064180
ER20	.125"	6.35mm	1.27mm	30mm	6.35mm	6.5mm	ARBR318064300
ER20	.187"	9.53mm	1.27mm	18mm	6.35mm	7.5mm	ARBR476095180
ER20	.187"	9.53mm	1.27mm	30mm	6.35mm	7.5mm	ARBR476095300
ER20	5mm	9.53mm	1.27mm	18mm	6.35mm	7.5mm	ARBR500095180
ER20	5mm	9.53mm	1.27mm	30mm	6.35mm	7.5mm	ARBR500095300
ER20	6mm	9.53mm	1.27mm	18mm	6.35mm	8.5mm	ARBR600095180
ER20	6mm	9.53mm	1.27mm	30mm	6.35mm	8.5mm	ARBR600095300
ER20	.250"	9.53mm	1.27mm	18mm	6.35mm	7.5mm	ARBR635095180
ER20	.250"	9.53mm	1.27mm	30mm	6.35mm	7.5mm	ARBR635095300
ER20	.312"	9.53mm	1.27mm	18mm	6.35mm	7.5mm	ARBR794100180
ER20	.312"	9.53mm	1.27mm	30mm	6.35mm	7.5mm	ARBR794100300
ER20	8mm	10mm	1.27mm	18mm	6.35mm	7.5mm	ARBR800100180
ER20	8mm	10mm	1.27mm	30mm	6.35mm	7.5mm	ARBR800100300
ER20	.375"	12.5mm	1.27mm	18mm	7mm	9mm	ARBR952125180
ER20	.375"	12.5mm	1.27mm	30mm	7mm	9mm	ARBR952125300
ER20	10mm	12.5mm	1.27mm	18mm	7mm	9mm	ARBR100125180
ER20	10mm	12.5mm	1.27mm	30mm	7mm	9mm	ARBR100125300

SAW ARBORS

KEYED QUAD DRIVE MILLING ARBOR



These arbors are high precision, semi-low-profile, and keyed. Their patented design allows side milling with very thin cutters (as thin as .001”), where torque and cutter slippage can be an issue. The quad locking mechanism prevents the cap from rotating, giving operators the ability to run cutters in either direction.

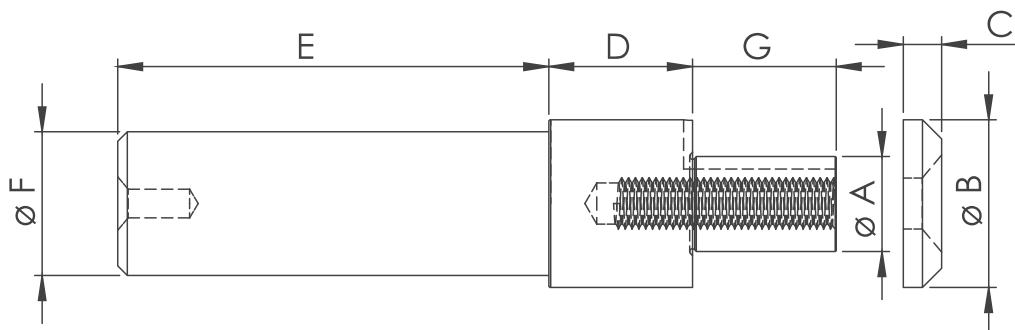


“ØA” SAW ID	“B” KEY WIDTH	“ØC” ARBOR DIA.	“D” CAP WIDTH	SAW WIDTH	“ØE” SHANK DIA.	“F” BODY LENGTH	CATALOG NUMBER
.500	N/A	3/4”	3/32”	0 - .093	.500	3.09	ARBRK0500
.625	N/A	1”	1/8”	0 - .150	.500	3.31	ARBRK0625
.875	1/8”	1 3/8”	3/16”	0 - .187	.750	4.18	ARBRK0875
1.000	1/4”	1 5/8”	1/4”	0 - .250	.750	4.82	ARBRK1000
1.000	1/4”	1 5/8”	1/4”	0 - .281	1.000	4.87	ARBRK1001
1.250	5/16”	1 7/8”	9/32”	0 - .312	1.000	5.25	ARBRK1250

CUSTOM ARBORS



- ▶ Can be made extra-long for reach beyond or inside part features
- ▶ Accommodates multiple cutters for straddle or profile
- ▶ Different outside diameter cutters on the arbor
- ▶ ID grooving operations
- ▶ Made with or without keyways



CUTTING RECOMMENDATIONS FOR CIRCULAR SAWS

CUTTING SPEEDS & FEEDS

These are general cutting speed recommendations, and may vary from application to application. Martindale/Gaylee does not assume any liability in the following recommendations, which are basically suggestions on where to start. Please contact us if you have questions.

MATERIAL* TO BE CUT	HARDNESS RANGE (Bhn)**	H.S.S. SAW CUTTING SPEED (SFM / m/min.)	CARBIDE SAW CUTTING SPEED (SFM / m/min.)
Free Machining Carbon Steels-Wrought	100-425	30-130/9-40	130-555/40-170
Carbon Steels-Wrought	85-425	25-125/8-38	105-530/35-165
Carbon & Ferritic Alloy Steels (High Temp. Service)	150-200	75-100/23-30	320-425/100-130
Free Machining Alloy Steels-Wrought	150-425	8-110/2.5-34	35-470/11-145
Alloy Steels, Wrought	125-425	8-100/2.5-30	35-425/11-130
High Strength Steels-Wrought	225-400	8-60/2.5-18	35-255/11-80
Maraging Steels-Wrought	275-425	8-50/2.5-15	35-215/11-65
Tool Steels-Wrought	100-375	8-110/2.5-34	35-470/11-145
Nitriding Steels-Wrought	200-350	35-50/11-15	150-215/50-65
Armor Plate, Ship Plate, Aircraft Plate-Wrought	200-350	15-50/5-15	65-215/25-65
Structural Steels-Wrought	100-400	8-60/2.5-18	35-255/11-80
Free Machining Stainless Steels-Wrought	135-425	35-110/11-34	150-470/50-145
Stainless Steels-Wrought	135-425	8-100/2.5-30	35-425/11-130
Precipitation Hardening Stainless Steels-Wrought	150-440	20-80/6-24	85-340/25-105
Stainless Steels-Cast	135-425	25-100/8-30	105-425/35-130
Precipitation Hardening Stainless Steels-Cast	325-450	15-30/5-9	65-130/25-40
Carbon Steels-Cast	100-300	40-125/12-38	170-530/55-165
Alloy Steels-Cast	150-400	25-80/8-24	105-340/35-105
Tool Steels-Cast	150-375 48-50Rc	8-70/2.5-21	35-300/11-90
Gray Cast Irons	120-320	25-110/8-34	105-470/35-145
Compacted Graphite Cast Irons	120-330	25-40/8-12	105-170/35-55
Ductile Cast Irons	120-330	20-120/6-37	85-510/25-160
Malleable Cast Irons	110-320	30-110/9-34	130-470/40-145
Chromium-Nickel Alloy Castings	275-375	20-25/6-8	85-105/25-35
Aluminum Alloys-Wrought	30-150	800-1000/245-305	3400-4250/1042-1300
Aluminum Alloys-Cast	40-125	500-1250/150-380	2125-5315/640-1615
Magnesium Alloys-Wrought	40-125	1200-1500/365-460	5100-6375/1555-1955
Magnesium Alloys-Cast	50-90	1200-1500/365-460	5100-6375/1555-1955
Titanium Alloys-Wrought	110-440	15-125/5-38	65-530/125-165
Titanium Alloys-Cast	150-350	40-110/12-34	170-470/55-145
Copper Alloys-Wrought	100RB-100RB	80-500/24-150	340-2125/105-640
Copper Alloys-Cast	40-200	80-400/24-120	340-1700/105-510
Nickel Alloys-Wrought and Cast	80-360	15-70/5-21	65-300/25-90
Beryllium Nickel Alloys-Wrought and Cast	200-425 47-52Rc	8-50/2.5-15	35-215/11-65
High Temp. Alloys-Wrought and Cast	140-475	8-60/2.5-18	35-255/11-80
Refractory Alloys-Cast, P/M	170-320	35-70/11-21	150-300/50-90
Zinc Alloys-Cast	80-100	325-400/100-120	1380-1700/425-510

MATERIAL* TO BE CUT	HARDNESS RANGE (Bhn)**	H.S.S. SAW CUTTING SPEED (SFM / m/min.)	CARBIDE SAW CUTTING SPEED (SFM / m/min.)
Lead Alloys-Cast	5-20	250-300/76-90	1065-1275/325-385
TiN Alloys-Cast	15-30	250-300/76-90	1065-1275/325-385
Zirconium Alloys-Wrought	140-280	50-60/15-18	215-255/65-80
Manganese-Wrought	140-220	25-30/8-9	105-130/35-40
P/M Alloys-Copper	50-70RF	40-50/12-15	170-215/55-65
P/M Alloys-Brasses	35-81RH	50-60/15-18	215-255/65-85
P/M Alloys-Bronzes	30-75RF	40-50/12-15	170-215/55-65
P/M Alloys-Copper-Nickel Alloys	22-100RH	40-50/12-15	170-215/55-65
P/M Alloys-Nickel and Nickel Alloys	70-83	40-50/12-15	170-215/55-65
P/M Alloys-Refractory Metal Base	101-260	95-120/29-37	405-510/124-160
P/M Alloys-Irons	50-67	50-60/15-18	215-255/65-80
P/M Alloys-Steels	101-426	35-60/11-18	150-255/50-80
P/M Alloys-Stainless Steels	107-285	40-50/12-15	170-215/55-65
P/M Alloys-Aluminum Alloys	55-98RH	120-150/37-46	510-640/160-195
Machinable Carbides	40-51Rc	8-10/2.5-3	35-45/11-13
Free Machining Magnetic Alloys	185-240	50-80/15-24	215-340/65-105
Magnetic Alloys	185-240	12-50/3.6-15	55-215/16-65
Free Machining Controlled Expansion Alloys	125-220	50-60/15-18	215-255/65-80
Controlled Expansion Alloys	125-250	8-10/2.5-333	35-45/50-145
Carbons and Graphites	8-100 Shore	35-50/11-15	150-215/50-65
Glasses and Ceramics-Machinable	250 Knoop	20-25/6-8	85-105/25-35
Plastics-Thermoplastics	60-120RM 50-120RR	250-350/76-105	1065-1490/325-450
Plastics-Thermosetting	***	80-350/24-105	340-1490/105-450

* Materials list from Machining Data Handbook-3rd Edition, published by the Machinability Data Center. For specific metals/materials within each material category, refer to Machining Data Handbook.

** Hardness range listed in Brinell unless otherwise noted. 'Range' covers all metals/materials listed within each material group. Reduce speed for harder and more abrasive materials, and for deep cuts. Increase speed for free-machining and non-ferrous metals.

*** Thermosetting plastics have various hardness scales. Refer to Machining Data Handbook.

FEED RATES:

H.S.S. Saws:

.002"-.006"

(in. per tooth - IPT or chip load per tooth - CLPT)

Carbide Saws:

.0002"-.0015"

(in. per tooth - IPT or chip load per tooth - CLPT)

NOTE: This is a conservative recommendation as a starting point for feed rates, and may vary depending on material being cut and cutting speed (SFPM).

HSS saws will turn colors as they heat during cutting. A straw color is the limit. The saw will lose its temper when it starts turning blue.

USEFUL METALWORKING FORMULAS

SFPM =	.262 × (CUTTER DIA. × RPM) or (RPM × CUTTER DIA.) × 3.82
RPM =	(3.82 × SFPM) ÷ CUTTER DIA. or SFPM ÷ (CUTTER DIA. × .262)
IPM =	IPR × (# TEETH × RPM)
IPT =	IPM ÷ (# TEETH × RPM)
IPR =	IPM ÷ RPM
CIM =	IPR × SPD. × DOC
HP =	CIM × UHF
FORCE =	(33,000 × HP) ÷ SFM

CUTTING RECOMMENDATIONS FOR CIRCULAR SAWS

OTHER RECOMMENDATIONS

If a saw is working well, send it to us and we will duplicate it.

If a saw is not working well, send us a used blade. We can sometimes make recommendations from wear marks on the saw.

Variations to number of teeth, rake angle, clearance angle, bevel, side clearance, material, land, etc. may improve performance and tool life.

TEETH

- Deep cuts and soft material require fewer teeth (for chip clearance) and stronger teeth (landed).
- Thin material requires more teeth (at least 2 teeth engaged in cut).
- Hard materials and narrow slots (under .025") likewise require more teeth.
- Alternately beveled teeth keep chips from sticking in the cut and in the tooth gullets.
- Rake Angle: On center for iron and steel, 5° negative for yellow brass, from 5° to 10° positive for other soft materials.
- There should be at least 2 teeth engaged in the cut.
- Increase Number of Teeth For:
 - Thin material
 - Thin cuts (under .025")
 - Slow spindle speeds
 - Hard material
 - Sandy castings
 - Thin castings
 - Work hardened
 - Hard spots
- Decrease Number of Teeth For:
 - Chip clearance and tooth strength (Consider Metal Slitting or Copper Slitting style saws.)
 - Deep cuts (over 1/4")
 - High speeds
 - Free cutting material

SIDE CLEARANCE

- Also known as dish or hollow grind
- Increase for stainless steel and tenacious metals such as copper, zinc, tin or lead.

MOUNTING OF SAWS

- Breakage / Wobble / Rubbing: These problems may be caused by how washers are mounted on either side of saw.
- Washers drive saws in absence of a driving key, and must always be clean, flat and bur-free. A speck of dirt will let saws wobble and cut oversize. If a saw breaks, it may score washers. Check marks around saw hole for: dirt; shiny spots (as small as a pinpoint, indicating chips imbedded under washers); and circular skid marks, which indicate nut is not tight.
- Thin saws should especially be supported by washers as large as possible.
- Washers must be of equal diameter or they will flex out saw dish and cause one side of saw to rub.
- Nut must be wrench-tight.
- If saw blade pauses momentarily in its rotation while feed advances, it will break.

BREAKAGE

- In addition to causes noted under "MOUNTING OF SAWS", teeth may break when starting a cut at too fast a feed, if spindle bearings are worn, drive belts loose or sheaves worn, workpiece indexed before saw has cleared slot, improper workholding (workpiece not tight or not well supported), or saw is dull (even the best eventually wear out).

VIBRATION AND CHATTER

- Vibration and chatter may have many causes, including the following:
 - Arbor bent or worn undersize
 - Workpiece improperly supported, particularly with thin material
 - Teeth too coarse/fine
 - Speed too slow / too fast
 - Dull tool
 - Wrong clearance angles
 - Feed too slow
 - Climb milling recommended on CNC equipment. Conventional milling preferred on manual equipment, but climb milling may help to keep small parts from being ripped from the clamping fixture. It may also reduce burs.

EXCESSIVE WEAR

- Seizing: not enough coolant in cut
- Not enough side clearance
- Cutter speed too fast and/or feed too slow. The work may glaze and the saw will rub.

COOLANT

- Coolant helps keep saw and workpiece cool for optimum cutting conditions. Please contact your coolant supplier for recommendations.
- Cold jet airstream often used for dry cutting operations to clear chips and keep saw and workpiece cool.

RESHARPENING

- When resharpening saws, all wear marks must be removed from teeth. If wear is excessive, we will regrind diameter below wear marks. Either way, thickness is reduced because of side clearance required for even shallowest cuts.

RETIPPING

- Carbide tipped saw blades can be retipped and ground to original specifications.

COATINGS FOR SAWS AND CUTTERS

Cutting tool surface coatings are available upon request. Tool coatings provide tool wear resistance while significantly improving the performance of saws in most applications, particularly when cutting ferrous materials. These coatings are extremely thin, harder than steel and greatly reduce friction and wear. The most common coatings available for Martindale/Gaylee Saws are:

- **TiN:** Titanium Nitride - General purpose TiN hard coating. Best suited for iron-based materials, unalloyed and alloyed steels and hardened steels.
- **TiCN:** Titanium Carbonitride - Enhanced hardness and wear resistance over TiN with better surface lubricity. Suited for difficult to machine materials such as cast iron, aluminum alloys, tool steels, copper, Inconel, titanium alloys and nonferrous materials.
- **TiAlN:** Titanium Aluminum Nitride - Nano-layered coating, high toughness and oxidation resistance. Recommended for high temperature cutting, and a good choice when coating carbide. Suited for difficult materials like cast iron, aluminum alloys, tool steels and nickel alloys.
- **AlCrN:** Aluminum Chromium Nitride - Expanded performance capabilities over titanium-based coatings. Highest oxidation resistance and hot hardness for high temperature wear resistance. Can be used in wet/dry cutting applications. Well suited for a wide range of materials - cast iron, unalloyed steels, high strength steels, high hardness steels.

CUTTING RECOMMENDATIONS FOR CIRCULAR SAWS

COMMUTATOR UNDERCUTTING

Once commutator has been resurfaced, mica insulation separating copper segments must be undercut. Undercutting is most easily accomplished with armature removed from machine. However, various tools are available to undercut commutator “in place”.

After undercutting, commutator must be carefully inspected to assure all copper particles removed, all bars chamfered, and all sharp edges and burs eliminated. Slots should be individually checked and reworked to remove any traces of fin or side mica.

Commutator surface should then be lightly polished with fine-grain commutator stone or rubber bond cleaning stone to properly finish commutator surface.

Three basic types of slots may be produced by circular cutters: U-slot, V-slot, and compound land slot.

U-SLOT

U-slots (Fig. 1) are generally preferred if slots are accessible for easy cleaning. If cut carefully, these slots are effective until commutator has worn down full depth of undercut. Slot should be cut $1/32''$ - $3/64''$ (.031-.046) deep, or to OEM specifications. If slot cut too deep, accumulated dust will not be thrown out by the centrifugal action of the rotating commutator.

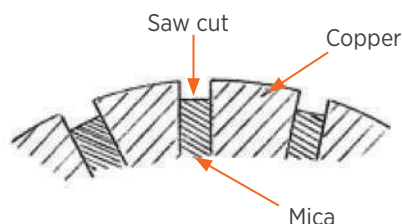


Fig. 1

Choose cutter width to slightly exceed mica thickness (recommend $+.003''$ / .08mm). This allows saw to remove full width of mica plus $.0015''$ (.04mm) copper on each side of slot. If unable to determine mica width, a feeler gage may help determine required saw thickness.

Undercutting may leave a bur (see Fig. 2). Edge of bar might become work hardened, leading to non-uniform wear and possible damage to brushes. Edges of bars must be chamfered to remove bur and work hardened area through use of suitable slotting file or specialty scraper. A chamfer of $1/64''$ (.4mm) is usually adequate. See Hand Tools section of catalog for slotting files and chamfering tools.

For best results, go over commutator a second time with a V-cutter to simultaneously chamfer both edges of slot.

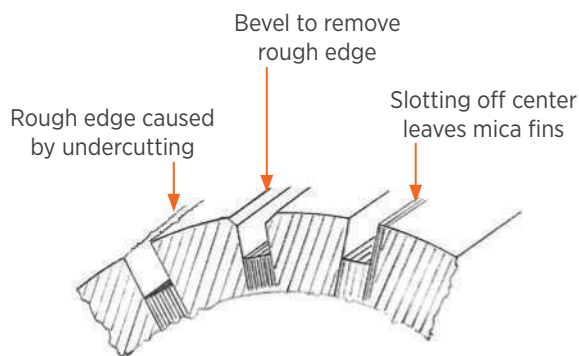


Fig. 2

V-SLOT

V-slots keep slots free from dust accumulations at low speeds, and do not require a separate operation for chamfering of bar edges. V-slots are usually made with either a slotting file, or a "V" tooth circular cutter. Usual practice is to use a circular cutter having an included angle between cutting edges such that a cut made 1/16" (1.6mm) deep will also leave 1/32" (.8mm) free copper above the mica. Standard V-cutters are available with 40°, 50°, or 60° angles between cutting edges.

Use following table to obtain 1/16" (1.6mm) deep cut with 1/32" (.8mm) free copper above mica:

THICKNESS OF MICA	ANGLE OF V-CUTTER
.023" (.58mm)	40°
.029" (.74mm)	50°
.036" (.91mm)	60°

Circular cutter must be accurately centered on mica (see Fig. 4). When cutter is not accurately centered, wedge-shaped mica fins in V-slots are more difficult to remove than fins with uniform thickness left after U-slot.

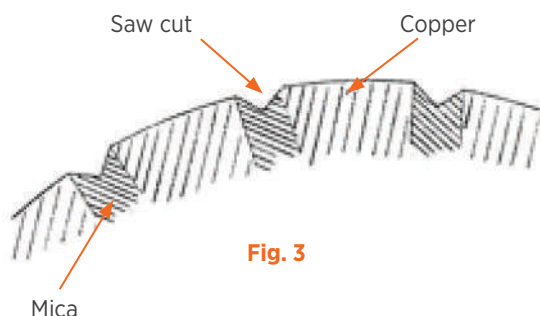


Fig. 3

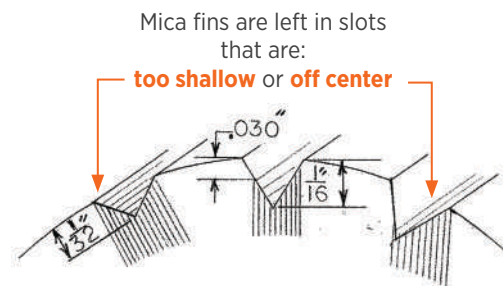


Fig. 4

COMPOUND LAND SLOT

Teeth on compound land mica saws are alternately ground to a special taper which reduces impact on each individual tooth and produces chips just slightly over half of slot width. This eliminates chips' tendency to clog slot. Saw will operate cooler and clear chips better, prolonging saw life.

When undercutting with compound land saws, bottom of slot will appear flat. However, as a result of reverse taper on alternate teeth, slot bottom will have slight pyramid or convex profile.

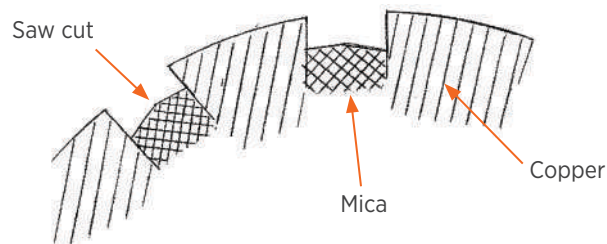


Fig. 5

SAW BLADE APPLICATION DATA SHEET



Company Name			
Contact Name			
City		State	
Phone		E-mail	

WORKPIECE

Workpiece Material			
Is sample workpiece available?	☐ No	☐ Yes	
Is this a cut-off application?	☐ No	☐ Yes	☐ Other
Workpiece Shape		Dimensions	
Length of Cut		Width of Cut	
		Depth of Cut	
# Workpieces/Blade		# Blades/Month	

SAW

Saw Material			
Saw Manufacturer		Price	
Saw Specifications:			
O.D.		Thickness	
		I.D.	
# Teeth/Geometry		Side Clearance / Dish (per side)	
Keyway	☐ No ☐ Yes	Dimensions	
		Pinholes	
Hub		Dimensional Tolerances	
		Print/Dwg. #	
Saw sample available?	New ☐ No ☐ Yes	Used ☐ No ☐ Yes	

SETUP

Type of Machine (Horizontal Mill, Bridgeport, etc.)			
Saw RPM		Adjustable?	☐ No ☐ Yes
Workpiece RPM		Feed Rate / Chip Load per Tooth	
Coolant	☐ No ☐ Yes	Coolant Type	
		Flooding both sides?	☐ No ☐ Yes
No. of Saws Ganged		Spacer Diameter	
Arbor Runout (T.I.R.)		Washer Diameter	
☐ Climb Milling	☐ Conventional Milling		

PROBLEM

Nature of Problem			
Duration of Problem			
Pcs. Between Resharps		Resharpener	
Bur	☐ No ☐ Yes	Location in Slot (Exit Bur / Entry Bur / Both)	
Other			





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