TDC

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www.tdc-tools.com

TDC SAWS

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TDC

TDC SAWS

TDC Cutting Tools Inc.(known as TDC),founded in 1995, is the backbone of Top-Eastern Group. After 2 decades of dedicated work and several corporate mergers and acquisitions overseas, TDC is now the leader of the world's cutting tool industry. TDC has a unique set of advantages: the most comprehensive supply chain, the largest scale, state of the art and the largest market share, not to mention multiple world famous brands and technology patents.

TDC began in China and developed on the world stage. It is very rare and precious for a cutting tool company to have successfully integrated material collection, production, products research and development research and development, distribution and recycling into one operating system.

TDC Cutting Tools Inc, Saws division is committed to becoming the world's best manufacturer and supplier of Industrial Saw Blades. The TDC team has dedicated itself to doing things right. You, as our customer, can expect excellence from our team. We produce a broad line of saw blades and related accessories. We incorporate the most sophisticate state-of-the-art equipment backed up by our quality control programs and procedures. This insures the integrity of the TDC Saw Blade product.

Cle-line takes a leading technology position in the field by constantly strives for perfection, innovation to ensure extraordinary quality to supply customers with high efficiency, more professional and more safe Bi-metal saw blades. It is available for cutting from large scale module to small steel block or tiny casting, different field from steel production to machine manufacture or automotive industry.

Contents

BI-METAL STRIPS

TYPE one

Bi-metal strip is the ideal raw material for the manufacture of superior high-performance saws.

- Two different steel grades-- high speed steel on the cutting edge and "temper-resistant spring steel" for the backing--are welded together in machine direction without the use of filler metals
- Our rolling technology makes it possible to produce strip to close tolerance, with optimum flatness and outstanding surface finish and excellent material characteristics
- Uncompromising implementation of customer requirements, careful tracking of the market at home and abroad, and a fair spirit of competition are the key factors driving the quality of our cold rolled strip.

FEATURES

TDC cold rolled strip has particular advantages for mass production, such as:

- Close tolerance
- Reduction of processing costs by excellent tool service life, and precision blanking characteristics
  High repeatability due to uniform material characteristics, expecially outstanding spheroidized microstructure

Standard Dimension & Sizes

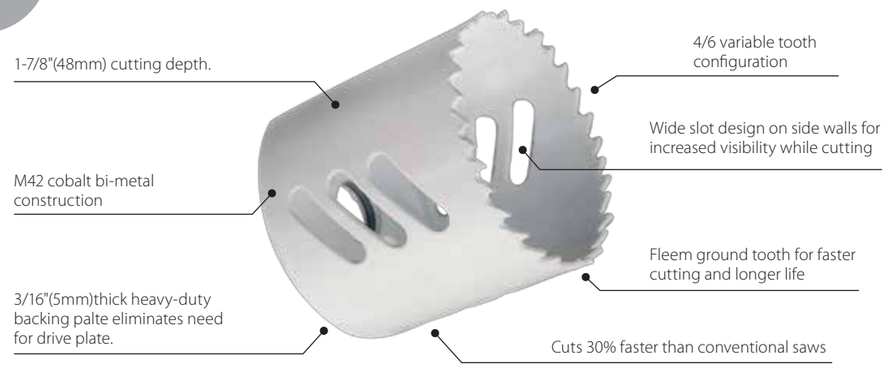
Bi-metal hand hacksaw strips		Bi-metal Air Saw strips	
INCH	MM	INCH	MM
1/2"x0.025"	12.70x0.60	1/2"x0.025"	12.70x0.60
Bi-metal Bandsaw strips		**Bi-metal Reciprocating Saw strips**	
INCH	MM	INCH	MM
3/4"x0.035"	19x0.90	3/4"x0.035"	19x0.90
1.063"x0.035"	27x0.90	3/4"x0.050"	19x1.30
1.350"x0.042"	34x1.10	1"x0.042"	25x1.06
1.614"x0.050"	41x1.30	7/8"x0.062	22x1.57
2-1/8"x0.063"	54x1.60		
2-5/8"x0.063"	67x1.60		

- Other sizes are available on request

HOLE SAWS

TYPE one

Fleem Ground Tooth Hole Saws



Bi-Metal [clamshell]

DIAMETER		ARTICLE#
INCHES	MM	M42
9/16"	14	91601
5/8"	16	91602
11/16"	17	91603
3/4"	19	91604
-	20	91605
13/16"	21	91606
7/8"	22	91607
15/16"	24	91608
1"	25	91609
1-1/16"	27	91610
1-1/8"	29	91611
1-3/16"	30	91612
1-1/4"	32	91613
1-5/16"	33	91614
1-3/8"	35	91615

DIAMETER		ARTICLE#
INCHES	MM	M42
1-7/16"	37	91616
1-1/2"	38	91617
1-9/16"	40	91618
1-5/8"	41	91619
1-11/16"	43	91620
1-3/4"	44	91621
-	45	91622
1-13/16"	46	91623
1-7/8"	48	91624
-	50	91625
2"	51	91626
2-1/16"	52	91627
2-1/8"	54	91628
-	55	91629
2-1/4"	57	91630

DIAMETER		ARTICLE#
INCHES	MM	M42
2-5/16"	59	91631
2-3/8"	60	91632
2-1/2"	64	91633
2-9/16"	65	91634
2-5/8"	67	91635
-	68	91636
2-3/4"	70	91637
2-7/8"	73	91638
-	75	91639
3"	76	91640
3-1/8"	79	91641
3-1/4"	83	91642
3-3/8"	86	91643
3-1/2"	89	91644
3-5/8"	92	91645

DIAMETER		ARTICLE#
INCHES	MM	M42
3-3/4"	95	91646
3-7/8"	98	91647
-	100	91648
4"	102	91649
4-1/8"	105	91650
4-1/4"	108	91651
4-3/8"	111	91652
4-1/2"	114	91653
4-3/4"	121	91654
5"	127	91655
5-1/2"	140	91656
5-3/4"	146	91657
6"	152	91658

FEATURES

- High Speed cutting edge
- 4/6 Variabe tooth configuration
- 1 7/8"(48mm) Cutting depth
- 3/16"(5mm) thick heavy-duty backing plate eliminates need for drive plate

ADVANTAGES

- Shock resistant teeth
- Resists tooth strippage
- Less vibration
- Cut 30% faster than conventional saws

APPLICATION INFORMATION

- Creates holes for pipe, tubing installations, door lock installations, electrical conduit, hoses and antennas
- Ideal for plumbing, construction, aircraft, electrical, maintenance and automotive applications
- Use in steel, aluminum, brass, cast iron, plastic or wood

- Hole Saw Kits are available for cutting almost any matrial. Each kit consist of assorted hole saws and accessories that are specially designed for use in the electrical, plumbing, manufacturing ect.
- The standard kits have in them Bi-Metal 8% Cobalt hole saws of 4/6 variable pitch however these can be supplied in Bi-Metal M3 holesaw and in consitant pitch of 6 tpi and 10 tpi.

Kit Type	5/8" 16mm	3/4" 19mm	13/16" 21mm	7/8" 22mm	1" 25mm	1-1/8" 29mm	1-1/4" 32mm	1-3/8" 35mm	1-1/2" 38mm	1-9/16" 40mm	1-3/4" 44mm	2" 51mm	2-1/8" 54mm	2-1/4" 57mm	2-1/2" 64mm	3" 76mm	3-1/4" 83mm	3-5/8" 92mm	3-3/4" 95mm	4-1/8" 105mm	4-1/2" 114mm	ARTICLE#
Handyman's - 7 piece (includes 1 mandrel and 1 adaptor)				✓	✓	✓	✓		✓													916K01
Locksmith's - 9 piece (includes 2 mandrels and 1 adaptor)				✓	✓		✓		✓		✓		✓									916K02
Plumber's - 9 piece (includes 2 mandrels and 1 adaptor)		✓		✓		✓			✓		✓			✓								916K03
Electrician's - 9 piece (includes 2 mandrels and 1 adaptor)				✓		✓		✓			✓	✓			✓							916K04
Electrician's - metric - 9 piece (includes 2 mandrels and 1 adaptor)	✓		✓		✓		✓			✓		✓										916K05
Journeyman's - 13 piece (includes 2 mandrels, 1 pilot hole drill, and 1 adaptor)		✓		✓		✓		✓	✓		✓	✓		✓	✓							916K06
Industrial's - 20 piece (includes 2 mandrels, 1 adaptor,1 pilot drill and 12" extension)		✓		✓		✓		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	916K07

TYPE two

Traditional Hole Saws

3/16"(5mm) thick heavy-duty backing plate eliminates need for drive plate

4/6 variable tooth configuration

1-7/8"(48mm) depth of cut

Thin kerf design
· 0.050" thickness for faster cutting
· Prolongs battery life when used on cordless tools

Bi-Metal [clamshell/boxed]

DIAMETER		ARTICLE#	
INCHES	MM	M3	M42
9/16"	14	91201	91301
5/8"	16	91202	91302
11/16"	17	91203	91303
3/4"	19	91204	91304
-	20	91205	91305
13/16"	21	91206	91306
7/8"	22	91207	91307
15/16"	24	91208	91308
1"	25	91209	91309
1-1/16"	27	91210	91310
1-1/8"	29	91211	91311
1-3/16"	30	91212	91312
1-1/4"	32	91213	91313
1-5/16"	33	91214	91314
1-3/8"	35	91215	91315

DIAMETER		ARTICLE#	
INCHES	MM	M3	M42
1-7/16"	37	91216	91316
1-1/2"	38	91217	91317
1-9/16"	40	91218	91318
1-5/8"	41	91219	91319
1-11/16"	43	91220	91320
1-3/4"	44	91221	91321
-	45	91222	91322
1-13/16"	46	91223	91323
1-7/8"	48	91224	91324
-	50	91225	91325
2"	51	91226	91326
2-1/16"	52	91227	91327
2-1/8"	54	91228	91328
-	55	91229	91329
2-1/4"	57	91230	91330

DIAMETER		ARTICLE#	
INCHES	MM	M3	M42
2-5/16"	59	91231	91331
2-3/8"	60	91232	91332
2-1/2"	64	91233	91333
2-9/16"	65	91234	91334
2-5/8"	67	91235	91335
-	68	91236	91336
2-3/4"	70	91237	91337
2-7/8"	73	91238	91338
-	75	91239	91339
3"	76	91240	91340
3-1/8"	79	91241	91341
3-1/4"	83	91242	91342
3-3/8"	86	91243	91343
3-1/2"	89	91244	91344
3-5/8"	92	91245	91345

DIAMETER		ARTICLE#	
INCHES	MM	M3	M42
3-3/4"	95	91246	91346
3-7/8"	98	91247	91347
-	100	91248	91348
4"	102	91249	91349
4-1/8"	105	91250	91350
4-1/4"	108	91251	91351
4-3/8"	111	91252	91352
4-1/2"	114	91253	91353
4-3/4"	121	91254	91354
5"	127	91255	91355
5-1/2"	140	91256	91356
5-3/4"	146	91257	91357
6"	152	91258	91358

FEATURES

- High Speed cutting edge
- 4/6 Variabe tooth configuration
- 1 7/8"(48mm) Cutting depth
- 3/16"(5mm) thick heavy-duty backing plate eliminates need for drive plate

ADVANTAGES

- Shock resistant teeth
- Resists tooth strippage
- Less vibration

APPLICATION INFORMATION

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Kit Type	5/8" 16mm	3/4" 19mm	13/16" 21mm	7/8" 22mm	1" 25mm	1-1/8" 29mm	1-1/4" 32mm	1-3/8" 35mm	1-1/2" 38mm	1-9/16" 40mm	1-3/4" 44mm	2" 51mm	2-1/8" 54mm	2-1/4" 57mm	2-1/2" 64mm	3" 76mm	3-1/4" 83mm	3-5/8" 92mm	3-3/4" 95mm	4-1/8" 105mm	4-1/2" 114mm	ARTICLE#
Handyman's - 7 piece (includes 1 mandrel and 1 adaptor)				✓	✓	✓	✓		✓													913K01
Locksmith's - 9 piece (includes 2 mandrels and 1 adaptor)				✓	✓		✓		✓		✓		✓									913K02
Plumber's - 9 piece (includes 2 mandrels and 1 adaptor)		✓		✓		✓			✓		✓			✓								913K03
Electrician's - 9 piece (includes 2 mandrels and 1 adaptor)				✓		✓		✓			✓	✓			✓							913K04
Electrician's - metric - 9 piece (includes 2 mandrels and 1 adaptor)	✓		✓		✓		✓			✓		✓										913K05
Journeyman's - 13 piece (includes 2 mandrels, 1 pilot hole drill, and 1 adaptor)		✓		✓		✓		✓	✓		✓	✓		✓	✓							913K06
Industrial's - 20 piece (includes 2 mandrels, 1 adaptor,1 pilot drill and 12" extension)		✓		✓		✓		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	913K07

Accessories

Arbor			
Code#	Description	Suitable For	
ACA01	Round Shank-6mm(1/4")	14 to 30mm(9/16" - 1 3/16")	
ACA02	Hex Shank-6mm(1/4")	14 to 30mm(9/16" - 1 3/16")	
ACA03	Hex Shank-9mm(3/8")	14 to 30mm(9/16" - 1 3/16")	
ACA04	Hex Shank-11mm(7/16")	14 to 30mm(9/16" - 1 3/16")	
ACA05	Hex Shank Pinned-9mm(3/8")	32 to 152mm(1 1/4"-6")	
ACA06	Hex Shank Pinned-11(7/16")	32 to 152mm(1 1/4"-6")	
ACA07	Quick Release & Nut	14 to 152mm(9/16"-6")	
ACA08	Hex Shank-9mm(3/8")	32 to 152mm(1 1/4"-6")	
Adaptor			
Code#	Description		
ACA09	32 to 152mm(1 1/4"-6")		
Pilot Drill			
Code#	Description		
ACD01	83mm(3 1/4"x1/4")		
ACD02	102mm(4"x1/4")		
Extensions			
Code#	Description		
ACE01	300mm(3/8"x12")		

Recommended Operating Speeds for Hole Saws

- Guidelines on generally recommended operating speeds.
- Always follow the recommendations of the hole saw manufacturer concerning use and operating speeds.

Bi-Metal Hole Saw Operating Speeds (RPM Table)

inches	mm	length	mild steel	tool steel & stainless	cast iron	brass	aluminum	wood
9/16	14	0.147	580	300	400	790	900	3000
5/8	16	0.164	550	275	365	730	825	3000
11/16	17	0.180	500	250	330	665	750	3000
3/4	19	0.196	460	230	300	600	690	3000
-	20	0.213	440	220	290	580	660	3000
7/8	22	0.229	390	195	260	520	585	3000
1	25	0.262	350	175	235	470	525	2700
1-1/16	27	0.278	320	160	215	435	480	2700
1-1/8	29	0.295	300	150	200	400	450	2700
1-3/16	30	0.311	285	145	190	380	425	2400
1-1/4	32	0.327	275	140	180	360	410	2400
1-5/16	33	0.344	260	135	175	345	390	2400
1-3/8	35	0.360	250	125	165	330	375	2400
1-7/16	37	0.376	240	120	160	315	360	2400
1-1/2	38	0.393	230	115	150	300	345	2400
1-9/16	40	0.409	220	110	145	290	330	2100
1-5/8	41	0.425	210	105	140	280	315	2100
1-11/16	43	0.442	205	100	135	270	305	2100
1-3/4	44	0.458	195	95	130	260	295	2100
1-13/16	46	0.475	190	95	125	250	285	2100
1-7/8	48	0.491	180	90	120	240	270	2100
2	51	0.524	170	85	115	230	255	2000
2-1/16	52	0.540	165	80	110	220	245	2000
2-1/8	54	0.556	160	80	105	210	240	2000
2-1/4	57	0.589	150	75	100	200	225	2000
2-5/16	59	0.605	145	75	95	195	225	2000
2-3/8	60	0.622	140	70	90	190	220	2000
2-1/2	64	0.655	135	65	85	180	205	1850
2-9/16	65	0.671	130	65	85	175	200	1850
2-5/8	67	0.687	130	65	85	170	195	1800
-	68	0.704	130	65	80	170	190	1800
2-3/4	70	0.720	125	60	80	160	185	1800
2-7/8	73	0.753	120	60	75	160	180	1800
3	76	0.785	115	55	70	150	170	1800
3-1/8	79	0.818	110	55	70	140	165	1500
3-1/4	83	0.851	105	50	65	140	155	1500
3-3/8	86	0.884	100	50	65	130	150	1500
3-1/2	89	0.916	95	45	60	130	145	1200
3-5/8	92	0.949	90	45	60	120	140	1200
3-3/4	95	0.982	90	45	60	120	135	1200
3-7/8	98	1.014	90	45	60	120	135	1200
4	102	1.047	85	40	55	110	130	1000
4-1/8	105	1.080	80	40	55	110	120	1000
4-1/4	108	1.113	80	40	55	110	120	900
4-3/8	111	1.145	80	40	50	100	120	900
4-1/2	114	1.178	75	35	50	100	105	900
4-3/4	121	1.244	75	35	50	92	95	900
5	127	1.309	65	30	45	90	90	800
5-1/2	140	1.440	60	25	40	85	85	800
5-3/4	146	1.505	55	25	35	75	75	800
6	152	1.571	55	25	35	75	75	800

Hole Saw Operating Speeds (RPM Table)

inches	mm	brick ceramic	slate	reinforced plastics	fiberglass
5/8	16	620	1540	2140	920
3/4	19	510	1280	1790	770
-	20	470	1180	1660	715
7/8	22	430	1090	1530	660
1	25	380	960	1340	580
1-1/8	29	340	850	1190	510
1-1/4	32	310	770	1070	460
1-3/8	35	280	700	980	420
1-1/2	38	260	640	890	390
1-3/4	44	220	550	770	330
1-7/8	48	200	510	720	310
2	51	190	480	670	290
2-1/8	54	180	450	630	280
2-1/4	57	170	430	600	270
2-3/8	60	160	400	570	250
2-1/2	64	150	380	540	230
2-3/4	70	140	350	500	210
3	76	130	320	450	190
3-1/4	83	120	295	415	180
3-3/8	86	115	285	400	175
3-3/4	95	102	255	350	160
4	102	95	240	330	150
4-1/2	114	82	215	290	125

diameter inch	diameter mm	pipe tap dia. inch	pipe tap dia. mm	pipe entrance dia inch	pipe entrance dia mm	order number M3	order number M42
9/16	14	-	-	-	-	91301	91601
5/8	16	-	-	-	-	91302	91602
11/16	17	-	-	-	-	91303	91603
3/4	19	1/2	13	3/8	10	91304	91604
-	20	-	-	-	-	91305	91605
13/16	21	-	-	-	-	91306	91606
7/8	22	3/4	19	1/2	13	91307	91607
15/16	24	-	-	-	-	91308	91608
1	25	-	-	-	-	91309	91609
1-1/16	27	-	-	-	-	91310	91610
1-1/8	29	1	25	3/4	19	91311	91611
1-3/16	30	-	-	-	-	91312	91612
1-1/4	32	-	-	-	-	91313	91613
1-5/16	33	-	-	-	-	91314	91614
1-3/8	35	-	-	1	25	91315	91615
1-7/16	37	-	-	-	-	91316	91616
1-1/2	38	1-1/4	32	-	-	91317	91617
1-9/16	40	-	-	-	-	91318	91618
1-5/8	41	-	-	-	-	91319	91619
1-11/16	43	-	-	-	-	91320	91620
1-3/4	44	1-1/2	38	1/2	38	91321	91621
-	45	-	-	-	-	91322	91622
1-13/16	46	-	-	-	-	91323	91623
1-7/8	48	-	-	-	-	91324	91624
-	50	-	-	-	-	91325	91625
2	51	-	-	1-1/2	38	91326	91626
2-1/16	52	-	-	-	-	91327	91627
2-1/8	54	-	-	-	-	91328	91628
-	55	-	-	-	-	91329	91629
2-1/4	57	2	51	-	-	91330	91630
2-5/16	59	-	-	-	-	91331	91631
2-3/8	60	-	-	-	-	91332	91632
2-1/2	64	-	-	2	51	91333	91633
2-9/16	65	-	-	-	-	91334	91634
2-5/8	67	2-1/2	64	-	-	91335	91635
-	68	-	-	-	-	91336	91636
2-3/4	70	-	-	-	-	91337	91637
2-7/8	73	-	-	-	-	91338	91638
-	75	-	-	-	-	91339	91639
3	76	-	-	2-1/2	64	91340	91640
3-1/8	79	-	-	-	-	91341	91641
3-1/4	83	3	76	-	-	91342	91642
3-3/8	86	-	-	-	-	91343	91643
3-1/2	89	-	-	-	-	91344	91644
3-5/8	92	-	-	3	76	91345	91645
3-3/4	95	3-1/2	89	-	-	91346	91646
3-7/8	98	-	-	-	-	91347	91647
-	100	-	-	-	-	91348	91648
4	102	-	-	-	-	91349	91649
4-1/8	105	-	-	3-1/2	89	91350	91650
4-1/4	108	4	102	-	-	91351	91651
4-3/8	111	-	-	-	-	91352	91652
4-1/2	114	-	-	-	-	91353	91653
4-3/4	121	4-1/2	114	4	102	91354	91654
5	127	-	-	-	-	91355	91655
5-1/2	140	-	-	5	127	91356	91656
5-3/4	146	-	-	-	-	91357	91657
6	152	-	-	-	-	91358	91658

Tech Tip

- Always wear eye protection.
- Always be sure that the pilot drill extends beyond the cutting edge of the saw by at least 1/8".
- Be sure to secure the material to be cut to keep it from spinning or slipping.
- Start the cutting process with the saw square to the material being cut, this will ensure that all teeth begin to cut at the same time and will help prevent premature wear and damage to the saw.
- Following the recommended operating speed for the saw size and the material being cut.
- Operator should feed the saw in and out to allow the material shavings to clear out of the hole being cut.
- Cutting oils or lubricants should be used to extend the life of the saw, except when cutting wood or cast iron.
- Occasionally check the mandrel's drive pins tobe sure they are still fully engaged in the saw and that they have not vibrated out of the drive holes in the saw.
- When sawing in wood, finish the hole from the opposite side to prevent splintering. Once the pilot drill has broken through the other side, you can use this hole to guarantee you are in line with where you have already started cutting.
- When sawing resistant and difficult to cut materials, drill a couple of small holes on the circumference to allow chip to clear.
- Keep an oil soaked sponge inside the hole saw if you:
  - — Cannot lubricate in the normal way
  - — Operate in stainless steel
  - — Operate in a vertical position from above.

Tech Tip

Pipe and Tap Entrance

- Pipe taps are used for threading holes created by a hole saw to receive a threaded pipe. Reference the product charts for proper selection. To cut a hole for a 1" pipe tap, select a 1-1/8" hole saw.
- Pipe entrance is the diameter for the hole through which a pipe of a given diameter will pass during installation or repair.
- Pipe size is defined by the inside diameter. To cut a hole through which a 3/4" pipe may be passed, a 1-1/8" hole saw is used.
- Tubing size is defined by the outside diameter. To cut an entrance hole of a given tubing diameter, the same diameter hole saw should be used.

HSS Hole Cutter

- Adopt high class high-speed steel as material, with features of good heat resistance, rigidlty and ductility.
- Used to pounch holes on all types of metal plates and stainess steel plastes.
- Adopt detachable design to save operating costs.

Bi-Metal [tube]

DIAMETER		ARTICLE#
INCHES	MM	M42
19/32"	15	91401
5/8"	16	91402
11/16"	17	91403
23/32"	18	91404
3/4"	19	91405
-	20	91406
13/16"	21	91407
7/8"	22	91408
29/32"	23	91409
15/16"	24	91410
1"	25	91411
1-1/32"	26	91412
1-3/32"	28	91413
1-3/16"	30	91414
1-1/4"	32	91415
1-3/8"	35	91416

DIAMETER		ARTICLE#
INCHES	MM	M42
1-1/2"	38	91417
1-9/16"	40	91418
1-21/32"	42	91419
1-25/32"	45	91420
1-15/16"	50	91421
2-3/16"	55	91422
2-3/8"	60	91423
2-9/16"	65	91424
2-3/4"	70	91425
2-15/16"	75	91426
3-5/32"	80	91427
3-11/32"	85	91428
3-9/16"	90	91429
3-3/4"	95	91430
3-15/16"	100	91431

TCT Hole Cutter

- 3-ply cutters reduces tip crack even with hard use, and the edge of knife adopts super quality alloy material,which is applied to drilling in cold/hard metal stainless steel plate;
- The 25mm effective length enables this hole-saw to drill thick steel plate as well as curved face material like thick-wall metal pipesetc.
- The abrasion reducing design heightens durability of hole-saw to great degree, besides, with lighter and faster drilling compared with previous TCat-edge products.

Bi-Metal [tube]

DIAMETER		ARTICLE#
INCHES	MM	M42
19/32"	15	91501
5/8"	16	91502
11/16"	17	91503
23/32"	18	91504
3/4"	19	91505
-	20	91506
13/16"	21	91507
7/8"	22	91508
29/32"	23	91509
15/16"	24	91510
1"	25	91511
1-1/32"	26	91512
1-3/32"	28	91513
1-3/16"	30	91514
1-1/4"	32	91515
1-3/8"	35	91516
1-1/2"	38	91517
1-9/16"	40	91518
1-21/32"	42	91519
1-25/32"	45	91520

DIAMETER		ARTICLE#
INCHES	MM	M42
1/7/8"	48	91521
1-15/16"	50	91522
2-3/32	53	91523
2-3/16"	55	91524
2-3/8"	60	91525
2-9/16"	65	91526
2-3/4"	70	91527
2-15/16"	75	91528
3-5/32"	80	91529
3-11/32"	85	91530
3-9/16"	90	91531
3-3/4"	95	91532
3-15/16"	100	91533
4-1/8"	105	91534
4-5/16"	110	91535
4-17/32"	115	91536
4-13/16"	120	91537
4-15/16"	125	91538
5"	127	91539

Reciprocating Saw Blade

TYPE one

Demolition Reciprocating Saw Blades

- These saw blades are wider and thicker and have been engineered for heavy-duty applications
- Designed for tough, heavy duty cutting jobs and are built to last longer
- Make your mark with these demolition reciprocating saw blades.

6 TPI Wood

- Wider(7/8")and thicker(.062)blades for demolition work
- Available in 6" 9"and 12" lengths with 1/2" universal shanks

SIZE LENGTH		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
6*7/8*.062	150*22*1.60	6	93101	For cutting nail embedded wood, railroad ties and other tough materials
9*7/8*.062	225*22*1.60	6	93102	
12*7/8*.062	300*22*1.60	6	93103	

14 TPI Metal

- Wider(1")and thicker(.042) blades for demolition work
- Available in 6" 9" and 12" lengths with 1/2"universal shanks

SIZE LENGTH		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
6*1*.042	150*25*1.10	14	93201	For cutting pipe, angle iron, nail embedded wood and structural steel
9*1*.042	225*25*1.10	14	93202	
12*1*.042	300*25*1.10	14	93203	

TYPE two

Pallet Reciprocating Saw Blades

- M42 cutting edge with 8% cobalt for longer life
- Unique tooth design for fast cutting
- Special heat treat for increased tooth life
- Rounded nose for easy cutting and safe operation
- Special blade backer for greater flexibility when cutting block pallets

SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
8*3/4*.035	200*19*.90	10	93301	High performance cutting for pallet dismantling

TYPE three

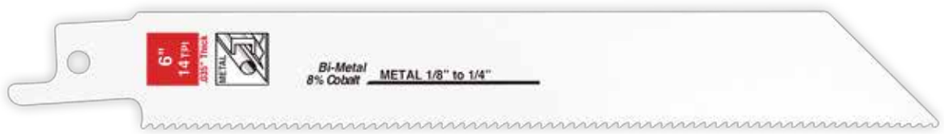
Bi-Metal Reciprocating Saw Blades

- These Reciprocating saw blades are designed for efficient cutting in a wide variety of materials including wood, metal and plastic
- All have the 1/2" universal shank that fits all standard 1/2" shank reciprocating saws
- Made for quick and accurate cutting

Wood Cutting

SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
6*3/4*.050	150*19*1.30	5/7	93401	General roughing-in work in wood and nail-embedded woods. Fast cutting
6*3/4*.050	150*19*1.30	6	93402	
6*3/4*.050	150*19*1.30	10	93403	
9*3/4*.050	225*19*1.30	6	93404	
12*3/4*.050	300*19*1.30	6	93405	

Metal Cutting



SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
3*5/16*.035 scroll	75*8*0.90	14	93501	For scroll cutting heavy gague metal, fiberglass, Masonite
6*3/4*.035	150*19*0.90	14	93502	For metals heavier than 1/8", bar stock, angles, etc. also rubber, Masonite, fiberglass, etc
9*3/4*.035	225*19*0.90	14	93503	
6*3/4*.035	150*19*0.90	18	93504	For heavy gauge sheet metal, conduit, pipe, tubing, thin fiberglass
8*3/4*.035	200*19*0.90	18	93505	
12*3/4*.035	300*19*0.90	18	93506	
6*3/4*.035	150*19*0.90	24	93507	For metals lighter than 18-gauge, thin wall tubing, formed sheet, trim, etc

All-Purpose Cutting

SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
8*3/4*.035	200*19*0.90	10/14	93601	Heavy gauge metals, compositions, masonite, wood .etc
12*3/4*.050	300*19*1.30	10/14	93602	
12*3/4*.050 taper	300*19*1.30	10/14	93603	

Plaster Cutting

SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
6*3/4*.050	150*19*1.3	6	93701	High performance cutting for Plaster. Fast cutting

Air Saw Blades

- Specially designed blades for use in pneumatic saws. Air Saw blades have fine teeth for cutting metal

SIZE		TEETH PER INCH	ARTICLE#	RECOMMENDED USES
INCH	MM			
3*1/2*.025	75*12.5*0.64	18	93801	For scroll cutting metals lighter than 14 gauge
4*1/2*.025	100*12.5*0.64	18	93804	
5*1/2*.025	125*12.5*0.64	18	93806	
3*1/2*.025	75*12.5*0.64	24	93802	For scroll cutting metals lighter than 18 gauge, thin tubing, formed sheet, trim, etc
3*1/2*.025	75*12.5*0.64	32	93803	For scroll cutting metals very thin gauge metals. sheet, tubing, trim, etc
4*1/2*.025	100*12.5*0.64	32	93805	

Tech Tipe for Reciprocating Saw Blades

- First decide on the length of saw blade you need for your application. We recommend that the blade be about 2"(50mm) more than the thickness or width of the material to be cut, to take into account the blade travel.
- Then refer to the cutting guide for the cross section you plan to cut and select the tooth pitch.
- Always wear eye protection.

HACKSAW BLADES

TYPE one

Bi-Metal Hacksaw Blades

- Bi-Metal hacksaw blades for heavy duty cutting
- Blade is shatter resistant
- Cut medium gauge metals (1/16" to 1/4") such as sheet metal, angle iron, bolts, channels, drill rods, threaded rod, pipes and tubing

SIZE		TPI	ARTICLE#
INCH	MM		
10*1/2*.025	250*12.5*0.64	18	95101
10*1/2*.025	250*12.5*0.64	24	95102
10*1/2*.025	250*12.5*0.64	32	95103
12*1/2*.025	300*12.5*0.64	14	95104
12*1/2*.025	300*12.5*0.64	18	95105
12*1/2*.025	300*12.5*0.64	24	95106
12*1/2*.025	300*12.5*0.64	32	95107
12*1/2*.025	300*12.5*0.64	10/14	95108
12*1/2*.025	300*12.5*0.64	14/18	95109
12*1/2*.025	300*12.5*0.64	18/24	95110
12*1/2*.025	300*12.5*0.64	24/32	95111

TECH TIPS

HACKSAW BLADE SELECTION

Carbon — These lades are recommended for cutting brass, copper, softer steels aluminum and similar materials

High speed Steel — Recommended for those materials which are difficult to cut such as stainless steel,tool and alloy steels. Use highspeed steel all hard blades when the workpiece can be held securely in a vice or clamp

Bi-Metal — Use on all types of materials. A highspeed steel cutting edge welded to a tough alloy steel back produces a blade with a long cutting life and high resistence to breaking

BAND SAWS

TYPE one

PORTABLE BANDSAWS(Matrix II)

LENGTH*WIDTH*THICKNESS		QUANTITY PER BOX	VARIABLE PITCH		CONSTANT PITCH				
INCH	MM		10/14	14/18	18/24	10 Raker	14 Raker	18 Raker	24 Raker
44-7/8*1/2*.020	1140mm*12.5mm*.50mm	3 or 100	92101	92102	92103	92104	92105	92106	92107

FEATURES

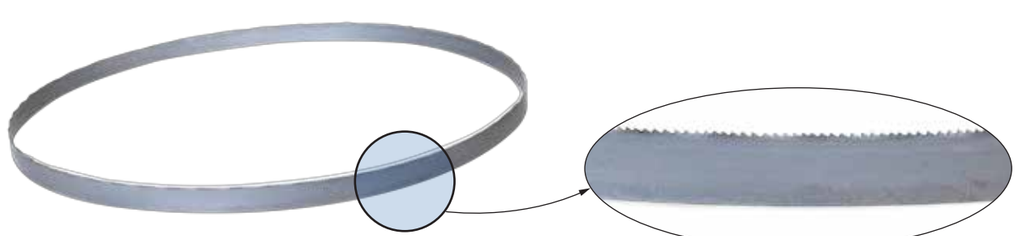
- Bi-Metal Portable Bandsaw Blades(Matrix II)
- All teeth have uniform spacing and gulleted depth

ADVANTAGES

- Improve cut quality and offer improved shock resistance
- Blades resist tooth strippage

APPLICATION INFORMATION

- Cuts aluminum, cast iron, chrome, stainless steel, tungsten steel and other problem material at low speed



TYPE two

BI-METAL BANDSAW BLADES(M42)

- Bi-Metal Bandsaw Blades have high speed steel teeth for a sharp cut and give you a longer lasting blade.
- HSS edge contains 8% cobalt.
- Available in coils or custom-welded to length.

Narrow Width Bands M-42

WIDTH*GAUGE			VARIABLE PITCH			CONSTANT PITCH						
INCH	MM	COIL LENGTH	6/10	8/12	10/14	4 Hook	6 Positive	10 Raker	14 raker	18 Wavy	24 Raker	24 Wavy
1/2*.020	12.5*0.51	250 ft.			92205				92214	92217	92219	92220
1/2*.025	12.5*0.64	250 ft.	92201	92202	92206			92212	92215	92218		
1/2*.035	12.5*0.90	250 ft.		92203	92207	92209	92210		92216			

● Color denotes Matrix II material

FEATURES

- Solids and thick wall tubing of medium to difficult material, such as stainless steels
- Narrow width from 1/4"to 1/2"for contour and miter cutting
- Narrow width and gauge can be welded by customer for die building and internal cutting re-use
- HSS Edge contains 8% cobalt

APPLICATION INFORMATION

T-1000 M-42(Straight tooth)

WIDTH*GAUGE			VARIABLE PITCH						CONSTANT PITCH	
INCH	MM	COIL LENGTH	3/4	4/6	5/8	6/10	8/12	10/14	10 Raker	14 Wavy
3/4*.035	19.0*0.90	250ft.				92228	92231	92233	92235	92236
1*.035	27.0*0.90	250ft.	92221	92223	92226	92229	92232	92234		92237
1-1/4*.042	34.0*1.10	250ft.	92222	92224	92227	92230				
1-1/2*.050	41.0*1.27	250ft.		92225						

FEATURES

- Bi-metal construction
- M42 High Speed Steel cutting edge provides higher heat and wear durability
- Tooth hardness Rc 67-69
- 0°rake for smoother cutting and general applications

APPLICATION INFORMATION

- All-purpose band for moderate to difficult to cut materials

T-2000 M-42(Positive Rake Tooth)

WIDTH*GAUGE			VARIABLE PITCH				CONSTANT PITCH		
INCH	MM	COIL LENGTH	2/3	3/4	4/6	5/7	2 Hook	6 Raker	8 Raker
3/4*.035	19.0*0.90	250ft.			92244	92248			
1*.035	27.0*0.90	250ft.	92238	92241	92245	92249	92251	92252	92254
1-1/4*.042	34.0*1.10	250ft.	92239	92242	92246	92250		92253	
1-1/2*.050	41.0*1.27	150ft.	92240	92243	92247				

FEATURES

- Bi-metal construction
- M42 High Speed Steel cutting edge provides higher heat and wear durability
- Tooth hardness Rc 67-69
- positive rake for easier penetration and reduced vibration

APPLICATION INFORMATION

- Ideal for production and non-production cutting of solids and thick wall tubing of medium alloy
- Recommended for work hardened materials such as stainless steel

T-3000 M-42(Reinforced Tooth)

WIDTH*GAUGE			VARIABLE PITCH		
INCH	MM	COIL LENGTH	2/3	3/4	4/6
3/4*.035	19.0*0.90	250ft.			92263
1*.035	27.0*0.90	250ft.	92255	92259	92264
1-1/4*.042	34.0*1.10	250ft.	92256	92260	92265
1-1/2*.050	41.0*1.27	250ft.	92257	92261	92266
2*.063	54.0*1.60	250ft.	92258	92262	92267

FEATURES

- Bi-metal construction
- M42 High Speed Steel cutting edge provides higher heat and wear durability
- Tooth hardness Rc 67-69
- Duplex tooth design
- High positive rake with DUPLEX tooth design for maximum strength when cutting difficult material such as super alloys
- Specially engineered relief angle
- More agreesive action for easier chip formation

APPLICATION INFORMATION

- Production sawing of exotic materials such as Inconels, Monels, Hastalloys, Hi-Alloys, Titanium, stainless and more

T-4000 M-42 (Protective Tooth)

WIDTH*GAUGE			VARIABLE PITCH	
INCH	MM	COIL LENGTH	3/4	4/6
1*.035	27.0*0.90	250ft.		92280
1-1/4*.042	34.0*1.10	250ft.		92281
1-1/2*.050	41.0*1.27	250ft.		92282

FEATURES

- Special designed for tube. To prevent tooth break-age by eliminating excessive tooth stripping due to the domino effect. To withstand the shock of interrupted cuts, allowing for heavier penetration under fast cutting rate

APPLICATION INFORMATION

- Tubes, structures, small size bundles

T-5000 M-42(Heavy Set)

WIDTH*GAUGE			VARIABLE PITCH			
INCH	MM	COIL LENGTH	2/3	3/4	4/6	5/7
1*.035	27.0*0.90	250ft.	92268		92273	92277
1-1/4*.042	34.0*1.10	250ft.		92270	92274	92278
1-1/2*.050	41.0*1.27	250ft.		92271	92275	92279
2*.063	54.0*1.60	250ft.	92269	92272	92276	

FEATURES

- Bi-metal construction
- M42 High Speed Steel cutting edge provides higher heat and wear durability
- Tooth hardness Rc 67-69
- Heavy Set

APPLICATION INFORMATION

- For large and bundle cutting of structural steel
- Ideal for applications where a larger kerf is needed to prevent blade pinching and stalling from material stresses and movement

T-6000 (Turtle Back Tooth)

WIDTH*GAUGE			VARIABLE PITCH	
INCH	MM	COIL LENGTH	3/4	4/6
1*.035	27.0*0.90	250ft.	92283	
1-1/4*.042	34.0*1.10	250ft.	92284	
1-1/2*.050	41.0*1.27	250ft.	92285	

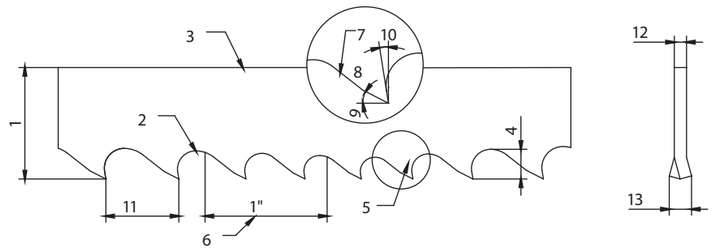
FEATURES

- it is suited for universal workshop operations

APPLICATION INFORMATION

- Profiles for thick wall tube, alloy steel, single, layer and bundle cutting steel girders

Terminology



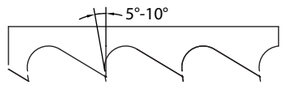
1) **Width**
   The nominal dimension of a saw blade, as measured from the tip of the tooth to the back of the blade.
2) **Gullet**
   The curved area at the base of the tooth.
3) **Blade Back**
   The blade body, not including the tooth portion.
4) **Gullet Depth**
   The distance from the tooth tip to the bottom of the gullet.
5) **Tooth**
   The cutting portion of the saw blade.
6) **TPI**
   The number of teeth per inch.
7) **Tooth Back or Relief Angle**
   The surface of the tooth opposite the cutting edge, or tooth face.
8) **Tooth Face or Rake Angle**
   The cutting surface of the tooth.
9) **Tooth Back Clearance Angle**
   The angle of the tooth back measured in relation to the cutting direction of the saw.
10) **Tooth Rake Angle**
    The angle of the tooth face measured with respect to a line perpendicular to the cutting direction of the saw.
11) **Tooth Pitch**
    The distance from one tooth tip to the next tooth tip.
12) **Thickness (Gage)**
    The thickness of the blade.
13) **Tooth Set**
    The bending of the teeth from right to left to allow clearance (kerf) of the blade back through the cut.

Tooth Form

Positive Rake

A positive rake is characterized by a 5° to 10° rake angle on the tooth face, resulting in better tooth penetration and easier chip formation. This tooth from is recommended for cutting difficult to machine materials, solid cross-sections.

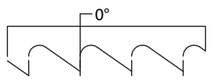
Positive Rake



Standard Straight

A standard straight tooth has a 0° cutting face, and is recommended for cutting easy-to-cut, low alloy materials. This is an efficient tooth form for cutting structural materials and interrupted cuts.

Standard Straight Rake



Tooth Type

Regular
This is a conventional tooth with a 0° cutting angle, ideal for a wide range of general purpose cutting applications.
Hook
This tooth type has a 10° positive rake angle for fast cutting with less feed pressure. The rounded, deeper gullets allow for fast chip removal, and is generally used for cutting nonmetallic and non-ferrous metals.
Skip
This tooth type has a 0° rake angle with shallow gullets and evenly spaced teeth for efficient chip removal. It is used for cutting large sections of soft, non-ferrous metal and nonmetal material, such as wood, composition materials, cork, and plastic.
Variable
A traditional tooth form that offers a 0° rake angle, varying gullet depths, and tooth sizes. Designed to reduce harmonic vibration, this blade efficiently removes chips, extending blade life in solids and structurals.

Variable Positive

Variable positive tooth form offers varying gullet depth, tooth sizes, and a positive rake angle for maximum cutting speeds and better tooth penetration in harder to machine materials.

Duplex
Duplex blades offer deep, chip clearing gullets, large chip-resistant teeth, and a high positive rake angle. This results in faster sawing rates, and improved finishes. Duplex blades are recommended for production cutting of work hardened metals, tool steels, and exotic alloys.

Regular

Variable

Hook

Variable Positive

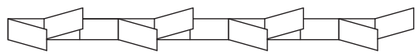
Skip

Duplex

Tooth Set

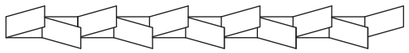
Raker Set
These are individually set teeth — first right then left — followed by an unset tooth. The unset tooth (raker tooth) allows for fast chip removal and a straight cutting actions This tooth set is recommended for general purpose cutting applications.
Wavy Set
Wavy set teeth are set in groups, right and left, in varying degrees. Wavy set teeth are recommended for cutting light metal sections, such as sheet, tubing, and small solid shapes.
Alternate Set
In an alternate tooth set, every tooth is set — one left, one right — throughout the blade length. This tooth set is primarily used for cutting wood.
Variable Set
Variable set teeth are set in alternating groups with a single unset tooth (raker tooth). When these are combined with the varying set angles of the teeth, a faster, smoother, quieter cutting actions is achieved. Variable tooth blades perform extremely well on most applications and provide fast cutting on solids, shapes, structurals, and piping.

Raker Set

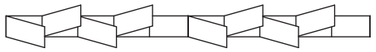


Wavy Set

Alternate Set



Variable Set



Guidelines

Successful Bandsaw Operation

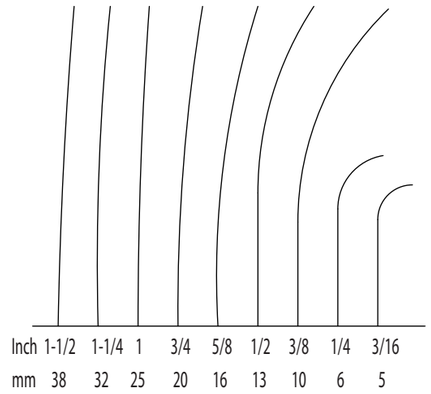
Blade Width Selection

The dimension from tooth tip to back edge of the blade is the blade width. The greater the width, the greater the resistance to deflection while cutting. For straight cutting applications, use the widest blade the machine can accept. For contour cutting use the widest blade that the contour radius will permit, see Minimum Radii Cutting Chart to the right.

Radii in this chart are based on manual feeding of one-inch thick milled steel. To cut close tolerance radii the following factors must be considered:

- Blade width
- Machinability
- Location of pivot point
- Material thickness
- Feed force

Minimum Radii Cut Chart



Teeth Per Inch

The pitch of the blade is defined by the number of TPI (Teeth Per Inch). Non-ferrous materials such as brass, bronze, and aluminum require a large chip area. A low TPI, or "course" pitch, prevents the chips from clogging and binding together in the gullets, which can diminish sawing and damage the blade.
On thin walled pipe, tubing, and sheet, many teeth per inch are required in order to avoid damaging or breaking the teeth. A low TPI blade is the best blade for cutting large cross-sections. The ability of each tooth to cut into the workpiece is increased because the saw's feed pressure is distributed over fewer teeth. A coarse pitch blade increases productivity and provides large chip clearing gullets.

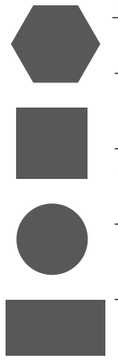
Blade Break-In

Set Bandsaw machine at recommended speed for material to be cut. When cutting easily machined metals, cutting rate should be set at 1/3 to 1/2 the recommended rate for the first 50 to 75 square inches.
When cutting difficult to machine metals, such as tool steels or workhardened alloys, set cutting rate at 3/4 of the recommended rate for the first 25 square inches. Gradually increase the feed until you achieve the recommended cutting rate after 50 to 60 square inches.

Tooth Selection

Tooth selection is based on the principle that there is a tooth pitch best suited for the cutting job. Blade selections should be based on the size, shape, accuracy, materials, and cutting rate expected. The chart below will help you select the correct pitch for cutting solids, tubes, and structurals.

Keep in mind these numbers: 3, 6, 12, and 24 . There should be a minimum of three teeth in the work at all times for bi-metal bands Ideally, 6-12 teeth should be in contact with the work; 24 teeth in the work is too many .



Solids	
Cross-section	Pitch
1/4"	10/14 TPI 14 TPI
3/8" - 3/4"	8/12 TPI 10 TPI 8 TPI
3/4"-1-1/2"	4/6 TPI 6 TPI 5/8 TPI
1-1/2" - 3"	4/6 TPI 4 TPI 3/4 TPI
3" - 6"	2/3 TPI 3/4 TPI 3 TPI
6" - 10"	2 TPI 2/3 TPI
10" - 14"	.75 TPI .8/1.5 TPI

Structural	
Cross-section	Pitch
1/4" - 1/2"	10/14 TPI 10 TPI 8/12 TPI
1/2" - 3/4"	8 TPI 6/10 TPI 5/8 TPI
3/4" - 1"	4/6 TPI 5/8 TPI 6 TPI

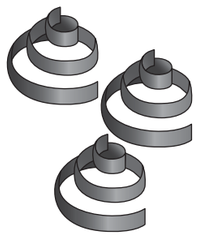
Tubing	
Wall Thickness	Pitch
1/4" - 1/2"	10 TPI 10/14 TPI 8/12 TPI
1/2" - 3/4"	8 TPI 6/10 TPI 5/8 TPI
3/4" - 1"	4/6 TPI 6/10 TPI 6 TPI

Feed Pressure

Chips tell you what is happening with your feed pressure and your blade. Powdery or fine chips indicated not enough feed pressure is being applied. Loosely curled chips tell you everything is going well. Heavy or thick / blue burned chips mean you're pushing the blade to hard, creating too much heat and load for the teeth. If a change in feed or speed rates is required, change one at a time and observe the

Correct

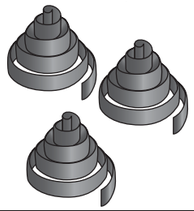
Loosely Curled Chip
Correct feed speed



Incorrect

Thin or powdery chips
Increase feed speed

Heavy, thick, blue chips
Reduce feed speed



Tech Tip

Tips On Bandsaw Cutting

Machine Checklist

___ The blade tension on the tension meter.
___ The performance of the chip brush.
___ The wear and alignment of the blade guides.
___ The band speed with a tachometer.
___ The cutting fluid concentration with a refractometer.

Cutting Fluid

The cutting fluid keeps the blade teeth cool; it prevents the chips from welding to the tooth; it also lubricates the chips, allowing them to move through the cut.

___ Use a high quality cutting fluid.
___ Make sure the cutting fluid is distributed throughout the cut.

Problem	Reason	Solution
Premature and excessive tooth wear	Feed pressure too light	Increase feed pressure
	Band saw too slow	Adjust band speed
	Insufficient coolant, improper coolant mix, or wrong coolant	Apply proper coolant for type material being cut, check flow of coolant
	Improper tooth selection	Call Greenfield Industries for additional information
	Feed pressure too high	Call Greenfield Industries for additional information
	Guides hitting teeth alignment	Check blade
	Improper break-in with new band	Feed should be reduced for first few cuts
Tooth Strippage	Teeth too coarse for material thickness	Select finer pitch
	Material not securely vised	Adjust clamping pressure
	Insufficient or improper coolant	Apply proper coolant for type material begin cut, check flow of coolant
	Excessive feed pressure	Reduce feed pressure
	Band speed too slow	Increase band speed
	Chips loaded in gullet	Replace or adjust chip brush
Finished Surface too Rough	Improper blade selection	Select finer pitch
	Band speed too slow	Adjust band speed
	Feed rate too high	Slow down feed rate
	Improper coolant for type of material being cut	Apply proper coolant
Premature Blade Breakage	Thickness of blade too heavy for diameter of wheels	Select thinner blade
	Band tension too high	Adjust tension
	Improper speed	Call Greenfield Industries for additional information
	Excessive feed pressure	Reduce feed pressure
	Brittle weld	Increase annealing period, decreasing heat gradually
	Saw out of alignment	Get machine properly re-aligned
	Improper coolant	Apply proper coolant for type of material being cut
	Band wheels worn	Replace wheels
Cutting Rate too Slow	Incorrect band speed	Adjust band speed
	Incorrect feed pressure	Adjust feed pressure
	Blade pitch too fine	Select coarser pitch blade
Gullets Loading with Chips	Excessive cutting speed	Reduce cutting rate
	Blade pitch too fine	Select coarse pitch
	Chip brush not working	Replace or adjust chip brush
	Insufficient coolant, improper coolant mix, or improper coolant	Apply proper coolant for type of material being cut, check flow of coolant
Band Squeals	Feed rate too slow	Increase feed rate
	Insufficient coolant flow	Check coolant flow
Belly Shaped Cuts	Blade tension	Check blade tension with tension meter
	Guide arm is too far from work piece	Adjust guides closer to work piece
	Blade pitch too fine	Select coarser pitch blade
	Excessive feed force	Reduce feed force or feed rate
Blade Leading in Cut	Excessive feed force or feed rate	Reduce feed force or feed rate
	Possible hard inclusion	Use cutting oil to reduce leading
	Chip brush not working	Replace or adjust chip brush
	Blade tension too low	Check blade tension with tension meter
Band Develops Twist	Wrong width for radius being cut	Select a narrower blade
	Binding in cut	Adjust blade tension
	Saw guides too close to work piece	Adjust saw guides further from work
Band Stalls in Work	Feed pressure too great	Reduce feed pressure
	Improper blade tension	Adjust blade tension
	Blade pitch too coarse for material being cut	Select finer pitch blade
Burring or Mushrooming of Back Edge	Improper blade tension	Adjust blade tension
	Excessive feed pressure	Reduce feed pressure
	Blade pitch too fine	Select coarser pitch blade
	Improper guide adjustments	Adjust guides
Band Scoring	Band has side wear or grooving	Check saw guide inserts for wear and replace
	Improper alignment of saw guides	Adjust guides so they are square to front vise
	Worn guides	Replace guides
Blade Not Running True against Saw Guide Backup Bearing	Clicking noise against the saw guide backup bearing indicates there is a burr on the back edge of the band	Remove burr on the band
	Weld not in proper alignment	Reweld blade straight and true
	Saw guide backup bearing worn	Replace
	Improper blade tracking	Check band wheel alignment
Band Develops Negative Camber	Band is riding on saw guide backup bearing too heavily	Adjust band alignment on top and bottom wheels Check band wheel alignment
Band Develops Positive Camber	Excessive feed force	Reduce feed force
	Poor tooth penetration	Select a coarser pitch blade for increased tooth penetration
	Saw guide is too far from work piece or no locked	Adjust saw guides closer to work piece
Blade Vibration	Guides poorly adjusted	Check guide adjustments
	Improper band speed	Increase or decrease band speed
	Low blade tension	Increase blade tension
	Feed rate too low	Increase feed rate
	Blade pitch too coarse for material being cut	Select variable pitch blade
	Work piece not properly secured	Adjust clamping pressure
Chip Welding	Excessive feed pressure	Reduce feed pressure
	Excessive cutting speed	Reduce blade speed
	Chip brush not working	Replace or adjust chip brush
	Insufficient or improper coolant	Apply proper coolant for the type of material being cut, check coolant flow