



BX TOOL



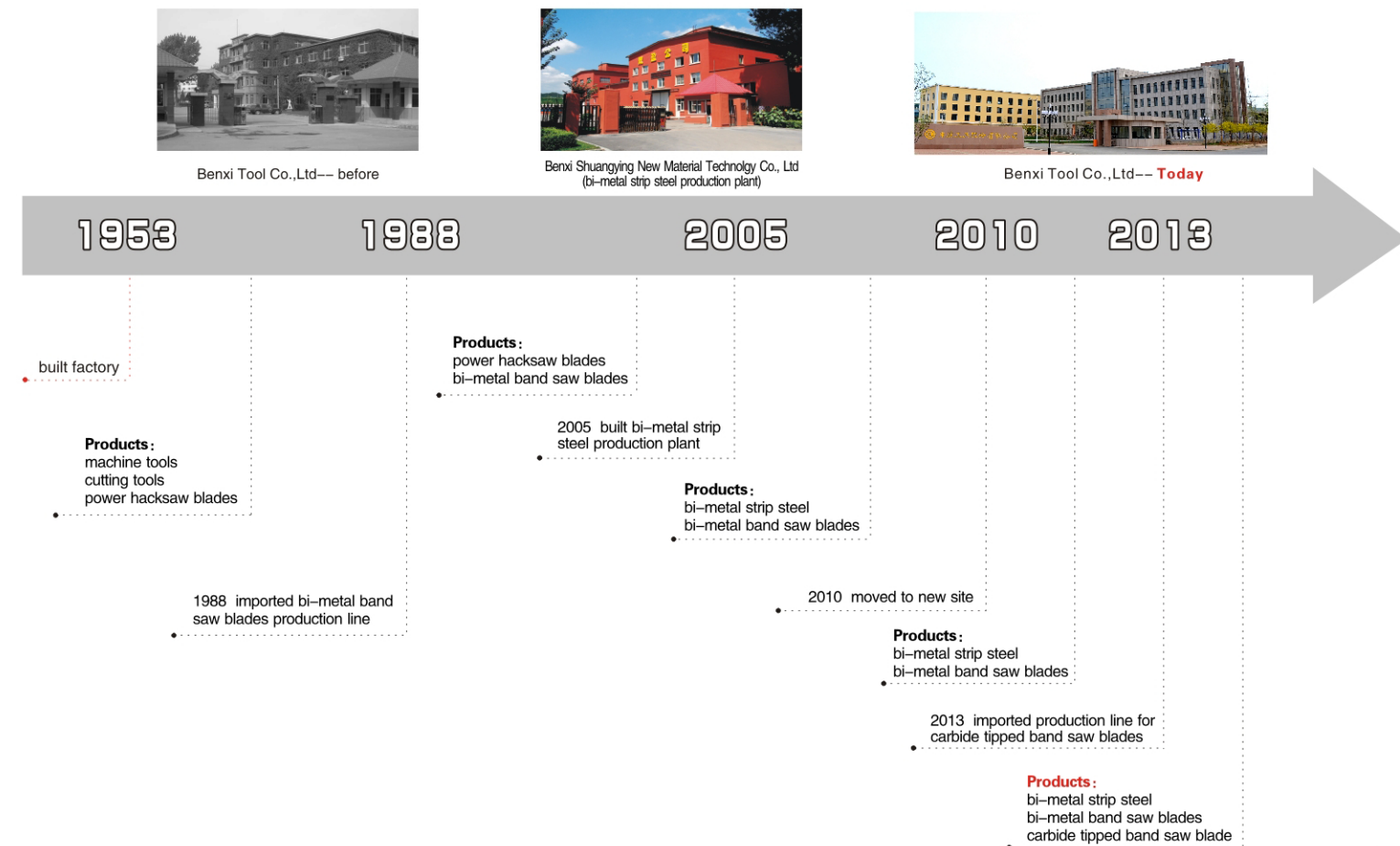
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 **Benxi Tool Co., Ltd**



Company Profile

Benxi Tool Co., Ltd was built in 1953, from the production of various kinds of cutting tools, changes gradually specializing in the production of bi-metal band saw blades manufacturer. The company is integrated with research , production and marketing with a purpose of seeking best quality in production. After over 20 years of efforts has become one of the leading band saw blades manufacturers in China, annual output rank ten in the world. Our products are exported to more than 20 countries. For stable and high quality of products, we strict to choose best quality raw materials and adopted world advanced production technology and equipments. Benxi Tool will do our best to meet your needs, provide quality products and service on delivery to meet various your requests. Our engineers and staffs support your advanced requirement professionally.





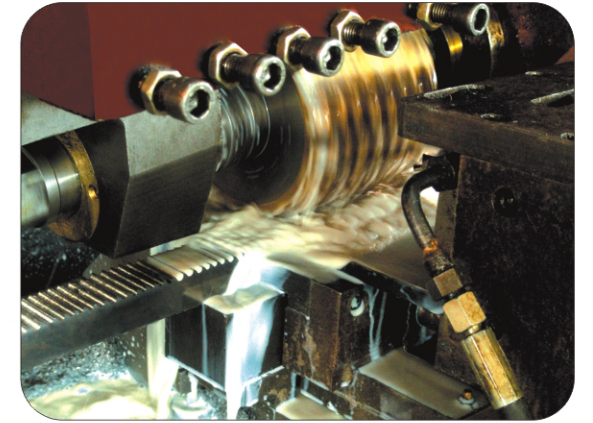
▲ Imported laser welding line



▲ Imported cold rolling machine



▲ Imported strip levelling machine



▲ Imported milling machine



▲ Imported setter machine



▲ Imported heat treatment production line



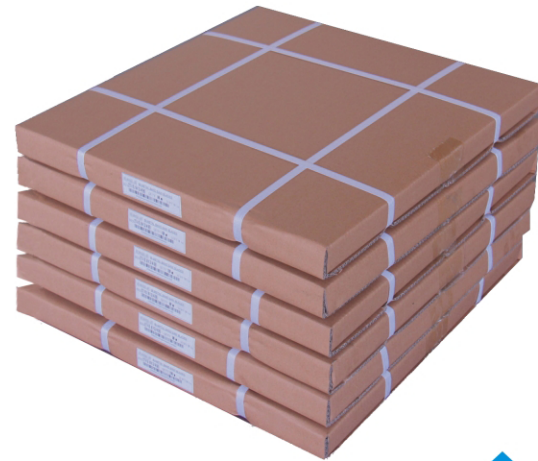
▲ Imported metallographic microscope



▲ Imported straightness machine

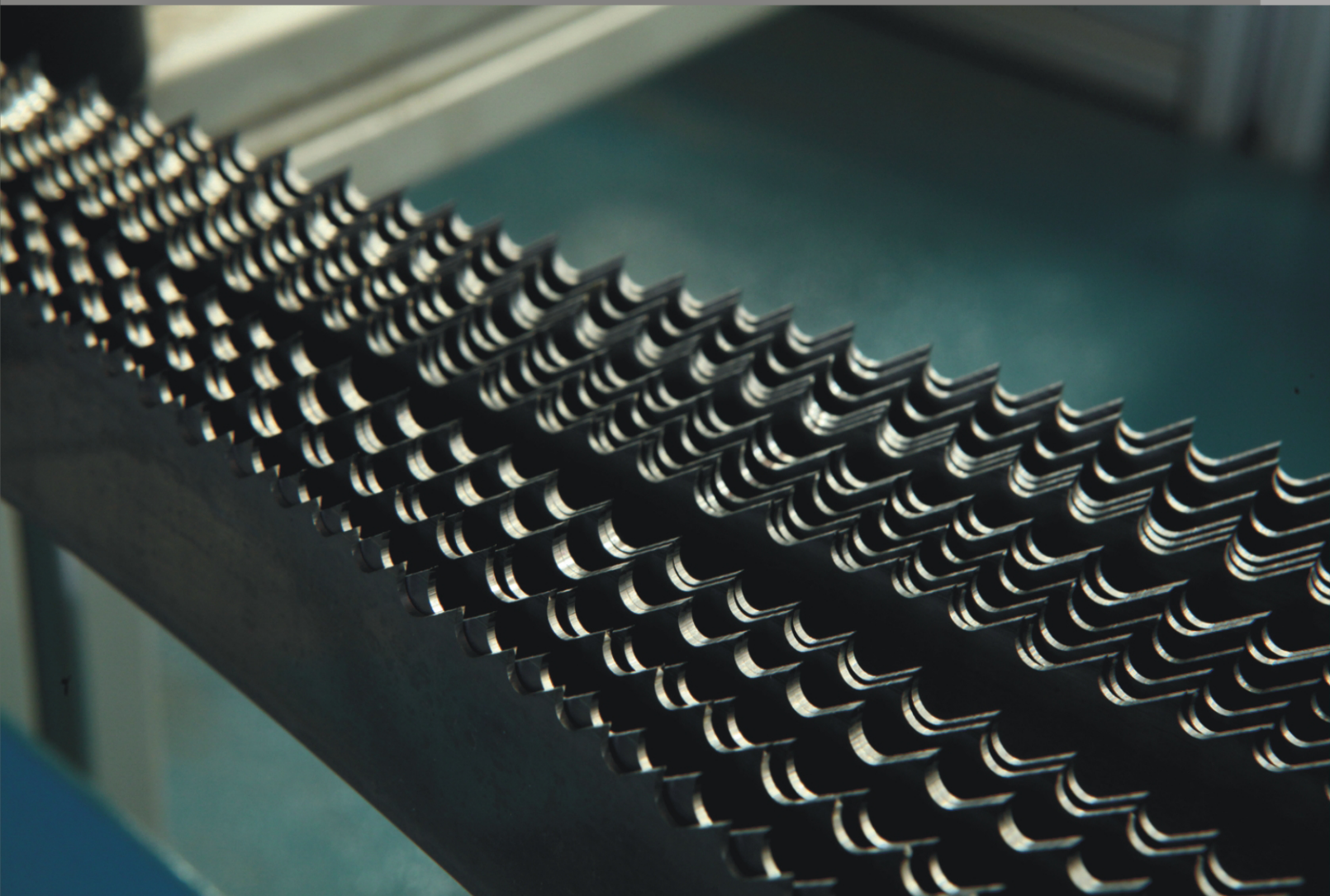


▲ Imported welding machine



Technology & Equipments

We have the most advanced technology and production equipments for producing band saw blade.

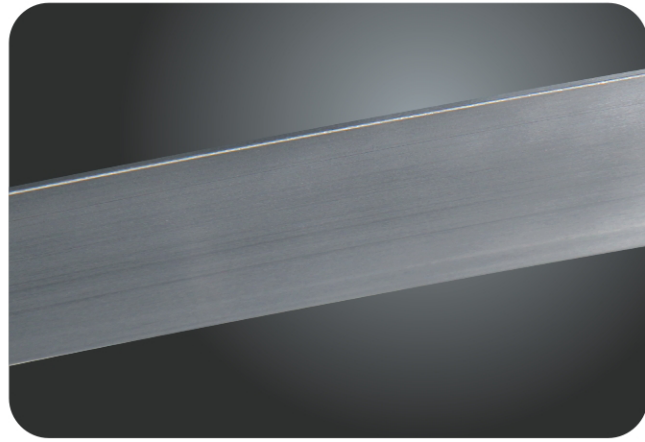


PRODUCT

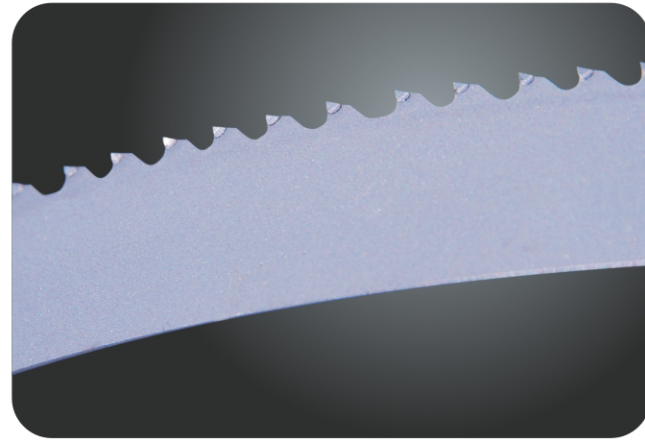
Your cutting solution

We provide best quality and invest in research & development to support client's development.

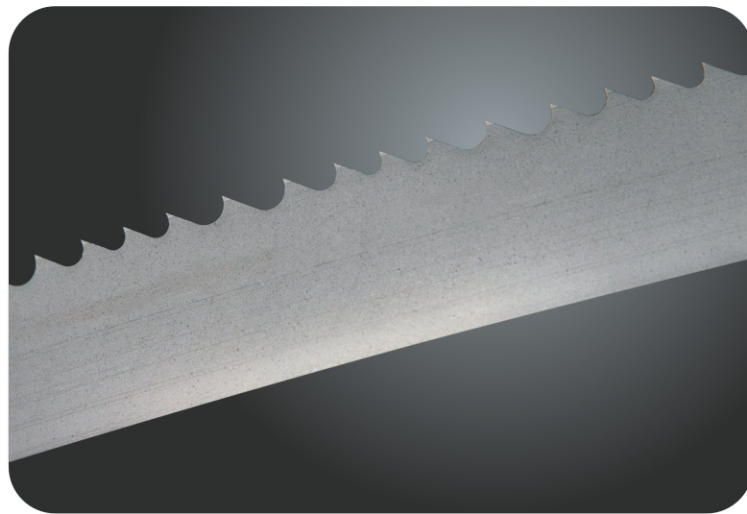
Products Range



Bi-metal Strip Steel



Carbide Tipped Band Saw Blade



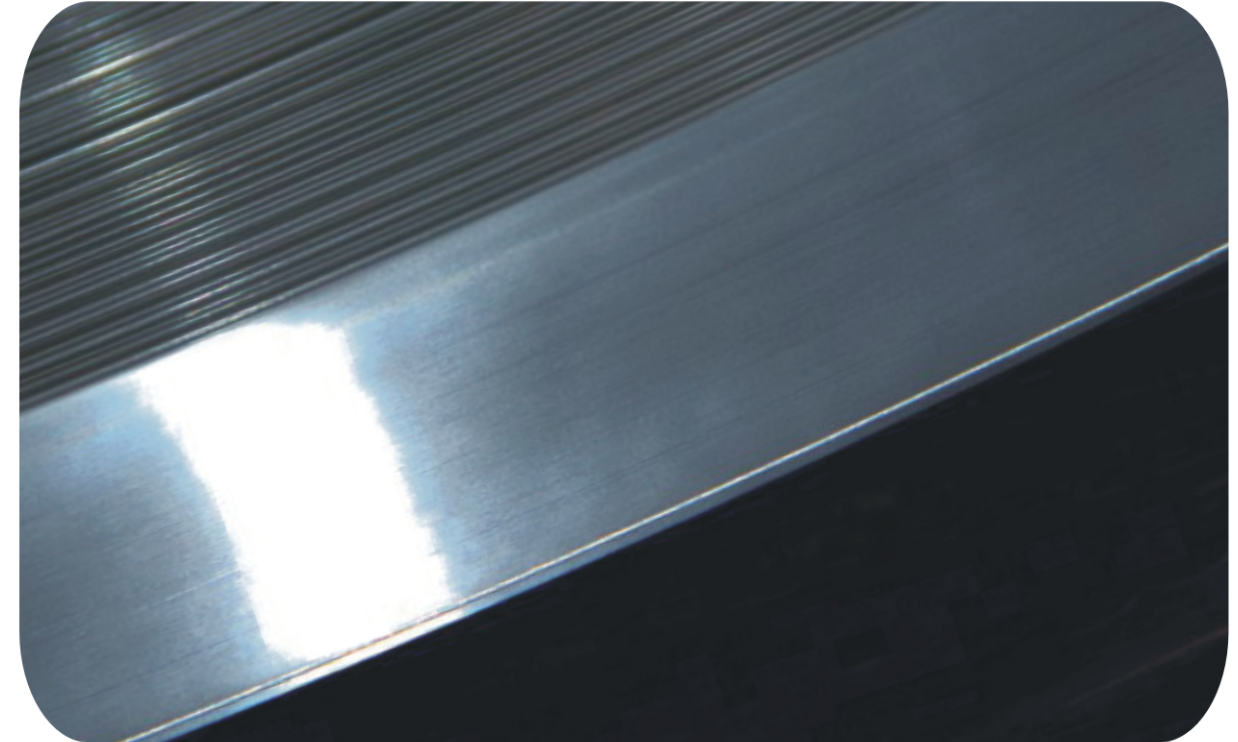
Bi-metal Band Saw Blade

M51 series

HS series

M42 series

Bi-metal Strip Steel



Bi-metal strip steel is welded by two materials, imported spring steel as backing strip steel, the high speed steel as edge material, which are jointing by the international advanced laser welding technology.

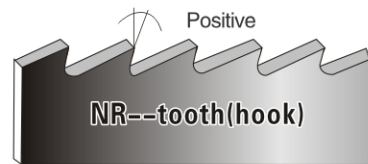
SIZE (mm)	SIZE (inch)
13 × 0.6	1/2 × 0.025
19 × 0.9	3/4 × 0.035
27 × 0.9	1 × 0.035
34 × 1.1	1 1/4 × 0.042
41 × 1.3	1 1/2 × 0.050
54 × 1.6	2 × 0.063
67 × 1.6	2 5/8 × 0.063
80 × 1.6	3 5/8 × 0.063

Special sizes can be available to meet your requirement

Tooth Forms



N-tooth with **null** positive rake angle, is best suited for sawing of small-chip materials with high carbon content, such as tool steels or cast irons. It is suitable for a wide range of applications, including thin cross-cuts and materials with thin-walled cross sections.



NR-tooth with **normal** positive rake angle, can be used for all kinds of steels, especially for long-chip and hard-to-cut materials, for example construction steels and hardened steels, as well as high alloy materials.



BR-tooth with **bigger** positive rake angle than normal, the special high-performance hook tooth with modified tooth geometry with low machinability high alloy steels as well as exotic alloys and Cr-Ni-alloys.

Protective Tooth

This tooth-shape is with enhanced welding zone, beneficial for preventing tooth break-age by eliminating excessive tooth stripping due to the domino effect.
Application: Tubes, structures, small size bundles.



Combine Tooth

Combination of normal tooth, turtle back tooth, protective tooth per inch.
Application: Tubes, Profiles, Section steel, solid materials.
Features: Fast cutting rate. Efficient.

Back Angle Tooth

It is excellent for cutting tube with curved back and a gullet with large chip capacity.

Flat Gullet Tooth

The tooth gullet is wider and flatter than normal tooth design. Extremely suit for cutting more stickiness materials, like cooper or aluminum and so on.

Turtle Back Tooth

It is suited for universal workshop operations. Special tooth geometry for profiles for single, layer and bundle cutting steel girders.

Carbide Tipped Band Saw Blade

CT



- Performs extremely well cutting hard materials
- High abrasion resistance carbide teeth materials
- Special teeth set mode design: set teeth or unset teeth

Application

- High Nickel Chrome Alloys
- Ti / Titanium Alloys
- Heat Resistant steels
- High Temperature Alloy Steels
- Aluminum, and for high speed cutting of Aluminum Alloys
- Other cutting application that M42 blade cannot be used

SIZE (mm)	TPI					SIZE (inch)
	3/4	2/3	1.4/2.0	1/1.25	0.75/1	
27 × 0.9	● ▲	● ▲				1 × 0.035
34 × 1.1	● ▲	● ▲	● ▲			1 1/4 × 0.042
41 × 1.3	● ▲	● ▲	● ▲	● ▲		1 1/2 × 0.050
54 × 1.6		● ▲	● ▲	● ▲	● ▲	2 × 0.063
67 × 1.6			● ▲	● ▲	● ▲	2 5/8 × 0.063
80 × 1.6			● ▲	● ▲	● ▲	3 5/8 × 0.063

● --Setting Tooth ▲ --Non-setting Tooth
Special sizes can be available to meet your requirement

M51

Bi-metal Band Saw Blade



Have a higher red-hardness and hardness than M42

Application

- Titanium / Titanium Alloys
- Alloy Tool Steels
- Stainless Steels
- High Speed Steels
- Other hard cutting materials

SIZE (mm)	TPI						SIZE (inch)
	4/6	3/4	2/3	1.4/2.0	1/1.25	0.75/1.25	
27 × 0.9	NR	BR	BR				1 × 0.035
34 × 1.1		BR	BR	BR			1 1/4 × 0.042
41 × 1.3		BR	BR	BR	BR		1 1/2 × 0.050
54 × 1.6		BR	BR	BR	BR	BR	2 × 0.063
67 × 1.6				BR	BR	BR	2 5/8 × 0.063
80 × 1.6				BR	BR	BR	3 5/8 × 0.063

NR--Normal Raker BR--Bigger Raker
Special sizes can be available to meet your requirement

Bi-metal Band Saw Blade

HS



Have better wear resistance teeth materials than M42

Application

- Tool Steels
- Abrasive Tool Steels
- Stainless Steels

SIZE (mm)	TPI					SIZE (inch)
	4/6	3/4	2/3	1.4/2.0	1/1.25	
27 × 0.9	NR	NR/BR	NR/BR			1 × 0.035
34 × 1.1	NR	NR/BR	NR/BR	BR		1 1/4 × 0.042
41 × 1.3		NR/BR	NR/BR	BR	BR	1 1/2 × 0.050

NR--Normal Raker BR--Bigger Raker
Special sizes can be available to meet your requirement

M42

Bi-metal Band Saw Blade



For universal use, cutting range widely

Application

- Stainless Steels
- Alloy Tool Steels
- Die Steels
- Spring Steels
- Bearing Steels
- Quality Carbon Steels
- Structural Steels
- Graphite
- Copper
- Aluminum
- Other Metal and Non Metal Materials

Tooth List

TPI	tooth form	M42							
		13 × 0.6	19 × 0.9	27 × 0.9	34 × 1.1	41 × 1.3	54 × 1.6	67 × 1.6	80 × 1.6
		1/2 × 0.025	3/4 × 0.035	1 × 0.035	1 1/4 × 0.042	1 1/2 × 0.050	2 × 0.063	2 5/8 × 0.063	3 5/8 × 0.063
12/16T	N ■	■		■					
14NT	N ■	■	■	■					
10/14T	N ■	■	■	■					
8/12T	N ■	■	■	■					
6/10T	N ■		■	■					
6NT	N ■	■		■					
5/8T	N ■		■	■	■				
5/8TT	NR ■			■	■				
4/6T	N ■			■					
4/6T	NR ■		■	■	■	■			
4/6PT	NR ■			■	■	■	■		
4/6TT	NR ■			■	■				
4NT	N ■			■	■				
3/4T	N ■			■					
3/4T	NR ■		■	■	■	■			
3/4PT	NR ■			■	■	■	■		
3/4T	BR ■				■				
3/4TT	NR ■			■	■				
3/4CT	NR ■				■				
3/4FT	BR ■			■	■				
3/4T	BR ■								
2/3T	NR ■			■			■		
2/3BT	BR ■					■			
2/3TT	NR ■				■				
2T	NR ■			■			■		
1.4/2.0BT	BR ■					■	■	■	
1.4/2.0FT	BR ■					■			
1/1.5BT	BR ■							■	
1.25BT	BR ■					■	■	■	
1/1.25BT	BR ■					■	■	■	
1/1.25BT	BR ■					■	■	■	
	BR ■						■	■	■

Tooth List

TPI	tooth form	M51				
		27 × 0.9	34 × 1.1	41 × 1.3	54 × 1.6	67 × 1.6
		1 × 0.035	1 1/4 × 0.042	1 1/2 × 0.050	2 × 0.063	2 5/8 × 0.063
4/6PT	NR ■	■				
3/4T	N ■	■				
3/4T	NR ■	■	■	■		
3/4TT	NR ■	■	■	■		
3/4CT	NR ■		■			
2/3T	NR ■				■	
2NT	NR ■				■	
1.4/2.0BT	BR ■			■	■	
1.4/2.0FT	BR ■					■
1/1.5BT	BR ■					■
1.25BT	BR ■				■	■
1/1.25BT	BR ■			■	■	■
1/1.25FT	BR ■			■	■	■
0.75/1.25BT	BR ■				■	■

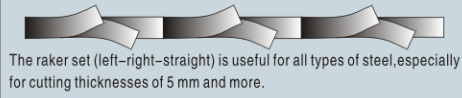
TPI	tooth form	CARBIDE					
		27 × 0.9	34 × 1.1	41 × 1.3	54 × 1.6	67 × 1.6	80 × 1.6
		1 × 0.035	1 1/4 × 0.042	1 1/2 × 0.050	2 × 0.063	2 5/8 × 0.063	3 5/8 × 0.063
3/4	BR ■	●▲	●▲	●▲	●▲		
2/3	BR ■	●▲	●▲	●▲	●▲		
1.4/2.0	BR ■		●▲	●▲	●▲	●▲	●▲
1/1.25	BR ■				●▲		●▲
0.75/1	BR ■				●▲	●▲	●▲

Special sizes can be available to meet your requirement

- NT/T—Normal Tooth(constant or variable pitch)
- BT—Back Angle Tooth
- TT—Turtle Back Tooth
- PT—Protective Tooth
- FT—Flat Gullet Tooth
- CT—Combine Tooth
- N —Null Raker
- NR—Normal Raker
- BR—Bigger Raker
- —Setting Tooth
- ▲ —Non-setting Tooth

Tooth Set

Standard Set



The raker set (left-right-straight) is useful for all types of steel, especially for cutting thicknesses of 5 mm and more.

Left-right Set



In a variable set there is one unset tooth per tooth interval. The rest of the teeth are bent alternately left/right. This set facilitates low-vibration and low-noise cutting.

Wave Set



The wave set is well suited for thin materials up to 3/16", such as sheet metal, thin-walled tubing and cross sections.

How to choose TPI

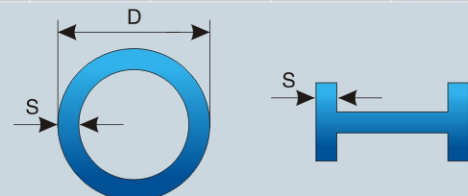
Solid Materials

Diameter of Workpiece (mm)	TPI
≤30	5/8T、6T、8/12T
30-50	6T、4/6T、4T
50-100	4T、3/4T、4/6T
100-150	3/4T、2/3T
150-200	3/4T、2/3T
200-300	2/3T、2T、1.25T、1.4/2.0T
300-500	1.25T、1/1.25T、1.4/2.0T
≥500	1/1.25T、0.9/1.3T

Tubing and Profiles Material

D(mm)	20	40	60	80	100	150	200	300	500
S(mm)	TPI								
2	14	14	14	14	10/14	10/14	10/14	10/14	8/12
3	14	10/14	10/14	8/12	8/12	8/12	6/10	6/10	6/10
4	14	10/14	10/14	8/12	8/12	6/10	6/10	5/8	4/6
5	14	10/14	10/14	8/12	6/10	6/10	5/8	4/6	4/6
6	14	10/14	8/12	8/12	6/10	5/8	5/8	4/6	4/6
8	14	8/12	6/10	6/10	6/10	5/8	5/8	4/6	4/6
10		6/10	6/10	5/8	5/8	4/6	4/6	4/6	3/4
12		6/10	5/8	4/6	4/6	4/6	4/6	3/4	3/4
15				4/6	4/6	3/4	3/4	3/4	2/3
20				4/6	4/6	3/4	3/4	3/4	2/3
30				3/4	3/4	3/4	2/3	2/3	2/3
50						2/3	2/3	2/3	1.4/2.0
75							2/3	1.4/2.0	1.4/2.0
100								1.4/2.0	0.75/1.25
150									0.75/1.25

According to the wall thickness of cutting tubes and profile materials when choose the teeth pattern for tensile teeth.



Products/Applications

Carbide Tipped Band Saw Blade

- High Nickel Chrome Alloys
- Ti / Titanium Alloys
- Heat Resistant steels
- High Temperature Alloy Steels
- Aluminum, and for high speed cutting of Aluminum Alloys
- Other cutting application that M42 blade cannot be used



M51 Bi-metal Band Saw Blade

- Titanium / Titanium Alloys
- Alloy Tool Steels
- Other hard cutting materials
- Stainless Steels
- High Speed Steels



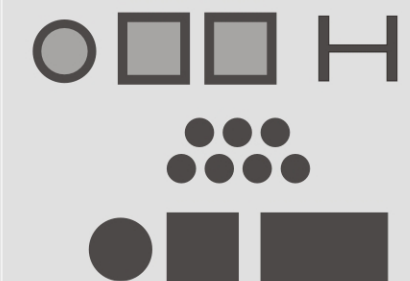
HS Bi-metal Band Saw Blade

- Tool Steels
- Abrasive Tool Steels
- Stainless Steels



M42 Bi-metal Band Saw Blade

- Stainless Steels
- Die Steels
- Bearing Steels
- Structural Steels
- Quality Carbon Steels
- Other Metal and Non Metal Materials
- Alloy Tool Steels
- Spring Steels
- Copper
- Graphite
- Aluminum



How to Use Well Band Saw Blade

1. When install blade, must make sure that all the teeth part are shown outside the guide. And the direction of teeth is the same with the direction of wheel rotation.
2. The tension of blade will be different for the difference of blade width and thickness. And also along with increasing using time of band saw machine, the tension will be reduced by blade stretched. So please make sure the blade tension is in good situation. We recommend blade tension is 300N/mm².
3. Choose cutting liquid: the main function of cutting liquid is cooling and lubricating during cutting. And also have antirust function for workpiece. The higher concentration of cutting liquid will increase the cooling capacity, and the lower concentration will not good with lubrication. So the compounding concentration of cutting liquid should be moderate. We recommend you choose water cutting liquid.

How to Make Running In

Running in should operate with work piece. It is very important for bimetal blade get the best operating life. During running in, the cutting speed should be 1/3 of normal speed; the feed in quantity is 1/4 of normal. Usually, after 5–10 pieces cutting, adjust relative parameters to normal cutting condition gradually.

How to Choose Correct Cutting Speed

Workpiece Material	Cutting parameter	Specification				
		27	34	41	54	67
Structural Steel	Cutting Speed m/min	70 ~ 80	60 ~ 70	50 ~ 60	45 ~ 50	40 ~ 50
	Cutting Rate cm/min	50 ~ 60				
Middle/Low Steel	Cutting Speed m/min	65 ~ 80	55 ~ 70	50 ~ 65	40 ~ 55	
	Cutting Rate cm/min	45 ~ 55				
Hardened and Tempered Steel/ Alloy Steel	Cutting Speed m/min	55 ~ 70	50 ~ 65	45 ~ 60	40 ~ 55	
	Cutting Rate cm/min	40 ~ 50				
Bearing Steel/ Spring Steel/ Tool Steel	Cutting Speed m/min	40 ~ 55		35 ~ 50	30 ~ 45	
	Cutting Rate cm/min	30 ~ 40			25 ~ 35	
Die Steel/ High speed Tool Steel	Cutting Speed m/min	35 ~ 45	30 ~ 45	25 ~ 40		20 ~ 35
	Cutting Rate cm/min	25 ~ 35			20 ~ 30	
Stainless Steel/ Heat-resistant Steel	Cutting Speed m/min	35 ~ 45		25 ~ 40		20 ~ 35
	Cutting Rate cm/min	20 ~ 30				
Aluminum Alloys	Cutting Speed m/min	80 ~ 150			60 ~ 80	
	Cutting Rate cm/min	70 ~ 150				
Copper Alloys	Cutting Speed m/min	60 ~ 90			40 ~ 60	
	Cutting Rate cm/min	45 ~ 50			30 ~ 40	
Profile Steel	Cutting Speed m/min	50 ~ 80			45 ~ 65	
	Cutting Rate cm/min	40 ~ 70			30 ~ 50	

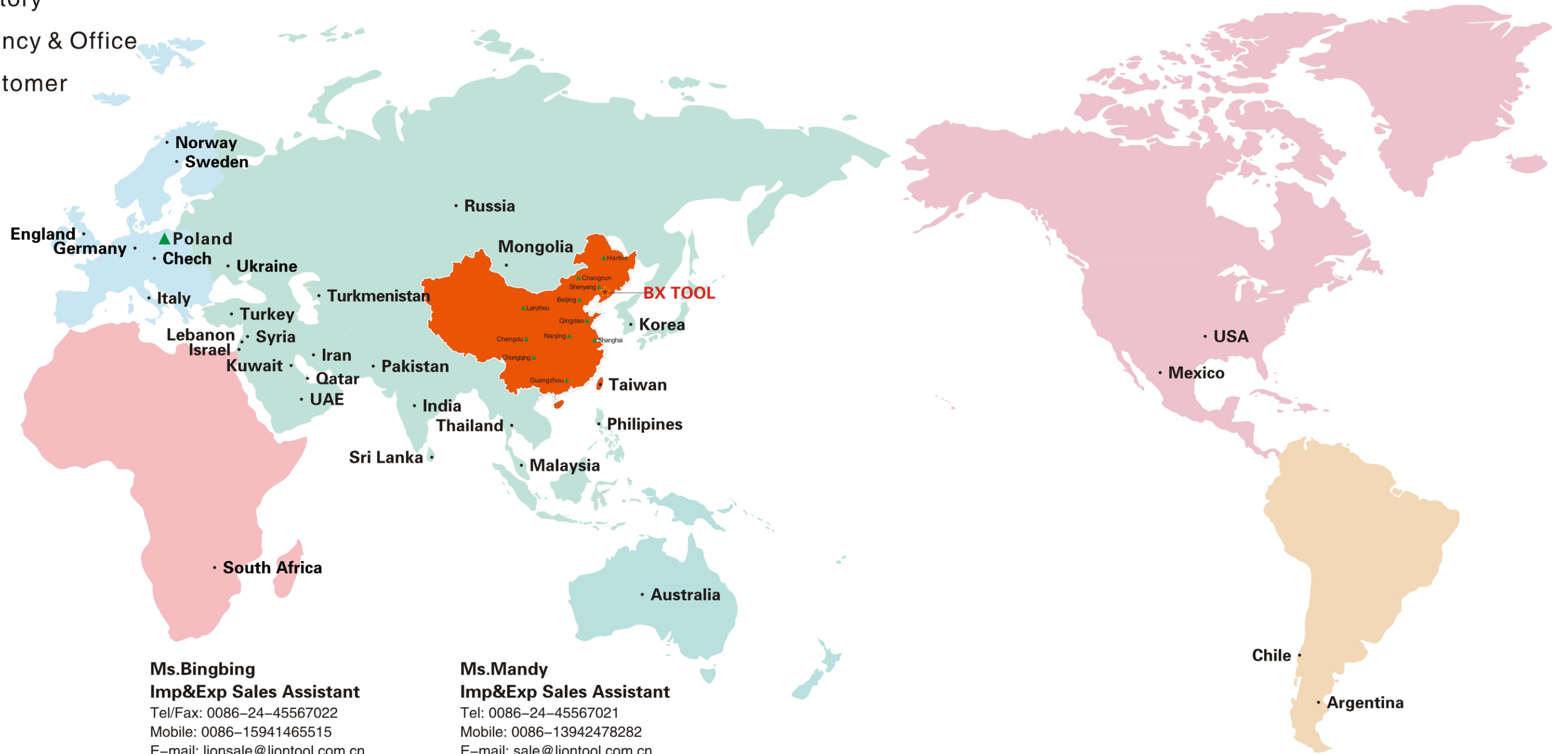
The Common Cutting Problems and Solutions

Problem	Main Reason	Solution
Cut slanting	a. Badly running in, teeth earlier passivation	a. Properly running-in at the beginning using
	b. Speed too fast and feed too more	b. Properly choose the cutting speed and feed
	c. Improper cooling (cutting fluid flow is abnormal)	c. Properly adjust the cutting fluid flow and ratio
	d. Wrong TPI	d. Choose correct TPI by the diameter of workpiece
	e. Tension too small(Improper adjustment of blade tension)	e. Properly adjust blade tension
	f. Guide arm open too wide	f. Choose the width of guide arm basic on the diameter of workpiece
	g. Jaw and workpiece are loosen	g. Adjust jaw tightness of band saw machine
Easily broken teeth	a. New blade not running-in and feed too more	a. Properly running in at the beginning running of blade
	b. Wrong TPI, chips block the gullet	b. Choose correct TPI by the diameter of workpiece
	c. At the beginning of cutting, blade not correctly contact with workpiece, teeth suddenly broken by high load	c. Properly adjust the cutting speed and feed amount
	d. Workpiece with inclusions, hardness is uneven.	d. Change the workpiece or change another kurf
Chips block the gullet	a. Improper ratio of cutting liquid	a. Properly use cutting liquid
	b. Problem with wire brush	b. Adjust wire brush or change the brush
	c. Wrong TPI	c. Choose correct TPI by the diameter of workpiece
Cutting surface rough	a. Teeth passivation, side teeth damaged, few teeth broken	a. Properly running in at the beginning running of blade, avoid of teeth passivation or damage
	b. Wrong position of guide arm and workpiece, Blade tension is not enough	b. Choose the width of guide arm basic on the diameter of workpiece, Properly adjust the blade tension
	c. Cutting speed too fast	c. Properly adjust the feed amount
	d. Improper choice of blade length	d. choose the blade length by the equipment requirement
Blade backing easily break	a. Blade tension too big	a. Adjust the blade tension, better use torque spanner
	b. Feed speed too fast, downward pressure too big	b. Properly adjust feed speed and downward pressure
	c. Three points on a line of driving wheel, driven wheel and guide inaccuracy, result to the blade backing break under high load	c. Adjust the line of driving wheel, driven wheel and guide, be sure that blade working with a proper torque line
	d. Friction of blade backing and saw wheel too big, then make the cracks	d. Adjust the clearance distance between blade backing and the edge of band saw machine's saw wheel
	e. Guide block or top pressure board wore	e. Adjust or change the guide block or top pressure board
	f. Cutting liquid flow too small, improper cooling	f. Properly adjust the cutting fluid flow and ratio
Welding part easily break	a. Bad welding quality, welding seam not good, annealing under the tempering	a. Adjust the parameter of welding machine, make sure welding quality
	b. The grinding of welding part too thin	b. properly grind the welding part
Partly broken teeth or distortion	a. Cutting speed too fast lead to the blade teeth directly contact with workpiece	a. Properly adjust the feed amount, when the machine stop running, keep 12~15mm distance between the teeth of blade and workpiece

Benxi Tool Co., Ltd

Sales Distribution Network & Contact Mode

- ★:Factory
- ▲:Agency & Office
- :Customer



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We sincerely welcome old and new customers to visit our factory!!

Please note:
 Benxi Lion Technology Import and Export Co., Ltd is the daughter company of Benxi Tool Co.,Ltd which is responsible for the import and exportbusiness for Benxi Tool Co.,Ltd.

To be continued.....