

Durable Cutting Tools Worldwide



**BIPICO**

Leadership through Performance



BIPICO, an ISO 9001-2000 company, is proud of its 30 years history. Starting in November, 1974 with a single product, the humble but essential Hacksaw Blade, BIPICO has grown into a major cutting tools manufacturer - exporter with a strong Brand Image in India and in the International Market.

**BIPICO today has :**

- Several products, and product groups
- Extensive well equipped production areas
- Exclusive quality assurance facilities
- BIPICO products are exported to several countries across the globe
- The company has Modern Laboratory equipments to check Quality
- A network of 175 dealers spread across the country

....But above all, BIPICO tells the success story of one individual, who with determination and hard work, could gather together a dedicated team to translate his dream into reality- the story of Kanubhai Patel- the Chairman of the company- honoured by International WHO'S WHO of Professionals, USA.

Predictably, BIPICO marketing efforts in the initial years were directed to the domestic market.

But from the early eighties, BIPICO began exports to markets beyond India's immediate neighbours. The initial success was achieved in the erstwhile USSR, and over the years other markets came into the ambit of BIPICO exports.

Today BIPICO products are well accepted by satisfied customers in the USA, Canada, Sweden, Germany, France, Italy, African countries, and the Middle East.

Kanubhai, and his son Prमित Patel (Managing Director) maintain frequent contact with BIPICO export clientele. They are regular participants to the International Industry fairs, and seminars/meetings held in Europe, USA, and other parts of the world.





**Shri Kanubhai Patel - Chairman**  
Bipico Industries (Tools) Pvt. Ltd.

*I take this opportunity to thank you all for the proud association we share over the past three decades.*

*As a dedicated technocrat, I have always strived to offer technology embedded products to my customers and thereby providing a cutting edge to them, to stand out in this present globalization era.*

*Bipico has a concentrated focus on research and development, and resultant quality. The rigorous efforts have paved way to brilliant success of Bipico's entire product range. Our team of management and dedicated work force has driven the company to a commendable leadership position in the industry.*

*I am happy to announce that Bipico has started the manufacturing of Bimetal Bandsaw blades, first of its kind in India. With the establishment of state-of-the-art laboratory and high-end equipments, I am sure, the company would shortly achieve a leadership position in this segment, too.*

*Bringing to light our past achievements, many accolades and awards, I feel that we have in store more horizons to sketch out more quality dreams. With our determination and consumer-friendly focus, we are ready to still expand our presence not only in domestic but international market at all levels.*

*With your continuous patronage and support, Bipico has always been successful and is desirous to extend quality products and services to its ever increasing number of satisfied customers, dealers and industry fraternity. Let us join together to write more success stories on footsteps of time.*

*Thanking you,*

*Kanubhai Patel*

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## BIMETAL BANDSAW BLADES



CNC MILLING MACHINE



AUTOMATIC SETTING MACHINE



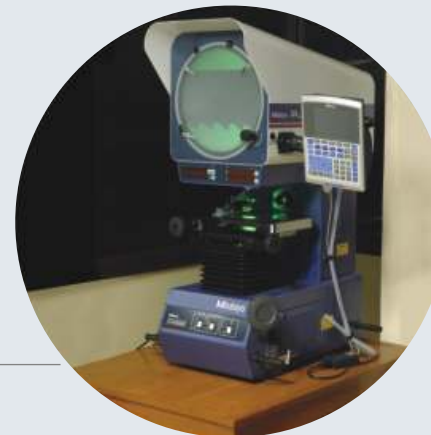
AUTOMATIC WELDING MACHINE



STATE - OF - THE - ART - LABORATORY



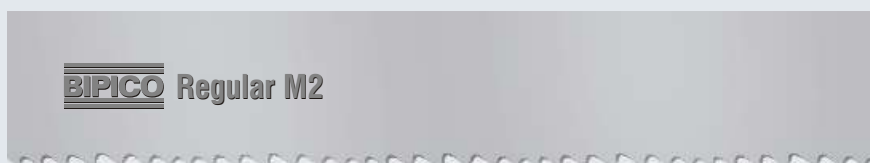
HARDENING LINE



- Low Cost, High performance without any Compromise in quality
- Technological Leadership through the world class quality management.

## REGULAR M2

The **Regular M2 Bandsaw** is manufactured with spring steel backing material superior property of tooth cutting edge for tubing, cross section and radius/contour cutting application. This saw blade have excellent cutting features and is suitable for free cutting steel and non-ferrous metal.

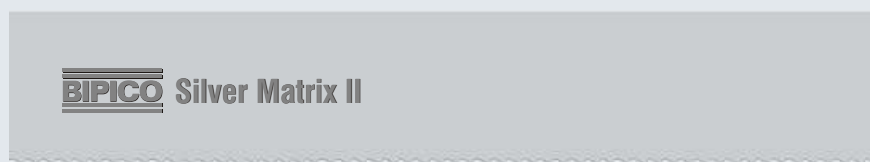


### **BIPICO** REGULAR M2

WIDTH X THICKNESS		TEETH FORM			
METRIC	INCHES	CONSTANT		VARIABLE	
		STANDARD (TPI)	HOOK (TPI)	STANDARD (TPI)	HOOK (TPI)
13 X 0.65	1/2 X 0.025	6, 10, 14, 18, 24	-		-
20 X 0.90	3/4 X 0.035	6, 8, 10, 14, 18, 24	6	4/6, 6/10, 8/12, 10/14	-

## SILVER MATRIX II

The **Silver Matrix II Bandsaw** is manufactured with Bipico Spring steel backing material as all our other high-quality bimetal bandsaw blades. The Superior properties of the tooth cutting edge during **high-vibration sawing**, like cutting thin-walled tubing, cross sections and bundle cutting applications, are achieved through reduced tungsten and carbon content. This saw blade with its **excellent cutting** edge features is suitable for cutting medium steel alloys, as well as non-ferrous metals in automatic sawing mode.

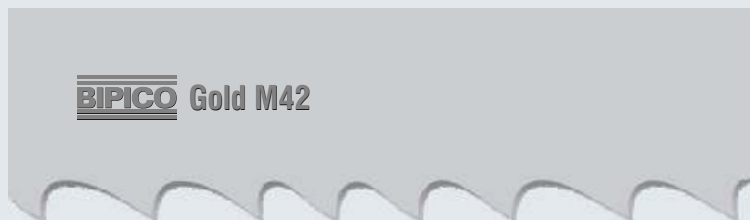
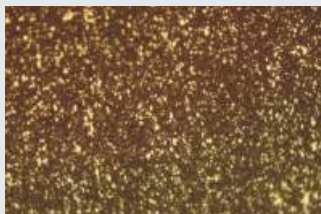


### **BIPICO** SILVER MATRIX II

WIDTH X THICKNESS		TEETH FORM			
METRIC	INCHES	CONSTANT		VARIABLE	
		STANDARD (TPI)	HOOK (TPI)	STANDARD (TPI)	HOOK (TPI)
13 X 0.65	1/2 X 0.025	6, 10, 14, 18, 24	-	-	-
13 X 0.90	1/2 X 0.035	6, 8, 10, 14,	-	8/12, 10/14	-
20 X 0.90	3/4 X 0.035	6, 8, 10, 14, 18, 24	6	4/6, 6/10, 8/12, 10/14	-

## GOLD M42

The **Gold M42 Bandsaw** is manufactured with HSS M42 material having excellent wear resistance characteristic features and specific BIPICO spring steel backing material having good fatigue strength. The excellent carbide element and their distribution gives superior cutting conditions. The Superior, properties of the tooth cutting edge during **high-vibration sawing**, like cutting tubing, cross sections and bundle cutting applications, are achieved through extremely hard special carbide distributed in temperature resistance martensitic matrix. This saw blade, with its **excellent cutting** edge features, is suitable for cutting high carbon steel, alloys, as well as tool steels (upto 45 HRC) metals in automatic sawing mode.

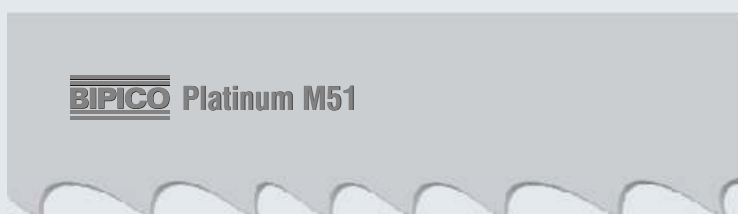
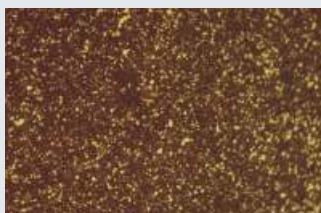


### **BIPICO** GOLD M42

WIDTH X THICKNESS		TEETH FORM			
METRIC	INCHES	CONSTANT		VARIABLE	
		STANDARD (TPI)	HOOK (TPI)	STANDARD (TPI)	HOOK (TPI)
13 X 0.90	$\frac{1}{2}$ X 0.035	6, 8, 10, 14	-	8/12, 10/14	-
20 X 0.90	$\frac{3}{4}$ X 0.035	6, 8, 10, 14, 18, 24	6	4/6, 6/10, 8/12, 10/14	-
27 X 0.90	$1\frac{1}{16}$ X 0.035	3, 4, 6, 8, 10, 14	3, 4, 6	4/6, 5/8, 6/10, 8/12, 10/14	2/3, 3/4, 4/6
34 X 1.10	$1\frac{1}{3}$ X 0.042	3, 4, 6	2, 3, 4, 6	4/6, 5/8, 6/10	2/3, 3/4, 4/6
41 X 1.30	$1\frac{5}{8}$ X 0.050	3, 4, 6	1.25, 2, 3, 4	4/6, 5/8	1.25/2, 2/3, 3/4, 4/6
54 X 1.30	$2\frac{1}{8}$ X 0.050	-	0.75, 1.25, 2	-	0.75/1.25, 1.25/2, 1.40/2, 2/3, 3/4
54 X 1.60	$2\frac{1}{8}$ X 0.063	-	0.75, 1.25, 2	-	0.75/1.25, 1.25/2, 1.40/2, 2/3, 3/4
67 X 1.60	$2\frac{5}{8}$ X 0.063	-	0.75, 1.25	-	0.75/1.25, 1.25/2, 1.40/2, 2/3
80 X 1.60	$3\frac{3}{16}$ X 0.063	-	0.75, 1.25	-	0.75/1.25, 1.25/2, 1.40/2

## PLATINUM M51

The **Platinum M51 Bandsaw** is manufactured with HSS M51 material having excellent characteristic to cut high strength tools steel, austenitic steel and exotic alloys **BIPICO spring steel alloy** backing material having good fatigue strength. The high percentage of **cobalt and tungstone** increase the density of extreme **hard carbide** element and their distribution gives superior cutting action.



### **BIPICO** PLATINUM M51

WIDTH X THICKNESS		TEETH FORM			
METRIC	INCHES	CONSTANT		VARIABLE	
		STANDARD (TPI)	HOOK (TPI)	STANDARD (TPI)	HOOK (TPI)
27 X 0.90	$1\frac{1}{16}$ X 0.035	4	3, 4	-	-
34 X 1.10	$1\frac{1}{3}$ X 0.042	4	2, 3, 4	4/6, 5/8, 6/10	2/3, 3/4, 4/6
41 X 1.30	$1\frac{5}{8}$ X 0.050	-	2, 3, 4	-	1.25/2, 2/3, 3/4, 4/6
54 X 1.60	$2\frac{1}{8}$ X 0.063	-	0.75, 1.25, 2	-	0.75/1.25, 1.25/2, 1.40/2, 2/3, 3/4
67 X 1.60	$2\frac{5}{8}$ X 0.063	-	0.75, 1.25	-	0.75/1.25, 1.25/2, 1.40/2, 2/3

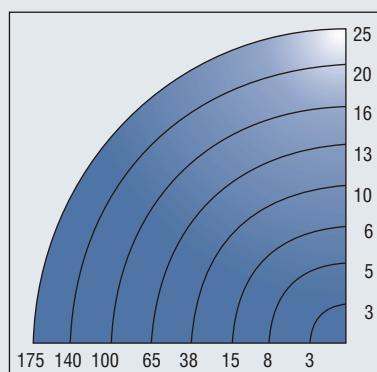
## TOOTHING FOR SOLIDS

Constant Tothing Diameter of solid material

6	10	20	30	50	80	100	120	200	300	400	500	800	(mm)
22	18	14	10	8	6	4	3	2			1,25	0,75	
Tothing								teeth/inch(TPI)					

Variable Tothing Diameter of solid material

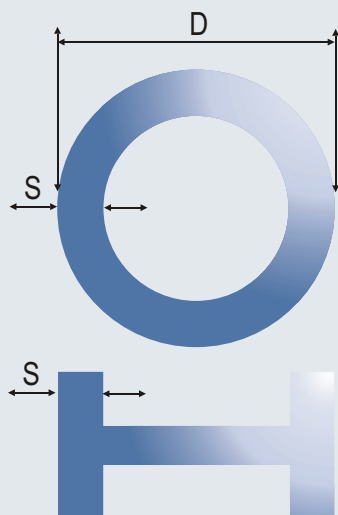
20	30	50	80	100	200	300	500	800	(mm)
10/14	8/12	6/10	5/8	4/6	4/6	3/4	2/3	1,4/2	0,75/1,25
Tothing								teeth/inch(TPI)	



### CONTOUR SAWING

To select the blade best suited for a cutting operation, determine the smallest arc(radius) to be cut and choose the corresponding blade width from the chart; the smaller the arc, the narrower the blade. Bipico metal bandsaws are high quality tools, in order to ensure optimum performance and operating life it is vital to select the correct blade as well as proper break-in and operating procedures.

### TO DETERMINE THE CORRECT TOOTHING FOR SAWING TUBING AND PROFILES



D (mm)	20	40	60	80	100	150	200	300	500
S (mm)	Tooth pitch (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
75							2/3	1.4/2	1.4/2
100								1.4/2	0.75/1.25
150									0.75/1.25

**Formula for calculating time for cutting the job.**

$$\text{Cutting time (Min.)} = \frac{\text{Cross section area of material (cm}^2\text{)}}{\text{Cutting Speed (cm}^2\text{/min.)}}$$



Formula for workout the cross section area.

**EXAMPLE**

For solid square and rectangle bars = Width (cm) X Thickness (cm).

For round bars = Diameter(cm) x Diameter (cm) x 0.80.

For bundle cutting always multiply by no. of piece kept in bundle cutting.











SPECIFICATION FOR INTERNATIONAL STANDARD						MATERIAL SIZE IN MM	IBM PROFILE	
							200 x 150	600 x 200
DIN						AREA (cm <sup>2</sup> )	39	134
AISI/SAE/ASTM						SHAPE		
JIS								
St50-2	1,0050	A570 Gr. 50	1035	S20C	SUM21	Band Speed (mtr./min.)	48~72	41~61
C22	1,0402	A572 Gr. 50	1040	S22C	SUM22	Cutting Feed (cm <sup>2</sup> /min)	16~24	32~48
C35	1,0501	A588	1045	S25C	SUM23	Cutting Time (min/per cut)	1,6~2,4	2,8~4,2
C45	1,0503	A633 Gr.C	1117	S28C	SUM31			
Ct52-3	1,0570	M1020	1137	S30C	SUM41			
9SMn28	1,0715	M1023	1141	S33C	SUM42			
Ck22	1,1151	1020	1144	S35C	SUM43			
Ck25	1,1158	1023	1212	S40C	SM490A			
Ck40	1,1186	1025	1213	S45C	SS490			
St37-2	1,0037	A570Gr.36	1049	S10C	SMn420	Band Speed (mtr./min.)	44~66	37~56
St44-2	1,0044	A570 Gr.40	1050	S15C	SMnC433	Cutting Feed (cm <sup>2</sup> /min)	13~19	26~38
St60-2	1,0060	A572 Gr.65	1055	S55C	SNC236	Cutting Time (min/per cut)	2,0~3,0	3,5~5,3
C10	1,0301	A366	3310	SCM415	SNCM220			
C15	1,0401	M1010	33415	SCM418	SNCM240			
Ck55	1,1203	M1015	5115	Scr415	SPCC			
Ck50	1,1206	M1016	8620	Scr420	SN400A			
16MnCr5	1,7131	M1017	8740	SM400A	SS400			
16CrMo4	1,7242	1008	9314	SM570	STKM12A			
C60	1,0601	1060	4337	S58C	SCr445	Band Speed (mtr./min.)	-	-
Ck60	1,2210	1064	4340	SCM421	SMnC420	Cutting Feed (cm <sup>2</sup> /min)	-	-
14NiCr14	1,5752	3310	5120	SCM432	SNC815	Cutting Time (min/per cut)	-	-
40NiCrMo6	1,6565	3415	5132	SCM440	SNCM431			
34Cr4	1,7033	4135	5135	SCM445	SNCM439			
37Cr4	1,7034	4137	5140	SCM822	SNCM447			
20MnCr5	1,7147	4140	9314	SCr430	SACM645			
34CrMo4	1,7220	4142	9850	Scr435	SCCrM3			
42CrMo4	1,7225	4150	A355 Cl.A	SCr440	SNB7			
C105W1	1,1545	W1	M2	Sk3	SUP9	Band Speed (mtr./min.)	-	-
X155CrVMo12-1	1,2379	W108	M33	SKS93	SUP10	Cutting Feed (cm <sup>2</sup> /min)	-	-
55NiCrMoV6	1,2713	W110	T1	SKS94	SUP13	Cutting Time (min/per cut)	-	-
S6-5-2-5	1,3243	A2	1075	SKS95	SUJ1			
S6-5-2	1,3343	D2	5155	SKT4	SUJ2			
S18-0-1	1,3355	L3	5160	SKD11	SUS303			
100Cr6	1,3505	L6	6150	SKH2	SUS303Se			
X10CrN1812	1,4305	303	9260	SKH51	SNCM630			
55Cr3	1,7176	303Se	52100	SKH55	SNCM815			
X210Cr12	1,2080	304	430Ti	SUS304	SUS431	Band Speed (mtr./min.)	-	-
40CrMnMo7	1,2311	304	431	SUS304L	SUS440C	Cutting Feed (cm <sup>2</sup> /min)	-	-
X40CrMOV5-1	1,2344	304H	439	SUS316	SUS630	Cutting Time (min/per cut)	-	-
105WCr6	1,2419	305	440C	SUS316L	SUS631			
X15Cr13	1,4024	308	630	SUS316Ti	SCS24			
X20CrNi172	1,4057	316	Xm8	SUS321	SCS19			
X5CrN1810	1,4301	316L	D3	SUS405	SKD1			
X6CrNiTi18-10	1,4541	316Ti	H13	SUS410	SKD61			
X6CrNiMoTi17-12-2	1,4571	321	M42	SUS430	SKH59			
X45CrNiW18-9	1,4873	A-286	Ti-13-11-3	A-286	SUH1	Band Speed (mtr./min.)	-	-
X5NiCrTi26-15	1,4980	HASTELLOY	Ti-6-2-4-2	HASTELLOY	SUH3	Cutting Feed (cm <sup>2</sup> /min)	-	-
NiCr20TiAl	2,4631	INCOLOY	Ti-6-2-4-6	INCOLOY	SUH31	Cutting Time (min/per cut)	-	-
NiCo20Cr15MoAlTi	2,4634	INCONEL	Ti-6-4	INCONEL	SUH36			
NiCo20Cr20MoTi	2,4650	MONEL	Ti-6-6-2	MONEL	SUH37			
NiCr19Co14Mo4Ti	2,4654	NIMONIC		NIMONIC	SUH38			
NiCr22Fe18Mo	2,4665	Udiemt	309	Udiemt	SUH309			
NiCr19NbMo	2,4668	WASPALLOY	446	WASPALLOY	SUH446			
Lt31	3,7165			Ti-6-4	SUH616			

**NOTE :**

The above parameters gives optimum life only if the machine is maintained in good working condition.

**Guidelines for selecting cutting parameters.**

- 1) Select the correct size of band.
- 2) Select the right tooth form and tpi.
- 3) Select the cutting speed and cutting feed from recommendation table to obtain optimum cutting time.

TUBING		SOLID							
Ø 100 x 5t	Ø 50 x 3t 9 Bundel	Ø 50 9 Bundel	Ø 100	Ø 200	Ø 300	Ø 400	Ø 500	Ø 700	Ø 1000
15	40	177	79	314	707	157	1963	3848	7854
									
52~78	52~78	48~72	48~72	48~72	48~72	43~65	39~58	34~51	30~44
9~13	16~24	43~65	36~54	72~108	72~108	60~91	49~73	37~56	26~38
1,1~1,7	1,7~2,5	2,7~4,1	1,5~2,2	2,9~4,4	6,5~9,8	13,9~20,8	26,8~40	69~103	205~307
48~71	48~71	44~66	44~66	44~66	44~66	39~59	35~52	30~45	26~38
7~11	13~19	34~50	28~42	56~84	56~84	47~71	39~58	30~45	22~32
1,4~2,1	2,1~3,1	3,5~5,3	1,9~2,8	3,7~5,6	8,4~12,6	17,7~26,5	34~51	85~127	242~364
43~65	43~65	40~60	40~60	40~60	40~60	35~53	31~46	26~39	22~32
6~10	11~17	24~36	20~30	40~60	40~60	34~52	29~43	23~35	18~26
1,5~2,3	2,3~3,5	4,9~7,4	2,6~3,9	5,2~7,9	11,8~17,7	24,4~37	45~68	111~166	297~446
30~45	30~45	28~42	28~42	28~42	28~42	25~38	23~34	20~30	18~26
6~9	10~16	14~27	11~23	23~46	23~46	20~40	17~35	15~25	12~20
1,7~2,6	2,6~3,9	6,5~12,9	3,5~6,9	6,9~13,8	15,5~31	31~63	57~113	154~263	385~660
29~43	29~43	24~36	24~36	24~36	22~32	19~29	17~26	-	-
5~8	9~14	10~18	8~15	16~30	14~27	13~24	12~22	-	-
1,9~2,9	2,9~4,3	9,8~18,4	5,2~9,8	10,5~19,6	26~49	52~97	90~168	-	-
-	-	-	8~18	8~18	7~16	-	-	-	-
-	-	-	2~9	3~15	3~14	-	-	-	-
-	-	-	9,2~52	20,9~105	52~262	-	-	-	-



**Refractometer** (For measuring oil content in cutting fluid)

Material group	Cooling lubricant (oil content)
<b>Copper</b>	10 %
<b>Brass</b>	3 %
<b>Bronzes</b>	
Tin bronze	3 %
Red cast	3 %
Aluminum bronze*	15 %
Tin lead bronze	3 %
<b>Aluminum</b>	25 %
Forging alloy	25 %
	25 %
Cast alloy	25 %
Piston alloy*	25 %
<b>Plastics</b>	
- thermoplastic	dry
-thermosetting	dry
<b>Gas-aerated concrete*</b>	dry
<b>Graphite carbon*</b>	dry
<b>High-fired graphite**</b>	dry
<b>Fibre-cement*/**</b>	dry
<b>Structural steels</b>	10 %
	10 %
<b>Case hardened steels</b>	15 %
	10 %
	10 %
	10 %
<b>Nitriding steels</b>	5 %
	5 %
<b>Machining steels</b>	15 %
<b>Quenched and tempered steels</b>	5 %
<b>Ball bearing steels</b>	3 %
<b>Spring steels</b>	3 %

Material group	Cooling lubricant (oil content)
Unalloyed	3 %
<b>Tool steels</b>	3 %
<b>Tool steels for cold work</b>	3 %
	dry/2 %
	dry/2 %
	3 %
<b>Tool steels for hot work</b>	5 %
	5 %
<b>High-speed steels</b>	3 %
<b>Stainless steels</b>	10 %
<b>Valve steels</b>	5 %
<b>High temperature resisting steels</b>	10 %
<b>Heat-resistant steels</b>	10 %
<b>Special alloys</b>	15 %
	20 %
	12 %
	20 %
	15 %
<b>Tempered steels</b>	
1000-1200 N/mm <sup>2</sup>	~5 %
1200-1400 N/mm <sup>2</sup>	~5 %
1400-1600 N/mm <sup>2</sup>	~5 %
<b>Hardened steels</b>	
50 HRC	~5 %
55 HRC	~5 %
60 HRC	~5 %
<b>Cast steel</b>	~3 %
	~3 %
<b>Cast iron</b>	dry/2 %
-alloyed	dry/2 %
<b>Titanium</b>	10 %
-alloyed	10 %
<b>Zirconium</b>	12 %

\* Carbide tipped bandsaw blades are strongly recommended

\*\* We recommend diamond coated band saw blades



**Tension meter** (Recommended Blade Tension is 25000 to 30000 PSI)

#### PROBABLE CAUSES FOR FOLLOWING PROBLEMS :-

	PROBLEM	PROBLEM CAUSES
A	Taper Cutting	Point No. 1,2,3,4,5,6,7,8,12,14,15,16 & 20
B	Poor Surface Finished	Point No. 1,2,3,4,5,8,9,10,11,16,17 & 20
C	Teeth Breakage	Point No. 1,2,3,4,5,8,9,10,11,16,17,18,19 & 20
D	Blade Breakage	Point No. 1,2,3,4,5,6,7,8,11,12,13,14 & 20
E	Poor Life	Point No. 2,3,4,5,6,7,8,16 & 20

#### Problem Causes

- Overhanging of Blades between Guide Box is more.
- When there is a play in either of the wheels (Drivers Wheels or Driven Wheels).
- When selection of teeth is not proper as per material specification.
- When ratio of Band speed and feed is not correct (Speed to be increased and feed to be slowed). Please control speed and feed time to time.
- When break-in-procedure has not done.
- When rate of flow of cutting oil is less from guides and top.
- When content of cutting oil is 0% or 1%.
- When wire brush is not in correct position.
- When machine vibrates due to forging hammer or due to incorrect foundation of machine.
- When clamping of jobs is not firm.
- When top support on blades at blade guide box is not correct (Position of carbide blade and bearings).
- When blade tension is not proper.
- When guide bearing is not good or worn out.
- When back guide of blade (Carbide plate) is not clean.
- When blade is too loosely or too tightly at blade guide box.
- When combination of materials (i.e. two different quality of materials) is being cut at a time.
- When some foreign materials come into cutting area.
- For cutting bigger size round bar and H Profile, a wedge shape wood or iron metal to be kept in cutting area. So, that at the end of cutting, the blade cannot get jammed due to uneven level.
- Each project from wheel to be 5 mm. As after 5-6 years the projection of teeth become only 2 mm. At this stage the wheel to be changed.
- Feed rate of the blade to be smooth. As some time due to hydraulic malfunctioning, the blade feed rate changes during cutting.

## GUIDELINES FOR GETTING AN OPTIMUM LIFE OF THE BIPICO BANDSAW BLADES

Thank you for selecting BIPICO BIMETAL BANDSAW BLADES.

### 1) BLADE BREAK-IN IS EXTREMELY IMPORTANT

The extremely sharp tooth points and edges of new blades must be broken-in before applying full feed pressure to the blade. A good analogy is that of writing with a freshly sharpened wooden pencil.





#### RECOMMENDED PROCEDURE

- Maintain proper blade speed for the material to be cut.
- Reduce blade feed pressure or feed rate by 50% for the first 300 to 500 square centimeter of material cut.
- Gradually increase feed pressure or feed rate after break-in to normal pressure or rate.
- If vibrations or noises occur at the beginning of the cutting operation, cutting speed should slightly be adjusted.

- 2) Be sure to adjust your band saw blade guides when changing to a narrow blade. If blade teeth contact metal guide blocks, the blade will be ruined.
- 3) Keep the distance between job and guide box minimum to avoid vibration and cracks.
- 4) Always check alignment of Driver Wheel and Driven Wheel.
- 5) To maintain the smooth outflow of the chip, please change the wire brush at regular interval. The position of the wire brush should be such that is should touch the gullet area of the teeth for the proper removal of the chips.
- 6) Keep tension of Blade 25000 PSI minimum.
- 7) Regular inspection is required for blade guide wear.

### 8) USING METAL CHIPS TO TROUBLE SHOOT

You can improve the productivity of your metal cutting operation by paying close attention to the chips made by the blade cutting through metal. This chart shows some of the common problems that can be discovered and solved by paying attention to chips.

CHIP FORM	CHIP CONDITION	CHIP COLOR	BLADE SPEED	BLADE FEED	OTHER
	Thick, Hard and Short	Blue or Brown	Decrease	Decrease	Check Cutting Fluid and mix
	Thin and Curled	Silver	Suitable	Suitable	-
	Powder	Silver	Decrease	Increase	-
	Thin and Curl Tight	Silver	Suitable	Decrease	Check Tooth Pitch

## PACKAGING TYPES



Bandsaw blades fastened to a pallet



Bandsaw blades, packed in a flat box



Production coils on a pallet



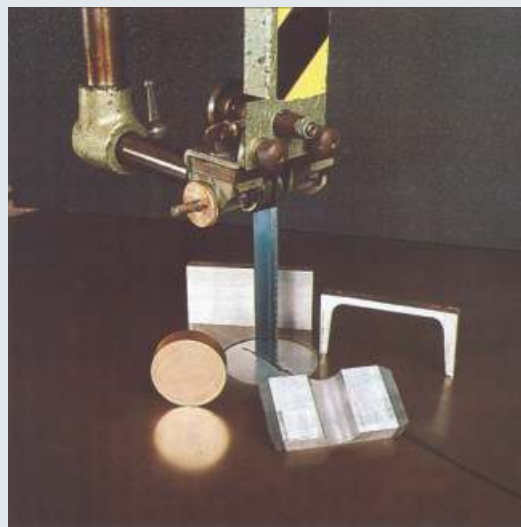
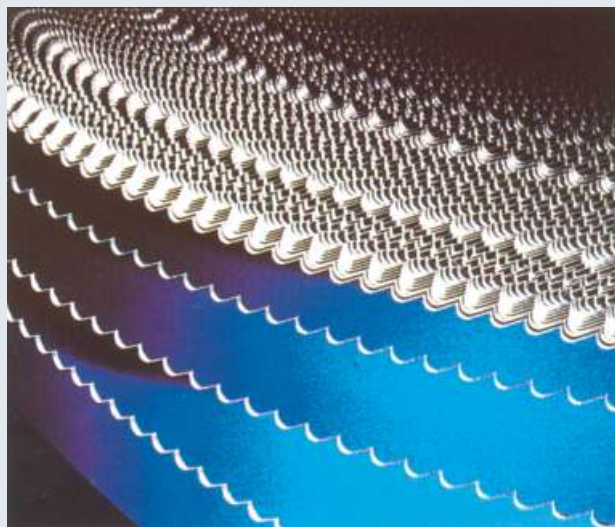
Production coils in the box

## CARBON BANDSAW BLADES

### BIPICO CARBON FLEXIBLE BACK BANDSAW BLADES

An economical, high quality carbon steel bandsaw for general purpose cutting. Hard teeth and a flexible back ensure long cutting life on mild and low alloy steels, plastics and wood.

Width and Thickness		Teeth per inch (25 mm)		
mm	inch	Standard Tooth	Skip Tooth	Hook Tooth
6.0 x 0.63	1/4 x .025	10 14 18 24	4 6	4 6
10.0 x 0.63	3/8 x .025	4 6 8 10 14 18 24	3 4 6	3 4 6
12.5 x 0.63	1/2 x .025	6 8 10 14 18 24	3 4 6	3 4 6
16.0 x 0.80	5/8 x .032	6 8 10 14 18	3 4 6	3 4 6
20.0 x 0.80	3/4 x .032	6 8 10 14 18	3 4 6	3 4 6
25.0 x 0.90	1 x .035	4 6 8 10 14	3 4 6	2 3 4 6



Bipico Hard Back Carbon Bandsaw Blades

### BIPICO HARD BACK CARBON BANDSAW BLADES

A heavy duty carbon blade designed to deliver maximum performance from standard bandsaw machines. The high hardness backing material allows increased feed pressure and cutting rates without compromise to the straightness and accuracy of cut, while greater fatigue resistance extends the blade life over that of standard carbon steel blades.

Width and Thickness		Teeth per inch (25 mm)		
mm	inch	Standard Tooth	Skip Tooth	Hook Tooth
6.0 x 0.63	1/4 x .025	8 10 14 18 24	4 6	4 6
10.0 x 0.63	3/8 x .025	8 10 14 18	3 4	3 4 6
12.5 x 0.63	1/2 x .025	6 8 10 14 18 24	3 4	3 4 6
16.0 x 0.80	5/8 x .032	10 14 18	4	4
20.0 x 0.80	3/4 x .032	6 8 10 14 18	3	3 6
25.0 x 0.90	1 x .035	6 8 10 14		2 3 4

\* Bipico Carbon Bandsaw Blades can be supplied in coils & welded loops.

## HAND HACKSAW BLADES



The New 20/24 VARI TOOTH Bimetal HSS Blade is virtually unbreakable, superb cutting performance wear resistance and safety.

Have two blades in one. Cuts through all types of materials including alloy and stainless steels.



The NEW 20/24 VARI TOOTH HSS Blade is all hard blade for highly accurate cutting and long life.

Have two blades in one. Cuts through all types of materials including alloy and stainless steels.



A virtually unbreakable bimetal blade for superb cutting performance, wear resistance and safety. The combination of M2 High Speed cutting edge, electronbeam welded to a flexible alloy back gives a level

of cutting power and flexibility that is far superior to edge hardened or conventional flexible blades. Cuts through all types of materials including alloy and stainless steels.



A rigid, All Hard blade, for highly accurate cutting and long life. Manufactured entirely from top quality High Speed Steel, each blade is precisely hardened throughout its entire width to give a strong, rigid back, ensuring a perfectly straight cut time after time.

All Hard blades the workpiece should be securely held in a clamp or vice to prevent shattering of the blade and safety goggles should be worn. Cuts through all types of materials including alloy and stainless steels.



A virtually unbreakable, edge hardened blade, which offers flexibility and safety but less

wear resistance than an All Hard or bimetal blade.



A Low Alloy Steel blade is manufactured from High Carbon steel and this blade is ideal for general purpose sawing of

mild steel, brass, aluminium, copper and other soft metals and plastics.

## BIMETAL HSS VARIABLE TOOTH

⇒ 20 % longer Life

⇒ High Performance

BLADE SIZE (in mm)	BLADE SIZE IN (INCHES)	TEETH PER 25 mm	PIN DIA. (mm)	PACK SIZE	WEIGHT PER PACK (KG.)
300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## ALL HARD HSS VARIABLE TOOTH

⇒ 20 % longer Life

⇒ High Performance

300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## BIMETAL HIGH SPEED STEEL

⇒ High Performance

⇒ Shatterproof Blade

250 x 12.5 x 0.63	10 x 1/2 x 0.025	18	4	100	1.50
250 x 12.5 x 0.63	10 x 1/2 x 0.025	24	4	100	1.50
300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## ALL HARD HIGH SPEED STEEL

⇒ Accurate Cutting

⇒ Long Life

250 x 12.5 x 0.63	10 x 1/2 x 0.025	18	4	100	1.50
250 x 12.5 x 0.63	10 x 1/2 x 0.025	24	4	100	1.50
300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## FLEXIBLE HIGH SPEED STEEL

⇒ Edge Hardened

⇒ Shatterproof Blade

300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## LOW ALLOY STEEL FULLY HARD

⇒ General Purpose

⇒ Economical

250 x 12.5 x 0.63	10 x 1/2 x 0.025	18	4	100	1.50
250 x 12.5 x 0.63	10 x 1/2 x 0.025	24	4	100	1.50
300 x 12.5 x 0.63	12 x 1/2 x 0.025	18	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	24	4	100	1.80
300 x 12.5 x 0.63	12 x 1/2 x 0.025	32	4	100	1.80

## POWER HACKSAW BLADES

The comprehensive range of BIPICO Power Hacksaw Blades will suit virtually all popular sawing machines. The continuous development of our range has improved the long-term sharpness of the blades. There is a choice of All Hard HSS or Bimetal HSS blades with a wide range of sizes and tooth pitch to cater for all varieties of materials and thickness.

### ALL HARD HIGH SPEED STEEL

High Speed Hacksaw Blades satisfy the highest requirements for power sawing bars, tubes, sections, etc. High Speed blades are specially hardened and precision set. Blades suitable for Kasto Machine can also be produced.

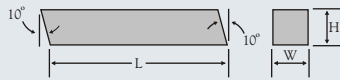
BLADE SIZE (MM)	BLADE SIZE (INCHES)	TEETH PER 25 MM	PIN HOLE DIA. (mm)	PACK SIZE	WEIGHT PER PACK (KG.)
300 x25x1.25	12x1x0.050	10,14	8.20	20	1.45
350x25x1.25	14x1x0.050	10,14	8.20	20	1.68
400x25x1.25	16x1x0.050	10,14	8.20	20	1.95
425x25x1.25	17x1x0.050	10,14	8.20	20	2.03
450x25x1.25	18x1x0.050	10,14	8.20	20	2.19
350x32x1.60	14x1-1/4x0.062	6,10	8.20	20	2.87
400x32x1.60	16x1-1/4x0.062	6,10	8.20	20	3.34
425x32x1.60	17x1-1/4x0.062	6,10	8.20	20	3.58
450x32x1.60	18x1-1/4x0.062	6,10	10.20	20	3.70
450x38x1.60	18x1-1/2x0.062	6,10	10.20	10	2.28
450x38x2.00	18x1-1/2x0.075	4,6,10	10.20	10	2.65
450x45x2.25	18x1-3/4x0.088	4,6,10	10.20	10	3.69
500x32x2.00	20x1-1/4x0.075	4,6	10.20	10	2.08
500x38x2.00	20x1-1/2x0.075	4,6,10	10.20	10	2.93
525x38x2.00	21x1-1/2x0.075	4,6,10	10.20	10	3.02
525x45x2.25	21x1-3/4x0.088	4,6	10.20	10	4.45
550x38x2.00	22x1-1/2x0.075	4,6,10	10.20	10	3.20
600x40x2.00	24x1-1/2x0.075	4,6,10	10.20	10	3.48
600x45x2.25	24x1-3/4x0.088	4,6,10	10.20	10	4.71
600x45x2.25	24x1-3/4x0.088	4,6	10.20	10	4.71
600x50x2.00	24x2x0.075	4,6,10	10.20	10	4.85
600x38x2.50	24x1-1/2x0.100	4,6	10.20	10	4.57
600x50x2.50	24x2x0.100	4,6	10.20	10	6.11
700x38x2.50	28x1-1/2x0.100	4,6	10.20	10	5.20
700x50x2.50	28x2x0.100	4,6	10.20	10	6.98
750x38x2.50	30x1-1/2x0.100	4,6	10.20	10	5.44
750x50x2.50	30x2x0.100	4,6	10.20	10	7.47
800x50x2.50	32x2x0.100	4,6	10.20	10	7.75
900x50x2.50	36x2x0.100	4,6	10.20	10	8.99

### BIMETAL HIGH SPEED STEEL

Manufactured from High Speed Steel, electron beam welded to a spring steel back, these bimetal blades are able to withstand heavy feed pressures, giving economical, high cutting rates. Because these blades are virtually unbreakable in normal use, they are particularly safe and therefore suitable for use by unskilled operators or on older machines. They will cut through most type of material including alloy and stainless steel.

BLADE SIZE (MM)	BLADE SIZE (INCHES)	TEETH PER 25 MM	PIN HOLE DIA. (mm)	PACK SIZE	WEIGHT PER PACK (KG.)
300 x25x1.25	12x1x0.050	10,14	8.20	20	1.45
350x25x1.25	14x1x0.050	6,10,14	8.20	20	1.68
300x32x1.60	12x1-1/4x0.062	6,10	8.20	20	2.46
350x32x1.60	14x1-1/4x0.062	4,6,10	8.20	20	2.87
400x32x1.60	16x1-1/4x0.062	4,6,10,14	8.20	20	3.34
425x32x2.00	17x1-1/4x0.062	10	8.20	20	3.58
450x32x2.00	18x1-1/4x0.062	4,6,10,14	10.20	20	3.70
350x32x2.00	14x1-1/4x0.075	4,6,10	8.20	20	2.87
350x38x2.00	14x1-1/2x0.075	4,6,10	8.20	10	2.06
400x38x2.00	16x1-1/2x0.075	4,6,10	8.20	10	2.37
450x32x2.25	18x1-1/4x0.075	4,6,10	10.20	20	2.47
450x38x2.25	18x1-1/2x0.075	4,6,10	10.20	10	2.67
500x38x2.25	20x1-1/2x0.075	4,6,10	10.20	10	2.93
450x45x2.25	18x1-3/4x0.088	4,6	10.20	10	3.77
475x45x2.25	19x1-3/4x0.088	6	10.20	10	3.97
500x45x2.25	20x1-3/4x0.088	4,6	10.20	10	4.18
525x38x2.25	21x1-1/2x0.088	6	10.20	10	3.03
525x45x2.25	21x1-3/4x0.088	4,6	10.20	10	7.45
550x45x2.25	22x1-3/4x0.088	6	10.20	10	4.66
575x45x2.25	23x1-3/4x0.088	4	10.20	10	4.87
600x45x2.25	24x1-3/4x0.088	6	10.20	10	4.71
500x50x2.50	20x2x0.100	4,6	10.20	10	4.87
525x50x2.50	21x2x0.100	4,6	10.20	10	5.11
550x50x2.50	22x2x0.100	4,6	10.20	10	5.35
575x50x2.50	23x2x0.100	4	10.20	10	5.61
600x50x2.50	24x2x0.100	4,6	10.20	10	5.85
650x50x2.50	26x2x0.100	4,6	10.20	10	6.32
700x50x2.50	28x2x0.100	4,6	10.20	10	6.80
800x50x2.50	32x2x0.100	4,6	10.20	10	7.75
900x50x2.50	36x2x0.100	4,6	10.20	10	8.99

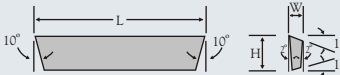
**SQUARE GROUND TOOL BITS  
HIGH SPEED STEEL**



Size (inch)		
WIDTH	HEIGHT	LENGTH
1/8	1/8	2.1/2
3/16	3/16	2.1/2
1/4	1/4	2.1/2
5/16	5/16	2.1/2
3/8	3/8	3
7/16	7/16	3.1/2
1/2	1/2	4
5/8	5/8	4.1/2
3/4	3/4	5
7/8	7/8	6
1	1	7
1.1/8	1.1/8	7
1.1/4	1.1/4	7
EXTRA LONG		
1/4	1/4	4
1/4	1/4	6
1/4	1/4	8
5/16	5/16	4
5/16	5/16	6
5/16	5/16	8
3/8	3/8	4
3/8	3/8	6
3/8	3/8	8
7/16	7/16	6
1/2	1/2	6
1/2	1/2	8
5/8	5/8	6
5/8	5/8	8
3/4	3/4	6
3/4	3/4	8
1	1	8

**AVAILABLE**  
 BP 101 GRADE M2 WITHOUT COBALT  
 BP 202 GRADE M35 WITH 5% COBALT  
 BP 303 GRADE M42 WITH 8% COBALT  
 BP 404 GRADE T42 WITH 10% COBALT

**CUT - OFF BLADES  
HIGH SPEED STEEL**



Size (inch)		
WIDTH	HEIGHT	LENGTH
1/6	1/2	4.1/2
1/16	11/16	5
3/32	1/2	4.1/2
3/32	5/8	5
1/8	1/2	4.1/2
1/8	3/4	5
1/8	3/4	6
1/8	7/8	6
1/8	7/8	7
3/16	3/4	6
3/16	13/16	6
3/16	1	6.1/2
3/16	1	8
3/16	1.1/8	7
1/4	1.1/8	7
1/4	1.1/4	7
1/4	1.1/4	9

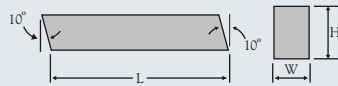
**AVAILABLE**  
 BP 101 GRADE M2 WITHOUT COBALT  
 BP 202 GRADE M35 WITH 5% COBALT

**TOOL BITS**



**HIGH SPEED STEEL TOOL BITS** are manufactured from the finest quality Molybdenum & Tungsten bearing grades of High Speed Steel. Widely used for machining and variety of ferrous and nonferrous metals. Sophisticated heat treatment provides more life between two regrinds.

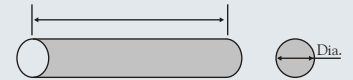
**RECTANGULAR GROUND TOOL BITS HIGH SPEED STEEL**



Size (inch)			Size (inch)		
WIDTH	HEIGHT	LENGTH	WIDTH	HEIGHT	LENGTH
1/8	1/2	4	3/8	3/4	5
3/16	5/16	4	3/8	3/4	6
1/4	3/8	2.1/2	3/8	1	6
1/4	3/8	3	1/2	3/4	4
1/4	3/8	4	1/2	3/4	5
1/4	3/8	6	1/2	3/4	6
1/4	1/2	3	1/2	1	6
1/4	1/2	4	1/2	1	7
1/4	1/2	6	1/2	1	8
1/4	3/4	4	1/2	1.1/4	7
1/4	3/4	5	1/2	1.1/2	7
1/4	3/4	6	5/8	3/4	5
1/4	1	6	5/8	7/8	6
5/16	3/8	4	5/8	1	6
5/16	7/16	3	5/8	1	7
5/16	7/16	4	5/8	1.1/4	6
5/16	1/2	4	5/8	1.1/4	7
5/16	1/2	6	5/8	1.1/2	7
5/16	3/4	4	3/4	1	6
5/16	3/4	5	3/4	1	7
5/16	1	6	3/4	1.1/4	6
3/8	1/2	3	3/4	1.1/4	7
3/8	1/2	4	3/4	1.1/2	7
3/8	5/8	4	3/4	1.1/8	7
3/8	5/8	5	1	1.1/4	6
3/8	5/8	6	1	1.1/4	7
3/8	3/4	4	1	1.1/2	7

**AVAILABLE**  
 BP 101 GRADE M2 WITHOUT COBALT  
 BP 202 GRADE M35 WITH 5% COBALT  
 BP 303 GRADE M42 WITH 8% COBALT

**ROUND TOOL BITS HIGH SPEED STEEL**



Size (inch)	
DIAMETER	LENGTH
1/8	2.3/4
3/16	3.1/2
1/4	2.1/2
5/16	2.1/2
5/16	3.1/2
3/8	3
7/16	3.1/2
7/16	4
1/2	4
5/8	3
EXTRA LONG	
1/4	4
5/16	4.1/2
3/8	4
3/8	5
7/16	5.1/2
1/2	6
3/16	6
5/8	6
3/4	6
7/8	6
7/8	8
1	6
1	8

**AVAILABLE**  
 BP 101 GRADE M2 WITHOUT COBALT  
 BP 202 GRADE M35 WITH 5% COBALT

**CUT - OFF BLADES P TYPE  
(T SHAPED)  
HIGH SPEED STEEL**



Size (inch)			
CODE	WIDTH	HEIGHT	LENGTH
P1N	0.040	1/2	3.1/2
P1	1/16	1/2	4.1/2
P2N	5/64	1/2	4.1/2
P2	3/32	1/2	4.1/2
P3S	1/8	1/2	4.1/2
P3N	3/32	11/16	5
P3	1/8	11/16	5
P4	5/32	11/16	5
P5S	3/16	11/16	5
P3W	1/8	3/4	5
P4W	5/32	3/4	5
P5W	3/16	3/4	5
P5X	1/8	7/8	6
P5N	5/32	7/8	6
P5	3/16	7/8	6
P6	1/4	7/8	6
P8X	1/8	1.1/8	6.1/2
P8N	5/32	1.1/8	6.1/2
P8	3/16	1.1/8	6.1/2
P9	1/4	1.1/8	6.1/2
P10	5/16	1.1/8	6.1/2

**AVAILABLE**  
 BP 101 GRADE M2 WITHOUT COBALT  
 BP 202 GRADE M35 WITH 5% COBALT



## JIGSAW BLADES, RECIPROCATING SAW, BODY SAW & AIR SAW BLADES

Manufactured for the first time in India & largest Exporter to developed countries

### Usages

**PROFILE CUTTING :** Cuts ferrous and non-ferrous, FRP plastic, Steel Sheets, Plastic, Thinwood, Plywood, Softwood etc.

**STRAIGHT CUTTING :** Straight Cuts in Steel Sheet metal, tubing and non-ferrous metals wood and reinforced plastics and pipes.

Suitable for machines of Bosch, Black & Decker, Makita, AEG, REMS, Hitachi, etc.

Body Saw & Airsaw can be used for Pallet Cutting.

### Available in :

- Flexible Bimetal HSS
- All Hard HSS
- All Hard LAS



## PATA / PLANNER BLADES

A Unique product to cater vast industrial application

### Applications

- A Planner Blades is used in Hand Planners and in Machines for Wood-Working
- As a Scrappers in Chemical Plants, Engineering Industries, Construction Industries, etc.

### Salient Features

- Available in two grades i.e. LAS & HSS



## GP SAW- DO-IT-YOURSELF TOOL

Product of 21st Century from **BIPICO**

An invaluable DO-IT-YOURSELF tool for automobile workshops, carpenters, small factories, engineering industries, building contractors, households, farms & gardens.

Nine different adjustable angles provided on special Zinc Die Cast Handle makes easier to cut at DIFFICULT-TO-REACH POSITIONS.

### Available in :

4TPI, 6TPI, 10TPI & 14TPI with flexible blade also

### Applications :

**10 TPI** - Can cut Non-Ferrous, Ferrous Bars, Sections, Angles, Channels, Cables, Asbestos Sheets etc.

**14 TPI** - Can cut galvanised pipes & sheets, PVC pipes, cement pipes, ceramic pipes etc.

**6 TPI** - Can cut hard wood

**4 TPI** - Can cut soft wood

- Replacement of the blade is easy & quick

## HACKSAW FRAME

A Perfect Match for your Hand HACKSAW BLADES. Scientifically designed heavy duty Hacksaw Frame from "**BIPICO**" The Perfect Saw Makers.

### Salient Features

Zinc Die Cast Handle.

- Adjustable 10" /12"
- Tubular design to give rigidity
- Powder coated attractive look

### Advantages

- Due to heavy duty frame it reduces operator's fatigue drastically.
- Smooth & faster cutting
- Increase the life of blade
- More Output & reduce the cost for cut



[illegible]

## INQUIRY/ORDER FORM

### How to inquire and order

On this page you see an example of how to make an inquiry or to order by fax. Please help us to handle your

questions and orders as quickly as possible by giving us detailed information.

Company:	Contact person:	
Street :		
Country :	Postal code :	City :
Customer number :	Phone :	Email :

### Technical Advice

1. Material :	possibly tensile strength	[N/mm <sup>2</sup> ]
2. Cross-section :	[mm]. Diameter and wall thickness in case of tubes	
3. Surface conditions :	<input type="checkbox"/> forged <input type="checkbox"/> rolled <input type="checkbox"/> cast <input type="checkbox"/> drawn <input type="checkbox"/> bare	
4. Clamping :	<input type="checkbox"/> individuality <input type="checkbox"/> number of layers <input type="checkbox"/> number of bundies	
5. Dimension of band saw blade :	<input type="text"/> mm length <input type="text"/> mm width <input type="text"/> mm thickness	
6. Machine type :		

☒ Inquiry    ☐ Order

In case of an inquiry or an order please indicate the following data :

Quantity	Product description including item group	Band dimension (in mm) length x width x thickness			Tooth pitch	Tooth shape
10 pieces	Bipico Gold M42	3660	27	0,90	3-4 tpi	K

Place :	Date :	Signature/stamp :
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Please fax back this form to us at the following number :

Fax : +91 - 22 - 22001631 or +91 - 2634 - 283256