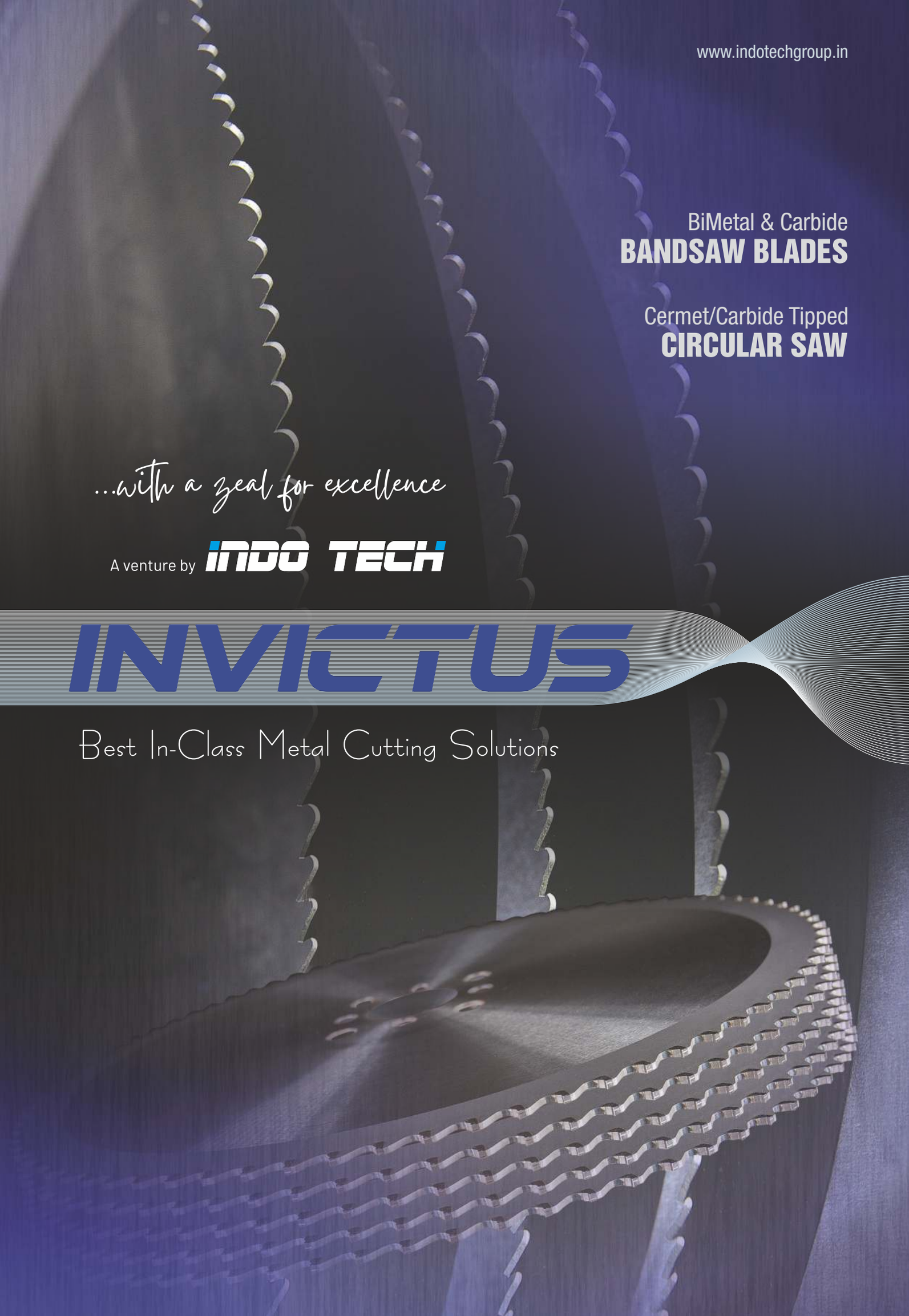
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BiMetal & Carbide
BANDSAW BLADES
Cermet/Carbide Tipped
CIRCULAR SAW
...with a zeal for excellence
A venture by INDO TECH
INVICTUS
Best In-Class Metal Cutting Solutions

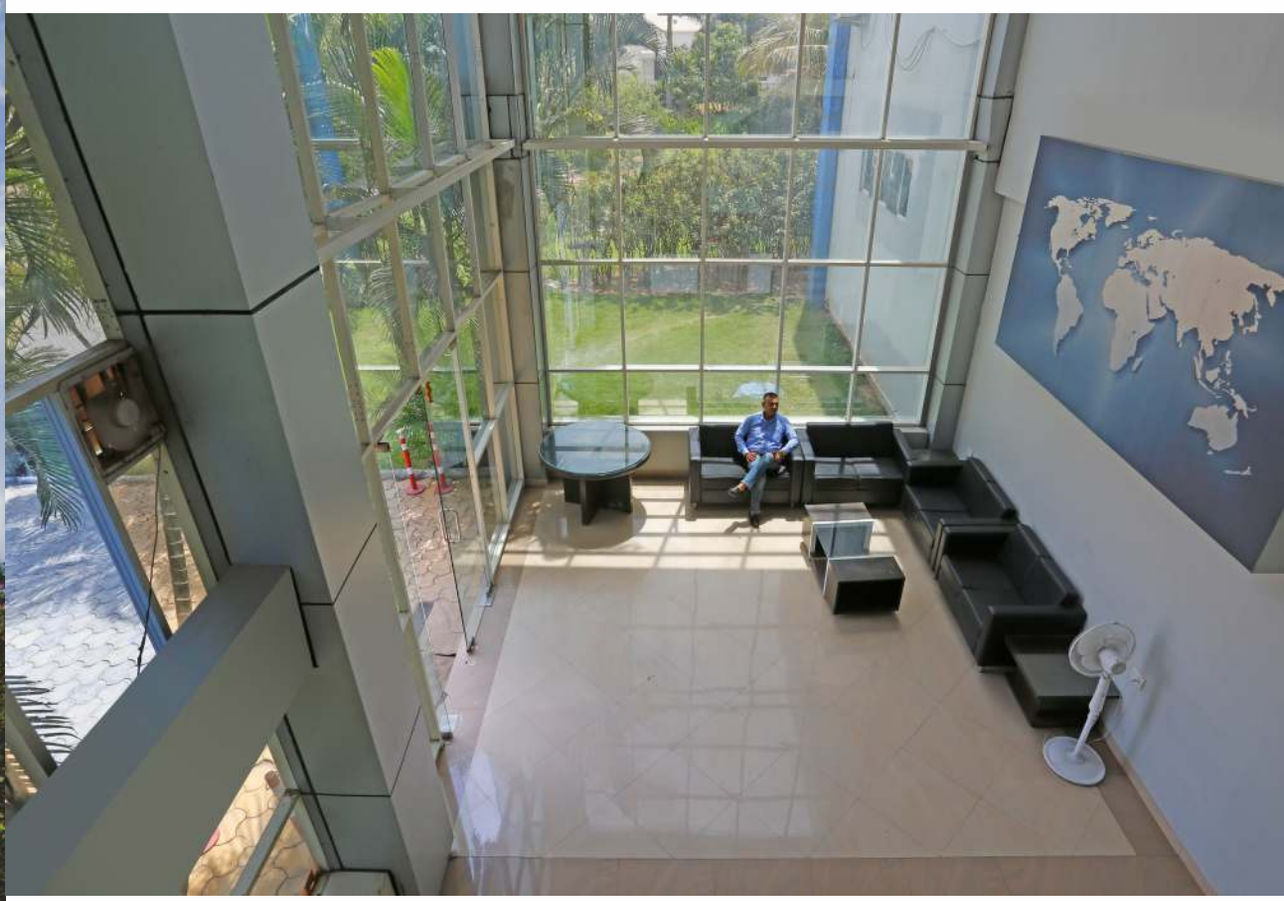
INVICTUS

FACILITATING PRECISION **METAL CUTTING**

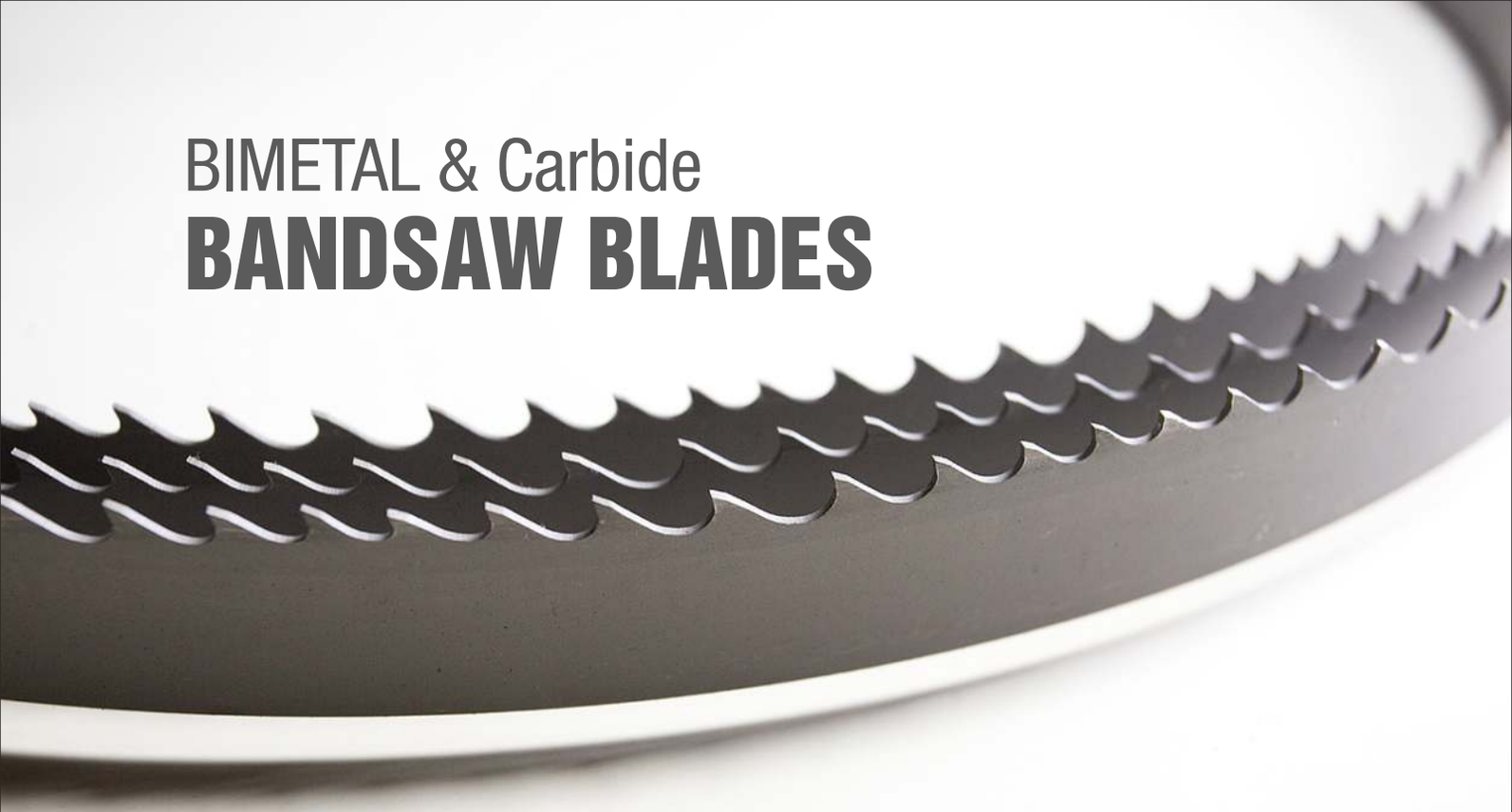
WELCOME TO
INDO TECH

...with a zeal for excellence

IndoTech Machines is one of the leading manufacturers of metal bandsaw Machines world-wide. Based on our long experience in producing metal saw machines, we supply standard and custom made solutions for the metal cutting industry. We are currently supplying Japan based Bimetal bandsaw blades and circular saws cutters to all our esteemed domestic and International customers



BIMETAL & Carbide
BANDSAW BLADES



INVICTUS DISCOVER

GENERAL PURPOSE

BENEFITS
Cost effective blade with positive and neutral rake angle tooth design for cutting variety of tubes and solids. An excellent general purpose bi-metal bandsaw high quality steel combined with special breaking steel which is in all

APPLICATIONS
Carbon steel, alloy steel, aluminium, Mild steel, Cast Iron, Aluminium casting etc.

WIDTH & THICKNESS	TPI								
MM	2/3	3	3/4	4	4/6	5/8	6/10	8/12	10/14
19 X 0.9		✔		✔	✔	✔	✔	✔	✔
27 X 0.9	✔		✔	✔	✔	✔	✔	✔	✔
34 X 1.1	✔		✔		✔	✔	✔	✔	
41 X 1.3	✔		✔		✔	✔			

INVICTUS EXPERT

ENGINEERED TO CUT STRUCTURALS, TUBING & BUNDLES

BENEFITS
Long blade life and extreme durability customised tooth profile that resists tooth strip page even at high feed rates Xn designed tooth setting absorbs the shocks created by uneven job surfaces or vibration

APPLICATIONS
Mild steel , carbon steel , tool steel, alloy steel, aluminium, Aluminium casting etc.

WIDTH & THICKNESS	TPI				
MM	2/3	3/4	4/6	5/7	8/12
19 X 0.9			✔	✔	✔
27 X 0.9	✔	✔	✔	✔	✔
34 X 1.1	✔	✔	✔	✔	✔
41 X 1.3	✔	✔	✔	✔	

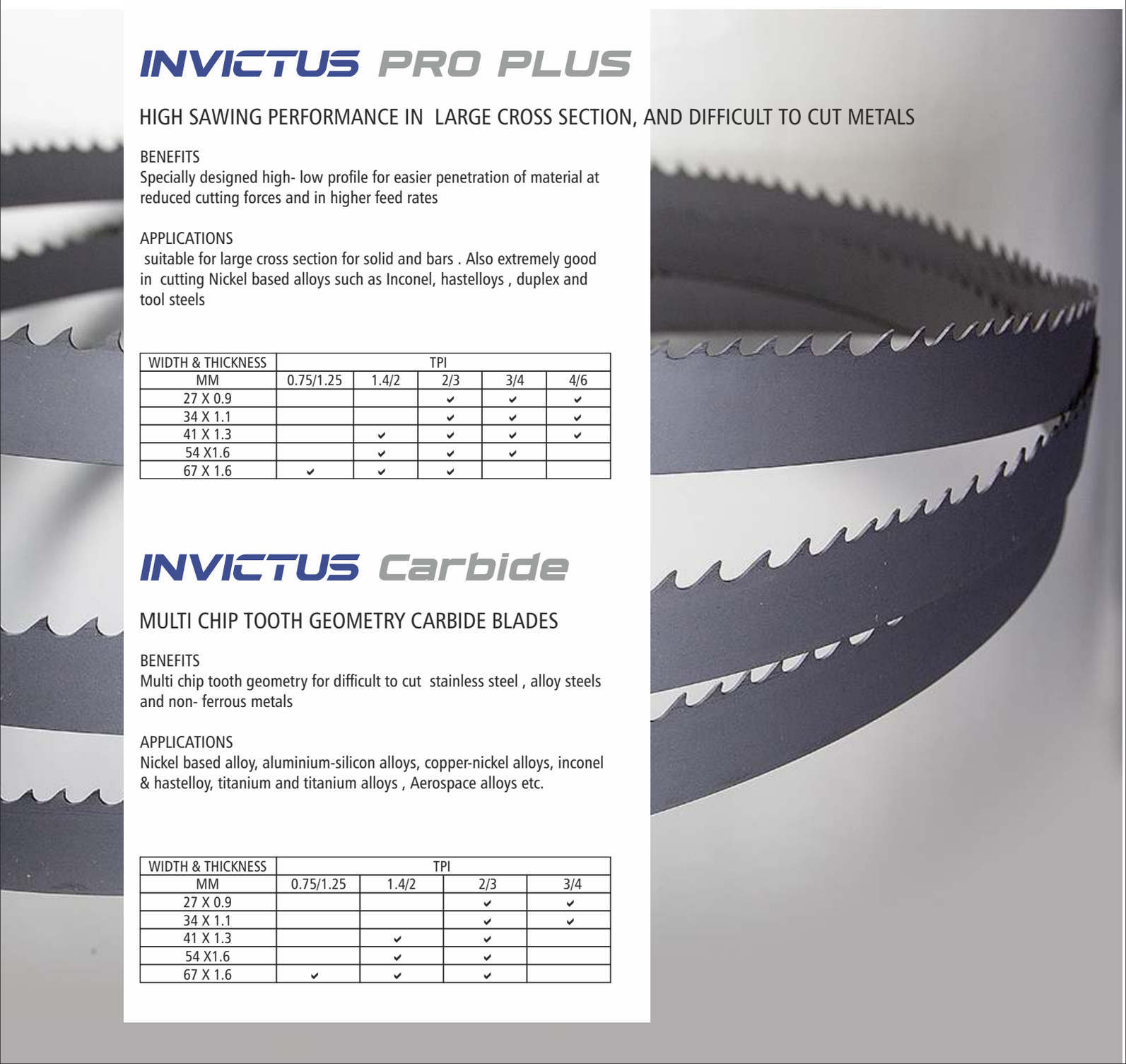
INVICTUS PRO

EXCELLENT SAWING PERFORMANCE

BENEFITS
The blade designed for getting high performance on hard and difficult material to cut The long lasting backing material is developed with high chrome

APPLICATIONS
Specially designed for large cross section for solid and bars of stainless steel, die steel, alloy steel, bearing steel , tool steel etc.

WIDTH & THICKNESS	TPI					
MM	0.75/1.25	1.4/2	2/3	3/4	4/6	5/8
27 X 0.9			✔	✔	✔	✔
34 X 1.1			✔	✔	✔	✔
41 X 1.3		✔	✔	✔	✔	✔
54 X1.6		✔	✔	✔	✔	
67 X 1.6	✔	✔	✔	✔		



INVICTUS PRO PLUS

HIGH SAWING PERFORMANCE IN LARGE CROSS SECTION, AND DIFFICULT TO CUT METALS

BENEFITS
Specially designed high- low profile for easier penetration of material at reduced cutting forces and in higher feed rates

APPLICATIONS
suitable for large cross section for solid and bars . Also extremely good in cutting Nickel based alloys such as Inconel, hastelloys , duplex and tool steels

WIDTH & THICKNESS	TPI				
MM	0.75/1.25	1.4/2	2/3	3/4	4/6
27 X 0.9			✔	✔	✔
34 X 1.1			✔	✔	✔
41 X 1.3		✔	✔	✔	✔
54 X1.6		✔	✔	✔	
67 X 1.6	✔	✔	✔		

INVICTUS Carbide

MULTI CHIP TOOTH GEOMETRY CARBIDE BLADES

BENEFITS
Multi chip tooth geometry for difficult to cut stainless steel , alloy steels and non- ferrous metals

APPLICATIONS
Nickel based alloy, aluminium-silicon alloys, copper-nickel alloys, inconel & hastelloy, titanium and titanium alloys , Aerospace alloys etc.

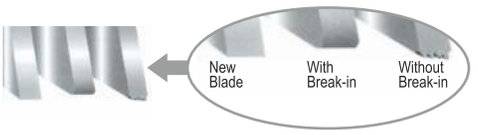
WIDTH & THICKNESS	TPI			
MM	0.75/1.25	1.4/2	2/3	3/4
27 X 0.9			✔	✔
34 X 1.1			✔	✔
41 X 1.3		✔	✔	
54 X1.6		✔	✔	
67 X 1.6	✔	✔	✔	

TECHNICAL INFORMATION for Bi-Metal Bandsaw

BREAK IN PROCEDURE All new blades possess very sharp teeth edges. This causes micro fractures at normal cutting rate due to excessive vibration. It is recommended that approximately 60 minutes of solid cutting or 500 sq.cm. of material should be cut at 40% of recommended feed at reduced speed. Proper break-in rounds off sharper edges and ensures longer blade life.

SELECTING THE CORRECT BLADE

The most important aspect that should be focused upon, before the cutting process, is selecting the most appropriate cutting blade. Proper selection brings out maximum productivity and enhances the tool life to optimum. Choosing the correct dimension and TPI in case of a bandsaw blade, is thus very essential. Special tooth design can be applied to achieve better result in sawing difficult-to-cut materials.



SELECTING THE CORRECT TPI

SOLIDS

Material Size		Tooth Pitch (tpi)
Upto 20 mm	-	10/14 or 14 tpi
15 mm to 30 mm	-	8/12 or 12 tpi
25 mm to 50 mm	-	6/10 or 10 tpi
40 mm to 80 mm	-	5/8 or 6, 8 tpi
50 mm to 100 mm	-	4/6 or 4, 6 tpi
70 mm to 140 mm	-	3/4 or 3, 4 tpi
120 mm to 350 mm	-	2/3 or 2, 3 tpi
250 mm to 600 mm	-	1.4/2 or 1.25, 2 tpi
500 mm to 1200 mm	-	0.75/1.25 or 1.25, 0.75tpi
1200 mm plus...	-	0.55/0.75 or 0.75 tpi *

* Available upon request

PIPES AND STRUCTURES

T(mm) \ L(mm)	20	40	60	80	100	120	150	200	300	500
2	14	14	10/14	10/14	10/14	10/14	10/14	10/14	8/12	6/10
3	10/14	10/14	10/14	10/14	10/14	10/14	8/12	8/12	6/10	5/8
4	10/14	10/14	10/14	10/14	8/12	8/12	8/12	6/10	5/8	5/8
5	10/14	10/14	10/14	8/12	8/12	8/12	8/12	6/10	5/8	4/6
6	8/12	8/12	8/12	8/12	8/12	6/10	6/10	5/8	4/6	4/6
8	8/12	8/12	8/12	8/12	8/12	6/10	6/10	5/8	4/6	4/6
10		6/10	6/10	6/10	6/10	5/8	5/8	4/6	4/6	4/6
12		6/10	6/10	6/10	5/8	4/6	4/6	4/6	4/6	3/4
15		5/8	5/8	5/8	5/8	4/6	4/6	4/6	3/4	3/4
20			5/8	5/8	4/6	4/6	4/6	3/4	3/4	2/3
30				4/6	4/6	4/6	3/4	3/4	3/4	2/3
50						3/4	3/4	3/4	2/3	2/3

L = Outer Diameter T + Thickness

* If you have to cut two or more tubes/pipes lying side by side, please use this table considering the double wall thickness

USING SWARF CHIPS TO TROUBLESHOOT

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 Rate	Other
	Thick, Hard and Short	Blue or Brown	Decrease ↓	Decrease ↓	Check Cutting Fluid & Mix
	Thin and Curled	Silver	Suitable ✔	Suitable ✔	

Chip Form	Chip Condition	Chip Color	Blade Speed	Blade Feed Rate	Other
	Powder	Silver	Decrease ↓	Increase ↑	
	Thin and Tightly Curled	Silver	Suitable ✔	Decrease ↓	Check Tooth Pitch

BLADE SELECTION

	Carbon Steel	Structural Steel	Aluminium	Alloy Steel	Tool steel	Stainless Steel	Nickle Based Alloy
INVICTUS DISCOVER							
INVICTUS EXPERT							
INVICTUS PRO							
INVICTUS PRO PLUS							
INVICTUS CARBIDE							

More suitable Suitable

Cermet/Carbide Tipped
CIRCULAR SAW

INVICTUS GENERAL PURPOSE

NON COATED CIRCULAR SAW

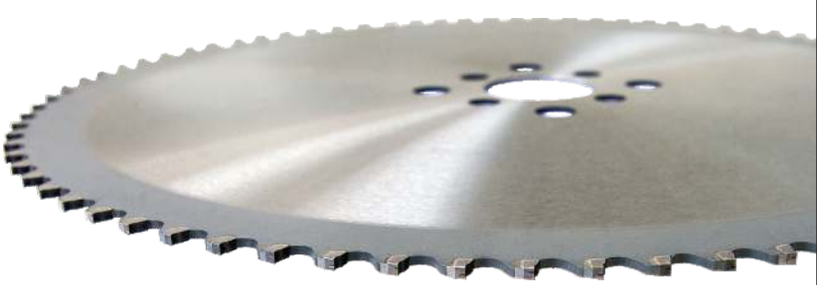
BENEFITS
Qualified for high speed cutting with improved life. To keep longer life for cutting with normal speed. Improved life under complex cutting condition, High performance cutting in high carbon steel materials Avoid blades scuffing during cutting

APPLICATIONS
Medium and high carbon steel. (Steel of 0.25% - 0.60%)
PARAMETER : Line Speed 100-130m/min
Feeding speed : 0.05-0.10mm
cutting Fluid : mist coolent required
Plate material : SKS51

INVICTUS SPECIAL COATED CIRCULAR SAW

FOR STAINLESS STEEL AND SPECIAL STAINLESS STEEL MATERIALS

BENEFITS
Smooth and bar free cutting surface.
Stable cutting life
High cutting precision
maximum cutting 20 square meter
Avoid blades scuffing during cutting



APPLICATIONS
Stainless steel and special stainless steel
PARAMETER : Line Speed 50-80m/min
Feeding speed : 0.02-0.05mm
cutting Fluid : mist coolent required for staainless steel cutting
Plate material : SKS51

INVICTUS COATED CIRCULAR SAW

FOR HARD AND DIFFICULT TO CUT MATERIALS

BENEFITS
Qualified for high speed cutting with improved life. To keep longer life for cutting with normal speed. Improved life under complex cutting condition, High performance cutting in Low, medium, and high carbon steel materials Avoid blades scuffing during cutting

APPLICATIONS
Medium and high carbon steel. (Steel of carbon content 0.60 % - 1.7 %)
PARAMETER : Line Speed 100-130m/min
Feeding speed : 0.05-0.80mm
cutting Fluid : mist coolent required
Plate material : SKS51

TECHNICAL INFORMATION for TA COLD SAWS

TECHNICAL INFORMATION for TA COLD SAWS

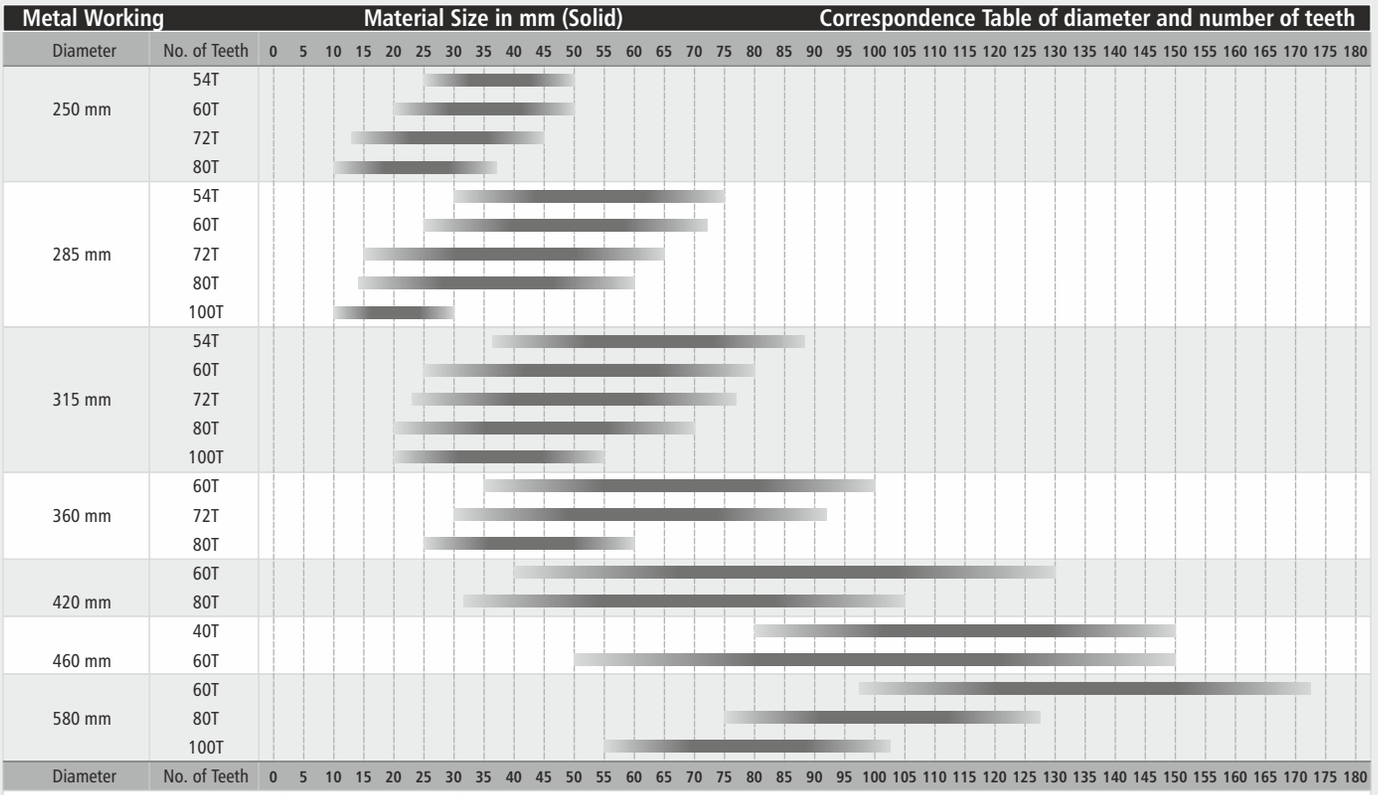
TECHNICAL INFORMATION FOR TA COLD SAWS

No.	Dia.	X	Kerf	X	Plate	X	Bore	X	No. of teeth	Pin Holes
1	250	X	2	X	1.7	X	32	X	54/60/72/80/100	4-9-50 PCD, 4-11-63 PCD
2	285	X	2	X	1.7	X	32	X	54/60/72/80/100	4-9-50 PCD, 4-11-63 PCD
3	315	X	2	X	1.7	X	40	X	54/60/72/80/100	4-9-50 PCD, 4-11-63 PCD
4	360	X	2.6	X	2.25/2.3	X	40/50	X	60/80/100	4-11-90 PCD, 4-15-80 PCD
5	420	X	2.6	X	2.25	X	50	X	60/80	4-15-80 PCD
6	460	X	2.7	X	2.25	X	40/50	X	40/60/80	4-11-90 PCD, 4-14-90 PCD 4-15-80 PCD
7	580	X	3.2	X	2.6/2.7	X	50/80	X	40/60/80/100	4-22-120 PCD

TA Cold Saws Available in above Dimensions and Specifications | other dimensions also available.

SELECTING THE CORRECT TEETH & MATERIAL SIZE

Metal Working — **Material Size in mm (Solid)** — **Correspondence Table of diameter and number of teeth**



Note:
- The actual size of cut material may vary depending on its type and the cutting conditions. Chart is a rough guide only.
- Other sizes and teeth are also available upon request.

Most Suitable Suitable

RECOMMENDED SAWING PARAMETERS

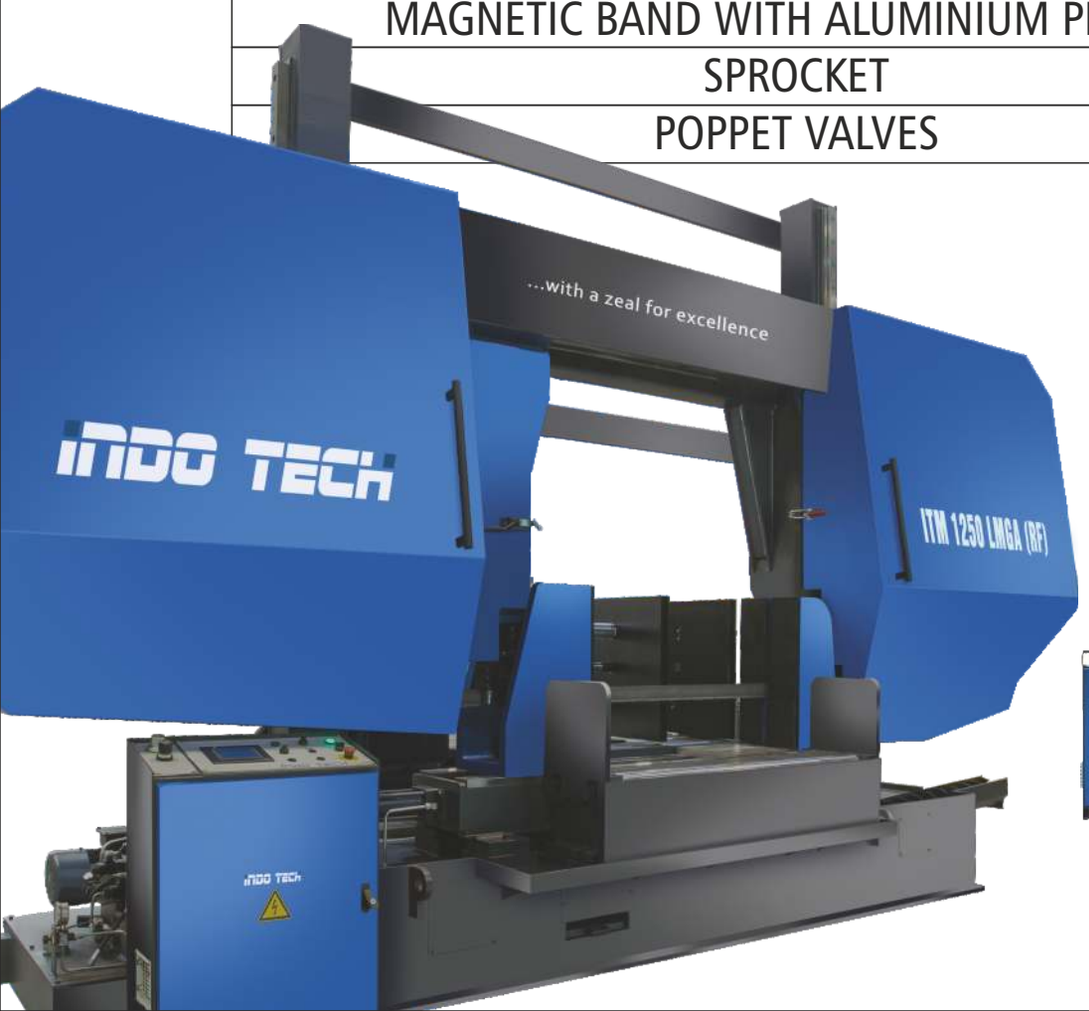
Material Group	Din	Cutting Speed (M/min)	Tip Load (mm)
Structural steels	St 37/42	90 -130	0.04-0.09
	St 52/60	90-120	0.04-0.09
Case Hardened Steels	C 10/C 15	100-130	0.04-0.08
	16 MnCr 5	100-120	0.04-0.08
	20 CrMo 5	100-120	0.04-0.08
	21 NiCrMo 2	100-120	0.04-0.08
Nitriding steels	34 CralNi 7	90-120	0.04-0.09
	34 CralMo 5	90-120	0.04-0.09
Machining steels	9 S 20	110-130	0.04-0.08
	9 S Mn 28	110-130	0.04-0.08
Quenched and tempered steels	C 35/45	90-120	0.05-0.09
	42 CrMo 4	90-110	0.04-0.08
	34 CrNiMo 6	90-110	0.04-0.08
Ball bearing steel	115 Cr V 3	80-100	0.03-0.07
	100 Cr 6	80-100	0.03-0.07

Material Group	Din	Cutting Speed (M/min)	Tip Load (mm)
Spring steel	65 Si 7	90-100	0.04-0.08
	50 CrV 4	90-100	0.04-0.08
Tool steels	C 125 W	50-70	0.03-0.07
	40 CrMnMo 7	70-90	0.03-0.07
	X 40 Cr MoV 5 1	50-70	0.03-0.06
	X 155 CrVMo 12 1	50-70	0.03-0.06
High speed steels	S 6-5-2	40-70	0.03-0.06
	S 2-20-1-8	40-70	0.03-0.06
Ferritic SS	X10CrA124/446	40-70	0.03-0.06
Stainless steels	X 20 Cr 13	40-70	0.03-0.08
	X 5 CrNi 18 10	40-70	0.03-0.08
	X 6 CrNMioTi 17 12 2	40-70	0.03-0.08
Cold forging steel	38Cr 2	80-110	0.04-0.07
	37Cr 4	90-110	0.04-0.08

* To determine the number of Revolution Per Minute (RPM) to be calculated,
RPM = $1000V / \pi D$ | where, V = cutting speed (m/min), D = Saw Diameter (mm)

INVICTUS STANDARD SPARE PARTS

MIST OIL FOR FERROUS AND NON FERROUS
MICROMIST SPRAY SYSTEM
CUSTOMISED DRIVER AND IDLER WHEEL ASSEMBLY
TENSION ASSEMBLY
JAW LINER
TENSION METER
CARBIDE WEAR PLATE
FEED CONTROL VALVES
WIRE BRUSHES
OIL SEALS
BLADE GUIDE BOX
BLADE GUIDE
ALL SOLENOID VALVES
INDOTECH MAKE CYLINDERS OF ALL SIZES
HYDRAULIC ASSEMBLY
MAGNETIC SENSORS
MAGNETIC BAND WITH ALUMINIUM PROFILE
SPROCKET
POPPET VALVES



SUPPLYING THE FINEST METAL CUTTING SOLUTIONS TO THE WORLD

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