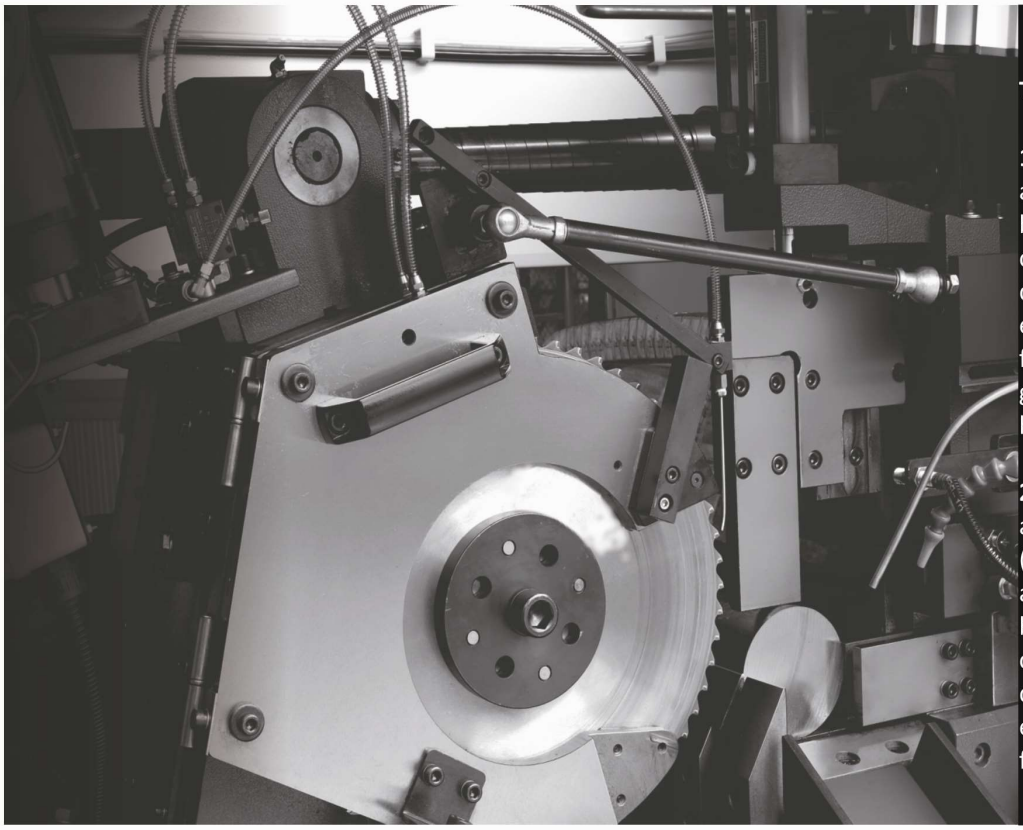
MEBA
sawing solutions.

CIRCULAR SAW BLADE CATALOGUE



TYPES OF CS BLADE:

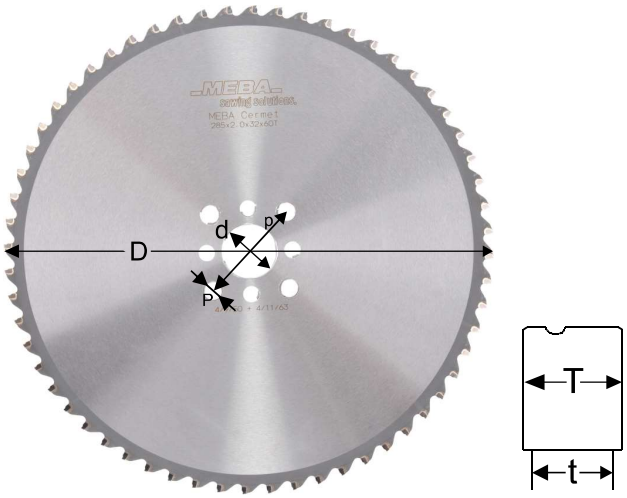
1. TCT RANGE
a) MEBA CERMET
b) MEBA PREMIUM
c) INDUSTRIAL WOOD CUTTER
d) INDUSTRIAL PLASTIC CUTTER
e) INDUTRIAL ALUMINIUM CUTTER
f) INDUSTRIAL PVD CUTTER
g) DRY STEEL CUTTER
h) INDUSTRIAL BRASS/BRONZE CUTTER

2. HSS RANGE
a) HSS-DMO5 (M2) / b) HSS-E (M35)
(With different PVD coating i.e.)
a) MEBA HSS
b) MEBA PRO
c) MEBA PRO+
d) MEBA PRO-NF
e) MEBA XTREME
f) MEBA ULTIMATE

HIGH PERFORMANCE CIRCULAR SAW BLADES FOR PROFESSIONALS

MEBA TCT CIRCULAR SAW

TECHNICAL CHARACTERISTICS



D – Blade Diameter
d – Bore
P – Pin Hole Diameter
T – Cutter Thickness
t – Body Thickness
Z – Number of Teeth

Blade Type	Teeth	Application	Blade Surface Speed (m/min)	Chip Load (mm/tooth)	Material Shape	Machine Category	Material: Carbon Steel / Alloy Steel C% 0.1	0.2	0.3	0.4	0.5	0.6	Bearing steel	Stainless Steel	Die Steel	Thick Steel Pipe	Thin Steel Pipe	Stainless Pipe	Non Ferrous Metal
M-01	CERMET	STEEL BAR	110-125	0.06-0.07	■ ● ◎	A	■	■	■	■	■					■			
M-02	CERMET	STEEL BAR	100-125	0.05-0.07						■	■	■	■			■			
M-03	PREMIUM	BEARING STEEL	100-110	0.04-0.05									■						
M-04	PREMIUM	STAINLESS BAR	65	0.03										■					
M-05	PREMIUM	DIE STEEL	60-70	0.04-0.05											■				
M-06	CERMET	STEEL PIPE	100-125	0.03-0.05	□ ○												■		
M-07	PREMIUM	STAINLESS PIPE	65	0.03														■	
M-08	PREMIUM	STAINLESS BAR & PIPE	200-350	0.04-0.12	◎■●○	B	■	■	■	■	■	■	■		■	■	■		
M-09	PREMIUM	STAINLESS BAR & PIPE	80-140	0.03-0.08										■				■	
M-10	PREMIUM	STEEL PIPE	350-400	0.04-0.12	□ ○	C										■	■		
M-11	PREMIUM	STAINLESS PIPE	60-120	0.035-0.10														■	
M-12	CERMET	NON FERROUS METAL	2000-4000	0.005-0.01	◎■●○	D													■

MEBA CERMET

Cermet circular saw blade, throw-away type, suitable for cutting solids with medium-low hardness and low content of carbon.

MEBA PREMIUM

Carbide tipped circular saw blade, throw-away type with PVD coating. Suitable for cutting solids with medium-high hardness and high carbon content or for stainless steel & tubes with different wall thickness.

Other TCT blades available for industrial requirements on request:

a) Industrial wood cutters
b) Industrial plastic cutters
c) Indutrial aluminium cutters
d) Industrial PVD cutters
e) Dry steel cutters
f) Industrial Brass/Bronze cutters

MEBA TCT CIRCULAR SAW

Selecting The Right No of Teeth for Solid Applications

Dia. (mm)	Teeth	Pitch(mm)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
250	60	13.08					■	■											
	72	10.90				■	■	■											
	80	9.81			■	■	■												
	100	7.85		■	■														
285	60	14.92							■	■	■								
	72	12.43						■	■	■									
	80	11.19				■	■	■											
	100	8.95			■	■	■												
	120	7.46		■	■														
	140	6.39	■	■															
315	60	16.49									■	■	■						
	72	13.74							■	■	■								
	80	12.36						■	■	■									
	100	9.89				■	■	■											
	120	8.24			■	■	■												
360	60	18.84									■	■	■	■					
	80	14.13							■	■	■								
	100	11.30					■	■	■										
	120	9.42				■	■	■											
425	60	22.24											■	■	■				
	80	16.68									■	■	■						
	100	13.35							■	■	■								
	120	11.12					■	■	■										
460	40	36.11														■	■	■	■
	60	24.07											■	■	■	■			
	80	18.06									■	■	■						
	100	14.44							■	■	■								
	120	12.04					■	■	■										
580	60	30.35														■	■	■	■
	80	22.77											■	■	■	■			
	100	18.21									■	■	■						
	120	15.18							■	■	■								
	140	13.01					■	■	■										

Selecting The Right No of Teeth for Tube Application

The number of teeth for cutting tube

D : Tube Diameter Z : Number of Teeth

t : Wall Thickness P : Tooth Pitch

Blade Diameter	285mm blade				360mm blade			
Number of Teeth	140Z	120Z	100Z	80Z	160Z	140Z	120Z	100Z
Tooth Pitch	P 6.39mm	P 7.46mm	P 8,95mm	P 11.19mm	P 7.06mm	P 8.07mm	P 9.42mm	P 11.30mm
Tube Diameter	**Tube Thickness**							
10 mm	-	-	-	-	-	-	-	-
20 mm	6.8mm	-	-	-	-	-	-	-
30 mm	3.1mm	9.3mm	-	-	6.3mm	10.5mm	-	-
40 mm	2.1mm	5.2mm	8.3mm	11.4mm	3.7mm	6.4mm	9.8mm	11.5mm
50 mm	1.6mm	3.7mm	5.8mm	7.9mm	2.7mm	4.4mm	6.8mm	8.0mm
60 mm	1.2mm	2.8mm	4.4mm	6.0mm	2.1mm	3.2mm	5.2mm	6.1mm
70 mm	1.0mm	2.3mm	3.6mm	4.9mm	1.7mm	2.5mm	4.2mm	5.0mm

MEBA HIGH SPEED CIRCULAR SAW

MEBA HSS DMo5

This is a Molybdenum high speed steel. The alloying element molybdenum reduces the fragility allowing the formation of a very fine martensitic grain, increasing as well the limit of elasticity, which allows a great cutting performance & giving the saw blades great tenacity, great wear resistance and high temperature resistence improving the cutting capacity. The Vanadium contributes to the formation of hard carbides that improve the wear out resistance.

MEBA HSS E

This is a Molybdenum - Cobalt high speed steel. The difference to HSS-DMo5 is the content of 5% cobalt. The cobalt contributes to give a very good tenacity and long lifetime especially when used at high temperatures. These characteristics are important, as they allow to recommend this steel to cut INOX and materials of high mechanic resistance that process produce high temperature in the contact area during cutting.

MEBA HSS DMo5 & HSS E is available in 'Steam Oxide' & below mentioned PVD coatings:

MEBA **PRO** is a surface coating with 3 microns thickness layer, with a Titanium base, yellow colored.

Suitable for cutting materials with a tensile strength up to 500 N/mm^2

MEBA **PRO+** is a surface coating with 2,5 microns thickness layer, with a Titanium and Carbon base, which gives a high hardness and a low friction.

Suitable for cutting materials with a tensile strength up to 800 N/mm^2

MEBA **PRO-NF** is a surface coating with 3 microns thickness layer, with a Chrome base

Specially recommended for cutting soft materials such as Brass, Bronze, Aluminium, etc.

MEBA **XTREME** is a surface coating with 3 microns thickness layer, with a Titanium and Aluminium base, combining high toughness of the multilayer structure with high hardness. It allows machining at high speed, with few lubricant.

Suitable for cutting materials with a tensile strength up to 1100 N/mm^2 , Cast Iron, Stainless Steel , etc.

MEBA **ULTIMATE** is a surface coating with 3 microns thickness layer, with a Titanium and Aluminium base with an additive, which gives an additional protection to the coating, due to the lubricant effect, that prevents the chip micro welding.

Suitable for cutting materials with a tensile strength above 1100 N/mm^2, Stainless Steel, INCONEL, Die Steel and other difficult to cut materials.

MEBA HIGH SPEED CIRCULAR SAW

MEBA sawing solutions.

A - FINE TOOTH

The toothform A and AW are mainly used for works of fine mechanizing with short chipping. The tooth pitches are from 0,8 to 6, mm. according to external diameter and thickness and are used for minor cutting depths, generally from 3 to 5 mm.

AW - TOOTH WITH ALTERNATED BEVELS

Form AW has the same characteristics, but producing smaller chips.

B - GROSS TOOTH

Form B is conceived to cut deep, materials with long chipping. This geometry is adequate to ease the chip formation and remove from the work area. It is recommended to cut sections bigger than 5 mm.

BW - TOOTH WITH ALTERNATED BEVELS

Form BW is adequate for cut off ma-chines cutting profile up to 3-4 mm, although in small blades this toothform can also be used cutting profiles thicker than 5 mm. Bevel size is 2/5 of thickness to reduce the cutting strength.

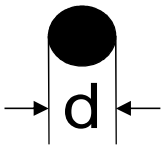
C (HZ) - PRECUTTER TOOTH WITH SIDE BEVELS AND FINISHING TOOTH WITHOUT BEVELS

The effect of this toothform is to reduce the necessary efforts of mechanizing a working piece. The precutter tooth is 0,15/0,3mm higher than the finishing tooth, with side bevels, cutting the precutter only 1/3 in the center of the sawblade's thickness and the finishing tooth the remaining 2/3 on the sides.

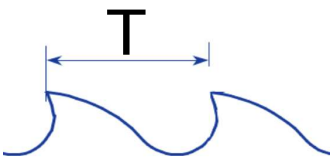
BR - FORM B WITH CHIPBREAKER

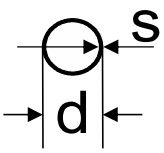
The latest novelty in relation to toothform. Especially indicated to cut tubes.The chipbreaker is a fine slot of 0,4 mm. on top of the tooth. It obtains 25% more performances than form BW.

TOOTH PITCH: Once the material and the section to be cut have been identified, the pitch must be chosen. The correct pitch will prevent dangerous vibration and guarantee correct chip evacuation. The following data are approximate.



Solid Bar		
	Avg < 0.08 mm/Z	Avg > 0.08 mm/Z
d	T	T
≤ 20mm	5.5	
≤ 30mm	7	
≤ 40mm	8	
≤ 50mm	9	
≤ 60mm	10	12
≤ 70mm	11	12
≤ 80mm	12	14
≤ 90mm	12	14
≤ 100mm	14	16
≤ 120mm	14	16
≤ 140mm	14	18





Pipe and Structural Shapes				
O Avg = 0.05 to 0.08 mm/Z				
d	s	T	s	T
≤ 20mm	≤ 1mm	3	> 1mm	4
≤ 30mm	≤ 1.5mm	5	> 1.5mm	5.5
≤ 40mm	≤ 2mm	6	> 2mm	7
≤ 50mm	≤ 4mm	6	> 4mm	7
≤ 60mm	≤ 4mm	7	> 4mm	8
≤ 70mm	≤ 3mm	7	> 3mm	8
≤ 80mm	≤ 4mm	8	> 4mm	10
≤ 90mm	≤ 4mm	8	> 4mm	10
≤ 100mm	≤ 7mm	10	> 7mm	12
≤ 120mm	≤ 5mm	10	> 5mm	12
≤ 140mm	≤ 4mm	10	> 4mm	12

In order to choose the right number of teeth, it is important to consider the section that needs to be cut and the material. The pitch is correct when the teeth to section ratio is at least 1:3 for solid bars and 1:1 for pipes and structural shapes.

TROUBLE SHOOTING

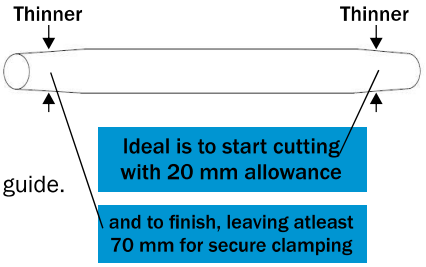
Blade life is affected by below mentioned conditions. Negligence will result in inconsistent performance. Bad results are usually caused by :-

Material

- Material is usually thinner on both edges. Cutting the first waste material in short length causes the material to move between the clamp resulting teeth chipping.
- To save blade cost, cut the first waste material in long length.
- Material should be straight and even.
- Material should be annealed steel. If it's hardened, the blade life will go down.
- Uniform, grain & good branded materials give consistent performance.

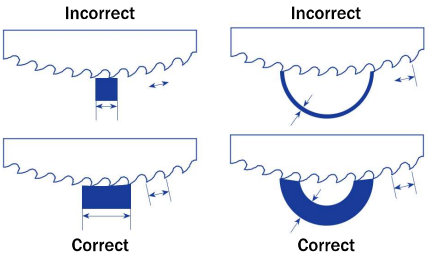
Machine

- The machines have to be the correct machine for TCT blade. Machine for HSS is different.
- Wire brush should be working properly all the time.
- Mist oil supply should be adequate & continuous.
- Flange has no damage and has to be straight.
- Clamp should not be worn out. If so, needs corrective action.
- Clamping pressure should be good enough & sturdy
- Vibration guide should be working properly. Keep a prescribed gap between the blade and the guide.
- Nozzle of mist oil should be facing the right direction.
- The gear box should not be making strange noise.
- Check the V belt, If loosened or cut, would chip off the blade prematurely at early stages.



Operator

- Need to check if above machine condition is ok.
- Need to check if parameter is correct.
- Need to check if material thickness and blade number of teeth are correct as per recommendations.
- Need to check if the blade type is suitable for the material.
- Need to check if Material thickness is consistent



Blade

- Blade specifications should be right for the material.
- Blade finish should be done in certain tolerance.
- Blade teeth should not be chipped and brazing should be done properly.
- Proper tool selection as per cutting material and machine conditions.
- Number of teeth selection is very important factor and it should be like as mentioned

MEBA HIGH PERFORMANCE CIRCULAR SAW MACHINES

MEBA**mcs** 70

MEBA**mcs** 100

MEBA**mcs** 150

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