TOTEM®

High Performance Cutting Tools

NEW

HIGH QUALITY FLEXIBLE CARBIDE BURRS FOR SPECIAL CASTINGS

FEATURES

- Flexible Shaft Carbide burs is for Specialty cleaning of impeller, Pump housings, and all Castings, Excellent for the cleaning of burnt sand, welding, fins, and inner Pipe cleaning, and all other blending operations.
- Metric size flexible shank carbide burs are available upon customer's request.
- Available in 6", 8", 10", & 12" length and all shapes. For special length and shapes, please send us email – sales@forbes.co.in
- Our rotary burrs are brazed by the advanced welding equipment automatically. The cutters are made by the modern CNC grinding machines.
- Flexible shank carbide burrs manufactured to your drawings to meet your demands of particular stock removal.
- TOTEM flexible shank carbide burs can be coated with TiN, TiCN, TiALN
- Best Suited to castings in areas that are difficult to reach with standards.
- Focus on Turbine blade assemblies, Pump Casings, Pump Impellers.

FORBES

Forbes & Company Limited

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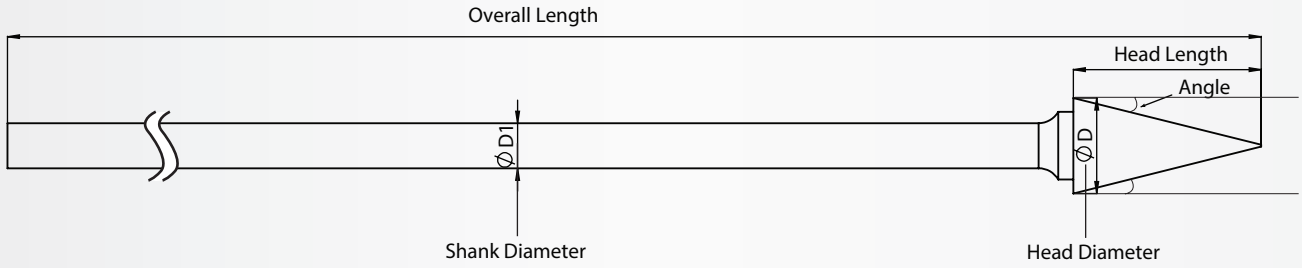
FLEXIBLE CARBIDE BURRS NOMENCLATURE



FLEXIBLE CARBIDE BURR

SERIES
SA/ZYA

SHAPE DESCRIPTION
CYLINDRICAL WITHOUT END CUT

TOTEM REFERENCE
C

SERIES
SB/ZYAS

SHAPE DESCRIPTION
CYLINDRICAL WITH END CUT

TOTEM REFERENCE
CE

SERIES
SC/WRC

SHAPE DESCRIPTION
CYLINDRICAL WITH RADIUS END

TOTEM REFERENCE
B

SERIES
SD/KUD

SHAPE DESCRIPTION
Ball Shape

TOTEM REFERENCE
S

SERIES
SE/TRE

SHAPE DESCRIPTION
OVAL SHAPE BURR

TOTEM REFERENCE
O

SERIES
SF/RBF

SHAPE DESCRIPTION
TREE SHAPE WITH RADIUS END

TOTEM REFERENCE
TB

SERIES
SG/SPG

SHAPE DESCRIPTION
TREE SHAPE WITH POINT END

TOTEM REFERENCE
T

SERIES
SH

SHAPE DESCRIPTION
FLAME SHAPE

TOTEM REFERENCE
F

SERIES
SL/KEL

SHAPE DESCRIPTION
CONE WITH RADIUS BURR

TOTEM REFERENCE
K

SERIES
SM/SKM

SHAPE DESCRIPTION
CONE SHAPED BURR

TOTEM REFERENCE
A

SERIES
SN

SHAPE DESCRIPTION
INVERTED CONE SHAPE BURRS

TOTEM REFERENCE
N

SERIES
RIM

SHAPE DESCRIPTION
RIM SHAPE BURRS

TOTEM REFERENCE
R

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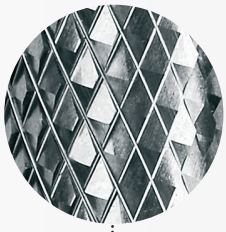
TYPE OF CUTS

STANDARD CUT (SINGLE CUT)
This flute structure is designed for superior material removal and general purpose application. These can be used on Steel, Steel alloys, Cast Iron, Stainless Steel, Hard Bronze and Copper. Produces longer chips.

SUPREME CUT (DOUBLE CUT / CROSS CUT):
This burr allows for efficient stock removal in the harder materials. Its design reduces tool chatter and breaks the chips into granular shapes. These smaller chips also help to eliminate loading on the flutes. This design helps to have better control on the burr and grinder.



DELUXE CUT (DIAMOND CUT):
This design of tool is like triangular style of point, which produces extremely small chips (powder like chips). The cut eliminates pulling action of the main cut, and offers the operator good control over the tool and produces excellent finish. Effective in heat treated Steels and Tough alloy steels.

CUTTING PARAMETERS

Material	6mm	8mm	10mm	12mm	16mm
Steel	30-45	25-35	20-30	15-25	10-18
Hardened / Tool Steel	15-20	10-15	10-15	8-10	5-8
Stainless Steel	15-25	12-20	10-15	9-12	7-10
Nickel / Titanium	15-20	10-15	10-15	8-10	5-8
Cast Iron	30-45	25-35	20-30	15-20	10-18
Aluminium / Plastics	15-60	12-50	10-50	8-35	6-30
Brass	20-30	15-20	13-17	10-15	8-12
Copper	15-60	12-50	10-50	8-35	6-30
Zinc	30-45	25-35	20-30	15-25	10-18

The table lists recommended rotational speeds (RPM) as a function of burr diameter.

SAFETY NOTE

Tools with long shanks must be placed on the workpiece, or inserted into the bore or groove, before the power source is switched on. For safety reasons we urge you to reduce idling speeds (RPM) by up to one-third from the values stated.

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FLEXIBLE CARBIDE BURRS NOMENCLATURE

Material Groups			Application	Cut Type		
				Standard	Supreme	Deluxe
Steel and steel castings	Non Hardened, non heat treated steels upto 1200 N/mm² (<35 HRC)	Constructional steels Carbon steels Tool steels Non-alloyed steels Case-hardened steels Steel castings	Coarse machining = high stock removal	X	X	
			Fine maching - eg: deburring			X
	Hardened, heattreated steels exceeding 1200 N/mm² (>35 HRC)	Tool steels Tempering steels Alloyed steels Steel castings	Coarse machining = high stock removal	X	X	
			Fine maching - eg: deburring			X
High-grade steels	Stainless steels	Austenitic and ferritic high-grade steels	Coarse machining = high stock removal			
			Fine maching - eg: deburring			X
Non - ferrous metals	Soft non-ferrous metals	Aluminium alloys Brass Copper Zinc	Coarse machining = high stock removal			
			Fine maching - eg: deburring			
	Hard non-ferrous metals	Bronze Titanium / titanium alloys Very hard aluminium alloys (high Si content)	Coarse machining = high stock removal	X	X	
			Fine maching - eg: deburring			X
	Heat resisting alloys	Nickel based alloys NiCo alloys (aircraft engine and turbine construction)	Coarse machining = high stock removal	X	X	
			Fine maching - eg: deburring			X
Cast Iron		Grey Cast Iron Spherodial Graphite cast iron	Coarse machining = high stock removal	X	X	
			Fine maching - eg: deburring			X
Plastics / Other materials		Fibre Reinforced plastics Thermoplastics hard rubber	Coarse machining = high stock removal			
			Fine maching - eg: deburring			

RECOMMENDATIONS FOR USE

TOTEM Tungsten Carbide Burrs are designed for machining materials of virtually any strength; the superior performance reflects an optimum combination of key parameters such as shape, number of flutes, spiral angle, rake angle and concentricity. The precise concentricity of TOTEM tungsten carbide burrs

- Ensures an improved protection of operator safety and health
- Reduces power tool wear
- Provides smooth operating behaviour
- Prevents chatter marks

An optimum power output and RPM of the power source (air-powered or electric machine, flexible shaft system) are necessary conditions for an economically efficient use of tungsten carbide burrs. We therefore recommend you to observe the following rules:

- Work with maximum RPM. Do not use speeds below 3000 RPM except in special cases (eg: on stationery machines or when countersinking with fully immersed burr).
- Chucks and collets must be absolutely concentric to avoid chipping. Tool runout and chatter will result in premature wear.
- Work with significantly reduced RPM on poorly heat conducting materials (eg: stainless steel, titanium alloys, etc.) to prevent tool damage. Avoid the typical blue Discoloration of the shank and the tool.
- In light cutting applications (deburring, chamfering, light surface work) the tool speed may be increased uo to twice indicated rate.
- When machining very sticky materials, the use of a suitable lubricant (grease, kerosene, chalk or similar) is recommended to prevent loading.

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