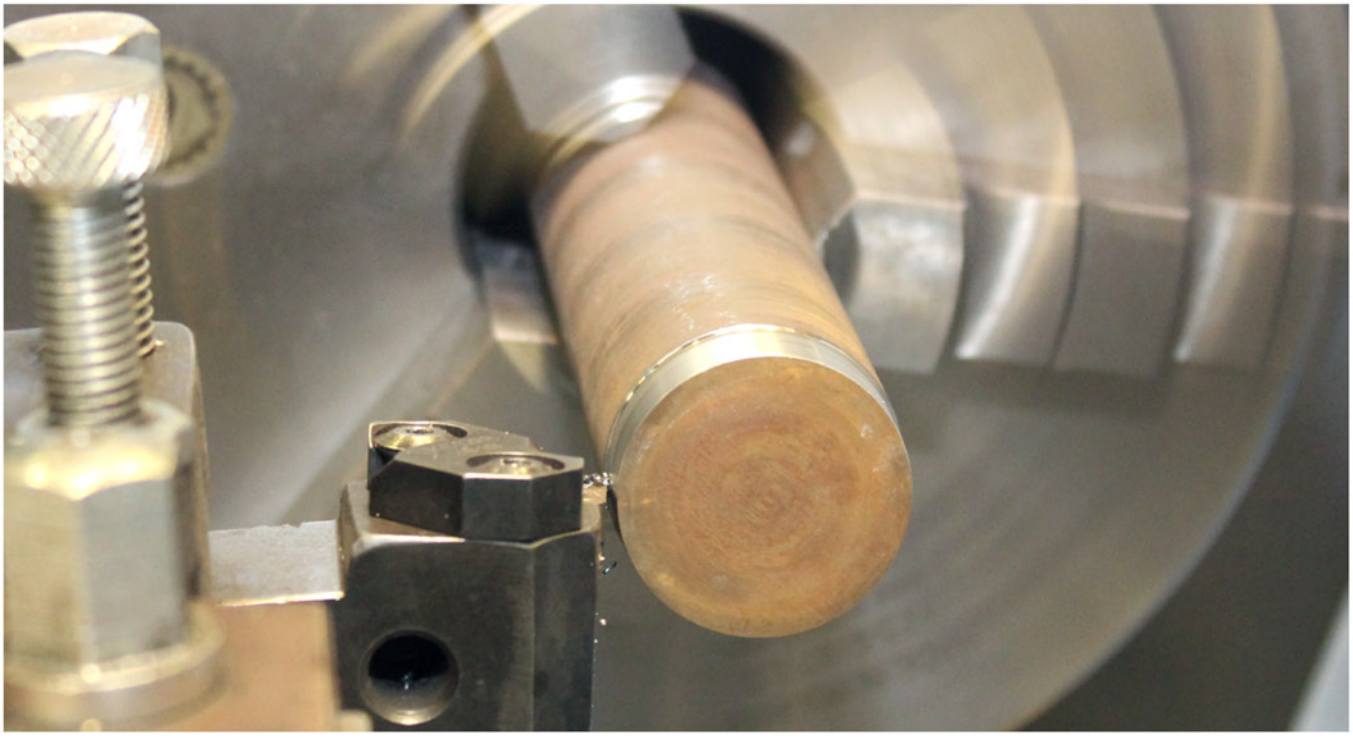
HARDOX®
WEAR PLATE

ROBITAILLE EQUIPEMENT INC.

Hardox® 400 Round Bars – Turning Recommendations



Typical Properties

Hardness in Brinell (HBW)	Hardness in Rockwell (HRC)	Tensile Strength, Rm (N/mm²)
~ 400	~ 40	~ 1250

For more specific information see data sheet for Hardox® 400 Round Bar.

Cuttingdata Turning	Cemented Carbide	
	Roughing	Finishing
Cutting speed, V_c (m/min)	70 – 90	70 - 130
Feed per revolution, f_n (mm/r)	0.2 – 0.6	0.05 – 0.3
Cutting depth, a_p (mm)	2 – 4	0.5 – 2
Suitable grades	P20 – P35* K20 – K30*	K01 – K20*

* If possible, use a CVD coated cemented carbide.

Note

These cutting data should be seen as a starting values. It is up to each workshop to optimize cutting data for each machine.

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Remarks

- It is recommended to use cutting fluid when turning. Insert holder with internal cooling channels can be used.
- Use a tougher carbide grade with interrupted cut or face turning of large workpieces.
- At higher Feed rate, lower the cutting speed.

Formulas and definitions

$V_c = \pi \times d \times n / 1000$

$n = V_c \times 1000 / \pi \times d$

$v_f = n \times f_n$

$\pi = 3{,}14$

V_c = cutting speed (m/min)

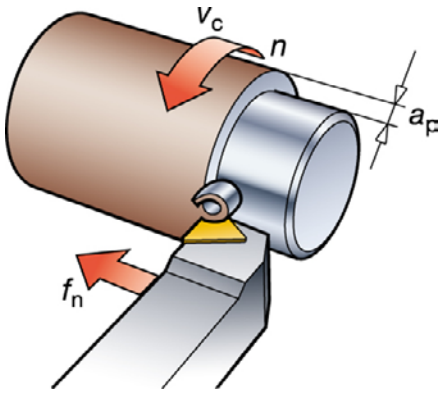
n = speed (rpm)

f_n = feed rate (mm/rev)

v_f = feed rate (mm/min)

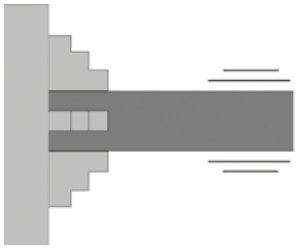
d = workpiece Ø

a_p = cutting depth (mm)



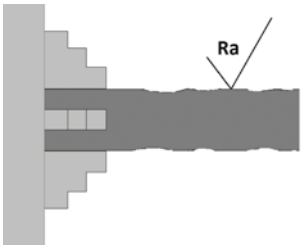
Troubleshooting

Vibrations



- Improve the tool and workpiece stability.
- Change cutting speed.
- Increasing feed.
- Reduce the depth of cut.
- Choose a more easy-cutting chipbreaker.
- Select an insert with less nose radius.

Bad surface finish



- Reduce feedrate.
- Increase cutting speed.
- Use coolant.
- Improve the tool and workpiece stability.
- Choose a more easy-cutting chipbreaker.
- Select inserts with larger nose radius.

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