

Solid Carbide Bar for Very Small Hole Boring

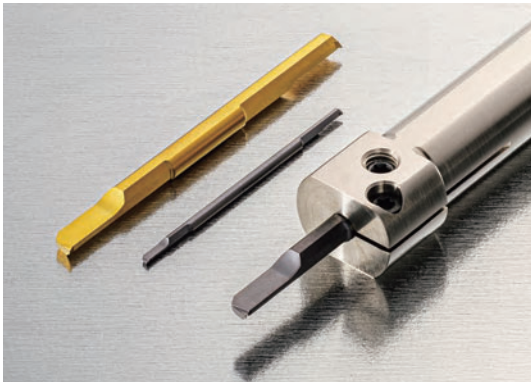
Solid Carbide Bar **BXBR** series

For min. bore diameter of $\varnothing 2.0\text{mm}$
and up
Economical 2-cornered bars



Expansion Corner Radius **RE = 0.15mm**
added to chipbreaker type bars
AC1030U with excellent cutting
edge quality now **in stock**

SumiSm

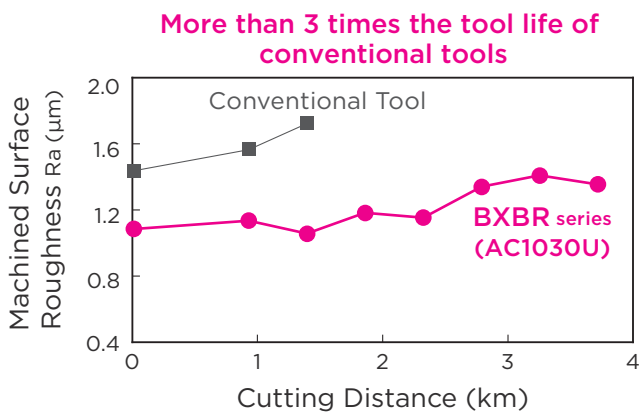


■ Features

- Economical 2-cornered bars
- Boring depths of 5D (5 times the shank diameter)
- Usable at any desired overhang
- Shank size = min. bore diameter for easy selection.
(Available from $\phi 2.0\text{mm}$ to $\phi 5.0\text{mm}$ in 0.5mm increments)
- KBMX type cutting edge used. Bars with no chipbreaker are also available in stock
- **Corner radius expansion (RE = 0.15mm)**
- **AC1030U with excellent cutting edge quality now in stock** (bars with chipbreaker only)

■ Cutting Performance

● Machined Surface Quality

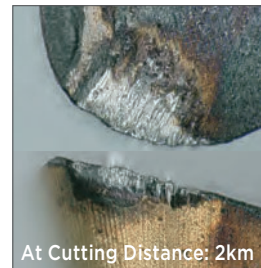


● Wear Resistance

Cutting Edge Failure Suppressed

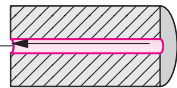


BXBR series (AC1030U)

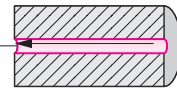


Conventional Tool

Work Material: SCM415 Work Dia.: $\phi 6.0\text{mm}$
 Tool: BXBR 05020R (AC1030U)
 Cutting Conditions: $v_c=80\text{m/min}$ $f=0.05\text{mm/rev}$ $a_p=0.05\text{mm}$ Wet(Non-water-soluble Cutting Oil)



Work Material: SUS304 Work Dia.: $\phi 6.0\text{mm}$
 Tool: BXBR 05015R (AC1030U)
 Cutting Conditions: $v_c=70\text{m/min}$ $f=0.03\text{mm/rev}$ $a_p=0.05\text{mm}$ Wet(Non-water-soluble Cutting Oil)

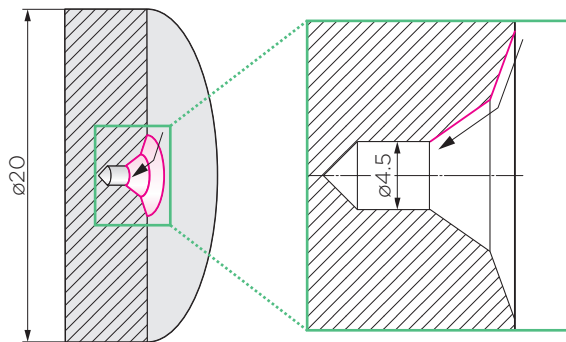


■ Application Examples

SCM415 Output Shaft



Achieves machined surface roughness of Rz6.3



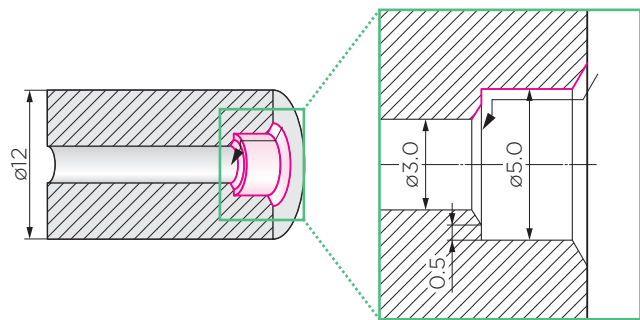
(mm)

Tool: BXBR 04020R (ACZ150)
 Cutting Conditions: $v_c=50\text{m/min}$ $f=0.06\text{mm/rev}$ $a_p=0.10\text{mm}$ Wet

SUS304 Automotive Component



Stable machined surface roughness realised



(mm)

Tool: BXBR 03020R (ACZ150)
 Cutting Conditions: $v_c=30\text{m/min}$ $f=0.05\text{mm/rev}$ $a_p=0.15\text{mm}$ Wet

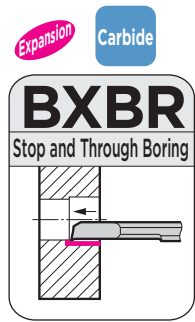
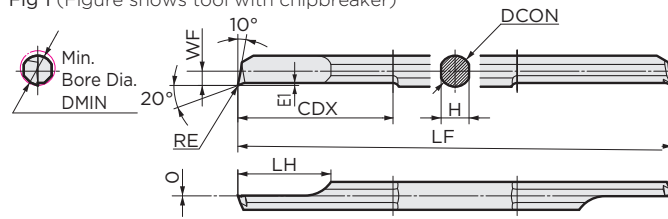


Fig 1 (Figure shows tool with chipbreaker)



Internal (Small Diameter) Finishing Solid



■ Bar (With Chipbreaker) (Coated Carbide)

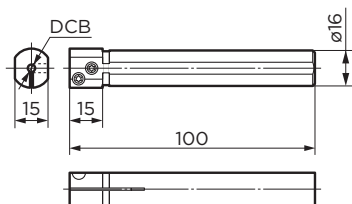
Dimensions (mm)

Cat. No.	Stocking			*Min. Bore Dia. DMIN	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LH	Maximum Boring Depth CDX	Offset E1	Corner Radius RE	Applicable Sleeve	Fig
	AC1030U	ACZ150	AC530U											
BXBR 02005R	●	●		2.0	2.0	1.8	50	0.80	6.0	10.0	0.20	0.05	HBX 2016	1
BXBR 02015R <i>new</i>	●			2.0	2.0	1.8	50	0.80	6.0	10.0	0.20	0.15	HBX 2016	1
BXBR 02020R	●	●		2.0	2.0	1.8	50	0.80	6.0	10.0	0.20	0.20	HBX 2016	1
BXBR 02505R	●	●		2.5	2.5	2.2	50	1.05	7.5	12.5	0.20	0.05	HBX 2516	1
BXBR 02515R <i>new</i>	●			2.5	2.5	2.2	50	1.05	7.5	12.5	0.20	0.15	HBX 2516	1
BXBR 02520R	●	●		2.5	2.5	2.2	50	1.05	7.5	12.5	0.20	0.20	HBX 2516	1
BXBR 03005R	●	●		3.0	3.0	2.7	50	1.30	9.0	15.0	0.25	0.05	HBX 3016	1
BXBR 03015R <i>new</i>	●			3.0	3.0	2.7	50	1.30	9.0	15.0	0.25	0.15	HBX 3016	1
BXBR 03020R	●	●		3.0	3.0	2.7	50	1.30	9.0	15.0	0.25	0.20	HBX 3016	1
BXBR 03505R	●	●		3.5	3.5	3.1	60	1.55	10.5	17.5	0.25	0.05	HBX 3516	1
BXBR 03515R <i>new</i>	●			3.5	3.5	3.1	60	1.55	10.5	17.5	0.25	0.15	HBX 3516	1
BXBR 03520R	●	●		3.5	3.5	3.1	60	1.55	10.5	17.5	0.25	0.20	HBX 3516	1
BXBR 04005R	●	●		4.0	4.0	3.6	60	1.80	12.0	20.0	0.35	0.05	HBX 4016	1
BXBR 04015R <i>new</i>	●			4.0	4.0	3.6	60	1.80	12.0	20.0	0.35	0.15	HBX 4016	1
BXBR 04020R	●	●		4.0	4.0	3.6	60	1.80	12.0	20.0	0.35	0.20	HBX 4016	1
BXBR 04505R	●	●		4.5	4.5	4.1	70	2.05	13.5	22.5	0.35	0.05	HBX 4516	1
BXBR 04515R <i>new</i>	●			4.5	4.5	4.1	70	2.05	13.5	22.5	0.35	0.15	HBX 4516	1
BXBR 04520R	●	●		4.5	4.5	4.1	70	2.05	13.5	22.5	0.35	0.20	HBX 4516	1
BXBR 05005R	●	●		5.0	5.0	4.5	70	2.30	15.0	25.0	0.40	0.05	HBX 5016	1
BXBR 05015R <i>new</i>	●			5.0	5.0	4.5	70	2.30	15.0	25.0	0.40	0.15	HBX 5016	1
BXBR 05020R	●	●		5.0	5.0	4.5	70	2.30	15.0	25.0	0.40	0.20	HBX 5016	1

* Boring depth CDX or less.

Recommended Cutting Conditions **P4**

Fig 1



■ Sleeve

Dimensions (mm)

Cat. No.	Stock	Bore Dia. DCB	Applicable Bar	Fig
HBX 2016	●	2.0	BXBR 0200OR(-NB)	1
HBX 2516	●	2.5	BXBR 0250OR(-NB)	1
HBX 3016	●	3.0	BXBR 0300OR(-NB)	1
HBX 3516	●	3.5	BXBR 0350OR(-NB)	1
HBX 4016	●	4.0	BXBR 0400OR(-NB)	1
HBX 4516	●	4.5	BXBR 0450OR(-NB)	1
HBX 5016	●	5.0	BXBR 0500OR(-NB)	1

BXBR bars can also be used with HBB type sleeves. Commercially available sleeves may also be used.

■ Parts (for Adapter Sleeve)

Applicable Sleeve	Flat Head Screw	Set Screw	Wrench
	HBX0000	BFTX0409N	3.4 BT06035T

Sleeve is optional.

Carbide

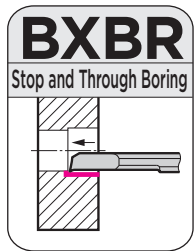
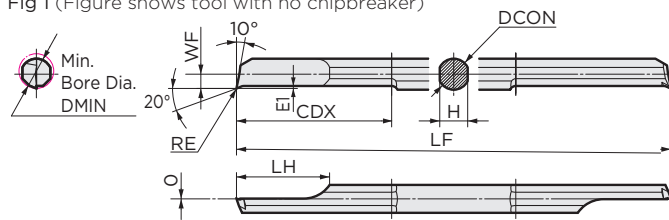


Fig 1 (Figure shows tool with no chipbreaker)



Internal (Small Diameter) Finishing Solid

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■ Bar (No Chipbreaker) (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U	ACZ150	AC5530U	*Min. Bore Dia.		Diameter	Overall Length		Cutting Edge Distance	Head	Maximum Boring Depth	Offset	Corner Radius	Applicable Sleeve	Fig
				DMIN	DCON		LF	WF							
BXBR 02005R-NB	●			2.0	2.0	2.0	50	0.80	6.0	10.0	0.20	0.05	HBX 2016	1	
BXBR 02020R-NB	●			2.0	2.0	2.0	50	0.80	6.0	10.0	0.20	0.20	HBX 2016	1	
BXBR 02505R-NB	●			2.5	2.5	2.2	50	1.05	7.5	12.5	0.20	0.05	HBX 2516	1	
BXBR 02520R-NB	●			2.5	2.5	2.2	50	1.05	7.5	12.5	0.20	0.20	HBX 2516	1	
BXBR 03005R-NB	●			3.0	3.0	2.7	50	1.30	9.0	15.0	0.25	0.05	HBX 3016	1	
BXBR 03020R-NB	●			3.0	3.0	2.7	50	1.30	9.0	15.0	0.25	0.20	HBX 3016	1	
BXBR 03505R-NB	●			3.5	3.5	3.1	60	1.55	10.5	17.5	0.25	0.05	HBX 3516	1	
BXBR 03520R-NB	●			3.5	3.5	3.1	60	1.55	10.5	17.5	0.25	0.20	HBX 3516	1	
BXBR 04005R-NB	●			4.0	4.0	3.6	60	1.80	12.0	20.0	0.35	0.05	HBX 4016	1	
BXBR 04020R-NB	●			4.0	4.0	3.6	60	1.80	12.0	20.0	0.35	0.20	HBX 4016	1	
BXBR 04505R-NB	●			4.5	4.5	4.1	70	2.05	13.5	22.5	0.35	0.05	HBX 4516	1	
BXBR 04520R-NB	●			4.5	4.5	4.1	70	2.05	13.5	22.5	0.35	0.20	HBX 4516	1	
BXBR 05005R-NB	●			5.0	5.0	4.5	70	2.30	15.0	25.0	0.40	0.05	HBX 5016	1	
BXBR 05020R-NB	●			5.0	5.0	4.5	70	2.30	15.0	25.0	0.40	0.20	HBX 5016	1	

* Boring depth CDX or less.

Applicable Sleeve P3

● mark: Standard stocked item — mark: Not available

■ Recommended Cutting Conditions

Work Material		P General Steel	M Stainless Steel	N Non-Ferrous Metal	S Exotic Alloy
Internal Boring	Tool Grades	ACZ150/AC1030U	ACZ150/AC1030U	ACZ150/AC1030U	ACZ150/AC1030U
	Spindle Speed n (min ⁻¹)	2,000 to 10,000	2,000 to 8,000	5,000 to 15,000	2,000 to 6,000
	Depth of Cut ap (mm)	up to 0.2	up to 0.2	up to 0.2	up to 0.2
	Feed Rate f (mm/rev)	up to 0.05	up to 0.05	up to 0.05	up to 0.05

< SAFETY NOTES >



- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.
- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.
- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

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