

SMALL BORING BAR SERIES

Ideal for small-diameter boring of general steels and stainless steels.

MICRO-MINI TWIN

Solid shank with two cutting edges. Economical. A back cutting edge enables continuous turning-from internal turning to face turning. Minimum bore diameter 2.2mm.

MICRO-DEX

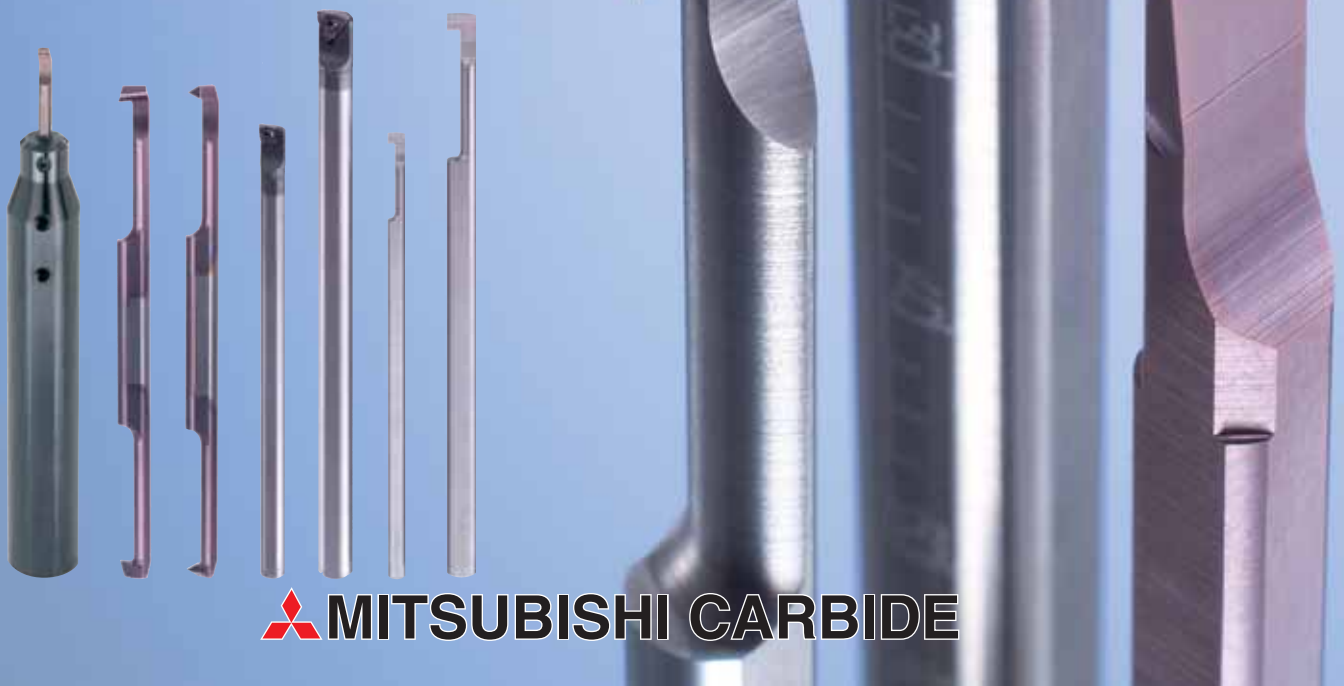
Indexable type boring bars. Adjustable tool overhang. Minimum bore diameter 5.0mm.

MICRO-MINI

Solid shank. Multi-functional bar for threading, grooving and boring-by grinding its cutting edge. Minimum bore diameter 3.2mm.

Round Type Holder · Square Type Holder

Addition of round holders that are compatible with any type of automatic lathes. Easy installation to the center axis of lathes. Good chip disposal and coolant supply.



SMALL BORING BAR SERIES

Features

Tools



MICRO-MINI TWIN (P2~)

- Solid carbide shank
- Minimum cutting diameter $\phi 2.2$ ~
- Economical because of two cutting edges.
- Boring, Grooving, Threading



MICRO-DEX (P5~)

- Indexable type solid carbide shank
- Minimum cutting diameter $\phi 5$ ~



MICRO-MINI (P8~)

- Solid carbide shank
- Minimum cutting diameter $\phi 3.2$
- Various cutting edge forms are possible

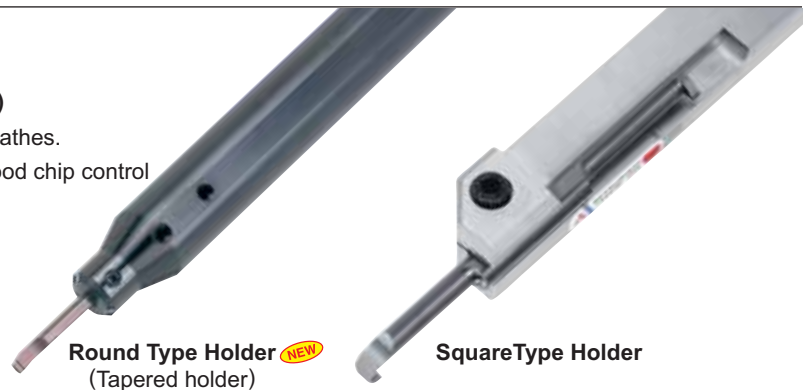
Holders

Round Type Holder / Square Type Holder (P9~)

- Compatible with any type of automatic and NC lathes.
- The shape of the tip of holders contributes to good chip control and coolant supply.
- Square holder making entering easy.

<Machine makers>

Citizen Precision Machinery Co., Ltd., STAR MICRONICS CO., LTD., Tsugami Corporation, MIYANO MACHINERY JAPAN INC.



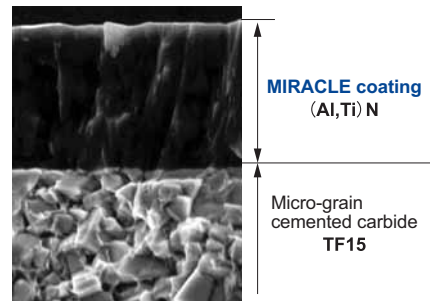
Round Type Holder (Tapered holder) **NEW**

Square Type Holder

Grade

MIRACLE coating Feature of **VP15TF**

MIRACLE coating **VP15TF** displays excellent welding resistance when machining a wide range of work piece materials such as plain steels, mild steels, low carbon steels, and stainless steels.



Micro-structure of **VP15TF**

Application

		Minimum cutting diameter							Reference page
		$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$	$\phi 6$	$\phi 7$	$\phi 8$	
MICRO-MINI TWIN (Solid carbide type)	Boring	CB02	CB03	CB04	CB05				P2~
	Grooving		CG03	CG04	CG05	CG06	CG07		
	Threading		CT03	CT04	CT05	CT06			
MICRO-DEX (Indexable insert type)	Boring				C04 SCLC	C05 SCLC	C06 SCLC	C07 SCLC	P5~
						C05 SWUB	C06 SWUB	C07 SWUB	
MICRO-MINI (Solid carbide type)	Grooving		C03	C04	C05				P8

* By grinding its cutting edge, the same bar can be used for boring and threading.

* Other small tools to be used on automatic lathes can be found in catalogue CJ007.

SMALL BORING BAR SERIES

MICRO-MINI TWIN

Features

● 1 tool offering 2 cutting edges

Reduced tooling costs,
Economical!!

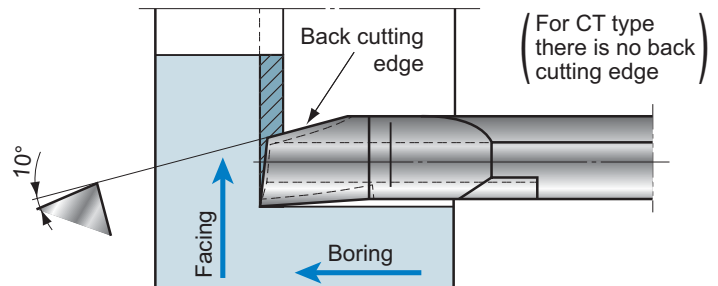
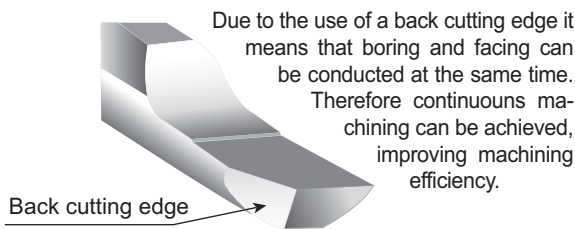


● Wide series

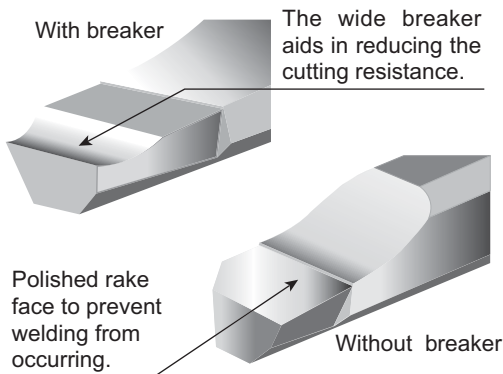
- Boring
Minimum cutting diameter $\varnothing 2.2\sim$
- Grooving
Minimum cutting diameter $\varnothing 3\sim$
- Threading
Minimum cutting diameter $\varnothing 3\sim$



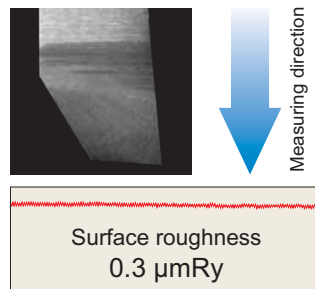
● Back cutting edge



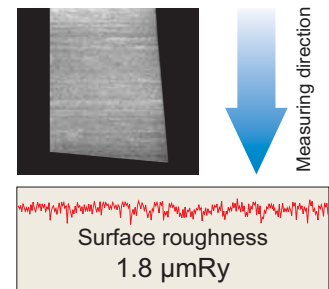
● Available with or without a breaker



● MICRO-MINI TWIN (Polished rake face)



● Conventional product



Highly polished rake face, the surface roughness of the cutting edge far exceeds that of conventional boring bars.

Cutting performance

● Polished rake face

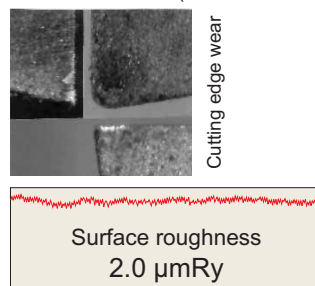
■ Machining of stainless steel

The polished rake face prevents welding from occurring and provides an excellent surface finish.

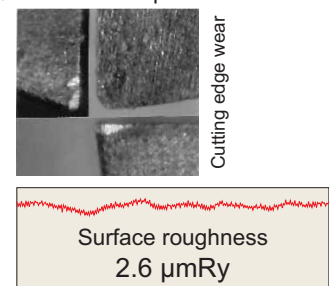
<Cutting conditions>

Workpiece : JIS SUS304 Feed : 0.02mm/rev
Tool : CB05RS, VP15TF D.O.C : 0.1mm
Cutting speed : 100m/min Wet

● MICRO-MINI TWIN (Polished rake face)

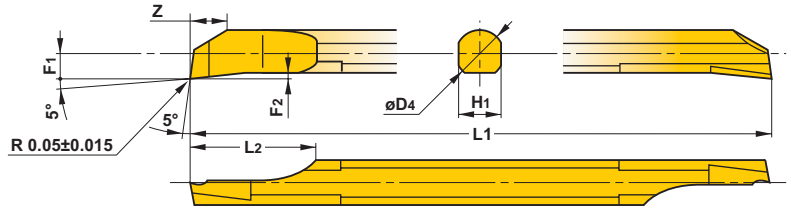


● Conventional product



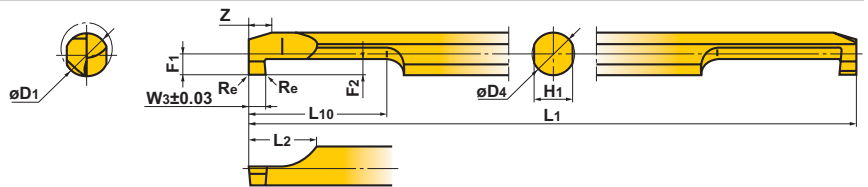
MICRO-MINI TWIN

**Standard of the CB type
(For boring)**



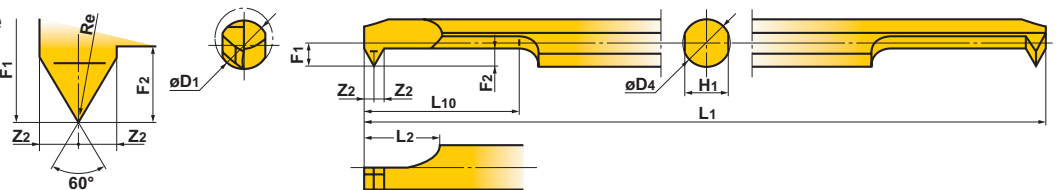
Order Number	Stock		Breaker	Minimum Cutting Diameter	Dimensions (mm)						
	Micro Grain	Coated			D4	L1	L2	F1	F2	H1	Z
	TF15	VP15TF									
CB02RS	●	●	No	2.2	2	50	5	1.0	0.25	1.8	1.4
02RS-B	●	●	Yes	2.2	2	50	5	1.0	0.25	1.8	1.4
03RS	●	●	No	3.2	3	50	7.5	1.5	0.35	2.7	2.3
03RS-B	●	●	Yes	3.2	3	50	7.5	1.5	0.35	2.7	2.3
04RS	●	●	No	4.2	4	60	10	2.0	0.45	3.6	3.1
04RS-B	●	●	Yes	4.2	4	60	10	2.0	0.45	3.6	3.1
05RS	●	●	No	5.2	5	70	12.5	2.5	0.55	4.5	3.9
05RS-B	●	●	Yes	5.2	5	70	12.5	2.5	0.55	4.5	3.9

**Standard of the CG type
(For internal grooving)**



Order Number	Stock		Breaker	Minimum Cutting Diameter	Groove Width	Max. Groove Depth	Dimensions (mm)							
	Micro Grain	Coated					Re	D4	L1	L10	L2	F1	H1	Z
	TF15	VP15TF												
CG03RS-10	●	●	No	3	1	1	0.05	3	50	10	6	1.3	2.7	1.2
03RS-10B	●	●	Yes	3	1	1	0.05	3	50	10	6	1.3	2.7	1.2
03RS-20	●	●	No	3	2	1	0.1	3	50	11	6	1.3	2.7	1.2
03RS-20B	●	●	Yes	3	2	1	0.1	3	50	11	6	1.3	2.7	1.2
04RS-10	●	●	No	4	1	1.5	0.05	4	60	15	7	1.8	3.6	2.0
04RS-10B	●	●	Yes	4	1	1.5	0.05	4	60	15	7	1.8	3.6	2.0
04RS-20	●	●	No	4	2	1.5	0.1	4	60	16	7	1.8	3.6	2.0
04RS-20B	●	●	Yes	4	2	1.5	0.1	4	60	16	7	1.8	3.6	2.0
05RS-10	●	●	No	5	1	2	0.05	5	70	20	8	2.3	4.5	2.8
05RS-10B	●	●	Yes	5	1	2	0.05	5	70	20	8	2.3	4.5	2.8
05RS-20	●	●	No	5	2	2	0.1	5	70	21	8	2.3	4.5	2.8
05RS-20B	●	●	Yes	5	2	2	0.1	5	70	21	8	2.3	4.5	2.8
06RS-10	●	●	No	6	1	2	0.05	6	75	20	8	2.8	5.4	2.8
06RS-10B	●	●	Yes	6	1	2	0.05	6	75	20	8	2.8	5.4	2.8
06RS-20	●	●	No	6	2	2	0.1	6	75	21	8	2.8	5.4	2.8
06RS-20B	●	●	Yes	6	2	2	0.1	6	75	21	8	2.8	5.4	2.8
07RS-10	●	●	No	7	1	2	0.05	7	85	25	8	3.3	6.4	2.8
07RS-10B	●	●	Yes	7	1	2	0.05	7	85	25	8	3.3	6.4	2.8
07RS-20	●	●	No	7	2	2	0.1	7	85	26	8	3.3	6.4	2.8
07RS-20B	●	●	Yes	7	2	2	0.1	7	85	26	8	3.3	6.4	2.8

**Standard of the CT type
(For internal threading)**



Order Number	Stock		Breaker	Threads				Minimum Cutting Diameter	Dimensions (mm)									
	Micro Grain	Coated		Metric		Unified			D1	Re	D4	L1	L10	L2	F1	Z2	F2	H1
				Thread	Pitch (mm)	Thread	Pitch (thread/inch)											
				TF15	VP15TF													
CT03RS-M4	●	●	No	≧ M4	0.5-1.0	≧ NO.8-32UNC	36-24	3	0.03	3	50	10.2	6	1.3	0.6	1.2	2.7	
03RS-M4B	●	●	Yes	≧ M4	0.5-1.0	≧ NO.8-36UNF	36-24	3	0.03	3	50	10.2	6	1.3	0.6	1.2	2.7	
04RS-M6	●	●	No	≧ M6	0.75-1.25	≧ 1/4-20UNC	28-20	4.5	0.05	4	60	15.6	7	1.8	0.8	1.7	3.6	
04RS-M6B	●	●	Yes	≧ M6	0.75-1.25	≧ 1/4-28UNF	28-20	4.5	0.05	4	60	15.6	7	1.8	0.8	1.7	3.6	
05RS-M8	●	●	No	≧ M8	0.75-1.5	≧ 5/16-18UNC	24-18	6	0.05	5	70	21	8	2.3	1	2.2	4.5	
05RS-M8B	●	●	Yes	≧ M8	0.75-1.5	≧ 5/16-24UNF	24-18	6	0.05	5	70	21	8	2.3	1	2.2	4.5	
06RS-M10	●	●	No	≧ M10	0.75-1.75	≧ 3/8-16UNC	24-16	7	0.05	6	75	21	8	2.8	1	2.2	5.4	
06RS-M10B	●	●	Yes	≧ M10	0.75-1.75	≧ 3/8-24UNF	24-16	7	0.05	6	75	21	8	2.8	1	2.2	5.4	

RECOMMENDED CUTTING CONDITIONS

Workpiece	MICRO-MINI TWIN CB type				MICRO-MINI TWIN CG type			MICRO-MINI TWIN CT type		
	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Tool Overhang (l/d)	Cutting Speed (m/min)	Feed (mm/rev)		Recommended Overhang (l/d)	Cutting Speed (m/min)	Recommended Overhang (l/d)
						03RS/04RS	05RS/06RS/07RS			
P General Steel (JIS S45C, JIS SCM440 etc.)	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5	80 (40-120)	0.02 (0.01-0.03)	0.03 (0.01-0.05)		50 (30-80)	
M Stainless Steel (JIS SUS304 etc.)	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5	80 (40-120)	0.02 (0.01-0.03)	0.03 (0.01-0.05)		50 (30-80)	
K Cast Iron (JIS FC, JIS FCD etc.)	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5	80 (40-120)	0.03 (0.01-0.05)	0.03 (0.01-0.05)		50 (30-80)	
N Non-ferrous Materials (Aluminium, Brass)	120 (80-160)	0.05 (0.01-0.08)	0.3 (0.1-0.5)	3-5	120 (80-160)	0.03 (0.01-0.05)	0.05 (0.01-0.08)		80 (50-100)	

Note 1) Recommend wet machining.

Note 2) Please remember when machining small diameters and high speeds there is the possibility that the machine can not keep up with the set feed. (CT type)

THREAD PITCH FOR THE CT TYPE

Order Number	Metric Thread								Unified Thread						
	P (pitch)								P (thread/inch)						
	0.50	0.70	0.75	0.80	1.00	1.25	1.50	1.75	36	32	28	24	20	18	16
CT03RS-M4 CT03RS-M4B	○	○	○	○	○	—	—	—	○	○	○	○	—	—	—
CT04RS-M6 CT04RS-M6B	—	—	○	—	○	○	—	—	—	—	○	○	○	—	—
CT05RS-M8 CT05RS-M8B	—	—	○	—	○	○	○	—	—	—	—	○	○	○	—
CT06RS-M10 CT06RS-M10B	—	—	○	—	○	○	○	○	—	—	—	○	○	○	○

Note) For internal threads that are larger than the minimum diameter of the Micro Mini Twin (CT type) it is possible to machining the above thread pitches. For the minimum diameter please refer to the standards.

DEPTH OF CUT FOR THE CT TYPE

●Metric thread

P (pitch)	0.05	0.7	0.75	0.8	1	1.25	1.5	1.75
D.O.C. (mm)	0.3	0.43	0.46	0.44	0.49	0.62	0.6	0.76
Re* (Nose radius)	0.03	0.03	0.03	0.05	0.03	0.03	0.05	0.05
Number of passes	1	0.06	0.06	0.06	0.06	0.07	0.07	0.07
	2	0.05	0.06	0.06	0.06	0.06	0.07	0.07
	3	0.05	0.06	0.06	0.05	0.06	0.06	0.07
	4	0.04	0.05	0.05	0.05	0.06	0.06	0.07
	5	0.04	0.05	0.05	0.05	0.05	0.06	0.07
	6	0.03	0.04	0.04	0.04	0.05	0.05	0.06
	7	0.03	0.04	0.04	0.04	0.05	0.05	0.06
	8		0.04	0.04	0.03	0.04	0.04	0.05
	9		0.03	0.03	0.03	0.04	0.04	0.05
	10			0.03	0.03	0.04	0.04	0.05
	11				0.03	0.03	0.03	0.04
	12					0.03	0.03	0.04
	13					0.03		0.04
	14						0.03	0.04
	15							0.04
	16							0.04
	17							0.03
	18							0.04
	19							0.04
	20							0.03

●Unified thread

P (thread/inch)	36	32	28	24	20	18	16
D.O.C. (mm)	0.43	0.49	0.56	0.54	0.66	0.64	0.78
Re* (Nose radius)	0.03	0.03	0.03	0.05	0.03	0.05	0.05
Number of passes	1	0.06	0.06	0.07	0.06	0.07	0.07
	2	0.06	0.06	0.06	0.06	0.07	0.07
	3	0.06	0.06	0.06	0.06	0.06	0.07
	4	0.05	0.05	0.06	0.05	0.06	0.06
	5	0.05	0.05	0.05	0.05	0.06	0.06
	6	0.04	0.04	0.05	0.05	0.05	0.06
	7	0.04	0.04	0.04	0.04	0.05	0.05
	8	0.04	0.04	0.04	0.04	0.05	0.05
	9	0.03	0.03	0.04	0.04	0.04	0.05
	10		0.03	0.03	0.03	0.04	0.04
	11		0.03	0.03	0.03	0.03	0.04
	12			0.03	0.03	0.03	0.04
	13				0.03	0.03	0.04
	14					0.03	0.04
	15						0.03
	16						0.03
	17						0.03
	18						0.03
	19						0.03
	20						0.03

* Even though the pitch maybe the same, the depth of cut varies according to the nose radius. For the Micro Mini Twin CT type CT03RS-M4, and CT03RS-M4B the nose radius is 0.03mm, for other types it is 0.05mm. For further details please refer to the standards section.

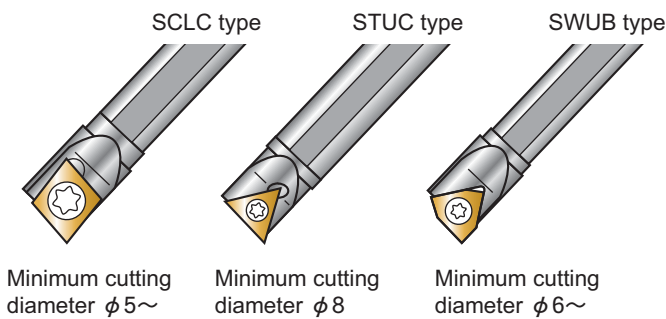
SMALL BORING BAR SERIES

MICRO-DEX

Features

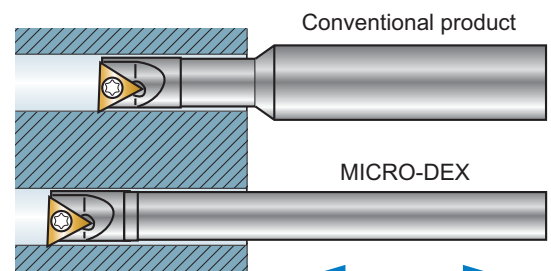
1 Indexable type boring bars capable of minimum bore diameter 5.0mm

Screw on type.
Achieves minimum bore diameter 5.0mm. (SCLC type)



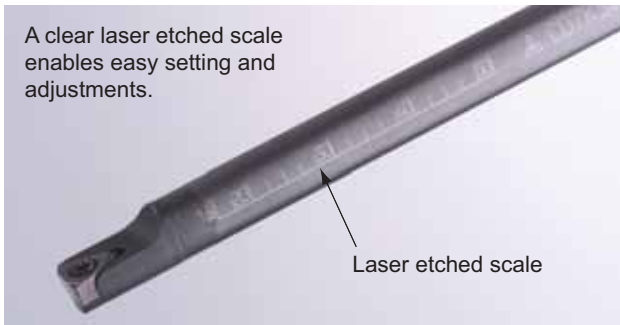
2 Constant diameter design

Conventional type boring bars restrict the amount of tool overhang. This straight shank design allows greater adjustability for deeper cutting of components.



Able to change the tool overhang.

● Solid carbide shank



● Micro indexable inserts



3 Two grades to cover a wide application rang.

Two standardized insert grades, applied to all cutting areas, are available.

Cermet

NX2525

General steel
(JIS S45C, JIS SCM440)

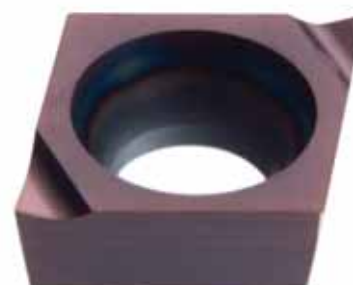
Coated carbide

VP15TF

Stainless steel
(JIS SUS304, 420)
Non-ferrous materials
(Aluminium, Brass)
Cast iron
(JIS FC, JIS FCD)

4 Various nose radii

Standardized nose radii of 0.03mm - 0.4mm are available for small parts machining.



R0.03
R0.1
R0.2
R0.4

MICRO-DEX

SCLC type (Rhombic 80° insert)

Features : A precision stable cutting edge and a small minimum cutting diameter.

SCLC

(Solid carbide shank)

CC^o inserts

Finish
L-F

Order Number	Stock R	Insert Number	Dimensions (mm)					Minimum Cutting Diameter D ₁	Standard Corner Radius Re	Clamp Screw	Wrench	
			D ₄	L ₁	F ₁	H ₁	RR°					
C04GSCLCR03	●	CCGT NP-CCMW	03S1 ^o L-F	4	90	2.5	3.7	15	5	0.2	TS16	TKY06F
C05HSCLCR03	●		03S1 ^o L-F	5	100	3.0	4.7	13	6	0.2	TS16	TKY06F
C06JSCLCR04	●		04T0 ^o L-F	6	110	3.5	5.7	13	7	0.2	TS21	TKY06F
C07KSCLCR04	●		04T0 ^o L-F	7	125	4.0	6.7	11	8	0.2	TS21	TKY06F

STUC type (Triangular insert)

Features : Cost effective back boring can be utilised.

STUC

(Solid carbide shank)

TCGT inserts

Finish
L-F

Order Number	Stock R	Insert Number	Dimensions (mm)					Minimum Cutting Diameter D ₁	Standard Corner Radius Re	Clamp Screw	Wrench	
			D ₄	L ₁	F ₁	H ₁	RR°					
C07KSTUCR06	●	TCGT	0601 ^o L-F	7	125	4.0	6.7	12	8	0.2	TS2C	TKY06F

SWUB type (Hexagonal insert)

Features : Cost effective back boring can be utilised.

SWUB

(Solid carbide shank)

WBGT inserts

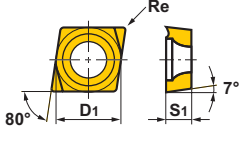
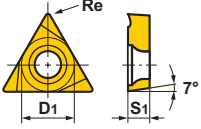
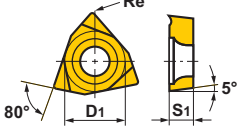
Finish
L-F

Order Number	Stock R	Insert Number	Dimensions (mm)					Minimum Cutting Diameter D ₁	Standard Corner Radius Re	Clamp Screw	Wrench	
			D ₄	L ₁	F ₁	H ₁	RR°					
C05HSWUBR02	●	WBGT	0201 ^o L-F	5	100	3.0	4.7	13	6	0.2	TS21	TKY06F
C06JSWUBR02	●		0201 ^o L-F	6	110	3.5	5.7	13	7	0.2	TS2C	TKY06F
C07KSWUBRL3	●		L302 ^o L-F	7	125	4.0	6.7	11	8	0.2	TS2	TKY06F

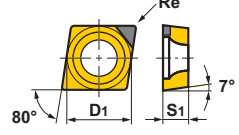
MICRO-DEX

INSERTS

● Coated carbide and cermet

Geometry	Class	Order Number	Stainless Steel Non-ferrous Materials Cast Iron	General Steel	Dimensions (mm)		
			Coated	Cermet	D1	S1	Re
			VP15TF	NX2525			
Rhombic 80° 	G	CCGT03S1V3L-F	●	●	3.57	1.39	0.03
		03S101L-F	●	●	3.57	1.39	0.1
		03S102L-F	●	●	3.57	1.39	0.2
		03S104L-F	●	●	3.57	1.39	0.4
		CCGT04T0V3L-F	●	●	4.37	1.79	0.03
		04T001L-F	●	●	4.37	1.79	0.1
		04T002L-F	●	●	4.37	1.79	0.2
04T004L-F	●	●	4.37	1.79	0.4		
Triangular 	G	TCGT0601V3L-F	●	●	3.97	1.59	0.03
		060101L-F	●	●	3.97	1.59	0.1
		060102L-F	●	●	3.97	1.59	0.2
		060104L-F	●	●	3.97	1.59	0.4
Hexagonal 	G	WBG0201V3L-F	●	●	3.97	1.59	0.03
		020101L-F	●	●	3.97	1.59	0.1
		020102L-F	●	●	3.97	1.59	0.2
		020104L-F	●	●	3.97	1.59	0.4
		WBGTL302V3L-F	●	●	4.76	2.38	0.03
		L30201L-F	●	●	4.76	2.38	0.1
		L30202L-F	●	●	4.76	2.38	0.2
L30204L-F	●	●	4.76	2.38	0.4		

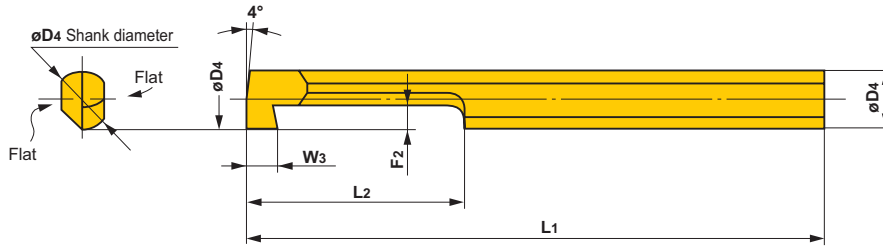
● CBN and polycrystalline diamond inserts

Geometry	Class	Order Number	Non-ferrous Materials	Hardened Steel	Dimensions (mm)		
			Sintared Diamond	Sintared CBN	D1	S1	Re
			MD220	MB810			
Rhombic 80° 	M	NP-CCMW03S102	●		3.57	1.39	0.2
		03S104	●		3.57	1.39	0.4
		04T002	●		4.37	1.79	0.2
		04T004	●		4.37	1.79	0.4
		NP-CCMW03S102F		●	3.57	1.39	0.2
		03S104F		●	3.57	1.39	0.4
		04T002F		●	4.37	1.79	0.2
		04T004F		●	4.37	1.79	0.4

RECOMMENDED CUTTING CONDITIONS

Workpiece	Grade	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (m/m)	Tool Overhang (l/d)
P General Steel (JIS S45C, JIS SCM440 etc.)	NX2525	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5
H Hardened Steel (JIS SKD, JIS SKH etc.)	MB810	80 (40-120)	0.03 (0.01-0.05)	0.1 (0.03-0.2)	3-5
M Stainless Steel (JIS SUS304 etc.)	VP15TF	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5
K Cast Iron (JIS FC, JIS FCD etc.)	VP15TF	80 (40-120)	0.03 (0.01-0.05)	0.2 (0.1-0.3)	3-5
N Non-ferrous Materials (Aluminium, Brass)	VP15TF	120 (80-160)	0.05 (0.01-0.08)	0.4 (0.1-0.6)	3-5
	MD220	120 (80-160)	0.05 (0.01-0.08)	0.4 (0.1-0.6)	3-5

MICRO-MINI



Right hand tool holder only.

Order Number	Stock	Min. Cutting Diameter	Max. Groove Depth F2	Dimensions (mm)			
	R			W3	D4	L1	L2
C03FR-BLS	●	3.2	1.0	2.0	3	80	15
C04FR-BLS	●	4.2	1.5	2.5	4	80	20
C05HR-BLS	●	5.2	2.0	3.0	5	100	25

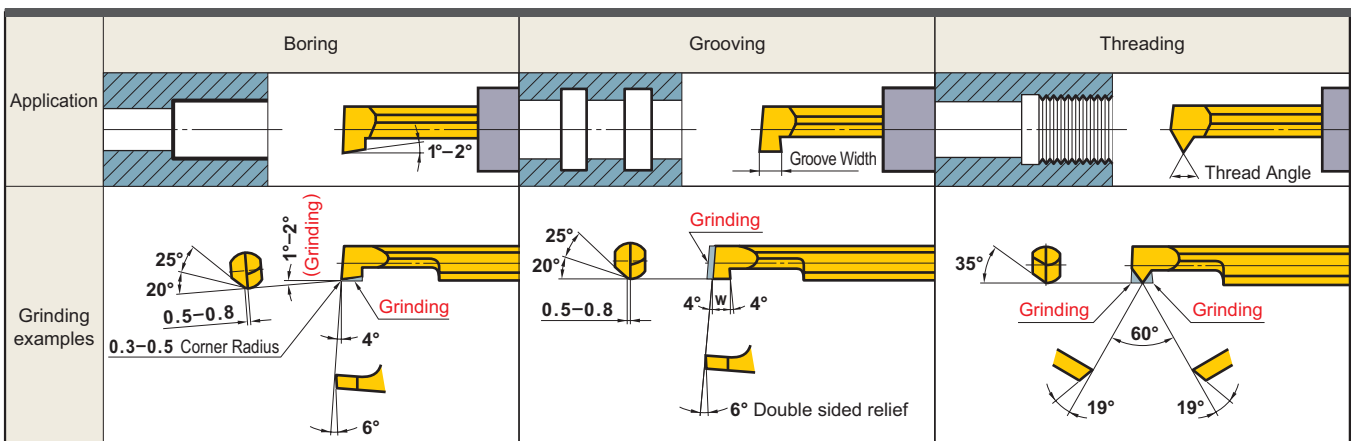
RECOMMENDED CUTTING CONDITIONS

Workpiece	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (m/m)	Tool Overhang (l/d)	Cutting Edge Grinding Preparation	
					Corner Radius*	Honing*
P General Steel (JIS S45C, JIS SCM440 etc.)	40 (30-50)	0.05 (-0.1)	0.2 (0.1-0.3)	5	0.1-0.5	0.01-0.05
M Stainless Steel (JIS SUS304 etc.)	40 (30-50)	0.05 (-0.1)	0.2 (0.1-0.3)	5	≤0.4	≤0.03 (Not required for boring applications)
K Cast Iron (JIS FC, JIS FCD etc.)	40 (30-50)	0.05 (-0.05)	0.2 (0.1-0.3)	5	0.1-0.5	0.01-0.05
N Non-ferrous Materials (Aluminium, Brass)	80 (60-100)	0.05 (-0.1)	0.3 (0.1-0.5)	5	0.1-0.5	≤0.03 (Not required for boring applications)

* Cutting edge is not honed. Please hone according to the workpiece before machining.

Grinding cutting edge of MICRO-MINI

- MICRO-MINI can be applied to boring and grooving as it is. But, it can also be reground as shown below.
- For shaping and regrinding, use diamond whetstone approximately #250 - #400. Please grind according to application using the figure below as a reference.

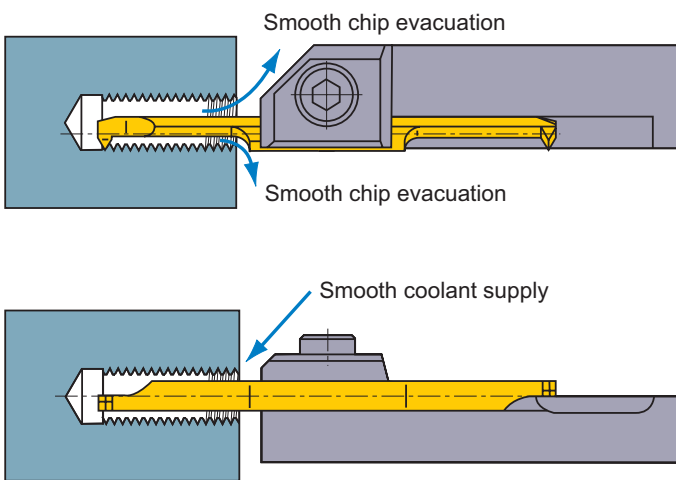
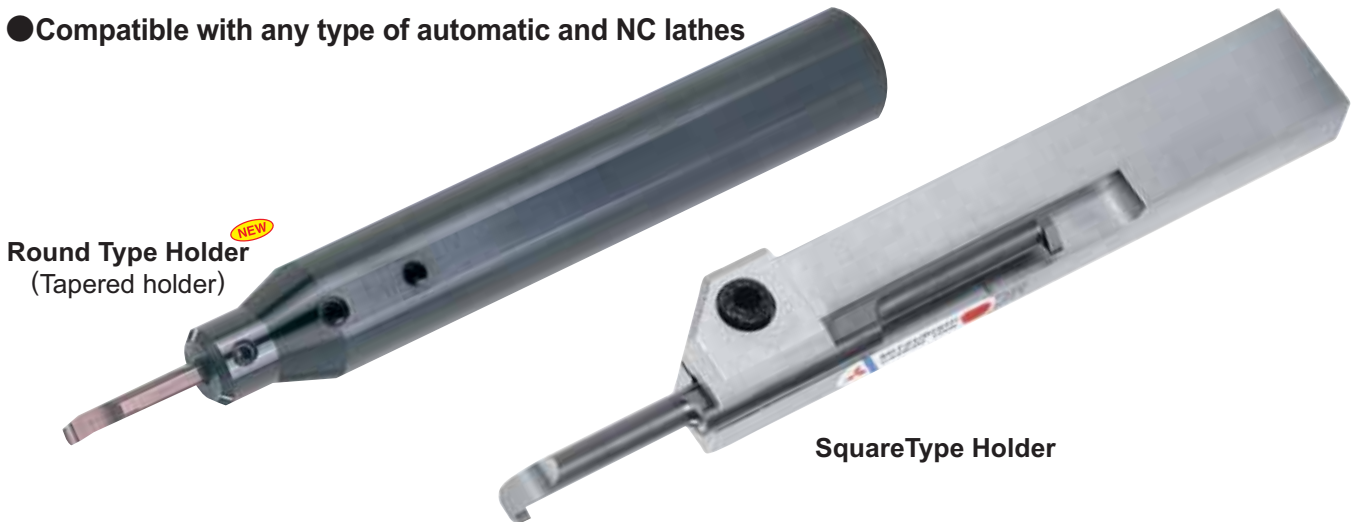


SMALL BORING BAR SERIES

HOLDER

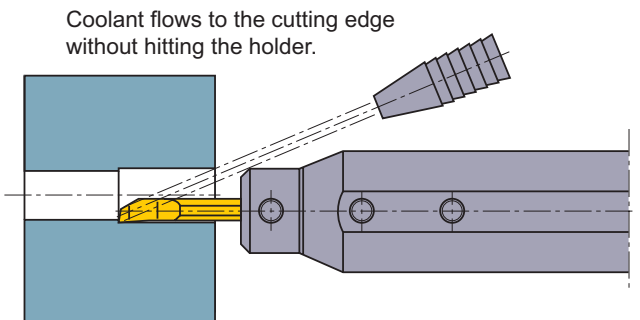
Features

- Compatible with any type of automatic and NC lathes



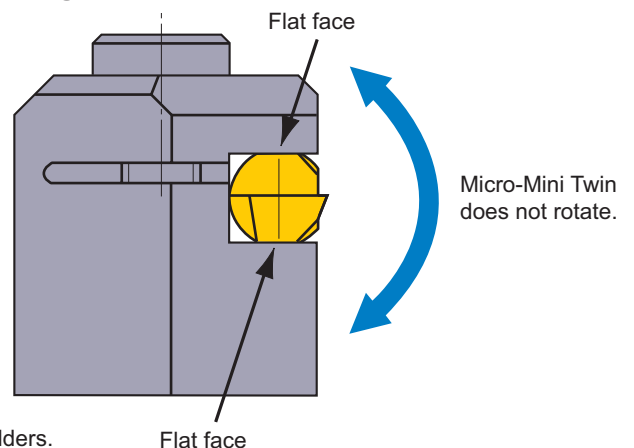
- The shape of the tip of holders contributes to good chip control and coolant supply

The compact holder top achieves easy and smooth coolant supply as well as excellent chip evacuation.



- Square holder making entering easy (Specially designed for the MICRO-MINI TWIN)

Flat clamp faces fix the position of top cutting edge.
No positioning is necessary for rotating directions (shown by the double headed arrow in the picture on the right).



* The MICRO-DEX and the MICRO-MINI cannot be fit to square holders.

HOLDER

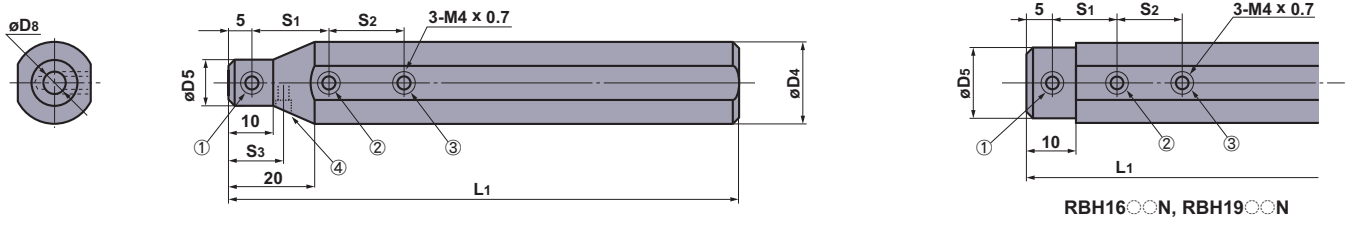
HOLDER CROSS REFERENCE LIST

Holder		MICRO-MINI TWIN			MICRO-DEX	MICRO-MINI	Machine Makers
Type	Order Number	CB	CG	CT		C	
Round Type Holder ø16	RBH1620N	02RS 02RS-B	—	—	—	—	MIYANO MACHINERY JAPAN INC. NC lathes
	1630N	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	03FR-BLS	
	1640N	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	C04GS○○○○R○○	04FR-BLS	
	1650N	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	C05GS○○○○R○○	05FR-BLS	
	1660N	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	C06GS○○○○R○○	—	
	1670N	—	07RS-○○ 07RS-○○B	—	C07GS○○○○R○○	—	
Round Type Holder ø19.05	RBH1920N	02RS 02RS-B	—	—	—	—	Citizen Precision Machinery Co., Ltd.
	1930N	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	03FR-BLS	
	1940N	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	C04GS○○○○R○○	04FR-BLS	
	1950N	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	C05GS○○○○R○○	05FR-BLS	
	1960N	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	C06GS○○○○R○○	—	
	1970N	—	07RS-○○ 07RS-○○B	—	C07GS○○○○R○○	—	
NEW Round Type Holder ø20	RBH2020N	02RS 02RS-B	—	—	—	—	Citizen Precision Machinery Co., Ltd. Tsunami Corporation MIYANO MACHINERY JAPAN INC. NC lathes
	2030N	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	03FR-BLS	
	2040N	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	C04GS○○○○R○○	04FR-BLS	
	2050N	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	C05GS○○○○R○○	05FR-BLS	
	2060N	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	C06GS○○○○R○○	—	
	2070N	—	07RS-○○ 07RS-○○B	—	C07GS○○○○R○○	—	
NEW Round Type Holder ø22	RBH2220N	02RS 02RS-B	—	—	—	—	STAR MICRONICS CO., LTD.
	2230N	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	03FR-BLS	
	2240N	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	C04GS○○○○R○○	04FR-BLS	
	2250N	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	C05GS○○○○R○○	05FR-BLS	
	2260N	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	C06GS○○○○R○○	—	
	2270N	—	07RS-○○ 07RS-○○B	—	C07GS○○○○R○○	—	
NEW Round Type Holder ø25	RBH2520N	02RS 02RS-B	—	—	—	—	Tsunami Corporation MIYANO MACHINERY JAPAN INC. NC lathes
	2530N	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	03FR-BLS	
	2540N	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	C04GS○○○○R○○	04FR-BLS	
	2550N	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	C05GS○○○○R○○	05FR-BLS	
	2560N	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	C06GS○○○○R○○	—	
	2570N	—	07RS-○○ 07RS-○○B	—	C07GS○○○○R○○	—	
Square Type Holder □10	SBH1020R	02RS 02RS-B	—	—	—	—	NC lathes
	1030R	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	—	—	
	1040R	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	—	—	
	1050R	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	—	—	
	1060R	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	—	—	
	1070R	—	07RS-○○ 07RS-○○B	—	—	—	

* Mitsubishi Materials obtained the makers' approval before entering their names in the list.

HOLDER

Round type holder

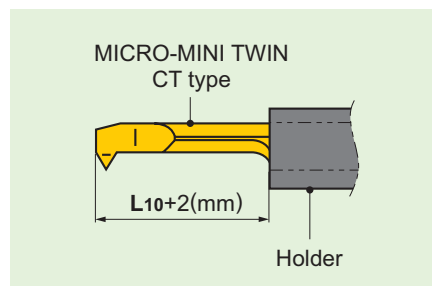
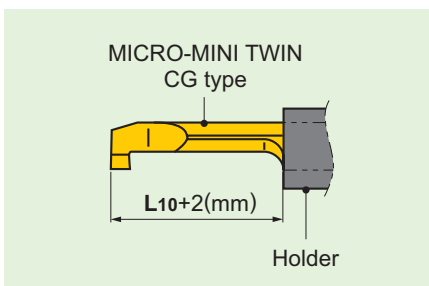


RBH2200N has a temporary setscrew according to machine specifications.
(Represented by number 4.)

Order Number	Stock	Dimensions (mm)							Clamp Screw*				Wrench	Torque (N·m)
		D4	D8	D5	L1	S1	S2	S3	①	②	③	④		
RBH1620N	●	16	2	15	100	10	—	—	B	B	—	—	HKY20F	2.0
1630N	●	16	3	15	100	10	10	—	A	A	A	—	HKY20F	2.0
1640N	●	16	4	15	100	15	15	—	A	A	A	—	HKY20F	2.0
1650N	●	16	5	15	100	15	15	—	A	A	A	—	HKY20F	2.0
1660N	●	16	6	15	100	20	20	—	A	A	A	—	HKY20F	2.0
1670N	●	16	7	15	100	20	20	—	A	A	A	—	HKY20F	2.0
RBH1920N	●	19.05	2	18	125	10	—	—	C	C	—	—	HKY20F	2.0
1930N	●	19.05	3	18	125	10	10	—	B	B	B	—	HKY20F	2.0
1940N	●	19.05	4	18	125	15	15	—	B	B	B	—	HKY20F	2.0
1950N	●	19.05	5	18	125	15	15	—	B	B	B	—	HKY20F	2.0
1960N	●	19.05	6	18	125	20	20	—	B	B	B	—	HKY20F	2.0
1970N	●	19.05	7	18	125	20	20	—	B	B	B	—	HKY20F	2.0
NEW RBH2020N	●	20	2	11	125	10	—	—	A	A	—	—	HKY20F	2.0
2030N	●	20	3	12	125	10	10	—	A	A	B	—	HKY20F	2.0
2040N	●	20	4	13	125	15	15	—	A	B	B	—	HKY20F	2.0
2050N	●	20	5	14	125	15	15	—	A	B	B	—	HKY20F	2.0
2060N	●	20	6	15	125	20	20	—	A	B	B	—	HKY20F	2.0
2070N	●	20	7	16	125	20	20	—	A	B	B	—	HKY20F	2.0
NEW RBH2220N	●	22	2	11	125	10	—	10	A	B	—	A	HKY20F	2.0
2230N	●	22	3	12	125	10	10	10	A	B	C	A	HKY20F	2.0
2240N	●	22	4	13	125	15	15	12.5	A	B	B	A	HKY20F	2.0
2250N	●	22	5	14	125	15	15	12.5	A	B	B	A	HKY20F	2.0
2260N	●	22	6	15	125	20	20	15	A	B	B	A	HKY20F	2.0
2270N	●	22	7	16	125	20	20	15	A	B	B	A	HKY20F	2.0
NEW RBH2520N	●	25	2	11	150	10	—	—	A	B	—	—	HKY20F	2.0
2530N	●	25	3	12	150	10	10	—	A	B	C	—	HKY20F	2.0
2540N	●	25	4	13	150	15	15	—	A	C	C	—	HKY20F	2.0
2550N	●	25	5	14	150	15	15	—	A	C	C	—	HKY20F	2.0
2560N	●	25	6	15	150	20	20	—	A	C	C	—	HKY20F	2.0
2570N	●	25	7	16	150	20	20	—	A	C	C	—	HKY20F	2.0

* Order number of clamp screw A=HSS04004, B=HSS04006, C=HSS04008

Recommended tool overhang

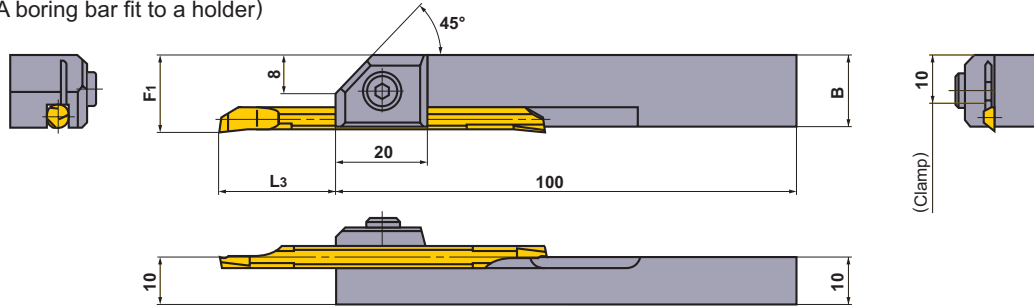


Note) For L10, refer to page 3.

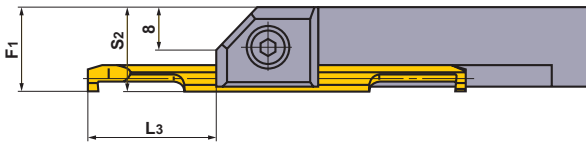
● : Inventory maintained.

Square type holder

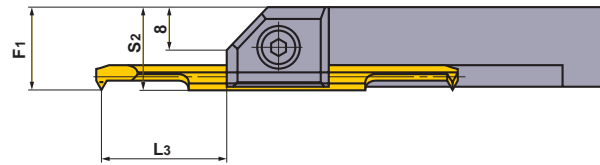
CB type (A boring bar fit to a holder)



CG type (A boring bar fit to a holder)



CT type (A boring bar fit to a holder)



Order Number	Stock	Dimensions (mm)								MICRO-MINI TWIN			Clamp Screw	Wrench	Torque (N·m)	
		F1			Maximum tool overhang L3 (Recommended tool overhang when machining general steels)				S2	B	CB type	CG type				CT type
		CB type	CG type	CT type	CB type	CG..RS-10 CG..RS-10B	CG..RS-20 CG..RS-20B	CT type	CG CT type	CB-CG CT type						
SBH1020R	●	13	—	—	6—24 (6—10)	—	—	—	—	12.9	02RS 02RS-B	—	—	HSC 04010	HKY30R	4.8
1030R	●	14	13.8	13.8	8.5—22 (9-15)	13—17.5 (14)	14—16.5 (15)	13—17.5 (14)	14	13.8	03RS 03RS-B	03RS-○○ 03RS-○○B	03RS-M4 03RS-M4B	HSC 05012	HKY40R	9.5
1040R	●	15	14.8	14.8	11—29.5 (12—20)	18—22.5 (19)	19—21.5 (20)	18.5—22 (19.5)	15	14.7	04RS 04RS-B	04RS-○○ 04RS-○○B	04RS-M6 04RS-M6B	HSC 05012	HKY40R	9.5
1050R	●	16	15.8	15.8	13.5—37 (15—25)	23—27.5 (24)	24—26.5 (25)	24—26.5 (25)	16	15.6	05RS 05RS-B	05RS-○○ 05RS-○○B	05RS-M8 05RS-M8B	HSC 05012	HKY40R	9.5
1060R	●	—	16.8	16.8	—	23—32.5 (24)	24—31.5 (25)	24—31.5 (25)	17	16.5	—	06RS-○○ 06RS-○○B	06RS-M10 06RS-M10B	HSC 05012	HKY40R	9.5
1070R	●	—	17.8	—	—	28—38 (29)	29—37 (30)	—	18	17.4	—	07RS-○○ 07RS-○○B	—	HSC 05012	HKY40R	9.5

* The MICRO-DEX and the MICRO-MINI cannot be fit to square holders.

MICRO-DEX

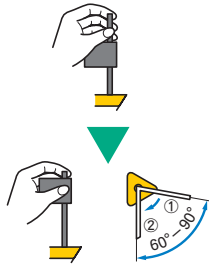
PRECAUTIONS IN USING THE MICRO-DEX

- We recommended cutting fluid to improve tool life and accuracy of the machined surface.
- Indexable inserts and clamp screws are small, so be careful not to lose them.
- If the insert screw is overtightened, the screw or wrench may be damaged. Follow the guidelines shown below in tightening the clamp screw. The appropriate insert tightening torque is **0.5 (N·m)**.

Screw tightening of insert

① Hold the wrench flag as shown in the diagram and turn it until you feel it begin to stop.

② Hold the wrench flag and turn it approximately 60° to 90° (reference tightening angle).

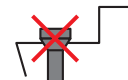


Screw tightening without insert

If you press the tapered part of the screw into the hole, the main screw part may be damaged.

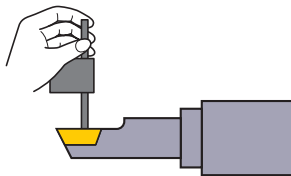
Correct

Incorrect



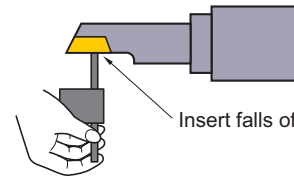
- Note that the procedures are performed starting with the insert screw on the back side when using reverse holder.

Normal use



Perform starting with insert clamp on front side.

Reverse holder use



Perform starting with insert clamp on back side.

- Use within recommended specification ranges.
Maximum $L/d=5$ (L : total length; d : shank diameter)
If the L/d ratio exceeds the recommended value, set the cutting parameters to lower values.

Repair

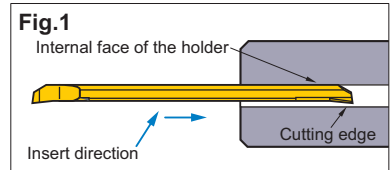
- Should holders break, Mitsubishi Materials will repair the broken holder bodies.

MICRO-MINI TWIN

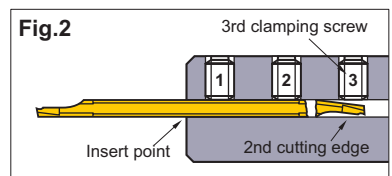
PRECAUTIONS IN USING THE MICRO-DEX

● When using a holder for general purpose/small automatic lathe

- ① To avoid chipping of the 2nd cutting edge take care when inserting the boring bar into the holder. Refer to fig.1 if the 2nd edge contacts the internal face of the holder there is a possibility that it may chip.



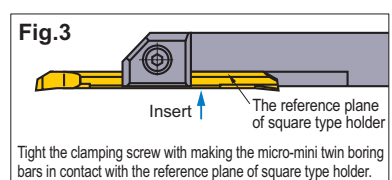
- ② When clamping the boring bar into the holder, there is a possibility that damage to the shank and the 2nd cutting edge can occur. Make sure that the clamping screws are tightened to the set torque value. Additionally make sure that there is no clamping screw near the 2nd cutting edge as this can break the boring bar.



- ③ When using Mitsubishi holders with a tool overhand of 5, ensure that the 3rd clamping screw is removed prior to machining. (For RBH1620N, RBH1920N there are no 3rd clamping screws). The set torque value for clamping screw is 2.0N·m.

● When using a square type holder

- ① When installing the boring bar into the holder, tight the clamping screw with making the micro-mini twin boring bars in contact with the reference plane of square type holder.
- ② Make sure that the clamping screws are tightened. The recommended set torque value is shown in the table of standard boring bar (A209). Tight enough the clamping screw, otherwise clamping rigidity cannot be guaranteed.
- ③ Don't tight the clamping screws without setting the micro-mini twin boring bars, otherwise a clamp bridge can be deformed.



MICRO-MINI TWIN

APPLICATION EXAMPLES

Tool	CB05RS-B	CG05RS-20B	CT05RS-M8B
Grade	VP15TF	VP15TF	VP15TF
Overhang (mm)	15	23	23
Machine	Small NC lathe	Small NC lathe	Small NC lathe
Workpiece	Flange : JIS SUS316 	JIS S45C 	JIS S45C
Cutting Conditions	Cutting Speed (m/min)	60	40
	Feed (mm/rev)	0.02	0.03
	Depth of Cut (mm)	0.1	Groove depth : 1.5
Coolant	Cutting oil	WSO	WSO
Results	Compared with a conventional tool without a breaker, problems related with poor chip control were eliminated.	For conventional tools with a flat land on the rake face the cutting resistance is too high and fractures occur. The sharp edge of the Micro Mini Twin improves cutting edge reliability.	Conventional tools left burrs on the thread, whereas the MICRO-MINI TWIN with a breaker left no burrs.

MICRO-DEX

APPLICATION EXAMPLES

●SCLC type

Tool	C04GSCLCR03	C04GSCLCR03	C05HSCLCR03
Grade	10	10	35
Overhang (mm)	CCGT03S102L-F(NX2525)	CCGT03S1V3L-F(VP15TF)	CCGT03S101L-F(VP15TF)
Machine	NC automatic lathe	Small NC lathe	NC automatic lathe
Workpiece	JIS C1213 	JIS SUS316 	JIS SUS303
Cutting Conditions	Cutting Speed (m/min)	50	57
	Feed (mm/rev)	0.04	0.03
	Depth of Cut (mm)	0.2	0.2
Coolant	Cutting oil	Cutting oil	WSO
Results	Improved insert life and component surface finish when compared to conventional products.	Improved insert life and component surface finish when compared to conventional products.	Improved resistance to insert wear and tool life increased by 300%.

MICRO-DEX

APPLICATION EXAMPLES

●STUC type

Tool	C07KSTUCR06	C07KSTUCR06	C07KSTUCR06
Grade	35	35	21
Overhang (mm)	TCGT060102L-F(VP15TF)	TCGT060102L-F(NX2525)	TCGT060102L-F(VP15TF)
Machine	NC automatic lathe	NC lathe	NC automatic lathe
Workpiece	<p>JIS SUS303</p>	<p>JIS S15C</p>	<p>JIS A5052</p>
Cutting Conditions	Cutting Speed (m/min)	63	32
	Feed (mm/rev)	0.04	0.03
	Depth of Cut (mm)	0.08	0.2
Coolant	Cutting oil	Cutting oil	Dry
Results	Improved resistance to insert wear and tool life increased by 30%.	Surface finish is improved and consistent dimensional accuracy was achieved.	Increased wear resistance compared to conventional products.

●SWUB type

Tool	C06JSWUBR02	C05HSWUBR02	C05HSWUBR02
Grade	18	15	10
Overhang (mm)	WBG020102L-F(NX2525)	WBG0201V3L-F(VP15TF)	WBG0201V3L-F(VP15TF)
Machine	NC automatic lathe	NC automatic lathe	NC automatic lathe
Workpiece	<p>JIS S10C</p>	<p>JIS SUS303</p>	<p>JIS SUS316</p>
Cutting Conditions	Cutting Speed (m/min)	33	120
	Feed (mm/rev)	0.1	0.03
	Depth of Cut (mm)	0.25	0.05
Coolant	Cutting oil	Cutting oil	Cutting oil
Results	Improved resistance to insert wear and tool life increased by 30%.	Compared to non coated inserts tool life is extended by 50%.	Greater resistance to wear and chipping compared to conventional products. 20% longer tool life.

For Your Safety

●Don't touch cutting edge and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching chips or spare parts, please use the attached wrench or spanner. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc. ●Grinding or heating of cutting tools produces dust and mist. Inhaling large amount of dust or contacting with eyes and skins may harm your body.

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(Tools specifications subject to change without notice.)