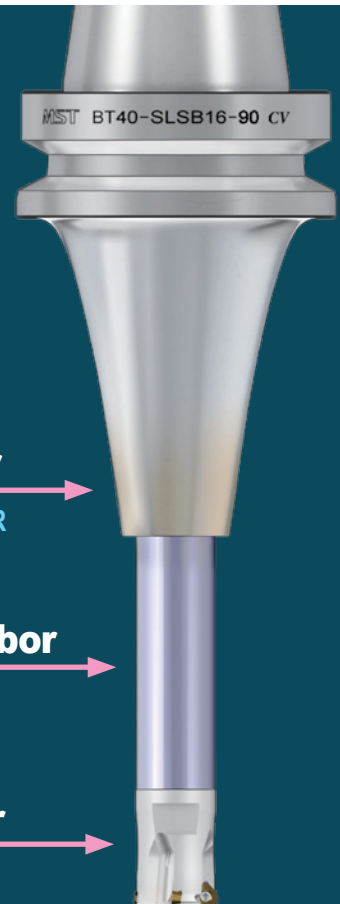
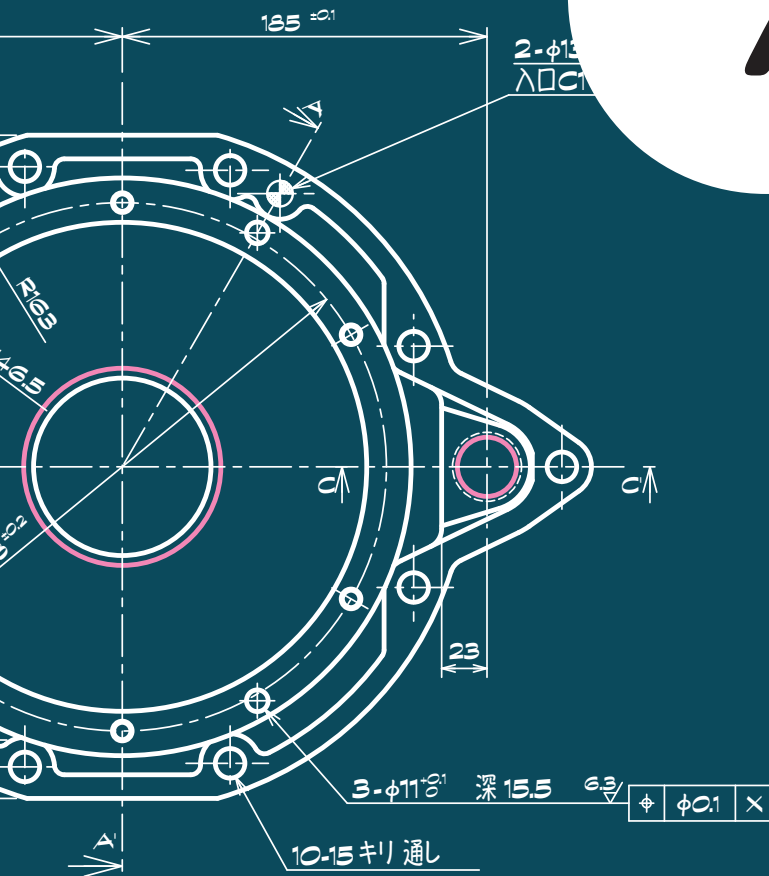


MILL BORE PAT.P

NEW CONCEPT



Base Holder

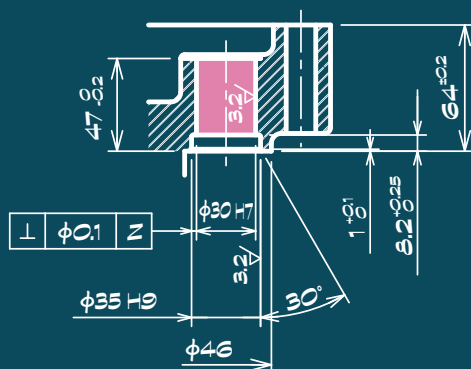
SHRINK-FIT HOLDER
SLIMLINE

Extension arbor

Carbide arbor

Milling cutter

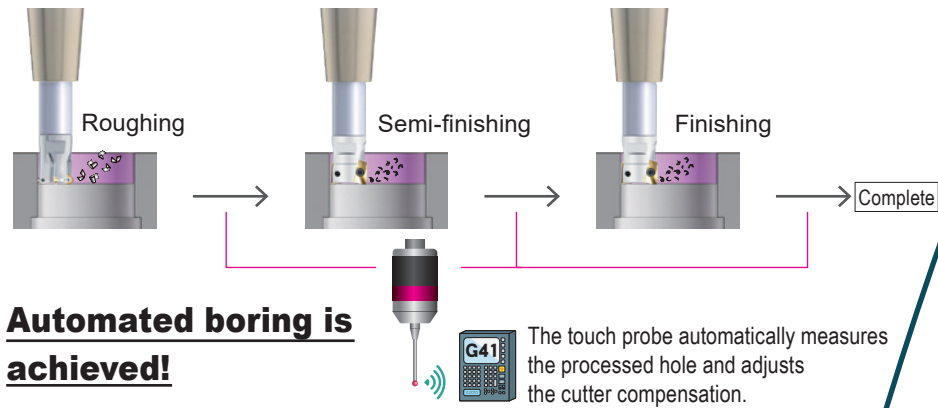
Indexable tool



Boring
with a
milling
cutter

No skill required : Automatic measurement and compensation

Boring operation using helical milling. The hole is automatically measured using a touch probe and the dimensional difference is automatically adjusted until the machining is completed. In other words, with a single push of a button everything from roughing and measuring to cutter compensation and finishing will be completed.



Advanced boring process!

The MILL BORE is a tool holder that achieves high precision boring with helical milling

NEW CONCEPT

Base Holder

SHRINK-FIT HOLDER **SLIMLINE**



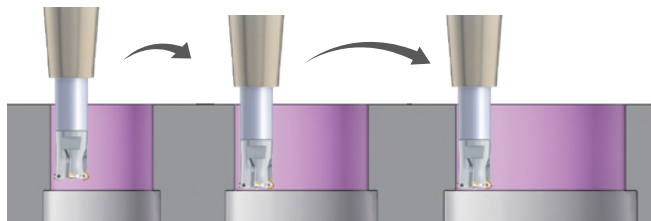
BT ...30/40/50 **HSK** ...A50/63/100

A broad range of 4000 variations

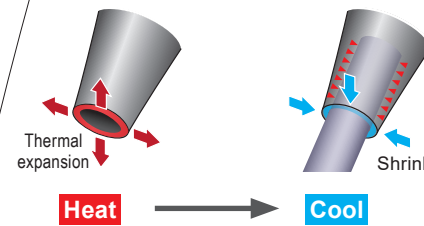
The best holder can be selected for each component.

Completed with one holder and cutter

Cost reduction can be achieved by using a single holder for various bore sizes.



Shrink-fit Maximum gripping force



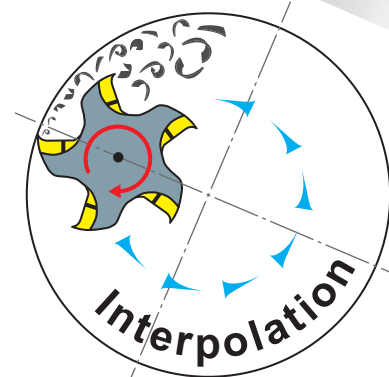
Extension arbor

Carbide arbor

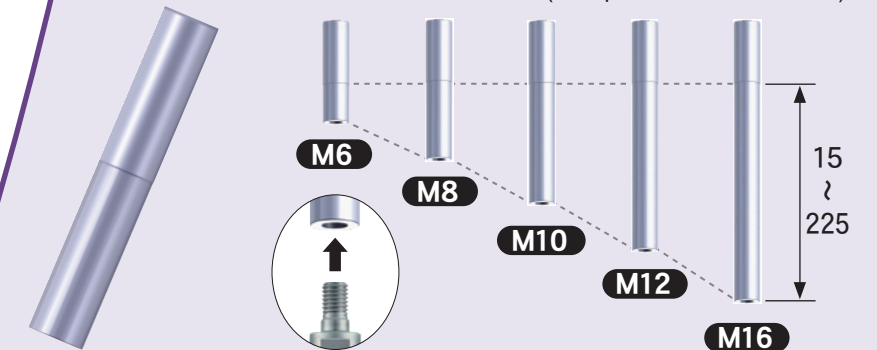
Small cutting chips

Milling cutter

Indexable tool



Less chattering Flexural rigidity **3 times** (Compared with steel arbor)



Stable machining even with old machines

Cutting load is small due to multiple-flute milling. Achieves stable machining whether your machining center is old or new.

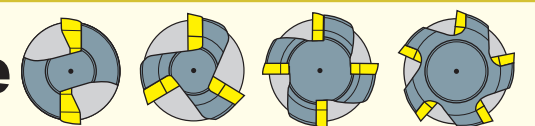


BT30 spindle,
operated for
16 years

BT50 spindle,
operated for
19 years

HSK-A63 spindle,
operated for
6 years

Multiple-flute cutter



Many tool manufacturers are supplying milling cutters, and with the MILL BORE you can choose your preferred insert material, coating type and chip to suit various applications.



•MOLDINO •DIJET •Mitsubishi Materials •OSG •TUNGALOY •SUMITOMO ELECTRIC
•KYOCERA •ISCAR •Seco Tools •TaeguTec ...

MILL BORE selection manual

To achieve high-efficiency boring, it is necessary to select the optimal combination of a base holder (Shrink-fit holder SLIMLINE) and an extension arbor (carbide arbor) that matches the shape of the workpiece. MILL BORE selection software is available through MST. Please find your best combination.

MILL BORE Selection Tool

https://www.mst-corp.co.jp/en/millbore_calculate/

※ A dedicated access code is required for use. Please access the webpage using this QR code.



Instruction manual for MILL BORE Selection Tool

1 Input the workpiece details.

2 Input cutter, base holder and extension arbor details.

3 The suitable MILL BORE holders are displayed in order of rigidity.

The holders displayed are based on cutting steel and cast iron (workpiece material). Other combinations are available depending on the material. Please contact us.

4 Confirm the MILL BORE model code.

MST MillBore Selector

SAMPLE New here? Click [SAMPLE]! MODE: DARK

* This is a sample image. Actual conditions may differ.

Workpiece

- Diameter (D1) 40 mm
- Depth (H1) 20 mm
- Tool Out (C) 1 mm
- Obst. Hole ☒ Obst. Wall ☐
- Obst. Dia (D2) 55 mm
- Obst. Wall (B1) From Ctr
- Obst. Dpt (H2) 60 mm
- Slope Angle(θ) 90 °
- Clearance > 0 mm

Milling cutter (Indexable Tool)

- Dia * Len D16*25L
- Cutter Dia (d) 16 mm
- Cutter Len (h) 25 mm

Base Holder (SlimLine Holder)

- Shank BT40
- Tip Shape(Thick) SLSB
- Holder Len (L) 90
- M Size or CV cv(curve)
- Total Len(Blade) ALL

Extension arbor (Carbide Arbor)

- Shank[ST] ST16C
- Protr. [MB] (L) 25 mm

MillBore Code ☐ Holder Display [CLR(Clearance)] > [Defl.(Deflection)]

BT40-SLSB16-90 cv-MB25	0.79
BT40-SLSB16-90 cv-MB35	1.13
BT40-SLSB16-90 cv-MB50	1.79
BT40-SLSB16-90 cv-MB60	2.37
BT40-SLSB16-90 cv-MB75	3.44
BT40-SLSB16-90 cv-MB90	4.81
BT40-SLSB16-90 cv-MB105	6.50

3D Diagram Labels: BT40, m 52.6, 90, 140, 63, 0.1, Φ 21, H2=60, D2=55 (θ=90°), Φ 15, 29, D1=40, H1=20, C=1, 25, 50.

※The actual screen is under development and the final specifications may be different.

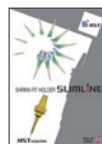
Code sample

BT40 - SLSB16-90 cv - MB25

Base Holder(SHRINK-FIT HOLDER SLIMLINE)

Extension arbor

Please confirm the shape and dimensions of the base holder in the shrink-fit holder SLIMLINE catalog.



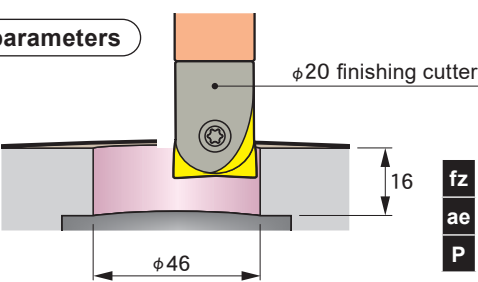
Please confirm the shape and dimensions of the extension on page 7.

Ex. ST16C - G8 - 70 - **MB25**

MILL BORE Case Study

Even if the machine, the number of years in operation, and the workpiece material differ, it is possible to complete your machining within the general tolerance of boring processing using the MILL BORE.

Cutting parameters



φ20 finishing cutter

16

φ46

fz : 0.1mm/t

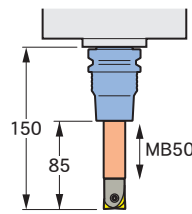
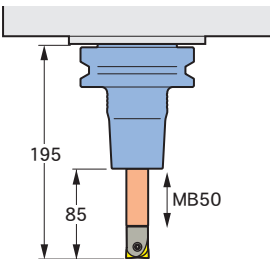
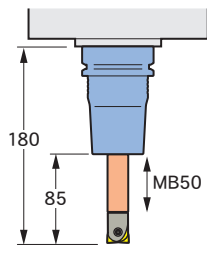
ae : 0.1mm

P : 1.0mm

General tolerance of boring application

Roundness (μm)	Below 10~20
Cylindricity (μm)	Below 10~20
Surface roughness Rz (μm)	Below 6.3

Case study by machine (Workpiece material : FC250)

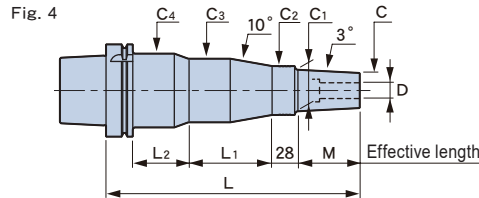
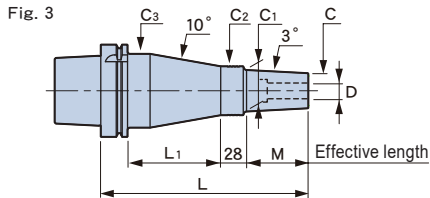
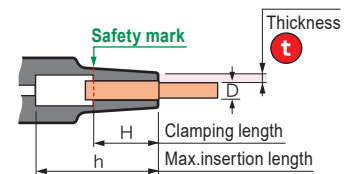
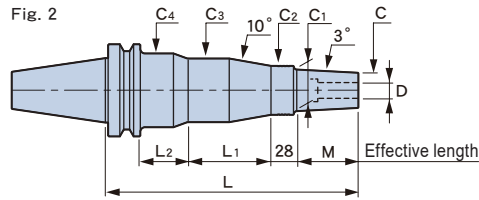
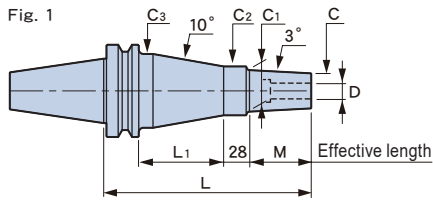
Machine	Spindle	BT30	BT50	HSK-A63
	Years in operation	2	15	6
Holder	Target dimension φ46.000			
		BT30-SLRA20-65-M22-MB50	BT50-SLRB20-110-M42-MB50	A63-SLRB20-95-M42-MB50
Vc (m/min)		350		
Finished dimension (mm)		φ46.001	φ45.999	φ46.000
Roundness (μm)		4.5	6.1	3.9
Cylindricity (μm)		5.1	7.0	4.5
Surface roughness Rz (μm)		1.2	2.8	1.3

Case study by material (BT50 spindle, operated for 10 years)

Workpiece material	FC250	S50C	A5052
Vc (m/min)	350	300	600
Machining time(sec.)	76	88	44
Finished dimension (mm)	φ45.996	φ46.001	φ45.998
Roundness (μm)	5.5	4.0	3.7
Cylindricity (μm)	6.2	4.5	5.7
Surface roughness Rz (μm)	2.4	2.2	0.3
Machined surface			

Base Holder

Newly-added models



CODE	Fig.	φD	φC	t	L	M	L1	L2	φC1	φC2	φC3	φC4	H	h	Kg	S
BT50-SLRB16-200-M22	1	16	32	8	200	22	112	—	34.3	42	63	—	32	255	5.7	0.6
-220-M42					220	42			36.4					275	5.8	0.8
BT50 -245-M67					245	67			39					300	6.0	1.1
-250-M22					250	22	162		34.3					305	6.7	0.8
-270-M42					270	42			36.4					325	6.8	1
-295-M67					295	67			39					350	7	1.4
BT50-SLRB20-200-M42	1	20	38	9	200	42	92	—	42.4	53	80	—	40	255	6.2	0.5
-225-M67					225	67			45					280	6.4	0.6
-250-M42	2				250	42	90	52	42.4		69	80		305	7.4	0.6
-275-M67					275	67			45					330	7.6	0.8
-300-M42					300	42	130	62	42.4					355	8.6	0.8
-325-M67					325	67			45					380	8.8	1
BT50-SLRB25-200-M42	1	25	45	10	200	42	92	—	49.4	53	80	—	45	255	6.3	0.5
-250-M42	2				250		90	52			69	80		305	7.5	0.6
-300-M42					300		130	62						355	8.7	0.8
BT50-SLRB32-200-M42	2	32	54	11	200	42	50	42	58.4	63	69	100	50	255	7	0.4
-250-M42					250		90	52						305	8.3	0.5
-300-M42					300		130	62						355	9.6	0.7
A100-SLRB16-200-M22	3	16	32	8	200	22	121	—	34.3	42	63	—	32	167	4.5	0.6
-220-M42					220	42			36.4					187	4.6	0.8
-245-M67					245	67			39					212	4.8	1.1
A100 -250-M22					250	22	171		34.3					217	5.5	0.8
-270-M42					270	42			36.4					237	5.6	1
-295-M67					295	67			39					262	5.8	1.4
A100-SLRB20-200-M42	3	20	38	9	200	42	92	—	42.4	53	80	—	40	167	5	0.5
-225-M67					225	67			45					192	5.2	0.6
-250-M42	4				250	42	90	61	42.4		69	80		217	6.2	0.6
-275-M67					275	67			45					242	6.4	0.8
-300-M42					300	42	130	71	42.4					267	7.3	0.8
-325-M67					325	67			45					292	7.6	1
A100-SLRB25-200-M42	3	25	45	10	200	42	101	—	49.4	53	80	—	45	167	5.1	0.5
-250-M42	4				250		90	61			69	80		217	6.3	0.6
-300-M42					300		130	71						267	7.5	0.8
A100-SLRB32-205-M42	4	32	54	11	205	42	50	56	58.4	63	69	100	50	172	6	0.4
-255-M42					255		90	66						222	7.3	0.5
-305-M42					305		130	76						272	8.6	0.7

Option

- Retention knob(BT50)

Std.Access.

- Coolant duct (A100)(fixed type)

Note

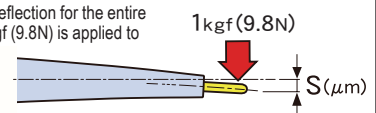
- Swing type coolant ducts are available upon request.

Caution

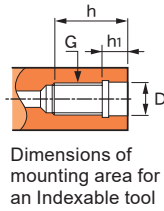
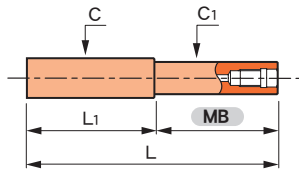
- Setting cutters...Be sure to insert the tool beyond the safety mark.

The rigidity value

A rigidity value represents the amount of deflection for the entire holder and tool when a bending load of 1kgf (9.8N) is applied to the tip of the tool. The smaller the numerical value is, the higher the rigidity and the more stable machining.



Extension arbor



Dimensions of mounting area for an Indexable tool

Common dimensions

CODE	Cutter dia.	G	φD	h	h1
ST10C - G 6	10	M 6	6.5	15.5	9
ST12C - G 6	12				
ST16C - G 8	16	M 8	8.5	18	10
ST20C - G10	20				
ST25C - G12	25	M12	12.5	22	
ST32C - G16	32/40				

M6 φ10 Milling cutter

CODE	L	L1	φC	φC1	MB
ST10C-G 6 - 61-MB 15	61	46	10	9.7	15
- 76-MB 30	76				30
- 91-MB 45	91				45
-106-MB 60	106				60
-121-MB 75	121				75

M6 φ12 Milling cutter

CODE	L	L1	φC	φC1	MB
ST12C-G 6 - 64-MB 15	64	49	12	11.5	15
- 79-MB 30	79				30
- 94-MB 45	94				45
-109-MB 60	109				60
-124-MB 75	124				75
-139-MB 90	139				90

M8 φ16 Milling cutter

CODE	L	L1	φC	φC1	MB
ST16C-G 8 - 70-MB 25	70	45	16	15	25
- 80-MB 35	80				35
- 95-MB 50	95				50
-105-MB 60	105				60
-120-MB 75	120				75
-135-MB 90	135				90
-150-MB105	150				105

M10 φ20 Milling cutter

CODE	L	L1	φC	φC1	MB
ST20C-G10 - 75-MB 25	75	50	20	19	25
- 85-MB 35	85				35
-100-MB 50	100				50
-110-MB 60	110				60
-125-MB 75	125				75
-150-MB100	150				100
-170-MB120	170				120
-190-MB140	190				140

M12 φ25 Milling cutter

CODE	L	L1	φC	φC1	MB
ST25C-G12 - 80-MB 25	80	55	25	24	25
-105-MB 50	105				50
-130-MB 75	130				75
-155-MB100	155				100
-180-MB125	180				125
-205-MB150	205				150
-230-MB175	230				175

M16 φ32 / φ40 Milling cutter

CODE	L	L1	φC	φC1	MB
ST32C-G16 - 85-MB 25	85	60	32	29	25
-110-MB 50	110				50
-135-MB 75	135				75
-160-MB100	160				100
-185-MB125	185				125
-210-MB150	210				150
-235-MB175	235				175
-260-MB200	260				200
-285-MB225	285				225

Can be combined arbitrarily

Extension arbors are also sold individually.
Customers who own a MST shrink-fit heater can carry out the combining operation as they wish.



Shrink-fit heater HEAT ROBO

CAD data download(2D and 3D)

You can download CAD data at MST's website.
www.mst-corp.co.jp

※Registration is required when you download CAD data.



