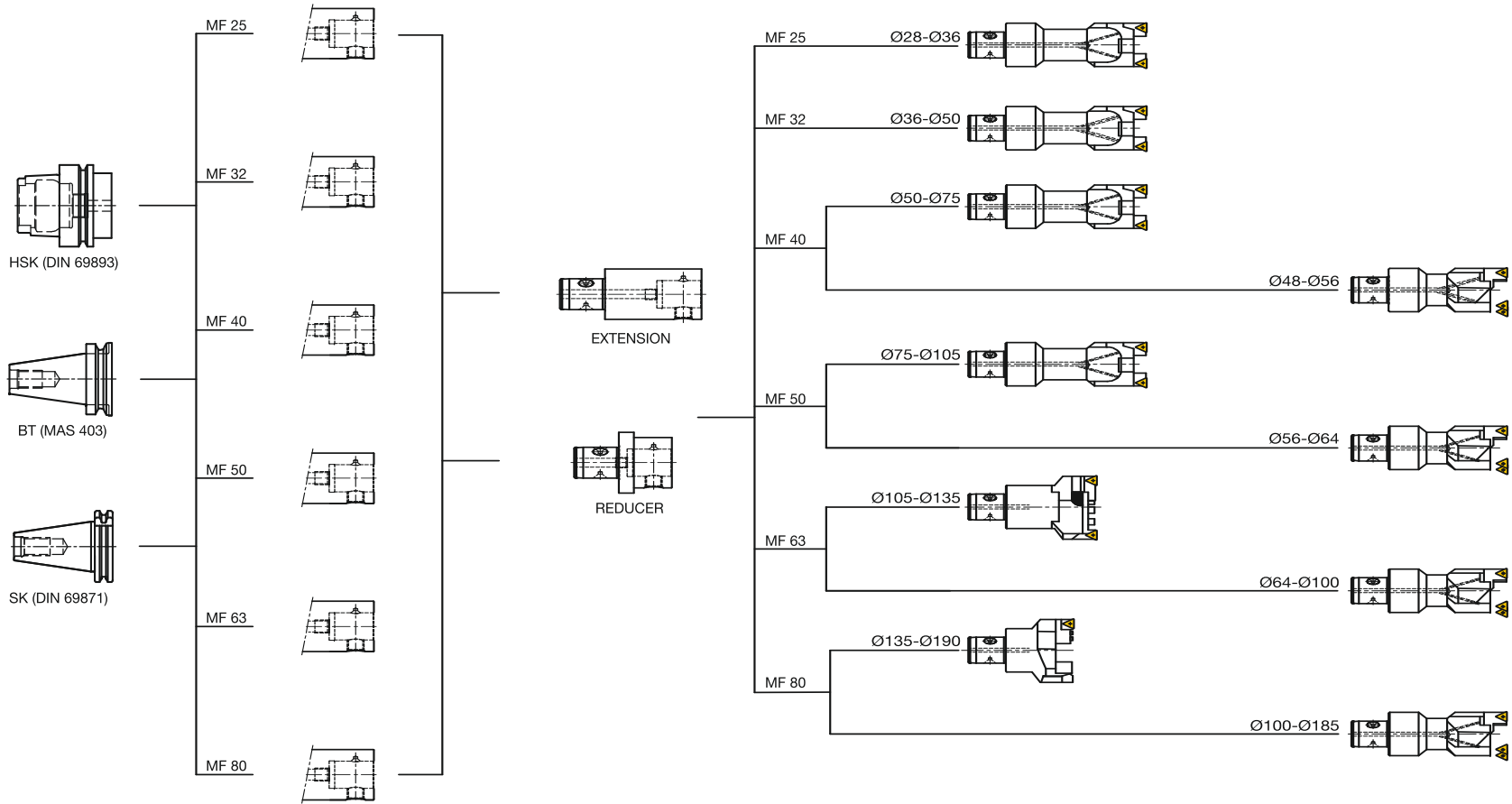




# Boring Solutions



**SPECIAL BORING  
SOLUTIONS  
OFFERED**



# Contents

Page

## Modular system

Adapter system overview	2 - 5
Adapter	6
Extension / Reducer	7

## Rough boring system

TWINBORE / TRIBORE : Boring heads	8
TWINBORE / TRIBORE : Insert holders	9
TWINBORE / TRIBORE : Spares	9

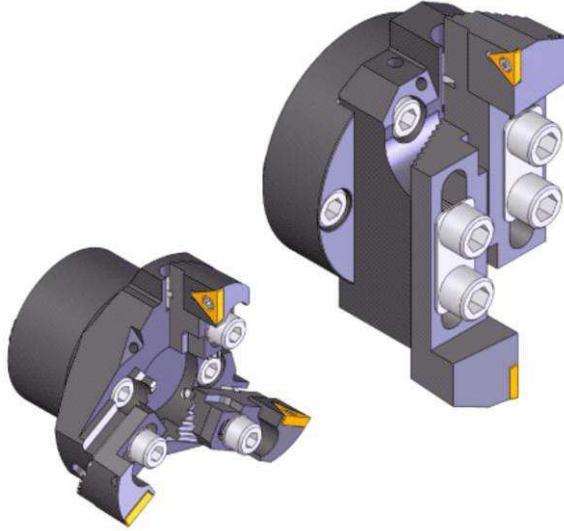
## Fine boring system

System description	10 - 11
MGAG / MR : Fine boring head / Units	12
MR System : Operating Instructions	13

## Special boring solutions

14 - 15

# Adapter system overview



TWINBORE and TRIBORE tooling provide a full range of rough boring tools. The range offers the selection of 2-blade and 3-blade boring heads. Within this tooling family the user can produce components with the most economical type of tool available.

Particular advantages

- Flexibility of application
- Reduction of machining cycle time
- Increase of machine capacities

.Convincing technical design

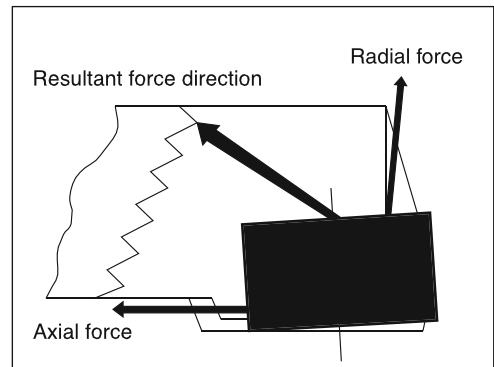
- Angular serrations to absorb highest cutting forces
- Compact design to secure best chip removal and maximum rigidity
- Extra large boring capacities of each boring head; that reduces capital investment
- Internal coolant supply, directly to the cutting edges
- Each insert holder can be adjusted individually
- Centric and step-boring application possible



Boring Head

Economy and productivity can be increased with the application of TWINBORE and TRIBORE.

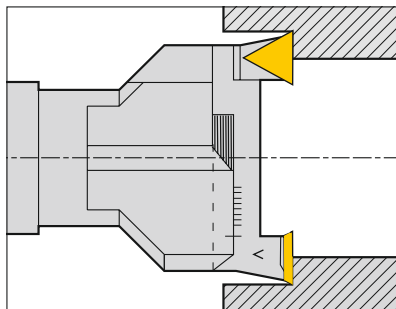
The high clamping pressure resulting through the prismatic seating shape combined with the high surface area contact of the serration design ensures optimum rigidity over the extensive adjustment range of the boring heads when used in both concentric and step-boring applications. As a result of the unique engineering features an extreme robustness and vibration-free machining are achieved.



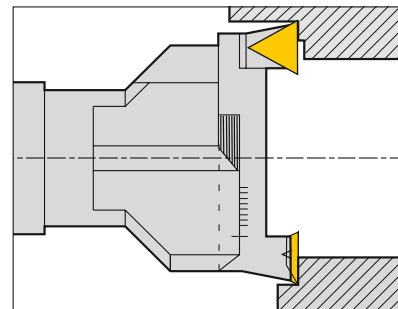
## Twinbore / Tribore - System description

TWINBORE and TRIBORE tooling can be used in different applications.

One is Standard-boring, i.e., concentric application and the other is Step-boring, i.e. eccentric application.



Standard-boring

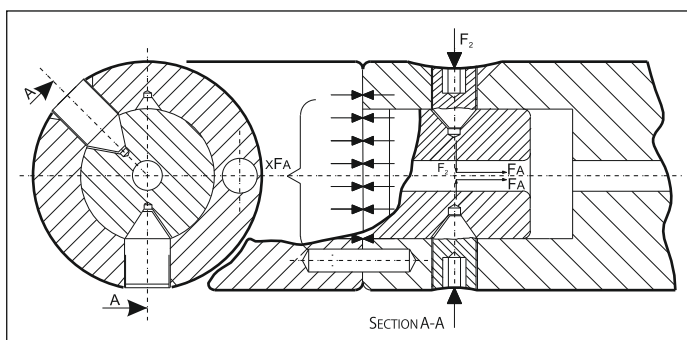


Step-boring

On Standard boring applications two or three (depending on system) insert holders are set to the same bore diameter and boring length. Thus it is possible to machine with double or triple feed rate.

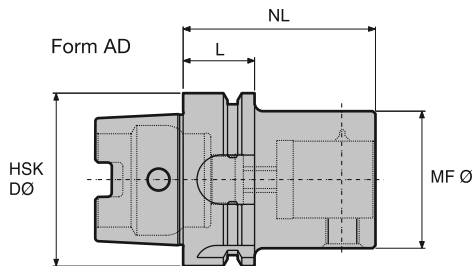
When “Step Boring” all insert holders are adjusted to different diameter and length dimensions. This is possible by the choice of various standard insert holders. The feed rate is limited to the conditions of single point cutting. However, the advantage results in a higher chip depth. Step-boring is practiced on machining of castings when tolerances of bores vary or when the clamping of the components can absorb limited forces only.

## Modular & Flexible system (Mod-Flex system)

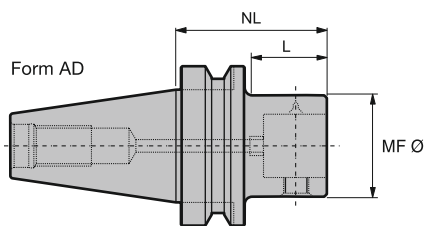


The modular build up of the Microbore system allows maximum flexibility in combination with a cost down environment.

A large variety of adapters, extensions and reducers allows the user to assemble the tool for an optimum performance.



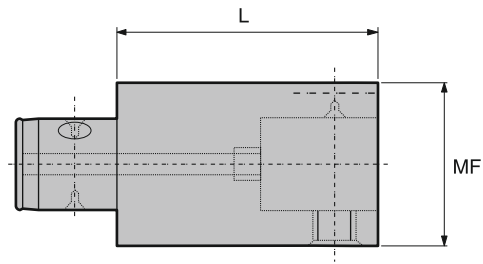
HSK-A Taper DIN69893						
Designation	HSK DØ	MF Ø	NL	L	Kg	Ident No.
HSK-A63-MF25-50	63	25	50	26	0,9	55511125
HSK-A63-MF32-50	63	32	50	26	0,9	55511126
HSK-A63-MF40-60	63	40	60	26	1,0	55511127
HSK-A63-MF50-70	63	50	70	26	1,2	55511128
HSK-A63-MF63-80	63	63	80	26	1,5	55511129
HSK-A63-MF80-80	63	80	80	26	2,0	55511130
HSK-A100-MF25-60	100	25	60	29	2,3	55511131
HSK-A100-MF32-60	100	32	60	29	2,3	55511132
HSK-A100-MF40-80	100	40	80	29	2,5	55511133
HSK-A100-MF50-80	100	50	80	29	2,8	55511134
HSK-A100-MF63-80	100	63	80	29	3,2	55511135
HSK-A100-MF80-90	100	80	90	29	3,9	55511136



BT Taper DIN JIS 6339 (MAS 403)					
Designation	MF Ø	NL	L	Kg	Ident No.
GBT40M-MF25- 60	25	60	19	1,2	55511421
GBT40M-MF32- 60	32	60	19	1,3	55511422
GBT40M-MF40- 60	40	60	25	1,4	55511423
GBT40M-MF50- 60	50	60	30	1,4	55511424
GBT40M-MF63- 70	63	70	40	1,8	55511425
GBT50M-MF25-70	25	70	30	3,8	55511431
GBT50M-MF32- 70	32	70	30	4,0	55511426
GBT50M-MF40- 70	40	70	30	4,1	55511427
GBT50M-MF50- 70	50	70	30	4,2	55511428
GBT50M-MF63- 80	63	80	40	4,5	55511429
GBT50M-MF80-100	80	100	60	5,4	55511430

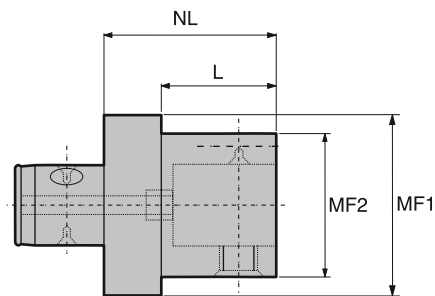
## Extension / Reducer

### Extension



Designation	MF Ø	L	Kg	Ident. No.
V-MF25-40	25	40	0,2	55512121
V-MF25-80	25	80	0,4	55512122
V-MF32-50	32	50	0,4	55512123
V-MF32-80	32	80	0,6	55512124
V-MF40-60	40	60	0,7	55512134
V-MF40-100	40	100	1,0	55512125
V-MF50-80	50	80	1,2	55512126
V-MF50-120	50	120	1,9	55512127
V-MF63-60	63	60	1,5	55512128
V-MF63-100	63	100	2,5	55512129
V-MF63-160	63	160	3,9	55512130
V-MF80-60	80	60	2,3	55512131
V-MF80-100	80	100	3,8	55512132
V-MF80-160	80	160	6,2	55512133

### Reducer



Designation	MF1	MF2	NL	L	Kg	Ident. No.
R-MF32-25-30	32	25	30	20	0,2	55513121
R-MF40-25-40	40	25	40	28	0,3	55513122
R-MF40-32-40	40	32	40	25	0,4	55513123
R-MF50-25-40	50	25	40	24	0,6	55513124
R-MF50-32-40	50	32	40	24	0,6	55513125
R-MF50-40-40	50	40	40	25	0,6	55513126
R-MF63-40-60	63	40	60	40	1,2	55513127
R-MF63-50-60	63	50	60	40	1,2	55513128
R-MF80-50-60	80	50	60	35	1,9	55513129
R-MF80-63-60	80	63	60	35	2,1	55513130

Note : Attachments suitable for both rough and fine boring

## Twinbore : Boring heads

Boring ranges: Ø 28 - 190mm

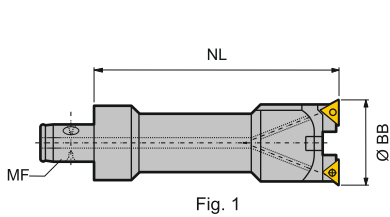


Fig. 1

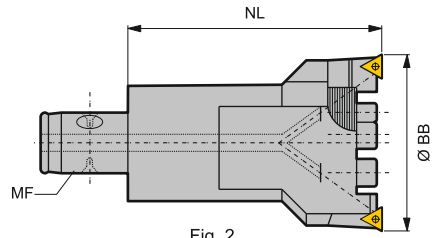


Fig. 2

BB Ø	Designation	Ident No.	MF	NL	Fig	kg	Insert holder size
28 - 36	MTP- 28-100-MF25	55514121	25	100	1	0,4	MTP-28
36 - 50	MTP- 36-100-MF32	55514122	32	100	1	0,6	MTP-36
50 - 75	MTP- 50-100-MF40	55514123	40	100	1	1,0	MTP-50
75 -105	MTP- 75-100-MF50	55514124	50	100	2	1,6	MTP-75
105-135	MTP-105-100-MF63	55514125	63	100	2	2,3	MTP-75
135-190	MTP-135-100-MF80	55514126	80	100	2	3,7	MTP-135

\* BB Ø : from Ø190 to 355 on request

## Tribore : Boring heads

Boring ranges: Ø 48 - 185mm

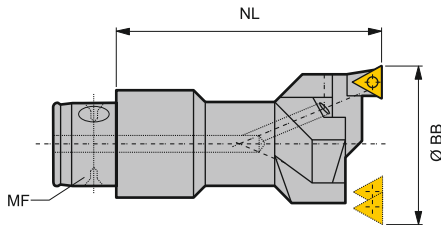


Fig. 1

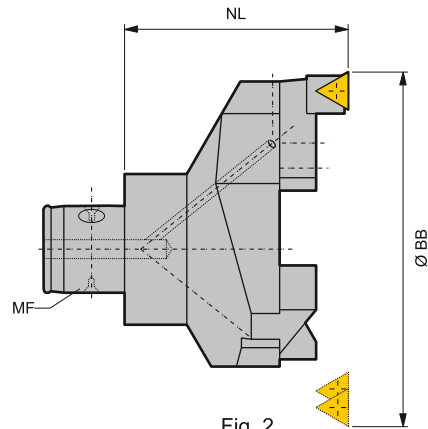


Fig. 2

BB Ø	Designation	Id. No.	MF	NL	Fig	kg	Insert holder size
48 - 56	MDP-48-100-MF40	55515121	40	100	1	0,9	MTP-28
56 - 64	MDP-56-100-MF50	55515122	50	100	1	1,3	MTP-28
64 - 78	MDP-64-100-MF63	55515123	63	100	1	2,0	MTP-36
78 -100	MDP-78-100-MF63	55515124	63	100	2	2,1	MTP-50
100-125	MDP-100-100-MF80	55515125	80	100	2	3,5	MTP-50
125-155	MDP-125-100-MF80	55515126	80	100	2	3,9	MTP-75
155-185	MDP-155-100-MF80	55515127	80	100	2	4,7	MTP-75

\* BB Ø - from Ø 185 to 245 on request

Please refer the insert holder details in the next page

Example for ordering : Ø =100mm / L=200mm

- 1 GBT50M-MF50-70 Adapter
- 1 V-MF50-80 Extension
- 1 MTP- 75-100-MF 50 Boring head
- 2 MTP-75-1CC Insert holders



# Insert holders for Twinbore & Tribore

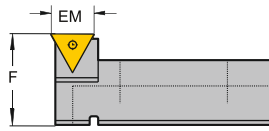


Fig. 1

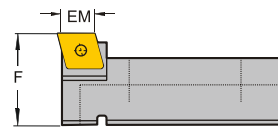


Fig. 2

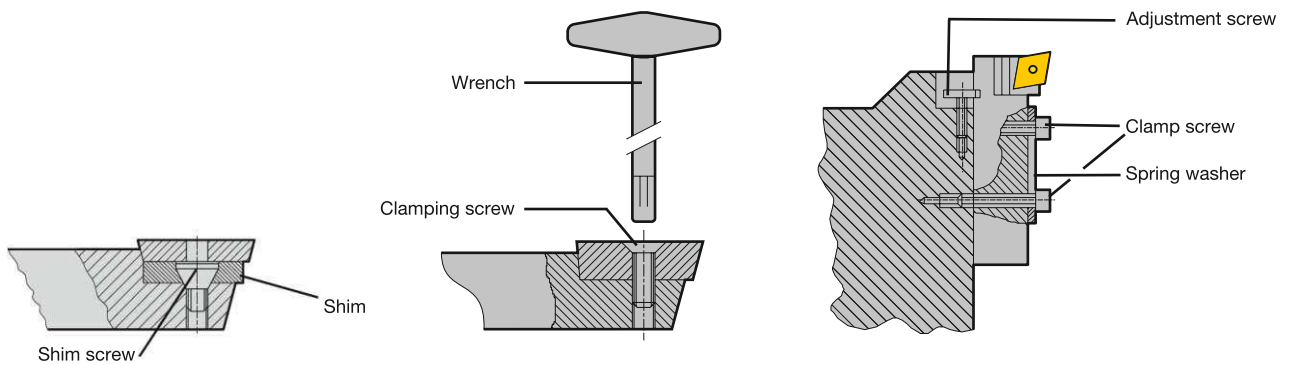
Lead angle 0°

Insert Holder size	Designationg	Ident No.	Insert	F	EM	Fig.
MTP-28	MTP-28-1CC	55516101	CC..0602	18.7	6	2
MTP-28	MTP-28-107CC	55516102	CC..0602	18.0	6	2
MTP-28	MTP-28-1TC	55516106	TC..1102	18.7	11	1
MTP-28	MTP-28-107TC	55516107	TC..1102	18.0	11	1
MTP-36	MTP-36-1CC	55516201	CC..0602	21.5	6	2
MTP-36	MTP-36-107CC	55516202	CC..0602	20.8	6	2
MTP-36	MTP-36-1TC	55516206	TC..1102	21.5	11	1
MTP-36	MTP-36-107TC	55516207	TC..1102	20.8	11	1
MTP-50	MTP-50-1CC	55516301	CC..09T3	28.0	9	2
MTP-50	MTP-50-107CC	55516302	CC..09T3	27.3	9	2
MTP-50	MTP-50-1TC	55516307	TC..16T3	28.0	16	1
MTP-50	MTP-50-107TC	55516308	TC..16T3	27.3	16	1
MTP-75	MTP-75-1CC	55516401	CC..1204	28.0	12	2
MTP-75	MTP-75-107CC	55516402	CC..1204	27.3	12	2
MTP-75	MTP-75-1TC	55516407	TC..16T3	28.0	16	1
MTP-75	MTP-75-107TC	55516408	TC..16T3	27.3	16	1
MTP-135	MTP-135-1CC	55516511	CC..1204	40.0	12	2
MTP-135	MTP-135-107CC	55516512	CC..1204	39.3	12	2
MTP-135	MTP-135-1TC	55516504	TC..16T3	40.0	16	1
MTP-135	MTP-135-107TC	55516505	TC..16T3	39.3	16	1

Example for ordering :

Standard boring centric order 2 of MTP-36-1TC and for Step boring order 1 each from MTP-36-1TC & MTP-36-107TC

## Twinbore / Tribore : Spares

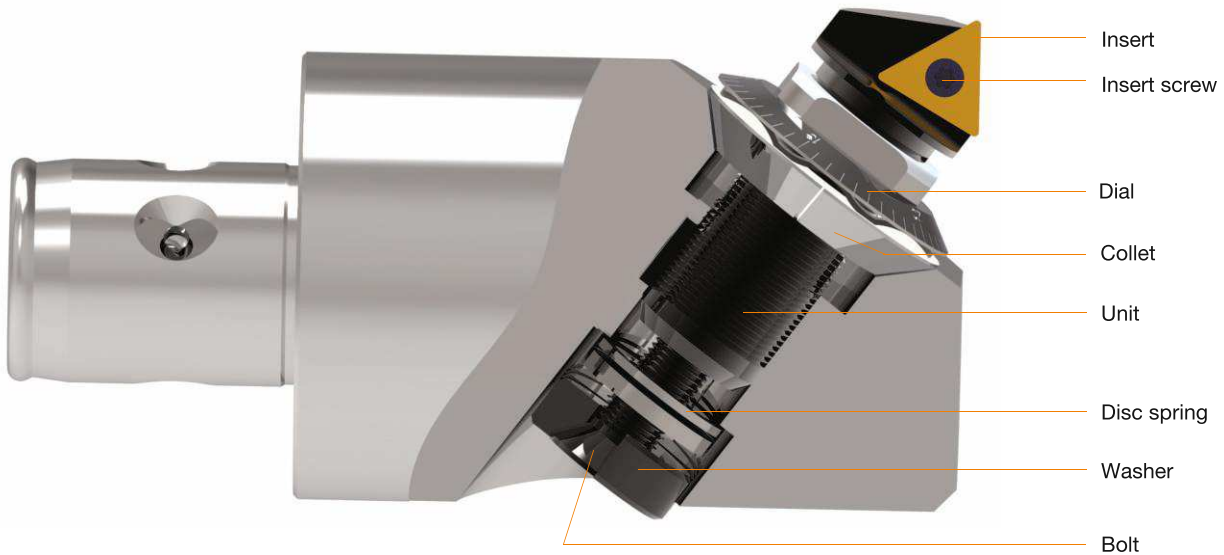


Insert Holder		Clamping screw	Wrench	Shim	Shim screw	Adjustment screw	Spring washer	B.- Clamp screw
		Id. No.	Id. No.	Id. No.	Id. No.	Id. No.	Id. No.	Id. No.
MTP-28-1CC	MTP-28-107CC	C02506				MTP-28-2	MTP-28-15	M5x20
MTP-28-1TC	MTP-28-107TC	5513-020-03	TX - 7			MTP-28-2	MTP-28-15	M5x20
MTP-36-1CC	MTP-36-107CC	C02506				MTP-28-2	MTP-36-15	M6x20
MTP-36-1TC	MTP-36-107TC	5513-020-03	TX - 7			MTP-28-2	MTP-36-15	M6x20
MTP-50-1CC	MTP-50-107CC	C04008				MTP-50-2	MTP-50-15	M8x25
MTP-50-1TC	MTP-50-107TC	5513-020-01	TX -15			MTP-50-2	MTP-50-15	M8x25
MTP-75-1CC	MTP-75-107CC	C05012		123.19-621	CA5008	MTP-50-2	MTP-75-15	M8x25
MTP-75-1TC	MTP-75-107TC	5513-020-01	TX -15			MTP-50-2	MTP-75-15	M8x25
MTP-135-1CC	MTP-135-107CC	C05012		123.19-621	CA5008	MTP-135-2	MTP-135-15	M12x40
MTP-135-1TC	MTP-135-107TC	5513-020-01	TX -15			MTP-135-2	MTP-135-15	M12x40

Note: Order only applicable spares mentioned for the specific insert holder

## Fine boring head

MR with Fine boring unit



Least count of adjustment dial is 10 microns on radius

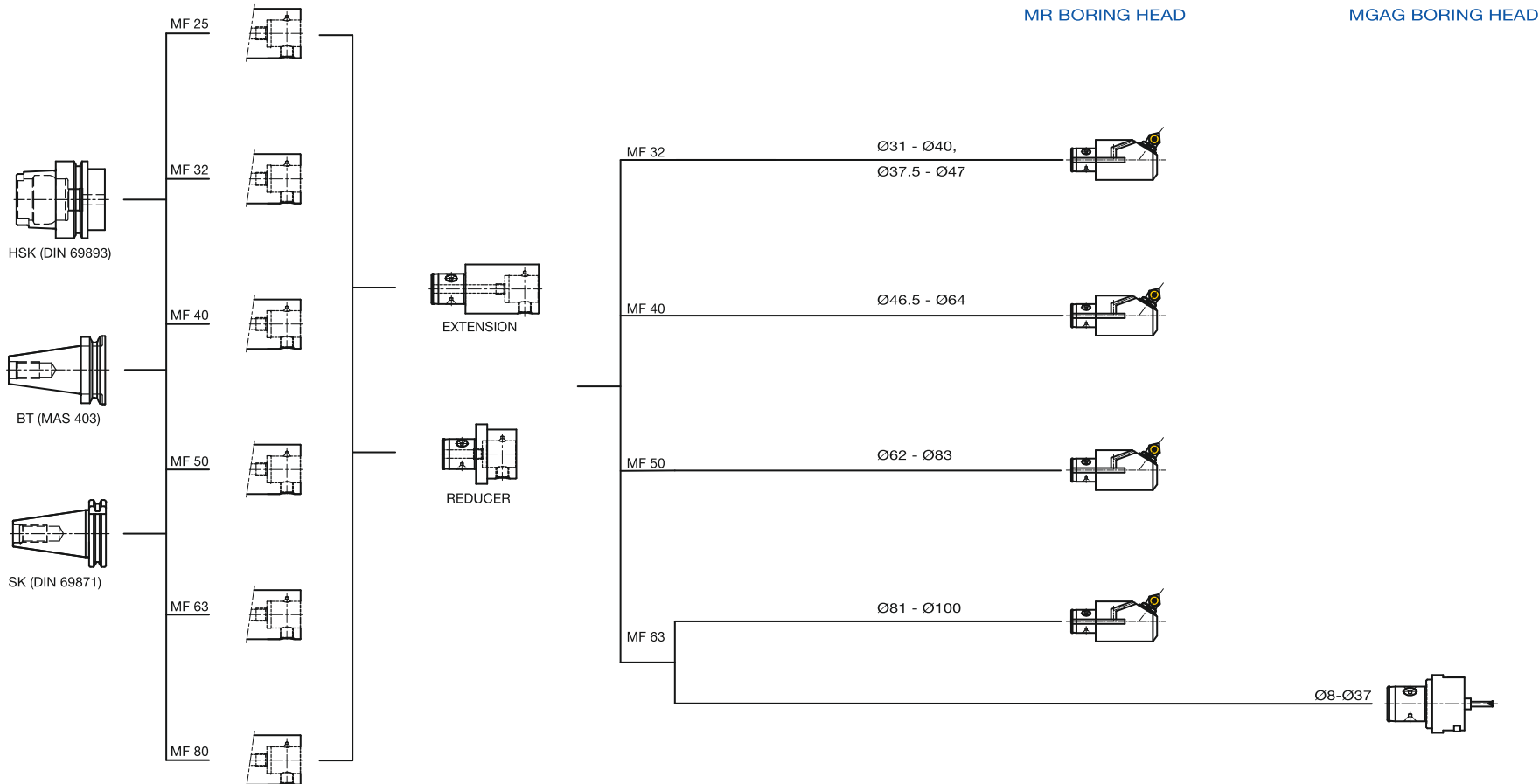
The collet clamping system units offers substantial advantages over similar units by firmly clamping the tool when the assembly is tensioned. The collet spring also keeps the dial in place when the retaining bolt is released for adjustment.

Dial graduations are easily read and each produces an adjustment of 0.01mm/0.004in on radius (0.02mm / 0.0008in on diameter).

Dial graduation can be readily split to provide and even finer setting capability. On top-adjusting units, modified components and additional spring washers at the back provide fine adjustment without releasing the retaining bolt.

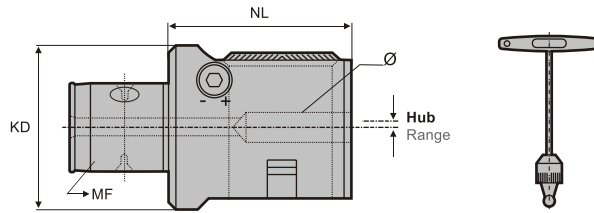
For achieving the required size, we have to adjust dia less than the required size for the 1st cut. After that we have to correct the boring bar dial on the machine itself without removing the boring bar from the machine spindle with the help of the wrench.





# MGAG: Fine boring heads

Boring ranges : Ø 8 - 37mm

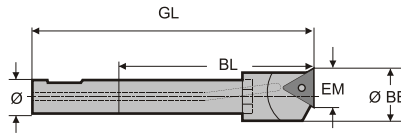


\* recommended for bore tolerance within 10 microns

BB Ø	Designation	Ident No.	KD	MF	NL	Ø	Range	kg	Adjustment-Wrench
8 - 37	MGAG-07-MF63	55522112	76	63	60	16	2.5 = Ø5	1.8	MGAG - 05**

# ASH: Fine boring bars

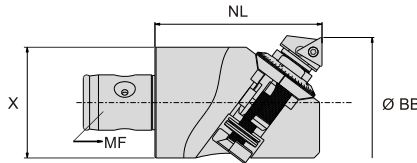
Note:  
The shanks of styles ASH are in solid carbide. Lead angle 3°



BB Ø	Designation	Ident No.	Ø	BL	GL	Insert	EM
8 - 13	ASH16-08-03T06	55524207	16	29	62	TCMT-06T102L	6
12 - 17	ASH16-12-03T06	55524208	16	77	110	TCMT-06T102L	6
17 - 22	ASH16-17-03	55524209	16	107	140	TC...-1102..	11
22 - 27	ASH16-22-03	55524210	16	107	140	TC...-1102..	11
27 - 32	ASH16-27-03	55524211	16	107	140	TC...-1102..	11
32 - 37	ASH16-32-03	55524212	16	107	140	TC...-1102..	11

# MR Fine boring head

Boring ranges : Ø 36 - 134.5mm



BB Ø	Designation	Ident No.	L	NL	X	kg	Fine boring unit	Insert
31.0 - 40.0	MR31-60-MF32	55561213	60	50**	32	0.4	TR3A2	TC...-0902
37.5 - 47.0	MR37.5-60-MF32	55561214	60	60	32	0.6	TR5B2	TC...-1102
46.5 - 64.0	MR46.5-60-MF40	55561215	60	60	40	0.7	TR5A2	TC...-1102
62.0 - 83.0	MR61.5-60-MF50	55561216	60	60	50	1.2	TR7A2	TC...-16T3
81.0 - 100.0	MR79.5-80-MF63	55561217	80	80	63	2.0	TR7A2	TC...-16T3

Note: with bores for internal coolant supply  
Working length (NL) 50\*\* will be 60 when boring dia will be more than 32mm. Above Ø96-140 on special request.  
The above fine boring head consists of boring head & boring unit.

# Spares & Accessories



Tool	Tool body	Dial	Collet	Collet Spring	Key	Adjustment Wrench	Hexagonal Wrench
TR3A2	R30A2	R312	R32	R35	R34	R36	R38
TR5B2	R50B2	R512	R52	R55	R54	R36	R58
TR5A2	R50A2	R512	R52	R55	R54	R36	R58
TR7A2	R70A2	R712	R72	R75	R74	R76	R78
TR10A2	R100A2	R112	R102	R105	R104	R76	R108

Tool	Tool body	Torx Wrench	Insert Screw	Screw & Washer (TR unit)	Adjusting Spring stack
TR3A2	R30A2	R37	RS2263	R33AT	R39
TR5B2	R50B2	R37	RS2560	R53BT	R59
TR5A2	R50A2	R37	RS2560	R53AT	R59
TR7A2	R70A2	R77	RS4048	R73BT	R79
TR10A2	R100A2	R77	RS35120	R103AT	R109

# MR System: Operating Instructions

This photo series should aid you to handle MR system correctly and reliably.

1.

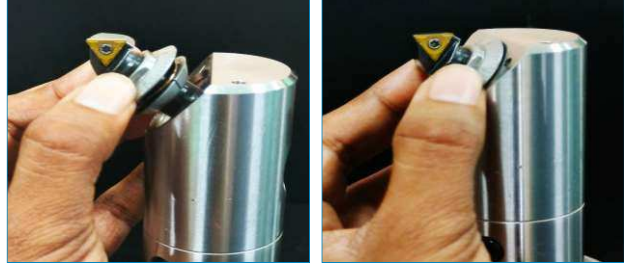


Before setting the diameter in pre-setter, make sure that the 'disc spring' are in correct position as shown. The outer rim of the disc spring seats against the counterbore in the back of the unit.

Note:

The number of disc springs varies with the unit size. Size 3: No. of disc springs are 5, Size 5: No. of disc springs are 3 and Size 7: No. of disc springs are 4.

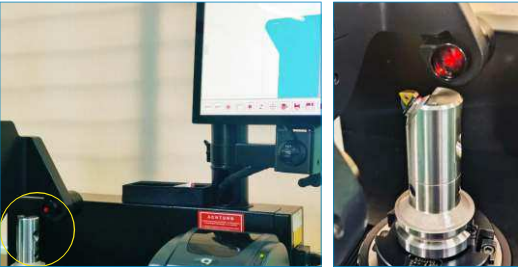
2.



Insert the unit and pre-adjust as per the required diameter by using the tool pre-setter.

The boring bar diameter should be maintained as per the required bore size by turning the dial and the 'cutting edge' should be always face towards the component as shown above.

3.



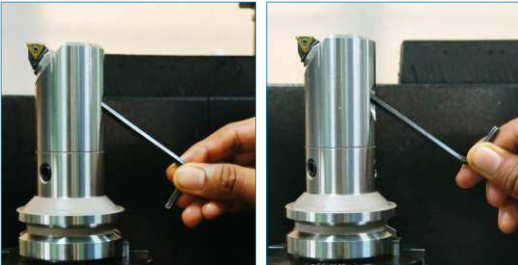
Set the diameter on the pre-setter and please repeat the step 1 & 2, if you have not met your requirement.

4.



Bolt, washer and disc spring must be assembled in the boring tool with the help of hexagonal wrench as shown.

5.



Bolt or draw screw should be tightened completely until its stop rotating as shown.

In order to pre-load, the disc spring bolt or draw screw has to be unlocked by rotating the hexagonal wrench for a half-turn. After that don't change the screw setting.

6.



Fine adjustment needs to be done using adjustment wrench. Clock wise direction will increase the diameter and anti-clock wise direction will reduce the diameter as shown. Each division on the dial is 0.02mm on diameter as shown.

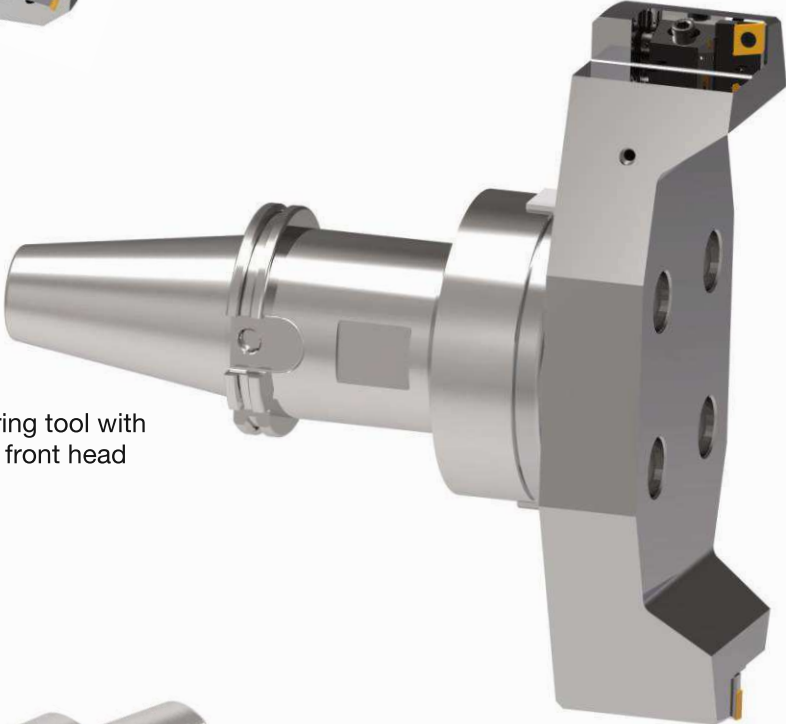
### Special boring solutions

BILZ special boring bar solution with ISO Cartridge have been field proven successfully in producing multiple bores and chamfers to customer specific tolerance, which gives improved productivity to the customer. Below are some of our special boring bars designed and manufactured.

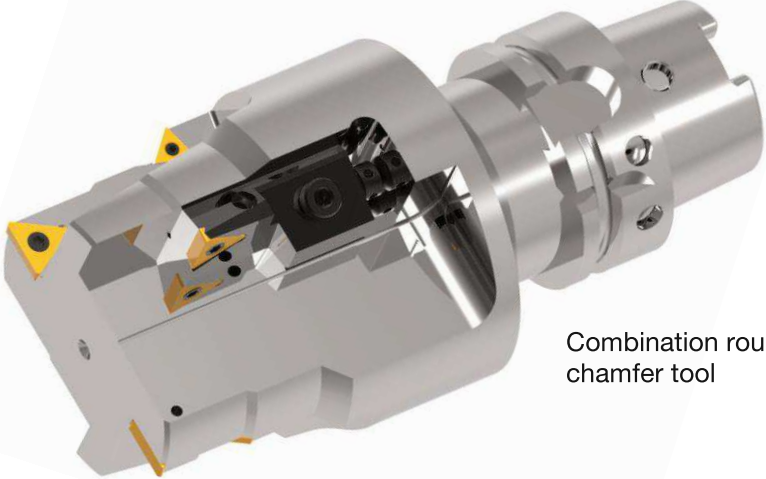
Combination finish boring tool



Rough boring tool with aluminium front head



Combination rough boring and chamfer tool



Special boring solutions

Combination Front-back chamfer & finish boring tool



Finish boring tool



Rough boring tool





**OTTO BILZ (INDIA) PVT. LTD.**  
5A-5B/6A, KIADB Industrial Area  
Doddaballapur - 561203  
Bengaluru District  
India  
Tel +91 080 22638700  
Fax +91 080 22638702  
sales@bilzindia.com  
www.bilz.in



*Produktions- und Vertriebsstandorte der LEITZ-Group  
Production and sales locations of the LEITZ Group*

- **Bilz**
- **Boehlerit**
- **Leitz**