

## for workpiece and tool measurement



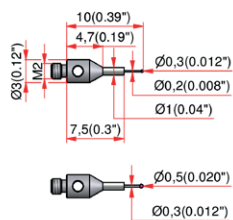


## Styli and Accessories

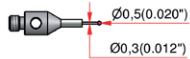
m&h Inprocess Messtechnik GmbH is one of the leading companies in technologically advanced touch probe manufacture for machine tools. Touch probe systems made by m&h are renowned for their high quality standards and continuous innovation. m&h touch probes are being successfully used in many noted companies worldwide. For a variety of measuring tasks on the machine tool m&h offers a substantial range of high-grade styli and accessories. They are made of high-grade materials and distinguish themselves by easy handling.

### M2 STYLI AND ACCESSORIES

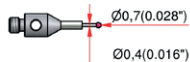
#### M2 - Styli with tungsten carbide shaft and ruby ball



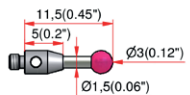
Length	Ball Ø	Weight	Part number
10 (0.39'')	0,3 (0.012'')	0,3 g	91.00-T10/0,3-HM-M2



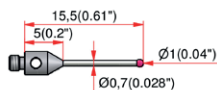
10 (0.39'')	0,5 (0.020'')	0,3 g	91.00-T10/0,5-HM-M2
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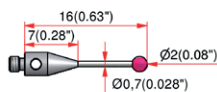
10 (0.39'')	0,7 (0.028'')	0,3 g	91.00-T10/0,7-HM-M2
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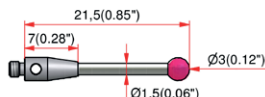
11,5 (0.45'')	3 (0.12'')	0,7 g	91.00-T11,5/3-HM-M2
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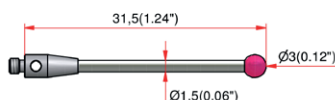
15,5 (0.61'')	1 (0.04'')	0,3 g	91.00-T15,5/1-HM-M2
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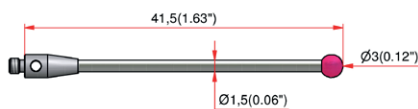
16 (0.63'')	2 (0.08'')	0,4 g	91.00-T16/2-HM-M2
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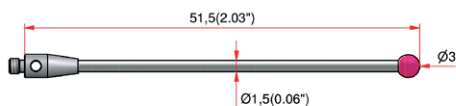
21,5 (0.85'')	3 (0.12'')	0,9 g	91.00-T21,5/3-HM-M2
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31,5 (1.24'')	3 (0.12'')	1,1 g	91.00-T31,5/3-HM-M2
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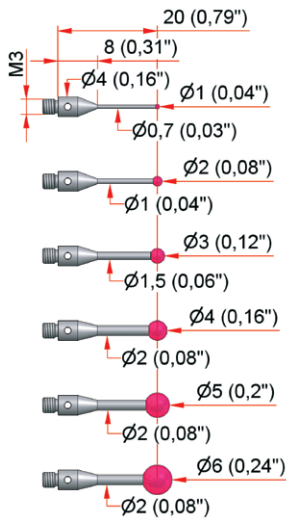
41,5 (1.63'')	3 (0.12'')	1,3 g	91.00-T41,5/3-HM-M2
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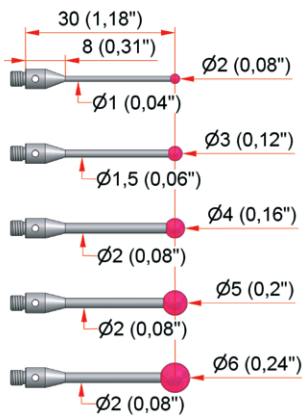
51,5 (2.03'')	3 (0.12'')	1,6 g	91.00-T51,5/3-HM-M2
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## M3 STYLI AND ACCESSORIES

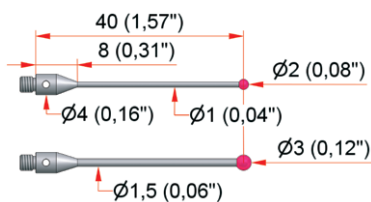
### M3 - Styli with tungsten carbide shaft and ruby ball



Length	Ball Ø	Weight	Part number
20 (0.79")	1 (0.04")	0,7g	21.00-T20/1-HM-M3
20 (0.79")	2 (0.08")	0,7g	21.00-T20/2-HM-M3
20 (0.79")	3 (0.12")	1,1g	21.00-T20/3-HM-M3
20 (0.79")	4 (0.16")	1,6g	21.00-T20/4-HM-M3
20 (0.79")	5 (0.2")	1,7g	21.00-T20/5-HM-M3
20 (0.79")	6 (0.24")	1,9g	21.00-T20/6-HM-M3



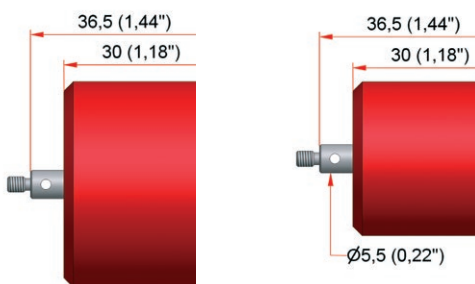
30 (1.18")	2 (0.08")	0,9g	21.00-T30/2-HM-M3
30 (1.18")	3 (0.12")	1,4g	21.00-T30/3-HM-M3
30 (1.18")	4 (0.16")	1,9g	21.00-T30/4-HM-M3
30 (1.18")	5 (0.2")	2,0g	21.00-T30/5-HM-M3
30 (1.18")	6 (0.24")	2,2g	21.00-T30/6-HM-M3



40 (1.57")	2 (0.08")	1,0g	21.00-T40/2-HM-M3
40 (1.57")	3 (0.12")	1,6g	21.00-T40/3-HM-M3

### M3 - Cylindrical styli

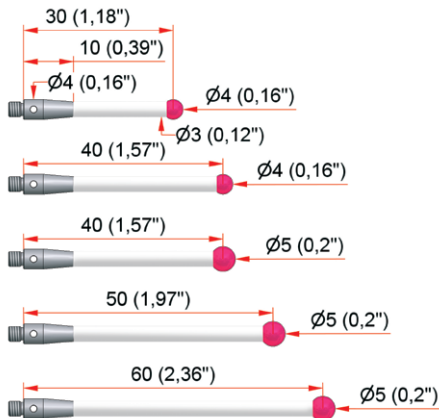
Material: Anodised aluminium



Length	Cylinder Ø	Weight	Part number
36,5 (1.44")	30 (1.18")	35 g	21.00-T36,5/30-M3
36,5 (1.44")	40 (1.57")	45 g	21.00-T36,5/40-M3

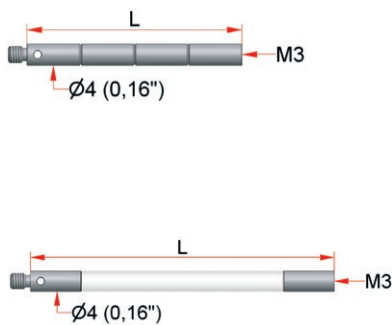
## M3 STYLI AND ACCESSORIES

### M3 - Stylus with ceramic shaft and ruby ball



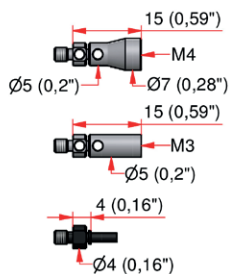
Length	Ball Ø	Weight	Part number
30 (1.18'')	4 (0.16'')	2,4g	21.00-T30/4-KE-M3
40 (1.57'')	4 (0.16'')	2,6 g	21.00-T40/4-KE-M3
40 (1.57'')	5 (0.2'')	3,1 g	21.00-T40/5-KE-M3
50 (1.97'')	5 (0.2'')	3,3 g	21.00-T50/5-KE-M3
60 (2.36'')	5 (0.2'')	3,5 g	21.00-T60/5-KE-M3

### M3 - Stylus extensions



Length (L)	Material	Weight	Part number
10 (0.39'')	Stainl. steel	0,8 g	21.00-TV10-ST-M3
20 (0.79'')	Stainl. steel	1,5 g	21.00-TV20-ST-M3
30 (1.18'')	Stainl. steel	2,0 g	21.00-TV30-ST-M3
40 (1.57'')	Stainl. steel	2,4 g	21.00-TV40-ST-M3
40 (1.57'')	Ceramic	1,4 g	21.00-TV40-KE-M3
60 (2.36'')	Ceramic	1,8 g	21.00-TV60-KE-M3
100 (3.94'')	Ceramic	2,5 g	21.00-TV100-KE-M3

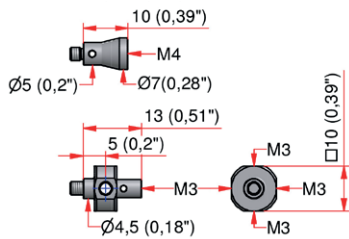
### M3 - Stylus adapters with break shaft



Length	Thread	Weight	Part number
15 (0.59'')	M3/M4	1,5 g	91.00-S-M3/M4
15 (0.59'')	M3/M3	1,4 g	21.00-S-M3/M3
4 (0.16'')	M3	0,6 g	21.00-S-M3

## M3 STYLI AND ACCESSORIES

### M3 - Accessories



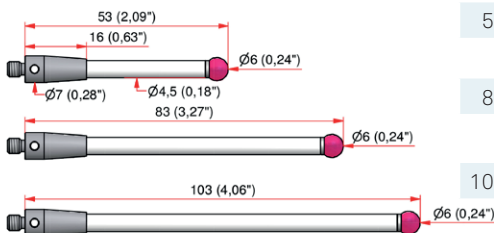
Adapter

5 way-  
stylus centre

Length	Thread	Weight	Part number
10 (0.39")	M3/M4	1,0 g	91.00-TA-M3/M4
13 (0.51")	M3	3,3 g	21.00-TK-M3

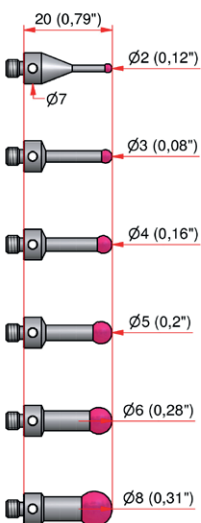
## M4 STYLI AND ACCESSORIES

### M4 - Styli with ceramic shaft and ruby ball



Length	Ball Ø	Weight	Part number
53 (2.09")	6 (0.24")	5,6 g	91.00-T53/6-KE-M4
83 (3.27")	6 (0.24")	7,0 g	91.00-T83/6-KE-M4
103 (4.06")	6 (0.24")	8,7 g	91.00-T103/6-KE-M4

### M4 - Styli with stainless steel shaft and ruby ball

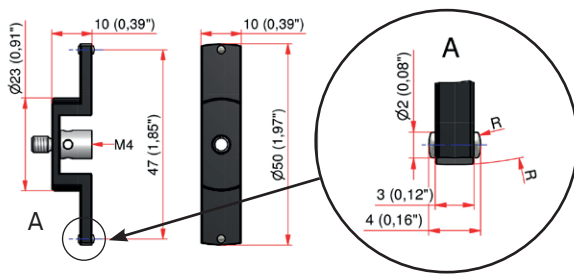


Length	Ball Ø	Weight	Part number
20 (0.79")	2 (0.12")	2,3 g	91.00-T20/2-ST-M4-D7
20 (0.79")	3 (0.08")	2,0 g	91.00-T20/3-ST-M4-D7
20 (0.79")	4 (0.16")	2,2 g	91.00-T20/4-ST-M4-D7
20 (0.79")	5 (0.2")	2,5 g	91.00-T20/5-ST-M4-D7
20 (0.79")	6 (0.28")	3,1 g	91.00-T20/6-ST-M4-D7
20 (0.79")	8 (0.31")	4,1 g	91.00-T20/8-ST-M4-D7

## M4 STYLI AND ACCESSORIES

### M4 - Disc styli (Ø50)

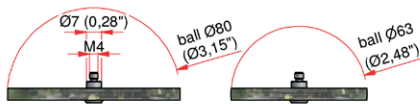
Material: Steel



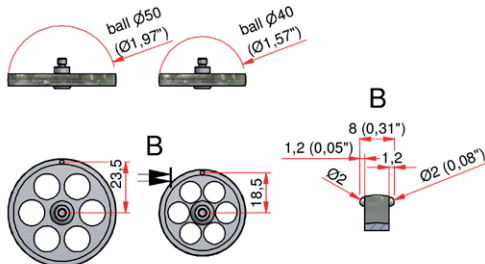
Thread	Weight	Part number
M4/M4	16,1 g	91.00-TS-ST-M4
M4/M3	16,1 g	91.00-TS-ST-M4/M3

### M4 - Ball Disc Styli

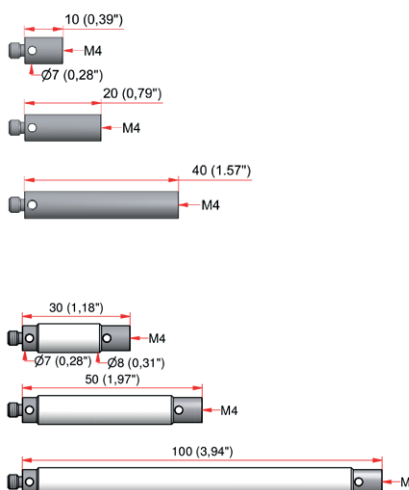
Material: Stainless steel



Radius	Ball Ø	Weight	Part number
38,5	80 (3.15")	67 g	91.00-TS80-ST-M4
30	63 (2.48")	11,9 g	91.00-TS63-ST-M4
23,5	50 (1.97")	34 g	91.00-TS50-ST-M4
18,5	40 (1.57")	24 g	91.00-TS40-ST-M4



### M4 - Stylus extensions

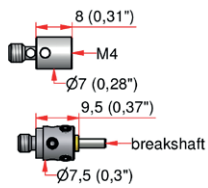


Length	Material	Weight	Part number
10 (0.39")	Stainl. steel	2,7 g	91.00-TV10-ST-M4-D7
20 (0.79")	Stainl. steel	5,2 g	91.00-TV20-ST-M4-D7
40 (1.57")	Stainl. steel	11,4 g	91.00-TV40-ST-M4-D7
30 (1.18")	Ceramic	6,7 g	91.00-TV30-KE-M4
50 (1.97")	Ceramic	8,9 g	91.00-TV50-KE-M4
100 (3.94")	Ceramic	13,8 g	91.00-TV100-KE-M4



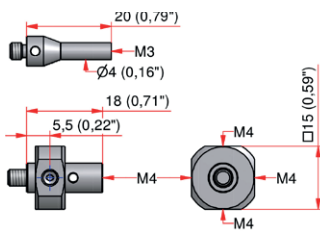
## M4 STYLI AND ACCESSORIES

### M4 - Stylus adapters with break shaft



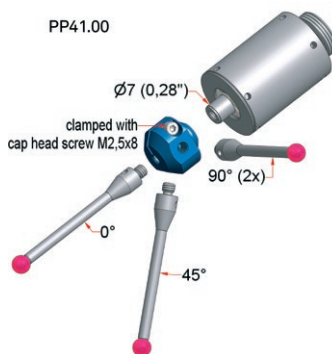
Length	Thread	Weight	Part number
8 (0,31'')	M4/M4	1,9 g	91.00-S-M4/M4
9,5 (0,37'')	M4	3,3 g	91.00-S-M4

### M4 - Accessories

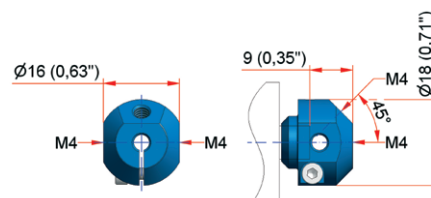


	Length	Thread	Weight	Part number
Adapter	20 (0,79'')	M4/M3	2,8 g	91.00-TA-M4/M3
5 Way-stylus centre	18 (0,71'')	M4	11,9 g	91.00-TK-ST-M4

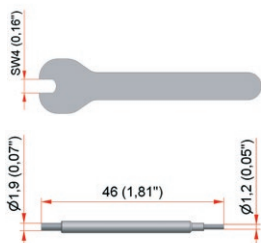
### M4 - Clamp adapter (Ø7)



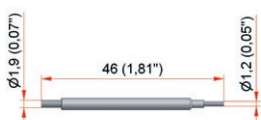
Thread	Weight	Part number
M4 (4x)	6,3 g	41.00-KM-M4



### Mounting tools



Mounting tools	Thread	Part number
Spanner AF4mm	M3	#1665



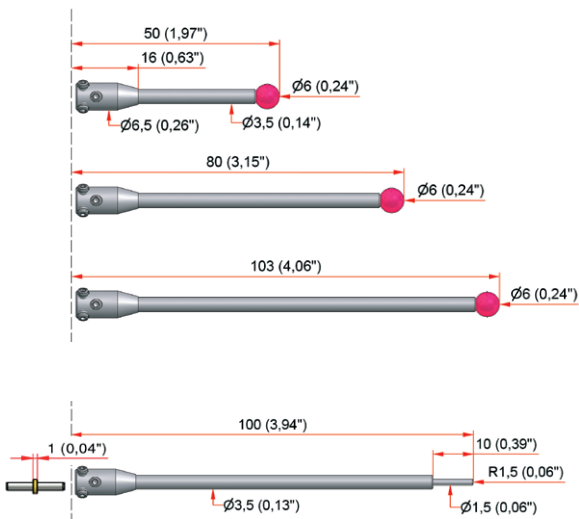
Mounting pin	M2/M3/M4	#0885
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Mounting tool for break shaft connections		
Hexagon key AF 1.3mm	Break shaft	#0227

# STYLI AND ACCESSORIES WITH BREAK SHAFT CONNECTION

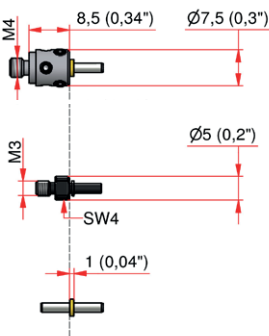
## Styli with stainless steel shaft, ruby ball for workpiece measurement



Length	Ball Ø	Weight	Part number
50 (1.97'')	6 (0.24'')	5,7 g	91.00-T50/6
80 (3.15'')	6 (0.24'')	8,1 g	91.00-T80/6
103 (4.06'')	6 (0.24'')	9,8 g	91.00-T103/6

Length	Stylus tip Ø	
100 (3.94'')	1,5 (0.51'')	91.00-T100/R1,5
with Break shaft 91.00-S		

## Break shaft adapters / Break shaft



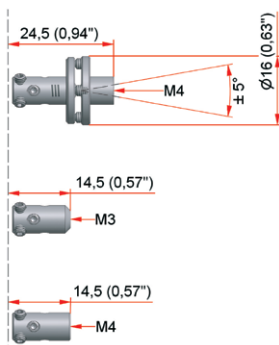
Adapter with break shaft

Adapter with break shaft

Break shaft

Length	Thread	Weight	Part number
8,5 (0.34'')	M4	3,3 g	91.00-S-M4
4 (0.16'')	M3	0,6 g	21.00-S-M3
		0,6 g	91.00-S

## Accessories with break shaft connection



Indination adapter

Adapter

Adapter

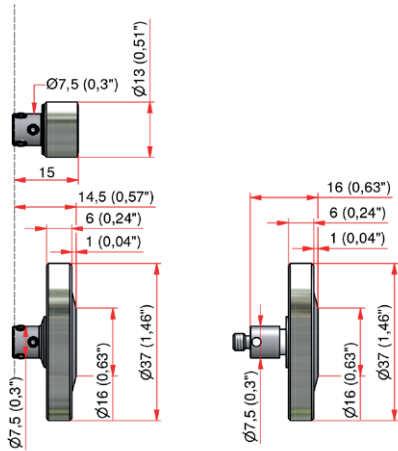
Length	Thread	Weight	Part number
24,5 (0.94'')	M4	9,5 g	91.00-NA
14,5 (0.57'')	M3	2,6 g	91.00-TA-M3
14,5 (0.57'')	M4	2,7 g	91.00-TA-M4



## STYLI AND ACCESSORIES FOR TOOL SETTING

### Cylindrical styli of tungsten carbide with break shaft connection

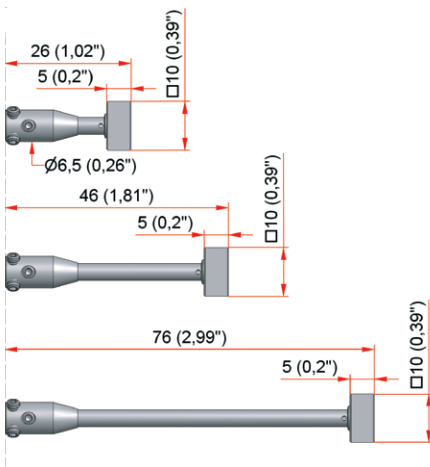
for measuring rotating tools



Length	Cylinder Ø	Weight	Part number
15 (0.59'')	13 (0.51'')	9,8 g	91.00-D13/24,5
14,5 (0.57'')	37 ( 1.46'')	40,0 g	35.10-D37/24
16 (0.63'')	37 ( 1.46'')	40,0 g	35.10-D37/16-M4

### Square styli of tungsten carbide with break shaft connection

for measuring of non rotating tools

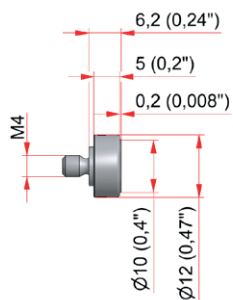


Length	Square	Weight	Part number
26 (1.02'')	10x10x5	11,9 g	21.00-WM26
46 (1.81'')	10x10x5	14,2 g	21.00-WM46
76 (2.99'')	10x10x5	14,6 g	21.00-WM76

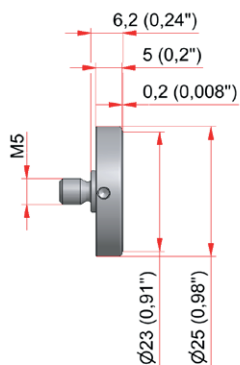
## STYLI AND ACCESSORIES FOR TOOL SETTING

### Cylindrical styli of tungsten carbide without break shaft connection

for measuring of non rotating tools

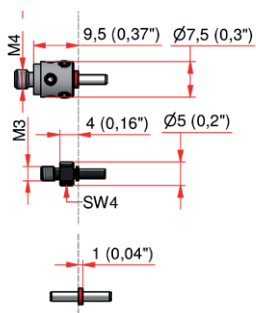


Anschluss	Length	Cylinder Ø	Weight	Part number
M4	15 (0.59'')	12 (0.47'')	5,4 g	35.35-D10



M5	14,5 (0.57'')	25 (0,98'')	24,8 g	35.30-D23
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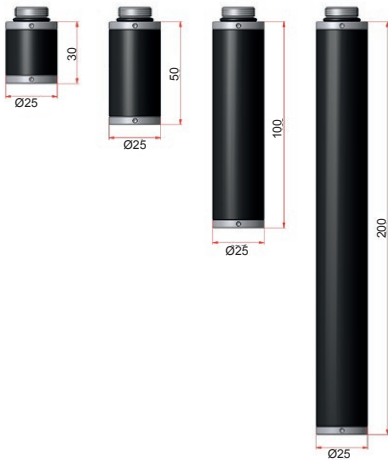
### Break shaft adapters / Break shaft



	Length	Thread	Weight	Part number
Adapter with break shaft - High force	9,5 (0.37'')	M4	3,3 g	91.00-S-M4-HF
Adapter with break shaft	4 (0.16'')	M3	0,6 g	21.00-S-M3
Break shaft - High force			0,6 g	91.00-S-HF

## MEASURING UNIT EXTENSIONS

### Measuring unit extensions in carbon



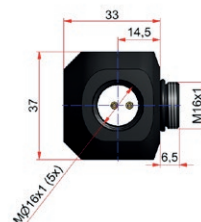
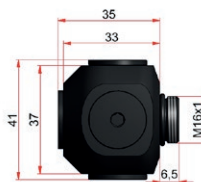
Length	Thread	Diameter Ø	Part number
30 (1.18")	M16x1	25 (0.98")	41.00-VE30
50 (1.97")	M16x1	25 (0.98")	41.00-VE50
100 (3.94")	M16x1	25 (0.98")	41.00-VE100
200 (7.87")	M16x1	25 (0.98")	41.00-VE200

### Cross adapter

screwed up to 5 production probes



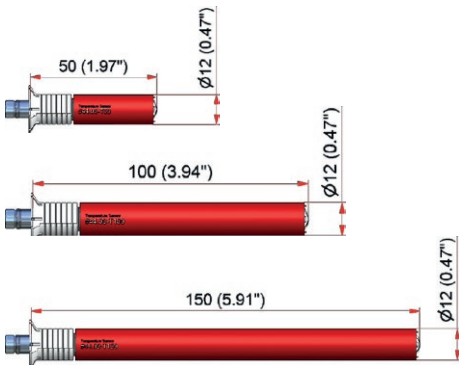
Description	Thread	Part number
Cross adapter with Screw plugs (4x)	M 16x1	41.00-KA
Screw plug	M 16x1	41.00-KA-V



plug screw

## TEMPERATURE SENSORS

### Temperature Sensors



Length	Diameter Ø	Part number
50 (1.97")	12 (0.47")	44.00-T50
100 (3.94")	12 (0.47")	44.00-T100
150 (5.91")	12 (0.47")	44.00-T150

## PROBE-EXTENSIONS

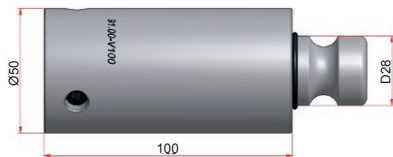
### Probe-Extensions in stainless steel



Length	Thread	Diameter Ø	Part number
50 (1.97")	D28	50 (1.97")	91.00-V50



75 (2.96")	D28	50 (1.97")	91.00-V75
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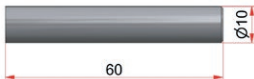


100 (3.94")	D28	50 (1.97")	91.00-V100
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## CALIBRATION EQUIPMENT

### Calibration pin for Tool Setters

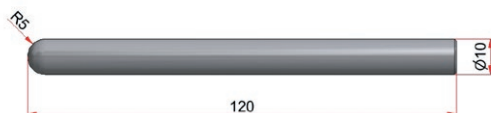
high-alloy stainless steel; hardened



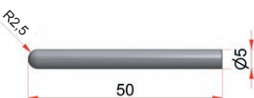
Length	Diameter Ø	Part number
60 (2.36")	10 (0.39")	35.20-CP

### Calibration Pins for Laser Tool Setters

high-alloy stainless steel; hardened



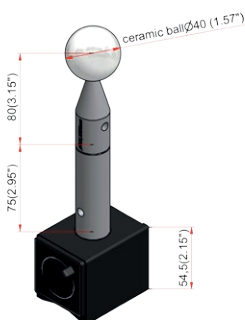
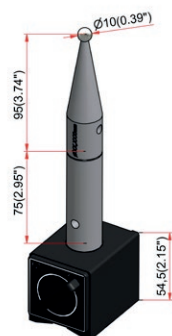
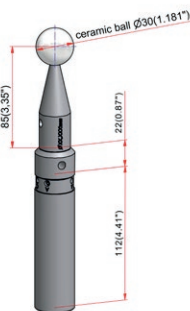
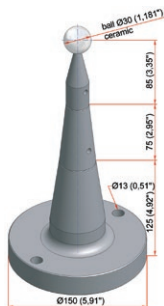
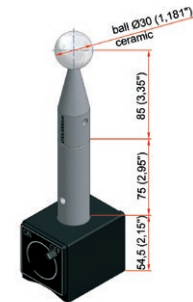
Length	Diameter Ø	Part number
120 (4.72")	10 (0.39")	#4286



50 (1.97")	5 (0.19")	#5209
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# CALIBRATION EQUIPMENT

## Calibration Ball Sets



### Description

### Part number

Calibration Ball SET 1

3D-FI EICHKUGEL SET 1

Magnetic base for calibration ball

Extension (75mm/2.95") for magnetic base

Calibration ball D=30mm (1.18"), L=100mm (3.9")

Measurement certificate for ball diameter

Mounting pin D6x80

Storage box

Calibration Ball SET 2

3D-FI EICHKUGEL SET 2

Calibration Ball SET 1

Calibration stand L=125mm (4.92")

Extension (75mm/2.95") for calibration stand

Plastic case

Calibration Ball SET 3

3D-FI EICHKUGEL SET 3

Calibration Ball SET 1

Cylindrical shaft with adapter L=134mm (5.28")

Calibration Ball SET 4

3D-FI EICHKUGEL SET 4

Magnetic base for calibration ball

Extension (75mm/2.95") for magnetic base

Calibration ball D=10mm (0.39"), L=100mm (3.9")

Measurement certificate for ball diameter

Mounting pin D6x80

Storage box

Calibration Ball SET 5

3D-FI EICHKUGEL SET 5

Magnetic base for calibration ball

Extension (75mm/2.95") for magnetic base

Calibration ball D=40mm (1.57"), L=100mm (3.9")

Measurement certificate for ball diameter

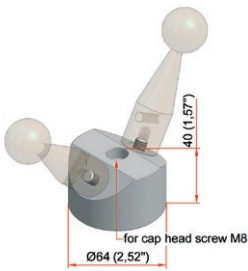
Mounting pin D6x80

Storage box

## CALIBRATION EQUIPMENT

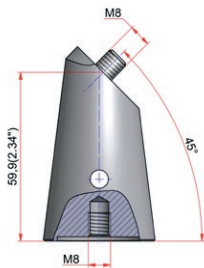
### Support base for calibration balls

Delivered without balls.



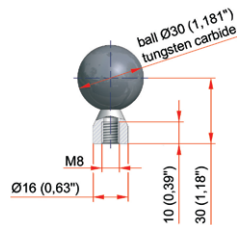
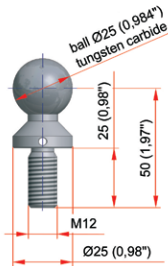
Base Ø	Base height	Angle	Part number
64 (2.52")	40 (1.57")	45° und 60°	3D-FI SUPPORT BASE

### Extension for Calibration Ball Set 2



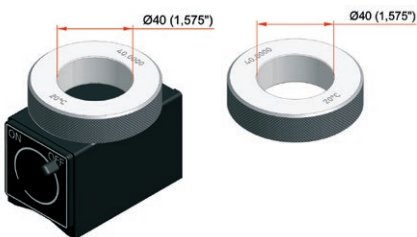
Base height	Angle	Thread	Part number
59,9 (2.34")	45°	M8	3D-FI EXTENSION 45

### Calibration balls of tungsten carbide



Ball Ø	Thread	Part number
25 (0.98")	M12 (External thread)	#2675
30 (1.18")	M8 (Internal thread)	#3468

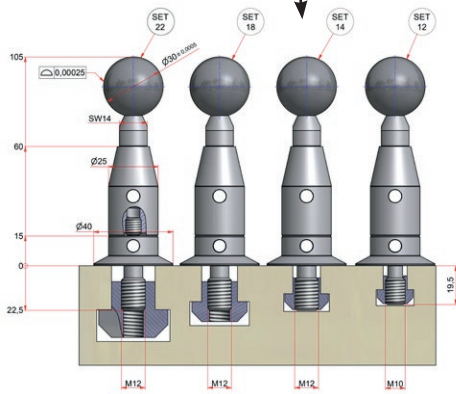
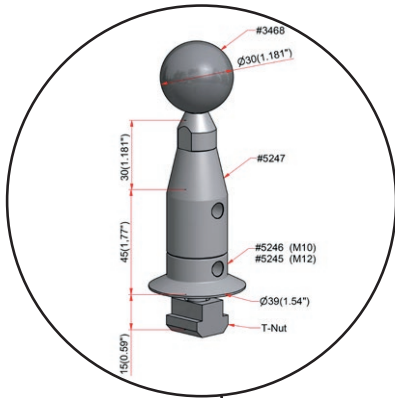
### Calibration Rings



Ring Ø	Base height	Part number
40 (1.575")	55 (2.17")	91.00-CR-M
40 (1.575")		91.00-CR

# CALIBRATION EQUIPMENT

## Calibration Sets for T-Nuts



### Description

Calibrierset for T-Nut 12mm

### T-Nut

12mm (0.47")

### Part number

CALIBRATION SET 12

Calibration ball Ø30mm (1.18") #3468

Mounting pin #5250

Storage box #5251

### Description

Calibrierset for T-Nut 14mm

### T-Nut

14mm (0.55")

### Part number

CALIBRATION SET 14

Calibration ball Ø30mm (1.18") #3468

Mounting pin #5250

Storage box #5251

### Description

Calibrierset for T-Nut 18mm

### T-Nut

18mm (0.70")

### Part number

CALIBRATION SET 18

Calibration ball Ø30mm (1.18") #3468

Mounting pin #5250

Storage box #5251

### Description

Calibrierset for T-Nut 22mm

### T-Nut

22mm (0.86")

### Part number

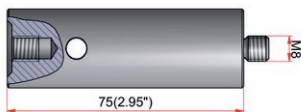
CALIBRATION SET 22

Calibration ball Ø30mm (1.18") #3468

Mounting pin #5250

Storage box #5251

## Extension for T-Nut Calibration Sets 12/14/18/22



### Length

75 (2.75")

### Diameter Ø

25 (0.98")

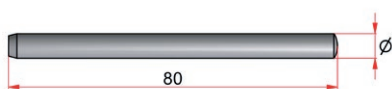
### Thread

M8

### Part number

#5248

## Accessories for T-Nut Calibration Sets



### Description

Mounting Pin D6x80

### Part number

#5250

The sizes of the illustrations do not correspond to the original sizes. Subject to technical alternation without prior notice.

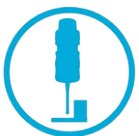


## Probing systems and software

m&h designs and manufactures precision made, highquality, dependable probe systems for use in machine tools.

Technical innovation focused on our customer's manufacturing processes lies at the heart of our development process.

As a part of Hexagon Metrology, m&h stands for innovative metrology for machine tools. [m&h – Part of Hexagon Metrology](#)



m&h PROBING SYSTEMS



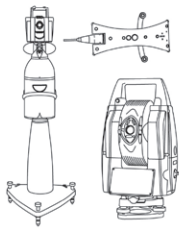
m&h LASER TOOL SETTERS



m&h TOOL SETTERS



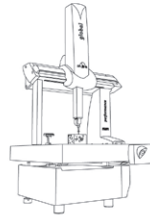
m&h MEASURING SOFTWARE



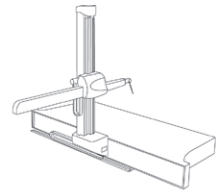
LASER TRACKERS  
& STATIONS



PORTABLE MEASURING ARMS



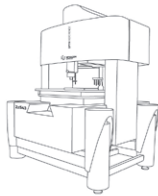
BRIDGE CMMs



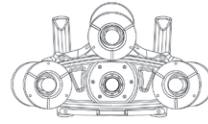
HORIZONTAL ARM CMMs



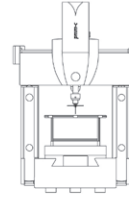
GANTRY CMMs



MULTISENSOR & OPTICAL SYSTEMS



WHITE LIGHT SCANNERS



ULTRA HIGH ACCURACY CMMs



SENSORS



PRECISION MEASURING  
INSTRUMENTS



SOFTWARE SOLUTIONS