

# Infrared Probe 25.41-HDR

## **OPERATING INSTRUCTIONS**

*(Translation of the original operating instructions)*

	<u>Page</u>
<b>System Components, Technical data, Dimensions</b>	<b>1</b>
<b>Stylus Change, Battery Replacement</b>	<b>2</b>
<b>Adjusting Stylus Runout</b>	<b>3</b>
<b>Optical Status Display, Adjusting Trigger force, Maintenance</b>	<b>4</b>
<b>Selecting transmission code</b>	<b>5</b>
<b>Different probe switch ON methods</b>	<b>6</b>
<b>Pullstuds</b>	<b>7</b>
<b>Measuring unit Extension</b>	<b>8</b>
<b>Probe Extension</b>	<b>9</b>
<b>Styli</b>	<b>10</b>
<b>Spare Parts, Accessories</b>	<b>11</b>



Precision at the workpiece

[www.mh-inprocess.com](http://www.mh-inprocess.com)

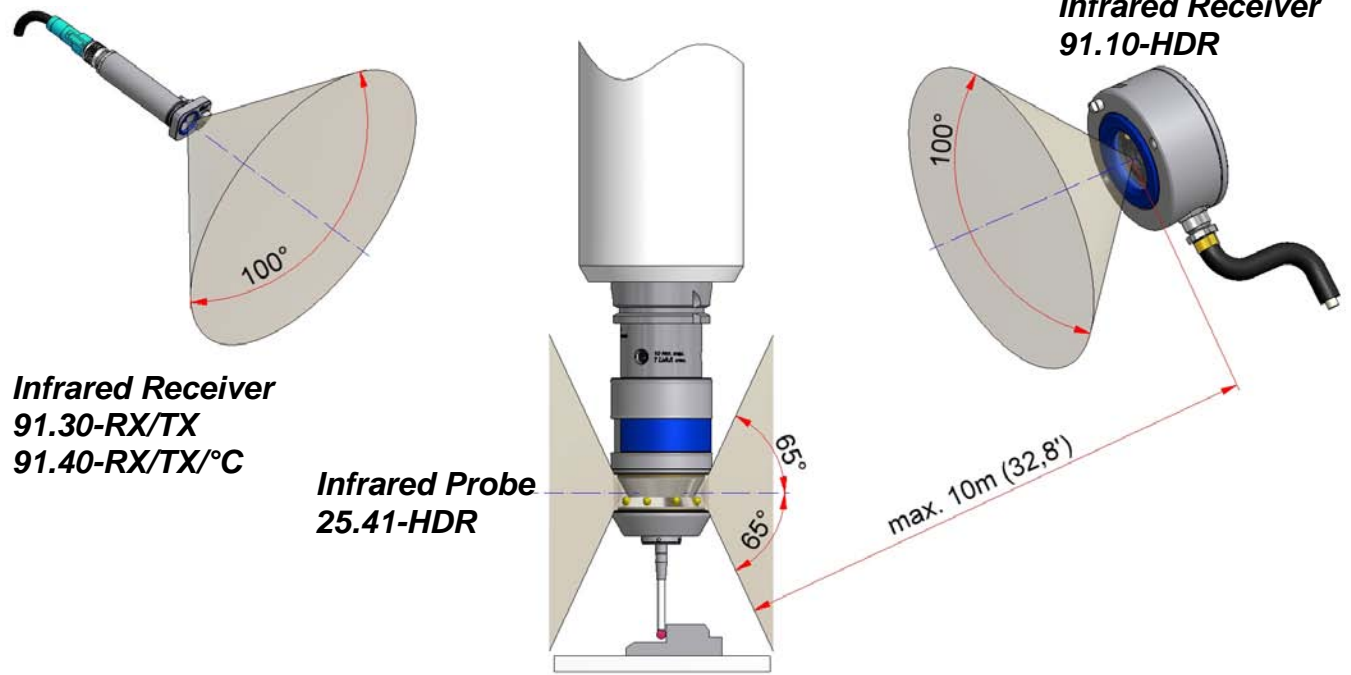
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BA2541-HDR-4910-WEST

Subject to change without notice

# Infrared Probe 25.41-HDR

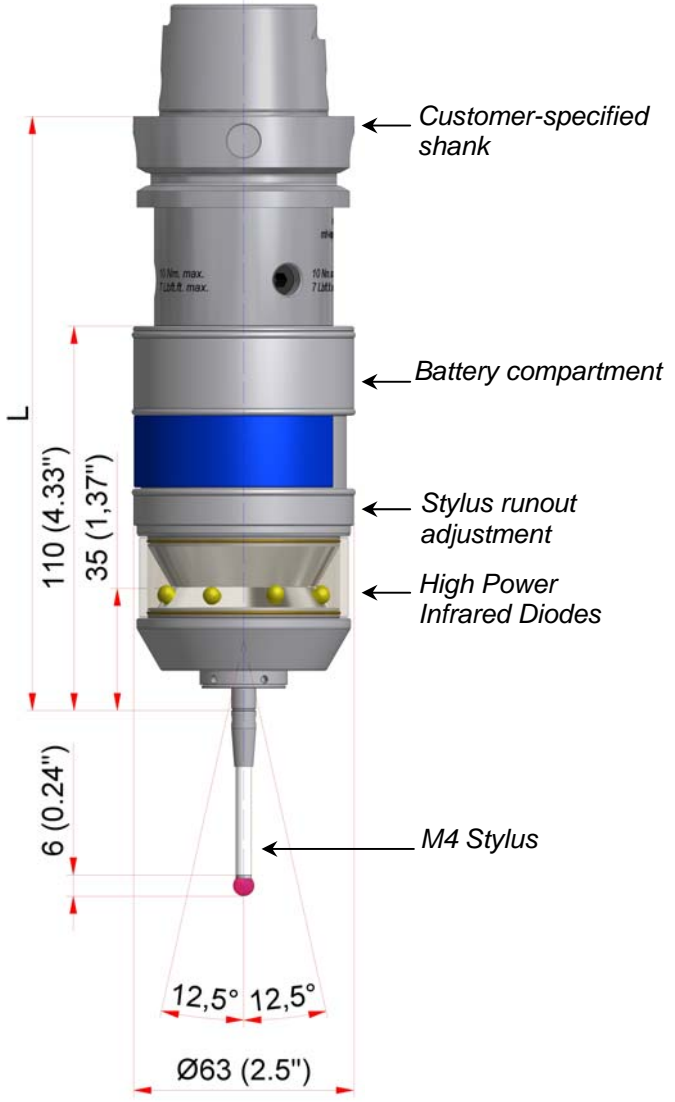
## System Components



## Technical Data

<u>Sensing Directions:</u>	$\pm X; \pm Y; -Z$
<u>Maximum Stylus Overtravel:</u>	$XY \pm 12,5; Z -6mm$
<u>Trigger Force with 50mm Stylus:</u>	$XY=0,3-1,4N; Z=2,5-12,5N$ adjustable
<u>Factory Settings:</u>	$XY=0,96N; Z=8,5N$
<u>Recommended Probing Speed:</u>	254mm/min – 2000mm/min
<u>Power Supply:</u>	1x 9V Battery Type PP3, Block, 6LR61 Lithium 1200 mAh Alkaline 550 mAh
<u>Continuous Measurement Time:</u>	Lithium / Alkaline
<u>Transmission power 85%:</u>	140h / 70h
<u>Transmission power 70%:</u>	180h / 90h
<u>Material:</u>	Stainless Steel
<u>Weight without Shank:</u>	ca. 1350g
<u>Temperature Range:</u>	Operating: 10° - 50°C Storage: 5° - 70°C
<u>Unidirectional Repeatability:</u>	max. 2Sigma $\pm 1\mu m$ with 50mm stylus at 254mm/min
<u>Guaranteed Life-time of Measuring Unit:</u>	10 million deflections
<u>Sealing:</u>	IP68: EN60529

## Dimensions



# Infrared Probe 25.41-HDR

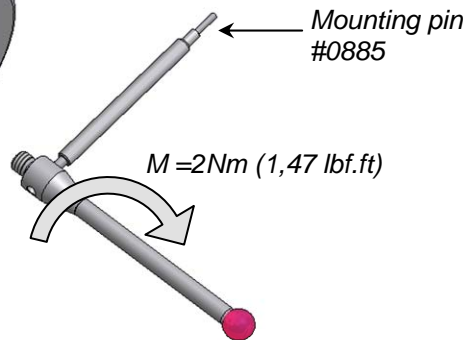
## Stylus Change



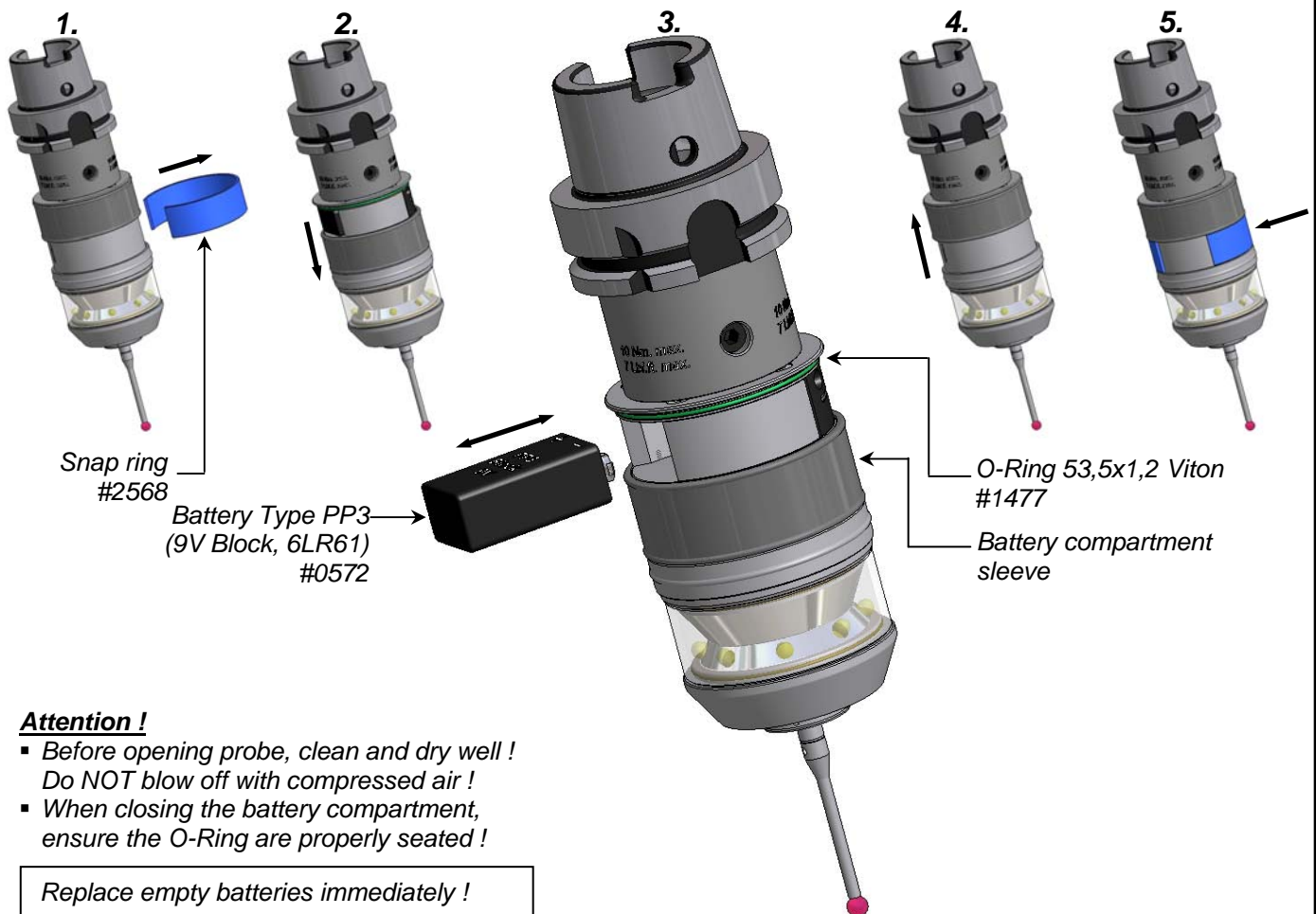
### **Attention !**

After changing the stylus:

- Align stylus to spindle centre
- Calibrate probe



## Battery Replacement



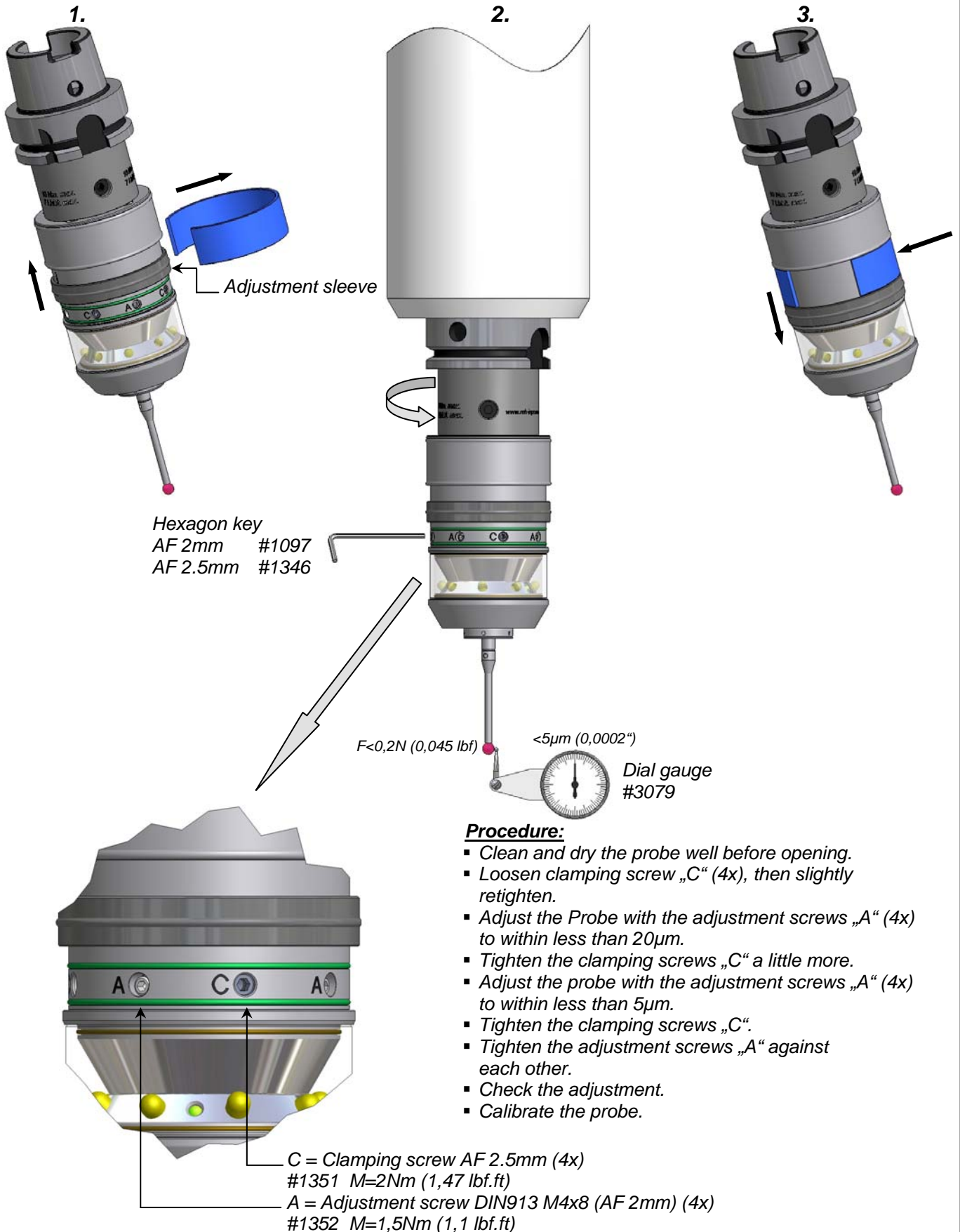
### **Attention !**

- Before opening probe, clean and dry well !  
Do NOT blow off with compressed air !
- When closing the battery compartment, ensure the O-Ring are properly seated !

Replace empty batteries immediately !

# Infrared Probe 25.41-HDR

## Aligning Stylus to Spindle Centre

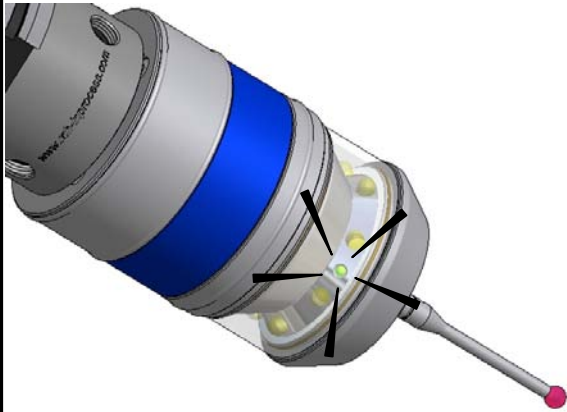


### **Procedure:**

- Clean and dry the probe well before opening.
- Loosen clamping screw „C“ (4x), then slightly retighten.
- Adjust the Probe with the adjustment screws „A“ (4x) to within less than 20µm.
- Tighten the clamping screws „C“ a little more.
- Adjust the probe with the adjustment screws „A“ (4x) to within less than 5µm.
- Tighten the clamping screws „C“.
- Tighten the adjustment screws „A“ against each other.
- Check the adjustment.
- Calibrate the probe.

# Infrared Probe 25.41-HDR

## Optical Status Display



### LED blinking green:

- Probe is transmitting signals

### LED blinking green / red:

- Low battery warning

### LED blinking orange:

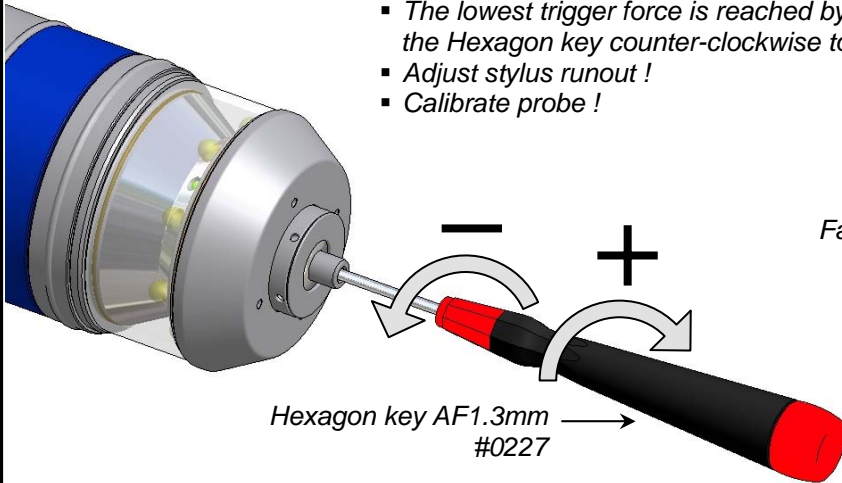
- Stylus deflected

## Adjusting Trigger Force (patented)

In case of strong machine vibrations or heavy styli it is recommended to increase probe trigger force.

### Attention !

- To adjust trigger force, remove stylus first !
- The lowest trigger force is reached by turning the Hexagon key counter-clockwise to its limit.
- Adjust stylus runout !
- Calibrate probe !



Hexagon key AF1.3mm #0227

Factory setting →

Turns from lowest force	Trigger force with 50mm stylus in N	
	Z	X/Y
min.0	2.5	0.30
1	3.5	0.41
2	4.5	0.52
3	5.5	0.63
4	6.5	0.74
5	7.5	0.85
6	8.5	0.96
7	9.5	1.07
8	10.5	1.18
9	11.5	1.29
max.10	12.5	1.40

## Maintenance

Service cover #3240  
with O-Ring 16x1 Viton #3455

Metal eyelid  
#2906

Conical spring  
#2931



Dirt may accumulate in the cavity underneath the metal eyelid seal.

### To clean :

- Remove service cover with eyelid and conical spring by hand.
- Clean probe and parts under running water.
- Replace parts and close probe by hand.
- Align stylus to spindle centre !
- Calibrate probe.

### Attention !

- Do NOT use compressed air or high pressure water to clean
- Do NOT use any sharp tools ! (these could damage the inner seal)

# Infrared Probe 25.41-HDR

## Transmission Code

(Set at factory)



### Procedure:

- Ensure the probe is off
- Clean and dry the probe well before opening  
**Attention:** Do NOT blow off with compressed air !
- Slide the battery compartment sleeve partially down, keeping the battery held in place
- Press „SELECT“-button until the display is on.
- Repeatedly press „SELECT“button until the requested configuration is indicated.
- Wait for the channel display to shut off after 5 sec.
- Close the battery compartment sleeve and ensure the O-Rings are properly seated

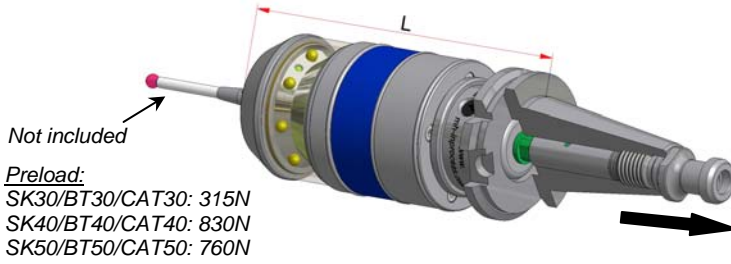


	Probe Type	Transmission Power	ON Delay Time	Activation Method
0.0.	m&h High Data Rate	85%	0,2s	AZ
0.1.	m&h High Data Rate	85%	0,2s	HSK / WS
0.2.	m&h High Data Rate	100%	0,2s	AZ
0.3.	m&h High Data Rate	100%	0,2s	HSK / WS
0.4.	m&h High Data Rate	70%	0,2s	AZ
0.5.	m&h High Data Rate	70%	0,2s	HSK / WS
0.6.	m&h standard 38kHz (red)	60%	0,2s	AZ
0.7.	m&h standard 38kHz (red)	60%	0,2s	HSK / WS
0.8.	m&h standard 38kHz (red)	65%	0,2s	AZ
0.9.	m&h standard 38kHz (red)	65%	0,2s	HSK / WS
1.0.	m&h old 30kHz (black)	62%	0,2s	AZ
1.1.	m&h old 30kHz (black)	62%	0,2s	HSK / WS
1.2.	TS 640 - SE640 - SE540	100%	0,2s	AZ
1.3.	TS 640 - SE640 - SE540	100%	0,2s	HSK / WS
1.4.	TS 632 - EA550	100%	0,2s	AZ
1.5.	TS 632 - EA550	100%	0,2s	HSK / WS
1.6.	MP 3	100%	4,0s	AZ
1.7.	MP 3	100%	4,0s	HSK / WS
1.8.	MP 8/10/12/40/700 (6 Bit)	100%	0,5s	AZ
1.9.	MP 8/10/12/40/700 (6 Bit)	100%	0,5s	HSK / WS
2.0.	MP 7/9 (6 Bit)	100%	4,0s	AZ
2.1.	MP 7/9 (6 Bit)	100%	4,0s	HSK / WS
2.2.	MP 10/40/700 (8 Bit)	100%	0,5s	AZ
2.3.	MP 10/40/700 (8 Bit)	100%	0,5s	HSK / WS
2.4.	Italy Infrared TG60	100%	0,5s	AZ
2.5.	Italy Infrared TG60	100%	0,5s	HSK / WS
2.6.	OMI-2 / OMI-2C	100%	1,0s	AZ
2.7.	OMI-2 / OMI-2C	100%	1,0s	HSK / WS

Other transmission codes upon request

# Infrared Probe 25.41-HDR

## Activation Method – AZ (patented)



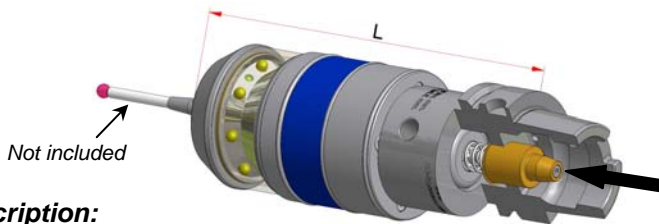
### Description:

This is a mechanical activation method.  
The probe is activated by tension on the pullstud.

Available Shanks:	L:	Order Number:
DIN69871-SK30	148 (5.83")	25.41-SK30-XX-AZ
DIN69871-SK30-Mube	148 (5.83")	25.41-SK30-Mube-XX-AZ
DIN69871-SK40	150 (5.91")	25.41-SK40-XX-AZ
DIN69871-SK50	150 (5.91")	25.41-SK50-XX-AZ
DIN69871-SK60	170 (6.69")	25.41-SK60-XX-AZ
DIN2080-SK50	146 (5.75")	25.41-DIN2080-SK50-XX-AZ
BT30	148 (5.83")	25.41-BT30-XX-AZ
BT40	150 (5.91")	25.41-BT40-XX-AZ
BT50	165 (6.5")	25.41-BT50-XX-AZ
CAT40	150 (5.91")	25.41-AN40-XX-AZ
CAT50	150 (5.91")	25.41-AN50-XX-AZ
Nikken-NC5-46	169 (6.65")	25.41-NC5-46-AZ
Nikken-NC5-63	169 (6.65")	25.41-NC5-63-AZ
Other shanks upon request		

XX = Type of pullstud (see next page)

## Activation Method – HSK

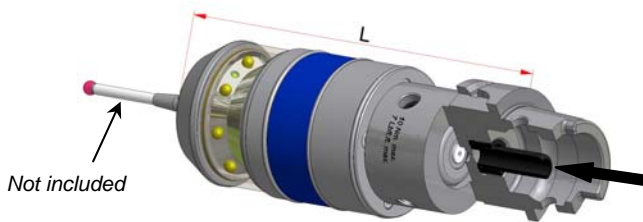


### Description:

This is a mechanical activation method.  
There is a mechanical switch inside the HSK to activate the probe.  
When inside the spindle, the probe is on, inside the magazine the probe is off.

Available Shanks:	L:	Order Number:
DIN69893-HSK-A50	170 (6.69")	25.41-HSK50A-ME
DIN69893-HSK-A63	170 (6.69")	25.41-HSK63A-ME
DIN69893-HSK-A80	175 (6.89")	25.41-HSK80A-ME
DIN69893-HSK-A100	175 (6.89")	25.41-HSK100A-ME
DIN69893-HSK-E50	170 (6.69")	25.41-HSK50E-ME
DIN69893-HSK-E63	170 (6.69")	25.41-HSK63E-ME
Other shanks upon request		

## Activation Method – WS (patented)



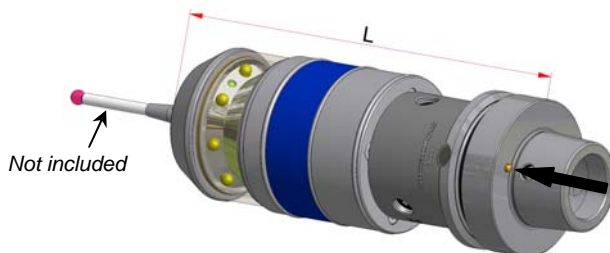
Preload: 30N

### Description:

For all machines with programmable through-spindle coolant or air blast >3.5bar (50psi).  
The probe will be activated by the M-Code used for either coolant or air blast.  
Probe is active until either command is switched off.

Available Shanks:	L:	Order Number:
DIN69871-SK30	148 (5.83")	25.41-SK30-WS
DIN69871-SK30-Mube	148 (5.83")	25.41-SK30-Mube-WS
DIN69871-SK40	150 (5.91")	25.41-SK40-WS
DIN69871-SK50	150 (5.91")	25.41-SK50-WS
DIN69871-SK60	170 (6.69")	25.41-SK60-WS
DIN2080-SK50	146 (5.75")	25.41-DIN2080-SK50-WS
BT30	148 (5.83")	25.41-BT30-WS
BT40	150 (5.91")	25.41-BT40-WS
BT50	165 (6.5")	25.41-BT50-WS
CAT40	150 (5.91")	25.41-AN40-WS
CAT50	150 (5.91")	25.41-AN50-WS
DIN69893-HSK-A63	170 (6.69")	25.41-HSK63A-WS
DIN69893-HSK-F63	175 (6.89")	25.41-HSK63F-WS
DIN69893-HSK-A80	175 (6.89")	25.41-HSK80A-WS
DIN69893-HSK-A100	175 (6.89")	25.41-HSK100A-WS
Coromant Capto C5	175 (6.89")	25.41-C5-WS
Coromant Capto C6	175 (6.89")	25.41-C6-WS
Coromant Capto C8	175 (6.89")	25.41-C8-WS
Nikken-NC5-46	169 (6.65")	25.41-NC5-46-WS
Nikken-NC5-63	169 (6.65")	25.41-NC5-63-WS
Kennametal KM63	175 (6.89")	25.41-KM63-WS
Kennametal KM80	175 (6.89")	25.41-KM80-WS
Other shanks upon request		

## Activation Method – PS



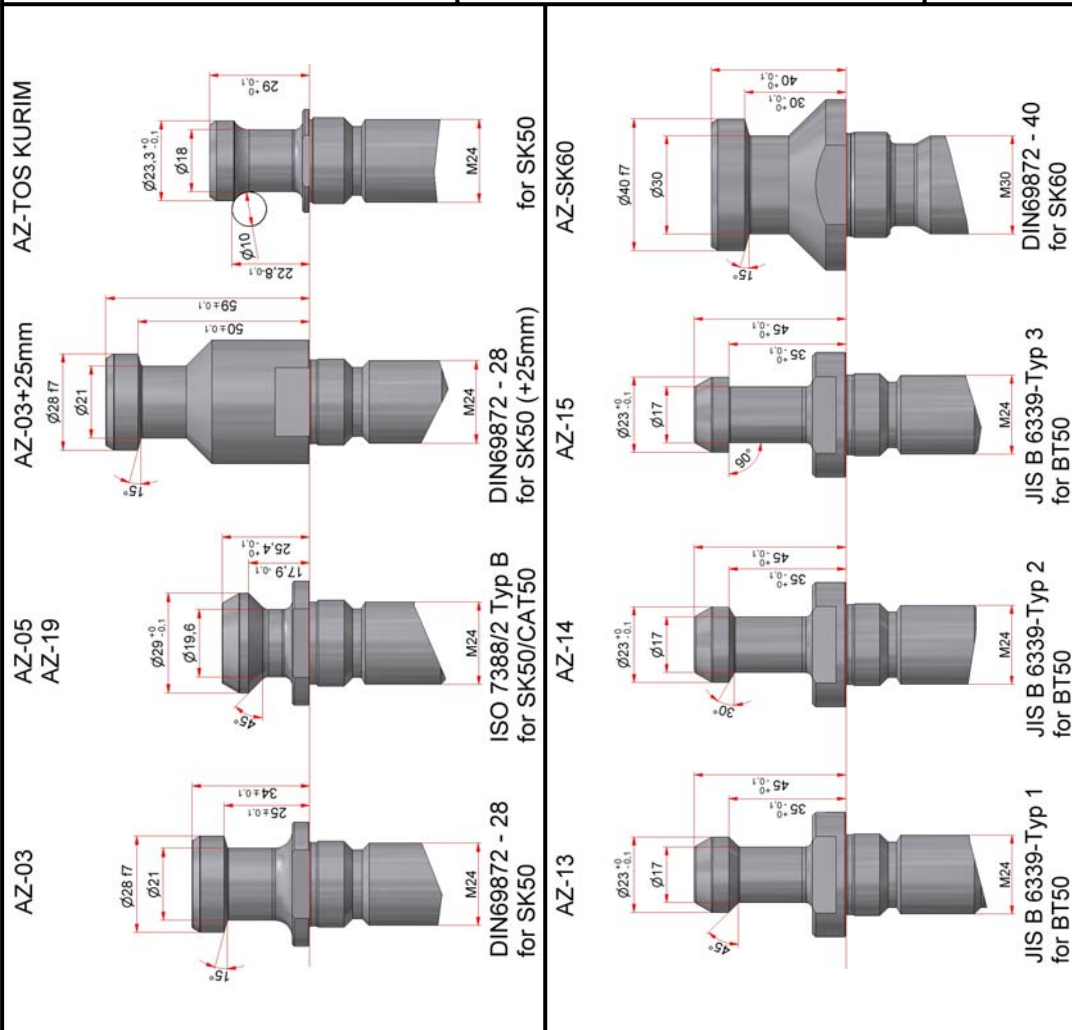
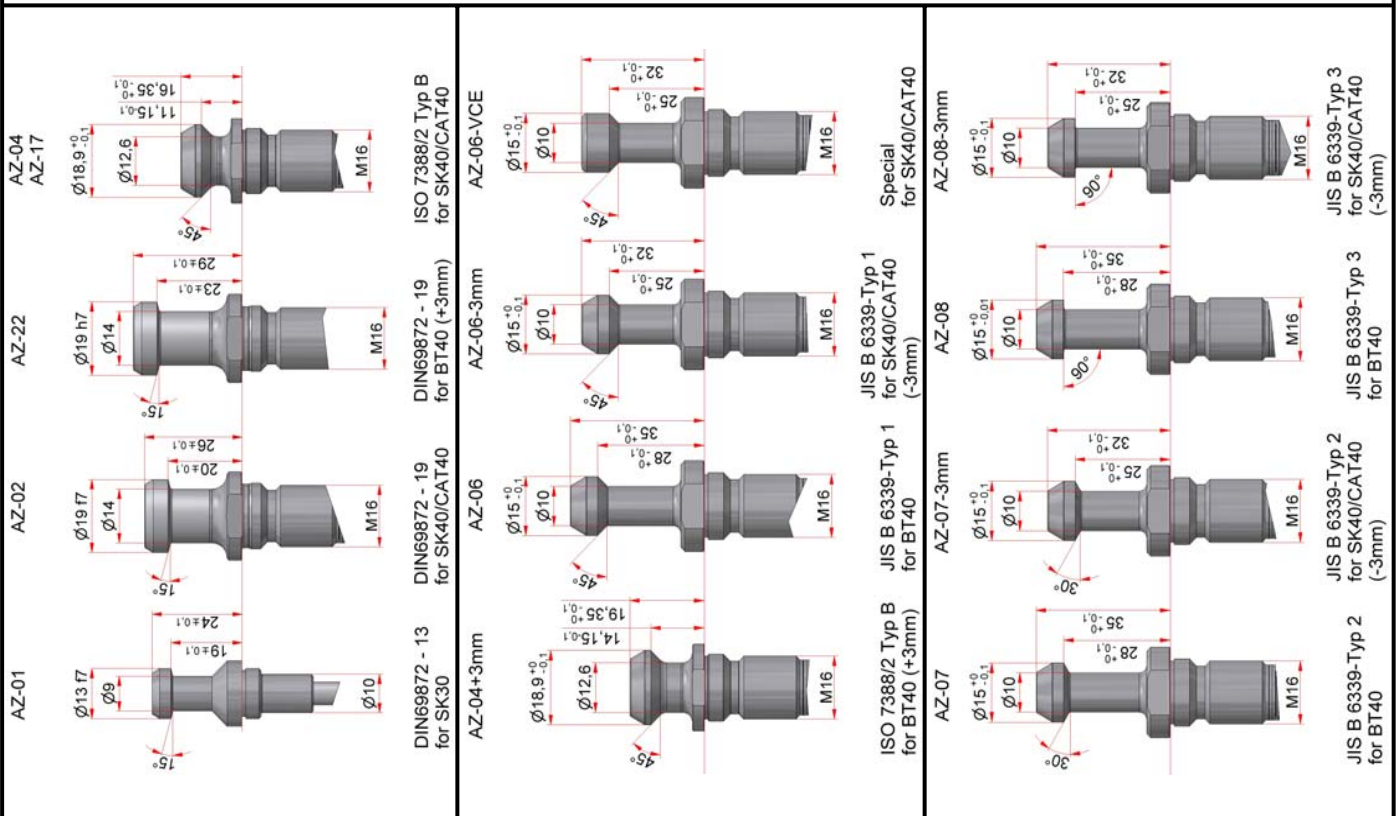
### Description:

For all machines with HSK shanks. The probe is activated by a mechanical switch on the planar face of the HSK.  
When the probe is in the Spindle, the switch is depressed and the probe activated.

Available Shanks:	L:	Order Number:
DIN69893-HSK-F63	175 (6.89")	25.41-HSK63F-PS
Coromant Capto C5	175 (6.89")	25.41-C5-PS
Coromant Capto C6	175 (6.89")	25.41-C6-PS
Coromant Capto C8	175 (6.89")	25.41-C8-PS
Kennametal KM63	175 (6.89")	25.41-KM63-PS
Kennametal KM80	175 (6.89")	25.41-KM80-PS
Other shanks upon request		

# Infrared Probe 25.41-HDR

## Pullstuds

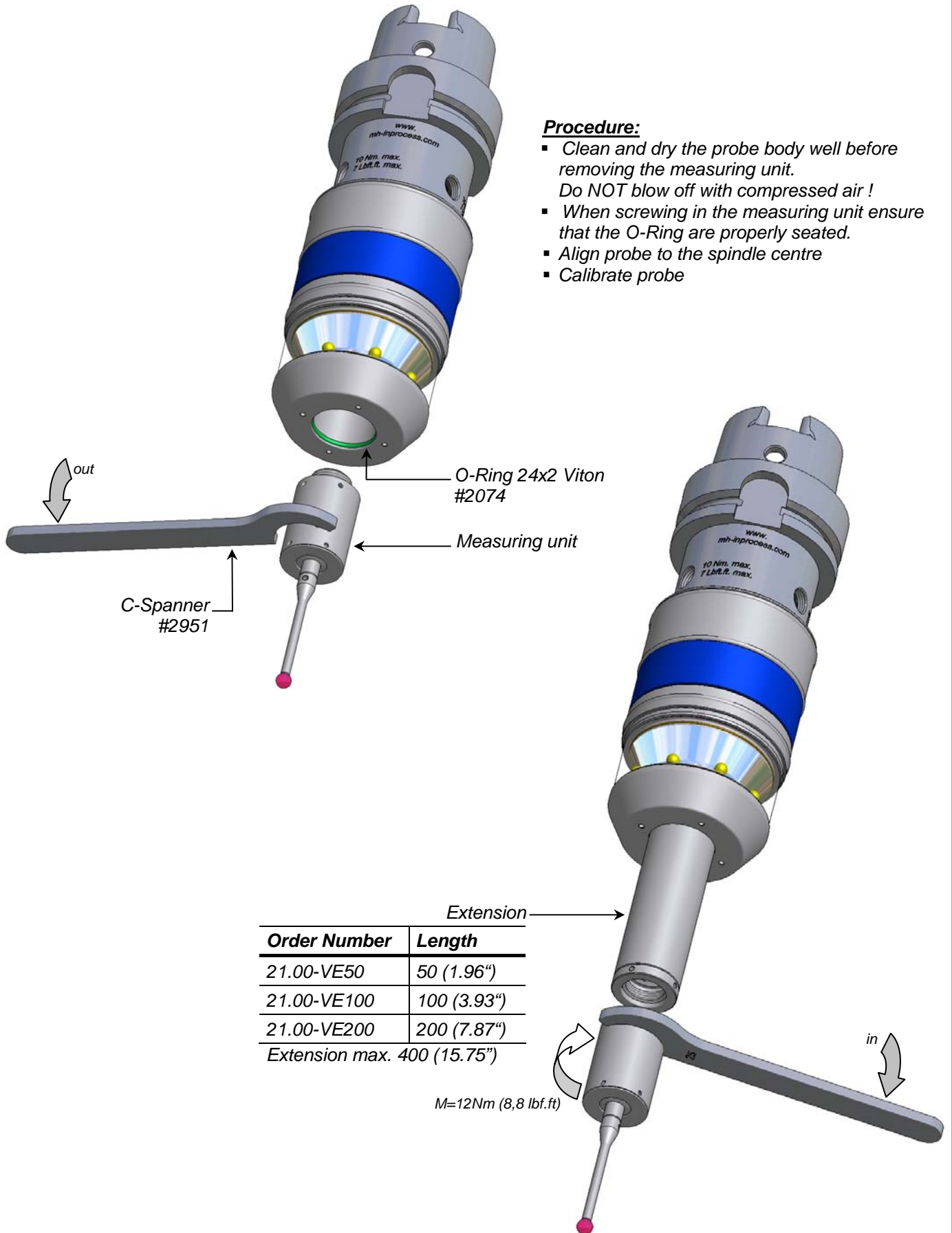


Others available upon request.  
Please send two examples!



# Infrared Probe 25.41-HDR

## Measuring Unit Extension



# Infrared Probe 25.41-HDR

## Probe Extension

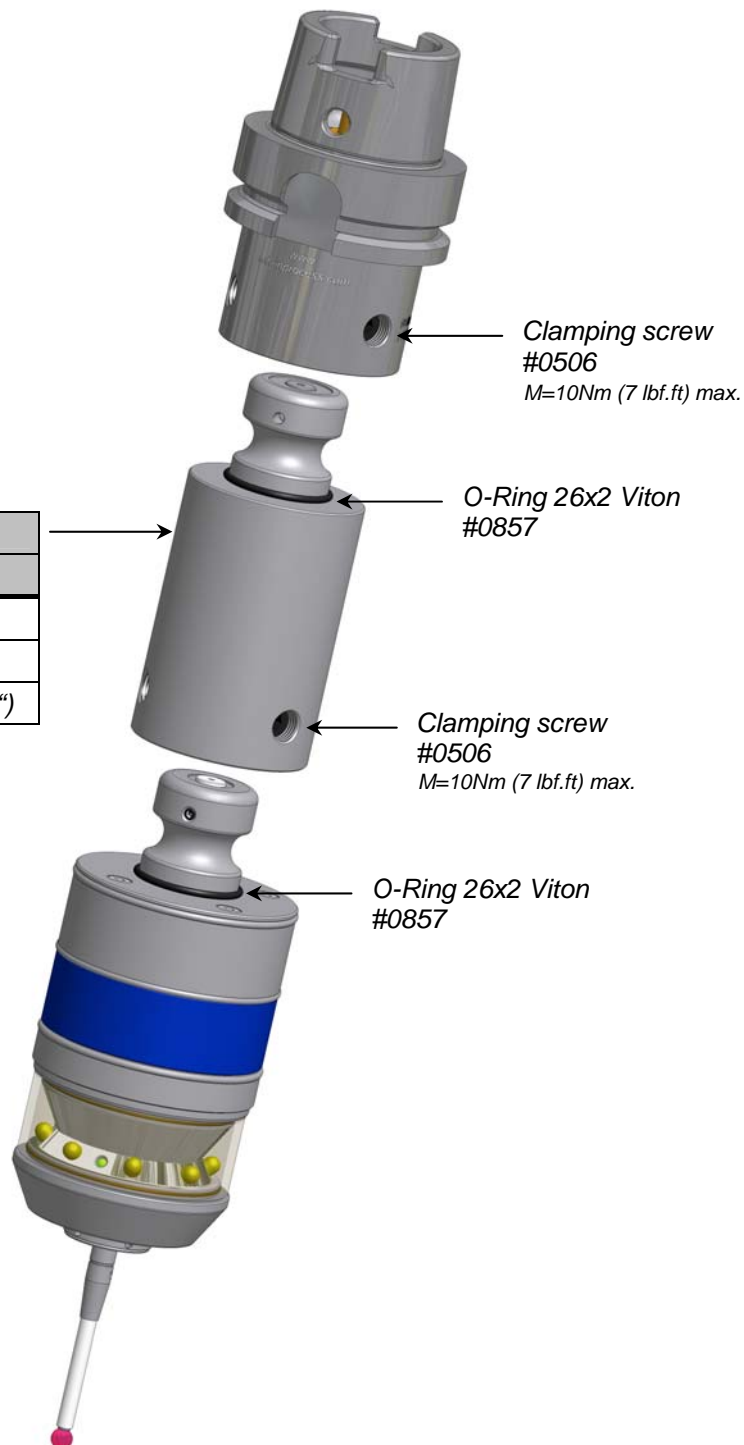
### Probe Extension only possible with:

- Activation Method – AZ
- Activation Method – HSK
- Activation Method – WS

### Attention !

- Before removing the probe clean and dry the probe well.  
Do NOT blow off with compressed air !
- When assembling the extension and the probe, ensure the O-Rings are properly seated.
- Align probe to the spindle centre.
- Calibrate probe.

Probe Extension	
Order Number	Length
91.00-V50	50 (1.97")
91.00-V75	75 (2.95")
91.00-V100	100 (3.94")

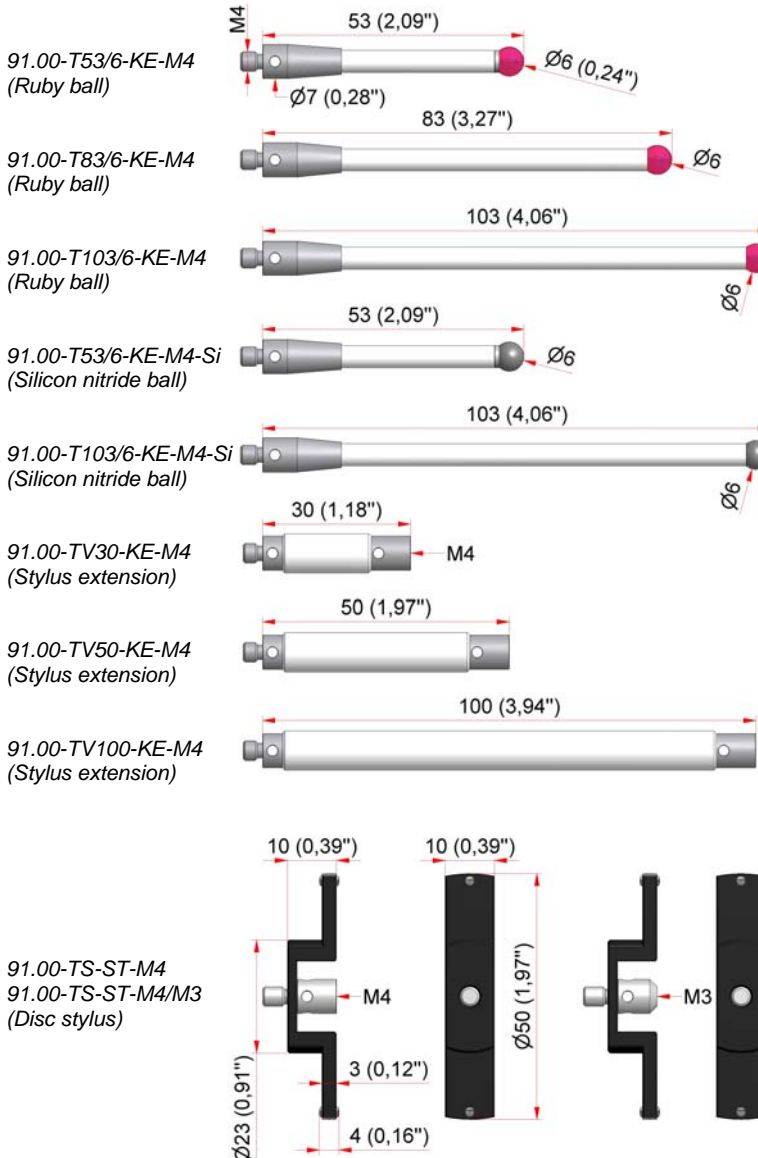


# Infrared Probe 25.41-HDR

## M4-Styli, Shaft-Ø7

All styli with ceramic shaft

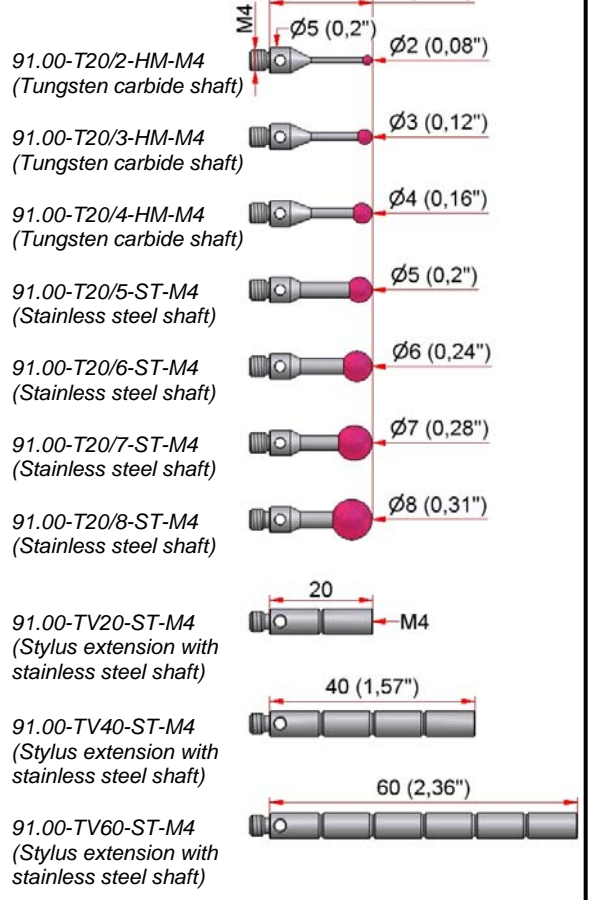
**Order Number:**



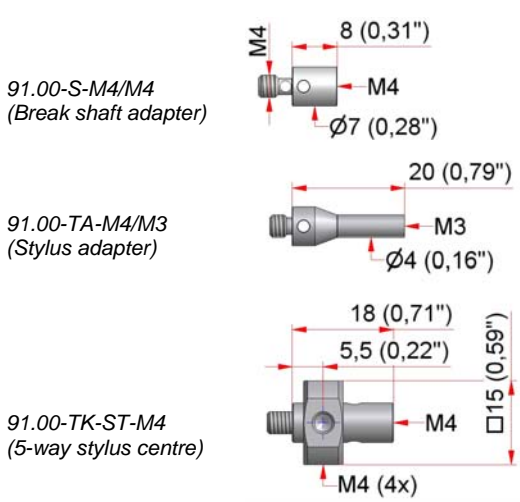
## M4-Styli, Shaft-Ø5

All styli with ruby ball

**Order Number:**



## Accessories



## Clamp Adapter M4














Other styli available on request.







# Infrared Probe 25.41-HDR

## Spare Parts, Accessories

### Probe Parts







Order Number	Description	
#0572	Battery Type PP3 (9V Block, 6LR61)	
#2568	Snap ring	
#1477	O-Ring 53,5x1,2 Viton	
#1351	Clamping screw AF2.5mm	
#1352	Adjustment screw DIN913 M4x8 (AF2mm)	
#0506	Clamping screw	
#3240	Service cover	
#3455	O-Ring 16x1 Viton for service cover	
#2906	Metal eyelid	
#2931	Conical spring	
#2074	O-Ring 24x2 Viton	

### Tools

Order Number	Description	
#0227	Hexagon key AF1.3mm	
#1346	Hexagon key AF2.5mm	
#1097	Hexagon key AF2mm	
#2951	C-Spanner	
#0885	Mounting pin	
#3079	Dial gauge	
25.41-TB	<b>Toolbox:</b> 1x Battery Type PP3 (9V Block, 6LR61) #0572 1x Hexagon key AF2.5mm #1346 2x Hexagon key AF2mm #1097 1x Hexagon key AF1.3mm #0227 4x Adjustment screw DIN913 M4x8 (AF2mm) #1352 1x Mounting pin #0885 2x C-Spanner #2951	

# Infrared Probe 25.41-HDR

## Spare Parts, Accessories

<b>Accessories</b>		
<i>Order Number</i>	<i>Description</i>	
21.00-VE50	<i>Extension, Length = 50mm (1.96")</i>	
21.00-VE100	<i>Extension, Length = 100mm (3.93")</i>	
21.00-VE200	<i>Extension, Length = 200mm (7.87")</i>	
91.00-V50	<i>Probe Extension, Length = 50mm (1.96")</i>	
91.00-V75	<i>Probe Extension, Length = 75mm (2.95")</i>	
91.00-V100	<i>Probe Extension, Length = 100mm (3.93")</i>	
25.00-HB	<i>Storage Box</i>	