

# Radio-wave Touch Probe RWP38.41

## **OPERATING INSTRUCTIONS**

*(Translation of the original operating instructions)*

# EN

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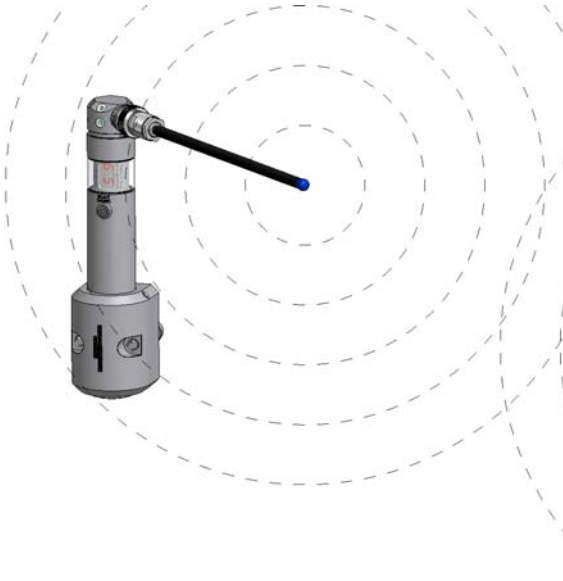
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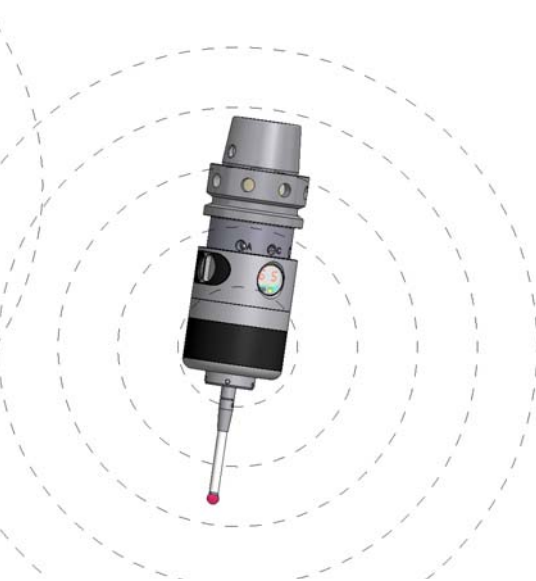
# Radio-wave Touch Probe RWP38.41

## System Components

**Radio-wave Receiver  
RWR95.40**



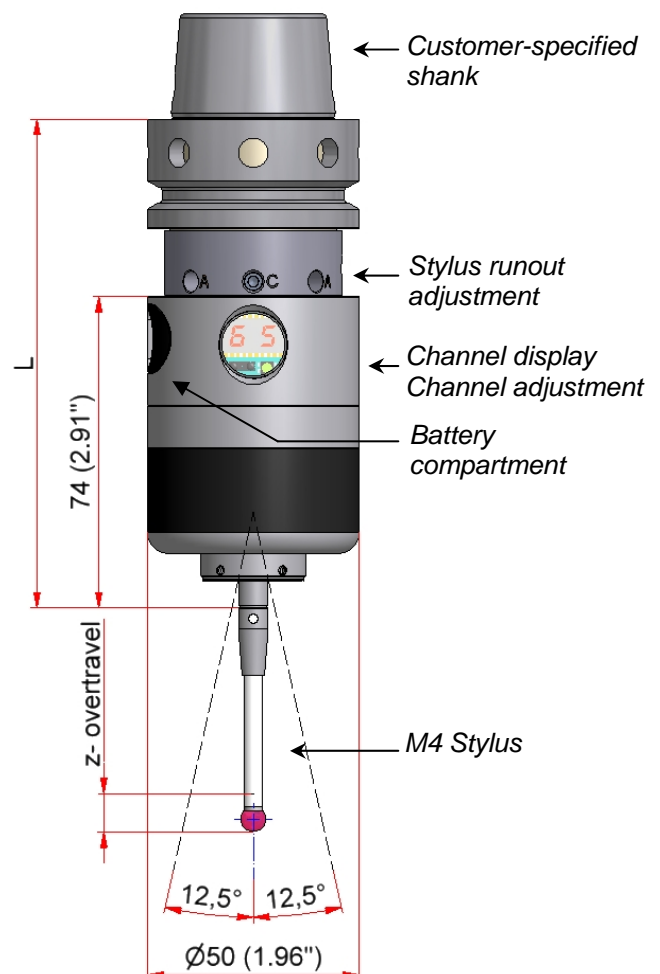
**Radio-wave Touch Probe  
RWP38.41**



## Technical Data

<u>Sensing Directions:</u>	$\pm X; \pm Y; -Z$
<u>Max. Stylus Overtravel:</u>	$XY \pm 12.5^\circ; Z -6\text{mm} (0.24\text{'})$
<u>Trigger Force with 50mm Stylus:</u>	$XY = 0.3-1.4\text{N}; Z = 2.5-12.5\text{N}$ adjustable
<u>Factory Settings:</u>	$XY = 0.96\text{N}; Z = 8.5\text{N}$
<u>Recommended Probing Speed:</u>	254mm/min – 2000mm/min
<u>Power Supply:</u>	2x Battery 3,6V Type ½ AA (1200mAh)
<u>Battery lifetime:</u>	100% = 325h 5% = 219d Standby = 230d
<u>Material:</u>	Stainless steel
<u>Weight without Shank:</u>	approx. 460g
<u>Temperature Range:</u>	Operating: $10^\circ - 50^\circ\text{C}$ Storage: $5^\circ - 70^\circ\text{C}$
<u>Unidirectional Repeatability:</u>	max. $2\sigma \pm 1\mu\text{m}$ with 50mm stylus at 254mm/min
<u>Guaranteed Life-time of Measuring Unit:</u>	10 million deflections
<u>Frequency Range:</u>	433.075 – 434.650 MHz
<u>Number of Channels:</u>	64
<u>Channel Spacing:</u>	25 KHz
<u>Sealing:</u>	IP68: EN60529

## Dimensions



# Radio-wave Touch Probe RWP38.41

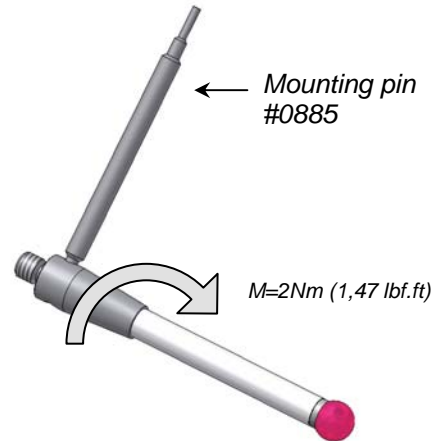
## Stylus Change



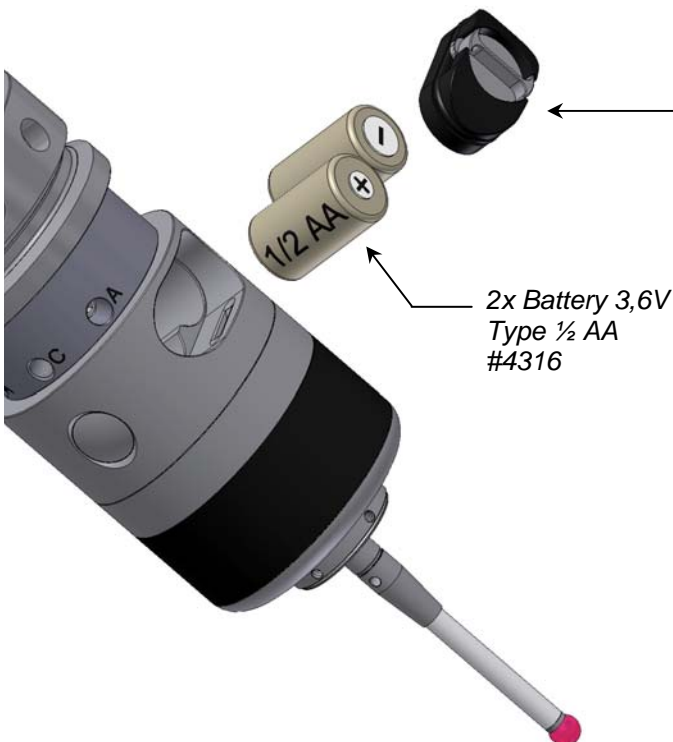
### **Attention !**

After changing the stylus:

- Adjust stylus to spindle centre!
- Calibrate probe !



## Battery Replacement



Battery cover 38.41-BD  
(incl. O-Ring 21x2 Viton #4475)

2x Battery 3,6V  
Type 1/2 AA  
#4316

Battery cover  
open



Battery cover  
closed



### **Attention !**

- Before opening probe, clean and dry well.  
Do NOT blow off with compressed air!
- Open battery cover by a circular motion.
- Remove empty batteries.
- Make sure positive and negative ends of battery are inserted correctly.
- When closing the battery cover, ensure the O-ring for sealing will be properly inserted.
- Replace empty batteries immediately.



# Radio-wave Touch Probe RWP38.41

## Aligning Stylus to Spindle Centre

### 1 Set „C“ Screws

Hexagon key AF2.5mm  
#1346 →



- Loosen all "A" screws 2 turns
- Loosen the "C" screws
- Using the long end of the Hex key tighten both "C" screws lightly

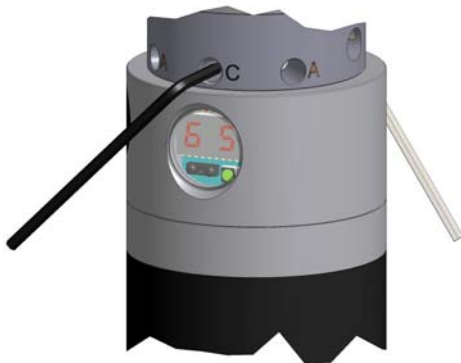
### 2 Adjustment to $<20\mu$

Hexagon key AF2mm  
#1097

- Set dial gauge in front of the stylus like on the picture
- Turn the probe until the maximum deviation is shown on the indicator
- Turn the "A" screws **half** of the indicator reading
- Loosen the "A" screws that were used 1 turn
- Repeat procedure until runout is  $< 20\mu$



### 3 Tighten „C“ Screws



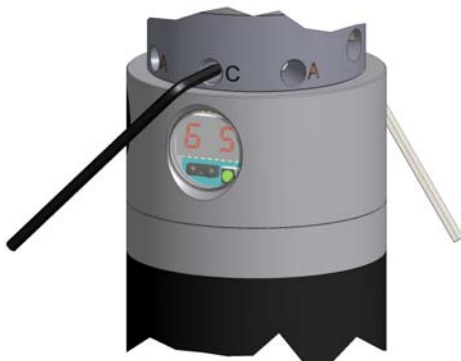
- Tighten both "C" screws using the short end of the Hex Key

### 4 Adjustment to $<5\mu$

- Turn the probe until the maximum deviation is shown on the indicator
- Turn the "A" screws **half** of the indicator reading
- Loosen the "A" screws that were used 1 turn
- Repeat procedure until runout is  $< 5\mu$



### 5 Retighten „C“ Screws



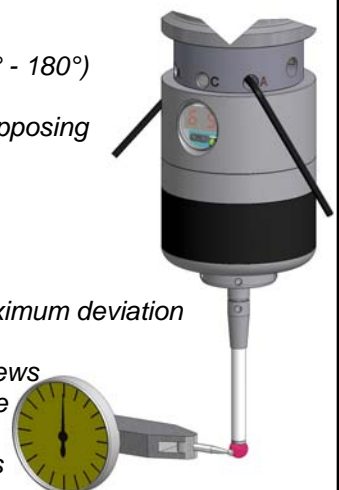
- Using the short end of the Hex Key
- Securely retighten both "C" screws

### 6 Set „A“ Screws against each other

- Set opposing „A“ screws ( $0^\circ - 180^\circ$ ) against each other
- Repeat with the other two opposing „A“ screws ( $90^\circ - 270^\circ$ )

#### **If the runout goes out of adjustment:**

- Turn the probe until the maximum deviation is shown on the indicator
- Carefully loosen the „A“ screws on the opposite side until the runout is  $< 5\mu$
- Set the opposing „A“ screws against the newly adjusted one



# Radio-wave Touch Probe RWP38.41

## Channels and Frequencies

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	locked	18	433,300	36	433,875	54	434,375
01	433,925	19	433,325	37	433,900	55	434,400
02	434,075	20	433,350	38	433,950	56	434,425
03	433,075	21	433,400	39	433,975	57	434,450
04	locked	22	433,425	40	434,000	58	434,475
05	433,175	23	433,450	41	434,025	59	434,500
06	433,275	24	433,500	42	434,050	60	434,525
07	433,375	25	433,525	43	434,100	61	434,550
08	433,475	26	433,550	44	434,125	62	434,575
09	433,575	27	433,600	45	434,150	63	434,600
10	433,675	28	433,625	46	434,175	64	434,625
11	433,775	29	433,650	47	434,200	65	434,650
12	433,100	30	433,700	48	434,225		
13	433,125	31	433,725	49	434,250	66-99	locked
14	433,150	32	433,750	50	434,275		
15	433,200	33	433,800	51	434,300		
16	433,225	34	433,825	52	434,325		
17	433,250	35	433,850	53	434,350		

## Setting the Channel



### Procedure:

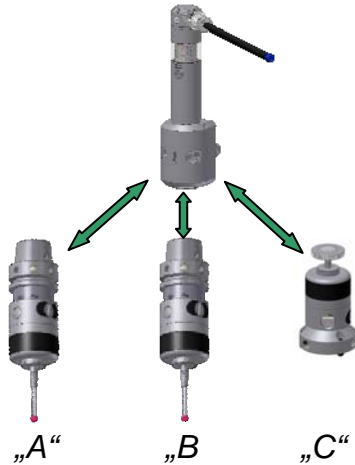
- Ensure the probe is off
- Press the button until the channel is displayed
- Press the button again until the desired channel is displayed
- Channel display shuts off after 5 sec.
- Channel is now adjusted!



# Radio-wave Touch Probe RWP38.41

## Activation Code and Time-Out Adjustment

With 3 available activation codes, „A“ / „B“ / „C“, it is possible to operate up to 3 systems with one receiver. The receiver sends the selected activation code and expect only signals from the selected activation code.



### Attention – Safety advice!

**Under no circumstances 2 or more systems may be set up on the same channel using the same activation coding!**

Every activation code is available with the respective time-out adjustment „Radio-wave OFF“ and „3min“. When using the setting „Radio-wave OFF“, the measuring system must be deactivated by the receiver with an M-Code!

When using the setting „3min“, the measuring system must also be deactivated with an M-Code, but in case of a failure during deactivation the probe will be automatically deactivated after 3min!

The „1“ in front of the activation code shows that the time-out is **activated**, the „0“ that it is **deactivated**!

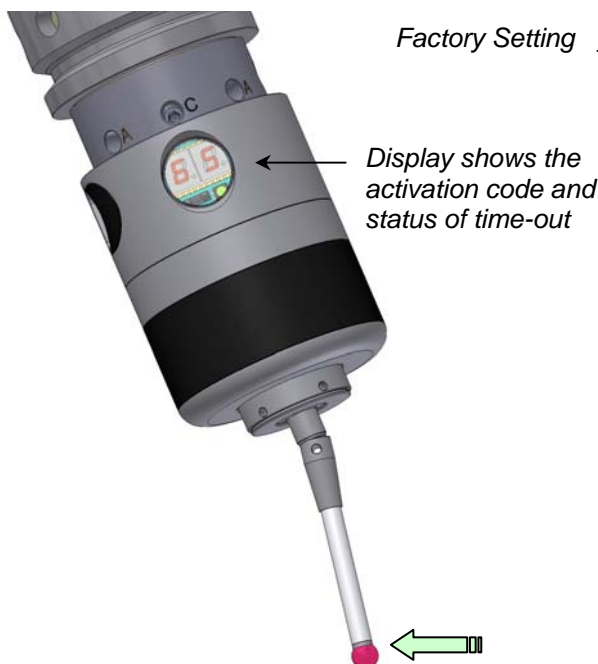
In the display:



= 0.A. → Time-out is deactivated („Radio-wave OFF“) / Activation code „A“



= 1.C. → Time-out is activated („3 min“) / Activation code „C“



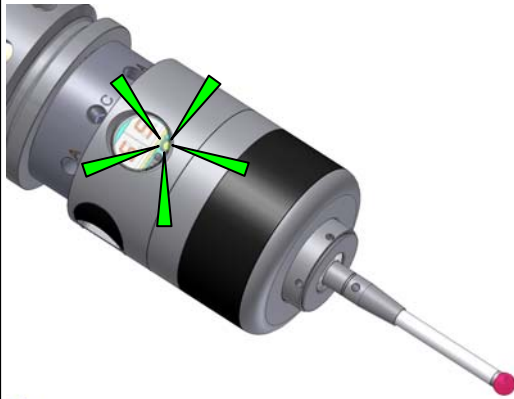
Adjustment	Activation Code	Time-Out
0.A.	„A“	Radio-wave OFF
0.B.	„B“	Radio-wave OFF
0.C.	„C“	Radio-wave OFF
1.A.	„A“	3 min
1.B.	„B“	3 min
1.C.	„C“	3 min

### Procedure:

- Ensure the probe is off.
- Press the button until the channel is displayed.
- Deflect the stylus until the desired activation code is displayed.
- Do not operate the button and stylus again.
- Display shuts off after 5 sec.
- Activation code is now adjusted!

# Radio-wave Touch Probe RWP38.41

## Optical Status Display



### LED blinking green:

- Probe is transmitting signals

### LED blinking green / red:

- Low battery warning

### LED blinking orange:

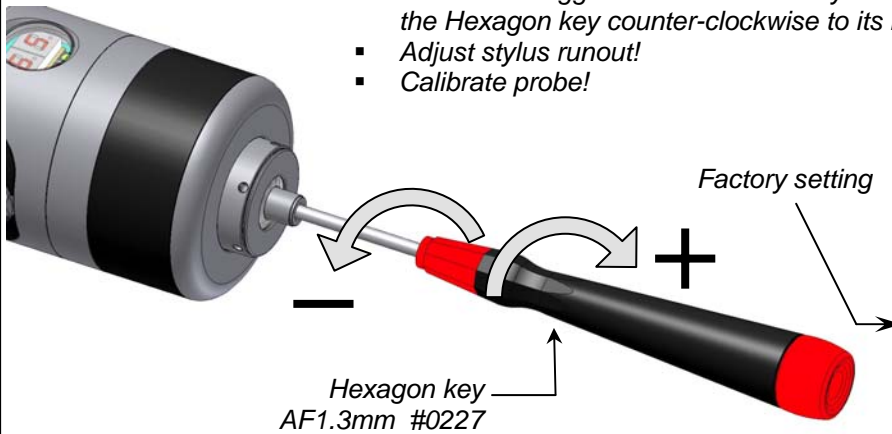
- Stylus deflected

## 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

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 under the metal eyelid

### To clean :

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

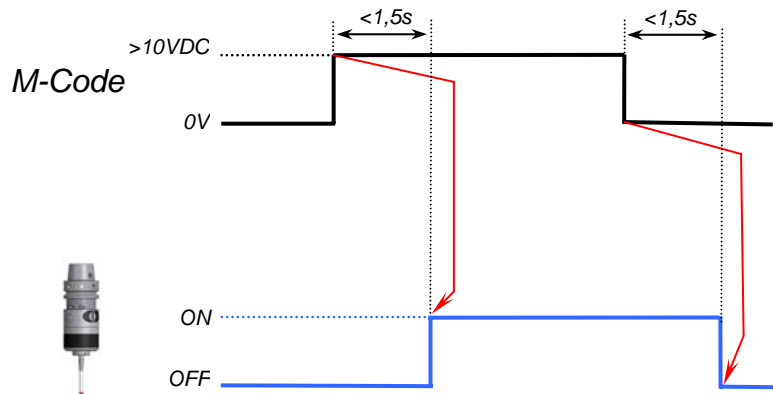
### Attention !

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

# Radio-wave Touch Probe RWP38.41

## Probe ON / OFF Procedure

The bi-directional probe will be activated and deactivated by the Radio-wave Receiver RWR95.40. After setting the M-Code the probe is activated in  $<1,5$  s and deactivated in  $<1,5$  s after resetting.



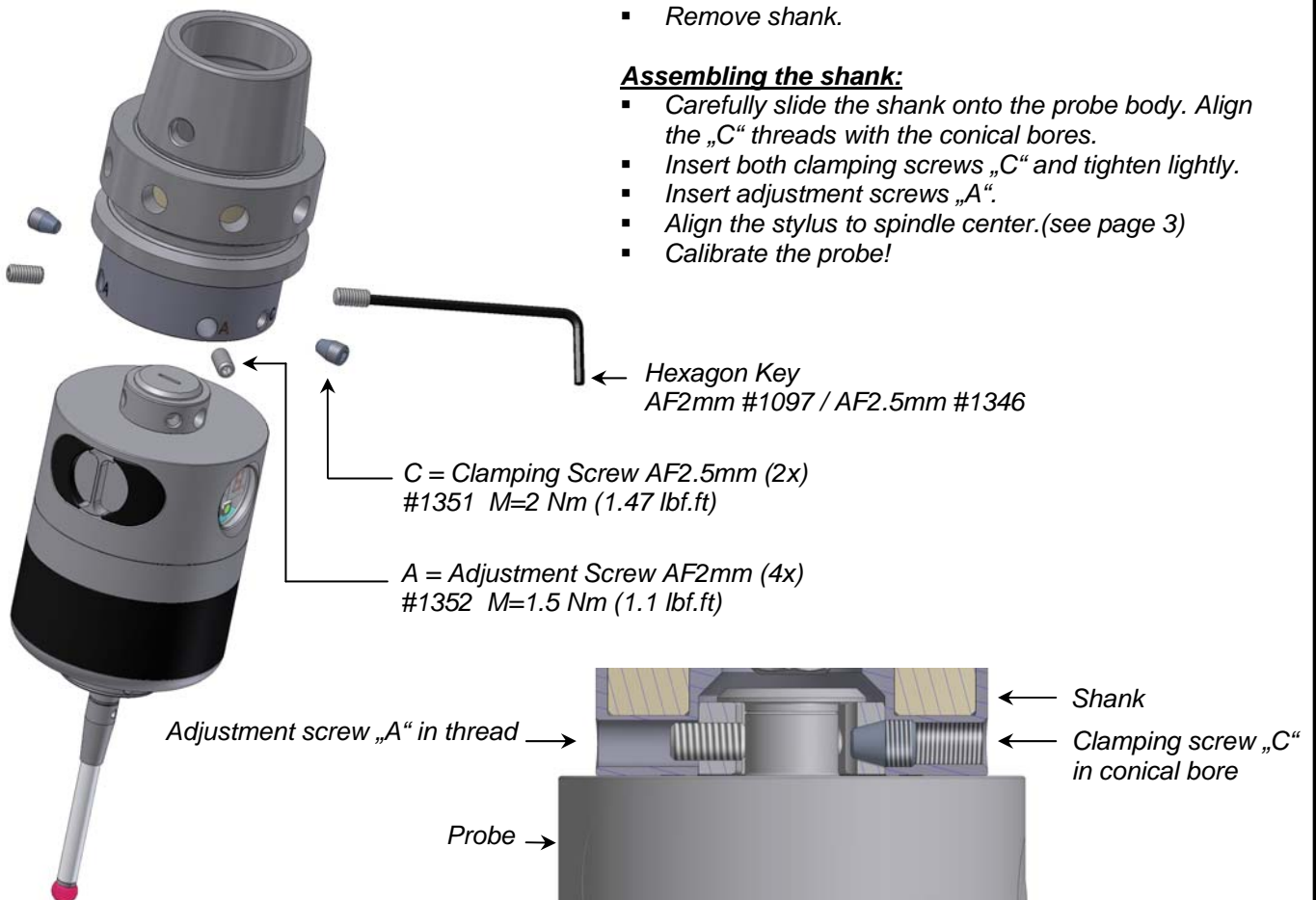
## Mounting the Shank

### Removing the shank:

- Remove all „A“ and „C“ screws.
- Remove shank.

### Assembling the shank:

- Carefully slide the shank onto the probe body. Align the „C“ threads with the conical bores.
- Insert both clamping screws „C“ and tighten lightly.
- Insert adjustment screws „A“.
- Align the stylus to spindle center.(see page 3)
- Calibrate the probe!





# Radio-wave Touch Probe RWP38.41

## Probe with Shank HSK



### Available Shanks:

DIN69893-HSK-E25  
 DIN69893-HSK-A32  
 DIN69893-HSK-E32  
 DIN69893-HSK-A40  
 DIN69893-HSK-E40  
 DIN69893-HSK-F40  
 DIN69893-HSK-A50  
 DIN69893-HSK-A50  
 DIN69893-HSK-E50  
 DIN69893-HSK-E50  
 DIN69893-HSK-F50  
 DIN69893-HSK-A63  
 DIN69893-HSK-A63  
 DIN69893-HSK-A63-70  
 DIN69893-HSK-E63  
 DIN69893-HSK-F63  
 DIN69893-HSK-A80  
 DIN69893-HSK-A100  
 DIN69893-HSK-A100  
 Kennametal KM63  
 Kennametal KM80  
 Other shanks upon request

### L:

93 (3.67")  
 110 (4.33")  
 110 (4.33")  
 110 (4.33")  
 110 (4.33")  
 110 (4.33")  
 110 (4.33")  
 142,5 (5.61")  
 116 (4.57")  
 142,5 (5.61")  
 116 (4.57")  
 110 (4.33")  
 142,5 (5.61")  
 144 (5.67")  
 132,5 (5.22")  
 147,5 (5.81")  
 147,5 (5.81")  
 116 (4.57")  
 147,5 (5.81")  
 147,5 (5.81")  
 147,5 (5.81")

### Order Number:

38.41-HSK25E  
 38.41-HSK32A  
 38.41-HSK32E  
 38.41-HSK40A  
 38.41-HSK40E  
 38.41-HSK40F  
 38.41-HSK50A  
 38.41-HSK50A-142,5  
 38.41-HSK50E  
 38.41-HSK50E-142,5  
 38.41-HSK50F  
 38.41-HSK63A  
 38.41-HSK63A-142,5  
 38.41-HSK63A-144  
 38.41-HSK63E  
 38.41-HSK63F  
 38.41-HSK80A  
 38.41-HSK100A  
 38.41-HSK100A-147,5  
 38.41-KM63  
 38.41-KM80

## Probe with Shank SK



### Available Shanks:

DIN69871-SK30  
 DIN69871-SK30-Mube  
 DIN69871-SK40  
 DIN69871-SK40-70  
 DIN69871-SK50  
 DIN2080-SK50  
 DIN69871-SK60  
 BT30  
 BT30  
 BT30  
 BT30  
 BT30  
 BT40  
 BT40-70  
 BT50  
 CAT40  
 CAT40-70  
 CAT50  
 Other shanks upon request

### L:

120,5 (4.74")  
 120,5 (4.74")  
 122,5 (4.82")  
 144 (5.67")  
 122,5 (4.82")  
 118,5 (4.67")  
 142,5 (5.61")  
 101 (3.98")  
 120,5 (4.74")  
 151 (5.94")  
 176 (6.93")  
 201 (7.91")  
 122,5 (4.82")  
 144 (5.67")  
 137,5 (5.41")  
 122,5 (4.82")  
 144 (5.67")  
 122,5 (4.82")

### Order Number:

38.41-SK30  
 38.41-SK30-Mube  
 38.41-SK40  
 38.41-SK40-144  
 38.41-SK50  
 38.41-DIN2080-SK50  
 38.41-SK60  
 38.41-BT30  
 38.41-BT30-120,5  
 38.41-BT30-151  
 38.41-BT30-176  
 38.41-BT30-201  
 38.41-BT40  
 38.41-BT40-144  
 38.41-BT50  
 38.41-AN40  
 38.41-AN40-144  
 38.41-AN50

# Radio-wave Touch Probe RWP38.41

## Probe with Shank Coromant Capto



Stylus not included

### Available Shanks:

Coromant Capto C4  
Coromant Capto C5  
Coromant Capto C5  
Coromant Capto C6  
Coromant Capto C6  
Coromant Capto C8  
Coromant Capto C8

Other shanks upon request

### L:

110 (4.33")  
110 (4.33")  
147,5 (5.81")  
116 (4.57")  
147,5 (5.81")  
116 (4.57")  
147,5 (5.81")

### Order Number:

38.41-C4  
38.41-C5  
38.41-C5-147,5  
38.41-C6  
38.41-C6-147,5  
38.41-C8  
38.41-C8-147,5

## Probe with Shank THERMO-LOCK® (patented)



Stylus not included

### Available Shanks:

DIN69893 HSK-E32  
DIN69893 HSK-E40  
DIN69893 HSK-E50  
DIN69893 HSK-A63

### L:

110 (4.33")  
110 (4.33")  
116 (4.57")  
116 (4.57")

### Order Number:

38.41-HSK32E-TI  
38.41-HSK40E-TI  
38.41-HSK50E-TI  
38.41-HSK63A-TI

Patented THERMO-LOCK® Technology prevents thermal expansion of the HSK and heat transfer from the spindle to the probe. This ensures that the probe delivers stable, precise results even by large temperature differences between the spindle and the HSK.

## Probe with Other Shanks



Stylus not included

### Available Shanks:

D20-D8-L25-B  
D20-D32-L100-B

NIKKEN-NC5-46  
NIKKEN-NC5-63

D20-Erowa-ITS

### L:

89 (3.50")  
86 (3.39")

141,5 (5.57")  
141,5 (5.57")

115 (4.53")

### Order Number:

38.41-D8-L25  
38.41-D32-L100

38.41-NC5-46  
38.41-NC5-63

38.41-ITS

# Radio-wave Touch Probe RWP38.41

## Measuring Unit Extension



### **Procedure:**

- Clean and dry the probe body well before removing the probe !
- When screwing in the probe, ensure the O-Rings are properly seated !
- Align probe to the spindle centre!
- Calibrate probe

Order Number	Length
21.00-VE50	50 (1.96")
21.00-VE100	100 (3.93")
21.00-VE200	200 (7.87")
Extension max. 400 (15.75")	



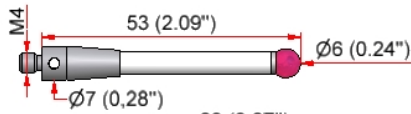
# Radio-wave Touch Probe RWP38.41

## M4-Styli, Shaft- $\varnothing 7$

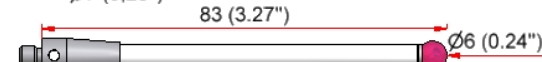
All styli with ceramic shaft

### Order Number:

91.00-T53/6-KE-M4  
(Ruby ball)



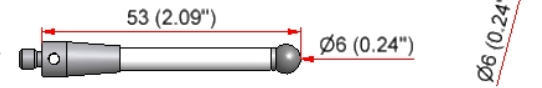
91.00-T83/6-KE-M4  
(Ruby ball)



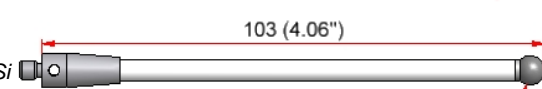
91.00-T103/6-KE-M4  
(Ruby ball)



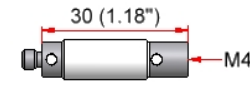
91.00-T53/6-KE-M4-Si  
(Silicon nitride ball)



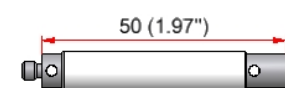
91.00-T103/6-KE-M4-Si  
(Silicon nitride ball)



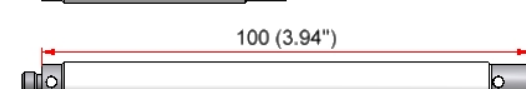
91.00-TV30-KE-M4  
(Stylus extension)



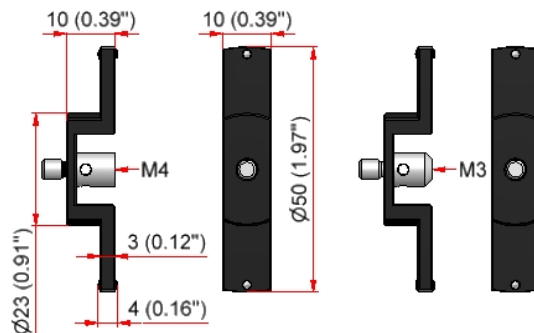
91.00-TV50-KE-M4  
(Stylus extension)



91.00-TV100-KE-M4  
(Stylus extension)



91.00-TS-ST-M4  
91.00-TS-ST-M4/M3  
(Disc stylus)

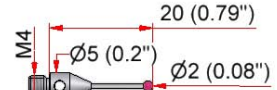


## M4-Styli, Shaft- $\varnothing 5$

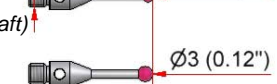
All styli with ruby ball

### Order Number:

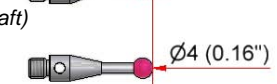
91.00-T20/2-HM-M4  
(Tungsten carbide shaft)



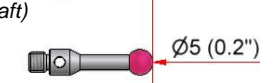
91.00-T20/3-HM-M4  
(Tungsten carbide shaft)



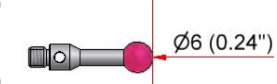
91.00-T20/4-HM-M4  
(Tungsten carbide shaft)



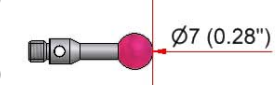
91.00-T20/5-ST-M4  
(Stainless steel shaft)



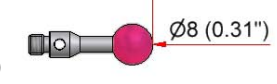
91.00-T20/6-ST-M4  
(Stainless steel shaft)



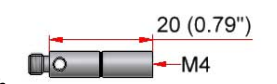
91.00-T20/7-ST-M4  
(Stainless steel shaft)



91.00-T20/8-ST-M4  
(Stainless steel shaft)



91.00-TV20-ST-M4  
(Stylus Extension with stainless steel shaft)



91.00-TV40-ST-M4  
(Stylus Extension with stainless steel shaft)

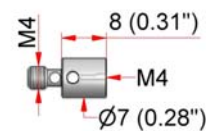


91.00-TV60-ST-M4  
(Stylus Extension with stainless steel shaft)

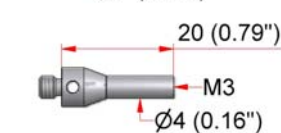


## Accessories

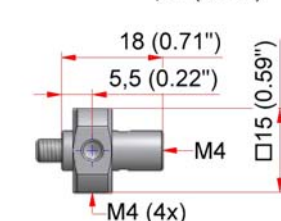
91.00-S-M4/M4  
(Break shaft adapter)



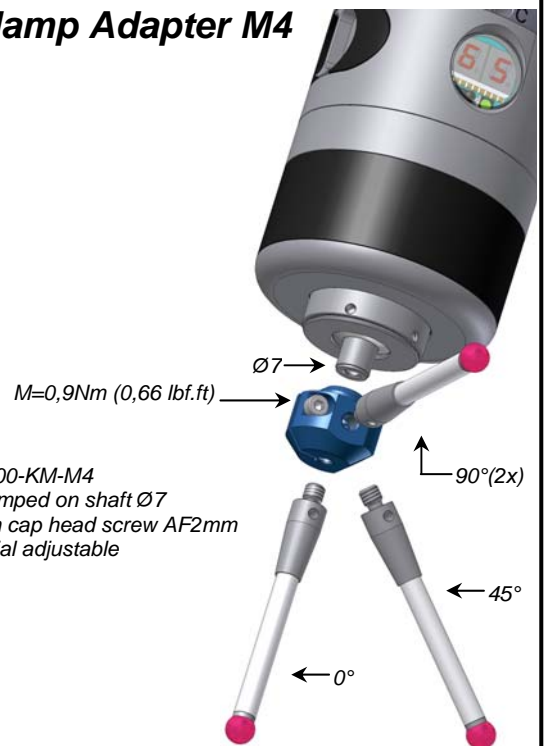
91.00-TA-M4/M3  
(Stylus adapter)



91.00-TK-ST-M4  
(5-way stylus centre)



## Clamp Adapter M4



41.00-KM-M4  
Clamped on shaft  $\varnothing 7$   
with cap head screw AF2mm  
radial adjustable

Other styli available upon request.

# Radio-wave Touch Probe RWP38.41

## Safety Advice !

1. Manual or automatic positioning of the probe should be protected, so that the machine axis stops feeding if the probe is triggered during its move to the position where actual measuring should begin.
2. Feedhold or spindle-stop resulting from a trigger or ready signal from a probe should only happen if the probe is actually in the spindle. This security logic will protect the machine against a possible spindle or feeding stop under normal milling operation if a signal from a probe reaches the control under one of the conditions below:
  - Customer is changing the batteries and checks the function of the probe by manually switching the probe on.
  - A new machine is installed with radio-wave transmission with the same frequency as a probe already fitted to an existing machine.

## Declaration of Conformity

We declare under our sole responsibility that the product „ **Radio-Wave Touch Probe RWP38.41**“ to which this declaration relates is in conformity with following standards:

R&TTE-Directive 99/5/EG	
EN 300 220-1 V2.3.1 (2010-08)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods
EN 300 220-2 V2.3.2 (2010-08)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

EMC- Directive 2004/108/EG	
EN 301 489-1 V1.8.1 (2008-04)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301 489-3 V1.4.1 (2002-08)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 40 GHz
EN 6000-4-2 (2009-12)	Electromagnetic compatibility (EMC) - Part 4-2: Testing and Measurement - Examination of the discharge immunity static electricity

## FCC / RSS - Declaration

In Progress: Application done - Confirmation coming soon!



















# Radio-wave Touch Probe RWP38.41

## Delivery Contents, Spare Parts, Accessories

### Delivery Contents

Order Number	Description	
38.41-RWP	<b>Radio-wave Touch Probe RWP38.41</b> 4xBattery Type 1/2AA(3,6V) Toolbox Storage box	#4316 38.41-TB 25.00-HB or #3611




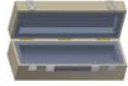
### Spare Parts and Tools

Order Number	Description	
#4316	Battery Type ½ AA (3,6V)	
38.41-BD	Battery cover	
#4475	O-Ring 21x12 Viton for Battery cover	
#1351	Clamping screw AF2.5mm	
#1352	Adjustment screw DIN913 M4x8 (AF2mm)	
#3240	Service cover	
#3455	O-Ring 16x1 Viton for service cover	
#2906	Metal eyelid	
#2931	Conical spring	
#2074	O-Ring 24x2 Viton	
#0227	Hexagon key AF1.3mm	
#1346	Hexagon key AF2.5mm	
#1097	Hexagon key AF2.0mm	
#2951	C-Spanner	
#0885	Mounting pin	
#3079	Dial gauge	
38.41-TB	<b>Toolbox</b> 1xHexagon key AF2.5mm 2xHexagon key AF2mm 1xHexagon key AF1.3mm 2xAdjustment screw DIN913 M4x8 (AF2mm) 1xMounting pin 2xC-Spanner	#1346 #1097 #0227 #1352 #0885 #2951

# Radio-wave Touch Probe RWP38.41

## Delivery Contents, Spare Parts, Accessories

### Accessories

Order Number	Description	
21.00-VE50	Extension L=50mm (1.96")	
21.00-VE100	Extension L=100mm (3.93")	
21.00-VE200	Extension L=200mm (7.87")	
25.00-HB	Storage Box	
#3611	Storage box	