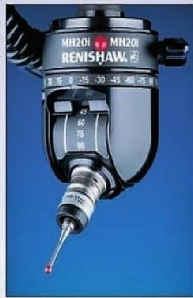
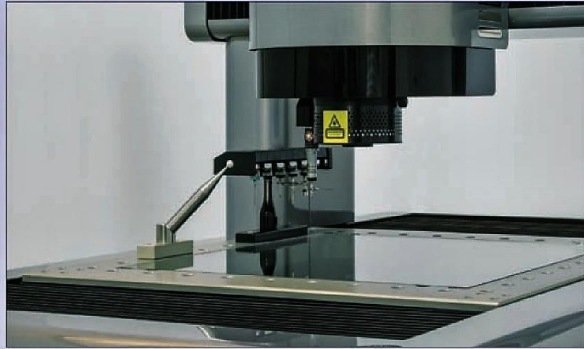


**Probes and probe systems**



Ask for the detailed catalog

**TP20 probe system**

The TP20 probe consists of two parts; a probe body, and a detachable probe module that contains the kinematic touch sensor and carries the stylus assembly.

The probe body has a standard M8 x 1.25 screw connector, which enables simple fitment to all CMMs with a Renishaw standard probe head (including PH6). The body contains a

The probe module is connected to the probe body by a highly repeatable magnetic kinematic coupling, which allows the automatic (CNC) or manual exchange of modules without the need to requalify the stylus tips.

Seven probe module options are available, each with a preset trigger force designed to ensure maximum probe performance when using different stylus configurations.



magnetic proximity switch to inhibit triggering of the probe during automatic module changing with the MCR20. (The TP20 NI, Non-Inhibit,

is not affected by magnetic fields and must be inhibited through software. The TP20 NI is available on request.)



Module type <sup>1</sup>	Unidirectional repeatability (2σ/μm)	2D (XY) form meas. deviation PTV at 10 mm/μm		Trigger force/N (nominal at stylus tip)			Overall displacement (max at stylus tip)		Length Z mm
		XY	Z	XY <sup>2</sup>	+Z/mm	-Z/mm			
LF	0.35	±0.6	0.055	0.65	±14°	3.1	-	19.5	
SF	0.35	±0.8	0.08	0.75	±14°	4.0	-	19.5	
MF	0.5	±1.0	0.1	1.9	±14°	3.7	-	19.5	
EF	0.65	±2.0	0.1	3.2	±14°	2.4	-	19.5	
6-way	0.80	±1.5	0.14	1.6	±14°	4.5	-	24.5	
EM1	0.35	±0.8	0.08	0.75	±14°	4.0	1.5	69.5	
EM2	0.35	±0.8	0.08	0.75	±14°	4.0	-	94.5	

<sup>1</sup> Probe length: 10 mm, except MF: 25 mm and EF: 50 mm.  
<sup>2</sup> The probe module can get detached if this value is exceeded.

Item No.	Description	Price EUR
<b>TP20 probe sets (incl. stylus tools/cleaning kit and manual):</b>		
876.198	Probe body, probe module SF	2,292.00
876.244	Probe body, two probe modules SF	2,682.00
876.200	Probe body, probe modules SF and MF	2,682.00
<i>Other set compositions are available on request.</i>		
876.180	Probe module LF: with low force (green)	1,012.00
876.170	Probe module SF: with standard force (black)	920.00
876.171	Probe module MF: with medium force (gray)	920.00
876.172	Probe module EF: with extended force (brown)	920.00
876.194	Probe module 6W: 6-way (blue)	1,195.00
876.190	Extension module EM1 (standard force)	1,111.00
876.195	Extension module EM2 (standard force)	1,142.00
876.168	CK200 cleaning kit	17.40

**PH6 Fixed Probe Head**

The PH6 is a compact, vertical probe head for a single probe, with a fixed cable. The correct shank with cable combination must be chosen to suit the mounting features of your CMM. Many combinations are possible and available on request.

- Weight: 48 g (without shank and cable).
- Probe status identification: 1 LED.
- Cable connection: fixed cable (specify on order).
- Probe mounting: M8 thread.

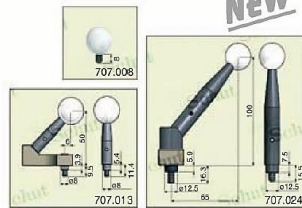


Item No.	Description	Price EUR
876.061 <sup>1</sup>	PH6 Fixed Probe Head	294.00

<sup>1</sup> Equipped with PL1 cable (0.71 m) and MS1/T shank (ø9.500 - 9.512 mm).

**Qualification spheres**

- Ball: ø8 or ø25 mm, made of ceramics.
- Delivery with a measuring report.



Item No.	Description	Price EUR
<b>Qualification sphere ø8 mm:</b>		
707.025 <sup>1</sup>	For DeMeet-220	445.00
707.026 <sup>2</sup>	For DeMeet-4xx/705	398.00
<b>Qualification sphere ø25 mm:</b>		
707.013 <sup>1</sup>	For DeMeet-220	390.00
707.024 <sup>2</sup>	For DeMeet-4xx/705	366.00
707.008 <sup>3</sup>	Ball only; M6 external thread	277.00

<sup>1</sup> Thread M4.  
<sup>2</sup> Thread M6.

**Probes and accessories**



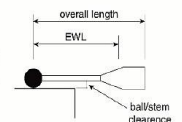
The element of the product to be measured determines the type and length of the probe. Maximum rigidity of the stem and perfect roundness of the ball are very important.

Only the M2 styli of the Renishaw probe program have been included in this catalog. M3, M4 and M5 are also available on request. The M2 probes are primarily suitable for the TP2, TP20 and TP200 probe systems.

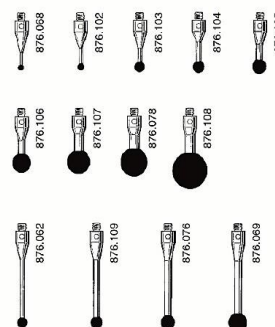
**Choosing probes for inspections**

In order to maximize the accuracy of the main part of the probe applications, we advise you to use:

- the shortest and stiffest probes possible; the more the probe bends or deviates, the lower the measuring accuracy.
- the largest possible probe ball; the bigger the probe ball, the greater the free space between the ball and the stem and the smaller the effect of the surface condition of the product that has to be measured.
- as little extensions as possible; every connection introduces a potential diffraction or deviation.



**Ruby ball styli with stainless steel stem and thread M2**



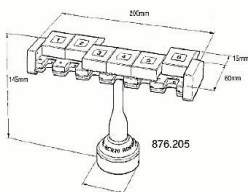
Item No.	Ball ø/mm	EWL* mm	Weight g	Price EUR
<b>Total length* 10 mm:</b>				
876.068	1	4.5	0.3	30.00
876.102	1.5	4.5	0.3	25.00
876.103	2	6	0.3	21.00
876.104	2.5	6	0.3	23.00
876.105	3	7.5	0.4	25.00
876.106	4	10	0.4	24.00
876.107	5	10	0.7	33.00
876.078	6	10	0.9	37.00
<b>Total length* 11 mm:</b>				
876.108	8	11	1.5	68.00
<b>Total length* 20 mm:</b>				
876.062	2	14	0.4	24.00
876.109	2.5	14	0.4	25.00
876.076	3	17.5	0.5	26.00
876.069	4	20.2	0.6	27.00

\*Total length: from the base of the stem up to the center of the ball. EWL: effective working length.

**MCR20 Probe Module Changing Rack**

The MCR20 is designed to securely hold up to six probe modules for automatic (CNC) changing and to protect them from airborne contaminants which may be present in the working environment.

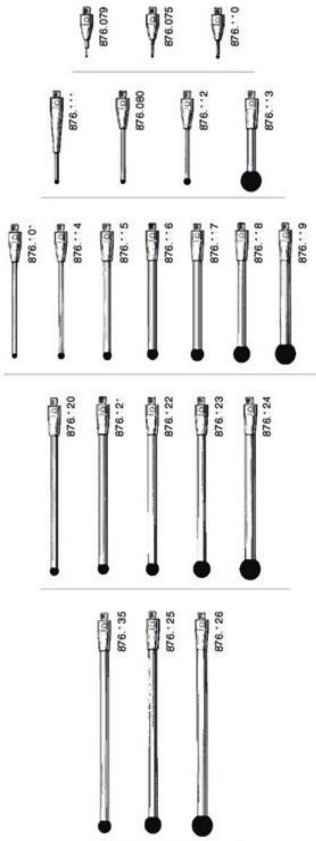
- Height: 876.205: 145 mm, 635.141: 108.5 mm, 635.140: 110.5 mm.
- Capacity for 6 TP20 modules.
- Inhibit range: 50 mm.
- Delivery with base, without probe modules.



Item No.	Description	Price EUR
876.205	MCR20	2,386.00
635.141	MCR20 DeMeet-220	2,520.00
635.140	MCR20 DeMeet-4xx/705	2,530.00

## Probes and accessories (continued)

Ruby ball styli with tungsten carbide stem and thread M2



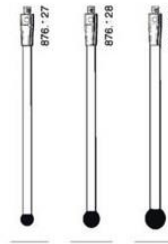
Item No.	Ball ø/mm	EWL* mm	Weight g	Price EUR
<b>Total length* 10 mm:</b>				
876.079	0.3	2	0.3	
876.075	0.5	3	0.3	
876.110	0.7	4	0.3	
<b>Total length* 20 mm:</b>				
876.111	1	7	0.5	
876.080	1	12.5	0.41	
876.112	1.5	15	1.98	
876.113	5	20	1.98	
<b>Total length* 30 mm:</b>				
876.101	1	20.5	0.4	
876.114	1.5	25	0.58	
876.115	2	25	0.99	
876.116	2.5	25	1.48	
876.117	3	25	1.49	
876.118	4	30	1.57	
876.119	5	30	2.57	
<b>Total length* 40 mm:</b>				
876.120	2	35	1.29	
876.121	2.5	35	1.95	
876.122	3	35	1.97	
876.123	4	40	2.04	
876.124	5	40	3.17	
<b>Total length* 50 mm:</b>				
876.135	3	42.5	2.44	
876.125	4	50	2.52	
876.126	5	50	3.75	

\*Total length: from the base of the stem up to the center of the ball. EWL: effective working length.



## Probes and accessories (continued)

Ruby ball styli with ceramic stem and thread M2, total length\* 50 mm



Item No.	Ball ø/mm	EWL <sup>1</sup> mm	Weight g	Price EUR
876.127	3	42.5	0.83	
876.128	4	50	0.91	
876.129	5	50	1.31	

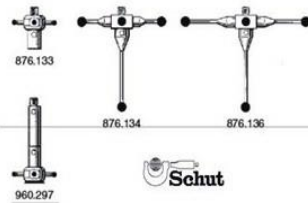
Ruby ball styli with carbon fiber stem and thread M2, total length\* 50 mm



Item No.	Ball ø/mm	EWL <sup>1</sup> mm	Weight g	Price EUR
876.130	4	50.5	1	
876.131	5	50.5	1.1	
876.132	6	50.5	1.2	

<sup>1</sup>Total length: from the base of the stem up to the center of the ball. EWL: effective working length.

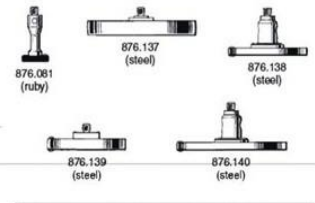
Star styli (fixed) with thread M2



Item No.	Ball ø/mm	Work <sup>2</sup> ø/mm	Weight g	Price EUR
876.133	1	10	0.5	
876.134	2	20	1.3	
876.136	2	30	1.8	
960.297	1	11	1.4	

<sup>2</sup>Span (center distance).

Disc styli with thread M2



Item No.	Disc ø/mm	Disc thick- ness/mm	Weight g	Price EUR
876.081	6	2 <sup>3</sup>	0.6	
876.137	25	3	3.8	
876.138	18	2.5 <sup>3</sup>	3	
876.139	18	3 <sup>3</sup>	2.7	
876.140	25	2.5 <sup>3</sup>	4	

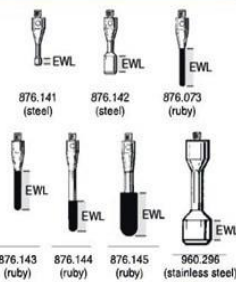
<sup>3</sup>Size is incl. ball probe on the disc.

## Probes and accessories (continued)

Cylinder styli with thread M2

Item No.	Cylinder ø/mm	Total length*/mm	EWL* mm	Weight g	Price EUR
876.141	1.5	11	1.5	0.3	
876.142	3	13	3.8	0.6	
876.073	1	15	8	0.3	
876.143	1.5	15	8.5	0.3	
876.144	2	20	7.2	0.5	
876.145	4	20	10	0.9	
960.296	8	23	5	4.4	

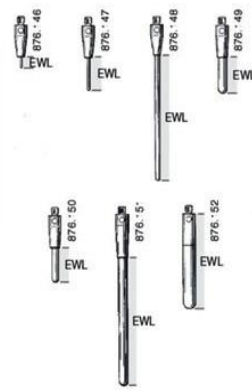
\*Total length: from the base of the stem up to the center of the ball. EWL: effective working length.



Parallel hemispherical ended styli (tungsten carbide) with thread M2

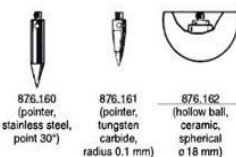
Item No.	Cylinder ø/mm	Total length*/mm	EWL* mm	Weight g	Price EUR
876.146	0.3	10.2	2.7	0.3	
876.147	0.5	15.3	7.8	0.3	
876.148	1	35.5	29.8	0.7	
876.149	1.5	15.8	8.3	0.6	
876.150	2	16	8.5	0.8	
876.151	2	40	32	2	
876.152	3	22.5	22.5	2	

\*Total length: from the base of the stem up to the center of the ball. EWL: effective working length.



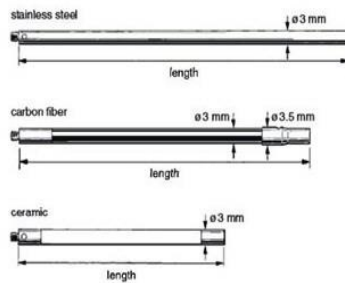
Special purpose styli with thread M2

Item No.	Length mm	Weight g	Material	Price EUR
876.160	15	0.7	stainless steel	
876.161	10	0.7	tungsten carbide	
876.162	11	3.3	ceramic	



## Probes and accessories (continued)

Stylus extensions with thread M2



Item No.	Length mm	Weight g	Price EUR
<b>Stainless steel:</b>			
876.067	5	0.2	
876.077	10	0.4	
876.070	20	0.9	
876.164	30	1.4	
876.165	40	1.8	
<b>Carbon fiber:</b>			
876.153	40	0.9	
876.154	50	1	
876.155	70	1.3	
876.156	90	1.5	
<b>Ceramic:</b>			
876.157	30	0.97	
876.158	40	1.22	
876.159	50	1.51	

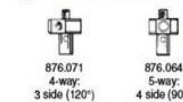
Stylus knuckles to put the probe in any desired position



Item No.	Thread	EWL* mm	Center offset/mm	Weight g	Price EUR
876.072	M2	8	4.5	1.6	
876.087	M2	16.5	-	1.3	

\*EWL: effective working length.

Stylus centers for a maximum of 5 styli



Item No.	Thread	EWL* mm	Center size/mm	Weight g	Price EUR
876.071	M2	7.5	7.5	1.1	
876.064	M2	8	7.5	0.8	

\*EWL: effective working length.

Adapters (stainless steel)



Item No.	Thread external/internal	Length mm	Weight g	Price EUR
876.074	M2/M3	7	0.4	
876.065	M3/M2	5	0.6	

Styli tool for fitting styli to probe modules, couplings and extensions



Item No.	Description	Price EUR
876.166	Styli tool for M2 and M3 threaded styli	