

Technical specifications
H-1000-3200-15-A

RENISHAW 
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Styli and accessories

When precision counts, insist on genuine Renishaw styli. Don't settle for less!



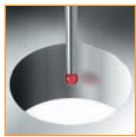
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Technical specifications

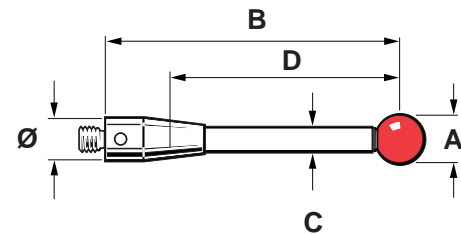
Ball material properties

Stylus type	Material	Grade	Deviation from spherical form	Structure	Composition	Purity	Density	Hardness	Compression strength	Bending strength	Fracture toughness K1c
			(μm)	-	(wt%)	(%)	(g/cm^3)	HV	(MPa)	(MPa)	($\text{MN}/\text{m}^{3/2}$)
AL ₂ O ₃ Ruby balls	Synthetic ruby monocrystalline	Grade 5*	0.13	mono	99% AL ₂ O ₃	99.90	3.90	2300	2100	400-700	1
Silicon nitride balls	Hard pressed Si ₃ N ₄	Grade 5*	0.13	poly	Si ₃ N ₄	90	3.0-3.2	1600	3000	850	6
Zirconia oxide balls	Sintered ZrO ₂	Grade 5*	0.13	poly	ZrO ₂	90-95	6.05	1200	2000	1000	10
Alumina hollow balls	White ceramic sintered alumina AL ₂ O ₃	-	1	poly	AL ₂ O ₃	99.80	3.8-3.9	1900	2500	350	3.5
Silver steel discs	Silver steel	-	1	-	-	-	8	450	-	-	-
Silver steel simple cylinder	Silver steel	-	Roundness 4 μm	-	-	-	8	200	-	-	-
Ruby ball ended cylinder	Synthetic ruby	Ball: Grade 5*	Ball deviation from spherical form : 0.13 Concentricity: Ball/cylinder 4 μm	mono	99% AL ₂ O ₃	99.90	3.99	2300	2300	400-700	1
Tungsten carbide ball ended cylinder	Tungsten carbide	-	+ 20 μm end radius	-	92-93.5% WC 6.5-8% CO	14.8	14.95	1550	6000	-	-
Silver steel simple pointer	Silver steel	-	Cone angle 30°	-	-	-	8	300	-	-	-
Tungsten carbide radius end pointer	Tungsten carbide	-	Cone angle 30°	-	92-93.5% WC 6.5-8% CO	99.90	15	1550	6000	-	-
Aluminium hollow balls	Al. alloy 6082-T6	-	30 μm	-	95.2-98.3% AL	-	2.7	95	-	-	-

* Refers to DIN-5401 ball grade standard
* Grade 3 sphericity balls are available on request.

Extension material properties

Material	Coefficient of expansion @25°C
Stainless steel	$16 \times 10^{-6}/^\circ\text{C}$
Tungsten carbide	$5 \times 10^{-6}/^\circ\text{C}$
White ceramic sintered alumina	$8.1 \times 10^{-6}/^\circ\text{C}$
Carbon fibre	$-0.4 \times 10^{-6}/^\circ\text{C}$
Titanium	$9.2 \times 10^{-6}/^\circ\text{C}$
Ruby	$4.5 \times 10^{-6}/^\circ\text{C}$
Silicon nitride	$3.2 \times 10^{-6}/^\circ\text{C}$
Zirconia	$10.5 \times 10^{-6}/^\circ\text{C}$



- A** Ball diameter
- B** Overall length
- C** Stem diameter
- D** Effective working length
- ∅ M2 = 3 mm
- ∅ M3 = 4 mm
- ∅ M4 = 7 mm
- ∅ M5 = 10 mm

M2 styli and extensions quick reference guide*

Ruby ball / stainless steel stem

Ball diameter	1.0 (0.4)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
Length 10 mm	A-5000-7806	A-5000-7802	A-5000-7807	A-5000-7803	A-5000-3604	A-5000-4154	A-5000-4155	A-5000-4156	A-5000-4158
20 mm	–	–	A-5000-3603	A-5000-7804	A-5000-4160	A-5000-4161	–	–	–

Ruby ball / tungsten carbide stem

Ball diameter	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
Length 10 mm	A-5000-7800	A-5000-7805	A-5000-7801	A-5003-1325	–	–	–	–	–	–
20 mm	–	A-5003-1345	A-5003-0577	SEE DRAWING	A-5003-0034	A-5003-3822	A-5003-1896	A-5003-0938	A-5003-1029	A-5003-0046
30 mm	–	–	–	A-5000-8663	A-5003-0035	A-5003-0036	A-5003-0038	A-5003-0040	A-5003-0043	A-5003-0047
40 mm	–	–	–	–	–	A-5003-0037	A-5003-0039	A-5003-0041	A-5003-0044	A-5003-0048
50 mm	–	–	–	–	–	–	–	A-5003-0042	A-5003-0045	A-5003-0049

Ruby ball / ceramic stem

Ball diameter	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
Length 30 mm	A-5003-4177	A-5003-1370	A-5003-4779	A-5003-4780
50 mm	A-5003-0064	A-5003-0065	A-5003-0066	A-5003-0470

Ruby ball / carbon fibre stem

Ball diameter	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
Length 30 mm	A-5003-4241	A-5003-4781	A-5003-4782
50 mm	A-5003-2285	A-5003-2286	A-5003-2287
75 mm	A-5003-4784	A-5003-4785	A-5003-4786
100 mm	A-5003-2289	A-5003-2290	A-5003-2291

Stylus extensions

Length	5.0 (0.20)	10.0 (0.40)	20.0 (0.79)	30.0 (1.19)	40.0 (1.58)	50.0 (1.97)	70.0 (2.76)	90.0 (3.55)
Stainless steel	M-5000-7634	M-5000-3647	M-5000-3648	M-5000-4162	M-5000-7779	–	–	–
Ceramic	–	–	–	A-5003-0070	A-5003-0071	A-5003-0072	–	–
Carbon fibre	–	–	–	–	A-5003-2280	A-5003-2281	A-5003-2282	A-5003-2283

* These are a selection of the most popular styli

M3 styli and extensions quick reference guide*

Ruby ball / stainless steel stem

Ball diameter		1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
Length	21 mm	A-5000-3551	A-5000-3552	A-5000-3553	A-5000-7606	A-5000-7630
	31 mm	–	–	–	A-5000-3554	A-5000-7648

Ruby ball / tungsten carbide stem

Ball diameter		0.5 (0.020)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
Length	21 mm	A-5000-7632	A-5003-0050	–	A-5003-0054	–	–	–
	30 mm	–	A-5003-0051	A-5003-0052	A-5003-0055	A-5003-0057	–	–
	40 mm	–	–	A-5003-0053	A-5003-0056	A-5003-0058	A-5003-0060	A-5003-0062
	50 mm	–	–	–	–	A-5003-0059	A-5003-0061	A-5003-0063

Ruby ball / ceramic stem

Ball diameter		3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
Length	50 mm	A-5003-0067	A-5003-0068	A-5003-0069

Ruby ball / carbon fibre stem

Ball diameter		6.0 (0.24)	8.0 (0.32)
Length	75 mm	A-5003-4860	A-5003-4861
	100 mm	A-5003-4862	A-5003-4863

Stylus extensions

Length		10.0 (0.40)	20.0 (0.79)	35.0 (1.38)	50.0 (1.97)	70.0 (2.76)
Stainless steel		M-5000-7633	M-5000-3592	M-5000-3593	–	–
Ceramic		–	–	–	A-5003-0075	–
Carbon fibre		–	–	–	A-5003-4864	A-5003-4865

*These are a selection of the most popular styli

M4 styli and extensions quick reference guide*

Ruby ball / stainless steel stem

Ball diameter	1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
Length 10 mm	–	–	–	–	A-5000-6350	–	–
20 mm	A-5000-7545	A-5000-7547	A-5000-7549	A-5000-7551	SEE DRAWING	A-5000-7555	A-5000-7557
30 mm	–	–	–	–	A-5000-6352	–	–
50 mm	–	–	–	–	A-5000-7521	–	–
100 mm	–	–	–	–	A-5000-7522	–	–

Ruby ball / tungsten carbide stem

Ball diameter	1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
Length 20 mm	A-5003-4792	A-5003-2932	A-5003-4793	A-5003-4794	A-5003-4795	A-5003-4796
50 mm	–	A-5003-4797	A-5003-3680	A-5003-4799	A-5003-4800	A-5003-4801

Ruby ball / ceramic stem

Ball diameter	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
Length 50 mm	A-5003-0235	A-5000-3709	A-5000-7795
75 mm	A-5003-0236	A-5003-2764	A-5003-4802
100 mm	A-5000-9761	A-5000-3712	A-5000-7796

Ruby ball / carbon fibre stem

Ball diameter	6.0 (0.24)	8.0 (0.32)
Length 50 mm	A-5003-1436	–
100 mm	A-5003-1358	–
150 mm	A-5003-1255	–
200 mm	A-5003-1075	–
300 mm	–	A-5003-3461

Stylus extensions

Length	10.0 (0.40)	15.0 (0.60)	20.0 (0.79)	30.0 (1.19)	50.0 (1.97)	100.0 (3.94)
Stainless steel	M-5000-7583	M-5000-7584	M-5000-7585	M-5000-7586	–	–
Ceramic	–	–	–	A-5000-7754	A-5000-7755	A-5000-7727

*These are a selection of the most popular styli

M5 styli and extensions quick reference guide*

Ruby ball / tungsten carbide stem

Ball diameter	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
Length 20 mm	A-5003-5201	A-5003-5202	A-5003-5203	A-5003-5204	A-5003-5205	A-5003-5206	A-5003-5207	A-5003-5208	A-5003-5209	A-5003-5210
30 mm	A-5003-5211	A-5003-5212	A-5003-5213	A-5003-5214	A-5003-5215	A-5003-5216	A-5003-5217	A-5003-5218	A-5003-5219	A-5003-5220
40 mm	–	–	–	–	A-5003-5221	A-5003-5222	A-5003-5223	A-5003-5224	–	–
50 mm	A-5003-5225	A-5003-5226	A-5003-5227	A-5003-5228	A-5003-5229	SEE DRAWING	A-5003-5232	A-5003-5234	A-5003-5235	A-5003-5236
75 mm	A-5003-5240	A-5003-5241	A-5003-5242	A-5003-5243	A-5003-5244	–	–	A-5003-5253	SEE DRAWING	SEE DRAWING
100 mm	–	–	–	–	–	–	A-5003-5254	–	–	–

Ruby ball / carbon fibre stem

Ball diameter	2.5 (0.10)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
Length 20 mm	–	–	–	–
30 mm	–	–	–	–
40 mm	–	–	–	–
50 mm	–	A-5003-5237	A-5003-5238	A-5003-5239
75 mm	–	A-5003-5250	A-5003-5251	A-5003-5252
100 mm	–	SEE DRAWING	SEE DRAWING	SEE DRAWING
150 mm	–	A-5003-5265	A-5003-5266	A-5003-5267
200 mm	–	A-5003-5268	A-5003-5269	A-5003-5270
300 mm	–	A-5003-5271	A-5003-5272	A-5003-5273

Stylus extensions

Length	10.0 (0.40)	20.0 (0.79)	30.0 (1.19)	40.0 (1.58)	50.0 (1.97)	60.0 (2.37)	70.0 (2.76)	80.0 (3.15)	90.0 (3.55)	100.0 (3.94)
CF/Titanium (Ø11 mm)	–	–	–	A-5555-0647	A-5555-0648	A-5555-0649	A-5555-0623	A-5555-0650	A-5555-0651	A-5555-0652
CF/Titanium (Ø20 mm)	–	–	–	A-5555-0620	A-5555-0657	A-5555-0658	–	A-5555-0621	–	A-5555-0659
Stainless steel	A-5555-0142	A-5555-0140	A-5555-0669	–	A-5555-0670	–	–	–	–	A-5555-0136
Aluminium tube	–	–	–	–	A-5555-0671	–	–	–	–	A-5555-0127

Length	120.0 (4.73)	150.0 (5.91)	180.0 (7.09)	200.0 (7.88)	250.0 (9.85)	300.0 (11.82)	400.0 (15.76)	500.0 (19.70)	600.0 (23.64)
CF/Titanium (Ø11 mm)	A-5555-0425	A-5555-0424	A-5555-0653	A-5555-0654	A-5555-0655	A-5555-0642	A-5555-0656	–	–
CF/Titanium (Ø20 mm)	A-5555-0660	A-5555-0621	A-5555-0662	A-5555-0663	A-5555-0427	A-5555-0664	A-5555-0665	A-5555-0667	A-5555-0668
Stainless steel	–	–	–	–	–	–	–	–	–
Aluminium tube	–	–	–	A-5555-0125	–	–	–	–	–

*These are a selection of the most popular styli

Accuracy at the point of contact

2.1



Accuracy at the point of contact

As industry has developed its requirement for increasingly diverse and complex manufactured parts, inspection systems have had to work hard to keep up. The use of co-ordinate measuring machines (CMMs) with probing systems and in-process inspection on machine tools are two of the solutions offered by Renishaw to help you maximise your productivity and maintain the highest quality.

Successful gauging depends very much on the ability of the probe's stylus to access a feature and then maintain accuracy at the point of contact. At Renishaw, we have used our expertise in probe and stylus design to develop a comprehensive range of CMM and machine tool styli to offer you the greatest possible precision.

These notes explain the critical features of every stylus type, helping you to choose the right design for each inspection need.

What is a stylus?

A stylus is that part of the measuring system which makes contact with the component, causing the probe's mechanism to displace. The generated signal enables a measurement to be taken. The feature to be inspected dictates the type and size of stylus used. In all cases, however, maximum rigidity of the stylus and perfect sphericity of the tip are vital.

To achieve this, Renishaw's stylus stems are produced on CNC machine tools to exacting standards. Great care is taken to ensure that location faces give maximum stiffness whilst stylus mass is optimised to suit Renishaw's range of probes.

Genuine Renishaw stylus balls are produced to the highest standards and are bonded to the stems in such a way as to ensure maximum joint integrity.

The performance of your gauging can easily be degraded if you use a stylus with poor ball roundness, poor ball location, bad thread fit or a compromised design that allows excessive bending during measurement. To ensure the integrity of the data you gather, make certain that you specify and use a stylus from the comprehensive range of genuine Renishaw styli.

What naming protocol do Renishaw use to describe their styli range?

Renishaw uses the following naming protocol to allow easy identification of styli by name and part number. The examples below show how this protocol is assigned and describe the abbreviations used:

Straight styli

M2 STY D2R L20 EWL14 d1.4SS

The above protocol describes an M2 threaded straight stylus fitted with a 2 mm diameter ruby ball. It has an overall length of 20 mm, has an effective working length (EWL) of 14 mm and has a 1.4 mm diameter stainless steel stem.

Star styli

M2 STR D2R L20 5BALL L19.5 S32

The above protocol describes an M2 threaded star stylus fitted with a 2 mm diameter ruby ball. It has 5 balls on the star and an overall length of 19.5 mm (from the centre of the ball to the rear of the star mounting face when assembled to a probe). The span of the star cluster is 32 mm.

Disc styli

M2 DSC SD18 SLVS T2.2 L2.6 BR-Y

The above protocol describes an M2 threaded disc stylus with a spherical diameter disc of 18 mm. It is made from silver steel with a disc thickness of 2.2 mm and a length of 2.6 mm. BR stands for balls/rollers followed by yes (Y) or no (N).

Cylinder styli

M2 CYL D3 SLVS L13 EWL4

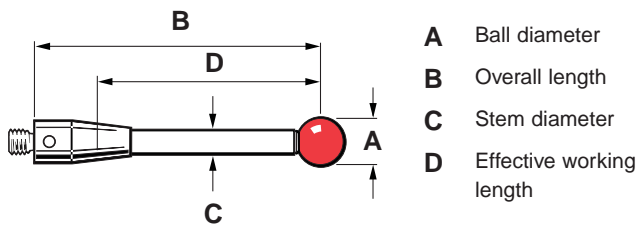
The above protocol describes an M2 threaded cylinder stylus with a critical measuring element diameter of 3 mm made from silver steel. It has an overall length of 13 mm and an EWL of 4 mm.

Extensions

M4 EXT L15 d7 SS

The above protocol describes an M4 threaded extension with a length of 15 mm diameter and a diameter of 7 mm. The extension is made from stainless steel.

Terminology



Overall length

Renishaw uses a standard description of overall length, measuring from the rear mounting face of the stylus to the centre of the ball.

Effective working length (EWL)

This is measured from the centre of the ball to the point at which the stem will foul against the feature when measuring 'normal' to the part.

Choosing a stylus

To maintain accuracy at the point of contact we recommend that you:

Keep styli short

The more that a stylus bends or deflects, the lower the accuracy. Probing with the minimum stylus length for your application is the best option.

Minimise joints

Every time you join styli and extensions, you introduce potential bending and deflection points. Try, wherever possible, to keep to the minimum number of pieces for your application.

Keep the ball as large as possible

There are two reasons for this,

- firstly, it maximises your ball/stem clearance thereby reducing the chances for false triggers caused by 'shanking out' on the stylus stem
- secondly, the larger ball reduces the effect of the surface finish of the component being inspected.

The range of genuine Renishaw styli

Ball material

Ruby

The industry standard and the optimum stylus ball material for a vast majority of measurement applications, ruby is one of the hardest known materials. Synthetic ruby is 99% pure aluminium oxide which is grown into crystals (or "boules") at 2000 °C using the Verneuil process.

The boules are then cut and gradually machined into a highly spherical form. Ruby balls are exceptionally smooth on the surface, have great compressive strength and a high resistance to mechanical corrosion.

Very few applications exist where ruby is not the preferred ball material, however there are two applications where balls manufactured from other materials are recommended.

The first is for heavy duty scanning applications on aluminium. Because the materials attract, a phenomenon known as 'adhesive wear' can occur which involves build up of aluminium from the surface onto the ball. A better ball material for such applications is silicon nitride.

The second is in heavy duty scanning applications on cast iron. Interaction between the two materials can result in 'abrasive wear' of the ruby ball surface. For such applications, Zirconia balls are recommended.

Silicon nitride

Silicon nitride possesses many similar properties to ruby. It is a very hard and wear-resistant ceramic which can be machined into very high precision spheres. It can also be polished to an extremely smooth surface finish. Silicon nitride does not have the attraction to aluminium and so does not exhibit the adhesive wear seen with ruby in similar applications. However, silicon nitride does show significant abrasive wear characteristics when scanning on steel surfaces and so its applications are best confined to aluminium.

Zirconia

Zirconia is a particularly tough ceramic material with hardness and wear characteristics approaching those of ruby. Its surface properties make it an ideal material for aggressive scanning applications on cast iron components.

Stem material

Steel

Stylus stems manufactured from stainless steel are used widely for styli with ball/tip diameters of 2 mm or greater and with lengths up to 30 mm. Within this range, one-piece steel stems offer the optimum stiffness to weight ratio, giving adequate ball/stem clearance without compromising stiffness with a joint between the stem and threaded body.

Please contact us if you require any styli with special ball materials. We can recommend the most suitable material for scanning different materials

Styli and accessories

Tungsten carbide

Tungsten carbide stems are best used for maximising stiffness with either small stem diameters required for ball diameters of 1 mm and below, or lengths up to 50 mm. Beyond this, weight can become a problem and stiffness is lost due to deflection at the stem to body joint.

Ceramic

For ball diameters greater than 3 mm, and lengths over 30 mm, ceramic stems offer stiffness comparable to steel but are significantly lighter than tungsten carbide. Ceramic stemmed styli can also offer additional crash protection to your probe as the stem will shatter in a collision.

Carbon fibre (Renishaw GF)

There are many grades of carbon fibre materials. However, Renishaw GF combines optimum stiffness characteristics, both longitudinally and in torsion (important in star constructions), with extremely low weight. Carbon fibre is inert and this, combined with a special resin matrix, provides excellent protection in the most hostile of machine tool environments.

Renishaw GF is ideal for maximising stiffness while giving very low mass for styli above 50 mm in length. It is the optimum stem material for high accuracy strain gauge technology probes with excellent vibration damping characteristics and negligible co-efficient of thermal expansion.

The genuine Renishaw stylus range comprises several types:

Straight styli



These are the simplest form of stylus, incorporating highly spherical industrial ruby balls and a choice of stem material.

Ruby is an extremely hard material and hence stylus wear is minimised. It is also of low density, keeping tip mass to a minimum, which avoids unwanted probe triggers caused by machine motion or vibration.

Mounted on stems made from a range of materials – stainless steel, tungsten carbide, ceramic and a specialised carbon fibre material, “Renishaw GF” – these simple ruby ball styli are suitable for most inspection applications.

Each stylus has an effective working length (EWL) which is the penetration that can be achieved by the ball before the stem fouls against the feature.

The size of the ball and the EWL of the stylus chosen are dictated by the size of the feature to be inspected. However, keeping the stylus ball as large as possible and the stem as short as possible will ensure maximum ball/stem clearance, whilst providing a greater yet still rigid EWL. Using larger ruby balls also reduces the effect of the surface finish of the component being inspected.

Probing with very long stylus/extension combinations is not recommended with standard kinematic touch trigger probes as the rigidity is reduced and accuracy lost due to stylus bending. This is not the case with other types of probe such as those with strain gauge technology, as their very low trigger forces permit the use of long stylus/extension combinations without a significant loss of accuracy.

Star styli



These stylus clusters provide you with multiple-tip probing of complex features and bores. Four or five ruby ball systems are mounted rigidly on a stainless steel centre. Three standard sizes are offered – alternatively, you can create custom-made star styli using a 5-way stylus centre and any of the genuine Renishaw stylus range.

Star styli can be used to inspect a variety of different features. Their use can reduce inspection cycle times by allowing multi-tip probing, minimising the need to move the probe to extreme points of internal features such as the sides or grooves in a bore. Using star styli also allows effective probing in the –Z (upwards) direction when using a 5-way probe, provided that the stylus tips extend beyond the diameter of the probe body. Each tip on a star stylus requires datuming (sometimes referred to as ‘qualifying’ or ‘calibrating’) in the same manner as a single-ball stylus. The ‘span’ of star styli is taken from ball centre to ball centre.

Disc styli



These styli are used to probe undercuts and grooves within bores which may be inaccessible to star styli. They are ‘sections’ of highly spherical balls and are available in various diameters and thicknesses. Full rotational adjustment and the ability to add a centre stylus are features of the Renishaw range of disc styli that make them particularly flexible and easy to use.

Probing with the 'spherical edge' of a simple disc is effectively the same as probing on or about the equator of a large stylus ball. However, only a small area of this ball surface is available for contact and hence thinner discs require careful angular alignment in order to ensure correct contact with the feature being probed.

A simple disc requires datuming for only one diameter (usually in a ring gauge), but limits effective probing to only X and Y directions.

Adding a 'radius end roller' allows you to datum and hence probe in the Z direction, provided that the centre of the 'radius end roller' extends beyond the diameter of the probe. The 'radius end roller' can be datumed on a sphere or a slip gauge. Rotating and locking the disc about its centre axis allows the 'radius end roller' to be positioned to suit the application.

Discs may also have a threaded centre to allow the fixing of a centre stylus, giving the additional flexibility of probing the bottom of deep bores (where access for the disc may be limited).

Styli for specialist applications

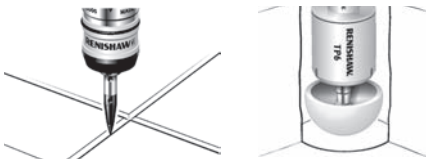
A range of specialist styli is available to enable probing of features such as thread form, thin sectioned material, tool setting and other specialist applications.

Cylinder styli



These are used for probing holes in thin sheet material. In addition, various threaded features can be probed and the centres of tapped holes located. Ball-ended cylinder styli allow full datuming and probing in X, Y and Z directions, thus allowing surface inspection to be performed.

Pointer and ceramic hollow ball styli



Pointer styli are designed for the inspection of thread forms, specific points and scribed lines (to lower accuracy). The use of a radius end pointer stylus allows more accurate datuming and probing of features as detailed above and can also be used to inspect the location of very small holes.

Ceramic hollow ball styli are ideal for probing deep features and bores in X, Y and Z directions, with the need to datum only one ball. There are two versions in the range, 18 and 30 mm diameter, specially designed for the TP2 / TP20 / TP200 and TP6 probes respectively. Probing with such a large diameter ball can average out the effects of very rough surfaces.

Tool setting styli



Typically, these are fitted with a square tip and can have threaded or plain shaft attachments. The tip faces are ground to ensure high squareness and parallelism. The TS27R tool setting probe for machining centres can also be fitted with a tungsten carbide disc stylus.

Crash protection devices



Renishaw's stylus crash protection devices are designed to break in the event of impact and protect the probe from damage.

Accessories and tools

A wide range of accessories including extensions, 4 and 5-way centres and stylus knuckles complement the genuine Renishaw stylus range to achieve fully flexible inspection.

Stylus centres



These provide maximum probing flexibility with a single probe. Taking up to five styli of the same mounting thread, this accessory allows you to build stylus configurations to your own specification.

Stylus knuckles



These give full adjustment about two axes, allowing the stylus to be orientated to probe angled features. This adjustment is especially useful when the probe cannot be correctly orientated by the probe head, or when access for the head is limited.

Stylus extensions



These provide additional probing penetration by extending the stylus away from the probe. However, using stylus extensions can reduce probe accuracy due to loss of rigidity. This is not the case with electronic probes, whose extremely low trigger forces render them less sensitive to this type of inaccuracy.

Stylus thread adaptors



These allow M2, M3, M4 and M5 threaded styli to be interchanged on the majority of touch trigger probes. They are particularly useful for adapting the extensive range of specialised application M2 styli for use on larger probes.

Stylus tools

Specifically designed for mounting styli correctly onto probes and for the construction of specialised stylus combinations, Renishaw's stylus tools protect your investment.

The S7 stylus tool



The S7 stylus tool is used for tightening styli and accessories when connecting to one another or directly into the probe. It is specifically designed to yield if excessive tightening force is applied, avoiding damage to the threads of stylus and probe.

A stylus crank



A stylus crank can allow access to features that are otherwise difficult to reach, and are often used in lathe inspection applications.

Renishaw stylus kits

Renishaw styli and accessories are available in a wide selection of kits, ranging from a small precision set of the most frequently used styli, to a comprehensive set to meet virtually every inspection need.

Some sets are housed in a quality wooden case for maximum protection and superb presentation. The styli are held in a wood insert, individually located in a nylon sleeve providing protection for the mounting threads. This type of box features a removable module which houses up to twelve ruby ball styli and contains a tray for discs, tools and accessories. This allows the stylus selection for a particular inspection task to be brought to the CMM's table. The sloping lid design of this kit provides easy access to styli, minimising handling of ruby balls and contact surfaces, thus aiding cleanliness.

Probing kits are also available to include a probe, probe head, extension bars and styli.

Custom design service

If you cannot achieve your objectives using our extensive range of standard products, Renishaw's Styli and Custom Products Division offers a unique service by providing customers with a total solution for their probing needs for CMM, machine tool or scanning applications.

The Division includes expertise in applications, design, engineering and manufacturing with extensive experience in providing tailor-made product solutions to specific customer's requirements.

In many application problems, the solution lies in the choice of the stylus which influences access of the workpiece features, inspection times and probe performance. All of these aspects are considered within the design of a custom stylus, ensuring that the solution incorporates the ideal choice of materials and optimises probe performance for your particular application.

Renishaw's Styli and Custom Products Division has supplied over 5,000 different custom styli into probing applications worldwide, so the solution to your application problem may already exist.

For advice and further details, please contact your nearest Renishaw distributor.

Always use genuine Renishaw styli or your probe performance will be compromised!

M2 threaded stylus range

3.1
















TP200 with a SCR200 stylus changing rack

Renishaw's probing systems are designed to give optimum performance using styli from Renishaw's comprehensive range. The following probes all use M2 threaded styli, however with suitable adaptors, other thread sizes may be used.





- TP2
- TP20
- TP200
- Revo™

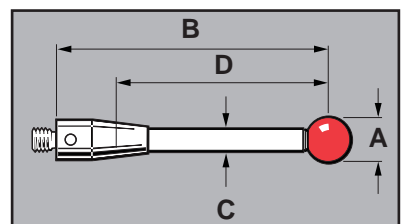
Ruby ball styli (stainless steel stems)

Ball material		Part number								
Ruby		A-5000-7806	A-5000-7802	A-5000-7807	A-5000-7803	A-5000-3604	A-5000-4154	A-5000-4155	A-5000-4156	A-5000-4158
Silicon nitride		A-5004-0210	A-5004-1918	A-5003-6120	A-5004-1920	A-5003-2138	A-5003-9524	A-5004-1921	A-5004-0237	A-5004-1922
Zirconia		A-5003-7757	A-5004-0165	A-5003-7723	A-5004-2913	A-5004-2914	A-5003-7261	A-5003-2186	A-5004-2203	A-5004-2915
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
B	Length mm (in.)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	11.0 (0.44)
C	Stem dia. mm (in.)	0.7 (0.028)	0.7 (0.028)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	1.5 (0.06)	2.5 (0.10)	2.5 (0.10)	2.5 (0.10)
D	EWL* mm (in.)	4.5 (0.18)	4.5 (0.18)	6.0 (0.24)	6.5 (0.25)	7.0 (0.28)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	11.0 (0.44)
	Mass grammes	0.3	0.3	0.3	0.3	0.4	0.4	0.7	0.9	1.5
10 mm range										

Ball material		Part number			
Ruby		A-5000-3603	A-5000-7804	A-5000-4160	A-5000-4161
Silicon nitride		A-5003-1730	A-5004-1923	A-5003-6691	A-5004-0236
Zirconia		A-5004-2916	A-5004-2917	A-5004-1057	A-5004-2918
A	Ball dia. mm (in.)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
C	Stem dia. mm (in.)	1.4 (0.05)	1.4 (0.05)	1.5 (0.06)	1.5 (0.06)
D	EWL* mm (in.)	14.0 (0.56)	16.4 (0.64)	17.0 (0.67)	20.0 (0.79)
	Mass grammes	0.4	0.4	0.5	0.6
20 mm range					

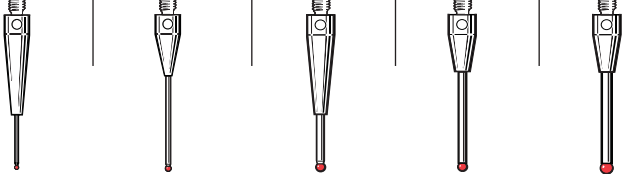
Ruby ball styli (tungsten carbide stems)

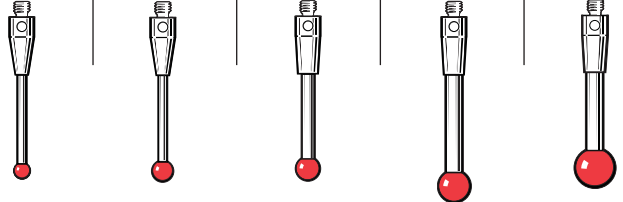
Ball material		Part number			
Ruby		A-5000-7800	A-5000-7805	A-5000-7801	A-5003-1325
Silicon nitride		A-5004-2016	A-5003-2020		A-5004-2018
Zirconia			A-5003-7672	A-5004-2632**	A-5004-2919**
A	Ball dia. mm (in.)	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)	1.0 (0.04)
B	Length mm (in.)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)
C	Stem dia. mm (in.)	0.2 (0.01)	0.4 (0.02)	0.5 (0.020)	0.7 (0.028)
D	EWL* mm (in.)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	4.0 (0.16)
	Mass grammes	0.3	0.3	0.3	0.3
10 mm range					

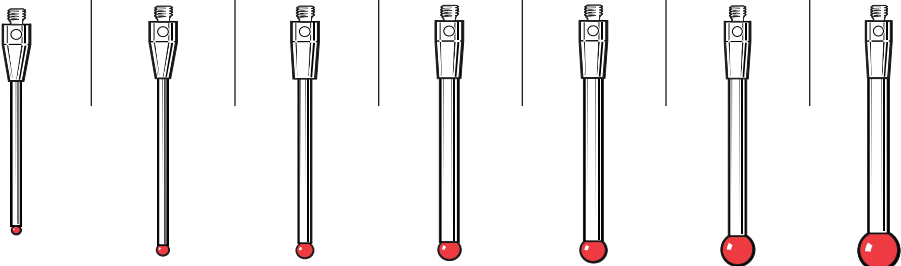


**Special

Ruby ball styli (tungsten carbide stems) – continued

Ball Material		Part number				
Ruby		A-5003-1345	A-5003-0577	A-5000-7808	A-5003-0033	A-5003-0034
Silicon nitride		A-5004-2019		A-5004-1508	A-5004-2021	A-5004-1925
Zirconia		A-5004-2920	A-5004-1714**	A-5004-0435	A-5004-2921	A-5004-2922
A	Ball dia. mm (in.)	0.5 (0.020)	0.7 (0.028)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.76)	20.0 (0.76)
C	Stem dia. mm (in.)	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)	0.8 (0.04)	1.0 (0.04)
D	EWL* mm (in.)	7.0 (0.28)	12.0 (0.48)	7.0 (0.28)	12.5 (0.50)	12.5 (0.50)
	Mass grammes	0.48	0.32	0.50	0.41	0.50
20 mm range						

Ball material		Part number				
Ruby		A-5003-3822	A-5003-1896	A-5003-0938	A-5003-1029	A-5003-0046
Silicon nitride		A-5004-1017	A-5004-1928	A-5004-1021	A-5004-1929	A-5004-1930
Zirconia		A-5004-2923	A-5004-2924	A-5004-0437	A-5004-2925	A-5004-2926
A	Ball dia. mm (in.)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	22.0 (0.87)	20.0 (0.79)
C	Stem dia. mm (in.)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)
D	EWL* mm (in.)	14.0 (0.55)	15.5 (0.62)	17.0 (0.67)	22.0 (0.87)	20.0 (0.79)
	Mass grammes	0.48	0.50	0.77	1.24	1.98
20 mm range						

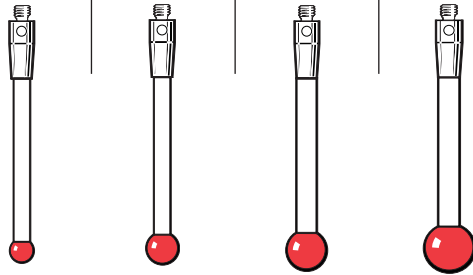
Ball material		Part number						
Ruby		A-5000-8663	A-5003-0035	A-5003-0036	A-5003-0038	A-5003-0040	A-5003-0043	A-5003-0047
Silicon nitride		A-5004-2022	A-5004-1931	A-5003-7573	A-5004-1932	A-5004-1933	A-5004-1944	A-5004-1945
Zirconia		A-5004-2927	A-5004-1711	A-5004-1058	A-5004-2928	A-5004-0264	A-5004-2929	A-5004-2930
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	27.5 (1.08)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	0.7 (0.028)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)
D	EWL* mm (in.)	20.5 (0.81)	22.5 (0.89)	22.5 (0.89)	22.5 (0.89)	27.0 (1.06)	30.0 (1.19)	30.0 (1.19)
	Mass grammes	0.40	0.58	0.99	1.48	1.49	1.57	2.57
30 mm range								

*Effective working length

Ruby ball styli (ceramic stems)

Ball material		Part number			
Ruby		A-5003-4177	A-5003-1370	A-5003-4779	A-5003-4780
Silicon nitride		A-5004-1946	A-5004-1952	A-5004-1953	A-5004-1954
Zirconia		A-5004-2931	A-5004-2932	A-5004-2933	A-5004-2934
A	Ball dia. mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)
D	EWL* mm (in.)	27.0 (1.06)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
	Mass grammes	0.44	0.68	0.93	1.11

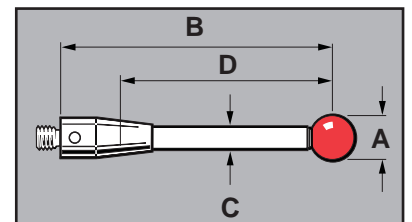
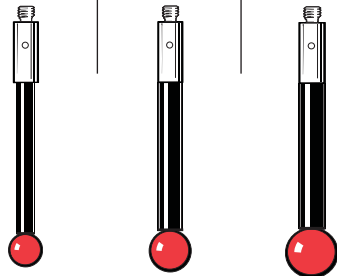
30 mm range



Ruby ball styli (carbon fibre stems)

Ball material		Part number		
Ruby		A-5003-4241	A-5003-4781	A-5003-4782
Silicon nitride		A-5004-1955	A-5004-1956	A-5004-1957
Zirconia		A-5004-2935	A-5004-2936	A-5004-0618
A	Ball dia. mm (in.)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	2.0 (0.08)	3.0 (0.12)	3.0 (0.12)
D	EWL* mm (in.)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
	Mass grammes	0.57	0.79	0.96

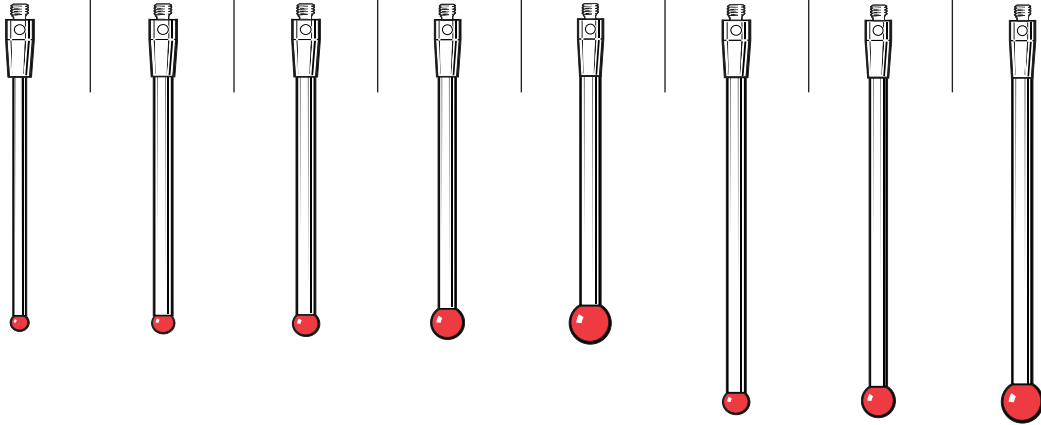
30 mm range



Ruby ball styli (tungsten carbide stems)

Ball material		Part number							
Ruby		A-5003-0037	A-5003-0039	A-5003-0041	A-5003-0044	A-5003-0048	A-5003-0042	A-5003-0045	A-5003-0049
Silicon nitride		A-5003-7269	A-5003-1959	A-5004-1960	A-5004-1961	A-5004-1962	A-5004-1963	A-5004-1964	A-5004-1965
Zirconia		A-5004-2937	A-5004-2938	A-5004-1059	A-5004-2939	A-5004-2940	A-5004-2942	A-5004-2943	A-5004-2944
A	Ball dia. mm (in.)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)
D	EWL* mm (in.)	32.5 (1.28)	32.5 (1.28)	37.0 (1.46)	40.0 (1.58)	40.0 (1.58)	47.0 (1.85)	50.0 (1.97)	50.0 (1.97)
	Mass grammes	1.29	1.95	1.97	2.04	3.17	2.44	2.52	3.75

40 mm - 50 mm
range



M2 threaded
stylus range

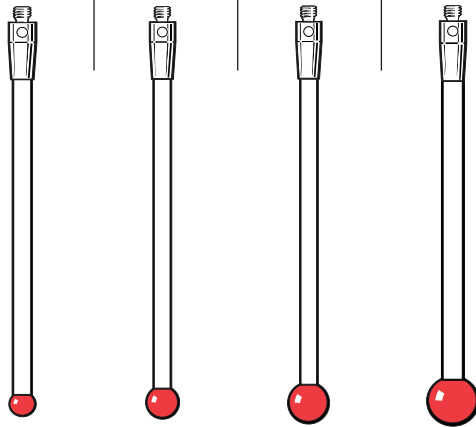
3.5

*Effective working length

Ruby ball styli (ceramic stems)

Ball material		Part number			
Ruby		A-5003-0064	A-5003-0065	A-5003-0066	A-5003-0470
Silicon nitride		A-5004-1967	A-5004-1519	A-5004-1968	A-5004-1969
Zirconia		A-5004-2945	A-5004-2946	A-5004-2947	A-5004-2948
A	Ball dia. mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)
D	EWL* mm (in.)	47.0 (1.85)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
	Mass grammes	0.83	0.91	1.31	1.49

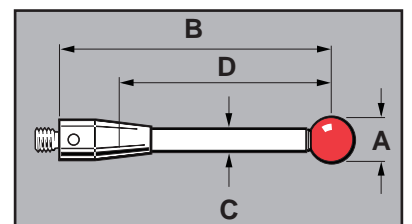
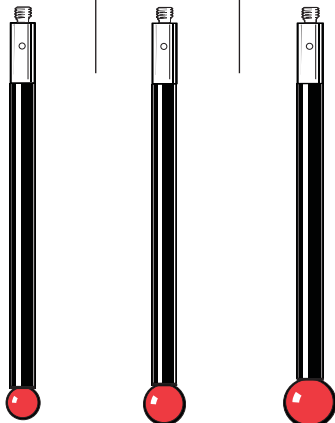
50 mm range



Ruby ball styli (carbon fibre stems)

Ball material		Part number		
Ruby		A-5003-2285	A-5003-2286	A-5003-2287
Silicon nitride		A-5004-1970	A-5004-1971	A-5004-1972
Zirconia		A-5004-1331	A-5004-1330	A-5004-1329
A	Ball dia. mm (in.)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
D	EWL* mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
	Mass grammes	1.00	1.10	1.20

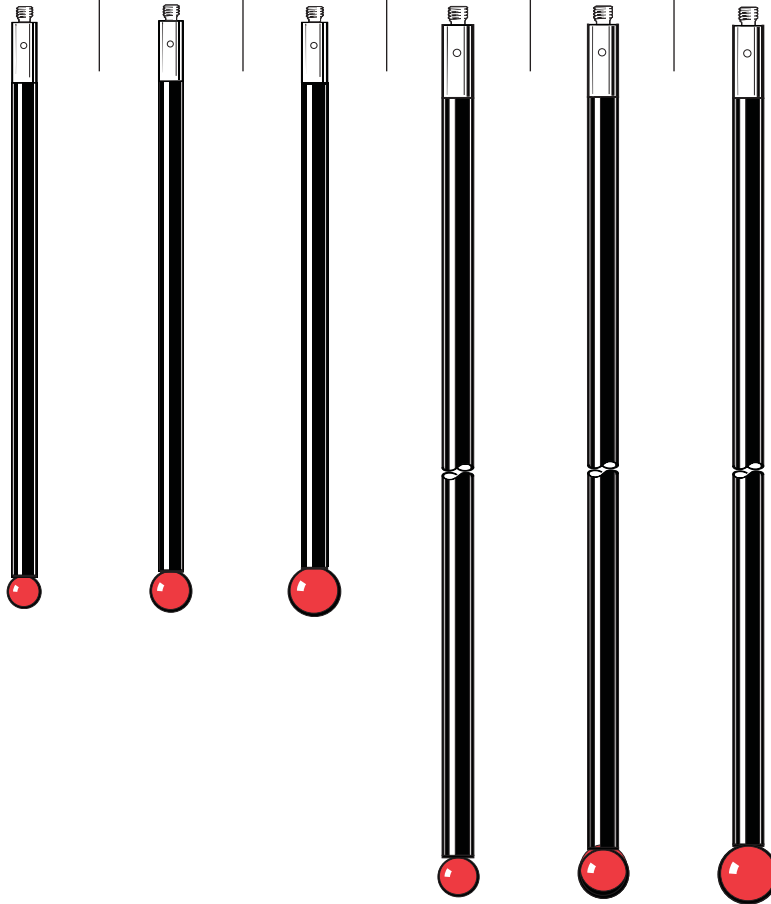
50 mm range



Ruby ball styli (carbon fibre stems)



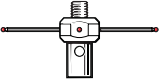
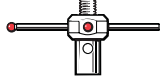
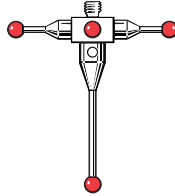
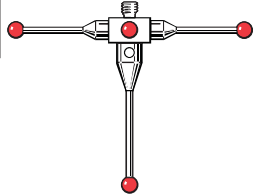
Ball material		Part number					
Ruby		A-5003-4784	A-5003-4785	A-5003-4786	A-5003-2289	A-5003-2290	A-5003-2291
Silicon nitride		A-5004-1973	A-5004-1974	A-5004-1975	A-5004-1976	A-5004-1977	A-5004-1978
Zirconia		A-5004-2949	A-5004-2950	A-5004-2951	A-5004-2952	A-5004-2953	A-5004-2954
A	Ball dia. mm (in.)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)
C	Stem dia. mm (in.)	2.0 (0.8)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
D	EWL* mm (in.)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)
	Mass grammes	0.75	1.35	1.45	1.50	1.59	1.78

75 mm -
100 mm range







*Effective working length





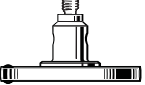
Star styli (fixed)

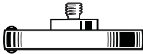


Part number	A-5003-4011	A-5000-7811	A-5003-4787	A-5003-4788	A-5000-7629	A-5000-3626
Span mm (in.)	10.0 (0.40)	10.0 (0.40)	20.0 (0.79)	20.0 (0.79)	18.0 (0.71)	30.0 (1.19)
Ball dia. mm (in.)	0.5 (0.020)	1.0 (0.04)	0.5 (0.020)	1.0 (0.04)	2.0 (0.08)	2.0 (0.08)
Stem dia. mm (in.)	0.3 (0.012)	0.7 (0.028)	0.3 (0.012)	0.7 (0.028)	1.4 (0.05)	1.4 (0.05)
EWL* mm (in.)	N/A	N/A	N/A	N/A	12.0 (0.48)	12.0 (0.48)
Mass grammes	0.7	0.5	0.7	0.9	1.3	1.8
						

Star styli centres







Part number	A-5003-4789	A-5003-4790	A-5003-4791	A-5000-3609
Ball dia mm (in.)	1.0 (0.04)	0.5 (0.020)	1.0 (0.04)	2.0 (0.08)
Stem dia. mm (in.)	0.7 (0.028)	0.4 (0.02)	0.7 (0.028)	1.4 (0.05)
EWL* mm (in.)	3.5 (0.14)	7.0 (0.28)	11.0 (0.44)	12.0 (0.48)
Mass grammes	0.31	0.43	0.45	0.44
				

Disc styli

Part number	A-5000-3611 Ruby	A-5004-1387 Silver steel	A-5004-1395 Silver steel	A-5004-1396 Silver steel	A-5000-7809 Silver steel
Disc dia mm (in.)	6.0 (0.24)	10.0 (0.40)	12.0 (0.47)	14.0 (0.55)	18.0 (0.71)
Disc depth mm (in.)	1.2 (0.05)	1.2 (0.05)	1.6 (0.06)	1.6 (0.06)	1.6 (0.07)
Roller depth mm (in.)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)	2.5 (0.10)
Stem dia. mm (in.)	2.0 (0.08)	2.0 (0.08)	4.2 (0.17)	4.2 (0.17)	4.2 (0.17)
Mass grammes	0.6	1.0	2.0	2.5	3.0
					

Part number	A-5000-3613 Silver steel	A-5000-7810 Silver steel	A-5000-4187 Silver steel
Disc dia mm (in.)	18.0 (0.71)	25.0 (0.99)	25.0 (0.99)
Disc depth mm (in.)	2.3 (0.10)	1.6 (0.07)	3.1 (0.13)
Roller depth mm (in.)	3.0 (0.12)	2.5 (0.10)	N/A
Stem dia. mm (in.)	N/A	4.2 (0.17)	N/A
Mass grammes	2.7	4.0	3.8
			

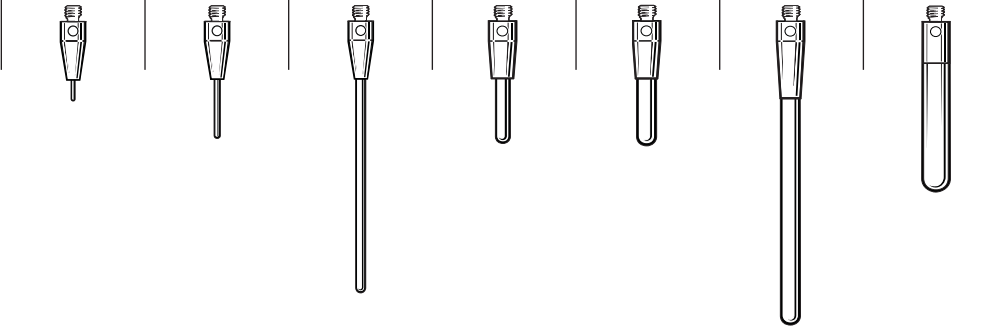
Cylinder styli

Part number	M-5000-4152 Silver steel	M-5000-4153 Silver steel	A-5000-8876 Ruby	A-5000-8877 Ruby	A-5000-7812 Ruby	A-5003-0073 Ruby
Cylinder dia mm (in.)	1.5 (0.06)	3.0 (0.12)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	4.0 (0.16)
Overall length mm (in.)	10.75 (0.42)	12.75 (0.50)	15.0 (0.60)	15.0 (0.60)	20.0 (0.79)	22.0 (0.87)
Stem dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	N/A	N/A	1.6 (0.07)	2.0 (0.08)
EWL* mm (in.)	1.25 (0.05)	3.8 (0.15)	8.0 (0.32)	8.0 (0.32)	7.2 (0.29)	10.0 (0.40)
Mass grammes	0.3	0.6	0.3	0.3	0.5	0.9
						

*Effective working length

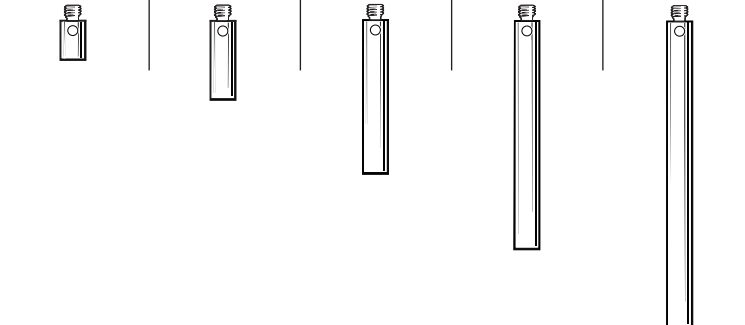
Parallel hemispherical ended styli (tungsten carbide)

Part number	A-5003-1208	A-5003-1210	A-5003-1218	A-5003-1219	A-5003-1228	A-5003-0074	A-5003-1258
Cylinder dia mm (in.)	0.3 (0.012)	0.5 (0.020)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	3.0 (0.12)
Overall length mm (in.)	10.2 (0.41)	15.3 (0.61)	35.5 (1.40)	15.8 (0.63)	16.0 (0.63)	40.0 (1.58)	22.5 (0.89)
EWL* mm (in.)	2.7 (0.11)	7.8 (0.31)	28.0 (1.10)	8.3 (0.33)	8.5 (0.34)	32.0 (1.26)	22.5 (0.89)
Mass grammes	0.3	0.3	0.7	0.6	0.8	2.0	2.0



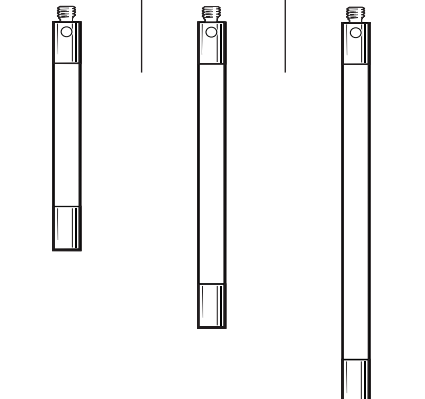
Stylus extensions (stainless steel)

Part number	M-5000-7634	M-5000-3647	M-5000-3648	M-5000-4162	M-5000-7779
Length mm (in.)	5.0 (0.20)	10.0 (0.40)	20.0 (0.79)	30.0 (1.19)	40.0 (1.58)
Stem dia. mm (in.)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
Mass grammes	0.2	0.4	0.9	1.4	1.8



Stylus extensions (ceramic)

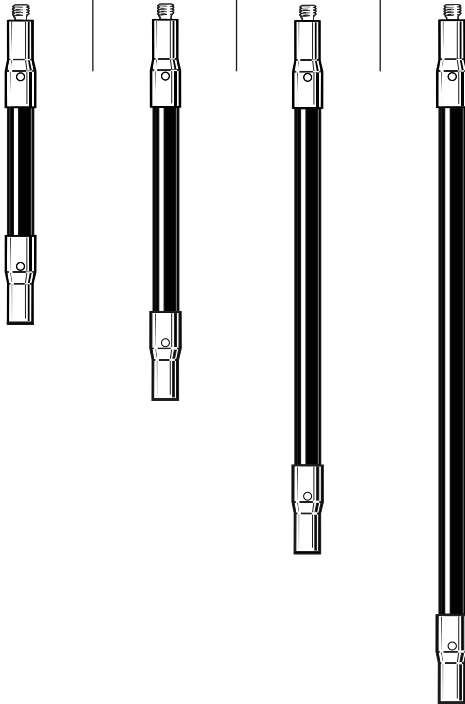
Part number	A-5003-0070	A-5003-0071	A-5003-0072
Length mm (in.)	30.0 (1.19)	40.0 (1.58)	50.0 (1.97)
Stem dia. mm (in.)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
Mass grammes	0.97	1.22	1.51



*Effective working length

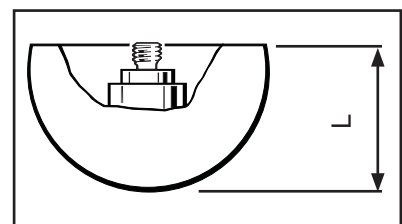
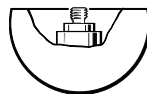
Stylus extensions (carbon fibre)

Part number	A-5003-2280	A-5003-2281	A-5003-2282	A-5003-2283
Length mm (in.)	40.0 (1.58)	50.0 (1.97)	70.0 (2.76)	90.0 (3.55)
Stem dia. mm (in.)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
Outer dia. mm (in.)	3.5 (0.14)	3.5 (0.14)	3.5 (0.14)	3.5 (0.14)
Mass grammes	0.9	1.0	1.3	1.5



Special purpose styli

Part number	M-5000-4150 Silver steel	A-5000-7813 Tungsten carbide	A-5000-3614 Ceramic
Length mm (in.)	15.0 (0.60)	10.0 (0.40)	11.0 (0.44)
Ball dia. mm (in.)	N/A	N/A	18.0 (0.71)
End feature mm (in.)	Flat Rad 0.05 (0.002)	Spherical Rad 0.1 (0.004)	N/A
Mass grammes	0.7	0.7	3.3
Angles	30° inclusive	30° inclusive	N/A



M3 threaded stylus range

4.1



SP25M with two FCR25s on a modular rail system

Renishaw's probing systems are designed to give optimum performance using styli from Renishaw's comprehensive range. The following probes all use M3 threaded styli, however with suitable adaptors, other thread sizes may be used.

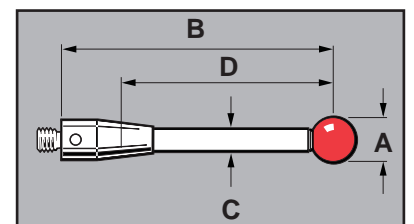
- TP1
- TP6
- REVO™
- SP25M

Ruby ball styli (stainless steel stems)

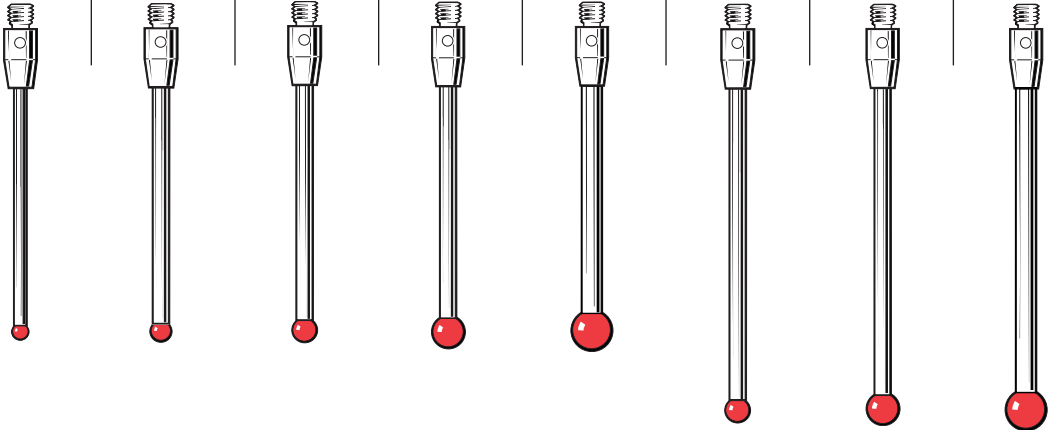
Ball material		Part number						
Ruby		A-5000-3551	A-5000-3552	A-5000-3553	A-5000-7606	A-5000-7630	A-5000-3554	A-5000-7648
Silicon nitride		A-5004-1979	A-5003-5723	A-5003-6257	A-5003-5061	A-5003-6695	A-5004-1980	A-5004-1981
Zirconia		A-5004-2955	A-5003-5736	A-5004-2956	A-5003-5737	A-5003-9500	A-5004-2957	A-5004-2958
A	Ball dia. mm (in.)	1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	31.0 (1.23)	31.0 (1.23)
C	Stem dia. mm (in.)	0.7 (0.028)	1.4 (0.05)	1.5 (0.06)	2.5 (0.10)	2.5 (0.10)	2.5 (0.10)	3.5 (0.14)
D	EWL* mm (in.)	4.0 (0.16)	9.6 (0.38)	14.7 (0.58)	17.2 (0.68)	21.0 (0.83)	27.0 (1.07)	31.0 (1.23)
	Mass grammes	1.0	1.0	1.0	1.3	1.5	2.5	3.0
21 mm - 31 mm range								

Ruby ball styli (tungsten carbide stems)

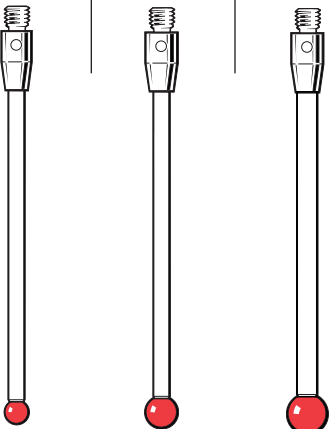
Ball material		Part number						
Ruby		A-5000-7632	A-5003-0050	A-5003-0054	A-5003-0051	A-5003-0052	A-5003-0055	A-5003-0057
Silicon nitride		A-5004-2023	A-5004-1198	A-5004-1982	A-5003-8091	A-5003-5724	A-5004-1983	A-5004-1984
Zirconia		A-5004-2959	A-5004-2960	A-5004-2961	A-5004-2962	A-5003-5738	A-5004-2963	A-5003-6766
A	Ball dia. mm (in.)	0.5 (0.020)	1.5 (0.06)	2.5 (0.10)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)
B	Length mm (in.)	21.0 (0.83)	20.0 (0.79)	20.2 (0.80)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	0.4 (0.02)	1.0 (0.04)	2.0 (0.08)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)
D	EWL* mm (in.)	2.0 (0.08)	12.5 (0.50)	12.5 (0.50)	22.5 (0.89)	22.8 (0.90)	22.5 (0.89)	24.0 (0.94)
	Mass grammes	1.0	0.8	1.3	0.93	1.32	1.81	1.83
20 mm - 30 mm range								



Ruby ball styli (tungsten carbide stems)

Ball material	Part number							
Ruby	A-5003-0053	A-5003-0056	A-5003-0058	A-5003-0060	A-5003-0062	A-5003-0059	A-5003-0061	A-5003-0063
Silicon nitride	A-5004-1985	A-5004-1986	A-5004-1987	A-5004-1195	A-5004-1718	A-5004-1199	A-5004-1988	A-5004-1201
Zirconia	A-5003-2043	A-5004-2964	A-5004-2965	A-5003-6767	A-5004-2966	A-5004-2968	A-5003-6768	A-5003-7665
A Ball dia. mm (in.)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B Length mm (in.)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C Stem dia. mm (in.)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)
D EWL* mm (in.)	32.5 (1.28)	32.5 (1.28)	33.7 (1.33)	36.0 (1.42)	40.0 (1.58)	43.7 (1.72)	46.0 (1.82)	50.0 (1.97)
Mass grammes	1.58	2.28	2.30	2.38	3.50	2.78	2.85	4.10
40 mm - 50 mm range								

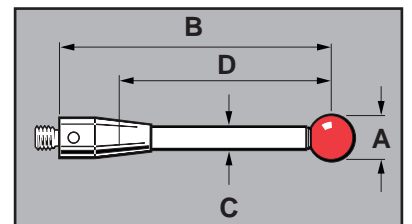
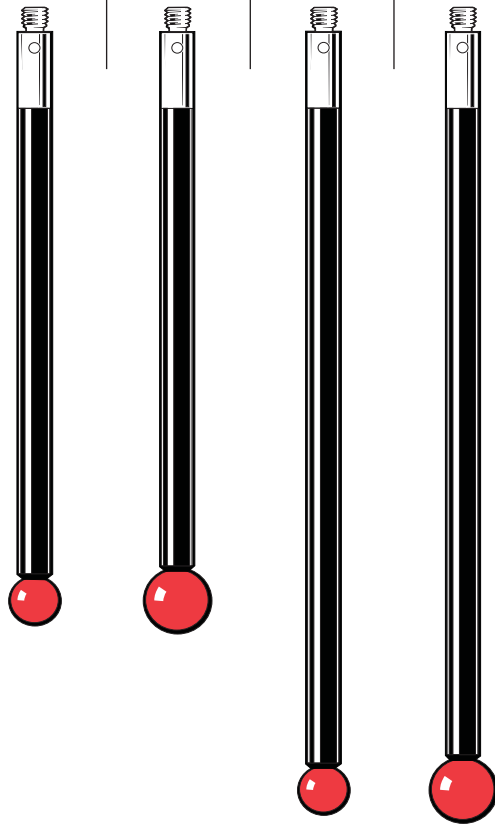
Ruby ball styli (ceramic stems)

Ruby	A-5003-0067	A-5003-0068	A-5003-0069
Silicon nitride	A-5004-1989	A-5003-5725	A-5004-1990
Zirconia	A-5004-2969	A-5003-5739	A-5004-2970
A Ball dia. mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C Stem dia. mm (in.)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)
D EWL* mm (in.)	43.7 (1.72)	46.0 (1.82)	50.0 (1.97)
Mass grammes	1.17	1.24	1.33
50 mm range			

Ruby ball styli (carbon fibre stems)

Ball material	Part number			
Ruby	A-5003-4860	A-5003-4862	A-5003-4861	A-5003-4863
Silicon nitride	A-5003-5726	A-5004-1991	A-5003-5727	A-5004-5466
Zirconia	A-5003-5740	A-5003-6771	A-5003-5741	A-5003-6778
A Ball dia. mm (in.)	6.0 (0.24)	8.0 (0.32)	6.0 (0.24)	8.0 (0.32)
B Length mm (in.)	75.0 (2.96)	75.0 (2.96)	100.0 (3.94)	100.0 (3.94)
C Stem dia. mm (in.)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)
D EWL* mm (in.)	75.0 (2.96)	75.0 (2.96)	100.0 (3.94)	100.0 (3.94)
Mass grammes	2.40	2.98	2.89	3.47

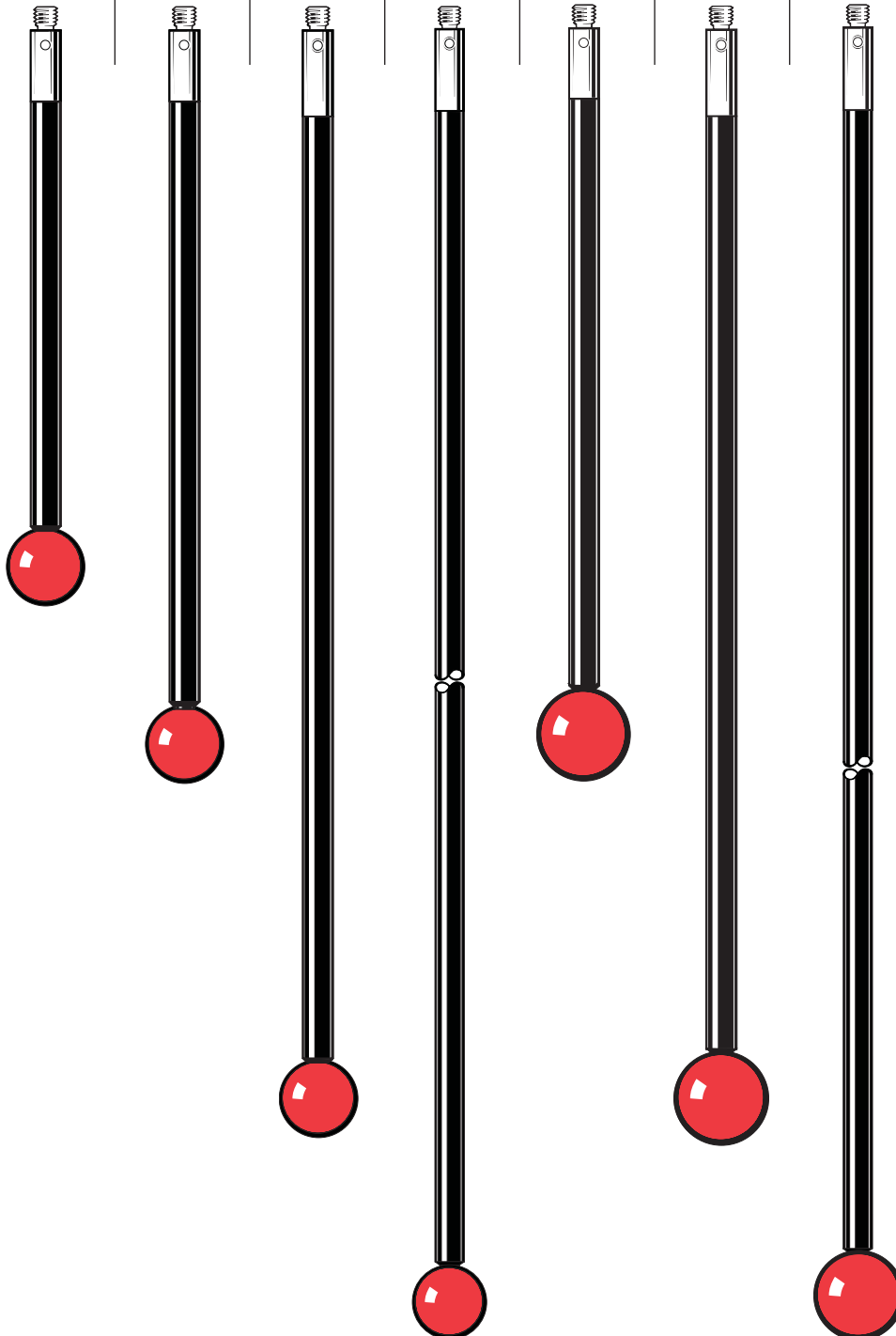
75 mm -
100 mm range



Ruby ball styli (carbon fibre stems)

Ball material	Part number							
Ruby	A-5003-7057	A-5003-7056	A-5003-7055	A-5003-7054	A-5003-7445	A-5003-7446	A-5003-7447	
Silicon nitride	A-5004-1992	A-5004-1993	A-5004-1994	A-5004-1995	A-5004-1996	A-5004-1997	A-5004-1998	
Zirconia	A-5004-2972	A-5003-9495	A-5004-2973	A-5004-2974	A-5004-2975	A-5004-2976	A-5004-2977	
A	Ball dia. mm (in.)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	12.0 (0.48)	12.0 (0.48)	12.0 (0.48)
B	Length mm (in.)	75.0 (2.96)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)
C	Stem dia. mm (in.)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)
D	EWL* mm (in.)	75.0 (2.96)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)
	Mass grammes	4.05	4.53	5.49	6.47	5.9	6.9	7.9

75 mm -
200 mm range



*Effective working length

Stylus extensions (stainless steel)

Part number	M-5000-7633	M-5000-3592	M-5000-3593
Length mm (in.)	10.0 (0.40)	20.0 (0.79)	35.0 (1.38)
Stem dia. mm (in.)	4.0 (0.16)	4.0 (0.16)	4.0 (0.16)
Mass grammes	0.9	1.6	2.9



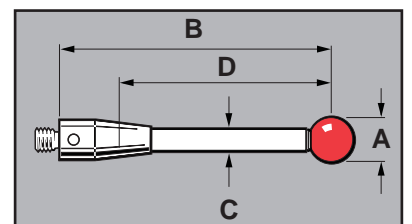
Stylus extensions (carbon fibre)

Part number	A-5003-4864	A-5003-4865
Length mm (in.)	75.0 (2.96)	100.0 (3.94)
Stem dia. mm (in.)	4.0 (0.16)	4.0 (0.16)
Mass grammes	2.53	3.02



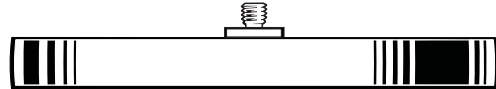
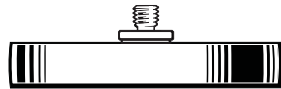
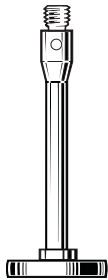
Stylus extension (ceramic)

Part number	A-5003-0075
Length mm (in.)	50.0 (1.97)
Stem dia. mm (in.)	4.0 (0.16)
Mass grammes	2.95



Disc and hollow ball styli

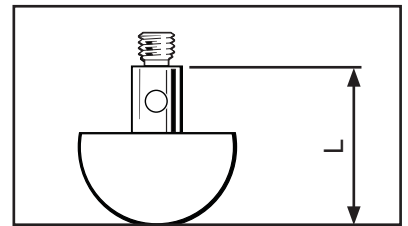
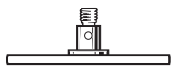
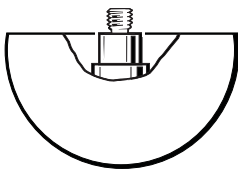
Part number	A-5000-3615 Silver steel	A-5000-7612 Silver steel	A-5000-7669 Carbon steel
Disc dia mm (in.)	12.7 (0.50)	35.0 (1.38)	63.5 (2.51)
Disc depth mm (in.)	2.2 (0.09)	5.0 (0.20)	6.0 (0.24)
Stem dia. mm (in.)	3.5 (0.14)	N/A	N/A
Mass grammes	4.0	10.0	45.0



M3 threaded
stylus range

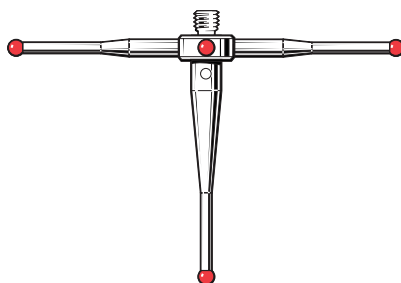
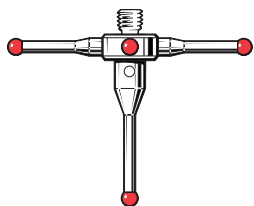
4.7

Part number	A-5000-7814 Ceramic	A-5003-7098 Ceramic
Disc dia mm (in.)	30.0 (1.19)	30.0 (1.19)
Disc depth mm (in.)	17.0 (0.67)	1.5 (0.06)
Stem dia. mm (in.)	N/A	4.0 (0.16)
Mass grammes	13.0	3.6



Star styli (fixed)

Part number	A-5003-0076	A-5003-0077
Span mm (in.)	30.0 (1.19)	50.0 (1.97)
Ball mm (in.)	2.0 (0.08)	2.0 (0.08)
Stem dia. mm (in.)	1.4 (0.05)	1.4 (0.05)
EWL* mm (in.)	11.0 (0.44)	11.0 (0.44)
Mass grammes	2.38	5.25



*Effective working length

M4 threaded stylus range



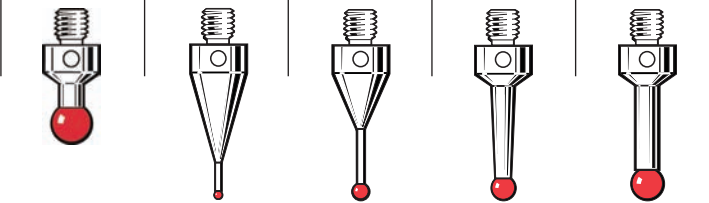
OMP40-2 is a compact probe suited to small machining centres

Renishaw's probing systems are designed to give optimum performance using styli from Renishaw's comprehensive range. The following probes all use M4 threaded styli, however with suitable adaptors, other thread sizes may be used.

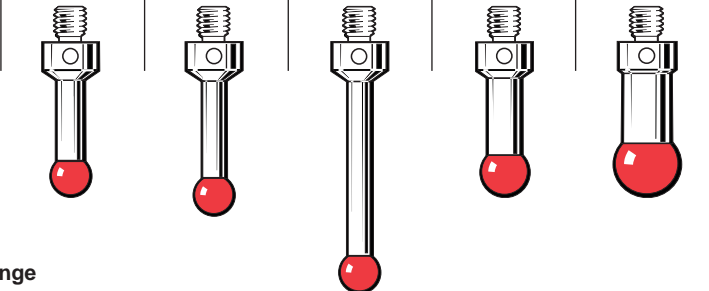
CMM	Machine tool	
• TP7	• MP1	• RLP40
• SP600	• MP3	• OLP40
• TP800	• MP11	• OMP60
	• MP700	• OTS
	• LP2	• RMP600
	• TS27R	• MP250
	• OMP40-2	• HPR
	• OMP400	• HPPA
	• RMP60	• HPM
	• RP3	
	• RMP40	

Ruby ball styli (stainless steel stems)

Ball material	Part number				
Ruby	A-5000-6350	A-5000-7545	A-5000-7547	A-5000-7549	A-5000-7551
Silicon nitride			A-5003-5728		A-5003-5729
Zirconia			A-5003-5742		A-5003-5743
A Ball dia. mm (in.)	5.0 (0.20)	1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)
B Length mm (in.)	10.0 (0.40)	19.5 (0.77)	19.0 (0.75)	18.5 (0.73)	18.0 (0.71)
C Stem dia. mm (in.)	3.0 (0.12)	0.7 (0.028)	1.4 (0.05)	2.0 (0.08)	3.0 (0.12)
D EWL* mm (in.)	5.0 (0.20)	4.5 (0.18)	9.2 (0.36)	13.0 (0.52)	13.7 (0.54)
Mass grammes	1.9	2.5	2.3	2.0	2.1



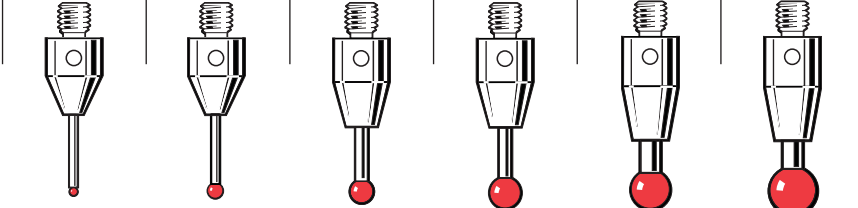
Part number	A-5000-7553	A-5000-6731	A-5000-6352	A-5000-7555	A-5000-7557
A Ball dia. mm (in.)	5.0 (0.20)	5.0 (0.20)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
B Length mm (in.)	17.5 (0.69)	20.0 (0.79)	30.0 (1.19)	17.0 (0.67)	16.0 (0.63)
C Stem dia. mm (in.)	3.5 (0.14)	3.0 (0.12)	3.0 (0.12)	4.5 (0.18)	6.0 (0.24)
D EWL* mm (in.)	13.6 (0.55)	15.89 (0.63)	26.0 (1.03)	13.3 (0.53)	16.0 (0.63)
Mass grammes	2.3	2.4	3.0	3.0	3.9



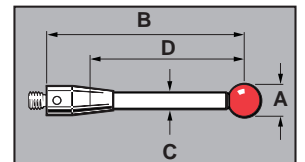
10 mm - 30 mm range

Ruby ball styli (Tungsten carbide stems)

Part number	A-5003-4792	A-5003-2932	A-5003-4793	A-5003-4794	A-5003-4795	A-5003-4796
A Ball dia. mm (in.)	1.0 (0.04)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
C Stem dia. mm (in.)	0.7 (0.028)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)
D EWL* mm (in.)	10.0 (0.40)	10.0 (0.40)	8.5 (0.33)	8.5 (0.33)	7.9 (0.31)	10.7 (0.42)
Mass grammes	2.39	3.01	3.53	3.53	4.52	4.66



20 mm range

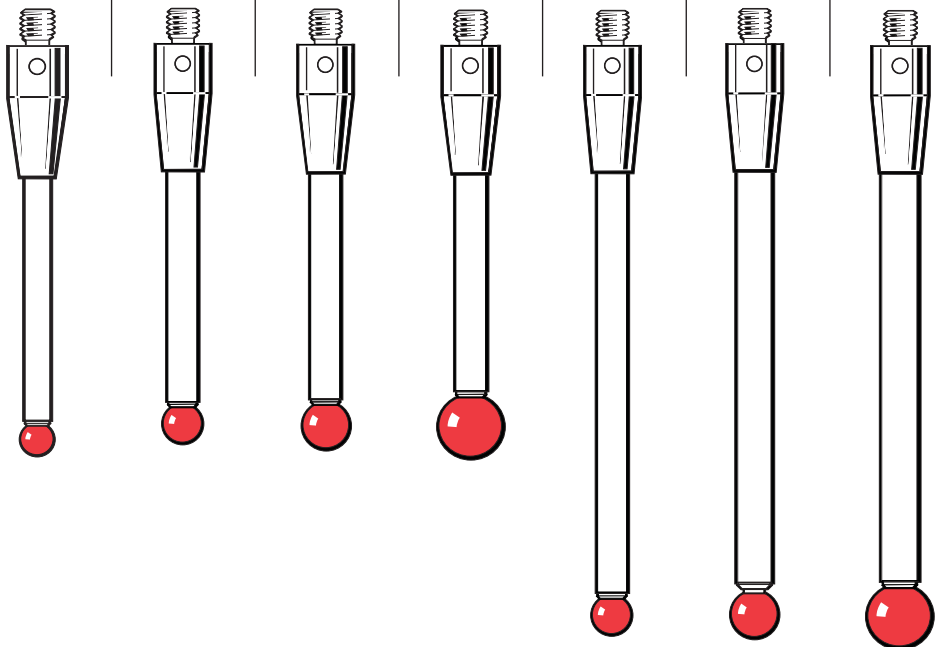


Ruby ball styli

Ceramic stems

Part number		A-5003-0233	A-5003-0235	A-5000-3709	A-5000-7795	A-5003-0236	A-5003-2764	A-5003-4802
		Ceramic	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic	Ceramic
A	Ball dia. mm (in.)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)
C	Stem dia. mm (in.)	3.0 (0.12)	3.8 (0.15)	4.5 (0.18)	4.5 (0.18)	3.8 (0.15)	4.5 (0.18)	4.5 (0.18)
D	EWL* mm (in.)	33.5 (1.32)	33.5 (1.32)	38.5 (1.50)	50.0 (1.97)	58.5 (2.30)	63.5 (2.51)	75.0 (2.96)
	Mass grammes	3.9	5.0	4.8	5.4	5.63	5.64	6.20

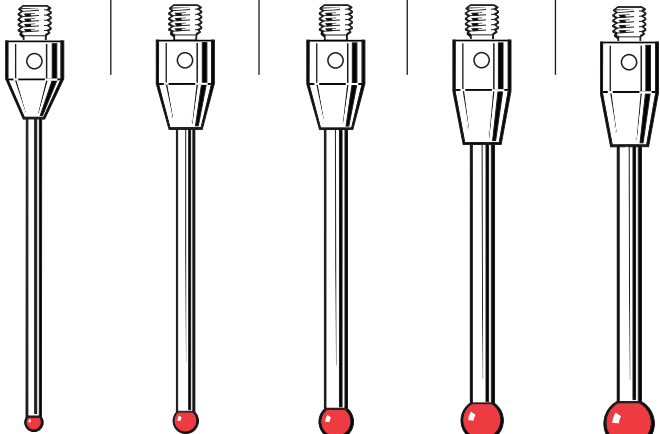
50 mm - 75 mm range



Tungsten carbide stems

Part number		A-5003-4797	A-5003-3680	A-5003-4799	A-5003-4800	A-5003-4801
		Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide
A	Ball dia. mm (in.)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)
D	EWL* mm (in.)	40.0 (1.58)	38.5 (1.51)	38.5 (1.51)	37.9 (1.49)	40.7 (1.60)
	Mass grammes	3.80	4.94	4.99	6.72	6.86

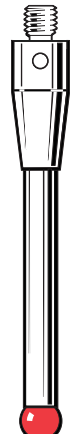
50 mm range



Stainless steel stems

Part number		A-5000-7521
		Stainless steel
A	Ball dia. mm (in.)	5.0 (0.20)
B	Length mm (in.)	50.0 (1.97)
C	Stem dia. mm (in.)	4.5 (0.18)
D	EWL* mm (in.)	33.5 (1.32)
	Mass grammes	5.8

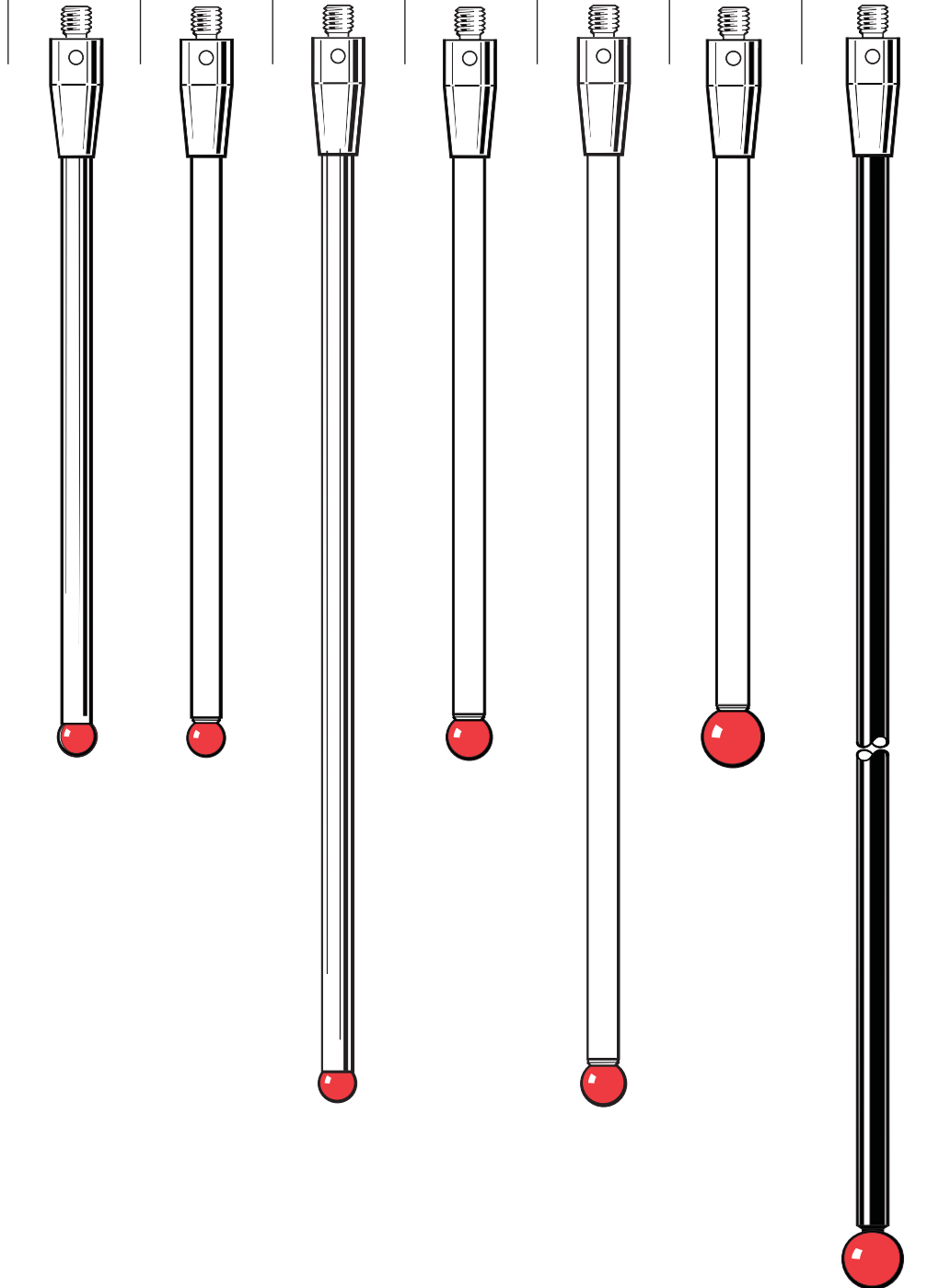
50 mm range



*Effective working length

Ruby ball styli

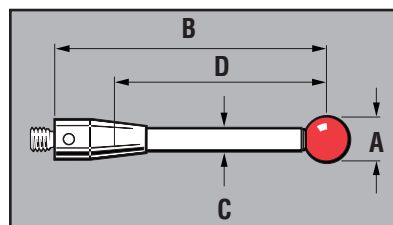
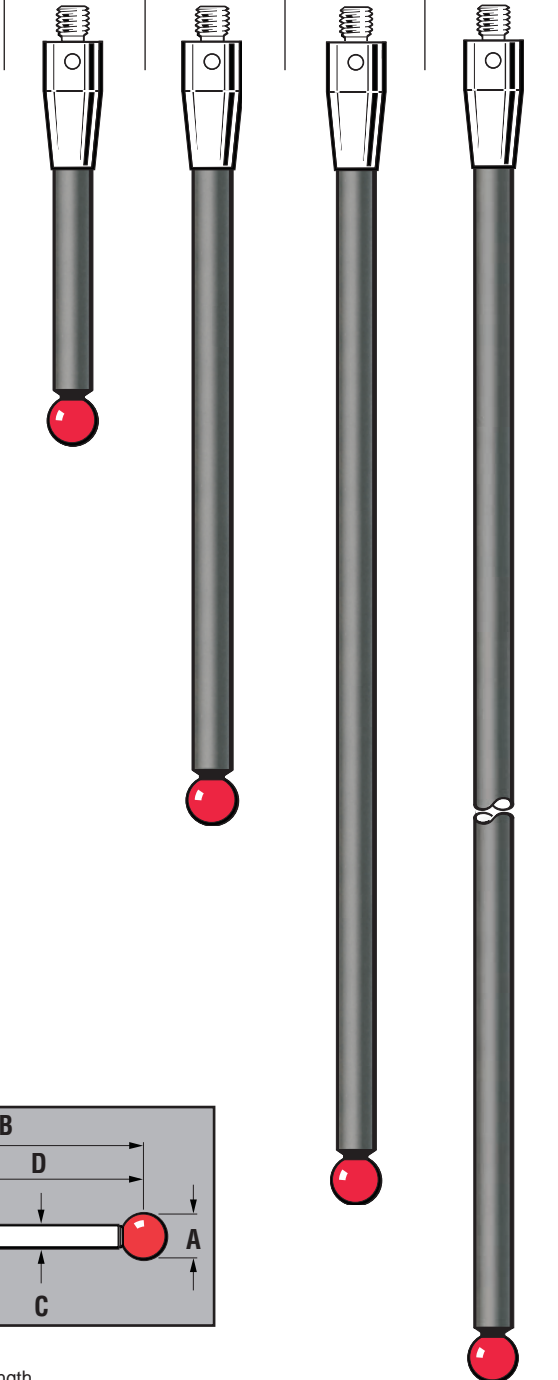
Part number		A-5000-7522	A-5000-9761	A-5000-7523	A-5000-3712	A-5000-8156	A-5000-7796	A-5003-3461
		Stainless steel	Ceramic	Stainless steel	Ceramic	Ceramic	Ceramic	Carbon fibre
A	Ball dia. mm (in.)	5.0 (0.20)	5.0 (0.20)	5.0 (0.20)	6.0 (0.24)	6.0 (0.24)	8.0 (0.32)	8.0 (0.32)
B	Length mm (in.)	100.0 (3.94)	100.0 (3.94)	150.0 (5.91)	100.0 (3.94)	150.0 (5.91)	100.0 (3.94)	300.0 (11.82)
C	Stem dia. mm (in.)	4.5 (0.18)	3.8 (0.15)	4.4 (0.17)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)
D	EWL* mm (in.)	83.2 (3.28)	83.5 (3.29)	133.0 (5.24)	88.5 (3.48)	135.0 (5.31)	100.0 (3.94)	300.0 (11.82)
	Mass grammes	11.3	6.3	17.4	6.3	7.9	7.5	10.4



100 mm – 300 mm range

Ruby ball styli
(recommended for use with OMP400 and RMP600)

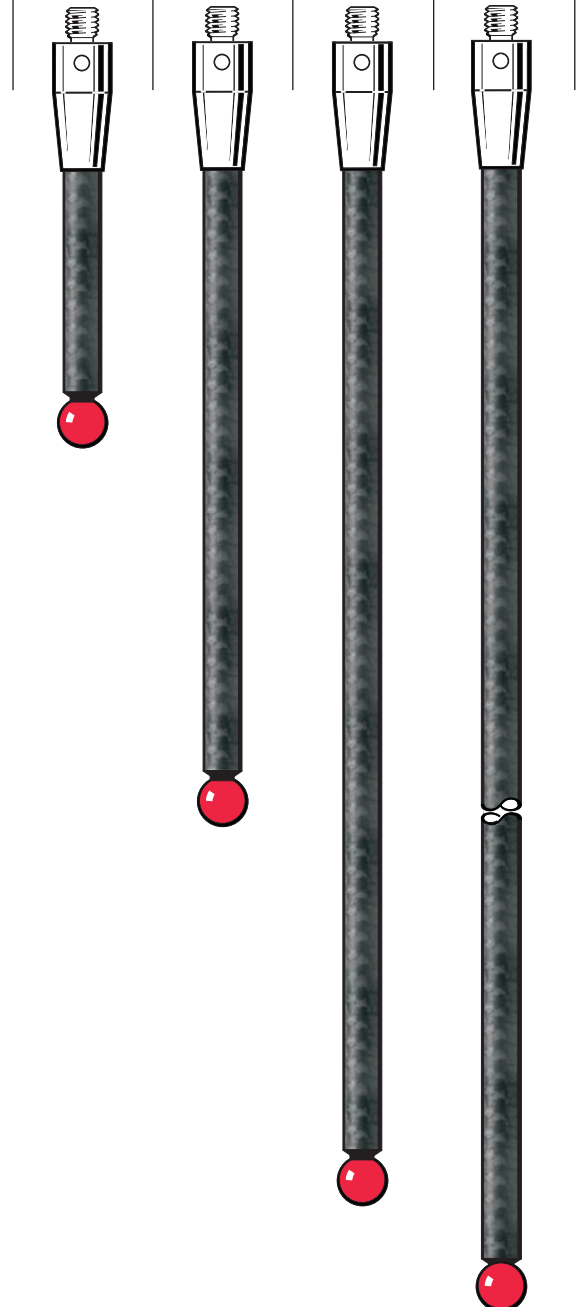
Ball material	Part number			
Ruby	A-5003-7306	A-5003-6510	A-5003-6511	A-5003-6512
Silicon nitride	A-5003-5730	A-5003-5731		
Zirconia	A-5003-5744	A-5003-5745		
	Carbon fibre	Carbon fibre	Carbon fibre	Carbon fibre
A Ball dia. mm (in.)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)
B Length mm (in.)	50.0 (1.97)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)
C Stem dia. mm (in.)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)
D EWL* mm (in.)	38.5 (1.52)	88.5 (3.48)	138.5 (5.45)	188.5 (7.42)
Mass grammes	4.1	6.2	7.5	8.7



*Effective working length

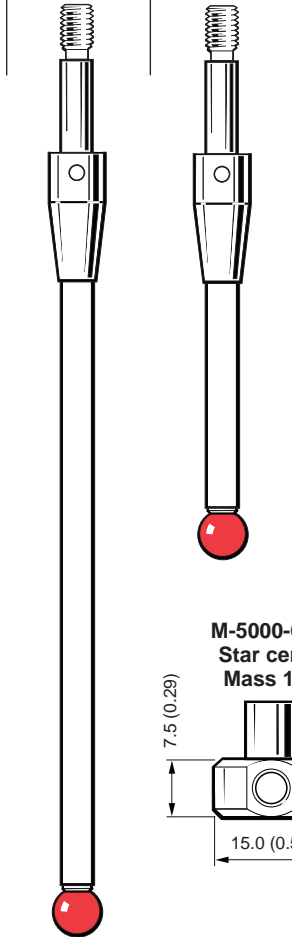
Ruby ball styli
(recommended for use with MP700)

A-5003-1436	A-5003-1358	A-5003-1255	A-5003-1075
Carbon fibre	Carbon fibre	Carbon fibre	Carbon fibre
6.0 (0.24)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)
50.0 (1.97)	100.0 (3.94)	150.0 (5.91)	200.0 (7.88)
4.5 (0.18)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)
38.5 (1.52)	88.5 (3.48)	138.5 (5.46)	188.5 (7.42)
4.1	6.2	7.5	8.7



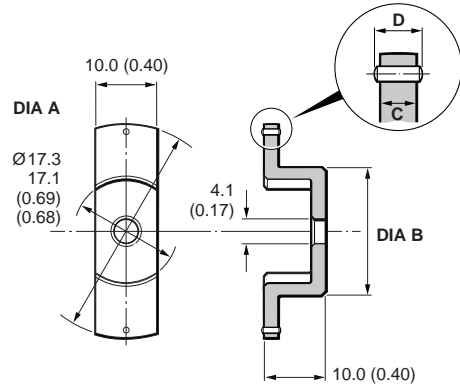
M4 star styli

Part number	A-5000-6462 Ceramic	A-5000-7098 Ceramic
Ball dia. mm (in.)	6.0 (0.24)	6.0 (0.24)
Length mm (in.)	100.0 (3.94)	50.0 (1.97)
Stem dia. mm (in.)	4.5 (0.18)	4.5 (0.18)
EWL* mm (in.)	88.5 (3.48)	38.5 (1.52)
Mass grammes	7.5	6.0



Disc styli

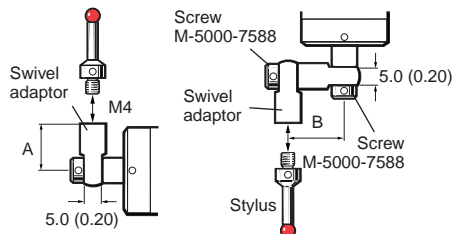
Part number	A-5000-7596	A-5000-7597	A-5000-7598
Diameter A mm (in.)	Ø30.0 (1.19)	Ø35.0 (1.38)	Ø50.0 (1.97)
Diameter B mm (in.)	Ø21.0 (0.83)	Ø21.0 (0.83)	Ø23.0 (0.91)
C mm (in.)	2.2 (0.09)	2.2 (0.09)	3.0 (0.12)
D mm (in.)	3.0 (0.12)	3.0 (0.12)	4.0 (0.16)
Mass grammes	8.01	9.57	13.55



Part number	A-5000-6351 Silver steel
Disc dia. mm (in.)	Ø30.0 (1.19)
Disc depth mm (in.)	3.0 (0.12)
Length mm (in.)	10.0 (0.40)
Rollers	N/A
Mass grammes	7.9

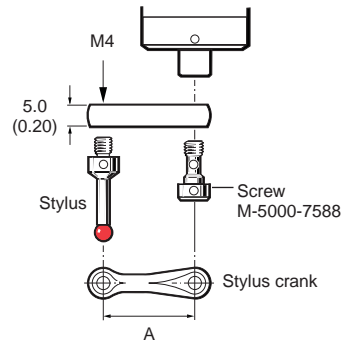
Swivel adaptor

Part number	M-5000-7591	M-5000-7592
Length A mm (in.)	10.0 (0.40)	13.5 (0.54)
Length B mm (in.)	12.5 (0.50)	16.0 (0.63)
Mass grammes	2.76	3.70










Styli crank

Part number	M-5000-7589	M-5000-7590
Length A mm (in.)	21.9 (0.86)	27.6 (1.09)
Mass grammes	6.07	6.94




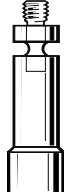



*Effective working length

Crash protection devices

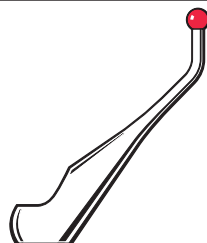
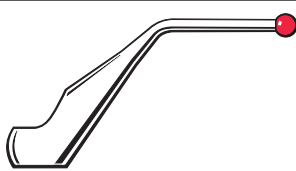
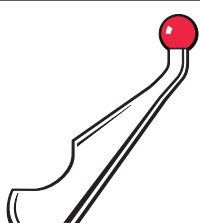
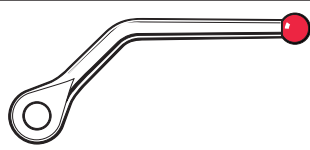
Part number For pack of ten	M-5000-7582	M-5000-7587	M-5000-7588	M-2085-0069	A-5003-0661*	M-2197-0156	M-2197-0150
	Stainless steel	Stainless steel	Stainless steel	Silver steel	A-5004-1865 Silver steel	A-5004-1867 Silver steel	A-5004-1869 Silver steel
Length mm (in.)	8.0 (0.32)	8.0 (0.32)	10.0 (0.40)	12.0 (0.48)	15.2 (0.60)	9.0 (0.36)	16.0 (0.63)
Mass grammes	1.8	1.4	1.5	2.7	4.6	1.5	2.1
For use on	LP2	LP2	LP2	MP10 MP12 RMP60 OMP60 MP3 MP11	TS27R	HPMA HPRA HPPA	HPMA HPRA HPPA
							

Use **P-TL09-0003**
to tighten.

* Please note: If you require the full TS27R break stem kit, please order A-5003-5171.

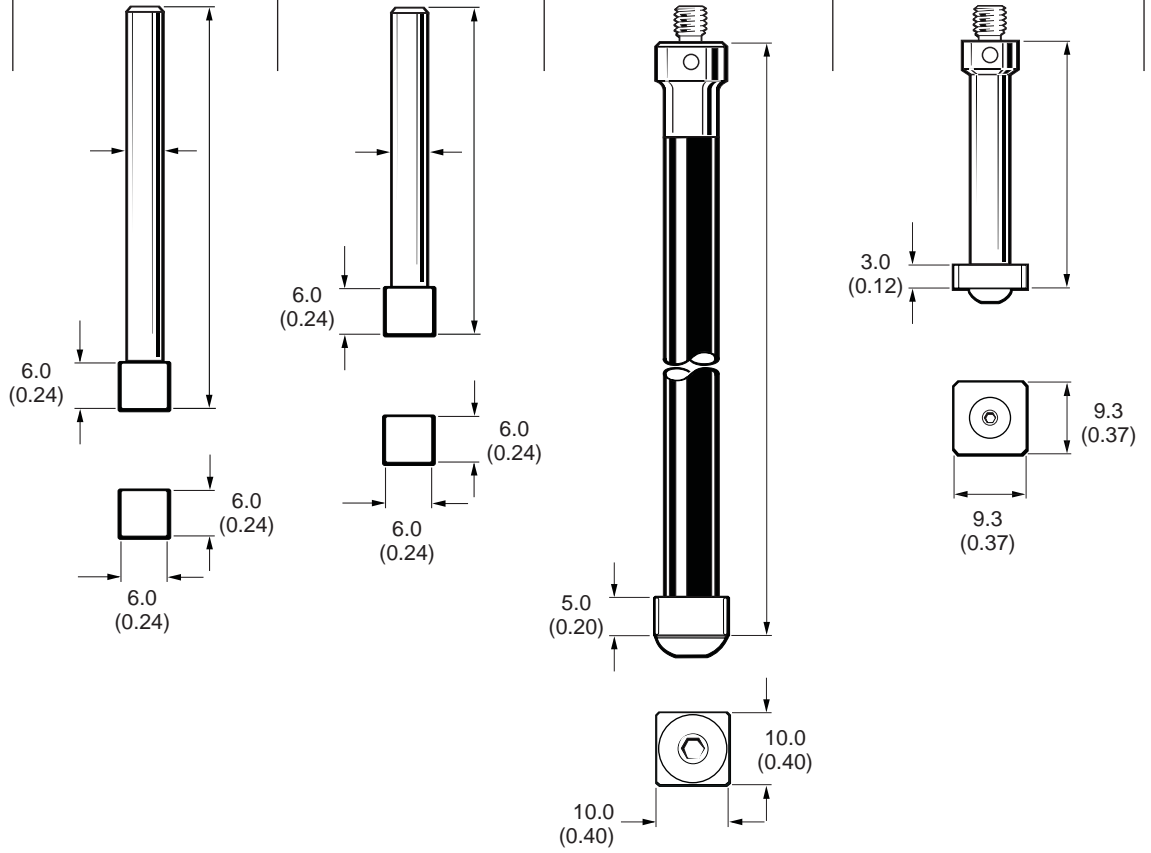
Part number	M-2008-0333	M-2008-0604	M-2008-0605	M-2048-2093	M-2116-0127
	M3 Silver steel	M3 Silver steel	M3 Silver steel	M4 Silver steel	M4 Silver steel
Length mm (in.)	13.3 (0.52)	22.3 (0.88)	30.3 (1.19)	13.5 (0.53)	19.0 (0.75)
Mass grammes	2.43	3.6	4.5	1.37	2.2
For use on	TS20	TS20	TS20	RP1/2	TSA
					

Cranked styli

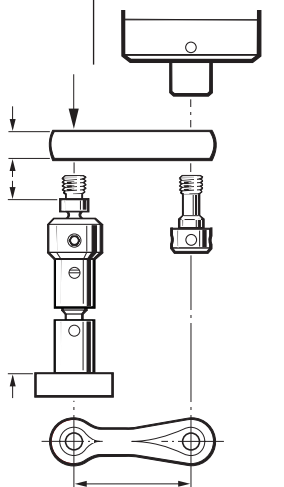
Part number	A-5000-5302	A-5000-5307	A-5000-6620	A-5000-7580
	M4 Tungsten steel	M4 Tungsten steel	M4 Tungsten steel	M4 Tungsten steel
Length mm (in.)	32.0 (1.26)	21.6 (0.85)	27.4 (1.08)	38.8 (1.53)
Mass grammes	3.8	3.85	4.7	2.5
For use on	LP2	LP2	LP2	LP2
				

Tool datuming styli

Part number	A-5000-3212 Stainless steel	A-5000-6701 Stainless steel	A-5000-6713 Aluminium	A-5000-6403 Stainless steel
Overall length mm (in.)	53.0 (2.09)	43.0 (1.70)	96.5 (3.80)	32.5 (1.28)
Stem dia. mm (in.)	4.5 (0.18)	4.5 (0.18)	7.5 (0.30)	5.4 (0.22)
Mass grammes	4.5	4.3	21.9	11.0

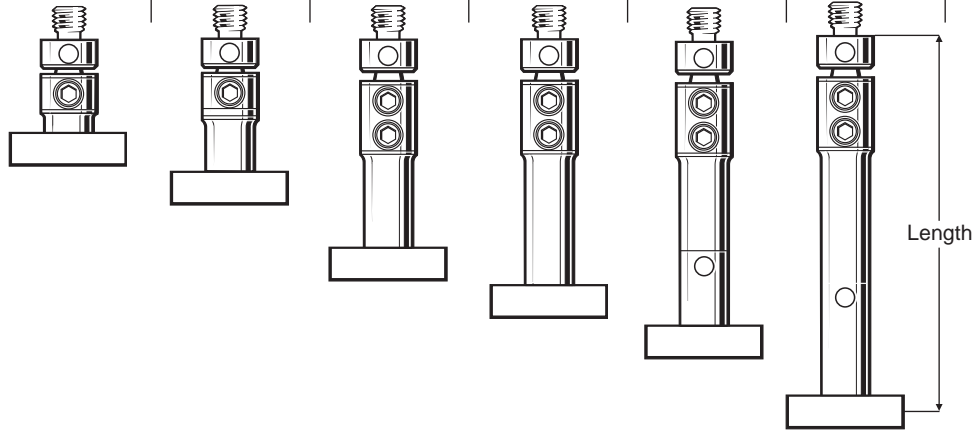


Part number	A-2116-0142
Length mm (inch)	30.3 (0.40)
Mass grammes	22.6
For use on	TSA

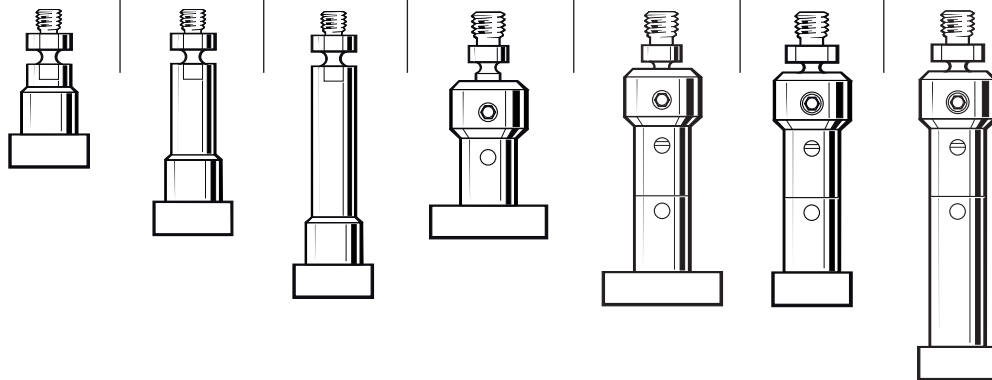


Tool datuming styli (continued)

Part number	A-2197-0157 Tungsten steel	A-2197-0158 Tungsten steel	A-2197-0159 Tungsten steel	A-2197-0160 Tungsten steel	A-2197-0161 Tungsten steel	A-2197-0162 Tungsten steel
Length mm (in.)	14.2 (0.56)	19.57 (0.77)	29.5 (1.16)	34.5 (1.36)	39.5 (1.55)	49.5 (1.95)
Mass grammes	14.86	16.0	20.0	20.7	21.8	23.5
For use on	HPPA HPMA HPRA RP3	HPPA HPMA HPRA RP3	HPPA HPMA HPRA RP3	HPPA HPMA HPRA RP3	HPPA HPMA HPRA RP3	HPPA HPMA HPRA RP3

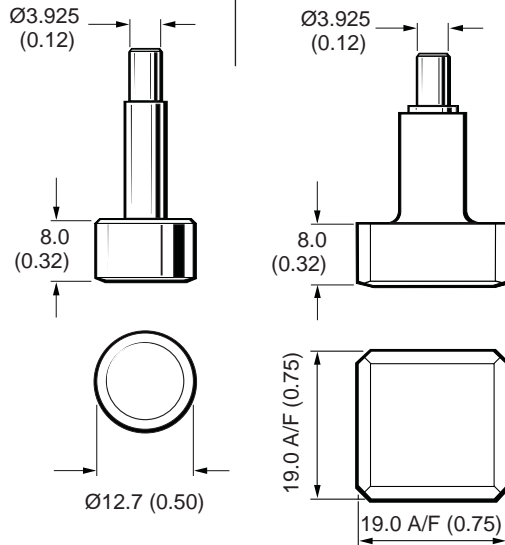


Part number	A-2008-0601 M3 Tungsten steel	A-2008-0602 M3 Tungsten steel	A-2008-0603 M3 Tungsten steel	A-2048-2050 M4 Tungsten steel	A-2048-2051 M4 Tungsten steel	A-2116-0140 M4 Tungsten steel	A-2116-0141 M4 Tungsten steel
Length mm (in.)	15.4 (0.61)	24.0 (0.96)	32.4 (1.27)	23.2 (0.91)	32.0 (1.26)	32.0 (1.26)	42.0 (1.65)
Mass grammes	9.1	8.0	8.95	18.14	20.64	13.56	16.05
For use on	TS20	TS20	TS20	HPA (M6 MTG)	HPA (M6 MTG)	TSA	TSA

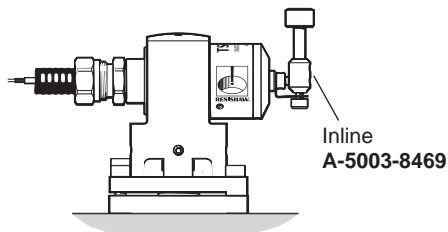


TS27R styli – parallel shafted (not M4) – Not compatible with TS27 probes

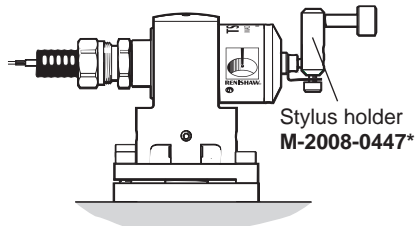
Part number	A-2008-0382 Tungsten carbide	A-2008-0384 Ceramic
Overall length mm (in.)	23.0 (0.91)	22.0 (0.87)
Mass grammes	12.1	7.1



Stylus conversion kit for TS27R to allow Horizontal M/C applications (**A-2008-0448**)











Vertical M/C applications



Horizontal M/C applications






*Order also requires 2 x P-SC11-0404

Stylus extensions

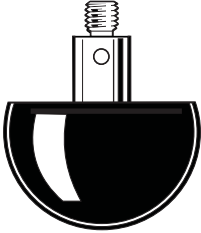
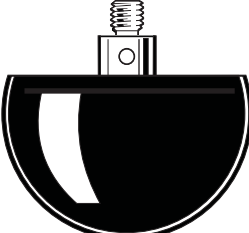
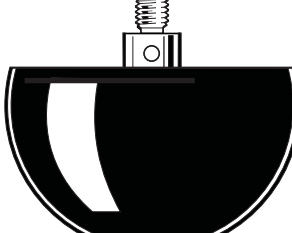
Part number	M-5000-7583 Stainless steel	M-5000-7584 Stainless steel	M-5000-7585 Stainless steel	M-5000-7586 Stainless steel	A-5000-7754 Ceramic	A-5000-7755 Ceramic	A-5000-7727 Ceramic	A-5003-0587 Ceramic
Length mm (in.)	10.0 (0.40)	15.0 (0.60)	20.0 (0.79)	30.0 (1.19)	30.0 (1.19)	50.0 (1.97)	100.0 (3.94)	200.0 (7.87)
Stem dia. mm (in.)	7.0 (0.28)	7.0 (0.28)	7.0 (0.28)	7.0 (0.28)	7.4 (0.30)	7.4 (0.30)	7.4 (0.30)	7.4 (0.30)
Mass grammes	2.4	3.7	4.8	7.4	5.1	6.7	10.6	18.4
								

M4 digitising styli



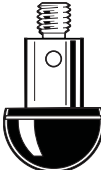


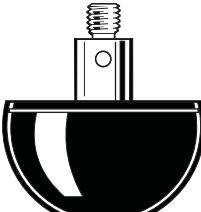
Hemispherical anodised aluminium ball styli (metric)

Part number	A-5000-7718	A-5000-7719	A-5000-7720	A-5000-7721	A-5000-7722
Ball dia. mm (in.)	8.0 (0.32)	10.0 (0.40)	12.0 (0.48)	16.0 (0.63)	20.0 (0.79)
Length mm (in.)	10.5 (0.42)	10.5 (0.42)	10.5 (0.42)	11.5 (0.46)	11.5 (0.46)
Mass grammes	3.4	3.9	4.6	7.2	10.9
					

Complete stylus kit available – Part number A-5000-7676

Part number	A-5000-7723	A-5000-7724	A-5000-7725
Ball dia. mm (in.)	25.0 (0.99)	32.0 (1.26)	38.0 (1.50)
Length mm (in.)	12.5 (0.50)	9.5 (0.38)	9.5 (0.38)
Mass grammes	18.7	19.6	28.5
			

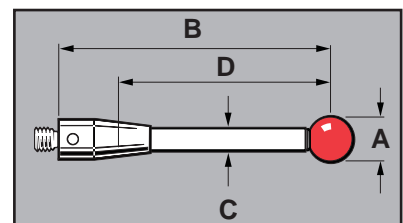
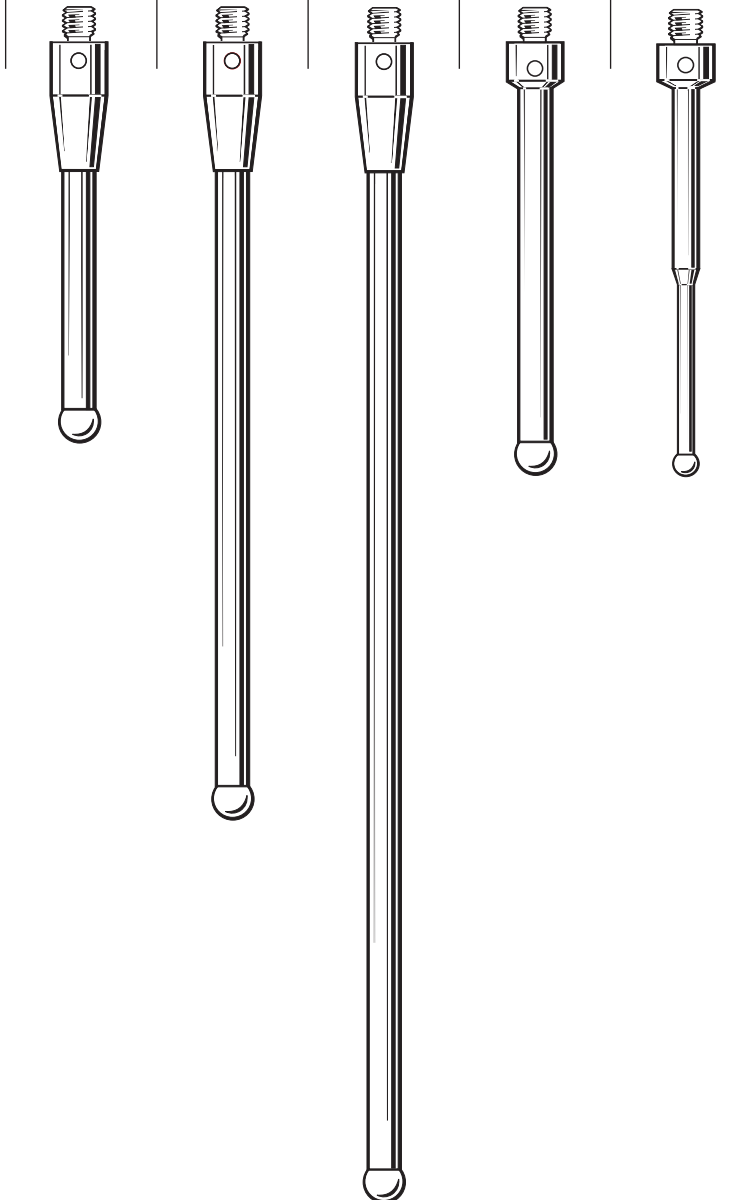
Hemispherical anodised aluminium ball styli (imperial)

Part number	A-5000-7710	A-5000-7711	A-5000-7712	A-5000-7713	A-5000-7714	A-5000-7715
Ball dia. inch (mm)	5/16 (8.0)	3/8 (9.6)	1/2 (12.7)	5/8 (15.9)	3/4 (19.1)	1 (25.4)
Length mm (in.)	10.5 (0.42)	10.5 (0.42)	10.5 (0.42)	11.5 (0.46)	11.5 (0.46)	12.5 (0.50)
Mass grammes	3.4	3.8	4.9	7.1	9.9	19.6
						

Complete stylus kit available – Part number A-5000-7677

Tungsten carbide styli (stainless steel stems)

Part number	A-5000-7670	A-5000-7671	A-5000-7672	A-5000-9685	A-5000-9697
A Ball dia. mm (in.)	5.0 (0.20)	5.0 (0.20)	5.0 (0.20)	5.0 (0.20)	3.0 (0.12)
B Length mm (in.)	50.0 (1.97)	100.0 (3.94)	150.0 (5.91)	54.0 (2.12)	55.0 (2.17)
C Stem dia. mm (in.)	4.5 (0.18)	4.5 (0.18)	4.5 (0.18)	3.9 (0.15)	1.9 (0.07)
D EWL* mm (in.)	35.0 (1.38)	85.0 (3.35)	135.0 (5.31)	50.0 (1.97)	25.0 (0.99)
Mass grammes	6.2	11.9	18.2	6.9	3.8

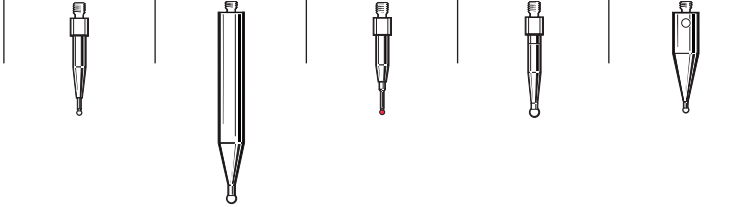


*Effective working length

Walter styli

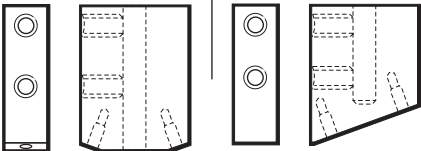
M1.4 thread styli

Part number	A-5003-3814 M1.4	A-5003-3045 M1.4	A-5003-3042 M1.4	A-5000-9860 M1.4	A-5003-1699 M1.4
Stem material	Tungsten carbide	Stainless steel	Tungsten carbide	Tungsten carbide	Stainless steel
Ball material	Tungsten carbide	Tungsten carbide	Ruby	Tungsten carbide	Tungsten carbide
A Ball dia. mm (in.)	0.5 (0.020)	1.0 (0.04)	0.5 (0.020)	1.0 (0.04)	0.6 (0.024)
B Length mm (in.)	12.5 (0.49)	25.0 (0.98)	12.5 (0.49)	13.0 (0.51)	12.75 (0.50)
D EWL* mm (in.)	1.5 (0.059)	1.5 (0.059)	3.0 (0.12)	1.0 (0.04)	1.0 (0.04)
Mass grammes	0.2	1.1	0.19	0.22	0.41




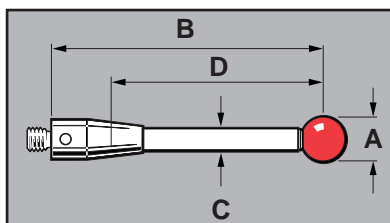
Adaptors

Part number	A-5003-1448	A-5000-9724
D3 MTG	2 x M1.4 adaptor 20°	M1.4 adaptor 20°
Mass grammes	9.73	8.31



Break stem

Part number	M-5000-9712 M4 stylus break stem
Mass grammes	2.0

*Effective working length

M5 threaded stylus range

6.1



SP80 is an ultra-accurate quill-mounted scanning probe

Renishaw's probing systems are designed to give optimum performance using styli from its comprehensive range.

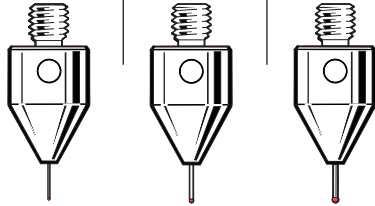
The following probes all use M5 threaded styli, however with suitable adaptors, other thread sizes may be used.

- SP80
- SP2
- SP2-1

Ruby micro ball styli (Tungsten carbide stems)

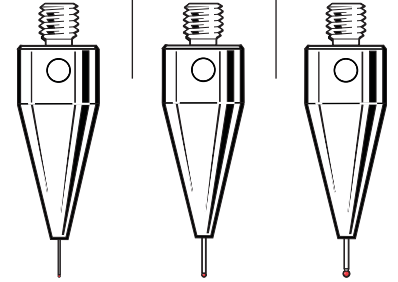
Part number		A-5003-5201	A-5003-5202	A-5003-5203
A	Ball dia. mm (in.)	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
C	Stem dia. mm (in.)	0.2 (0.008)	0.4 (0.016)	0.5 (0.020)
D	EWL* mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
	Mass grammes	6.5	6.5	6.5

20 mm range



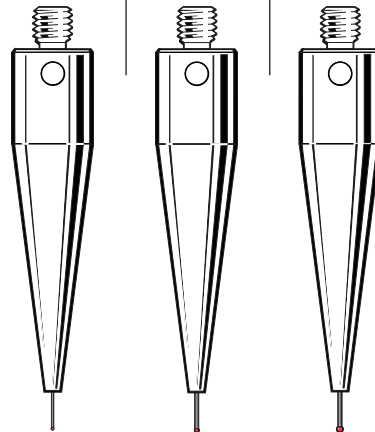
A-5003-5211	A-5003-5212	A-5003-5213
0.3 (0.012)	0.5 (0.020)	0.7 (0.028)
30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
0.2 (0.008)	0.4 (0.016)	0.5 (0.020)
3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
8.95	8.95	8.98

30 mm range



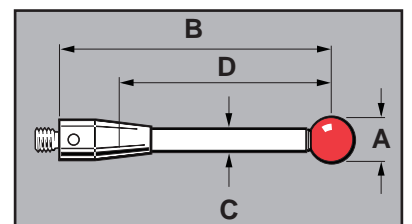
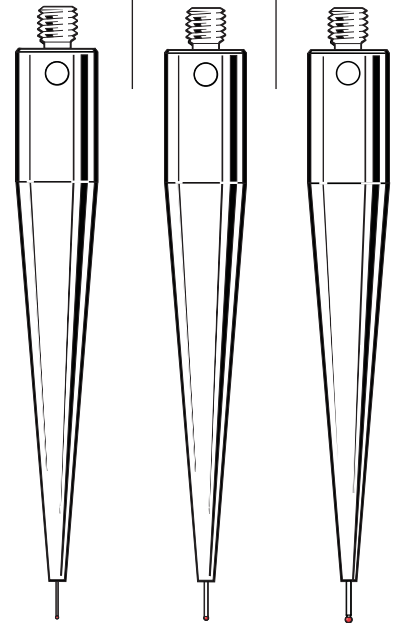
Part number		A-5003-5225	A-5003-5226	A-5003-5227
A	Ball dia. mm (in.)	0.3 (0.012)	0.5 (0.020)	0.7 (0.028)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	0.2 (0.008)	0.4 (0.016)	0.5 (0.020)
D	EWL* mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
	Mass grammes	15.79	15.79	15.79

50 mm range

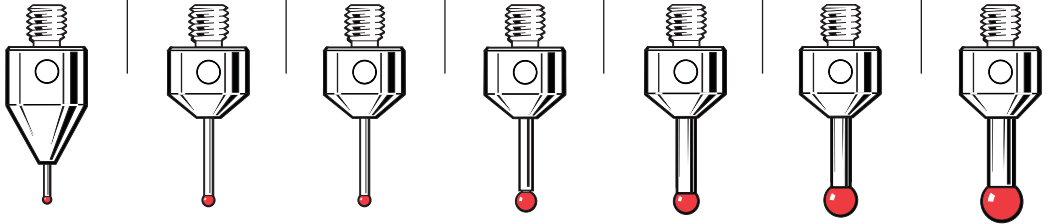


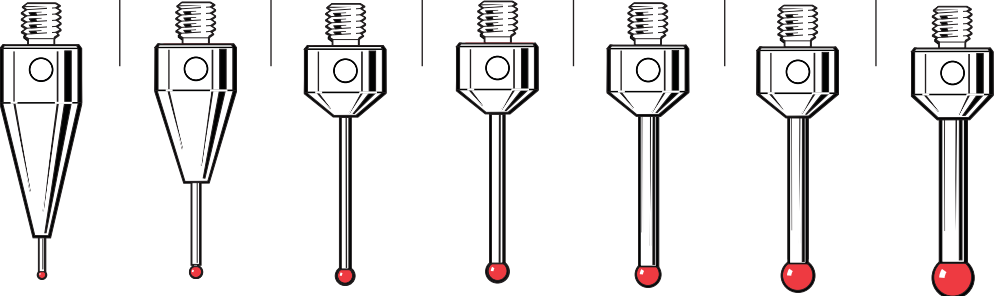
A-5003-5240	A-5003-5241	A-5003-5242
0.3 (0.012)	0.5 (0.020)	0.7 (0.028)
75.0 (2.96)	75.0 (2.96)	75.0 (2.96)
0.2 (0.008)	0.4 (0.016)	0.5 (0.020)
3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
23.84	23.84	23.84

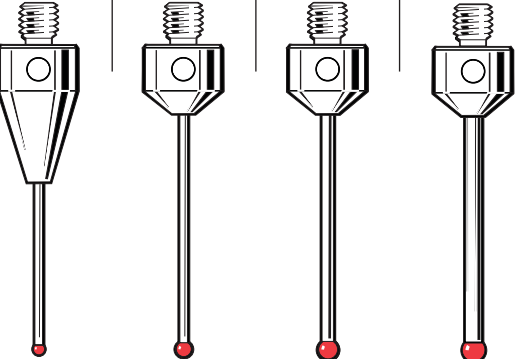
75 mm range



Ruby ball styli (tungsten carbide stems)

Ball material		Part number						
Ruby		A-5003-5204	A-5003-5205	A-5003-5206	A-5003-5207	A-5003-5208	A-5003-5209	A-5003-5210
Silicon nitride				A-5003-5732			A-5003-5733	
Zirconia				A-5003-5746			A-5003-5747	
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
C	Stem dia. mm (in.)	0.7 (0.028)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	3.0 (0.12)
D	EWL* mm (in.)	5.0 (0.20)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.9 (0.47)	11.5 (0.45)
	Mass grammes	6.52	4.68	4.70	4.84	5.12	5.19	6.06
20 mm range								

Part number		A-5003-5214	A-5003-5215	A-5003-5216	A-5003-5217	A-5003-5218	A-5003-5219	A-5003-5220
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	0.7 (0.028)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	3.0 (0.12)
D	EWL* mm (in.)	5.0 (0.20)	12.0 (0.48)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	21.9 (0.86)	21.5 (0.85)
	Mass grammes	9.01	7.28	4.81	5.14	5.58	5.64	7.10
30 mm range								

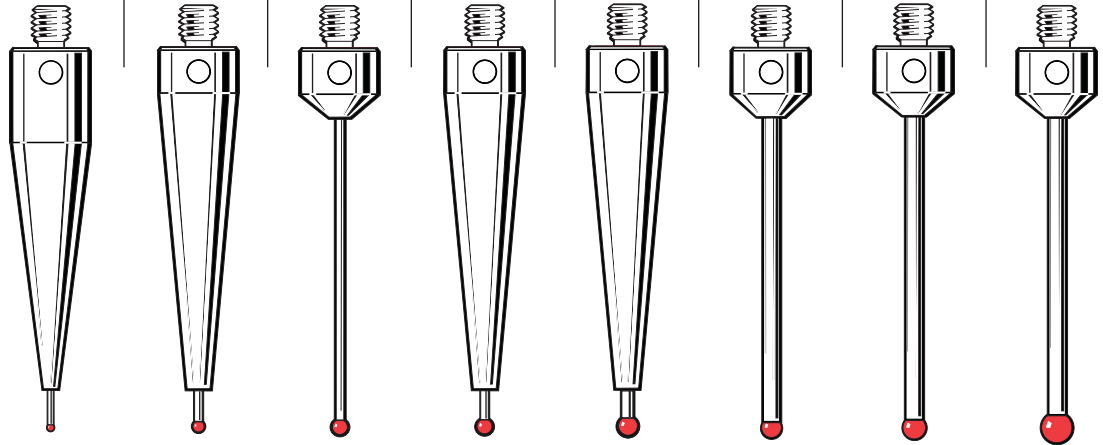
Part number		A-5003-5221	A-5003-5222	A-5003-5223	A-5003-5224
A	Ball dia. mm (in.)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)
B	Length mm (in.)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)
C	Stem dia. mm (in.)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)
D	EWL* mm (in.)	22.0 (0.87)	31.0 (1.23)	31.0 (1.23)	31.0 (1.23)
	Mass grammes	7.39	4.93	5.40	6.04
40 mm range					

*Effective working length

Ruby ball styli (tungsten carbide stems - <5 mm ball diameter)

Part number	A-5003-5228	A-5003-5229	A-5003-5230	A-5003-5231	A-5003-5233	A-5003-5232	A-5003-5234	A-5003-5235
A Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.5 (0.10)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)
B Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C Stem dia. mm (in.)	0.7 (0.028)	1.0 (0.04)	1.0 (0.04)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.0 (0.08)	2.0 (0.08)
D EWL* mm (in.)	5.0 (0.20)	5.0 (0.20)	41.0 (1.62)	5.0 (0.20)	5.0 (0.20)	41.0 (1.62)	41.0 (1.62)	41.9 (1.65)
Mass grammes	15.81	14.82	5.05	14.85	14.94	6.48	6.50	6.55

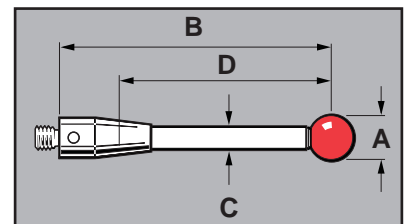
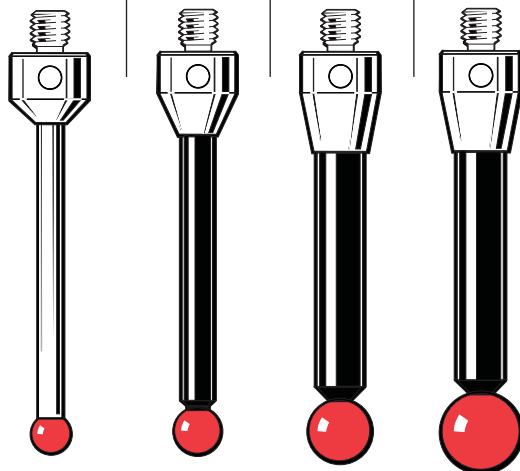
50 mm range



Ruby ball styli (≥5 mm ball diameter)

Ball material	Part number			
Ruby	A-5003-5236	A-5003-5237	A-5003-5238	A-5003-5239
Silicon nitride		A-5003-5734		
Zirconia			A-5003-5748	
	Tungsten carbide	Carbon fibre	Carbon fibre	Carbon fibre
A Ball dia. mm (in.)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
B Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C Stem dia. mm (in.)	3.0 (0.12)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
D EWL* mm (in.)	41.5 (1.63)	39.5 (1.55)	39.5 (1.55)	44.5 (1.75)
Mass grammes	9.19	6.10	7.96	8.91

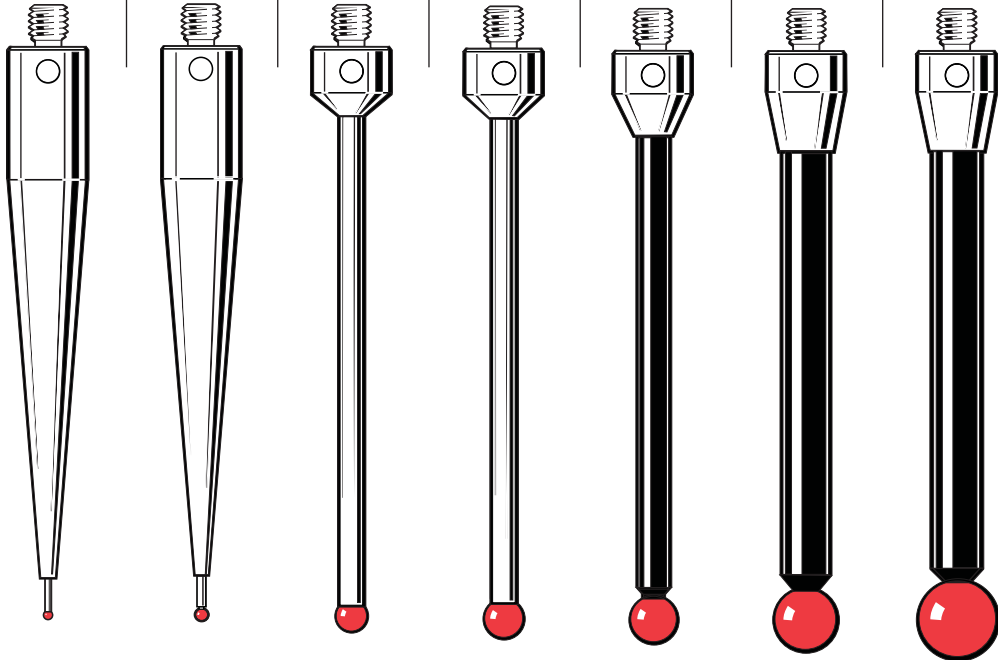
50 mm range



Ruby ball styli (1 mm – 10 mm ball diameter)

Part number		A-5003-5243	A-5003-5244	A-5003-5248	A-5003-5249	A-5003-5250	A-5003-5251	A-5003-5252
		Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	Carbon fibre	Carbon fibre	Carbon fibre
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
B	Length mm (in.)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)
C	Stem dia. mm (in.)	0.7 (0.028)	1.0 (0.04)	3.0 (0.12)	3.0 (0.12)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
D	EWL* mm (in.)	5.0 (0.20)	5.0 (0.20)	66.0 (2.60)	66.0 (2.60)	65.1 (2.56)	64.5 (2.54)	69.5 (2.74)
	Mass grammes	23.86	23.90	11.61	11.80	6.59	9.06	10.01

75 mm range



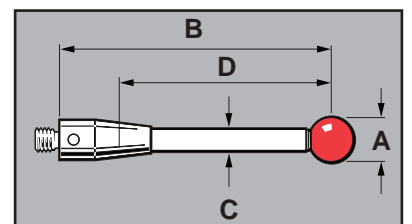
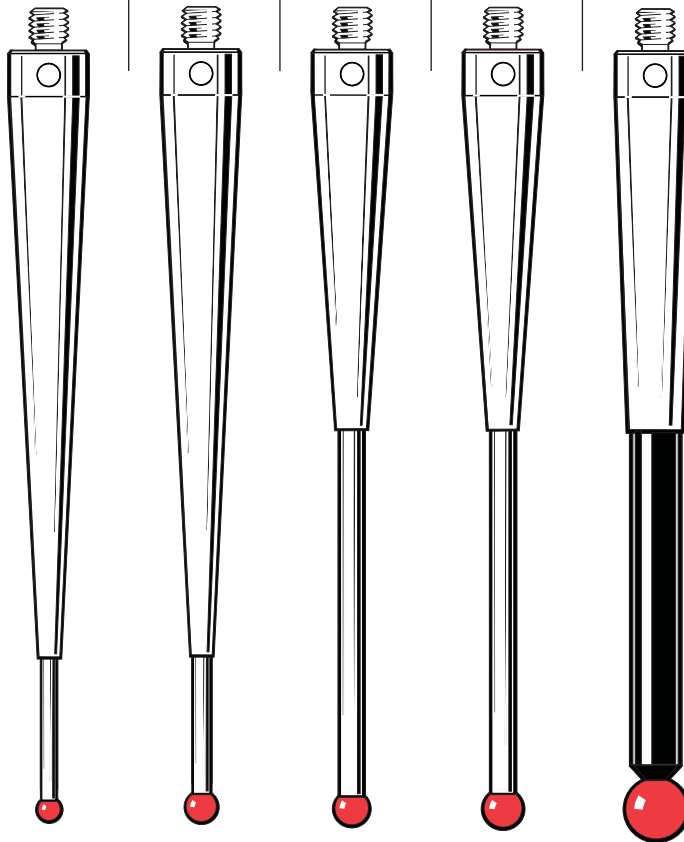
M5 threaded
 stylus range
6.5

*Effective working length

Ruby ball styli (≤ 50 mm EWL)

Ball material		Part number				
		A-5003-5253	A-5003-5255	A-5003-5256	A-5003-5257	A-5003-5261
Ruby						
Silicon nitride						
Zirconia						
		Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	Carbon fibre
A	Ball dia. mm (in.)	3.0 (0.12)	4.0 (0.16)	4.0 (0.16)	5.0 (0.20)	8.0 (0.32)
B	Length mm (in.)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)
C	Stem dia. mm (in.)	2.0 (0.08)	2.0 (0.08)	3.0 (0.12)	3.0 (0.12)	6.0 (0.24)
D	EWL* mm (in.)	20.0 (0.79)	30.5 (1.20)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
	Mass grammes	25.71	25.75	23.07	23.31	22.97

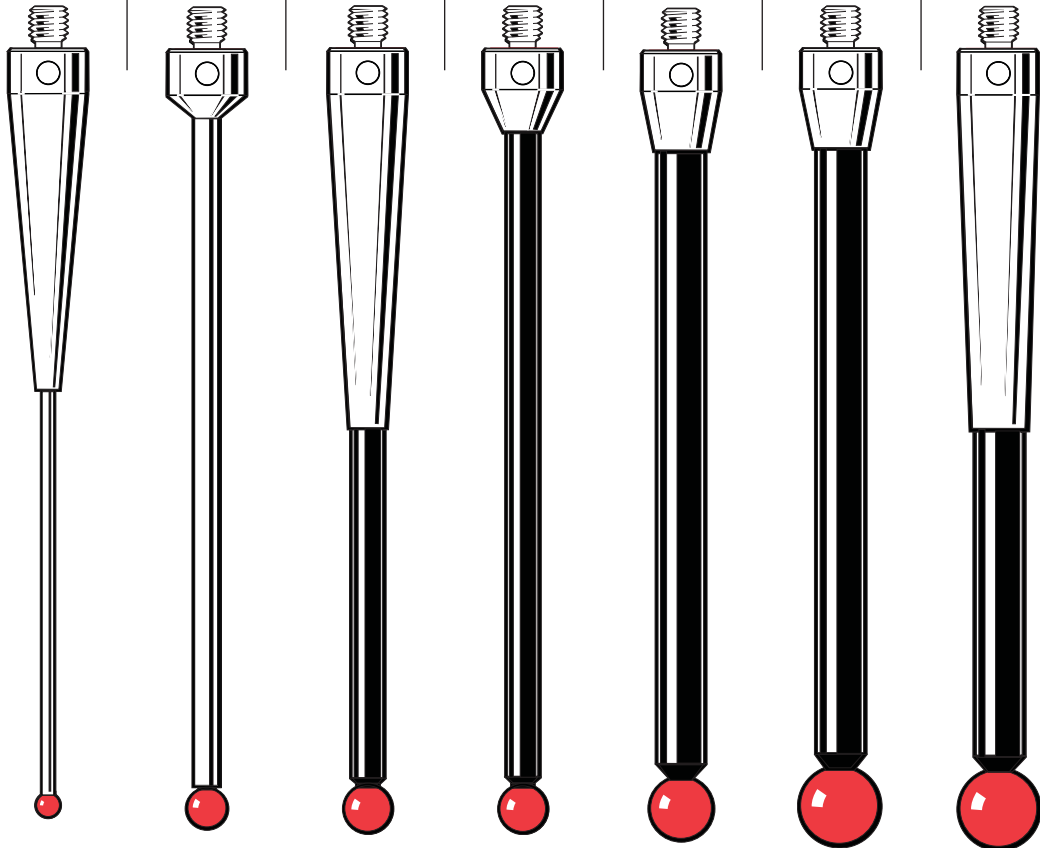
100 mm range



Ruby ball styli (>50 mm EWL)

Ball material		Part number						
Ruby		A-5003-5254	A-5003-5258	A-5003-5259	A-5003-5260	A-5003-5262	A-5003-5264	A-5003-5263
Silicon nitride				A-5003-5735				
Zirconia				A-5003-5749				
		Tungsten carbide	Tungsten carbide	Carbon fibre	Carbon fibre	Carbon fibre	Carbon fibre	Carbon fibre
A	Ball dia. mm (in.)	3.0 (0.12)	5.0 (0.20)	6.0 (0.24)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)	10.0 (0.40)
B	Length mm (in.)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)	100.0 (3.94)
C	Stem dia. mm (in.)	1.5 (0.06)	3.0 (0.12)	4.0 (0.16)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)
D	EWL* mm (in.)	55.0 (2.17)	91.0 (3.59)	58.9 (2.32)	90.1 (3.55)	89.5 (3.52)	94.5 (3.72)	95.5 (3.76)
	Mass grammes	16.30	14.40	19.66	7.08	10.17	11.11	23.91

100 mm range

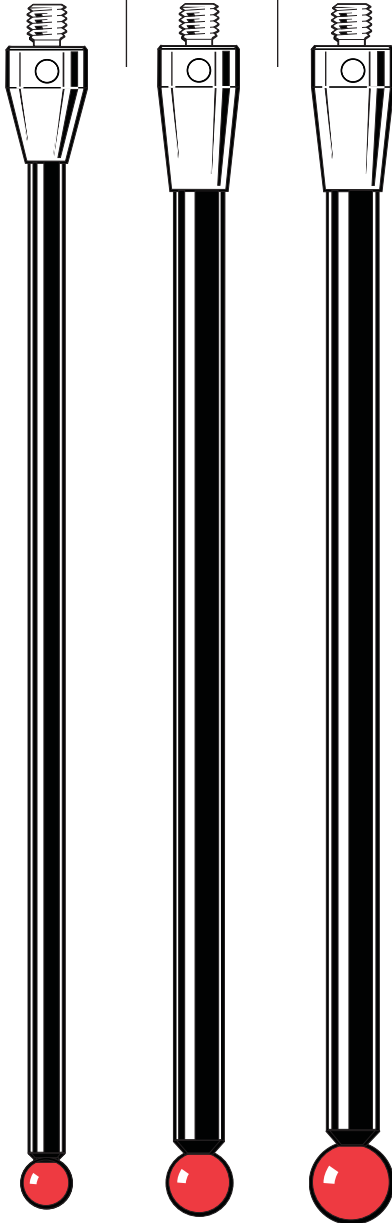


*Effective working length

Ruby ball styli (carbon fibre stems)

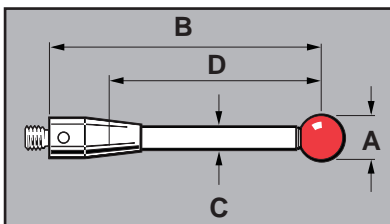
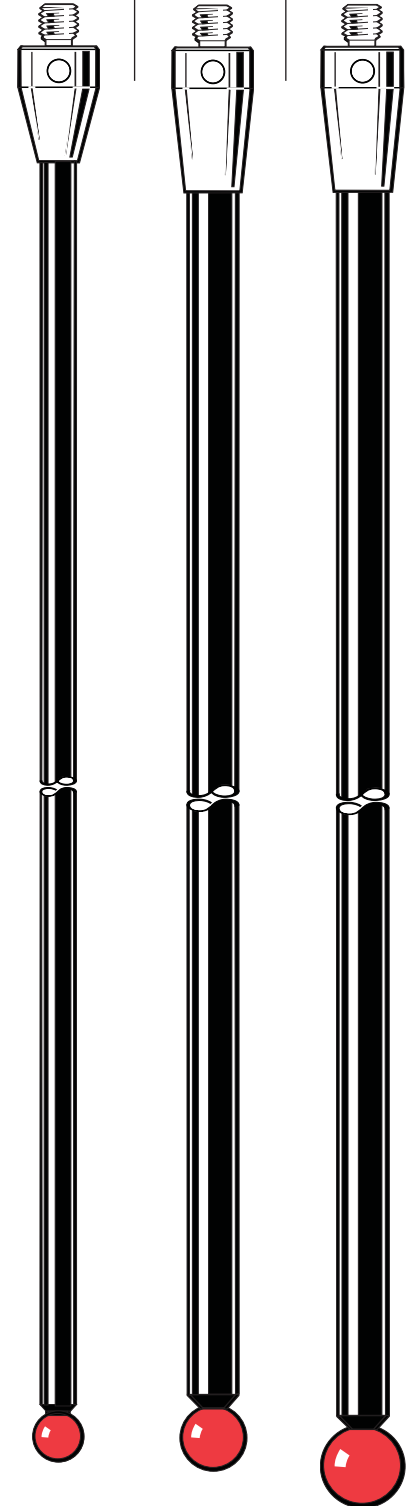
Part number	A-5003-5265	A-5003-5266	A-5003-5267
A Ball dia. mm (in.)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
B Length mm (in.)	150.0 (5.91)	150.0 (5.91)	150.0 (5.91)
C Stem dia. mm (in.)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
D EWL* mm (in.)	137.0 (5.39)	135.0 (5.31)	144.5 (5.69)
Mass grammes	9.09	13.71	14.66

150 mm range



A-5003-5268	A-5003-5269	A-5003-5270
6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
200.0 (7.88)	200.0 (7.88)	200.0 (7.88)
4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
187.0 (7.36)	180.0 (7.09)	194.5 (7.66)
10.07	15.92	16.87

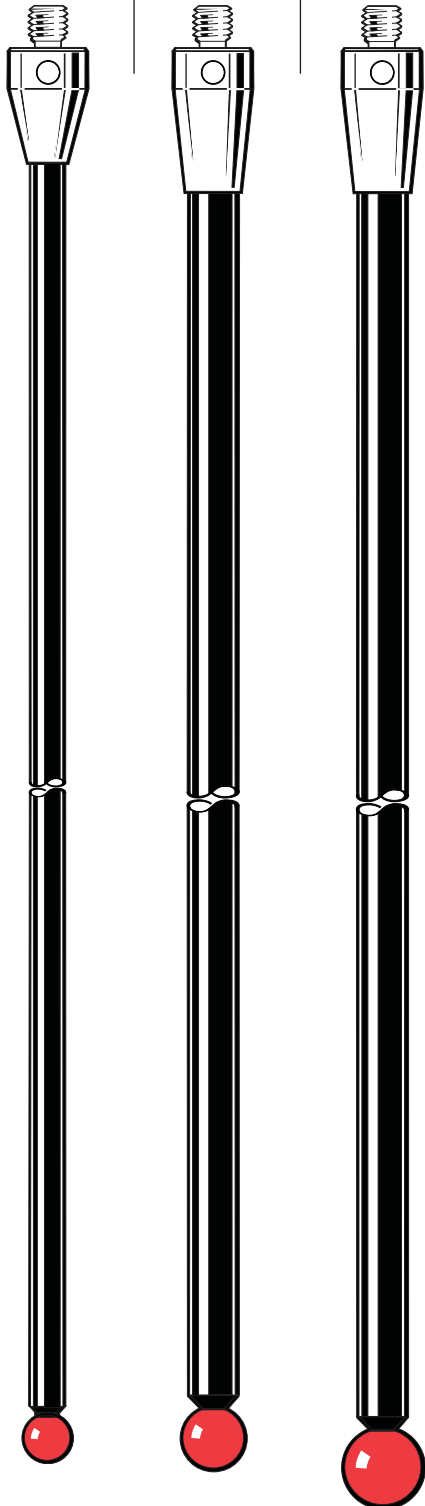
200 mm range



Ruby ball styli (carbon fibre stems)

Part number	A-5003-5271	A-5003-5272	A-5003-5273
A Ball dia. mm (in.)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
B Length mm (in.)	300.0 (11.82)	300.0 (11.82)	300.0 (11.82)
C Stem dia. mm (in.)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
D EWL* mm (in.)	287.0 (11.30)	280.0 (11.03)	294.5 (11.59)
Mass grammes	12.02	20.33	21.28

300 mm range



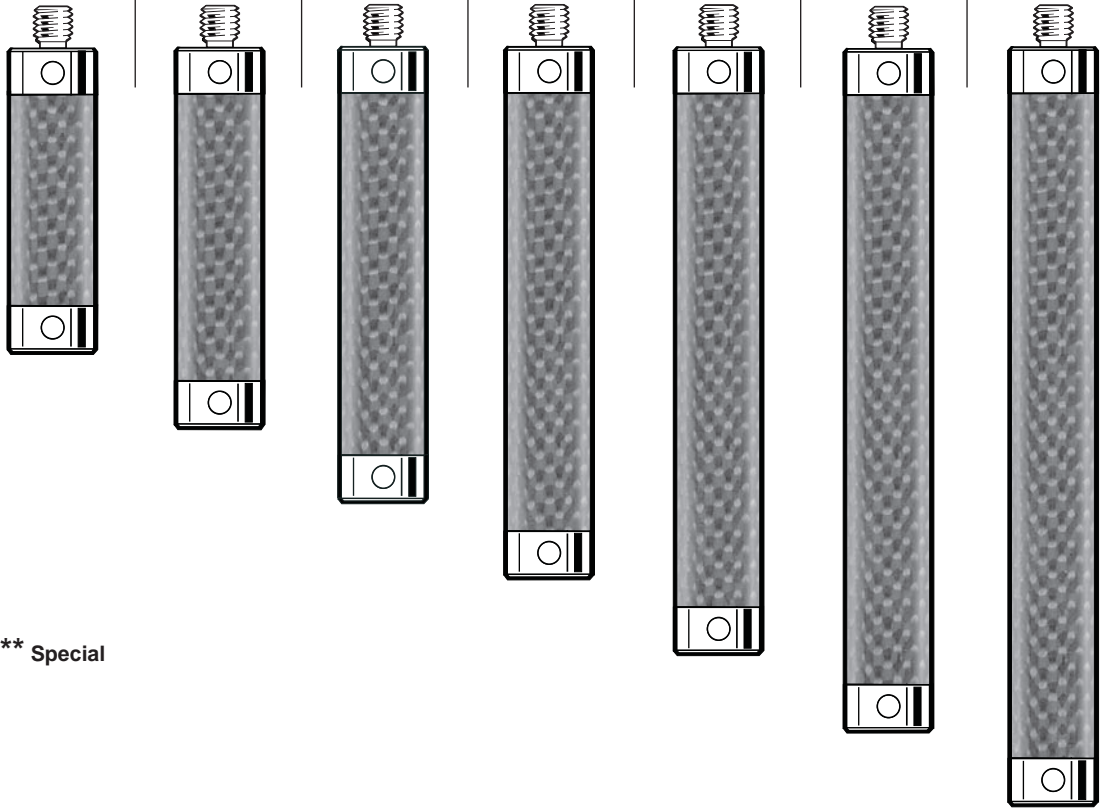
M5 threaded
 stylus range

6.9

* Effective working length

Stylus extensions – thermo stable carbon fibre stems, titanium ends (stem dia. 11 mm)

Part number	A-5555-0647**	A-5555-0648**	A-5555-0649**	A-5555-0623**	A-5555-0650**	A-5555-0651**	A-5555-0652**
Length mm (in.)	40.0 (1.58)	50.0 (1.97)	60.0 (2.37)	70.0 (2.76)	80.0 (3.15)	90.0 (3.55)	100.0 (3.94)
Stem dia. mm (in.)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)
Mass grammes	7.6	8.3	9.0	9.7	10.4	11.1	11.8

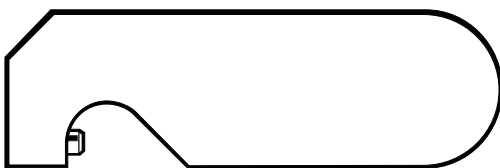


** Special

M5 extension tools

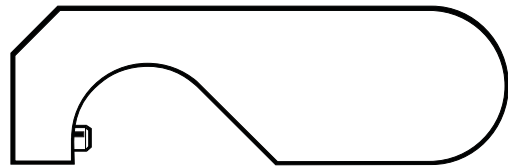
A-5003-6134

For M5 threaded extensions with
11 mm (0.44 in.) stem diameter



A-5003-6135

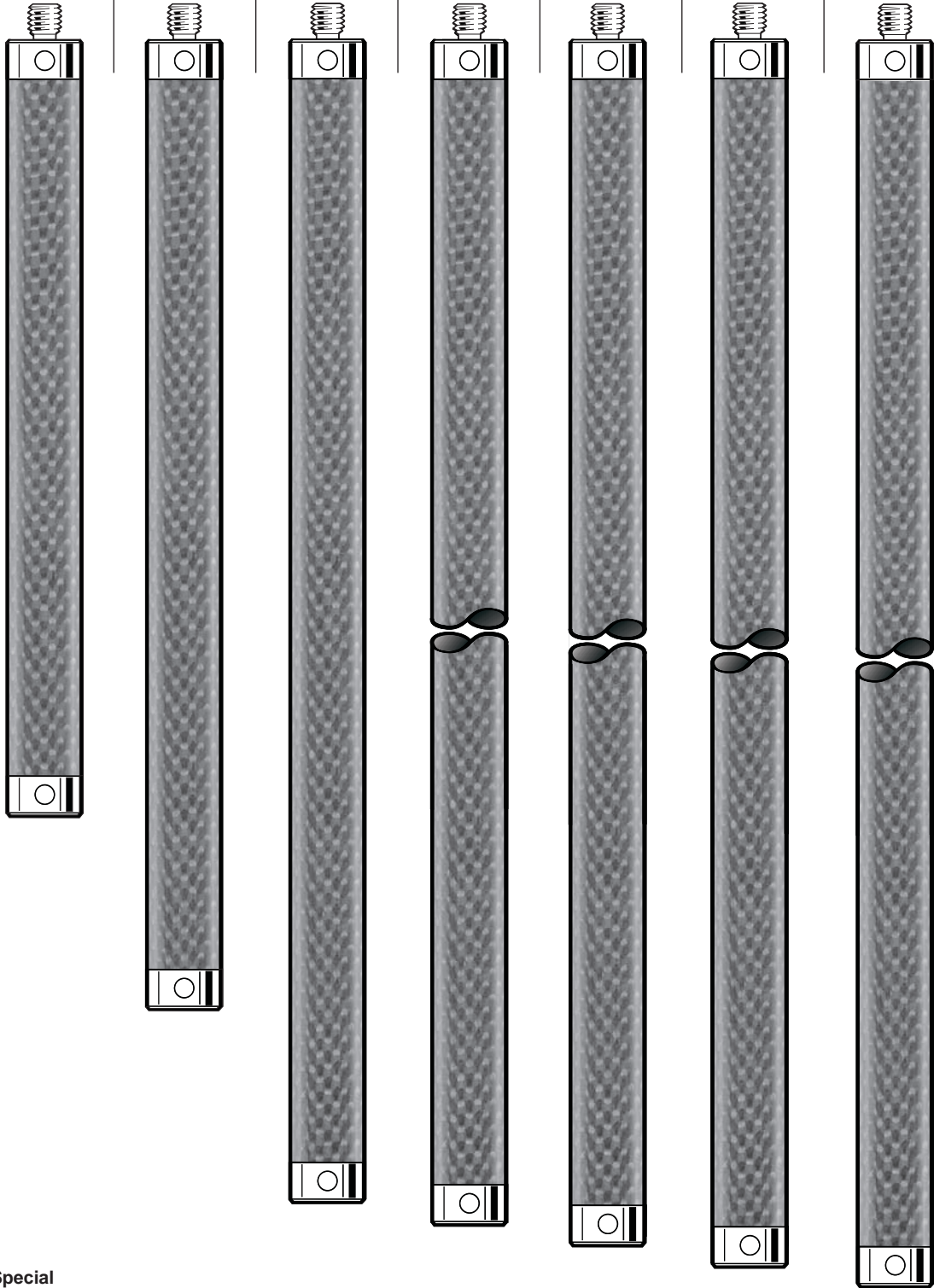
For M5 threaded extensions with
20 mm (0.79 in.) stem diameter



These tools are designed to fit styli extensions to Renishaw probes without causing internal damage

Stylus extensions – thermo stable carbon fibre stems, titanium ends (stem dia. 11 mm)

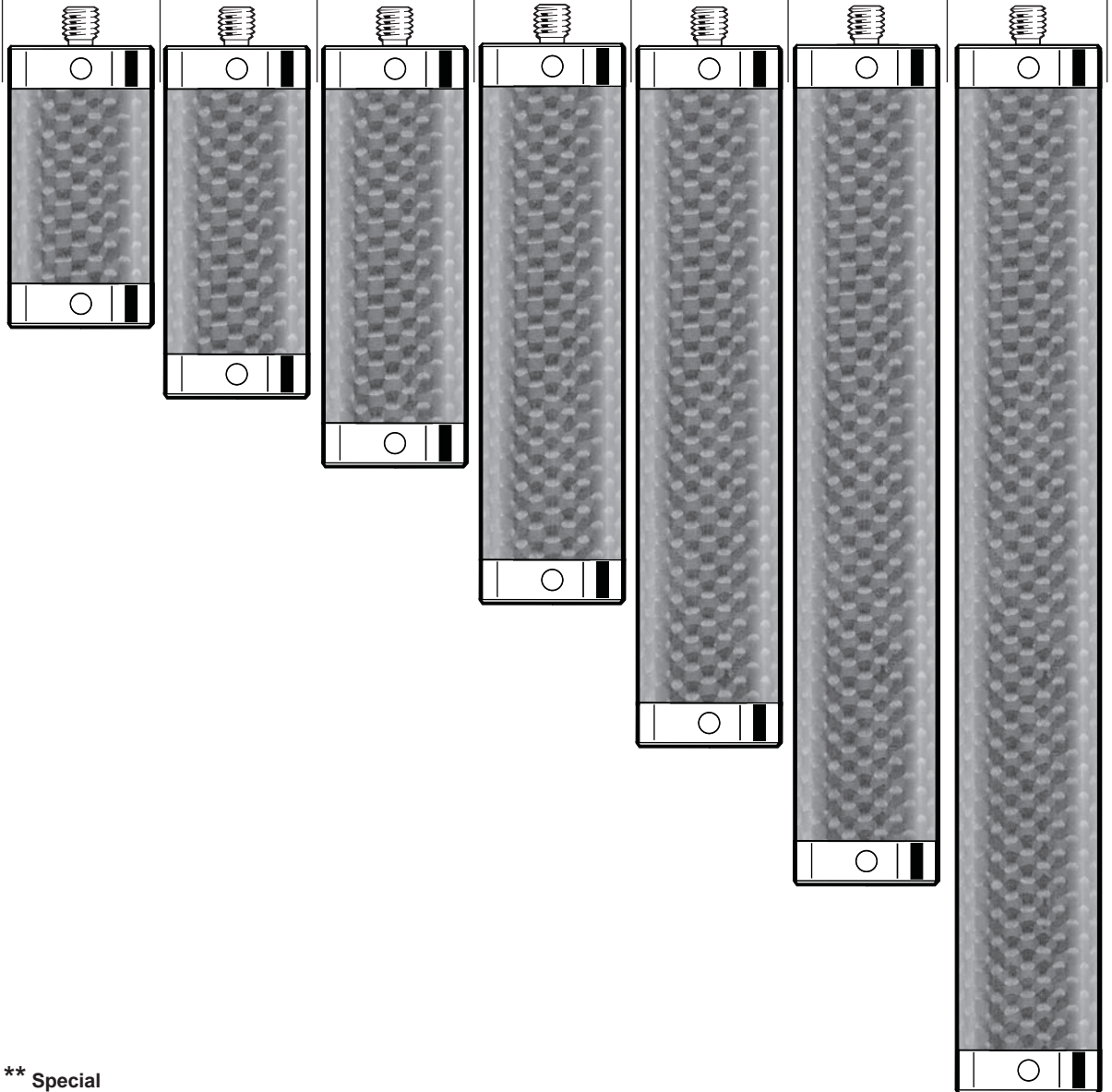
Part number	A-5555-0425**	A-5555-0424**	A-5555-0653**	A-5555-0654**	A-5555-0655**	A-5555-0642**	A-5555-0656**
Length mm (in.)	120.0 (4.73)	150.0 (5.91)	180.0 (7.09)	200.0 (7.88)	250.0 (9.85)	300.0 (11.82)	400.0 (15.76)
Stem dia. mm (in.)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)
Mass grammes	13.2	15.4	17.5	18.9	22.4	25.9	33.0



** Special

Stylus extensions – thermo stable carbon fibre stems, titanium ends (stem dia. 20 mm)

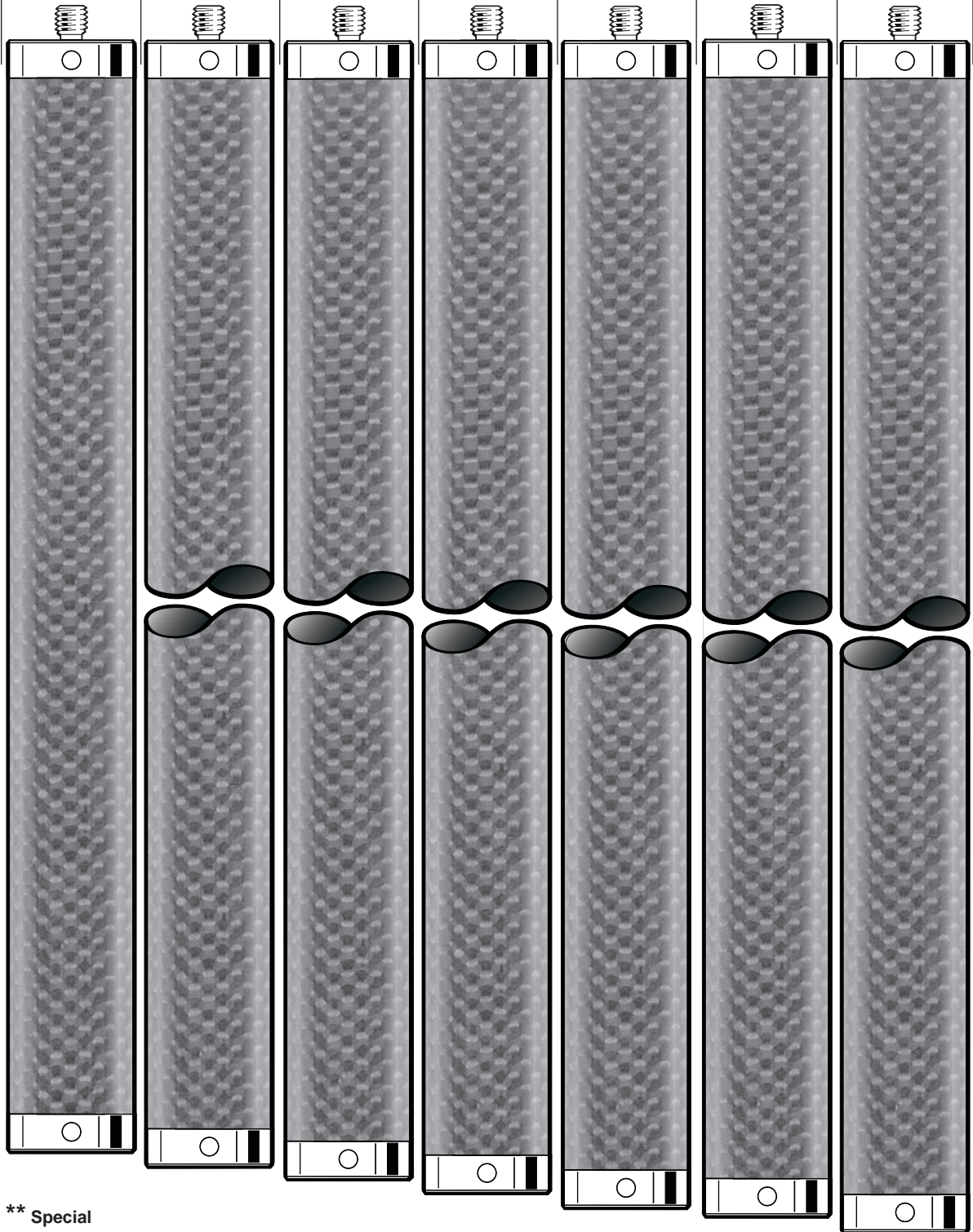
Part number	A-5555-0620**	A-5555-0657**	A-5555-0658**	A-5555-0621**	A-5555-0659**	A-5555-0660**	A-5555-0661**
Length mm (in.)	40.0 (1.58)	50.0 (1.97)	60.0 (2.37)	80.0 (3.15)	100.0 (3.94)	120.0 (4.73)	150.0 (5.91)
Stem dia. mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
Mass grammes	23.8	25.1	26.5	29.3	32.1	34.9	39.0



** Special

Stylus extensions – thermo stable carbon fibre stems, titanium ends (stem dia. 20 mm)

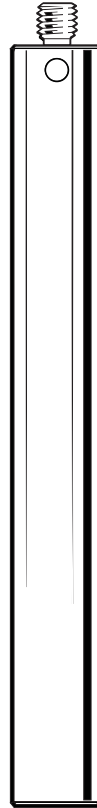
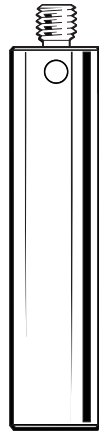
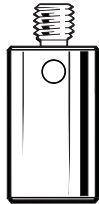
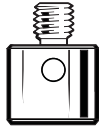
Part number	A-5555-0662**	A-5555-0663**	A-5555-0427**	A-5555-0664**	A-5555-0665**	A-5555-0667**	A-5555-0668**
Length mm (in.)	180.0 (7.09)	200.0 (7.88)	250.0 (9.85)	300.0 (11.82)	400.0 (15.76)	500.0 (19.70)	600.0 (23.64)
Stem dia. mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
Mass grammes	43.2	46.0	52.9	59.9	73.8	87.7	101.5



** Special

Stylus extensions – stainless steel

Part number	A-5555-0142	A-5555-0140	A-5555-0669	A-5555-0670	A-5555-0136
Length mm (in.)	10.0 (0.40)	20.0 (0.79)	30.0 (1.19)	50.0 (1.97)	100.0 (3.94)
Stem dia. mm (in.)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)
Mass grammes	6.0	13.0	20.0	34.8	73.0




Stylus extensions – aluminium

Part number	A-5555-0671	A-5555-0127	A-5555-0125
Length mm (in.)	50.0 (1.97)	100.0 (3.94)	200.0 (7.88)
Stem dia. mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
Mass grammes	47.2	50.0	85.0



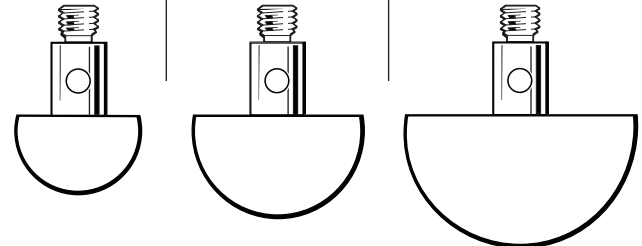
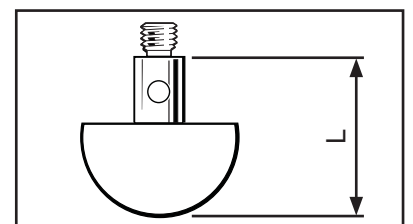
Disc styli – silver steel

Part number	A-5003-5288	A-5003-5289	A-5003-5290	A-5003-5291
Disc dia. mm (in.)	12.0 (0.48)	21.0 (0.83)	35.0 (1.38)	63.5 (2.51)
Disc depth mm (in.)	3.0 (0.12)	3.0 (0.12)	5.0 (0.20)	5.0 (0.20)
Roller depth mm (in.)	5.0 (0.20)	5.0 (0.20)	8.0 (0.32)	8.0 (0.32)
Mass grammes	2.52	5.23	14.00	51.00



Hemispherical styli - ceramic

Part number	A-5003-5275	A-5003-5276	A-5003-5277
Length mm (in.)	16.0 (0.63)	22.0 (0.87)	30.0 (1.19)
Stem dia. mm (in.)	19.5 (0.77)	20.5 (0.81)	24.5 (0.96)
Mass grammes	7.0	14.0	19.7

Styli for Faro arms

7.1



Styli for Faro arms

These styli have been designed especially for use on Faro portable arm CMMs. Their robust design and construction utilizes Grade 5 Zirconia balls that have a high fracture toughness. The balls are bonded to the high strength tungsten carbide stem with impact resistant adhesive, and specialist construction techniques have been incorporated to ensure that the joint between the body and stem is extremely rigid and virtually indestructible.

1¼–20 UN thread styli

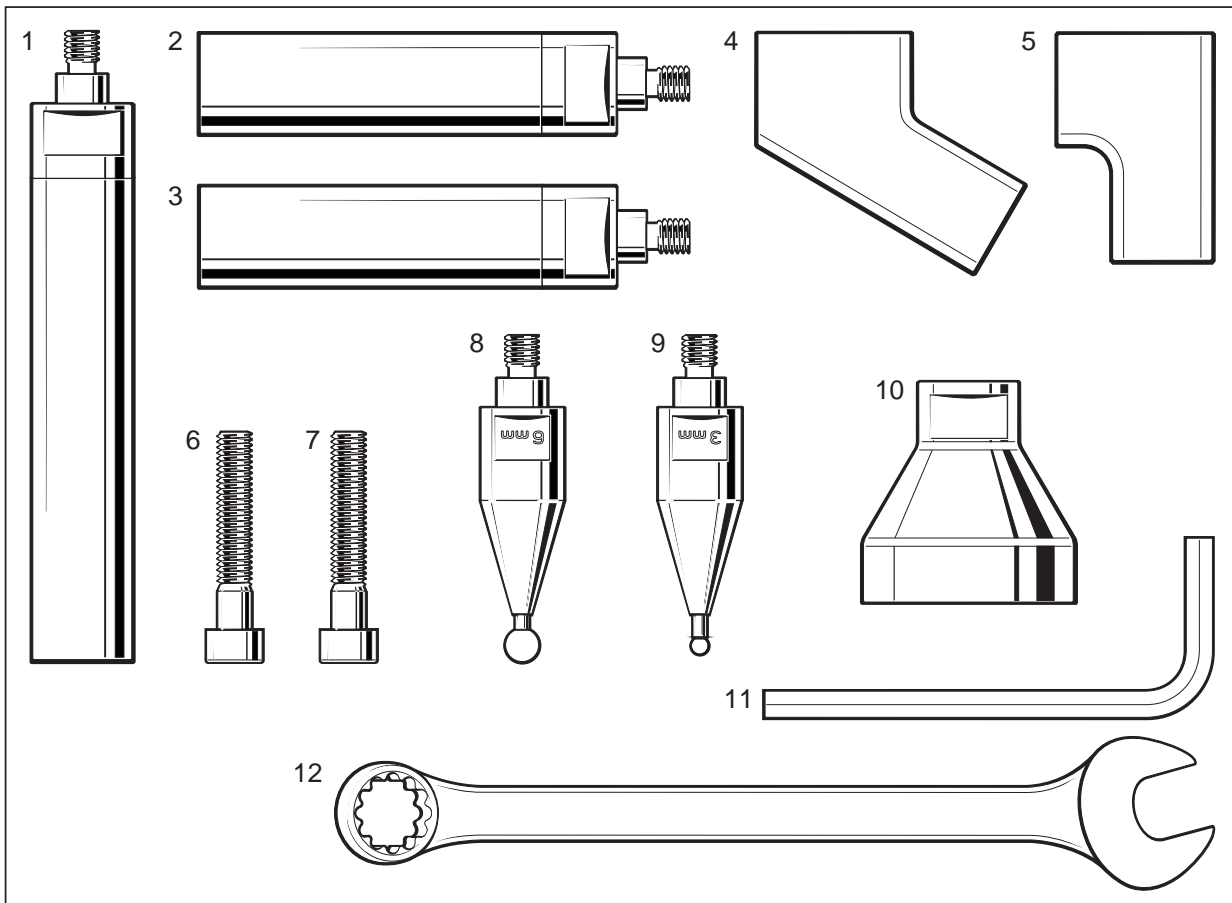
Part number	A-5003-7673	A-5003-7674	A-5003-7675
Ball dia. (mm)	3	6	N/A
Length (mm)	57	57	57

M6 styli

Part number	A-5003-7676	A-5003-7677	A-5003-7678	A-5003-7679
Ball diameter	1/8 in.	¼ in.	3 mm	6 mm
Length (mm)	43	43	43	43

Faro kit

A-5003-9190 Faro probe kit 0073 12 piece



Position	Part number	Description
1	A-5003-9127	M6M - M6F EXT L101.6 (4.0) D18 AL
2 - 3	A-5003-9126	M6M - M6F EXT L76.2 (3.0) D18 AL
4	A-5003-9186	M6F FARO EXT 60 DEG ADAPTOR
5	A-5003-9187	M6F FARO EXT 90 DEG ADAPTOR
6 - 7	P-5C08-0635	SCREW HEX SKT CAPHD M6X35 STST
8	A-5003-7679	STYLUS M6 DIA 6 MM 21 PROBE 0067
9	A-5003-7678	STYLUS M6 DIA 3 MM 21 PROBE 0065
10	M-5003-9133	FARO ADAPTOR 1.25-20 UN-M6
11	P-TL01-0500	SKT WRENCH 5 MM A/F
12	P-TL09-0012	12 MM A/F OPEN/RING SPANNER

Accessories

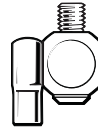
8.1



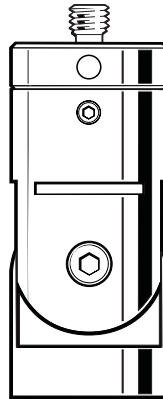
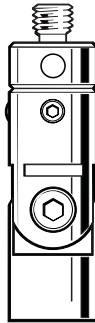
M2 CF stylus tool

Stylus knuckles

Part number	A-5000-7534	A-5003-4697	A-5000-9902 Rotary	A-5000-7616	A-5003-4686 Rotary
Thread size	M2	M2	M2	M3	M3
Effective length mm (In.)	8.0 (0.32)	13.5 (0.54)	16.5 (0.65)	12.0 (0.48)	17.0 (0.67)
Centre offset mm (in.)	4.5 (0.18)	N/A	N/A	6.0 (0.24)	N/A
Mass grammes	1.6	1.1	1.3	3.7	1.5



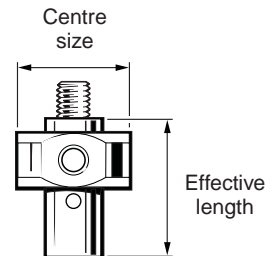
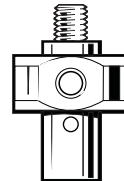
Part number	A-5003-4689 Rotary	A-5003-5278* Rotary	A-5003-5279 Rotary
Thread size	M4	M5	M5
Effective length mm (In.)	33.0 (1.30)	36.5 (1.44)	46.5 (1.84)
Centre offset mm (in.)	N/A	N/A	N/A
Mass grammes	9.8	16.5	64.9








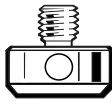
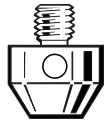
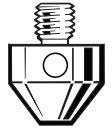
*Not for use with SP80







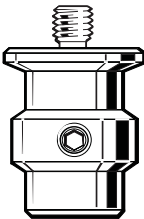
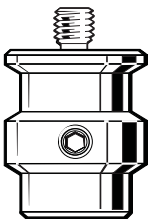
Stylus centres

Part number	A-5000-8395 4-way	A-5000-3627 5-way	A-5000-7610 5-way	A-5000-7792 5-way
Thread size	M2	M2	M3	M4
Effective length mm (In.)	7.5 (0.30)	7.5 (0.30)	13.0 (0.52)	18.0 (0.71)
Centre offset mm (in.)	7.5 (0.30)	7.0 (0.28)	10.0 (0.40)	15.0 (0.60)
Mass grammes	1.1	0.8	3.6	12.1



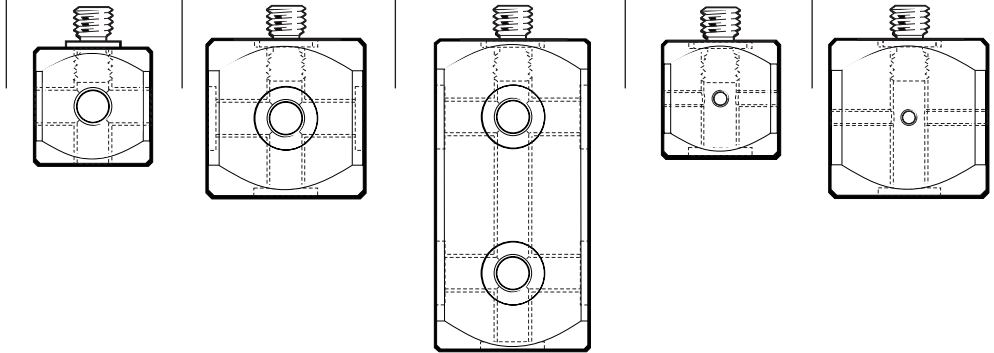
Adaptors

Part number	M-5000-4164 Stainless steel	M-5000-4163 Stainless steel	M-5000-6622 Stainless steel	M-5000-6714 Stainless steel	M-5000-6625 Stainless steel	M-5000-9301 Stainless steel	A-5003-0856 Stainless steel	A-5555-0227 Stainless steel
Male/female thread	M2/M3	M3/M2	M4/M2	M4/M3	M4/M3	M5/M4	M5/M4	M5/M3
Length mm (In.)	7.0 (0.28)	5.0 (0.20)	5.0 (0.20)	9.0 (0.36)	20.0 (0.79)	6.5 (0.26)	9.0 (0.36)	10.0 (0.40)
Mass grammes	0.4	0.6	1.5	1.4	3.2	6.0	4.6	5.0
								

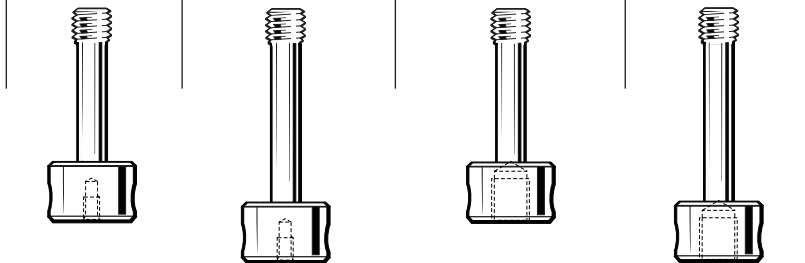
Part number	A-5555-0226 Stainless steel	A-5000-7751 Ceramic	M-5000-8167 Stainless steel	A-5000-7752 Ceramic	A-5000-7753 Ceramic	A-2054-4657 Stainless steel	A-5000-9302 Stainless steel	A-5000-9303 Stainless steel
Male/female thread	M5/M2	M4/M3	TF6/M3	M4/M3	M4/M3	M4/Ø4.5	M5/Ø8.0	M5/Ø10.0
Length mm (In.)	10.0 (0.40)	50.0 (1.97)	18.0 (0.71)	75.0 (2.96)	100.0 (3.94)	10.0 (0.40)	22.0 (0.87)	22.0 (0.87)
Mass grammes	5.0	4.4	1.9	5.2	6.3	5.0	18.0	20.0
								

Cubes and bolts

Part number	A-5555-0189 Titanium	A-5555-0190 Titanium	A-5555-0194 Titanium	A-5003-5683 Titanium	A-5003-5684 Titanium
Thread size	M5	M5	M5	M5 – M2	M5 – M2
Length mm (In.)	15.0 (0.60)	20.0 (0.79)	20.0 (0.79)	15.0 (0.60)	20.0 (0.79)
Width mm (in.)	15.0 (0.60)	20.0 (0.79)	40.0 (1.58)	15.0 (0.60)	20.0 (0.79)
Mass grammes	12.85	32.55	63.50	13.75	35.18

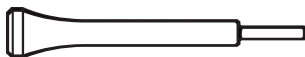


Part number	A-5003-5679 Stainless steel	A-5003-5678 Stainless steel	A-5003-5677 Stainless steel	A-5003-5676 Stainless steel
Thread size	M5 – M2	M5 – M2	M5	M5
Length mm (In.)	28.0 (1.11)	33.0 (1.30)	28.0 (1.11)	33.0 (1.30)
Mass grammes	6.7	7.1	6.0	6.4



Styli tools

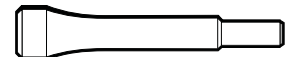
M-5000-3540
For M2 and M3
threaded styli



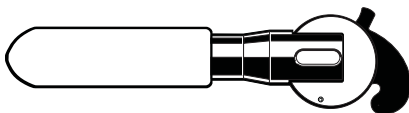
M-5000-3707
For M4
threaded styli



M-5000-9304
For M5
threaded styli



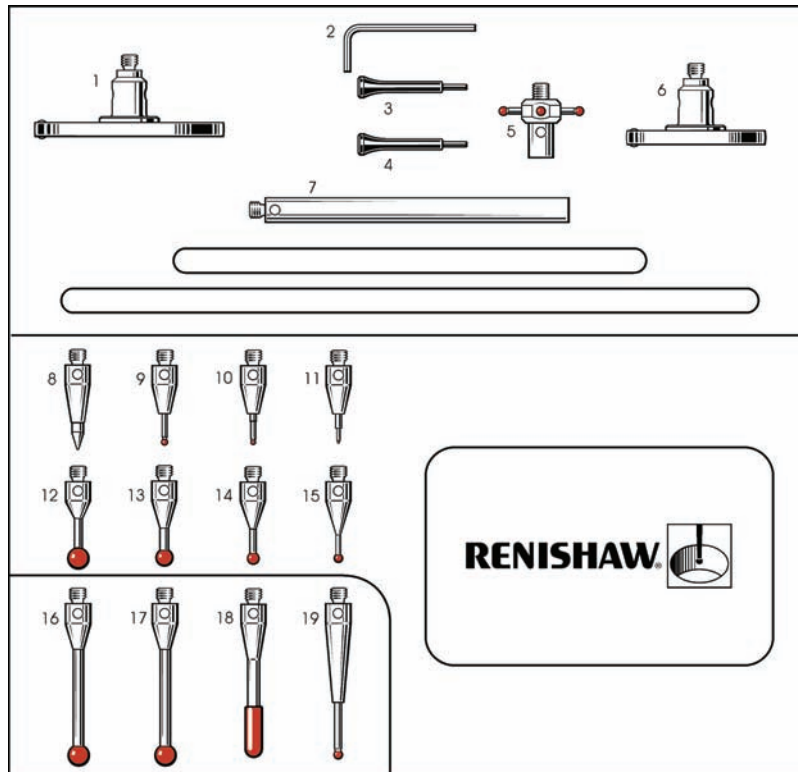
A-5003-2300
For the M2 carbon fibre
range of styli



These tools are designed to fit styli to Renishaw probes without causing internal damage

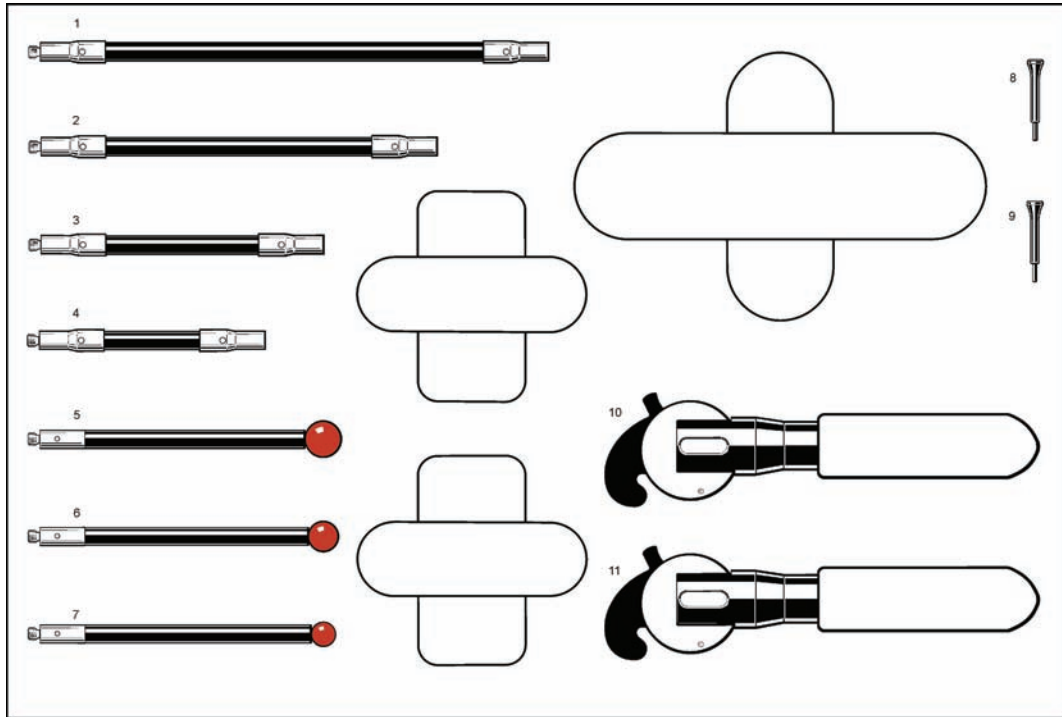
M2 styli kits

A-5000-0002 M2 stylus enhancement kit



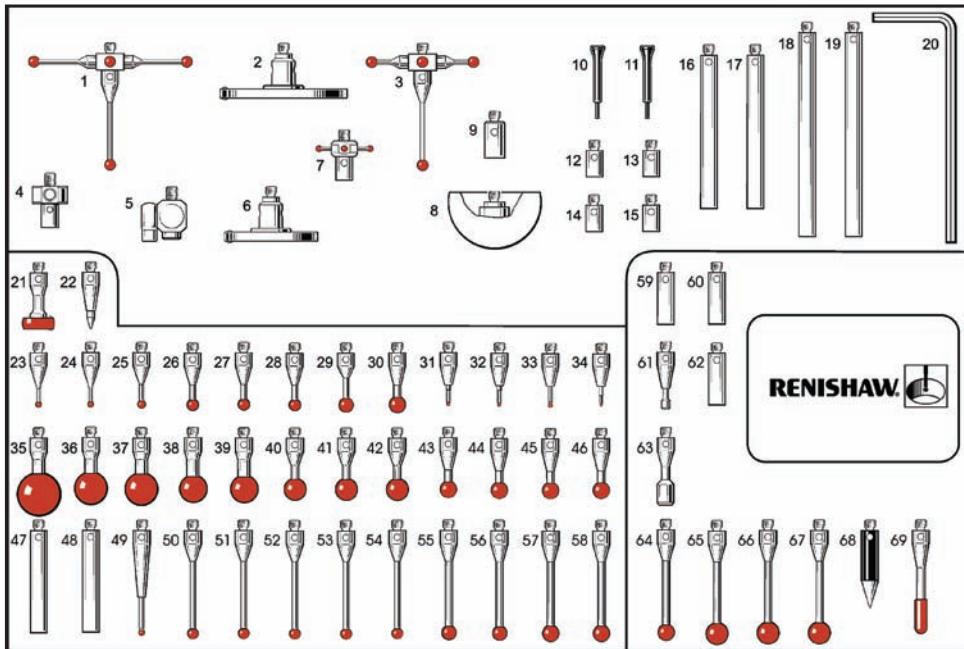
Position	Part number	Description
1	A-5000-7810	M2 DSC D25SLVS T1.5 L8.6 BR-Y2.5
2	P-TL01-0150	S3 HEX WRENCH 1.5 MM A/F
3-4	M-5000-3540	M2-M3 STYLUS TOOL
5	A-5000-7811	M2 STR D1R 4BALL L7.5T S10
6	A-5000-7809	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
7	M-5000-7779	M2 EXT L40 d3SS
8	A-5000-7813	M2 PNT D1.4TC 30deg L10
9	A-5000-7801	M2 STY D0.7R L10 EWL4 d0.5TC
10	A-5000-7805	M2 STY D0.5R L10 EWL3 d0.4TC
11	A-5000-7800	M2 STY D0.3R L10 EWL2 d0.2TC
12	A-5000-7803	M2 STY D2.5R L10 EWL6.5 d1SS
13	A-5000-7807	M2 STY D2R L10 EWL6 d1SS
14	A-5000-7802	M2 STY D1.5R L10 EWL4.5 d0.7SS
15	A-5000-7806	M2 STY D1R L10 EWL4.5 d0.7SS
16-17	A-5000-7804	M2 STY D2.5R L20 EWL16.4 d1.4SS
18	A-5000-7812	M2 SPH D2R L20 EWL7.2 SS
19	A-5000-7808	M2 STY D1R L20 EWL7 d0.7TC

A-5003-2310 M2 high performance kit



Position	Part number	Description
1	A-5003-2283	M2 EXT L90 d3CF
2	A-5003-2282	M2 EXT L70 d3CF
3	A-5003-2281	M2 EXT L50 d3CF
4	A-5003-2280	M2 EXT L40 d3CF
5	A-5003-2287	M2 STY D6R L50 EWL50 d3CF
6	A-5003-2286	M2 STY D5R L50 EWL50 d3CF
7	A-5003-2285	M2 STY D4R L50 EWL50 d3CF
8-9	M-5000-3540	M2-M3 STYLUS TOOL
10-11	A-5003-2300	M2 STYLUS TOOL CF RANGE

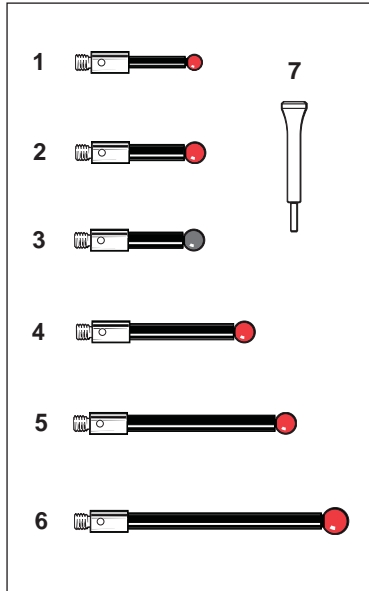
A-5000-0001 M2 comprehensive stylus kit



Position	Part number	Description
1	A-5000-3626	M2 STR D2R 5BALL L19.2 S30
2	A-5000-7810	M2 DSC D25SLVS T1.5 L8.6 BR-Y2.5
3	A-5000-7629	M2 STR D2R 5BALL L19.2 S18
4	A-5000-3627	M2 ACC CENTRE 5WAY
5	A-5000-7534	M2 ACC KNUCKLE OFFSET
6	A-5000-7809	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
7	A-5000-7811	M2 STR D1 4BALL L7.5 S10
8	A-5000-3614	M2 HEM D18CE
9	M-5000-4164	M2-M3 EXT L7SS
10-11	M-5000-3540	M2-M3 STYLUS TOOL
12-15	M-5000-7634	M2 EXT L5 d3SS
16-17	M-5000-4162	M2 EXT L30 d3SS
18-19	M-5000-7779	M2 EXT L40 d3SS
20	P-TL01-0150	S3 HEX WRENCH 1.5 MM A/F
21	A-5000-3611	M2 DSC D6R T1.2 L10 BR-Y2
22	A-5000-7813	M2 PNT D1.4TC 30deg L10
23-24	A-5000-7806	M2 STY D1R L10 EWL4.5 d0.7SS
25	A-5000-7802	M2 STY D1.5R L10 EWL4.5 d0.7SS
26-28	A-5000-7807	M2 STY D2R L10 EWL6 d1SS
29	A-5000-7803	M2 STY D2.5R L10 EWL6 d1SS
30	A-5000-3604	M2 STY D3R L10 EWL7.5 d1.5SS
31-32	A-5000-7805	M2 STY D0.5R L10 EWL3 d0.4TC
33	A-5000-7801	M2 STY D0.7R L10 EWL4 d0.5TC
34	A-5000-7800	M2 STY D0.3R L10 EWL2 d0.2TC
35	A-5000-4158	M2 STY D8R L11 EWL11 d2.5SS
36-37	A-5000-4156	M2 STY D6R L10 EWL10 d2.5SS
38-39	A-5000-4155	M2 STY D5R L10 EWL10 d2.5SS
40-42	A-5000-4154	M2 STY D4R L10 EWL10 d1.5SS
43-46	A-5000-3604	M2 STY D3R L10 EWL7 d1.5SS
47-48	M-5000-3648	M2 EXT L20 d3SS
49	A-5000-7808	M2 STY D1R L20 EWL7 d0.7TC
50-54	A-5000-3603	M2 STY D2R L20 EWL14 d1.4SS
55-56	A-5000-7804	M2 STY D2.5R L20 EWL16.4 d1.4SS
57-58	A-5000-4160	M2 STY D3R L20 EWL17 d1.5SS
59-60	M-5000-3647	M2 EXT L10 d3SS
61	M-5000-4152	M2 CYL D1.5SLVS L11 EWL1.25
62	M-5000-3647	M2 EXT L10 d3SS
63	M-5000-4153	M2 CYL D3SLVS L13 EWL3.8
64	A-5000-4160	M2 STY D3R L20 EWL17 d1.5SS
65-67	A-5000-4161	M2 STY D4R L20 EWL20 d1.5SS
68	M-5000-4150	M2 PNT D3SLVS 30deg L15
69	A-5000-7812	M2 SPH D2R L20 EWL7.2 SS

M3 styli kits

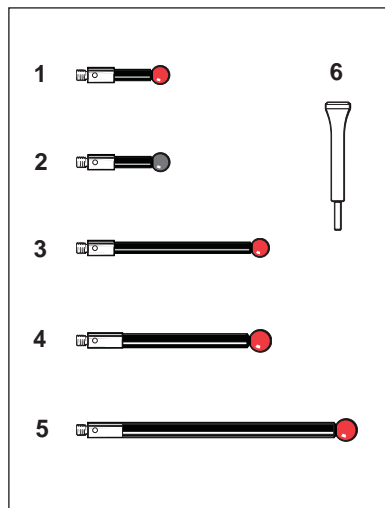
A-5003-6151 M3 stylus kit for SP25M/SM25-1/SH25-1



Position	Part number	Description
1	A-5003-5970	M3 STY D3R L21 EWL13.5 d2CF
2	A-5003-5971	M3 STY D4R L21 EWL13.5 d3CF
3	A-5003-5977	M3 STY D4SN L21 EWL13.5 d3CF
4	A-5003-5972	M3 STY D4R L31 EWL23.5 d3CF
5	A-5003-5973	M3 STY D4R L40 EWL32.5 d3CF
6	A-5003-5974	M3 STY D5R L50 EWL42.5 d3CF
7	M-5000-3540	M2-M3 STYLUS TOOL

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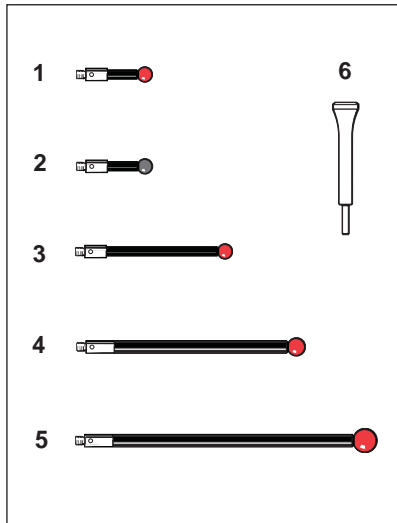
A-5003-6152 M3 stylus kit for SP25M/SM25-2/SH25-2



Position	Part number	Description
1	A-5003-5975	M3 STY D5R L21 EWL13.5 d3CF
2	A-5003-5978	M3 STY D5SN L21 EWL13.5 d3CF
3	A-5003-5974	M3 STY D5R L50 EWL42.5 d3CF
4	A-5003-5976	M3 STY D6R L50 EWL50 d4CF
5	A-5003-4860	M3 STY D6R L75 EWL75 d4CF
6	M-5000-3540	M2-M3 STYLUS TOOL

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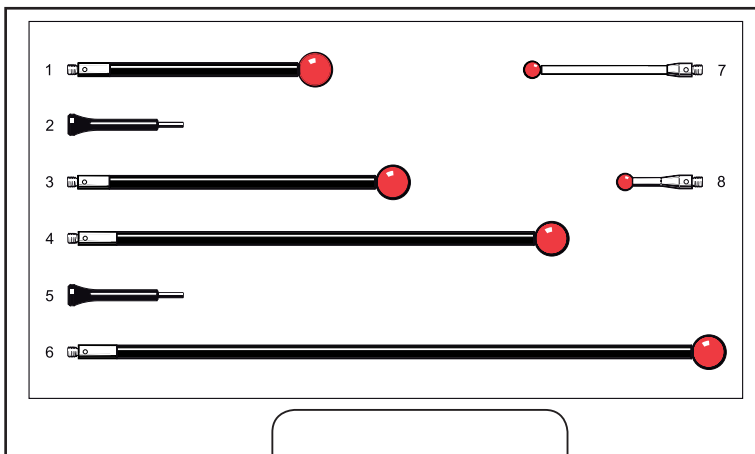
A-5003-6153 M3 stylus kit for SP25M/SM25-3/SH25-3



Position	Part number	Description
1	A-5003-5975	M3 STY D5R L21 EWL13.5 d3CF
2	A-5003-5978	M3 STY D5SN L21 EWL13.5 d3CF
3	A-5003-5974	M3 STY D5R L50 EWL42.5 d3CF
4	A-5003-4860	M3 STY D6R L75 EWL75 d4CF
5	A-5003-4863	M3 STY D8R L100 EWL100 d4CF
6	M-5000-3540	M2-M3 STYLUS TOOL

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****A-5003-8124 M3 stylus kit for SP25M/SM25-4/SH25-4**



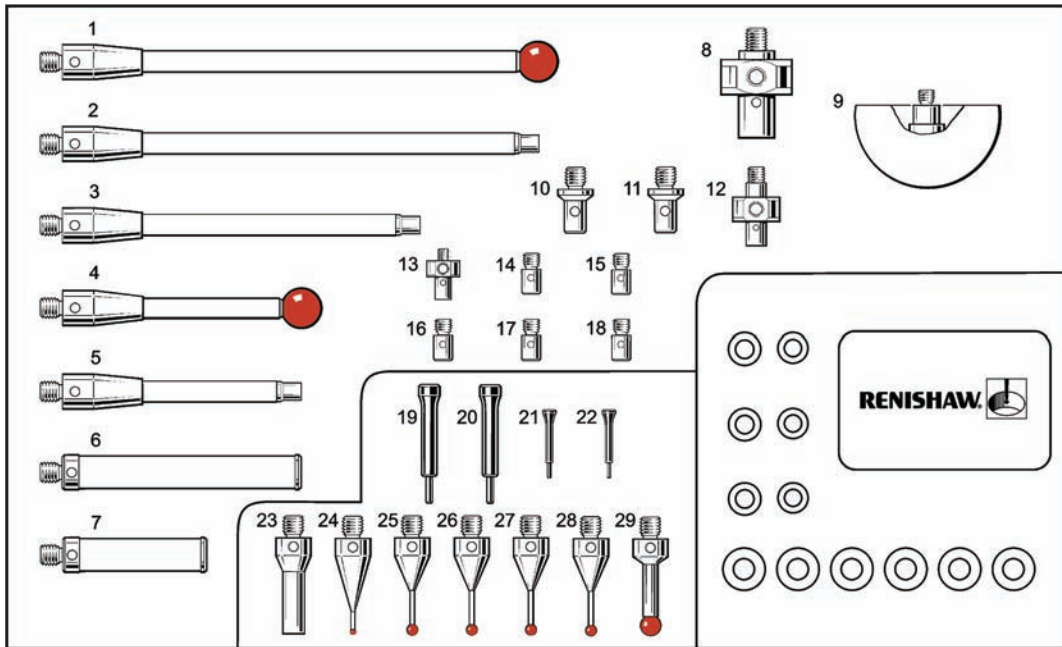
Position	Part number	Description
1	A-5003-7057	M3 STYLUS D10R L75 EWL75 d4CF
2	M-5000-3540	M2/M3 STYLUS TOOL
3	A-5003-7056	M3 STYLUS D10R L100 EWL100 d4CF
4	A-5003-7055	M3 STYLUS D10R L150 EWL150 d4CF
5	M-5000-3540	M2/M3 STYLUS TOOL
6	A-5003-7054	M3 STYLUS D10R L200 EWL200 d4CF
7	A-5003-0069	M3 STYLUS D5R L50 EWL50 d2.5CE
8	A-5000-7630	M3 STYLUS D5R L21 EWL21 d2.5SS

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** Special

M4 styli kits

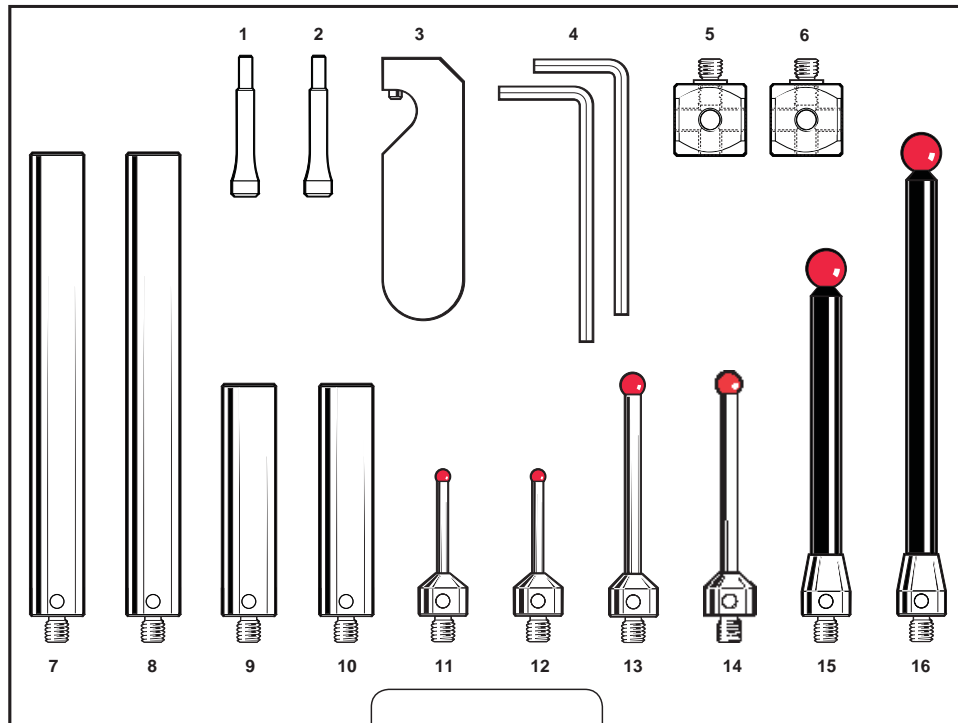
A-5000-7829 M4 stylus kit (TP7M use)



Position	Part number	Description
1	A-5000-7796	M4 STY D8R L100 EWL100 d4.5CE
2	A-5000-7753	M4-M3 EXT L100CE
3	A-5000-7752	M4-M3 EXT L75CE
4	A-5000-7795	M4 STY D8R L50 EWL50 d4.5CE
5	A-5000-7751	M4-M3 EXT L50CE
6	A-5000-7755	M4 EXT L50 d7.4CE
7	A-5000-7754	M4 EXT L30 d7.4CE
8	A-5000-7792	M4 ACC CENTRE 5WAY
9	A-5000-7814	M3 HEM D30CE
10-11	M-5000-6714	M4-M3 EXT L9SS
12	A-5000-7610	M3 ACC CENTRE 5WAY
13	A-5000-3627	M2 ACC CENTRE 5WAY
14-18	M-5000-4163	M3-M2 EXT L5SS
19-20	M-5000-3707	M4 STYLUS TOOL
21-22	M-5000-3540	M2-M3 STYLUS TOOL
23	M-5000-6625	M4-M3 EXT L20SS
24	A-5000-7545	M4 STY D1R L19.5 EWL4.5 d0.7SS
25-28	A-5000-7547	M4 STY D2R L19 EWL9.2 d1.4SS
29	A-5000-7551	M4 STY D4R L18 EWL13.7 d3SS

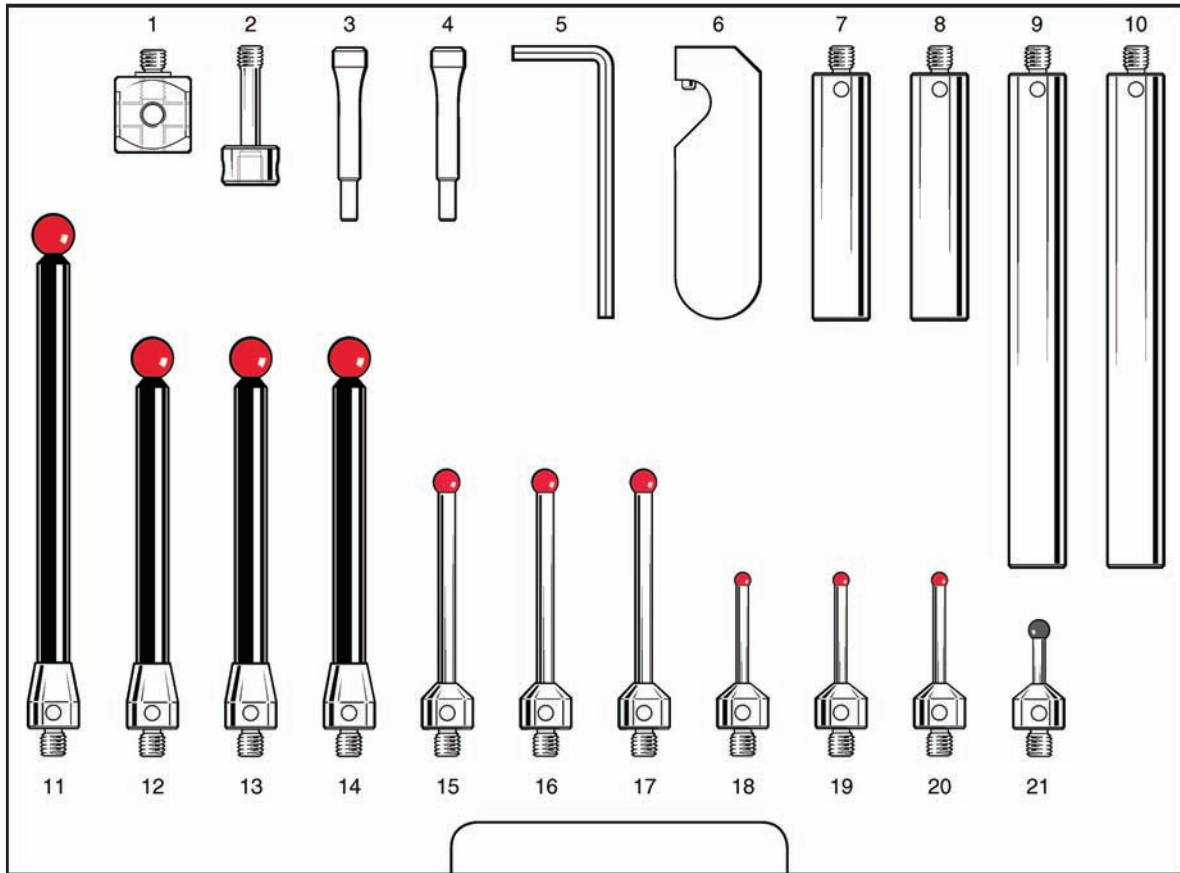
M5 styli kits

A-5003-6168 M5 stylus kit SP80



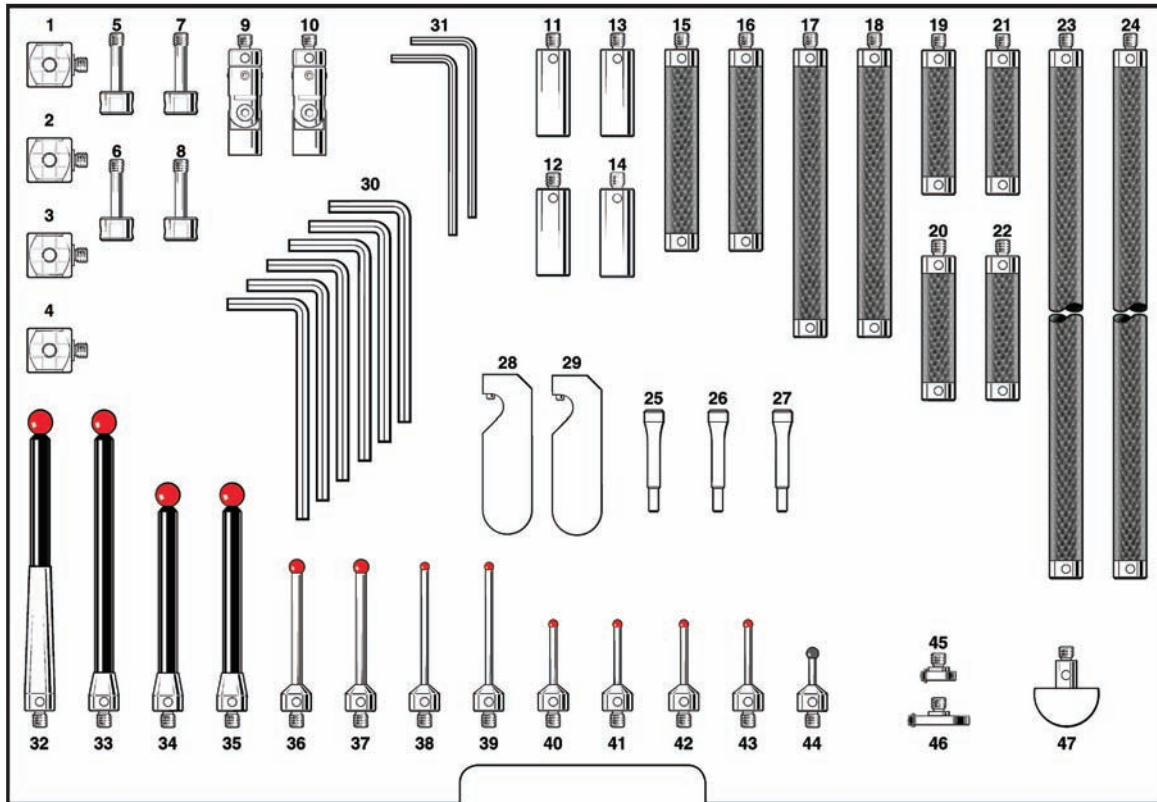
Position	Part number	Description
1-2	M-5000-9304	M5 STYLUS TOOL
3	A-5003-6134	M5 ACC D11 EXTENSION TOOL
4	P-TL01-0250	S3 HEX WRENCH 2.5 MM A/F
5-6	A-5555-0189	M5 ACC 15x15 CUBE
7-8	A-5555-0136	M5 EXT L100 d11SS
9-10	A-5555-0670	M5 EXT L50 d11SS
11-12	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
13-14	A-5003-5236	M5 STY D5R L50 EWL41 d3TC
15	A-5003-5251	M5 STY D8R L75 EWL62 d6CF
16	A-5003-5262	M5 STY D8R L100 EWL87 d6CF

A-5003-5911 M5 stylus kit - standard



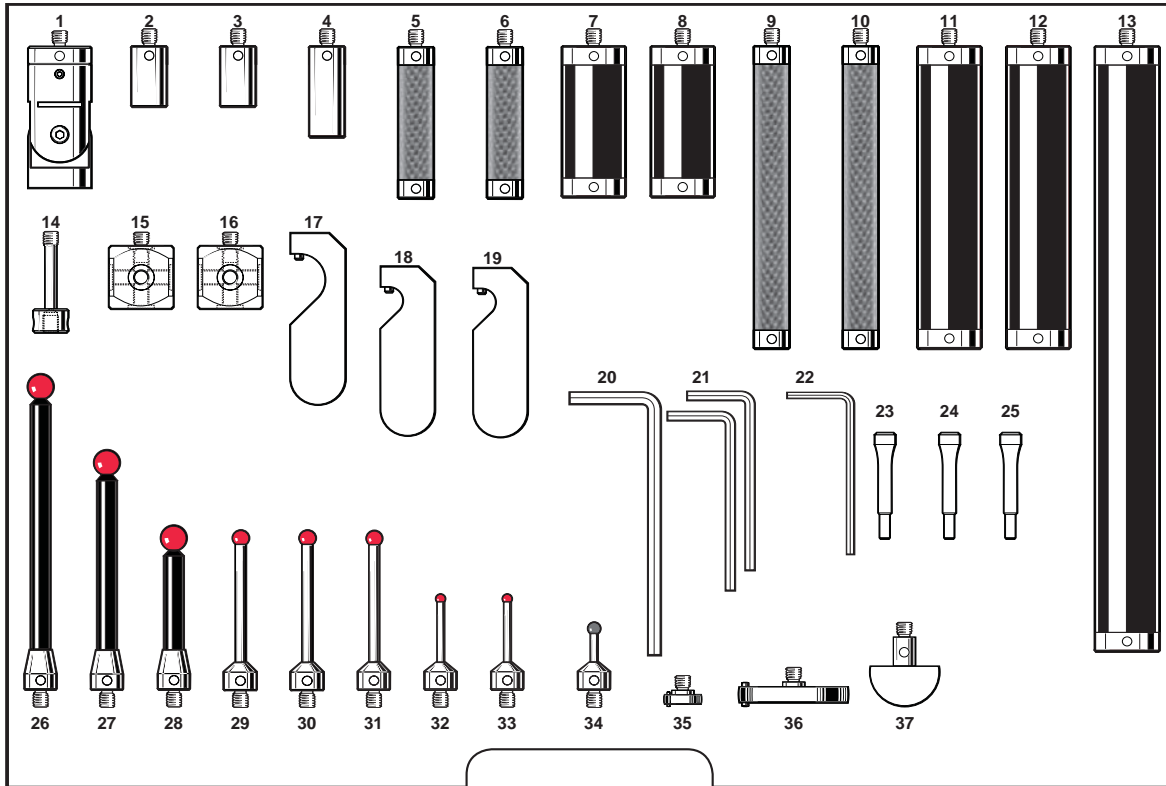
Position	Part number	Description
1	A-5555-0189	M5 ACC 15x15 CUBE
2	A-5003-5677	M5 ACC CUBE BOLT L28
3-4	M-5000-9304	M5 STYLUS TOOL
5	P-TL01-0250	S6 HEX WRENCH 2.5 MM A/F
6	A-5003-6134	M5 ACC D11 EXTENSION TOOL
7-8	A-5555-0670	M5 EXT L50 d11SS
9-10	A-5555-0136	M5 EXT L100 d11SS
11	A-5003-5262	M5 STY D8R L100 EWL89.5 d6CF
12-14	A-5003-5251	M5 STY D8R L75 EWL64.5 d6CF
15-17	A-5003-5236	M5 STY D5R L50 EWL41.5 d3TC
18-20	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
21	A-5003-5733	M5 STY D4SN L20 EWL11.9 d2TC

A-5003-5909 M5 stylus kit - comprehensive



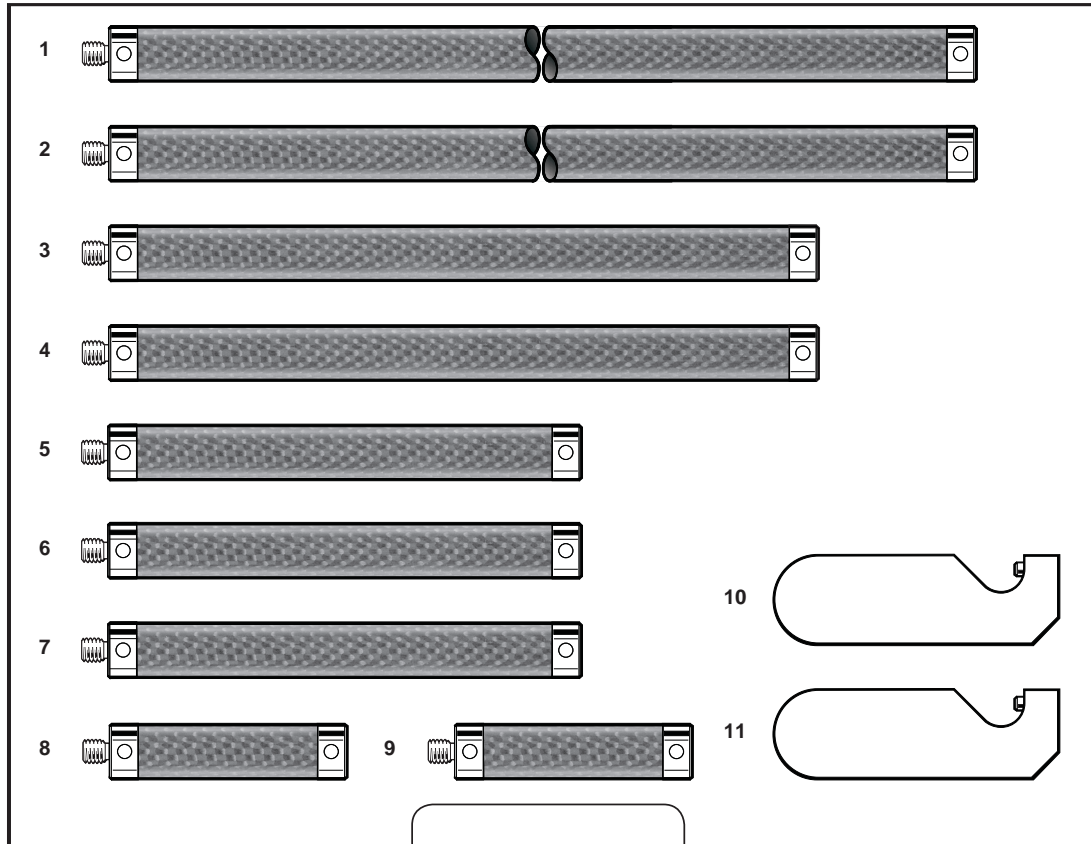
Position	Part number	Description
1-4	A-5555-0189	M5 ACC 15x15 CUBE
5-8	A-5003-5677	M5 ACC CUBE BOLT L28
9-10	A-5003-5278	M5 ACC KNUCKLE d11 ROTARY
11-14	A-5555-0669	M5 EXT L30 d11SS
15-16	A-5555-0623	M5 EXT L70 d11CF
17-18	A-5555-0652	M5 EXT L100 d11CF
19-22	A-5555-0648	M5 EXT L50 d11CF
23-24	A-5555-0654	M5 EXT L200 d11CF
25-27	M-5000-9304	M5 STYLUS TOOL
28-29	A-5003-6134	M5 ACC D11 EXTENSION TOOL
30	P-TL01-0250	S3 HEX WRENCH 2.5 MM A/F
31	P-TL01-0150	S3 HEX WRENCH 1.5 MM A/F
32	A-5003-5261	M5 STY D8R L100 EWL50 d6CF
33	A-5003-5262	M5 STY D8R L100 EWL89.5 d6CF
34-35	A-5003-5251	M5 STY D8R L75 EWL64.5 d6CF
36-37	A-5003-5236	M5 STY D5R L50 EWL41.5 d3TC
38-39	A-5003-5234	M5 STY D3R L50 EWL41 d2TC
40-43	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
44	A-5003-5733	M5 STY D4SN L20 EWL11.9 d2TC
45	A-5003-5288	M5 DSC D12SLVS T3 L3 BR-Y5
46	A-5003-5289	M5 DSC D21SLVS T3 L3 BR-Y5
47	A-5003-5276	M5 HEM D22CE d7SS

A-5003-5910 M5 stylus kit - general purpose



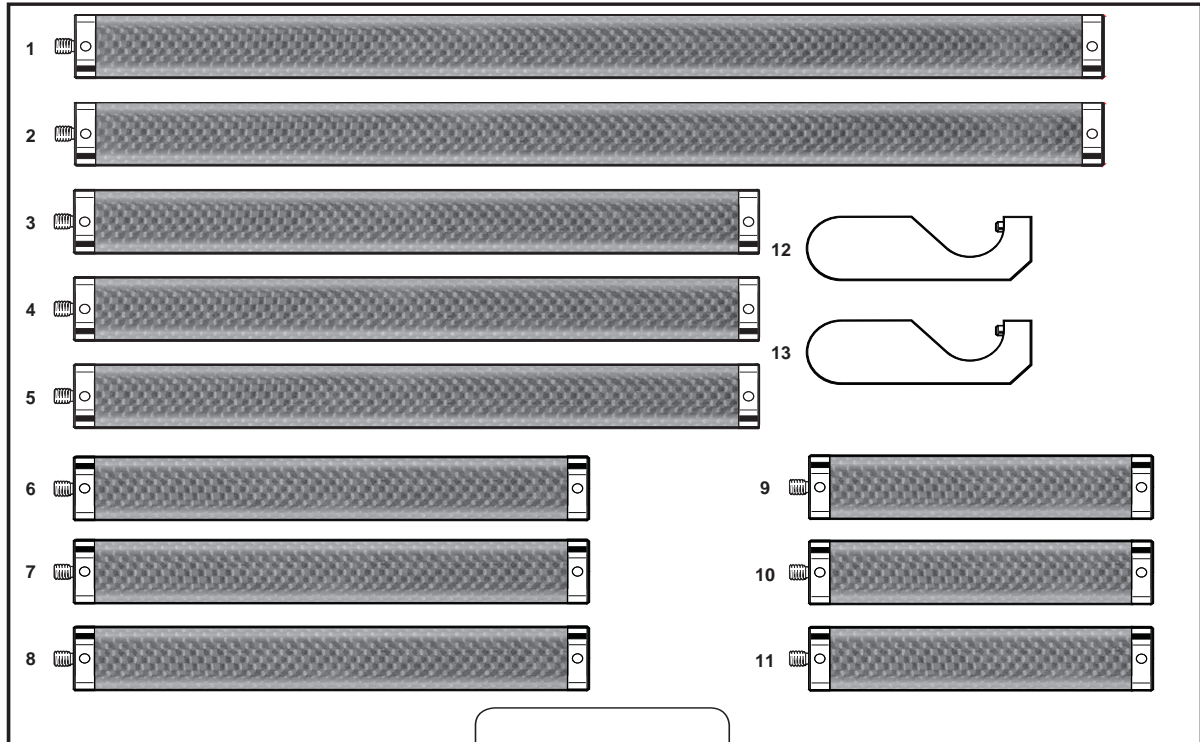
Position	Part number	Description
1	A-5003-5279	M5 ACC KNUCKLE d20 ROTARY
2-3	A-5555-0140	M5 EXT L20 d11SS
4	A-5555-0669	M5 EXT L30 d11SS
5-6	A-5555-0648	M5 EXT L50 d11CF
7-8	A-5555-0671	M5 EXT L50 d20AL
9-10	A-5555-0652	M5 EXT L100 d11CF
11-12	A-5555-0127	M5 EXT L100 d20AL
13	A-5555-0125	M5 EXT L200 d20AL
14	A-5003-5676	M5 ACC CUBE BOLT L33
15-16	A-5555-0190	M5 ACC 20x20 CUBE
17	A-5003-6135	M5 ACC D20 EXTENSION TOOL
18-19	A-5003-6134	M5 ACC D11 EXTENSION TOOL
20	P-TL01-0300	S4 HEX WRENCH 3.0 MM A/F
21	P-TL01-0250	S6 HEX WRENCH 2.5 MM A/F
22	P-TL01-0150	S3 HEX WRENCH 1.5 MM A/F
23-25	M-5000-9304	M5 STYLUS TOOL
26	A-5003-5262	M5 STY D8R L100 EWL89.5 d6CF
27	A-5003-5251	M5 STY D8R L75 EWL64.2 d6CF
28	A-5003-5238	M5 STY D8R L50 EWL39.5 d6CF
29-31	A-5003-5236	M5 STY D5R L50 EWL41.5 d3TC
32-33	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
34	A-5003-5733	M5 STY D4SN L20 EWL11.9 d2TC
35	A-5003-5288	M5 DSC D12SLVS T3 L3 BR-Y5
36	A-5003-5290	M5 DSC D35SLVS T5 L4 BR-Y8
37	A-5003-5276	M5 HEM D22CE d7SS

A-5003-5912 M5 stylus extension kit - 11 mm



Position	Part number	Description
1-2	A-5555-0654	M5 EXT L200 d11CF
3-4	A-5555-0424	M5 EXT L150 d11CF
5-7	A-5555-0652	M5 EXT L100 d11CF
8-9	A-5555-0648	M5 EXT L50 d11CF
10-11	A-5003-6134	M5 ACC D11 EXTENSION TOOL

A-5003-5913 M5 stylus extension kit - 20 mm



Position	Part number	Description
1-2	A-5555-0664	M5 EXT L300 d20CF
3-5	A-5555-0663	M5 EXT L200 d20CF
6-8	A-5555-0661	M5 EXT L150 d20CF
9-11	A-5555-0659	M5 EXT L100 d20CF
12-13	A-5003-6135	M5 ACC D20 EXTENSION TOOL