PRODUCT CATALOGUE

EMEA

ISSUE | 1

RENISHAW
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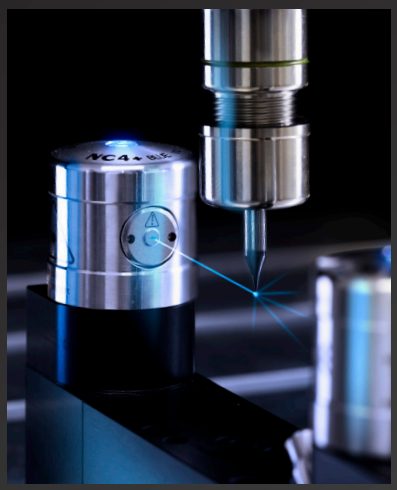
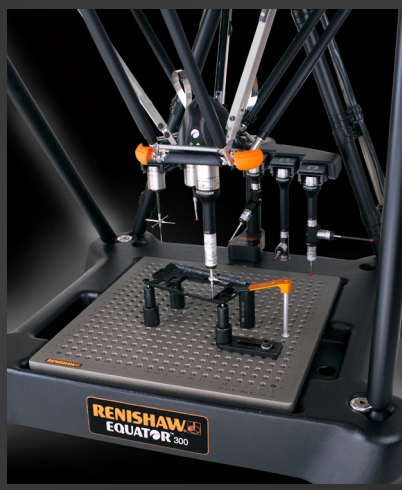
MACHINE CALIBRATION

MACHINE TOOL PROBES AND SOFTWARE

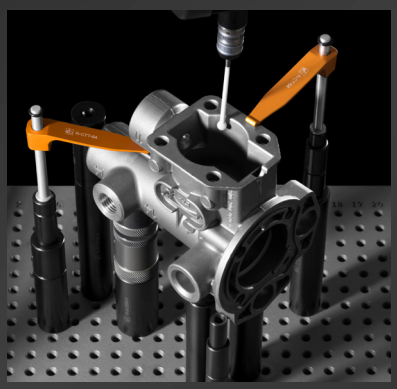


CMM PROBES, SOFTWARE AND RETROFITS

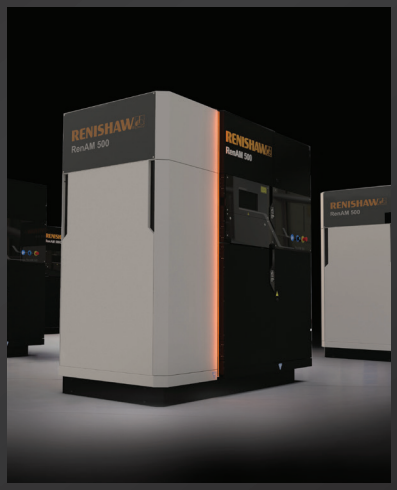
EQUATOR™ GAUGING SYSTEMS



STYLI AND ACCESSORIES



METROLOGY FIXTURES



METAL 3D PRINTING

ENCODERS

Helping you create the world of tomorrow

"We have a fundamental belief that metrology isn't just an eliminator of variation but an enabler of new capabilities."

Our work unleashes the capacity of our customers to do more for less, to produce higher quality and more innovative products, and to better and more profitably serve their customers or patients.

Over the years, we have built a company that is different to others. Different in how we apply technology to real world problems, in how we invest for the long-term, in how we manufacture rather than outsource, and in how we treat our customers as partners.

Which is why we've invested in research and development, in high quality manufacturing, in life-changing fields like healthcare, and in the ability to provide local customer support in all our markets around the globe. All of it rooted in our ethos of continual improvement and our passionate belief in the power of metrology.

We'd be proud to work with you on solving the challenges your business faces and helping you manufacture the products that will define our world in the decades to come.

Sir David McMurtry
Co-founder, Executive Chairman

Introduction

The Renishaw mission

Renishaw will design, manufacture and supply metrology systems of the highest quality and reliability to enable customers worldwide to carry out dimensional measurements to traceable standards.

Our product offerings will enhance quality and productivity, and we will strive for total customer satisfaction through superior customer service.

Our aim is to provide leading edge technology by encouraging innovation to address our customers' needs.

We are committed to sustained growth through continued investment in product development and manufacturing methods.

Renishaw wishes to be recognized collectively and individually as leaders and contributors in our field and our community.

We wish to achieve our aims in a way that is caring, open and honest.

Renishaw is an environmentally conscious and responsible company. We will strive to ensure that all aspects of the business have the least harmful effect on the environment.

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Coordinate measuring machine probes

Fixed and manual probe heads

PH1

A small swivel head, adjustable in both the A and B axes, with limited overtravel protection. The probe is offset from the mounting shank Z axis.

Number of probe sockets:	1
Probe status indication:	1 LED
Cable connection:	5 pin DIN 180° socket
Overtravel break load:	Adjustable from 20 gf (0.7 ozf) to locked solid
A-axis indexing:	Swivel of 115° locked with hexagonal key (3 mm A/F)
B-axis indexing:	15° steps through 360°
Weight:	125 g (4.5 oz)
Mounting options:	Shank to suit your CMM

Part number: A-1049-1795

PH6

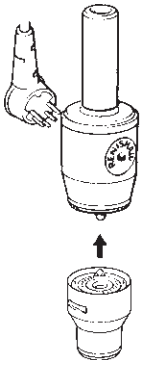
A compact, vertical probe head for a single probe, with a choice of integral cables (see below).

Number of probe sockets:	1
Probe status indication:	1 LED
Cable connection:	Integral cable
Mounting options:	Shank to suit your CMM

Part number: A-1046-5097 (coiled 12-28 in, 5 pin DIN)
Part number: A-1046-5098 (coiled 18-50 in, 5 pin DIN)
Part number: A-1046-5099 (coiled 30-95 in, 5 pin DIN)
Part number: A-1046-5094 (plain 177 in, 5 pin DIN)
Part number: A-1046-5096 (coiled 23-72 in, 7 pin amph)

PH6A

The PH6A is designed for use with autojoint probes and allows you to change probes or add extensions without having to requalify the probe. **Special order only**.



Number of probe sockets:	1
Probe status indication:	1 LED
Cable connection:	5 pin DIN 180° socket
Mounting options:	Shank to suit your CMM

Part number: A-1051-0012

PH6M

A fixed head with autojoint connection for probes and adaptors. For use with TP7M, SP600M, and SP25M.

Number of probe sockets:	1 autojoint
Probe status indication:	1 LED
Cable connection:	Micro ‘D’ connector
Mounting options:	Shank to suit your CMM

Part number: A-1074-0020

MH8

A manually indexable probe head with repeatable indexing, eliminating the need to requalify the stylus tip position after orientation. The MH8 can be used with the TP6 probe directly or with the TP20 probe with up to 50 mm extension. An easy upgrade, as there is no need for special software, cabling, or electronics.

2σ positional repeatability:	1.5 µm
Probe status indication:	1 LED
Cable connection:	5 pin DIN type connector
A-axis indexing:	0° to 90° in 15° steps = 7 positions
B-axis indexing:	±180° in 15° steps = 24 positions
Total number of positions:	168
Maximum support capability:	TP6 mounted directly
	TP20 with PEL1 50 mm extension
Probe mounting:	M8 bush
Mounting options:	Shank to suit your CMM

Part number: A-1332-0002

MIH

A manually indexable head, repeatable in 720 positions over two axes with LCD display, the MIH is designed for use with the autojoint TP6A touch probe and long extensions for large components. TP2, TP6, TP20 touch probes can be used with the addition of the PAA1 or PAA2 extensions.

2σ positional repeatability:	1 µm
Probe status indication:	1 LED
Cable connection:	5 pin DIN 180° socket
A-axis indexing:	105° to 0° in 7.5° steps = 15 positions
B-axis indexing:	±180° in 7.5° steps = 48 positions
Probe mounting:	Autojoint
Mounting options:	Shank to suit your CMM

Part number: A-1070-0003

MH20i

The MH20i offers the significant advantage of repeatable indexing positions, vastly improving productivity for multi-orientation measurement applications. The MH20i is incompatible with the MCR20.

Probe mounting:	TP20 kinematic mount
Head mounting:	MS range of shanks
Suitable interfaces:	PI4-2, PI200-3 or PI7-3
Number of probe sockets:	1
Probe status indication:	1 LED
Cable connection:	5 pin DIN 180° socket
A-axis indexing:	0° to 90° in 15° repeatable steps
B-axis indexing:	180° in 15° repeatable steps
Repeatability of position:	1.5 µm (0.00006 in) with TP20 and 10 mm stylus 2.5 µm (0.0001 in) with EM2 extension module and 10 mm stylus
Maximum extension bar:	EM2 extension module – 75 mm (2.95 in)

MH20i head with low force module

Part number: A-4099-0000

MH20i head with standard force module

Part number: A-4099-0100

MH20i head with medium force module

Part number: A-4099-0200

MH20i head with extended force module

Part number: A-4099-0300

RTP20

Renishaw's new RTP20 compact head for DCC coordinate measuring machines (CMMs) offers low-cost 'motorized' head functionality and integral TP20 touch-trigger probe.

The new RTP probe head allows the integral probe to be moved to 168 repeatable positions in 15° increments using both A and B axes, allowing a one-time qualification for a stylus tip position. This eliminates the need for costly time-consuming requalification routines, ensuring fast throughput for part inspection. Users can therefore easily access features to be measured and optimize system performance by ensuring the probe is applied to the surface at the best angle to achieve accurate measurements.

Probe mounting:	TP20 kinematic mount
Head mounting:	MS range of shanks
Suitable interfaces:	PI4-2, PI200-3 or PI7-3
Number of probe sockets:	1
Probe status indication:	1 LED
Cable connection:	5 pin DIN 180° socket
A-axis indexing:	0° to 90° in 15° repeatable steps
B-axis indexing:	180° in 15° repeatable steps
Repeatability of position:	1.5 µm (0.00006 in) with TP20 and 10 mm stylus 2.5 µm (0.0001 in) with EM2 extension module and 10 mm stylus
Maximum extension bar:	EM2 extension module – 75 mm (2.95 in)

RTP20 rack kit

Includes:
- RTP20 head
- Shank (various types)
- Pole
- Pole adaptor (various types)
- MCR20 rack
- 2 × TP20 modules (standard, medium, extended or low)
- 2 × M2 stylus spanners
- 2 × M4 stylus spanners

Cleaning kit

Part number: A-5400-#### (see next page)

(Additional charge for 6-way module)

RTP20 non-rack kit

Includes:
- RTP20 head
- Shank (various types)
- Pole
- Pole adaptor (various types)
- 1 × TP20 module (standard, medium, extended or low)
- 2 × M2 stylus spanners
- 2 × M4 stylus spanners

Cleaning kit

Part number: A-5400-8### (see next page)

(Additional charge for 6-way module)

RTP20 part numbers

Non-rack kit

A-5400-8###

This number represents the TP20 module required:

1 = Low force module
2 = Standard force module
3 = Medium force module
4 = Extended force module
5 = 6-way module
6 = EM1 module
7 = EM2 module

These numbers represent the shank required:

01 = MS1 shank
02 = MS2 shank
03 = MS3 shank
04 = MS4 shank
05 = MS5 shank
06 = MS6 shank
07 = MS7 shank
08 = MS8 shank
09 = MS9 shank
10 = MS10 shank
11 = MS11 shank
12 = MS12 shank
13 = MS13 shank
14 = MS14 shank
15 = MS15 shank
16 = MS7(S) shank
17 = MS17 shank
18 = MS1(S) shank
19 = no shank

PLUS the pole adaptor required:

+0 = M8 pole adaptor
+20 = M6 pole adaptor
+40 = 5/16 pole adaptor
+60 = 3/8 pole adaptor
+80 = M10 pole adaptor

Example

RTP20 with:

- No rack (8)
- Standard force module (2)
- MS3 shank + M6 pole adaptor (03 + 20 = 23)

= **A-5400-8223**

Rack kit

A-5400-####

This number represents the first TP20 module required:

1 = Low force module
2 = Standard force module
3 = Medium force module
4 = Extended force module
5 = 6-way module
6 = EM1 module
7 = EM2 module

This number represents the second TP20 module required:

1 = Low force module
2 = Standard force module
3 = Medium force module
4 = Extended force module
5 = 6-way module
6 = EM1 module
7 = EM2 module

These numbers represent the shank required:

01 = MS1 shank
02 = MS2 shank
03 = MS3 shank
04 = MS4 shank
05 = MS5 shank
06 = MS6 shank
07 = MS7 shank
08 = MS8 shank
09 = MS9 shank
10 = MS10 shank
11 = MS11 shank
12 = MS12 shank
13 = MS13 shank
14 = MS14 shank
15 = MS15 shank
16 = MS7(S) shank
17 = MS17 shank
18 = MS1(S) shank
19 = no shank

PLUS the pole adaptor required:

+0 = M8 pole adaptor
+20 = M6 pole adaptor
+40 = 5/16 pole adaptor
+60 = 3/8 pole adaptor
+80 = M10 pole adaptor

Example

RTP20 with:

- Rack
- Low force module (1)
- Standard force module (2)
- MS1(S) shank + M10 pole adaptor (18 + 80 = 98)

= **A-5400-1298**

See pages 1-44 to 1-46 for information on the shank type for your machine.

Please call Customer Service on 847-286-9953 for part number assistance.

Motorized probe heads

PH10T PLUS

The new PH10T PLUS motorized probe head allows complete, rapid, and repeatable inspection of most complex components with minimum human intervention. Full orientation of your TP2, TP6, TP20 or TP200 probe between any of 720 positions, under manual or program control, turns your 3 axis CMM into a 5 axis machine.

2σ positional repeatability:	0.4 µm
Cycle time (90° move):	3.5 seconds
Total angular movement:	A axis 105° to 0° in 7.5° steps = 15 positions
	B axis ±180° in 7.5° steps = 48 positions
Total number of positions :	720
Maximum extension bar length:	300 mm using PEL4 extension*
Head mounting:	Shank to suit your CMM
Probe mounting facility:	M8 thread
Probe head control:	PHC10-3 PLUS (purchased separately)
Dimensions:	Length 102 mm excluding AM1, width 62 mm
Weight:	645 g

Part number: A-5863-5000

PH10M PLUS

The PH10M PLUS motorized probe head has been developed for the new generation of contact and non-contact scanning probes. It has three times the torque of PH10 PLUS, allowing probe extension bars up to 300 mm long to be used.

The PH10M PLUS has an autojoint mounting.

2σ positional repeatability:	0.4 µm
Cycle time (90° move):	3.5 seconds
Total angular movement:	A axis: 105° to 0° in 7.5° steps = 15 positions
	B axis: ±180° in 7.5° steps = 48 positions
Total number of positions:	720
Maximum extension bar length:	300 mm using PAA3 extension*
Head mounting:	Shank to suit your CMM
Probe mounting facility:	Autojoint
Probe head control:	PHC10-3 PLUS (purchased separately)
Dimensions:	Length 102 mm excluding AM1, width 62 mm
Weight:	645 g

Part number: A-5863-4000

* On all the PH10 PLUS series of probe heads, it is possible to extend beyond 300 mm using our range of CF extensions.

PH10MQ PLUS

The PH10MQ PLUS can be mounted vertically inside the CMM's quill for a greater working envelope by increasing the Z axis travel. The specification of the PH10MQ PLUS is identical to that of the PH10M PLUS, with the following exceptions:

Head mounting:	Direct to quill
Dimensions:	Length 73 mm, width 80 mm
Weight:	730 g

Part number: A-5863-6000

PH10M-iQ PLUS

PH10M-iQ PLUS functions identically to a traditional PH10M PLUS but with the addition of inferred qualification technology. Inferred qualification increases throughput by removing the need to qualify each head position that is used in a measurement program.

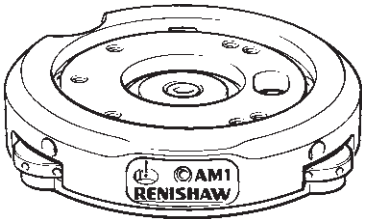
PH10M-iQ PLUS works with all PH10M compatible probes, but only touch-trigger probe configurations can utilize inferred qualification. Scanning probes can be used in traditional PH10M qualification mode but cannot use inferred qualification.

Part Number: A-5863-7000

Motorized probe head accessories

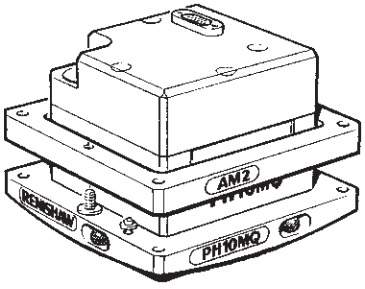
AM1/AM2

The AM1 adjustment module is designed for use with the PH10T and PH10M probe heads. The AM2 is designed for the PH10MQ probe heads. Each module provides quick and accurate angular alignment of the motorized probe head with the CMM's axes and/or the autochange rack. The quick release mechanism allows the head to be removed for storage and replaced without further alignment.



	AM1	AM2
Size:	60 mm × 15.5 mm	80 mm × 10 mm
Adjustment:	±2° in pitch and roll*	±1° in pitch and roll
	±4.5° in yaw	±1° in yaw
Overtravel:	±3.5° in pitch and roll	0
Mounting:	Mounts to quill using shank	Mounts direct to quill

* Up to ±5.5° in pitch and roll is possible, but at the expense of overtravel.



Part number: A-1026-0320 (AM1)
Part number: A-1036-0080 (AM2)

PHC10-3 PLUS

The PHC10-3 PLUS head control receives instructions and processes signals to rotate the angles of the PH10 PLUS series probe heads. The PHC10-3 PLUS is compatible with all PH10 PLUS heads. It has its own internal power supply.

Data transmission:	RS232 or USB
Input connectors:	15 way 'D' probe
Output connectors:	7 pin DIN or 9 pin D type
Maximum cable length:	50 m (164 ft)
Hand control:	HCU1 (purchased separately)

Part number: A-5863-0100

PHC10-3 PLUS with internal PI200-3

This variant of the PHC10-3 PLUS controller includes a prefitted PI200-3 interface card in a single 1U case.

Part number: A-5863-0200

HCU2

The HCU2 hand control unit enables the probe head to be used in a manual mode or during a teach cycle. An LCD dot matrix display provides information and status of the PHC10-3 system.

Part number: A-5882-0010

MCU*lite-2* joystick

Part number: A-5331-0015

MCU5-2 joystick kit

Part number: A-5734-0100

MCU-W2 wireless joystick kit (no batteries)

Part number: A-5734-0200

MCU-W battery (2 pack)

Part number: A-5381-0095

MCU-W 1 battery

Part number: A-5381-0036

PL163

5 meter cable for MCU.

Part number: A-1016-8098

PL164

10 meter cable for MCU.

Part number: A-1016-8099

PL171

20 meter cable for MCU.

Part number: A-1016-8100

PH20

PH20 is another innovative measurement product from Renishaw that transforms coordinate measuring machine (CMM) performance. For the first time, 5-axis technology developed for the multi-award winning REVO® measurement system is available for touch-trigger applications on all sizes of CMM.

PH20's unique 'head touches' allow measurement points to be taken by moving only the head rather than the CMM structure. Using only the rapid rotary motion of the head, points can be taken faster, and with improved accuracy and repeatability. Furthermore, 5-axis motion eliminates time spent indexing the head. Together these speed increases typically result in a three-fold improvement in throughput over conventional systems.

PH20's infinite positioning capability guarantees optimal feature access, minimizing stylus changes. Five-axis simultaneous motion allows larger parts to be measured on the CMM by minimizing the space required around the part for head rotation.

Users of the PH20 probe head will immediately have access to the range of proven TP20 probe modules, providing a wide selection of trigger forces, directional sensing options and extensions to meet application requirements*. The detachable modules provide crash protection and can be automatically changed using the MCR20 change rack.

* Excepting the extended force module

PH20 features and benefits

- Incorporates 5-axis measurement technology, minimizing CMM motion and the associated CMM dynamic errors.
- Infinite positioning and 5-axis motion reduces non-productive transitions between features.
- Infinite positioning and 5-axis motion aid access to difficult features.
- Rapid calibration with all positions inferred means more time measuring.
- Maximum reach up to 200 mm with maintained effective working length.
- Standard M2 styli for convenience.

Hardware integration

- The UCC controller is fundamental to the PH20 system.
- The UCC controller features routines particular to 5-axis motion and head-touch measurement.
- MCU*lite-2* is the multi-function hand control unit required for the system.
- PH20 can fit to any machine, either directly to the quill or via a shank using a range of mounting adaptors.
- The PH20 is compatible with the existing range of TP20 modules, excepting the extended force module.
- MCR20NI is the recommended rack for stylus changing, but it is possible to use an MCR20.
- No air supply is needed.

Software integration

- The Renishaw UCCserver™ software application will provide the interface for PH20 control.
- UCCserver is based on I++DME command protocol.
- PH20 is fully integrated with Renishaw's MODUS™ application software.

Specification summary		PH20		
Weight (excluding module and cables)		810 g (28.6 oz)		
Temperature range	Operating	15 °C to 35 °C (59 °F to 95 °F)		
	Storage	–25 °C to 70 °C (–13 °F to 158 °F)		
Maximum movement speed		3 revs/s (1281 mm/s with standard module and 10 mm stylus)		
Maximum head touch speed		50 mm/s		
Rotation angles	A axis	–115° to 115°		
	B axis	∞		
Angular resolution		0.4 µRadians		
Bearings		Mechanical		
Change rack system		TCR20 or MCR20 with TDA block		
Joystick		MCU*lite-2*, MCU5 or MCU-W		
ISO 10360-5 (2001) typical performance standard force module with 12 × 4 mm stylus on a CMM with ISO 10360-2 (2002) specification of 0.48+ L/1000*			CMM TOUCH	HEAD TOUCH
		Size	0.0006 mm (0.00002 in)	0.0002 mm (0.00001 in)
		Form	0.0026 mm (0.00010 in)	0.0024 mm (0.00009 in)
		Location	0.0013 mm (0.00005 in)	0.0009 mm (0.00003 in)

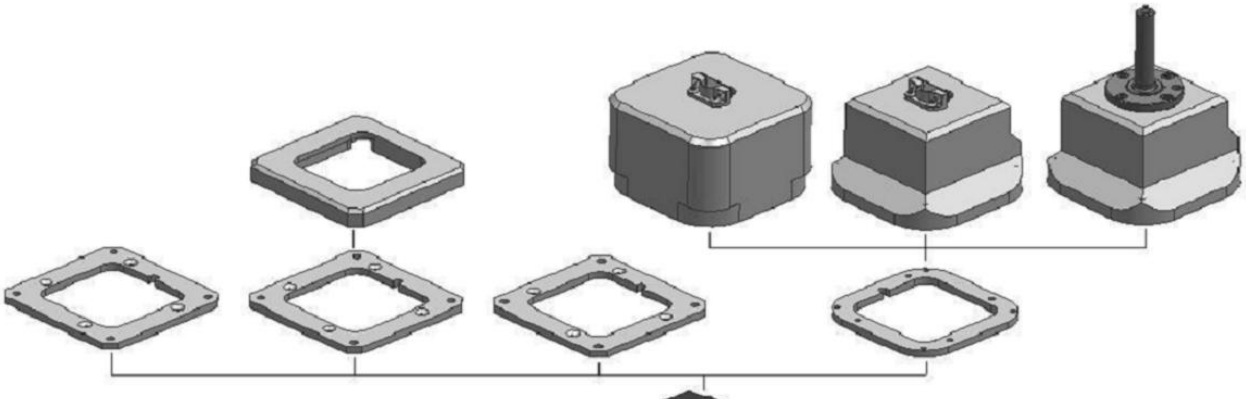
* specified with a TP7

PH20 head

Includes: PH20 head with standard force module TP20

Part number: A-5669-0001

PH20 shanks



PH20 shank adaptor

Part number: A-3007-1715

PH20 small quill adaptor

60 mm × 60 mm.

Part number: A-3007-1716

PH20 large quill adaptor

80 mm × 80 mm.

Part number: A-3007-1717

PH20 PH10MQ quill adaptor

Part number: A-3007-1720

PH20 calibration stylus

Part number: A-5004-2182

PH20 calibration sphere

Part number: A-1034-0026

Rack for PH20

TCR20

Part number: A-1371-1001

NOTE: See CMM probe shanks starting on page 1-44.

REVO-2

The 5-axis REVO-2 system incorporating the REVO-2 head provides fast, ultra-high accuracy positioning.

REVO-2 system overview

The system comprises the following elements:

- REVO-2 head
- RSP2 2D tip sensing probe and associated stylus holders and accessories
- RSP3 3D probe and associated accessories
- **UCC** universal CMM controller
- REVO-2 PCI interface card (for **UCC**)
- **SPA** servo power amplifier
- Air filter unit

REVO-2 – 'tip sensing' probe technology

- Enclosed laser directed onto a reflector at the stylus tip.
- The stylus touches the part and bends.
- The reflector is displaced.
- The altered return path of the laser is sensed by a PSD.
- The exact tip position is known because the reflector and the stylus ball are close together.
- Stylus wear is minimized by using a low scanning force.

REVO-2 features and benefits

- Incorporates **Renscan*5***™ 5-axis scanning technology minimizing CMM motion and the associated CMM dynamic errors
- Increased measuring speed, up to 500 mm/s, resulting in increased measurement throughput
- Data collection rates up to 6,000 points per second
- Infinite positioning and 5-axis motion reduces non-productive transitions between features
- Stylus wear minimized by extremely low scanning forces
- Infinite positioning and 5-axis motion aid access to difficult features
- Rapid calibration with all positions inferred means more time measuring
- Maximum reach up to 500 mm with maintained effective working length
- Standard M2 styli for convenience
- Probe and stylus changing capability allowing flexibility and future probing technology compatibility

Hardware integration

- The **UCC** is fundamental to the REVO-2 system
- The **UCC** controller features **Renscan*5***™ scanning routines particular to 5-axis motion and scanning
- **SPA** is a servo power amplifier used to drive the head and CMM
- MCU is the multi-function hand control unit required for the system

Software integration

- The Renishaw **UCC*server***™ software application will provide the interface for REVO® control
- **UCC*server***™ is based on I++DME command protocol

Specification summary		REVO-2			
Operating temperature		14 °C to 30 °C (57 °F to 86 °F)			
Storage temperature		–10 °C to 70 °C (14 °F to 158 °F)			
Weight (excluding probe and cables)		1.75 kg			
Dimensions	Height (overall)	239 mm (9.41 in)			
	B axis	86 mm (3.40 in) square			
	A axis swept diameter	118 mm (4.65 in)			
Air specification	Incoming supply to filter specification (ref: ISO 8537.1)	Particle size	Class 4	15 µm	Line pressure of 6 bar to 6.5 bar
		Dirt concentration	Class 4	8 mg/m³	
		Dewpoint	Class 4	3 °C	
		Oil	Class 4	5 mg/m³	
	After filtration air specification (ref: ISO 8537.1)	Particle size	Class 2	1 µm	Pressure 5 bar
		Dirt concentration	Class 2	1 mg/m³	
		Dewpoint	Class 3	–20 °C	
		Oil	Class 2	0.1 mg/m³	
Movement speed		3 revolutions per second			
Rotation angles	A axis	–5° to 120°			
	B axis	Continuous			
Angular resolution		0.08 arc second			
Bearings		Air			
Change rack system		Allowing both probe changing and stylus holder changing			

REVO-2 head kit

Includes: REVO-2®
RSP2
RSH250
45 mm diameter datum ball

Part number: A-5518-1095

REVO-2 head only

Part number: A-5759-0001

REVO® RSP2 V2 probe

Part number: A-3060-0028

REVO® RSH250 stylus holder kit

Part number: A-3060-0021

REVO® RSH350 stylus holder kit

Part number: A-3060-0022

REVO® RSH500 stylus holder kit

Part number: A-3060-0023

REVO® RSH175 stylus holder kit

Part number: A-3060-0024

REVO® RSH450 stylus holder kit

Part number: A-3060-0026 1

RSP3-1 REVO® probe kit

Includes: RSP3-1

PSH3-1

Part number: A-3060-0331

RSP3-2 REVO® probe kit

Includes: RSP3-2 RSH3-2

Part number: A-3060-0332

RSP3-3 REVO® probe kit

Includes: RSP3-3
RSH3-3

Part number: A-3060-0333

RSP3-4 REVO® probe kit

Includes: RSP3-4
RSH3-4

Part number: A-3060-0334

RSH3-1

Includes: PA25 - RSH3

Part number: A-3061-2521

RSH3-2

Includes: PA25 - RSH3

Part number: A-3061-2522

RSH3-3

Includes: PA25 - RSH3

Part number: A-3061-2523

RSH3-4

Includes: PA25 - RSH3

Part number: A-3061-2524

RSP3-6 probe kit

Includes: Probe
Portspacer

Part number: A-6084-0001

REVO® RSH3-6C-500 (500 mm crank)

Part number: A-6084-0015

REVO® RSH3-6C-600 (600 mm crank)

Part number: A-6084-0016

REVO® RSH3-6-600 (600 mm straight)

Part number: A-6084-0006

REVO® RSH3-6-700 (700 mm straight)

Part number: A-6084-0007

REVO® RSH3-6-800 (800 mm straight)

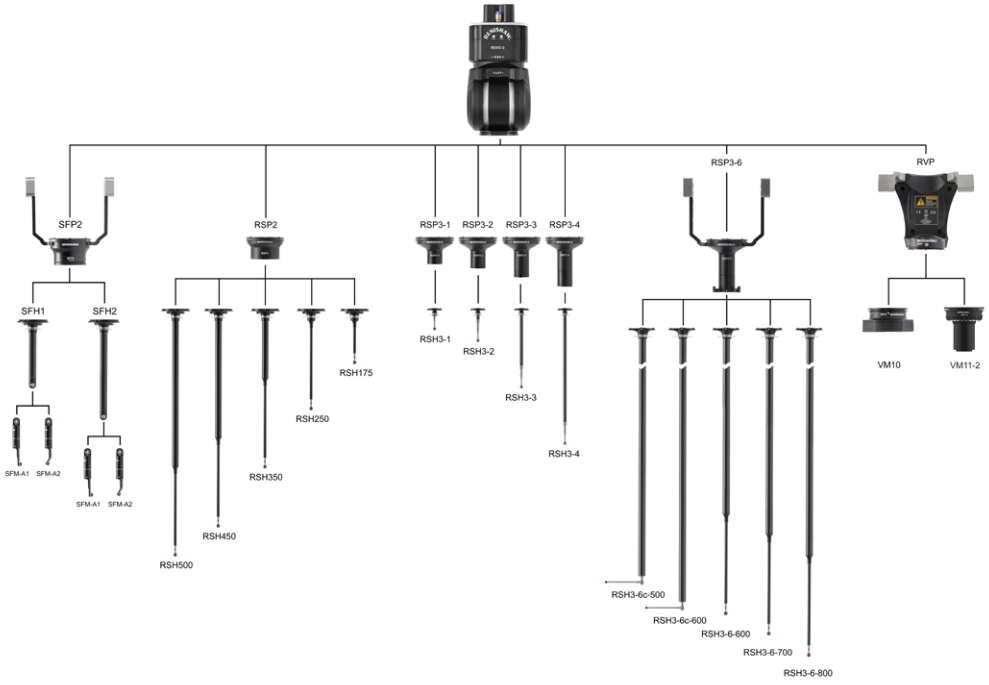
Part number: A-6084-0008

REVO® to REVO-2 upgrade kit

Includes: REVO-2

UCCS5 and PSU
SPA3
Blanking plate

Part number: A-1032-0025



RVP vision probe for REVO-2

The REVO vision probe (RVP) provides non-contact vision measurement on an infinitely positioning, 5-axis platform. Now, tactile scanning measurement, surface finish analysis and non-contact inspection can all be performed on one CMM.

The RVP system is a breakthrough in technology in the world of non-contact CMM inspection. The combination of non-contact vision measurement and a 5-axis, infinitely positioning platform makes the RVP system truly unique.

RVP further expands the range of applications for the REVO-2 system with a non-contact edge detecting sensor automatically interchangeable with all other REVO probe options. As a result, the system provides the optimum tool to measure multiple features, and a wider variety of parts can be inspected.

System components

The RVP system comprises a vision probe body, a number of vision modules, rack ports and a calibration artefact. The image capture and processing components of the system are held inside the vision probe body and include an industry standard, robust, CMOS sensor for reliable image capture. The vision modules allow a range of features with different sizes and shapes to be inspected. All vision modules contain integral LED lighting to achieve a sharp contrast between holes and part material. Background feature enhancement is also available using backlighting combined with bespoke part fixturing.

Benefits

Added part inspection capability

Small features and delicate or flexible parts that cannot be measured using tactile probes can now be inspected on a 5-axis non-contact measurement platform.

Added value multi-sensor system

A machine equipped with REVO-2 can be used for a large range of inspection applications including scanning measurement, surface finish analysis and now, non-contact inspection.

High speed data collection

5-axis motion between part features and real time image processing dramatically increase data collection rates.

Innovations

5-axis movement, infinite positioning

RVP benefits from REVO's infinite positioning and 5-axis movement, which ensure accurate and unrestricted placement in front of features at any angle.

Automatically interchangeable sensors

The RVP non-contact probe is automatically interchangeable with all other probe options available for REVO-2, and data from multiple sensors is automatically referenced to a common datum.

3D surface reconstruction

5-axis motion and infinite positioning provide access to the data required for 3D surface reconstruction.

Probe specification	RVP
Weight	551 g
Dimensions	158 mm × 131 mm × 134 mm
Rack port compatibility	VPCP (heated)
Sensor type	1/1.8” CMOS sensor
Head compatibility	REVO-2
Operating temperature	+10 °C to +40 °C
Software compatibility	UCCsuite 5.0 onwards MODUS™ 1.7 onwards
Integration	I++ DME protocol

Module specification	VM10	VM11-2	VM12
Weight	153 g	134 g	138 g
Dimensions	86 mm × 39 mm	74 mm × 67 mm	144 mm × 67 mm
Rack port compatibility	VMCP (heated)	VMCP (heated)	VMCP (heated)
Measurement range	1 mm diameter or greater	0.4 mm diameter or greater	0.05 mm diameter or greater
Field of view	50 mm × 40 mm	12.5 × 10 mm	3.1 mm × 2.5 mm
Stand-off	80 mm	120 mm	50 mm
Depth of field	5 mm	5 mm	0.2 mm
Resolution	40 µm	20 µm	2.5 µm
LED illumination	24 LEDs	10 LEDs	10 LEDs
Backlight compatibility	Yes	Yes	Yes

RVP probe

Part number: A-5378-0080

VM10 vision module

Part number: A-5378-0082

VM11-2 vision module

Part number: A-5378-0093

VM12 vision module

Part number: A-5378-0088

RVP ACM module only

Part number: A-5378-0094

VPCP vision probe change port

Part number: A-5378-0081

VMCP vision module change port

Part number: A-5378-0083

VA10 calibration artefact

Part number: A-5378-0089

RVP kits

RVP combo kit

Includes:

RVP probe
VPCP vision probe change port
VM10 vision module
VM11-2 vision module
VMCP vision module change port
VA10 calibration artefact

Part number: A-5378-9504

RVP VM10 kit

Includes: RVP probe
VPCP vision probe change port
VM10 vision module
VMCP vision module change port
VA10 calibration artefact

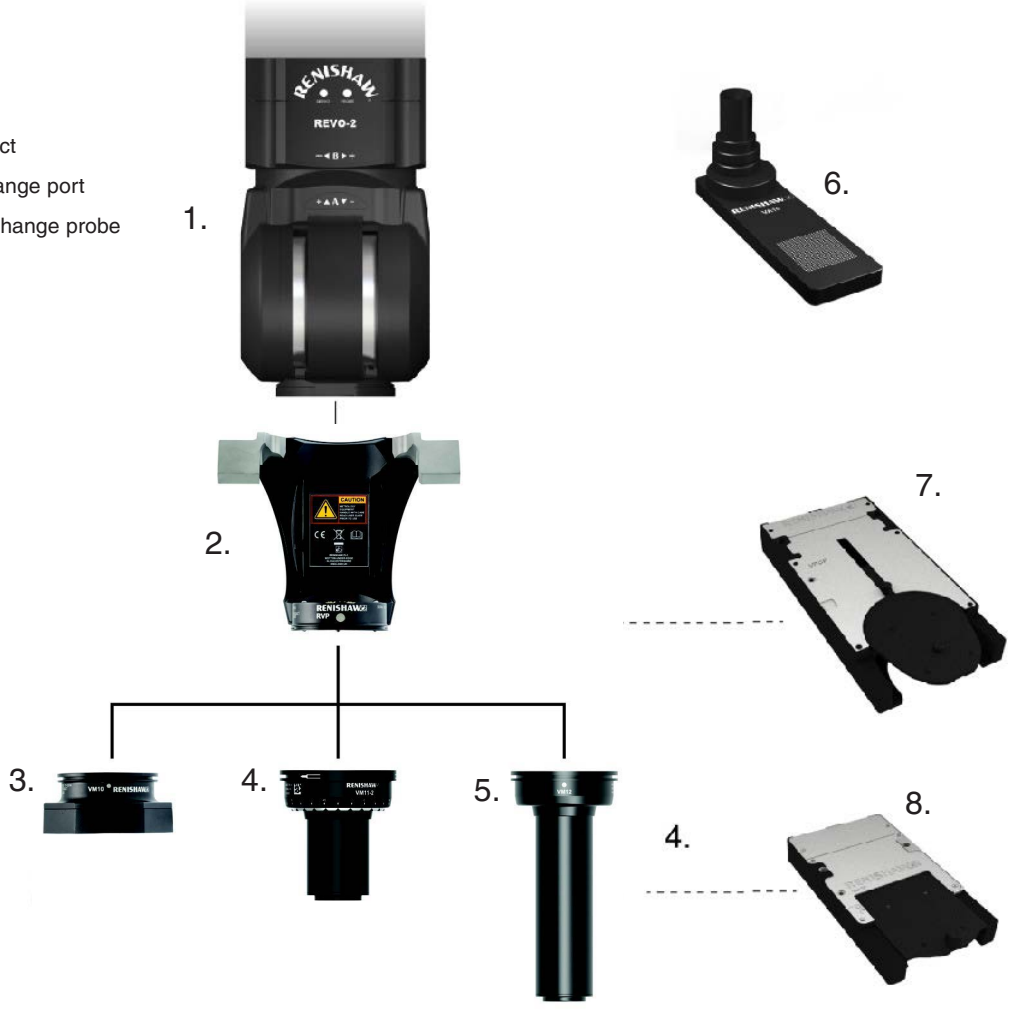
Part number: A-5378-9505

RVP VM11-2 kit

Includes: RVP probe
VPCP vision probe change port
VM11-2 vision module
VMCP vision module change port
VA10 calibration artefact

Part number: A-5378-9506

1. REVO-2 head
2. RVP probe
3. VM10 vision module
4. VM11-2 vision module
5. VM12 vision module
6. VA10 calibration artefact
7. VPCP vision probe change port
8. VMCP vision module change probe



RUP1 ultrasonic probe

The RUP1 ultrasonic probe increases the multi-sensor capability of the REVO® 5-axis measurement system for CMMs, offering ultrasonic thickness inspection.

Unlike many other ultrasonic systems, RUP1 probe does not require the use of water tanks or coupling gel to enable a good transmission of the signal. Instead, it uses an innovative elastomer tip ball to provide excellent coupling between the probe and the material. As a result, the RUP1 probe eliminates the need for skilled operators to interpret oscilloscope screens and releases shop floor space occupied by the dedicated immersion tanks.

The use of ultrasonics for single-sided measurement of part thickness also delivers clear advantages over traditional tactile probing techniques for parts where access to internal features is challenging.

The RUP1 probe uses a 20 MHz transducer and provides a thickness measurement range of 1 mm to 20 mm with an accuracy of better than 10 microns using touch points.

The RUP1 probe is fully integrated into Renishaw's MODUS™ metrology software (version 1.12) and UCCsuite software (version 5.8). It includes features such as geometry and material calibration, tip ball size monitoring and compensation, automatic calculation of REVO head positions based on the back-wall angle for non-parallel surfaces, and tip life monitoring.

Aircraft landing gear parts, power generation drive shafts, and hollow aerospace blades are just a few parts that will significantly benefit from using the RUP1.

Material thickness range	1 mm to 20 mm on typical metal parts (aluminum, steels and titanium). Not supported are: parts made from cast iron, CF, GF, glass and additive materials, and those with coatings.
Thickness measurement accuracy	Better than 0.010 mm on parallel surfaces Better than 0.100 mm on wedge angles of up to 10°
Tip composition	Elastomer bead swollen with an ethylene glycol and distilled water solution
In use tip life	1–5 shifts – dependent on environment
Ready to use tip life	7 days when stored in a rack with protective cap
Tip shelf life	12 months minimum
Measurement metho	Point measurement of near parallel surfaces and wedges up to 10°
Probe changing	Fully automated to operate as part of a multi-sensor measurement system

RUP1 system kit 1

Includes:

RUP
TC-3
UMA1
10 balls
Artefact

Part number: A-6159-0001

REVO RUP UMA1 kit

Step block holder (step block not included).

Part number: A-6159-1501

REVO RUP balls

Pack of 10.

Part number: A-6159-1508

SFP2 surface finish probe

Enhanced access and inspection capability for integrated surface finish measurement.

The SFP2 probe increases the surface finish measurement ability of the REVO® system, which offers multi-sensor capability providing touch-trigger, high-speed tactile scanning and non-contact vision measurement on a single CMM.

Powered by 5-axis measurement technology, the SFP2's automated surface finish inspection offers significant time savings, reduced part handling and greater return on CMM investment.

The SFP2 system consists of a probe and a range of modules and is automatically interchangeable with all other probe options available for REVO, providing the flexibility to easily select the optimum tool to inspect a wide range of features, all on one CMM platform. Data from multiple sensors is automatically referenced to a common datum.

The surface finish system is managed by the same I++ DME compliant interface as the REVO system, and full user functionality is provided by Renishaw's MODUS™ metrology software.

Key benefits

Unrivalled feature access

SFP2 benefits from REVO's infinite positioning and 5-axis movement, and features an integral motorized C axis. The SFM variants offer a range of tip arrangements which, combined with the knuckle joint between module and holder, provide access to the features most difficult to reach.

Operator independent data collection

CMM programs can now include automated and operator-independent surface finish measurement. All results, including surface finish data, are recorded and stored in a single location for easy retrieval.

Greater return on investment in CMMs

Integrated surface finish and dimensional inspection can remove the need for dedicated surface measurement equipment, reducing factory footprint, part handling and associated costs.

Specification summary		SFP2 surface finish probe			
SFM-A1 and SFM-A2 modules	Surface finish range	0.05 µm – 6.3 µm Ra			
	Surface finish accuracy (of nominal Rs)	± (5% +15 nm)			
	Surface forces	Skid: 0.2 N		Stylus tip: 0.005 N	
	Encoder resolution	1 nm			
	Measurement range	1.0 mm			
	Measurement speed	Up to 1 mm/s			
	SFM range of adjustment	±90° at the knuckle joint			
SFP2 probe	C-axis positioning accuracy	±0.25°			
	C-axis rotation speed	Up to 90°/sec			
	Rotational capability	A axis (from REVO-2)		+120° / –110°	
		B axis (from REVO-2)		Infinite positioning	
		C axis		±180°	
	Mounting (probe and holder)	Magnetized coupling			
System features	Probe head	REVO-2 only			
	Change rack	MRS2 recommended for full capability			
	Software compatibility	UCCsuite 5.2 onwards MODUS 1.8 onwards			
	Weight	SFP2 probe	SFH1 holder	SFM-A1 module	SFM-A2 module
		330 g	33 g	12 g	12 g
	Operating temperature range	+10 °C to +40 °C			
	Storage temperature range	–25 °C to +70 °C			
	Operating humidity	0% to 80% (non-condensing)			
	Calibration and verification artefacts	SFA1		3.0 µm Ra sinusoid	
		SFA2		0.5 µm Ra sinusoid	
		SFA3		0.4 µm Ra sawtooth	
		TFP		Uses LF TP20 module; PICS interface to SPA3 amplifier	
	Outputs	MODUS basic		Ra, Rms(Rq)	
		MODUS standard surface texture		Rt, R3z, Rz, Rz1max, RzDIN, RzJIS, Rseg Rp, Rv Rpm, Rvm, Rc, Rsm	
		MODUS advanced surface texture		Rk, Rpk, Rvk, Rmr, Rmr1, Rmr2, Rpq, Rvq, Rmq, Rvoid, Rvdd, Rvddl, Rcvx, Rcvxl	
	Sampling rate	4 kHz			

REVO® SFP2 base kit

Part number: A-5764-0005-KIT

REVO® SFP2 probe

Part number: A-5764-0010

REVO® SFM-A1 (Straight, Type A Skid)

Part number: A1-D-02C90D

REVO® SFM-A2 (Crank, Type A Skid)

Part number: A2-D-02C90D

REVO® SFM-B1 (SM Straight, Type B Skid)

Part number: B1-D-02C90D

REVO® SFM-C2 (Straight, Type C Skid)

Part number: C3-D-02C90D

REVO® SFM-D1 (90°, Type D Skid)

Part number: D1-D-02C90D

Single artefact kit (SFA1 and 1 AF holder)

Part number: A-5764-0072

REVO® SFH-1 module holder

Part number: A-5764-0080

REVO® SFH-2 module holder

Part number: A-5764-0081

REVO® SFA1 3.0 sin artefact

Part number: A-5764-0060

REVO® SFA2 0.5 sin artefact

Part number: A-5764-0061

REVO® SFA3 0.4 ST artefact

Part number: A-5764-0062

REVO® OFA optical flat artefact

Part number: A-5764-3142

Triple artefact kit (SFA1, 2, 3 and 3 AF holder)

Part number: A-5764-0073

REVO® single AF holder (SFAH-1, tools)

Part number: A-5764-0070

REVO® triple AF holder (SFAH-2, tools)

Part number: A-5764-0071

REVO® SF2 TFP probe kit (LF, PL24, styli)

Part number: A-5764-0063

REVO® SF2 MST – module setting tool

Part number: A-5764-0091

REVO® SF2 system storage box

Part number: A-5764-0090

REVO® RCP TC-3 high force rack port

Part number: A-3061-0320

MRS MPS1 port spacing tool

Part number: A-6084-0017

Touch probes

TP1S/TP1SM

A robust and reliable probe which is especially suited for manual CMMs. It is available in two versions with differing plug socket orientations:

TP1S	cable connects vertically
TP1SM	cable connects horizontally

Sense directions:	±X, ±Y, +Z
2σ unidirectional repeatability:	0.5 µm
Pre-travel variation:	±2.0 µm
Stylus force range:	10 g to 50 g
Stylus overtravel:	XY plane ±19.5°
	+Z axis 8.5 mm @ 15 g
	5.0 mm @ 50 g
Suitable interfaces:	PI4-2, PI7-3, or PI200-3
Stylus thread size:	M3
Mounting option:	Shank to suit your CMM
Test conditions:	31 mm stylus @ 8 mm/s with trigger force of 15 g

Part number: A-1041-7540 (TP1S)
Part number: A-1041-7541 (TP1SM)

TP20/TP20 NI modular probes

The TP20 is a 5-way or 6-way kinematic touch-trigger probe. Its two piece design comprises a probe body and detachable stylus module(s) which gives the ability to change stylus configurations either manually or automatically without requalification of the stylus tips. It affords significant time savings in inspection routines.

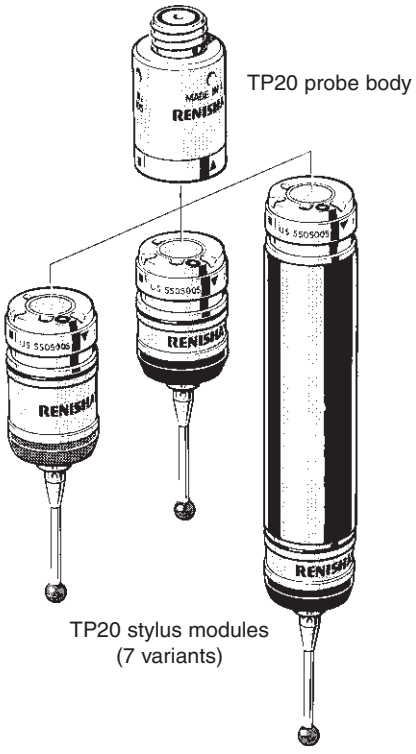
A direct replacement for the industry standard Renishaw TP2 probe, the TP20 probe system brings a range of new benefits to manual and DCC CMM applications, and can easily be retrofitted to existing TP2 installations.

The TP20 can be used on a wide range of Renishaw's manual or motorized probe heads, either by direct mounting using the standard M8 thread or, alternatively, by using a PAA# adaptor to connect to an autojoint.

The system components are:

- TP20/TP20 NI probe body
- TP20 stylus module – seven module variants allow for optimization of performance to suit the application
- MCR20 module changing rack – automatic operation

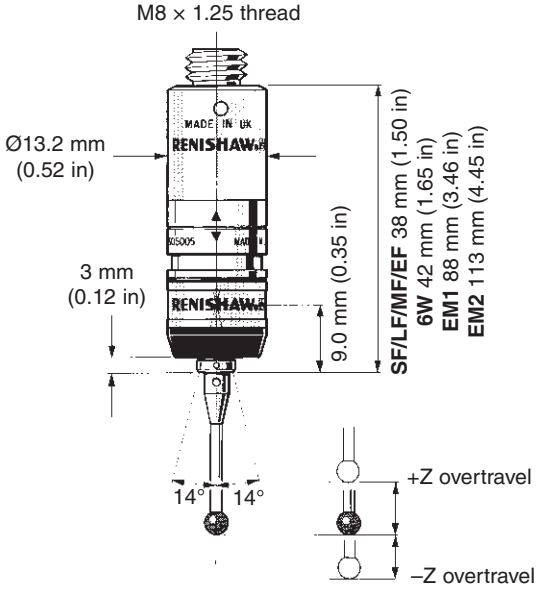
The TP20 probe system may be used with Renishaw's PI 4-2, PI 7-2 or PI 200 probe interfaces.



TP20 probe body

The TP20 probe body houses one half of the highly repeatable magnetic kinematic coupling that attaches the stylus module and body. The body also contains a magnetic proximity switch to inhibit triggering of the probe during automatic module changing with MCR20.

Note: If the probe is operated close to magnetized parts/ clamping etc, the probe trigger may become inhibited. Countermeasures include the use of long styli, stylus extensions or body orientation to increase the distance to the magnetic source. Alternatively, use the TP20 NI probe body.



TP20 NI probe body

The TP20 NI probe differs from the TP20 body in that it is not affected by magnetic fields. However the probe trigger must be inhibited through software during change cycles using the MCR20.

+Z overtravel

SF/EM1/EM2	4.0 mm (0.16 in)
LF	3.1 mm (0.12 in)
MF	3.7 mm (0.15 in)
EF	2.4 mm (0.09 in)
6W	4.5 mm (0.177 in)

–Z overtravel

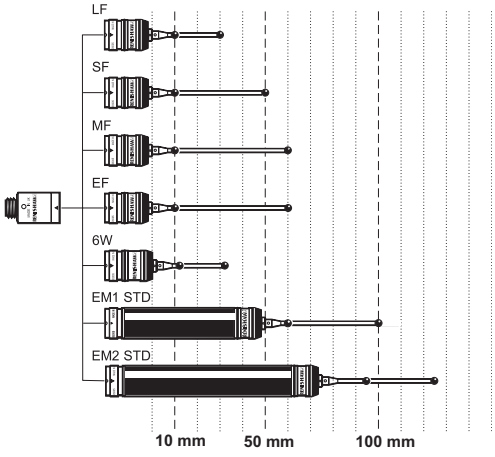
6W	1.5 mm (0.06 in)

Specification summary		TP20	TP20 NI
Principal application		DCC and manual CMMs suitable for most applications	DCC and manual CMMs where operation is within a magnetic field
Sense directions	All modules except 6W 6W	±X, ±Y, +Z ±X, ±Y, ±Z	±X, ±Y, +Z ±X, ±Y, ±Z
Pre-travel variation	LF SF/EM1/EM2 MF EF 6W	±0.6 µm (±0.000023 in) ±0.8 µm (±0.000032 in) ±1.0 µm (±0.000039 in) ±2.0 µm (±0.000079 in) ±1.5 µm (±0.000058 in)	±0.6 µm (±0.000023 in) ±0.8 µm (±0.000032 in) ±1.0 µm (±0.000039 in) ±2.0 µm (±0.000079 in) ±1.5 µm (±0.000058 in)
Repeatability of stylus change (max)	With SCR200 Manual	±0.5 µm (±0.000020 in) ±1.0 µm (±0.000040 in)	±0.5 µm (±0.000020 in) ±1.0 µm (±0.000040 in)
Stylus range		M2	M2
Probe mounting method		M8 thread	M8 thread
Suitable interface		PI 4-2, PI 7-2, PI 200	PI 4-2, PI 7-2, PI 200
Stylus module changing rack (automatic)		MCR20	MCR20
Stylus module storage rack (manual)		MSR1	MSR1

Module type and test stylus length	Trigger force		Overtravel force			Overtravel displacement			Unidirectional repeatability 2σ at stylus tip	2D (XY) form error
	XY	Z	XY	+Z	–Z	XY	+Z	–Z		
SF (black cap) 10 mm	0.08 N	0.75 N	0.2-0.3 N	3.5 N	-	±14°	4.0 mm (0.16 in)	-	0.35 µm (0.000014 in)	±0.8 µm (±0.000032 in)
LF (green cap) 10 mm	0.055 N	0.65 N	0.09 N	1.15 N	-	±14°	3.1 mm (0.12 in)	-	0.35 µm (0.000014 in)	±0.6 µm (±0.000024 in)
MF (grey cap) 25 mm	0.1 N	1.9 N	0.2-0.4 N	7.0 N	-	±14°	3.7 mm (0.15 in)	-	0.50 µm (0.000020 in)	±1.0 µm (±0.000039 in)
EF (brown cap) 50 mm	0.1 N	3.2 N	0.2-0.5 N	10.0 N	-	±14°	2.4 mm (0.09 in)	-	0.65 µm (0.000026 in)	±2.0 µm (±0.000079 in)
6W (blue cap) 10 mm	0.14 N	1.6 N	0.25 N	2.5 N	9.0 N	±14°	4.5 mm (0.18 in)	1.5 mm (0.059 in)	0.80 µm (0.000032 in)	±1.5 µm (±0.000059 in)
EM1 10 mm	0.08 N	0.75 N	0.2-0.3 N	3.5 N	-	±14°	4.0 mm (0.16 in)	-	0.35 µm (0.000014 in)	±0.8 µm (±0.000032 in)
EM2 10 mm	0.08 N	0.75 N	0.2-0.3 N	3.5 N	-	±14°	4.0 mm (0.16 in)	-	0.35 µm (0.000014 in)	±0.8 µm (±0.000032 in)

The above data applies for test conditions as follows:

Stylus length as stated above
Stylus velocity 480 mm/min (1.57 ft/min)



TP20 probe kits

TP20 probe kit 1

Includes two standard force modules.

Part number: A-1371-0290

TP20 probe kit 2

Includes one standard force and one medium force module.

Part number: A-1371-0291

TP20 probe kit 3

Includes one standard force and one extended force module.

Part number: A-1371-0292

TP20 probe kit 4

Includes two medium force modules.

Part number: A-1371-0293

TP20 probe kit 5

Includes one medium force and one extended force module.

Part number: A-1371-0294

TP20 probe kit 6

Includes two extended force modules.

Part number: A-1371-0295

TP20 probe kit 7

Includes one standard force and one 6-way module.

Part number: A-1371-0418

TP20 non-inhibit (NI) probe kits

TP20 non-inhibit probe kit 1

Includes two standard force modules.

Part number: A-1371-0640

TP20 non-inhibit probe kit 2

Includes one standard force and one medium force module.

Part number: A-1371-0641

TP20 non-inhibit probe kit 3

Includes one standard force and one extended force module.

Part number: A-1371-0642

TP20 non-inhibit probe kit 4

Includes two medium force modules.

Part number: A-1371-0643

TP20 non-inhibit probe kit 5

Includes one medium force and one extended force module.

Part number: A-1371-0644

TP20 non-inhibit probe kit 6

Includes two extended force modules.

Part number: A-1371-0645

TP20 accessories

TP20 probe modules

Standard force probe module

Part number: A-1371-0270

Medium force probe module

Part number: A-1371-0271

Extended force probe module

Part number: A-1371-0272

Low force module

This module has a lower trigger force for use on components where a low probing force is needed.

Part number: A-1371-0392

6-way probe module

Part number: A-1371-0419

EM1 module only kit

This module is based on the standard force module with an integral 50 mm carbon fiber extension piece.

Part number: A-1371-0430

EM2 module only kit

This module is based on the standard force module with an integral 75 mm carbon fiber extension piece.

Part number: A-1371-0431

EM1/EM2 kit

Includes:

TP20 EM1 standard module assembly TP20 EM2 standard module assembly
Test certificate
EMI1/EM2 user's information

Part number: A-1371-043

Cleaning kit

Part number: A-1085-0016

MCR20

The MCR20 module changing rack provides rapid automatic changing of probe modules without the need to requalify. Rack function is completely passive and does not require any electrical connections.

Installation and set-up of the system is achieved with minimal operator skill as no special software or communications are required. The rack base and docking port assembly incorporate hinged overtravel mechanisms to assist crash protection. The kits include two probe modules, a mounting kit, a location plate, and a PS2R stylus.

Mounting fixture:	Single stud
Number of ports:	6
Repeatability of module change:	Automatic ≤ 1 µm
	Manual ≤ 2 µm

MCR20 probe module change rack kits

MCR20 module change rack kit 1

Includes two standard force modules.

Part number: A-1371-0261

MCR20 probe module change rack kit 2

Includes one standard force and one medium force module.

Part number: A-1371-0262

MCR20 probe module change rack kit 3

Includes one standard force and one extended force module.

Part number: A-1371-0263

MCR20 probe module change rack kit 4

Includes two medium force modules.

Part number: A-1371-0264

MCR20 probe module change rack kit 5

Includes one medium force and one extended force module.

Part number: A-1371-0265

MCR20 probe module change rack kit 6

Includes two extended force modules.

Part number: A-1371-0266

MCR20 location plate

Part number: M-1085-0301

TP2 5-way

TP2 5-way is the industry-standard probe for most CMM applications. Its compact dimensions are ideal for probing into restricted component features.

Sense directions:	5-way (±X, ±Y, +Z)	
2σ unidirectional repeatability:	0.35 µm	
Pre-travel variation:	±0.80 µm	
Stylus force range:	7 g to 15 g	
Stylus overtravel:	XY plane	±14°
	+Z axis	4.5 mm @ 7 g
		3.0 mm @15 g
Mounting options:	M8 thread	
Stylus thread size:	M2	
Suitable interface:	PI4-2, PI7-3 or PI200-3	
Test conditions:	10 mm stylus @ 8 mm/s with trigger force of 7 g to 8 g	

Part number: A-1042-1890

TP6/TP6A

The TP6 combines the robust characteristics of the TP1(S) with the repeatability of the TP2. It can be used on manual or DCC CMMs along with Renishaw's vast range of heads and extensions. The TP6A incorporates an autojoint for use with the Renishaw autochange system, or for manual probe changing. The TP6A allows for fast probe exchange without redatuming.

Sense directions:	±X, ±Y, +Z	
2σ unidirectional repeatability:	0.35 µm	
Pre-travel variation:	±1.0 µm	
Stylus force range:	10 g to 30 g	
Stylus overtravel:	XY plane	±22°
	+Z axis	6.5 mm @ 12 g
		3.0 mm @ 30 g
Mounting options:	TP6	M8 thread
	TP6A	Autojoint
Stylus thread size:	M3	
Test stylus length:	21 mm	
Suitable interface:	PI4-2, PI7-3, PI200-3	
Test conditions:	21 mm stylus @ 8 mm/s with trigger force of 11 g to 13 g	

Part number: A-1039-0001 (TP6)
Part number: A-1039-0028 (TP6A)

TP7M

The TP7M is designed to maintain a high level of accurate and reliable performance across a wide range of conditions. The TP7M must be used with either the PH10M probe head or a PH6M fixed head.

Sense directions:	±X, ±Y, ±Z	
2σ unidirectional repeatability:	High sensitivity	0.25 µm
	Mid sensitivity	0.25 µm
Pre-travel variation:	High sensitivity	±0.25 µm
	Mid sensitivity	±0.50 µm
Trigger force:	XY plane	2 g
	Z axis	15 g
Overtravel force:	XY plane	50 g
	Z axis	300 g
Stylus overtravel:	XY plane	16°
	+Z axis	5 mm
	–Z axis	5 mm
Max. extension on PH10M:	200 mm	
Mounting options:	Autojoint	
Stylus thread size:	M4	
Test stylus length:	50 mm	
Suitable interface:	PI7-3 only	
Test conditions:	50 mm stylus @ 8 mm/s	

TP7M probe kit

Part number: A-1073-0121

TP7M EP

The TP7M EP (enhanced performance) is capable of achieving a 3D accuracy of < 0.6 µm tested to ISO 10360 Part 2.

TP7M EP probe kit

Part number: A-1073-0261

TP200/TP200B modular probes

The TP200 and TP200B are electronic probes using strain gage technology which gives higher accuracy than kinematic touch-trigger probes. They combine outstanding metrology performance with superior functionality to produce a highly versatile DCC CMM probing system with excellent productivity.

The TP200 system components are:

- TP200 probe body – the standard model
- TP200B probe body – a variant model with increased vibration tolerance
- TP200 stylus module – choice of fixed overtravel forces: 'SF' (standard force) or 'LF' (low force)
- PI 200 probe interface
- SCR200 stylus changing rack

TP200 probe body

The TP200 probe incorporates micro strain gage transducers delivering excellent repeatability and accurate 3D form measurement even with long styli. The sensor technology gives sub-micron triggering performance and eliminates the lobing characteristics encountered with standard probes. The solid state ASIC electronics within the probe ensure reliable operation over millions of trigger points.

TP200B probe body

The TP200B probe uses the same technology as TP200 but has been designed to have a higher tolerance to vibration. This helps to overcome the problem of 'air' trigger generation which can arise from vibrations transmitted through the CMM or when using longer styli with faster positioning speeds. Please note that we do not recommend the use of TP200B with the LF module or cranked/star styli.

Measuring performance			TP200	TP200B
Principal application			DCC CMM where high accuracy measurement is required	As TP200 but where 'air' * trigger events occur
Sense directions			6-way (±X, ±Y, ±Z)	6 way (±X, ±Y, ±Z)
Unidirectional repeatability (2σ µm)		Trigger level 1 Trigger level 2	0.4 µm (0.000016 in) 0.5 µm (0.000020 in)	0.4 µm (0.000016 in) 0.5 µm (0.000020 in)
XY (2D) form measurement deviation		Trigger level 1 Trigger level 2	±0.8 µm (0.000032 in) ±0.9 µm (0.000036 in)	±1.0 µm (0.000040 in) ±1.2 µm (0.000047 in)
XYZ (3D) form measurement deviation		Trigger level 1 Trigger level 2	±1.0 µm (0.000040 in) ±1.4 µm (0.000056 in)	±2.5 µm (0.000100 in) ±4.0 µm (0.000160 in)
Repeatability of stylus change		With SCR200 Manual	±0.5 µm (0.000020 in) max ±1.0 µm (0.000040 in) max	±0.5 µm (0.000020 in) max ±1.0 µm (0.000040 in) max
Trigger force	XY plane Z axis	All modules All modules	0.02 N 0.07 N	0.02 N 0.07 N
Overtravel force (@ 0.5 mm displacement)	XY plane Z axis	SF/EO module LF module SF/EO module LF module	0.2 N – 0.4 N 0.1 N – 0.15 N 4.9 N 1.6 N	0.2 N – 0.4 N 0.1 N – 0.15 N 4.9 N 1.6 N
Weight (probe sensor + module)			22 g (0.8 oz)	22 g (0.8 oz)
Max. extension (if on PH10 series head)			300 g (11.8 oz)	300 g (11.8 oz)
Max. recommended stylus length (M2 stylus range)		SF/EO module LF module	50 mm (1.97 in) steel – 100 mm (3.94 in) GF 20 mm (0.79 in) steel – 50 mm (1.97 in) GF	50 mm (1.97 in) steel – 100 mm (3.94 in) GF 20 mm (0.79 in) steel – 50 mm (1.97 in) GF
Probe mounting method			M8 thread	M8 thread
Suitable interface			PI200	PI200
Stylus module changing rack (automatic)			SCR200	SCR200
Stylus module storage rack (manual)			MSR1	MSR1

The above data applies for test conditions as follows:

Stylus length 50 mm (1.97 in)
Stylus velocity 480 mm/min (1.57 ft/min)

* Air trigger (or false trigger). The TP200B reduces triggers that may be caused by vibrations.

TP200/TP200B probe kits

TP200 probe with standard force module

Part number: A-1207-0001

TP200 probe with low force module

Part number: A-1207-0002

TP200B probe with standard force module

Part number: A-1207-0055

TP200 accessories

Standard force stylus module

Part number: A-1207-0010

Low force stylus module

Part number: A-1207-0011

TP200 probe cleaning kit

Part number: A-1085-0016

GF stylus kit *

Part number: A-5003-2310

*See Stylus section for kit contents.

SCR200

The SCR200 stylus changing rack provides rapid, automatic changing of styli without the need to requalify probe tips. Installation and set-up of the system are achieved with minimal operator skill, as no special CMM cabling, software or communications are required. The SCR200 is powered and serviced entirely by the PI200-3 interface and is fully crashed protected.

Mounting:	Horizontal or vertical	
Mounting fixture:	Single stud	
Number of ports:	6	
Module location and retention:	Magnetic	
Repeatability of stylus change (2σ) at 50 mm:	Automatic:	1 µm
	Manual:	2 µm
Change cycle:	< 2 seconds	

SCR200 kit

Includes: 3 stylus changing modules
Mounting kit
PS2R stylus
Location plate

Part number: A-1207-0030 (standard force modules)
Part number: A-1207-0070 (low force modules

SCR200 stylus changing rack only

Part number: A-1085-0002

SCR200 datum stylus (PS35R)

Part number: A-5000-7812

SCR200 cables

Part number: A-1016-7630 (PL63S – 5 m)
Part number: A-1016-7631 (PL64S – 10 m)
Part number: A-1016-7632 (PL65S – 20 m)

SCR200 mounting kit

Part number: A-1085-0005

SCR200 location plate

Part number: M-1085-0301

Special probing systems

SP25

The SP25M is actually two sensors in one! – enabling the user to SCAN for form measurement or reverse engineering and TOUCH-TRIGGER PROBE (TTP) for geometry.

Highly accurate scanning performance with (M3) stylus lengths from 20 mm to 200 mm together with the ability to carry Renishaw's TP20 range of touch-trigger probe modules mean that the SP25M system provides unmatched flexibility to optimize a measurement solution to suit the application.

The probe is just 25 mm in diameter, compatible with Renishaw's PH10M/MQ, PH6M and PHS1 probe heads, and can also be mounted using a multiwired extension bar. Together these combinations permit excellent reach and access to part features.

Physical measurement range:		±0.5 mm deflection in all directions in all orientations
Physical overtravel range:		X,Y ±2.0 mm +Z 1.7 mm –Z 1.2 mm
Resolution:		Capable of < 0.1 µm
Spring rate:		0.6 N/mm to 0.2 N/mm – dependent on stylus length
Dimensions:		Ø25 mm × length dependent on module used
Mass:	SP25M body	65 g
	SM25-1 scan module	35 g (includes SH25-1, but excludes stylus)
	SM25-2 scan module	40 g (includes SH25-2, but excludes stylus)
	SM25-3 scan module	49 g (includes SH25-3, but excludes stylus)
	TM25-20 TTP module	40 g (includes TP20 standard module, but excludes stylus)
Mounting:		Multiwired autojoint connnection • compatible with PH10M PLUS, PH10MQ PLUS, and PH6M • may be mounted to autojoint extension bars
Signal outputs:		Non-linear and non-orthogonal analog outputs – rate, gain and resolution are not fixed
Interface:		AC3 card

SP25M special SCAN/TTP full combination kit

The full scanning system plus the capability to use TP20 modules – this kit includes all the equipment in these separate kits and is supplied as one complete kit:

1 × A-2237-1001 SP25M scanning probe kit #1 (includes SM25-1 kit)
1 × A-2237-1102 SM25-2 scanning module kit
1 × A-2237-1103 SM25-3 scanning module kit
1 × A-2237-1200 TM25-20 TTP module adaptor ONLY (to directly carry any TP20 module)

Part number: A-2237-1015

SP25M scanning probe kit #1 (entry level kit)

Includes: 1 × SP25M probe body
1 × SM25-1 scanning module kit (see below)

Part number: A-2237-1001

SP25M scanning probe kit #2 (entry level kit)

Includes: 1 × SP25M probe body
1 × SM25-2 scanning module kit (see below)

Part number: A-2237-1002

SP25M scanning probe kit #3 (entry level kit)

Includes: 1 × SP25M probe body
1 × SM25-3 scanning module kit (see below)

Part number: A-2237-1003

SP25M scanning probe kit #4 (entry level kit)

Includes: 1 × SP25M probe body
1 × SM25-4 scanning module kit (see below)

Part number: A-2237-1004

SM25-1 scanning module kit

Includes: 1 × SM25-1 2 × SH25-1

Part number: A-2237-1101

SM25-2 scanning module kit

Includes: 1 × SM25-2 2 × SH25-2

Part number: A-2237-1102

SM25-3 scanning module kit

Includes: 1 × SM25-3 2 × SH25-3

Part number: A-2237-1103

SM25-4 full module kit

Includes: 1 × SM25-4
2 × SH25-4
full stylus kit containing:
1 × M3 stylus D5R L21 EWL21 d2.5SS
1 × M3 stylus D5R L50 EWL50 d2.5CE
1 × M3 stylus D10R L200 EWL200 d4C/F
1 × M3 stylus D10R L150 EWL150 d4C/F
1 × M3 stylus D10R L100 EWL100 d4C/F
1 × M3 stylus D10R L75 EWL75 d4C/F
2 × M2-M3 stylus tools

Part number: A-2237-

SM25-4 entry level module kit

Includes: 1 × SM25-4
1 × SH25-4
basic stylus kit containing:
1 × M3 stylus D5R L21 EWL21 d2.5SS
1 × M3 stylus D10R L100 EWL100 d4C/F
2 × M2-M3 stylus tools

Part number: A-2237-1108

SM25-4 basic module kit

Includes: 1 × SM25-4
2 × SH25-4
basic stylus kit containing:
1 × M3 stylus D5R L21 EWL21 d2.5SS
1 × M3 stylus D10R L100 EWL100 d4C/F
2 × M2-M3 stylus tools

Part number: A-2237-1109

SM25-5 scanning module kit

Includes: 1 × SM25-5 2 × SH25-5

Part number: A-2237-1105

TM25-20 TTP module adaptor only

Part number: A-2237-1200

TM25-20 TTP module adaptor kit #1

Includes: 1 × TM25-20
2 × TP20 standard modules

Part number: A-2237-1201

SM25-1 scanning module only

Part number: A-2237-1111

SM25-2 scanning module only

Part number: A-2237-1112

SM25-3 scanning module only

Part number: A-2237-1113

SM25-4 scanning module only

Part number: A-2237-1114

SM25-5 scanning module only

Part number: A-2237-1115

SH25-1 stylus holder only

Part number: A-2237-1301

SH25-2 stylus holder only

Part number: A-2237-1302

SH25-3 stylus holder only

Part number: A-2237-1303

SH25-4 stylus holder only

Part number: A-2237-1304

SH25-5 stylus holder only

Part number: A-2237-1305

AC3 interface card

Part number: A-2237-1601

FCR25

The full potential of the SP25M system may be realized when the lexible change rack option is incorporated. Based on the versatile FCR25 triple-port rack unit, which allows any of the SP25M system elements to be rapidly exchanged in any of the ports, this is undoubtedly the most adaptable rack system yet from Renishaw. The FCR25 mounts directly to Renishaw's MRS modular rack system. Alternatively, compact 3-port and 6-port 'standalone' racks are available which incorporate FCR25.

FCR25 lexible change rack unit

Triple-port unit for MRS system.

Includes:

1 × FCR25
3 × PA25-SH
3 × PA25-20

Note: Requires an MRS kit for CMM mounting.

Part number: A-2237-1401

FCR25 TC

Thermally controlled FCR25 for use with SM25 modules only.

Part number: A-2237-1408

FCR25-L3 3-port standalone change rack unit

Includes:

1 × FCR25 with integral leg for table mounting
3 × PA25-SH
3 × PA25-20

Part number: A-2237-1403

FCR25-L6 6-port standalone change rack unit

Includes:

2 × FCR25 with integral leg for table mounting
3 × PA25-SH
3 × PA25-20

Part number: A-2237-1406

Part number: A-2237-1415

FCR25 port adaptor insert kit

Includes: 3 × PA25-SH 3 × PA25-20

SP80

The SP80 is a quill-mounted scanning probe that uses digital scale and readhead technology, plus Renishaw's innovative isolated optical metrology principles, to provide exceptional scanning performance, even with long styli.

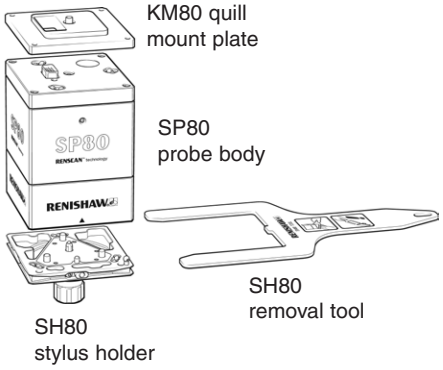
It is able to reach deep into parts by carrying styli up to 500 mm long and 500 g mass, including star configurations which do not require counterbalancing. Renishaw's M5 styli products are designed to complement SP80 and ensure maximum performance.

Detachable stylus holders (SH80) permit rapid and repeatable interchange between stylus configurations, thus eliminating recalibration, maximizing productivity and permitting optimum solutions to match the application.

A simple and robust passive design, with no internal motors to generate heat or reliability issues, avoids unnecessary system complexity.

The SP80 probe body houses the sensor mechanism comprising a 'box' spring motion system and the isolated metrology system featuring high accuracy digital scale and readheads.

Longer stylus lengths may be carried subject to operating conditions (consult Renishaw for application assistance).



SP80 probe kit 1

Includes: SP80 probe body
SH80 stylus holder
KM80 quill mount plate
PL157 probe cable
60 mm long stylus
Tools

Part number: A-2238-0700

SP80 probe kit 2

Includes: SP80 probe kit 1
SCP80 stylus change port (3 off)
MRS kit 2 (600 mm rail length – see page 1-57)

Part number: A-2238-0732

SP80 probe kit 3

Includes: SP80 probe kit 1
SCP80 stylus change port (4 off)
MRS kit 2 (600 mm rail length – see page 1-57)

Part number: A-2238-0733

SP80 probe kit 4

Includes: SP80 probe kit 1
SCP80 stylus change port (5 off)
MRS kit 3 (1000 mm rail length – see page 1-57)

Part number: A-2238-0734

SP80 probe kit 5

Includes: SP80 probe kit 2

SH80 stylus holder (3 off)

Part number: A-2238-0735

SP80 probe kit 6

Includes: SP80 probe kit 3 SH80 stylus holder (4 off)

Part number: A-2238-0736

SP80 probe kit 7

Includes: SP80 probe kit 4 SH80 stylus holder (5 off)

Part number: A-2238-0737

SP80H

The SP80H is a horizontal quill-mounted version of the SP80 probe that uses the same digital scale and readhead technology as the SP80 probe.

The SP80H is intended for use on horizontal arm machines and uses the standard SH80 stylus holder and KM80 quill mount. It uses the SCP80V for automated stylus changing.

It is able to carry Renishaw's range of M5 threaded styli up to 500 mm long. Stylus configurations up to 300 g unbalanced are possible.

SP80H probe kit 1

Includes: SP80H probe body
SH80 stylus holder
SH80K stylus holder
KM80 quill mount plate
SH80 removal tool
PL157 probe cable
60 mm long stylus
Tools

Part number: A-2238-0419

Other probe kits similarly configured to the SP80 probe kits are available upon request. Please contact Renishaw for details.

SCP80 stylus change port

Individual ports for rapid interchange between SH80s. The SCP80 mounts to Renishaw's modular rack system (MRS) – see page 1-55.

Part number: A-2238-0706

SCP80V rack port

The SCP80V is a rack port designed for use with SP80H to allow automatic changing of the SCP80 stylus holders on horizontal arm machines. It may also be used for changing stylus holders that have long styli protruding from the rear of a horizontally mounted port.

Part number: A-2238-0726

SH80 stylus holder

Rapidly interchangeable onto the probe body via a magnetic kinematic joint, the SH80 features a 5-way stylus cube which can be rotated to align styli as desired.

Part number: A-2238-0705

SH80K stylus holder

The SH80K is a stylus holder that allows you to power off the SP80 and SP80H probes and turn them back on without needing to re-home the probe.

Part number: A-2238-0430

SH80 removal tool

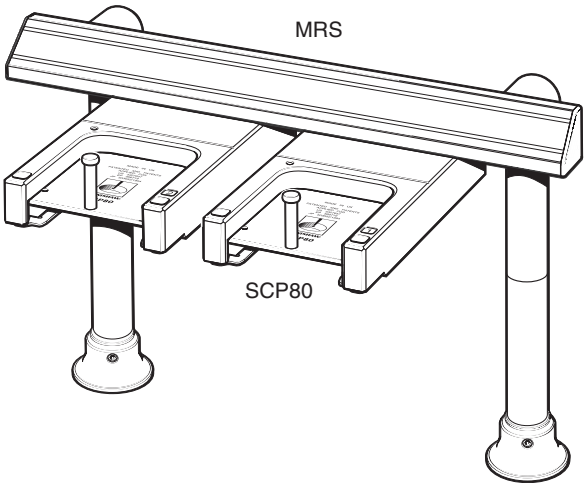
The SH80 removal tool is used to manually remove the SH80 or SH80K stylus holder from the SP80 or SP80H.

Part number: M-2238-0443

KM80 quill mount plate

The standard mounting plate between the CMM quill (80 mm square) and the SP80 probe body. Provides easy and repeatable removal/replacement of the probe. Alternative CMM quill mountings are available (see KM6080 and SM80 below).

Part number: A-2238-0703



SM80 shank mount plate

As KM80 but with a shank mount to the CMM (non-preferred method).

Part number: A-2238-0704

IU80 interpolator unit

Required for all OEM controller installations (as opposed to Renishaw's UCC controller installations which require use of the UCC/SP80 daughter card).

Part number: A-2238-0720

CC6 counter card

Required where this function is not performed by the CMM controller/PC.

Part number: A-4068-0400

Cables

PL156

IU80 to OEM controller (supplied unterminated).

Part number: A-1016-7129

PL157

SP80 probe cable (included with all SP80 kits).

Part number: A-1016-7132

PL158

IU80 to CC6.

Part number: A-1016-7133

SP600M

The SP600M is an autojointed, multiwired analog scanning probe which enables a CMM to gather large amounts of data very rapidly for inspection or digitizing purposes. Low spring forces allow scanning of finely detailed parts. The probe can be used with a PH10M or PH6M probe head and is compatible with the Renishaw autochange system.

Measurement range:	±1 mm (0.04 in) X, Y, and Z
Return to zero:	< 5 µm (0.0002 in) from 0.5 mm deflection
Resolution:	0.1 µm (0.000004 in) with optional AC2 interface
	0.5 µm (0.00002 in) with optional AC1 interface
Spring rate:	120 gf/mm nominal
Outputs (X,Y,Z):	Analog proportional voltage output scaling: 4 V to 8.5 V/mm
Interface:	AC1 or AC2 analog converter PC card (optional)
Mounting:	Multi-wired autojoint
Dimension:	Length 107.5 mm, diameter 50 mm
Weight:	216 g

Part number: A-2098-0105

AC1 analog converter PC card

Part number: A-2098-1000

AC2 analog converter PC card

Part number: A-2172-0001

Stylus module – SH600 standard

Part number: A-2098-0284

Stylus module – SH600 extended

Part number: A-2098-1036

SP600Q

The SP600Q is a quill-mounted version of the SP600M probe. It can therefore be connected directly to the quill of a CMM and an external cable carries the probe signal to the interface card. The specification for the SP600Q is identical to the SP600M, with the following exceptions:

Mounting:	Direct in quill
Dimensions:	Length 99 mm, diameter 60 mm
Weight:	299 g

SP600Q kit

Part number: A-2098-0890

SCR600 stylus changing rack

The SCR600 is a passive stylus change rack for use with the SP600M and requires no electrical connections. It houses up to four stylus modules per rack. The rack kit includes two stylus changing modules and additional modules can be purchased separately.

Part number: A-2098-0255

Gram gage

The gram gage allows you to adjust, reset and check probe trigger force settings on all standard Renishaw CMM touch-trigger probes. Setting the optimum trigger force using the gram gage maximizes probe performance. It can be used to set trigger force settings over a range of 3 to 30 grams.

Overall length:	95 mm
Needle length:	41 mm
Depth:	27 mm
Width:	43 mm
Range:	4 to 35 gram range with 1 gram graduations

Probe	Stylus length (mm)	Optimum trigger force (grams) *
TP1	31	15
TP2-5W	10	7 to 8
TP2-6W	10	7 to 8
TP6	21	11 to 13
TP6A	21	11 to 13

* This is the optimum trigger force recommended by Renishaw. Higher trigger forces may be required for longer styli.

Part number: P-GA01-0001

CMM probe shanks

Shanks are used to mount the probe head to the quill of the CMM. The shanks listed below are suitable for all Renishaw manual and motorized heads, as well as the TP1 and MIP probes.

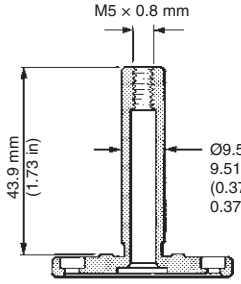
Note: The PH6 requires a different shank and has a separate listing (see page 1-46).

The correct shank must be chosen to suit the mounting facility of your coordinate measuring machine.

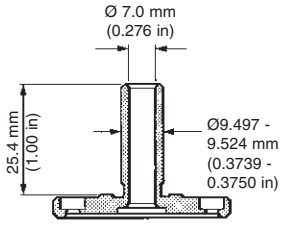
Shanks are included in the price of Renishaw heads and TP1 and MIP probes, but must be specified when placing an order. See the drawings on the following pages for the exact dimensions of each shank.

Shank	Used on the following machines	Part number
MS1	Brown & Sharpe, Bridgeport, Elm Systems, Fanamation, Giddings & Lewis, I.T.P., Poli, Portage Machine, Tesa, Zett-Mess	M-1041-2146
MS1(S)	New Carl Zeiss	A-1041-7114
MS2	Boice, Carl Zeiss, Federal Products, Helmel, Kemco, Metrologic, MFO, Mora, Numerex, Real Meca, Starrett, Tokyo-Boeki, Tri-mesures, TSK, and Wenzel	M-1041-1650
MS3	LK Tool (meter 4), Ferranti, Tarus, W & A, Eley & Warren	M-1041-1656
MS5	Ferranti	M-1041-1652
MS6	C.E. Johannson (old specification)	M-1041-1653
MS7	Renault (Seiv), Tri-Measures	M-1041-1654
MS7(S)	Starrett (new specification)	M-1041-7132
MS8	Olivetti	M-1041-1657
MS9	MTI Corporation (UK)	M-1041-4843
MS10	MTI Corporation	M-1041-7507
MS11	Crown Windley	M-1041-1088
MS12	MTI Corporation (new specification)	M-1041-7068
MS13	DEA Corp	M-1041-5348
MS14	CTA, Real Meca	M-1041-5981
MS15	C.E. Johannson (new specification)	M-1041-2153
MS17	Stiefelmayer	A-1041-7113

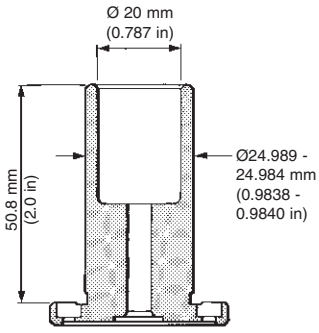
Standard base diameter 41.35 mm – 41.45 mm (1.630 in – 1.632 in)



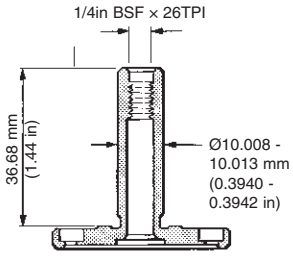
MS1



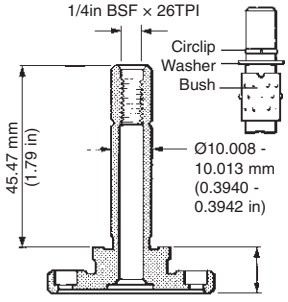
MS2



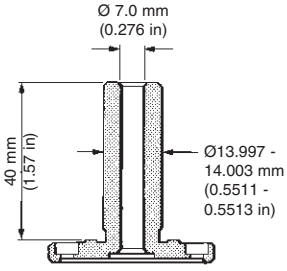
MS3



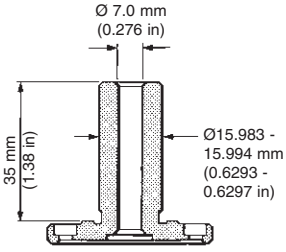
MS4



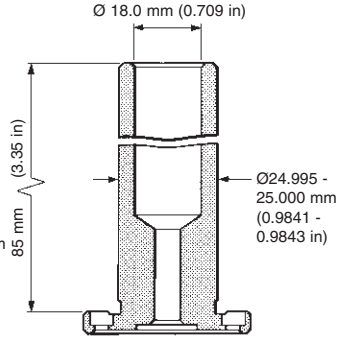
MS5



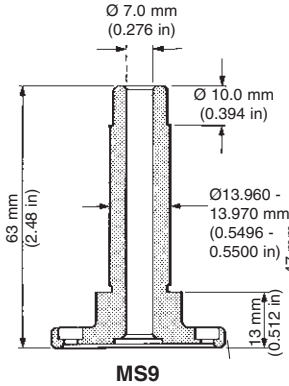
MS6



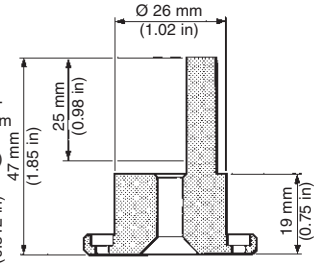
MS7



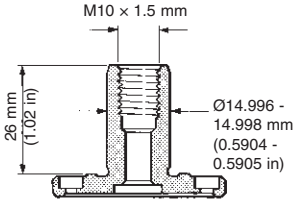
MS8



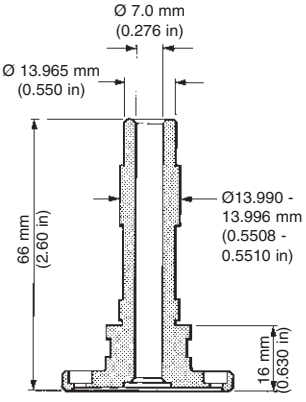
MS9



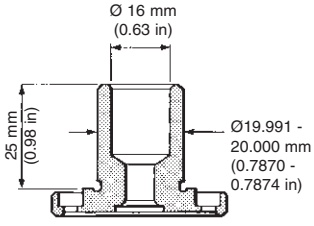
MS10



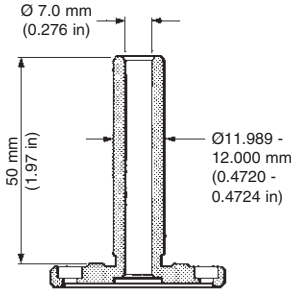
MS11



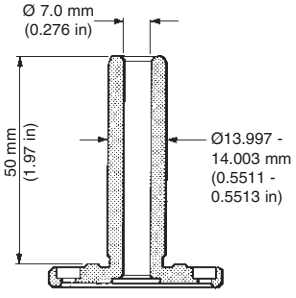
MS12



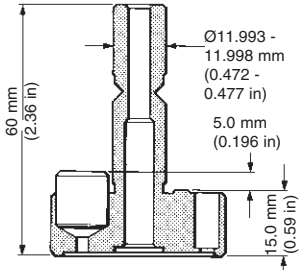
MS13



MS14



MS15

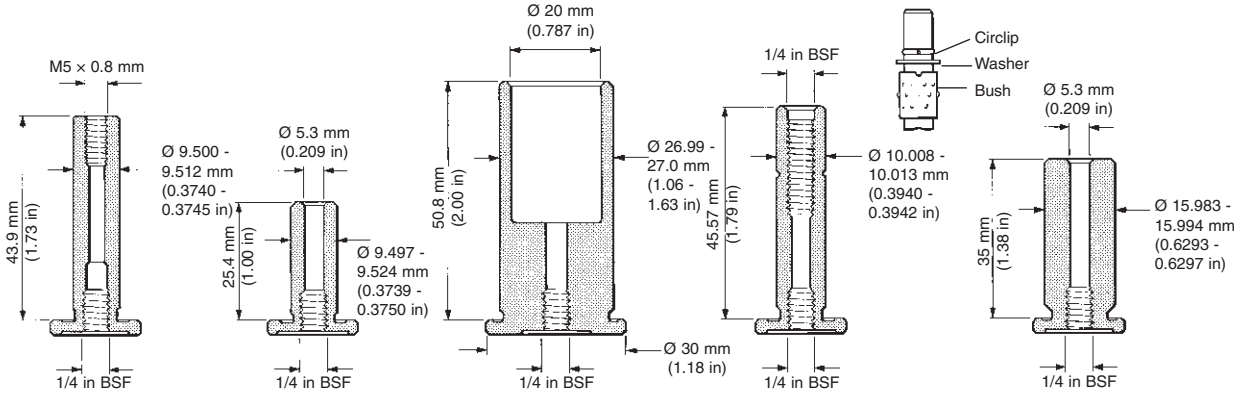


MS17

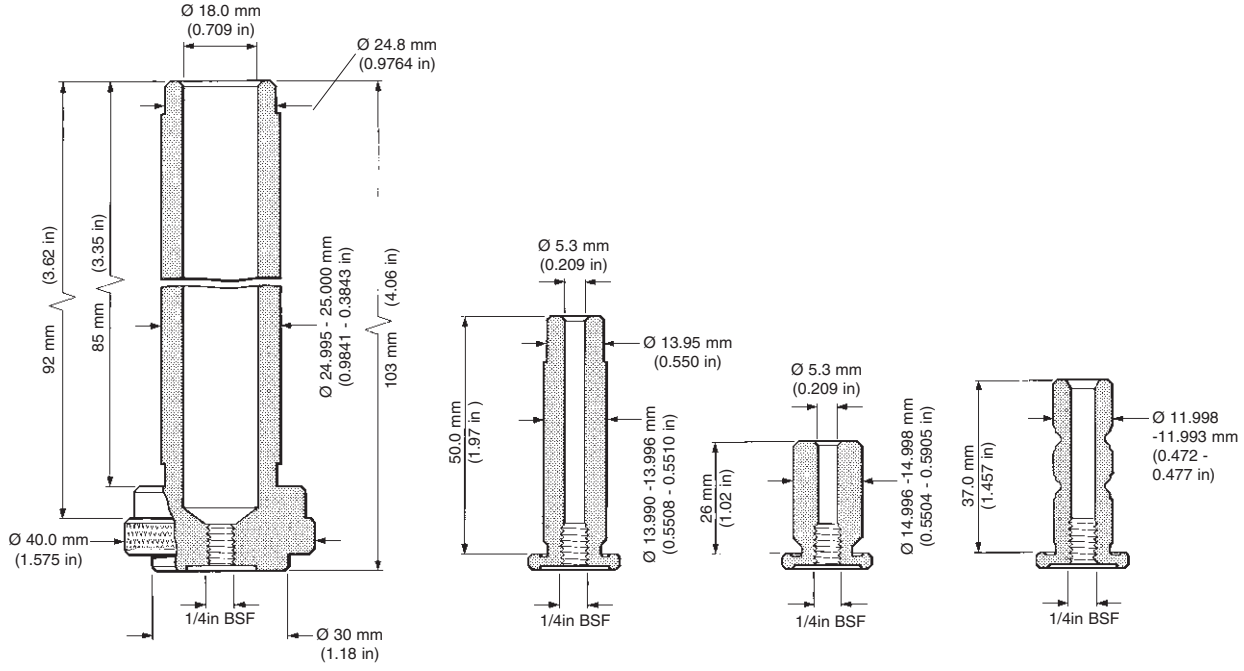
PH6 shanks

Shank	Used on the following machines	Part number
MS1/T	Brown & Sharpe, Bridgeport, Elm Systems, Fanamation, Giddings & Lewis, Poli, Portage Machine	M-1046-1121
MS2/T	Federal Products, Helmel, Kemco, Mora, Numerex, Starrett, Tokyo-Boeki, Wenzel	M-1046-1120
MS3/T	Eley, Ferranti, LK Tool (meter 4), Tarus, W & A, Warren	M-1046-1126
MS4/T	LK Tool (micro)	M-1046-1128
MS5/T	Ferranti	M-1046-1122
MS6/T	C.E. Johannson	M-1046-1123
MS7/T	Renault	M-1046-1124
MS8/T	Olivetti	M-1046-1802
MS9/T	MTI Corporation (UK)	M-1046-4545
MS11/T	Crown & Windley	M-1046-2661
MS18/T	Mora	M-1046-7107

Standard base diameter 18.9 mm – 19.1 mm (0.74 in – 0.75 in) unless stated



MS1/T MS2/T MS3/T MS5/T MS7/T



MS8/T MS9/T MS11/T MS18/T

CMM cables

Manual probe head cables

Cable	Type	Overall length	Machine connector	Part number
PL1(T)	Coiled	315 mm – 730 mm (12.4 in – 28.7 in)	5 pin mold – 5 pin DIN	A-1016-0004
PL2(T)	Coiled	465 mm – 1290 mm (18.3 in – 50.8 in)	5 pin mold – 5 pin DIN	A-1016-0006
PL3(T)	Coiled	765 mm – 2415 mm (30.1 in – 95.1 in)	5 pin mold – 5 pin DIN	A-1016-0012
PL4(T)	Plain	4510 mm (177.6 in)	5 pin mold – 5 pin DIN	A-1016-0001
PL14	Coiled	595 mm – 1830 mm (23.4 in – 72 in)	5 pin mold – 7 pin AMPHENOL	A-1016-0003
PL17(T)	Coiled	200 mm – 400 mm (7.9 in – 15.8 in)	5 pin mold – 14 pin LEMO	A-1023-7024
PL18(T)	Coiled	500 mm – 1300 mm (19.7 in – 51.2 in)	5 pin mold – 14 pin LEMO	A-1023-7025
PL27(T)	Coiled	203 mm (8 in)	5 pin mold – 5 pin mold	A-1016-6370
PL27(T)	Plain	152 mm (6 in)	5 pin mold – 5 pin mold	A-1016-6440

Motorized probe head cables

Cable	Type	Overall length	Machine connector	Part number
PL5(U)	Coiled	0.4 m – 0.8 m (16 in – 31 in)	PH9/10 to machine cable	A-1016-7672
PL6(U)	Coiled	0.8 m –1.6 m (31 in – 63 in)	PH9/10 to machine cable	A-1016-7673
PL12(U)	Plain	0.1 m (4 in)	PH9/10 to machine cable	A-1016-7674
PL13(U)	Coiled	0.1 m – 0.2 m (4 in – 8 in)	PH9/10 to machine cable	A-1016-7675
PL33(U)	Plain	3 m (118 in)	PH9/10 to machine cable	A-1023-7056
PL93(U)	Plain	0.1 m (4 in)	PH10MQ to PLM6/7/8/9S	A-1016-7676

Machine cables

Cable	Type	Overall length	Machine connector	Part number
PLM6(T)	Plain	6 m (19 ft)	PH10 cable to PHC10-3 controller (chassis)	A-1016-7564
PLM7(T)	Plain	4 m (13 ft)	PH10 cable to PHC10-3 controller (chassis)	A-1016-7563
PLM8(U)	Plain	6 m (19 ft)	PH10 cable to PHC10-3 controller (socket)	A-1016-7677
PLM9(U)	Plain	4 m (13 ft)	PH10 cable to PHC10-3 controller (socket)	A-1016-7678

Output cables

Cable	Type	Overall length	Machine connector	Part number
PL7	Plain	3 m (118 in)	5 pin DIN to 5 pin DIN	A-1029-0166
PL15	Plain	4.5 m (177 in)	5 pin DIN, interface to CMM	A-1004-0110
PL26(T)	Plain	0.6 m (23 in)	PI200-3 to PHC9 (7 pin)	A-1057-0132
PL37	Plain	0.5 m (19 in)	7 pin DIN to 7 pin DIN	A-1054-0003

Multiwired cables

Cable	Type	Overall length	Description	Part number
PL38V	Plain	25 m (82 ft)	Multiwired cable	A-1016-7625
PL42V	Plain	15 m (49 ft)	Multiwired cable	A-1016-7624
PL44V	Plain	8 m (26 ft)	Multiwired cable	A-1016-7627
PL45V	Plain	1.8 m (5.9 ft)	Multiwired cable	A-1016-7629
PL46V	Plain	3.7 m (12 ft)	Multiwired cable	A-1016-7628
PL56V	Plain	12 m (39.3 ft)	Multiwired cable	A-1016-7626
PL75V	Plain	1 m (3.2 ft)	IS1-2 extension cable	A-1016-7644

Adaptor/extension cables

Cable	Type	Overall length	Description	Part number
PL9	Plain	0.6 m (23 in)	Machine cable to probe interface cable	A-1029-0182
PL10	Plain	0.1 m (4 in)	Machine cable to probe/head cable (5 pin)	A-1029-0111
PL22	Plain	0.3 m (12 in)	Probe head cable adaptor (PL1S, 2S, 3S, 4S to PI4-2, PI200-3 input)	A-1057-0131
PL23(T)		0.5 m (19 in)	PI4-2, PI200-3 adaptor cable (machine cable to PHC9 extension cable PL82V to video interface)	A-1057-0133
PL97(S)	Plain	0.1 m (4 in)	SCR200 Y adaptor cable	A-1016-7660

PICS interconnection cables

Cable	Overall length	Description	Part number
PL24	5 m (196 in)	PI200-3 or PI7-3 to CMM	A-1016-0121
PL25(T)	0.3 m (11 in)	PI200-3 or PI7-3 to PHC10-3/ACC2-2	A-1016-0120
PL70(V)	0.5 m (19 in)	PI200-3 and PI7-3 interfaces	A-1016-7634
PL72	2 m (6.5 in)	PI200-3 or PI7-3 to PHC10-3/ACC2-2	A-1016-7637
PL76(S)	0.7 m (2.25 in)	T cable	A-1016-7643

Extensions

The extensions and knuckle joint are the primary means of adding flexibility to fixed heads. Extensions provide penetration into deep features, while the knuckle joint allows inspection of angular features. The knuckle joint allows 360° in the B axis and ±100° in the A axis.

Extension bars

Number	Description	Material	Length	Diameter	Part number
PEL1	M8 thread to M8 thread	Aluminum	50 mm (1.97 in)	13 mm	A-1047-3484
PEL2	M8 thread to M8 thread	Aluminum	100 mm (3.94 in)	18 mm – 13 mm	A-1047-3485
PEL3	M8 thread to M8 thread	Aluminum	200 mm (7.87 in)	18 mm – 13 mm	A-1047-3486
PEL4	M8 thread to M8 thread	Aluminum	300 mm (11.81 in)	13 mm	A-1047-3487
PECF1*	M8 thread to M8 thread	Carbon fiber	50 mm (1.97 in)	13 mm	A-1047-7065
PECF2*	M8 thread to M8 thread	Carbon fiber	100 mm (3.94 in)	13 mm	A-1047-7064
PECF3*	M8 thread to M8 thread	Carbon fiber	200 mm (7.87 in)	13 mm	A-1047-7066

* These products are special order only. Please call Customer Service for details.

Knuckle joint

Number	Description	Part number
PK1	Knuckle joint	A-1014-1720

Autojoint extension bars

Number	Description	Material	Length	Diameter	Part number
PAA1	Autojoint to M8 thread	Steel	30 mm (1.18 in)	25 mm – 18 mm	A-1051-0417
PAA2	Autojoint to M8 thread	Aluminum	140 mm (5.51 in)	25 mm – 13 mm	A-1051-0418
PAA3	Autojoint to M8 thread	Aluminum	300 mm (11.81 in)	25 mm – 13 mm	A-1051-0419
PAACF2*	Autojoint to M8 thread	Carbon fiber	140 mm (5.51 in)	25 mm – 13 mm	A-1051-0488
PAACF3*	Autojoint to M8 thread	Carbon fiber	300 mm (11.81 in)	25 mm – 13 mm	A-1051-0493
PAACF*	Autojoint to M8 thread	Carbon fiber	400 mm (15.74 in)	25 mm – 14 mm	A-1051-0513
PAACF*	Autojoint to M8 thread	Carbon fiber	450 mm (17.72 in)	25 mm – 14 mm	A-1051-0394
PEM1	Autojoint to autojoint	Steel/aluminum	50 mm (1.97 in)	25 mm	A-1076-0070
PEM2	Autojoint to autojoint	Steel/aluminum	100 mm (3.94 in)	25 mm	A-1076-0071
PEM3	Autojoint to autojoint	Steel/aluminum	200 mm (7.87 in)	25 mm	A-1076-0072
PEM4	Autojoint to autojoint	Steel/aluminum	150 mm (5.91 in)	25 mm (90°)	A-1076-0073
PEMCF1*	Autojoint to autojoint	Carbon fiber	50 mm (1.97 in)	25 mm	A-1051-0490
PEMCF2*	Autojoint to autojoint	Carbon fiber	100 mm (3.94 in)	25 mm	A-1051-0443
PEMCF3*	Autojoint to autojoint	Carbon fiber	200 mm (7.87 in)	25 mm	A-1051-0491
PEMCF*	Autojoint to autojoint	Carbon fiber	150 mm (5.91 in)	25 mm	A-1051-1132

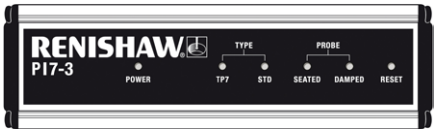
* These products are special order only. Please call Customer Service for details.

Interfaces

PI7-3

The PI7-3 interface is a dual-purpose probe interface designed to process signals from the TP7M high-accuracy probe and standard touch-trigger probes (TP2, TP20, TP6, and TP6A). Special auto-selecting electronics within the interface allow the automatic use and exchange of all of these probes without any setting changes to the interface.

The PI7-3 performs all the functions of the PI4 and PI9 interfaces, but has additional features such as probe damping, probe inhibit, and emergency stop. This interface can be either free-standing or rack-mounted.



Application:	TP7, TP2, TP6, TP6A, TP20, MH20, and MH20i	
Power supply:	85 V – 135 V, 50/60 Hz	
	170 V – 270 V, 50/60 Hz	
Dimensions:	Height	88 mm (3.46 in)
	Width	146 mm (5.75 in)
	Depth	208.5 mm (8.21 in)
Input:	9 way ‘D’ type socket	
TP7M input:	15 way double density ‘D’ type socket or	
	9 pin ‘D’ type socket	
Compatibility:	Output TTL(PICS)/SSR 5 pin DIN socket	
	(PICS-9 pin ‘D’ type plug)	
Cables	Contact Renishaw	

Part number: A-5726-0100

PI200-3

The PI200-3 interface can be interconnected within the majority of Renishaw's manual and motorized probing installations with no additional CMM communications or control signalling required. Optimum performance will be obtained on installations utilizing probe damping or halt signal facilities. Probe signalling between TP200 and PI200-3 must be direct and uninterrupted. Probe signal interfacing may be present within some CMM cabling arrangements. Call Renishaw for further details.

Application:	TP1, MIP, TP2, TP20, TP6, TP6A, TP200, MH20, and MH20i
Power supply:	85 V – 264 V, 47 Hz – 66 Hz
Dimensions:	Height 88 mm (3.46 in)
	Width 146 mm (5.75 in)
	Depth 183 mm (7.19 in)
Input:	9 way 'D' type socket
Compatibility:	Output PICS/SSR

Part number: A-5707-0100

IS1-2

The IS1-2 interface selector is a fully-automatic system for use on CMM installations requiring multiple sensor types (i.e. video, laser, analog, etc.). The unit functions by identifying which probe has been fitted to the probe head and switches the probe signal/power lines to the appropriate interface. The unit is configurable by inserting different programming modules.

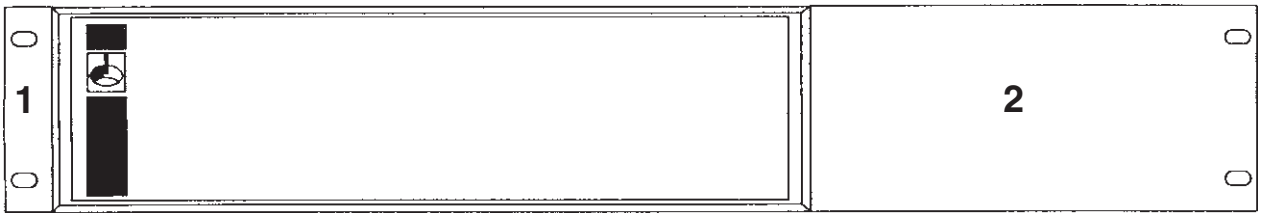
Applications:	TP7M, SP600M, TP2, TP20, TP6, TP200, SP25M, TP800
Power supply:	85 V – 264 V, 47 Hz – 66 Hz
Dimensions:	Height 88 mm (3.46 in)
	Width 164 mm (5.75 in)
	Depth 208 mm (8.21 in)
Input:	15 way double density 'D' type socket
Output:	15 way double density 'D' type plug and
	9 way 'D' type plug (PICS)
Cables:	Contact Renishaw

Part number: A-1327-0100

Mounting brackets

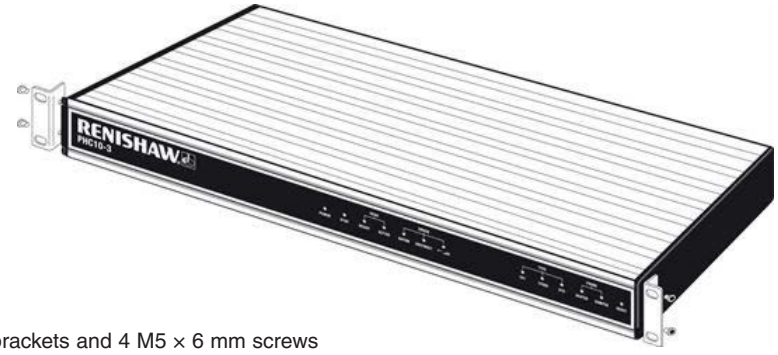
Renishaw controllers and interfaces are supplied in various different types of enclosures. Consult the drawings below to determine your bracket requirements based upon the combination of products you are installing.

PHC9 / PHC50 / PHC10-2 / ACC2-2



1. Rack mount bracket kit **Part number:** A-1018-0124
2. 1/3 blanking panel kit **Part number:** A-1018-0123

PHC10-3 PLUS cabinet mounting



Mounting kit containing 2 brackets and 4 M5 × 6 mm screws

Part number: A-1018-0189 **Price:** $37

PI7-3 alone / PI200-3

1/3 mounting panel kit containing 1U × 1/3 blanking plate and 2 M6 × 5 mm screws (2 kits required)

Part number: A-1018-0179

PI7-3 next to PHC10-2

Mounting kit containing PI7-3 to PHC10-2 conversion bracket

Part number: A-1018-0173

Autochange system

Renishaw's autochange equipment is the world's first integrated CMM probe exchange system. Mounted within the CMM's working envelope, autochange facilitates fast, automatic probe exchange without the need for redatuming. In addition, it provides covered storage for probes and extension bars.

ACR1 autochange rack with adjustable base

The ACR1 is designed to accept the SP600 and SP25M as well as all other Renishaw autojoint probes and extension bars (must be used in conjunction with the horizontal mounting kit – see below). The rack is supplied with eight long ports for maximum support. Where a probe greater than Ø25 mm is required, the rack can be configured by the user by swapping a long port for a short port (see below).

Number of stations:	8
Dimensions:	460 mm × 109 mm × 81 mm

This system can be mounted either horizontally or vertically.

Part number: A-1051-4000

Note: Adjustable base, legs and cable sold separately (see page 1-54).

Horizontal mounting kit

Includes: 1 × adjustable rack base
2 × 200 mm legs
2 × screws

Part number: A-1051-0441

Vertical mounting kit

Includes: 1 × support plate
8 × support pins (short)
8 × support pins (long)

Part number: A-1051-1308

ACC2-2 autochange controller

Data transmission:	Serial (RS232)
User-definable parameters:	Baud rate 300–19200
Voltage range:	85 V–135 V, 170 V–275 V, 50/60 Hz automatic selection
Dimensions:	Height 88 mm (3.46 in) Width 290 mm (11.42 in) Depth 220 mm (8.66 in)

Part number: A-6299-0100

ACR1 autochange system accessories

Adjustable rack base

Part number: A-1051-0440

Leg (100 mm)

Part number: M-1051-0147

Leg (200 mm)

Part number: M-1051-0148

Port replacement kits

All kits contain four ports.

Short port replacement kit

Part number: A-5036-0049

Long port replacement kit

Part number: A-1051-7077

Mixed port replacement kit

Contains two short and two long ports.

Part number: A-1051-7076

ACR1 autochange system cables

PL19 5 m cable

Part number: A-1051-0199

PL20 10 m cable

Part number: A-1051-0045

PL21 15 m cable

Part number: A-1051-0102

PL40 30 m cable

Part number: A-1054-0002

ACR3 autochange rack

The ACR3 forms part of the modular rack system (MRS) and is an autochange rack for probes and extension bars that incorporate the Renishaw autojoint. The ACR3 is a four-port mechanical design that traverses the MRS rail. Driven by the motion of the CMM, it locks and unlocks the autojoint between the probe and the probe head.

ACR3 4-port rack

Part number: A-5036-0005

Note: For 8-port applications, two 4-port racks can be connected together. The 8-port configuration requires the use of either the MRS kit 2 or MRS kit 3 (see below).

MRS kits

Include: MRS rail (see below)
MRS feet (2)
125 mm legs (4)
Step back adaptors (2)

The MRS rail is available in 400 mm, 600 mm and 1000 mm lengths.

MRS kit 1

400 mm long rail.

Part number: A-4192-0001

MRS kit 2

600 mm long rail.

Part number: A-4192-0002

MRS kit 3

1000 mm long rail.

Part number: A-4192-0003

Note: The MRS kits are compatible with FCR25, SCP600 and ACR3.

MRS rails

Part number: A-4192-0050 (400 mm)
Part number: A-4192-0051 (600 mm)
Part number: A-4192-0052 (1000 mm)

ACR3 components

SCP600

Stylus change port for SP600.

Part number: A-2098-0933

MRS legs

One per kit.

Part number: A-4192-0061 (62.5 mm)
Part number: A-4192-0053 (125 mm)

MRS heavy duty leg kit

Ø60 mm × 350 mm long. One per kit.

Part number: A-4192-0020

MRS adjustable foot plate

Two per kit.

Part number: A-4192-0702

MRS leg and foot adaptor

One per kit.

Part number: A-4192-0055

MRS fixed foot

One per kit.

Part number: A-4192-0056

MRS step back adaptor

One per kit.

Part number: A-4192-0058

M8 T nut *

Part number: P-NU18-0005

* no discounts

MRS spacer kit

Two per kit.

Part number: A-4192-0014

MRS2 kits

The MRS2 is a highly versatile storage solution for Renishaw probe and stylus configurations. It has been designed for users who are increasingly using their CMMs for multi sensor measurement, and therefore need to store greater varieties of probes and styli on racks within a limited machine working volume.

MRS2 is built entirely from extruded aluminum and is available in a variety of interchangeable rail and leg kits that can be configured according to the need of the individual. Leg and rail kits are sold separately to allow maximum flexibility. Rails can be tiered, using the front and back spacer kits, to offer up to three meters of rail space.

MRS2 leg kits

Includes: 2 × leg extrusions
4 × 40 mm brackets
6 × square end caps
2 × extrusion clamp plate kits

Not included: Rail, front spacer, and back spacer.

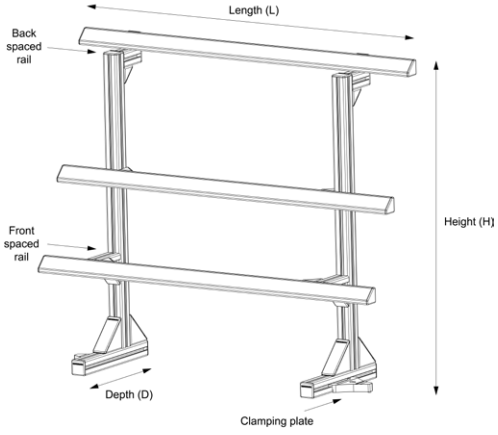
Part number: A-6007-1020 (H = 200 mm)
Part number: A-6007-1040 (H = 400 mm)
Part number: A-6007-1060 (H = 600 mm)
Part number: A-6007-1080 (H = 800 mm)

MRS2 rail kits

Includes: 1 × rail
2 × triangular end caps
2 × 40 mm brackets

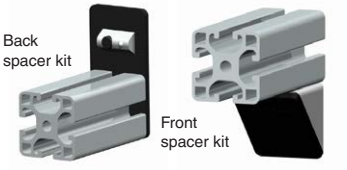
Not included: Leg, front spacer, and back spacer.

Part number: A-6007-2040 (L = 400 mm)
Part number: A-6007-2060 (L = 600 mm)
Part number: A-6007-2100 (L = 1000 mm)



MRS2 spacer kits

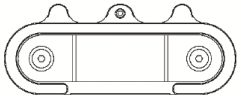
Part number: A-6007-3010 (front spacer kit)
Part number: A-6007-4008 (back spacer kit)



MRS2 accessories

MRS2 spirit level

Part number: A-6007-0630



Spirit level

MRS2 extrusion clamp plate kit

Part number: A-6007-0620 (1 per kit)

MRS2 end caps and brackets

Part number: A-6007-0710 (4 × triangular end caps)
Part number: A-6007-0720 (6 × square end caps)
Part number: A-6007-0740 (4 × 40 mm bracket end caps)
Part number: A-6007-0780 (4 × 80 mm bracket end caps)
Part number: A-6007-0810 (10 × D-nuts and bolts)

M8 D-Nut

Datum sphere

The Renishaw universal datum sphere enhances the performance of manual and fully automated CMMs. It allows for quick and easy adjustment to set ball stem over a wide range of probe datuming angles. This enables datuming above, centrally and below the ball. Each datum sphere is supplied with its own certificate, giving ball diameter and roundness. All sphere measurements are performed on equipment traceable to UK (NPL) standards.

Specifications:	Hard-wearing tungsten carbide sphere (ball) available in five sizes
Metric:	Ø12 mm, Ø19 mm and Ø25 mm
Inch:	Ø3/4 in and Ø1 in
Sphericity:	to within 0.1 µm (0.000004 in)
Diametric tolerance:	±1 µm (0.00004 in)

Datum sphere kit

Includes:
- 1 datum ball (selected by size)
- Pivot pillar
- Base
- C spanner
- Ball certificate
- Storage box

Description	Part number
Ø12 mm ball	A-1034-0028
Ø19 mm ball	A-1034-0027
Ø25 mm ball	A-1034-0026
Ø¾ in ball	A-1034-0031
Ø1 in ball	A-1034-0035

Datum sphere fixing studs

A fixing stud is required with each kit to attach the pillar to the table surface. Select one from the list below.

Description	Manufacturer	Part number
M6 × 1		A-1034-0352
M8 × 1.25	MTI	A-1034-0351
M10 × 1.5	B&S, LK Tool & Sheffield	A-1034-0350
5/16–18 UNC		A-1034-0354
3/8–16 UNC	Carl Zeiss, Fanamation, LK Tool, & L.S. Starrett	A-1034-0353

Datum sphere accessories (M6 thread – stem is attached to the ball)

Description	Part number
Ø12 mm datum ball	A-1034-0005
Ø19 mm datum ball	A-1034-0023
Ø25 mm datum ball	A-1034-0002
Ø¾ in datum ball	A-1034-0032
Ø1 in datum ball	A-1034-0036
2 way adaptor	A-1034-0356
3 way adaptor *	A-1034-0357
Pillar extension 75 mm (2.96 in) long	A-1034-0355

* Special order

Probe extension kits

Kit EKL **Part number:** A-1047-7005

Description	Quantity	Part number
Lightweight extension bar (50 mm) PEL1	1	A-1047-3484
Lightweight extension bar (100 mm) PEL2	1	A-1047-3485
Lightweight extension bar (200 mm) PEL3	1	A-1047-3486
Double-ended spanner	1	A-1047-3932
Box	1	A-1015-7694

PEM Kit **Part number:** A-1076-0100

Description	Quantity	Part number
Multiwire extension bar (50 mm) PEM1	1	A-1076-0070
Multiwire extension bar (100 mm) PEM2	1	A-1076-0071
Multiwire extension bar (200 mm) PEM3	1	A-1076-0072
Joint key	1	A-1051-0040
Box	1	A-1015-7761

Stylus tools

S1 C spanner (for use with TP20 probe body)

Part number: A-1042-1486

S3 hex key 1.5 mm A/F

Part number: P-TL01-0150

S4 hex key 3.0 mm straight arm

Part number: P-TL01-0300

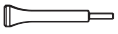
S5 wrench 2 mm A/F

Part number: P-TL01-0200

S6 hex key 2.5 mm A/F

Part number: P-TL01-0250

S7 stylus tool (for use with M2 and M3 styli)



Part number: M-5000-3540

S9 double-ended spanner

Part number: A-1047-3932

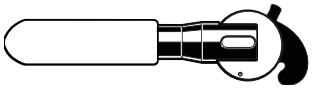
S10 joint key (for use with autojoint)

Part number: A-1051-0040

S12 hex key 0.9 mm A/F

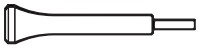
Part number: P-TL01-0089

S20 torque tool (for use with M2 carbon fiber stylus)



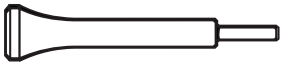
Part number: A-5003-2300

M4 stylus tool (for use with M4 and M5 styli)



Part number: M-5000-3707

Stylus tool (for use with adaptor M-5000-9301)



Part number: M-5000-9304

Tool kits

TK1 tool kit

The TK1 tool kit is included with the MP1, MP3, MP4, MP7, MP8, MP9, MP10, MP11, MP12, MP14 and LP2 probes.

Includes: Stylus tool Ø1.98 mm
Hex key 1.5 mm A/F
Hex key 2.0 mm A/F
Hex key 2.5 mm A/F
Hex key 3.0 mm A/F
Hex key 4.0 mm A/F

Part number: A-2053-7531

TK3 tool kit

The TK3 tool kit is included with the M6-3 probe.

Includes: Stylus tool Ø1.98 mm
Hex key 1.5 mm A/F
Hex key 2.0 mm A/F
Hex key 2.5 mm A/F
Hex key 3.0 mm A/F
Hex key 4.0 mm A/F
Hex key 5.0 mm A/F

Part number: A-2027-7046

TK4 tool kit

Includes: S7 stylus tool (2)
Hex key 1.5 mm A/F
Hex key 2.5 mm A/F

Part number: A-1041-7041

TK5 tool kit

Includes: S7 stylus tool (2)
S8 spanner
C spanner
Double-ended spanner
Hex key 1.5mm A/F

Part number: A-1042-7030

TK6 tool kit

Includes: Hex key 2.0 mm A/F
Hex key 2.5 mm A/F
Hex key 3.0 mm A/F

Part number: A-1042-7031

TK7 tool kit

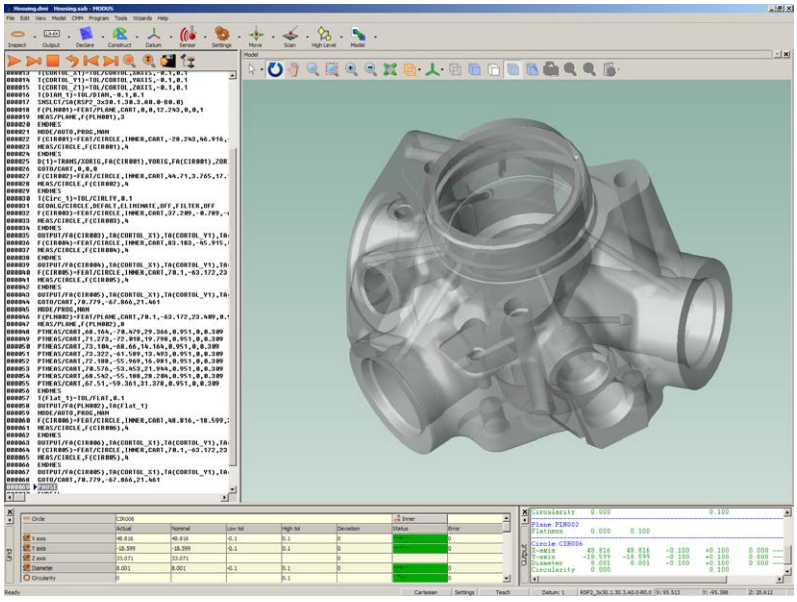
Includes: Joint key
S7 stylus tools (2)
Hex key 1.5 mm A/F

Part number: A-1039-0041

CMM metrology software

MODUS™

Renishaw's new MODUS™ software provides a powerful platform for 3-axis and 5-axis measurement. A configurable user interface allows native DMIS programs to be developed online or offline, drawing geometry, embedded dimensions and tolerance data from CAD, with full simulation and collision detection. The software includes certified algorithms for feature measurement, feature construction and part alignment.



- Full support for I++ DME compliant metrology controllers, including Renishaw's UCC range of universal CMM controllers
- Full compatibility with REVO® and PH20
- CAD-driven online / offline programming
- Full motion simulation and collision detection, including 5-axis moves
- Native DMIS support
- Certified mathematical algorithms
- Powerful text and graphical reporting
- Flexible output of results data including certified Q-DAS

MODUS™

MODUS™ – 3-axis and 5-axis touch-trigger Part number: A-5639-0001

MODUS™ – 3-axis scanning

Part number: A-5639-0003

MODUS™ – 5-axis scanning

Part number: A-5639-0005

MODUS™ Offline*

MODUS™ – Offline 3-axis and 5-axis touch-trigger

Part number: A-5639-0101

MODUS™ – Offline 3-axis scanning

Part number: A-5639-0103

MODUS™ – Offline 5-axis scanning

Part number: A-5639-0105

Offline – Graphical reporting

Part number: A-5639-0007

Options

Renishaw offers multiple application-specific analysis packages including Modus Gear, Modus Spline and Modus Airfoil. These are chargeable modules added to a base package of Modus 3-axis or 5-axis. Please contact Renishaw for details.

* *The online version of MODUS™ can also be run offline without the need to purchase MODUS™ Offline. Only purchase MODUS™ Offline if you require a dedicated offline seat of MODUS™.*

CAD integration options

In addition to the native IGES and STEP support, MODUS™ offers a wide range of CAD options including VDA-FS, STEP, CATIA® (v5 and v4), Unigraphics®, Parasolid®, Pro/E® and SolidWorks®. For a complete list and pricing of CAD import / export options please contact Renishaw sales.

Software maintenance agreements

Every new purchase of MODUS™ comes with one year's free software updates, maintenance and support. After the first year, one-year maintenance agreements can be purchased for MODUS™ and its software options. Please contact Renishaw sales for details.

MODUS™ training at Renishaw Inc

Charge per student.

4 days

Part number: CS-TRA-INHO-01-4DAY

3 days

Part number: CS-TRA-INHO-01-3DAY

2 days

Part number: CS-TRA-INHO-01-2DAY

1 day

Part number: CS-TRA-INHO-01-1DAY

On-site MODUS™ training

Up to four people, all inclusive of expenses.

4 days

Part number: CS-TRA-ONSI-01-4DAY

3 days

Part number: CS-TRA-ONSI-01-3DAY

2 days

Part number: CS-TRA-ONSI-01-2DAY

1 day

Part number: CS-TRA-ONSI-01-1DAY

MODUS™ training block

Part number: A-5639-2500

Renishaw services

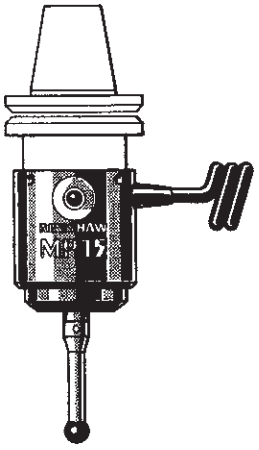
Renishaw offers a number of services including: part inspection programming, bespoke training, CMM calibrations and other engineering support. Please contact us with the services you require and we will gladly put together a quotation to meet your company's unique business and technical needs.

RENISHAW
apply innovation™

Machine tool probes

Inspection probes for machining centers

MP15



The MP15 probe is used on small CNC machines with limited Z travel and manual tool changing.

The probe is mounted in the machine spindle with the signal transmission cable connected to the machine control. With the MP15, the illuminated LED switches off every time the probe stylus contacts the workpiece.

MP15 hard-wired probe kit

Part number: A-2116-1802

MP15/MP11 adaptor

Part number: M-2116-1356

HSI interface

Part number: A-5500-1000

OMP40-2

The OMP40-2 is an ultra-compact optical transmission part probing system. Measuring just 40 mm diameter and 50 mm in length, the OMP40-2 is suitable for all machining and mill-turn centers. Utilizing a revised state-of-the-art modulated optical transmission method, the system offers the highest level of resistance to light interference when used with the OMI-2/OMI-2T. The OMP40-2 probe is also backwards compatible with existing OMM/MI12 and OMI receivers, enabling current MP7, MP8, MP9 and MP10 system users to benefit from its innovative features.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	6 mm (0.23 in)
Stylus trigger force	X and Y:	51 gf – 92 gf
	Z:	597 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

OMP40-2 retrofit kit

Includes: OMP40-2 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm ceramic styli
Sealtite kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OMP40-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

OMP40-2 hardware only kit

Includes: OMP40-2 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm ceramic styli
Sealtite kit

Part number: OMP40-NS-KIT

OMP40-2 probe kit

Includes: OMP40-2
½ AA battery (2)
Tool kit

Legacy

Part number: A-4071-0001

Modulated

Part number: A-4071-2001

OMP40-2 upgrade kit

Current users of MP7, MP8, MP9 or MP10 optical transmission probes may upgrade to OMP40-2. A complete working system (probe module plus transmission system) must be exchanged.

Includes: OMP40-2 probe system

Part number: RI-4071-0001

OMP40-2 accessories and replacement parts

½ AA battery (2 pack)

Part number: P-BT03-0007

OMP60/RMP60 style shank adaptor

Part number: A-4071-0031

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 meter long. Includes one fitting.

Part number: A-4113-0306

OMP400

OMP400 is an ultra-compact optical transmission probe using strain gage technology. Measuring just 40 mm diameter × 50 mm in length, OMP400 is suitable for all machining and mill-turn centers requiring uncompromised 3D metrology performance. Utilizing a revised state-of-the-art modulated optical transmission method, the system offers the highest level of resistance to light interference when used with OMI-2. The OMP400 probe is also backwards compatible with existing OMM/MI12 and OMI receivers, enabling current MP7, MP8, MP9 and MP10 system users to benefit from its innovative features.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±11°
	Z:	6 mm (0.27 in)
Stylus trigger force	X and Y:	6 gf
	Z:	260 gf
Unidirectional repeatability	0.25 µm (0.00001 in)	

OMP400 retro it kit

Includes:

OMP400 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm carbon fiber styli
Sealtite kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OMP400-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

OMP400 hardware only kit

Includes:

OMP400 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm carbon fiber styli
Sealtite kit

Part number: OMP400-NS-KIT

OMM-2 optical receiver

Part number: A-5492-0051

OMP400 probe kit

Includes: OMP400 probe
½ AA battery (2)
Tool kit

Legacy

Part number: A-5069-0001

Modulated

Part number: A-5069-2001

OMP400 upgrade kit

Current users of MP700 optical transmission probes may upgrade to OMP400. A complete working system (probe module plus transmission system) must be exchanged.

Includes: OMP400 probe

Part number: RI-5069-0001

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

To obtain optimal metrology performance, the following carbon fiber styli are recommended. Refer to the Styli section for more details.

Stylus	Part number
6 × 50 mm CF	A-5003-7306
6 × 100 mm CF	A-5003-6510
6 × 150 mm CF	A-5003-6511
6 × 200 mm CF	A-5003-6512

OMP60

OMP60 is an optical transmission probing system suitable for medium to large machining and mill-turn centers. Utilizing a revised state-of-the-art modulated optical transmission method, the system offers the highest level of resistance to light interference. The OMP60 probe is also backwards compatible with existing OMM/MI12 and OMI receivers. OMP60 also supports all methods of probe activation – shank switch, spin and M code – enabling current MP7, MP8, MP9 and MP10 users to benefit from some of its innovative features.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±18°
	Z:	11 mm (0.43 in)
Stylus trigger force	X and Y:	76 gf – 143 gf
	Z:	540 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

OMP60 retrofit kit

Includes: OMP60 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm ceramic styli
Sealtite kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OMP60-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

OMP60 hardware only kit

Includes: OMP60 probe
OMM-2
Receiver mounting bracket
OSI interface
50 mm and 100 mm ceramic styli
Sealtite kit

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OMP60-NS-KIT

OMP60 probe kit

Includes: OMP60 probe
AA battery (2)
Tool kit

Legacy

Part number: A-4038-0001

Modulated

Part number: A-4038-2001

OMP60 upgrade kit

Current users of MP7, MP8, MP9 or MP10 optical transmission probes may upgrade to OMP60. A complete working system (probe module plus transmission system) must be exchanged.

Includes: OMP60 probe system

Part number: RI-4038-0001

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

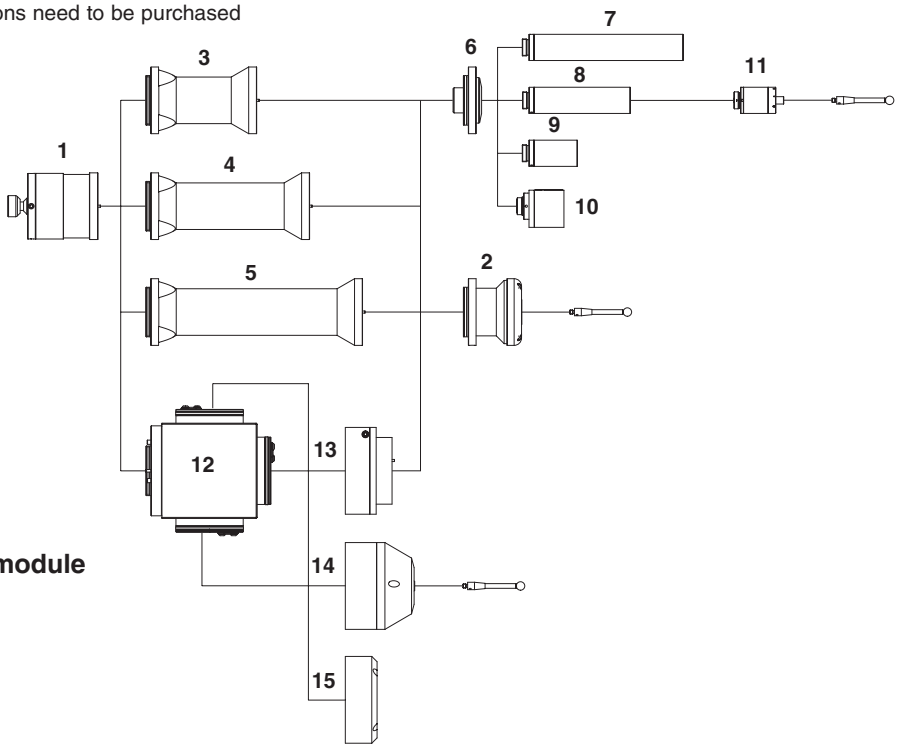
Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

OMP60M

OMP60M is a modular version of the OMP60. The OMP60M, probe module, adaptors and extensions need to be purchased separately.



1 – OMP60M transmission module

Part number: A-4038-1003

2 – OMP60M probe module

Part number: A-4038-1002

3 – OMP60M 100 mm extension

Part number: A-4038-1010

4 – OMP60M 150 mm extension

Part number: A-4038-1027

5 – OMP60M 200 mm extension

Part number: A-4038-1028

6 – OMP60M LP2 adaptor

Part number: A-4038-0212

7 – LPE3 150 mm extension

Part number: A-2063-7003

8 – LPE2 100 mm extension

Part number: A-2063-7002

9 – LPE1 50 mm extension

Part number: A-2063-7001

10 – MA4 90° adaptor

Part number: A-2063-7600

11 – LP2 probe assembly

Part number: A-2063-6098

12 – OMP60M 3-way adaptor

Part number: A-4113-0784

13 – OMP60M probe module adaptor

Part number: A-4113-0771

14 – MP3 probe

Part number: A-2053-5358

15 – Shorting cover

Part number: A-2053-6468

OMP60M upgrade kit

Current users of MP7, MP8, MP9 or MP10 optical transmission probes may upgrade to OMP60M. A complete working probe must be exchanged.

Includes: OMP60M module

OMP60M probe module

Part number: RI-4038-1003

OMP600

OMP600 is the latest generation optical transmission probe using strain gage technology and suitable for medium to large machining and mill-turn centers. Utilizing a revised state-of-the-art modulated optical transmission method, the system offers the highest resistance to light interference.

The OMP600 probe is also backwards compatible with existing OMM/MI12 and OMI receivers. OMP600 also supports all methods of probe activation – shank switch, spin and M code – enabling current MP700 users to benefit from some of its innovations.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±15°
	Z:	11 mm (0.43 in)
Stylus trigger force	X and Y:	15 gf
	Z:	178 gf
Unidirectional repeatability	0.25 µm (0.00001 in)	

OMP600 retrofit kit

Includes: OMP600 probe
OMM-2/OSI
Receiver mounting bracket
50mm and 100 mm carbon fiber styli
Sealtite kit
Renishaw Inspection Plus software
Installation and application support

A shank (tool holder) is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OMP600-NS-S (Available at fixed price) Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

OMP600 hardware only kit

Includes:

OMP600 probe
OMM-2/OSI
Receiver mounting bracket
50 mm and 100 mm carbon fiber styli
Sealtite kit

Part number: OMP600-NS-KIT

OMP600 probe kit

Includes: OMP600 probe
AA battery (2)
Tool kit

Legacy

Part number: A-5180-0001

Modulated

Part number: A-5180-2001

OMP600 upgrade kit

Current users of MP700 optical transmission probes may upgrade to OMP600. A complete working system (probe module plus transmission system) must be exchanged.

Includes: OMP600 probe

Part number: RI-5180-0001

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

To obtain optimal metrology performance, the following carbon fiber styli are recommended. Refer to the Styli section for more details.

Stylus	Part number
6 × 50 mm CF	A-5003-7306
6 × 100 mm CF	A-5003-6510
6 × 150 mm CF	A-5003-6511
6 × 200 mm CF	A-5003-6512

RMP40

RMP40 is an ultra-compact radio transmission part probe, ideal for use on small to medium machine tools. RMP40 features an integrated probe module delivering exceptional robustness and generous overtravel. RMP40 complies with FCC regulations and operates in the 2.4 GHz range. RMP40 delivers interference-free transmission through the use of FHSS (frequency hopping spread spectrum).

RMP40 supports two methods of probe activation:

Radio-on The probe is turned on via an RF signal produced by the RMI-Q and initiated by an M code. The probe is turned off via an RF signal or the internal timer.

Spin-on The probe is turned on via an internal centrifugal switch. The probe is turned off via the centrifugal switch or the internal timer.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	6 mm (0.24 in)
Stylus trigger force	X and Y:	51 gf – 92 gf
	Z:	597 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

RMP40 retrofit kit

Includes: RMP40 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm ceramic styli
Sealtite kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: RMP40-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RMP40 hardware only kit

Includes: RMP40 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm ceramic styli
Sealtite kit

Part number: RMP40-NS-KIT

RMP40 probe kit

Includes:

RMP40 probe
½ AA battery (2)
Tool kit

Part number: A-5480-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RMP400

RMP400 is an ultra-compact radio transmission probe using strain gage technology. Measuring only 40 mm in diameter and 50.5 mm in length, with an omni-directional transmission distance of 15 m, it is suitable for all machining and mill-turn centers requiring uncompromised 3D metrology performance. It delivers interference-free transmission through the use of FHSS (frequency hopping spread spectrum). RMP400 complies with FCC regulations and operates in the 2.4 GHz range.

RMP400 supports two methods of probe activation:

Radio-on The probe is turned on via an RF signal produced by the RMI-Q and initiated by an M code. The probe is turned off via an RF signal or the internal timer.

Spin-on The probe is turned on via an internal centrifugal switch. The probe is turned off via the centrifugal switch or the internal timer.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±11°
	Z:	6 mm (0.23 in)
Stylus trigger force	X and Y:	9 gf
	Z:	341 gf
Unidirectional repeatability	0.25 µm (0.00001 in)	

RMP400 retrofit kit

Includes: RMP400 probe
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm carbon fiber styli
Sealtite kit
Renishaw Inspection Plus software
Installation and application support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: RMP400-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RMP400 hardware only kit

Includes:

RMP400 probe
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm carbon fiber styli
Sealtite kit

Part number: RMP400-NS-KIT

RMP400 probe kit

Includes: RMP400 probe
½ AA battery (2)
Tool kit

Part number: A-6570-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RMP400 upgrade kit

Current users of MP14, MP16 or MP18 radio probes may upgrade to RMP400. A complete working system (MP3 probe, transmission system, MI14 or MI16 interface and RMM antennas) must be exchanged.

Includes: RMP400 probe
RMI-Q radio machine interface
Receiver mounting bracket
Sealtite kit

Part number: RI-6570-0001

RMP60

RMP60 is a radio transmission part probing system ideal for use on all machine tools. RMP60 features an integrated probe module delivering exceptional robustness and generous overtravel. RMP60 complies with FCC regulations and operates in the 2.4 GHz range. RMP60 delivers interference-free transmission through the use of FHSS (frequency hopping spread spectrum).

RMP60 supports three methods of probe activation:

Radio-on The probe is turned on via an RF signal produced by the RMI-Q and initiated by an M code. The probe is turned off via an RF signal or the internal timer.

Spin-on The probe is turned on via an internal centrifugal switch. The probe is turned off via the centrifugal switch or the internal timer.

Switch-on The probe is turned on and off via a switch incorporated into the shank, activated when the probe is loaded into the spindle.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±18°
	Z:	11 mm (0.43 in)
Stylus trigger force	X and Y:	76 gf – 143 gf
	Z:	540 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

RMP60 retrofit kit

Includes: RMP60 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm ceramic styli
Sealtite kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: RMP60-NS-S (Available at fixed price)
Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RMP60 hardware only kit

Includes: RMP60 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm ceramic styli
Sealtite kit

Part number: RMP60-NS-KIT

RMP60 probe kit

Includes: RMP60 probe
AA battery (2)
Tool kit

Part number: A-5742-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RMP60 upgrade kit

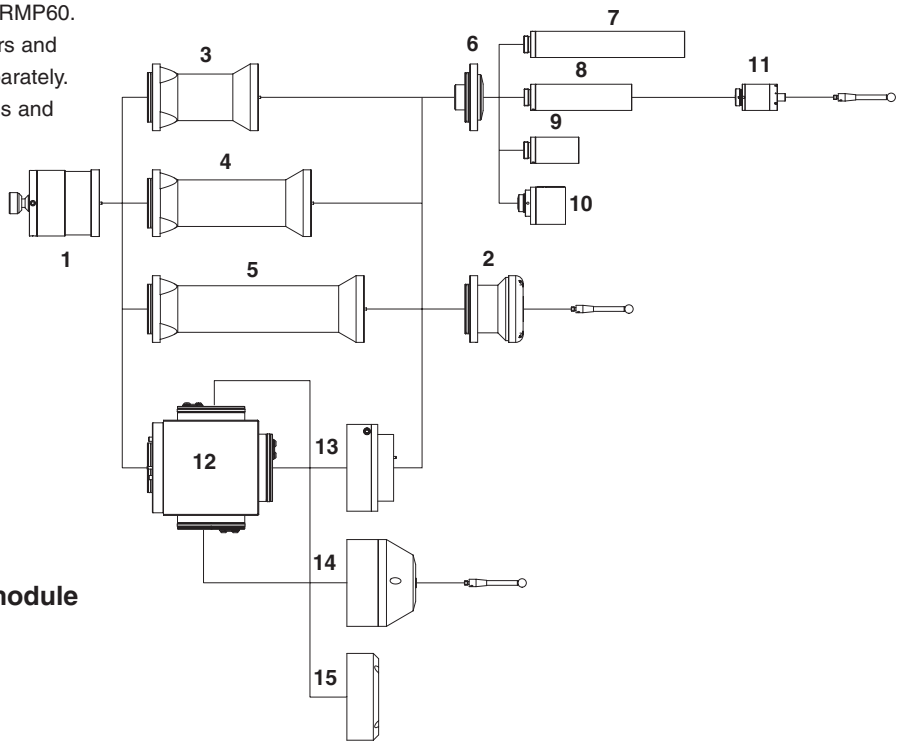
Current users of MP14, MP16 or MP18 radio probes may upgrade to RMP60. A complete working system (MP3 probe, transmission system, MI14 or MI16 interface and RMM antennas) must be exchanged.

Includes: RMP60 probe
RMI-Q radio machine interface
Receiver mounting bracket
Sealtite kit

Part number: RI-5742-0001

RMP60M

RMP60M is a modular version of the RMP60. The RMP60M, probe module, adaptors and extensions need to be purchased separately. RMP60 complies with FCC regulations and operates in the 2.4 GHz range.



1 – RMP60M transmission module

Part number: A-5742-1003

2 – RMP60M probe module

Part number: A-4038-1002

3 – RMP60M 100 mm extension

Part number: A-4038-1010

4 – RMP60M 150 mm extension

Part number: A-4038-1027

5 – RMP60M 200 mm extension

Part number: A-4038-1028

6 – RMP60M LP2 adaptor

Part number: A-4038-0212

7 – LPE3 150 mm extension

Part number: A-2063-7003

8 – LPE2 100 mm extension

Part number: A-2063-7002

9 – LPE1 50 mm extension

Part number: A-2063-7001

10 – MA4 90° adaptor

Part number: A-2063-7600

11 – LP2 probe assembly

Part number: A-2063-6098

12 – RMP60M 3-way adaptor

Part number: A-4113-0784

13 – RMP60M probe module adaptor

Part number: A-4113-0771

14 – MP3 probe

Part number: A-2053-5358

15 – Shorting cover

Part number: A-2053-6468

RMP60M upgrade kit

Current users of MP14, MP16 or MP18 radio probes may upgrade to RMP60M. A complete working system (probe, MI14 or MI16 interface and RMM antennas) must be exchanged.

Includes: RMP60M module
RMP60M probe module
RMI radio machine interface
Receiver mounting bracket
Sealtite kit

Part number: RI-5742-1003

RMP600

RMP600 is a radio transmission probe using strain gage technology. Measuring only 63 mm in diameter and 76 mm in length, with an omni-directional transmission distance of 15 m, it is ideal for use on all machine tools. RMP600 features an integrated probe module delivering exceptional robustness and generous overtravel. It delivers interference-free transmission through the use of FHSS (frequency hopping spread spectrum). RMP600 complies with FCC regulations and operates in the 2.4 GHz range.

RMP600 supports three methods of probe activation:

Radio-on The probe is turned on via an RF signal produced by the RMI-Q and initiated by an M code. The probe is turned off via an RF signal or the internal timer.

Spin-on The probe is turned on via an internal centrifugal switch. The probe is turned off via the centrifugal switch or the internal timer.

Switch-on The probe is turned on and off via a switch incorporated into the shank, activated when the probe is loaded into the spindle.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±15°
	Z:	11 mm (0.43 in)
Stylus trigger force	X and Y:	20 gf
	Z:	194 gf
Unidirectional repeatability	0.25 µm (0.00001 in)	

RMP600 retrofit kit

Includes: RMP600 probe
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm carbon fiber styli
Sealtite kit
Renishaw Inspection Plus software
Installation and application support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: RMP600-NS-S (Available at fixed price) Call for details

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RMP600 hardware only kit

Includes: RMP600 probe
RMI-Q radio machine interface
Receiver mounting bracket
50 mm and 100 mm carbon fiber styli
Sealtite kit

Part number: RMP600-NS-KIT

RMP600 probe kit

Includes: RMP600 probe
AA battery (2)
Tool kit

Part number: A-5312-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RMP600 upgrade kit

Current users of MP14, MP16 or MP18 radio probes may upgrade to RMP600. A complete working system (MP3 probe, transmission system, MI14 or MI16 interface and RMM antennas) must be exchanged.

Includes: RMP600 probe
RMI-Q radio machine interface
Receiver mounting bracket
Sealtite kit

Part number: RI-5312-0001

Shanks and Toolholders

Shanks for OMP60, OMP600, RMP60 and RMP600 (spin-on, optical-on, radio-on) systems

Part number	Description
M-2045-0068	CAT30
M-2045-0069	CAT40
M-2045-0138	CAT45
M-2045-0071	CAT50
M-2045-0292	CAT60
M-2045-0077	BT30
M-2045-0027	BT40
M-2045-0038	BT45
M-2045-0073	BT50
M-2045-0186	HSK A40
M-2045-0187	HSK A50
M-2045-0188	HSK A63
M-2045-0189	HSK A80
M-2045-0190	HSK A100
M-2045-0313	CAPTO C4
M-2045-0346	CAPTO C5
M-2045-0310	CAPTO C6
M-2045-0311	CAPTO C8
M-2045-0335	KM63
M-2045-1831591	KM63Y (Mazak)
A-2045-0243	½ in straight shank
A-2030-0252	1 in straight shank
A-2030-0211	25 mm straight shank

Calibration masters

Calibration tools

Part number	Description
M-2253-0954	CAT40
M-2253-0955	CAT50
M-2253-1562	BT30
M-2253-1263	BT40
M-2253-1557	BT50

Shanks for OMP40-2, OMP400, RMP40 and RMP400

Part number	Description
M-4071-0050	CAT30
M-4071-0058	CAT40
M-4071-0072	CAT50
M-4071-0049	BT30
M-4071-0057	BT40
M-4071-0071	BT50
M-4071-0048	ISO30 DIN69871
M-4071-0069	ISO40 DIN69871
M-4071-0044	HSK E25
M-4071-0055	HSK E32
M-4071-0054	HSK E40
M-4071-0045	HSK A32
M-4071-0046	HSK A40
M-4071-0047	HSK A50
M-4071-0129	HSK A63
M-4071-0141	CAPTO C4
M-4071-0066	CAPTO C5
M-4071-0067	CAPTO C6
M-4071-0065	KM63

OMP400 and RMP40 shank kits

CAT40 shank kit

Includes: CAT40 shank
OMP60/RMP60 shank adaptor

Part number: M-4071-0058-RI

BT40 shank kit

Includes: BT40 shank
OMP60/RMP60 shank adaptor

Part number: M-4071-0057-RI

Shanks for OLP40 and RLP40

Part number	Description
A-5625-1003	25 mm straight shank
A-5625-1004	½ in straight shank
A-5625-1007	1 in straight shank

ACS-1

The ACS-1 helps you to achieve maximum measurement accuracy on your machine tools by removing manual calibration steps. ACS-1 provides the user with a lockable datum face for accurate probe length calibration purposes. A domed calibration disc is fitted to a linear setting stage (plunger) with 10 mm (0.3937 in) of travel which can be locked in position using the locking lever. The unit comes with a magnetic base and a precision sphere which enables accurate probe stylus ball diameter calibration. The mechanical structure is extremely rugged to ensure the longevity of the mechanism.

ACS-1 kit (25 mm sphere)

Includes: ACS-1 unit
Carry case
Sphere and sphere box
C-spanner
Quick-start guide
Rustproof paper

Part number: A-6794-0200

ACS-1 kit (1 in sphere)

Includes: ACS-1 unit
Carry case
Sphere and sphere box
C-spanner
Quick-start guide
Rustproof paper

Part number: A-6794-0210

ACS-1 calibration cycle for machining centers with Fanuc controllers *

Supplied free of charge with ACS-1 purchase. The calibration cycle part number must be included on the order. This cycle is to be used alongside a compatible host Inspection Plus software package.

Part number: A-4012-2125 **Price:** FOC

** Support for additional controllers is being developed. Contact Renishaw to find out if your controller is now supported.*

Tool setting probes for machining centers

NC4 tool setter

NC4 is a non-contact tool setter and our most compact design. NC4 is available in fixed (with Blue laser and Integral Air Blast – IAB) or separate (with Red laser) configurations. NC4F (fixed) Blue laser systems are available in four different sizes and all configurations are connectorized. NC4S (separate) Red laser systems are user-configurable, operating between 500 mm and 5 m.

Laser	Repeatability	Minimum tool setting and breakage
NC4+ F115 Blue	±0.50 µm	0.03 µm
NC4+ F145 Blue	±0.50 µm	0.05 µm
NC4+ F230 Blue	±0.75 µm	0.10 µm
NC4+ F300 Blue	±0.75 µm	0.20 µm
NC4 S800 Red	±1.0 µm at 1 m separation	0.30 µm
NC4 S1500 Red		0.40 µm
NC4 S2000 Red		0.50 µm
NC4 S3000 Red		1.0 µm
NC4 S4000 Red		1.0 µm

NC4 Blue fixed system retrofit kits

Include: NC4 Blue fixed unit with 12.5 m cable
NCi-6 interface
Air regulator kit
Air blast solenoid kit
Steel braided conduit
Mounting plate
Tool setting software
Installation and application support

Part number: NC4-F115C-BLUE-S
Part number: NC4-F145C-BLUE-S
Part number: NC4-F230C-BLUE-S
Part number: NC4-F300C-BLUE-S

NC4 Red separate system retrofit kits

Include: NC4 Red separate unit with 12.5 m cable
NCi-6 interface
Air regulator kit
Steel braided conduit
Tool setting software
Installation and application support

Part number: NC4-S800-S
Part number: NC4-S1500-S
Part number: NC4-S2000-S
Part number: NC4-S3000-S
Part number: NC4-S5000-S

Note: When ordering a separate system retrofit kit, the customer must select an NC4 based on its operating range. In addition, the customer must select tool setting software based on the controller type. Brackets and an adjusting method (see following page) are also needed for NC4 separate systems. These are not included with NC4 separate systems and must be ordered additionally. Mounting brackets for various machines are continually developed. Contact Renishaw for the latest list of compatibility. Bracket installation is **not** included with the standard separate system retrofit price, this service can be quoted upon request.

NC4 Blue IAB fixed hardware kits

NC4+ F115/55 Blue

Separation 55 mm

Part number: NC4+-F115C-BLUE-KIT

NC4+ F145/85 Blue

Separation 85 mm

Part number: NC4+-F145C-BLUE-KIT

NC4+ F230/170 Blue

Separation 170 mm

Part number: NC4+-F230C-BLUE-KIT

NC4+ F300/240 Blue

Separation 240 mm

Part number: NC4+-F300C-BLUE-KIT

NC4 Red separate kits

NC4 S800 with NCi-6 kit

Separation 500 mm – 800 mm

Part number: A-4114-5060

NC4 S1500 with NCi-6 kit

Separation 800 mm – 1500 mm

Part number: A-4114-5065

NC4 S2000 with NCi-6 kit

Separation 1500 mm – 2000 mm

Part number: A-4114-5070

NC4 S3000 with NCi-6 kit

Separation 2000 mm – 3000 mm

Part number: A-4114-5075

NC4 S5000 with NCi-6 kit

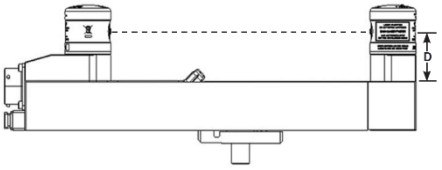
Separation 3000 mm – 5000 mm

Part number: A-4114-5080

NC4+ Blue IAB kits

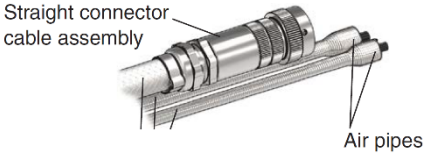
Select your kit according to the required size, beam height and cable connector as shown below.

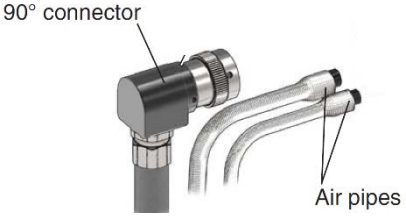
For more details, see the NC4 data sheet, Renishaw part number H-6270-8200.



D = Beam height (31 mm or 50 mm)

Type/Size	Beam height	Cable connector	Part number
NC4+ F115/55	31 mm	Straight	A-6435-3010
NC4+ F145/85	31 mm	Straight	A-6435-3210
NC4+ F230/170	31 mm	Straight	A-6435-3410
NC4+ F300/240	31 mm	Straight	A-6435-3610
NC4+ F115/55	31 mm	90 degrees	A-6435-3030
NC4+ F145/85	31 mm	90 degrees	A-6435-3230
NC4+ F230/170	31 mm	90 degrees	A-6435-3430
NC4+ F300/240	31 mm	90 degrees	A-6435-3630
NC4+ F115/55	50 mm	Straight	A-6435-3110
NC4+ F145/85	50 mm	Straight	A-6435-3310
NC4+ F230/170	50 mm	Straight	A-6435-3510
NC4+ F300/240	50 mm	Straight	A-6435-3710
NC4+ F115/55	50 mm	90 degrees	A-6435-3130
NC4+ F145/85	50 mm	90 degrees	A-6435-3330
NC4+ F230/170	50 mm	90 degrees	A-6435-3530
NC4+ F300/240	50 mm	90 degrees	A-6435-3730





Air blast solenoid kit

Included with all NC4F Blue IAB hardware kits and retrofit kits. Also available separately.

Part number: A-5299-2933

NC4 tool kit

Part number: A-4114-4110

NC4 air regulator kit (ilter/drier/regulator)

Part number: A-6435-4000

NCi-6 interface

Part number: A-6516-2000

NC4 air cap 0.10

Part number: A-6270-0310

NC4 air cap 0.18

Part number: A-6270-0315

NC4 air cap 0.20

Part number: A-6270-0320

NC4 air cap 0.40

Part number: A-6270-0335

NC4+ IAB air cap 0.40

Part number: A-6270-0340

NC4+ IAB air cap 0.50

Part number: A-6270-0350

NC4+ air cap 0.60

Part number: A-6270-0360

NC4+ Blue air cap 0.50

Part number: A-6756-0350

NC4 set-up tool

Part number: A-4114-8000

NC4S mounting hardware options

1. NC4 spacer plate – separate

Part number: A-4114-4400

2. NC4 adjuster pack – separate

Part number: A-4114-3100

Steel sheath conduit 14 mm OD × 1 m

For NC4F Blue IAB cable protection (GP9).

Part number: P-HO01-0010

Steel sheath conduit 24 mm OD × 1 m

For legacy NC4F IAB cable protection (GP18).

Part number: M-6270-0278

Steel sheath conduit 17 mm OD × 1 m

For NC4S cable protection (GP11).

Part number: P-HO01-0008

NC4F Blue 12.5 m cable with straight connector and 4 m GP9 sheathing

Part number: A-6270-0485

NC4F Blue 12.5 m cable with 90 degree connector and 4 m GP9 sheathing

Part number: A-6270-0495

Conduit gland GP9

Part number: A-6270-0383

Conduit gland GP18

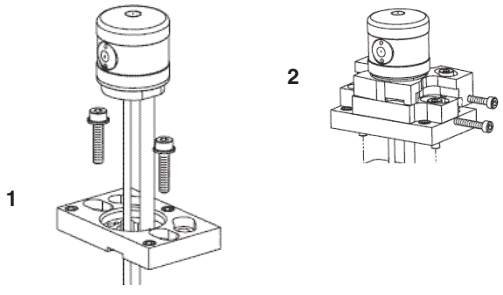
Part number: M-6270-0277

Conduit gland GP11

Part number: P-CA61-0063

NC4F IAB nozzle replacement kit

Part number: A-6270-0395



OTS

The OTS is a new optical transmission tool setter for vertical and horizontal machining centers. Modeled on the TS27R, OTS can set tool length and diameter of rotating tools and perform broken tool detection. OTS is available in two configurations – OTS ½ AA and OTS AA. OTS can be used with the OMI-2, OMI-2T or OMM-2/OSI interface. OMI-2T or OMM-2/OSI must be used if OTS is to be paired with another optical transmission probe.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±3.5 mm (0.14 in)
	+Z:	6 mm (0.23 in)
Stylus trigger force	133 gf – 245 gf	
Unidirectional repeatability	1.0 µm (0.00004 in)	

OTS ½ AA

OTS AA

OTS retrofit kit

Includes: OTS ½ AA or OTS AA probe
OMM-2
Receiver mounting bracket
OSI interface
Sealtite kit
Renishaw tool setting software
Installation and application support

Part number: OTS-S (½ AA configuration)
Part number: OTSAA-S (AA configuration)

Available at fixed price – call for details.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

OTS hardware only kit

Includes: OTS ½ AA probe or OTS AA probe
OMM-2
Receiver mounting bracket
OSI interface
Sealtite kit

Partnumber:OTS-KIT(½AA)
Part number: OTSAA-KIT (AA)

OTS ½ AA probe kit

Includes: OTS probe
½ AA battery (2)
Tool kit

Part number: A-5401-2001

OTS AA probe kit

Includes: OTS probe
AA battery (2)
Tool kit

Part number: A-5514-2001

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RTS

The RTS is a radio transmission tool setter for vertical and horizontal machining centers. Modeled after the OTS, RTS can set tool length and diameter of rotating tools and perform broken tool detection. RTS uses AA batteries (identical to RMP60). RTS can be used with either the RMI or the RMI-Q. The RMI-Q must be used if RTS is to be paired with another radio transmission probe.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±3.5 mm (0.14 in)
	Z:	6 mm (0.23 in)
Stylus trigger force	133 gf – 245 gf	
Unidirectional repeatability	1.0 µm (0.00004 in)	

RTS retro it kit

Includes: RTS AA probe
RMI-Q
Receiver mounting bracket
Sealtite kit
Renishaw tool setting software
Installation and application support

Part number: RTSAA-S

Available at fixed price – call for details.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RTS hardware only kit

Includes: RTS AA probe
RMI-Q
Receiver mounting bracket
Sealtite kit

Part number: RTSAA-KIT

RTS AA probe kit

Includes: RTS probe
AA battery (2)
Tool kit

Part number: A-5646-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

TS27R

The TS27R is a tool setter for vertical machining centers that enables the user to set both tool length and diameter of rotating tools, and to carry out broken tool detection.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±10°
	Z:	5.5 mm (0.21 in)
Stylus trigger force	133 gf – 245 gf	
Unidirectional repeatability	1.0 µm (0.00004 in)	

TS27R retrofit kit

Includes: TS27R probe
HSI interface
Sealtite kit
Renishaw toolsetting software
Installation and application support

Part number: TS27R-S

Available at fixed price – call for details.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

TS27R hardware only kit

Includes: TS27R probe
HSI interface
Sealtite kit

Part number: TS27R-KIT

TS27R probe, stylus, and holder kit

Part number: A-2008-0368

HSI interface

Part number: A-5500-1000

OTS, RTS or TS27R replacement parts and accessories

Tungsten carbide stylus (0.5 in disk)

Part number: A-2008-0382

Ceramic stylus (19 mm square)

Part number: A-2008-0384

Retrofit stylus kit

Includes: Break protection
Tether
Screws

Part number: A-5003-5171

Break protect link

Part number: A-5004-7443

Stylus holder with 4 set screws

Part number: A-2008-0389

Stylus holder set screws

Part number: P-SC13-0403

Crank for horizontal machining centers

Part number: A-2008-0448

108 mm riser

Part number: M-2008-0866-RI-KIT

TS27 stylus (0.5 in disk)

For TS27 probes shipped prior to July 1995.

Part number: M-5003-1033 (steel)
Part number: M-2008-0197 (ceramic)

TS34

TS34 is a hard-wired tool setter for vertical and horizontal machining centers that enables users to set both length and diameter of rotating tools and perform broken tool detection.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±9°
	Z:	4 mm (0.16 in)
Stylus trigger force	X and Y:	66 gf – 145 gf
	Z:	561 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

TS34 probe, stylus and holder kit

Rear exit

Part number: A-2197-2100

Side exit

Part number: A-2197-3000

HSI interface

Part number: A-5500-1000

LTS

The LTS (length tool setter) is a hard wired single-axis tool setter which provides users with the ability to set tool length, check for tool wear and tool breakage, and to compensate for machine thermal growth. The LTS is used in conjunction with LTS application software.

Sense directions	+Z
Stylus overtravel	Z: 7.5 mm (0.29 in)
Stylus trigger force	3N / 306 gf
Repeatability	0.75 µm (0.00003 in)

LTS kit

Includes: LTS
Ø26 mm contact pad

Part number: A-5475-0001

LTS with adaptor block

Includes: LTS
Ø26 mm contact pad
Adaptor

Part number: A-5475-0002

LTS software package

Part number: A-5475-8700

LTS replacement parts and accessories

LTS tool kit

Includes: Ferrules (× 3)
1.5 mm hex key (× 1)

Part number: A-5475-0060

LTS installation kit

Includes: M5 cap head screws (× 4)
Air pipe fitting (× 1)
Air flow regulator (× 1)
5 m × Ø6 mm air pipe

Part number: A-5475-0401

LTS Ø26 mm contact pad kit

Includes: Ø26 mm (Ø1.02 in) contact pad (tungsten carbide)
Tool kit

Part number: A-5475-0402

LTS air pipe

Part number: A-5475-0403

LTS adaptor block (for T-slot mounting)

Part number: A-5475-0404

LTS riser block 50 mm

Part number: A-5475-0405

LTS riser block 100 mm

Part number: A-5475-0406

LTS conduit bulkhead kit

Part number: A-5475-0407

LTS conduit extension kit 2 m

Part number: A-5475-0408

LTS conduit extension kit 5 m

Part number: A-5475-0409

Solenoid kit

Part number: A-5299-2933

TRS2

TRS2 is a cost-effective laser-based solution for high-speed broken tool detection. Working with the reflective properties of a rotating tool, TRS2 can detect broken tools at a distance of between 300 mm and 2 m, but optimized for use between 300 mm and 1 m. Toolwise™ Electronics makes TRS2 especially effective with tiny, easily broken tools down to 0.019 in (0.5 mm) diameter. TRS2 is suitable for solid profile tools including drills, taps, reamers and end mills.

TRS2 hardware kit

Includes: TRS2 laser system with integral interface
Tool kit
Air regulator kit
Sealtite kit
Basic mounting bracket (shown)
Renishaw TRS2 broken tool detection software

Part number: TRS2-KIT

TRS2 probe only

Includes: TRS2 laser system with integral interface

Part number: A-5450-0400

TRS2 retrofit kit

Includes: TRS2 laser system with integral interface
Tool kit
Air regulator kit
Sealtite kit
Basic mounting bracket (shown)
Renishaw TRS2 broken tool detection software
Installation and application support

Part number: TRS2-S

Available at fixed price – call for details.

Special pricing available for multiple systems.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

TRS2 air regulator kit (3 bowl)

Part number: A-5450-2000

TRS2 air ilter service kit (3 bowl)

Part number: M-3060-0933

TRS2 air ilter service kit (2 bowl)

Part number: P-FI01-S002

Sealtite conduit for TRS2

¼ in conduit, 1 m long. Includes one fitting.

Part number: RI-CF01-0001

TRS2 replacement air cap

Part number: A-5450-0440

TRS2 receiver lens

Part number: A-5450-0470

TRS2 sapphire glass window

Part number: A-5450-0460

Inspection probes for turning centers

OLP40

OLP40 is a compact optical transmission part probe, ideal for use on turning centers. OLP40's compact design features an integrated probe module delivering exceptional robustness and generous overtravel. Utilizing a revised state-of-the-art modulated optical transmission method, the system offers the highest level of resistance to light interference. The OLP40 probe is also backwards compatible with existing OMM/MI12 and OMI receivers. OLP40 supports two methods of probe activation – M code and spin-on.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	6 mm (0.24 in)
Stylus trigger force	X and Y:	41 gf – 80 gf
	Z:	540 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

OLP40 retrofit kit

Includes: OLP40 probe and transmission system
OMM-2
Receiver mounting bracket
OSI interface
30 mm stainless steel stylus (×2)
Sealtite kit
Renishaw lathe inspection software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: OLP40-NS-S

Available at fixed price – call for details.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to us before a retrofit order can be processed.

OLP40 hardware only kit

Includes: OLP40 probe and transmission system
OMM-2
Receiver mounting bracket
OSI interface
30 mm stainless steel stylus (×2)
Sealtite kit

Part number: OLP40-NS-KIT

OLP40 probe kit

Includes: OLP40 probe
½ AA battery (2)
Tool kit

Legacy

Part number: A-5625-0001

Modulated

Part number: A-5625-2001

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

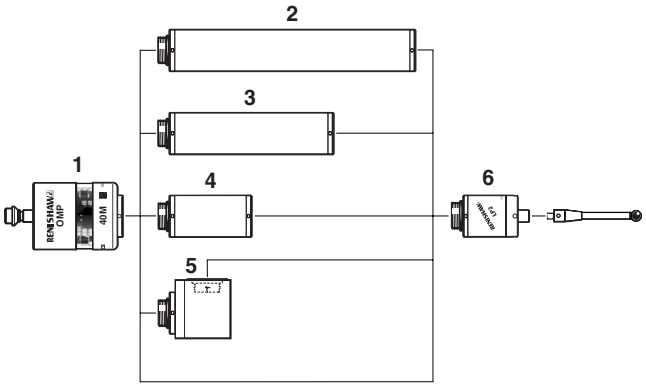
Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 meter long. Includes one fitting.

Part number: A-4113-0306

OMP40M

OMP40M is a modular version of the OLP40. The LP2 probe module, adaptors and extensions need to be purchased separately.



1 – OMP40M transmission module

Legacy

Part number: A-5626-0001

Modulated

Part number: A-5626-2001

2 – LPE3 extension 150 mm

Part number: A-2063-7003

3 – LPE2 extension 100 mm

Part number: A-2063-7002

4 – LPE1 extension 50 mm

Part number: A-2063-7001

5 – MA4 90° adaptor

Part number: A-2063-7600

6 – LP2 probe assembly

Part number: A-2063-6098

OMP40M retrofit kit

Includes: OMP40M transmission system
LP2 probe
OMM-2
Receiver mounting bracket
OSI interface
30 mm stainless steel stylus (× 2)
Sealtite kit
Renishaw lathe inspection software
Installation and applications support

Part number: OMP40M-NS-S

Available at fixed price – call for details.

OMP40M hardware only kit

Includes: OMP40 transmission system
LP2 probe
OMM-2
Receiver mounting bracket
OSI interface
30 mm stainless steel stylus (× 2)
Sealtite kit

Part number: OMP40M-NS-KIT

A shank is not included in the above kits. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

OMM-2 optical receiver

Part number: A-5492-0051

OMI-2 optical receiver/interface

Part number: A-5191-0049

OMI-2T optical receiver/interface

Part number: A-5439-0049

Receiver mounting bracket

Part number: A-2033-0830

OSI interface

Part number: A-5492-2000

Sealtite conduit for OMM-2, OMI-2 or OMI-2T

5/16 in conduit, 1 meter long. Includes one fitting.

Part number: A-4113-0306

RLP40

RLP40 is a compact radio transmission part probe, ideal for use on turning centers. RLP40's compact design features an integrated probe module delivering exceptional robustness and generous overtravel. RLP40 complies with FCC regulations and operates in the 2.4 Ghz range. RLP40 delivers interference-free transmission through the use of FHSS (frequency hopping spread spectrum).

RLP40 supports two methods of probe activation:

Radio-on The probe is turned on via an RF signal produced by the RMI-Q and initiated by an M code. The probe is turned off via an RF signal or the internal timer.

Spin-on The probe is turned on via an internal centrifugal switch. The probe is turned off via the centrifugal switch or the internal timer.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	6 mm (0.24 in)
Stylus trigger force	X and Y:	41 gf – 82 gf
	Z:	540 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

RLP40 retrofit kit

Includes: RLP40 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
30 mm stainless steel stylus (× 2)
Sealtite kit
Renishaw lathe inspection software
Installation and applications support

A shank is not included in this kit. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

Part number: RLP40-NS-S

Available at fixed price – call for details.

Note: The retrofit questionnaire at the end of this section must be filled out and returned to Renishaw before a retrofit order can be processed.

RLP40 hardware only kit

Includes: RLP40 probe and transmission system
RMI-Q radio machine interface
Receiver mounting bracket
30 mm stainless steel stylus (× 2)
Sealtite kit

Part number: RLP40-NS-KIT

RLP40 probe kit

Includes: RLP40 probe
½ AA battery (2)
Tool kit

Part number: A-5627-0001

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

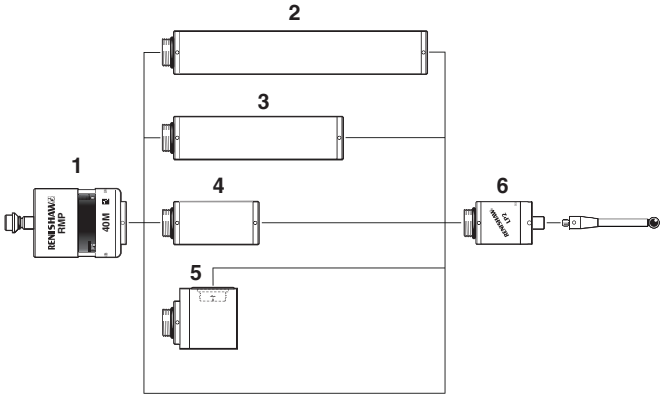
Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

RMP40M

RMP40M is a modular version of the RLP40. The LP2 probe module, adaptors and extensions need to be purchased separately.



1 – RMP40M transmission module

Part number: A-5628-0001

2 – LPE3 extension 150 mm

Part number: A-2063-7003

3 – LPE2 extension 100 mm

Part number: A-2063-7002

4 – LPE1 extension 50 mm

Part number: A-2063-7001

5 – MA4 90° adaptor

Part number: A-2063-7600

6 – LP2 probe assembly

Part number: A-2063-6098

RMP40M retrofit kit

Includes: RMP40M transmission system
LP2 probe
RMI-Q radio machine interface
Receiver mounting bracket
30 mm stainless steel stylus (× 2)
Sealtite kit
Renishaw lathe inspection software
Installation and applications support

Part number: RMP40M-NS-S

Available at fixed price – call for details.

RMP40M hardware only kit

Includes: RMP40 transmission system
LP2 probe
RMI-Q radio machine interface
Receiver mounting bracket
30 mm stainless steel stylus (× 2)
Sealtite kit

Part number: RMP40M-NS-KIT

A shank is not included in the above kits. See section entitled Shanks and Toolholders on page 2-17 for price and part number information.

RMI-Q radio machine interface

Part number: A-5687-0050

Receiver mounting bracket

Part number: A-2033-0830

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

LP2

The LP2 probe is used on CNC lathes for workpiece inspection and tool setting. It is also used in special applications where its small body makes it suitable for gauging workpiece features with restricted access.

The LP2 is universal and can be fitted to optical, inductive, hard-wired and radio transmission systems. An array of sockets and adaptors is available to support these applications. Please contact Renishaw for further details.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	6.5 mm (0.26 in)
Stylus trigger force	X and Y:	51 gf – 92 gf
	Z:	597 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

Includes: LP2 probe
2 C spanners
TK1 tool kit

Part number: A-2063-6098

LP2H

The LP2H probe is used on CNC lathes for workpiece inspection and tool setting. It is designed for heavier duty applications where machine vibration or heavy stylus arrangements may cause unexpected triggers.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±12.5°
	Z:	5 mm (0.20 in)
Stylus trigger force	X and Y:	204 gf – 408 gf
	Z:	3059 gf
Unidirectional repeatability	2.0 µm (0.00008 in)	

Includes: LP2H probe
2 C spanners
TK1 tool kit

Part number: A-2064-0002

LP2DD

The LP2DD probe is based on the LP2 design, but incorporates a revised diaphragm assembly. This probe is recommended for grinding machines and other installations where dust-filled coolant is abundant.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±15°
	Z:	6.5 mm (0.26 in)
Stylus trigger force	X and Y:	51 gf – 92 gf
	Z:	597 gf
Unidirectional repeatability	1.0 µm (0.00004 in)	

Includes: LP2DD probe
2 C spanners
TK1 tool kit

Part number: A-2063-8020

LP2/LP2DD replacement parts

LP2DD diaphragm replacement kit

An outer diaphragm replacement kit for the LP2DD.

Includes: Diaphragm
O ring

Part number: A-2063-8030

Chip deflector

This deflector is recommended if the LP2DD is subjected to continual exposure to hot chips.

Part number: M-2063-8003

C spanner

A C spanner is required for fitting an LP2 to your machine.

Part number: A-2063-7587

LP2 service kit (DK2)

Includes: Front cap
Metal eyelid
Spring
O ring

Part number: A-2063-7542

TK1 tool kit

Includes: Stylus tool
1.5 mm A/F hex key
2.0 mm A/F hex key
2.5 mm A/F hex key
3.0 mm A/F hex key
4.0 mm A/F hex key

Part number: A-2053-7531

LP2 accessories

FS1 adjustable female socket

Provides ±4° of angular rotation about the center line of the LP2. Supplied with 500 mm long cable, protective cover and adjusting screws.

Part number: A-2063-6697

FS2 fixed female socket

Designed for rigid mounting of an LP2. Supplied with 500 mm long cable and protective cover.

Part number: A-2063-5431

FS3 single axis adjustable holder

The socket pivots on two balls, this provides ±4° of pitch adjustment about the center line of the LP2. Supplied with 500 mm long cable, protective cover and adjusting screws.

Part number: A-2063-5308

MA4 90° adaptor

Part number: A-2063-7600

HSI interface

Part number: A-5500-1000

LPE1 extension

A 50 mm long extension which can be fitted between the LP2 and holder.

Part number: A-2063-7001

LPE2 extension

100 mm long.

Part number: A-2063-7002

LPE3 extension

150 mm long

Part number: A-2063-7003

LP2 straight shanks

LP2 straight shanks are fitted with FS2 socket assemblies to accommodate the LP2 probe. An HSI interface is also required.

LP2 0.75 in straight shank with FS2 and cable assembly

Part number: A-2063-8326

LP2 1 in straight shank with FS2 and cable assembly

Part number: A-2063-8328

LP2 22 mm straight shank with FS2 and cable assembly

Part number: A-2063-8366

MP250

MP250 is the next generation compact probe. Measuring just 25 mm in diameter and 40 mm in length, MP250 is identical in size to the popular LP2. MP250 uses RENGAGE™ strain gage sensing technology and delivers superior metrology performance. MP250 is aimed at the tool cutter grinder and special CNC lathe markets. MP250 is supported via hard-wired only and must be used with the HSI interface and FS sockets designed specifically for the MP250. MP250 is not suitable for use with inductive, optical or radio transmission.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	±13°
	Z:	6.5 mm (0.26 in)
Stylus trigger force	X and Y:	8 gf
	Z:	229 gf
Unidirectional repeatability *	0.25 µm (0.00001 in)	

* Based on 50 mm stylus length

MP250 probe kit

Includes: MP250 probe
Tool kit

Part number: A-5500-1600

MP250 accessories

FS10 adjustable female socket for MP250

Part number: A-5500-1710

FS20 fixed female socket for MP250

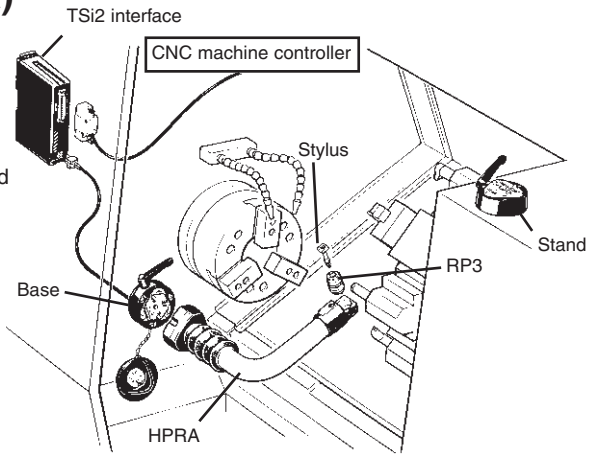
Part number: A-5500-1810

HSI-C interface for MP250

Part number: A-6527-1000

Tool setting for turning centers

High precision removable arm (HPRA)

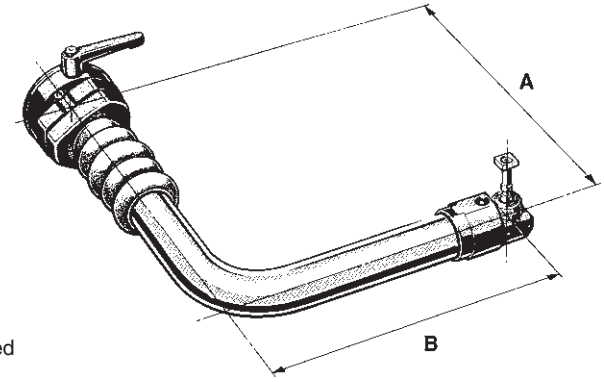


The HPRA is a 'plug-in', cost effective, precision tool setting system for use on CNC lathes. When needed, the arm is manually introduced to the machine envelope and held in place through the use of the machine resident HPRA base. The arm is locked in position through the duration of the tool setting cycle. After use, the arm is removed and stored on the HPRA storage stand.

Unidirectional repeatability max 2σ value:	5.0 µm (0.0002 in) for arms supporting 6 in to 15 in chucks 8.0 µm (0.0003 in) for arms supporting 18 in to 24 in chucks
Max arm dimensions:	A=580 mm B=450 mm
Min arm dimensions:	A=250 mm B=211 mm

HPRA is available to fit most common chuck sizes from 6 in to 24 in. Each HPRA standard kit (see below) is supplied complete with:

- RP3 probe (A-2197-0049)
- 90° probe holder
- TSi2 interface (A-2176-0010)
- HPRA storage stand (A-2176-0019)



Standard kits

Part number: See below

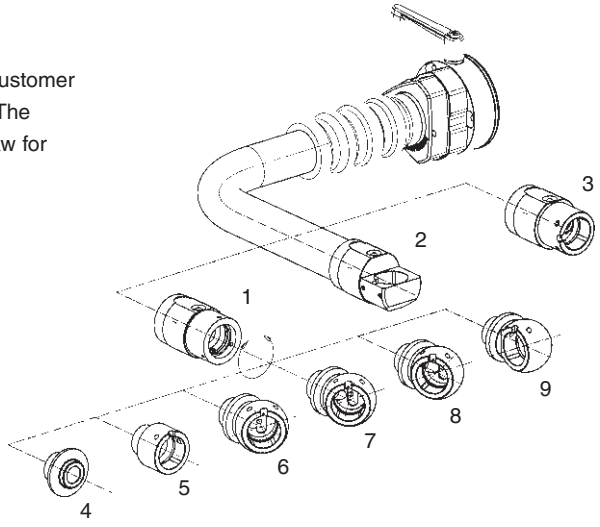
* A stylus assembly and base (rear exit or side exit) are not included and must be ordered separately.

Part description	Part number	A-dimension	B-dimension
HPRA 6 in chuck with RP3 kit	A-2176-0883	250	211
HPRA 8 in chuck with RP3 kit	A-2176-0884	280	241
HPRA 10 in chuck with RP3 kit	A-2176-0885	325	290
HPRA 12 in chuck with RP3 kit	A-2176-0886	355	290
HPRA 15 in chuck with RP3 kit	A-2176-0887	455	335
HPRA 18 in chuck with RP3 kit	A-2176-0888	510	375
HPRA 24 in chuck with RP3 kit	A-2176-0889	580	450

Custom kits

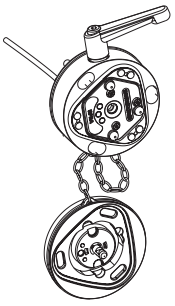
The HPRA can also be designed for specific applications. The customer must specify arm length, probe holder, stylus configuration etc. The items below depict some of the options. Please contact Renishaw for pricing.

1	A-2176-0268	PCB/LED housing
2	A-2176-0018	90° holder fixed
3	A-2176-0257	I/L holder fixed
4	A-2048-0523	LP2 adaptor
5	A-2176-1291	I/L adj RP3 holder
6	A-2176-1290	30° adj RP3 holder
7	A-2176-0269	45° adj RP3 holder
8	A-2176-1289	60° adj RP3 holder
9	A-2176-1288	90° adj RP3 holder



HPRA bases

The HPRA base is designed to provide a repeatable location for fixing the HPRA arm during tool setting cycles. The base is designed to stay resident within the machine and is supplied with a cover to protect the unit from coolant and debris when the arm is not in use. HPRA bases are available in rear and side exit configurations and are supplied with 3 meters of cable.

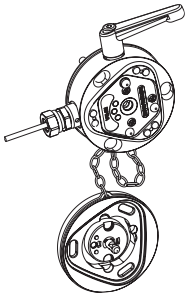


HPRA rear exit base

Part number: A-2176-0025

HPRA side exit base

Part number: A-2176-0187



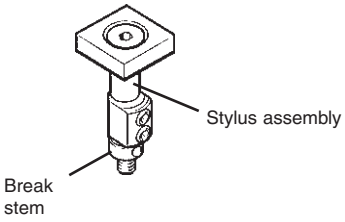
HPRA storage stand

Part number: A-2176-0019

HPRA/HPPA/HPMA stylus kits

There are six primary configurations of styli to support HPRA. Each is designed to be compatible with standard sizes of block tooling ranging from 5/8 in to 2 in. Each stylus kit is supplied complete with:

- 15 × 15 × 4 stylus assembly
- Break stem
- Stylus extension/adaptor



Part number: A-2197-0157 (16 mm tooling)
Part number: A-2197-0158 (20 mm tooling)
Part number: A-2197-0159 (25 mm tooling)
Part number: A-2197-0160 (32 mm tooling)
Part number: A-2197-0161 (40 mm tooling)
Part number: A-2197-0162 (50 mm tooling)

HPRA/HPPA/HPMA break stems

Part number: A-5004-7624 (16 mm and 20 mm tooling)
Part number: A-5004-6723 (25 mm to 50 mm tooling)

HPRA/HPPA/HPMA break stem tool kits

Contain break stem and hex wrenches.

Part number: A-2176-0639 (16 mm to 20 mm tooling)
Part number: A-2176-0636 (25 mm to 50 mm tooling)

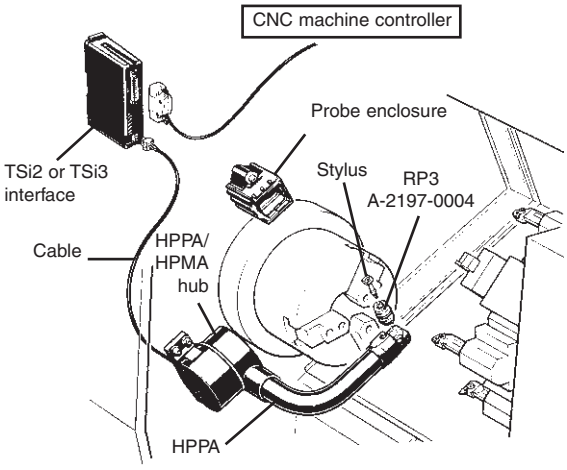
High precision pull-down arm (HPPA)

High precision motorized arm (HPMA)

The HPPA is a manual 'pull-down / push-up' tool setting system for use on CNC lathes. The HPMA is an 'automatic' servo driven system. Both products are designed to permanently reside in the machine envelope.

When needed, the HPPA is manually 'pulled-down' into position. After use, the arm is 'pushed-up' away from the cutting volume. HPMA requires the use of CNC M codes to drive the arm to its active and stowed positions.

All HPPA and HPMA systems are supplied with an enclosure to protect the probe and stylus assembly when not in use. HPPA and HPMA hubs are available in both R/E (rear exit) and S/E (side exit) configurations. S/E hubs are supplied with a fixed 5 m cable. **R/E hubs are supplied with a bulkhead connector and require the purchase of a separate cable.**



Specifications

Unidirectional repeatability

max 2σ value in machine XZ axis:	5.0 µm (0.0002 in) for arms supporting 6 in to 15 in chucks 8.0 µm (0.0003 in) for arms supporting 18 in to 24 in chucks
HPPA max arm dimensions:	A=555 mm B=458 mm
HPPA min arm dimensions:	A=250 mm B=219 mm
HPMA max arm dimensions:	A=555 mm B=458 mm
HPMA min arm dimensions:	A=250 mm B=219 mm

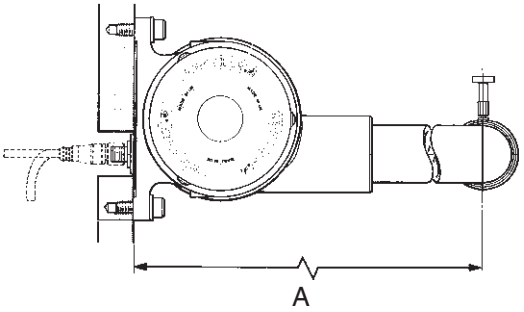
HPPA and HPMA are available to fit most common chuck sizes from 6 in to 24 in. Each 'standard' kit (see below) is supplied complete with:

- Arm
- HPPA or HPMA hub
- RP3 probe (A-2197-0049)
- 90° probe holder
- TSi2 interface for HPPA (A-2176-0010)
- TSi3 interface for HPMA (A-2181-0465)
- Probe enclosure (A-2275-0098)
- Cable (supplied with S/E systems only, **purchase separately for R/E systems**)

HPPA standard kits

Part number: See below

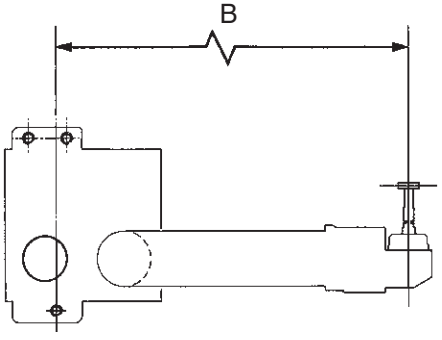
Part description	Part number	A-dimension	B-dimension
HPPA 6 in R/E with RP3 kit	A-2275-0181	250	219
HPPA 8 in R/E with RP3 kit	A-2275-0182	286	249
HPPA 10 in R/E with RP3 kit	A-2275-0183	335	298
HPPA 12 in R/E with RP3 kit	A-2275-0184	368	298
HPPA 15 in R/E with RP3 kit	A-2275-0185	400	343
HPPA 18 in R/E with RP3 kit	A-2275-0186	469	383
HPPA 24 in R/E with RP3 kit	A-2275-0187	555	458
HPPA 6 in S/E with RP3 kit	A-2275-0188	250	219
HPPA 8 in S/E with RP3 kit	A-2275-0189	286	249
HPPA 10 in S/E with RP3 kit	A-2275-0190	335	298
HPPA 12 in S/E with RP3 kit	A-2275-0191	368	298
HPPA 15 in S/E with RP3 kit	A-2275-0192	400	343
HPPA 18 in S/E with RP3 kit	A-2275-0193	469	383
HPPA 24 in S/E with RP3 kit	A-2275-0194	555	458



HPMA standard kits

Part number: See below

Part description	Part number	A-dimension	B-dimension
HPMA 6 in R/E with RP3 kit	A-2181-0645	250	219
HPMA 8 in R/E with RP3 kit	A-2181-0646	286	249
HPMA 10 in R/E with RP3 kit	A-2181-0647	335	298
HPMA 12 in R/E with RP3 kit	A-2181-0648	368	298
HPMA 15 in R/E with RP3 kit	A-2181-0649	400	343
HPMA 18 in R/E with RP3 kit	A-2181-0650	469	383
HPMA 24 in R/E with RP3 kit	A-2181-0651	555	458
HPMA 6 in S/E with RP3 kit	A-2181-0652	250	219
HPMA 8 in S/E with RP3 kit	A-2181-0653	286	249
HPMA 10 in S/E with RP3 kit	A-2181-0654	355	298
HPMA 12 in S/E with RP3 kit	A-2181-0655	368	298
HPMA 15 in S/E with RP3 kit	A-2181-0656	400	343
HPMA 18 in S/E with RP3 kit	A-2181-0657	469	383
HPMA 24 in S/E with RP3 kit	A-2181-0658	555	458

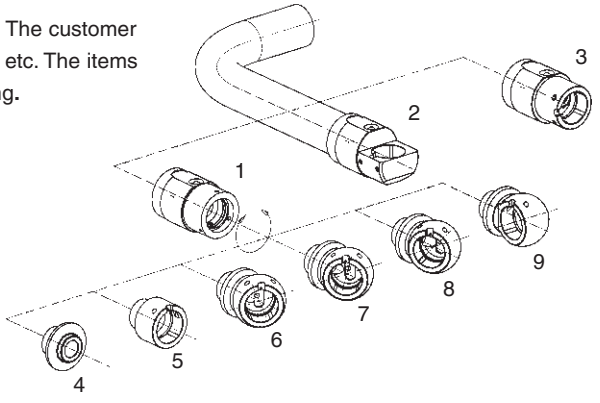


* A stylus assembly is not included and must be ordered separately. In addition HPPA and HPMA R/E systems require the separate purchase of a cable.

Custom kits

The HPPA and HPMA can also be designed for specific applications. The customer must specify arm length, probe holder, stylus configuration, hub type etc. The items below depict some of the options. Please contact Renishaw for pricing.

1	A-2176-0268	PCB/LED housing
2	A-2176-0018	90° holder fixed
3	A-2176-0257	I/L holder fixed
4	A-2048-0523	LP2 adaptor
5	A-2176-1291	I/L adj RP3 holder
6	A-2176-1290	30° adj RP3 holder
7	A-2176-0269	45° adj RP3 holder
8	A-2176-1289	60° adj RP3 holder
9	A-2176-1288	90° adj RP3 holder



HPPA cables

The HPPA R/E systems require the use of one of the cables below:

Part number: P-CA82-1010 (2 meters)
Part number: P-CA82-1009 (5 meters)
Part number: P-CA82-1011 (10 meters)

HPMA cables

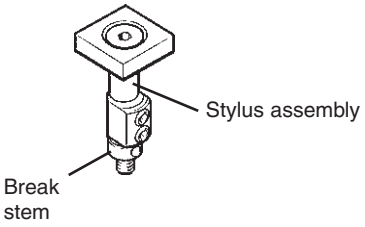
The HPMA R/E systems require the use of one of the cables below:

Part number: A-2181-1080 (2 meters)
Part number: A-2181-1085 (5 meters)
Part number: A-2181-1090 (10 meters)

HPRA/HPPA/HPMA stylus kits

There are six primary configurations of styli to support HPPA and HPMA. Each is designed to be compatible with standard sizes of block tooling ranging from 5/8 in to 2 in. Each stylus kit is supplied complete with:

- 15 × 15 × 4 stylus assembly
- Break stem
- Stylus extension/adaptor



Part number: A-2197-0157 (16 mm tooling)
Part number: A-2197-0158 (20 mm tooling)
Part number: A-2197-0159 (25 mm tooling)
Part number: A-2197-0160 (32 mm tooling)
Part number: A-2197-0161 (40 mm tooling)
Part number: A-2197-0162 (50 mm tooling)

HPRA/HPPA/HPMA M4 break stems

Part number: A-5004-7624 (16 mm and 20 mm tooling)
Part number: A-5004-6723 (25 mm to 50 mm tooling)
Part number: A-5004-7620 (Mori Seiki)

HPRA/HPPA/HPMA M4 break stem tool kits

Contain break stem and hex wrenches.

Part number: A-2176-0639 (16 mm to 20 mm tooling)
Part number: A-2176-0636 (25 mm to 50 mm tooling)

Legacy HPA stylus kits

TS20 replacement stylus kit

Includes stylus 10 × 10 × 4, break protect link, adaptor and screw.

Part number: A-2008-0601 (25 mm tooling)
Part number: A-2008-0602 (32 mm tooling)
Part number: A-2008-0603 (40 mm tooling)

TS20 break protect link

Part number: A-5004-7616 (25 mm tooling)
Part number: A-5004-7618 (32 mm tooling)
Part number: A-5004-7619 (40 mm tooling)

APC products

The automatic probe cover (APC) is a tool setting probe that features a pneumatically-operated protection cover for lathes and multi-tasking machines. The APC is typically used when the probe is mounted in a harsh environment; for example, where exposed to large pieces of flying swarf, or long strands of swarf wrapping around the stylus that can damage the probe when pulled away. The pneumatically-operated cover will protect the probe's stylus and allow it to operate in this hazardous environment.

The APC features an "air bleed" function. "Air bleed" is where air flows through the APC mechanism at a constant rate over the stylus cube when the APC cover is extended or retracted to help prevent build-up of contamination on the stylus cube.

The APC also features an air blast port. The customer can supply, fit and control an air blast pipe to suit their requirements.

Sense directions	±X, ±Y, +Z	
Stylus overtravel	X and Y:	5 mm (0.20 in)
	Z:	5 mm (0.20 in)
Stylus trigger force	X and Y:	50.2 gf to 92.2 gf
	Z:	692.8 gf
Unidirectional repeatability *	1.5 µm (0.000059 in)	

APCA-45

With air extension and air retraction.

Part number: A-6596-0001

APCS-45

With air extension and spring retraction.

Part number: A-6596-0002

HSI interface

Part number: A-5500-1000

HSI-C interface

Part number: A-6527-1000

Cables

5 meter long cable.

Part number: A-6596-0277

10 meter long cable.

Part number: A-6596-0278

25 meter long cable.

Part number: A-6596-0279

Stylus

Part number: A-6560-7584

Nose cone

Part number: A-6596-0057

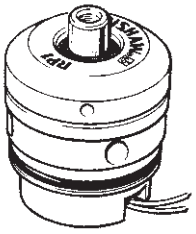
RP1, RP2 and RP3 tool setting probes

The RP1, RP2 and RP3 probes are suitable for OEM installation into purpose-built holders, or for use with Renishaw's automatic or manual tool setting arms.

RP1 – Tool setting/inspection probe and tool kit

For use on OEM installation into purpose-built holders.

Part number: A-2154-0007



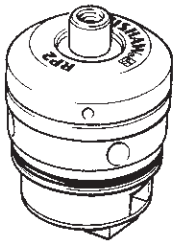
RP1 DD – RP1 double diaphragm version and tool kit

For use on OEM installation into purpose-built holders.

Part number: A-2154-0008

RP2 – Probe for tool setting arm (TSA) only

Part number: A-2116-0149

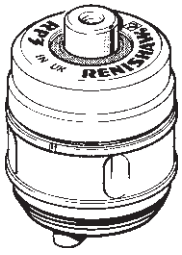


RP2DD – RP2 double diaphragm version for TSA only

Part number: A-2116-0150

RP3 – Probe for HPRA, HPPA and HPMA arms

Part number: A-2197-0049



Interfaces

OSI interface

The OSI interface is required for use with Renishaw optical probes using Modulated transmission. The OSI works exclusively with the OMM-2 receiver.

Part number: A-5492-2000

HSI interface

The HSI interface is required for use with Renishaw's hard-wired probes (LP2 variants, TS27R, TS34, MP250 and APCA/APCS). The HSI converts signals received from the probe into an acceptable form for the CNC machine control. The HSI has solid state relay output.

Part number: A-5500-1000

HSI-C interface

The HSI-C processes signals from RENGAGE (MP250) or standard hard-wired probes and converts them into voltage-free solid-state relay (SSR) outputs, which are then transmitted to the CNC machine controller. The HSI-C enables the user to select a suitable level of immunity to false triggering for the connected probe, caused by machine vibrations or accelerations.

Part number: A-6527-1000

NCi-6 interface

The NCi-6 interface is required for use with Renishaw non-contact tool setting systems. The interface converts probe signals into an acceptable form for the CNC machine control. This interface has solid state relay outputs.

Part number: A-6516-2000

Receivers and interfaces

OMI-2 and OMI-2T are optical receivers that transmit signals between the probe and CNC control. All systems offer visual indicators of probe status, start signal status, battery condition and error condition.

OMI-2

OMI-2 offers increased resistance to light interference and is exclusively compatible with Renishaw optical transmission systems operating in Modulated transmission mode (OMP60, OMP40-2, OMP400, OMP600 and OLP40).

Part number: A-5191-0049 (8 m cable)

Part number: A-5191-0050 (15 m cable)

OMI-2T

OMI-2T is identical to the OMI-2 and is the exclusive interface supporting the twin probe system. OMI-2T is capable of communicating with multiple optical probes. CNC must have supporting M codes. This interface should be used when combining an OTS with an OMP60, OMP40-2, OMP600 or OMP400.

Part number: A-5439-0049 (8 m cable)

Part number: A-5439-0050 (15 m cable)

OMM-2 optical machine module

The OMM-2 receiver is required for use with Renishaw optical probes using Modulated transmission. The OMM-2 works exclusively with the OSI. OMM-2 is capable of communicating with multiple optical probes.

Part number: A-5492-0051 (25 m cable)

RMI-Q radio machine interface

RMI-Q is identical to RMI and is the exclusive interface supporting multiple (up to four) probe systems. RMI-Q is capable of communicating with multiple radio probes. CNC must have supporting M codes. This interface should be used with the RTS, RMP40, RMP60, RMP600, RMP400 or RLP40.

Side exit

Part number: A-5687-0049 (8m cable)
Part number: A-5687-0050 (15 m cable)

Rear exit

Part number: A-5687-0059 (8 m cable)
Part number: A-5687-0060 (15 m cable)

RMI-Q accessories

RMI-Q 30 m replacement cable

Part number: A-5687-0303

RMI-Q 50 m replacement cable

Part number: A-5687-0304

RMI-Q antenna cover

Part number: A-5687-0305

Additional items for all optical and radio receivers

Sealtite conduit

5/16 in conduit, 1 m long. Includes one fitting.

Part number: A-4113-0306

Receiver mounting bracket

Part number: A-2033-0830

Lathe tool setting arm interfaces

There are two primary configurations of interfaces supporting lathe arms. The TSi2, TSi3 and TSi3-P interfaces deliver OCT (active high) output for probe status and arm positions, while the TSi2-C, TSi3-C and TSi3-CP interfaces deliver solid state relay (SSR) outputs for probe status and arm positions. The TSi2 interfaces support the HPRA and HPPA lathe arms. The TSi3 interfaces support the HPMA and HPGA lathe arms. When replacing TSi units, make sure to order the correct version.

TSi2

Part number: A-2176-0010

TSi2-C

Part number: A-2176-1152

TSi3

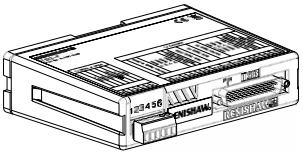
Part number: A-2181-0465

TSi3-C

Part number: A-2181-2239

TSi3-P

Part number: A-2181-5200



TSi3-CP

Part Number: A-2181-5300

Machine tool software

Macro based programming

Renishaw probing and tool setting software is a set of macros that control probing motion and data manipulation for a number of routines with input of a few parameters. Some capabilities may vary by specific software package and individual controller. All software is supplied on USB with electronic user's guide.

Many versions of Inspection Plus now support **SupaTouch** and **GoProbe**. **SupaTouch** is an optimization routine. It is an easy-to-use program that intelligently optimizes on-machine probing cycles, leading to a cycle time reduction of up to 60% on CNC machine tools. **GoProbe** makes your Renishaw probing system quick and easy-to-use. GoProbe provides a simplified user interface with easy-to-use probing cycles. It uses a Smartphone app to deliver a simple yet powerful manufacturing solution.

See data sheet H-2000-2298 for more details on Renishaw macro software, including support for SupaTouch, GoProbe, Set and Inspect and Reporter (a MyRenishaw account is required to download this data sheet).

Inspection Plus software for machining centers

Available measurement cycles include:

- X or Y or Z single surface measure
- Any angle web/pocket
- 3 or 4 point bore/boss
- Internal/external corner
- 4th or 5th axis measure
- Feature to feature measure

Description	Part number
Brother 32A/A0000 (post June 2002)	A-4012-0908
Brother 32B/B00/32C/C00	A-4012-1028
DMG Mori (Fanuc/Meldas)	A-4012-0936
Fagor 8060/8065/8070	A-4016-0071
Fanuc 0-32	A-4012-0516
Haas	A-4012-0880
Mazak M32/M Plus/Fusion	A-4013-0023
Mazak Smooth/Matrix/Nexus/Smart	A-4013-0112
Mitsubishi Meldas	A-4012-0516
Okuma OSP/E100-300/U100	A-4016-1035
Siemens 810D/828D/840D	A-4014-0356
Toshiba Tosnuc (888M/999M)	A-4012-0949

Inspection Plus software for machining centers using strain gage probes

Available measurement cycles include:

- X or Y or Z single surface measure
- XYZ vector measure
- Any angle web/pocket
- 3 or 4 point bore/boss
- Internal/external corner
- 4th or 5th axis measure
- Feature to feature measure

Description	Part number
Haas	A-4012-0890
Mazak Fusion	A-4013-0040
Yasnac I80, MX3, J50, J300	A-4014-0104

Tool setting software for machining centers

Renishaw tool setting software allows you to set tool length and diameter offsets for single point and multiple point tools, perform in-cycle broken tool detection and manual or automatic (programmed) positioning.

Contact tool setting

Description	Part number
Brother 32A/A00 (post June 2002)/32B/B00/32C/C00	A-4012-1007
DMG Mori (Fanuc/Meldas)	A-4012-1555
Fagor 8060/8065/8070	A-4016-0078
Fanuc 0-32	A-4012-0584
Haas	A-4012-0886
Mazak 640M, M32, M+	A-4013-0036
Mazak Smooth/Matrix/Nexus/Smart	A-4013-0133
Mitsubishi Meldas	A-4012-0584
Okuma OSP/E100/P100/P200/P300/U100	A-4016-1039
Okuma OSP/E100/P100/P200/P300/U100 (HMC)	A-4016-1071
Siemens 810/840D (Ver 5 and above)	A-4014-0396

Non-contact tool setting

Description	Part number
Brother 32A/A00 (post June 2002)	A-4012-0904
Brother 32B/B00/32C/C00	A-4012-1035
DMG Mori (Fanuc/Meldas)	A-4012-0953
Fanuc 0-32	A-4012-0820
Haas	A-4012-0895
Mazak INT E/I/J Smooth/Matrix/Nexus/Smart	A-4013-0123
Mazak Smooth/Matrix	A-4013-0119
Mitsubishi Meldas	A-4012-0820
Okuma OSP/E100M/P100M/200M/P300M/U100M	A-4016-1051
Siemens 810/840D/828D	A-4014-0401

See data sheet H-2000-2298 for more details on Renishaw macro software (a MyRenishaw account is required to download this datasheet).

Inspection software for turning centers

Renishaw's Inspection software for turning centers offers macros for:

- single-point (radial) measurement
- two-point (diameter) measurement
- rib/groove measurement
- single Z-surface measurement

It can update tool offsets and work offsets. It has an upper tolerance band which can be set for no offset correction. On completion of each measurement cycle it is possible to print out the results.

Description	Part number
Fanuc 0-32	A-4012-0541
Haas	A-4012-0874
Mazak (QTN) T-Plus/Fusion/640T	A-4013-0071
Mazak (QTN) Smooth/Matrix/Nexus/Smart	A-4013-0137
Siemens 810D/840D	A-4014-0137

Inspection software for multi-axis turning centers

- horizontal and vertical head orientations
- X, Y and Z single surface measure
- bore/boss
- web/pocket
- C-axis find

Description	Part number
DMG Mori MT/NT (Fanuc)	A-4012-0834
DMG Mori Y axis (Fanuc)	A-4012-1301
Doosan MX (Fanuc)	A-4012-1016
Doosan SMX (Fanuc)	A-4012-1511
Fanuc/Meldas Y axis	A-4012-1092
Haas Y axis	A-4012-1309
Mazak E-series Fusion	A-4013-0083
Mazak Mark IV and E-series Matrix	A-4013-0106
Nakamura Super NX (Fanuc)	A-4012-1074
Okuma OSP	A-4016-1056

Tool setting software for turning centers

The Renishaw tool setting software for turning centers sets tool length and/or diameter for static and powered tools. It has manual or automatic (programmed) positioning capability.

Description	Part number
Fanuc	A-4012-0779
Fanuc (3 axis)	A-4012-0745
Haas	A-4012-0877
Mitsubishi Meldas	A-4013-0254
Mitsubishi Meldas (3 axis)	A-4013-0250
Siemens 810D/828D/840D)	A-4014-0130

See data sheet H-2000-2298 for more details on Renishaw macro software (a MyRenishaw account is required to download this datasheet).

AxiSet™ Check-Up

Compatible with common formats of 5-axis machines, AxiSet™ Check-Up provides machine users with a fast and accurate method for determining rotary axis pivot points. The system is comprised of macro software, dedicated calibration artifact and PC-based data analysis software. Performance analysis is reported graphically via Microsoft® Excel®, compared against user-defined tolerances and stored for historical comparison.

The solutions defined below are compatible with 5-axis table-table machines. New solutions are being developed. Contact Renishaw for the latest list of compatibility. Each solution includes:

- CNC specific macro
- Artifact with magnetic base
- PC-based data analysis software

AxiSet™ Check-Up Mazak Variaxis

Part number: A-5642-1000

AxiSet™ Check-Up Fanuc (Table-Table)

Part number: A-5642-1120

AxiSet™ Check-Up Mori Seiki NMV NMH

Part number: A-5642-1400

AxiSet™ Check-Up Siemens (Table-Table)

Part number: A-5642-1500

AxiSet™ Check-Up Mazak Mark IV

Part number: A-5642-1005

AxiSet™ Check-Up Mazak eV/eH

Part number: A-5642-1009

AxiSet™ Check-Up Hurco Winmax (Table-Table)

Part number: A-5642-1105

AxiSet™ Check-Up Haas

Part number: A-5642-1600

AxiSet™ Check-Up Mori Seiki NT

Part number: A-5642-1405

AxiSet™ Check-Up Siemens (Head-Head)

Part number: A-5642-1515

AxiSet™ Check-Up app

The new AxiSet Check-Up™ app now runs on Windows 10 (included in all kits). It is available to customers who use the spreadsheet version and would like to upgrade. The app provides a detailed graphical representation of the measurement data produced by the AxiSet Check-Up™ macro software and has been designed to provide a look and feel consistent with the Reporter app.

Part number: A-5642-3001

AxiSet Check-Up™ app 90-day trial

Part number: A-5642-3111

Off-line programming

Productivity+™ is a software module designed to simplify the process of integrating probing cycles into the CNC machining program.

Productivity+™:

- Imports the native CAD model
- Creates and edits probing programs
- Allows simulation of inspection routines in a virtual environment
- Requires no detailed knowledge of macro codes
- Is compatible with many popular controls
- Multi-axis machining center support
- Perpetual software maintenance

Productivity+™ Active Editor Pro

Includes: A-4007-1400-USB
CS-SOF-SW-02-1400

Part number: A-4007-1400

Productivity+™ post processors

Productivity+™ is supplied with one post processor per purchased seat (select from the list below).

Control	Part number
Brother	A-4007-5900
Fanuc Macro B	A-4007-5100
Haas	A-4007-5200
Heidenhain i530	A-4007-6000
Heidenhain 426/430	A-4007-6900
Heidenhain 6xx	A-4007-7200
Hitachi Seicos	A-4007-5300
Hurco Winmax	A-4007-6800
Makino	A-4007-5400
Mazak	A-4007-5500
Mazak Integrex	A-4007-7100
Mitsubishi Meldas	A-4007-5600
Mori Seiki	A-4007-6600
Okuma	A-4007-6300
Siemens 840D/810D	A-4007-6700
Yasnac	A-4007-5700

Productivity+™ CAD importers

Productivity+™ comes with three CAD importers as standard: IGES, STEP and Parasolid®. Other CAD importers are available (select from the list below).

CAD system	Part number
Pro-E	CS-SOF-SW-02-0007
CATIA	CS-SOF-SW-02-0008
UG/NX	CS-SOF-SW-02-0009
ACIS	CS-SOF-SW-02-0010
SolidWorks®	CS-SOF-SW-02-0011
Inventor™	CS-SOF-SW-02-0012
All of the above	CS-SOF-SW-02-0005

Productivity+™ Active Editor Pro 90-day trial

Part number: A-4007-8999

RENISHAW
apply innovation™

Gauging systems

EQUATOR™

the versatile gauge™

The Renishaw Equator™ is a versatile alternative to custom gauging, offering inspection of an unprecedented variety of manufactured parts.

Fast, repeatable and versatile

The Equator™ system consists of a highly repeatable, "parallel kinematic" structure machine coupled with a high-power, multi-axis universal controller and digital servo power amplifier. The resultant system is capable of high-speed, comparative gauging for inspection of high-volume manufactured parts, directly on the shop floor. Additionally, the optimized ratio of working envelope (300 mm × 300 mm × 300 mm*) to machine footprint (~ 570 mm × 500 mm), means Equator™ can be set to work in even the most crowded of factory spaces. The lightweight machine, weighing just 55 lbs, requires just single phase power and needs no costly air supply.

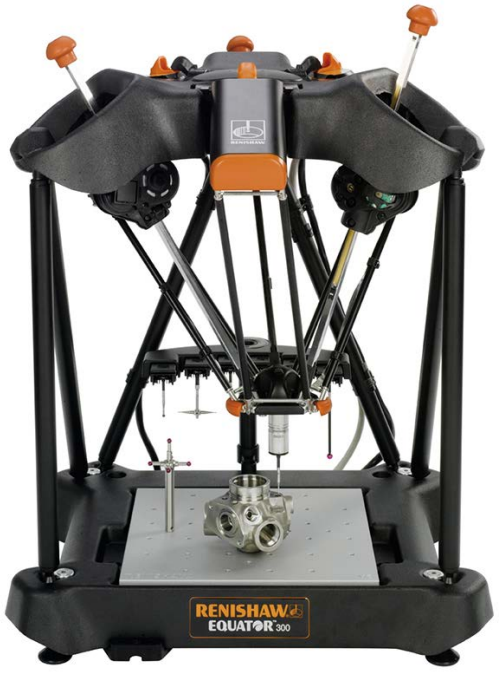
Re-configuration of the gauging system to cater for part design changes, or to measure new parts, is possible in a fraction of the time it would take with conventional custom gauging. An operator can switch between parts in seconds, perfect for flexible manufacturing processes or for accepting parts from multiple machines.

Easy to use

The included intuitive MODUS™ Organizer operator front-end software requires little or no training, while on the programmable system the comprehensive MODUS™ Equator™ programming software allows engineers to rapidly create gauging routines for any part – simple or complex, prismatic or free-form – using industry-standard DMIS programming.

Thermally "stable" – for shop floor use

Re-mastering is as swift as measuring a production part and immediately compensates both the machine and the part being measured for temperature variations typical of a shop floor environment.



Integrated stylus changing

Further versatility is offered by the included Equator™-specific stylus changing rack, allowing automated in-cycle changing of SM25 stylus modules. The SM25 modules couple to the industry-standard SP25 CMM probe, allowing Equator™ users to swap the stylus configurations without re-qualifying each time. Up to six stylus combinations can be loaded into the rack at any time. These can be used on a single complex part or with multiple parts of varying geometries.

Traceability to calibrated CMMs

Master parts do not need to be expensive custom parts like a traditional gauge; take a production part and measure it on a CMM to establish feature variation from CAD or drawing nominals. The results from any CMM can be configured to be used directly within the Equator™ software.

Effectively, the calibrated absolute accuracy of the CMM can be "extended" onto the shop floor to provide calibrated traceability to Equator™ measurements. With the calibration file loaded into the Equator™ software, measurements made in the Equator™ system can be referred back to the CAD or drawing nominals. This allows true process control with SPC packages.

* 300 mm Z measurement range available with module change to SM25-3, measuring external features only on an extended height Equator only. Z axis stroke is 150 mm.

Machine kit

Includes: Equator™ 300 machine
Equator™ 6-port rack
SP25M scanning probe kit
Calibration accessory kit
Joystick (or 'E-stop' button)
Cables

Controller kit

Includes: Equator™ controller
Intuitive "front-end" software package

Equator™ tiles

Renishaw fixture plates (various options available).

Regular height Equator 300 combination kits

Operator's version

Description	Part number
Equator 300 machine with 6-port rack and joystick, controller with Organizer software and ¼ in R&R threaded fixture plate	A-EQ33-1J40

Programmer's version

Description	Part number
Equator 300 machine with 6-port rack and joystick, controller with Organizer and MODUS™ software and ¼ in R&R threaded fixture plate	A-EQ33-2J40

Extended height Equator 300 combination kits

Operator's version

Description	Part number
Extended height Equator 300 machine with 6-port rack and joystick with Organizer software and ¼ in R&R threaded fixture plate	A-EH33-1J40

Programmer's version

Description	Part number
Extended height Equator 300 machine with 6-port rack and joystick with Organizer and MODUS™ software and ¼ in R&R threaded fixture plate	A-EH33-2J40

Renishaw Equator™ 500

Intelligent process control for larger parts with all the benefits of the proven Equator 300 gauging system

The larger Equator 500 system now enables the gauging of larger parts, with a working volume of 500 mm in diameter and up to 400 mm in height.

Both Equator 300 and 500 gauging systems are accurate between a range of 5 °C and 50 °C at any rate of temperature change, and are capable of scanning speeds in excess of 200 mm/s.

Every system is compatible with simple-to-use Organizer operator software, EZ-IO software for automation, and IPC (intelligent process control) software for updating tool offsets on CNC machine tools.

Larger measuring volume

The Equator 500 has a gauging volume of 500 mm diameter in the X/Y plane and 250 mm in Z when used with the SM25-2 scanning module. This can be expanded to 400 mm in Z with the SM25-3 scanning module, which allows styli up to 200 mm in length to reach many more features. The base of Equator 500 supports workpiece and fixturing with a total weight limit of 100 kg.

Typical applications include the manufacture of car and truck transmission and engine casings, drive-train parts like conrods and differential housings, suspension castings, pressed parts, valves and pumps.

Accuracy with rapid temperature changes, now over a 45 °C range

Climatic conditions can result in variable daily and seasonal temperature cycles. For example, early in the morning a cold machine shop can increase in temperature due to both external conditions and machinery heating up. The system has been proven to cope with this by re-mastering, meaning that accurate gauging can start as soon as the first part has been produced and continue regardless of how conditions change.

Regular height Equator 500 kits

Equator 500 machine with 6-port rack and joystick, controller with Organizer and MODUS programming software and M8 threaded fixture plate

Part number: A-EQ53-2J70

Equator 500 machine with 6-port rack and joystick, controller with Organizer software and M8 threaded fixture plate

Part number: A-EQ53-1J70

Extended height Equator 500 kits

Extended height Equator 500 machine with 6-port rack and joystick, controller with Organizer and MODUS programming software and M8 threaded fixture plate

Part number: A-EH53-2J70

Extended height Equator 500 machine with 6-port rack and joystick, controller with Organizer software and M8 threaded fixture plate

Part number: A-EH53-1J70

Automatic update of tool offsets directly from Equator 300 and 500 systems

The Equator range is compatible with new IPC software which allows constant monitoring and automatic adjustment of a machining operation, keeping part dimensions close to nominal and well within process control limits. This correction of process drift improves part quality and manufacturing capability, and reduces scrap. The proximity of the Equator gauge to the CNC process allows adjustment at the point of manufacture, avoiding time delays or reliance on finished part (tailgate) inspection. An Equator gauging system can be connected to one or multiple CNC machine tool controllers.

Replacement equipment

Stop button

Part number: A-5504-0255

Joystick kit

Part number: A-5504-0258

Joystick cable only

Part number: A-5358-5016

Button interface

Part number: A-6088-0010

Autochange rack (6 ports)

Part number: A-5504-0250

Rack port inserts for 6 off SH25

Part number: A-2237-1414

Rack set-up tool

Part number: A-2237-0682

Rack port clip for autochange rack alignment

6 required.

Part number: M-5358-2589

MODUS™ Equator™ dongle

Part number: A-5639-3000

Power cables

Part number: P-EQ33-MAIN

Fixturing plate (M6)

Part number: A-5504-2552

Fixturing plate (¼-20 in)

Part number: R-PCR-501212-50-20

Fixturing plate (M8)

Part number: A-5504-2553

Fixturing plate (single ¼-20 hole)

Part number: R-PEC-13300300-6

Fixturing plate spacer (50 mm)

Part number: A-5504-0203

Fixturing plate spacer (150 mm)

Part number: A-5504-0207

Optional equipment

Renishaw digital I/O box (normally open)

With EZ-IO software.

Part number: A-5923-0110

Additional Renishaw digital I/O box only (normally open)

Part number: A-5923-0100

Full 5-sphere calibration artefact only

Part number: A-5504-0252

Extended calibration artefact stem

Part number: A-5504-0274

Gauge checker

Part number: A-5925-0200

Cleaning kit

Part number: A-5504-9055

Equator 300 enclosure

Equator 300 full enclosure kit

Includes top, base and monitor bracket.

Part number: A-5924-0840

Equator 300 enclosure top

Part number: A-5924-0842

Equator 300 enclosure base

Part number: A-5924-0841

Equator 300 enclosure monitor bracket

Includes: Monitor bracket
Bolts
10 inch monitor cable
10 inch power cord

Part number: RI-ENCL-EQ-PCMO

Equator 300/500 enclosure keyboard/monitor post

Part number: A-5924-0350

Equator 500 enclosure lid

Part number: A-5924-0820

Equator 500 enclosure mid section

Part number: A-5924-0400

Equator 500 enclosure top and base

Open on top.

Part number: A-5924-0850

MCU docking port for wired joystick

Part number: A-1333-0026

Fixturing components

¼-20 in CMM magnetic and clamping set A

Part number: R-FSC-MCA-20

¼-20 in CMM clamping set A

Part number: R-FSC-CA-20

Equator probe kit

Equator SP25-2 scanning kit with single calibration sphere

Part number: A-5504-0205

Equator stylus kits

Equator basic stylus kit

Part number: A-5504-0281

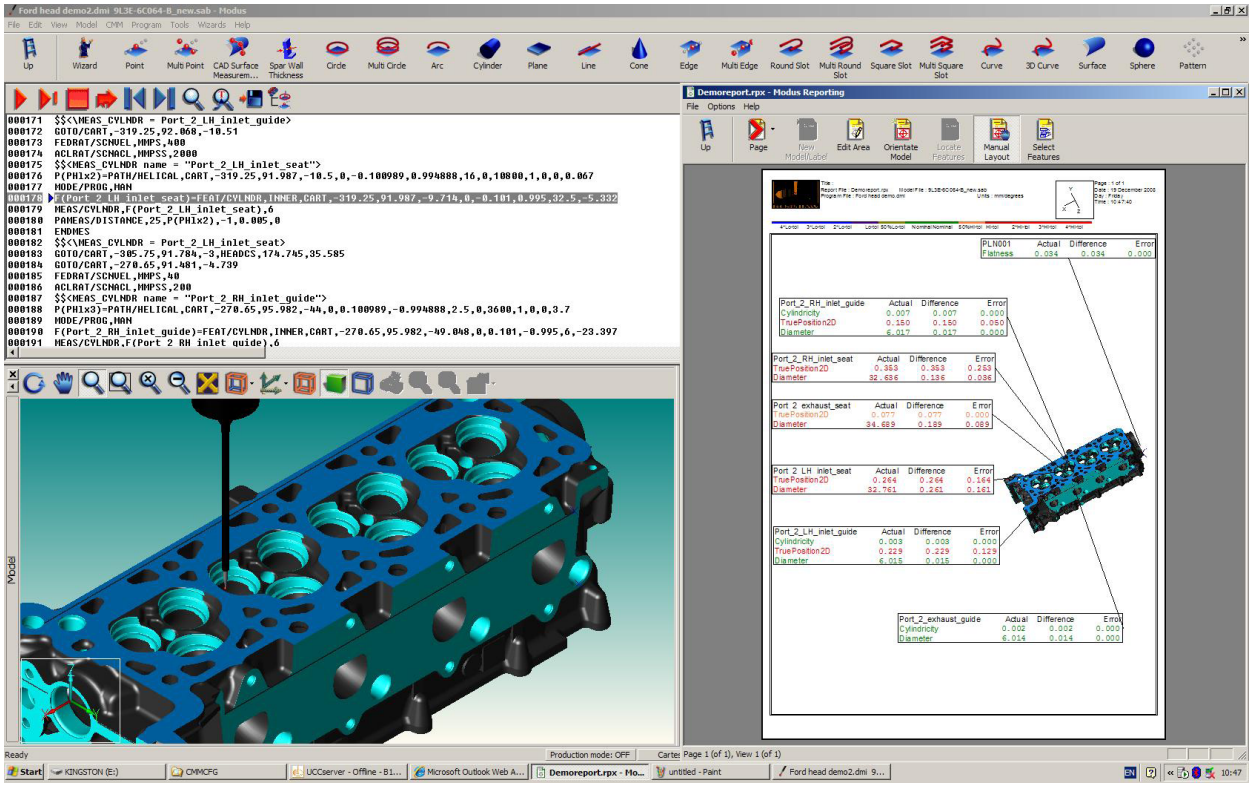
Equator intermediate stylus kit

Part number: A-5504-0282

Equator advanced stylus kit

Part number: A-5504-0283

Equator™ MODUS™ software training



On site training (maximum 4 students)

Description	Part number
Equator™ MODUS™ scanning training (US travel) – 4 days	CS-TRA-ONSI-11-4DAY
Equator™ MODUS™ advanced training (US travel) – 2 days	CS-TRA-ONSI-11-2DAY

Training at Renishaw Inc*

Description	Part number
Equator™ MODUS™ scanning training (US) – 4 days	CS-TRA-INHO-11-4DAY
Equator™ MODUS™ advanced training (US) – 2 days	CS-TRA-INHO-11-2DAY

* per student

Equator training block

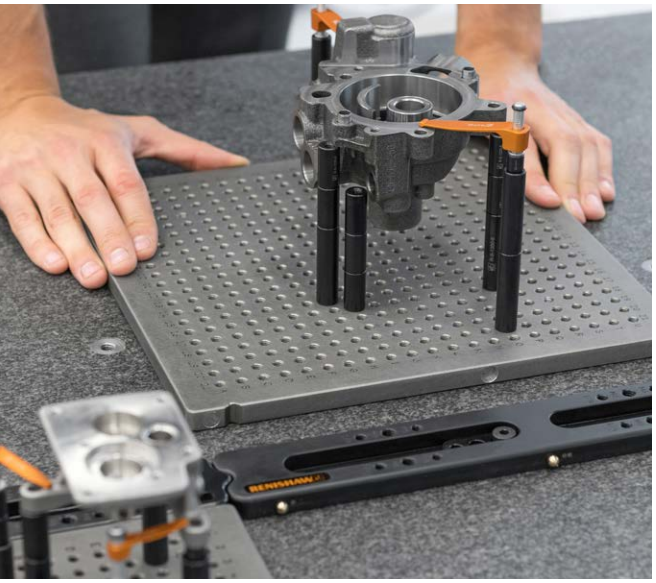
Part number: A-5504-0209

Equator 2nd year extended warranty

Now available.

Part number: Please ask your Renishaw representative

Renishaw metrology fixturing



Why choose Renishaw fixtures? 4-3

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Why choose Renishaw fixtures?

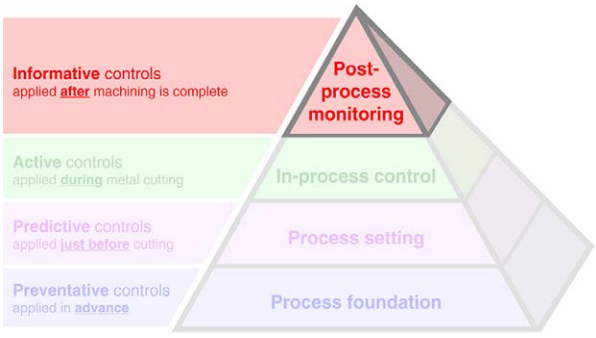
Renishaw metrology fixtures will give you the clear advantage

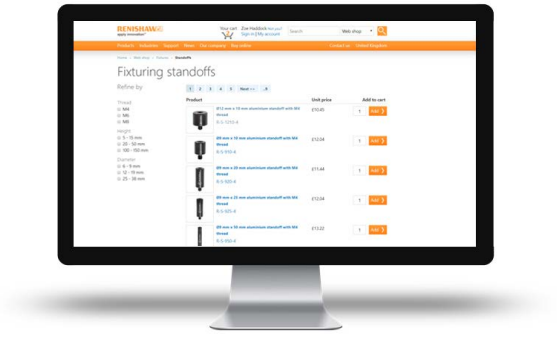
- Our large range of modular fixturing components and custom design capabilities provides a solution for any application and parts of almost any size, shape or material.
- Most components are hand-tightened and require no special tools, making fixturing set-ups quick and easy.
- Set-ups can be documented and repeated with speed and precision using our alpha-numerically labelled base plates.
- Unrivalled durability and wear resistance with Renishaw's heat treated steel components and Nituff® hardcoat anodized base plates.
- Improved productivity during part inspection with Renishaw's FixtureBuilder software; create fixturing set-ups, provide documentation and assist off-line programming.
- Maximum flexibility when fixturing with a wide choice of base plates and components available in M4, M6 and M8 metric and ¼-20 imperial thread sizes.

Perfect your process control

Within Renishaw's industry recognized Productive Process Pyramid™ framework for process control, the 'post-process monitoring' phase is the final step to ensure effective end-to-end metrology. It is within this phase that consideration needs to be given to the fixturing solution to maximize the effectiveness of a CMM, vision machine or flexible gauge.

There are many benefits that the correct use of metrology fixturing can bring to your inspection process such as repeatability and reproducibility, part positioning and productivity, and cost reduction.





Available online 24/7

As well as ordering metrology fixturing through your local sales representative, you can also purchase our modular fixturing components and FixtureBuilder software through the Renishaw Web shop. It's never been so quick, convenient and easy to order your parts, spares and accessories.

Renishaw's Web shop hosts a range of modular fixturing designed for CMMs, vision systems and the Equator™ gauging system. Parts and accessories for Renishaw's products can be purchased online 24/7, or a quote can be requested by visiting www.renishaw.com/shop

Your fixture application

Fixtures for co-ordinate measuring machines (CMMs)

Whether you are inspecting parts for aerospace, automotive, electronics, industrial or medical applications, Renishaw CMM fixtures can provide a full solution to your CMM fixturing requirements.

The range includes fixture plates with M4, M6, M8 or ¼-20 threaded fittings in a wide choice of standard sizes, and an extensive selection of easy-to-use modular fixturing components. Perfect fixturing solutions can be assembled very quickly to increase throughput and avoid downtime in inspection.

Renishaw CMM fixtures can improve the throughput, reproducibility and accuracy of your inspection process by providing quick and repeatable fixturing set-ups for your components. Renishaw CMM fixtures are modular and can be expanded with your requirements to provide a complete fixturing solution for any part regardless of its size, shape or material.

Fixtures for vision systems

Renishaw's multi-hole and multi-window precision acrylic base plates allow for backlighting and a clear, clean view of the part. Fixturing components can quickly be threaded into the base plate and arranged in any configuration, allowing the part to be held in a virtually free state with very little force applied to the surface. The part can be viewed easily without obstruction to the backlight or probe path. Fixturing components can be placed within a tight circumference to hold and locate the smallest of parts.

Renishaw's vision fixtures offer two unique fixturing solutions designed to fit your specific vision system or multi-sensor machine:

- QuickLoad™ corner (QLC)
- Interchangeable vision fixture (IVF)

Each system uses an acrylic base plate that allows for the use of backlighting for a clear view of the part on your vision system.

Fixtures for Equator™ gauging system

The loading and positive engagement of the Renishaw Equator system fixtures base plate allows for a quick changeover of parts, on and off the Equator system, within seconds. Each fixture is repeatedly located and securely held in place with a unique 3-point kinematic system.

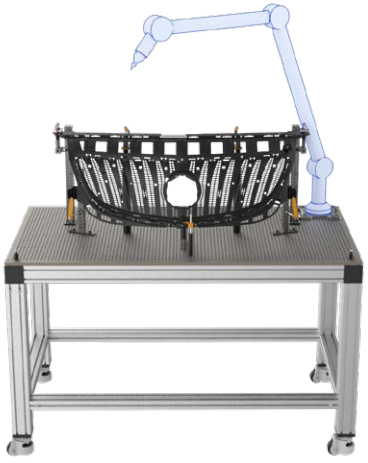
Multiple holes on the base plate ensure flexibility for fixturing a range of parts. Each plate is alphanumerically labelled so that the set-up can be recorded and documented, allowing the user to repeat the set-up quickly and accurately.

Fixturing components can be easily threaded into the base plate and positioned for minimal contact on and around the part. This provides an unobstructed probe path and the ability to inspect every detail on the part.

Fixturing solutions

Metrology fixture tables

Compatible with any portable CMM, white light or laser system, our metrology tables give you the freedom to move about your workshop or metrology inspection area with ease.



The modular construction of Renishaw's metrology tables provide flexibility to mount portable CMMs. Improve your inspection process with our metrology tables and discover the following benefits:

Stability: Every fixture plate is secured to the metrology table frame with mounting holes, adding to the stability and rigidity of the table. This also allows users to mount heavy parts to the table without the top plate flexing or distorting.

Portability: Each table is fitted with levelling casters for easy height adjustments and manoeuvrability around your metrology or inspection area.

Repeatability: The fixture plates are precision ground and hard coat anodized to resist scratching and increase durability. All plates come with alpha-numeric labelling as standard, for correctly documenting each fixture set-up.

Compatibility: Fixture your parts using individual modular fixturing components or a custom fixture. Ordering one of our universal adapter plates (R-PAACU) will allow for fitment of any Faro, Romer or Nikon portable CMMs.

No downtime: Our metrology tables come fully assembled, just un-crate and start measuring.

Designed to suit your needs: Metrology fixture tables are available in any size to suit your requirements. Base plates are available in either a clear hard coat or black hard coat anodized finish (black finish ideal for vision-related applications).

Renishaw's metrology fixture tables are available in standard sizes (see table below) or custom sizes with fully customisable options such as drawers, shelves and monitor or laptop brackets.

Contact your local sales representative for more information or visit www.renishaw.com/fixturetable

Standard sized metrology fixture tables

Part number	Thread	Height	Width	Depth	Thread spacing	
R-TM-1200900-25-6	M6	914 mm	1200 mm	900 mm	25 mm	
R-TM-1500900-25-6	M6	914 mm	1500 mm	900 mm	25 mm	
R-TM-18001200-25-6	M6	914 mm	1800 mm	1200 mm	25 mm	
R-TM-1200900-30-8	M8	914 mm	1200 mm	900 mm	30 mm	
R-TM-1500900-30-8	M8	914 mm	1500 mm	900 mm	30 mm	
R-TM-18001200-30-8	M8	914 mm	1800 mm	1200 mm	30 mm	
R-TM-4836-1-20	¼-20	36 in	48 in	36 in	1 in	
R-TM-6036-1-20	¼-20	36 in	60 in	36 in	1 in	
R-TM-7248-1-20	¼-20	36 in	72 in	48 in	1 in	

N.B. Don't forget to order a universal adapter plate R-PAACU to allow fitment of any Faro, Romer or Nikon portable CMM to your metrology table (see page 4-45). Contact your local sales representative for a black finish plate top.

FixtureBuilder software

Renishaw's FixtureBuilder is a 3D-modelling software package designed to allow the creation and documentation of fixturing set-ups. It can also be used to assist with offline programming.

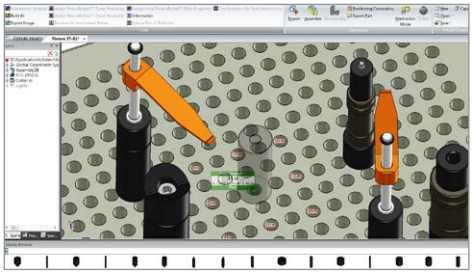
Easy to use: All standard base plates and fixturing components are conveniently organized into tabbed catalogues, grouped by component category and thread size.

Flexible: Users can create custom fixturing set-ups and components, e.g. custom plates, and store them in user-defined libraries for future use and reference.

Less time offline: You can export the part and the fixture together. This can greatly reduce editing when programming offline in your CMM or vision software, where fixturing components could interfere with probe clearances.

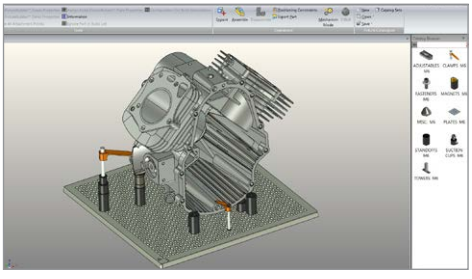
Try before you buy and download a free trial online at www.renishaw.com/fixturebuilderdownload

> "Renishaw's FixtureBuilder software has improved our ability to programme off-line. The software package enables us to build and export fixture set-ups using 3D models, which we then use to create inspection programmes before the part is ready. In some cases, before the part has even been manufactured! We can work from a 3D model in FixtureBuilder to create the fixture, and use this model to programme well ahead of time.."
>
> **Tritech Precision Products Yeovil (UK)**



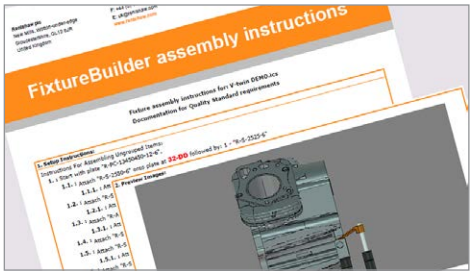
Intelligent 'Drag and drop' functionality

Simply drag and drop the components onto a plate or another component. The *SmartSnap® technology automatically aligns them while indicating the mating hole, X, Y and Z co-ordinates.



Full CAD compatibility

FixtureBuilder offers the ability to import and export most common 3D CAD files. An additional translator module for CATIA, Pro/E, UGNX, Solidworks® and Inventor® is also available for purchase.



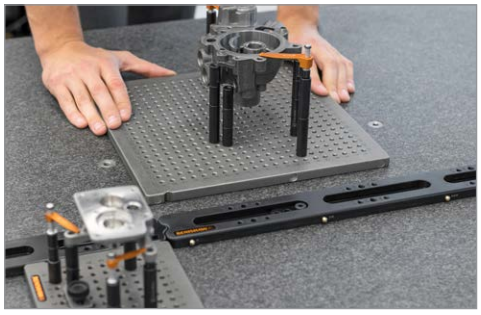
Compliance and quality standards

The 'Build it' function is one of the key benefits to all FixtureBuilder software users. It allows the automated production of a complete bill of materials and work instructions for every fixture set-up.

*SmartSnap® and TriBall® are registered trademarks of IronCAD

QuickLoad™ rail system

The QuickLoad rail system allows for increased speed and flexibility, while maintaining repeatability and reproducibility when loading and locating base plates onto a CMM.



The QuickLoad rail (QLR) system is rapid, easy and repeatable, allowing the user to set up parts for inspection on multiple plates, and load them to the rail efficiently to maximize throughput. Due to the simplicity of its application, it requires no additional training, so you will be up and running without disruption to your inspection process.

The specially designed QuickLoad base plates locate to the QuickLoad rail, on either side, using quick-release magnets and locating pins. This design ensures the plates are located and secured for maximum throughput and unrivalled repeatability. This technology gives users the ability to inspect and release parts swiftly.

The QuickLoad rail's versatile system allows for flexibility when setting up your parts for measurement and provides a robust work-holding solution. Its universal mounting design allows for fitment to any CMM machine.

The design of our rail maximizes the available measuring volume on your CMM. The rail can be located and secured to the CMM's granite on the left, center, right or to an existing modular base plate, allowing multiple plates and configurations to be used, that utilize one or both sides of the QuickLoad rail.

Custom fixtures can be designed for use with the QuickLoad rail system allowing for increased flexibility and repeatability of your part inspection process.

The QuickLoad rail system is available to purchase separately or in sets. Additional thread sizes and custom sized plates are also available to order. Contact your local sales representative for more information or visit www.renishaw.com/quickloadrail

QuickLoad rails

Part number	Thread	Thickness	Width	Length	
R-QLR-1350450	M4/M6/M8	12.4 mm	50.8 mm	457.2 mm	
R-QLR-1350600	M4/M6/M8	12.4 mm	50 mm	600 mm	
R-QLR2-1350600 (× 2 rails)	M4/M6/M8	12.4 mm	50 mm	600 mm	
R-QLR-50218	¼-20	0.5 in	2 in	18 in	
R-QLR-50224	¼-20	0.5 in	2 in	24 in	
R-QLR2-50224 (× 2 rails)	¼-20	0.5 in	2 in	24 in	

Included: all QuickLoad rails come with locating washers and M6, M8, M10, M12 and ¼-20 cap head screws.

QuickLoad plates

Part number	Thread	Height	Width	Depth	Hole spacing	
R-QLPC-13150150-12-6	M6	12.7 mm	150 mm	150 mm	12.5 mm OC	
R-QLPC-13300300-12-6	M6	12.7 mm	300 mm	300 mm	12.5 mm OC	
R-QLPC-13450450-12-6	M6	12.7 mm	450 mm	450 mm	12.5 mm OC	
R-QLPC-13300300-15-8	M8	12.7 mm	300 mm	300 mm	15 mm OC	
R-QLPC-13450450-15-8	M8	12.7 mm	450 mm	450 mm	15 mm OC	
R-QLPC-5066-50-20	¼-20	0.5 in	6 in	6 in	0.5 in OC	
R-QLPC-501212-50-20	¼-20	0.5 in	12 in	12 in	0.5 in OC	
R-QLPC-501818-50-20	¼-20	0.5 in	18 in	18 in	0.5 in OC	

N.B. Custom plate sizes and additional thread sizes available upon request. Contact your local sales representative for more information.

QuickLoad rail and plate sets

Part number	Thread	Contents	Quantity	
R-KQL-A-6	M6	R-QLR-1350600	1	
		R-QLPC-13300300-12-6	2	
R-KQL-B-6	M6	R-QLR-1350600	2	
		R-QLPC-13300300-12-6	2	
		R-QLPC-13450450-12-6	2	
R-KQL-A-8	M8	R-QLR-1350600	1	
		R-QLPC-13300300-15-8	2	
R-KQL-B-8	M8	R-QLR-1350600	2	
		R-QLPC-13300300-15-8	2	
		R-QLPC-13450450-15-8	2	
R-KQL-A-20	¼-20	R-QLR-50224	1	
		R-QLPC-501212-50-20	2	
R-KQL-B-20	¼-20	R-QLR-50224	2	
		R-QLPC-501212-50-20	2	
		R-QLPC-501818-50-20	2	

Included: all QuickLoad rails come with locating washers and M6, M8, M10, M12 and ¼-20 cap head screws.

QuickLoad™ corner (QLC)

Renishaw's QuickLoad™ corner (QLC) system is designed to fit your specific vision machine.

This system is made to fit the lower left hand corner of your vision stage and the location of its mounting holes. The QuickLoad corner contains magnets that allow Renishaw's vision acrylic base plates to snap into a precise and repeatable position, enabling quick and easy loading and unloading of plates. Steel pins are pressed into the sides of the plate to fit the magnets contained in the QLC.

The edges of the QLC are serrated so that parts can be mounted directly against them with Renishaw fixturing components. This enables quick and easy viewing for inspection.

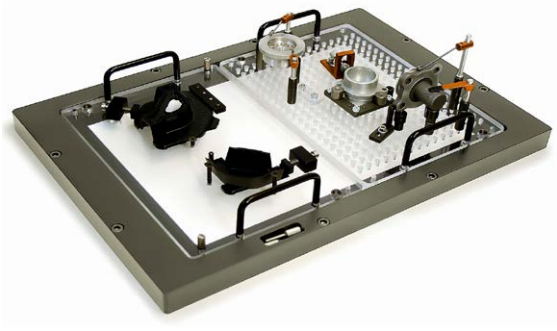
There are two plate options to choose from to accompany your QLC:

- **Multi-hole** – Set up multiple parts on the plate at one time. Ideal for fixturing parts of various shapes and sizes.
- **Multi-window** – Allows a clear, unobstructed view of your parts. Multi-window plates can accommodate numerous parts at one time with different size window options. Ideal for small part inspection.

Interchangeable vision fixture (IVF)

Renishaw's interchangeable vision fixture (IVF) is ideal for machines 450 mm × 450 mm or larger.

The interchangeable vision fixture (IVF) makes holding parts an easy and efficient turnkey fixturing method. Easily switch multiple fixturing plates on and off the aluminum frame mounted to your vision system.



The anodized aluminum frame and acrylic fixture plates are custom-made to fit and mount to your specific vision machine taking into account the mounting of your probe rack and calibration artefacts.

Fixturing plates can be different sizes, depending on the size of your frame and parts and the number of parts you are inspecting. Plates are designed to use all, ½, ¼ or 1/8 of the frame's total size and are equipped with handles to load on to the frame. Modular plates come with your choice of multi-hole or multi-window threaded hole pattern.

Interchangeable fixture plates can be modular with M4, M6 or ¼-20 threaded holes (10 mm or 0.50 in OC) or Renishaw can design and build a custom fixture for your parts.

A combination of both modular and custom fixture plates can be made to fit the same IVF frame. Some parts are better suited for custom fixturing depending on the orientation, the complexity of the part and the frequency of the inspection.

Fixture kits

Steps to building the right fixture kit

It's easy to get started and build your own fixture kit using the simple steps below. Get in touch with our expert sales representatives who can help you build a kit unique to your needs.

A kit consists of one base plate and a comprehensive set of components available for CMM, vision – including a QuickLoad™ corner (QLC) – and Equator™ gauging systems. The type of parts you are going to fixture, your machine and application will determine which kit you choose. Renishaw offers a range of different kit choices depending on your application.

Custom options are available. Contact your local sales representative for more information.

Building your fixture kit

CMM and Equator kits:

1. Choose a thread size: M4, M6, M8 or ¼-20
2. Choose the size of your fixture base plate
3. Choose a set of components (clamping or magnetic and clamping)

Vision and QLC kits:

1. Choose a thread size: M4, M6 or ¼-20
2. Choose the size of your fixture acrylic base plate (multi-hole or multi-window)
3. Choose your QLC
4. Choose a set of components

Additional considerations when building your kit

CMM and Equator™ gauging system:

- Clamping component set
- Magnetic and clamping component set

If you are fixturing steel or cast iron parts, a magnetic and clamping component set is recommended.

Component sets are available with increasing numbers of components from A, our smallest component set, to B, our medium sized set, and finally C, our largest set. Additional components can be purchased individually to expand your kit.

Vision:

- Multi-hole acrylic plate – more holes for attaching more components
- Multi-window acrylic plate – more windows for optimal viewing of small parts

Don't forget to select the correct QLC specific to your vision or multi-sensor machine to accompany your acrylic base plate. To find the correct QLC compatible with your machine, please contact your local sales representative.

Fixture base plates

Choosing the correct fixture base plate

Renishaw fixture base plates are designed to allow the fixturing of all workpieces, from very small delicate parts, up to large, heavy industrial components. Renishaw's fixture base plates are available for three main applications – CMM, vision and Equator™ gauging system and because of this, there are several factors which need to be considered when choosing the correct fixture base plate:

- Application (CMM, vision or Equator gauging system)
- Machine type
- Base plate size
- Thread size

Additional considerations for aluminum base plates

For aluminum base plates, it is important to ensure you secure your plate to the granite surface of your CMM bed. Securing your base plate is always advised, to maintain accuracy and repeatability during your inspection process.

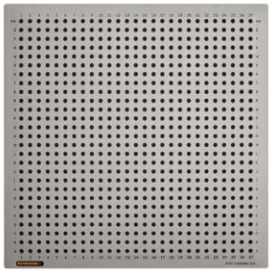
The two available options when securing your base plates are:

Plate clamps:

- Plates clamps can be purchased for an additional cost and can be used to secure any standard or custom fixture base plates to your CMM granite, plate clamp part no. R-CPC-190 (see page 4-38).

Mounting holes:

- These are only provided on a request basis and should be discussed with your sales representative when placing your order. Mounting holes can be added to any standard or custom base.



M8 CMM aluminum plate,
12.7 mm × 450 mm × 450 mm

M6 Equator™ plate,
12.7 mm × 300 mm × 300 mm

¼-20 multi-hole acrylic plate,
0.5 in × 10 in × 10 in

M4 multi-window acrylic plate,
11.7 mm × 250 mm × 250 mm

CMM base plates

Renishaw CMM fixture base plates are precision ground within tight tolerances that are key to the quality of the modular Renishaw fixtures system.

Base plates are available in standard and custom sizes with a choice of threaded holes: M4, M6, M8* or ¼-20. Cast aluminum base plates are coated with Nituff® hard coat anodize to resist wear and scratching and are available in sizes up to 1500 mm × 3000 mm (60 in × 120 in). Custom sized plates are available to order.

Don't forget to ask your local sales representative about securing your plate to the CMM granite. This can be done with either Renishaw's plate clamps or mounting holes.

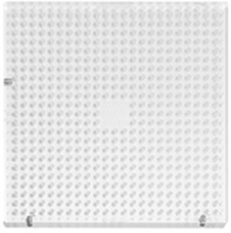
* M12 thread size available upon request.

Part number	Thread	Height	Width	Depth	Spacing	Price
M4 plates						
R-PC-13150150-10-4	M4	13 mm	150 mm	150 mm	10 mm OC	
R-PC-13300300-10-4	M4	13 mm	300 mm	300 mm	10 mm OC	
M6 plates						
R-PC-13150150-12-6	M6	13 mm	150 mm	150 mm	12.5 mm OC	
R-PC-13300300-12-6	M6	13 mm	300 mm	300 mm	12.5 mm OC	
R-PC-13450450-12-6	M6	13 mm	450 mm	450 mm	12.5 mm OC	
R-PC-19600600-12-6	M6	19 mm	600 mm	600 mm	12.5 mm OC	
R-PC-19750750-12-6*	M6	19 mm	750 mm	750 mm	12.5 mm OC	
R-PC-197501000-12-6*	M6	19 mm	750 mm	1000 mm	12.5 mm OC	
R-PC-199001200-12-6*	M6	19 mm	900 mm	1200 mm	12.5 mm OC	
M8 plates						
R-PC-13300300-15-8	M8	13 mm	300 mm	300 mm	15 mm OC	
R-PC-13450450-15-8	M8	13 mm	450 mm	450 mm	15 mm OC	
R-PC-19600600-15-8	M8	19 mm	600 mm	600 mm	15 mm OC	
R-PC-19750750-15-8*	M8	19 mm	750 mm	750 mm	15 mm OC	
R-PC-197501020-15-8*	M8	19 mm	750 mm	1020 mm	15 mm OC	
R-PC-199001200-15-8*	M8	19 mm	900 mm	1200 mm	15 mm OC	
¼-20 plates						
R-PC-5066-50-20	¼-20	0.5 in	6 in	6 in	0.5 in OC	
R-PC-501212-50-20	¼-20	0.5 in	12 in	12 in	0.5 in OC	
R-PC-501818-50-20*	¼-20	0.5 in	18 in	18 in	0.5 in OC	
R-PC-752424-50-20*	¼-20	0.75 in	24 in	24 in	0.5 in OC	
R-PC-752840-50-20*	¼-20	0.75 in	28 in	40 in	0.5 in OC	
R-PC-753030-50-20*	¼-20	0.75 in	30 in	30 in	0.5 in OC	
R-PC-753648-50-20*	¼-20	0.75 in	36 in	48 in	0.5 in OC	

* Mounting holes may also be added and longer lead times may apply to larger plates.

Vision base plates

Our acrylic fixture base plates can be customized to fit and mount to your vision stage with a small area in the center of the plate without threaded holes, which allows an unrestricted view for very small parts.



Acrylic base plates are 13 mm (0.50 in) thick and available in sizes from 150 mm × 150 mm (6 in × 6 in) up to 400 mm × 400 mm (16 in × 16 in), available with M4, M6 or ¼-20 threaded holes. Custom sized plates are available to order.

There are two base plate options to choose from:

Multi-hole – offers greater flexibility to set up and check as many parts as possible at one time with a clear area in the center of the plate.

Multi-window – more windows for the clearest view of small parts.

Don't forget to select the correct QuickLoad™ corner (QLC) specific to your vision or multi-sensor machine to accompany your acrylic base plate. To find the correct QLC compatible with your machine, please contact your local sales representative.

Part number	Thread	Height	Width	Depth	Windows	Spacing	
M4 multi-hole plates (ideal for parts 75 mm × 75 mm or smaller)							
R-PV-13150150-10-4	M4	13 mm	150 mm	150 mm	-	10 mm OC	
R-PV-13200200-10-4	M4	13 mm	200 mm	200 mm	-	10 mm OC	
R-PV-13250150-10-4	M4	13 mm	250 mm	150 mm	-	10 mm OC	
R-PV-13250250-10-4	M4	13 mm	250 mm	250 mm	-	10 mm OC	
R-PV-13300200-10-4	M4	13 mm	300 mm	200 mm	-	10 mm OC	
R-PV-13300300-10-4	M4	13 mm	300 mm	300 mm	-	10 mm OC	
R-PV-13400400-10-4	M4	13 mm	400 mm	400 mm	-	10 mm OC	
R-PV-13250150-10-4R*	M4	13 mm	250 mm	150 mm	-	10 mm OC	
R-PV-13200200-10-4R*	M4	13 mm	200 mm	200 mm	-	10 mm OC	
R-PV-13250250-10-4R*	M4	13 mm	250 mm	250 mm	-	10 mm OC	
R-PV-13300200-10-4R*	M4	13 mm	300 mm	200 mm	-	10 mm OC	
M4 multi-window plates							
R-PV-W-13150150-10-4	M4	13 mm	150 mm	150 mm	4	10 mm OC	
R-PV-W-13200200-10-4	M4	13 mm	200 mm	200 mm	5	10 mm OC	
R-PV-W-13250150-10-4	M4	13 mm	250 mm	150 mm	3	10 mm OC	
R-PV-W-13250250-10-4	M4	13 mm	250 mm	250 mm	5	10 mm OC	
R-PV-W-13300200-10-4	M4	13 mm	300 mm	200 mm	3	10 mm OC	
R-PV-W-13300300-10-4	M4	13 mm	300 mm	300 mm	8	10 mm OC	
R-PV-W-13400400-10-4	M4	13 mm	400 mm	400 mm	7	10 mm OC	
R-PV-W-13200200-10-4R*	M4	13 mm	200 mm	200 mm	5	10 mm OC	
R-PV-W-13250150-10-4R*	M4	13 mm	250 mm	150 mm	3	10 mm OC	
R-PV-W-13250250-10-4R*	M4	13 mm	250 mm	250 mm	5	10 mm OC	
R-PV-W-13300200-10-4R*	M4	13 mm	300 mm	200 mm	3	10 mm OC	
M6 multi-hole plates							
R-PV-13150150-12-6	M6	13 mm	150 mm	150 mm	-	12.5 mm OC	
R-PV-13250250-12-6	M6	13 mm	250 mm	250 mm	-	12.5 mm OC	
M6 multi-window plates							
R-PV-W-13250150-12-6	M6	13 mm	250 mm	150 mm	4	12.5 mm OC	
R-PV-W-13250250-12-6	M6	13 mm	250 mm	250 mm	5	12.5 mm OC	
R-PV-W-13400400-12-6	M6	13 mm	400 mm	400 mm	7	12.5 mm OC	

*The letter R at end of a vision plate part number indicates that the plate is designed for use with a lower right mounting QLC.

Vision base plates continued

Part number	Thread	Height	Width	Depth	Windows	Spacing	
¼-20 multi-hole plates							
R-PV-5066-50-20	¼-20	0.5 in	6 in	6 in	-	0.5 in	
R-PV-501010-50-20	¼-20	0.5 in	10 in	10 in	-	0.5 in OC	
R-PV-50128-50-20	¼-20	0.5 in	12 in	8 in	-	0.5 in OC	
R-PV-501616-50-20	¼-20	0.5 in	16 in	16 in	-	0.5 in OC	
R-PV-501010-50-20R*	¼-20	0.5 in	10 in	10 in	-	0.5 in OC	
R-PV-501212-50-20R*	¼-20	0.5 in	12 in	12 in	-	0.5 in OC	
¼-20 multi-window plates							
R-PV-W-50106-50-20	¼-20	0.5 in	10 in	6 in	4	0.5 in OC	
R-PV-W-501010-50-20	¼-20	0.5 in	10 in	10 in	5	0.5 in OC	
R-PVW-50128-50-20	¼-20	0.5 in	12 in	8 in	4	0.5 in OC	
R-PV-W-501616-50-20	¼-20	0.5 in	16 in	16 in	7	0.5 in OC	
R-PVW-501010-50-20R*	¼-20	0.5 in	10 in	10 in	5	0.5 in OC	
R-PVW-501212-50-20R*	¼-20	0.5 in	12 in	12 in	6	0.5 in OC	

*R at end of part number indicates that the plate is designed for use with a lower right mounting QLC.

Equator™ gauging system base plates

Base plates for Renishaw Equator system fixtures use a 3-point kinematic system and can be taken on and off the Equator system within seconds.

The base plates are available in M4, M6, M8 or ¼-20 thread sizes and are all precision ground within tight tolerances.

Each plate is cast aluminum and coated with Nituff® hard coat anodize to reduce wear and scratching.

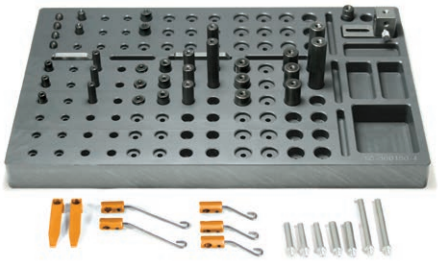
Part number	Thread	Height	Width	Depth	Spacing	
M4 plate						
R-PCR-13300300-10-4	M4	13 mm	300 mm	300 mm	10 mm OC	
M6 plate						
A-5504-2552	M6	13 mm	300 mm	300 mm	12.5 mm OC	
R-PCR-13510510-25-6	M6	13 mm	510 mm	510 mm	25 mm OC	
M8 plate						
A-5504-2553	M8	13 mm	300 mm	300 mm	15 mm OC	
¼-20 plate						
R-PCR-501212-50-20	¼-20	0.5 in	12 in	12 in	0.5 in OC	

CMM and Equator™ gauging system component sets

M4 CMM and Equator system component set: Clamping

The M4 CMM and Equator system clamping kits can be used to hold brass, titanium, aluminum, plastic and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with M4 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.



R-FSC-CA-4

Part number	Description	Set A (part no. R-FSC-CA-4)
R-S-610-4*	6 mm dia. × 10 mm standoff	3
R-S-625-4*	6 mm dia. × 2 mm standoff	3
R-S-95-4*	9 mm dia. × 5 mm standoff	3
R-S-910-4	9 mm dia. × 10 mm standoff	3
R-S-925-4	9 mm dia. × 25 mm standoff	3
R-S-950-4	9 mm dia. × 50 mm standoff	2
R-S-1210-4	12 mm dia. × 12 mm standoff	3
R-S-1225-4	12 mm dia. × 25 mm standoff	3
R-S-1250-4	12 mm dia. × 50 mm standoff	2
R-SP-610-4	6 mm dia. × 10 mm pin standoff	2
R-SP-910-4	9 mm dia. × 10 mm pin standoff	2
R-CT-40-25-4	40 mm tension clamp with 25 mm post	2
R-CW-25-25-4	25 mm wire clamp with 25 mm post	3
R-CW-50-50-4	50 mm wire clamp with 50 mm post	2
R-RPA-4	Aluminum resting pin	4
R-AJ-9-4	9 mm dia. adjustable jackstand	1
R-AS-30-4	30 mm long adjustable slide	1
R-AS-45-4	45 mm long adjustable slide	1
R-TB-1619-4	Tower block with base 16 mm² × 19 mm	1
R-TC-300190-4	300 mm × 190 mm × 25 mm component tray	1
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1
Total number of components in each set		

* Component does not have a threaded top

M6 CMM and Equator system component sets: Clamping

The M6 CMM and Equator system clamping kits can be used to hold brass, titanium, aluminum, plastic and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with M6 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-CB-6

Part number	Description	Set A (part no. R-FSC-CA-6)	Set B (part no. R-FSC-CB-6)	Set C (part no. R-FSC-CC-6)
R-S-910-6	9 mm dia. × 10 mm standoff	-	3	6
R-S-1310-6	13 mm dia. × 10 mm standoff	-	-	4
R-S-1320-6	13 mm dia. × 20 mm standoff	3	6	8
R-S-1325-6	13 mm dia. × 25 mm standoff	3	6	8
R-S-1350-6	13 mm dia. × 50 mm standoff	3	6	8
R-S-1910-6	19 mm dia. × 10 mm standoff	-	3	4
R-S-1920-6	19 mm dia. × 20 mm standoff	3	6	8
R-S-1925-6	19 mm dia. × 25 mm standoff	3	6	8
R-S-1950-6	19 mm dia. × 50 mm standoff	3	6	8
R-S-19100-6	19 mm dia. × 100 mm standoff	-	4	6
R-S-2520-6	25 mm dia. × 20 mm standoff	3	6	8
R-S-2525-6	25 mm dia. × 25 mm standoff	3	6	8
R-S-2550-6	25 mm dia. × 50 mm standoff	3	6	8
R-S-25100-6	25 mm dia. × 100 mm standoff	-	4	6
R-SP-1325-6	13 mm dia. × 25 mm pin standoff	2	4	4
R-SP-1925-6	19 mm dia. × 25 mm pin standoff	-	-	2
R-CT-40-30-6	40 mm tension clamp with 30 mm post	2	6	6
R-CT-64-70-6	64 mm tension clamp with 70 mm post	4	12	12
R-CT-95-83-6	95 mm tension clamp with 83 mm post	-	-	3
R-CT-100P-83-6	100 mm tension clamp plunger with 83 mm post	-	-	3
R-CTB-25-6	25 mm tension clamp bracket	-	-	1
R-RCD-6	Delrin® resting cone	4	4	6
R-RPS-6	Steel resting pin	-	4	6
R-APJ-6	Adjustable pivot joint	-	-	1
R-AJ-13-6	13 mm dia. adjustable jackstand	1	2	4
R-AJ-25-6	25 mm dia. adjustable jackstand	-	2	3
R-AS-45-6	45 mm long adjustable slide	1	2	3
R-AS-70-6	70 mm long adjustable slide	1	2	4
R-TB-2025-6	Tower block with base 20 mm² × 30 mm	-	2	2
R-T-25300-6	25 mm² × 300 mm tower	-	-	1
R-TC-500200	500 mm × 200 mm × 25 mm component tray	1	1	2
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1	1	2
Total number of components in each set		**44**	**110**	**163**

M6 CMM and Equator system component sets: Magnetic and clamping

The M6 CMM and Equator system magnetic and clamping kits can be used to hold steel, aluminum, plastic, ferrous and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with M6 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-MCB-6

Part number	Description	Set A (part no. R-FSC-MCA-6)	Set B (part no. R-FSC-MCB-6)	Set C (part no. R-FSC-MCC-6)
R-M-13-6	13 mm dia. × 25 mm magnet	3	4	6
R-M-19-6	19 mm dia. × 25 mm magnet	3	4	6
R-M-25-6	25 mm dia. × 25 mm magnet	3	4	6
R-MP-13-6	13 mm dia. × 25 mm pin magnet	-	2	2
R-MP-19-6	19 mm dia. × 25 mm pin magnet	-	-	2
R-S-910-6	9 mm dia. × 10 mm standoff	-	3	4
R-S-1310-6	13 mm dia. × 10 mm standoff	-	-	4
R-S-1320-6	13 mm dia. × 20 mm standoff	3	6	8
R-S-1325-6	13 mm dia. × 25 mm standoff	3	6	8
R-S-1350-6	13 mm dia. × 50 mm standoff	3	6	8
R-S-1910-6	19 mm dia. × 10 mm standoff	-	3	4
R-S-1920-6	19 mm dia. × 20 mm standoff	3	6	8
R-S-1925-6	19 mm dia. × 25 mm standoff	3	6	8
R-S-1950-6	19 mm dia. × 50 mm standoff	3	6	8
R-S-19100-6	19 mm dia. × 100 mm standoff	-	3	6
R-S-2520-6	25 mm dia. × 20 mm standoff	3	6	8
R-S-2525-6	25 mm dia. × 25 mm standoff	3	6	8
R-S-2550-6	25 mm dia. × 50 mm standoff	3	6	8
R-S-25100-6	25 mm dia. × 100 mm standoff	-	3	6
R-CT-40-30-6	40 mm tension clamp with 30 mm post	-	4	4
R-CT-64-70-6	64 mm tension clamp with 70 mm post	4	8	8
R-CT-95-83-6	95 mm tension clamp with 83 mm post	-	-	2
R-CTB-25-6	25 mm tension clamp bracket	-	-	1
R-RCD-6	Delrin® resting cone	4	4	6
R-RPS-6	Steel resting pin	-	4	6
R-APJ-6	Adjustable pivot joint	-	-	1
R-AJ-13-6	13 mm dia. adjustable jackstand	1	2	3
R-AJ-25-6	25 mm dia. adjustable jackstand	-	2	3
R-AS-45-6	45 mm long adjustable slide	1	2	3
R-AS-70-6	70 mm long adjustable slide	1	2	3
R-TB-2025-6	Tower block with base 20 mm^2 × 30 mm	-	2	2
R-T-25300-6	25 mm^2 × 300 mm tower	-	-	1
R-TC-500200	500 mm × 200 mm × 25 mm component tray	1	1	2
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1	1	2
Total number of components in each set		**49**	**112**	**165**

M8 CMM and Equator system component sets: Clamping

The M8 CMM and Equator system clamping component set can be used to hold aluminum, plastic, brass, titanium and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with M8 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-CB-8

Part number	Description	Set A (part no. R-FSC-CA-8)	Set B (part no. R-FSC-CB-8)	Set C (part no. R-FSC-CC-8)
R-S-1315-8	13 mm dia. × 15 mm standoff	-	3	4
R-S-1320-8	13 mm dia. × 20 mm standoff	3	6	8
R-S-1325-8	13 mm dia. × 25 mm standoff	3	6	8
R-S-1350-8	13 mm dia. × 50 mm standoff	3	6	8
R-S-1915-8	19 mm dia. × 15 mm standoff	-	3	4
R-S-1920-8	19 mm dia. × 20 mm standoff	3	6	8
R-S-1925-8	19 mm dia. × 25 mm standoff	3	6	8
R-S-1950-8	19 mm dia. × 50 mm standoff	3	6	8
R-S-19100-8	19 mm dia. × 100 mm standoff	-	4	6
R-S-2520-8	25 mm dia. × 20 mm standoff	3	6	8
R-S-2525-8	25 mm dia. × 25 mm standoff	3	6	8
R-S-2550-8	25 mm dia. × 50 mm standoff	3	6	8
R-S-25100-8	25 mm dia. × 100 mm standoff	-	4	6
R-SP-1325-8	13 mm dia. × 25 mm pin standoff	2	4	6
R-CT-40-30-8	40 mm tension clamp with 30 mm post	2	6	6
R-CT-64-70-8	64 mm tension clamp with 70 mm post	4	12	12
R-CT-95-83-8	95 mm tension clamp with 83 mm post	-	-	3
R-CT-100P-83-8	100 mm tension clamp plunger with 83 mm post	-	-	3
R-CTB-25-8	25 mm tension clamp bracket	-	-	1
R-RCD-8	Delrin® resting cone	4	4	4
R-RCS-8	Steel resting cone	-	4	4
R-APJ-8	Adjustable pivot joint	-	-	1
R-AJ-19-8	19 mm dia. adjustable jackstand	1	2	4
R-AJ-25-8	25 mm dia. adjustable jackstand	-	2	3
R-AS-45-8	45 mm long adjustable slide	-	1	3
R-AS-70-8	70 mm long adjustable slide	1	3	4
R-TB-2530-8	Tower block with base	-	2	2
R-T-25300-8	25 mm² × 300 mm tower	-	-	1
R-TC-500200	500 mm × 200 mm × 25 mm component tray	1	1	2
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1	1	2
Total number of components in each set		**43**	**110**	**153**

M8 CMM and Equator system component sets: Magnetic and clamping

The M8 CMM and Equator system magnetic and clamping component set can be used to hold steel, aluminum, plastic, ferrous and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with M8 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-MCB-8

Part number	Description	Set A (part no. R-FSC-MCA-8)	Set B (part no. R-FSC-MCB-8)	Set C (part no. R-FSC-MCC-8)
R-M-13-8	13 mm dia. × 25 mm magnet	3	4	6
R-M-19-8	19 mm dia. × 25 mm magnet	3	4	6
R-M-25-8	25 mm dia. × 25 mm magnet	3	4	6
R-MP-13-8	13 mm dia. × 25 mm pin magnet	-	2	2
R-MP-19-8	19 mm dia. × 25 mm pin magnet	-	-	2
R-S-1315-8	13 mm dia. × 15 mm standoff	-	3	3
R-S-1320-8	13 mm dia. × 20 mm standoff	3	6	8
R-S-1325-8	13 mm dia. × 25 mm standoff	3	6	8
R-S-1350-8	13 mm dia. × 50 mm standoff	3	6	8
R-S-1915-8	19 mm dia. × 15 mm standoff	-	3	3
R-S-1920-8	19 mm dia. × 20 mm standoff	3	6	8
R-S-1925-8	19 mm dia. × 25 mm standoff	3	6	8
R-S-1950-8	19 mm dia. × 50 mm standoff	3	6	8
R-S-19100-8	19 mm dia. × 100 mm standoff	-	4	6
R-S-2520-8	25 mm dia. × 20 mm standoff	3	6	8
R-S-2525-8	25 mm dia. × 25 mm standoff	3	6	8
R-S-2550-8	25 mm dia. × 50 mm standoff	3	6	8
R-S-25100-8	25 mm dia. × 100 mm standoff	-	4	6
R-CT-40-30-8	40 mm tension clamp with 30 mm post	-	4	4
R-CT-64-70-8	64 mm tension clamp with 70 mm post	3	8	8
R-CT-95-83-8	95 mm tension clamp with 83 mm post	-	-	2
R-CTB-25-8	25 mm tension clamp bracket	-	-	1
R-RCD-8	Delrin® resting cone	4	4	4
R-RCS-8	Steel resting cone	-	4	4
R-APJ-8	Adjustable pivot joint	-	-	1
R-AJ-19-8	19 mm dia. adjustable jackstand	1	2	3
R-AJ-25-8	25 mm dia. adjustable jackstand	-	2	3
R-AS-45-8	45 mm long adjustable slide	-	1	3
R-AS-70-8	70 mm long adjustable slide	1	3	3
R-TB-2530-8	Tower block with base	-	2	2
R-T-25300-8	25 mm^2 × 300 mm tower	-	-	1
R-TC-500200	500 mm × 200 mm × 25 mm component tray	1	1	2
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1	1	2
Total number of components in each set		**47**	**114**	**155**

¼-20 CMM and Equator system component sets: Clamping

The ¼-20 CMM and Equator system clamping component set can be used to hold aluminum, plastic, brass, titanium and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with ¼-20 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-CB-20

Part number	Description	Set A (part no. R-FSC-CA-20)	Set B (part no. R-FSC-CB-20)	Set C (part no. R-FSC-CC-20)
R-S-37550-20	0.375 in dia. × 0.5 in standoff	-	3	6
R-S-5050-20	0.5 in dia. × 0.5 in standoff	-	-	4
R-S-5075-20	0.5 in dia. × 0.75 in standoff	3	6	8
R-S-501-20	0.5 in dia. × 1.0 in standoff	3	6	8
R-S-502-20	0.5 in dia. × 2.0 in standoff	3	6	8
R-S-7550-20	0.75 in dia. × 0.5 in standoff	-	3	4
R-S-7575-20	0.75 in dia. × 0.75 in standoff	3	6	8
R-S-751-20	0.75 in dia. × 1.0 in standoff	3	6	8
R-S-752-20	0.75 in dia. × 2.0 in standoff	3	6	8
R-S-754-20	0.75 in dia. × 4.0 in standoff	-	4	6
R-S-175-20	1.0 in dia. × 0.75 in standoff	3	6	8
R-S-11-20	1.0 in dia. × 1.0 in standoff	3	6	8
R-S-12-20	1.0 in dia. × 2.0 in standoff	3	6	8
R-S-14-20	1.0 in dia. × 4.0 in standoff	-	4	6
R-SP-501-20	0.5 in dia. × 1.0 in pin standoff	2	4	4
R-SP-751-20	0.75 in dia. × 1.0 in pin standoff	-	-	2
R-CT-160-125-20	1.6 in tension clamp with 1.25 in post	2	6	6
R-CT-250-275-20	2.5 in tension clamp with 2.75 in post	4	12	12
R-CT-375-325-20	3.75 in tension clamp with 3.25 in post	-	-	3
R-CT-4P-325-20	4.0 in tension clamp plunger with 3.25 in post	-	-	3
R-CTB-1-20	1.0 in tension clamp bracket	-	-	1
R-RCD-20	Delrin® resting cone	3	4	6
R-RPS-20	Steel resting pin	-	4	6
R-APJ-20	Adjustable pivot joint	-	-	1
R-AJ-50-20	0.50 in dia. adjustable jackstand	1	2	4
R-AJ-1-20	1.0 in dia. adjustable jackstand	-	2	3
R-AS-1-20	1.0 in long adjustable slide	1	2	3
R-AS-3-20	3.0 in long adjustable slide	1	2	4
R-TB-751-20	Tower block with base 0.75 in² × 1.0 in	-	2	2
R-T-112-20	1.0 in² × 12.0 in tower (1 row, 4 sides)	-	-	1
R-TC-500200	20 in × 8 in × 1 in component tray	1	1	2
R-BC10	8 in × 8 in × 2 in compartment box (not shown)	1	1	2
Total number of components in each set		**42**	**109**	**161**

¼-20 CMM and Equator system component sets: Magnetic and clamping

The ¼-20 CMM and Equator system magnetic and clamping component set can be used to hold steel, aluminum, plastic, ferrous and other non-ferrous parts.

To build your kit, select an appropriately sized base plate for your requirements with ¼-20 threaded holes. Don't forget to ask your sales representative to add on plate clamps or mounting holes to your order to secure your plate to the CMM granite.

R-FSC-MCB-20

Part number	Description	Set A (part no. R-FSC-MCA-20)	Set B (part no. R-FSC-MCB-20)	Set C (part no. R-FSC-MCC-20)
R-M-50-20	0.5 in dia. × 1.0 in magnet	3	4	6
R-M-75-20	0.75 in dia. × 1.0 in magnet	3	4	6
R-M-1-20	1.0 in dia. × 1.0 in magnet	3	4	6
R-MP-50-20	0.5 in dia. × 1.0 in pin magnet	-	2	2
R-MP-75-20	0.75 in dia. × 1.0 in pin magnet	-	-	2
R-S-37550-20	0.375 in dia. × 0.5 in standoff	-	3	4
R-S-5050-20	0.5 in dia. × 0.5 in standoff	-	-	4
R-S-5075-20	0.5 in dia. × 0.75 in standoff	3	6	8
R-S-501-20	0.5 in dia. × 1.0 in standoff	3	6	8
R-S-502-20	0.5 in dia. × 2.0 in standoff	3	6	8
R-S-7550-20	0.75 in dia. × 0.5 in standoff	-	3	4
R-S-7575-20	0.75 in dia. × 0.75 in standoff	3	6	8
R-S-751-20	0.75 in dia. × 1.0 in standoff	3	6	8
R-S-752-20	0.75 in dia. × 2.0 in standoff	3	6	8
R-S-754-20	0.75 in dia. × 4.0 in standoff	-	3	6
R-S-175-20	1.0 in dia. × 0.75 in standoff	3	6	8
R-S-11-20	1.0 in dia. × 1.0 in standoff	3	6	8
R-S-12-20	1.0 in dia. × 2.0 in standoff	3	6	8
R-S-14-20	1.0 in dia. × 4.0 in standoff	-	3	6
R-CT-160-125-20	1.6 in tension clamp with 1.25 in post	-	4	4
R-CT-250-275-20	2.5 in tension clamp with 2.75 in post	4	8	8
R-CT-375-325-20	3.75 in tension clamp with 3.25 in post	-	-	2
R-CTB-1-20	1.0 in tension clamp bracket	-	-	1
R-RCD-20	Delrin® resting cone	3	4	6
R-RPS-20	Steel resting pin	-	4	6
R-APJ-20	Adjustable pivot joint	-	-	1
R-AJ-50-20	0.50 in dia. adjustable jackstand	1	2	3
R-AJ-1-20	1.0 in dia. adjustable jackstand	-	2	3
R-AS-1-20	1.0 in long adjustable slide	1	2	3
R-AS-3-20	3.0 in long adjustable slide	1	2	3
R-TB-751-20	Tower block with base 0.75 in² × 1.0 in	-	2	2
R-T-112-20	1.0 in² × 12.0 in tower (1 row, 4 sides)	-	-	1
R-TC-500200	20 in × 8 in × 1 in component tray	1	1	2
R-BC10	8 in × 8 in × 2 in compartment box (not shown)	1	1	2
Total number of components in each set		**47**	**111**	**163**

Vision component sets

M4 vision component sets

The M4 vision component set is ideal for holding small intricate parts, ferrous or non-ferrous.

N.B.: Ensure that the acrylic plate and QuickLoad corner you select will fit your specific machine. Please contact your local sales representative to discuss your requirements.

R-FSV-B-4

Part number	Description	Set A (part no. R-FSV-A-4)	Set B (part no. R-FSV-B-4)	Set C (part no. R-FSV-C-4)
R-S-65-4*	6 mm dia. × 5 mm standoff	-	3	3
R-S-610-4*	6 mm dia. × 10 mm standoff	3	6	6
R-S-615-4*	6 mm dia. × 15 mm standoff	-	-	4
R-S-625-4*	6 mm dia. × 25 mm standoff	3	6	6
R-S-95-4*	9 mm dia. × 5 mm standoff	3	3	3
R-S-910-4	9 mm dia. × 10 mm standoff	3	6	6
R-S-915-4	9 mm dia. × 15 mm standoff	-	-	4
R-S-920-4	9 mm dia. × 20 mm standoff	3	6	6
R-S-925-4	9 mm dia. × 25 mm standoff	3	6	6
R-S-950-4	9 mm dia. × 50 mm standoff	-	-	4
R-S-1210-4	12 mm dia. × 10 mm standoff	3	6	6
R-S-1215-4	12 mm dia. × 15 mm standoff	-	-	4
R-S-1225-4	12 mm dia. × 25 mm standoff	3	6	6
R-S-1250-4	12 mm dia. × 50 mm standoff	-	-	4
R-SP-610-4	6 mm dia. × 10 mm pin standoff	2	4	4
R-SP-910-4	9 mm dia. × 10 mm pin standoff	2	4	4
R-SP-1210-4	12 mm dia. × 10 mm pin standoff	-	-	4
R-CTT-40-25-4	40 mm tension clamp with coated soft tip with 25 mm post	2	4	4
R-CWT-25-25-4	25 mm wire clamp with coated soft tip with 50 mm post	2	4	4
R-CWT-50-50-4	50 mm wire clamp with coated soft tip with 50 mm post	2	4	4
R-CP-4	Pusher clamp	1	1	1
R-CVM-B-4	Micro vise clamp with base	1	1	1
R-CSPS-1210-4	Spring pusher standoff clamp	1	1	1
R-RPA-4	Aluminum resting pin	4	4	4
R-VC-5050-4	50 mm × 50 mm corner viewer	1	1	1
R-AJ-9-4	9 mm dia. adjustable jackstand	1	2	2
R-AS-30-4	30 mm long adjustable slide	1	2	2
R-ASA-45-4	45 mm long adjustable acrylic slide base	1	2	2
R-ASAE-4	Adjustable slide with acrylic extension	-	-	1
R-TB-1619-4	Tower block with base 16 mm² × 19 mm	1	1	2
R-TC-300190-4	300 mm × 190 mm × 25 mm component tray	1	1	1
R-BC10	40 mm × 200 mm × 135 mm compartment box (not shown)	1	1	1
Total number of components in each set		**48**	**85**	**111**

* Component does not have a threaded top

M6 vision component set

The M6 vision component set can be used to hold any type or part, ferrous or non-ferrous.

N.B.: Ensure that the acrylic plate and QuickLoad corner you select will fit your specific machine. Please contact your local sales representative to discuss your requirements.

R-FSV-A-6

Part number	Description	Set A (part no. R-FSV-A-6)
R-S-610-6*	6 mm dia. × 10 mm standoff	3
R-S-625-6*	6 mm dia. × 25 mm standoff	3
R-S-95-6*	9 mm dia. × 5 mm standoff	3
R-S-910-6	9 mm dia. × 10 mm standoff	3
R-S-920-6	9 mm dia. × 20 mm standoff	3
R-S-925-6	9 mm dia. × 25 mm standoff	3
R-S-1310-6	13 mm dia. × 10 mm standoff	3
R-S-1320-6	13 mm dia. × 20 mm standoff	3
R-SP-610-6	6 mm dia. × 10 mm pin standoff	2
R-SP-910-6	9 mm dia. × 10 mm pin standoff	2
R-CTT-40-30-6	40 mm tension clamp with coated soft tip with 30 mm post	4
R-CWT-25-25-6	25 mm wire clamp with coated soft tip with 25 mm post	4
R-CWT-50-50-6	50 mm wire clamp with coated soft tip with 50 mm post	4
R-CP-6	Pusher clamp	1
R-CVM-B-6	Micro vise clamp with base	1
R-CSPS-1925-6	19 mm dia. × 25 mm spring pusher standoff clamp	1
R-RPS-6	Steel resting pin	4
R-VC-7575-6	75 mm × 75 mm corner viewer	1
R-AJ-13-6	13 mm dia. adjustable jackstand	1
R-AS-45-6	45 mm long adjustable slide	1
R-ASA-45-6	45 mm long adjustable acrylic slide base	1
R-TB-2025-6	Tower block with base 20 mm² × 30 mm	1
R-TC-300190-6	300 mm × 190 mm × 25 mm component tray	1
R-BC10	50 mm × 200 mm × 150 mm compartment box (not shown)	1
Total number of components in each set		**54**

* Component does not have a threaded top

¼-20 vision component sets

The ¼-20 vision component set can be used to hold any type of part, ferrous or non-ferrous.

N.B.: Ensure that the acrylic plate and QuickLoad corner you select will fit your specific machine. Please contact your local sales representative to discuss your requirements.

R-FSV-QLCB-20

Part number	Description	Set A (part no. R-FSV-QLCA-20)	Set B (part no. R-FSV-QLCB-20)
R-S-2550-20*	0.25 in dia. × 0.5 in standoff	3	3
R-S-251-20*	0.25 in dia. × 1.0 in standoff	3	6
R-S-37525-20*	0.375 in dia. × 0.25 in standoff	3	6
R-S-37550-20	0.375 in dia. × 0.5 in standoff	3	6
R-S-37575-20	0.375 in dia. × 0.75 in standoff	3	6
R-S-3751-20	0.375 in dia. × 1.0 in standoff	3	6
R-S-5050-20	0.5 in dia. × 0.5 in standoff	3	6
R-S-5075-20	0.5 in dia. × 0.75 in standoff	3	6
R-S-501-20	0.5 in dia. × 1.0 in standoff	-	6
R-SP-2550-20	0.25 in dia. × 0.5 in pin standoff	2	4
R-SP-37550-20	0.375 in dia. × 0.5 in pin standoff	2	4
R-CTT-160-125-20	1.6 in tension clamp with rubber coated tip with 1.25 in post	4	4
R-CWT-1-1-20	1.0 in wire clamp with rubber coated tip with 1.0 in post	4	4
R-CWT-2-2-20	2.0 in wire clamp with rubber coated tip with 2.0 in post	4	4
R-RPS-20	Steel resting pin	4	4
R-VC-33-20	3.25 in × 3.25 in corner viewer	1	1
R-AJ-50-20	0.5 in dia. adjustable jackstand	1	2
R-CP-20	Pusher clamp	1	1
R-CSPS-751-20	0.75 in dia. × 1.0 in spring pusher standoff clamp	1	1
R-AS-1-20	1.0 in long adjustable slide	1	2
R-ASA-2-20	2.0 in long adjustable acrylic slide	1	2
R-TB-751-20	Tower block with base 0.75 in² × 1.0 in	1	2
R-CVM-B-20	Micro vise clamp with base	1	1
R-TC-300190-20	20 in × 8 in × 1 in component tray	1	1
R-BC10	8 in × 8 in × 2 in compartment box (not shown)	1	1
Total number of components in each set		**54**	**89**

* Component does not have a threaded top

Modular fixturing components

Adjustables 4-26

Clamps 4-31

Magnets 4-39

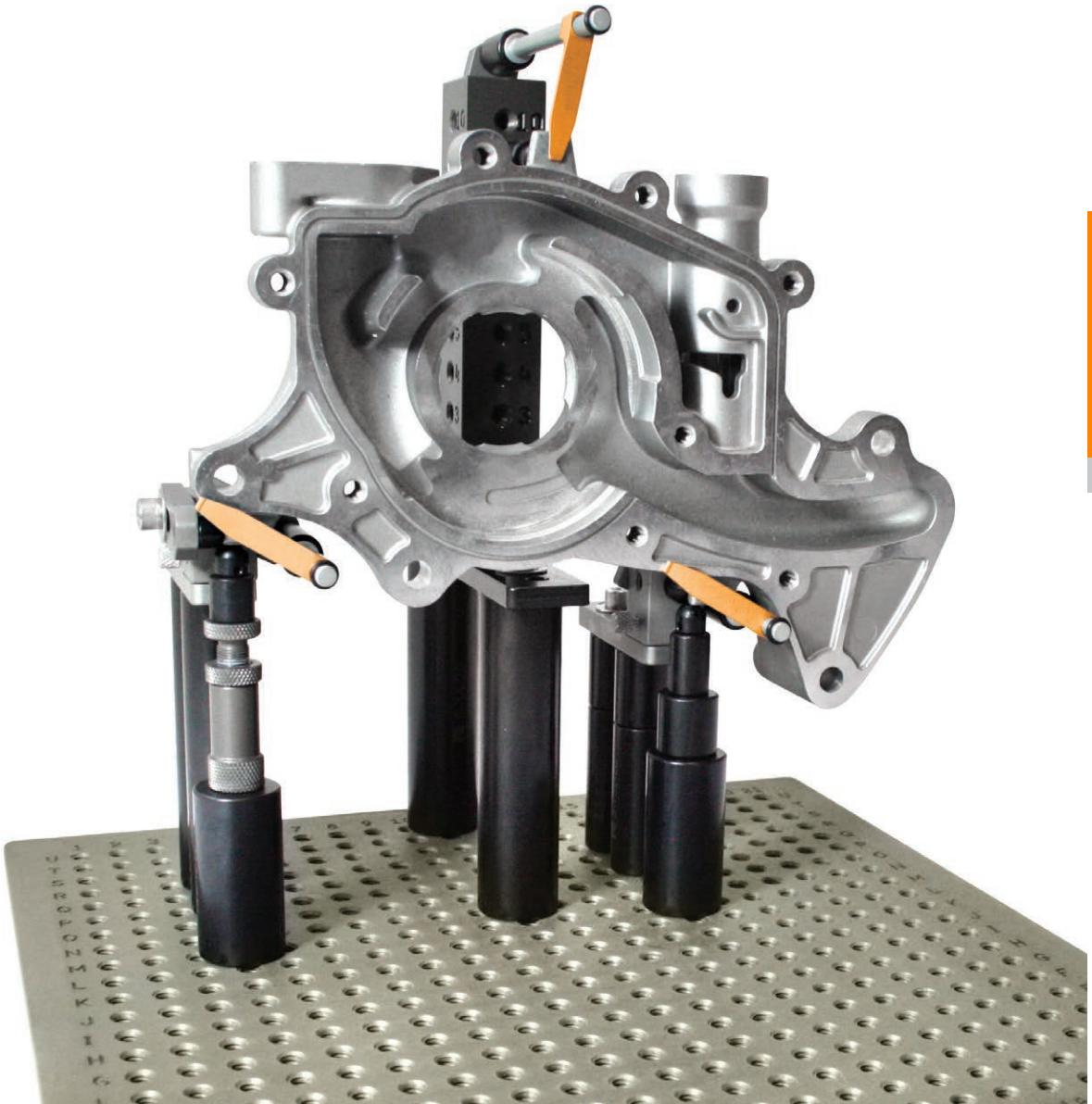
Miscellaneous 4-41

Standoffs 4-45

Suction cups 4-49

Towers 4-52

Trays 4-54

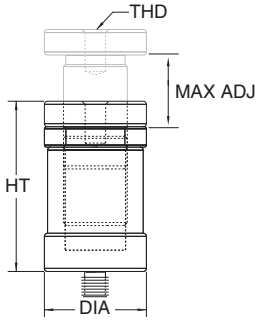


Adjustables

Adjustable jack stand

To allow variable heights of up to 22 mm and then lock into position.

R-AJ-25-8



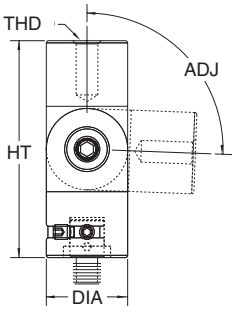
Part no.	THD	DIA	HT	ADJ	
R-AJ-9-4	M4	9.5 mm	16.1 mm	2.5 mm	
R-AJ-13-6	M6	15.9 mm	42.4 mm	14 mm	
R-AJ-25-6	M6	25.4 mm	42.4 mm	13.5 mm	
R-AJ-19-8	M8	19.1 mm	37 mm	13 mm	
R-AJ-25-8	M8	25.4 mm	42.4 mm	12.7 mm	
R-AJS-35-8*	M8	38.1 mm	65 mm	15 mm	
R-AJS-50-12*	M12	50.8 mm	100 mm	35.5 mm	
R-AJ-50-20	¼-20	0.63 in	1.5 in	0.55 in	
R-AJ-1-20	¼-20	1.0 in	1.5 in	0.5 in	

* = component made from steel.

Adjustable pivot joint

For positioning a component at any angle. Lock the rotating base into position and then set the angle of the pivot.

R-APJ-8

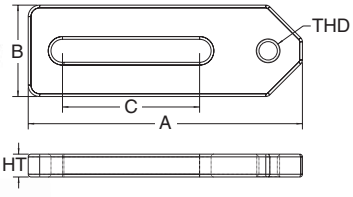


Part no.	THD	DIA	HT	ADJ	
R-APJ-6	M6	19 mm	50.8 mm	186°	
R-APJ-8	M8	19 mm	50.8 mm	186°	
R-APJ-20	¼-20	0.75 in	2.0 in	186°	

Adjustable slide

To place components in between holes on the plate.

R-AS-45-8



R-AS-45-4

Part no.	THD	HT	A	B	C	
R-AS-30-4	M4	5 mm	30.1 mm	12.7 mm	9.3 mm	
R-AS-45-4	M4	5 mm	45 mm	12.7 mm	23.8 mm	
R-AS-45-6	M6	10 mm	44.5 mm	20 mm	12.9 mm	
R-AS-70-6	M6	10 mm	72 mm	25 mm	33.9 mm	
R-AS-100-6	M6	10 mm	100 mm	25 mm	61.9 mm	
R-AS-45-8	M8	10 mm	44.5 mm	20 mm	12.9 mm	
R-AS-70-8	M8	10 mm	71.9 mm	25 mm	33.9 mm	
R-AS-150-12	M12	25 mm	175 mm	50.8 mm	100 mm	
R-AS-1-20	¼-20	0.25 in	1.38 in	0.63 in	0.5 in	
R-AS-3-20	¼-20	0.25 in	3.0 in	1.0 in	1.5 in	

Included: socket head cap and thumb screws.

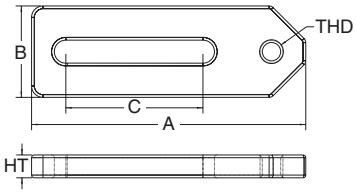
Adjustable acrylic slide

To place components in between holes on the plate.

Part no.	THD	HT	A	B	C	
R-ASA-45-4	M4	5 mm	45 mm	12.7 mm	24 mm	
R-ASA-45-6	M6	10 mm	50.8 mm	20 mm	28.6 mm	
R-ASA-2-20	¼-20	0.025 in	2 in	0.63 in	1.13 in	

Included: socket head cap and thumb screws.

R-ASA-45-4

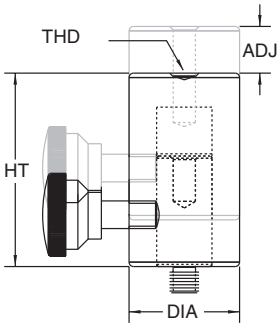


Adjustable height stand

To allow variable heights without marring the part.

Part no.	THD	DIA	HT	ADJ	
R-AH-2545-6	M6	25.4 mm	45 mm	9 mm	
R-AH-2545-8	M8	25.4 mm	45 mm	9 mm	
R-AH-1175-20	¼-20	1.0 in	1.75 in	0.38 in	

R-AH-2545-8



Adjustable V-post

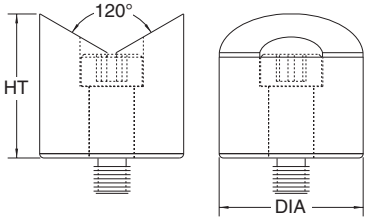
For holding cylindrical or tubular parts without marring the part's surface. Can be rotated and locked to any orientation.

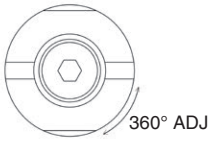
Part no.	THD	DIA	HT	ADJ	
R-AVP-2525-6	M6	25.1 mm	25 mm	360°	
R-AVP-2525-8	M8	25.1 mm	25 mm	360°	
R-AVP-11-20	¼-20	0.99 in	1.0 in	360°	

$38.75

Included: shoulder bolt.

R-AVP-2525-6





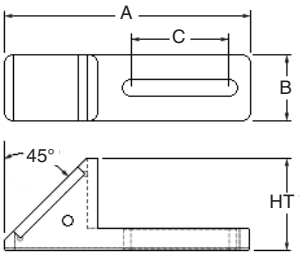
Adjustable slide mirror

To aid viewing and inspecting a part.

Part no.	THD	HT	A	B	C	
R-ASM-4	M4	28.6 mm	75 mm	20.24 mm	30 mm	
R-ASM-50-2	M4/ M6/ ¼-20	45.8 mm/ 1.8 in	95 mm/ 3.75 in	34.9 mm/ 1.97 in	31.8 mm/ 1.18 in	

R-ASM-50-2

R-ASM-4



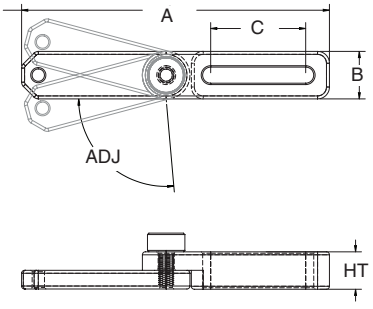
Adjustable slide acrylic extension

Screw any component onto the acrylic slide to extend the reach of the component.

Part no.	THD	HT	A	B	C	ADJ	
R-ASAE-4	M4	10 mm	82.3 mm	12.7 mm	25.4 mm	186°	

Included: socket head screws.

R-ASAE-4

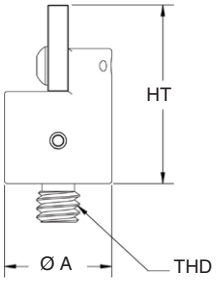


Rotational micro V

For holding small cylindrical or tubular parts with minimal surface contact.

Part no.	THD	HT	A	
R-VMR-1525-4	M4	26.5 mm	15.9 mm	
R-VMR-1525-6	M6	25 mm	15.9 mm	
R-VMR-631-20	¼-20	1.04 in	0.63 in	

R-VMR-1525-4

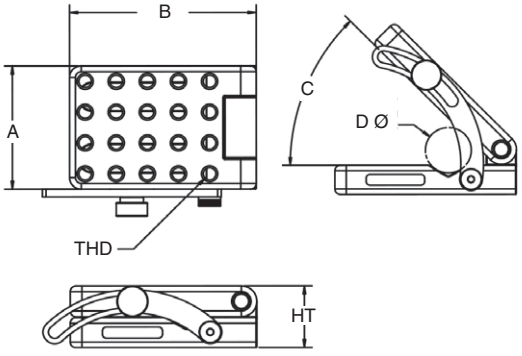


Adjustable angle plate

Ideal for holding components on an angle. The angle plate is adjustable to 180°.

Part no.	THD	HT	A	B	C	
R-PCA-135075-10-4	M4	12.3 mm	76.2 mm	50.8 mm	180°	
R-PCA-135075-12-6	M6	12.3 mm	76.2 mm	50.8 mm	180°	
R-PCA-135075-15-8	M8	12.3 mm	76.2 mm	50.8 mm	180°	
R-PCA-5023-50-20	¼-20	0.49 in	3.0 in	2.0 in	180°	

R-PCA-135075-15-8



C	D Ø
0°	-
5°	6.55 mm/0.258 in
10°	8.26 mm/0.325 in
15°	9.93 mm/0.391 in
20°	11.56 mm/0.455 in
25°	13.16 mm/0.518 in
30°	14.71 mm/0.579 in
35°	16.26 mm/0.64 in
40°	17.75 mm/0.699 in
45°	19.25 mm/0.758 in
50°	20.73 mm/0.816 in
55°	22.20 mm/0.874 in
60°	23.65 mm/0.931 in
65°	25.07 mm/0.987 in
70°	26.47 mm/1.042 in
75°	27.86 mm/1.097 in
80°	29.21 mm/1.15 in
85°	30.51 mm/1.201 in
90°	31.75 mm/1.25 in

N.B. column D Ø can be used to set gauge pin angles

Quick slide plate

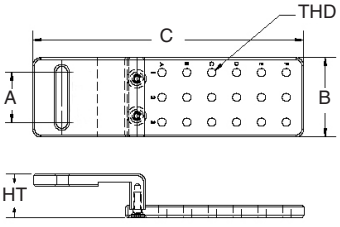
Threaded slide plate, designed to mount fixturing components to, using the QuickLoad Corner (QLC).

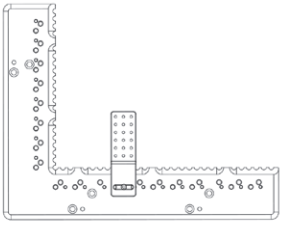
Part no.	THD	A	B	C	HT	
R-PSQ-2042-4	M4	20.5 mm	20 mm	79 mm	17.6 mm	
R-PSQ-3272-4	M4	20.5 mm	32 mm	109 mm	17.6 mm	

Included: socket head cap screws and washers.

R-PSQ-3272-4

R-PSQ-2042-4





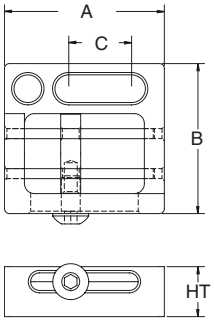
APPLICATION EXAMPLE ON QLC

Adjustable micro V

For cylindrical parts smaller than 6.5 mm in diameter.

Part no.	THD	HT	A	B	C	
R-AVM-4	M4	8 mm	25.4 mm	23.8 mm	10 mm	

R-AVM-4

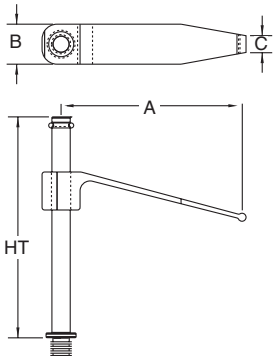


Clamps

Tension clamp

For quick and easy clamping.

R-CT-64-70-6



R-CT-40-30-6

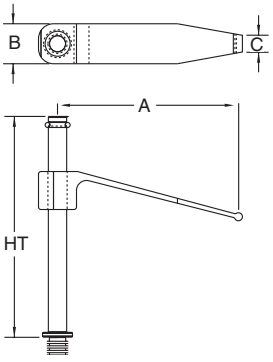
Part no.	THD	HT	A	B	C	
R-CT-40-25-4	M4	25 mm	42.9 mm	7.6 mm	3.9 mm	
R-CT-40-30-6	M6	30 mm	42.9 mm	7.6 mm	3.9 mm	
R-CT-40-70-6	M6	68.1 mm	42.9 mm	7.6 mm	3.9 mm	
R-CT-64-70-6	M6	68.1 mm	66.4 mm	12.7 mm	5.4 mm	
R-CT-95-83-6	M6	82.8 mm	98.5 mm	19.1 mm	8.6 mm	
R-CT-40-30-8	M8	30.1 mm	42.9 mm	7.6 mm	3.9 mm	
R-CT-40-70-8	M8	68.2 mm	42.9 mm	7.6 mm	3.9 mm	
R-CT-64-70-8	M8	68.2 mm	66.4 mm	12.7 mm	5.4 mm	
R-CT-95-83-8	M8	80.9 mm	98.5 mm	19.1 mm	8.6 mm	
R-CT-160-125-20	¼-20	1.26 in	1.7 in	0.3 in	0.15 in	
R-CT-160-275-20	¼-20	2.76 in	1.7 in	0.3 in	0.15 in	
R-CT-250-275-20	¼-20	2.76 in	2.62 in	0.5 in	0.21 in	
R-CT-375-325-20	¼-20	3.26 in	3.88 in	0.75 in	0.34 in	

N.B. Part number under tension clamp is for reference only. See chart for complete dimensions.

Soft tip tension clamp

Rubber coated tips hold parts without scratching or marring the surface of a part.

R-CTT-64-70-6



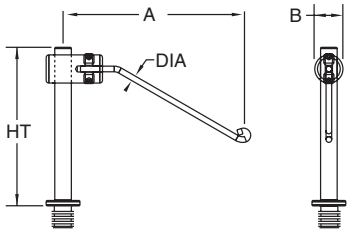
Part no.	THD	HT	A	B	C	
R-CTT-40-25-4	M4	25 mm	42.9 mm	7.6 mm	3.9 mm	
R-CTT-40-30-6	M6	30 mm	42.9 mm	7.6 mm	3.9 mm	
R-CTT-40-70-6	M6	68.2 mm	42.9 mm	7.6 mm	3.9 mm	
R-CTT-64-70-6	M6	68.1 mm	66.4 mm	12.7 mm	5.4 mm	
R-CTT-95-83-6	M6	82.8 mm	98.5 mm	19.1 mm	8.6 mm	
R-CTT-40-30-8	M8	30.1 mm	42.9 mm	7.6 mm	3.9 mm	
R-CTT-40-70-8	M8	68.2 mm	42.9 mm	7.6 mm	3.9 mm	
R-CTT-64-70-8	M8	68.2 mm	66.4 mm	12.7 mm	5.4 mm	
R-CTT-95-83-8	M8	80.9 mm	98.5 mm	19.1 mm	8.6 mm	
R-CTT-160-125-20	¼-20	1.26 in	1.7 in	0.3 in	0.15 in	
R-CTT-160-275-20	¼-20	2.76 in	1.7 in	0.3 in	0.15 in	
R-CTT-250-275-20	¼-20	2.76 in	2.62 in	0.5 in	0.21 in	
R-CTT-375-325-20	¼-20	3.26 in	3.88 in	0.75 in	0.34 in	

N.B. Part number under soft tip tension clamp is for reference only. See chart for complete dimensions.

Spring wire clamp

For light clamping of small parts, minimizing the contact area on a part and for least possible obstruction.

R-CW-50-50-4



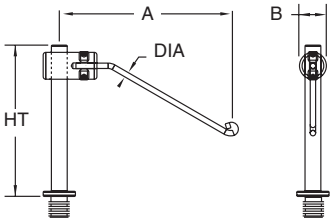
Part no.	THD	HT	A	B	DIA	
R-CW-25-25-4	M4	25 mm	38.35 mm	7.9 mm	1.6 mm	
R-CW-50-50-4	M4	50 mm	56.85 mm	7.9 mm	1.6 mm	
R-CW-25-25-6	M6	23.9 mm	38.35 mm	7.9 mm	1.6 mm	
R-CW-50-50-6	M6	50 mm	56.85 mm	7.9 mm	1.6 mm	
R-CW-1-1-20	¼-20	0.94 in	1.51 in	0.31 in	0.06 in	
R-CW-2-2-20	¼-20	1.76 in	2.23 in	0.31 in	0.06 in	

N.B. Part number under spring wire clamp is for reference only. See chart for complete dimensions.

Soft tip spring wire clamp

With rubber coated tips for light clamping of small parts, minimizing the contact area on a part and for least possible obstruction.

R-CWT-25-25-4



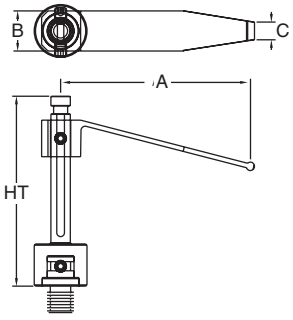
Part no.	THD	HT	A	B	DIA	
R-CWT-25-25-4	M4	25 mm	38.35 mm	7.9 mm	1.6 mm	
R-CWT-50-50-4	M4	50 mm	56.85 mm	7.9 mm	1.6 mm	
R-CWT-25-25-6	M6	23.9 mm	38.35 mm	7.9 mm	1.6 mm	
R-CWT-50-50-6	M6	50 mm	56.85 mm	7.9 mm	1.6 mm	
R-CWT-1-1-20	¼-20	0.94 in	1.51 in	0.31 in	0.06 in	
R-CWT-2-2-20	¼-20	1.76 in	2.23 in	0.31 in	0.06 in	

N.B. Part number under spring wire clamp is for reference only. See chart for complete dimensions.

Positional tension clamp

Allows locking the tension clamp rotational position to avoid probing interferences from one time to the next.

R-CPT-64-58-6



Part no.	THD	HT	A	B	C	
R-CPT-64-58-6	M6	57.2 mm	63.5 mm	12.7 mm	5.4 mm	
R-CPTT-64-58-6*	M6	57.2 mm	63.5 mm	12.7 mm	5.4 mm	
R-CPT-250-225-20	¼-20	2.25 in	2.5 in	0.5 in	0.21 in	
R-CPTT-250-225-20*	¼-20	2.25 in	2.5 in	0.5 in	0.21 in	

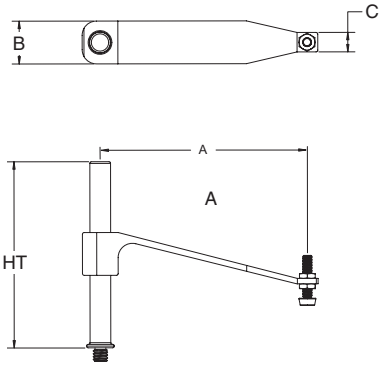
* Part number beginning R-CPTT has rubber coated tips.

Plunger tip tension clamp

This tension clamp contains an adjustable rubber-tipped plunger to reach over the edge of a part and apply a clamping force inside a recess.

Part no.	THD	HT	A	B	C	
R-CT-100P-83-6	M6	82.8 mm	95.4 mm	19.1 mm	8.6 mm	
R-CT-100P-83-8	M8	80.9 mm	95.4 mm	19.1 mm	8.6 mm	
R-CT-4P-325-20	¼-20	3.26 in	3.76 in	0.75 in	0.34 in	

R-CT-4P-325-20



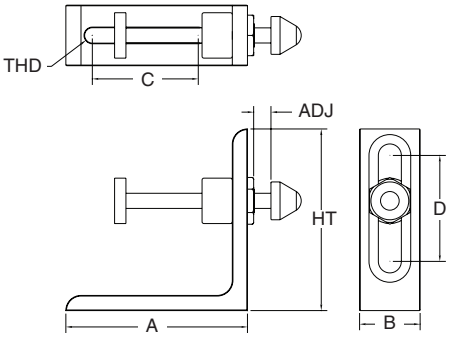
Screw pusher clamp

For pushing and holding a part against stops.

Part no.	THD	HT	A	B	C	D	ADJ	
R-CSP	M6/ M8/ ¼-20	76 mm/ 3.0 in	76 mm/ 3.0 in	25 mm/ 1.0 in	44 mm/ 1.75 in	44 mm/ 1.75 in	38 mm/ 1.5 in	

Included: socket head cap screw, M6, M8 and ¼-20 thumbs screw and washer.

R-CSP



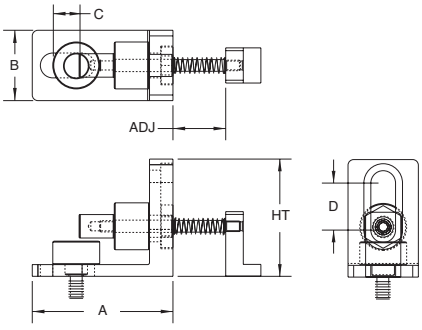
Pusher clamp

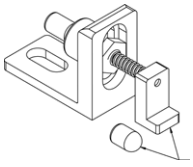
To push a part against standoffs or into corner (two interchangeable tips are included).

Part no.	THD	HT	A	B	C	D	ADJ	
R-CP-4	M4	31.2 mm	38.1 mm	19.1 mm	7.9 mm	12.7 mm	9.5 mm	
R-CP-6	M6	31.2 mm	38.1 mm	19.1 mm	7.9 mm	12.7 mm	9.5 mm	
R-CP-20	¼-20	1.23 in	1.5 in	0.75 in	0.31 in	0.5 in	0.38 in	

Included: socket head cap screw, thumb screw and washer.

R-CP-4





INTERCHANGABLE DELRIN® TIP

Micro vise clamp

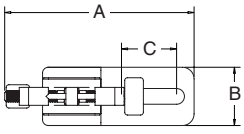
Ideal for holding parts horizontally or vertically. Jaws have a V notch for holding cylindrical and tubular parts.

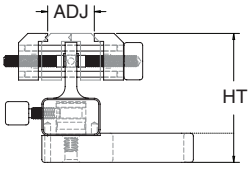
Part no.	THD	HT	A	B	C	ADJ	
R-CVM-4	M4	27.8 mm	37.8 mm	10.2 mm	–	12.7 mm	
R-CVM-B-4 (with base)	M4	35.1 mm	51.5 mm	15.9 mm	15 mm	12.7 mm	
R-CVM-6	M6	27.8 mm	37.8 mm	10.2 mm	–	12.7 mm	
R-CVM-B-6 (with base)	M6	37.8 mm	78.3 mm	20 mm	35 mm	12.7 mm	
R-CVM-20	¼-20	1.1 in	1.49 in	0.4 in	–	0.5 in	
R-CVM-B-20 (with base)	¼-20	1.35 in	3.0 in	0.75 in	1.5 in	0.5 in	

Included: socket head cap screws and washers.

R-CVM-4

R-CVM-B-20





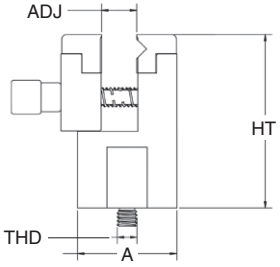
Mini vise

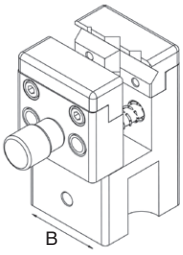
For clamping a small area of a part. Vise can be rotated 360° and then locked into position.

Part no.	THD	HT	A	B	ADJ	
R-CMV-4	M4	57.2 mm	31.8 mm	31.8 mm	11 mm	
R-CMV-6	M6	57.2 mm	31.8 mm	31.8 mm	11 mm	
R-CMV-8	M8	57.2 mm	31.8 mm	31.8 mm	11 mm	
R-CMV-20	¼-20	2.25 in	1.25 in	1.25 in	0.44 in	

N.B. Additional jaws can be purchased for use with any thread size mini vise by ordering part numbers: R-CMV-AJ (aluminum flat jaw) or R-CMV-VAJ (aluminum V jaw).

R-CMV-6



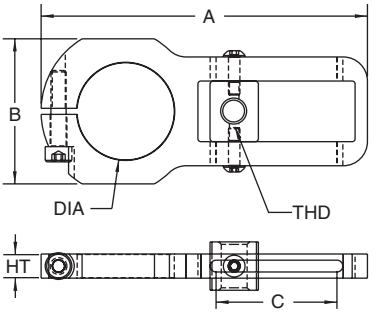


Tension clamp bracket

To hold a tension clamp on an angle.

Part no.	THD	DIA	HT	A	B	C	
R-CTB-25-6	M6	25.5 mm	6.4 mm	85.7 mm	38.1 mm	31.8 mm	
R-CTB-25-8	M8	25.5 mm	6.4 mm	85.7 mm	38.1 mm	31.8 mm	
R-CTB-1-20	¼-20	1.01 in	0.25 in	3.37 in	1.5 in	1.25 in	

R-CTB-25-6

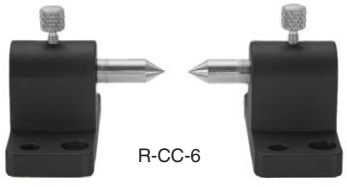


Centers

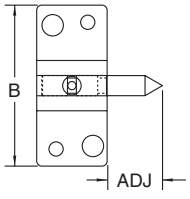
For holding cylindrical parts at each end on their inside diameters.

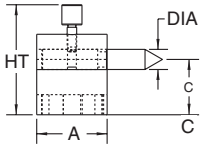
Part no.	THD	DIA	HT	A	B	C	ADJ	
R-CC-6	M4/M6/ ¼-20	6.4 mm/ 0.25 in	38 mm/ 1.5 in	22.2 mm/ 0.88 in	50.8 mm/ 2.0 in	20 mm/ 1.10 in	16 mm/ 0.63 in	
R-CC-13	M4/M6/ M8/ ¼-20	12.7 mm/ 0.50 in	50.2 mm/ 1.98 in	38.1 mm/ 1.5 in	63.5 mm/ 2.5 in	25 mm/ 1.48 in	38 mm/ 1.5 in	
R-CC-25	M4/M6/ M8/ ¼-20	25.4 mm/ 1.0 in	69.2 mm/ 2.73 in	50.8 mm/ 2.0 in	76.2 mm/ 2.0 in	35 mm/ 2.13 in	50 mm/ 1.97 in	

Included: both male and female centering options; socket head cap screws.



R-CC-6



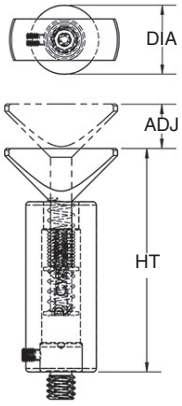


Spring wedge clamp

Designed for securing parts using a downwards force, instead of using tension clamps.

Part no.	THD	HT	ADJ	DIA	
R-CWS-6	M6	51.9 mm	9.9 mm	15.9 mm	
R-CWS-20	¼-20	1.97 in	0.39 in	0.63 in	

R-CWS-6



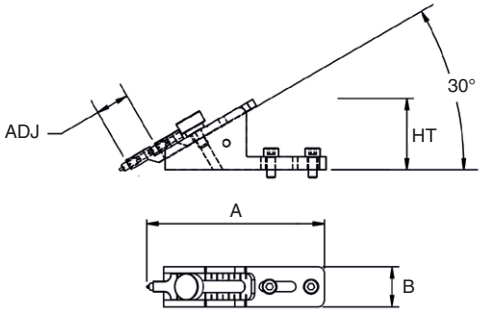
Micro sliding pusher clamp

For securing small and delicate parts using a spring pointed Delrin® tip, with minimum force and contact.

Part no.	THD	HT	A	B	ADJ	
R-CPSM-4	M4	29 mm	103 mm	19 mm	25 mm	

N.B. Includes socket head cap screws and washers.

R-CPSM-4



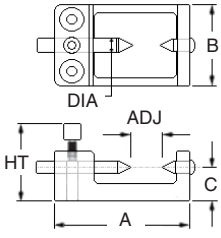
Micro center

Has adjustability to hold cylindrical parts up to 26 mm in length and 25.5 mm in diameter.

Part no.	THD	A	B	C	ADJ	
R-CMC-4	M4	50.8 mm	31.8 mm	12.7 mm	26 mm	

N.B. Includes socket head cap screws and washers.

R-CMC-4

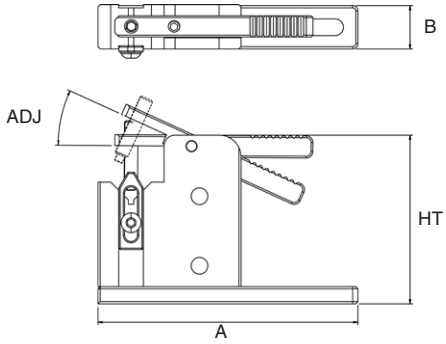


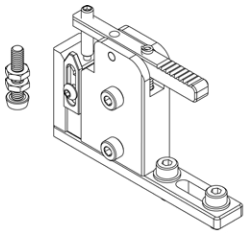
Micro V spring clamp

The clamp has an adjustable spring arm for different diameter parts and also an adjustable end stop (two interchangeable feet are included).

Part no.	THD	HT	A	B	ADJ	
R-CSVM-4	M4	48.5 mm	75 mm	12.4 mm	0-24°	

R-CSVM-4





INTERCHANGABLE FEET

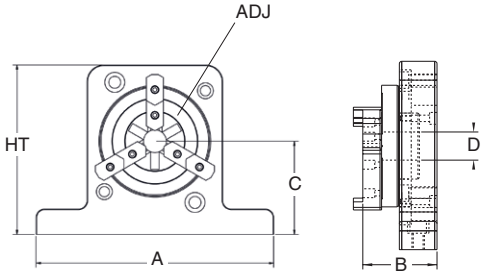
3-jaw clamp

For holding round parts at one end or in the middle, allowing the probe around the part without interference.

Part no.	THD	HT	A	B	C	D	ADJ	
R-CJ-3	M6/ M8/ ¼-20	127 mm/ 5 in	178 mm/ 7 in	56.3 mm/ 2.22 in	70 mm/ 2.75 in	19 mm/ 0.75 in	1.5 mm–64.5 mm	

Included: socket head cap screws.
OD Min = 1.5 mm, OD Max = 64 mm, ID Min = 47 mm, ID Max = 64

R-CJ-3



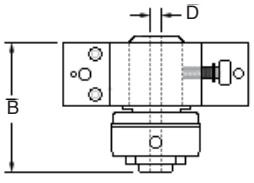
Rotating 3-jaw clamp

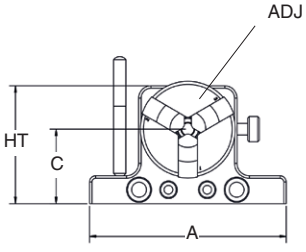
For clamping on inner and outer diameter of part, locking into position then rotated to a marked increment. Not intended for checking part run-out.

Part no.	THD	HT	A	B	C	D	ADJ	
R-CJR-3	M4/ M6/ ¼-20	60 mm/ 2.38 in	102 mm/ 4 in	70 mm/ 2.76 in	38 mm/ 1.5 in	6.4 mm	1 mm–63 mm	

Included: socket head cap screws and chuck keys.
OD Min = 1.5 mm, OD Max = 27 mm, ID Min = 16 mm, ID Max = 55

R-CJR-3





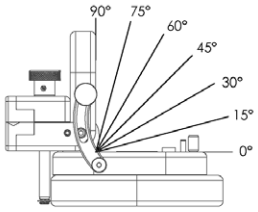
Rotational angle vise

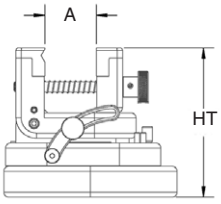
Provides quick, convenient staging for a variety of parts, can be mounted directly on the rails of your comparator. Pivot range from 0 to 90° and rotational range of 360°.

Part no.	THD	HT	A (jaws)	
R-CRAV	M4/M6/¼-20	91.8 mm/3.64 in	31.5 mm/1.24 in	

N.B. Dovetail nuts not included as standard.

R-CRAV





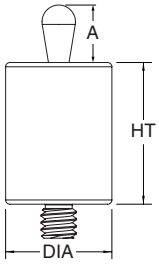
Spring pusher standoff clamp

Designed for fixturing small parts in tight or compact space. Ideal for positioning parts and for profile clamping.

Part no.	THD	DIA	HT	A	
R-CSPS-1210-4	M4	12 mm	10 mm	4 mm	
R-CSPS-1515-4	M4	15 mm	15 mm	6.7 mm	
R-CSPS-1925-6	M6	19 mm	25 mm	10.7 mm	
R-CSPS-1925-8	M8	19.1 mm	25 mm	11 mm	
R-CSPS-751-20	¼-20	0.75 in	1.0 in	0.42 in	

R-CSPS-1210-4

R-CSPS-1925-6



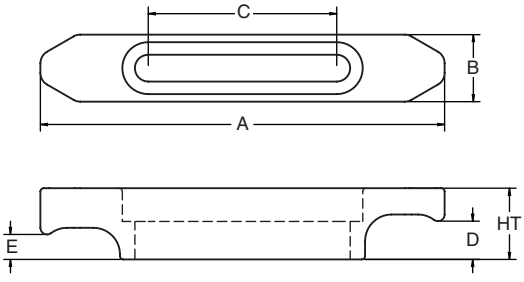
CMM plate clamp

Non-marking clamp for securing 13 mm and 19 mm thick plates to a CMM. Includes screws for M8, M10 and M12 inserts.

Part no.	THD	HT	A	B	C	D	E	
R-CPC-190	M8/M10/ M12	34 mm	193 mm	32 mm	90 mm	18.3 mm	11.9 mm	

N.B. Set of 2.

R-CPC-190



Adjustable angle slide

Hold and secure cylindrical/tubular parts at a specific angle. Available with six different female/male removable centering pin options for different length parts allowing for maximum access.

Part no.	THD	ADJ HT	WDTH	DPTH	ADJ L	MAX DIA	
R-CCAS	M4/ ¼-20	0-30°	155 mm/ 6.13 in	50 mm/ 2 in	73 mm/ 2.89 in	29 mm/ 1.14 in	

R-CCAS

Hold down clamp

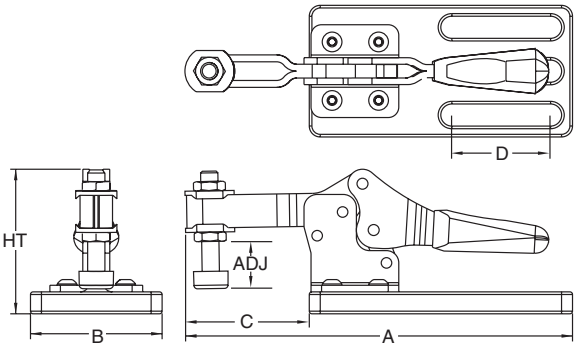
For more clamping force.

Part no.	THD	HT	A	B	C	D	ADJ	
R-CH-89-6	M6	41.8 mm	125.3 mm	38.1 mm	35.3 mm	28.6 mm	12.7 mm	
R-CH-133-6	M6	49.9 mm	139.4 mm	38.1 mm	49.4 mm	28.6 mm	7.9 mm	
R-CH-89-8	M8	41.8 mm	124.2 mm	38.1 mm	35.3 mm	30 mm	12.7 mm	
R-CH-133-8	M8	49.9 mm	137.9 mm	38.1 mm	49 mm	30 mm	7.9 mm	
R-CH-350-20	¼-20	1.64 in	4.89 in	1.5 in	1.39 in	1.13 in	0.5 in	
R-CH-525-20	¼-20	1.96 in	5.43 in	1.5 in	1.93 in	1.13 in	0.31 in	

R-CH-89-6

Included: socket head cap screws and washers.

R-CH-133-6



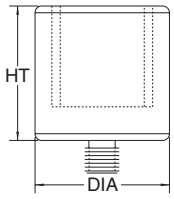
Magnets

Magnet

For holding steel or iron parts.

R-M-19-6

R-M-25-8



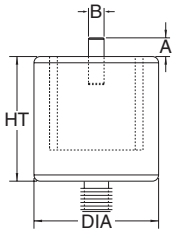
Part no.	THD	DIA	HT	
R-M-6-4	M4	6.4 mm	25 mm	
R-M-13-4	M4	12.7 mm	25 mm	
R-M-13-6	M6	12.7 mm	25 mm	
R-M-19-6	M6	19.1 mm	25 mm	
R-M-25-6	M6	25.4 mm	25 mm	
R-M-32-6	M6	31.8 mm	25 mm	
R-M-13-8	M8	12.7 mm	25 mm	
R-M-19-8	M8	19.1 mm	25 mm	
R-M-25-8	M8	25.4 mm	25 mm	
R-M-32-8	M8	31.8 mm	25 mm	
R-M-50-20	¼-20	0.5 in	1.0 in	
R-M-75-20	¼-20	0.75 in	1.0 in	
R-M-1-20	¼-20	1.0 in	1.0 in	
R-M-125-20	¼-20	1.25 in	1.0 in	

Pin magnet

For holding and locating steel or iron parts.

R-MP-19-6

R-MP-13-8



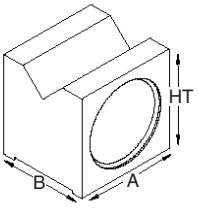
Part no.	THD	DIA	HT	A	B	
R-MP-6-4	M4	6.4 mm	25 mm	3.8 mm	1.6 mm	
R-MP-13-4	M4	12.7 mm	25 mm	3.8 mm	3.2 m	
R-MP-13-6	M6	12.7 mm	25 mm	3.8 mm	3.2 mm	
R-MP-19-6	M6	19.1 mm	25 mm	3.8 mm	3.2 mm	
R-MP-25-6	M6	25.4 mm	25 mm	3.8 mm	3.2 mm	
R-MP-13-8	M8	12.7 mm	25 mm	3.8 mm	3.2 mm	
R-MP-19-8	M8	19.1 mm	25 mm	3.8 mm	3.2 mm	
R-MP-25-8	M8	25.4 mm	25 mm	3.8 mm	3.2 mm	
R-MP-50-20	¼-20	0.5 in	1.0 in	0.15 in	0.13 in	
R-MP-75-20	¼-20	0.75 in	1.0 in	0.15 in	0.13 in	
R-MP-1-20	¼-20	1.0 in	1.0 in	0.15 in	0.13 in	

Magnetic mini V block

Designed to hold ferrous cylindrical parts in a V, without the need for additional tension clamps.

Part no.	HT	A	B	
R-NTM-1	27.9 mm/1.1 in	27.9 mm/1.1 in	24.9 mm/1.1 in	

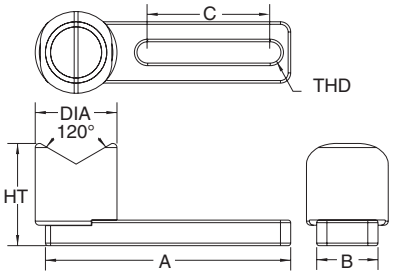
R-NTM-1



V magnet with base

For holding round and tubular parts.

R-MVB-25-6



Part no.	THD	DIA	HT	A	B	C	
R-MVB-13-6	M6	12.7 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-19-6	M6	19.1 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-25-6	M6	25.4 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-32-6	M6	31.8 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-19-8	M8	19.1 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-25-8	M8	25.4 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-32-8	M8	31.8 mm	31.4 mm	76.2 mm	19.1 mm	38.1 mm	
R-MVB-50-20	¼-20	0.5 in	1.25 in	3.0 in	0.75 in	1.5 in	
R-MVB-75-20	¼-20	0.75 in	1.25 in	3.0 in	0.75 in	1.5 in	
R-MVB-1-20	¼-20	1.0 in	1.25 in	3.0 in	0.75 in	1.5 in	
R-MVB-125-20	¼-20	1.25 in	1.25 in	3.0 in	0.75 in	1.5 in	

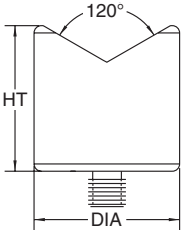
Included: socket head cap screws, thumb screws and washers.

V magnet

For holding cylindrical parts and bent tubing.

R-MV-13-6

R-MV-25-8



Part no.	THD	DIA	HT	
R-MV-13-6	M6	12.7 mm	25 mm	
R-MV-19-6	M6	19.1 mm	25 mm	
R-MV-25-6	M6	25.4 mm	25 mm	
R-MV-32-6	M6	31.8 mm	25 mm	
R-MV-13-8	M8	12.7 mm	25 mm	
R-MV-19-8	M8	19.1 mm	25 mm	
R-MV-25-8	M8	25.4 mm	25 mm	
R-MV-32-8	M8	31.8 mm	25 mm	
R-MV-50-20	¼-20	0.5 in	1.0 in	
R-MV-75-20	¼-20	0.75 in	1.0 in	
R-MV-1-20	¼-20	1.0 in	1.0 in	
R-MV-125-20	¼-20	1.25 in	1.0 in	

Miscellaneous

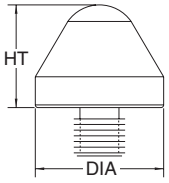
Cone

To rest a part on a rounded point for single-point contact.

Delrin®
R-RCD-6

Steel
R-RCS-6

Aluminum
R-RCA-6



Part no.	THD	DIA	HT	Material	
R-RCD-6	M6	15.9 mm	12.7 mm	Delrin®	
R-RCS-6	M6	15.9 mm	12.7 mm	Steel	
R-RCA-6	M6	25.4 mm	19.1 mm	Aluminum	
R-RCD-8	M8	15.9 mm	12.7 mm	Delrin®	
R-RCS-8	M8	15.9 mm	12.7 mm	Steel	
R-RCA-8	M8	25.4 mm	19.1 mm	Aluminum	
R-RCS-25-8	M8	25.4 mm	19.1 mm	Steel	
R-RCS-50-12	M12	50 mm	40 mm	Steel	
R-RCD-20	¼-20	0.63 in	0.5 in	Delrin®	
R-RCS-20	¼-20	0.63 in	0.5 in	Steel	
R-RCA-20	¼-20	1.0 in	0.75 in	Aluminum	

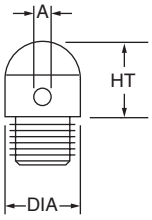
Resting pin

To rest a part on a rounded point.

Aluminum
R-RPA-4

Steel
R-RPS-6

Delrin®
R-RPD-6



Part no.	THD	DIA	HT	Material	A	
R-RPD-4	M4	6.4 mm	5 mm	Delrin®	1.6 mm	
R-RPA-4	M4	6.4 mm	5 mm	Aluminum	1.6 mm	
R-RPD-6	M6	9.5 mm	10 mm	Delrin®	1.9 mm	
R-RPS-6	M6	9.5 mm	10 mm	Steel	1.9 mm	
R-RPD-20	¼-20	0.38 in	0.38 in	Delrin®	0.08 in	
R-RPS-20	¼-20	0.38 in	0.38 in	Steel	0.08 in	

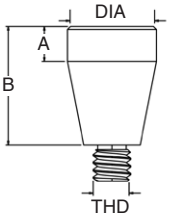
Wedge stop

The wedge stops, typically used in pairs, will locate and hold down a part plus restrict the part from lifting.

Part no.	THD	DIA	A	B	Material	
R-WS-1010-4	M4	10 mm	15 mm	4.7 mm	Aluminum	
R-WS-915-6	M6	14.5 mm	6.4 mm	19.1 mm	Steel	
R-WS-37550-20	¼-20	0.57 in	0.25 in	0.75 in	Steel	

R-WS-37550-20

R-WS-915-6



Screws and adapters

Component replacement parts.

AATK-6 AATS-20 AATS-14 ATS-4 AAS-6

Part no.	THD	DIA	HT	
Thumb screw				
AATK-6	M6	12 mm	20 mm	
AATK-20	¼-20	0.32 in	0.35 in	
Screw				
AATS-14	M3	6 mm	15 mm	
AATS-20	M3	6 mm	20 mm	
ATS-4	M4	13 mm	15 mm	
Adapter				
AAS-4	M4	8 mm	15 mm	
AAS-6	M6	8 mm	15 mm	
AAS-8	M8	11 mm	17 mm	
AAS-20	¼-20	0.83 in	1.1 in	

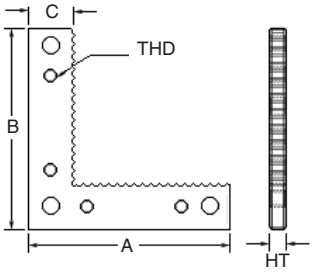
Corner viewer

For allowing a part to be located in a corner. The serrations allow backlighting along the sides of the part.

Part no.	THD	HT	A	B	C	
R-VC-5050-4	M4	5 mm	50 mm	50 mm	10 mm	
R-VC-7575-6	M6	7 mm	82.6 mm	82.6 mm	19 mm	
R-VC-33-20	¼-20	0.25 in	3.25 in	3.25 in	0.75 in	

Included: socket head cap screws.

R-VC-5050-4

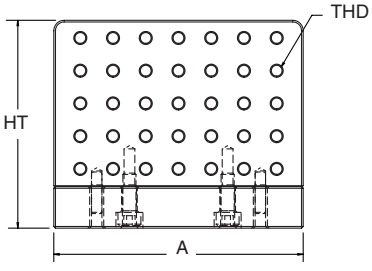


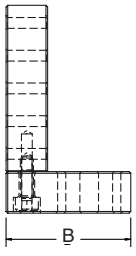
Vertical base plate

For holding components vertically.

Part no.	THD	HT	A	B	
R-PCV-507540-10-4	M4	63.5 mm	76.2 mm	38.1 mm	

R-PCV-507540-10-4





Micro V block

For holding small cylindrical parts.

Part no.	HT	WDTH	DPTH	
R-VMB-20510	10 mm/0.39 in	20 mm/0.79 in	5 mm/0.2 in	$74.50

N.B. Set of 2.

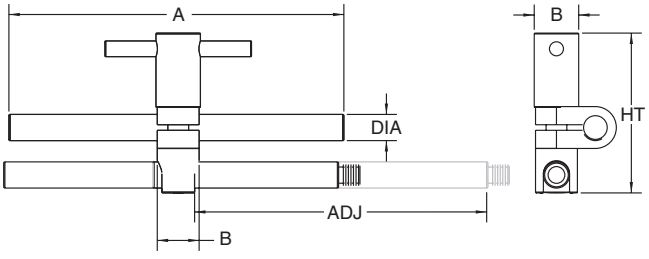
R-VMB-20510

Adjustable T-arm

To support a part on its side.

Part no.	THD	DIA	HT	A	B	ADJ	
R-AT-6	M6	7.8 mm	52 mm	100 mm	12.7 mm	89 mm	

R-AT-6

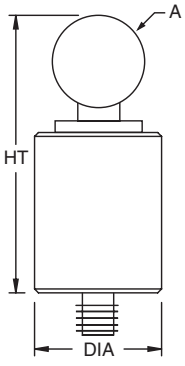


Tooling ball

For referencing CMM co-ordinates to a program or part.

Part no.	THD	DIA	HT	A	
R-STB-13-6	M6	19.1 mm	41.5 mm	12.7 mm	
R-STB-13-8	M8	19.1 mm	41.5 mm	12.7 mm	$74.00
R-STB-50-20	¼-20	0.75 in	1.6 in	0.5 in	$68.75

R-STB-13-6



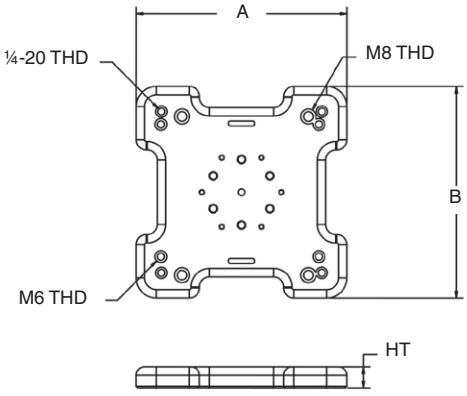
Metrology table adapter plate

Allows for fitment of any Faro, Romer or Nikon portable CMMs to any Renishaw fixture base plate or metrology table base plate.

Part no.	THD	HT	A	B	
R-PAACU	M6/M8/¼-20	20 mm/ 0.79 in	200 mm/ 7.87 in	200 mm/ 7.87 in	$239.00

Included: socket head cap screws, thumb screws and washers.

R-PAACU



Standoffs

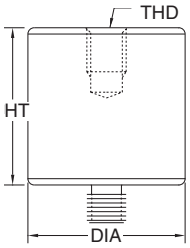
Standoff

To elevate and locate a part. Available to order in M4, M6, M8, M12 and ¼-20 thread sizes. Component information continues on the following page.

R-S-125-4*

R-S-1220-4

R-S-13100-6



Part no.	THD	DIA	HT	
M4 standoffs				
R-S-65-4*	M4	6 mm	5 mm	
R-S-610-4*	M4	6 mm	10 mm	
R-S-615-4*	M4	6 mm	15 mm	
R-S-620-4*	M4	6 mm	20 mm	
R-S-625-4*	M4	6 mm	25 mm	
R-S-95-4*	M4	9 mm	5 mm	
R-S-910-4	M4	9 mm	10 mm	
R-S-915-4	M4	9 mm	15 mm	
R-S-920-4	M4	9 mm	20 mm	
R-S-925-4	M4	9 mm	25 mm	
R-S-950-4	M4	9 mm	50 mm	
R-S-125-4	M4	12 mm	5 mm	
R-S-1210-4	M4	12 mm	10 mm	
R-S-1215-4	M4	12 mm	15 mm	
R-S-1220-4	M4	12 mm	20 mm	
R-S-1225-4	M4	12 mm	25 mm	
R-S-1250-4	M4	12 mm	50 mm	

N.B. M4 standoffs are made of aluminum.
* = does not have a threaded top.

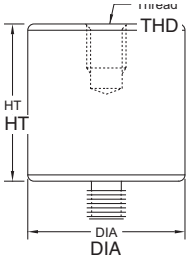
Part no.	THD	DIA	HT	
M6 standoffs				
R-S-610-6*	M6	6 mm	10 mm	
R-S-625-6*	M6	6.4 mm	25 mm	
R-S-95-6*	M6	9 mm	5 mm	
R-S-910-6	M6	9.5 mm	10 mm	
R-S-915-6	M6	9.5 mm	15 mm	
R-S-920-6	M6	9.5 mm	20 mm	
R-S-925-6	M6	9.5 mm	25 mm	
R-S-1310-6	M6	13 mm	10 mm	
R-S-1315-6	M6	12.7 mm	15 mm	
R-S-1320-6	M6	12.7 mm	20 mm	
R-S-1325-6	M6	12.7 mm	25 mm	
R-S-1350-6	M6	12.7 mm	50 mm	
R-S-13100-6	M6	12.7 mm	100 mm	
R-S-13150-6	M6	12.7 mm	150 mm	
R-S-1910-6	M6	19 mm	10 mm	
R-S-1915-6	M6	19.1 mm	15 mm	
R-S-1920-6	M6	19.1 mm	20 mm	
R-S-1925-6	M6	19.1 mm	25 mm	
R-S-1950-6	M6	19.1 mm	50 mm	
R-S-19100-6	M6	19.1 mm	100 mm	
R-S-19150-6	M6	19.1 mm	150 mm	
R-S-2515-6	M6	25.4 mm	15 mm	
R-S-2520-6	M6	25 mm	20 mm	
R-S-2525-6	M6	25.4 mm	25 mm	
R-S-2550-6	M6	25.4 mm	50 mm	
R-S-25100-6	M6	25.4 mm	100 mm	
R-S-25150-6	M6	25.4 mm	150 mm	
R-S-3825-6	M6	38.1 mm	25 mm	
R-S-3850-6	M6	38 mm	50 mm	
R-S-38150-6	M6	38.1 mm	150 mm	

N.B. M6 standoffs are made of steel.
* = does not have a threaded top.

R-S-1320-8

R-S-5050-12

R-S-502-20



Part no.	THD	DIA	HT	
M8 standoffs				
R-S-1315-8	M8	12.7 mm	15 mm	
R-S-1320-8	M8	12.7 mm	20 mm	
R-S-1325-8	M8	12.7 mm	25 mm	
R-S-1350-8	M8	12.7 mm	50 mm	
R-S-13100-8	M8	12.7 mm	100 mm	
R-S-1915-8	M8	19.1 mm	15 mm	
R-S-1920-8	M8	19.1 mm	20 mm	
R-S-1925-8	M8	19.1 mm	25 mm	
R-S-1950-8	M8	19.1 mm	50 mm	
R-S-19100-8	M8	19.1 mm	100 mm	
R-S-19150-8	M8	19.1 mm	150 mm	
R-S-2520-8	M8	25.4 mm	20 mm	
R-S-2525-8	M8	25.4 mm	25 mm	
R-S-2550-8	M8	25.4 mm	50 mm	
R-S-25100-8	M8	25.4 mm	100 mm	
R-S-25150-8	M8	25.4 mm	150 mm	
R-S-3825-8	M8	38.1 mm	25 mm	
R-S-3850-8	M8	38.1 mm	50 mm	
R-S-38150-8	M8	38.1 mm	150 mm	

N.B. M8 standoffs are made of steel.

Part no.	THD	DIA	HT	
M12 standoffs				
R-S-3825-12	M12	38 mm	25 mm	
R-S-3850-12	M12	38 mm	50 mm	
R-S-5025-12	M12	50 mm	25 mm	
R-S-5050-12	M12	50 mm	50 mm	
R-S-50100-12	M12	50 mm	100 mm	
R-S-50200-12	M12	50 mm	200 mm	
R-S-50300-12	M12	50 mm	300 mm	

N.B. M12 standoffs are made of steel.

Part no.	THD	DIA	HT	
¼-20 standoffs				
R-S-2550-20*	¼-20	0.25 in	0.5 in	
R-S-251-20*	¼-20	0.25 in	1.0 in	
R-S-37525-20*	¼-20	0.375 in	0.25 in	
R-S-37550-20	¼-20	0.375 in	0.5 in	
R-S-37575-20	¼-20	0.375 in	0.75 in	
R-S-3751-20	¼-20	0.375 in	1.0 in	
R-S-5025-20*	¼-20	0.5 in	0.25 in	
R-S-5050-20	¼-20	0.5 in	0.5 in	
R-S-5075-20	¼-20	0.5 in	0.75 in	
R-S-501-20	¼-20	0.5 in	1.0 in	
R-S-502-20	¼-20	0.5 in	2.0 in	
R-S-504-20	¼-20	0.5 in	4.0 in	
R-S-506-20	¼-20	0.5 in	6.0 in	
R-S-7550-20	¼-20	0.75 in	0.5 in	
R-S-7575-20	¼-20	0.75 in	0.75 in	
R-S-751-20	¼-20	0.75 in	1.0 in	
R-S-752-20	¼-20	0.75 in	2.0 in	
R-S-754-20	¼-20	0.75 in	4.0 in	
R-S-756-20	¼-20	0.75 in	6.0 in	
R-S-150-20	¼-20	1.0 in	0.5 in	
R-S-175-20	¼-20	1.0 in	0.75 in	
R-S-11-20	¼-20	1.0 in	1.0 in	
R-S-12-20	¼-20	1.0 in	2.0 in	
R-S-14-20	¼-20	1.0 in	4.0 in	
R-S-16-20	¼-20	1.0 in	6.0 in	
R-S-1501-20	¼-20	1.5 in	1.0 in	
R-S-1502-20	¼-20	1.5 in	2.0 in	
R-S-1506-20	¼-20	1.5 in	6.0 in	

* = standoffs are made of steel.

Delrin® standoff

To elevate and locate a part using a non-marring material.

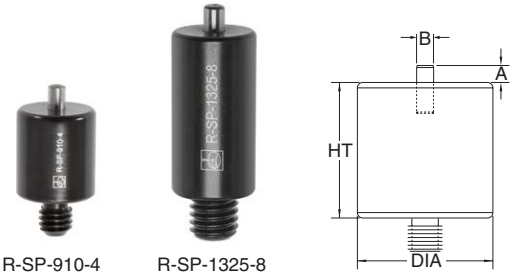
R-SD-610-4 R-SD-910-4 R-SD-1325-6

Part no.	THD	DIA	HT	
R-SD-610-4*	M4	6 mm	10 mm	
R-SD-910-4	M4	9 mm	10 mm	
R-SD-1210-4	M4	12 mm	10 mm	
R-SD-925-6	M6	9 mm	25 mm	
R-SD-1325-6	M6	13 mm	25 mm	
R-SD-1925-6	M6	19 mm	25 mm	
R-SD-3751-20	¼-20	0.38 in	1.0 in	
R-SD-501-20	¼-20	0.5 in	1.0 in	
R-SD-751-20	¼-20	0.75 in	1.0 in	

* = does not have a threaded top.

Pin standoff

To elevate and locate a part against the pin.



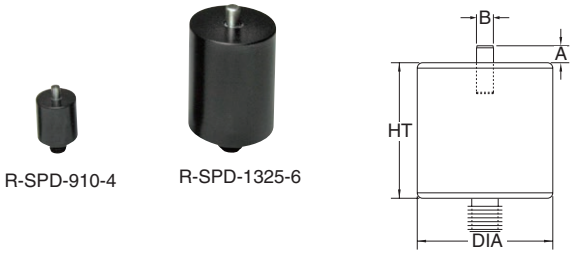
R-SP-910-4 R-SP-1325-8

Part no.	THD	DIA	HT	A	B	
R-SP-610-4	M4	6 mm	10 mm	2.5 mm	2 mm	
R-SP-910-4	M4	9 mm	10 mm	2.5 mm	2 mm	
R-SP-1210-4	M4	12 mm	10 mm	2.5 mm	2 mm	
R-SP-610-6	M6	9.5 mm	10 mm	3.8 mm	1.6 mm	
R-SP-910-6	M6	9.5 mm	10 mm	3.8 mm	1.6 mm	
R-SP-1325-6	M6	12.7 mm	25 mm	3.8 mm	3.2 mm	
R-SP-1925-6	M6	19.1 mm	25 mm	3.8 mm	3.2 mm	
R-SP-2525-6	M6	25 mm	25 mm	3.8 mm	3.2 mm	
R-SP-1325-8	M8	12.7 mm	25 mm	3.8 mm	3.2 mm	
R-SP-1925-8	M8	19 mm	25 mm	3.8 mm	3.2 mm	
R-SP-2525-8	M8	25.4 mm	25 mm	3.8 mm	3.2 mm	
R-SP-501-20	¼-20	0.5 in	1.0 in	0.15 in	0.13 in	
R-SP-751-20	¼-20	0.75 in	1.0 in	0.15 in	0.13 in	
R-SP-2550-20	¼-20	0.38 in	0.5 in	0.15 in	0.06 in	
R-SP-37550-20	¼-20	0.38 in	0.5 in	0.15 in	0.06 in	
R-SP-11-20	¼-20	1.0 in	1.0 in	0.15 in	0.13 in	

Delrin® pin standoff

To elevate and locate a part against a pin using a non-marring material.

Part no.	THD	DIA	HT	A	B	
R-SPD-910-4	M4	9 mm	10 mm	2.5 mm	2 mm	
R-SPD-1325-6	M6	12.7 mm	25 mm	3.8 mm	3.2 mm	
R-SPD-501-20	¼-20	0.5 in	1.0 in	0.15 in	0.13 in	

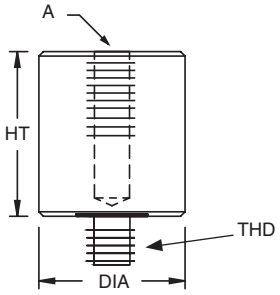


R-SPD-910-4 R-SPD-1325-6

Standoff adapter

For step clamps and calibration sphere.

R-SA-6-8



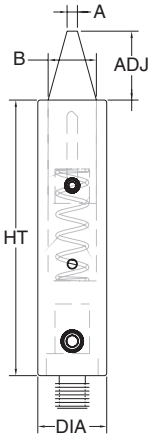
Part no.	THD	DIA	HT	A (top THD)	
R-SA-14-4	M4	19.1 mm	15 mm	¼-20	
R-SA-6-4	M4	19.1 mm	15 mm	M6	
R-SA-8-4	M4	19.1 mm	25 mm	M8	
R-SA-4-6	M6	9.5 mm	15 mm	M4	
R-SA-8-6	M6	25.4 mm	25 mm	M8	
R-SA-10-6	M6	25.4 mm	25 mm	M10	
R-SA-14-6	M6	25.4 mm	25 mm	¼-20	
R-SA-6-8	M8	25.4 mm	25 mm	M6	
R-SA-14-8	M8	25.4 mm/1.0 in	25 mm/0.98 in	¼-20	
R-SA-10-8	M8	25.4 mm	25 mm	M10	
R-SA-8-12	M12	25.4 mm	25 mm	M8	
R-SA-4-20	¼-20	9.5 mm/0.375 in	12.7 mm/0.50 in	M4	
R-SA-6-20	¼-20	25.4 mm/1.0 in	25.4 mm/1.0 in	M6	
R-SA-8-20	¼-20	25.4 mm/1.0 in	25.4 mm/1.0 in	M8	
R-SA-10-20	¼-20	25.4 mm/1.0 in	25.4 mm/1.0 in	M10	
R-SA-12-58	5/8-11	50.8 mm/2.0 in	50 mm/1.97 in	M12	

2-way and 4-way spring-loaded pin standoff

For locating within a hole or slot of a part.

R-S-2550-2W-6

R-S-2550-4W-6

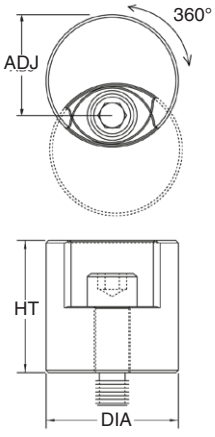


Part no.	THD	DIA	HT	A	B	ADJ	
2-way pins							
R-S-1350-2W-6	M6	13 mm	50 mm	2 mm	9 mm	12.5 mm	
R-S-2550-2W-6	M6	25 mm	50 mm	7 mm	19 mm	12.5 mm	
R-S-2550-2W-8	M8	25 mm	50 mm	7.1 mm	19 mm	12.5 mm	
R-S-502-2W-20	¼-20	0.50 in	2.0 in	0.08 in	0.35 in	0.50 in	
R-S-12-2W-20	¼-20	1.0 in	2.0 in	0.28 in	0.75 in	0.50 in	
4-way pins							
R-S-1350-4W-6	M6	13 mm	50 mm	2 mm	9 mm	12.5 mm	
R-S-2550-4W-6	M6	25 mm	50 mm	7 mm	19 mm	12.5 mm	
R-S-2550-4W-8	M8	25 mm	50 mm	7.1 mm	19 mm	12.5 mm	
R-S-502-4W-20	¼-20	0.50 in	2.0 in	0.08 in	0.35 in	0.50 in	
R-S-12-4W-20	¼-20	1.0 in	2.0 in	0.28 in	0.75 in	0.50 in	

Rotator standoff

To secure parts against stops/supports.

R-SR-2525-6



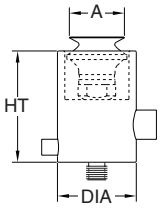
Part no.	THD	DIA	HT	ADJ	
R-SR-2525-6	M6	25 mm	25 mm	19 mm	
R-SR-11-20	¼-20	1.0 in	1.0 in	0.76 in	

Suction cups

Suction cup

For holding plastic, glass, polystyrene and other non-ferrous parts.

R-CS-20-6 R-CS-30-6 R-CS-50-6



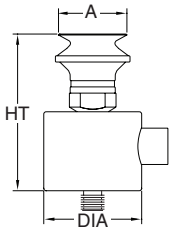
Part no.	THD	DIA	HT	A	
R-CS-5-6	M6	18.8 mm	35 mm	5.7 mm	
R-CS-10-6	M6	18.8 mm	45 mm	11 mm	
R-CS-20-6	M6	31.5 mm	45 mm	22 mm	
R-CS-30-6	M6	44.2 mm	65 mm	34 mm	
R-CS-50-6	M6	69.6 mm	65 mm	53 mm	
R-CS-5-20	¼-20	0.74 in	1.38 in	0.22 in	
R-CS-10-20	¼-20	0.74 in	1.75 in	0.43 in	
R-CS-20-20	¼-20	1.24 in	1.75 in	0.87 in	
R-CS-30-20	¼-20	1.74 in	2.5 in	1.34 in	
R-CS-50-20	¼-20	2.74 in	2.5 in	2.09 in	

N.B. Requires R-CSH-MSC, available separately.

Exposed suction cup

For holding contoured surfaces.

R-CES-10-6 R-CES-20-6 R-CES-30-6



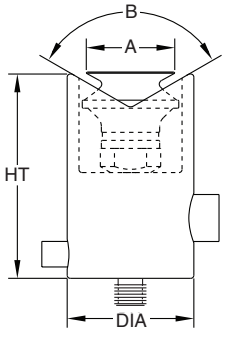
Part no.	THD	DIA	HT	A	
R-CES-10-6	M6	18.8 mm	41.7 mm	11 mm	
R-CES-20-6	M6	31.5 mm	49.4 mm	22 mm	
R-CES-30-6	M6	31.5 mm	56.6 mm	34 mm	
R-CES-50-6	M6	31.5 mm	66.6 mm	53 mm	
R-CES-10-20	¼-20	0.74 in	1.64 in	0.43 in	
R-CES-20-20	¼-20	1.24 in	1.94 in	0.87 in	
R-CES-30-20	¼-20	1.24 in	2.23 in	1.34 in	
R-CES-50-20	¼-20	1.24 in	2.26 in	2.09 in	

N.B. Requires R-CSH-MSC, available separately.

Suction V cup

For holding cylindrical tubes and shafts.

R-CVS-5-6 R-CVS-20-6



Part no.	THD	DIA	HT	A	B	
R-CVS-5-6	M6	19 mm	35 mm	5 mm	90°	
R-CVS-10-6	M6	19 mm	41 mm	10 mm	120°	
R-CVS-20-6	M6	31 mm	51 mm	20 mm	120°	
R-CVS-30-6	M6	44 mm	76 mm	30 mm	120°	
R-CVS-50-6	M6	70 mm	89 mm	50 mm	120°	
R-CVS-5-20	¼-20	0.74 in	1.46 in	0.22 in	90°	
R-CVS-10-20	¼-20	0.74 in	1.62 in	0.43 in	120°	
R-CVS-20-20	¼-20	1.24 in	2.0 in	0.87 in	120°	
R-CVS-30-20	¼-20	1.74 in	2.98 in	1.34 in	120°	
R-CVS-50-20	¼-20	2.74 in	3.5 in	2.09 in	120°	

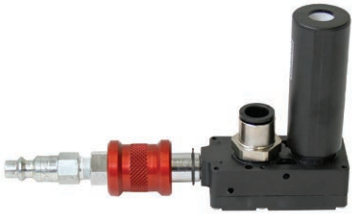
N.B. Requires R-CSH-MSC, available separately.

Vacuum pump

For suction cups with on/off valve, hose connector and quick disconnect.

Part no.	Description	
R-CSVP	Vacuum pump assembly	

N.B. Requires R-CSH-MP, available separately.



R-CSVP

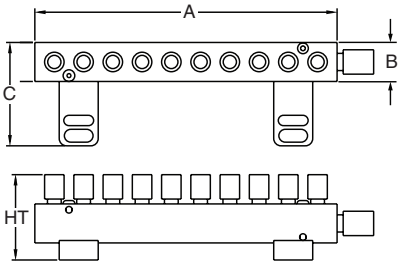
Manifold

6-port or 10-port manifold can be used vertically or horizontally on base plate.

Part no.	Description	HT	A	B	C	
R-CSM-6P	6-port manifold	52 mm	121 mm	25 mm	67 mm	
R-CSM-10P	10-port manifold	52 mm	197 mm	25 mm	67 mm	

N.B. Requires R-CSH-MP and R-CSH-MSC, available separately.

R-CSM-10P



Vacuum hose

Hose for connecting manifold to vacuum pump and to suction cups.

Part no.	Description	
R-CSH-MP	9.5 mm dia. hose to connect manifold to vacuum pump (sold per 1 m)	
R-CSH-MSC	6.4 mm dia. hose to connect manifold to suction cups (sold per 1 m)	

R-CSH-MSC

Suction cup tray

For holding and organizing suction cups.

R-TCS-300200

Part no.	THD	HT	WDTH	DPTH	
R-TCS-300200	M6	25.4 mm	304.8 mm	190.5 mm	
R-TCS-300200	¼-20	1.0 in	12.0 in	7.5 in	

N.B. Tray is compatible with both M6 or ¼-20 suction cup components.

Towers

Tower

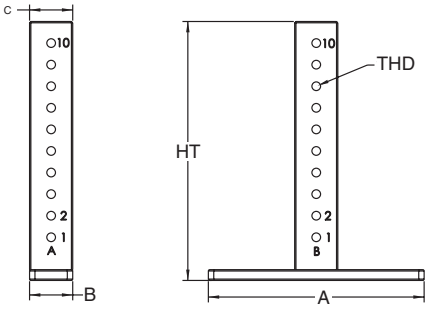
To hold a part vertically.

Part no.	THD	HT	A	B	C	THD Rows	
R-T-2080-4	M4	80 mm	75 mm	20 mm	20 mm	2 / 1*	
R-T-25150-6	M6	150 mm	127 mm	25 mm	25 mm	1	
R-T-25300-6	M6	300 mm	127 mm	25 mm	25 mm	1	
R-T-35300-6	M6	300 mm	152 mm	51 mm	35 mm	2	
R-T-35450-6	M6	450 mm	152 mm	51 mm	35 mm	2	
R-T-50600-6	M6	600 mm	152 mm	51 mm	50 mm	2	
R-T-50750-6	M6	760 mm	152 mm	51 mm	50 mm	2	
R-T-25150-8	M8	150 mm	127 mm	25 mm	25 mm	1	
R-T-25300-8	M8	300 mm	127 mm	25 mm	25 mm	1	
R-T-35300-8	M8	300 mm	152 mm	51 mm	35 mm	2 / 1*	
R-T-35450-8	M8	450 mm	152 mm	51 mm	35 mm	2 / 1*	
R-T-50600-8	M8	600 mm	152 mm	51 mm	50 mm	2	
R-T-50750-8	M8	760 mm	152 mm	51 mm	50 mm	2	
R-T-16-20	¼-20	6.0 in	5.0 in	1.0 in	1.0 in	1	
R-T-112-20	¼-20	12.0 in	5.0 in	1.0 in	1.0 in	1	
R-T-1512-20	¼-20	12.0 in	6.0 in	2.0 in	1.5 in	2	
R-T-1518-20	¼-20	18.0 in	6.0 in	2.0 in	1.5 in	2	
R-T-224-20	¼-20	24.0 in	6.0 in	2.0 in	2.0 in	2	
R-T-230-20	¼-20	30.0 in	6.0 in	2.0 in	2.0 in	2	

Included: socket head cap screws.

* Two sides have two rows of holes and two sides have one row of holes in the center.

R-T-50600-8 R-T-35450-6 R-T-35300-8 R-T-25150-6



C

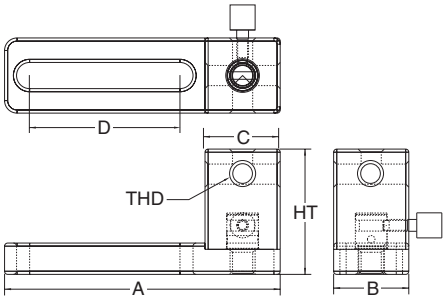
Tower block with base

For positioning a component vertically to the part set-up. Can be used without the base to allow full rotation.

R-TB-2530-8

Part no.	THD	HT	A	B	C	D	
R-TB-1619-4	M4	26.4 mm	41.3 mm	15.9 mm	15.9 mm	15 mm	
R-TB-2025-6	M6	35 mm	70 mm	20 mm	20 mm	35 mm	
R-TB-2530-8	M8	40 mm	88.9 mm	25 mm	25 mm	45 mm	
R-TB-751-20	¼-20	1.25 in	2.75 in	0.75 in	0.75 in	1.5 in	

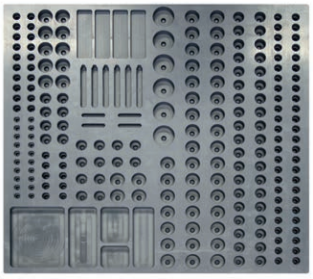
Included: socket head cap screws.



Trays

Large component tray

To hold and organize components.



R-TC-560500

Part no.	THD	HT	LNGTH	WDTH	
R-TC-560500	M6/M8/ ¼-20	25 mm/ 1 in	560 mm/ 21.5 in	500 mm/ 20 in	

Medium component tray

To hold and organize components.

R-TC-500200

Part no.	THD	HT	LNGTH	WDTH	
R-TC-500200	M6/M8/ ¼-20	25 mm/ 1 in	500 mm/ 20 in	200 mm/ 8 in	

Small component tray

To hold and organize components.

R-TC-300190-4

R-TC-300200

R-TC-300190-20

Part no.	THD	HT	LNGTH	WDTH	
M4 component tray					
R-TC-300190-4	M4	25 mm	300 mm	190 mm	
M6/M8 component tray					
R-TC-300190-6	M6	25 mm	300 mm	190 mm	
R-TC-300200*	M6/M8/ ¼-20	25 mm/ 1 in	300 mm/ 12 in	200 mm/ 8 in	
¼-20 component tray					
R-TC-300190-20	¼-20	1 in	12 in	8 in	

*Designed to hold 1.5 in/38 mm dia. standoffs.

Component storage box

Compartment box to hold and organize components.

R-BC10

Part no.	HT	LNGTH	WDTH	
R-BC10	40 mm	200 mm	135 mm	

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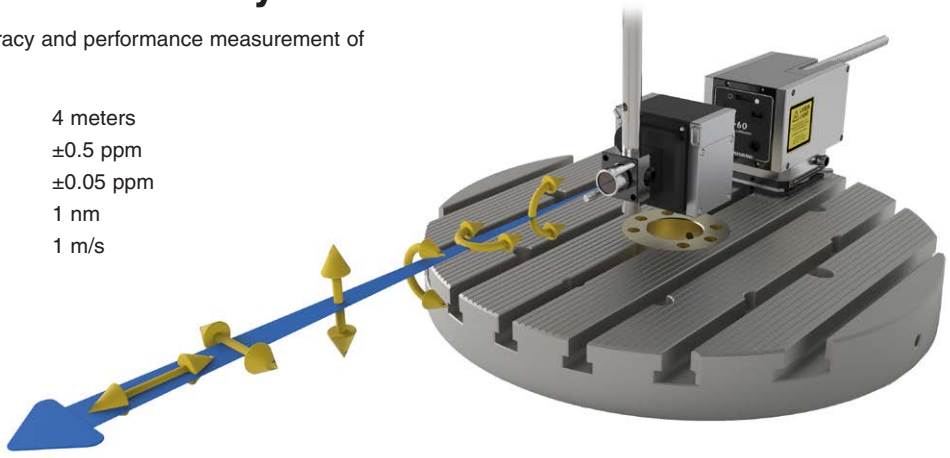
Portable laser measurement and calibration

XM multi-axis calibration systems

Used for comprehensive accuracy and performance measurement of any machine or system.

Linear measurement range	4 meters
Linear measurement accuracy	±0.5 ppm
Laser frequency accuracy	±0.05 ppm
Resolution	1 nm
Maximum travel velocity	1 m/s



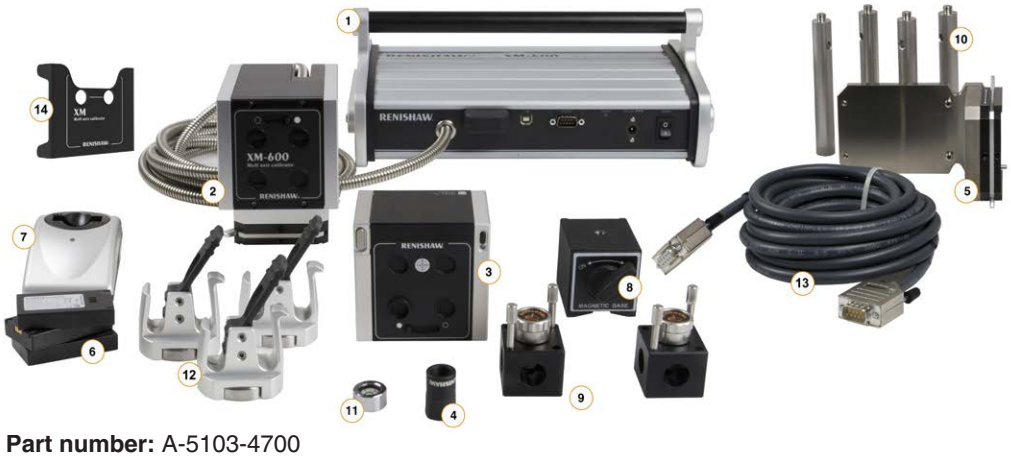
XM-60

1 Laser unit
2 Launch unit
3 Receiver unit
4 Beam shroud
5 90 degree bracket
6 Receiver batteries
7 Battery charger
8 Magnetic base
9 Clamp block
10 M8 pillars
11 Spirit level
12 Cable clamp
13 Beam blocker

Part number: A-5103-3600

Part number: A-5103-3600-XC*

XM-600



1 Laser unit
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6 Receiver batteries
7 Battery charger
8 Magnetic base
9 Clamp block
10 M8 pillars
11 Spirit level
12 Cable clamp
13 PICS cable
14 Beam blocker

Part number: A-5103-4700
Part number: A-5103-4700-XC*

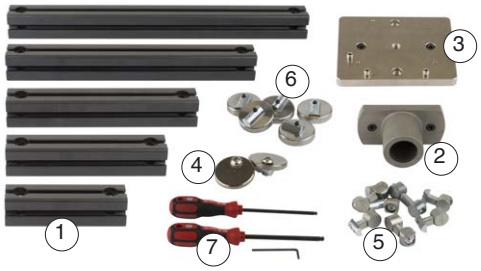
Note: In addition to the parts shown above, the kits will also contain required cables and product quality documentation.

* Includes XC-80 compensator

XM components and accessories

Fixture kit

Includes:
1 Range of extrusions
2 Lathe adaptor
3 Steel mounting plate
4 Extrusion alignment aids
5 Extrusion connectors
6 Magnets
7 Allen drivers



Part number: A-5103-4620

XM power supply kit

Part number: A-5103-4370

XM battery tray

For holding the battery in the receiver unit of the XM systems.

Part number: A-5103-4480

Cable clip

For holding the fiber optic cable between the laser and launch units of the XM systems.

Part number: A-5103-4340

Vertical mount pin kit

These pins are used to give a rough starting alignment along the axis when attaching the laser to the mounting plate.

Part number: A-5103-4664

Receiver beam shroud

Part number: A-5103-4330

System case

Part number: A-5103-4360

Machine optics mounting kit

Part number: A-1333-0174

Mount plate kit assembly spare

Part number: A-5103-9070

Mounting pillar

Part number: M-8003-0470

Spirit level circular

Part number: A-9908-0323

Clamp block

Part number: A-8003-0262

Magnetic base

Suitable for mounting optics and XL-80 laser head when fitted with A-9908-0760 magnetic base adaptor (sold in pairs).

Part number: A-9908-0780

Battery Li-Polymer 3.7 V

High-power rechargeable lithium battery (three batteries supplied with each XR20).

Part number: A-9920-0330

Battery charger and cables

Battery charger and a set of power cables for any territory (UK, Europe and USA).

Part number: A-9920-0320

USB cable

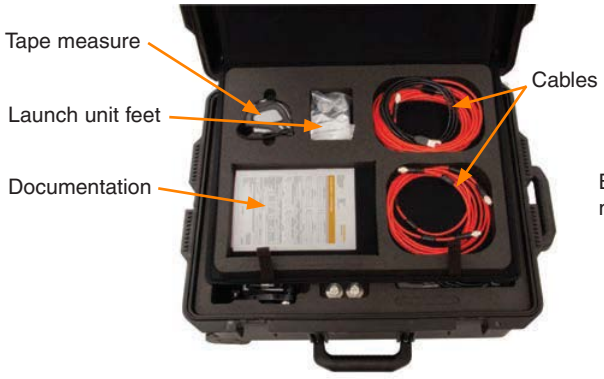
Part number: A-9908-0286

Horizontal translation stage

Part number: A-9954-2000

XK laser alignment system

Used for measuring and correcting machine alignment of castings, rails, axes, and spindles, including rotative elements.



XK fixture kit

Ref	Item	Quantity
1	Launch plate	1
2	Extrusion	1 × 350 mm 1 × 250 mm 1 × 200 mm 2 × 150 mm
3	Hex drivers	Various sizes
4	Reference mount	1
5	Extrusion connectors	3 × linear 6 × perpendicular
6	Magnets	6
7	Extrusion alignment aids	3

XK10 basic system and ixture kit

Part number: A-9936-0800

XK10 system and ixture kit

Part number: A-9936-0750

XK10 system with HDMI compatible tablet and ixture kit

Part number: A-9936-0753

XK components and accessories

Fixture kit

Alignment target

Part number: A-9936-0600

90-degree transceiver bracket

Part number: A-9936-0604

Transceiver spindle mount

Part number: A-9936-0605

Rod tightening tool

Part number: A-9936-0610

System case

Part number: A-9936-0615

Base pin kit

Part number: A9936-0617

Mounting post kit

Part number: A-9936-0618

Power supply and cables

Part number: A-9936-0619

Magnet assembly

Part number : A-9936-0611

Positioning disc

Part number: A-9936-0612

Extrusion fixings kit

Part number: A-5103-4649

Fixture kit case

Part number: A-9936-0616

XK tripod mount kit

Part number: A-9936-0170

XK tripod mount kit single

Part number: A-9936-0171

XK10 parallelism kit

Includes: Pentaprism/parallelism optic
Parallelism stage
Magnetic base
Target
Peli case

Part number: A-9936-0160

XK10 parallelism stage spare

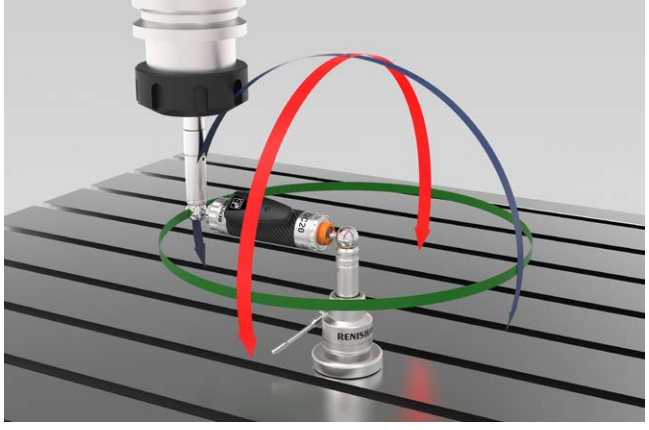
Part number: A-9936-0151

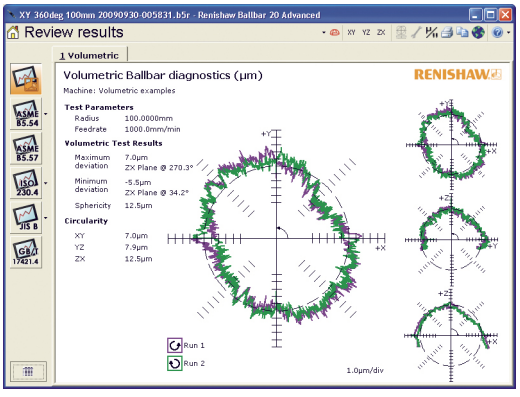
XK10 parallelism case spare

Part number: A-9936-0152

QC20 wireless ballbar

Bluetooth®





QC20 ballbar kit with glass calibrator

The Renishaw QC20 ballbar contains a precision linear transducer of Renishaw's own design. Signal processing is carried out within the ballbar and data transmitted to a suitable PC using a Bluetooth® Class 2 module.

Includes: QC20 wireless ballbar (and one CR2 battery)
Center pivot
Tool cup
Extension bars – 50 mm, 150 mm and 300 mm
Glass calibrator
System software (including manuals)
Setting ball
Machine validation cards
Calibration certificate
Bluetooth® adaptor
System carry case (the case includes cut-outs for the optional small circle and VTL adaptors)

Part number: A-8014-2510

QC10 trade-in for QC20

A complete working QC-10 kit can be traded in to obtain this special price on a complete QC20 kit.

Part number: A-8014-BB-TRADEIN

API, Heidenhain telescoping ballbar trade-in for QC20 kit with glass calibrator

A complete API or Heidenhain working ballbar kit can be traded in to obtain this special price on a complete QC20 kit.

Part number: SYS-QC-TRADEIN

QC20 ballbar upgrade kit

The lowest cost entry to QC20 use is with the QC20 upgrade kit. The kit includes a new ballbar, battery and BB20 software. The packaging fits directly into the later style aluminum framed case. Users with earlier plastic or wooden cases should purchase a new QC20 case separately (see below).

Includes: QC20 wireless ballbar upgrade kit
- QC20 wireless ballbar
- Tool cup
- System software (including manuals)
- Setting ball
- Machine validation cards
- Calibration certificate
- Foam tray (fits aluminum QC10 case only)

Partial arc test kit
Bluetooth® adaptor
2nd spare battery

Part number: A-8014-BBUG

QC20 system carrying case

The new QC20 case has dedicated locations to carry the small circle accessory kit and VTL, and is lockable.

Part number: M-8014-1700

Small circle accessory kit (SCAK)

The small circle accessory kit is used with the QC20 ballbar to allow tests with a radius of 50 mm. The existing QC10 small circle accessory kit (SCAK) cannot be used with the QC20. The SCAK includes a 50 mm glass calibrator, calibration certificate and the small circle adaptor, which is supplied with an additional center ball already fitted.

If you already use the QC10 SCAK, just purchase the new adaptor, which is a simple screw mount to the QC20 body. You can retain your existing 50 mm glass calibrator (see QC20 spare parts overleaf).

Part number: A-8014-1540

VTL adaptor kit

The VTL adaptor is available for 2-axis CNC applications. This replaces the “tool cup” in the standard set-up and gives restricted movement of the center cup in a single axis, enabling typical 2-axis machines such as vertical turning lathes and laser cutting machines etc to benefit from QC20 ballbar diagnosis.

Part number: A-8014-0417

Lathe adaptor kit

The lathe adaptor kit allows you to perform 360°, 100 mm radius ballbar tests on a lathe. The kit consists of an arm assembly for attachment to the lathe turret and a spindle bar for attachment in the lathe spindle. Both arm and spindle include magnetic cups in which to locate the ballbar.

Includes: Lathe adaptor arm assembly
Spindle bar assembly
Spherical adaptor
Center cup
Cup screw (with magnetic cup)
5 mm long-arm hex key
3 mm hex key
Set of user instructions
Plastic carrying case

Part number: A-8014-0551

Ballbar TRACE kit *

Ballbar TRACE is a new, time-based software package for the QC20 ballbar. The TRACE capture software is free of charge to existing QC20 users. An activation of XCal-View is needed for analysis. The flexibility of Ballbar TRACE opens up QC20 for many new applications, including 5-axis ballbar verification to ISO 10791-6 and static monitoring.

TRACE kit with 25 mm straight shank *

Part number: TRACE-1003

TRACE kit with ½ in straight shank *

Part number: TRACE-1004

TRACE kit with 1 in straight shank *

Part number: TRACE-1007

Ballbar TRACE individual parts

XCal-View single user activation

For analysis of the captured TRACE data.

Part number: A-9925-0208

Ballbar centering device

Used to center the pillar/tool cup on the spindle for performing Ballbar TRACE measurements.

Part number: S-8BBR-0052

Tool kit

For adjusting the ballbar centering device.

Part number: A-4071-0060

Mounting pillar

For extending the tool cup down from the spindle.

Part number: M-8003-0470

Straight shank

Used to help mount centering device in the spindle.

25 mm	**Part number:** A-5625-1003
½ in	**Part number:** A-5625-1004
1 in	**Part number:** A-5625-1007

* TRACE kits vary only by accompanying shank. If multiple shanks are desired, order a single kit and the extra shanks individually.

QC20 ballbar system spare parts

Item	Description	Part number
1	QC20 ballbar assembly (including balls)	A-8014-2520
2	QC20 system carrying case (not fully shown)	M-8014-1700
3	Transducer ball	A-8014-0182
4	Center cup	A-8014-0522
5	Center ball	A-8014-0141
6	Cover ring	A-8014-1592
7	Center pivot assembly	A-8014-1281
8	50 mm extension bar	A-8014-0231
9	150 mm extension bar	A-8014-0144
10	300 mm extension bar	A-8014-0145
11	Tool cup assembly	A-8014-0521
12	Setting ball	A-8014-1570
13	Tool cup extension	A-8014-1610
14	Glass calibrator	A-8014-0280
15	Spanner set	A-8014-1141
16	Lithium battery	A-8014-CR2
17	Battery end cap assembly	A-8014-1593
Not shown	Getting started DVD	A-8014-1285
Not shown	Validation card (minimum order quantity 10)	A-8014-VCAR
Not shown	Validation card holder (minimum order quantity 10)	A-8014-VCHD
Not shown	Ballbar20 software upgrade	A-8014-0717
Not shown	Cup cleaning kit	A-8014-0423

Small circle accessory kit

Item	Description	Part number
18	50 mm glass calibrator	A-8014-0491
19	Small circle adaptor	A-8014-1560

VTL adaptor kit

Item	Description	Part number
20	VTL adaptor kit	A-8014-0417

Lathe kit (cannot be stored in system case)

Item	Description	Part number
Not shown	Cup screw assembly	A-8014-0552
Not shown	Spindle bar assembly	A-8014-0553
Not shown	Lathe kit case	M-8014-0538

Glass calibrator

A glass calibrator is supplied with all QC20 kits and is used to calibrate the length of a ballbar. This type of calibrator is manufactured from a material which has a temperature expansion coefficient of almost zero.

Part number: A-8014-0280

Cover ring

The cover ring needs to be removed from the QC20 body before attaching the small circle adaptor.

Part number: A-8014-1592

Tool cup assembly

The condition of the phosphor bronze bearings in the tool cups affects the errors measured by the transducer. Tool cups cannot be repaired (if they are damaged they must be replaced).

Part number: A-8014-0521

Tool cup extension

The tool cup extension will provide the required clearances for conducting a vertical 220° partial arc test on a machine, for collet sizes up to ER40 (63 mm diameter collet nut). It has two different outer diameters, the smaller diameter is 12 mm and the larger diameter is ½ inch, to suit different collets.

Part number: A-8014-1610

Transducer ball

If a ball joint is dropped onto a hard surface, the ball sphericity may be affected, which will add to the errors measured by the ballbar system. If this happens, discard the ball joint and replace it with a new one, using the special spanner provided.

Part number: A-8014-0182

Battery end cap assembly

The battery end cap assembly is supplied with a center ball already fitted.

Part number: A-8014-1593

Center ball

If a ball joint is dropped onto a hard surface, the ball sphericity may be affected, which will add to the errors measured by the ballbar system. If this happens, discard the ball joint and replace it with a new one.

Part number: A-8014-0141

Center pivot assembly

The magnetic center pivot assembly has a clamping mechanism that can be locked/unlocked by pulling the lever to the horizontal/vertical position. The center pivot assembly is supplied with a center cup fitted.

Part number: A-8014-1281

Center cup

The condition of the phosphor bronze bearings in the center cups affects the errors measured by the transducer. Center cups cannot be repaired (if they are damaged they must be replaced).

Part number: A-8014-0522

Setting ball

The setting ball is placed into the center mount cup when setting the zero coordinates for a test.

Part number: A-8014-1570

Extension bars

By assembling the ballbar with different combinations of extension bars, it is possible to carry out ballbar tests with 100, 150, 250, 300, 400, 450, 550 or 600 mm radii.

Length 50 mm

Part number: A-8014-0231

Length 150 mm

Part number: A-8014-0144

Length 300 mm

Part number: A-8014-0145

Spanner set

The C spanners can be used to ensure the screw joints on the ballbar (including any extension bars) are not loose and the screw joints on the tool cup extension (if used) are tight. The battery end cap spanner is designed to securely hold the battery end cap when unscrewing the center ball.

Part number: A-8014-1141

Spherical adaptor

This adaptor is for use with the lathe kit to set in as the stationary cup.

Part number: A-8014-1565

30 mm small circle adaptor

Used to run a ballbar test with a 30 mm radius. The ballbar is still physically 130 mm in length but the measurement takes place in the 30 mm section provided by the adaptor.

Part number: A-8014-1272

Validation card

Double-sided card for recording ballbar test results and displaying on the tested machine (insert into card holder below).

Note: Pack of 10.

Part number: A-8014-VCAR

Validation card holder

Plastic wallet with self-adhesive back to attach to the machine.

Note: Pack of 10.

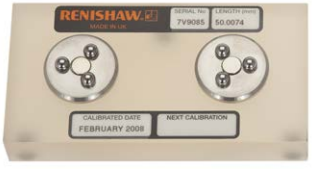
Part number: A-8014-VCHD

Cup cleaning kit

The tool cups are magnetic and may attract steel swarf and chips into the cup during use. Clear any swarf from the cups before storing them away with the cleaning kit.

Part number: A-8014-0423

50 mm glass calibrator (small circle accessory kit)



The 50 mm glass calibrator includes a calibration certificate.

Part number: A-8014-0491

Small circle adaptor (small circle accessory kit)

The small circle adaptor is supplied with an additional center ball already fitted. The adaptor is a simple screw fitting to the main ballbar body.

Part number: A-8014-1560

Spindle bar assembly (lathe adaptor kit)

The spindle bar assembly is fitted with a clamp holder and clamp.

Part number: A-8014-0553

Cup screw assembly (lathe adaptor kit)

The cup screw assembly is supplied with a center cup already fitted.

Part number: A-8014-0552

Bluetooth® USB wireless adaptor

Provides Windows PC with Bluetooth® communications capability. Tested and compatible with QC20.

Part number: A-8014-BTA1

Lithium battery for QC20

CR2 lithium battery.

Part number: A-8014-CR2

Machine checking gage

The Renishaw MCG is designed for rapid, volumetric accuracy evaluation for CMMs. The gage takes account of variations due to probe, machine and software errors.

Measuring range:	Vertically:	±45°
	Horizontally:	360°
Total gage error:	±0.5 µm	

MCG – 101 single arm kit

Part number: A-1007-0150

MCG – 151 single arm kit

Part number: A-1007-0151

MCG – 226 single arm kit

Part number: A-1007-0152

MCG – 380 single arm kit

Part number: A-1007-0154

MCG – 532 single arm kit

Part number: A-1007-0155

MCG – 685 single arm kit

Part number: A-1007-0156

XL laser calibration system

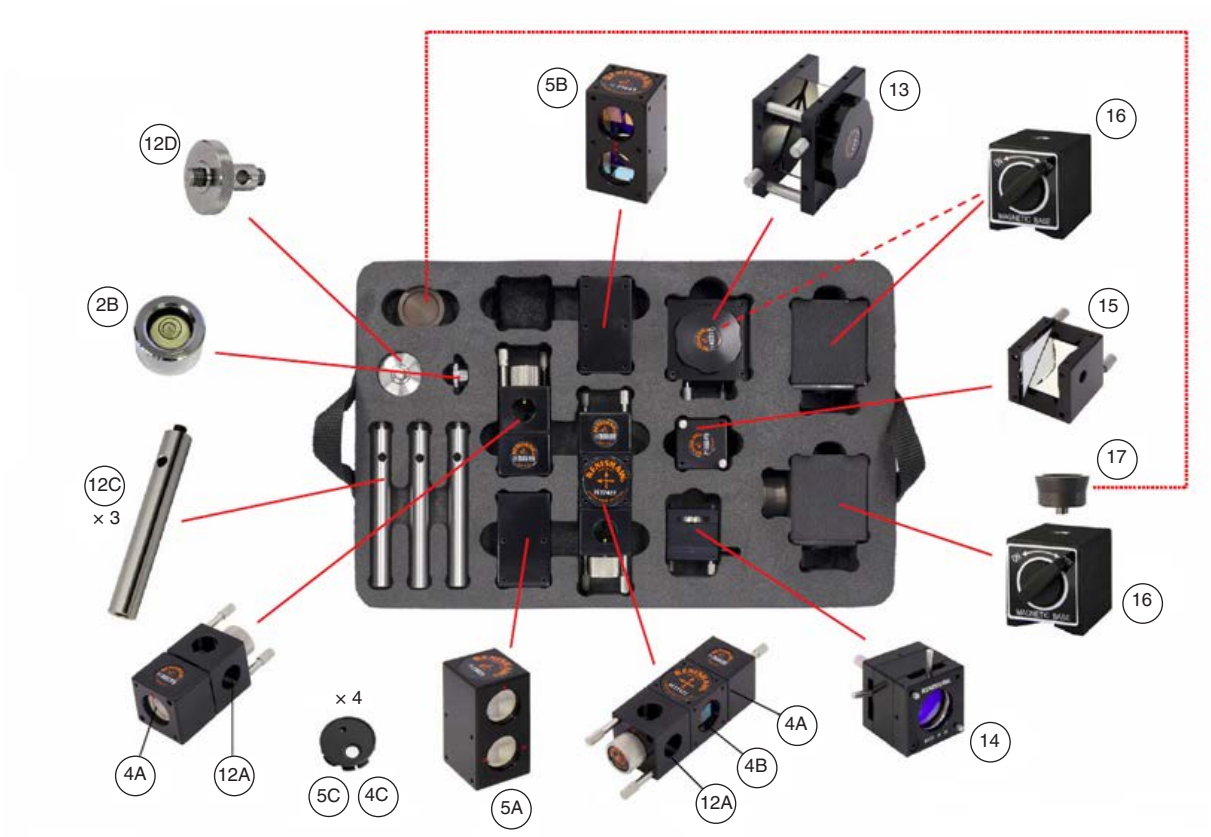
Used for comprehensive accuracy and performance measurement of any machine or system.

Linear measurement range	80 meters
Linear measurement accuracy	±0.5 ppm
Laser frequency accuracy	±0.05 ppm
Resolution	1 nm
Maximum travel velocity	4 m/s
Dynamic capture rate	10 Hz – 50 kHz

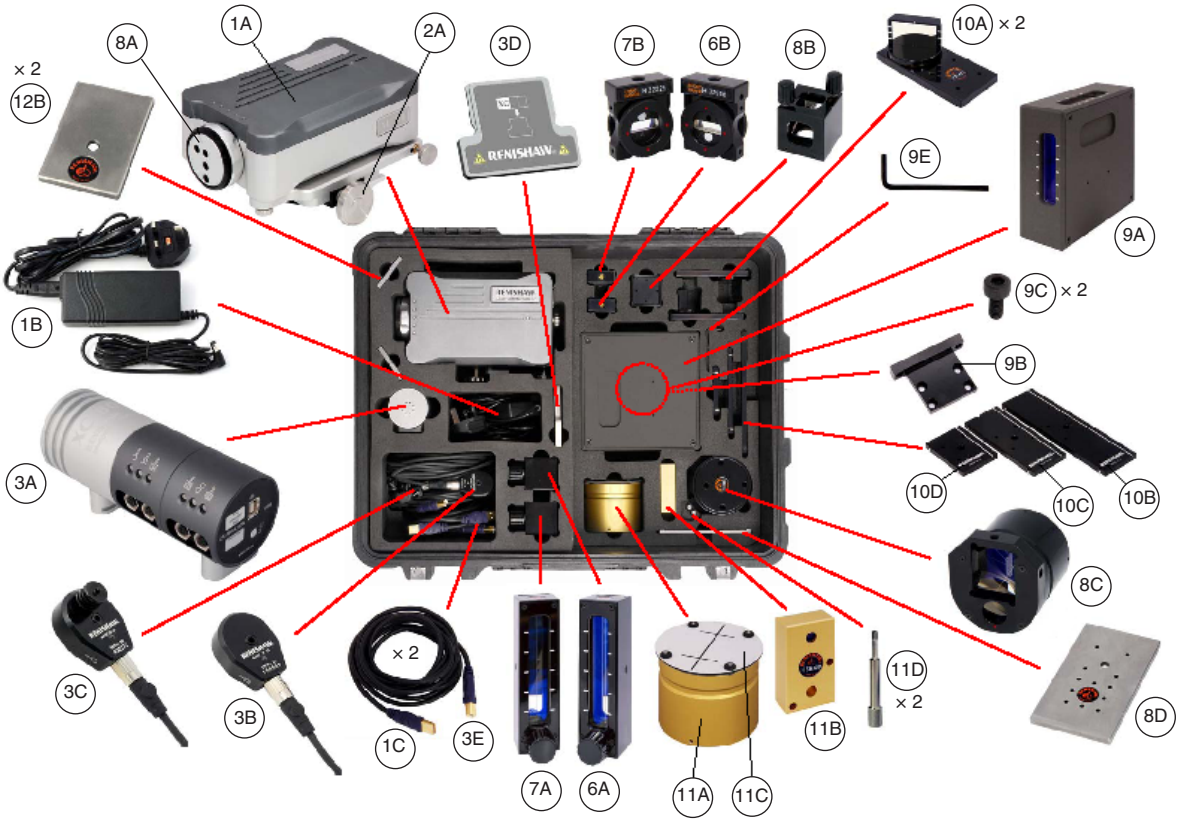
Contents of base XL system case

XL laser system components

Kit part number	Kit price	Includes	Part number		Index
A-9908-0405	**$15,287**	XL-80 laser Universal power supply USB cable XL system support disk AUX I/O connector Laser Capture and Analysis software	N/A A-9908-0299 A-9908-0286 A-9908-0303 A-9908-0329 A-9925-0201		1A 1B 1C Not shown Not shown Not shown
A-9908-0700	**$1,077**	XL translation stage Spirit level circular Tripod adaptor	A-9908-0700 A-9908-0323 A-9908-0770		2A 2B Not shown
A-9908-0510	**$10,077**	XC-80 compensator Material temperature sensor and cable Air temperature sensor and cable XC mounting plate USB cable	A-9908-0564 A-9908-0879 A-9908-0878 A-9908-0892 A-9908-0286		3A 3B 3C 3D 3E
A-8003-0440	**$3,472**	Linear reflector (qty 2) Linear interferometer Alignment target (qty 2)	A-8003-0219 A-8003-0557 A-8003-0478		4A 4B 4C
A-8003-0441	**$4,623**	Angular interferometer Angular reflector Alignment target (qty 2)	A-8003-0186 A-8003-0181 A-8003-0478		5A 5B 5C
A-8003-0443	**$6,206**	Short range straightness reflector Woollaston short range	A-8003-0615 A-8003-0393		6A 6B
A-8003-0444	**$6,206**	Long range straightness reflector Woollaston long range	A-8003-0620 A-8003-0430		7A 7B
A-8003-4209	**$881**	Straightness shutter	A-8003-4209		8A
A-8003-STAK	**$3,865**	Laser beam steerer LS350 Fixed turning mirror Large straightness retroreflector Straightness base	A-8003-3072 A-8003-1325 A-8003-0604 A-8003-0576		14 8B 8C 8D
A-8003-0665	**$6,206**	Optical square Bracket squareness optic	N/A M-8003-1680		9A 9B
A-8003-0442	**$3,737**	Flatness mirror (qty 2) Base (150 mm) Base (100 mm) Base (50 mm)	A-8003-0630 A-8003-0256 A-8003-0257 A-8003-0258		10A 10B 10C 10D
A-8003-4270	**$3,417**	Long range retroreflector Periscope Long range target Clamp screw (qty 2)	A-8003-2061 A-8003-2039 M-8003-2081 M-8003-0221		11A 11B 11C 11D
A-8003-0447	**$1,414**	Clamp block (qty 2) Base plate (qty 2) Mounting pillar (qty 3) M8 adaptor	A-8003-0262 A-8003-0522 M-8003-0470 A-8003-0979		12A 12B 12C 12D
		XL-80Q quad laser head	A-9908-0455		Not shown
		Base case	M-9908-0313		
		Full system case	M-9908-0314		
		Tripod	A-9908-0295		Not shown
		Tripod case	M-9908-0527		Not shown
		Swivel mirror	A-8003-1304		13
		Fixed turning mirror	A-8003-1325		15
		Magnetic base (qty 2)	A-9908-0780		16
		Magnetic base adaptor	A-9908-0760		17



Contents of full XL system case (tray)



Contents of full XL system case (tray removed)

XL laser calibration systems

Base system kit

Includes:	XL-80 laser head	A-8003-0440
	XC-80 environmental compensator kit	A-9908-0564
	XL translation stage kit	A-9908-0700

Download the software online.

XL-80 laser head

Linear system kit

Includes:	Components of base system kit	XL80-BASE
	Linear measurement optics	A-8003-0440
	Beam steerer LS350	A-8003-3072
	Optics mounting kit	A-8003-0447
	2 magnetic bases	A-9908-0780
	Magnetic base adaptor	A-9908-0760
	Tripod	A-9908-0295
	Tripod case	M-9908-0527
	Base system case	M-9908-0313

XC-80 environmental compensation unit

Linear/angular system kit

Includes:	Components of base system kit	XL80-BASE
	Linear measurement optics	A-8003-0440
	Angular measurement optics	A-8003-0441
	Beam steerer LS350	A-8003-3072
	Fixed turning mirror	A-8003-1325
	Optics mounting kit	A-8003-0447
	2 magnetic bases	A-9908-0780
	Magnetic base adaptor	A-9908-0760
	Tripod	A-9908-0295
	Tripod case	M-9908-0527
	Base system case	M-9908-0313

XL system case and tripod case

Advanced system kit

Includes:	Components of base system kit	XL80-BASE
	Linear measurement optics	A-8003-0440
	Angular measurement optics	A-8003-0441
	Swivel mirror	A-8003-1304
	Long range straightness optics	A-8003-0444
	Short range straightness optics	A-8003-0443
	Straightness accessory kit	A-8003-STAK
	Straightness shutter	A-8003-4209
	Squareness measurement kit	A-8003-0665
	Optics mounting kit	A-8003-0447
	2 magnetic bases	A-9908-0780
	Magnetic base adaptor	A-9908-0760
	Tripod	A-9908-0295
	Tripod case	M-9908-0527
	Full system case	M-9908-0314

Flatness system kit

Includes:	XL80 base kit	XL80-BASE
	Angular measurement optics	A-8003-0441
	Tripod	A-9908-0295
	Tripod case	M-9908-0527
	Flatness measurment kit	A-8003-0442
	Base system case	M-9908-0313

ML-10 to XL-80 upgrade

Includes components of base system kit XL80-BASE: XL-80 laser head
XC-80 environmental compensator kit
XL tripod stage kit

Additional parts that are not included but recommended for transportation and mounting purposes are:

Base system case	M-9908-0313
or	
Full system case	M-9908-0314
ML-XL tripod adaptor	A-9908-0765

Traded-in system must include the ML10 and EC10 with an air and material sensor. A non-working unit has a surcharge of

Part number: SYS-XL-UPG

HP, Agilent, Keysight laser interferometer system to XL-80 upgrade

Includes components of base system kit XL80-BASE: XL-80 laser head
XC-80 environmental compensator kit
XL tripod stage kit

Additional parts that are not included but recommended for transportation and mounting purposes are:

Base system case	M-9908-0313
or	
Full system case	M-9908-0314
Universal tripod	A-9908-0295
Universal tripod case	M-9908-0527
Magnetic bases	A-9908-0780
XL magnetic base adaptor	A-9908-0760

Traded-in system must include the ML10 and EC10 with an air sensor and a material sensor. A non-working unit has a surcharge

Part number: SYS-XL-UG2 **Price:** Call for price

Optodyne to XL-80 upgrade

Includes components of linear system kit:
Laser head
Laser translation stage kit
Linear measurement optics
Beam steerer
Mounting kit
Magnetic bases
Magnetic base adaptor
Base system case
Translation stage extension
USB extension kit

Price: Call for price

Optics

All Renishaw optics housings are lightweight aluminum with a hard anodized finish for durability and good thermal stability.

Linear kit (standard 40 m)

Includes: 1 linear beam splitter
2 linear reflectors
2 alignment targets

Part number: A-8003-0440

Small linear accessory kit

Please call for details.

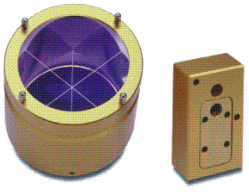
Part number: A-8003-3244

Long range linear optics kit (80 m max)

For use with the ML10X for linear measurements in excess of 40 m.

Includes: Periscope
Large retroreflector

Part number: A-8003-4270



Angular kit

Includes: 1 angular beam splitter
1 angular reflector
2 alignment targets

Part number: A-8003-0441

Linear/angular combination kit

This combination kit is a cost-saving solution, allowing linear and angular measurement to be made with a single set-up.

Includes: 1 angular beam splitter
1 angular reflector
1 linear reflector
2 alignment targets

Part number: A-8003-2774

Straightness measurement kits

Short range
Suitable for measurements up to 4 m (160 in)

Part number: A-8003-0443

Long range
Suitable for measurements from 1 m to 30 m (40 in to 1200 in)

Part number: A-8003-0444

Straightness accessory kit

Facilitates measurements on vertical axes and in other difficult configurations.

Includes: 1 fixed turning mirror
1 large retroreflector
1 stainless steel base
1 LS350 beam steerer

Note: XL-80 and ML10 users require straightness shutter, part number A-8003-4209, shown on page 5-24.

Part number: A-8003-STAK

Squareness measurement

This precision pentaprism is used in conjunction with straightness optics to measure squareness of machine axes. It includes a mounting bracket for a fixed turning mirror and LS350 beam steerer.

Part number: A-8003-0665

Flatness measurement kit

The turning mirrors rotate and tilt for easy alignment and are fitted with non-slip pads. The lightweight aluminum bases have precision stainless feet and guides.

Includes: 2 turning mirrors
1 50 mm flatness base
1 100 mm flatness base
1 150 mm flatness base

Part number: A-8003-0442

Standard optics mounting kit

This universal mounting kit is designed for use with the complete range of Renishaw measuring optics.

Includes: 2 mounting blocks
3 stainless pillars
1 stainless M8 adaptor
2 stainless bases

Part number: A-8003-0447

Magnetic base

Suitable for mounting optics and XL-80 laser head when fitted with A-9908-0760 magnetic base adaptor (sold in pairs).

Part number: A-9908-0780

CMM optics mounting kit

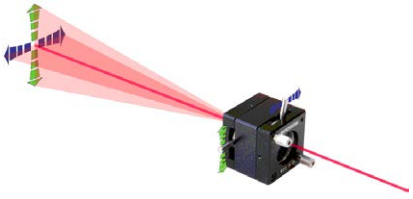
Designed specifically to aid the mounting of laser optics and other accessories on coordinate measuring machines. Recommended for UCC error mapping requirements.

Part number: A-1333-0174

Beam steerer LS350

This is the best time-saving device a laser system user could buy. It works with all the measuring optic kits, including HP optics using the HP optic adaptor plate. Included in straightness accessory kit.

Part number: A-8003-3072



Swivel mirror

This is used for directing the laser beam through any angle from 0° to 106°, for example for diagonal measurement and slant bed lathes. It works with all the optics kits, including HP optics using the HP optic adaptor plate.

Part number: A-8003-1304

Fixed turning mirror

This can be used with angular optics for 90° accessories. Included in straightness accessory kit.

Part number: A-8003-1325

Quarter wave plate

Used with linear optics for plane mirror interferometry applications.

Part number: A-8003-1998

Straightness shutter

Required for vertical straightness measurements.

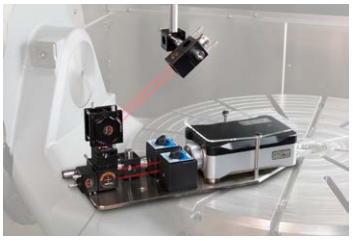
Part number: A-8003-4209

Pan and tilt adaptor

Adaptor for tripod to allow for easy mounting at an angle and easy swivel adjustment.

Part number: A-9908-1170

Linear diagonal measurement fixture kit

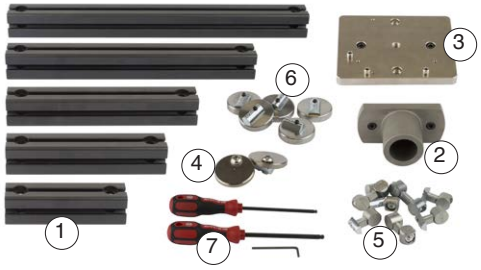


Includes: Custom diagonal plate to attach laser and optics
Mounting post
Heat shield

Laser, optics, clamp blocks and magnetic bases not included.

Part number: S-8LMS-2124

Fixture kit



Includes:
1 Range of extrusions
2 Lathe adaptor
3 Steel mounting plate
4 Extrusion alignment aids
5 Extrusion connectors
6 Magnets
7 Allen drivers

Part number: A-5103-4620

Optic adaptor plate

The adaptor plate provides compatibility for Renishaw accessories with HP, Keysight and Agilent optics.

Part number: M-8003-1307

Tripod and cases

Universal tripod

Tripod only, without the stage.

Part number: A-9908-0295

XL translation stage

Part number: A-9908-0700

Tripod adaptor

This allows the XL translation stage to be used with the Renishaw universal tripod or any other tripod with a standard camera mounting thread.

Part number: A-9908-0770

Tripod converter ML-XL

Part number: A-9908-0765

Magnetic base adaptor

This allows the XL translation stage to be mounted on any base or fixture with an M8 × 1.25 mounting hole.

Part number: A-9908-0760

Universal tripod case

Lightweight fabric.

Part number: M-9908-0527

System cases

Base system case

Suitable for basic laser system including linear and angle optics with accessories.

Part number: M-9908-0313

Full system case

Suitable for an advanced laser system including linear, angle, short range and long range straightness, squareness and flatness optics with accessories.

Part number: M-9908-0314

TB20 universal kit

Used to activate a trigger based on the signal received from encoders.

Includes: TB20 trigger box
XL trigger cable
Power supply cable
Plug adaptor kit
TB20 encoder and controller port connectors
Calibration user guide card

Part number: A-8003-4475

TB20 upgrade from TB10

Part number: UPG-TB10-SERV-1

TB20 connector kit

Part number: A-8003-4462

XL trigger cable

Part number: A-9908-0377

Power USB cable

Part number: A-9920-0390

USB power supply

USB power supply adaptors for any territory (UK, Europe and USA).

Part number: A-9920-0450

Software

XCal-View analysis software

XCal-View is used to comprehensively analyze legacy file formats. Its intuitive user interface makes it a simple but powerful tool for data analysis. The software provides automatic reporting that conforms to many international machine performance checking standards, making compliance simple. Standards include ISO, ASME, VDI, JIS and GB/T and an additional Renishaw analysis to succinctly summarize the result.

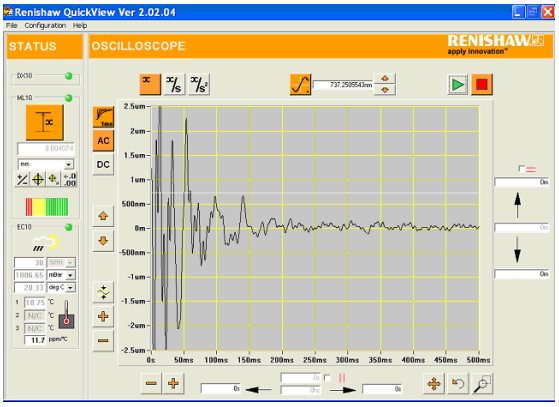
XCal-View (single user)

Part number: A-9925-0208

XCal-View (10 users)

Part number: A-9925-0203

QuickView XL software



QuickView is the simple, intuitive software package that allows you to understand the dynamic performance of many different machines and devices such as stages, machine tools and CMMs. It brings the functionality of an oscilloscope to the mechanical engineer, right on your desktop.

- Capture, review, and save dynamic data
- Measure distance, velocity and acceleration against time
- Display continuous “streaming” data or set trigger levels to capture single or multi-shot “events”
- Linear, angular or straightness modes
- Optional hardware – compact low mass optics kit

Applications

- Measure consistency of position, velocity and acceleration
- Determine movement in a locked rotary axis (torsional vibration)
- Detect dynamic yaw and lateral play (slop)
- Measure vibration
- Perform ASME B5.54 CNC tests such as Feedrate and acceleration, Minimum Block Execution Time (MBET) and Least Increment

Benefits include:

- Live data display allowing analysis of motion and positional characteristics
- Save data for analysis in other applications such as Excel® and MathCad
- Flexible measurement – avoids the need for defined measurement targets and sequences

Part number: A-9908-0302

Spare parts

The following items are normally supplied as parts of system kits but can be purchased as individual components for replacement purposes.

Clamp block

Part number: A-8003-0262

Locking screw assembly

For use with clamp block.

Part number: A-9954-0272

Locking screw pressure pad

Brass pad and rubber retaining ring.

Part number: A-8003-4500

Clamp screws

Long (for use with clamp block)

Part number: M-8003-0264

Short (for use with linear and angular optics)

Part number: M-8003-0221

LS350 (for use with LS350 beam steerer)

Part number: M-8003-3083

For use with fixed turning mirror.

Part number: M-8003-1070

For use with swivel mirror.

Part number: M-8003-1063

Mounting pillars

40 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0740

70 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0739

110 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0470

Straightness accessory base

Part number: A-8003-0576

Large retroreflector

For use with vertical straightness measurements.

Part number: A-8003-0604

M8 adaptor

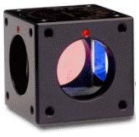
Part number: A-8003-0979

Alignment target

Part number: A-8003-0478

Linear beam splitter

Part number: A-8003-0557



Linear reflector

Part number: A-8003-0219

Angular reflector

Part number: A-8003-0181

Angular beam splitter

Part number: A-8003-0186

Cables

XC-80 temperature sensor cable (5 m)

Part number: A-9908-0932

USB to serial adaptor

Allows QC10 ballbar and other serial devices to be used with notebook PCs that do not have an RS232 serial port.

Part number: A-8014-0670

USB cable

Part number: A-9908-0286

Temperature sensor cable connector kit

Part number: A-9904-1636

Translation stage screws

Part number: A-9908-0750

XR20 rotary axis calibrator and components

XR20 rotary axis calibrator

The XR20 rotary axis calibrator allows the measurement of rotary axis positional accuracy to within 1 arc second. Totally wireless operation and modular mounting systems ensure suitability for a wide range of machines.

Includes: XR20
Mounting ring
Adaptor plate
Centration aid
Chuck adaptor
Battery charger
Batteries Li-polymer × 3
Electrical adaptor for use in any territory
USB cable and mains adaptor
Rotary XL software including system manual
Peli™ system case

Part number: A-9920-1400

OARS (Off Axis Rotary Software) bracket

Part number: A-9920-0700

XR20 rotary axis calibrator upgrade

Part number: XR20W-UPG

NOTE: The standard trade-in allowance quoted is on the basis that a complete and fully functional RX10 kit is returned. Non-functional, damaged or incomplete kits may be considered for trade-in at Renishaw's discretion. If accepted, the trade-in allowance will be reduced.

XR20 kit components

Mounting ring

The mounting ring bolts or clamps directly to the test surface for ease of centering the system on the test axis.

Part number: A-9920-0440

Mounting ring adaptor 150 mm

The adaptor plate enables fitting to rotary tables with unsuitable center recesses. It can also be used to secure the XR20 to the chuck adaptor and custom mounts.

Part number: A-9920-0270

Chuck (lathe) adaptor

The adaptor has a 40 mm diameter to fit most popular chuck sizes. It can also be used to secure the XR20 to users' own custom mounts.

Part number: A-9920-0280

Centration aid

The centration aid fits temporarily inside the mounting ring to assist visual centration before XR20 insertion.

Part number: A-9920-0340

Fixings kit

A complete set of screws and allen keys for XR20.

Part number: A-9920-0430

Battery Li-Polymer 3.7 V

High-power rechargeable lithium battery (three batteries supplied with each XR20).

Part number: A-9920-0330

Battery charger and cables

Battery charger and a set of power cables for any territory (UK, Europe and USA).

Part number: A-9920-0320

Battery cover

Replacement battery cover for XR20.

Part number: A-9920-0460

USB cover plug

Replacement protective plug for USB socket on XR20.

Part number: A-9920-0380

USB power supply

USB power supply adaptors for any territory (UK, Europe and USA).

Part number: A-9920-0450

XR20 case

Heavy duty transport and storage case for XR20.

Part number: A-9920-0360

RENISHAW
apply innovation™

Styli and accessories

Page 7-3 **Technical specifications and quick reference guides**

Quick selection from our extensive range.

Page 7-8 **Accuracy at the point of contact**

An explanation of why it is important to choose the right stylus for your application, and an overview of the entire range of stylus types.

Page 7-13 **M2 threaded stylus range**

Styli for use with the industry-standard CMM probes TP2, TP20 and TP200.

Page 7-21 **M3 threaded stylus range**

Styli for use with manual CMM probes TP1 and TP6 and the most flexible scanning probe, SP25M.

Page 7-27 **M4 threaded stylus range**

Optimized for stiffness and weight, styli purposely designed for the high accuracy TP7M and our comprehensive range of probing for machine tools.

Page 7-38 **M5 threaded stylus range**

A premium range specifically designed for highest accuracy scanning probes from Renishaw and other manufacturers.

Page 7-53 **Styli for Faro arms and Zeiss probing systems**

These styli have been designed especially for use on Faro portable arm CMMs and with Zeiss probing systems.

Page 7-87 **Accessories**

All of the 'bits and pieces' that you need to assemble anything from the most complex stylus clusters to a simple star.

Technical specifications

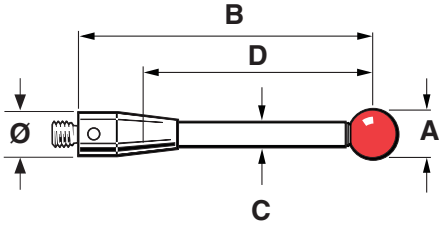
Ball material properties

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)	($MN/m^{3/2}$)
AL_2O_3 ruby balls	Synthetic ruby monocrystalline	Grade 5*	0.13	mono	99% AL_2O_3	99.90	3.90	2300	2100	400-700	1
Silicon nitride balls	Hard pressed Si_3N_4	Grade 5*	0.13	poly	Si_3N_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_2O_3	–	1	poly	AL_2O_3	99.80	3.8-3.9	1900	2500	350	3.5
Silver steel disks	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_2O_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	–	–
Aluminum 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	$16x10^{-6}/°C$
Tungsten carbide	$5x10^{-6}/°C$
White ceramic sintered alumina	$8.1x10^{-6}/°C$
Carbon fiber	$-0.4x10^{-6}/°C$
Titanium	$9.2x10^{-6}/°C$
Ruby	$4.5x10^{-6}/°C$
Silicon nitride	$3.2x10^{-6}/°C$
Zirconia	$10.5x10^{-6}/°C$



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

M2 styli and extensions quick reference guide

These are a selection of the most popular styli.

Ruby ball / stainless steel stem

Ball diameter	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)
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 (0.02)	0.7 (0.03)	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 fiber 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 (0.80)	30.0 (1.19)	40.0 (1.58)	50.0 (1.97)	70.0 (2.76)	90.0 (3.55)
Stainless steel	A-5004-7610	A-5004-7585	A-5004-7586	A-5004-7591	A-5004-7611	–	–	–
Ceramic	–	–	–	A-5003-0070	A-5003-0071	A-5003-0072	–	–
Carbon fiber	–	–	–	–	A-5003-2280	A-5003-2281	A-5003-2282	A-5003-2283

M3 styli and extensions quick reference guide

These are a selection of the most popular styli.

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 (0.02)	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 fiber 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 (0.80)	35.0 (1.38)	50.0 (1.97)	70.0 (2.76)
Stainless steel	A-5004-7609	A-5004-7583	A-5004-7584	–	–
Ceramic	–	–	–	A-5003-0075	–
Carbon fiber	–	–	–	A-5003-4864	A-5003-4865

M4 styli and extensions quick reference guide

These are a selection of the most popular styli.

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 fiber 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 (0.41)	15.0 (0.60)	20.0 (0.79)	30.0 (1.19)	50.0 (1.97)	100.0 (3.94)
Stainless steel	A-5004-7599	A-5004-7600	A-5004-7601	A-5004-7602	–	–
Ceramic	–	–	–	A-5000-7754	A-5000-7755	A-5000-7727

M5 styli and extensions quick reference guide

These are a selection of the most popular styli.

Ruby ball / tungsten carbide stem

Ball diameter	0.3 (0.012)	0.5 (0.02)	0.7 (0.03)	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 fiber 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 (0.41)	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
Aluminum tube	–	–	–	–	A-5555-0671	–	–	–	–	A-5555-0127

Length	120.0 (4.76)	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-5555-0661	A-5555-0662	A-5555-0663	A-5555-0427	A-5555-0664	A-5555-0665	A-5555-0667	A-5555-0668
Stainless steel	–	–	–	–	–	–	–	–	–
Aluminum tube	–	–	–	A-5555-0125	–	–	–	–	–

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 maximize your productivity and maintain the highest quality.

Successful gaging 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 optimized 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 gaging 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 does Renishaw use to describe its 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 five balls on the star and an overall length of 19.5 mm (from the center 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.

Disk styli

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

The above protocol describes an M2 threaded disk stylus with a spherical diameter disk of 18 mm. It is made from silver steel with a disk 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

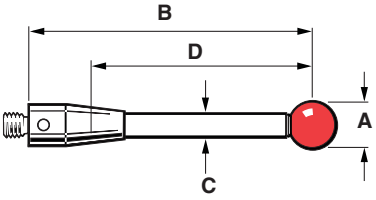
The above protocol describes an M2 threaded cylinder stylus with a critical measuring element diameter of 3 mm made from silver steel. It has an overall length of 13 mm and an EWL of 4 mm.

Extensions

M4 EXT L15 d7 SS

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

Terminology



A Ball diameter

B Overall length

C Stem diameter

D Effective working length

Overall length

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

Effective working length (EWL)

This is measured from the center 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 a stylus bends or deflects, the lower the accuracy. Probing with the minimum stylus length for your application is the best option.

Minimize 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 maximizes 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 aluminum 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 exists 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 aluminum. Because the materials attract, a phenomenon known as 'adhesive wear' can occur, which involves build up of aluminum 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 aluminum 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 aluminum.

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.

Tungsten carbide

Tungsten carbide stems are best used for maximizing 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 fiber (Renishaw GF)

There are many grades of carbon fiber materials, however Renishaw GF combines optimum stiffness characteristics, both longitudinally and in torsion (important in star constructions), with extremely low weight. Carbon fiber 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 maximizing stiffness while giving very low mass for styli above 50 mm in length. It is the optimum stem material for high-accuracy strain gage 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 minimized. It is also of low density, keeping tip mass to a minimum, which avoids unwanted probe triggers caused by machine motion or vibration.

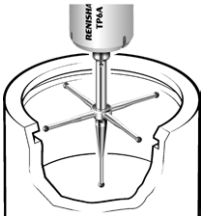
Mounted on stems made from a range of materials – stainless steel, tungsten carbide, ceramic and a specialized carbon fiber material, “Renishaw GF” – these simple ruby ball styli are suitable for most inspection applications.

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 gage 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 center. Three standard sizes are offered – alternatively, you can create custom-made star styli using a 5-way stylus center 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, minimizing 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 center to ball center.

Disk 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 center stylus are features of the Renishaw range of disk styli that make them particularly flexible and easy to use.

Probing with the 'spherical edge' of a simple disk 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 disks require careful angular alignment in order to ensure correct contact with the feature being probed.

A simple disk requires datuming for only one diameter (usually in a ring gage), 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 center 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 gage. Rotating and locking the disk about its center axis allows the 'radius end roller' to be positioned to suit the application.

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

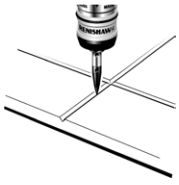
Styli for specialist applications

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 centers 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 mm 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 centers can also be fitted with a tungsten carbide disk 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 centers and stylus knuckles complement the genuine Renishaw stylus range to achieve fully flexible inspection.

Stylus centers

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 specialized application M2 styli for use on larger probes.

Stylus tools

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

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.

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 disks, 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, minimizing 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 optimizes probe performance for your particular application.

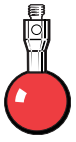
Renishaw's Styli and Custom Products Division has supplied over 5,000 different custom styli into probing applications worldwide, so the solution to your application problem may already exist.

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

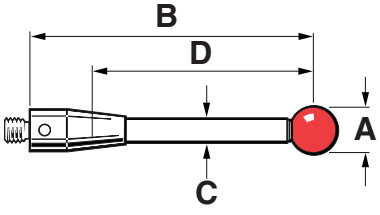
Ruby ball styli (stainless steel stems)

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 (0.03)	0.7 (0.03)	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 (0.26)	7.0 (0.28)	10.0 (0.40)	10.0 (0.40)	10.0 (0.40)	11.0 (0.44)
	Mass grams	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
Sillicon 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 (0.06)	1.4 (0.06)	1.5 (0.06)	1.5 (0.06)
D	EWL* mm (in.)	14.0 (0.56)	16.4 (0.65)	17.0 (0.67)	20.0 (0.79)
	Mass grams	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 (0.02)	0.7 (0.03)	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 (0.02)	0.7 (0.03)
D	EWL* mm (in.)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	4.0 (0.16)
	Mass grams	0.3	0.3	0.3	0.3
10 mm range					



** Special * Effective working length

RENISHAW
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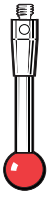
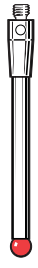
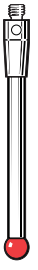
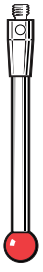
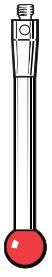
Ruby ball styli (tungsten carbide stems) – continued

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 (0.02)	0.7 (0.03)	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 (0.79)	20.0 (0.79)
C	Stem dia. mm (in.)	0.3 (0.012)	0.5 (0.02)	0.7 (0.03)	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 grams	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 grams	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 (0.03)	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 grams	0.40	0.58	0.99	1.48	1.49	1.57	2.57
30 mm range								

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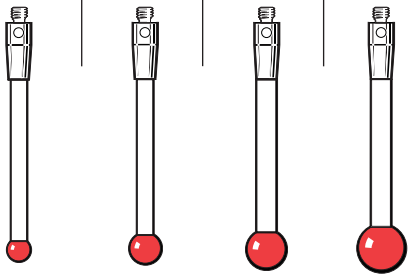
Ruby ball styli (ceramic stems)

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 grams	0.44	0.68	0.93	1.11

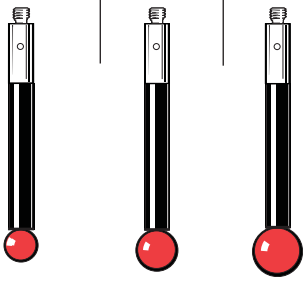
30 mm range



Ruby ball styli (carbon fiber 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)	3.0 (0.12)	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 grams	0.57	0.79	0.96

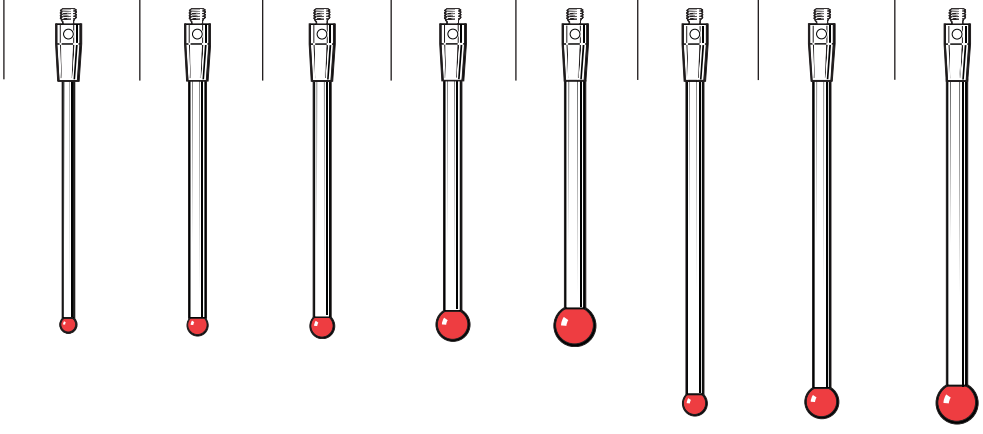
30 mm range

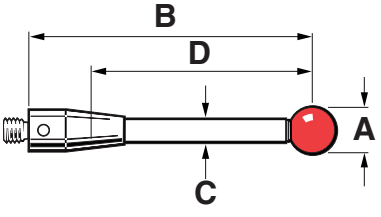


Ruby ball styli (tungsten carbide stems)

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-5004-1959	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 grams	1.29	1.95	1.97	2.04	3.17	2.44	2.52	3.75

40 mm – 50 mm range





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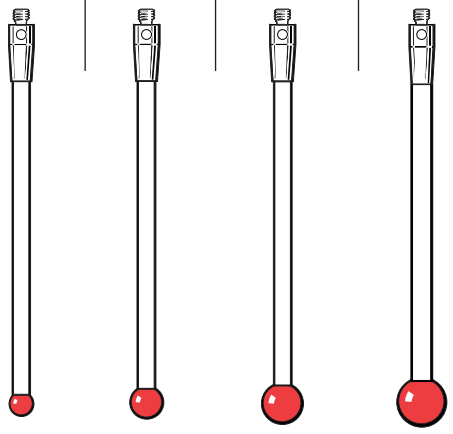
Ruby ball styli (ceramic stems)

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 grams	0.83	0.91	1.31	1.49

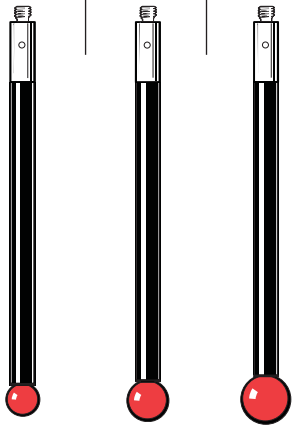
50 mm range

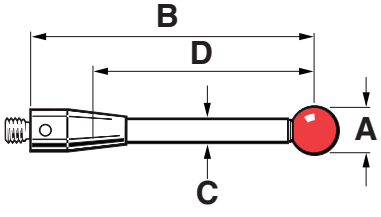


Ruby ball styli (carbon fiber stems)

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 grams	1.00	1.10	1.20

50 mm range





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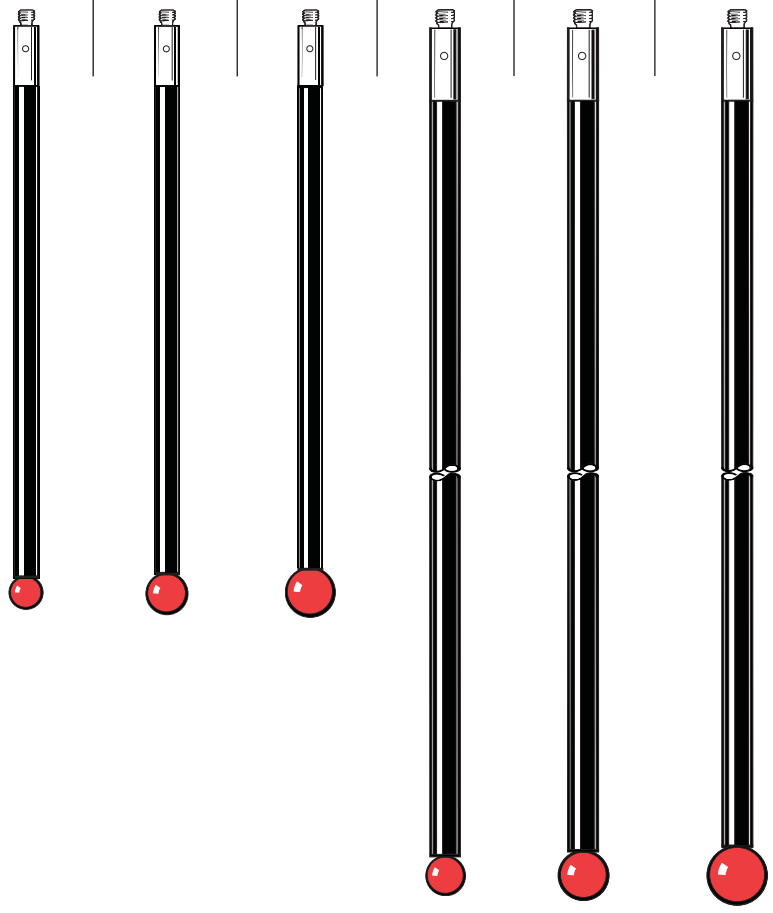
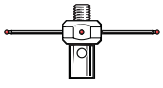
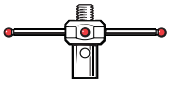
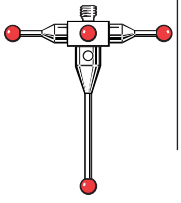
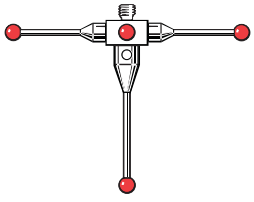
Ruby ball styli (carbon fiber stems)

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 (0.08)	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 grams	0.75	1.35	1.45	1.50	1.59	1.78
75 mm – 100 mm range							

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 mm (in.)	0.5 (0.02)	1.0 (0.04)	0.5 (0.02)	1.0 (0.04)	2.0 (0.08)	2.0 (0.08)
Stem dia. mm (in.)	0.3 (0.012)	0.7 (0.03)	0.3 (0.012)	0.7 (0.03)	1.4 (0.06)	1.4 (0.06)
EWL* mm (in.)	N/A	N/A	N/A	N/A	12.0 (0.48)	12.0 (0.48)
Mass grams	0.7	0.5	0.7	0.9	1.3	1.8
						

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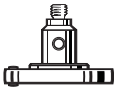
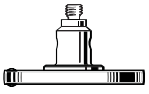
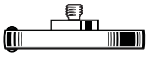
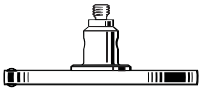
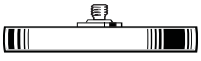
Star stylus centers

Part number	A-5003-4789	A-5003-4790	A-5003-4791	A-5000-3609
Ball mm (in.)	1.0 (0.04)	0.5 (0.02)	1.0 (0.04)	2.0 (0.08)
Stem dia. mm (in.)	0.7 (0.03)	0.4 (0.02)	0.7 (0.03)	1.4 (0.06)
EWL* mm (in.)	3.5 (0.14)	7.0 (0.28)	11.0 (0.44)	12.0 (0.48)
Mass grams	0.31	0.43	0.45	0.44

Disk 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
Disk dia. mm (in.)	6.0 (0.24)	10.0 (0.39)	12.0 (0.47)	14.0 (0.55)	18.0 (0.71)
Disk depth mm (in.)	1.2 (0.05)	1.2 (0.05)	1.6 (0.06)	1.6 (0.06)	1.6 (0.06)
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 grams	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
Disk dia. mm (in.)	18.0 (0.71)	25.0 (0.99)	25.0 (0.99)
Disk depth mm (in.)	2.3 (0.10)	1.6 (0.06)	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 grams	2.7	4.0	3.8
			

Cylinder styli

Part number	A-5004-7589 Silver steel	A-5004-7590 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)	21.2 (0.83)	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 grams	0.3	0.6	0.3	0.3	0.5	0.9

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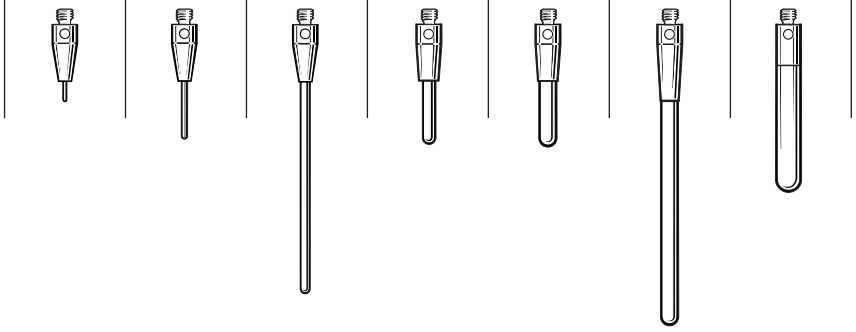
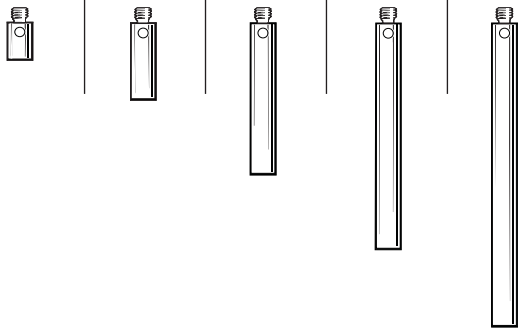
Parallel hemispherical-ended styli (tungsten carbide)

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 (0.02)	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 grams	0.3	0.3	0.7	0.6	0.8	2.0	2.0



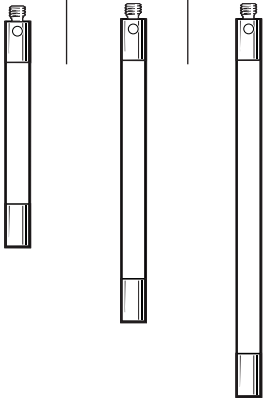
Stylus extensions (stainless steel)

Part number	A-5004-7610	A-5004-7585	A-5004-7586	A-5004-7591	A-5004-7611
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 grams	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 grams	0.97	1.22	1.51



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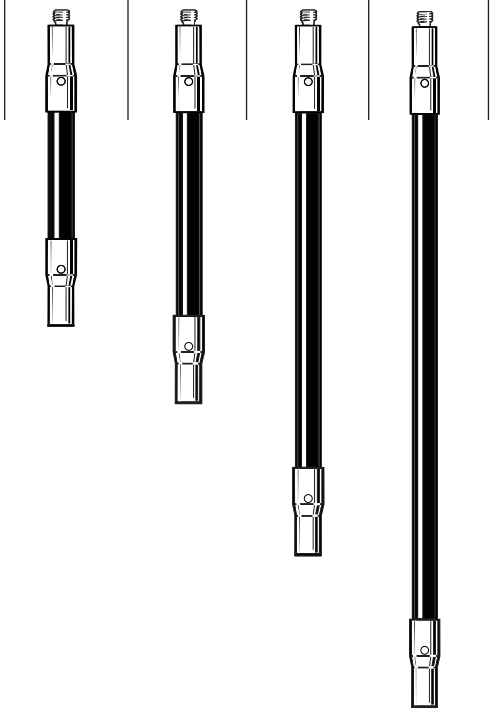
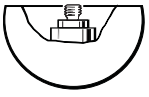
Stylus extensions (carbon fiber)

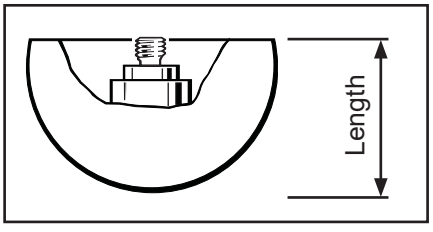
Part number	A-5003-2280	A-5003-2281	A-5003-2282	A-5003-2283
Length mm (in.)	40.0 (1.58)	50.0 (1.97)	70.0 (2.76)	90.0 (3.55)
Stem dia. mm (in.)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)	3.0 (0.12)
Outer dia. mm (in.)	3.5 (0.14)	3.5 (0.14)	3.5 (0.14)	3.5 (0.14)
Mass grams	0.9	1.0	1.3	1.5



Special purpose styli

Part number	A-5004-7588 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
Angles	30° inclusive	30° inclusive	N/A
Mass grams	0.7	0.7	3.3



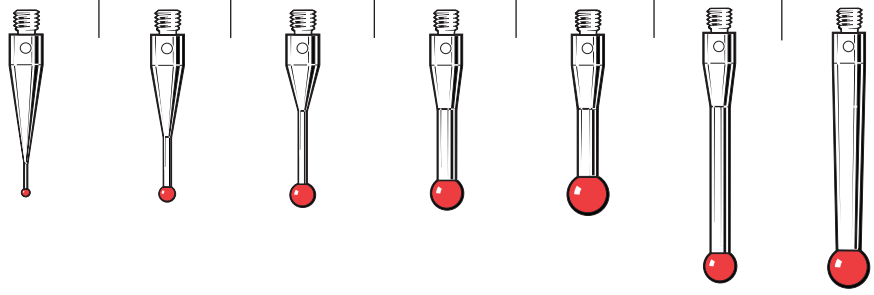


M3 threaded stylus range

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 (0.03)	1.4 (0.06)	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 grams	1.0	1.0	1.0	1.3	1.5	2.5	3.0

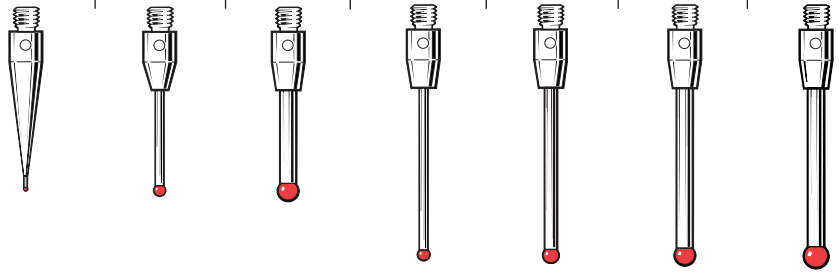
21 mm – 31 mm range

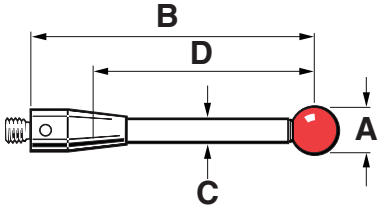


Ruby ball styli (tungsten carbide stems)

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 (0.02)	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 grams	1.0	0.8	1.3	0.93	1.32	1.81	1.83

20 mm – 30 mm range





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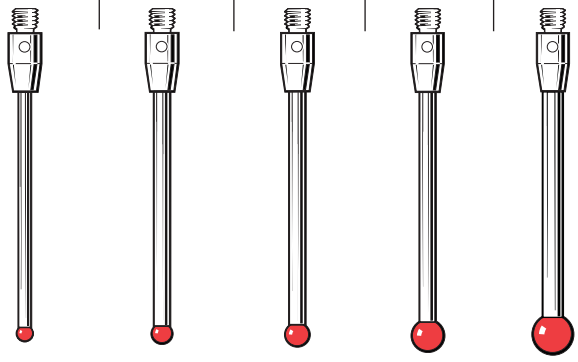
Ruby ball styli (tungsten carbide stems) – continued

Ball material		Part number				
Ruby		A-5003-0053	A-5003-0056	A-5003-0058	A-5003-0060	A-5003-0062
Silicon nitride		A-5004-1985	A-5004-1986	A-5004-1987	A-5004-1195	A-5004-1718
Zirconia		A-5003-2043**	A-5004-2964	A-5004-2965	A-5003-6767	A-5004-2966
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.)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)	40.0 (1.58)
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)
D	EWL* mm (in.)	32.5 (1.28)	32.5 (1.28)	33.7 (1.33)	36.0 (1.42)	40.0 (1.58)
	Mass grams	1.58	2.28	2.30	2.38	3.50

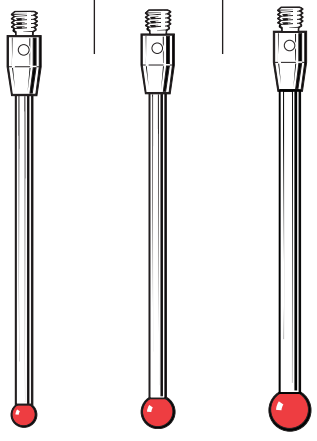
40 mm range



Ruby ball styli (tungsten carbide stems)

Ball material		Part number		
Ruby		A-5003-0059	A-5003-0061	A-5003-0063
Silicon nitride		A-5004-1199	A-5004-1988	A-5004-1201
Zirconia		A-5004-2968	A-5003-6768	A-5003-7665**
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 grams	2.78	2.85	4.10

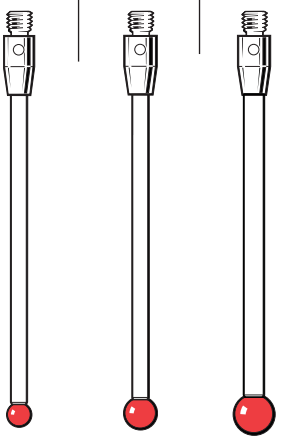
50 mm range

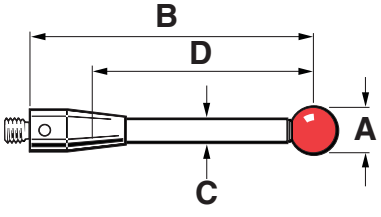


Ruby ball styli (ceramic stems)

Ball material		Part number		
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 grams	1.17	1.24	1.33

50 mm range





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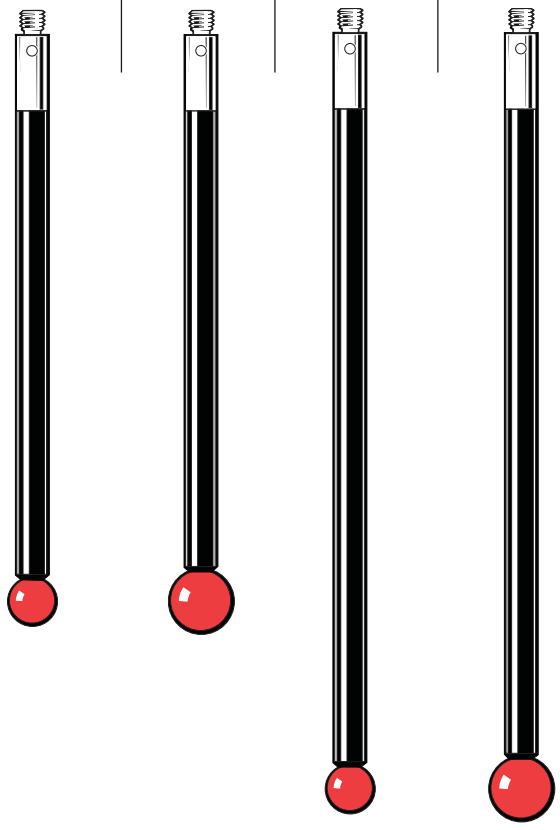
Ruby ball styli (carbon fiber stems)

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 grams	2.40	2.98	2.89	3.47

75 mm – 100 mm range



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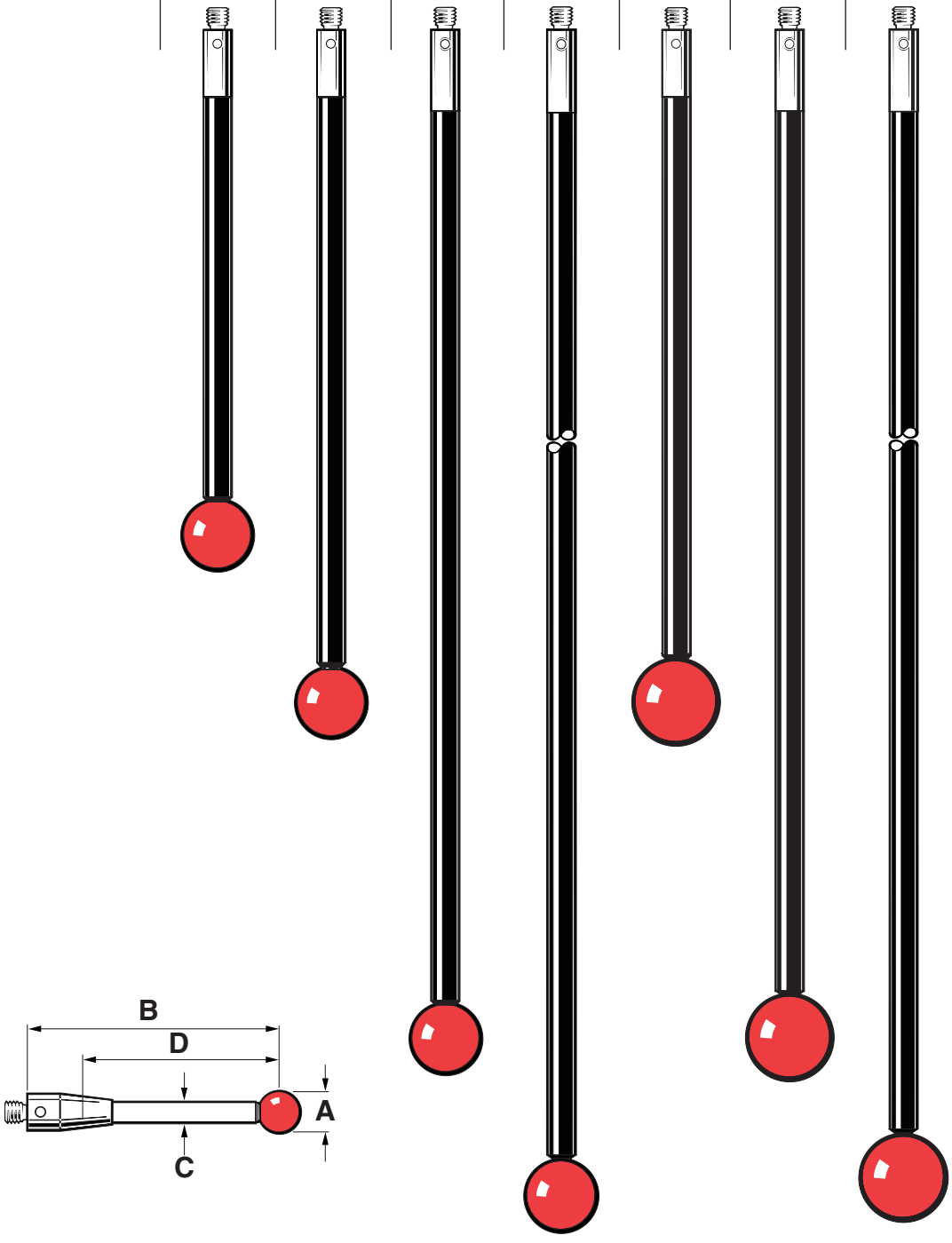
Ruby ball styli (carbon fiber stems) – continued

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 grams	4.05	4.53	5.49	6.47	5.9	6.9	7.9



* Effective working length

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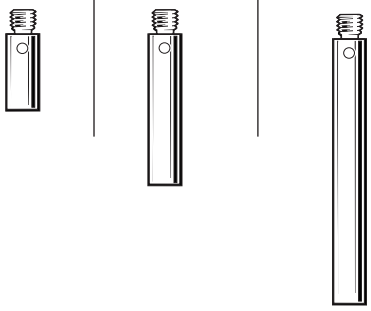
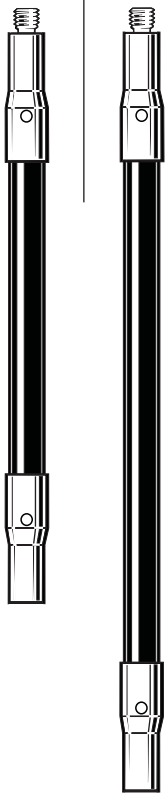
Stylus extensions (stainless steel)

Part number	A-5004-7609	A-5004-7583	A-5004-7584
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 grams	0.9	1.6	2.9
Price	$13	$15	$12



Stylus extensions (carbon fiber)

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 grams	2.53	3.02
Price	$102	$110



Stylus extensions (ceramic)

Part number	A-5003-0075
Length mm (in.)	50.0 (1.97)
Stem dia. mm (in.)	4.0 (0.16)
Mass grams	2.95
Price	$58

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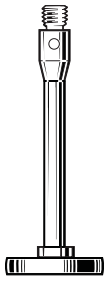
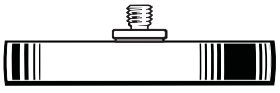
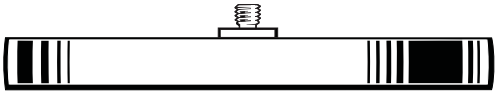
Disk and hollow ball styli

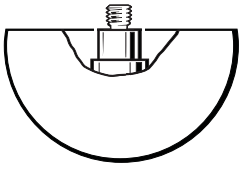
Part number	A-5000-3615 Silver steel	A-5000-7612 Silver steel	A-5000-7669 Carbon steel
Disk dia. mm (in.)	12.7 (0.50)	35.0 (1.38)	63.5 (2.51)
Disk depth mm (in.)	2.2 (0.09)	5.0 (0.20)	6.0 (0.24)
Stem dia. mm (in.)	3.5 (0.14)	N/A	N/A
Mass grams	4.0	10.0	45.0

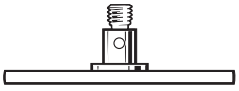


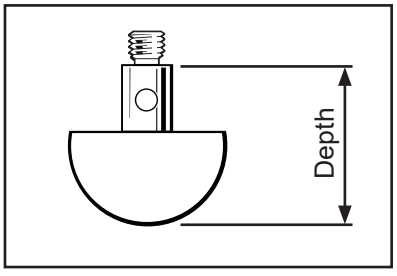




Part number	A-5000-7814 Ceramic	A-5003-7098 Ceramic
Disk dia. mm (in.)	30.0 (1.19)	30.0 (1.19)
Disk depth mm (in.)	17.0 (0.67)	1.5 (0.06)
Stem dia. mm (in.)	N/A	4.0 (0.16)
Mass grams	13.0	3.6

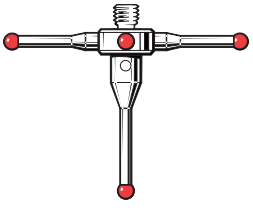


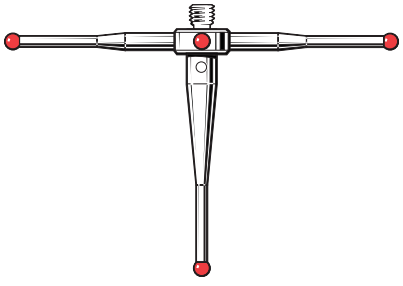


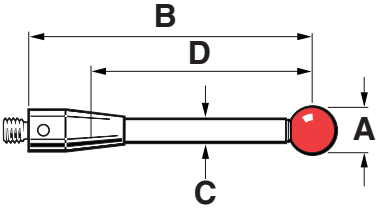


Star styli (fixed)

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 (0.06)	1.4 (0.06)
EWL* mm (in.)	11.0 (0.44)	11.0 (0.44)
Mass grams	2.38	5.25





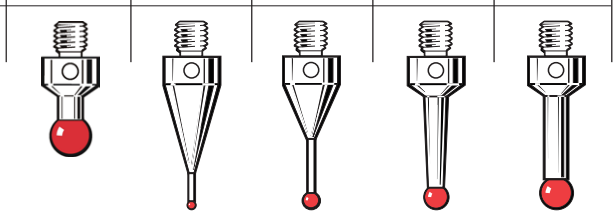


* Effective working length

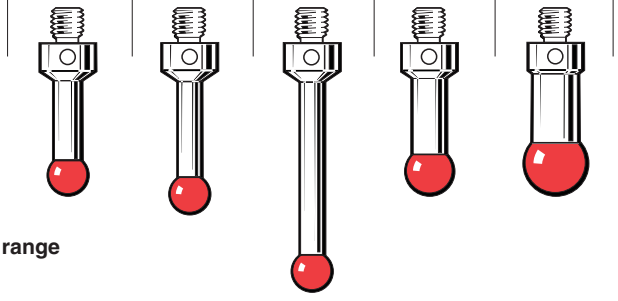
M4 threaded stylus range

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 (0.39)	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 (0.03)	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 grams	1.9	2.5	2.3	2.0	2.1



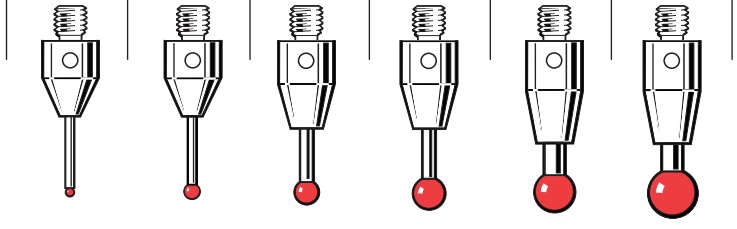
Part number		A-5000-7553	A-5000-6731	A-5000-6352	A-5000-7555	A-5000-7557
A	Ball dia. mm (in.)	5.0 (0.20)	5.0 (0.20)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
B	Length mm (in.)	17.5 (0.69)	20.0 (0.79)	30.0 (1.19)	17.0 (0.67)	16.0 (0.63)
C	Stem dia. mm (in.)	3.5 (0.14)	3.0 (0.12)	3.0 (0.12)	4.5 (0.18)	6.0 (0.24)
D	EWL* mm (in.)	13.6 (0.54)	15.89 (0.63)	26.0 (1.03)	13.3 (0.52)	16.0 (0.63)
	Mass grams	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 (0.03)	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 grams	2.39	3.01	3.53	3.53	4.52	4.66



20 mm range

* Effective working length

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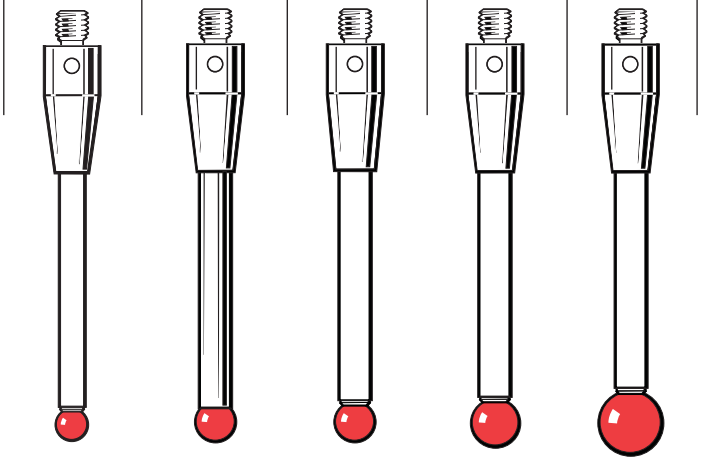
Ruby ball styli

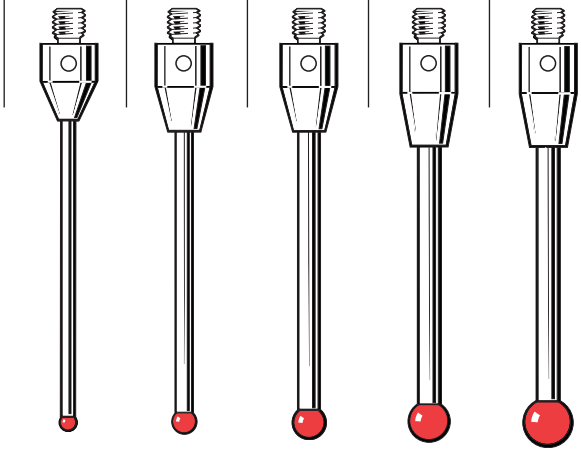
Part number		A-5003-0233 Ceramic	A-5000-7521 Stainless steel	A-5003-0235 Ceramic	A-5000-3709 Ceramic	A-5000-7795 Ceramic
A	Ball dia. mm (in.)	4.0 (0.16)	5.0 (0.20)	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	3.0 (0.12)	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)	33.5 (1.32)	38.5 (1.52)	50.0 (1.97)
	Mass grams	3.9	5.8	5.0	4.8	5.4

50 mm range



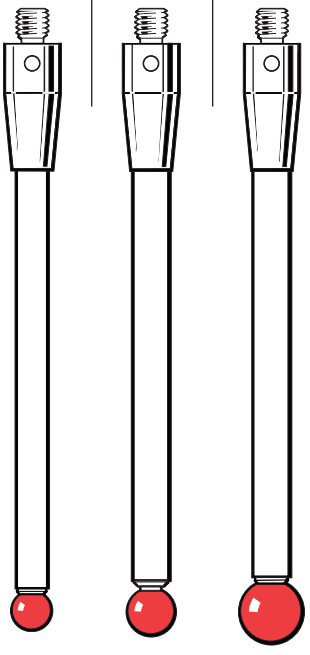
Part number		A-5003-4797 Tungsten carbide	A-5003-3680 Tungsten carbide	A-5003-4799 Tungsten Carbide	A-5003-4800 Tungsten carbide	A-5003-4801 Tungsten carbide
A	Ball dia. mm (in.)	2.0 (0.08)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)	6.0 (0.24)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)	50.0 (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 (1.52)	38.5 (1.52)	37.9 (1.49)	40.7 (1.60)
	Mass grams	3.80	4.94	4.99	6.72	6.86

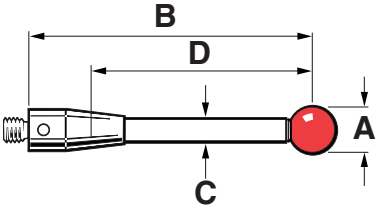
50 mm range



	A-5003-0236 Ceramic	A-5003-2764 Ceramic	A-5003-4802 Ceramic
	5.0 (0.20)	6.0 (0.24)	8.0 (0.32)
	75.0 (2.96)	75.0 (2.96)	75.0 (2.96)
	3.8 (0.15)	4.5 (0.18)	4.5 (0.18)
	58.5 (2.30)	63.5 (2.51)	75.0 (2.96)
	5.63	5.64	6.20

75 mm range





* Effective working length

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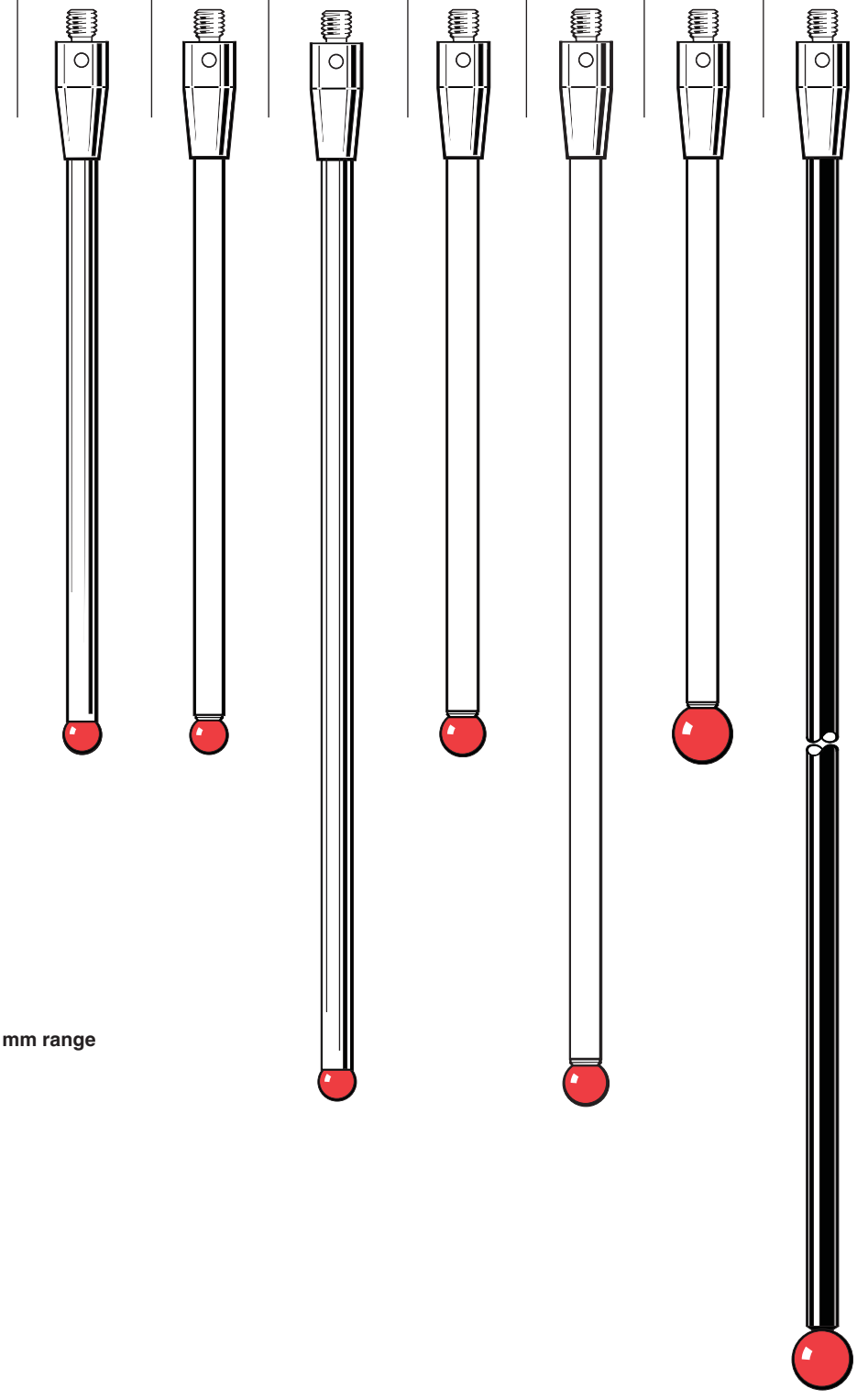
Ruby ball styli

Part number		A-5000-7522 Stainless steel	A-5000-9761 Ceramic	A-5000-7523 Stainless steel	A-5000-3712 Ceramic	A-5000-8156 Ceramic	A-5000-7796 Ceramic	A-5003-3461 Carbon fiber
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 (3.38)	83.5 (3.29)	133.00 (5.24)	88.5 (3.48)	135.0 (5.31)	100.0 (3.94)	300.0 (11.82)
	Mass grams	11.3	6.3	17.4	6.3	7.9	7.5	10.4



100 mm – 300 mm range

* Effective working length

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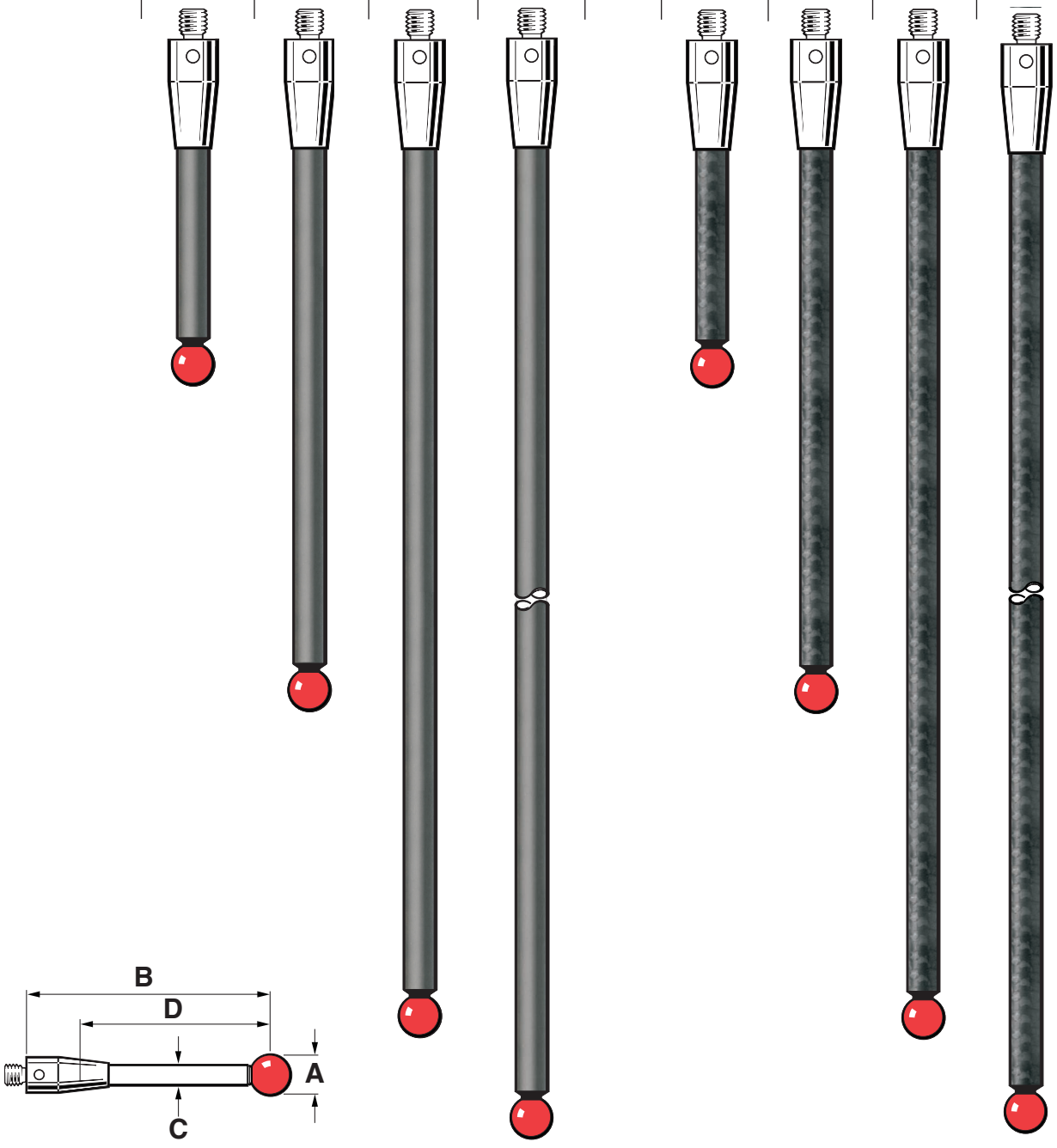
Ruby ball styli (carbon fiber stems)

Recommended for use with OMP400 and RMP600

Ball material		Part number							
Ruby		A-5003-7306	A-5003-6510	A-5003-6511	A-5003-6512	A-5003-1436	A-5003-1358	A-5003-1255	A-5003-1075
Silicon nitride		A-5003-5730	A-5003-5731	–	–	–	–	–	–
				–	–	–	–	–	–
Zirconia		A-5003-5744	A-5003-5745	–	–	–	–	–	–
				–	–	–	–	–	–
A	Ball dia. mm (in)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)	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)	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)	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)	38.5 (1.52)	88.5 (3.58)	138.5 (5.46)	188.5 (7.42)
	Mass grams	4.1	6.2	7.5	8.7	4.1	6.2	7.5	8.7



* Effective working length

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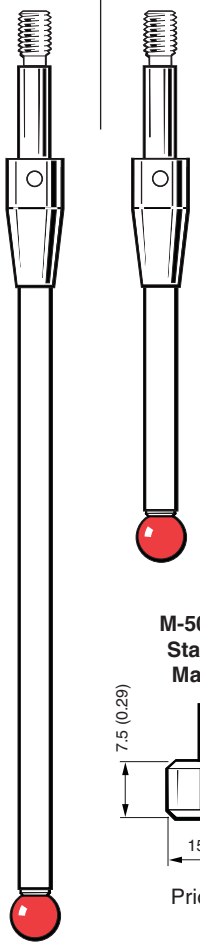
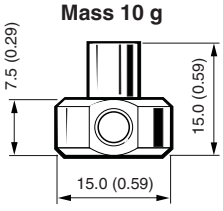
Star styli

Part number	A-5000-6462 Ceramic	A-5000-7098 Ceramic
Ball 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 grams	7.5	6.0



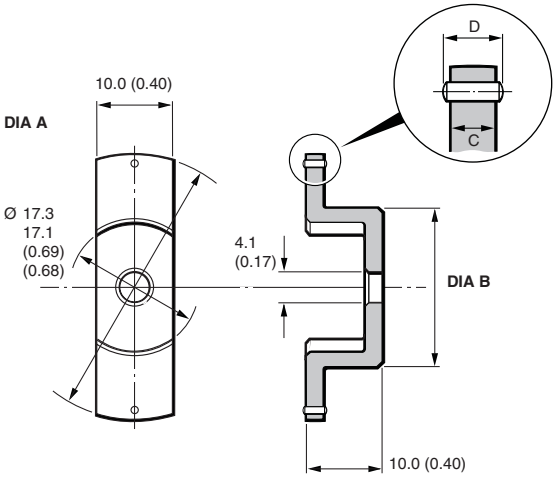
M-5000-6460
Star center
Mass 10 g



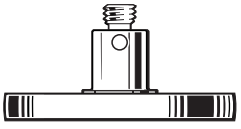
Price: $100

Disk styli

Part number	A-5000-7596	A-5000-7597	A-5000-7598
Diameter A mm (in.)	30.0 (1.19)	35.0 (1.38)	50.0 (1.97)
Diameter B mm (in.)	21.0 (0.83)	21.0 (0.83)	23.0 (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 grams	8.01	9.57	13.55

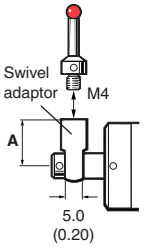


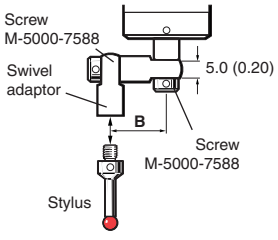
Part number	A-5000-6351 Silver steel
Disk dia. mm (in.)	30.0 (1.18)
Disk depth mm (in.)	3.0 (0.12)
Length mm (in.)	10.0 (0.39)
Rollers	NO
Mass grams	7.9



Swivel adaptor

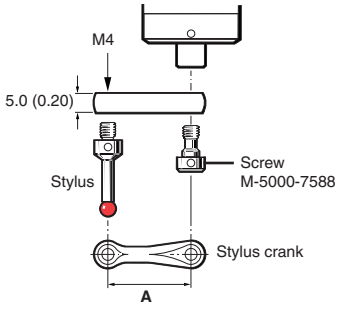
Part number	A-5004-7607	A-5004-7608
Length A mm (in.)	10.0 (0.40)	13.5 (0.54)
Length B mm (in.)	12.5 (0.50)	16.0 (0.63)
Mass grams	2.76	3.70





Stylus crank

Part number	A-5004-7605	A-5004-7606
Length A mm (in)	21.9 (0.86)	27.6 (1.09)
Mass grams	6.07	6.94



* Effective working length

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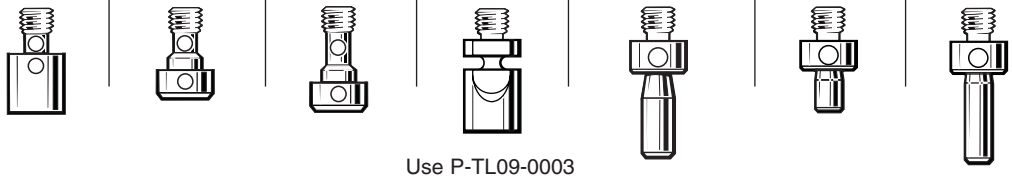
Crash protection devices

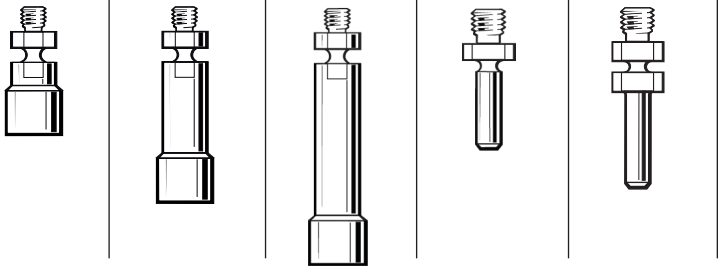
Part number	A-5004-7598	A-5004-7603	A-5004-7604	A-5004-7621	* A-5004-7443	A-5004-7624	A-5004-6723
	Stainless steel	Stainless steel	Stainless steel	Silver steel	Silver steel	Silver steel	Silver steel
For pack of ten	–	–	–	–	A-5004-1865	A-5004-1867	A-5004-1869
	–	–	–	–			
Length mm (in.)	8.0 (0.32)	8.0 (0.32)	10.0 (0.40)	12.0 (0.48)	15.2 (0.60)	9.0 (0.36)	16.0 (0.63)
Mass grams	1.8	1.4	1.5	2.7	4.6	1.5	2.1
For use on	LP2	LP2	LP2	MP10	TS27R	HPMA	HPMA
	–	–	–	MP12	–	HPRA	HPRA
	–	–	–	RMP60	–	HPPA	HPPA
	–	–	–	OMP60	–	–	–
	–	–	–	MP3	–	–	–
	–	–	–	MP11	–	–	–



Use P-TL09-0003
to tighten

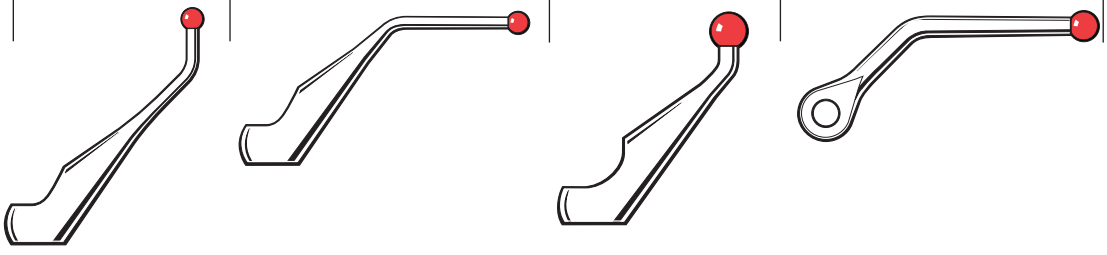
* Please note: If you require the full TS27R break stem kit, please order A-5003-5171.

Part number	A-5004-7616	A-5004-7618	A-5004-7619	A-5004-7620	A-5004-7622
	M3	M3	M3	M4	M4
	Silver steel	Silver steel	Silver steel	Silver steel	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 grams	2.43	3.6	4.5	1.37	2.2
For use on	TS20	TS20	TS20	RP1/RP2	TSA



Cranked styli

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



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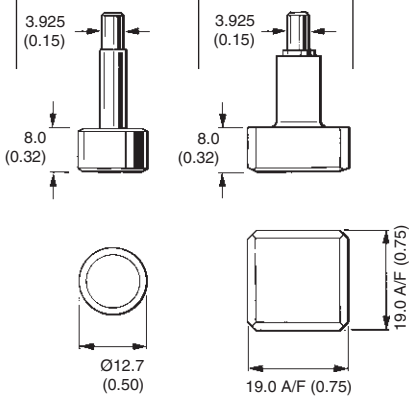
TS27R styli – parallel shafted (not M4) – not compatible with TS27 probes

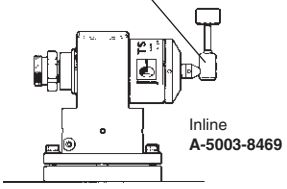
Part number	A-2008-0382 Tungsten carbide	A-2008-0384 Ceramic
Overall length mm (in.)	23.0 (0.91)	22.0 (0.87)
Mass grams	12.1	7.1



Stylus conversion kit for TS27R to allow horizontal machining applications **(A-2008-0448)**

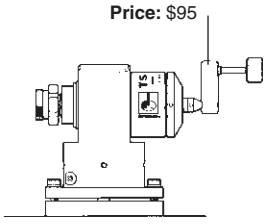
Price: $120

Stylus holder assembly
A-2008-0389
Price: $25



Vertical machining applications

Stylus holder
A-5004-7617*
Price: $95

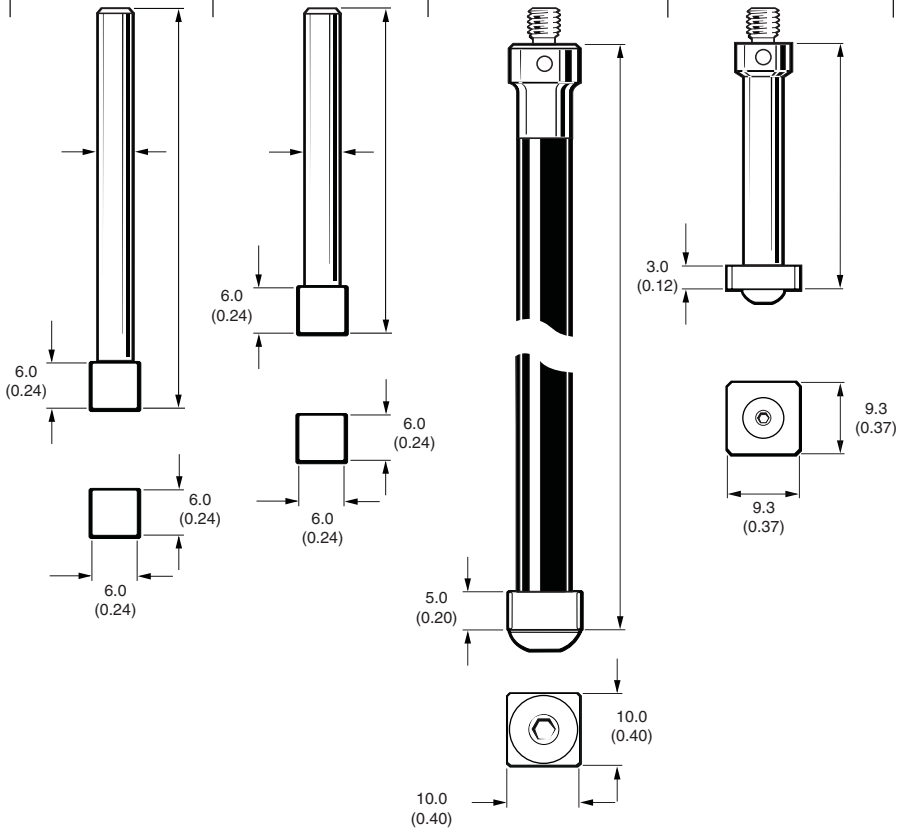


Horizontal machining applications

* Order also requires 2 x P-SC13-0404

Tool datuming styli

Part number	A-5000-3212 Stainless steel	A-5000-6701 Stainless steel	A-5000-6713 Aluminum	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 grams	4.5	4.3	21.9	11.0



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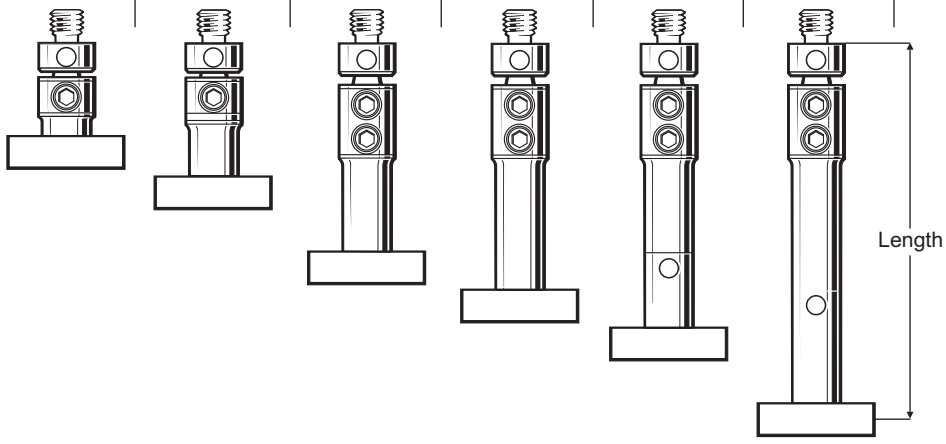
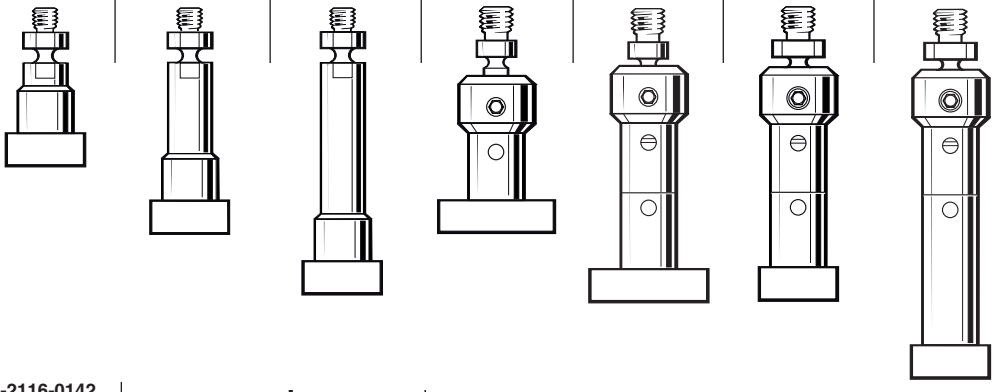
Tool datuming styli – continued

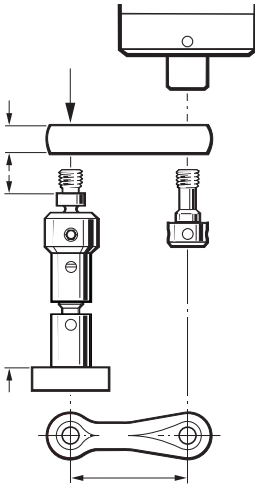
Part number	A-2197-0157 Tungsten steel	A-2197-0158 Tungsten steel	A-2197-0159 Tungsten steel	A-2197-0160 Tungsten steel	A-2197-0161 Tungsten steel	A-2197-0162 Tungsten steel
Length mm (in.)	14.2 (0.56)	19.5 (0.77)	29.5 (1.16)	34.5 (1.36)	39.5 (1.55)	49.5 (1.95)
Mass grams	14.86	16.0	20.0	20.7	21.8	23.5
For use on	HPPA	HPPA	HPPA	HPPA	HPPA	HPPA
	HPMA	HPMA	HPMA	HPMA	HPMA	HPMA
	HPRA	HPRA	HPRA	HPRA	HPRA	HPRA
	RP3	RP3	RP3	RP3	RP3	RP3



Part number	A-2008-0601	A-2008-0602	A-2008-0603	A-2048-2050	A-2048-2051	A-2116-0140	A-2116-0141
	M3	M3	M3	M4	M4	M4	M4
	Tungsten steel	Tungsten steel	Tungsten steel	Tungsten steel	Tungsten steel	Tungsten steel	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 grams	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



Part number	A-2116-0142
Length mm (in.)	30.3 (0.40)
Mass grams	22.6
Price	$158
For use on	TSA



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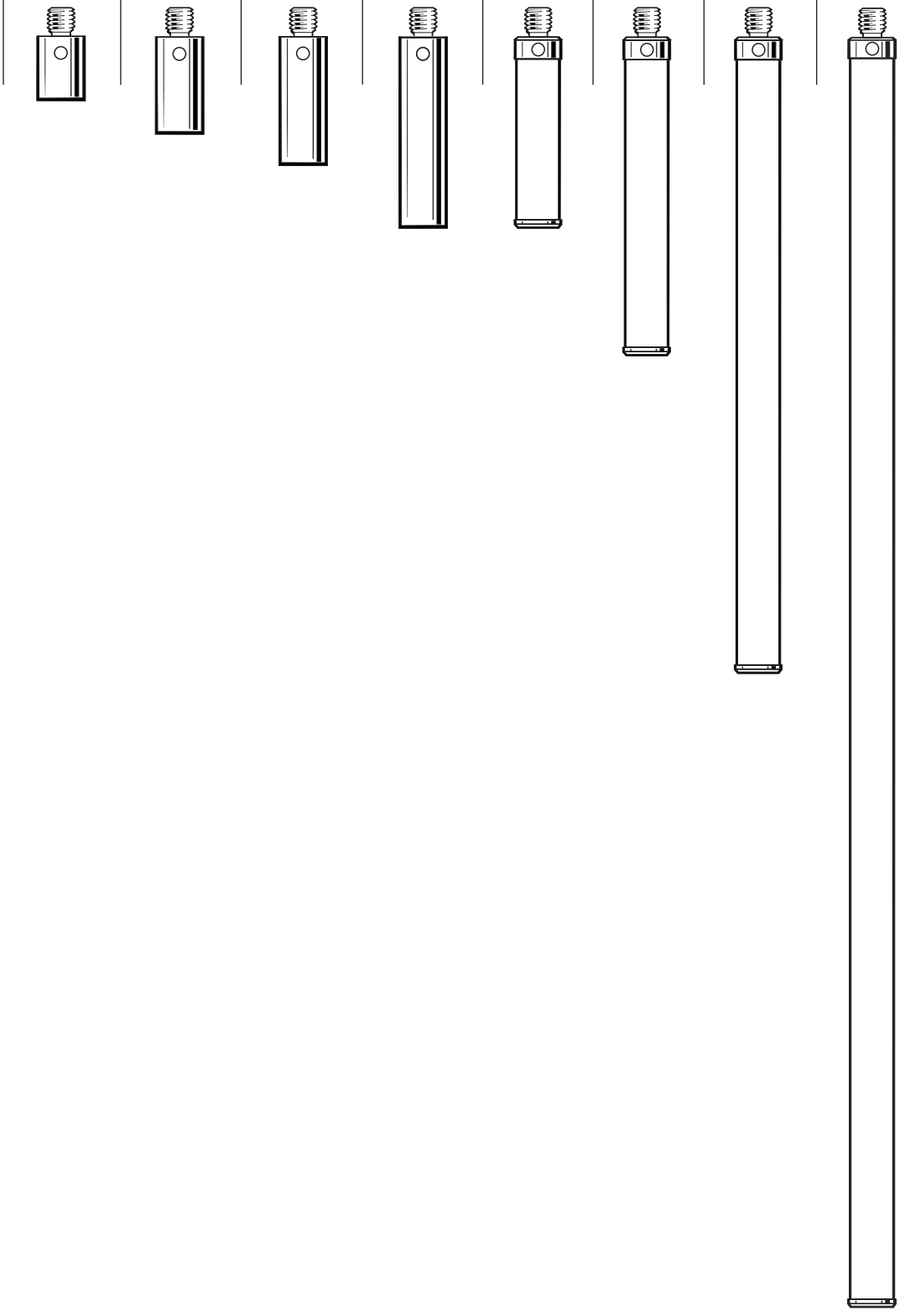
Stylus extensions

Part number	A-5004-7599 Stainless steel	A-5004-7600 Stainless steel	A-5004-7601 Stainless steel	A-5004-7602 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 (0.29)	7.4 (0.29)	7.4 (0.29)	7.4 (0.29)
Mass grams	2.4	3.7	4.8	7.4	5.1	6.7	10.6	18.4



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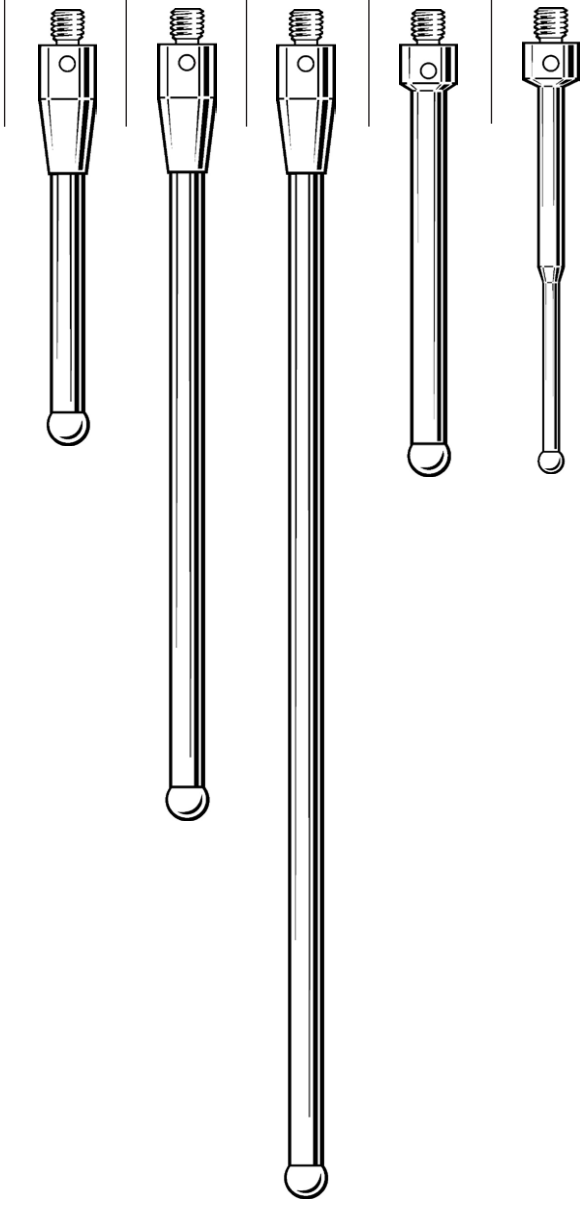
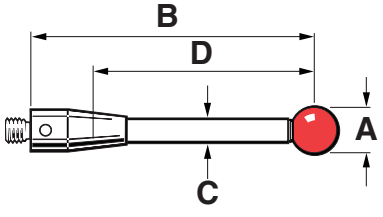
Tungsten carbide styli (stainless steel stems)

Part number		A-5000-7670	A-5003-7103	A-5003-7104	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 grams	6.2	11.9	18.2	6.9	3.8





* Effective working length

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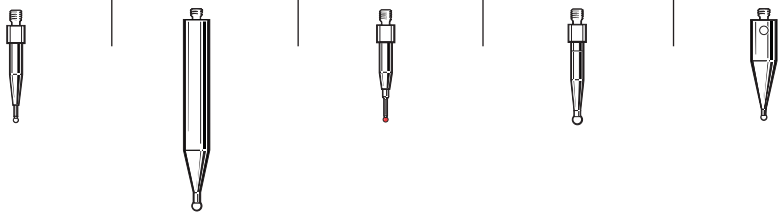
Walter styli

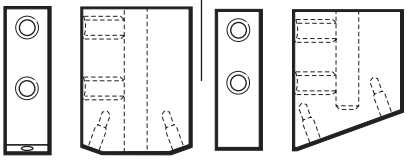
M1.4 thread styli

Part number		A-5003-3814	A-5003-3045	A-5003-3042	A-5000-9860	A-5003-1699
		M1.4	M1.4	M1.4	M1.4	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 (0.02)	1.0 (0.04)	0.5 (0.02)	1.0 (0.04)	0.6 (0.02)
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 grams	0.2	1.1	0.19	0.22	0.41



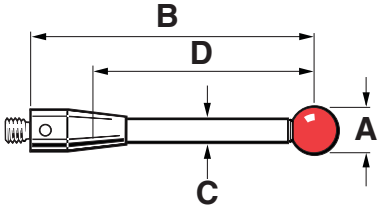
Adaptors

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



Crash protection device

Part number	A-5004-7615
Length mm (in.)	16.0 (0.63)
Mass grams	2



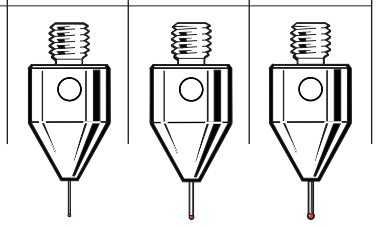
* Effective working length

M5 threaded stylus range

Ruby micro ball styli (tungsten carbide stems)

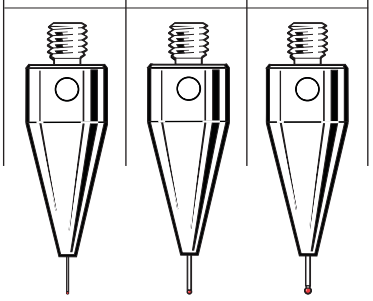
20 mm range

Part number		A-5003-5201	A-5003-5202	A-5003-5203
A	Ball dia. mm (in.)	0.3 (0.012)	0.5 (0.02)	0.7 (0.03)
B	Length mm (in.)	20.0 (0.79)	20.0 (0.79)	20.0 (0.79)
C	Stem dia. mm (in.)	0.2 (0.01)	0.4 (0.02)	0.5 (0.02)
D	EWL* mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
	Mass grams	6.5	6.5	6.5



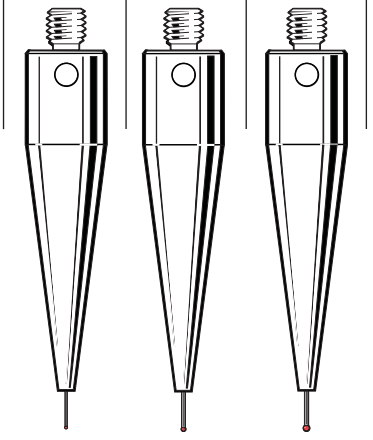
30 mm range

A-5003-5211	A-5003-5212	A-5003-5213
0.3 (0.012)	0.5 (0.02)	0.7 (0.03)
30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
0.2 (0.01)	0.4 (0.02)	0.5 (0.02)
3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
8.95	8.95	8.98



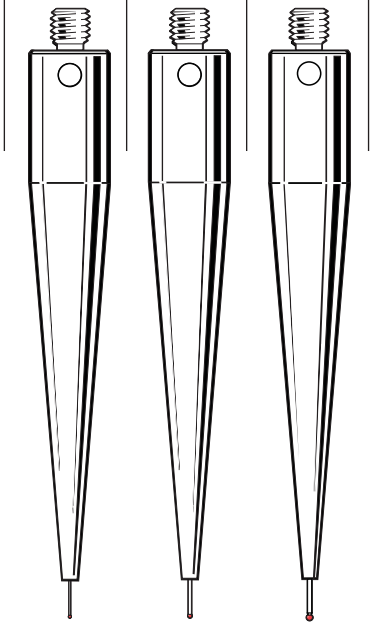
50 mm range

Part number		A-5003-5225	A-5003-5226	A-5003-5227
A	Ball dia. mm (in.)	0.3 (0.012)	0.5 (0.02)	0.7 (0.03)
B	Length mm (in.)	50.0 (1.97)	50.0 (1.97)	50.0 (1.97)
C	Stem dia. mm (in.)	0.2 (0.01)	0.4 (0.02)	0.5 (0.02)
D	EWL* mm (in.)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
	Mass grams	15.79	15.79	15.79



75 mm range

A-5003-5240	A-5003-5241	A-5003-5242
0.3 (0.012)	0.5 (0.02)	0.7 (0.03)
75.0 (2.96)	75.0 (2.96)	75.0 (2.96)
0.2 (0.01)	0.4 (0.02)	0.5 (0.02)
3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
23.84	23.84	23.84



* Effective working length

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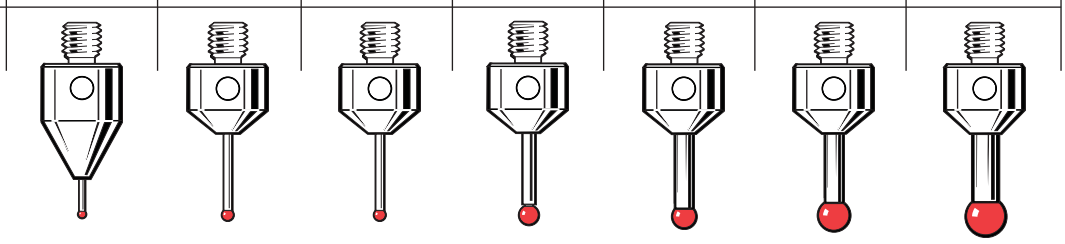
Ruby ball styli (tungsten carbide stems)

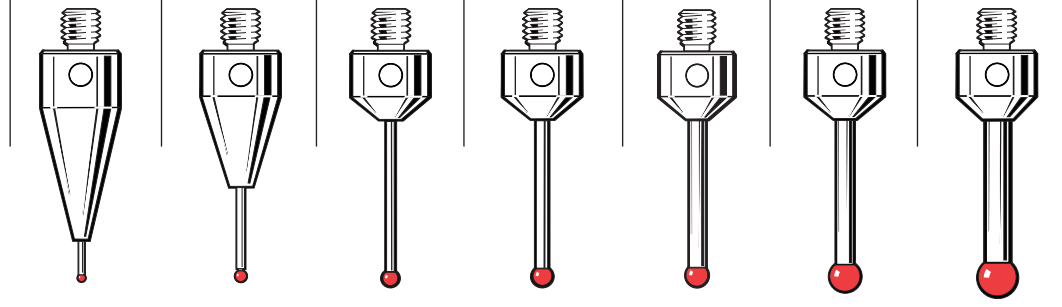
Ball material		Part number						
Ruby		A-5003-5204	A-5003-5205	A-5003-5206	A-5003-5207	A-5003-5208	A-5003-5209	A-5003-5210
Silicon nitride		–	–	A-5003-5732	–	–	A-5003-5733	–
		–	–		–	–		–
Zirconia		–	–	A-5003-5746	–	–	A-5003-5747	–
		–	–		–	–		–
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (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 (0.03)	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 grams	6.52	4.68	4.70	4.84	5.12	5.19	6.06

20 mm range



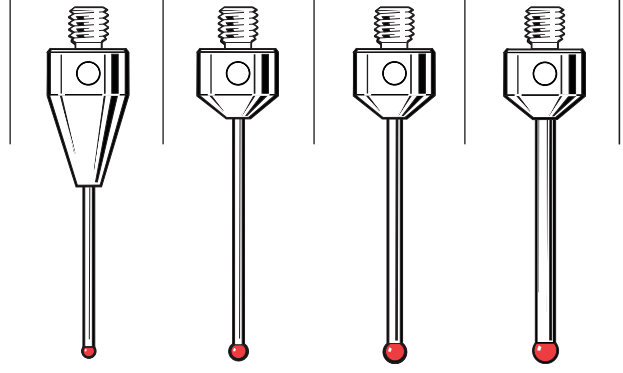
Part number		A-5003-5214	A-5003-5215	A-5003-5216	A-5003-5217	A-5003-5218	A-5003-5219	A-5003-5220
A	Ball dia. mm (in.)	1.0 (0.04)	1.5 (0.06)	2.0 (0.08)	2.5 (0.10)	3.0 (0.12)	4.0 (0.16)	5.0 (0.20)
B	Length mm (in.)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)	30.0 (1.19)
C	Stem dia. mm (in.)	0.7 (0.03)	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 grams	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 grams	7.39	4.93	5.40	6.04
					$86

40 mm range



* Effective working length

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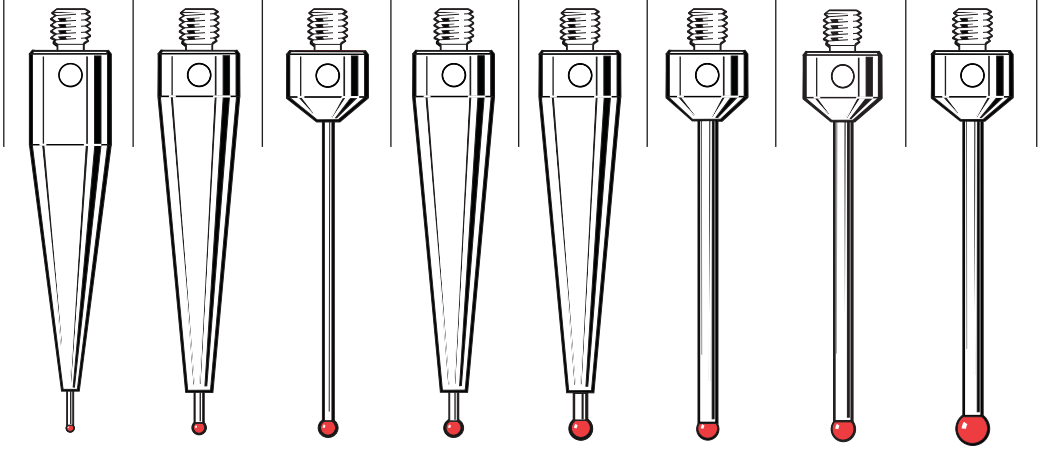
Ruby ball styli (< 5 mm ball diameter) (tungsten carbide stems)

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 (0.03)	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 grams	15.81	14.82	5.05	14.85	14.94	6.48	6.50	6.55

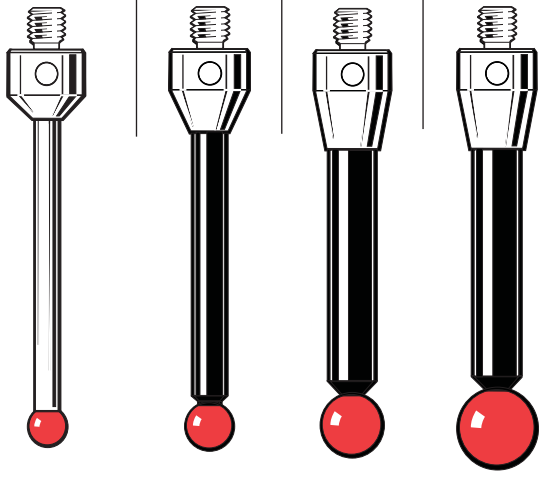
50 mm range

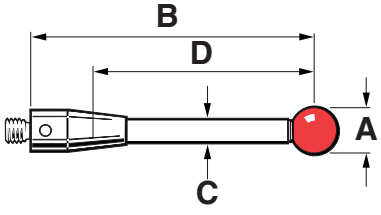


Ruby ball styli (≥ 5 mm ball diameter)

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 fiber	Carbon fiber	Carbon fiber
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 (1.56)	39.5 (1.56)	44.5 (1.75)
	Mass grams	9.19	6.10	7.96	8.91

50 mm range





* Effective working length

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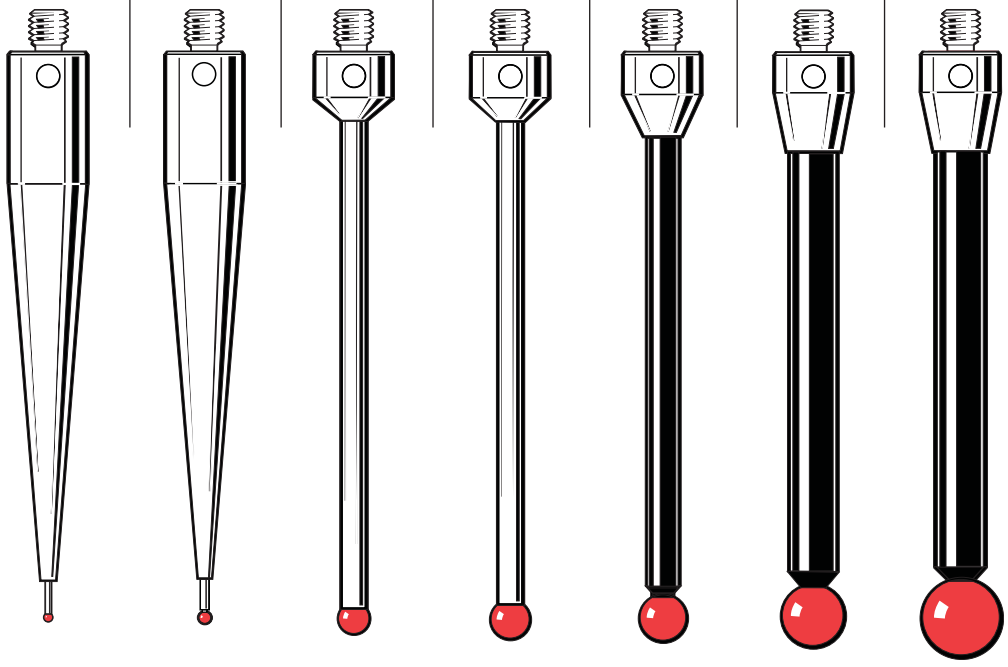
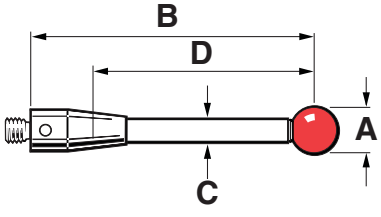
Ruby ball styli (1 mm – 10 mm ball diameter)

Part number		A-5003-5243 Tungsten carbide	A-5003-5244 Tungsten carbide	A-5003-5248 Tungsten carbide	A-5003-5249 Tungsten carbide	A-5003-5250 Carbon fiber	A-5003-5251 Carbon fiber	A-5003-5252 Carbon fiber
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 (0.03)	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 grams	23.86	23.90	11.61	11.80	6.59	9.06	10.01

75 mm range





* Effective working length

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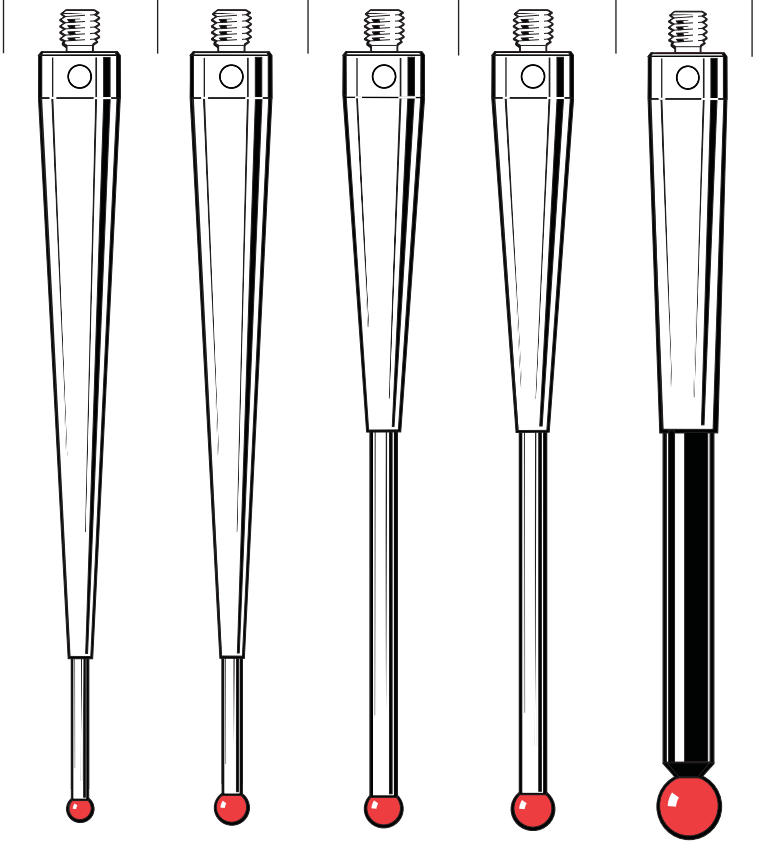
Ruby ball styli (≤ 50 mm EWL)

Part number		A-5003-5253 Tungsten carbide	A-5003-5255 Tungsten carbide	A-5003-5256 Tungsten carbide	A-5003-5257 Tungsten carbide	A-5003-5261 Carbon fiber
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 grams	25.71	25.75	23.07	23.31	22.97

100 mm range



* Effective working length

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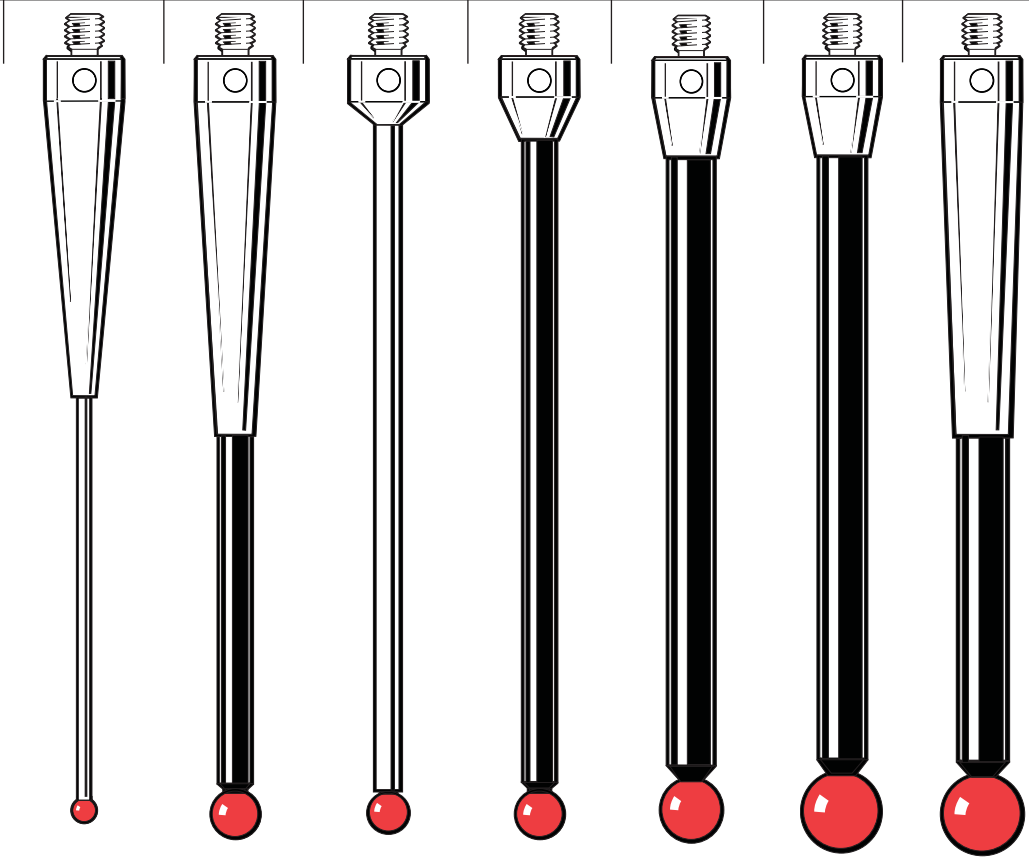
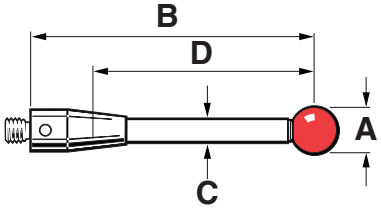
Ruby ball styli (> 50 mm EWL)

Ball material		Part number						
Ruby		A-5003-5254	A-5003-5259	A-5003-5258	A-5003-5260	A-5003-5262	A-5003-5264	A-5003-5263
Silicon nitride		–	A-5003-5735	–	–	–	–	–
		–		–	–	–	–	–
Zirconia		–	A-5003-5749	–	–	–	–	–
		–		–	–	–	–	–
		Tungsten carbide	Carbon fiber	Tungsten carbide	Carbon fiber	Carbon fiber	Carbon fiber	Carbon fiber
A	Ball dia. mm (in.)	3.0 (0.12)	6.0 (0.24)	5.0 (0.20)	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)	4.0 (0.16)	3.0 (0.12)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)	6.0 (0.24)
D	EWL* mm (in.)	55.0 (2.17)	58.9 (2.32)	91.0 (3.59)	90.1 (3.55)	89.5 (3.52)	94.5 (3.72)	95.5 (3.76)
	Mass grams	16.30	19.66	14.40	7.08	10.17	11.11	23.91

100 mm range





* Effective working length

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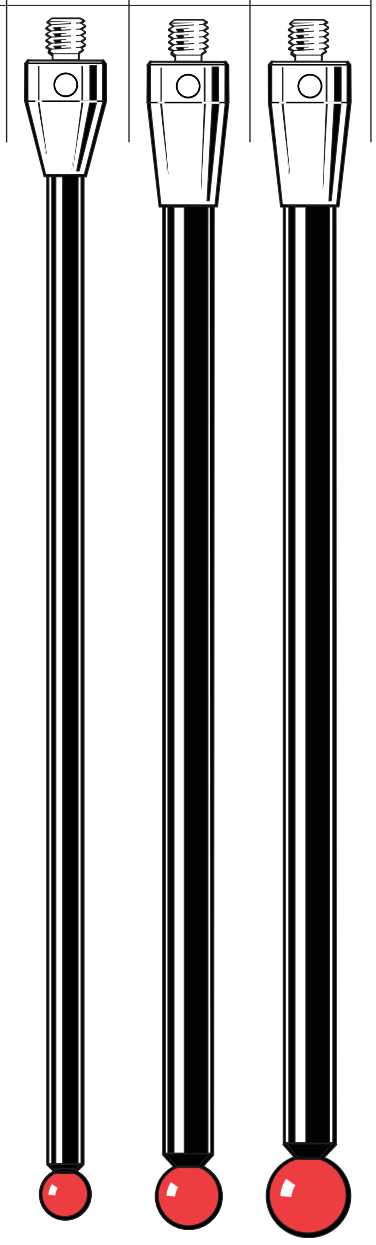
Ruby ball styli (carbon fiber stems)

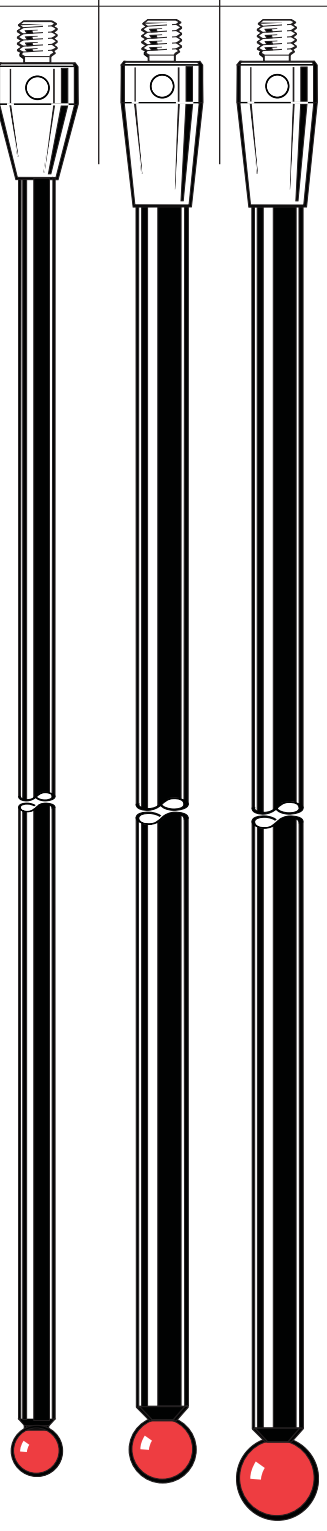
Part number		A-5003-5265	A-5003-5266	A-5003-5267
A	Ball dia. mm (in.)	6.0 (0.24)	8.0 (0.32)	10.0 (0.40)
B	Length mm (in.)	150.0 (5.91)	150.0 (5.91)	150.0 (5.91)
C	Stem dia. mm (in.)	4.0 (0.16)	6.0 (0.24)	6.0 (0.24)
D	EWL* mm (in.)	137.0 (5.39)	135.0 (5.31)	144.5 (5.69)
	Mass grams	9.09	13.71	14.66

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



* Effective working length

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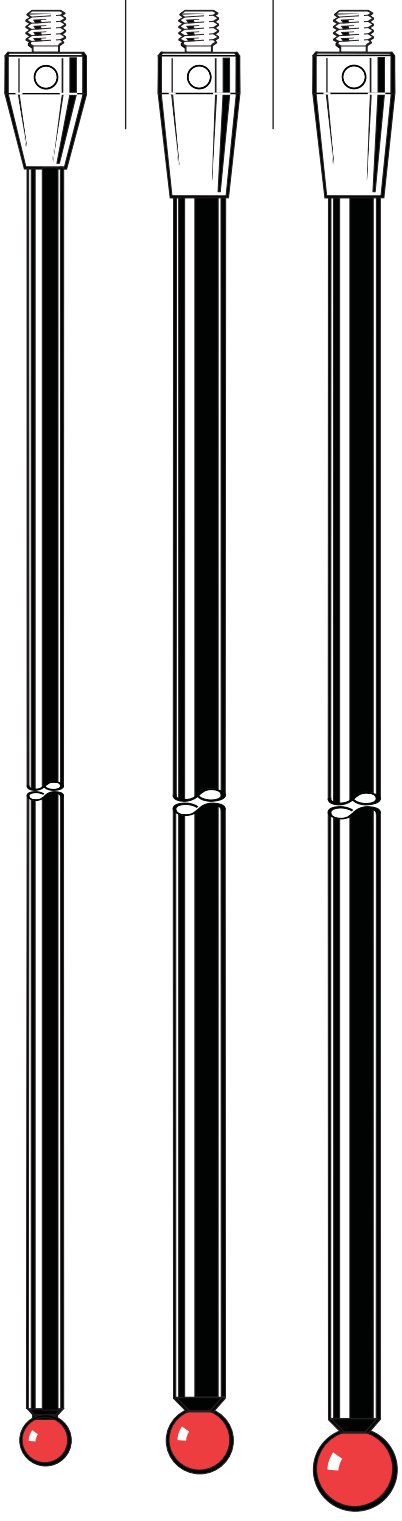
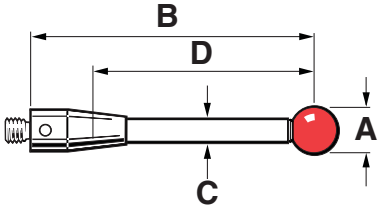
Ruby ball styli (carbon fiber stems)

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 grams	12.02	20.33	21.28

300 mm range





* Effective working length

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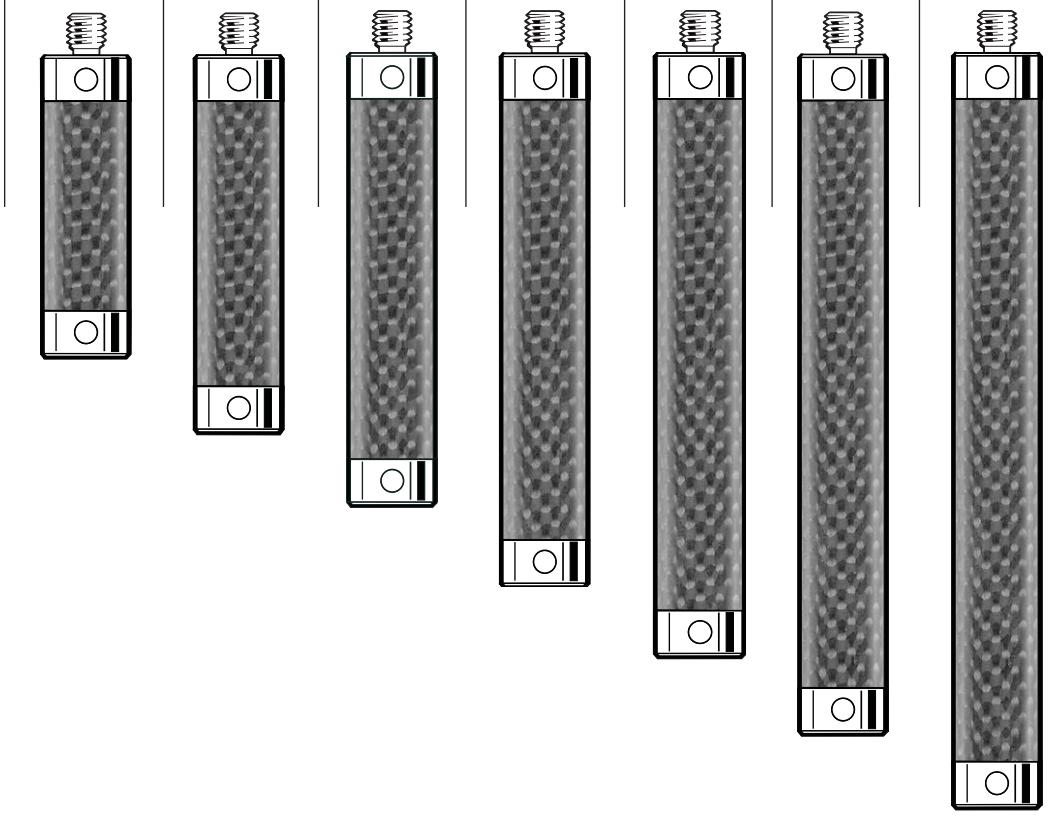
Stylus extensions – thermo stable carbon fiber stems, titanium ends

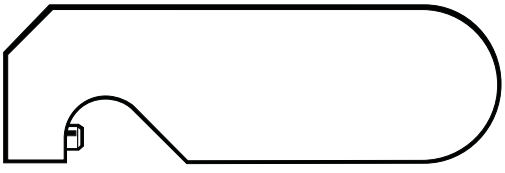
Part number	A-5555-0647	A-5555-0648	A-5555-0649	A-5555-0623	A-5555-0650	A-5555-0651	A-5555-0652
Length mm (in.)	40.0 (1.58)	50.0 (1.97)	60.0 (2.37)	70.0 (2.76)	80.0 (3.15)	90.0 (3.55)	100.0 (3.94)
Stem dia. mm (in.)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)	11.0 (0.44)
Mass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



M5 extension tools

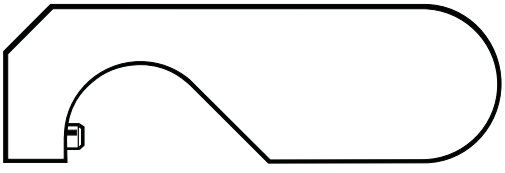
A-5003-6134

For M5 threaded extensions with
11 mm (0.44 mm stem diameter



A-5003-6135

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



Note: These tools are designed to fit stylus extensions for Renishaw probes without causing any internal damage.

** Special

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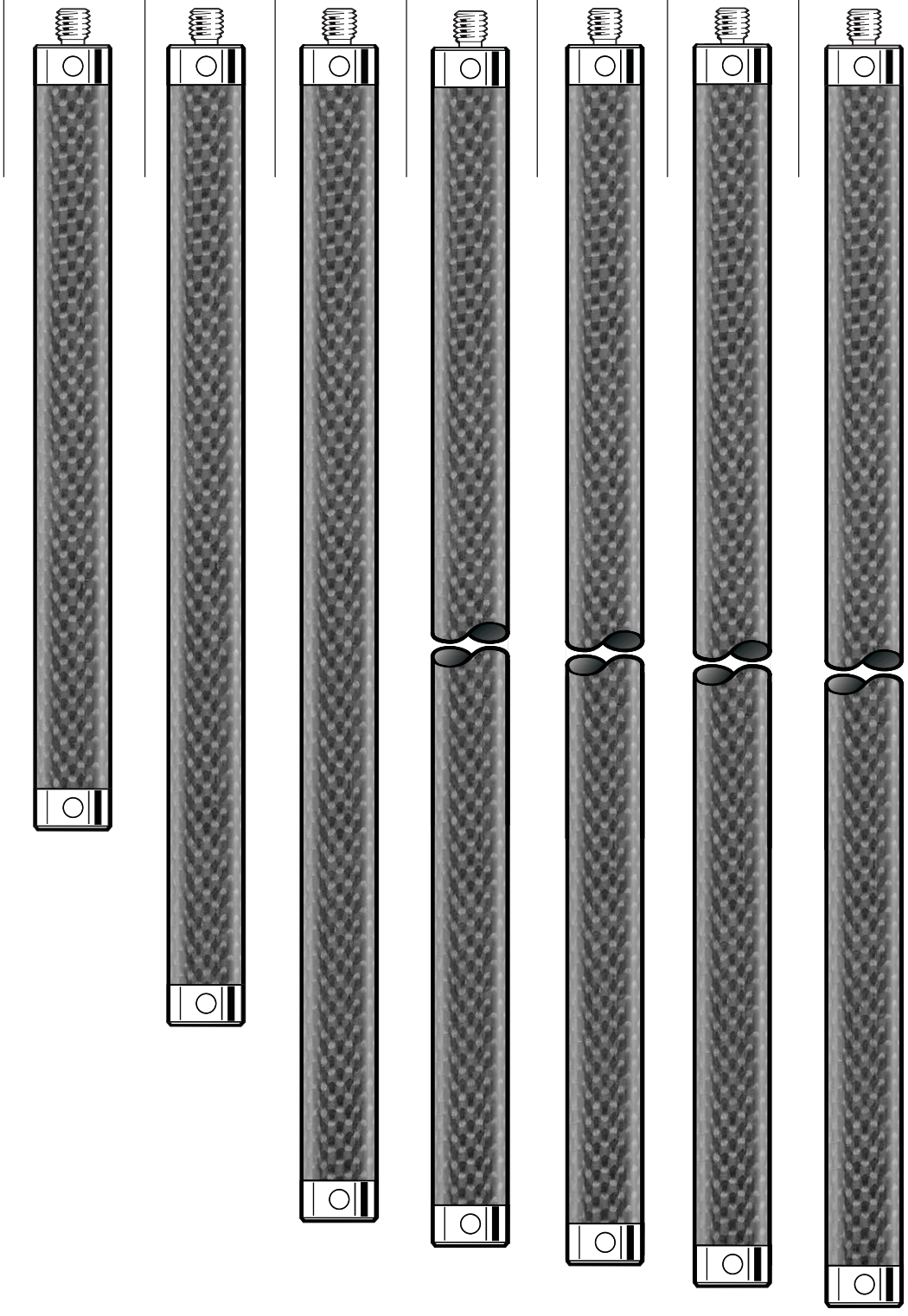
Stylus extensions – thermo stable carbon fiber stems, titanium ends

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 grams	13.2	15.4	17.5	18.9	22.4	25.9	33.0



** Special

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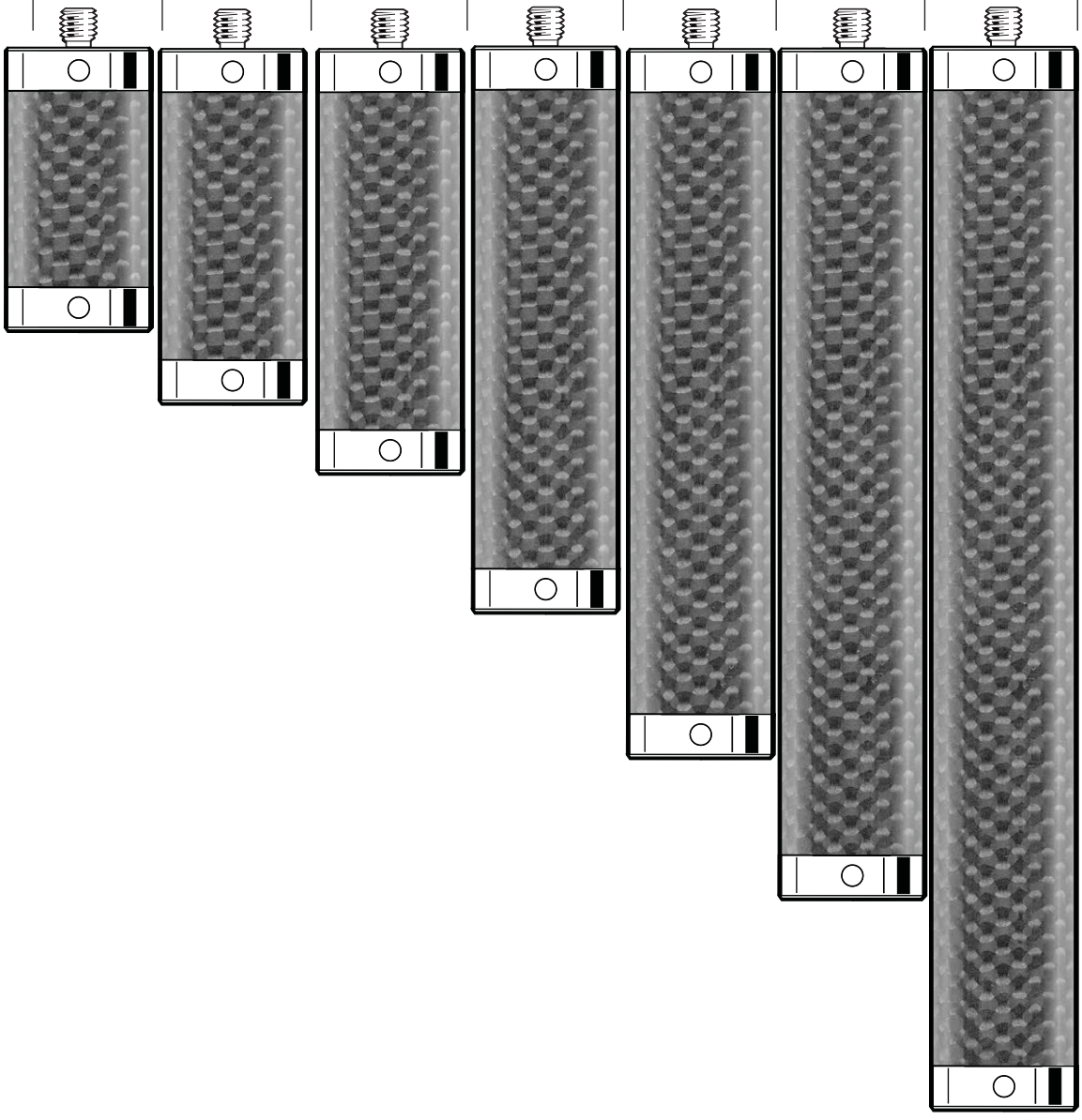
Stylus extensions – thermo stable carbon fiber stems, titanium ends

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 grams	23.8	25.1	26.5	29.3	32.1	34.9	39.0



** Special

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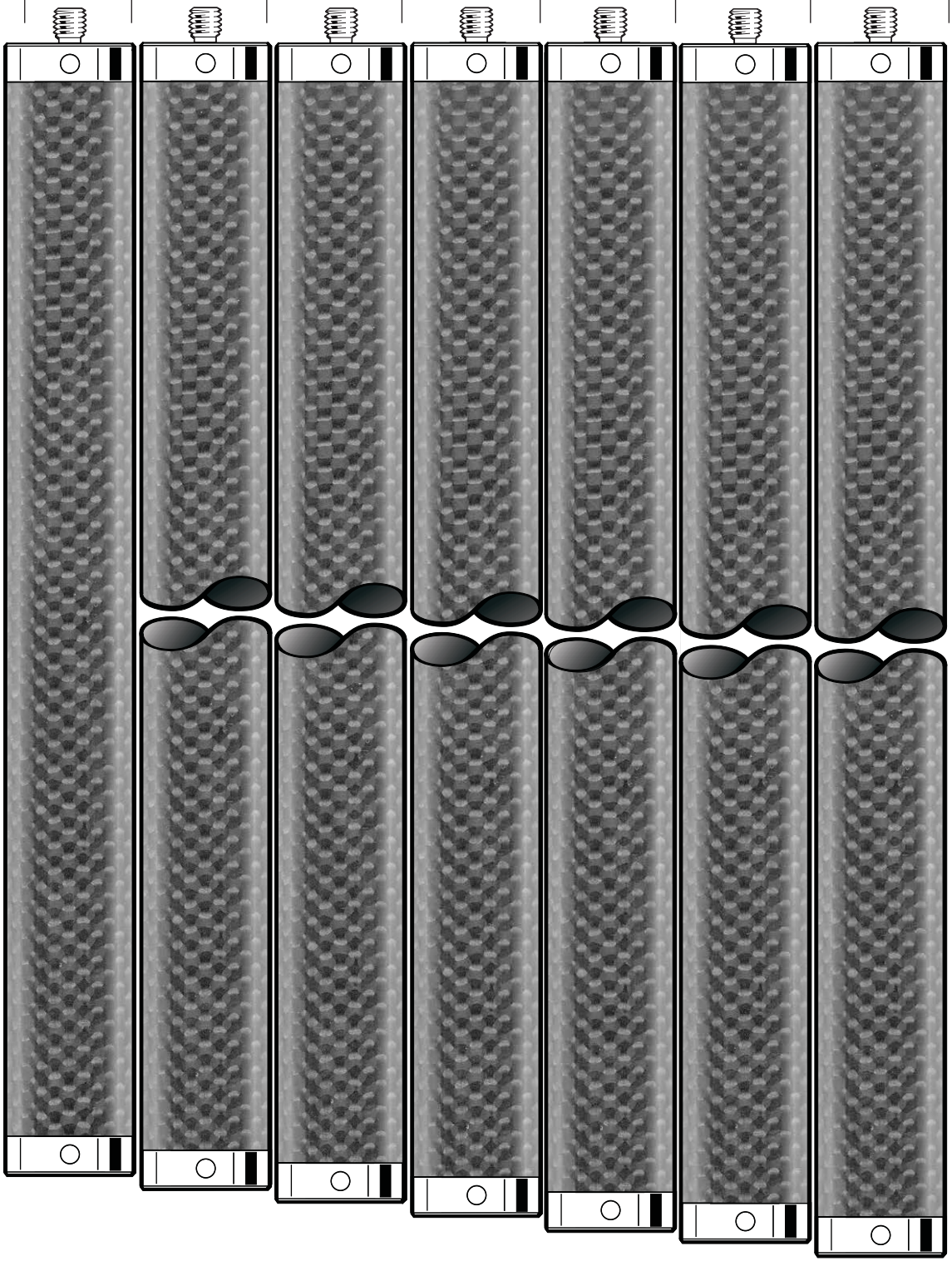
Stylus extensions – thermo stable carbon fiber stems, titanium ends

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 grams	43.2	46.0	52.9	59.9	73.8	87.7	101.5



** Special

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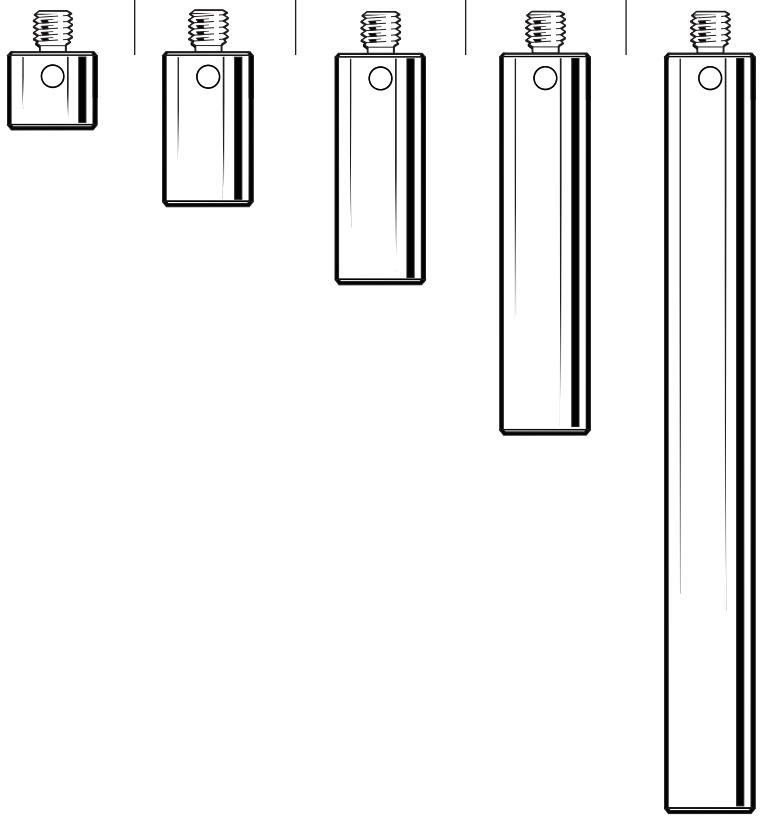
Stylus extensions – stainless steel

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 grams	6.0	13.0	20.0	34.8	73.0



** Special

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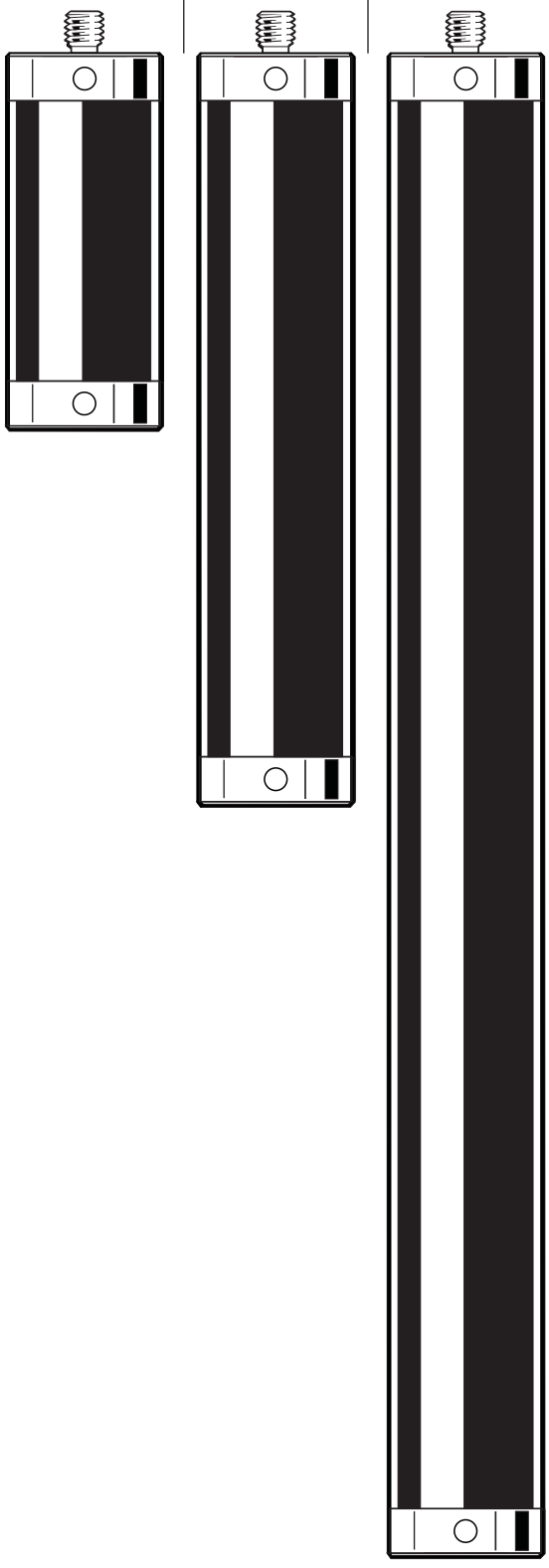
Stylus extensions – aluminum

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 grams	47.2	50.0	85.0



** Special

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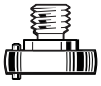
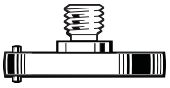
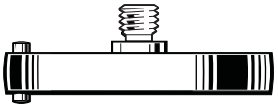
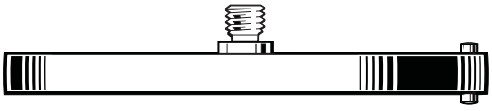
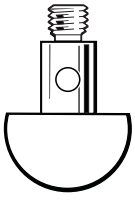
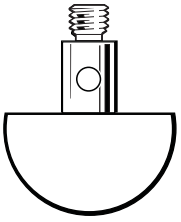
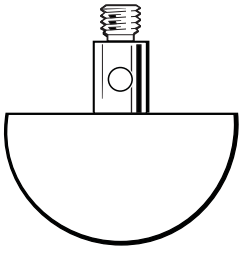
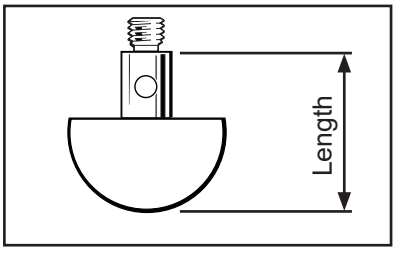
Disk styli

Part number	A-5003-5288 Silver steel	A-5003-5289 Silver steel	A-5003-5290 Silver steel	A-5003-5291 Silver steel
Disk diameter mm (in.)	12.0 (0.48)	21.0 (0.83)	35.0 (1.38)	63.5 (2.51)
Disk 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 grams	2.52	5.23	14.00	51.00
				

Hemispherical styli

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

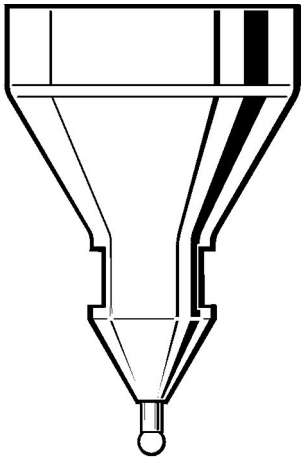
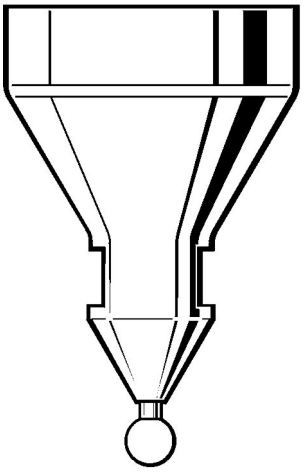
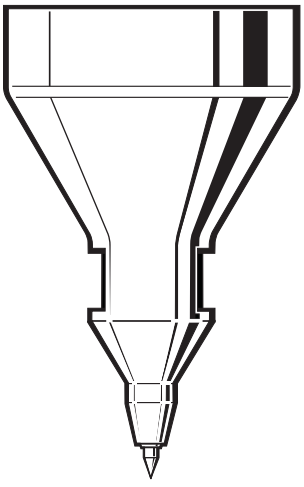


Styli for FARO® arms

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.

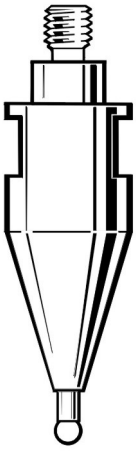
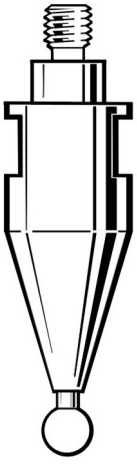
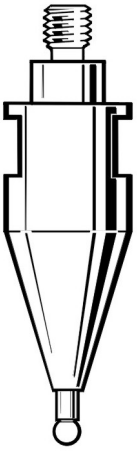
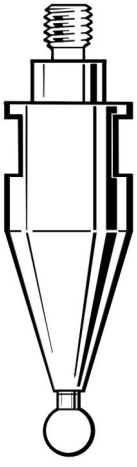
1¼–20 UN thread styli

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 dia	1/8 in	1/4 in	3 mm	6 mm
Length (mm)	43	43	43	43

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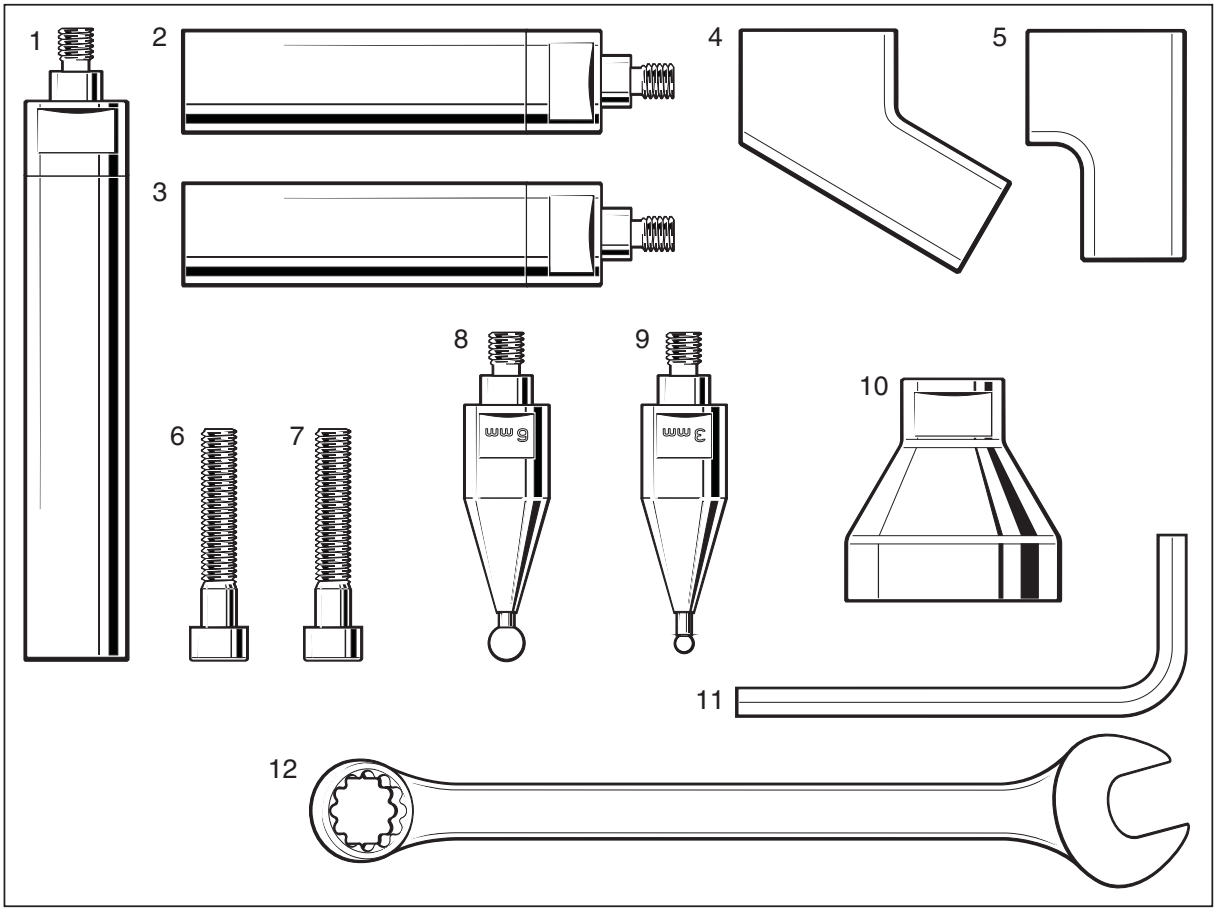
FARO® kit

A-5003-9190 FARO® probe kit 0073 12 piece



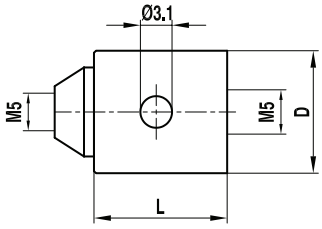
Position	Part number	Description
1	A-5003-9127	M6M - M6F EXT L101.6 (4.0) D18 AL
2 and 3	A-5003-9126	M6M - M6F EXT L76.2 (3.0) D18 AL
4	A-5003-9186	M6F FARO EXT 60 DEG ADAPTOR
5	A-5003-9187	M6F FARO EXT 90 DEG ADAPTOR
6 and 7	P-SC08-0635	SCREW HEX SKT CAPHD M6X35 STST
8	A-5003-7679	STYLUS M6 DIA 6 MM 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 5MM A/F
12	P-TL09-0012	12 MM A/F OPEN/RING SPANNER

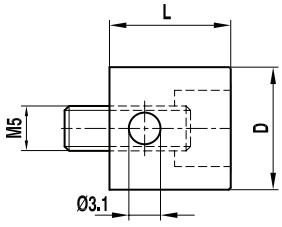
M5 adaptors and accessories for Zeiss analog probe systems

Schematics not shown to scale

Adaptor with thread/conical stem base, stainless steel

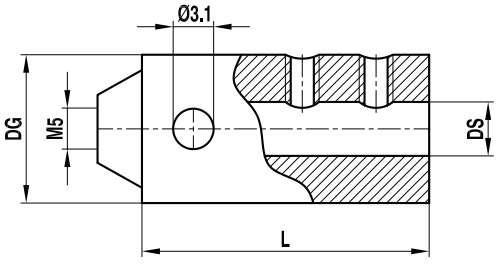
Part number	A-5555-0013	A-5555-0014
Zeiss order number	600331-0001	602030-0018
D (mm)	18	18
L (mm)	10	12
Weight (g)	12	10





Conical holder, stainless steel

Part number	A-5555-0015	A-5555-0016	A-5555-0017
Zeiss order number	602030-8350	602030-8351	602030-8352
DS (mm)	2	3.5	6
L (mm)	24	24	24
DG (mm)	19	19	19
Weight (g)	29	29	29



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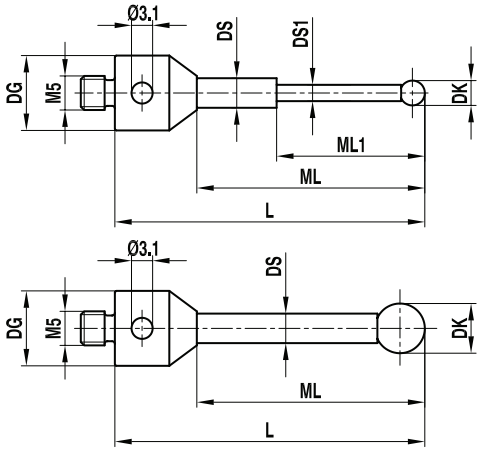
Tungsten carbide styli, titanium base, tungsten carbide stem, ruby ball

Schematics not shown to scale

Part number	A-5555-0018	A-5555-0019	A-5555-0020	A-5555-0021	A-5555-0022	A-5555-0023	A-5555-0024	A-5555-0025
Zeiss order number	602030-9010	600342-8020	602030-9011	600342-8021	600342-8025	602030-9012	602030-9013	600342-8022
DK (mm)	3	3	3	3	4	4	5	5
L (mm)	25	33.5	50	58	33.5	64	50	53
DG (mm)	11	11	11	11	11	11	11	11
ML (mm)	15	23.5	40	48	23.5	54	40	43
DS (mm)	2	2	2	2	2	2	3.5	3.5
Weight (g)	4	4.5	5.2	5.5	4.5	5.9	9	9.8

Part number	A-5555-0026	A-5555-0027	A-5555-0028	A-5555-0029	A-5555-0030	A-5555-0031	A-5555-0032	A-5555-0033
Zeiss order number	602030-9015	600342-8026	600342-8027	600342-8023	600342-8123	602030-9014	602030-9016	602030-9017
DK (mm)	5	6	7	8	8	8	8	8
L (mm)	75	54	55	63.5	63.5	74	75	100
DG (mm)	11	11	11	11	19	11	11	11
ML (mm)	65	44	45	50.5	41.5	61	62	87
DS (mm)	3.5	3.5	3.5	6	6	6	6	6
Weight (g)	12.5	10	10	24.8	36.7	29.5	30	40

Part number	A-5555-0034	A-5555-0035	A-5555-0036	A-5555-0037	A-5555-0038	A-5555-0039	A-5555-0040
Zeiss order number	600342-8024	600342-8124	600342-8028	600342-8128	600342-8029	600342-8129	602030-9018
DK (mm)	8	8	9	9	10	10	10
L (mm)	114.5	114.5	64.5	64.5	65.5	65.5	118
DG (mm)	11	19	11	19	11	19	11
ML (mm)	101.5	92.5	51.5	42.5	52.5	43.5	105
DS (mm)	6	6	6	6	6	6	6
Weight (g)	45.8	57.5	26.3	36.8	25.8	37.5	47.3



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Tungsten carbide styli, titanium base, tungsten carbide stem, silicon nitride ball

Schematics not shown to scale

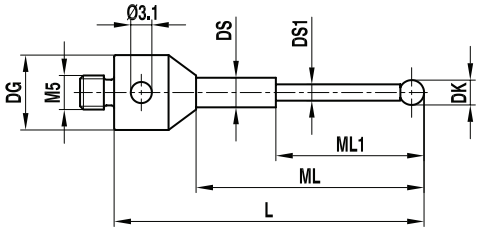
Part number	A-5555-3777	A-5555-3778	A-5555-3779	A-5555-3780	A-5555-3781	A-5555-3782	A-5555-3783	A-5555-3784
Zeiss order number	–	–	–	–	–	–	–	–
DK (mm)	1	1	1	1.5	2	2	2	2
L (mm)	20	25	30	30	20	25	30	40
DG (mm)	11	11	11	11	11	11	11	11
ML1 (mm)	5	5	5	8	–	–	–	–
ML (mm)	10	15	20	20	10	15	20	30
DS1 (mm)	0.8	0.8	0.8	1	–	–	–	–
DS (mm)	1	1	1	1.5	1	1	1.5	1.5
Weight (g)	3.5	3.5	3.8	3.5	3.5	3.5	3.8	4

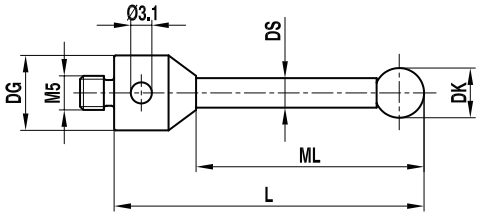
Part number	A-5555-3785	A-5555-3786	A-5555-3787	A-5555-3734	A-5555-3788	A-5555-3789
Zeiss order number	626115-0303-025	626115-0300-033	626115-0302-050	626115-0300-058	626115-0400-034	6262115-0401-064
DK (mm)	3	3	3	3	4	4
L (mm)	25	33.5	50	58	33.5	64
DG (mm)	11	11	11	11	11	11
ML (mm)	15	23.5	40	48	23.5	54
DS (mm)	2	2	2	2	2	2
Weight (g)	4	4.5	5.3	5.5	4.5	5.9

Part number	A-5555-3790	A-5555-3791	A-5555-3792	A-5555-3793	A-5555-3794	A-5555-3795
Zeiss order number	–	626115-0501-050	626115-0501-053	626115-0500-075	–	–
DK (mm)	5	5	5	5	5	6
L (mm)	30	50	53	75	100	54
DG (mm)	11	11	11	11	11	11
ML (mm)	20	40	43	65	90	44
DS (mm)	3.5	3.5	3.5	3.5	3.5	3.5
Weight (g)	8	9	9.8	12.5	18	10

Part number	A-5555-3796	A-5555-3797	A-5555-3798	A-5555-3799	A-5555-3800	A-5555-3801
Zeiss order number	–	626115-0800-064	626115-0800-075	626115-0801-100	626115-0800-115	–
DK (mm)	7	8	8	8	8	9
L (mm)	55	63.5	75	100	114.5	64.5
DG (mm)	11	11	11	11	11	11
ML (mm)	45	50.5	62	87	101.5	51.5
DS (mm)	3.5	6	6	6	6	6
Weight (g)	10	36.6	29.4	39.9	45.7	26.3

Part number	A-5555-3802	A-5555-3803	A-5555-3804
Zeiss order number	–	–	–
DK (mm)	10	10	10
L (mm)	65.5	118	150
DG (mm)	11	11	11
ML (mm)	52.5	105	135
DS (mm)	6	6	6
Weight (g)	25.8	47.3	60





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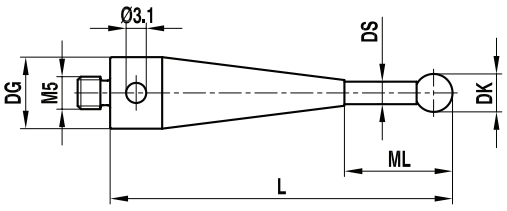
Reference styli (red dot), high-strength stainless steel base and stem, ruby ball

Schematics not shown to scale

Part number	A-5555-3805
Zeiss order number	600342-8023-010
DK (mm)	8
L (mm)	63.5
DG (mm)	11
ML (mm)	50.5
DS (mm)	6
Weight (g)	24.8



Thermo stable carbon fiber styli, titanium base, thermo stable carbon fiber stem, ruby ball

Part number	A-5555-1916	A-5555-1847	A-5555-0730	A-5555-3806	A-5555-1917	A-5555-0731
Zeiss order number	626105-0300-025	626105-0300-033	626105-0300-050	626105-0300-058	626105-0400-033	626105-0400-064
DK (mm)	3	3	3	3	4	4
L (mm)	25	33.5	50	58	33.5	64
DG (mm)	11	11	11	11	11	11
ML (mm)	15	23.5	40	48	23.5	54
DS (mm)	2	2	2	2	2	2
Weight (g)	4	4.2	4.5	4.9	4.2	4.6

Part number	A-5555-0732	A-5555-2013	A-5555-0735	A-5555-0410	A-5555-0733	A-5555-0734
Zeiss order number	626105-0510-050	–	626105-0510-075	626105-0510-100	626105-0610-054	626105-0710-055
DK (mm)	5	5	5	5	6	7
L (mm)	50	53	75	100	54	55
DG (mm)	11	11	11	11	11	11
ML (mm)	40	43	65	90	44	45
DS (mm)	3.5	3.5	3.5	3.5	3.5	3.5
Weight (g)	4.8	4.9	5	5.4	4.9	4.9

Part number	A-5555-3807	A-5555-2011	A-5555-1918	A-5555-3808	A-5555-9361	A-5555-1112
Zeiss order number	626105-0820-063	626105-0820-075	626105-0820-100	626105-0820-114	626105-0820-150	626105-0820-200
DK (mm)	8	8	8	8	8	8
L (mm)	63.5	75	100	114.5	150	200
DG (mm)	11	11	11	11	11	11
ML (mm)	50.5	62	87	101.5	137	187
DS (mm)	6	6	6	6	6	6
Weight (g)	7	7.3	7.5	9.5	11	13

Part number	A-5555-3809	A-5555-3810	A-5555-3811	A-5555-0643	A-5555-0644
Zeiss order number	–	626105-1020-065	626105-1020-118	626105-1020-150	626105-1020-200
DK (mm)	9	10	10	10	10
L (mm)	64.5	65.5	118	150	200
DG (mm)	11	11	11	11	11
ML (mm)	51.5	52.5	105	137	187
DS (mm)	6	6	6	6	6
Weight (g)	7.2	8	14.5	16	19

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Thermo stable carbon fiber styli, titanium base, thermo stable carbon fiber stem, silicon nitride ball

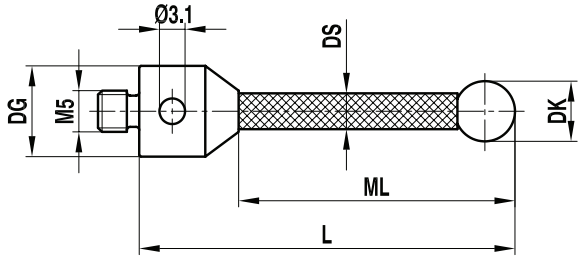
Schematics not shown to scale

Part number	A-5555-3812	A-5555-1828	A-5555-3813	A-5555-3814	A-5555-3815	A-5555-3816
Zeiss order number	–	626105-0301-033	–	626103-0301-058	–	–
DK (mm)	3	3	3	3	4	4
L (mm)	25	33.5	50	58	33.5	64
DG (mm)	11	11	11	11	11	11
ML (mm)	15	23.5	40	48	23.5	54
DS (mm)	2	2	2	2	2	2
Weight (g)	4	4.2	4.5	4.9	4.2	4.6

Part number	A-5555-3817	A-5555-0759	A-5555-2012	A-5555-9045	A-5555-3818	A-5555-3819
Zeiss order number	626105-0511-050	–	626105-0511-075	626105-0511-100	–	–
DK (mm)	5	5	5	5	6	7
L (mm)	50	53	75	100	54	55
DG (mm)	11	11	11	11	11	11
ML (mm)	40	43	65	90	44	45
DS (mm)	3.5	3.5	3.5	3.5	3.5	3.5
Weight (g)	4.8	4.9	5	5.4	4.9	4.9

Part number	A-5555-0720	A-5555-2010	A-5555-3820	A-5555-3821	A-5555-1169	A-5555-1179
Zeiss order number	626105-0821-063	–	626105-0821-100	626105-0821-114	626105-0821-150	626105-0821-200
DK (mm)	8	8	8	8	8	8
L (mm)	63.5	75	100	114.5	150	200
DG (mm)	11	11	11	11	11	11
ML (mm)	50.5	62	87	101.5	137	187
DS (mm)	6	6	6	6	6	6
Weight (g)	7	7.3	7.5	9.5	11	13

Part number	A-5555-3822	A-5555-2403	A-5555-3824	A-5555-3825	A-5555-1171
Zeiss order number	–	–	626105-1021-118	626105-1021-150	626105-1021-200
DK (mm)	9	10	10	10	10
L (mm)	64.5	65.5	118	150	200
DG (mm)	11	11	11	11	11
ML (mm)	51.5	52.5	105	137	187
DS (mm)	6	6	6	6	6
Weight (g)	7.2	8	14.5	16	19



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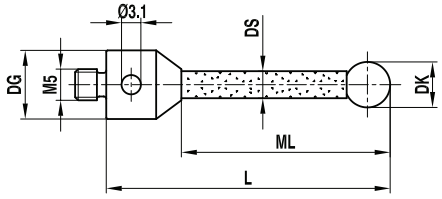
Ceramic styli, titanium base, ruby ball

Schematics not shown to scale

Part number	A-5555-0041	A-5555-0042	A-5555-0043	A-5555-0044	A-5555-0045	A-5555-0046	A-5555-0047	A-5555-0048
Zeiss order number	600342-8013	600342-8016	600342-8017	600342-8014	600342-8018	600342-8118	600342-8019	600342-8119
DK (mm)	5	6	7	8	9	9	10	10
L (mm)	53	54	55	63.5	64.5	64.5	65.5	65.5
DG (mm)	11	11	11	11	11	19	11	19
ML (mm)	43	44	45	50.5	51.5	42.5	52.5	43.5
DS (mm)	3.5	3.5	3.5	6	6	6	6	6
Weight (g)	4.6	4.7	5	8.3	8.4	21	9	38

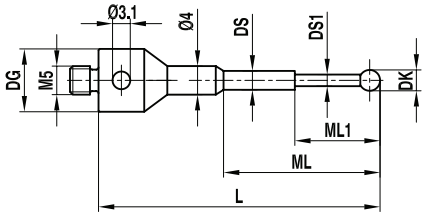
Part number	A-5555-0049	A-5555-0050	A-5555-0051
Zeiss order number	600342-8114	600342-8015	600342-8115
DK (mm)	8	8	8
L (mm)	63.5	114.5	114.5
DG (mm)	19	11	19
ML (mm)	41.5	101.5	92.5
DS (mm)	6	6	6
Weight (g)	33	11.8	38

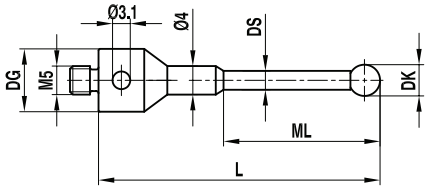


Small ball styli, stepped stem, stainless steel base, tungsten carbide stem, ruby ball

Part number	A-5555-0052	A-5555-0053	A-5555-0054	A-5555-0055	A-5555-0056	A-5555-0057	A-5555-0058	A-5555-0059
Zeiss order number	602030-8060	602030-8061	602030-8062	602030-8063	602030-8064	602030-8065	602030-8066	602030-8067
DK (mm)	0.8	1	1.35	1.35	1.5	1.5	2	2
L (mm)	32	32	32	44	32	44	32	44
DG (mm)	11	11	11	11	11	11	11	11
ML (mm)	12	12	12	19	12	19	12	19
ML1 (mm)	4.8	5.0	–	–	–	–	–	–
DS (mm)	1	1	1	1	1	1	1.5	1.5
DS1 (mm)	0.6	0.8	–	–	–	–	–	–
Weight (g)	6.8	6.8	6.9	7.5	6.5	7.5	7.3	8

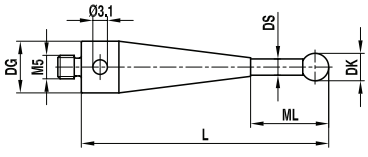
Part number	A-5555-0060	A-5555-0061	A-5555-0062	A-5555-0063
Zeiss order number	602030-8068	602030-8069	602030-8070	602030-8071
DK (mm)	2	2.5	2.5	2.5
L (mm)	58	32	44	58
DG (mm)	11	11	11	11
ML (mm)	33	12	19	33
DS (mm)	1.5	1.5	1.5	1.5
Weight (g)	8	7.3	8	8





Small ball styli, titanium base, tungsten carbide stem, ruby ball

Part number	A-5555-0064	A-5555-0065	A-5555-0066	A-5555-0067	A-5555-0068
Zeiss order number	602030-9019	602030-9020	602030-9021	602030-9022	602030-9023
DK (mm)	1	1.5	2	2.5	3.5
L (mm)	55	55	55	55	55
DG (mm)	11	11	11	11	11
ML (mm)	5	5	5	5	10
DS (mm)	0.8	1	1.5	2	2.5
Weight (g)	11.9	11.9	11.9	11.9	11.9



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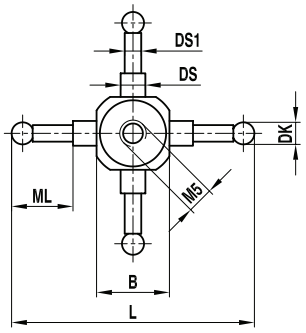
Cube star, titanium base, tungsten carbide stem, ruby ball

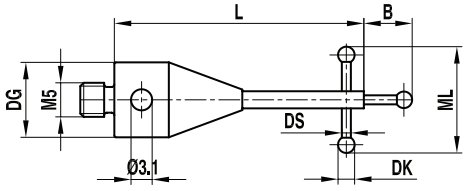
Schematics not shown to scale

Part number	A-5555-0069	A-5555-0070	A-5555-0071	A-5555-0072	A-5555-0073
Zeiss order number	602030-9024	602030-9025	602030-9026	602030-9027	602030-9028
DK (mm)	1	1.5	2	2.5	3.5
L (mm)	45	45	45	45	45
ML (mm)	7	7.5	7.5	8	15
DS (mm)	2	2	2	2	2
DS1 (mm)	0.8	1	1.5	1.5	–
B (mm)	15	15	15	15	15
Weight (g)	17.3	17.3	17.3	17.3	17.3



Styli for thread measurement, stainless steel base, tungsten carbide stem, ruby ball

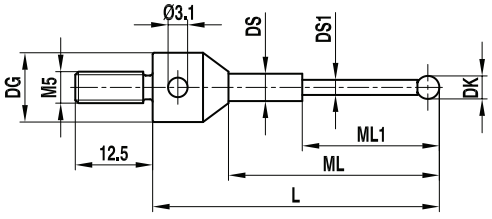
Part number	A-5555-0074	A-5555-0075	A-5555-0076	A-5555-0077
Zeiss order number	602030-9070	602030-9071	602030-9072	602030-9073
DK (mm)	1.35	2.3	1.8	0.8
L (mm)	40	40	40	40
DG (mm)	11	11	11	11
ML (mm)	9	12	10	5
DS (mm)	1	1	1	0.6
B (mm)	2	2.5	2	1.9
Weight (g)	11	13	12	7

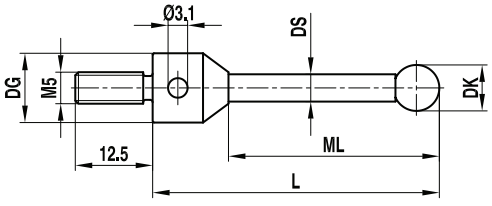


Long threaded styli, thread length 12.5 mm, stainless steel base, tungsten carbide stem, ruby ball

Part number	A-5555-0078	A-5555-0079	A-5555-0080	A-5555-0081	A-5555-0082	A-5555-0083	A-5555-0084
Zeiss order number	600342-8200	600342-8201	600342-8202	600342-8203	600342-8221	600342-8222	600342-8250
DK (mm)	1.35	1.5	2	2.5	3	5	0.3
L (mm)	32.85	33	33.5	34	34.5	43.5	21.8
DG (mm)	11	11	11	11	19	19	11
ML (mm)	23.85	24	24.5	25	16.5	25.5	12.8
ML1 (mm)	–	–	–	–	–	–	2.3
DS (mm)	1	1	1.5	1.5	2	3.5	1
DS1 (mm)	–	–	–	–	–	–	0.2
Weight (g)	6	7	7	7	20	23	6

Part number	A-5555-0085	A-5555-0086	A-5555-0087	A-5555-0088
Zeiss order number	600342-8251	600342-8252	600342-8253	600342-8254
DK (mm)	0.5	0.6	0.8	1
L (mm)	22	22.1	22.3	22.5
DG (mm)	11	11	11	11
ML (mm)	13	13.1	13.3	13.5
ML1 (mm)	2.5	4.6	4.8	5.0
DS (mm)	1	1	1	1
DS1 (mm)	0.3	0.4	0.6	0.8
Weight (g)	6	6	6	6





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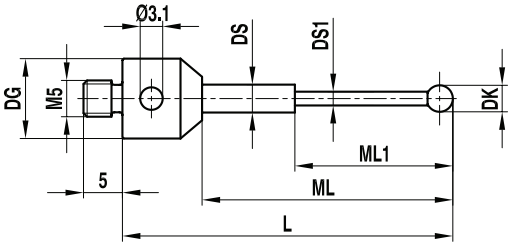
Long threaded styli, thread length 5 mm, stainless steel base, tungsten carbide stem, ruby ball

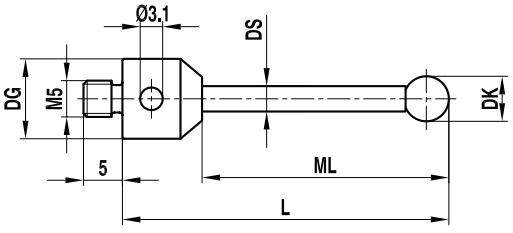
Schematics not shown to scale

Part number	A-5555-0799	A-5555-0329	A-5555-3826	A-5555-3827	A-5555-0686	A-5555-3828
Zeiss order number	626115-0140-033	626115-0150-033	626115-0200-034	–	626115-0250-034	–
DK (mm)	1.35	1.5	2	2.5	2.5	3
L (mm)	32.85	33	33.5	34	34	25.5
DG (mm)	11	11	11	11	11	11
ML (mm)	23.85	24	24.5	25	25	16.5
DS (mm)	1	1	1.5	1	1.5	2
Weight (g)	6	7	7	7	7	9

Part number	A-5555-3829	A-5555-0331	A-5555-1157	A-5555-1842	A-5555-1844	A-5555-1843
Zeiss order number	–	626115-0030-022	626115-0050-022	626115-0060-022	626115-0080-022	626115-0100-022
DK (mm)	5	0.3	0.5	0.6	0.8	1
L (mm)	34.5	21.8	22	22.1	22.3	22.5
DG (mm)	11	11	11	11	11	11
ML (mm)	25.5	12.8	13	13.1	13.3	13.5
ML1 (mm)	–	2.3	2.5	4.6	4.8	1.5
DS (mm)	3.5	1	1	1	1	1
DS1 (mm)	–	0.2	0.3	0.4	0.6	0.8
Weight (g)	9	6	6	6	6	6

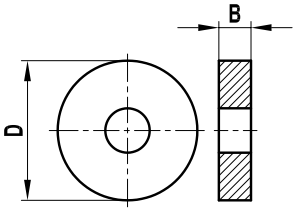
Part number	A-5555-1873
Zeiss order number	–
DK (mm)	1.5
L (mm)	33
DG (mm)	11
ML (mm)	24
ML1 (mm)	7
DS (mm)	1.5
DS1 (mm)	1
Weight (g)	7





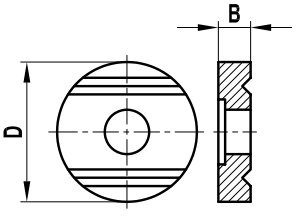
Flat washer for star styli, stainless steel

Part number	A-5555-0089	A-5555-0090
Zeiss order number	600341-0140	600341-0141
D (mm)	11	19
B (mm)	1.5	2
Weight (g)	1	4



Grooved washer for star styli, stainless steel

Part number	A-5555-0091	A-5555-0092
Zeiss order number	600341-0150	600341-0151
D (mm)	11	19
B (mm)	2	4
Weight (g)	1	7



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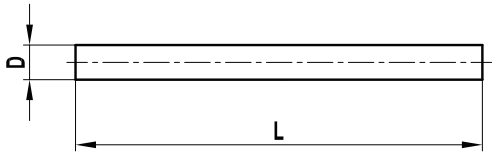
Tungsten carbide pin for star styli

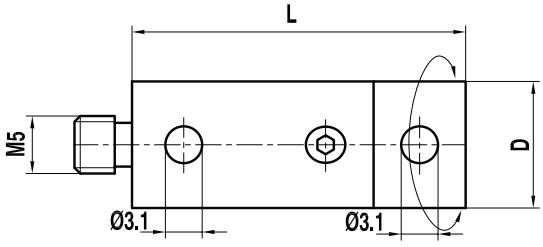
Schematics not shown to scale

Part number	A-5555-0093	A-5555-0094	A-5555-0095	A-5555-0096
Zeiss order number	600341-0520	600341-0521	600341-0522	600341-0523
L (mm)	10	10	18	18
D (mm)	1	1.5	2	3.5
Weight (g)	1	1	1	3



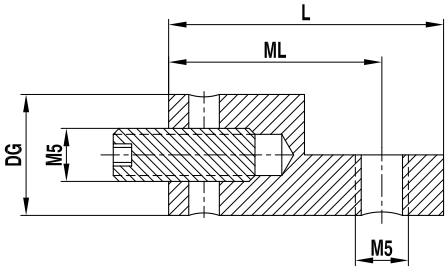
Rotary adaptor, titanium

Part number	A-5555-0099	A-5555-0713
Zeiss order number	602030-9095	612030-9737
L (mm)	30	29
D (mm)	18	11
Weight (g)	43	13



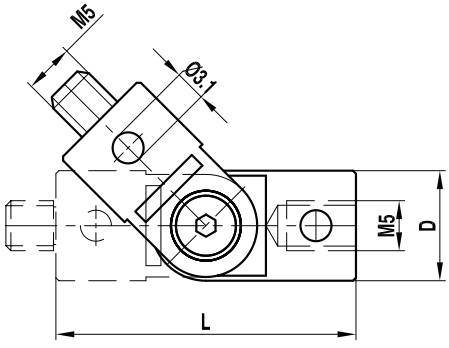
Holder, 90 degree offset, titanium

Part number	A-5555-1097
Zeiss order number	626105-6901-001
ML (mm)	17
DG (mm)	11
L (mm)	22.5
Weight (g)	6



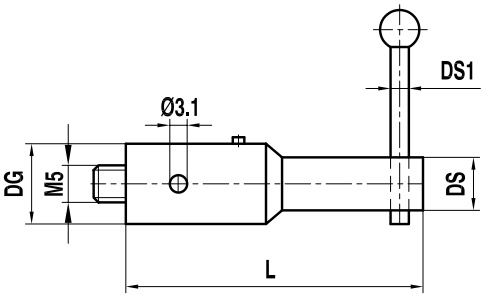
Rotary knuckle, slewing range 360 degrees, swing range 180 degrees, titanium

Part number	A-5003-5278	A-5555-3841
Zeiss order number	–	–
L (mm)	51	58
D (mm)	11	18
Weight (g)	19	58



Holder, 90 degrees, stainless steel

Part number	A-5555-0104
Zeiss order number	600341-8160
DS1 (mm)	1–1.5
L (mm)	45
DG (mm)	11
DS (mm)	6
Weight (g)	16



Fits with styli A-5555-0107 to A-5555-0115

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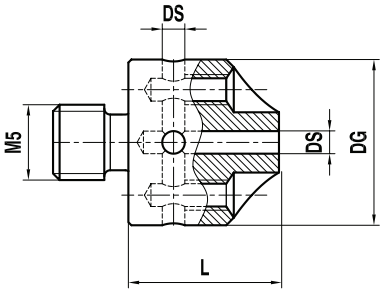
5-way holder, stainless steel

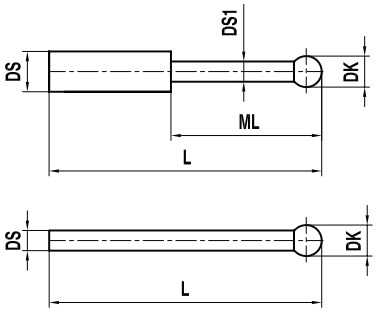
Schematics not shown to scale

Part number	A-5555-0105	A-5555-0106	A-5555-1245
Zeiss order number	600341-8367	600341-8368	626115-5000-199
DS (mm)	1	1.5	2
L (mm)	10	10	10
DG (mm)	11	11	11
Weight (g)	3.2	3.2	3.2



Styli for holder, tungsten carbide stem, ruby ball

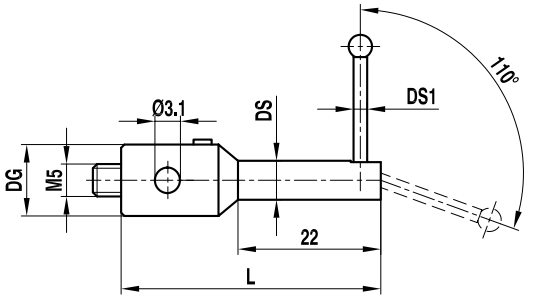
Part number	A-5555-0107	A-5555-0108	A-5555-0109	A-5555-0110	A-5555-0111
Zeiss order number	600341-8454	600341-8450	600341-8451	600341-8452	600341-8453
DK (mm)	1	0.3	0.5	0.6	0.8
L (mm)	16	15.3	15.5	15.6	15.8
DS (mm)	1	1	1	1	1
DS1 (mm)	0.8	0.2	0.3	0.4	0.6
ML (mm)	5	2.3	2.5	4.6	4.8
Weight (g)	1	1	1	1	1



Part number	A-5555-0112	A-5555-0113	A-5555-0114	A-5555-0115	A-5555-0116	A-5555-0117
Zeiss order number	600341-8500	600341-8501	600341-8502	600341-8503	600341-8510	600341-8511
DK (mm)	1.35	1.5	2	2.5	3	5
L (mm)	26.35	26.5	27	27.5	38	45
DS (mm)	1	1	1.5	1.5	2	3.5
Weight (g)	1	1	1	1	2	6

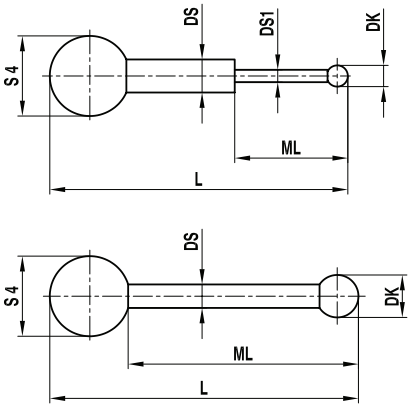
Holder for swivel styli, stainless steel

Part number	A-5555-0118
Zeiss order number	600341-8180
L (mm)	40
DG (mm)	11
DS (mm)	6
DS1 (mm)	1-1.5
Weight (g)	15



Styli for swiveling components, S4 steel ball, tungsten carbide stem, ruby ball

Part number	A-5555-0119	A-5555-0120
Zeiss order number	600341-8183	600341-8185
DK (mm)	1	2
L (mm)	17.5	28.5
DS (mm)	1	1.5
DS1 (mm)	0.8	–
ML (mm)	5	24.5
Weight (g)	1	1



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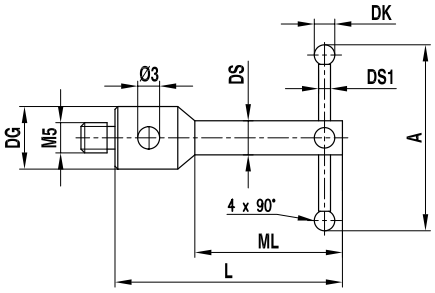
Star styli, stainless steel base, tungsten carbide stem, ruby ball

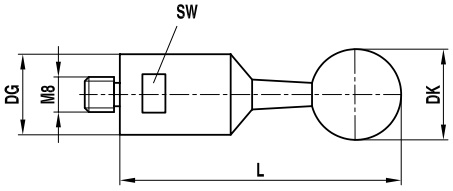
Schematics not shown to scale

Part number	A-5555-1153	A-5555-1135	A-5555-3839
Zeiss order number	–	–	–
DK (mm)	0.6	0.8	1
L (mm)	40	40	40
DG (mm)	11	11	11
DS (mm)	4	4	4
DS1 (mm)	0.4	0.6	0.8
ML (mm)	30	30	30
A (mm)	8	8	8
Weight (g)	9	9	9



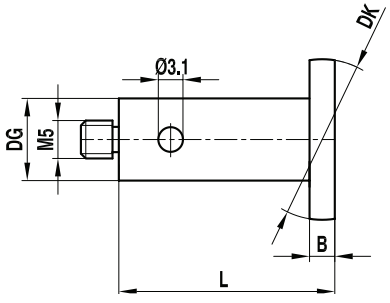
Reference sphere with stem, M8 thread, stainless steel, ceramic ball including certificate

Part number	A-5555-3842	A-5555-3843	A-5555-3844	A-1034-0124
Zeiss order number	–	–	–	–
DK (mm)	15	20	25	30
L (mm)	130	135	140	145
DG (mm)	24	24	24	24
SW (mm)	22	22	22	22



Spherical disk styli, aluminum base, high-strength steel disk

Part number	A-5555-0121	A-5555-0122	A-5555-0123	A-5555-0124
Zeiss order number	600341-8090	600341-8095	602030-8091	000000-1165-629
DK (mm)	10	15	20	15
L (mm)	21.5	21.5	60	40
DG (mm)	7	10	7	7
B (mm)	1.5	1.5	1	1
Weight (g)	3	6	8	5



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Extensions

Schematics not shown to scale

Aluminum, stainless steel ends

Part number	A-5555-0125	A-5555-0126	A-5555-0127	A-5555-0128	A-5555-0129	A-5555-0130	A-5555-0131	A-5555-0132
Zeiss order number	600341-8420	600341-8421	600341-8422	600341-8423	600341-8424	600341-8425	600341-8265	600341-8264
L (mm)	200	150	100	80	60	40	120	100
D (mm)	20	20	20	20	20	20	11	11
Weight (g)	84.7	67.4	50.7	44.8	37.7	29	30.9	25.6

Part number	A-5555-0133	A-5555-0134	A-5555-0135
Zeiss order number	600341-8263	600341-8262	600341-8261
L (mm)	80	60	40
D (mm)	11	11	11
Weight (g)	20.6	15.4	10.3

Stainless steel

Part number	A-5555-0136	A-5555-0137	A-5555-0138	A-5555-0139	A-5555-0140	A-5555-0141	A-5555-0142
Zeiss order number	600341-0260	600341-0258	600341-0256	600341-0254	600341-0252	600341-0251	600341-0250
L (mm)	100	80	60	40	20	15	10
D (mm)	11	11	11	11	11	11	11
Weight (g)	73	58	42	28	13	9	6

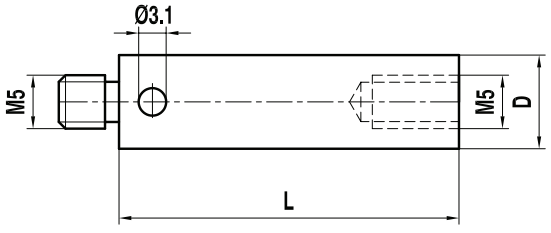
Titanium

Part number	A-5555-0143	A-5555-0144	A-5555-0145	A-5555-0146	A-5555-0147	A-5555-0148	A-5555-0149	A-5555-0150
Zeiss order number	602030-9044	602030-9045	602030-9046	602030-9047	602030-9048	602030-9049	602030-9050	602030-9051
L (mm)	10	15	20	25	25	40	40	50
D (mm)	11	11	11	11	18	11	18	11
Weight (g)	3.9	5.7	7.5	9.5	24.6	12.6	31.5	13.2

Part number	A-5555-0151	A-5555-0152	A-5555-0153	A-5555-0154	A-5555-0155	A-5555-0156	A-5555-0157	A-5555-0158
Zeiss order number	602030-9052	602030-9053	602030-9054	602030-9055	602030-9056	602030-9057	602030-9058	602030-9059
L (mm)	50	60	60	75	75	80	80	90
D (mm)	18	11	18	11	18	11	18	11
Weight (g)	33.3	14.2	35.1	15.3	37.9	15.6	38.8	16.5

Part number	A-5555-0159	A-5555-0160	A-5555-0161	A-5555-0162	A-5555-0163	A-5555-0164	A-5555-0165	A-5555-0166
Zeiss order number	602030-9060	602030-9061	602030-9062	602030-9063	602030-9064	602030-9065	602030-9066	602030-9067
L (mm)	90	100	100	120	120	150	150	200
D (mm)	18	11	18	11	18	11	18	18
Weight (g)	40.6	17.2	42.5	19.8	46.1	22.5	51.6	61

Part number	A-5555-0167	A-5555-0168
Zeiss order number	602030-9068	602030-9069
L (mm)	250	300
D (mm)	18	18
Weight (g)	70	79



M5 styli for Zeiss probing systems

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Black thermo stable carbon fiber, titanium ends

Schematics not shown to scale

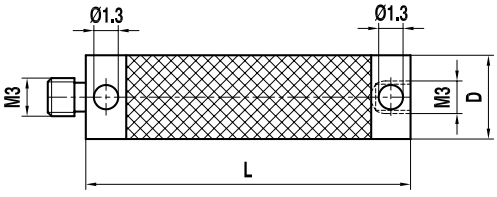
Part number	A-5555-0647	A-5555-0648	A-5555-0649	A-5555-0623	A-5555-0650	A-5555-0651
Zeiss order number	626107-1040-100	626107-1050-100	626107-1060-100	626107-1070-100	626107-1080-100	626107-1090-100
L (mm)	40	50	60	70	80	90
D (mm)	11	11	11	11	11	11
Weight (g)	9	10	11	10	12	13

Part number	A-5555-0652	A-5555-0425	A-5555-0424	A-5555-0653	A-5555-0654	A-5555-0655
Zeiss order number	626107-1100-100	626107-1120-100	626107-1150-100	626107-1180-100	626107-1200-100	626107-1250-100
L (mm)	100	120	150	180	200	250
D (mm)	11	11	11	11	11	11
Weight (g)	14	15	17	19	21	24

Part number	A-5555-0642	A-5555-0656	A-5555-0620	A-5555-0657	A-5555-0658	A-5555-0621
Zeiss order number	626107-1300-100	626107-1400-100	626107-2040-100	626107-2050-100	626107-2060-100	626107-2080-100
L (mm)	300	400	40	50	60	80
D (mm)	11	11	21	20	21	21
Weight (g)	27	34	26	28	29	32

Part number	A-5555-0659	A-5555-0661	A-5555-0663	A-5555-0427	A-5555-0664	A-5555-0665
Zeiss order number	626107-2100-100	626107-2150-100	626107-2200-100	626107-2250-100	626107-2300-100	626107-2400-100
L (mm)	100	150	200	250	300	400
D (mm)	21	21	21	21	21	20
Weight (g)	34	41	48	55	62	75

Part number	A-5555-0667	A-5555-0668
Zeiss order number	626107-2500-100	626107-2600-100
L (mm)	500	600
D (mm)	20	20
Weight (g)	89	103



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Adaptor plate extension for MT/VAST. Black thermo stable carbon fiber, titanium cube and plate adaptor

Schematics not shown to scale

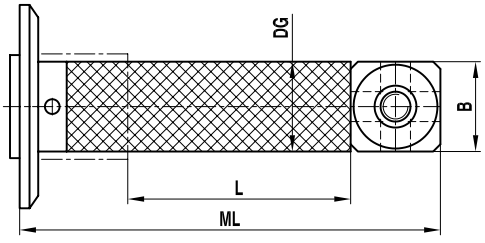
Part number	A-5555-3845	A-5555-3846	A-5555-3847	A-5555-3848	A-5555-3849	A-5555-3850
Zeiss order number	–	–	–	–	–	–
L (mm)	25	40	50	60	80	100
DG (mm)	11	11	11	11	11	11
ML (mm)	66.5	81.5	91.5	101.5	121.5	141.5
B (mm)	15	15	15	15	15	15
Weight (g)	60	62	64	66	68	70

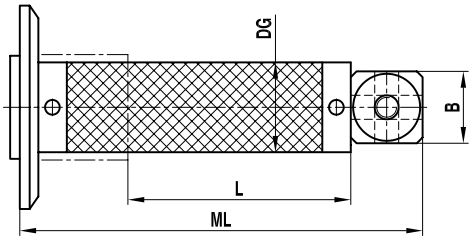
Part number	A-5555-3851	A-5555-3740	A-5555-3852	A-5555-0699	A-5555-1985	A-5555-1986
Zeiss order number	–	–	–	625107-2025-130	625107-2040-130	625107-2050-130
L (mm)	120	150	200	25	40	50
DG (mm)	11	11	11	20	20	20
ML (mm)	161.5	191.5	241.5	66.5	81.5	91.5
B (mm)	15	15	15	15	15	15
Weight (g)	72	77	84	60	62	64

Part number	A-5555-1987	A-5555-0700	A-5555-1988	A-5555-1989	A-5555-0701	A-5555-1990
Zeiss order number	626107-2060-130	626107-2080-130	626107-2100-130	625107-2120-130	625107-2150-130	625107-2200-130
L (mm)	60	80	100	120	150	200
DG (mm)	20	20	20	20	20	20
ML (mm)	101.5	121.5	141.5	161.5	191.5	241.5
B (mm)	15	15	15	15	15	15
Weight (g)	66	68	70	72	77	84

Part number	A-5555-1979	A-5555-1980	A-5555-1855	A-5555-1981	A-5555-1982	A-5555-1983
Zeiss order number	626107-2025-110	626107-2040-110	626107-2050-110	625107-2060-110	625107-2080-110	625107-2100-110
L (mm)	25	40	50	60	80	100
DG (mm)	20	20	20	20	20	20
ML (mm)	71.5	86.5	96.6	106.5	126.5	146.5
B (mm)	20	20	20	20	20	20
Weight (g)	74	76	78	80	82	84

Part number	A-5555-1938	A-5555-1937	A-5555-1984
Zeiss order number	626107-2120-110	626107-2150-110	626107-2200-110
L (mm)	120	150	200
DG (mm)	20	20	20
ML (mm)	166.5	196.5	246.5
B (mm)	20	20	20
Weight (g)	86	91	98





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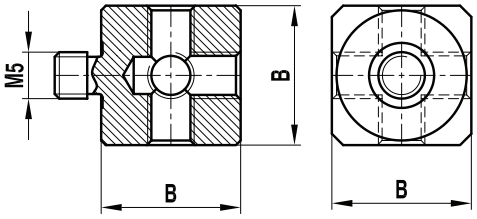
Schematics not shown to scale

Cube, titanium

Part number	A-5555-0189	A-5555-0190
Zeiss order number	600341-8361	600341-8002
B (mm)	15	20
Weight (g)	12.6	31.5

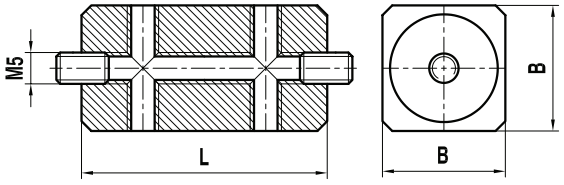


Cube, alumimum

Part number	A-5555-0191	A-5555-0192
Zeiss order number	602030-8363	602030-8362
B (mm)	15	20
Weight (g)	7.5	20

Double cube (titanium)

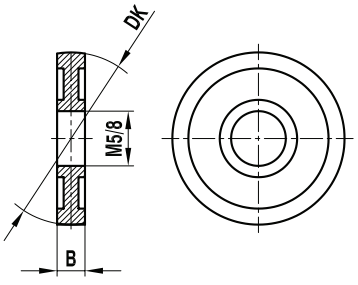
Part number	A-5555-0194
Zeiss order number	600342-8103
B (mm)	20
L (mm)	40
Weight (g)	64



Spherical disk, high-strength steel

Part number	A-5555-0196	A-5555-0197	A-5555-0198	A-5555-0199	A-5555-0200	A-5555-0201	A-5555-0203
Zeiss order number	602030-0004	602030-0005	602030-0006	602030-0007	602030-0008	602030-0009	602030-0011
B (mm)	4	4	4	5	5	5	4
DK (mm)	15	20	30	40	50	60	20
M5/8 (mm)	M5	M5	M5	M5	M5	M5	8
Weight (g)	5	9	21	42	64	89	8

Part number	A-5555-0204	A-5555-0205	A-5555-0206	A-5555-0207	A-5555-0208
Zeiss order number	600341-0200	600341-0203	600341-0204	600341-0205	600341-0206
B (mm)	2	4	4	5	6
DK (mm)	20	30	40	50	60
M5/8 (mm)	8	8	8	8	8
Weight (g)	4	10	21	36	59



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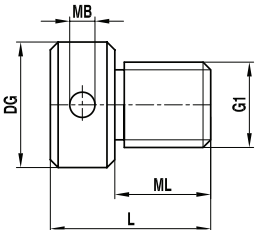
Hole location gage, stainless steel

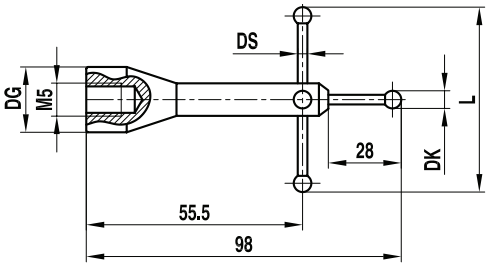
Schematics not shown to scale

Part number	A-5555-0209	A-5555-0210	A-5555-0211	A-5555-0212	A-5555-0213	A-5555-0214
Zeiss order number	602030-0012	602030-0013	600203-0014	602030-0015	602030-0016	600203-0017
G1	M4	M5	M6	M8	M10	M12
L (mm)	16	16	18	20	25	25
DG (mm)	10	10	12	15	18	20
ML (mm)	10	10	12	12	15	15
MB (mm)	1.8	1.8	1.8	3	3	3
Weight (g)	4	4	7	13	25	33



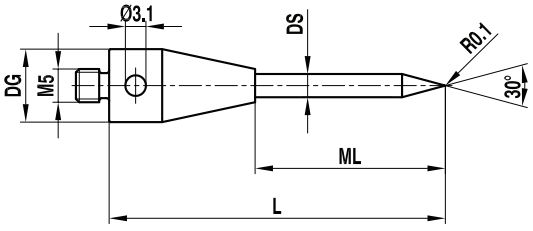
Star stylus, stainless steel base, tungsten carbide stem, ruby ball

Part number	A-5555-0215
Zeiss order number	600331-8093
DK (mm)	5
L (mm)	80
DG (mm)	19
DS (mm)	3.5
Weight (g)	70



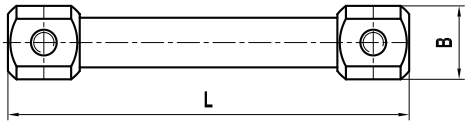
Pointed stylus, titanium base, tungsten carbide stem

Part number	A-5555-0216
Zeiss order number	600342-8051
L (mm)	61
DG (mm)	11
ML (mm)	39
DS (mm)	3.5
Weight (g)	12



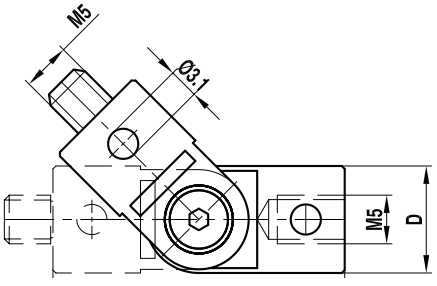
Cube extension, titanium

Part number	A-5555-0217
Zeiss order number	602030-0019
L (mm)	120
B (mm)	20
Weight (g)	87



Knuckle, swing range 180 degrees, titanium

Part number	A-5555-0218	A-5555-0219
Zeiss order number	600342-9002	600342-9003
L (mm)	30	36
D (mm)	11	18
Weight (g)	11.2	37.2



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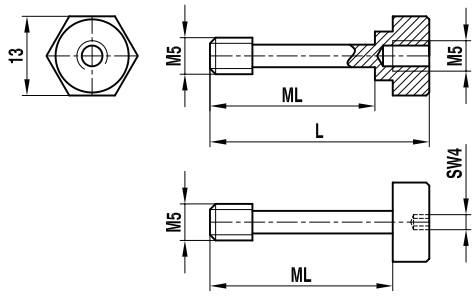
Bolts for spherical disk and cube, stainless steel

Schematics not shown to scale

Part number	A-5555-0221	A-5555-0222	A-5555-0223
Zeiss order number	600341-0210	600341-0211	600341-0212
L (mm)	35	30	17.5
ML (mm)	26	21	9
Weight (g)	9	9	7

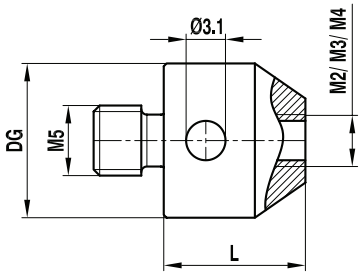


Bolts for cubes, stainless steel

Part number	A-5555-0224	A-5555-0225
Zeiss order number	600341-0220	600341-0221
ML (mm)	26	21
Weight (g)	4	3

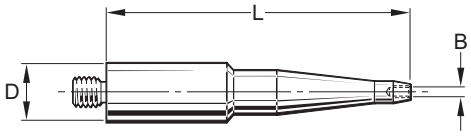
Adaptor, stainless steel

Part number	A-5555-0226	A-5555-0227	A-5555-0228
Zeiss order number	602030-0215	602030-0315	602030-0318
Threads	M5/M2	M5/M3	M5/M4
L (mm)	10	10	10
DG (mm)	11	11	11
Weight (g)	5.2	5.2	5.2



Holder for digitalization styli, stainless steel

Part number	A-5555-0231	A-5555-0232
Zeiss order number	602030-9113	602030-9115
L (mm)	119	127
D (mm)	15.81	9.52
B	M2	M2
Weight (g)	126	87

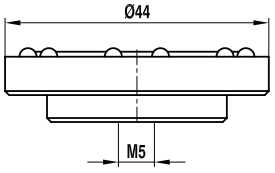


Adaptor plates for Zeiss probe heads

Adaptor plate for dynamic systems (ST), alumimum

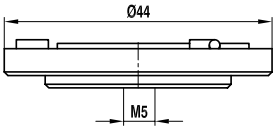
Schematics not shown to scale

Part number	A-5555-0322	A-5555-0251
Zeiss order number	600660-8240	600660-8251
Quantity in kit	1	2
Weight (g)	72	144



Adaptor plate for Prismo dynamic systems (ST), alumimum

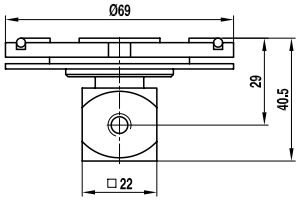
Part number	A-5555-0253	A-5555-3900
Zeiss order number	620660-8251-000	–
Quantity in kit	2	1
Weight (g)	144	72



Adaptor plate for measuring systems MT/Vast, aluminum, with active ID chip

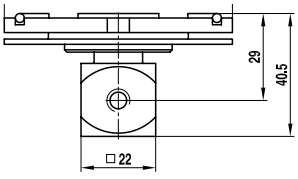
Part number	A-5555-0255	A-5555-0256	A-5555-0258*
Zeiss order number	600667-9601	600667-9611	600667-8571
Quantity in kit	1	2	1
Weight (g)	153	306	130

* adaptor plate without cube



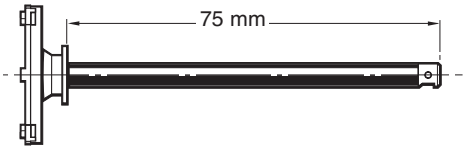
Adaptor plate for XXT TL1, reference plate for XXT TL1

Part number	A-5555-1235	A-5555-1236
Zeiss order number	620161-8055-000	620161-8058-000
Weight (g)	4.6	4.6



Adaptor plate for VAST XXT TL2, reference plate for XXT TL2

Part number	A-5555-1237	A-5555-1238
Zeiss order number	620161-8065-000	620161-8068-000
Weight (g)	5.4	5.4



Adaptor plate for VAST XXT TL3, reference plate for XXT TL3

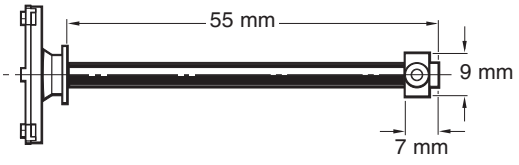
Part number	A-5555-1239	A-5555-1240
Zeiss order number	620161-8075-000	620161-8078-000
Weight (g)	4.6	4.6

VAST XXT TL1 with star adaptor

Part number	A-5555-1241
Zeiss order number	626103-8031-055
Weight (g)	6.3

VAST XXT TL3 with star adaptor

Part number	A-5555-1242
Zeiss order number	626103-8033-055
Weight (g)	6.3



M3 styli, adaptors and accessories for Zeiss analog probe systems

Schematics not shown to scale

Carbide styli XXT, titanium base, tungsten carbide stem, ruby ball

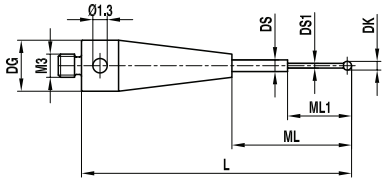
Part number	A-5004-3176	A-5004-2185	A-5004-1702	A-5004-2186	A-5555-3853	A-5004-3179
Zeiss order number	626113-0030-013	626113-0030-020	626113-0050-013	626113-0050-020	626113-0060-014	626113-0060-020
DK (mm)	0.3	0.3	0.5	0.5	0.6	0.6
L (mm)	13	20	13	20	14	20
DG (mm)	5	5	5	5	5	5
ML (mm)	4	11	4	11	5	1
ML1 (mm)	2.3	2.3	2.3	2.3	4.6	4.6
DS (mm)	1	1	1	1	1	1
DS1 (mm)	0.2	0.2	0.3	0.3	0.4	0.4
Weight (g)	0.62	0.69	0.61	0.69	0.61	0.68

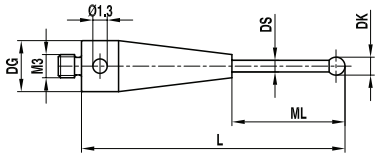
Part number	A-5004-3273	A-5004-3274	A-5004-1883	A-5004-3187	A-5555-3854	A-5004-1863
Zeiss order number	626113-0080-014	626113-0080-020	626113-0080-034	626113-0100-014	626113-0101-020	626113-0100-020
DK (mm)	0.8	0.8	0.8	1	1	1
L (mm)	14	20	34	14	20	20
DG (mm)	5	5	5	5	5	5
ML (mm)	5	11	25	5	11	11
ML1 (mm)	–	4.8	4.1	–	5.1	5
DS (mm)	0.6	1	1	0.8	1	1
DS1 (mm)	–	0.6	0.6	–	0.6	0.8
Weight (g)	0.62	0.69	0.8	0.63	0.7	0.69

Part number	A-5004-3519	A-5004-3427	A-5555-9341	A-5004-3272	A-5004-1862	A-5555-9339
Zeiss order number	626113-0130-020	626113-0100-030	626113-0100-040	626113-0150-014	626113-0150-020	626113-0151-030
DK (mm)	1	1	1	1.5	1.5	1.5
L (mm)	20	30	40	14	20	30
DG (mm)	5	5	5	5	5	5
ML (mm)	11	21	31	5	11	21
ML1 (mm)	–	5	5	–	–	–
DS (mm)	0.8	1	1	1	1	1
DS1 (mm)	–	0.8	0.8	–	–	–
Weight (g)	0.7	0.8	1.5	0.65	0.72	0.84

Part number	A-5555-9340	A-5004-1779	A-5004-3188	A-5004-1861	A-5004-0656	A-5555-3855
Zeiss order number	626113-0150-030	626113-0151-040	626113-0200-014	626113-0200-020	626113-0200-030	626113-0021-040
DK (mm)	1.5	1.5	2	2	2	2
L (mm)	30	40	14	20	30	40
DG (mm)	5	5	5	5	5	5
ML (mm)	22.5	31	5	11	21	31
DS (mm)	1	1	1	1	1	1.5
Weight (g)	0.9	1.6	0.66	0.72	0.83	1.7

Part number	A-5555-3856	A-5555-3857	A-5004-3428
Zeiss order number	626113-0250-020	626113-0250-030	626113-0250-040
DK (mm)	2.5	2.5	2.5
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	1.5	1.5	1.5
Weight (g)	1	1.5	2





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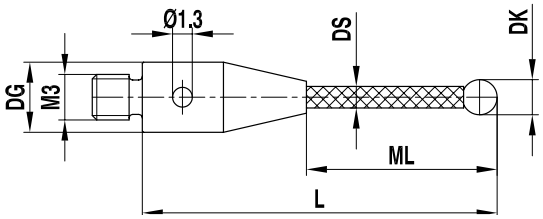
Reference styli XXT (red dot), titanium base, thermo stable carbon fiber stem, ruby ball

Schematics not shown to scale

Part number	A-5555-2033	A-5555-3858
Zeiss order number	626103-0501-030	626103-0501-050
DK (mm)	5	5
L (mm)	30	50
DG (mm)	5	5
ML (mm)	21	41
DS (mm)	3.5	3.5
Weight (g)	1.1	1.4



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Thermo stable carbon fiber styli XXT, titanium base, thermo stable carbon fiber stem, ruby ball

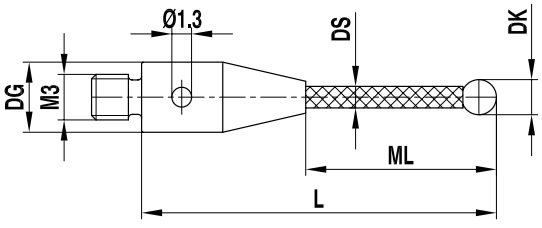
Schematics not shown to scale

Part number	A-5555-3859	A-5004-0802	A-5555-1251	A-5004-1884	A-5004-0803	A-5555-3860
Zeiss order number	626103-0300-025	626103-0300-033	626103-0300-040	626103-0300-042	626103-0300-050	626103-0300-058
DK (mm)	3	3	3	3	3	3
L (mm)	25	33	40	42	50	58
DG (mm)	5	5	5	5	5	5
ML (mm)	16	24	31	33	41	49
DS (mm)	2	2	2	2	2	2
Weight (g)	0.65	0.7	0.8	0.8	0.8	1

Part number	A-5555-3861	A-5555-3862	A-5004-2786	A-5004-2108	A-5003-0062	A-5004-0806
Zeiss order number	626103-0300-059	626103-0300-075	626103-0401-050	626103-0500-030	626103-0500-040	626103-0500-050
DK (mm)	3	3	4	5	5	5
L (mm)	59	75	50	30	40	50
DG (mm)	5	5	5	5	5	5
ML (mm)	50	66	41	21	31	41
DS (mm)	2	2	2	3.5	3.5	3.5
Weight (g)	1	1	1	1.1	1.2	1.4

Part number	A-5555-3864	A-5555-1114	A-5004-3429	A-5555-3865	A-5555-1115	A-5555-3866
Zeiss order number	626103-0500-060	626103-0501-075	626103-0600-050	626103-0610-070	626103-0600-100	626103-0800-030
DK (mm)	5	5	6	6	6	8
L (mm)	60	75	50	70	100	30
DG (mm)	5	5	5	5	5	5
ML (mm)	51	66	40	61	91	30
DS (mm)	3.5	3.5	3.5	3.5	3.5	5
Weight (g)	1.5	1.8	1.5	1.8	2.4	1.86

Part number	A-5555-3867	A-5555-3868	A-5555-3869	A-5004-0808
Zeiss order number	626103-0830-050	626103-0830-070	626103-0830-100	626103-0800-125
DK (mm)	8	8	8	8
L (mm)	50	70	100	125
DG (mm)	5	5	5	5
ML (mm)	50	70	100	125
DS (mm)	5	5	5	5
Weight (g)	2.1	2.6	2.7	2.9



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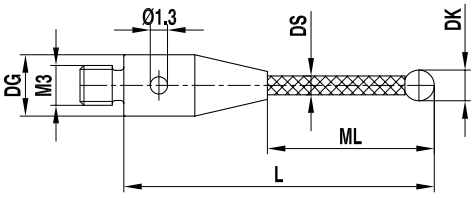
Thermo stable carbon fiber styli XXT, titanium base, thermo stable carbon fiber stem, silicon nitride ball

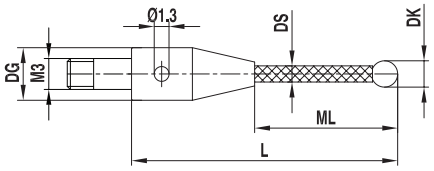
Schematics not shown to scale

Part number	A-5555-3870	A-5555-3871	A-5555-3872	A-5004-1858	A-5004-4635	A-5555-3874
Zeiss order number	626103-0301-033	626103-0301-050	626103-0502-050	626103-0500-075	626103-0801-070	626103-0801-125
DK (mm)	3	3	5	5	8	8
L (mm)	33	50	50	75	70	125
DG (mm)	5	5	5	5	5	5
ML (mm)	24	41	41	66	70	125
DS (mm)	2	2	3.5	3.5	5	5
Weight (g)	0.7	0.8	1.4	1.8	2.6	2.9



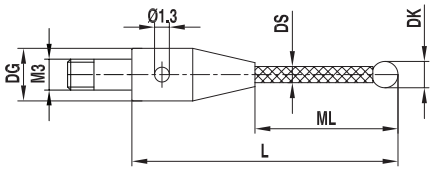
Thermo stable carbon fiber clamping styli XXT, titanium base, thermo stable carbon fiber stem, ruby ball

Part number	A-5555-3875	A-5555-3876	A-5004-3282
Zeiss order number	626103-0301-020	626103-0301-030	626103-0301-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	0.7	0.75	0.8



Thermo stable carbon fiber clamping styli XXT, titanium base, thermo stable carbon fiber stem, silicon nitride ball

Part number	A-5555-3877	A-5555-3878	A-5555-3879
Zeiss order number	626103-0311-020	626103-0311-030	626103-0311-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	0.7	0.75	0.8



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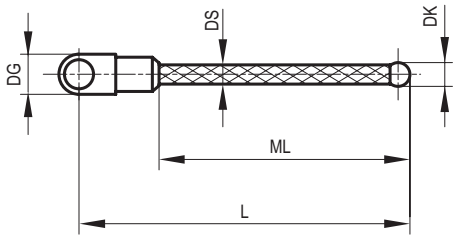
¼ star styli, thermo stable carbon fiber XXT, titanium base, thermo stable carbon fiber stem, ruby ball

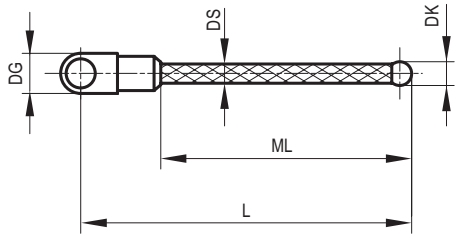
Schematics not shown to scale

Part number	A-5555-1273	A-5555-1274	A-5555-1275
Zeiss order number	626103-0302-020	626103-0302-030	626103-0302-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	0.8	0.9	1



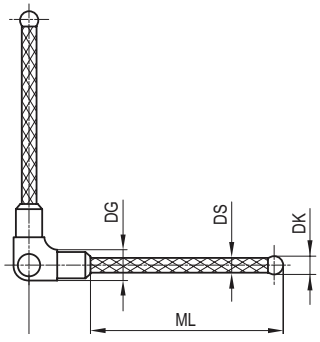
¼ star styli, thermo stable carbon fiber XXT, titanium base, thermo stable carbon fiber stem, silicon nitride ball

Part number	A-5555-3880	A-5555-3881	A-5555-3901
Zeiss order number	626103-0312-020	626103-0312-030	626103-0312-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	0.8	0.9	1



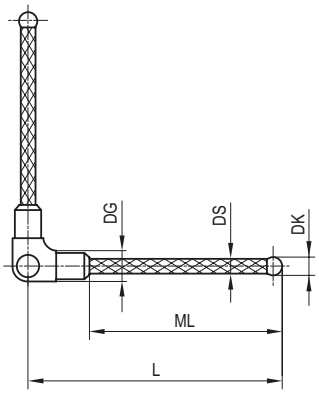
½ star styli, thermo stable carbon fiber XXT, 90 degrees, titanium base, thermo stable carbon fiber stem, ruby ball

Part number	A-5555-3882	A-5555-3883	A-5004-3284
Zeiss order number	626103-0303-020	626103-0303-030	626103-0303-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	1.4	1.5	1.6



½ star styli, thermo stable carbon fiber XXT, 90 degrees, titanium base, thermo stable carbon fiber stem, silicon nitride ball

Part number	A-5555-3884	A-5555-3885	A-5555-3886
Zeiss order number	626103-0313-020	626103-0313-030	626103-0313-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	1.4	1.5	1.6



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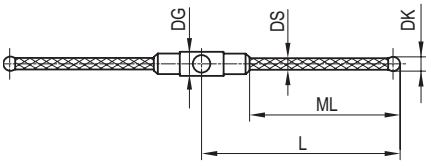
½ star styli, thermo stable carbon fiber XXT, 180 degrees, titanium base, thermo stable carbon fiber stem, ruby ball

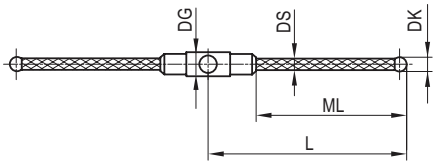
Schematics not shown to scale

Part number	A-5555-3887	A-5555-3888	A-5004-0654
Zeiss order number	626103-0304-020	626103-0304-030	626103-0304-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	1.4	1.5	1.6



½ star styli, thermo stable carbon fiber XXT, 180 degrees, titanium base, thermo stable carbon fiber stem, silicon nitride ball

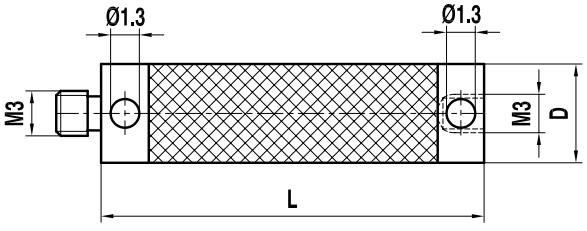
Part number	A-5555-3889	A-5555-3890	A-5555-3891
Zeiss order number	626103-0314-020	626103-0314-030	626103-0314-040
DK (mm)	3	3	3
L (mm)	20	30	40
DG (mm)	5	5	5
ML (mm)	11	21	31
DS (mm)	2	2	2
Weight (g)	1.4	1.5	1.6



Extension XXT, thermo stable black carbon fiber, titanium ends

Part number	A-5555-3892	A-5555-1947	A-5004-3430	A-5555-3893	A-5004-0002	A-5555-3894
Zeiss order number	626103-5020-000	626103-5025-000	626103-5030-000	626103-5040-000	626103-5050-000	626103-5060-000
D (mm)	5	5	5	5	5	5
L (mm)	20	25	30	40	50	60
Weight (g)	1.2	1.25	1.3	1.4	1.5	1.7

Part number	A-5555-1948	A-5004-2001	A-5004-1859	A-5555-3895	A-5555-1276
Zeiss order number	626103-5075-000	626103-5080-000	626103-5100-	626103-5130-000	626103-5150-000
D (mm)	5	5	5	5	5
L (mm)	75	80	100	130	150
Weight (g)	1.7	1.8	2	2.5	2.7



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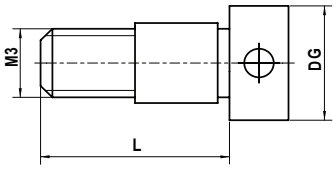
Schematics not shown to scale

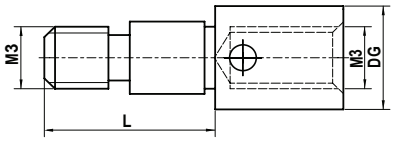
Clamping screw XXT, titanium

Part number	A-5004-1856
Zeiss order number	626103-6110-004
DG (mm)	5
L (mm)	8
Weight (g)	0.5



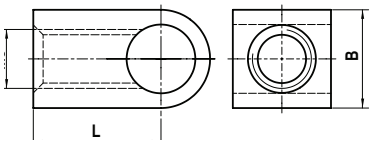
Clamping screw XXT with internal M3 thread, titanium

Part number	A-5004-1857
Zeiss order number	626103-6110-005
DG (mm)	5
L (mm)	8
Weight (g)	0.7



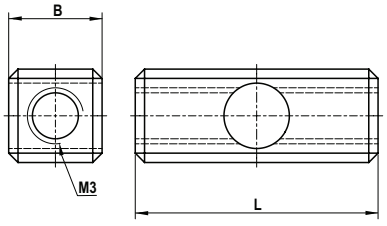
Cube XXT 90 degrees, 1 way, titanium

Part number	A-5004-3437
Zeiss order number	626103-6110-001
B (mm)	5
L (mm)	6.5
Weight (g)	0.64



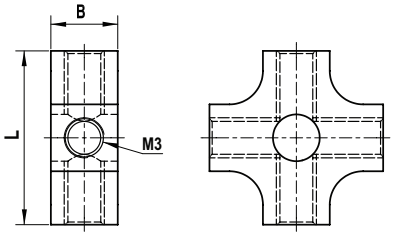
Cube XXT 180 degrees, 2 way, titanium

Part number	A-5555-3896
Zeiss order number	626103-6110-002
B (mm)	5
L (mm)	13
Weight (g)	1.05



Cube star XXT, titanium

Part number	A-5004-3185
Zeiss order number	626103-6110-003
B (mm)	5
L (mm)	13
Weight (g)	1.8



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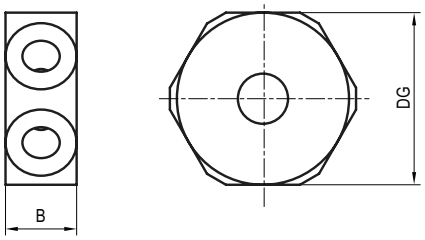
Schematics not shown to scale

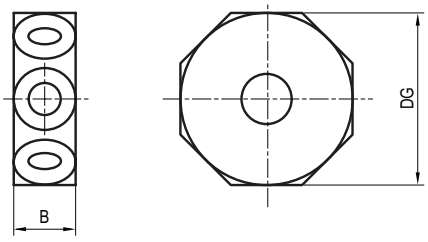
Cube XXT, 6 star, titanium

Part number	A-5555-3898
Zeiss order number	626103-6110-006
B (mm)	5
DG (mm)	12
Weight (g)	1.8



Cube XXT, 8 star, titanium

Part number	A-5555-3899
Zeiss order number	626103-6110-007
B (mm)	5
DG (mm)	14
Weight (g)	2.3



Knuckle XXT, titanium

Part number	A-5004-3285
Zeiss order number	626103-6180-001
B (mm)	5
L (mm)	10
Weight (g)	1.65

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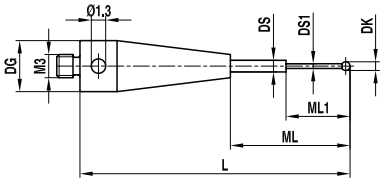
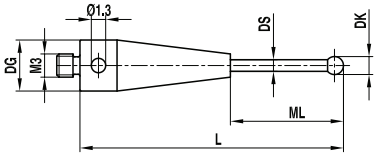
Tungsten carbide styli, stainless steel base, tungsten carbide stem, ruby ball

Schematics not shown to scale

Part number	A-5555-0261	A-5555-0263	A-5555-0265	A-5555-0267	A-5555-0268	A-5555-0269	A-5555-0270	A-5555-0271
Zeiss order number	602030-8104	602030-8113	602030-8112	602030-8115	602030-8116	602030-8117	602030-8118	602030-8119
DK (mm)	2	3	4	0.5	0.6	0.8	1	1.5
L (mm)	22	40	33	22	22	22	22	22
DG (mm)	4	5.5	4	4	4	4	4	4
ML (mm)	9	21.5	23	9	9	9	9	9
ML1 (mm)	–	–	–	2.5	4.6	4.8	5	–
DS (mm)	1	2	2.5	1	1	1	1	1
DS1 (mm)	–	–	–	0.3	0.4	0.6	0.8	–
Weight (g)	1	4	2.5	1	1	1	1	1

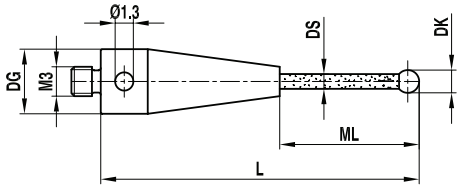
Part number	A-5555-0272	A-5555-0273	A-5555-0274	A-5555-0276	A-5555-0277
Zeiss order number	602030-8120	602030-8121	602030-8023	602030-8021	602030-8106
DK (mm)	1	0.3	2	3	3
L (mm)	10.5	22	21	21.5	21
DG (mm)	4	4	4	4	4
ML (mm)	5.5	9	15	15.5	13
ML1 (mm)	5	2.3	–	–	–
DS (mm)	10	1	1	1.5	2
DS1 (mm)	0.8	.02	–	–	–
Weight (g)	1	1	1	1	1





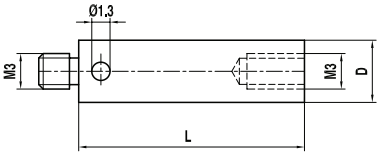
Ceramic styli, stainless steel base, ceramic stem, ruby ball

Part number	A-5555-0264	A-5555-0266	A-5555-0275
Zeiss order number	602030-8102	602030-8101	602030-8020
DK (mm)	4	5	6
L (mm)	32	32	13
DG (mm)	4	4	4
ML (mm)	26	19	9
DS (mm)	2	2	2
Weight (g)	1	1	1



Stainless steel extensions

Part number	A-5004-7609	A-5004-7583	A-5555-0286	A-5555-0287	A-5555-0288
Zeiss order number	602030-8301	602030-8302	602030-8303	602030-8304	602030-8305
L (mm)	10	20	30	40	50
D (mm)	4	4	4	4	4
Weight (g)	0.7	1.6	2.6	3.7	4.7

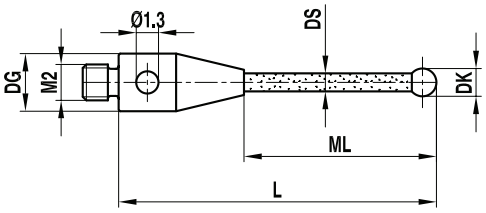


M2 styli, adaptors and accessories for Zeiss analog probe systems

Schematics not shown to scale

Ceramic styli, stainless steel base, ceramic stem, ruby ball

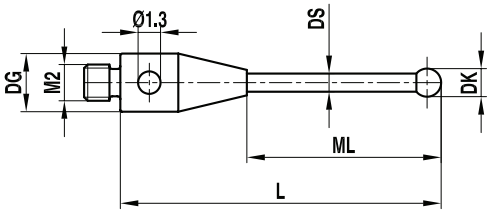
Part number	A-5555-0278	A-5555-0279
Zeiss order number	602030-8002	602030-8004
DK (mm)	6	5
L (mm)	13	22.5
DG (mm)	3	3
ML (mm)	9	16.5
DS (mm)	2	2
Weight (g)	1	1



Tungsten carbide styli, stainless steel base, tungsten carbide stem, ruby ball

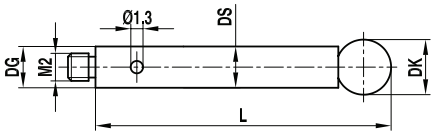
Part number	A-5555-0308	A-5555-0309	A-5555-0282	A-5555-0310	A-5555-0311	A-5003-3822	A-5003-0938	A-5555-0312
Zeiss order number	602030-8006	602030-8007	602030-8001	602030-8008	602030-8009	602030-8005	602030-8003	602030-8015
DK (mm)	1	1	2	2	2	2	3	4
L (mm)	10.5	15.5	11	11	16	21	21.5	12
DG (mm)	3	3	3	3	3	3	3	3
ML (mm)	6.5	11.5	5	7	12	15	15.5	8
DS (mm)	0.8	0.8	1	1	1	1	1.5	2.5
Weight (g)	0.3	0.3	1	1	1	1	1	1

Part number	A-5555-0313	A-5555-0283
Zeiss order number	602030-8016	602030-8034
DK (mm)	4	5
L (mm)	22	22.5
DG (mm)	3	3
ML (mm)	18	16.5
DS (mm)	2.5	2
Weight (g)	1	1



Steel styli, stainless steel base and stem, ruby ball

Part number	A-5555-0314	A-5555-0315	A-5555-0316
Zeiss order number	602030-8017	602030-8018	602030-8019
DK (mm)	6	6	8
L (mm)	13	28	13
DS (mm)	3	3	3
DG (mm)	3	3	3
Weight (g)	0.9	1.8	2



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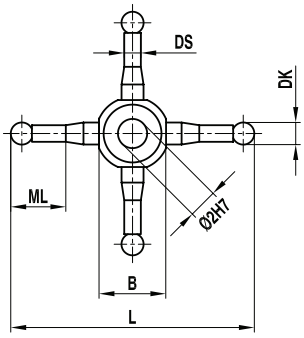
Star styli, stainless steel cube base and stem, ruby ball

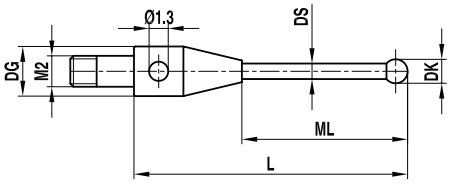
Schematics not shown to scale.

Part number	A-5555-0294	A-5555-0295
Zeiss order number	602030-8011	602030-8010
DK (mm)	2	2
L (mm)	32	22
ML (mm)	9.5	4.5
DS (mm)	1.4	1.4
B (mm)	5.5	5.5
Weight (g)	1	1



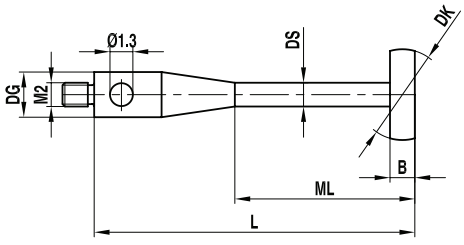
Styli for star configuration, stainless steel base and stem, ruby ball

Part number	A-5555-0296
Zeiss order number	602030-8012
DK (mm)	2
L (mm)	19.5
DG (mm)	3
ML (mm)	13.5
DS (mm)	1.5
Weight (g)	1



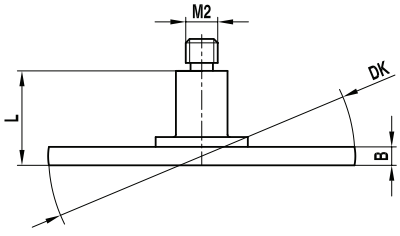
Spherical disk styli, stainless steel base, tungsten carbide stem, ceramic disk

Part number	A-5555-0297	A-5555-0298
Zeiss order number	602030-8201	602030-8202
DK (mm)	8	4
L (mm)	32	32
DG (mm)	3	3
ML (mm)	19	19
DS (mm)	1.5	1
B (mm)	1.5	1
Weight (g)	1	1



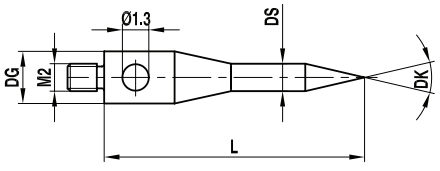
Spherical disk styli, stainless steel base and stem, ceramic disk

Part number	A-5555-0299	A-5555-0300
Zeiss order number	602030-8203	602030-8204
DK (mm)	14	20
L (mm)	5.5	5.5
B (mm)	2	2.5
Weight (g)	1	3



Pointer styli, stainless steel base, cone point, tungsten carbide

Part number	A-5555-0317	A-5555-0318
Zeiss order number	602030-8342	602030-8343
L (mm)	10	10
DG (mm)	3	3
DS (mm)	1.5	1.5
DK	30°	60°
Weight (g)	1	1



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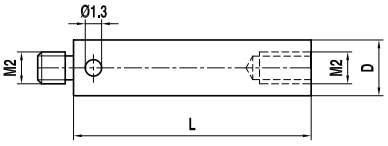
Stainless steel extension

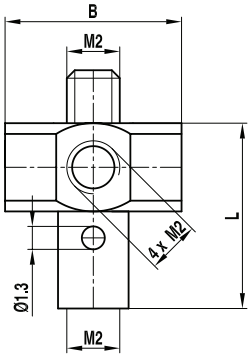
Schematics not shown to scale

Part number	A-5004-7610	A-5004-7585	A-5004-7586	A-5004-7591	A-5004-7611
Zeiss order number	602030-8321	602030-8322	602030-8323	602030-8324	602030-8325
L (mm)	5	10	20	30	40
D (mm)	3	3	3	3	3
Weight (g)	0.2	0.5	1	1.4	2.2



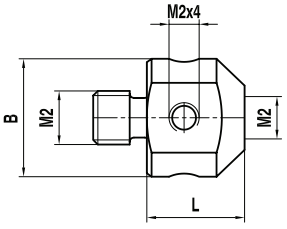
5-way holder, rotary, stainless steel

Part number	A-5000-3627
Zeiss order number	602030-8381
L (mm)	7.5
B (mm)	7
Weight (g)	1.2



5-way holder, stainless steel

Part number	A-5555-0319	A-5555-0320
Zeiss order number	602030-9104	602030-9103
L (mm)	9.1	5.4
D (mm)	10.5	7
Weight (g)	3.4	1



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Renishaw tools and accessories for the assembly of M2, M3 and M5 styli to Zeiss measuring probe heads

Schematics not shown to scale

Stylus tool (M2 and M3 styli)

Part number	A-5555-0233
Zeiss order number	602030-0001
DK (mm)	1.2
L (mm)	23
Weight (g)	1

Allen keys DIN 911

Part number	A-5555-0234	A-5555-0235	A-5555-0236
Zeiss order number	602030-0002	602030-0042	602030-0021
B (mm)	SW1.5	SW0.9	SW2.5
Weight (g)	1	1	2

Tool kit

Part number	A-5555-0237
Zeiss order number	600341-8595

consisting of:

	1 x offset screwdriver DIN 911-2	1 x offset screwdriver DIN 911-3	1 x offset screwdriver DIN 911-4	2 x pin-type spanner 2.9 mm	1 x single-headed spanner DIN 894
DK (mm)	–	–	–	2.9	–
L (mm)	–	–	–	70	–
D (mm)	–	–	–	5	–
B	SW2	SW3	SW4	–	SW13
Weight (g)	1	5	10	15 each	39

Stylus tool kit (2 × pin-type spanners 2.9 mm for M5)

Part number	A-5555-0238
Zeiss order number	600341-8596
DK (mm)	2.9
L (mm)	70
D (mm)	5
Weight (g)	15

Stylus tool 1.7 mm for M5

Part number	A-5555-0239
Zeiss order number	602030-0027
DK (mm)	1.7
L (mm)	49
D (mm)	2.5
Weight (g)	1

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Pin-type spanner 2.9 mm for M5

Part number	A-5555-0240
Zeiss order number	602030-0222
DK (mm)	2.9
L (mm)	70
D (mm)	5
Weight (g)	7.5

Assortment of screws

Part number	A-5555-0241
Zeiss order number	600341-8590
Weight (g)	27

Includes:

10 spring-lock washers FS 5x7
2 cheese-head screws M5x12
2 cheese-head screws M5x20
4 grub screws 10 mm long
2 grub screws 25 mm long

Spring-lock washers

Part number	A-5555-0242
Zeiss order number	600341-0042

Includes:

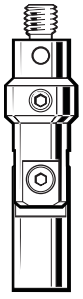
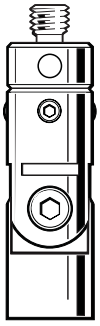
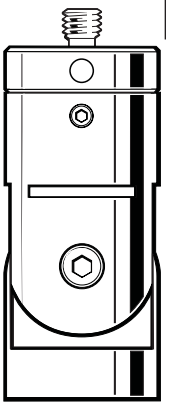
10 x FS 5.7 spring-lock washers

C spanners DIN 1810

Part number	A-5555-0243	A-5555-0244
Zeiss order number	602030-0045	602030-0044
DK (mm)	11	21

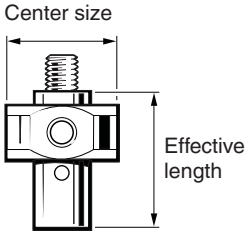
Accessories

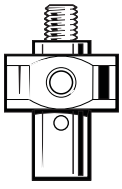
Stylus knuckles

Part number	A-5000-7534	A-5003-4697	A-5000-9902 Rotary	A-5000-7616	A-5003-4686 Rotary	A-5003-4689 Rotary	* A-5003-5278 Rotary	A-5003-5279 Rotary
Thread size	M2	M2	M2	M3	M3	M4	M5	M5
Effective length mm (in.)	8.0 (0.32)	13.5 (0.54)	16.5 (0.65)	12.0 (0.48)	17.0 (0.67)	33.0 (1.30)	36.5 (1.44)	46.5 (1.84)
Center offset mm (in.)	4.5 (0.18)	N/A	N/A	6.0 (0.24)	N/A	N/A	N/A	N/A
Mass grams	1.6	1.1	1.3	3.7	1.5	9.8	16.5	64.9
								

* Not for use with SP80

Stylus centers



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)
Center size mm (in.)	7.5 (0.30)	7.0 (0.28)	10.0 (0.40)	15.0 (0.60)
Mass grams	1.1	0.8	3.6	12.1
				

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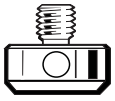
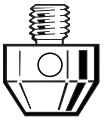
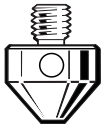
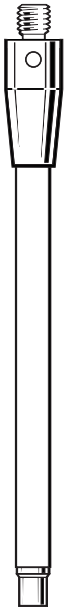
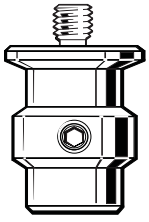
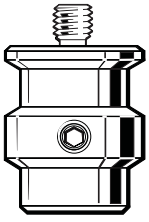
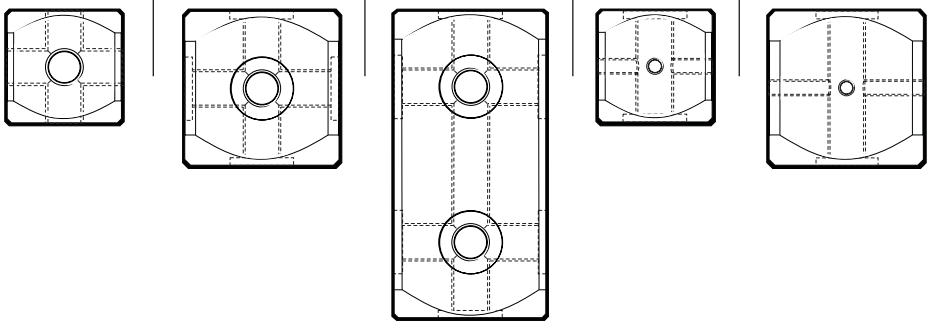
Adaptors

Part number	A-5004-7593 Stainless steel	A-5004-7592 Stainless steel	A-5004-7595 Stainless steel	A-5004-7597 Stainless steel	A-5004-7596 Stainless steel	A-5004-7613 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 grams	0.4	0.6	1.5	1.4	3.2	6.0	4.6	5.0
								

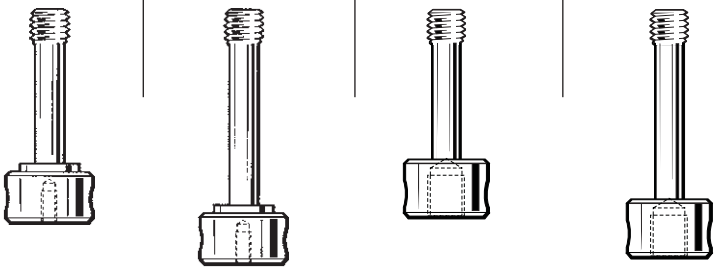
Part number	A-5555-0226 Stainless steel	A-5000-7751 Ceramic	A-5004-7612 Stainless steel	A-5000-7752 Ceramic	A-5000-7753 Ceramic	A-2054-4657 Stainless steel	A-5000-9302 Stainless steel	A-5000-9303 Stainless steel
Male/female thread	M5/M2	M4/M3	TF6/M3	M4/M3	M4/M3	M4/Ø4.5	M5/Ø8.0	M5/Ø10.0
Length mm (in.)	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 grams	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 grams	12.85	32.55	63.50	13.75	35.18

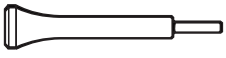


Part number	A-5003-5679 Stainless steel	A-5003-5678 Stainless steel	A-5003-5677 Stainless steel	A-5003-5676 Stainless steel
Thread size	M5 – M2	M5 – M2	M5	M5
Length mm (in.)	28.0 (1.11)	33.0 (1.30)	28.0 (1.11)	33.0 (1.30)
Mass grams	6.7	7.1	6.0	6.4

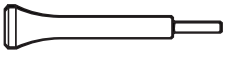


Stylus tools

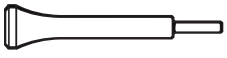
A-5004-7582
For M2 and M3
threaded styli



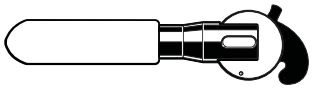
A-5004-7587
For M4
threaded styli



A-5004-7614
For M5
threaded styli



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

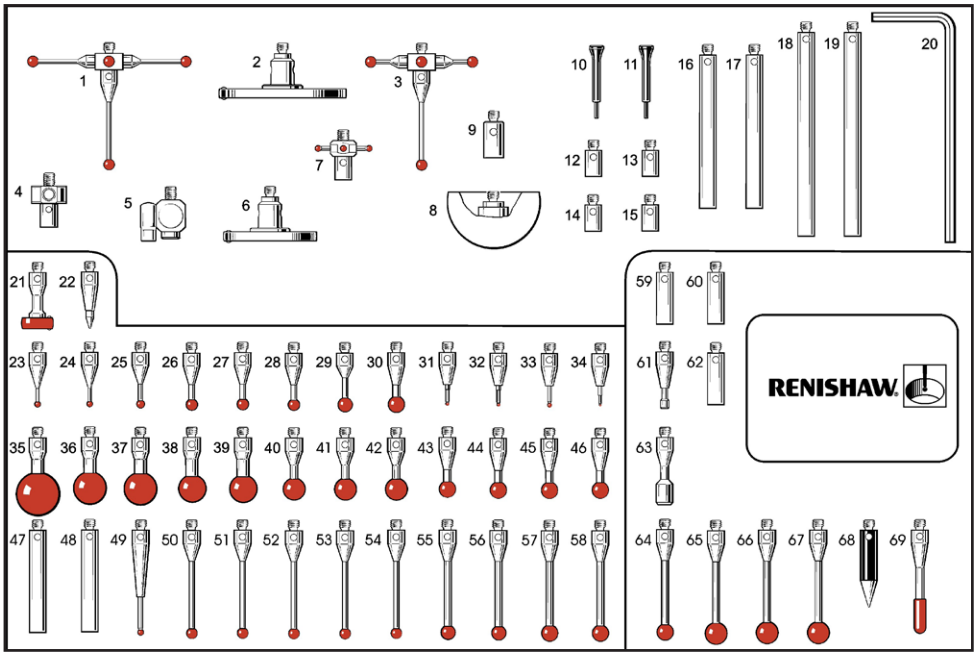


These tools are designed to fit styli to Renishaw probes without causing any internal damage.

Stylus kits

M2 comprehensive stylus kit

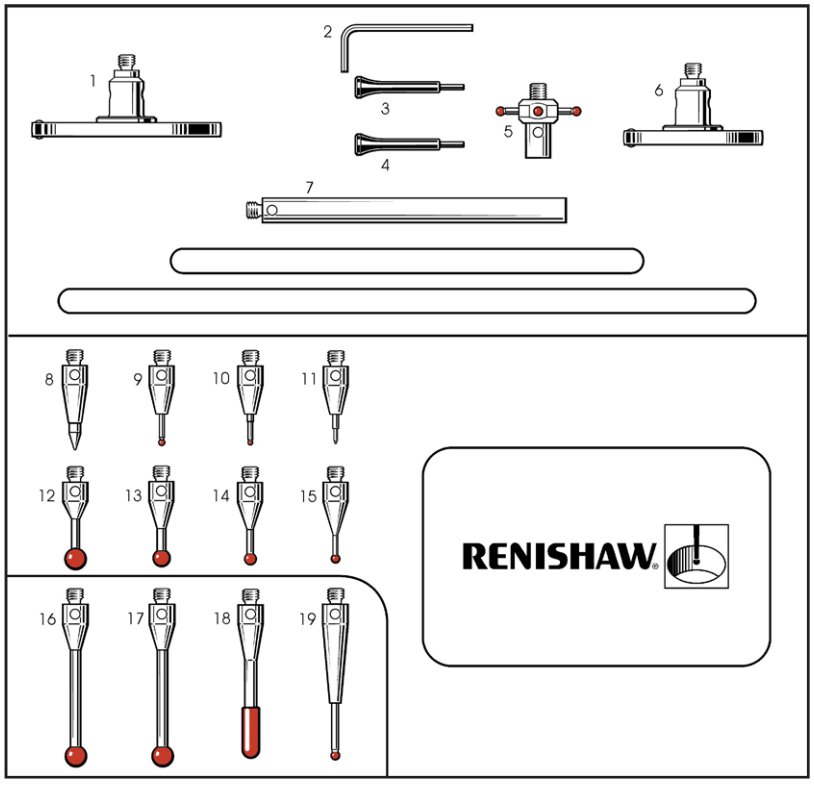
A-5000-0001



Position	Part number	Description
1	A-5000-3626	M2 STR D2 5BALL L19.2 S30
2	A-5000-7810	M2 DSC D25SLVS T1.5 L8.6 BR-Y2.5
3	A-5000-7629	M2 STR D2 5BALL L19.2 S18
4	A-5000-3627	M2 ACC CENTER 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 L7.5T S10
8	A-5000-3614	M2 HEM D18CE
9	A-5004-7593	M2-M3 EXT L7SS
10-11	A-5004-7582	M2-M3 STYLUS TOOL
12-15	A-5004-7610	M2 EXT L5 D3SS
16-17	A-5004-7591	M2 EXT L30 D3SS
18-19	A-5004-7611	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 EWL7.5 D1.5SS
47-48	A-5004-7586	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 EWL16.5 D1.4SS
57-58	A-5000-4160	M2 STY D3R L20 EWL17.5 D1.5SS
59-60	A-5004-7585	M2 EXT L10 D3SS
61	A-5004-7589	M2 CYL D1.5SLVS L11 EWL1.5
62	A-5004-7585	M2 EXT L10 D3SS
63	A-5004-7590	M2 CYL D3SLVS L13 EWL3.8
64	A-5000-4160	M2 STY D3R L20 EWL17.5 D1.5SS
65-67	A-5000-4161	M2 STY D4R L20 EWL20 D1.5SS
68	A-5004-7588	M2 PNT D3SLVS 30DEG L15
69	A-5000-7812	M2 SPH D2R L20 EWL7.2 SS

M2 stylus enhancement kit

A-5000-0002



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	A-5004-7582	M2-M3 STYLUS TOOL
5	A-5000-7811	M2 STR D1 4BALL L7.5T S10
6	A-5000-7809	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
7	A-5004-7611	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 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 EWL16.5 d1.4SS
18	A-5000-7812	M2 SPH D2R L20 EWL7.2 SS
19	A-5000-7808	M2 STY D1R L20 EWL7 d0.7TC

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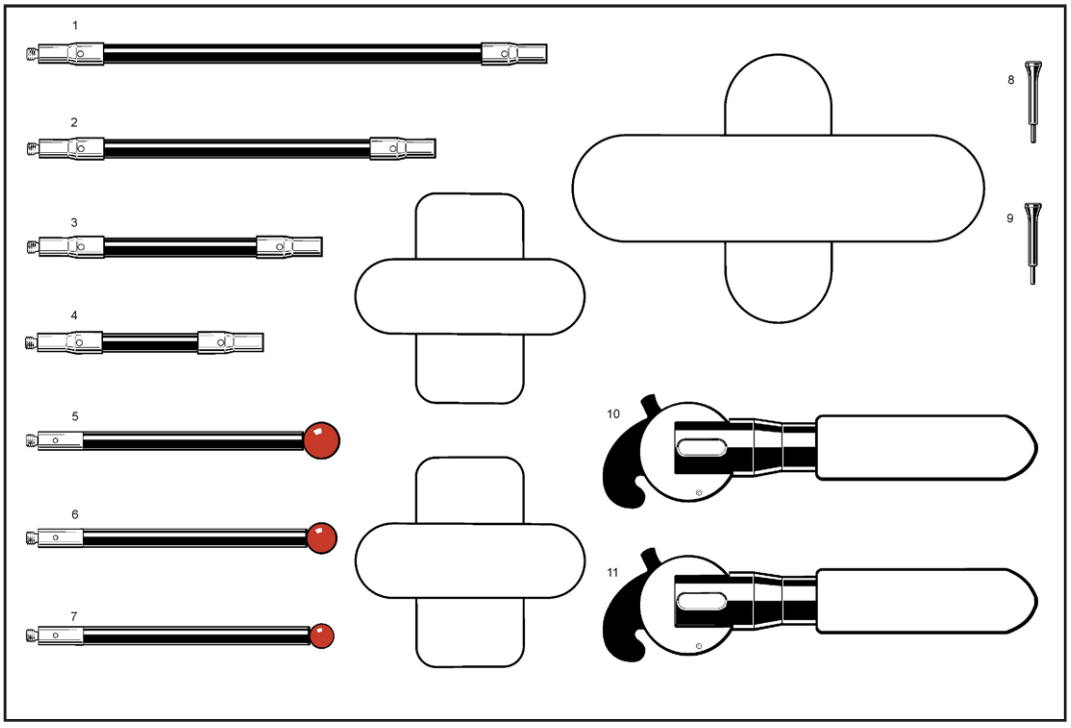
M2 high performance kit

A-5003-2310



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	A-5004-7582	M2-M3 STYLUS TOOL
10-11	A-5003-2300	M2 STYLUS TOOL CF RANGE

Stylus kit for M2 probes

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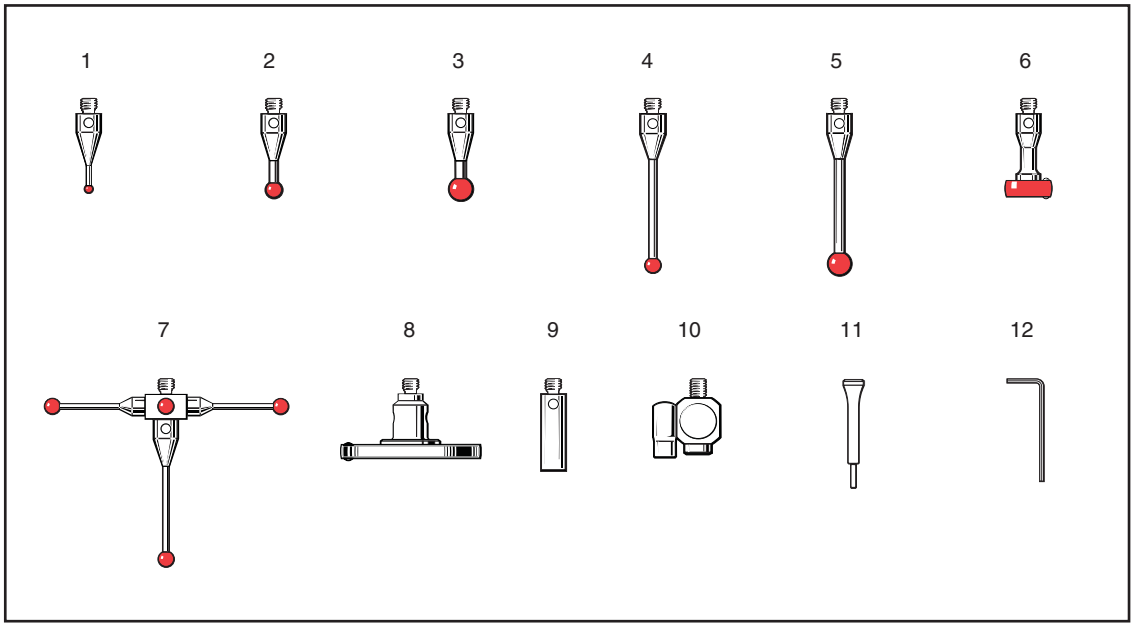
A-6560-7522



Position	Part number	Quantity	Description
1	A-5000-7806	1	M2 STY D1R L10 EWL4.5 d0.7SS
2	A-5000-7807	1	M2 STY D2R L10 EWL6 d1SS
3	A-5000-3604	1	M2 STY D3R L10 EWL7.5 d1.5SS
4	A-5000-3603	1	M2 STY D2R L20 EWL14 d1.4SS
5	A-5000-4160	1	M2 STY D3R L20 EWL17.5 d1.5SS
6	A-5000-3611	1	M2 DSC D6R T1.2 L10 BR-Y2
7	A-5000-3626	1	M2 STR D2 5BALL L19.2 S30
8	A-5000-7809	1	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
9	A-5004-7585	2	M2 EXT L10 d3SS
10	A-5000-7534	1	M2 ACC KNUCKLE OFFSET
11	A-5004-7582	2	M2-M3 STYLUS TOOL
12	P-TL01-0150	1	S3 HEX WRENCH 1.5 MM A/F
13	M-5000-3541	1	S8 TP2 SPANNER (not pictured)
14	A-1015-7658	1	TP2 & STYLI BOX (not pictured)

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Stylus kit for M2 probes

A-6560-7565

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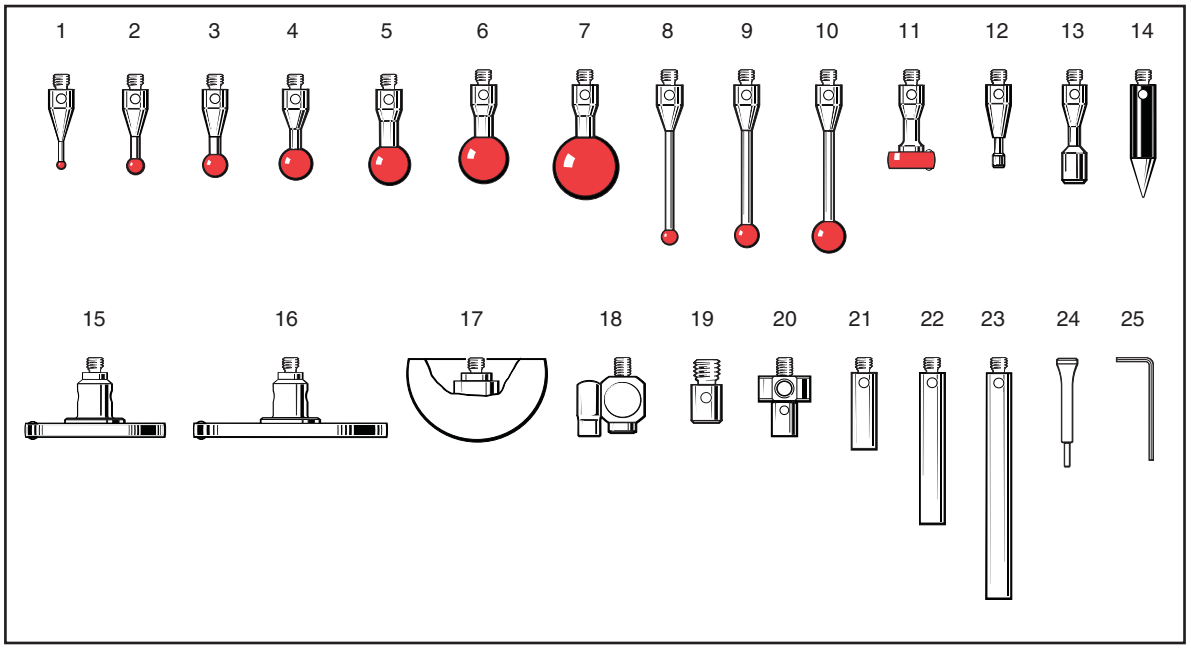

Position	Part number	Quantity	Description
1	A-5000-7806	1	M2 STY D1R L10 EWL4.5 d0.7SS
2	A-5000-7807	1	M2 STY D2R L10 EWL6 d1SS
3	A-5000-3604	1	M2 STY D3R L10 EWL7.5 d1.5SS
4	A-5000-4154	1	M2 STY D4R L10 EWL10 d1.5SS
5	A-5000-4155	1	M2 STY D5R L10 EWL10 d2.5SS
6	A-5000-4156	1	M2 STY D6R L10 EWL10 d2.5SS
7	A-5000-4158	1	M2 STY D8R L11 EWL11 d2.5SS
8	A-5000-3603	1	M2 STY D2R L20 EWL14 d1.4SS
9	A-5000-4160	1	M2 STY D3R L20 EWL17.5 d1.5SS
10	A-5000-4161	1	M2 STY D4R L20 EWL20 d1.5SS
11	A-5000-3611	1	M2 DSC D6R T1.2 L10 BR-Y2
12	A-5004-7589	1	M2 CYL D1.5SLVS L11 EWL1.5
13	A-5004-7590	1	M2 CYL D3SLVS L13 EWL3.8
14	A-5004-7588	1	M2 PNT D3SLVS 30deg L15
15	A-5000-7809	1	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
16	A-5000-7810	1	M2 DSC D25SLVS T1.5 L8.6 BR-Y2.5
17	A-5000-3614	1	M2 HEM D18CE
18	A-5000-7534	1	M2 ACC KNUCKLE OFFSET
19	A-5004-7592	1	M3-M2 EXT L5SS
20	A-5000-3627	1	M2 ACC Center 5WAY
21	A-5004-7585	2	M2 EXT L10 d3SS
22	A-5004-7586	2	M2 EXT L20 d3SS
23	A-5004-7591	2	M2 EXT L30 d3SS
24	A-5004-7582	2	M2-M3 STYLUS TOOL
25	P-TL01-0150	1	S3 HEX WRENCH 1.5 MM A/F
26	M-5000-3541	1	S8 TP2 SPANNER (not pictured)
27	A-1015-7749	1	COMP BOX ASSEMBLY (not pictured)

Stylus kit for M2 probes

A-6560-7524

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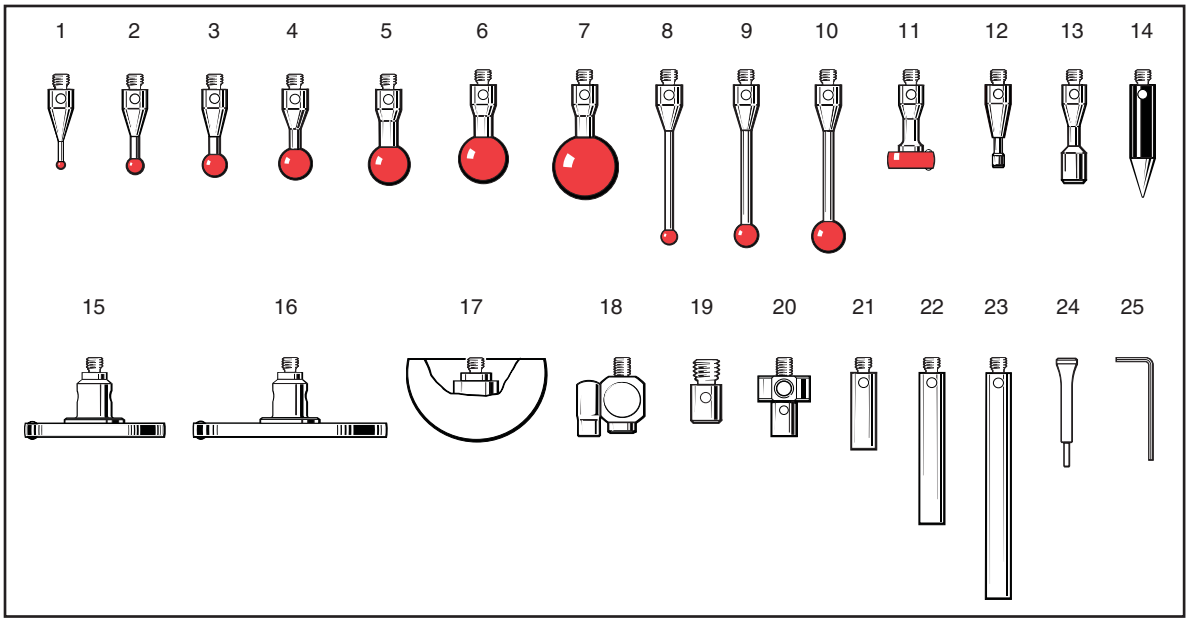

Position	Part number	Quantity	Description
1	A-5000-7806	5	M2 STY D1R L10 EWL4.5 d0.7SS
2	A-5000-7807	3	M2 STY D2R L10 EWL6 d1SS
3	A-5000-3604	5	M2 STY D3R L10 EWL7.5 d1.5SS
4	A-5000-4154	3	M2 STY D4R L10 EWL10 d1.5SS
5	A-5000-4155	2	M2 STY D5R L10 EWL10 d2.5SS
6	A-5000-4156	2	M2 STY D6R L10 EWL10 d2.5SS
7	A-5000-4158	1	M2 STY D8R L11 EWL11 d2.5SS
8	A-5000-3603	5	M2 STY D2R L20 EWL14 d1.4SS
9	A-5000-4160	3	M2 STY D3R L20 EWL17.5 d1.5SS
10	A-5000-4161	3	M2 STY D4R L20 EWL20 d1.5SS
11	A-5000-3611	1	M2 DSC D6R T1.2 L10 BR-Y2
12	A-5004-7589	1	M2 CYL D1.5SLVS L11 EWL1.5
13	A-5004-7590	1	M2 CYL D3SLVS L13 EWL3.8
14	A-5004-7588	1	M2 PNT D3SLVS 30deg L15
15	A-5000-7809	1	M2 DSC D18SLVS T1.5 L8.6 BR-Y2.5
16	A-5000-7810	1	M2 DSC D25SLVS T1.5 L8.6 BR-Y2.5
17	A-5000-3614	1	M2 HEM D18CE
18	A-5000-7534	1	M2 ACC KNUCKLE OFFSET
19	A-5004-7592	1	M3-M2 EXT L5SS
20	A-5000-3627	3	M2 ACC Center 5WAY
21	A-5004-7585	3	M2 EXT L10 d3SS
22	A-5004-7586	2	M2 EXT L20 d3SS
23	A-5004-7591	2	M2 EXT L30 d3SS
24	A-5004-7582	2	M2-M3 STYLUS TOOL
25	P-TL01-0150	1	S3 HEX WRENCH 1.5 MM A/F
26	M-5000-3541	1	S8 TP2 SPANNER (not pictured)
27	A-1015-7749	1	COMP BOX ASSEMBLY (not pictured)

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

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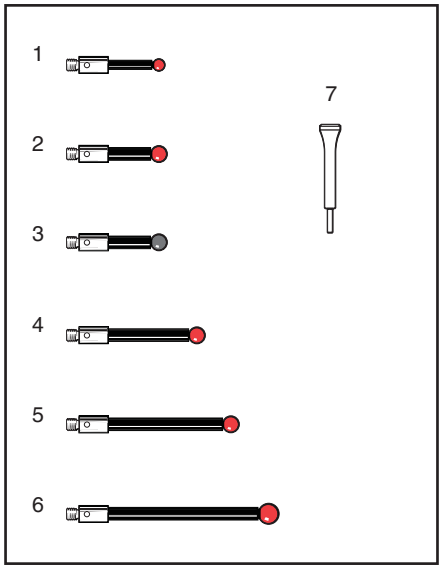

Position	Part number	Description
1	A-5003-5970	M3 STY D3R L21 EWL13.5 d2CF
2	A-5003-5971	M3 STY D4R L21 EWL13.5 d3CF
3	A-5003-5977	M3 STY D4SIN L21 EWL13.5 d3CF
4	A-5003-5972	M3 STY D4R L31 EWL23.5 d3CF
5	A-5003-5973	M3 STY D4R L40 EWL32.5 d3CF
6	A-5003-5974	M3 STY D5R L50 EWL42.5 d3CF
7	A-5004-7582	M2-M3 STYLUS TOOL

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

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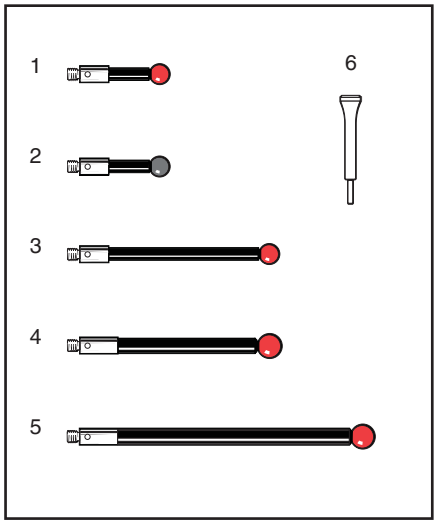

Position	Part number	Description
1	A-5003-5975	M3 STY D5R L21 EWL13.5 d3CF
2	A-5003-5978	M3 STY D5SIN L21 EWL13.5 d3CF
3	A-5003-5974	M3 STY D5F L50 EWL42.5 d3CF
4	A-5003-5976	M3 STY D6R L50 EWL50 d4CF
5	A-5003-4860	M3 STY D6R L75 EWL75 d4CF
6	A-5004-7582	M2-M3 STYLUS TOOL

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

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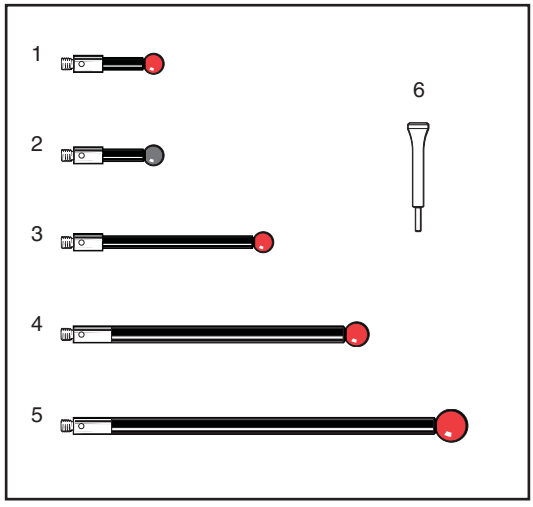

Position	Part number	Description
1	A-5003-5975	M3 STY D5R L21 EWL13.5 d3C/F
2	A-5003-5978	M3 STY D5SIN L21 EWL13.5 d3C/F
3	A-5003-5974	M3 STY D5R L50 EWL42.5 d3C/F
4	A-5003-4860	M3 STY D6R L75 EWL75 d4C/F
5	A-5003-4863	M3 STY D8R L100 EWL100 d4C/F
6	A-5004-7582	M2-M3 STYLUS TOOL

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

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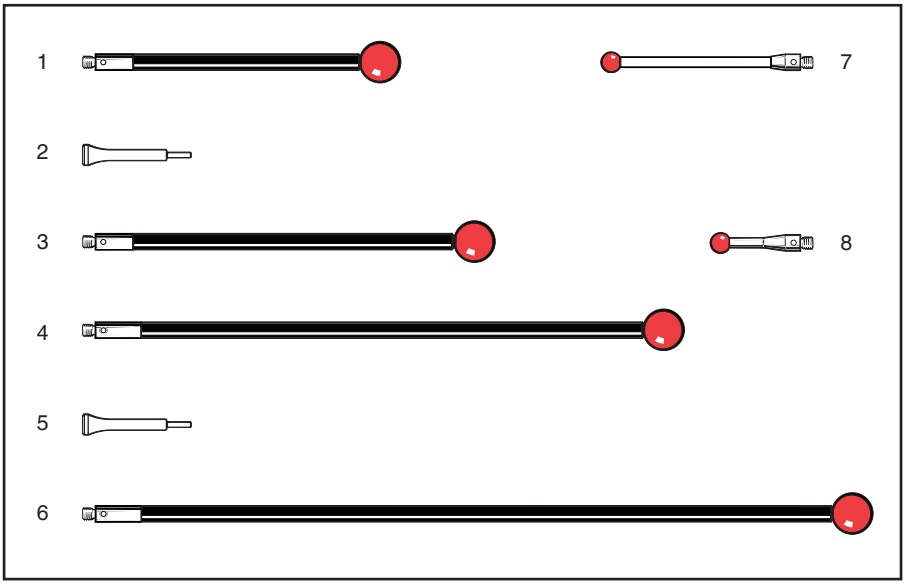

Position	Part number	Description
1	A-5003-7057	M3 STY D10R L25 EWL75 d4C/F
2	A-5004-7582	M2-M3 STYLUS TOOL
3	A-5003-7056	M3 STY D10R L100 EWL100 d4C/F
4	A-5003-7055	M3 STY D10R L150 EWL150 d4C/F
5	A-5004-7582	M2-M3 STYLUS TOOL
6	A-5003-7054	M3 STY D10R L200 EWL200 d4C/F
7	A-5003-0069	M3 STY D5R L50 EWL50 d2.5CER
8	A-5000-7630	M3 STY D5R L21 EWL21 d2.5SS

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Stylus kit for M3 probes

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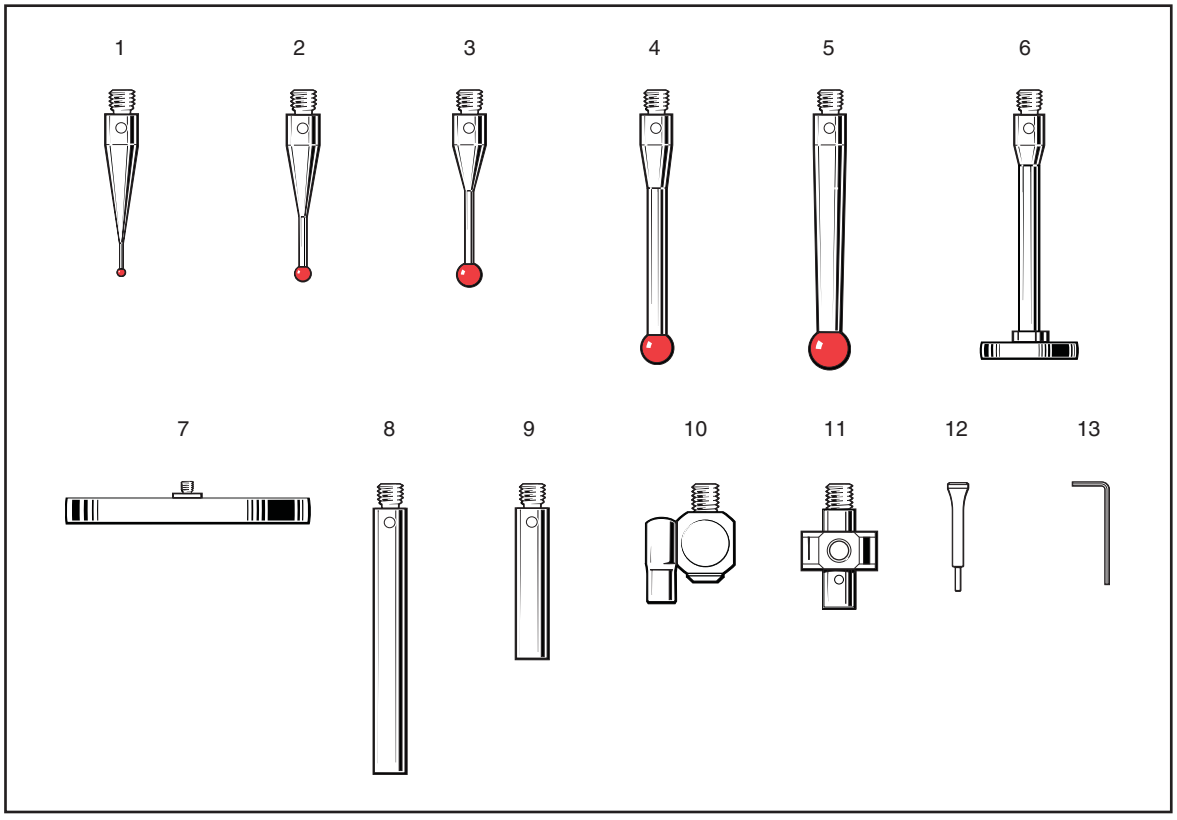
A-6560-7523



Position	Part number	Quantity	Description
1	A-5000-3551	1	M3 STY D1R L21 EWL4 d0.6SS
2	A-5000-3552	1	M3 STY D2R L21 EWL8 d1.4SS
3	A-5000-3553	1	M3 STY D3R L21 EWL12 d1.5SS
4	A-5000-3554	5	M3 STY D4R L31 EWL27 d2.5SS
5	A-5000-7648	1	M3 STY D5R L31 EWL31 d3.5SS
6	A-5000-3615	1	M3 DSC D12.7SLVS T2 L30.8 BR-N
7	A-5000-7669	1	M3 DSC D63.5CS T6 L4 BR-N
8	A-5004-7584	1	M3 EXT L35 d4SS
9	A-5004-7583	1	M3 EXT L20 d4SS
10	A-5000-7616	1	M3 ACC KNUCKLE OFFSET
11	A-5000-7610	1	M3 ACC Center 5WAY
12	A-5004-7582	2	M2-M3 STYLUS TOOL
13	P-TL01-0150	1	S3 HEX WRENCH 1.5 MM A/F
14	A-1041-7569	1	SA7 ADAPTOR (not pictured)
15	M-5000-3571	2	STYLUS SHANK ADAPTOR (not pictured)
16	A-1015-7650	1	TP1 STYLI BOX (not pictured)

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Stylus kit 102 for M3 probes

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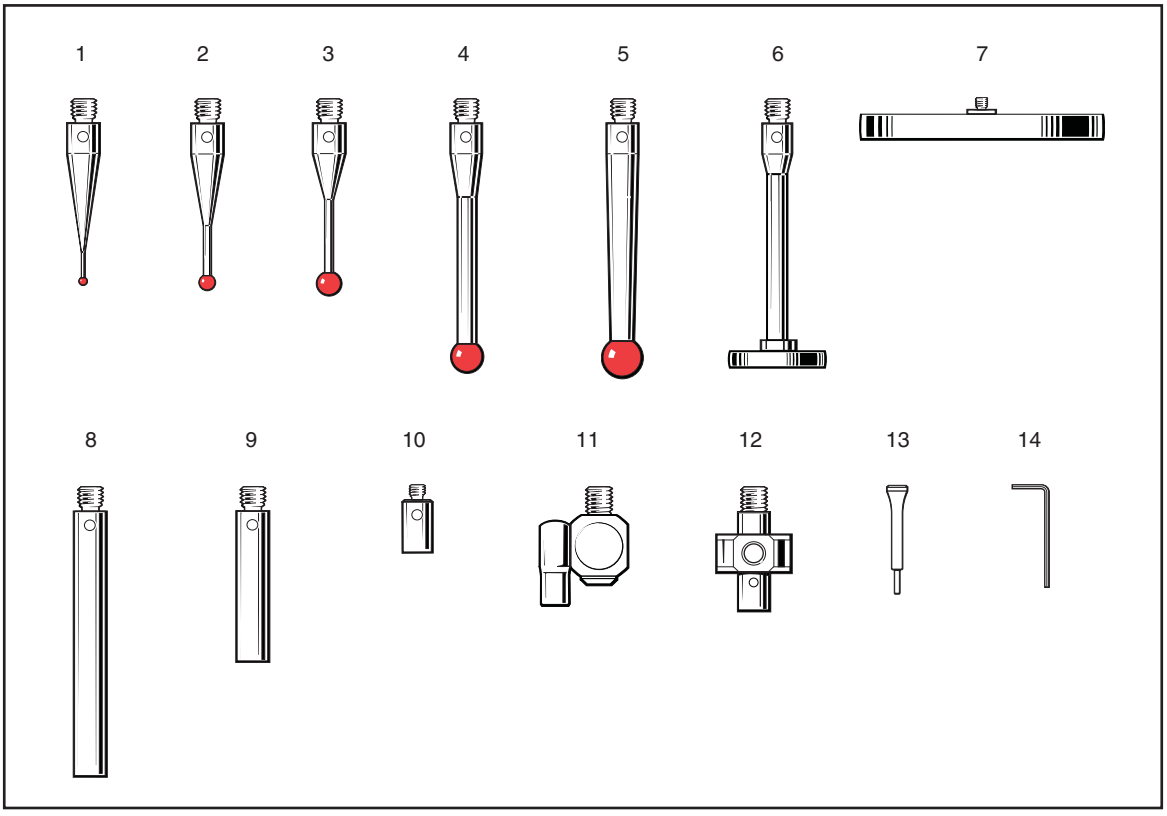

Position	Part number	Quantity	Description
1	A-5000-3551	3	M3 STY D1R L21 EWL4 d0.6SS
2	A-5000-3552	5	M3 STY D2R L21 EWL8 d1.4SS
3	A-5000-3553	3	M3 STY D3R L21 EWL12 d1.5SS
4	A-5000-3554	7	M3 STY D4R L31 EWL27 d2.5SS
5	A-5000-7648	1	M3 STY D5R L31 EWL31 d3.5SS
6	A-5000-3615	1	M3 DSC D12.7SLVS T2 L30.8 BR-N
7	A-5000-7669	1	M3 DSC D63.5CS T6 L4 BR-N
8	A-5004-7584	2	M3 EXT L35 d4SS
9	A-5004-7583	2	M3 EXT L20 d4SS
10	A-5004-7593	1	M2-M3 EXT L7SS
11	A-5000-7616	1	M3 ACC KNUCKLE OFFSET
12	A-5000-7610	2	M3 ACC Center 5WAY
13	A-5004-7582	2	M2-M3 STYLUS TOOL
14	P-TL01-0150	1	S3 HEX WRENCH 1.5 MM A/F
15	A-1041-7569	1	SA7 ADAPTOR (not pictured)
16	M-5000-3571	2	STYLUS SHANK ADAPTOR (not pictured)
17	A-1015-7650	1	TP1 STYLUS BOX (not pictured

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

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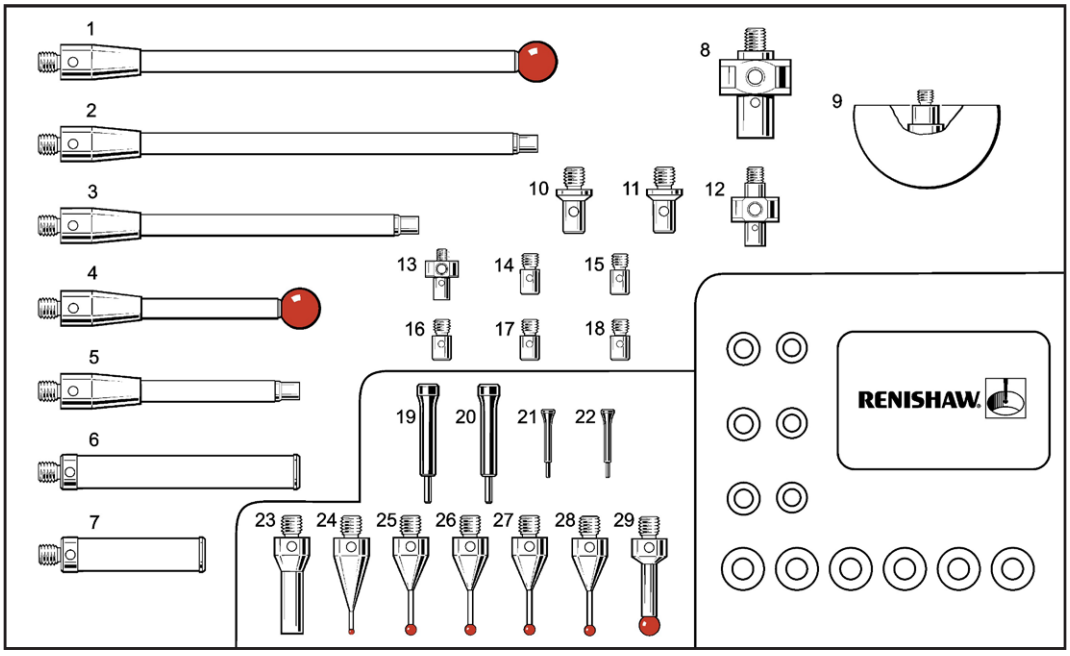

Position	Part number	Description
1	A-5000-7796	M4 STY D8R L100 EWL100 d4.5CE
2	A-5000-7753	M4-M3 EXT L100CE
3	A-5000-7752	M4-M3 EXT L75CE
4	A-5000-7795	M4 STY D8R L50 EWL50 d4.5CE
5	A-5000-7751	M4-M3 EXT L50C
6	A-5000-7755	M4 EXT L50 d7.4CE
7	A-5000-7754	M4 EXT L30 d7.4CE
8	A-5000-7792	M4 ACC Center 5WAY
9	A-5000-7814	M3 HEM D30CE
10-11	A-5004-7597	M4-M3 EXT L9SS
12	A-5000-7610	M3 ACC Center 5WAY
13	A-5000-3627	M2 ACC Center 5WAY
14-18	A-5004-7592	M3-M2 EXT L5SS
19-20	A-5004-7587	M4 STYLUS TOOL
21-22	A-5004-7582	M2-M3 STYLUS TOOL
23	A-5004-7596	M4-M3 EXT L20SS
24	A-5000-7545	M4 STY D1R L19.5 EWL4 d0.7SS
25-28	A-5000-7547	M4 STY D2R L19 EWL8 d1.4SS
29	A-5000-7551	M4 STY D4R L18 EWL13 d3SS

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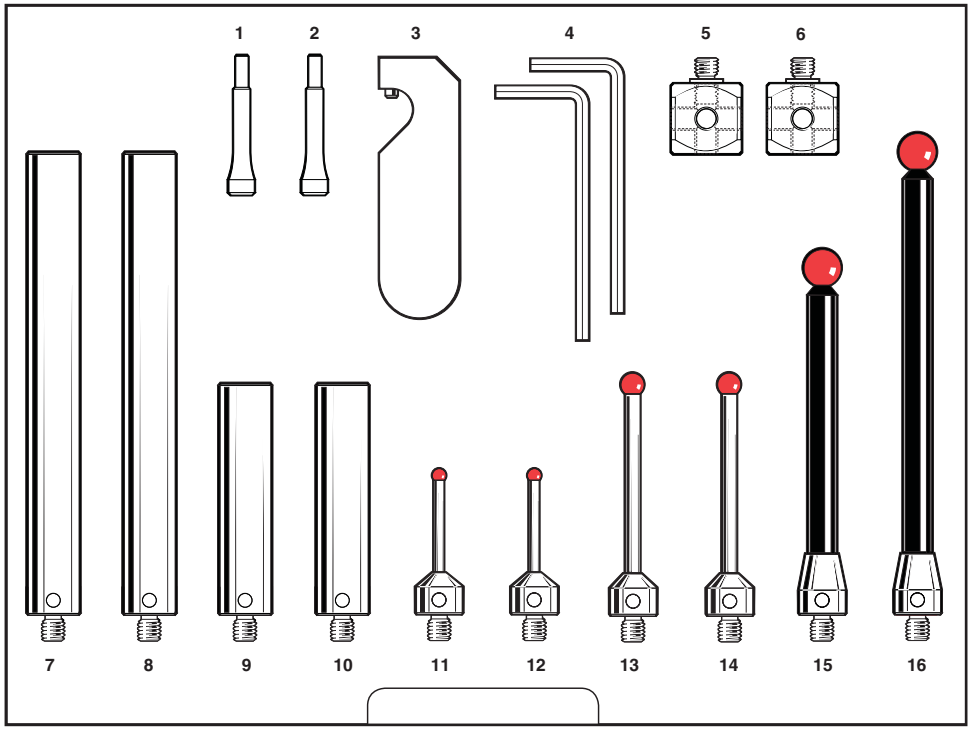
A-5003-6168 M5 stylus kit SP80



Position	Part number	Description
1-2	A-5004-7614	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

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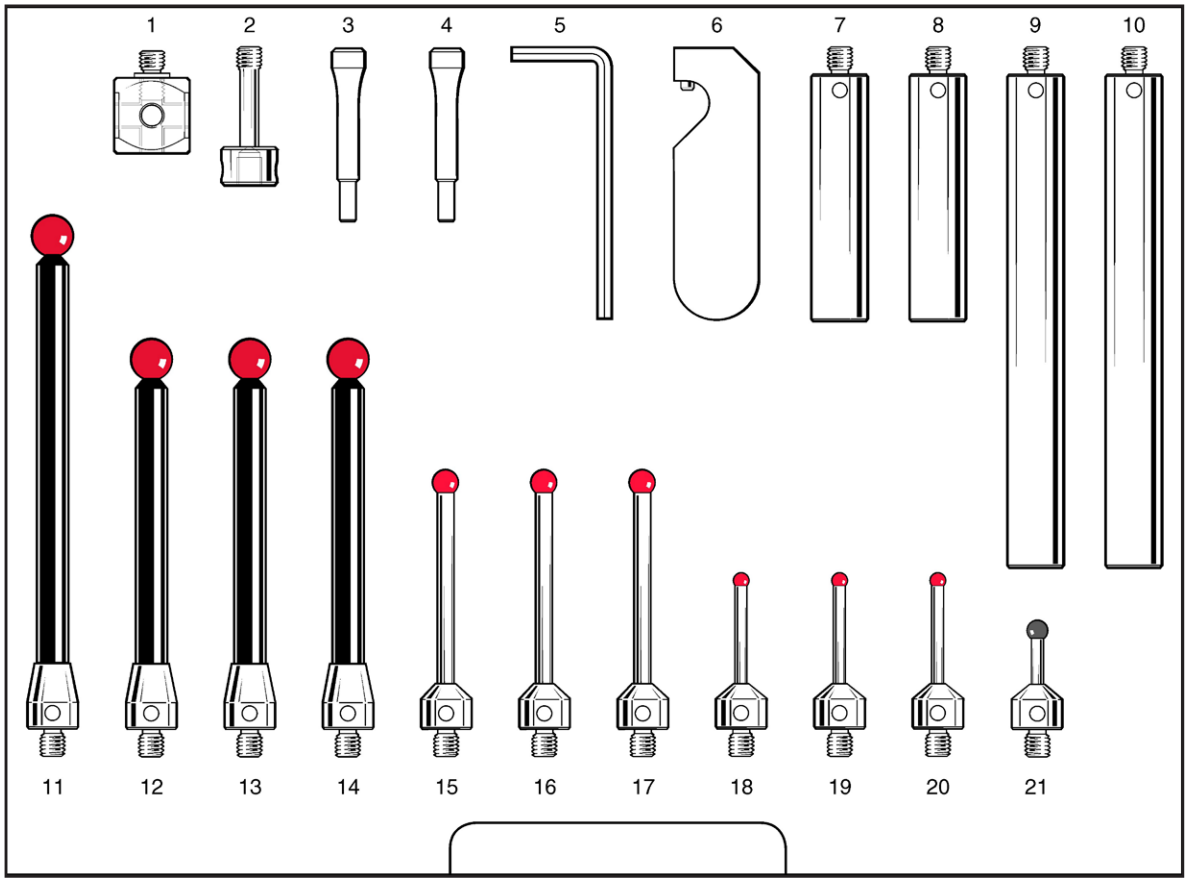

Position	Part number	Description
1	A-5555-0189	M5 ACC 15X15 CUBE
2	A-5003-5677	M5 ACC CUBE BOLT L28
3-4	A-5004-7614	M5 STYLUS TOOL
5	P-TL01-0250	S3 HEX WRENCH 2.5 MM A/F
6	A-5003-6134	M5 ACC D11 EXTENSION TOOL
7-8	A-5555-0670	M5 EXT L50 d11SS
9-10	A-5555-0136	M5 EXT L100 d11SS
11	A-5003-5262	M5 STY D8R L100 EWL87 d6CF
12-14	A-5003-5251	M5 STY D8R L75 EWL62 d6CF
15-17	A-5003-5236	M5 STY D5R L50 EWL41 d3TC
18-20	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
21	A-5003-5733	M5 STY D4SN L20 EWL11 d2TC

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A-5003-5909 M5 stylus kit - comprehensive

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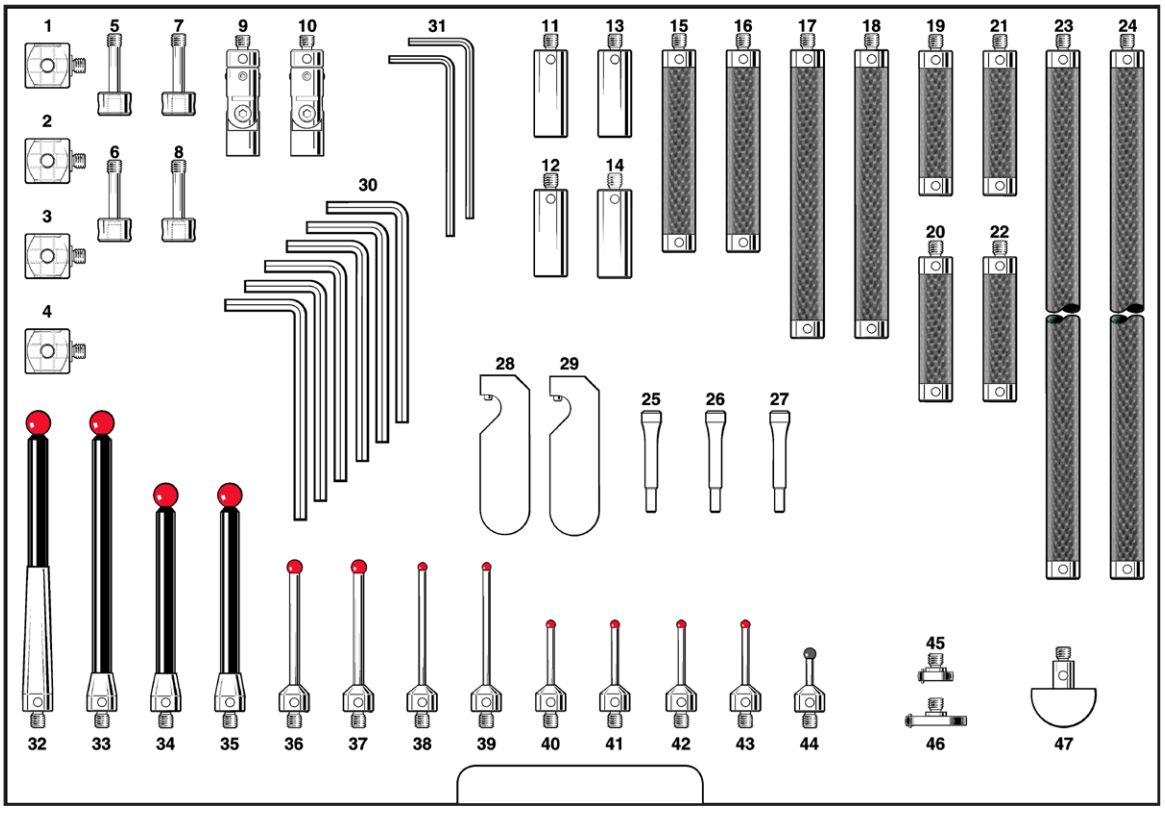

Position	Part number	Description
1-4	A-5555-0189	M5 ACC 15X15 CUBE
5-8	A-5003-5677	M5 ACC CUBE BOLT L28
9-10	A-5003-5278	M5 ACC KNUCKLE d11 ROTARY
11-14	A-5555-0669	M5 EXT L30 d11SS
15-16	A-5555-0623	M5 EXT L70 d11CF
17-18	A-5555-0652	M5 EXT L100 d11CF
19-22	A-5555-0648	M5 EXT L50 d11CF
23-24	A-5555-0654	M5 EXT L200 d11CF
25-27	A-5004-7614	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 EWL87 d6CF
34-35	A-5003-5251	M5 STY D8R L75 EWL62 d6CF
36-37	A-5003-5236	M5 STY D5R L50 EWL41 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 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

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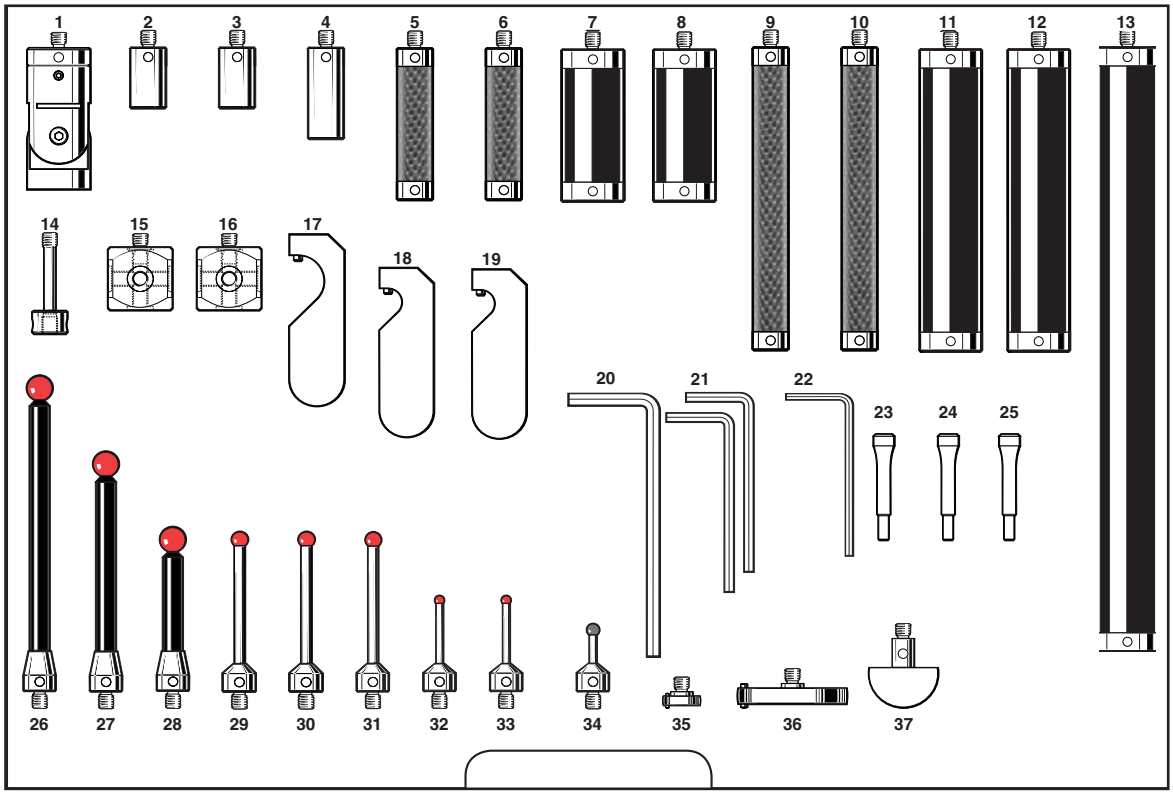

Position	Part number	Description
1	A-5003-5279	M5 ACC KNUCKLE d20 ROTARY
2-3	A-5555-0140	M5 EXT L20 d11SS
4	A-5555-0669	M5 EXT L30 d11SS
5-6	A-5555-0648	M5 EXT L50 d11CF
7-8	A-5555-0671	M5 EXT L50 d20AL
9-10	A-5555-0652	M5 EXT L100 d11CF
11-12	A-5555-0127	M5 EXT L100 d20AL
13	A-5555-0125	M5 EXT L200 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	S3 HEX WRENCH 3.0 MM A/F
21	P-TL01-0250	S3 HEX WRENCH 2.5 MM A/F
22	P-TL01-0150	S3 HEX WRENCH 1.5 MM A/F
23-25	A-5004-7614	M5 STYLUS TOOL
26	A-5003-5262	M5 STY D8R L100 EWL87 d6CF
27	A-5003-5251	M5 STY D8R L75 EWL62 d6CF
28	A-5003-5238	M5 STY D8R L50 EWL37 d6CF
29-31	A-5003-5236	M5 STY D5R L50 EWL41 d3TC
32-33	A-5003-5218	M5 STY D3R L30 EWL21 d2TC
34	A-5003-5733	M5 STY D4SN L20 EWL11 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

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

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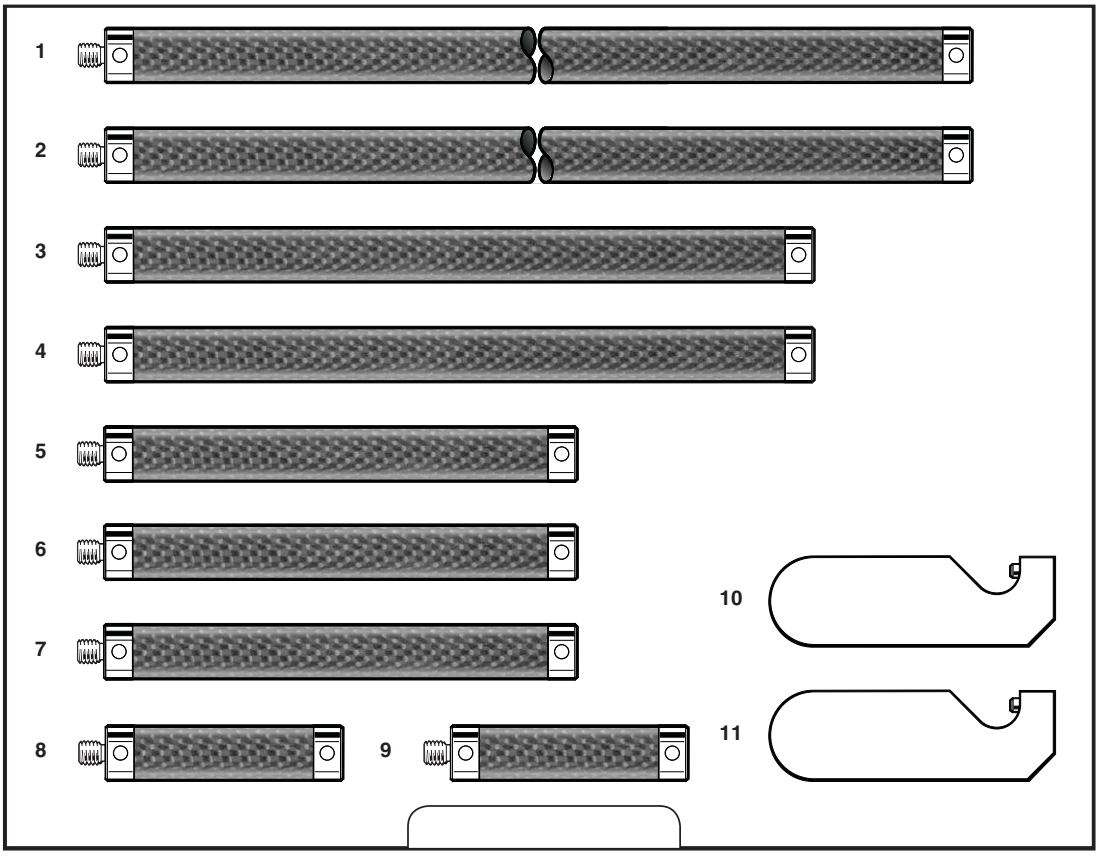
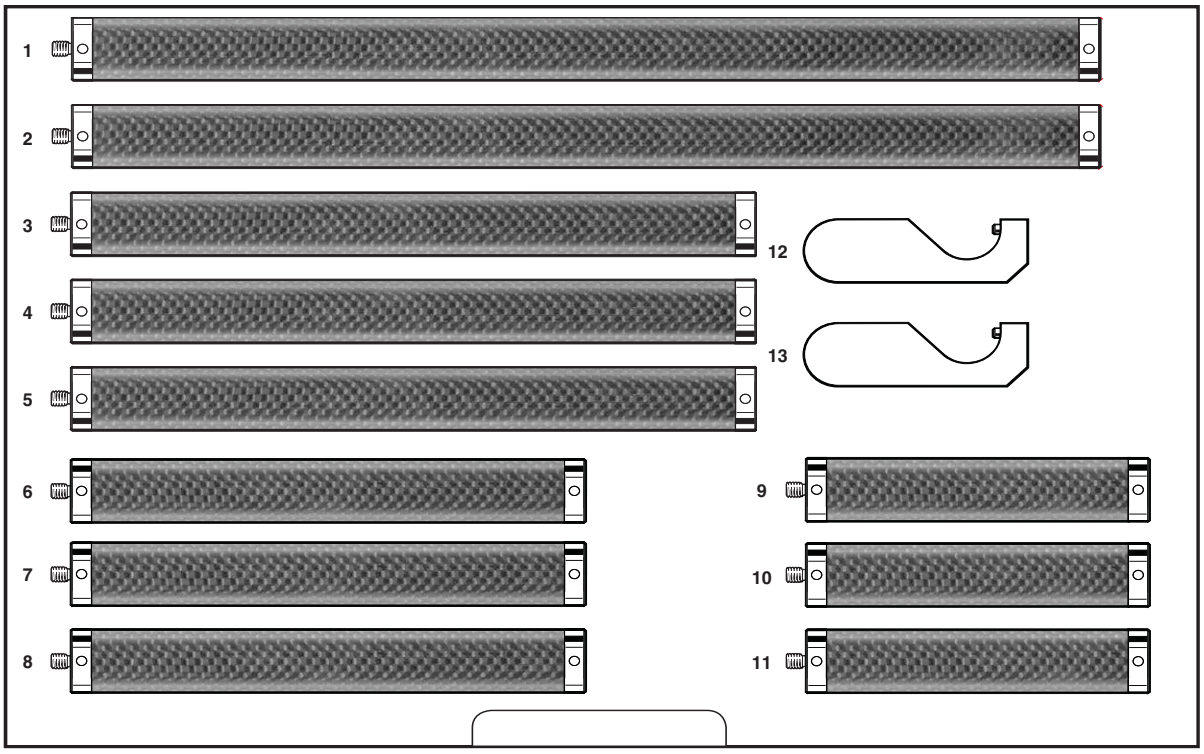


Position	Part number	Description
1-2	A-5555-0654	M5 EXT L200 d11CF
3-4	A-5555-0424	M5 EXT L150 d11CF
5-7	A-5555-0652	M5 EXT L100 d11CF
8-9	A-5555-0648	M5 EXT L50 d11CF
10-11	A-5003-6134	M5 ACC D11 EXTENSION TOOL

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

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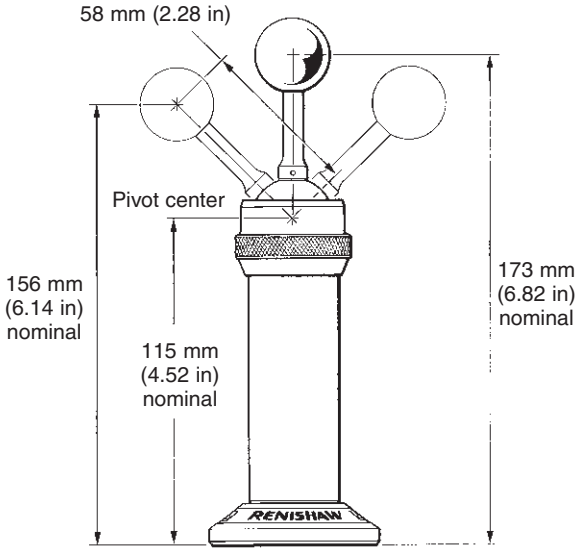
Datum balls

Datum spheres are made from hard-wearing tungsten carbide and come supplied with individual certificates stating ball diameter and roundness. All sphere measurements are performed on equipment traceable to UK (NPL) standards. Grade 3 sphericity balls are used.



Datum sphere kit	Part number	
Ø12 mm datum ball	A-1034-0028	
Ø19 mm datum ball	A-1034-0027	
Ø25 mm datum ball	A-1034-0026	
Ø¾ in datum ball	A-1034-0031	
Ø1 in datum ball	A-1034-0035	

Fixing stud – a fixing stud is required with each kit to attach the pillar to the table surface

Thread size	Part number	
M6 x 1	A-1034-0352	
M8 x 1.25	A-1034-0351	
M10 x 1.5	A-1034-0350	
5/16 - 18 x UNC	A-1034-0354	
3/8 - 16 x UNC	A-1034-0353	

Optional extras

Datum ball	Part number	
Ø12 mm	A-1034-0005	
Ø19 mm	A-1034-0023	
Ø25 mm	A-1034-0002	
Ø¾ in	A-1034-0032	
Ø1 in	A-1034-0036	

Adaptors/extension	Part number	
2 way adaptor	A-1034-0356	
3 way adaptor	A-1034-0357	
Pillar extension 75 mm (2.96 in) long	A-1034-0355	

Gram gage

The gram gage allows the optimum trigger force to be set to maximize probe performance on all standard Renishaw touch trigger probes.

Part number: P-GA01-0001

Overall length	95 mm
Needle length	41 mm
Depth	27 mm
Width	43 mm
Range	4 gram to 35 gram range with 1 gram graduations

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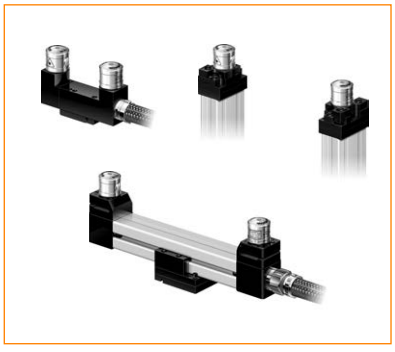
Repair services



Renishaw repair services

Services offered

Repair

Your product is repaired to factory performance specifications, and carries a 3-month warranty.

Repair By Exchange (RBE)

Your product is replaced by a refurbished or as new product, shipped to you once we have received your failed product. RBEs carry a 6-month warranty.

Advance RBE

Your product is replaced by a refurbished or as new product, shipped to you on the same day that you report a fault. Advance RBEs carry a 6-month warranty.

Replace new

Your product is replaced by a new product, carrying a new factory warranty.

Please note:

The services offered on each product vary – please consult the detailed list that follows.

On Advance RBE, in order to get you a replacement product as soon as possible, it is necessary to charge a small additional premium on top of the price of the product to cover additional administration.

Available repair services for Specials are quoted per job.

All the following prices are for guidance only. When units are received with excessive wear and tear, or obsolete product is returned for repair, Renishaw reserves the right to quote a different service/replacement charge.

Advance replacements

Advance replacement is a Renishaw premium service aimed at minimizing your downtime. This service is only available on products where a Repair By Exchange (RBE) service is offered. Through this service we ship an RBE in advance of receipt of your inoperative product.

Please note:

1) A charge applies to each advance replacement.
2) Your inoperative product must be returned to Renishaw within 14 working days of receipt of the advance replacement.
3) Failure to do so will result in an issuance of a non-return invoice in the amount of the difference between the RBE price and the new list price.
4) Return of your inoperative product after the issuance of the non-return invoice will not result in a credit of the non-return invoice, and your inoperative product will be returned to you.
5) Advance replacements sent out under a warranty claim will not be credited if the returned product is damaged, or no fault is found with the returned product.
6) Returns of advance replacements will be accepted if:
   a) they are returned unused, and in the original packaging, within ten working days of invoice date, and
   b) the return has been pre-approved by Renishaw through the issuance of a Return Goods Authorization (RGA) number, and
   c) the return passes Renishaw inspection, and
   d) a re-stocking fee of or 20% is applied, whichever is the greater.

Coordinate Measuring Machine products

Manual probe heads

Description	Check and test	Repair	Repair by exchange	RBE part number
MH20		N/A		A-4043-0024-RBE
MH20i		N/A		A-4099-0022-RBE
MH8		N/A		A-1332-0002-RBE
MIH		N/A		A-1070-0003-RBE
PH1		N/A		A-1049-1795-RBE
PH5		N/A		Replace at new list price
PH6		N/A		Replace at new list price

Motorized and servo positioning heads

Description	Check and test	Calibration	Minor repair	Major repair	Repair by exchange	RBE part number
REVO®					Call for upgrade options	
REVO2					A-	5759-0001-RBE
PH20					A-	5669-0001-RBE
PH9/PH9A					Call for upgrade options to PH10 system	
PH10M					A-	1025-6050-RBE
PH10MQ						A-1036-6001-RBE
PH10T						A-1025-7526-RBE
PH10M Plus						A-5863-1000-RBE
PH10T Plus						A-5863-2000-RBE
PH10MQ Plus						A-5863-3000-RBE

Description	Repair by exchange	RBE part number
PHS-2 RBE	$13,244	A-5795-0001-RBE
PHS	Call for upgrade options to PHS-2	

Controllers

Description	Calibration	Repair	RBE part number
ACC2 (upgrade to ACC2-3)	N/A	N/A	A-6299-0100-RBE
ACC2-2 (upgrade to ACC2-3)	N/A	N/A	A-6299-0100-RBE
ACC2-3	N/A	M/A	A-6299-0100-RBE
PHC9/RS232	Obsolete	Call for upgrade options to PH10 system	
PHC9/IEEE	Obsolete	Call for upgrade options to PH10 system	
PHC10/RS232 (upgrade to PHC10-3 Plus)	N/A	N/A	5863-0100-RBE
PHC10-2/RS232 (upgrade to PHC10-3 Plus)	N/A	N/A	A-5863-0100-RBE
PHC10-3 Plus	$295	N/A	A-5863-0100-RBE

Probes

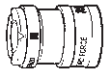
Description

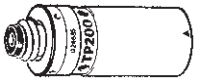
Probe recertification (check and test)

Description	Repair	Repair by exchange	RBE part number
SP25M probe body			A-2237-1000-RBE
SM25-1 module			A-2237-1111-RBE
SM25-2 module			A-2237-1112-RBE
SM252-U module			A-2237-1122-RBE
SM25-3 module			A-2237-1113-RBE
SM25-4 module			A-2237-1114-RBE
SM25-5 module			A-2237-1115-RBE
TM25-20 module			A-2237-1200-RBE
SP600M			A-2098-0104-RBE
TP1S			A-1041-7540-RBE
TP1SM			A-1041-7541-RBE

Probes continued

Description	Repair	Repair by exchange	RBE part number
TP2-5W			A-1042-1890-RBE
TP6			A-1039-0001-RBE
TP6A			A-1039-0028-RBE
TP7M			A-1073-0121-RBE
TPES			A-1311-0033-RBE
TP20 low force probe module only			A-1371-0392-RBE
TP20 standard force probe module only			A-1371-0270-RBE
TP20 medium force probe module only			A-1371-0271-RBE
TP20 extended force probe module only			A-1371-0272-RBE
TP20 6-way probe module only			A-1371-0419-RBE
EM1 TP20 extension module			A-1371-0430-RBE
EM2 TP20 extension module			A-1371-0431-RBE
TP20 body only			A-1371-0275-RBE
TP20 body (non-inhibit)			A-1371-0636-RBE
TP200 stylus module			Replace at new list price
TP200 probe sensor			A-1207-0020-RBE
TP200B probe sensor			A-1207-0046-RBE





Description	Check and test	Repair by exchange	RBE part number
SP80			A-2238-0101-RBE
SP80H			A-2238-0414-RBE

Interfaces

Description	Repair	Repair by exchange	RBE part number
PI7-3		N/A	Replace at new list price
PI200-3		N/A	Replace at new list price

Machine checking gage

Description	Calibration
Small checking gage set (includes arms, pivot and stylus; excludes needed replacement items)	
Large checking gage set (includes arms, pivot and stylus; excludes needed replacement items)	
(The machine checking gage is sent to the UK for calibration.)	

Changing systems

Description	Calibration	Minor repair	Major repair	Repair by exchange	RBE part number
ACR1	$473	$956			A-1051-4000-RBE
ACR2	N/A	N/A			Replace at new list price
ACR3	N/A	$425 (port replacement only)			A-5036-0005-RBE
FCR25 (for use with MRS)	N/A	$378 (port replacement only)			A-2237-1401-RBE
FCR25-L3	N/A	$378 (port replacement only)			A-2237-1403-RBE
MCR20	N/A	$462 (port replacement only)			A-1371-0163-RBE
SCR600	N/A	N/A			A-2098-0724-RBE
SCR200	N/A	(port replacement only)	N/A		A-1085-0370-RBE

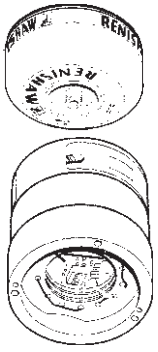
Machine Tool products

Inspection probes for machining centers

Description

Recertification (check and test)

Description		Repair by exchange	RBE part number
CP1 probe		Call for upgrade options	
MP1/R probe		Call for upgrade options	
MP1/S probe		Call for upgrade options	
MP3 probe		$824	A-2053-5358-RBE
MP3 wide angle OMP short arm		Call for upgrade options	
MP3 wide angle OMP long arm		Call for upgrade options	
MP3 360° OMP		Call for upgrade options	
MP12 probe		Call for upgrade options	
MP16 (RMP2)		Call for upgrade options	
MP15		$924	A-2116-0621-RBE
MP15F		$924	A-2116-0685-RBE
MP700 probe module	Obsolete	Call for upgrade options	
MP700 OMP 35°	Obsolete	Call for upgrade options	
MP700 OMP 70°	Obsolete	Call for upgrade options	
OMP40			Legacy: A-4071-0001-RBE Modulated: A-4071-2001-RBE
OMP400			Legacy: A-5069-0001-RBE Modulated: A-5069-2001-RBE
OMP60			Legacy: A-4038-0001-RBE Modulated: A-4038-2001-RBE
OMP600			A-5180-2001-RBE
RMP40			A-5480-0001-RBE
RMP60			Replace with A-5742-0001-RBE
RMP60Q			A-5742-0001-RBE
RMP60MQ transmission module			A-5742-1003-RBE
RMP600			A-5312-0001-RBE
OMP60M/RMP60M probe module			A-4038-1002-RBE
OMP60M transmission module			A-4038-1003-RBE



Description	Check test	Repair by exchange	RBE part number
MSP80 rear exit			A-2238-1255-RBE
MSP80 side exit			A-2238-1270-RBE

Tool setting probes for machining centers

Description	Repair	Upgrade	Upgrade part number
MP4 side exit (obsolete, upgrade to TS34 side exit)			RI-2197-3000
MP4 rear exit (obsolete, upgrade to TS34 rear exit)			RI-2197-2100
MP6 base only			Replace at new list price

Description	Rewire	Repair by exchange	RBE part number
TS27R			A-2008-0368-RBE
TS34 rear exit		Repair by exchange	A-2197-2100-RBE
TS34 side exit			A-2197-3000-RBE

Description	Repair	RBE part number
NC4 generic TX (separate – no access panel)		A-4114-5200-RBE
NC4 generic RX (separate – no access panel)		A-4114-5300-RBE
NC4 TX (separate with connector – no access panel)		A-4114-2345-RBE
NC4 RX (separate with connector – no access panel)		A-4114-2346-RBE
NC4F95 compact		Call for replacement options
NC4F115 compact		Call for replacement options
NC4F145 compact		Call for replacement options
NC4F230 compact		Call for replacement options
NC4F300 compact		Call for replacement options
NC4F300 modular		Call for replacement options
NC4+ F115 IAB H31 with integral cable		A-6270-2000-RBE
NC4+ F145 IAB H31 with integral cable		A-6270-2200-RBE
NC4+ F145 IAB H31 with connector		A-6270-2210-RBE
NC4 F230 IAB H31 with integral cable		A-6270-2400-RBE
NC4 F300 IAB H31 with integral cable		A-6270-2600-RBE
NC4 F300 IAB H50 with integral cable		A-6270-2700-RBE
NCPCB		Replace at new list price
OTS		A-5401-2001-RBE
OTS (AA)		A-5514-2001-RBE
TRS2		A-5450-0400-RBE
RTS		A-5646-0001-RBE

Inspection probes for turning centers

Description	Repair	RBE part number
LP2 probe		A-2063-6098-RBE
LP2DD probe		A-2063-8020-RBE
LP2H probe		A-2064-0002-RBE
LTO2		
LTO2S		
LTO2T (25 mm shank)		
LTO2T (1 in shank)		
LTO3T (25 mm shank)		
LTO3T (1 in shank)		
MP250		A-5500-1600-RBE
OLP40		A-5625-2001-RBE
OMP40M		A-5626-2001-RBE
RLP40		A-5627-0001-RBE
RMP40M		A-5628-0001-RBE

Tool setting arms

Description	Repair	RBE part number
HPRA 6 in with RP3		A-2176-0691-RBE
HPRA 8 in with RP3		A-2176-0692-RBE
HPRA 10 in with RP3		A-2176-0693-RBE
HPRA 12 in with RP3		A-2176-0694-RBE
HPRA 15 in with RP3		A-2176-0695-RBE
HPRA 18 in with RP3		A-2176-0697-RBE
HPRA 24 in with RP3		A-2176-0698-RBE
HPPA 6 in rear exit with RP3		A-2275-0230-RBE
HPPA 8 in rear exit with RP3		A-2275-0231-RBE
HPPA 10 in rear exit with RP3		A-2275-0232-RBE
HPPA 12 in rear exit with RP3		A-2275-0233-RBE
HPPA 15 in rear exit with RP3		A-2275-0234-RBE
HPPA 18 in rear exit with RP3		A-2275-0235-RBE
HPMA 6 in rear exit with RP3		A-2181-0645-RBE
HPMA 8 in rear exit with RP3		A-2181-0646-RBE
HPMA 10 in rear exit with RP3		A-2181-0647-RBE
HPMA 12 in rear exit with RP3		A-2181-0648-RBE
HPMA 15 in rear exit with RP3		A-2181-0649-RBE
HPMA 18 in rear exit with RP3		A-2181-0650-RBE
HPMA 24 in rear exit with RP3		A-2181-0651-RBE
HPGA (side exit)		A-5616-0352-RBE

Tool setting probes for turning centers

Description	Repair	Repair by exchange	RBE part number
RP1 probe	N/A		A-2154-0007-RBE
RP2 probe	N/A		A-2116-0149-RBE
RP3 probe	N/A		A-2197-0049-RBE
TS20 probe	N/A		Replace at new list price

Interfaces, receivers and inductive systems

Description	Repair	Repair by exchange	RBE part number
HSI	N/A	N/A	Replace at new list price
IMM (inductive module machine)	N/A	N/A	Obsolete – call for upgrade options
IMP (inductive module probe) assembly	N/A	N/A	Obsolete – call for upgrade options
MI5	N/A	N/A	Obsolete – call for upgrade options
MI8	N/A	N/A	Obsolete – replace with HSI interface at list price
MI12	N/A		Obsolete – call for upgrade options
NCi interface	N/A		Replace at new list price
OMI	N/A		Obsolete – call for upgrade options
OMI-2	N/A		A-5191-0050-RBE
OMI-2T	N/A		A-5439-0050-RBE
OMM	N/A		Obsolete – call for upgrade options
OMM-2	N/A		A-5492-0051-RBE
RMI	N/A		Replace with A-5687-0050-RBE
RMI-Q	N/A		A-5687-0050-RBE
SSR converter board	N/A		Obsolete – replace with HSI interface at list price
TSi interface	N/A		Replace at new list price

Gauging systems

Description	Repair	Repair by exchange	RBE part number
Equator™ 300 machine			A-5504-0040-RBE
Equator™ 300 extended height machine			A-5504-0050-RBE
Equator™ controller	N/A		A-5696-0101-RBE
SP25M body	N/A		A-2237-1000-RBE
SM25-2 module	N/A		A-2237-1112-RBE
Equator™ 500 machine	Call for repair options and pricing		

Calibration systems

Renishaw recommends the following calibration frequencies:

XM-60	Every 1-2 years
ML10/ML10X/XL-80	Every 2-3 years
EC10/XC-80	Every 12 months
Ballbar	Every 12 months
RX10	Every 2-3 years
XR20	Every 1-3 years
XK10	Every 2 years

Check and test

Repair prices

Description	Repair	Repair by exchange
XC-80	$2,275	N/A
XL-80	$2,275	N/A
XL-80 tripod	$395	N/A
XR20**	$4,105	N/A
RX10	$6,860	N/A
QC10 ballbar (mechanical assembly only)	Call for upgrade options	N/A
QC20 (mechanical assembly only)	N/A	$3,375
XK10	Call for pricing	Call for pricing
XM-60	Call for pricing	N/A

Calibration prices

	Standard calibration	Express calibration
QC20 (includes calibrator)		
QC10 (includes calibrator)		
50 m calibrator (glass only)		
50 mm calibrator kit for QC20		
50 mm calibrator kit for QC10		
300 mm calibrator (glass only)		
XC-80 *		
XL-80		
ML10/ML10X		
EC10 *		
XM-60/XM-600		
XK10		
RX10		
XR20**		
Copy of calibration certificate		

* Price includes one air sensor and up to three material sensors. Each additional sensor
Please send in your sensors with your EC10 and XC-80.

** XR20 must be shipped in proper packaging. Failure to do so could damage unit and delay return after service. Alternative packaging solutions other than the XR20 case are available for purchase which provide protection for your unit and save transport costs. XR20W-CAL-BOX is an economic and safe alternative to shipping XR20 in its case. The packaging is reusable and can be purchased

A “standard” calibration will take a maximum of five working days and an “express” calibration will take a maximum of two working days. Express calibrations must be scheduled by calling the Renishaw Service Center at: 847/286-9953 extension 62123.

Traceable calibration certificates will be issued at the time of calibration and enclosed with the returned units.

Ballbar calibration includes ballbar and calibrator calibration, and replacement of ball and mount assembly, center cup assembly, center ball assembly, and tool cup assembly. A new cleaning kit will also be supplied.

Replacement parts

Description	Part number
ACR1/ACR3 short port replacement kit	A-5036-0049
ACR1 long port replacement kit	A-1051-7077
ACR1 mixed port replacement kit	A-1051-7076
MP3/MP6 probe outer diaphragm kit	A-2053-8156
LP2 service kit	A-2063-7542
Ballbar center cup assembly	A-8014-0522
Ballbar center ball assembly	A-8014-0141
Ballbar magnetic tool cup	A-8014-0521
Transducer ball	A-8014-0182
Ballbar cleaning kit	A-8014-0423
Ballbar service kit	A-8014-0786
OMP40 pull-up cone assembly	A-4071-0094
OMP40 round battery cap with seal	A-4071-0096
OMP40 rectangular battery cassette	A-4071-1166
OMP40/OMP60/RMP60 battery cassette seal	A-4038-0301
OMP60/RMP60 battery cassette	A-4038-0300
OMP60/RMP60 outer diaphragm kit	A-4038-0302
OMP60/RMP60 shank switch bobbin	A-4038-0303
OMP60/RMP60 new type shank switch	A-4038-0177
OMP60/RMP60 cone puller kit	A-4038-CONE-KIT
OLP40/RLP40 eyelid service kit	A-5625-0005
OLP40/RLP40 metal battery cassette	A-5625-1166
OLP40/RLP40 front cover	M-5625-0113
OTS/RTS battery cap	A-5401-0301
OTS/RTS base assembly	A-5401-0350
TS27R front cover	A-2008-1015
OTS/RTS front cover kit	A-5401-8512
TS34 chip shield	A-2008-6007
OMI-2/OMM-2 window kit	A-5191-0019
1/4 in conduit, 1 meter unit	P-CF01-0001
1/4 in conduit gland/fitting	M-2028-7456
Locknut for 1/4 in conduit gland/fitting	M-2028-7459
5/16 in conduit, 1 meter unit, modulated optical/radio receivers	P-CF01-0004
5/16 in conduit gland with locknut	A-4113-0307
GP9 conduit, 1 meter unit, NC4 IAB/Blue with cable connector	P-HO01-0010
GP9 conduit gland/fitting	A-6270-0383
GP11 conduit, 1 meter unit, NC4 separate	P-HO01-0008
GP11 conduit gland/fitting	P-CA61-0063
GP16 conduit, 1 meter unit, NC4F legacy, hard-wired	P-HO01-0011
GP16 conduit gland/fitting	P-CA61-0065
GP18 conduit, 1 meter unit, NC4 IAB hard-wired	M-6270-0278
GP18 conduit gland/fitting	M-6270-0277
Locknut for GP9/11/16/18 conduit gland/fitting	P-NU03-0200

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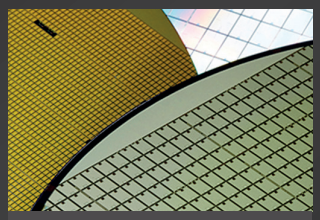
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Precision manufacturing

Scientific

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