

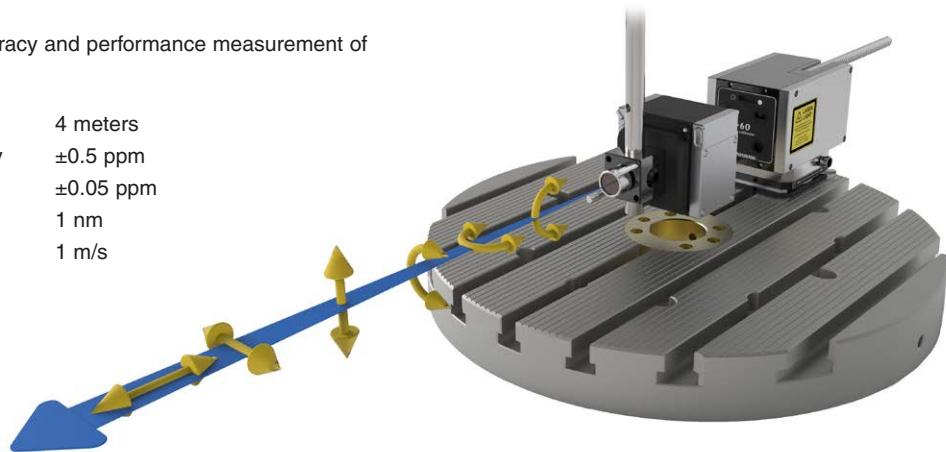
Portable laser measurement and calibration



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	8	Magnetic base
2	Launch unit	9	Clamp block
3	Receiver unit	10	M8 pillars
4	Beam shroud	11	Spirit level
5	Vertical mount	12	Cable clamp
6	Receiver batteries	13	Beam blocker
7	Battery charger	14	Portable system case

Part number: A-5103-3600 (XM-60 multi-axis calibrator kit)

Price: \$142,588

Part number: A-5103-3600-XC (XM-60 multi-axis calibrator kit with XC environmental unit)

Price: \$153,673

Note: In addition to the parts shown above, the kits will also contain required cables and product quality documentation.

XM-600 CMM



1	Laser unit	7	Clamp block	13	REVO mount plate	19	M8 cubes
2	Launch unit	8	Spirit level	14	Shank adaptors	20	Wrench
3	Receiver unit	9	PICS cable	15	Screws for M8 cubes	21	Mounting pillars
4	Beam shroud	10	Mount plate	16	Tape measure	22	Portable system case
5	Receiver batteries	11	Pan and tilt adaptor kit	17	PH10MQ mount plate		
6	Battery charger	12	XM600 CMM plate adaptor	18	Tommy bars		

Part number: A-5103-4739 (XM-600 multi-axis calibrator kit CMM)

Price: \$176,154

XM-600



1	Laser unit	6	Receiver batteries	11	Spirit level
2	Launch unit	7	Battery charger	12	Cable clamp
3	Receiver unit	8	Magnetic base	13	PICS cable
4	Beam shroud	9	Clamp block	14	Beam blocker
5	Vertical mount	10	M8 pillars	15	Portable system case

Part number: A-5103-4700 (XM-600 multi-axis calibrator kit)

Price: \$176,154

Part number: A-5103-4700-XC (XM-600 multi-axis calibrator kit with XC environmental unit)

Price: \$187,239

Note: In addition to the parts shown above, the kits will also contain required cables and product quality documentation.

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

Price: \$3,707



XM power supply kit

Part number: A-5103-4370

Price: \$224



XM battery tray

For holding the battery in the receiver unit of the XM systems.

Part number: A-5103-4480

Price: \$757



Cable clip

For holding the fiber optic cable between the laser and launch units of the XM systems.

Part number: A-5103-4340

Price: \$347



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

Price: \$105



Receiver beam shroud

Part number: A-5103-4330

Price: \$69



Portable laser measurement and calibration

System case

Part number: A-5103-4360

Price: \$1,533



CMM optics mounting kit

Part number: A-1333-0174

Price: \$1,071



Mount plate kit assembly spare

Part number: A-5103-9070

Price: \$657



M8 mounting pillar (110 mm long)

Part number: M-8003-0470

Price: \$109



M8 mounting pillar (70 mm long)

Part number: M-8003-0739

Price: \$80



M8 mounting pillar (40 mm long)

Part number: M-8003-0740

Price: \$44



Spirit level circular

Part number: A-9908-0323

Price: \$39



Clamp block

Part number: A-8003-0262

Price: \$304



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

Price: \$91



Battery Li-Polymer 3.7 V

High-power rechargeable lithium battery (three batteries supplied with each XR20).

Part number: A-9920-0330

Price: \$121



Battery charger and cables

Battery charger and a set of power cables for any territory (UK, Europe and USA).

Part number: A-9920-0320

Price: \$288



USB cable

Part number: A-9908-0286

Price: \$35



Horizontal translation stage

Part number: A-9954-2000

Price: \$1,550



XM CMM accessories kit with case

Part number: A-5103-4950

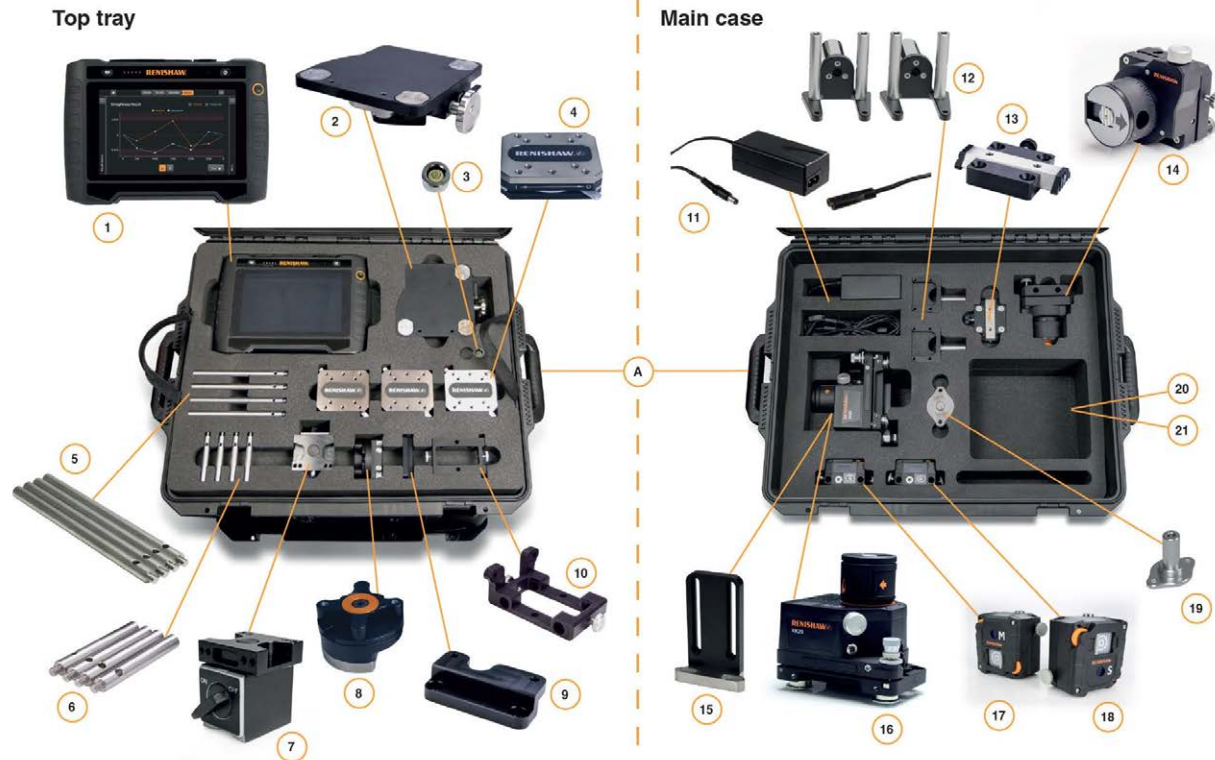
Price: \$6,620



XK20 laser alignment system

Used for measuring and correcting machine alignment of castings, rails and axes. The system is modular, allowing users to customize the kit to their specific needs.

Complete XK20 system case layout



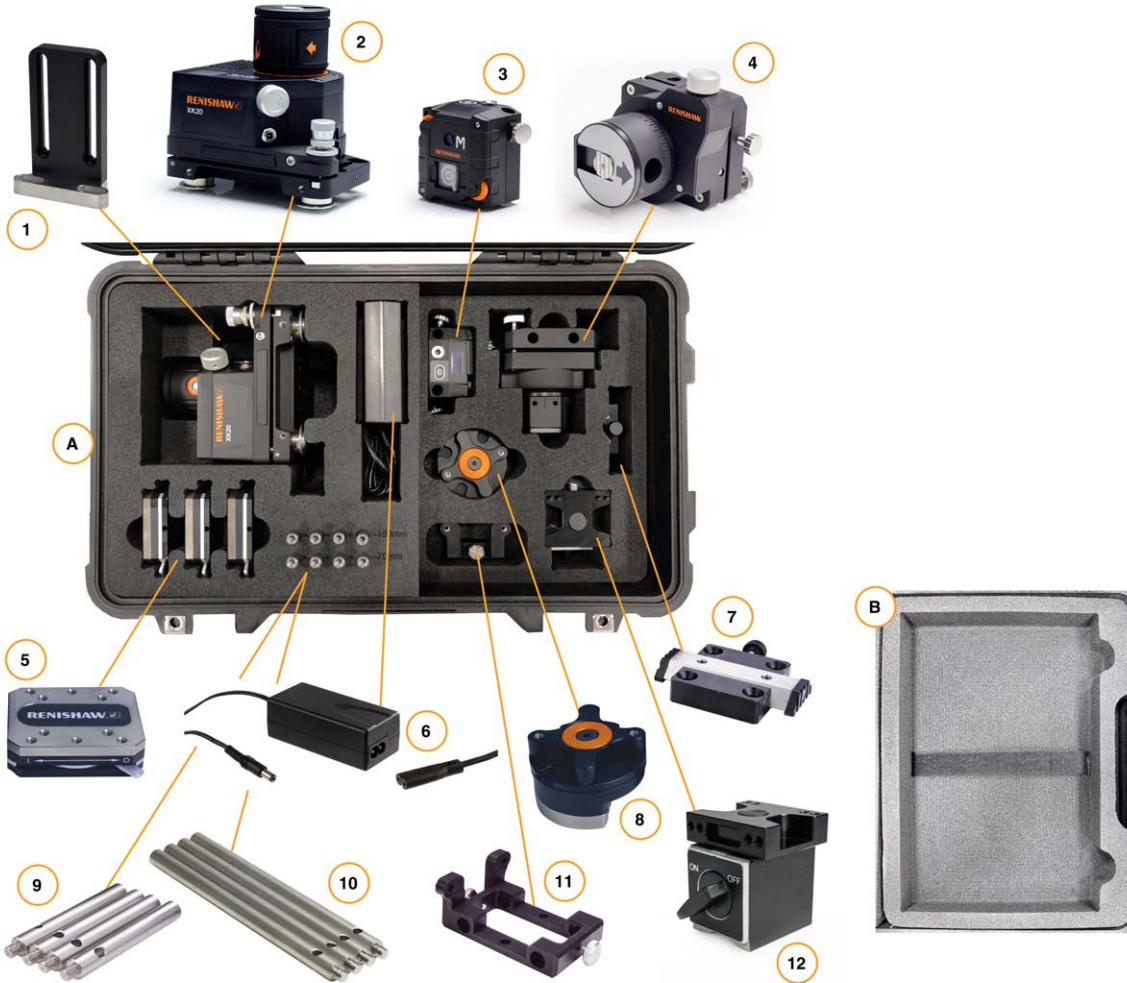
Complete XK20 system case contents

Ref	Part number	Item	Price
A	A-9971-0055	XK20 system case	\$1,547
1	A-9971-0037	Display unit	\$5,440
2	A-9971-0049	Tripod translation stage	\$1,503
3	A-9908-0323	Spirit level bubble	\$39
4	A-9971-0048	Low profile magnetic base x 3 *	\$891
5	A-9971-0052	Pillar kit (150 mm M6 pillars x 4)	\$213
6	A-9971-0053	Short pillar kit (70 mm M6 pillars x 4)	\$170
7	A-9971-0043	Rotary magnetic base	\$816
8	A-9971-0047	Magnetic reference mount	\$595
9	A-9971-0056	Transceiver lowering bracket	\$204
10	A-9971-0050	90 degree transceiver bracket	\$850
11	A-9971-0041	Universal power supply kit (1 x power supply and 3 x kettle leads for UK, EU and USA sockets)	\$392
12	A-9971-0046	Transceiver spindle mount *	\$493
13	A-9936-0151	Pentaprism translation stage	\$2,050
14	A-9971-0059	Pentaprism optic	\$12,160
15	A-9971-0044	Launch L bracket	\$334
16	A-9971-0120	XK20 launch kit (includes XK20 launch unit, universal power supply kit and DC split cable)	\$25,330
17	A-9971-0032	M unit	\$12,665
18	A-9971-0036	S unit	\$12,665
19	A-9971-0054	Launch spindle mount	\$434
20	A-9971-0098	USB-DC adapter (not pictured)	\$32
21	A-9971-0051	Tommy bar (not pictured)	\$51
22	A-9971-0042	DC split cable (not pictured)	\$103

* When ordering spare or replacement parts, only one of this item is included in the kit.

Compact XK20 system case

Layout



Contents

Ref	Part number	Item	Price
A	A-9971-0109	XK20 compact case	\$774
B		Tray insert for generic 11 inch tablet	
1	A-9971-0044	Launch L bracket	\$334
2	A-9971-0120	XK20 launch kit (includes XK20 launch unit, universal power supply kit and DC split cable)	\$25,330
3	A-9971-0032	M unit	\$12,665
4	A-9971-0059	Pentaprism optic	\$12,160
5	A-9971-0048	Low profile magnetic base × 3 *	\$891
6	A-9971-0041	Universal power supply kit (1 × power supply and 3 × kettle leads for UK, EU and USA sockets)	\$392
7	A-9936-0151	Pentaprism translation stage	\$2,050
8	A-9971-0047	Magnetic reference mount	\$595
9	A-9971-0053	Short pillar kit (70 mm M6 pillars × 4)	\$170
10	A-9971-0052	Pillar kit (150 mm mm M6 pillars × 4)	\$213
11	A-9971-0050	90 degree transceiver bracket	\$850
12	A-9971-0043	Rotary magnetic base	\$816

* When ordering spare or replacement parts, only one of this item is included in the kit.



Ref	Item
1	Magnetic reference mount
2	Launch L bracket
3	Pillars
4	Low profile magnetic base
5	Rotary magnetic base
6	Pentaprism optic
7	Tripod stage
8	Lowering bracket
9	Short pillars

Ref	Item
10	Parallelism stage
11	90 degree transceiver bracket
12	USB adapter
13	Extrusions
14	Launch unit extrusion mount
15	Hex drivers (4 mm, 5 mm)
16	Position discs
17	Magnets
18	Extrusion connectors

XK20 components and accessories

Recommended minimum kitting options for each measurement						
	Straightness and long-range straightness	Vertical parallelism	Horizontal parallelism	Combined parallelism	Squareness	Extended squareness
XK20 launch kit	✓	✓	✓	✓	✓	✓
XK20 M unit	✓	✓	✓	✓	✓	✓
XK20 mounting kit	✓	✓	✓	✓	✓	✓
Pentaprism optic			✓			✓
Parallelism stage			✓			
Low profile magnetic base						✓
90° transceiver bracket				✓		

For cases, see pages 5-7 and 5-8.

XK20 launch kit

Part number: A-9971-0120

Price: \$25,330



XK20 M unit

Part number: A-9971-0032

Price: \$12,665



XK20 S unit

Part number: A-9971-0036

Price: \$12,665



XK20 display unit

Part number: A-9971-0037

Price: \$5,440



Pentaprism optic

Part number: A-9971-0059

Price: \$12,160



XK20 mounting kit

Includes: Magnetic reference mount
Launch L bracket
Pillars
2 x low profile magnetic bases

Part number: A-9971-0110

Price: \$2,414



XK20 fixturing kit

Part number: A-9971-0058

Price: \$2,720



XK20 compact case

Part number: A-9971-0109

Price: \$774



XK20 system case

Part number: A-9971-0055

Price: \$1,547



Pentaprism translation stage

Part number: A-9936-0151

Price: \$2,050



Low profile magnetic base

Part number: A-9971-0048

Price: \$891



Magnetic reference mount

Part number: A-9971-0047

Price: \$595



Universal tripod base

Part number: A-9908-0295

Price: \$1,532



Universal tripod case

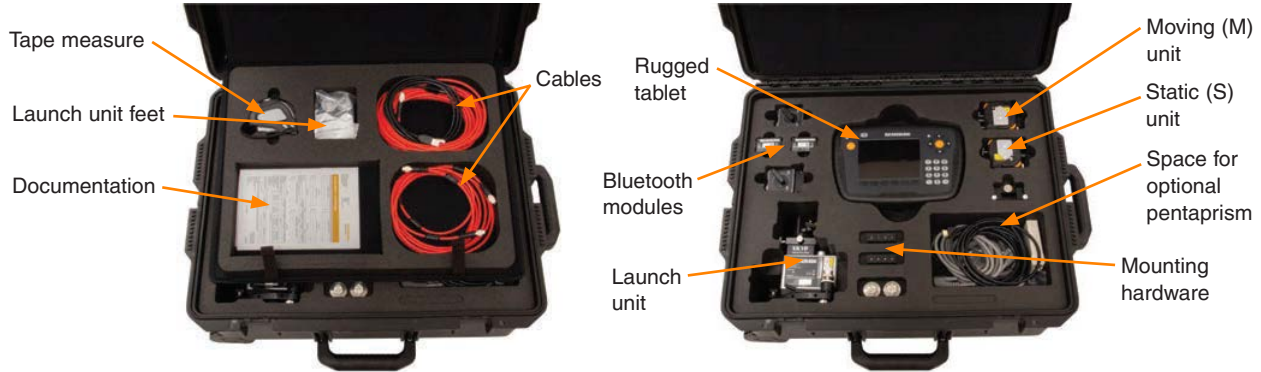
Part number: M-9908-0527

Price: \$296



XK10 laser alignment system

Used for measuring and correcting machine alignment of castings, rails, axes, and spindles, including rotative elements.



XK10 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 fixture kit

Part number: A-9936-0800 Price: \$49,088

XK10 system with HDMI compatible tablet and fixture kit

Part number: A-9936-0753 Price: \$61,851

XK10 system and fixture kit

Part number: A-9936-0750 Price: \$60,869

XK10 components and accessories

Fixture kit

Alignment target

Part number: A-9936-0600

Price: \$41



90-degree transceiver bracket

Part number: A-9936-0604

Price: \$2,865



Transceiver spindle mount

Part number: A-9936-0605

Price: \$2,694



Rod tightening tool

Part number: A-9936-0610

Price: \$31



System case

Part number: A-9936-0615

Price: \$3,623



Base pin kit

Part number: A-9936-0617

Price: \$1,292



Mounting post kit

Part number: A-9936-0618

Price: \$1,119



Power supply and cables

Part number: A-9936-0619

Price: \$2,023



Portable laser measurement and calibration

RENISHAW
apply innovation™

Magnet assembly

Part number : A-9936-0611

Price: \$259



Positioning disc

Part number: A-9936-0612

Price: \$448



Extrusion fixings kit

Part number: A-5103-4649

Price: \$528



Fixture kit case

Part number: A-9936-0616

Price: \$568



XK tripod mount kit

Part number: A-9936-0170

Price: \$1,140



XK tripod mount kit single

Part number: A-9936-0171

Price: \$630



XK10 parallelism kit

Includes: Pentaprism/parallelism optic
Parallelism stage
Magnetic base
Target
Peli case

Part number: A-9936-0160

Price: \$8,444



XK10 parallelism stage spare

Part number: A-9936-0151

Price: \$2,050



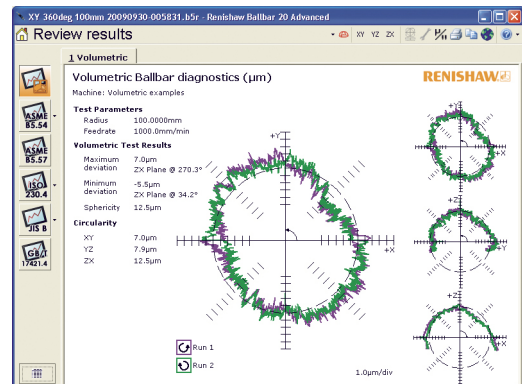
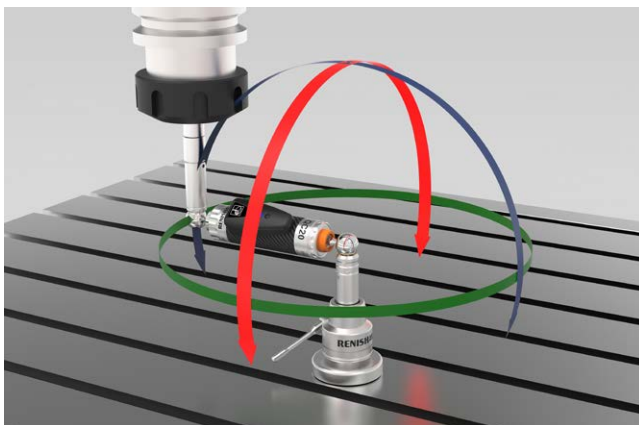
XK10 parallelism case spare

Part number: A-9936-0152

Price: \$719



QC20 wireless ballbar



QC20 ballbar kit with ballbar 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
Ballbar calibrator
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)

* The software is available to download from the Renishaw website.

Part number: A-8014-2510

Price: \$12,672



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

Price: \$8,512

API, Heidenhain telescoping ballbar trade-in for QC20 kit with ballbar calibrator

A complete API or Heidenhain working ballbar kit can be traded in to obtain this special price on a complete QC20 ballbar kit.

Part number: SYS-QC-TRADEIN

Price: \$8,512

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
- Tool cup
- Setting ball
- Machine validation cards
- Calibration certificate
- Foam tray (fits aluminum QC10 case only)
- Partial arc test kit
- Bluetooth® adaptor
- 2nd spare battery

* The software is available to download from the Renishaw website.

Part number: A-8014-BBUG

Price: \$6,028



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

Price: \$433



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 ballbar calibrator (see QC20 spare parts on page 5-20).

Part number: A-8014-1540

Price: \$1,243



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

Price: \$396



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

Price: \$1,447



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. 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 **Price:** \$580

TRACE kit with ½ in straight shank *

Part number: TRACE-1004 **Price:** \$580

TRACE kit with 1 in straight shank *

Part number: TRACE-1007 **Price:** \$580

Ballbar TRACE individual parts

Ballbar centering device

Used to center the pillar/tool cup on the spindle for performing Ballbar TRACE measurements.

Part number: S-8BBR-0052 **Price:** \$183



Tool kit

For adjusting the ballbar centering device.

Part number: A-4071-0060 **Price:** \$12



Mounting pillar

For extending the tool cup down from the spindle.

Part number: M-8003-0470 **Price:** \$109



Straight shank

Used to help mount centering device in the spindle.

25 mm Part number: A-5625-1003 **Price:** \$275

½ in Part number: A-5625-1004 **Price:** \$275

1 in Part number: A-5625-1007 **Price:** \$275



* 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	Ballbar 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	Validation card (minimum order quantity 10)	A-8014-VCAR
Not shown	Validation card holder (minimum order quantity 10)	A-8014-VCHD
Not shown	Cup cleaning kit	A-8014-0423

Small circle accessory kit

Item	Description	Part number
18	50 mm ballbar 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

The software is available to download from the Renishaw website.

Ballbar calibrator

A ballbar 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

Price: \$2,638

Cover ring

The cover ring needs to be removed from the QC20 body before attaching the small circle adaptor.



Part number: A-8014-1592

Price: \$33

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

Price: \$171

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 1/2 inch, to suit different collets.



Part number: A-8014-1610

Price: \$57

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

Price: \$190

Battery end cap assembly

The battery end cap assembly is supplied with a center ball already fitted.



Part number: A-8014-1593

Price: \$268

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

Price: \$190

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

Price: \$634



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

Price: \$215



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

Price: \$65



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

Price: \$258

Length 150 mm

Part number: A-8014-0144

Price: \$310

Length 300 mm

Part number: A-8014-0145

Price: \$420



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

Price: \$22



Spherical adaptor

This adaptor is for use with the lathe kit to set in as the stationary cup.

Part number: A-8014-1565

Price: \$85

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

Price: \$267



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

Price: \$9



Validation card holder

Plastic wallet with self-adhesive back to attach to the machine.

Note: Pack of 10.

Part number: A-8014-VCHD

Price: \$9



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

Price: \$26



50 mm ballbar calibrator (small circle accessory kit)

The 50 mm ballbar calibrator includes a calibration certificate.

Part number: A-8014-0491

Price: \$886



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

Price: \$383



Spindle bar assembly (lathe adaptor kit)

The spindle bar assembly is fitted with a clamp holder and clamp.

Part number: A-8014-0553

Price: \$385



Cup screw assembly (lathe adaptor kit)

The cup screw assembly is supplied with a center cup already fitted.

Part number: A-8014-0552

Price: \$208



Bluetooth® USB wireless adaptor

Provides Windows PC with Bluetooth® communications capability. Tested and compatible with QC20.

Part number: A-8014-BTA1

Price: \$125

Lithium battery for QC20

CR2 lithium battery.

Part number: A-8014-CR2

Price: \$13

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: $\pm 45^\circ$
Horizontally: 360°
Total gage error: $\pm 0.5 \mu\text{m}$



MCG – 101 single arm kit

Part number: A-1007-0150 Price: \$2,768

MCG – 151 single arm kit

Part number: A-1007-0151 Price: \$2,840

MCG – 226 single arm kit

Part number: A-1007-0152 Price: \$2,923

MCG – 380 single arm kit

Part number: A-1007-0154 Price: \$3,133

MCG – 532 single arm kit

Part number: A-1007-0155 Price: \$3,403

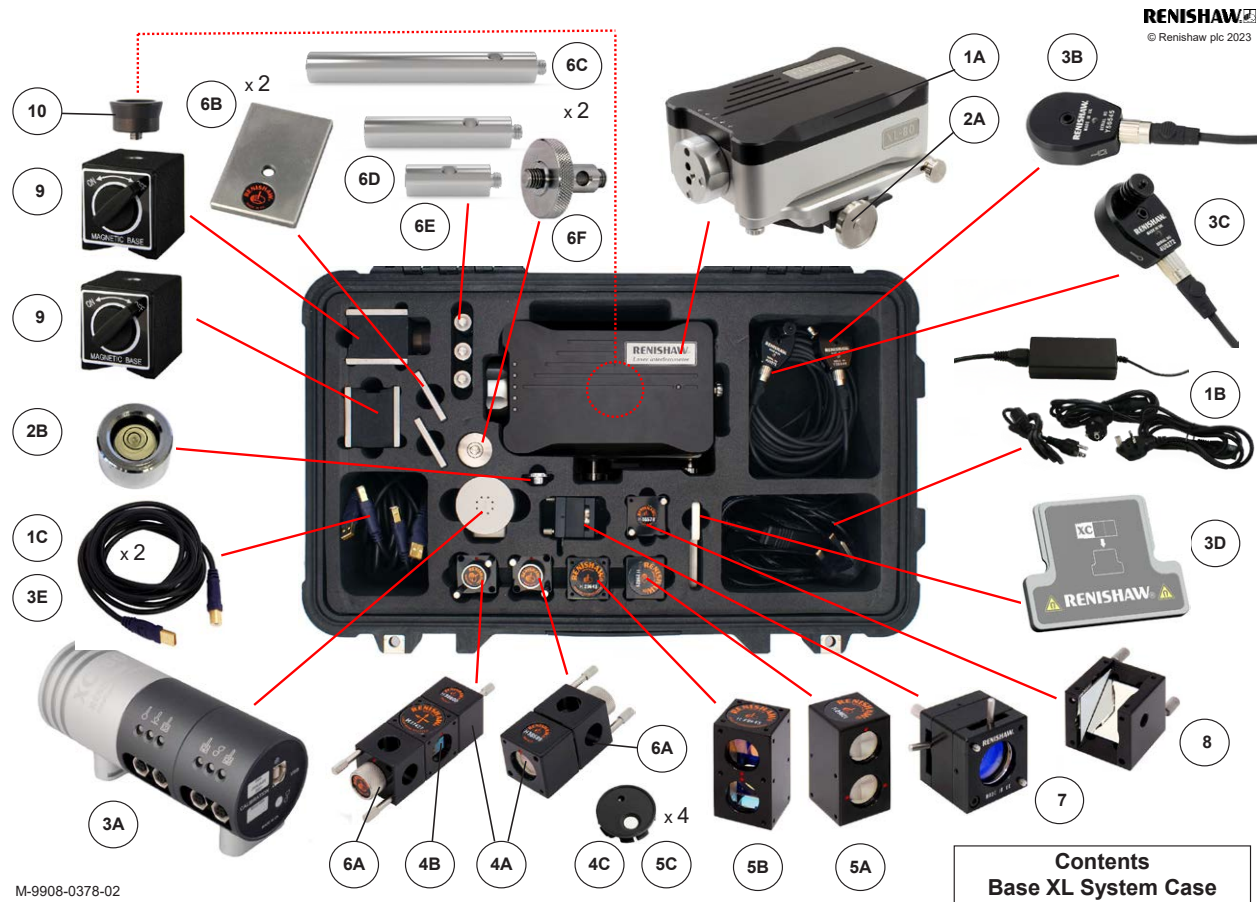
MCG – 685 single arm kit

Part number: A-1007-0156 Price: \$3,584

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



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**Contents
Base XL System Case**

M-9908-0378-02

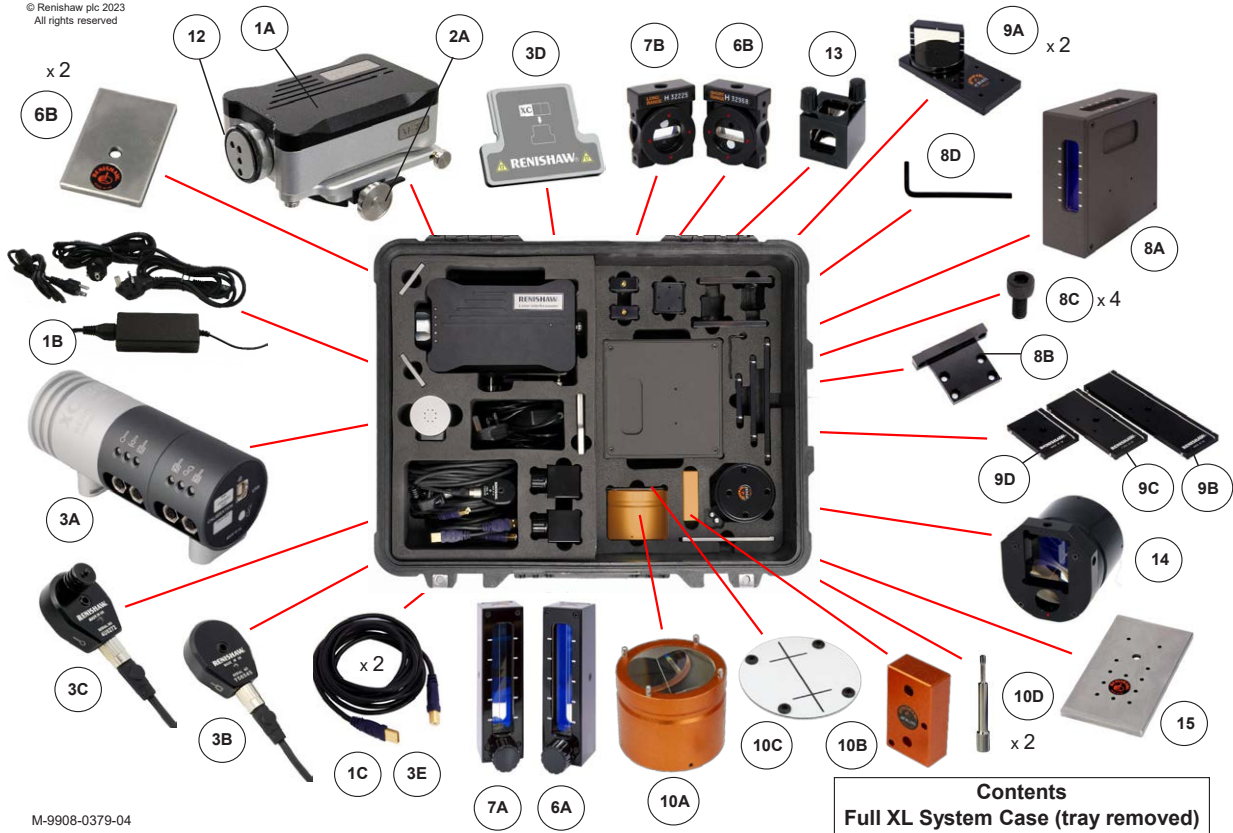
Portable laser measurement
and calibration
5-24

XL laser system components

Kit part number	Kit price	Includes	Part number	Price	Index
A-9908-0405 *	\$16,816	XL-80 laser	N/A		1A
		Power supply and cables	A-5103-4370	\$224	1B
		USB cable	A-9908-0286	\$35	1C
		AUX I/O connector	A-9908-0329	\$53	Not shown
A-9908-0700	\$1,185	XL translation stage	A-9908-0700	\$1,185	2A
		Spirit level circular	A-9908-0323	\$39	2B
		Tripod adaptor	A-9908-0770	\$38	Not shown
A-9908-0510	\$11,085	XC-80 compensator	A-9908-0564	\$9,216	3A
		Material temperature sensor and cable	A-9908-0879	\$1,600	3B
		Air temperature sensor and cable	A-9908-0878	\$1,600	3C
		XC mounting plate	A-9908-0892	\$143	3D
		USB cable	A-9908-0286	\$35	3E
A-8003-0440	\$3,820	Linear reflector (qty 2)	A-8003-0219	\$784 each	4A
		Linear interferometer	A-8003-0557	\$3,031	4B
		Alignment target (qty 2)	A-8003-0478	\$30 each	4C
A-8003-0441	\$5,086	Angular reflector	A-8003-0181	\$2,327	5A
		Angular interferometer	A-8003-0186	\$3,139	5B
		Alignment target (qty 2)	A-8003-0478	\$30 each	5C
A-8003-0443	\$6,827	Short range straightness reflector	A-8003-0615	\$4,480	6A
		Woollaston short range	A-8003-0393	\$3,802	6B
A-8003-0444	\$6,827	Long range straightness reflector	A-8003-0620	\$4,480	7A
		Woollaston long range	A-8003-0430	\$3,803	7B
A-8003-4209	\$970	Straightness shutter	A-8003-4209	\$970	12
A-8003-STAK	\$4,252	Laser beam steerer LS350	A-8003-3072	\$1,982	7
		Fixed turning mirror	A-8003-1325	\$1,086	13
		Large straightness retroreflector	A-8003-0604	\$1,260	14
		Straightness base	A-8003-0576	\$360	15
		Screw Hex Skt Cap Head M3x6 (qty 4)	N/A		8C
		Allen key	N/A		8D
A-8003-0665	\$6,827	Optical square	N/A		8A
		Bracket squareness optic	M-8003-1680	\$52	8B
		Screw Hex Skt Cap Head M3x6 (qty 4)	N/A		8C
		Allen key	N/A		8D
A-8003-0442	\$4,111	Flatness mirror (qty 2)	A-8003-0630	\$1,602 each	9A
		Base (150 mm)	A-8003-0256	\$424	9B
		Base (100 mm)	A-8003-0257	\$413	9C
		Base (50 mm)	A-8003-0258	\$377	9D
		Screw Hex Skt Cap Head M3x6 (qty 4)	N/A		8C
		Allen key	N/A		8D
A-8003-4270	\$3,759	Long range retroreflector	A-8003-2061	\$2,659	10A
		Periscope	A-8003-2039	\$2,310	10B
		Long range target	M-8003-2081	\$38	10C
		Clamp screw (qty 2)	M-8003-0221	\$18 each	10D
A-8003-0447	\$1,556	Clamp block (qty 2)	A-8003-0262	\$304 each	6A
		Base plate (qty 2)	A-8003-0522	\$305 each	6B
		M8 pillar 110 mm long (qty 2)	M-8003-0470	\$109 each	6C
		M8 pillar 70 mm long	M-8003-0739	\$80	6D
		M8 pillar 40 mm long	M-8003-0740	\$44	6E
		M8 adaptor	A-8003-0979	\$137	6F
		XL-80Q quad laser head	A-9908-0455	\$18,245	Not shown
		Base case	M-9908-0313	\$935	
		Full system case	M-9908-0314	\$1,311	
		Tripod	A-9908-0295	\$1,532	Not shown
		Tripod case	M-9908-0527	\$296	Not shown
		Fixed turning mirror	A-8003-1325	\$1,086	8
		Magnetic base (qty 2)	A-9908-0780	\$91	9
		Magnetic base adaptor	A-9908-0760	\$43	10
		Swivel mirror	A-8003-1304	\$1,672	13

* The software is available to download from the Renishaw website.

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M-9908-0379-04

XL laser calibration systems

Base system kit

Includes:	XL-80 laser head	A-9908-0405
	XC-80 environmental compensator kit	A-9908-0510
	XL translation stage kit	A-9908-0700

Download the software online.

Part number: XL80-BASE **Price:** \$29,086

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

Price: \$39,341

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

Price: \$45,513

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 optics	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

Price: \$70,196



XL-80 laser head



XC-80 environmental compensation unit



XL system case and tripod case

Flatness system kit

Includes:	XL-80 base kit	XL80-BASE
	Angular measurement optics	A-8003-0441
	Tripod	A-9908-0295
	Tripod case	M-9908-0527
	Flatness measurement optics	A-8003-0442
	Full system case	M-9908-0314

Price: \$41,422



ML10 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 \$1,500.

Part number: SYS-XL-UPG **Price:** \$21,813

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 of \$1,500.

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

Price: \$3,820



Small linear accessory kit

Please call for details.

Part number: A-8003-3244

Price: \$2,101



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

Price: \$3,759



Angular kit

Includes: 1 angular beam splitter
1 angular reflector
2 alignment targets

Part number: A-8003-0441

Price: \$5,086



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

Price: \$5,817



Straightness measurement kits

Short range

Suitable for measurements up to 4 m (160 in)

Part number: A-8003-0443

Price: \$6,827

Long range

Suitable for measurements from 1 m to 30 m (40 in to 1200 in)

Part number: A-8003-0444

Price: \$6,827



Straightness accessory kit

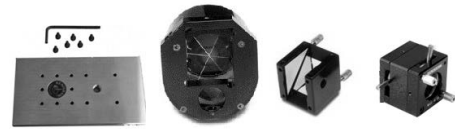
Facilitates measurements on vertical axes and in other difficult configurations.

- 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 5-31.

Part number: A-8003-STAK

Price: \$4,252



Squareness measurement kit

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

Price: \$6,827



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

Price: \$4,111



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

Price: \$1,556



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

Price: \$91



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

Price: \$1,071

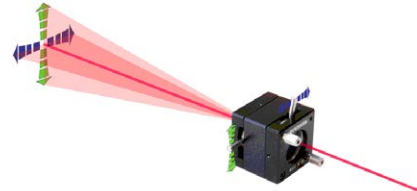


Beam steerer LS350

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

Price: \$1,982



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

Price: \$1,672



Fixed turning mirror

This can be used with angular optics for 90° accessories. Included in straightness accessory kit.

Part number: A-8003-1325

Price: \$1,086



Quarter wave plate

Used with linear optics for plane mirror interferometry applications.

Part number: A-8003-1998

Price: \$1,884



Straightness shutter

Required for vertical straightness measurements.

Part number: A-8003-4209

Price: \$970



Pan and tilt adaptor

Adaptor for tripod to allow for easy mounting at an angle and easy swivel adjustment.

Part number: A-9908-1170

Price: \$1,543



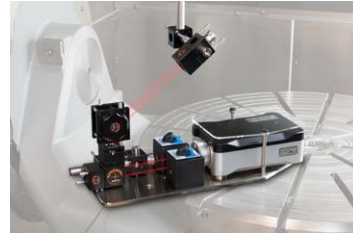
Linear diagonal measurement fixture kit

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

Price: \$2,086



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

Price: \$3,707



Optic adaptor plate

The adaptor plate provides compatibility for Renishaw accessories with HP, Keysight and Agilent optics.

Part number: M-8003-1307

Price: \$119



Tripod and cases

Universal tripod

Tripod only, without the stage.

Part number: A-9908-0295

Price: \$1,532



XL translation stage

Part number: A-9908-0700

Price: \$1,185



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

Price: \$38



Tripod converter ML-XL

Part number: A-9908-0765

Price: \$88



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

Price: \$43



Universal tripod case

Lightweight fabric.

Part number: M-9908-0527

Price: \$296



System cases

Base system case

Suitable for basic laser system including linear and angle optics with accessories.

Part number: M-9908-0313

Price: \$935



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

Price: \$1,311



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

Price: \$5,431



TB20 upgrade from TB10

Part number: UPG-TB10-SERV-1

Price: \$3,802

TB20 connector kit

Part number: A-8003-4462

Price: \$167



XL trigger cable

Part number: A-9908-0377

Price: \$500



Power USB cable

Part number: A-9920-0390

Price: \$58



USB power supply

USB power supply adaptors for any territory (UK, Europe and USA).

Part number: A-9920-0450

Price: \$62



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

Price: \$304



Locking screw assembly

For use with clamp block.

Part number: A-9954-0272

Price: \$62



Clamp screws

Long (for use with clamp block)

Part number: M-8003-0264

Price: \$18

Short (for use with linear and angular optics)

Part number: M-8003-0221

Price: \$18

LS350 (for use with LS350 beam steerer)

Part number: M-8003-3083

Price: \$18

For use with fixed turning mirror.

Part number: M-8003-1070

Price: \$19

For use with swivel mirror.

Part number: M-8003-1063

Price: \$19



Mounting pillars

40 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0740

Price: \$44

70 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0739

Price: \$80

110 mm long with M8 × 1.25 male thread at one end, female at the other.

Part number: M-8003-0470

Price: \$109



Straightness accessory base

Part number: A-8003-0576

Price: \$360



Large retroreflector

For use with vertical straightness measurements.

Part number: A-8003-0604

Price: \$1,260



M8 adaptor

Part number: A-8003-0979

Price: \$137



Alignment target

Part number: A-8003-0478

Price: \$30



Linear beam splitter

Part number: A-8003-0557

Price: \$3,031



Linear reflector

Part number: A-8003-0219

Price: \$784



Angular reflector

Part number: A-8003-0181

Price: \$2,327



Angular beam splitter

Part number: A-8003-0186

Price: \$3,139



Cables

XC-80 temperature sensor cable (5 m)

Part number: A-9908-0932

Price: \$168



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

Price: \$176



USB cable

Part number: A-9908-0286

Price: \$35



Temperature sensor cable connector kit

Part number: A-9904-1636

Price: \$87



Translation stage screws

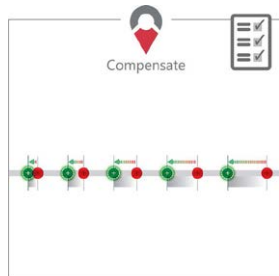
Part number: A-9908-0750

Price: \$30



Software

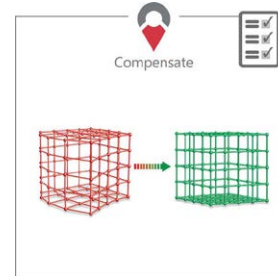
CARTO add-ons – Compensate



Provides easy updates of linear and straightness and rotary compensation tables for controls with supported options.

Compatible hardware:

- XL80 laser interferometer
- XM60 or XM600 multi-axis calibrator



Provides easy updates of linear, angular, straightness, roll, and squareness (21 degrees of freedom).

Compatible hardware:

- XM60 or XM600 multi-axis calibrator
- QC20 ballbar, XK20 or XK10 alignment lasers (squareness errors between axes)

Pitch compensation

Fanuc pitch compensation

Part number: CS-SOF-SW-03-LFAN **Price:** \$1,964

Siemens pitch compensation

Part number: CS-SOF-SW-03-LSIE **Price:** \$1,964

Heidenhain pitch compensation

Part number: CS-SOF-SW-03-LHDI **Price:** \$1,964

All pitch compensation

Part number: CS-SOF-SW-03-LIN **Price:** \$4,909

Volumetric compensation

Siemens volumetric compensation

Part number: CS-SOF-SW-03-VSIE **Price:** \$5,798

Mitsubishi volumetric compensation

Part number: CS-SOF-SW-03-VMIT **Price:** \$5,798

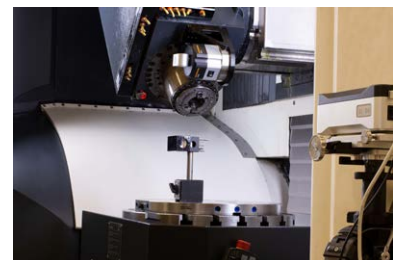
CARTO add-ons – Off-axis rotary measurement

Off-axis rotary measurement mode allows the user to:

- automatically calculate the offset distance between the center of rotation of the XR20 rotary axis calibrator and the center of rotation of the rotary axis
- generate a test part program (which synchronizes rotary axis and linear axis moves to maintain laser beam alignment)
- remove any contributory linear axis angular error from the observed rotary axis results, giving 'clean' results for the rotary axis

OARS (Off Axis Rotary Software)

Part number: CS-SOF-SW-03-OAR **Price:** \$1,870



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

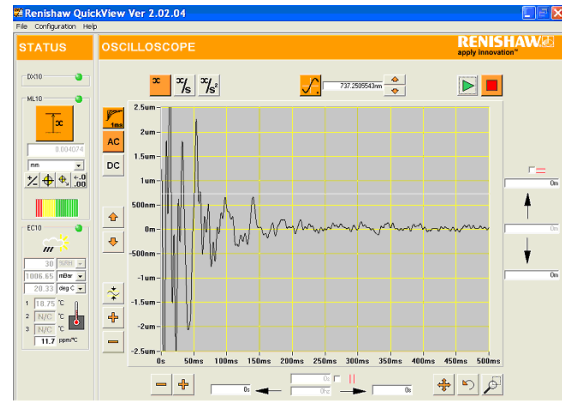
Price: \$581

XCal-View (10 users)

Part number: A-9925-0203

Price: \$4,636

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

Price: \$1,214

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
Peli™ system case

Part number: A-9920-1400

Price: \$29,009



OARS (Off Axis Rotary Software) kit

Includes: OARS (Off Axis Rotary Software) bracket
OARS CARTO add-in

Part number: OARS-KIT1 **Price:** \$5,701



OARS (Off Axis Rotary Software)

Part number: CS-SOF-SW-03-OAR **Price:** \$1,870

OARS (Off Axis Rotary Software) bracket

Includes: 90 degree bracket
XR20 magnet kit
Case

Part number: A-9920-0700 **Price:** \$4,362



XR20 magnet kit – matched set

Part number: A-9920-0710 **Price:** \$867



XR20 rotary axis calibrator upgrade

Part number: XR20-UPG **Price:** \$18,857

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 **Price:** \$745



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 **Price:** \$468



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 **Price:** \$621



Centration aid

The centration aid fits temporarily inside the mounting ring to assist visual centration before XR20 insertion.

Part number: A-9920-0340

Price: \$14



Fixings kit

A complete set of screws and allen keys for XR20.

Part number: A-9920-0430

Price: \$14



Battery Li-Polymer 3.7 V

High-power rechargeable lithium battery (three batteries supplied with each XR20).

Part number: A-9920-0330

Price: \$121



Battery charger and cables

Battery charger and a set of power cables for any territory (UK, Europe and USA).

Part number: A-9920-0320

Price: \$288



Battery cover

Replacement battery cover for XR20.

Part number: A-9920-0460

Price: \$43



USB cover plug

Replacement protective plug for USB socket on XR20.

Part number: A-9920-0380

Price: \$11



USB power supply

USB power supply adaptors for any territory (UK, Europe and USA).

Part number: A-9920-0450

Price: \$62



XR20 case

Heavy duty transport and storage case for XR20.

Part number: A-9920-0360

Price: \$952



Training

Renishaw offers world class training at their modern facilities in West Dundee, Illinois, only about 35 minutes west of Chicago's O'Hare airport. Regular classes are held once per month for both laser and ballbar product groups. In-house courses start on Tuesday morning and conclude around midday on the Friday. The training includes a mix of classroom work and hands-on experience in the Renishaw technology center where we have a selection of modern machines for students to work with. If you have a large group, or prefer not to travel, on-site training is also available.

Information on training classes and class schedules can be found on the web at www.renishaw.com/training-usa.

Our standard, in-house training courses cover the following subjects:

- The 21 degrees of freedom
- Accuracy and the environment
- Relative thermal behavior
- Machine geometry and design
- Determining relative errors
- Interpreting analysis data
- Troubleshooting set-up and machine errors
- Machine tool part programs
- Hardware set-up procedure
- Software set-up and data capture
- Correcting errors on the machine

Two basic training courses are offered:

Learning practical laser interferometry

In addition to the standard metrology subjects, the laser class will cover the following aspects:

- Laser interferometry theory
- Laser kit parts identification
- Current laser technology
- Linear, angular and straightness measurements
- Cosine, deadpath and Abbé errors
- Error compensation
- Using the laser as a diagnostic tool
- Implementing maintenance programs
- Accessories for the laser

Part number: CS-TRA-INHO-03-LASER **Price:** \$2,175



Using and understanding the QC20 ballbar and machine metrology

The comprehensive course provides students with a detailed understanding of the most powerful machine tool diagnostic device you can buy.

Specialist features of the course include:

- Why buy a ballbar?
- When to use a ballbar
- Ballbar theory
- Ballbar kit parts identification
- Ballbar accessories

Training materials, lunch and refreshments are provided each day.

Part number: CS-TRA-INHO-03-QC20 **Price:** \$2,175

Advanced training at Renishaw Inc

Charged per student, per day.

Part number: CS-TRA-INHO-03-1DAY **Price:** \$1,007

Training on-site at customer's premises (2 days)

Part number: CS-TRA-ONSI-03-2DAY **Price:** \$9,900

Training on-site at customer's premises (3 days)

Part number: CS-TRA-ONSI-03-3DAY **Price:** \$13,200

Training on-site at customer's premises (4 days)

Part number: CS-TRA-ONSI-03-4DAY **Price:** \$16,500

Additional day's training on-site at customer's premises

Part number: CS-TRA-ONSI-03-1DAY **Price:** \$3,300

Calibration rentals

All rentals require the creation of a rental agreement that must be sent in with the purchase order. Rentals do not come with a PC. For calibration repairs, please see page 9-9 of this catalog.

XL-80 linear rental

Includes:	Components of the 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

Part number: XL80-BASE-RENTAL-US

Price: \$3,148/week

XL-80 linear and angular rental

Includes:	Components of the base system kit	XL80-BASE
	Linear measurement optics	A-8003-0440
	Angular measurement optics	A-8003-0441
	Beam steerer LS350	A-8003-3072
	Optics mounting kit	A-8003-0447
	Fixed turning mirror	A-8003-1325
	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

Part number: XL80-LNAN-RENTAL-US

Price: \$3,641/week

XR20 with angular beam splitter rental

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: XR20W-RENTAL-US

Price: \$2,585/week

XL-80 linear and XR20 with angular beam splitter rental

Includes:	XL-80 linear rental
	XR20 with angular beam splitter rental

Part number: XLXR-RENTAL-US

Price: \$5,733/week