# 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.
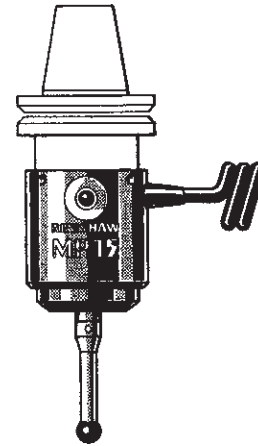
MP15 hard-wired probe kit

Part number: A-2116-1802   **Price:** $2,214

MP15/MP11 adaptor

Part number: M-2116-1356   **Price:** $236

HSI interface

Part number: A-5500-1000   **Price:** $207

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 2-16 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   **Price:** $6,407

OMP40-2 probe kit

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

Legacy

Part number: A-4071-0001   **Price:** $3,984

Modulated

Part number: A-4071-2001   **Price:** $3,984

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   **Price:** $1,992

OMP40-2 accessories and replacement parts

½ AA battery (2 pack)

Part number: P-BT03-0007   **Price:** $45

OMP60/RMP60 style shank adaptor

Part number: A-4071-0031   **Price:** $179

OMP40-2 continued

OMM-2 optical receiver

Part number: A-5492-0051 **Price:** $1,033

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049 **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050 **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049 **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050 **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830 **Price:** $125

OSI interface

Part number: A-5492-2000 **Price:** $975

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 **Price:** $36

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 retrofit 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 2-16 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   **Price:** $7,271

OMM-2 optical receiver

Part number: A-5492-0051   **Price:** $1,033

OMP400 probe kit

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

Legacy

Part number: A-5069-0001   **Price:** $4,781

Modulated

Part number: A-5069-2001   **Price:** $4,781

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   **Price:** $2,390

Note: A new shank is required. See section entitled Shanks and Toolholders on page 2-16 for price and part number information.

OMP400 continued

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049   **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050   **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049   **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050   **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

OSI interface

Part number: A-5492-2000   **Price:** $975

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   **Price:** $36

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

Stylus	Part number	Price
6 × 50 mm CF	A-5003-7306	$128
6 × 100 mm CF	A-5003-6510	$145
6 × 150 mm CF	A-5003-6511	$274
6 × 200 mm CF	A-5003-6512	$289

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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 2-16 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 2-16 for price and part number information.

Part number: OMP60-NS-KIT   **Price:** $6,407

OMP60 probe kit

Includes: OMP60 probe
             AA battery (2)
             Tool kit

Legacy

Part number: A-4038-0001   **Price:** $3,984

Modulated

Part number: A-4038-2001   **Price:** $3,984

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   **Price:** $1,992

OMP60 continued

OMM-2 optical receiver

Part number: A-5492-0051   **Price:** $1,033

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049   **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050   **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049   **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050   **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

OSI interface

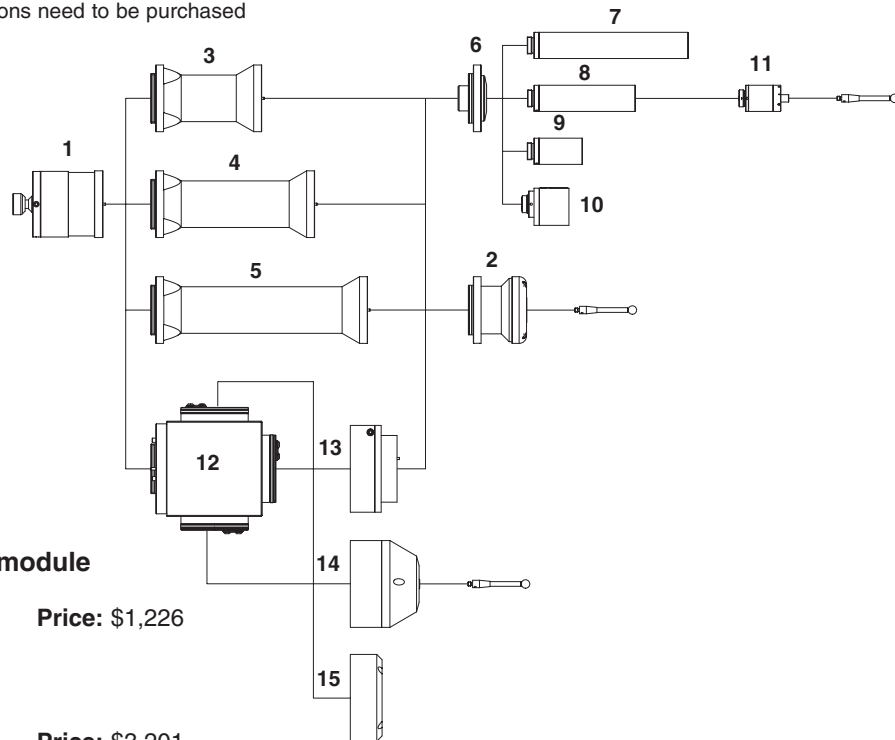**Part number:** A-5492-2000   **Price:** $975

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   **Price:** $36

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   **Price:** $1,226

2 – OMP60M probe module

Part number: A-4038-1002   **Price:** $3,201

3 – OMP60M 100 mm extension

Part number: A-4038-1010   **Price:** $647

4 – OMP60M 150 mm extension

Part number: A-4038-1027   **Price:** $839

5 – OMP60M 200 mm extension

Part number: A-4038-1028   **Price:** $872

6 – OMP60M LP2 adaptor

Part number: A-4038-0212   **Price:** $647

7 – LPE3 150 mm extension

Part number: A-2063-7003   **Price:** $299

8 – LPE2 100 mm extension

Part number: A-2063-7002   **Price:** $299

9 – LPE1 50 mm extension

Part number: A-2063-7001   **Price:** $299

10 – MA4 90° adaptor

Part number: A-2063-7600   **Price:** $486

11 – LP2 probe assembly

Part number: A-2063-6098   **Price:** $3,102

12 – OMP60M 3-way adaptor

Part number: A-4113-0784   **Price:** $1,307

13 – OMP60M probe module adaptor

Part number: A-4113-0771   **Price:** $741

14 – MP3 probe

Part number: A-2053-5358   **Price: $**3,245

15 – Shorting cover

Part number: A-2053-6468   **Price:** $144

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   **Price:** $2,537

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 2-16 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   **Price:** $7,271

OMP600 probe kit

Includes: OMP600 probe
AA battery (2)
Tool kit

Legacy

Part number: A-5180-0001   **Price:** $4,781

Modulated

Part number: A-5180-2001   **Price:** $4,781

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   **Price:** $2,390

OMM-2 optical receiver

Part number: A-5492-0051   **Price:** $1,033

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049   **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050   **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049   **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050   **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

OSI interface

Part number: A-5492-2000   **Price:** $957

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   **Price:** $36

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

Stylus	Part number	Price
6 × 50 mm CF	A-5003-7306	$128
6 × 100 mm CF	A-5003-6510	$145
6 × 150 mm CF	A-5003-6511	$274
6 × 200 mm CF	A-5003-6512	$289

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 2-16 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   **Price:** $8,459

RMP40 probe kit

Includes: RMP40 probe
             ½ AA battery (2)
             Tool kit

Part number: A-5480-0001   **Price:** $5,363

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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 2-16 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   **Price:** $8,459

RMP60 probe kit

Includes: RMP60 probe
AA battery (2)
Tool kit

Part number: A-5742-0001   **Price:** $5,363

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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   **Price**: $5,447

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.
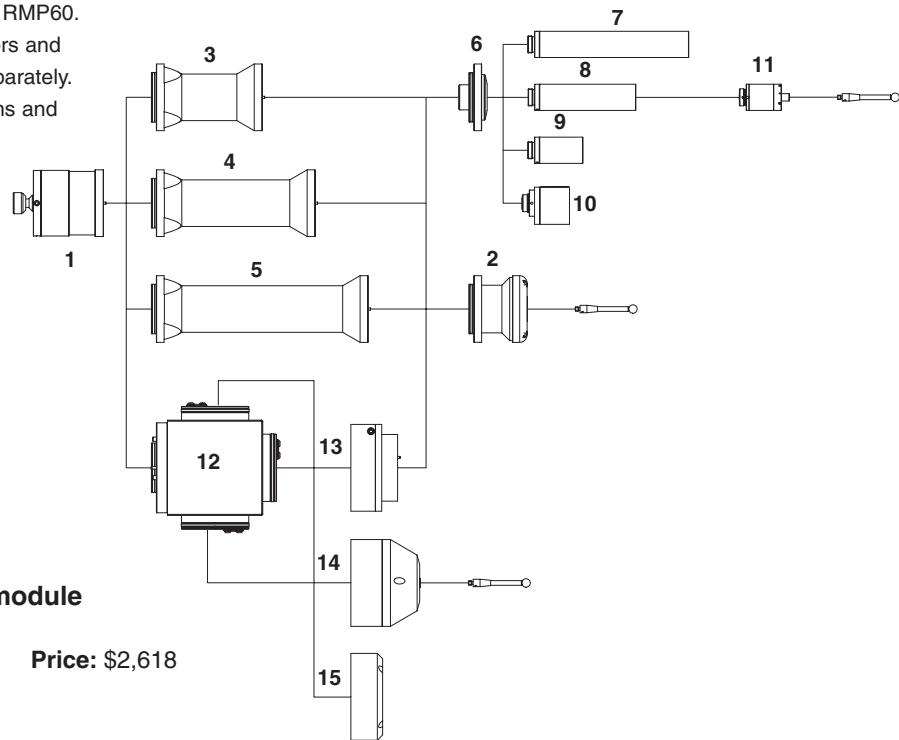
1 – RMP60M transmission module

Part number: A-5742-1003   **Price:** $2,618

2 – RMP60M probe module

Part number: A-4038-1002   **Price:** $3,201

3 – RMP60M 100 mm extension

Part number: A-4038-1010   **Price:** $647

4 – RMP60M 150 mm extension

Part number: A-4038-1027   **Price:** $839

5 – RMP60M 200 mm extension

Part number: A-4038-1028   **Price:** $872

6 – RMP60M LP2 adaptor

Part number: A-4038-0212   **Price:** $647

7 – LPE3 150 mm extension

Part number: A-2063-7003   **Price:** $299

8 – LPE2 100 mm extension

Part number: A-2063-7002   **Price:** $299

9 – LPE1 50 mm extension

Part number: A-2063-7001   **Price:** $299

10 – MA4 90° adaptor

Part number: A-2063-7600   **Price:** $486

11 – LP2 probe assembly

Part number: A-2063-6098   **Price:** $3,102

12 – RMP60M 3-way adaptor

Part number: A-4113-0784   **Price:** $1,307

13 – RMP60M probe module adaptor

Part number: A-4113-0771   **Price:** $741

14 – MP3 probe

Part number: A-2053-5358   **Price:** $3,245

15 – Shorting cover

Part number: A-2053-6468   **Price:** $144

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   **Price:** $5,992

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 2-16 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   **Price:** $10,496

RMP600 probe kit

Includes: RMP600 probe
AA battery (2)
Tool kit

Part number: A-5312-0001   **Price:** $7,333

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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   **Price**: $6,747

Shanks and Toolholders

Shanks for OMP60, MP11, OMP600, RMP60 and RMP600 (spin-on, optical-on, radio-on) systems

Part number	Description	Price
M-2045-0068	CAT30	$385
M-2045-0069	CAT40	$385
M-2045-0138	CAT45	$857
M-2045-0071	CAT50	$385
M-2045-0292	CAT60	$1,781
M-2045-0077	BT30	$385
M-2045-0027	BT40	$385
M-2045-0038	BT45	$857
M-2045-0073	BT50	$385
M-2045-0186	HSK A40	$726
M-2045-0187	HSK A50	$865
M-2045-0188	HSK A63	$929
M-2045-0189	HSK A80	$1,125
M-2045-0190	HSK A100	$1,128
M-2045-0313	CAPTO C4	$786
M-2045-0346	CAPTO C5	$1,042
M-2045-0310	CAPTO C6	$708
M-2045-0311	CAPTO C8	$1,751
M-2045-0335	KM63	$1,454
M-2045-1831591	KM63Y (Mazak)	$1,648
A-2045-0243	½ in straight shank	$228
A-2030-0252	1 in straight shank	$228
A-2030-0211	25 mm straight shank	$228

Calibration masters

Calibration tools

Part number	Description	Price
M-2253-0954	CAT40	$451
M-2253-0955	CAT50	$565
M-2253-1562	BT30	$730
M-2253-1263	BT40	$451
M-2253-1557	BT50	$1,753

Shanks for OMP40-2, OMP400 and RMP40

Part number	Description	Price
M-4071-0050	CAT30	$433
M-4071-0058	CAT40	$385
M-4071-0072	CAT50	$385
M-4071-0049	BT30	$445
M-4071-0057	BT40	$385
M-4071-0071	BT50	$385
M-4071-0048	ISO30 DIN69871	$433
M-4071-0069	ISO40 DIN69871	$414
M-4071-0044	HSK E25	$505
M-4071-0055	HSK E32	$505
M-4071-0054	HSK E40	$505
M-4071-0045	HSK A32	$505
M-4071-0046	HSK A40	$505
M-4071-0047	HSK A50	$680
M-4071-0129	HSK A63	$595
M-4071-0141	CAPTO C4	$829
M-4071-0066	CAPTO C5	$861
M-4071-0067	CAPTO C6	$861
M-4071-0065	KM63	$861

OMP400 and RMP40 shank kits

CAT40 shank kit

Includes: CAT40 shank
OMP60/RMP60 shank adaptor

Part number: M-4071-0058-RI   **Price:** $564

BT40 shank kit

Includes: BT40 shank
OMP60/RMP60 shank adaptor

Part number: M-4071-0057-RI   **Price:** $564

Shanks for OLP40 and RLP40

Part number	Description	Price
A-5625-1003	25 mm straight shank	$228
A-5625-1004	½ in straight shank	$228
A-5625-1007	1 in straight shank	$228

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 Integral Air Blast – IAB) or separate configurations. NC4F (fixed) is available in four different sizes and with integral cable/air lines or in a connectorized version. Kits shown are integral cable/air line versions. NC4S (separate) systems are user-configurable operating between 500 mm and 5 m.

Repeatability		±1.0 µm (0.00004 in)
Minimum tool diameter *	Measurement	0.03 mm (0.0012 in)
	Breakage	0.03 mm (0.0012 in)

* or larger, depending on the separation and set-up

NC4 fixed system retrofit kits

Include: NC4 fixed unit with 12.5 m cable
NCi-6 interface
Air regulator kit
Air blast solenoid kit
Ø24 mm OD steel braided conduit
Mounting plate
Tool setting software
Installation and application support

Part number: NC4-F300-S
Part number: NC4-F230-S
Part number: NC4-F145-S
Part number: NC4-F115-S

NC4 separate system retrofit kits

Include: NC4 separate unit with 12.5 m cable
NCi-6 interface
Air regulator kit
Ø17 mm OD 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 control 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 IAB fixed kits
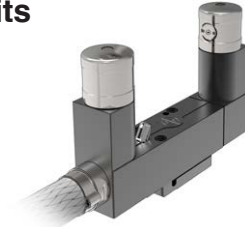
NC4 F300/240 with NCi-6 kit

Separation 240 mm

Part number: NC4-F300-kit   **Price:** $5,563

NC4 F230/170 with NCi-6 kit

Separation 170 mm

Part number: NC4-F230-kit   **Price:** $5,563

NC4 F145/85 with NCi-6 kit

Separation 85 mm

Part number: NC4-F145-kit   **Price:** $5,563

NC4 F115/55 with NCi-6 kit

Separation 55 mm

Part number: NC4-F115-kit   **Price:** $5,563

NC4 separate kits

NC4 S800 with NCi-6 kit

Separation 500 mm – 800 mm

Part number: A-4114-5060   **Price:** $4,972

NC4 S1500 with NCi-6 kit

Separation 800 mm – 1500 mm

Part number: A-4114-5065   **Price:** $4,972

NC4 S2000 with NCi-6 kit

Separation 1500 mm – 2000 mm

Part number: A-4114-5070   **Price:** $4,972

NC4 S3000 with NCi-6 kit

Separation 2000 mm – 3000 mm

Part number: A-4114-5075   **Price:** $4,972

NC4 S5000 with NCi-6 kit

Separation 3000 mm – 5000 mm

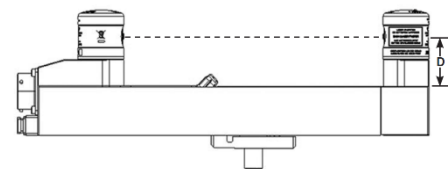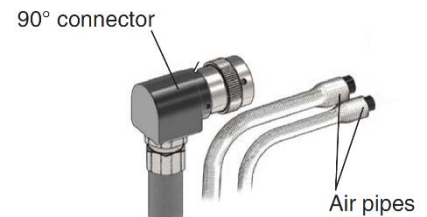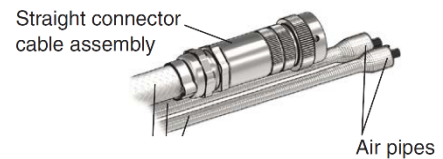**Part number:** A-4114-5080   **Price:** $4,972

NC4 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.

Price: $5,391

Type/Size	Beam height	Cable connector	Part number
NC4+ F115/55	31 mm	Straight	A-6270-3010
NC4+ F145/85	31 mm	Straight	A-6270-3210
NC4 F230/170	31 mm	Straight	A-6270-3410
NC4 F300/240	31 mm	Straight	A-6270-3610
NC4+ F115/55	31 mm	90 degrees	A-6270-3030
NC4+ F145/85	31 mm	90 degrees	A-6270-3230
NC4 F230/170	31 mm	90 degrees	A-6270-3430
NC4 F300/240	31 mm	90 degrees	A-6270-3630
NC4+ F115/55	50 mm	Straight	A-6270-3110
NC4+ F145/85	50 mm	Straight	A-6270-3310
NC4 F230/170	50 mm	Straight	A-6270-3510
NC4 F300/240	50 mm	Straight	A-6270-3710
NC4+ F115/55	50 mm	90 degrees	A-6270-3130
NC4+ F145/85	50 mm	90 degrees	A-6270-3330
NC4 F230/170	50 mm	90 degrees	A-6270-3530
NC4 F300/240	50 mm	90 degrees	A-6270-3730

D = Beam height (31 mm or 50 mm)

NC4 Blue 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.

Price: $5,891

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+ F115/55	31 mm	90 degrees	A-6435-3030
NC4+ F145/85	31 mm	90 degrees	A-6435-3230
NC4+ F115/55	50 mm	Straight	A-6435-3110
NC4+ F145/85	50 mm	Straight	A-6435-3310
NC4+ F115/55	50 mm	90 degrees	A-6435-3130
NC4+ F145/85	50 mm	90 degrees	A-6435-3330

Air blast solenoid kit

Recommended for all NC4 IAB kits.

Part number: A-5299-2933   **Price:** $469

Straight connector cable assembly

Air pipes

90° connector

Air pipes

NC4 tool kit

Part number: A-4114-4110   **Price:** $45

NC4 air regulator kit (filter/drier/regulator)

Part number: A-6435-4000   **Price:** $588

NCi-6 interface

Part number: A-6516-2000   **Price:** $237

NC4 access panel 0.2

Part number: A-6270-0320   **Price:** $23

NC4 access panel 0.4

Part number: A-6270-0335   **Price:** $23

NC4 access panel 0.6

Part number: A-6270-0360   **Price:** $23

Steel sheath conduit 24 mm OD × 1 m

For NC4 IAB fixed cable protection (GP18).

Part number: M-6270-0278   **Price:** $24

Steel sheath conduit 17 mm OD × 1 m

For NC4 separate cable protection (GP11).

Part number: P-HO01-0008   **Price:** $24

NC4F IAB hard-wired 90-degree conversion kit

Part number: A-6270-0380   **Price:** $61

NC4F IAB nozzle replacement kit

Part number: A-6270-0395   **Price:** $35

NC4 set-up tool

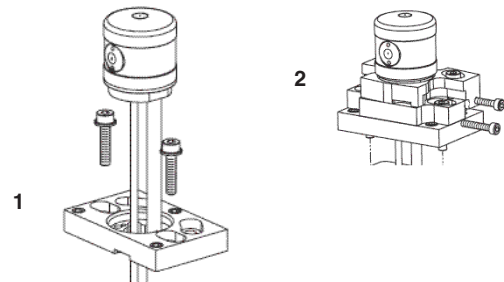**Part number:** A-4114-8000   **Price:** $358

NC4S mounting hardware options

1. NC4 spacer plate – separate

Part number: A-4114-4400   **Price:** $107

2. NC4 adjuster pack – separate

Part number: A-4114-3100   **Price:** $239

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

Part number: OTS-KIT (½ AA) **Price:** $4,596
Part number: OTSAA-KIT (AA) **Price:** $4,596

OTS ½ AA probe kit

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

Part number: A-5401-2001 **Price:** $2,379

OTS AA probe kit

Includes: OTS probe
AA battery (2)
Tool kit

Part number: A-5514-2001 **Price:** $2,379

OMM-2 optical receiver

Part number: A-5492-0051 **Price:** $1,033

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049 **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050 **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049 **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050 **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830 **Price:** $125

OSI interface

Part number: A-5492-2000 **Price:** $975

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 **Price:** $36

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 retrofit 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   **Price:** $5,982

RTS AA probe kit

Includes: RTS probe
AA battery (2)
Tool kit

Part number: A-5646-0001   **Price:** $3,092

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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   **Price:** $1,481

TS27R probe, stylus, and holder kit

Part number: A-2008-0368   **Price:** $1,190

HSI interface

Part number: A-5500-1000   **Price:** $207

OTS, RTS or TS27R replacement parts and accessories

Tungsten carbide stylus (0.5 in disk)

Part number: A-2008-0382   **Price:** $111

Ceramic stylus (19 mm square)

Part number: A-2008-0384   **Price:** $260

Retrofit stylus kit

Includes: Break protection
             Tether
             Screws

Part number: A-5003-5171   **Price:** $35

Break protect link

Part number: A-5004-7443   **Price:** $25

Stylus holder with 4 set screws

Part number: A-2008-0389   **Price:** $25

Stylus holder set screws

Part number: P-SC13-0403   **Price:** $2

Crank for horizontal machining centers

Part number: A-2008-0448   **Price:** $120

108 mm riser

Part number: M-2008-0866-RI-KIT   **Price:** $135

TS27 stylus (0.5 in disk)

For TS27 probes shipped prior to July 1995.

Part number: M-5003-1033 (steel)   **Price:** $111
Part number: M-2008-0197 (ceramic)   **Price:** $244

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   **Price:** $3,524

Side exit

Part number: A-2197-3000   **Price:** $3,524

HSI interface

Part number: A-5500-1000   **Price:** $207

![RENISHAW apply innovation™]

Primo™ LTS

The Primo 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 which is available to download free of charge.

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)

Primo LTS kit

Includes: Primo LTS
Ø26 mm contact pad

Part number: A-5475-0001   **Price:** $983

Primo LTS with adaptor block

Includes: Primo LTS
Ø26 mm contact pad
Adaptor

Part number: A-5475-0002   **Price:** $1,063

Primo LTS replacement parts and accessories

LTS tool kit

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

Part number: A-5475-0060   **Price:** $24

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   **Price:** $94

LTS Ø26 mm contact pad kit

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

Part number: A-5475-0402   **Price:** $205

LTS air pipe

Part number: A-5475-0403   **Price:** $63

LTS adaptor block (for T-slot mounting)

Part number: A-5475-0404   **Price:** $82

LTS riser block 50 mm

Part number: A-5475-0405   **Price:** $183

LTS riser block 100 mm

Part number: A-5475-0406   **Price:** $290

LTS conduit bulkhead kit

Part number: A-5475-0407   **Price:** $159

LTS conduit extension kit 2 m

Part number: A-5475-0408   **Price:** $159

LTS conduit extension kit 5 m

Part number: A-5475-0409   **Price:** $256

Solenoid kit

Part number: A-5299-2933   **Price:** $469

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   **Price:** $2,756

TRS2 probe only

Includes: TRS2 laser system with integral interface

Part number: A-5450-0400   **Price:** $2,103

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   **Price:** $464

TRS2 air filter service kit (3 bowl)

Part number: M-3060-0933   **Price:** $124

TRS2 air filter service kit (2 bowl)

Part number: P-FI01-S002   **Price:** $154

Sealtite conduit for TRS2

¼ in conduit, 5 ft long. Includes one fitting.

Part number: SEALTITE, 7455   **Price:** $36

TRS2 replacement air cap

Part number: A-4178-0440   **Price:** $30

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 2-16 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   **Price:** $6,341

OLP40 probe kit

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

Legacy

Part number: A-5625-0001   **Price:** $3,984

Modulated

Part number: A-5625-2001   **Price:** $3,984

OMM-2 optical receiver

Part number: A-5492-0051   **Price:** $1,033

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049   **Price:** $1,657

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050   **Price:** $1,743

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049   **Price:** $1,657

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050   **Price:** $1,743

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

OSI interface

Part number: A-5492-2000   **Price:** $975

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   **Price:** $36

OMP40M

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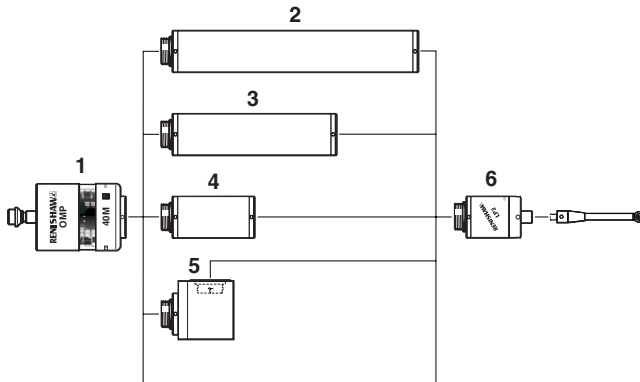
1 – OMP40M transmission module

Legacy

Part number: A-5626-0001   **Price:** $1,383

Modulated

Part number: A-5626-2001   **Price:** $1,383

2 – LPE3 extension 150 mm

Part number: A-2063-7003   **Price:** $299

3 – LPE2 extension 100 mm

Part number: A-2063-7002   **Price:** $299

4 – LPE1 extension 50 mm

Part number: A-2063-7001   **Price:** $299

5 – MA4 90° adaptor

Part number: A-2063-7600   **Price:** $486

6 – LP2 probe assembly

Part number: A-2063-6098   **Price:** $3,102

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   **Price:** $6,842

A shank is not included in the above kits. See section entitled Shanks and Toolholders on page 2-16 for price and part number information.

OMM-2 optical receiver

Part number: A-5492-0051   **Price:** $1,033

OMI-2 optical receiver/interface

Part number: A-5191-0049   **Price:** $1,657

OMI-2T optical receiver/interface

Part number: A-5439-0049   **Price:** $1,657

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

OSI interface

Part number: A-5492-2000   **Price:** $975

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   **Price:** $36

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 2-16 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   **Price:** $7,849

RLP40 probe kit

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

Part number: A-5627-0001   **Price:** $4,819

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125
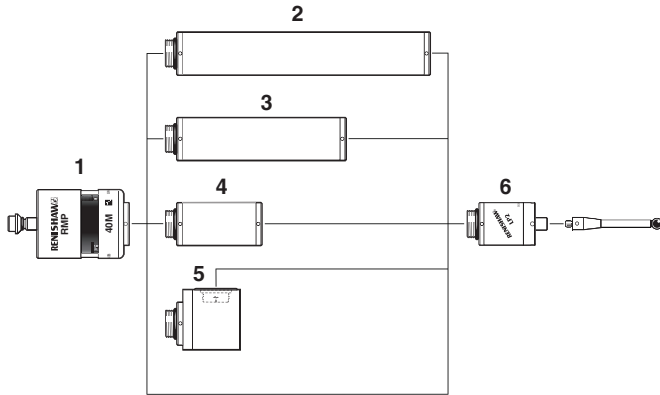
Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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   **Price:** $2,095

2 – LPE3 extension 150 mm

Part number: A-2063-7003   **Price:** $299

3 – LPE2 extension 100 mm

Part number: A-2063-7002   **Price:** $299

4 – LPE1 extension 50 mm

Part number: A-2063-7001   **Price:** $299

5 – MA4 90° adaptor

Part number: A-2063-7600   **Price:** $486

6 – LP2 probe assembly

Part number: A-2063-6098   **Price:** $3,102

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   **Price:** $8,227

A shank is not included in the above kits. See section entitled Shanks and Toolholders on page 2-16 for price and part number information.

RMI-Q radio machine interface

Part number: A-5687-0050   **Price:** $2,681

Receiver mounting bracket

Part number: A-2033-0830   **Price:** $125

Sealtite conduit

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

Part number: A-4113-0306   **Price:** $36

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 gaging 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   **Price:** $3,102

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   **Price:** $3,102

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   **Price:** $3,102

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   **Price:** $42

Chip deflector

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

Part number: M-2063-8003   **Price:** $142

C spanner

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

Part number: A-2063-7587   **Price:** $18

LP2 service kit (DK2)

Includes: Front cap
            Metal eyelid
            Spring
            O ring

Part number: A-2063-7542   **Price:** $80

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   **Price:** $38

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   **Price:** $142

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   **Price:** $142

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   **Price:** $249

MA4 90° adaptor

Part number: A-2063-7600   **Price:** $486

HSI interface

Part number: A-5500-1000   **Price:** $207

LPE1 extension

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

Part number: A-2063-7001   **Price:** $299

LPE2 extension

100 mm long.

Part number: A-2063-7002   **Price:** $299

LPE3 extension

150 mm long

Part number: A-2063-7003   **Price:** $299

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   **Price:** $1,281

LP2 1 in straight shank with FS2 and cable assembly

Part number: A-2063-8328   **Price:** $1,281

LP2 22 mm straight shank with FS2 and cable assembly

Part number: A-2063-8366   **Price:** $1,281

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   **Price:** $4,630

MP250 accessories

FS10 adjustable female socket for MP250

Part number: A-5500-1710   **Price:** $237

FS20 fixed female socket for MP250

Part number: A-5500-1810   Price: $237

HSI-C interface for MP250

Part number: A-6527-1000   **Price:** $241

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)
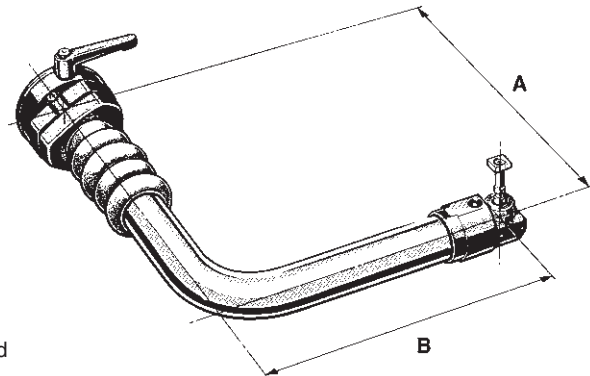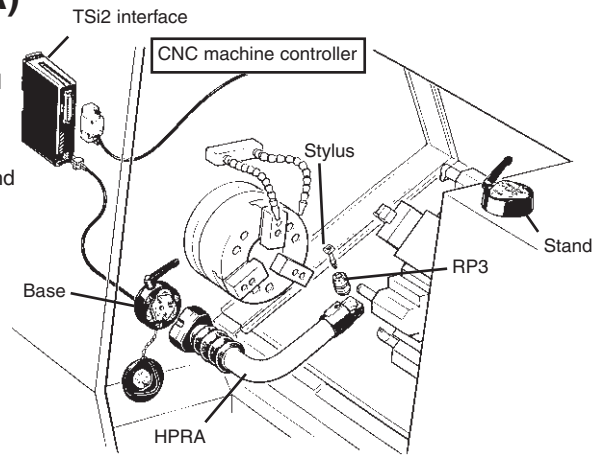
Standard kits

Part number: See below   **Price:** $3,706*

* 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

Machine tool probes

2-35
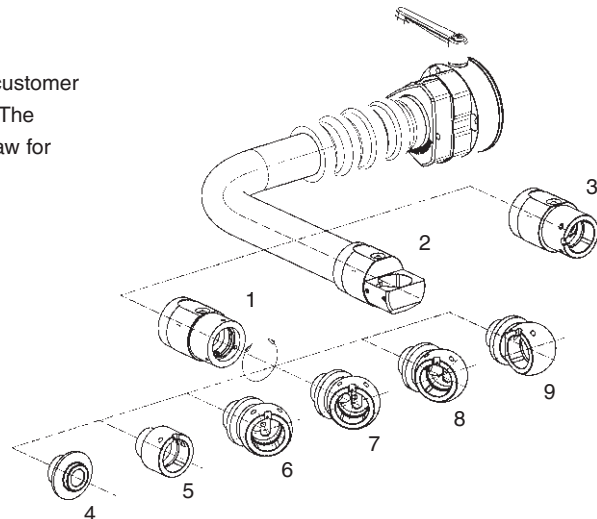
HPRA bases

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   **Price:** $784

HPRA side exit base

Part number: A-2176-0187   **Price:** $784

HPRA storage stand

Part number: A-2176-0019   **Price:** $311

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)   **Price:** $116
Part number: A-2197-0158 (20 mm tooling)   **Price:** $116
Part number: A-2197-0159 (25 mm tooling)   **Price:** $116
Part number: A-2197-0160 (32 mm tooling)   **Price:** $116
Part number: A-2197-0161 (40 mm tooling)   **Price:** $116
Part number: A-2197-0162 (50 mm tooling)   **Price:** $116

HPRA/HPPA/HPMA break stems

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

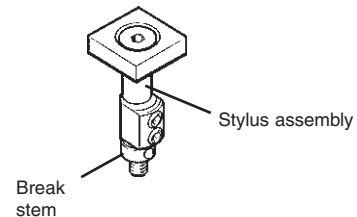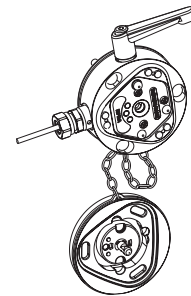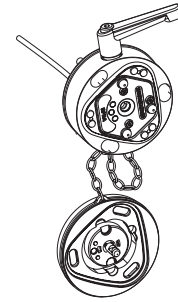## HPRA/HPPA/HPMA break stem tool kits

Contain break stem and hex wrenches.

Part number: A-2176-0639 (16 mm to 20 mm tooling)   **Price:** $27
Part number: A-2176-0636 (25 mm to 50 mm tooling)   **Price:** $27

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

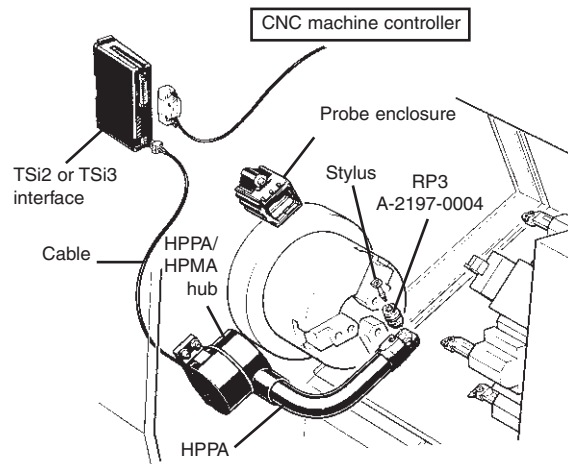|	
max 2σ value in machine XZ axis:	5.0 µm (0.0002 in) for arms supporting 6 in to 15 in chucks
	8.0 µm (0.0003 in) for arms supporting 18 in to 24 in chucks
HPPA max arm dimensions:	A=555 mm B=458 mm
HPPA min arm dimensions:	A=250 mm B=219 mm
HPMA max arm dimensions:	A=555 mm B=458 mm
HPMA min arm dimensions: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

CNC machine controller

Probe enclosure

TSi2 or TSi3 interface

Stylus   RP3 A-2197-0004

Cable   HPPA/ HPMA hub

HPPA

HPPA standard kits

Part number: See below   **Price:** $4,380*

| 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
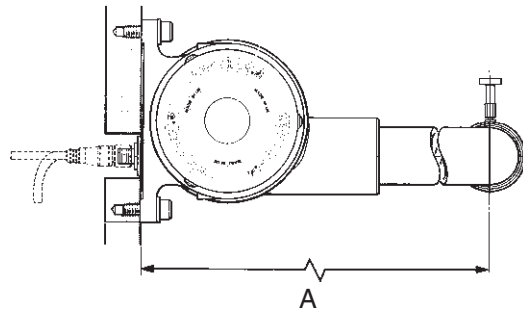
HPMA standard kits

Part number: See below   **Price:** $4,942*

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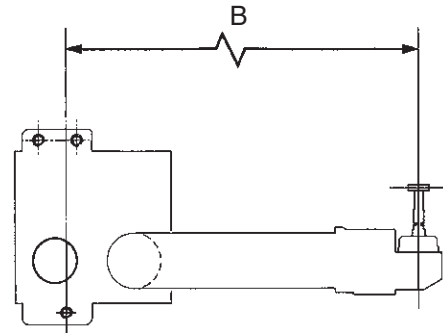
* A stylus assembly is not included and must be ordered separately. In addition HPPA and HPMA R/E systems require the separate purchase of a cable.

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
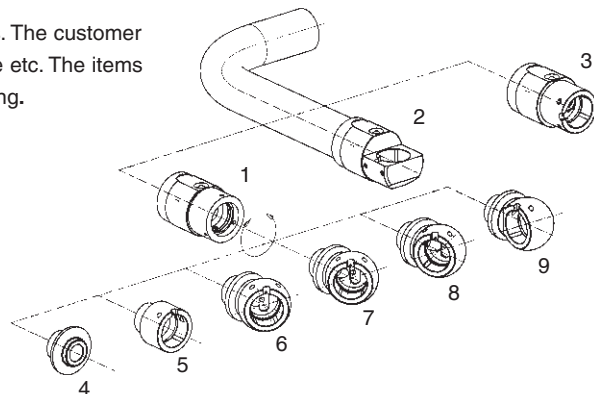
HPPA cables

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

Part number: P-CA82-1010 (2 meters) **Price:** $34
Part number: P-CA82-1009 (5 meters) **Price:** $54
Part number: P-CA82-1011 (10 meters) **Price:** $76

HPMA cables

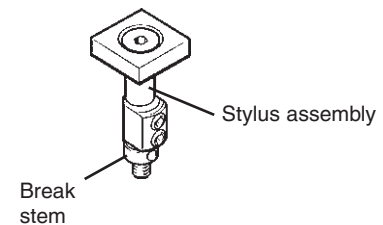The HPMA R/E systems require the use of one of the cables below:

Part number: A-2181-1080 (2 meters) **Price:** $105
Part number: A-2181-1085 (5 meters) **Price:** $131
Part number: A-2181-1090 (10 meters) **Price:** $178

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) **Price:** $116
Part number: A-2197-0158 (20 mm tooling) **Price:** $116
Part number: A-2197-0159 (25 mm tooling) **Price:** $116
Part number: A-2197-0160 (32 mm tooling) **Price:** $116
Part number: A-2197-0161 (40 mm tooling) **Price:** $116
Part number: A-2197-0162 (50 mm tooling) **Price:** $116

Stylus assembly

Break stem

HPRA/HPPA/HPMA M4 break stems

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

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) **Price:** $27
Part number: A-2176-0636 (25 mm to 50 mm tooling) **Price:** $27

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) **Price:** $116
Part number: A-2008-0602 (32 mm tooling) **Price:** $116
Part number: A-2008-0603 (40 mm tooling) **Price:** $116

TS20 break protect link

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

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.

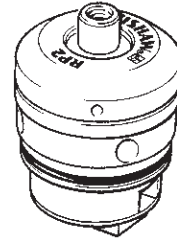**Part number:** A-2154-0007   **Price:** $1,540
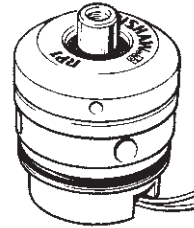
RP1 DD – RP1 double diaphragm version and tool kit

For use on OEM installation into purpose-built holders.

Part number: A-2154-0008   **Price:** $1,540

RP2 – Probe for tool setting arm (TSA) only

Part number: A-2116-0149   **Price:** $1,540
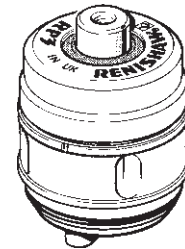
RP2DD – RP2 double diaphragm version for TSA only

Part number: A-2116-0150   **Price:** $1,540

RP3 – Probe for HPRA, HPPA and HPMA arms

Part number: A-2197-0049   **Price:** $1,540

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   **Price:** $975

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   **Price:** $207

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   **Price:** $241

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   **Price:** $237

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)   **Price:** $1,657
Part number: A-5191-0050 (15 m cable)   **Price:** $1,743

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)   **Price:** $1,657
Part number: A-5439-0050 (15 m cable)   **Price:** $1,743

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)   **Price:** $1,033

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 (8 m cable) **Price:** $2,681
Part number: A-5687-0050 (15 m cable) **Price:** $2,681

Rear exit

Part number: A-5687-0059 (8 m cable) **Price:** $2,681
Part number: A-5687-0060 (15 m cable) **Price:** $2,681

RMI-Q accessories

RMI-Q 30 m replacement cable

Part number: A-5687-0303 **Price:** $396

RMI-Q 50 m replacement cable

Part number: A-5687-0304 **Price:** $539

RMI-Q antenna cover

Part number: A-5687-0305 **Price:** $125

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 **Price:** $36

Receiver mounting bracket

Part number: A-2033-0830 **Price:** $125

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   **Price:** $194

TSi2-C

Part number: A-2176-1152   **Price:** $194

TSi3

Part number: A-2181-0465   **Price:** $237

TSi3-C

Part number: A-2181-2239   **Price:** $237

TSi3-P

Part number: A-2181-5200   **Price:** $463
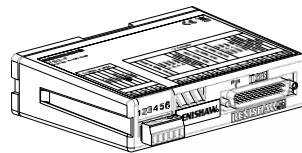
TSi3-CP

Part Number: A-2181-5300   **Price:** $463

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	Price
Brother 32A/A0000 (post June 2002)	A-4012-0908	$1,127
Brother 32B/B00/32C/C00	A-4012-1028	$1,127
DMG Mori (Fanuc/Meldas)	A-4012-0936	$1,127
Fagor 8060/8065/8070	A-4016-0071	$1,127
Fanuc 0-32	A-4012-0516	$1,127
Haas	A-4012-0880	$1,127
Mazak M32/M Plus/Fusion	A-4013-0023	$1,127
Mazak Smooth/Matrix/Nexus/Smart	A-4013-0112	$1,127
Mitsubishi Meldas	A-4012-0516	$1,127
Okuma OSP/E100-300/U100	A-4016-1035	$1,127
Siemens 810D/828D/840D	A-4014-0356	$1,127
Toshiba Tosnuc (888M/999M)	A-4012-0949	$1,127

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	Price
Haas	A-4012-0890	$1,127
Mazak Fusion	A-4013-0040	$1,127
Yasnac I80, MX3, J50, J300	A-4014-0104	$1,127

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	Price
Brother 32A/A00 (post June 2002)/32B/B00/32C/C00	A-4012-1007	$451
DMG Mori (Fanuc/Meldas)	A-4012-1555	$451
Fagor 8060/8065/8070	A-4016-0078	$451
Fanuc 0-32	A-4012-0584	$451
Haas	A-4012-0886	$451
Mazak 640M, M32, M+	A-4013-0036	$451
Mazak Smooth/Matrix/Nexus/Smart	A-4013-0133	$451
Mitsubishi Meldas	A-4012-0584	$451
Okuma OSP/E100/P100/P200/P300/U100	A-4016-1039	$451
Okuma OSP/E100/P100/P200/P300/U100 (HMC)	A-4016-1071	$451
Siemens 810/840D (Ver 5 and above)	A-4014-0396	$451

Non-contact tool setting

Description	Part number	Price
Brother 32A/A00 (post June 2002)	A-4012-0904	$677
Brother 32B/B00/32C/C00	A-4012-1035	$677
DMG Mori (Fanuc/Meldas)	A-4012-0953	$677
Fanuc 0-32	A-4012-0820	$677
Haas	A-4012-0895	$677
Mazak INT E/I/J Smooth/Matrix/Nexus/Smart	A-4013-0123	$677
Mazak Smooth/Matrix	A-4013-0119	$677
Mitsubishi Meldas	A-4012-0820	$677
Okuma OSP/E100M/P100M/200M/P300M/U100M	A-4016-1051	$677
Siemens 810/840D/828D	A-4014-0401	$677

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	Price
Fanuc 0-32	A-4012-0541	$902
Haas	A-4012-0874	$902
Mazak (QTN) T-Plus/Fusion/640T	A-4013-0071	$902
Mazak (QTN) Smooth/Matrix/Nexus/Smart	A-4013-0137	$902
Siemens 810D/840D	A-4014-0137	$902

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	Price
DMG Mori MT/NT (Fanuc)	A-4012-0834	$1,127
DMG Mori Y axis (Fanuc)	A-4012-1301	$1,127
Doosan MX (Fanuc)	A-4012-1016	$1,127
Doosan SMX (Fanuc)	A-4012-1511	$1,127
Fanuc/Meldas Y axis	A-4012-1092	$1,127
Haas Y axis	A-4012-1309	$902
Mazak E-series Fusion	A-4013-0083	$1,127
Mazak Mark IV and E-series Matrix	A-4013-0106	$1,127
Nakamura Super NX (Fanuc)	A-4012-1074	$1,127
Okuma OSP	A-4016-1056	$1,127

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	Price
Fanuc	A-4012-0779	$451
Fanuc (3 axis)	A-4012-0745	$451
Haas	A-4012-0877	$451
Mitsubishi Meldas	A-4013-0254	$451
Mitsubishi Meldas (3 axis)	A-4013-0250	$451
Siemens 810D/828D/840D)	A-4014-0130	$451

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   **Price:** $2,920

AxiSet™ Check-Up Fanuc (Table-Table)

Part number: A-5642-1120   **Price:** $2,920

AxiSet™ Check-Up Mori Seiki NMV NMH

Part number: A-5642-1400   **Price:** $2,920

AxiSet™ Check-Up Siemens (Table-Table)

Part number: A-5642-1500   **Price:** $2,920

AxiSet™ Check-Up Mazak Mark IV

Part number: A-5642-1005   **Price:** $2,920

AxiSet™ Check-Up Mazak eV/eH

Part number: A-5642-1009   **Price:** $2,920

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

Part number: A-5642-1105   **Price:** $2,920

AxiSet™ Check-Up Haas

Part number: A-5642-1600   **Price:** $2,920

AxiSet™ Check-Up Mori Seiki NT

Part number: A-5642-1405   **Price:** $2,920

AxiSet™ Check-Up Siemens (Head-Head)

Part number: A-5642-1515   **Price:** $2,920

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   **Price:** $300

AxiSet Check-Up™ app 90-day trial

Part number: A-5642-3111   **Price:** FOC

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

Part number: A-4007-1400   **Price:** $5,300

Productivity+™ post processors

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

Control	Part number	Price
Brother	A-4007-5900	$1,571
Fanuc Macro B	A-4007-5100	$1,571
Haas	A-4007-5200	$1,571
Heidenhain i530	A-4007-6000	$1,571
Heidenhain 426/430	A-4007-6900	$1,571
Heidenhain 6xx	A-4007-7200	$1,571
Hitachi Seicos	A-4007-5300	$1,571
Hurco Winmax	A-4007-6800	$1,571
Makino	A-4007-5400	$1,571
Mazak	A-4007-5500	$1,571
Mazak Integrex	A-4007-7100	$1,571
Mitsubishi Meldas	A-4007-5600	$1,571
Mori Seiki	A-4007-6600	$1,571
Okuma	A-4007-6300	$1,571
Siemens 840D/810D	A-4007-6700	$1,571
Yasnac	A-4007-5700	$1,571

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	Price
Pro-E	CS-SOF-SW-02-0007	$1,571
CATIA	CS-SOF-SW-02-0008	$1,571
UG/NX	CS-SOF-SW-02-0009	$1,571
ACIS	CS-SOF-SW-02-0010	$1,048
SolidWorks®	CS-SOF-SW-02-0011	$1,571
Inventor™	CS-SOF-SW-02-0012	$1,571
All of the above	CS-SOF-SW-02-0005	$2,095

Productivity+™ Active Editor Pro 90-day trial

Part number: A-4007-8999   **Price:** FOC

Machine tool probes

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Renishaw Capps-NC

Renishaw Capps-NC is a comprehensive part verification software package for machine tools, designed to give confidence to the user that the part produced conforms to the CAD model.

Capps-NC can reduce set-up time and fixturing cost while creating automated closed loop manufacturing. A reduction of additional repair and scraps will increase product quality.

- Generate measurement programs from the CAD model, offline, in a virtual PC environment.

- Using the comprehensive probe builder, various shanks, Renishaw probes and styli can be modeled.

- Generate probe paths for 3-axis machines measuring 2D and 3D prismatic features and 3D free-form surfaces.

- Collision avoidance automatically detects obstructions and generates avoidance paths.

- Supports a variety of CNCs and machine communication protocols (RS232, Ethernet, FOCAS, Mnet, TNCDirect, Siemens OPC, MTConnect).

- Uses industry-standard DMIS code to generate machine motion, construction, dimensioning and tolerance instructions.

- Generate comprehensive measurement reports with full GD&T.

- Using the optional 4th/5th axis module, Capps-NC supports a variety of multi-axis machine configurations.

- Using the optional tool and work offset module, tool compensation commands and work offset shifts can be incorporated into the post processed output.

- Intuitive part alignment tools to achieve perfect part set-up conditions before the cutting process. Tools such as Best Fit and Iterative Part Alignment.

- Adapt G-code cutting and trimming programs to any actual part shape and orientation for 5-axis motion code with NC-Fit.

- First year maintenance and support included.
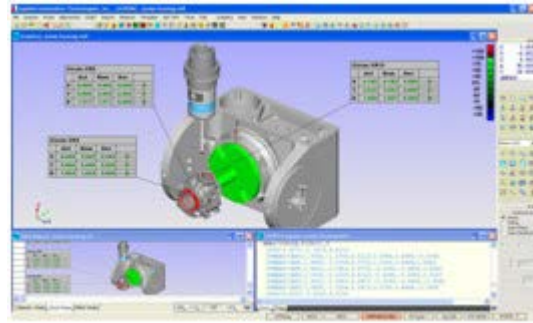
Capps-NC Advanced

Capps-NC Advanced is a single software license designed for the user who intends to program inspection cycles and capture measurement results **on a single PC**.

Includes: Complete Capps-NC license
Machine interface option
CAD importers (IGES and STEP)
One-year Capps-NC maintenance and support

Capps-NC Advanced – 3-axis machine

Part number: A-5722-CPNC-ADV-3A   **Price:** $16,500

Capps-NC Advanced – 4-axis machine

Part number: A-5722-CPNC-ADV-4A   **Price:** $19,500

Capps-NC Advanced – 5-axis machine

Part number: A-5722-CPNC-ADV-5A   **Price:** $22,500

Capps-NC Advanced – Mill Turn machine

Part number: A-5722-CPNC-ADV-MT   **Price:** $23,500

Capps-NC Advanced each additional axis control

Part number: A-5722-CPNC-ADV-AX   **Price:** $3,500

Capps-NC Advanced additional turret control

Part number: A-5722-CPNC-ADV-TUR   **Price:** $3,500

Work offset programming and feedback

Part number: A-5722-CPNC-ADV-WO   **Price:** $4,950

Tool offset programming and feedback

Part number: A-5722-CPNC-ADV-TO   **Price:** $4,950

Capps-NC programming station

Capps-NC programming – 3-axis machine

Part number: A-5722-CPNC-PS-3A   **Price:** $10,500

Capps-NC programming – 4-axis machine

Part number: A-5722-CPNC-PS-4A   **Price:** $12,500

Capps-NC programming – 5-axis machine

Part number: A-5722-CPNC-PS-5A   **Price:** $14,500

Capps-NC programming – Mill Turn machine

Part number: A-5722-CPNC-PS-MT   **Price:** $15,000

Capps-NC programming each additional axis control

Part number: A-5722-CPNC-PS-AX   **Price:** $2,045

Capps-NC programming additional turret control

Part number: A-5722-CPNC-PS-TUR   **Price:** $2,045

Work offset programming and feedback

Part number: A-5722-CPNC-PS-WO   **Price:** $2,250

Tool offset programming and feedback

Part number: A-5722-CPNC-PS-TO   **Price:** $2,250

Capps-NC execution module

Capps-NC execution module – 3-axis machine

Part number: A-5722-CPNC-EM-3A   **Price:** $8,950

Capps-NC execution module – 4-axis machine

Part number: A-5722-CPNC-EM-4A   **Price:** $10,450

Capps-NC execution module – 5-axis machine

Part number: A-5722-CPNC-EM-5A   **Price:** $12,500

Capps-NC execution module – Mill Turn machine

Part number: A-5722-CPNC-EM-MT   **Price:** $13,500

Capps-NC execution module each additional axis control

Part number: A-5722-CPNC-EM-AX   **Price:** $1,950

Capps-NC execution module additional turret control

Part number: A-5722-CPNC-EM-TUR   **Price:** $2,450

Work offset execution module and feedback

Part number: A-5722-CPNC-EM-WO   **Price:** $2,950

Tool offset execution module and feedback

Part number: A-5722-CPNC-EM-TO   **Price:** $2,950

Machine tool probes

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Capps-NC additional NC options

Additional machine interface options

Part number: A-5722-CPNC-OP-INT

Price: $1,950

2nd spindle or turret interface capability for mill turns

Part number: A-5722-CPNC-OP-DT

Price: $3,250

License Manager

Includes: 3 nodes of connection

Part number: A-5722-CPNC-LM

Price: $4,950

Execution modules configured for License Manager discount from configured price

Part number: A-5722-CPNC-LMCEM

Price: Call for details

AAT NC-fit for NC part program correction

Part number: A-5722-CPNC-NCF

Price: $12,500

Capps-NC Direct CAD translators

Catia4 direct import

Part number: A-5722-CAD-C4

Price: $4,345

Catia5 direct import

Part number: A-5722-CAD-C5

Price: $4,345

Pro-E direct import

Part number: A-5722-CAD-PE

Price: $4,345

Unigraphics import

Part number: A-5722-CAD-UG

Price: $4,345

Parasolid import

Part number: A-5722-CAD-PS

Price: $1,650

SolidWorks import

Part number: A-5722-CAD-SW

Price: $1,650

VDA import

Part number: A-5722-CAD-VDA

Price: $1,045

Capps-NC maintenance

SMA rate on software

Part number: A-5722-SMA-NC   **Price:** Call for details

Each skipped year

Part number: A-5722-SMAE-NC   **Price:** Call for details

Probe retrofit questionnaire

Customer information (location of installation)

⚠ **Important! This document consists of four pages. Please be sure to read all information before returning.**

Address of installation:

Company name _____ Contact name _____

Street _____

City _____ State _____ Zip _____

Telephone _____ Fax _____ E-mail _____

Product being purchased _____

Machine information

Machine make _____ Control make _____

Machine model _____ Control model _____

Machine type (i.e. VMC, HMC, lathe, gantry etc.) _____

Tool holder type/size (i.e. CAT50, BT40, HSK A80, VDI, other) _____

Axis/Axis travels: X _____   Y _____   Z _____   B _____   Other _____

Is the machine still in warranty?   Yes ☐   No ☐   Serial # _____

Is the machine installed?   Yes ☐   No ☐   If no, when will installation be complete? _____

Spindle orientation: Yes ☐   No ☐

Pallet shuttle: Yes ☐   No ☐   If Yes, indexer ☐   or full 4th axis ☐

Is there currently a probe system on the machine (i.e. tool post, part probe, tool eye)?   Yes ☐   No ☐

If yes, please explain _____

Is a safety briefing required to work at location of installation?   Yes ☐   No ☐

Note: If a non-disclosure form is required to enter the facility, please provide at least two weeks prior to the scheduled visit.

Application information _____

_____

_____

Note: The machine must be operational at the time of installation. A pull stud is required for spindle-mounted probes, but is not provided by Renishaw. A calibration device is not supplied.

The following options must be installed and activated (turned on) by your OEM, machine distributor or control manufacturer prior to Renishaw's arrival.

Required control features/options

Indicate which options are installed on your control.

Fanuc/Yasnac/Mitsubishi/Mazak   **Haas**

G31 skip	Yes ☐	No ☐	Promac	Yes ☐	No ☐
G31 high speed skip	Yes ☐	No ☐			
G31 multi-skip	Yes ☐	No ☐			

Custom macro   Yes ☐   No ☐

Connector type/pin location of skip signal _____

• 24 V dc required to power probe interface

• M codes may be required – see the following information pages for details

Note: Controls not listed may have similar features/options. Contact Renishaw regarding support for other controls. Machine motion (G00/G01/G32) must be allowed with or without spindle rotation.

IMPORTANT

This questionnaire is intended for information purposes for installation only and shall in no event constitute a binding contract with Renishaw.

Please note – The issuer of the purchase order is responsible for all information provided to Renishaw. Please make sure that the information is as accurate and current as possible, as this will expedite the installation. If additional time or hardware is required, due to incorrect information, additional costs may be billed to you.

The installation timeframe is 2 to 3 weeks. Please keep in mind that your installation is not considered for scheduling until this form is completed and returned to us. At that time, the form will be reviewed, and you will be contacted as to the acceptability of the retrofit and dates available for installation.

I have read and understood the preceding information.

⚠ **Important – this document consists of four pages. Please be sure to read all information before returning.**

Signed _____   Date _____

Purchase order issued to Renishaw by:

Company name _____   Contact name _____

Street _____

City _____   State _____   Zip _____

Telephone _____   Fax _____

Additional retrofit customer information

Machine tool software requirements

Machining center:	Inspection Plus	46.5 Kb	117 m
	Tool setting	9 Kb	23 m
	NC4 tool setting	15 Kb	38 m
Lathe software:	Inspection	11 Kb	28 m
	Tool setting	6 Kb	15 m

Program number requirements

Renishaw program numbers range from 9002 through 9100, and 9700 through 9900.

Macro variables required	#100–#149 (only used while macro is running)
	#500–#565 (some variables in this range required and must be dedicated)

Training

Training will be provided after installation on the use and application of Renishaw probing cycles. Training will **not** include the incorporation of probe cycles into the customer's current manufacturing programs. Any special applications or additional software training which requires additional time or visits to the original scheduled installation/training will be charged at Renishaw Inc standard service rates.

Note: Please indicate any additional training requirements on your purchase order.

Part probe system details

OMP40/OMP60/RMP60	Turn on (via optical or RF) / Turn off (via optical or RF) or time out	Installation time: Up to 8 hours
		Training time: Up to 6 hours

	Turn on methods	Auto start (OMP40/OMP60) sends a start signal every second until a probe command is received. This method can only be used if the probe is stored outside the machine enclosure when not in use.
		Machine start (OMP40/OMP60/RMP60) requires that an M code be available for use to issue the start command.
		Spin start (OMP60/RMP60) uses an internal switch. The probe will turn on after being spun at 650 RPM for 1 second.
	Turn off methods	Time out (OMP40/OMP60/RMP60). A timer automatically switches the power off 12, 33 or 134 seconds (selectable) after turn on. Each time the probe is triggered, the timer is reset to the selected value.
		Optical off (OMP40/OMP60) / RF off (RMP60) requires that an M code be available to initiate the turn off sequence.

OMP400	Optical (flash) on/optical off or time out (optical transmission)	Installation time Up to 8 hours
		Training time Up to 6 hours

	Turn on method	Machine start (optical on) requires that an M code be available for use to issue the start command. Auto start cannot be used with the strain gage probes.
	Turn off methods	Time out. A timer automatically switches the power off 33 or 134 seconds (selectable) after turn on. Each time the probe is triggered, the timer is reset to 33 or 134 seconds.
		Optical off. Requires the use of an M code as stated for machine start above.

RMP40M **OLP40M**	Turn on (via optical or RF) / Turn off (via optical or RF) or time out	Installation time Up to 8 hours
		Training time Up to 6 hours

	Turn on method	Machine start requires that an M code be available for use to issue the start command. Auto start cannot be used with these probes (for lathe applications).
	Turn off method	Optical off. Requires the use of an M code as stated for machine start above.

Tool setting probe details

| **TS27R** | Hard-wired | | Installation time | Up to 6 hours |
| | | | Training time | Up to 6 hours |

OTS Machine start requires that a level M code pair be available for use to issue the start command. Auto start cannot be used with these probes.

These probes are fixed either to a T slot in the machine bed, or can be mounted on a riser if required to allow tools to reach the stylus. A riser is not provided by Renishaw unless specified on the quotation. The TS27R is wired to the probe interface via a tough cable conduit. The TS27R cannot be mounted on pallets or rotary tables.

| **NC4 or TRS2** | Hard-wired | | Fixed installation time | Up to 8 hours |
| | | | Training time | Up to 6 hours |

Fixed system The probe is fixed either to a T slot in the machine bed, or can be mounted on a riser if required to allow tools to reach the laser beam. A riser is not provided by Renishaw unless specified on the quotation. The NC4 is wired to the probe interface via a tough cable conduit. **The NC4 cannot be mounted on pallets or rotary tables.**

| | | | Separate installation time | Up to 12 hours * |
| | | | Training time | Up to 6 hours |

Separate system The probe transmitter and receiver are mounted to brackets which attach to the machine. Brackets and their installation are not provided by Renishaw unless specifically stated in the quotation. Brackets not provided by Renishaw must be mounted prior to the arrival of a Renishaw engineer. The brackets should allow for complete machine motion (pallet shuttles, rotary tables, axis travels etc), laser beam alignment and expected system performance.

* Depending on bracket mounting requirements, additional time may be required.

Fixed or separate The NC4 must be mounted in such a way that the tool can access the laser beam and move in all three axes (X, Y, Z) with respect to the beam. For basic functionality (length, diameter, basic broken tool), no M code is required. For additional features (missing/broken insert, profile checking, rapid broken tool check) a level M code pair is required.

HPRA Hard-wired The HPRA must be mounted to a bracket which attaches to the machine. The brackets and their installation are not provided by Renishaw unless specifically stated in the quotation. Brackets not provided by Renishaw must be mounted prior to the arrival of a Renishaw engineer. The brackets should allow for complete machine and expected system performance.

Dual probe installations (part and tool probe on same machine)

Requires either two independent probe inputs (multi-channel skip) or an M code driven relay. The M code driven relay must be installed and available prior to the probe installation.

Example M51 – part probe (selected) M61 – tool setter (selected)

M51 energize relay (coil latches and stays energized) program continues
M61 de-energize relay (coil resets) program continues

M code for flash (optical) on and off

M71 pulse (momentarily energize relay) program continues

Example: Pulse M code M71 (flash on and flash off)