Machine tool probes
Machine tool probes

Inspection probes for machining centers

MP11

The MP11 is a hard-wired probe ideal for small machine tools with manual tool changing. The probe is mounted in the machine spindle with the signal transmission cable connected to the machine control. With the MP11, the illuminated LED switches off every time the probe stylus contacts the workpiece.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±17.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 8 mm (0.31 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 50 gf – 150 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 180 gf – 700 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

MP11 retrofit kit

Includes: MP11 probe with cable and connectors
Remote socket kit
50 mm and 100 mm ceramic styli
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See the section entitled Shanks and Toolholders for price and part number information.

Part number: MP11-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.

MP11 hardware only kit

Includes: MP11 probe with cable and connectors
Remote socket kit
50 mm and 100 mm ceramic styli

A shank is not included in this kit. See the section entitled Shanks and Toolholders for price and part number information.

Part number: MP11-NS-KIT  Price: $3,558

MP11 probe

Includes: MP11 probe with cable and connectors

Part number: A-2045-0001  Price: $3,079

MP11 replacement parts

Spare MP11 cable

Part number: A-2045-0051  Price: $132

4 pin connector for MP11 cable

Part number: MP11 PLUG KIT  Price: $64

4 pin socket for MP11

Part number: P-CN21-0304  Price: $60

Outer diaphragm kit

Part number: A-2051-7105  Price: $100
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 work piece.

MP15 hard-wired probe kit

Part number: A-2116-1802  
Price: $2,114

MP15/MP11 adaptor

Part number: M-2116-1356  
Price: $225

HSI interface

Part number: A-5500-1000  
Price: $198
Machine tool probes

MP700

The MP700 is an optical transmission part probing system for use on machining centers. The MP700 is specifically designed to deliver high-accuracy CMM type probe performance. The MP700 uses strain gage sensors and an internal microprocessor to provide a solid state sensor mechanism with unprecedented life and reliability. Low trigger force and consistent pre-travel results in high accuracy with long styli.

The MP700 is available with either 35° or 70° output. An M code must be supplied to turn the probe on. An internal timer or M code is used to turn the probe off.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±16.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 11 mm (0.45 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 19 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 325 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>0.25 µm (0.00001 in)</td>
</tr>
</tbody>
</table>

**MP700 retrofit kit**

Includes: MP700 probe with 70° OMP
OMM
Receiver mounting bracket
MI12 interface
50 mm and 100 mm carbon fiber styli
Sealtite conduit
9 V alkaline battery
TK1 tool kit
Renishaw Inspection Plus software
Installation and applications support

A shank is not included in this kit. See the section entitled Shanks and Toolholders for price and part number information.

**Part number:** MP700-NS-S  (Available at fixed price)  Price: $6,942

**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.

**MP700 hardware only kit**

Includes: MP700 probe with 70° OMP
OMM
Receiver mounting bracket
MI12 interface
50 mm and 100 mm carbon fiber styli
Sealtite conduit
9 V alkaline battery
TK1 tool kit

A shank is not included in this kit. See the section entitled Shanks and Toolholders for price and part number information.

**Part number:** MP700-NS-KIT  Price: $6,942

**MP700 probe**

Includes: MP700 probe
Adjusting plate
9 V alkaline battery
Tool kit

**Part number:** A-2107-0035 (35°)  Price: $4,564
**Part number:** A-2107-0070 (70°)  Price: $4,564

**MP700 probe module**

**Part number:** A-2108-0001  Price: $4,010

**MP700 OMP only**

**Part number:** A-2107-0036 (35°)  Price: $849
**Part number:** A-2107-0071 (70°)  Price: $849

**OMM optical receiver**

**Part number:** A-2033-0576  Price: $986

**Receiver mounting bracket**

**Part number:** A-2033-0830  Price: $119

**MI12 interface**

**Part number:** A-2075-0142  Price: $931

**Sealtite conduit**

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

**Part number:** SEALTITE, 7455  Price: $23
OMP40

The OMP40 is an ultra-compact optical transmission part probing system. Measuring just 40 mm diameter and 50 mm in length, the OMP40 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 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
</table>
| Stylus overtravel  | X and Y: ±12.5°  
|                    | Z: 6 mm (0.23 in) |
| Stylus trigger force| X and Y: 50 gf – 90 gf  
|                    | Z: 585 gf |
| Unidirectional repeatability | 1.0 µm (0.00004 in) |

**OMP40 retrofit kit**

Includes:  
- OMP40 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 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 hardware only kit**

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

**Part number:** OMP40-NS-KIT  
**Price:** $6,126

**OMP40 probe kit**

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

**Legacy**

**Part number:** A-4071-0001  
**Price:** $3,803

**Modulated**

**Part number:** A-4071-2001  
**Price:** $3,803

**OMP40 upgrade kit**

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

Includes:  
- OMP40 probe system

**Part number:** RI-4071-0001  
**Price:** $1,902

**OMP40 accessories and replacement parts**

- ½AA battery (2 pack)  
**Part number:** P-BT03-0007  
**Price:** $43

- OMP60/RMP60 style shank adaptor  
**Part number:** A-4071-0031  
**Price:** $171
Machine tool probes

**OMP40 continued**

**OMM optical receiver**
Part number: A-2033-0576  Price: $986

**OMM-2 optical receiver**
Part number: A-5492-0051  Price: $986

**OMI-2 optical receiver/interface**
With 8 m cable.
Part number: A-5191-0049  Price: $1,582

**OMI-2 optical receiver/interface**
With 15 m cable.
Part number: A-5191-0050  Price: $1,664

**OMI-2T optical receiver/interface**
With 8 m cable.
Part number: A-5439-0049  Price: $1,582

**OMI-2T optical receiver/interface**
With 15 m cable.
Part number: A-5439-0050  Price: $1,664

**Receiver mounting bracket**
Part number: A-2033-0830  Price: $119

**MI12 interface**
Part number: A-2075-0142  Price: $931

**OSI interface**
Part number: A-5492-2000  Price: $931

**Sealtite conduit for OMM or OMI**
¼ in conduit, 5 ft long. Includes one fitting.
Part number: SEALTITE, 7455  Price: $23

**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: $27
OMP400

OMP400 is an ultra-compact optical transmission probe using strain gage technology. Measuring just 40 mm diameter x 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±18°</td>
</tr>
<tr>
<td></td>
<td>Z: 11 mm (0.43 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 6 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 260 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>0.25 µm (0.00001 in)</td>
</tr>
</tbody>
</table>

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 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: $6,954

OMP400 probe kit

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

Legacy

Part number: A-5069-0001 Price: $4,564

Modulated

Part number: A-5069-2001 Price: $4,564

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: $2,282

Note: A new shank is required. See section entitled Shanks and Toolholders for price and part number information.

OMM optical receiver

Part number: A-2033-0576 Price: $986

OMM-2 optical receiver

Part number: A-5492-0051 Price: $986
Machine tool probes

OMP400 continued

OMI-2 optical receiver/interface
With 8 m cable.
Part number: A-5191-0049  Price: $1,582

OMI-2 optical receiver/interface
With 15 m cable.
Part number: A-5191-0050  Price: $1,664

OMI-2T optical receiver/interface
With 8 m cable.
Part number: A-5439-0049  Price: $1,582

OMI-2T optical receiver/interface
With 15 m cable.
Part number: A-5439-0050  Price: $1,664

Receiver mounting bracket
Part number: A-2033-0830  Price: $119

MI12 interface
Part number: A-2075-0142  Price: $931

OSI interface
Part number: A-5492-2000  Price: $931

Sealtite conduit for OMM or OMI
¼ in conduit, 5 ft long. Includes one fitting.
Part number: SEALTITE, 7455  Price: $23

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: $27

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

<table>
<thead>
<tr>
<th>Stylus</th>
<th>Part number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 50 mm CF</td>
<td>A-5003-7306</td>
<td>$128</td>
</tr>
<tr>
<td>6 x 100 mm CF</td>
<td>A-5003-6510</td>
<td>$145</td>
</tr>
<tr>
<td>6 x 150 mm CF</td>
<td>A-5003-6511</td>
<td>$274</td>
</tr>
<tr>
<td>6 x 200 mm CF</td>
<td>A-5003-6512</td>
<td>$289</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±18°</td>
</tr>
<tr>
<td></td>
<td>Z: 11 mm (0.43 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 75 gf – 140 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 530 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

**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 for price and part number information.

**Part number:** OMP60-NS-S (Available at a 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 for price and part number information.

**Part number:** OMP60-NS-KIT  
**Price:** $6,126

**OMP60 probe kit**

Includes:
- OMP60 probe
- AA battery (2)
- Tool kit

**Legacy**

**Part number:** A-4038-0001  
**Price:** $3,803

**Modulated**

**Part number:** A-4038-2001  
**Price:** $3,803

**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:** $1,902
Machine tool probes

OMP60 continued

OMM optical receiver
Part number: A-2033-0576  Price: $986

OMM-2 optical receiver
Part number: A-5492-0051  Price: $986

OMI-2 optical receiver/interface
With 8 m cable.
Part number: A-5191-0049  Price: $1,582

OMI-2 optical receiver/interface
With 15 m cable.
Part number: A-5191-0050  Price: $1,664

OMI-2T optical receiver/interface
With 8 m cable.
Part number: A-5439-0049  Price: $1,582

OMI-2T optical receiver/interface
With 15 m cable.
Part number: A-5439-0050  Price: $1,664

Receiver mounting bracket
Part number: A-2033-0830  Price: $119

MI12 interface
Part number: A-2075-0142  Price: $931

OSI interface
Part number: A-5492-2000  Price: $931

Sealtite conduit for OMM or OMI
¼ in conduit, 5 ft long. Includes one fitting.
Part number: SEALTITE, 7455  Price: $23

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: $27
**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: $1,170

2 – OMP60M probe module
Part number: A-4038-1002
Price: $3,056

3 – OMP60M 100 mm extension
Part number: A-4038-1010
Price: $618

4 – OMP60M 150 mm extension
Part number: A-4038-1027
Price: $801

5 – OMP60M 200 mm extension
Part number: A-4038-1028
Price: $832

6 – OMP60M LP2 adaptor
Part number: A-4038-0212
Price: $618

7 – LPE3 150 mm extension
Part number: A-2063-7003
Price: $285

8 – LPE2 100 mm extension
Part number: A-2063-7002
Price: $285

9 – LPE1 50 mm extension
Part number: A-2063-7001
Price: $285

10 – MA4 90° adaptor
Part number: A-2063-7600
Price: $464

11 – LP2 probe assembly
Part number: A-2063-6098
Price: $2,961

12 – OMP60M 3-way adaptor
Part number: A-4113-0784
Price: $1,248

13 – OMP60M probe module adaptor
Part number: A-4113-0771
Price: $707

14 – MP3 probe
Part number: A-2053-5358
Price: $3,098

15 – Shorting cover
Part number: A-2053-6468
Price: $137

**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: $2,422
Machine tool probes

RMP40

RMP40 is an ultra-compact radio transmission part probe, ideal for use on small to medium machining centers. 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 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±12.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 6 mm (0.24 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 50 gf – 90 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 585 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

RMP40 retrofit kit

Includes:
- RMP40 probe and transmission system
- RMI 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 for price and part number information.

**Part number:** RMP40-NS-S  (Available at a fixed price)  **Price:** £5,120

**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 radio machine interface
- Receiver mounting bracket
- 50 mm and 100 mm ceramic styli
- Sealtite kit

**Part number:** RMP40-NS-KIT  **Price:** £8,085

RMP40 probe kit

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

**Part number:** A-5480-0001  **Price:** £5,120

RMI radio machine interface

**Part number:** A-4113-0050  **Price:** £2,559

Receiver mounting bracket

**Part number:** A-2033-0830  **Price:** £119

Sealtite conduit

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

**Part number:** A-4113-0306  **Price:** £27
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 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±18°, Z: 11 mm (0.43 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 75 gf – 140 gf, Z: 530 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

RMP60 retrofit kit

Includes: RMP60 probe and transmission system, RMI 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 for price and part number information.

**Part number:** RMP60-NS-S (Available at a fixed price)  **Price:** $5,120

**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 radio machine interface, Receiver mounting bracket, 50 mm and 100 mm ceramic styli, Sealtite kit

**Part number:** RMP60-NS-KIT  **Price:** $8,085

RMP60 probe kit

Includes: RMP60 probe, AA battery (2), Tool kit

**Part number:** A-4113-0001  **Price:** $5,120

RMI radio machine interface

**Part number:** A-4113-0050  **Price:** $2,559

Receiver mounting bracket

**Part number:** A-2033-0830  **Price:** $119

Sealtite conduit

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

**Part number:** A-4113-0306  **Price:** $27

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 radio machine interface, Receiver mounting bracket, Sealtite kit

**Part number:** RI-4113-0001  **Price:** $5,200
Machine tool probes

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-4113-1003  Price: $2,499

2 – RMP60M probe module
Part number: A-4038-1002  Price: $3,056

3 – RMP60M 100 mm extension
Part number: A-4038-1010  Price: $618

4 – RMP60M 150 mm extension
Part number: A-4038-1027  Price: $801

5 – RMP60M 200 mm extension
Part number: A-4038-1028  Price: $832

6 – RMP60M LP2 adaptor
Part number: A-4038-0212  Price: $618

7 – LPE3 150 mm extension
Part number: A-2063-7003  Price: $285

8 – LPE2 100 mm extension
Part number: A-2063-7002  Price: $285

9 – LPE1 50 mm extension
Part number: A-2063-7001  Price: $285

10 – MA4 90° adaptor
Part number: A-2063-7600  Price: $464

11 – LP2 probe assembly
Part number: A-2063-6098  Price: $2,961

12 – RMP60M 3-way adaptor
Part number: A-4113-0784  Price: $1,248

13 – RMP60M probe module adaptor
Part number: A-4113-0771  Price: $707

14 – MP3 probe
Part number: A-2053-5358  Price: $3,098

15 – Shorting cover
Part number: A-2053-6468  Price: $137

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-4113-1003  Price: $5,720
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 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
</table>
| Stylus overtravel | X and Y: ±15°  
|                  | Z: 11 mm (0.43 in) |
| Stylus trigger force | X and Y: 20 gf  
|                  | Z: 193 gf |
| Unidirectional repeatability | 0.25 µm (0.00001 in) |

RMP600 retrofit kit

Includes:  RMP600 probe
            RMI 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 for price and part number information.

Part number: RMP600-NS-S  (Available at a 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 radio machine interface
            Receiver mounting bracket
            50 mm and 100 mm carbon fiber styli
            Sealtite kit

Part number: RMP600-NS-KIT  Price: $10,032

RMP600 probe kit

Includes:  RMP600 probe
            AA battery (2)
            Tool kit

Part number: A-5312-0001  Price: $7,000

RMI radio machine interface

Part number: A-4113-0050  Price: $2,559

Receiver mounting bracket

Part number: A-2033-0830  Price: $119

Sealtite conduit

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

Part number: A-4113-0306  Price: $27

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 radio machine interface
            Receiver mounting bracket
            Sealtite kit

Part number: RI-5312-0001  Price: $6,440
Machine tool probes

Shanks and Toolholders

Shanks for OMP60, MP11, MP700, RMP60 and RMP600 (spin-on, optical-on, radio-on) systems

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-2045-0068</td>
<td>CAT30</td>
<td>$368</td>
</tr>
<tr>
<td>M-2045-0069</td>
<td>CAT40</td>
<td>$368</td>
</tr>
<tr>
<td>M-2045-0138</td>
<td>CAT45</td>
<td>$818</td>
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<td>M-2045-0071</td>
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<tr>
<td>M-2045-0292</td>
<td>CAT60</td>
<td>$1,700</td>
</tr>
<tr>
<td>M-2045-0077</td>
<td>BT30</td>
<td>$368</td>
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<tr>
<td>M-2045-0027</td>
<td>BT40</td>
<td>$368</td>
</tr>
<tr>
<td>M-2045-0038</td>
<td>BT45</td>
<td>$818</td>
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<tr>
<td>M-2045-0073</td>
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<tr>
<td>M-2045-0186</td>
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<td>M-2045-0188</td>
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<tr>
<td>M-2045-0190</td>
<td>HSK A100</td>
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</tr>
<tr>
<td>A-2045-0243</td>
<td>½ in straight shank</td>
<td>$218</td>
</tr>
<tr>
<td>A-2030-0252</td>
<td>1 in straight shank</td>
<td>$218</td>
</tr>
<tr>
<td>A-2030-0211</td>
<td>25 mm straight shank</td>
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</tr>
<tr>
<td>M-2045-0313</td>
<td>CAPTO C4</td>
<td>$750</td>
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<tr>
<td>M-2045-0346</td>
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<td>M-2045-0310</td>
<td>CAPTO C6</td>
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<tr>
<td>M-2045-0311</td>
<td>CAPTO C8</td>
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<td>M-2045-0335</td>
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<tr>
<td>M-2045-1831591</td>
<td>KM63Y (Mazak)</td>
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</table>

Shanks for OMP40, OMP400 and RMP40

<table>
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<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-4071-0050</td>
<td>CAT30</td>
<td>$413</td>
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<tr>
<td>M-4071-0058</td>
<td>CAT40</td>
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<tr>
<td>M-4071-0072</td>
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<tr>
<td>M-4071-0049</td>
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<tr>
<td>M-4071-0057</td>
<td>BT40</td>
<td>$368</td>
</tr>
<tr>
<td>M-4071-0071</td>
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<tr>
<td>M-4071-0048</td>
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<td>M-4071-0069</td>
<td>ISO40 DIN69871</td>
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<td>M-4071-0044</td>
<td>HSK E25</td>
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<tr>
<td>M-4071-0055</td>
<td>HSK E32</td>
<td>$482</td>
</tr>
<tr>
<td>M-4071-0054</td>
<td>HSK E40</td>
<td>$482</td>
</tr>
<tr>
<td>M-4071-0045</td>
<td>HSK A32</td>
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<tr>
<td>M-4071-0046</td>
<td>HSK A40</td>
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<tr>
<td>M-4071-0047</td>
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<td>M-4071-0129</td>
<td>HSK A63</td>
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<tr>
<td>M-4071-0141</td>
<td>CAPTO C4</td>
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<td>M-4071-0066</td>
<td>CAPTO C5</td>
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<tr>
<td>M-4071-0067</td>
<td>CAPTO C6</td>
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<tr>
<td>M-4071-0065</td>
<td>KM63</td>
<td>$822</td>
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</table>

OMP40, OMP400 and RMP40 shank kits

CAT40 shank kit
Includes: CAT40 shank
OMP60/RMP60 shank adaptor

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-4071-0058-RI</td>
<td>Price: $539</td>
<td></td>
</tr>
</tbody>
</table>

BT40 shank kit
Includes: BT40 shank
OMP60/RMP60 shank adaptor

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-4071-0057-RI</td>
<td>Price: $539</td>
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Calibration masters

Calibration tools

<table>
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<th>Description</th>
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</thead>
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<tr>
<td>M-2253-0954</td>
<td>CAT40</td>
<td>$431</td>
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<tr>
<td>M-2253-0955</td>
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<tr>
<td>M-2253-1562</td>
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<tr>
<td>M-2253-1263</td>
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<td>$431</td>
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<tr>
<td>M-2253-1262</td>
<td>BT50</td>
<td>$539</td>
</tr>
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</table>

Shanks for OLP40 and RLP40

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-5625-1003</td>
<td>25 mm straight shank</td>
<td>$218</td>
</tr>
<tr>
<td>A-5625-1004</td>
<td>½ in straight shank</td>
<td>$218</td>
</tr>
<tr>
<td>A-5625-1007</td>
<td>1 in straight shank</td>
<td>$218</td>
</tr>
</tbody>
</table>
Tool setting probes for machining centers

NC3 tool setter

NC3 is a non-contact tool setter, available in a fixed configuration and offered in a single size. NC3 is compact and designed to accommodate tools up to 80 mm diameter making it ideal for small to medium machining centers and special applications.

<table>
<thead>
<tr>
<th>Repeatability</th>
<th>±0.15 µm (0.000006 in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool diameter</td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>Min: 0.20 mm (0.008 in)</td>
</tr>
<tr>
<td></td>
<td>Max: 80 mm (3.15 in)</td>
</tr>
<tr>
<td></td>
<td>Off-center: 100 mm (3.94 in)</td>
</tr>
<tr>
<td>Breakage</td>
<td>Min: 0.10 mm (0.0039 in)</td>
</tr>
</tbody>
</table>

NC3 fixed system kit

Includes:  NC3 fixed unit with 10 m integral cable  
NCi-5 interface  
Air regulator kit  
Ø17 mm OD × 4 m conduit  
Mounting plate

Part number: A-4179-1100  Price: $4,531

NC3 fixed unit only

Includes:  NC3 fixed unit with 10 m integral cable

Part number: A-4179-1500  Price: $3,631

NC3 fixed system retrofit kit

NC3 retrofit kit includes all items above plus the following:

Tool setting software  
Installation and application support

Part number: NC3-F135-S  Price: Call for details

NCi-5 interface


NC3 air regulator kit

Part number: A-4179-1600  Price: $443

NC3 air filter service kit

Part number: P-FI01-S002  Price: $147

Steel sheath conduit

Ø17 mm OD × 1 m length, for cable protection.

Part number: P-HO01-0008  Price: $23

45° mounting bracket

Part number: A-4179-1501  Price: $97

NC3 air nozzle kit

Part number: A-4179-0450  Price: $81
NC4 tool setter

NC4 is a non-contact tool setter and our most compact design. NC4 is available in fixed or separate configurations. NC4F (fixed) is available in four different sizes. NC4S (separate) systems are user-configurable operating between 500 mm and 5 m.

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

NC4 fixed system retrofit kits

Include: NC4 fixed unit with 12.5 m cable
NCi-5 interface
Air regulator kit
Ø22 mm OD steel braided conduit
Mounting plate
Tool setting software
Installation and application support

Part numbers:
- NC4-F300-Modular-S *
- NC4-F300-S *
- NC4-F230-S *
- NC4-F145-S *
- NC4-F115-S *
- NC4-F95-S *

NC4 separate system retrofit kits

Include: NC4 separate unit with 12.5 m cable
NCi-5 interface
Air regulator kit
Ø17 mm OD steel braided conduit
Tool setting software
Installation and application support

Part numbers:
- NC4-S800-S *
- NC4-S1500-S *
- NC4-S2000-S *
- NC4-S3000-S *
- 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.

* Available at a fixed price. Call for details.

NC4 fixed kits

NC4 F300/225 with NCi-5 kit
Separation 225 mm
Part number: NC4-F300-Modular-kit
Price: $4,781

NC4 F300/240 with NCi-5 kit
Separation 240 mm
Part number: NC4-F300-kit
Price: $4,781

NC4 F230/170 with NCi-5 kit
Separation 170 mm
Part number: NC4-F230-kit
Price: $4,781

NC4 F145/85 with NCi-5 kit
Separation 85 mm
Part number: NC4-F145-kit
Price: $4,781

NC4 F115/55 with NCi-5 kit
Separation 55 mm
Part number: NC4-F115-kit
Price: $4,781

NC4 F95/23 with NCi-5 kit
Separation 23 mm
Part number: NC4-F95-kit
Price: $4,781

NC4 separate kits

NC4 S800 with NCi-5 kit
Separation 500 mm – 800 mm
Part number: A-4114-5060
Price: $4,747

NC4 S1500 with NCi-5 kit
Separation 800 mm – 1500 mm
Part number: A-4114-5065
Price: $4,747

NC4 S2000 with NCi-5 kit
Separation 1500 mm – 2000 mm
Part number: A-4114-5070
Price: $4,747

NC4 S3000 with NCi-5 kit
Separation 2000 mm – 3000 mm
Part number: A-4114-5075
Price: $4,747

NC4 S5000 with NCi-5 kit
Separation 3000 mm – 5000 mm
Part number: A-4114-5080
Price: $4,747
## Machine tool probes

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC4 tool kit</td>
<td>A-4114-4110</td>
<td>$43</td>
</tr>
<tr>
<td>NC4 air regulator kit</td>
<td>A-2253-5120</td>
<td>$443</td>
</tr>
<tr>
<td>NC4 air filter service kit</td>
<td>P-Fi01-S002</td>
<td>$147</td>
</tr>
<tr>
<td>NCi-5 interface</td>
<td>A-5259-2000</td>
<td>$226</td>
</tr>
<tr>
<td>NC4 access panel 0.2</td>
<td>A-4114-0082</td>
<td>$22</td>
</tr>
<tr>
<td>NC4 access panel 0.4</td>
<td>A-4114-0084</td>
<td>$22</td>
</tr>
<tr>
<td>NC4 access panel 0.6</td>
<td>A-4114-0086</td>
<td>$22</td>
</tr>
<tr>
<td>NC4 set-up tool</td>
<td>A-4114-8000</td>
<td>$342</td>
</tr>
</tbody>
</table>

### NC4S mounting hardware options

1. NC4 spacer plate – separate
   - Part number: A-4114-4400  
   - Price: $102

2. NC4 adjuster pack – separate
   - Part number: A-4114-3100  
   - Price: $228

### Additional Accessories

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Part Number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steel sheath conduit 22 mm OD x 1 m</strong></td>
<td>P-HO01-0011</td>
<td>$23</td>
</tr>
<tr>
<td><strong>Steel sheath conduit 17 mm OD x 1 m</strong></td>
<td>P-HO01-0008</td>
<td>$23</td>
</tr>
<tr>
<td><strong>NC4F 90-degree cable exit kit</strong></td>
<td>P-CA61-0068</td>
<td>$22</td>
</tr>
<tr>
<td><strong>NC4F air blast nozzle and bracket</strong></td>
<td>A-5450-0480</td>
<td>$305</td>
</tr>
<tr>
<td><strong>Solenoid kit</strong></td>
<td>A-5450-0490</td>
<td>$850</td>
</tr>
</tbody>
</table>

### Additional Parts

- **NC4F mounting hardware options**
  - Part number: P-CA61-0069  
  - Price: $22
Machine tool probes

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 ½AA 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±10°</td>
</tr>
<tr>
<td></td>
<td>Z: 5.5 mm (0.21 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>130 gf – 240 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

OTS retrofit kit

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

Part number: OTS-S (½AA 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 ½AA probe or OTS AA probe
OMI-2T
Receiver mounting bracket
Sealtite kit

Part number: OTS-KIT
Part number: OTSAA-KIT
Price: $4,388

OTS ½AA probe kit

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

Part number: A-5401-2001
Price: $2,271

OTS AA probe kit

Includes: OTS probe
AA battery (2)
Tool kit

Part number: A-5514-2001
Price: $2,271

OMM-2 optical receiver

Part number: A-5492-0051
Price: $986

OMI-2 optical receiver/interface

With 8 m cable.

Part number: A-5191-0049
Price: $1,582

OMI-2 optical receiver/interface

With 15 m cable.

Part number: A-5191-0050
Price: $1,664

OMI-2T optical receiver/interface

With 8 m cable.

Part number: A-5439-0049
Price: $1,582

OMI-2T optical receiver/interface

With 15 m cable.

Part number: A-5439-0050
Price: $1,664

Receiver mounting bracket

Part number: A-2033-0830
Price: $119

OSI interface

Part number: A-5492-2000
Price: $931

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: $27
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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>±10°</td>
</tr>
<tr>
<td>Z:</td>
<td>5.5 mm (0.21 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>130 gf – 240 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

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: $5,711

RTS AA probe kit

Includes:  
RTS probe  
AA battery (2)  
Tool kit

Part number: A-5646-0001  
Price: $2,952

RMI radio machine interface

Part number: A-4113-0050  
Price: $2,559

RMI-Q radio machine interface

Part number: A-5687-0050  
Price: $2,559

Receiver mounting bracket

Part number: A-2033-0830  
Price: $119

Sealtite conduit

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

Part number: A-4113-0306  
Price: $27
Machine tool probes

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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±10°&lt;br&gt;Z: 5.5 mm (0.21 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>130 gf – 240 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

TS27R retrofit kit

Includes:
- TS27R probe
- HSI interface
- Sealite 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
- Sealite kit

Part number: TS27R-KIT  Price: $1,403

TS27R probe, stylus, and holder kit

Part number: A-2008-0368  Price: $1,136

HSI interface

Part number: A-5500-1000  Price: $198

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-5003-0661  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: $1

Crank for horizontal machining centers

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

100 mm riser

Part number: M-2008-0866-RI-KIT  Price: $129

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: $111
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
- Sealite kit
- Mounting bracket
- Renishaw TRS2 BTD software

Part number: TRS2-KIT Price: $2,600

TRS2 probe only

Includes: TRS2 laser system with integral interface

Part number: A-5450-0400 Price: $2,008

TRS2 retrofit kit

Includes: TRS2 laser system with integral interface
- Tool kit
- Air regulator kit
- Sealite kit
- Mounting bracket
- Renishaw TRS2 BTD 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.
Machine tool probes

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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±9°</td>
</tr>
<tr>
<td></td>
<td>Z: 4 mm (0.157 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 65 gf – 142 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 550 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

**TS34 probe, stylus and holder kit**

**Rear exit**

**Part number:** A-2197-2100  
**Price:** $3,364

**Side exit**

**Part number:** A-2197-3000  
**Price:** $3,364

**HSI interface**

**Part number:** A-5500-1000  
**Price:** $198
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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±12.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 6 mm (0.24 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 50 gf – 90 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 585 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

OLP40 retrofit kit

Includes:
- OLP40 probe and transmission system
- OMI-2 optical 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 for price and part number information.

Part number: OLP40-NS-S  (Available at fixed price)

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
- OMI-2 optical machine interface
- Receiver mounting bracket
- 30 mm stainless steel stylus (×2)
- Sealtite kit

Part number: OLP40-NS-KIT  Price: $6,060

OLP40 probe kit

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

Legacy

Part number: A-5625-0001  Price: $3,803

Modulated

Part number: A-5625-2001  Price: $3,803

Part number: A-5625-2001  Price: $3,803
Machine tool probes

OLP40 continued

OMM optical receiver
Part number: A-2033-0576  Price: $986

OMM-2 optical receiver
Part number: A-5492-0051  Price: $986

OMI-2 optical receiver/interface
With 8 m cable.
Part number: A-5191-0049  Price: $1,582

OMI-2 optical receiver/interface
With 15 m cable.
Part number: A-5191-0050  Price: $1,664

OMI-2T optical receiver/interface
With 8 m cable.
Part number: A-5439-0049  Price: $1,582

OMI-2T optical receiver/interface
With 15 m cable.
Part number: A-5439-0050  Price: $1,664

Receiver mounting bracket
Part number: A-2033-0830  Price: $119

MI12 interface
Part number: A-2075-0142  Price: $931

OSI interface
Part number: A-5492-2000  Price: $931

Sealtite conduit for OMM or OMI
¼ in conduit, 5 ft long. Includes one fitting.
Part number: SEALTITE, 7455  Price: $23

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: $27
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: $1,320
Modulated
Part number: A-5626-2001  Price: $1,320

2 – LPE3 extension 150 mm
Part number: A-2063-7003  Price: $285

3 – LPE2 extension 100 mm
Part number: A-2063-7002  Price: $285

4 – LPE1 extension 50 mm
Part number: A-2063-7001  Price: $285

5 – MA4 90° adaptor
Part number: A-2063-7600  Price: $464

6 – LP2 probe assembly
Part number: A-2063-6098  Price: $2,961

OMP40M retrofit kit
Includes:  OMP40M transmission system
          LP2 probe
          OMI-2 optical machine interface
          Receiver mounting bracket
          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
          OMI-2 optical machine interface
          Receiver mounting bracket
          30 mm stainless steel stylus (×2)
          Sealtite kit

Part number: OMP40M-NS-KIT  Price: $6,538

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

OMM optical receiver
Part number: A-2033-0576  Price: $986

OMM-2 optical receiver
Part number: A-5492-0051  Price: $986

OMI-2 optical receiver/interface
Part number: A-5191-0049  Price: $1,582

OMI-2T optical receiver/interface
Part number: A-5439-0049  Price: $1,582

Receiver mounting bracket
Part number: A-2033-0830  Price: $119

MI12 interface
Part number: A-2075-0142  Price: $931

OSI interface
Part number: A-5492-2000  Price: $931

Sealtite conduit for OMM or OMI
¼ in conduit, 5 ft long. Includes one fitting.
Part number: SEALTITE, 7455  Price: $23

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: $27
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 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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
</table>
| Stylus overtravel | X and Y: ±12.5°  
                    | Z: 6 mm (0.24 in)  |
| Stylus trigger force | X and Y: 50 gf – 90 gf  
                     | Z: 585 gf |
| Unidirectional repeatability | 1.0 µm (0.00004 in) |

**RLP40 retrofit kit**

Includes:
- RLP40 probe and transmission system
- RMI 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 for price and part number information.

Part number: RLP40-NS-S  (Available at fixed price)  
Part number: RLP40-NS-KIT  
Price: $7,499

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 probe kit**

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

Part number: A-5627-0001  
Price: $4,600

**RMI radio machine interface**

Part number: A-4113-0050  
Price: $2,559

**Receiver mounting bracket**

Part number: A-2033-0830  
Price: $119

**Sealtite conduit**

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

Part number: A-4113-0306  
Price: $27
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: $2,000

2 – LPE3 extension 150 mm
Part number: A-2063-7003   Price: $285

3 – LPE2 extension 100 mm
Part number: A-2063-7002   Price: $285

4 – LPE1 extension 50 mm
Part number: A-2063-7001   Price: $285

5 – MA4 90° adaptor
Part number: A-2063-7600   Price: $464

6 – LP2 probe assembly
Part number: A-2063-6098   Price: $2,961

RMP40M retrofit kit
Includes:  RMP40M transmission system
          LP2 probe
          Receiver radio machine interface
          Receiver mounting bracket
          30 mm stainless steel stylus (x2)
          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 radio machine interface
          Receiver mounting bracket
          30 mm stainless steel stylus (x2)
          Sealtite kit

Part number: RMP40M-NS-KIT   Price: $7,860

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

RMI radio machine interface
Part number: A-4113-0050   Price: $2,559

Receiver mounting bracket
Part number: A-2033-0830   Price: $119

Sealtite conduit
5/16 in conduit, 1 m long. Includes one fitting.
Part number: A-4113-0306   Price: $27
**Machine tool probes**

**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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±12.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 6.5 mm (0.25 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 50 gf – 90 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 585 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

Includes: LP2 probe
2 C spanners
TK1 tool kit

**Part number:** A-2063-6098  **Price:** $2,961

**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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±12.5°</td>
</tr>
<tr>
<td></td>
<td>Z: 5 mm (0.20 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 200 gf – 400 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 3000 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>2.0 µm (0.00008 in)</td>
</tr>
</tbody>
</table>

Includes: LP2H probe
2 C spanners
TK1 tool kit

**Part number:** A-2064-0002  **Price:** $2,961

**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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, +Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±15°</td>
</tr>
<tr>
<td></td>
<td>Z: 6.5 mm (0.25 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 50 gf – 90 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 585 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>1.0 µm (0.00004 in)</td>
</tr>
</tbody>
</table>

Includes: LP2DD probe
2 C spanners
TK1 tool kit

**Part number:** A-2063-8020  **Price:** $2,961
LP2/LP2DD replacement parts

**Conversion kit**
This kit allows the conversion of your existing LP2 probe to LP2DD.

Includes:
- 2 C spanners
- Front ring
- Outer diaphragm
- O ring

**Part number:** A-2063-8023  **Price:** $170

**LP2DD diaphragm replacement kit**
An outer diaphragm replacement kit for the LP2DD.

Includes:
- Diaphragm
- O ring

**Part number:** A-2063-8030  **Price:** $40

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

**Part number:** M-2063-8003  **Price:** $40

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

**Part number:** A-2063-7587  **Price:** $17

**LP2 service kit (DK2)**
Includes:
- Front cap
- Metal eyelid
- Spring
- O ring

**Part number:** A-2063-7542  **Price:** $75

**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:** $36
Machine tool probes

**LP2 accessories**

**FS1 adjustable female socket**
Provided ±4° of angular rotation about the centerline of the LP2. Supplied with 500 mm long cable, protective cover and adjusting screws.

Part number: A-2063-6697 Price: $136

**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: $136

**FS3 single axis adjustable holder**
The socket pivots on two balls, this provides ±4° of pitch adjustment about the centerline of the LP2. Supplied with 500 mm long cable, protective cover and adjusting screws.

Part number: A-2063-5308 Price: $238

**MA4 90° adaptor**
Part number: A-2063-7600 Price: $464

**COS to LP2 adaptor**
This adaptor allows the use of the LP2 on the MP7/MP8/MP9/MP10 OMP.

Part number: A-2063-7774 Price: $603

**IMP inductive module**
Part number: A-2028-7574 Price: $623

**MI5 interface**
Part number: A-2019-0006 Price: $583

**MI8 interface**
Part number: A-2037-0010 Price: $198

**LPE1 extension**
A 50 mm long extension which can be fitted between the LP2 and holder.

Part number: A-2063-7001 Price: $285

**LPE2 extension**
100 mm long.

Part number: A-2063-7002 Price: $285

**LPE3 extension**
150 mm long.

Part number: A-2063-7003 Price: $285

**LP2 straight shanks**
LP2 straight shanks are fitted with FS2 socket assemblies to accommodate the LP2 probe. An MI8 interface is also required.

**LP2 0.75 in straight shank with FS2 and cable assembly**
Part number: A-2063-8326 Price: $1,223

**LP2 1 in straight shank with FS2 and cable assembly**
Part number: A-2063-8328 Price: $1,223

**LP2 22 mm straight shank with FS2 and cable assembly**
Part number: A-2063-8366 Price: $1,223
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.

<table>
<thead>
<tr>
<th>Sense directions</th>
<th>±X, ±Y, ±Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus overtravel</td>
<td>X and Y: ±15°</td>
</tr>
<tr>
<td></td>
<td>Z: 6.5 mm (0.25 in)</td>
</tr>
<tr>
<td>Stylus trigger force</td>
<td>X and Y: 11 gf</td>
</tr>
<tr>
<td></td>
<td>Z: 220 gf</td>
</tr>
<tr>
<td>Unidirectional repeatability</td>
<td>0.25 µm (0.00001 in)</td>
</tr>
</tbody>
</table>

MP250 probe kit

Includes: MP250 probe Tool kit

Part number: A-5500-1600 Price: $4,420

MP250 accessories

FS1 adjustable female socket for MP250

Part number: A-5500-1710 Price: $226

FS2 fixed female socket for MP250

Part number: A-5500-1810 Price: $226

HSI interface for MP250

Part number: A-5500-1000 Price: $198
Machine tool probes

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 2 sigma 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: $3,538*

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

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

Custom kits

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

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

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

HPRA rear exit base

Part number: A-2176-0025  Price: $748

HPRA side exit base

Part number: A-2176-0187  Price: $748

HPRA storage stand

Part number: A-2176-0019  Price: $297

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:

- 15x15x4 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 and tool kits

Part number: M-2197-0156 (16 mm and 20 mm tooling)  Price: $25
Part number: M-2197-0150 (25 mm to 50 mm tooling)  Price: $25
Part number: A-2176-0639 (16 mm to 20 mm tooling)  Price: $26
Part number: A-2176-0636 (25 mm to 50 mm tooling)  Price: $26
High precision pull-down arm (HPPA)

High precision motorized arm (HPMA)

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

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

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

Specifications

Unidirectional repeatability

max 2σ value in machine XZ axis:
- 5.0 µm (0.0002 in) for arms supporting 6 in to 15 in chucks
- 8.0 µm (0.0003 in) for arms supporting 18 in to 24 in chucks

HPPA max arm dimensions: A=555 mm B=458 mm
HPPA min arm dimensions: A=250 mm B=219 mm
HPMA max arm dimensions: A=555 mm B=458 mm
HPMA min arm dimensions: A=250 mm B=219 mm

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

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

**Part number:** See below  
**Price:** $4,181*

*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.*

<table>
<thead>
<tr>
<th>Part description</th>
<th>Part number</th>
<th>A-dimension</th>
<th>B-dimension</th>
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</thead>
<tbody>
<tr>
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**HPMA standard kits**

**Part number:** See below  
**Price:** $4,718

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</table>

**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
Machine tool probes

HPPA/HPMA cables

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

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<tr>
<td>P-CA82-1011</td>
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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

<table>
<thead>
<tr>
<th>Part number</th>
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HPRA/HPPA/HPMA M4 break stems and tool kits

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<tr>
<td>A-2176-0636</td>
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Legacy HPA stylus kits

TS20 replacement stylus kit

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

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<th>Price</th>
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TS20 break protect link

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<tr>
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<td>$25</td>
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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: $1,470

RP1 DD – RP1 double diaphragm version and tool kit
For use on OEM installation into purpose-built holders.

Part number: A-2154-0008  Price: $1,470

RP2 – Probe for tool setting arm (TSA) only

Part number: A-2116-0149  Price: $1,470

RP2DD – RP2 double diaphragm version for TSA only

Part number: A-2116-0150  Price: $1,470

RP3 – Probe for HPRA, HPPA and HPMA arms

Part number: A-2197-0049  Price: $1,470
Machine tool probes

Interfaces

MI5 interface
The MI5 interface is required for use with Renishaw's inductive transmission probe systems. The MI5 converts probe signals into an acceptable form for the CNC machine control. This interface has solid state relay outputs.

Part number: A-2019-0006  Price: $583

MI5 board only (SSR)

Part number: A-2084-0500  Price: $498

MI12 interface
The MI12 interface is required for use with Renishaw optical probes using Legacy transmission. The MI12 converts signals received from the OMM receiver into an acceptable form for the CNC machine control. This interface has solid state relay outputs.

Part number: A-2075-0142  Price: $931

MI12 board only (SSR)

Part number: A-2075-0141  Price: $798

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: $931

HSI interface
The HSI interface is required for use with Renishaw's MP250 and TS34 probes. 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: $198

NCl-5 interface
An NCl-5 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.

Receivers and interfaces

OMI, OMI-2 and OMI-2T are optical receivers that transmit signals between the probe and CNC control. These interfaces differ from the OMM as they include machine interface circuitry that eliminates the MI12 interface. All three systems offer visual indicators of probe status, start signal status, battery condition and error condition.

OMI

OMI is compatible with all Renishaw optical transmission systems including the new OMP60, OMP40 and OMP400 when configured for Legacy transmission (does not work with the OTS).

Part number: A-2115-0001  Price: $1,582

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, OMP400 or OLP40).

Part number: A-5191-0049 (8 m cable)  Price: $1,582
Part number: A-5191-0050 (15 m cable)  Price: $1,664

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 or OMP400.

Part number: A-5439-0049 (8 m cable)  Price: $1,582
Part number: A-5439-0050 (15 m cable)  Price: $1,664

OMM optical machine module

The OMM receiver is required for use with Renishaw optical probes using Legacy transmission. The OMM works exclusively with the MI12 interface.

Part number: A-2033-0576 (25 m cable)  Price: $986

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: $986
Machine tool probes

RMI radio machine interface

The RMI interface is required for use with Renishaw’s radio transmission probes. The RMI converts RF signals into an acceptable form for the CNC machine control. The RMI has solid state relay output.

Part number: A-4113-0050 (15 m cable)  Price: $2,559

RMI accessories

RMI 30 m replacement cable

Part number: A-4113-0303  Price: $378

RMI 50 m replacement cable

Part number: A-4113-0304  Price: $515

RMI antenna cover

Part number: A-4113-0305  Price: $120

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 when combining an RTS with an RMP40, RMP60 or RMP600.

Part number: A-5687-0049 (8 m cable)  Price: $2,559
Part number: A-5687-0050 (15 m cable)  Price: $2,559

RMI-Q accessories

RMI-Q 30 m replacement cable

Part number: A-5687-0303  Price: $378

RMI-Q 50 m replacement cable

Part number: A-5687-0304  Price: $515

RMI-Q antenna cover

Part number: A-5687-0305  Price: $120
Lathe tool setting arm interfaces

There are two primary configurations of interfaces supporting lathe arms. The TSi2 and TSi3 deliver OCT (active high) output for probe status and arm positions, while the TSi2-C and TSi3-C interfaces deliver SSR solid state relay outputs for probe status and arm positions. The TSi2 and TSi2-C support the HPRA and HPPA lathe arms. The TSi3 and TSi3-C support the HPMA lathe arm.

**TSi2**
- **Part number:** A-2176-0010  
  **Price:** $185

**TSi2-C**
- **Part number:** A-2176-1152  
  **Price:** $185

**TSi3**
- **Part number:** A-2181-0465  
  **Price:** $226

**TSi3-C**
- **Part number:** A-2181-2239  
  **Price:** $226
Machine tool probes

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 CD-ROM with electronic user's guide.

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
- Print data via RS232

<table>
<thead>
<tr>
<th>Description</th>
<th>Memory</th>
<th>Part number</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brother 32A (June 2002 and above)</td>
<td>35K/87M</td>
<td>A-4012-0908</td>
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</table>

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
- Print data via RS232

<table>
<thead>
<tr>
<th>Description</th>
<th>Memory</th>
<th>Part number</th>
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**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

<table>
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<th>Description</th>
<th>Memory</th>
<th>Part number</th>
<th>Price</th>
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<td>Mazak 640M, M32, M+</td>
<td>9K/23M</td>
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<tr>
<td>Siemens 810/840D (Ver 4 or less)</td>
<td>9K/23M</td>
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</tr>
<tr>
<td>Siemens 810/840D (Ver 5 and above)</td>
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<tr>
<td>Yasnac J50, J300, I80/MX3</td>
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</tbody>
</table>

### Non-contact tool setting

<table>
<thead>
<tr>
<th>Description</th>
<th>Memory</th>
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<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brother 32A (June 2002 and above)</td>
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<td>Brother 32B</td>
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<td>Fadal</td>
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<td>Fanuc 0-31</td>
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<td>Haas</td>
<td>24K/67M</td>
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<tr>
<td>Makino</td>
<td>27K/67M</td>
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<td>$646</td>
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<tr>
<td>Mazak Fusion</td>
<td>24K/67M</td>
<td>A-4013-0062</td>
<td>$646</td>
</tr>
<tr>
<td>Mazak Matrix</td>
<td>57K/143M</td>
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<tr>
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<td>27K/67M</td>
<td>A-4014-0401</td>
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<tr>
<td>Yasnac MX3, I80, J50, J300</td>
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</table>

### Special non-contact tool setting

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Fanuc angle beam 0-31</td>
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<tr>
<td>Makino angle beam</td>
<td>27K/67M</td>
<td>A-4013-0900</td>
<td>$646</td>
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<tr>
<td>Mazak angle beam Fusion</td>
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</tr>
<tr>
<td>Mazak Matrix angle beam</td>
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<td>A-4013-0119</td>
<td>$646</td>
</tr>
<tr>
<td>Mazak E-Series Matrix</td>
<td>52K/130M</td>
<td>A-4013-0123</td>
<td>$646</td>
</tr>
<tr>
<td>Mazak E-series Fusion</td>
<td>27K/67M</td>
<td>A-4013-0092</td>
<td>$646</td>
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<tr>
<td>Mazak Mark III Fusion</td>
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<tr>
<td>Yasnac angle beam</td>
<td>27K/67M</td>
<td>A-4014-0025</td>
<td>$646</td>
</tr>
</tbody>
</table>
machine tool probes

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.

<table>
<thead>
<tr>
<th>description</th>
<th>memory</th>
<th>part number</th>
<th>price</th>
</tr>
</thead>
<tbody>
<tr>
<td>fanuc 0-31</td>
<td>11k/27m</td>
<td>a-4012-0541</td>
<td>$861</td>
</tr>
<tr>
<td>haas</td>
<td>11k/27m</td>
<td>a-4012-0874</td>
<td>$861</td>
</tr>
<tr>
<td>mazak fusion</td>
<td>11k/28m</td>
<td>a-4013-0071</td>
<td>$861</td>
</tr>
<tr>
<td>siemens 810d/840d</td>
<td>19k/47m</td>
<td>a-4014-0137</td>
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<tr>
<td>yasnac lx3</td>
<td>10k/26m</td>
<td>a-4014-0011</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>description</th>
<th>memory</th>
<th>part number</th>
<th>price</th>
</tr>
</thead>
<tbody>
<tr>
<td>mazak mark iii fusion</td>
<td>45k/113m</td>
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<td>$1,076</td>
</tr>
<tr>
<td>mazak e-series fusion</td>
<td>75k/188m</td>
<td>a-4013-0083</td>
<td>$1,076</td>
</tr>
<tr>
<td>mori seiki mtnt</td>
<td>43k/106m</td>
<td>a-4012-0834</td>
<td>$1,076</td>
</tr>
<tr>
<td>hitachi hi-cell</td>
<td>75k/188m</td>
<td>a-4012-0843</td>
<td>$1,076</td>
</tr>
<tr>
<td>nakamura NTX</td>
<td>46k/113m</td>
<td>a-4012-1074</td>
<td>$1,076</td>
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<tr>
<td>mazak mark iv and e-series matrix</td>
<td>110k/275m</td>
<td>a-4013-0106</td>
<td>$1,076</td>
</tr>
<tr>
<td>doosan mt</td>
<td>43k/106m</td>
<td>a-4012-1016</td>
<td>$1,076</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>description</th>
<th>memory</th>
<th>part number</th>
<th>price</th>
</tr>
</thead>
<tbody>
<tr>
<td>fanuc 0-31</td>
<td>4k/8m</td>
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<td>haas</td>
<td>4k/8m</td>
<td>a-4012-0877</td>
<td>$431</td>
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</tbody>
</table>
AxiSet™ Check-Up

Compatible with common formats of 5-axis machines, AxiSet™ Check-Up provides machine users 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: $2,500

AxiSet™ Check-Up Fanuc (Table-Table)
Part number: A-5642-1100  Price: $2,500

AxiSet™ Check-Up Mori Seiki NMV NMH
Part number: A-5642-1400  Price: $2,500

AxiSet™ Check-Up Siemens (Table-Table)
Part number: A-5642-1500  Price: $2,500

AxiSet™ Check-Up Mazak Mark IV
Part number: A-5642-1005  Price: $2,500

AxiSet™ Check-Up Mazak eV/eH
Part number: A-5642-1009  Price: $2,500

AxiSet™ Check-Up Hurco Winmax (Table-Table)
Part number: A-5642-1105  Price: $2,500

AxiSet™ Check-Up Haas
Part number: A-5642-1600  Price: $2,500

AxiSet™ Check-Up Mori Seiki NT
Part number: A-5642-1405  Price: $2,500

AxiSet™ Check-Up Siemens (Head-Head)
Part number: A-5642-1515  Price: $2,500
Machine tool probes

Off-line programming

Productivity+™ is a new software module designed to simplify the process of integrating probing cycles into the CNC machining program. Productivity+™ Active Editor Pro runs standalone, while the Productivity+™ GibbsCAM® plug-in runs in the GibbsCAM® environment and requires GibbsCAM® version 7 or above.

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

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

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

The Productivity+™ GibbsCAM® plug-in requires the GibbsCAM® machine post processor to be upgraded to allow compatibility. The first post processor upgrade is included.

Productivity+™ GibbsCAM® plug-in

Part number: A-4007-1000  Price: $4,995

Productivity+™ Active Editor Pro

Part number: A-4007-1400  Price: $4,995

Productivity+™ multi-axis option for Active Editor Pro

Part number: A-5226-2000  Price: $2,500

Productivity+™ post processors

<table>
<thead>
<tr>
<th>Control</th>
<th>Part number</th>
<th>Price</th>
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<tbody>
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<tr>
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<td>A-4007-5100</td>
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<td>Haas</td>
<td>A-4007-5200</td>
<td>$1,500</td>
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<td>Heidenhain</td>
<td>A-4007-6000</td>
<td>$1,500</td>
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<td>Hitachi Seicos</td>
<td>A-4007-5300</td>
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<td>Hurco</td>
<td>A-4007-6800</td>
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<td>Makino</td>
<td>A-4007-5400</td>
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<tr>
<td>Mazatrol ISO</td>
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<tr>
<td>Mitsubishi Meldas</td>
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<td>$1,500</td>
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<tr>
<td>Mori Seiki</td>
<td>A-4007-6600</td>
<td>$1,500</td>
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<td>Okuma</td>
<td>A-4007-6300</td>
<td>$1,500</td>
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<td>Siemens</td>
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<td>Yasnac</td>
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Productivity+™ CAD importers

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<tbody>
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<td>CATIA</td>
<td>A-5226-0008</td>
<td>$1,500</td>
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<tr>
<td>UG/NX</td>
<td>A-5226-0009</td>
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<tr>
<td>ACIS</td>
<td>A-5226-0010</td>
<td>$1,000</td>
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<tr>
<td>SolidWorks®</td>
<td>A-5226-0011</td>
<td>$1,500</td>
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<tr>
<td>Inventor™</td>
<td>A-5226-0012</td>
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</tr>
<tr>
<td>All of the above</td>
<td>A-5226-0020</td>
<td>$2,000</td>
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</table>

GibbsCAM® post processor upgrade service

Part number: A-4007-1000-RI  Price: $300

Productivity+™ maintenance

The first year’s maintenance is included in the purchase price.

One-year maintenance contract for GibbsCAM® plug-in

Part number: YI-4007-1000  Price: $840

One-year maintenance contract for Active Editor Pro

Part number: YI-4007-1400  Price: $840

One-year maintenance contract for multi-axis option for Active Editor Pro


Productivity+™ Active Editor Pro 90-day trial

Part number: A-4007-8999  Price: FOC

CNC Reporter

Part number: A-4007-1500  Price: $2,500
Renishaw CappsNC

Renishaw CappsNC 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.

- 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, CappsNC 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.
- First year maintenance and support included.

CappsNC Advanced

CappsNC 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 CappsNC license
- Machine interface option*
- CAD importers (IGES and STEP)
- One-year CappsNC maintenance and support

Part number: A-5722-1000  Price: $15,345

CappsNC Advanced Programming Server

CappsNC Advanced Programming Server is a modular configuration designed for users who have the requirement to program remotely while capturing measurement results locally at the machine tool.

Includes:
- Complete CappsNC license
- CappsNC execution module*
- CAD importers (IGES and STEP)
- One-year CappsNC maintenance and support

Part number: A-5722-1001  Price: $16,445

* specify control type (Fanuc, Mazak, Haas, Siemens or Heidenhain) and interface type (RS232, FOCAS, TNCDirect, Mnet or MT Connect)

CappsNC options

Additional machine interface option

Part number: A-5722-3000  Price: $1,650

Additional execution module

Includes one machine interface option.

Part number: A-5722-1100  Price: $6,545

4th-axis option

Part number: A-5722-6000 (ADV)  Price: $3,190
Part number: A-5722-6100 (PROGSTA)  Price: $2,145
Part number: A-5722-6200 (EXECMOD)  Price: $1,045

5th-axis option

Part number: A-5722-6001 (ADV)  Price: $3,190
Part number: A-5722-6101 (PROGSTA)  Price: $2,145
Part number: A-5722-6201 (EXECMOD)  Price: $1,045

Work offset and tool compensation

Part number: A-5722-6002 (ADV)  Price: $6,490
Part number: A-5722-6102 (PROGSTA)  Price: $2,145
Part number: A-5722-6202 (EXECMOD)  Price: $4,345

Work offset only

Part number: A-5722-6005 (ADV)  Price: $3,465
Part number: A-5722-6105 (PROGSTA)  Price: $1,045
Part number: A-5722-6205 (EXECMOD)  Price: $2,145

Tool compensation only

Part number: A-5722-6006 (ADV)  Price: $3,245
Part number: A-5722-6106 (PROGSTA)  Price: $1,375
Part number: A-5722-6206 (EXECMOD)  Price: $2,475

AAT SPC

Part number: A-5722-6003  Price: $2,695

AAT Modify Bestfit for NC part program correction

Part number: A-5722-6004  Price: $8,500
Machine tool probes

CappsNC CAD importers

Catia4 Direct Import
Part number: A-5722-5000  Price: $4,345

Catia5 Direct Import
Part number: A-5722-5001  Price: $4,345

Pro-E Direct Import
Part number: A-5722-5002  Price: $4,345

Unigraphics Import
Part number: A-5722-5003  Price: $4,345

Parasolid Import
Part number: A-5722-5004  Price: $1,650

Solid Works Import
Part number: A-5722-5005  Price: $1,650

VDA Import
Part number: A-5722-5006  Price: $1,045

CappsNC maintenance
The first year's maintenance is included. Subsequent years’ maintenance is offered at 15% of the list price for all components.
Part number: A-5722-4000  Price: Varies

CappsNC networking options

CappsNC License MGR – Programming Server
Includes three connections.
Part number: A-5722-3100  Price: $4,950

CappsNC License MGR – Execution Module
Includes two connections.
Part number: A-5722-3101  Price: $2,475

CappsNC License MGR 1 – additional connections
When purchased with initial installation.
Part number: A-5722-3102  Price: $550

CappsNC License MGR 2 – additional connections
When purchased after initial installation.
Part number: A-5722-3104  Price: $2,000

Renishaw services
Renishaw has set up a series of part numbers which should be referenced when ordering Renishaw services. These part numbers will appear on your invoice.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI-6000-0001</td>
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<tr>
<td>RI-6000-0002</td>
<td>Hourly travel</td>
<td>$140/hour</td>
</tr>
<tr>
<td>RI-6000-0003</td>
<td>Expenses as incurred</td>
<td></td>
</tr>
</tbody>
</table>
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 _______________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
Machine tool probes

**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.

<table>
<thead>
<tr>
<th>Fanuc/Yasnac/Mitsubishi/Mazak</th>
<th>Haas</th>
</tr>
</thead>
<tbody>
<tr>
<td>G31 skip</td>
<td>Promac</td>
</tr>
<tr>
<td>G31 high speed skip</td>
<td>Yes</td>
</tr>
<tr>
<td>G31 multi-skip</td>
<td>Yes</td>
</tr>
<tr>
<td>Custom macro</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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.

### 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

<table>
<thead>
<tr>
<th>Machining center:</th>
<th>Inspection Plus</th>
<th>46.5 Kb</th>
<th>117 m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tool setting</td>
<td>9 Kb</td>
<td>23 m</td>
</tr>
<tr>
<td></td>
<td>NC4 tool setting</td>
<td>15 Kb</td>
<td>38 m</td>
</tr>
<tr>
<td>Lathe software:</td>
<td>Inspection</td>
<td>11 Kb</td>
<td>28 m</td>
</tr>
<tr>
<td></td>
<td>Tool setting</td>
<td>6 Kb</td>
<td>15 m</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>OMP40/OMP60/RMP60</th>
<th>Turn on (via optical or RF) / Turn off (via optical or RF) or time out</th>
<th>Installation time: Up to 8 hours</th>
<th>Training time: Up to 6 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on methods</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machine start (OMP40/OMP60) requires that an M code be available for use to issue the start command.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spin start (OMP60/RMP60) uses an internal switch. The probe will turn on after being spun at 650 RPM for 1 second.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn off methods</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optical off (OMP40/OMP60) / RF off (RMP60) requires that an M code be available to initiate the turn off sequence.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OMP400</th>
<th>Optical (flash) on/optical off or time out (optical transmission)</th>
<th>Installation time: Up to 8 hours</th>
<th>Training time: Up to 6 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on method</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn off methods</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optical off. Requires the use of an M code as stated for machine start above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RMP40M</th>
<th>Turn on (via optical or RF) / Turn off (via optical or RF) or time out</th>
<th>Installation time: Up to 8 hours</th>
<th>Training time: Up to 6 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on method</td>
<td>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).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn off method</td>
<td>Optical off. Requires the use of an M code as stated for machine start above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OLP40M</th>
<th>Turn on (via optical or RF) / Turn off (via optical or RF) or time out</th>
<th>Installation time: Up to 8 hours</th>
<th>Training time: Up to 6 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn on method</td>
<td>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).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn off method</td>
<td>Optical off. Requires the use of an M code as stated for machine start above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Machine tool probes

Tool setting probe details

<table>
<thead>
<tr>
<th>Probe</th>
<th>Type</th>
<th>Installation time</th>
<th>Training time</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS27R</td>
<td>Hard-wired</td>
<td>Up to 6 hours</td>
<td>Up to 6 hours</td>
</tr>
</tbody>
</table>
| OTS      |              | Machine start requires that an M code 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 * |                   | * Depending on bracket mounting requirements, additional time may be required. |
|          | 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. |
|          | 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)