

RMP400



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한국어		<p>본 제품에 대한 간행물은 바코드를 스캔하거나 다음을 방문하여 확인하실 수 있습니다 www.renishaw.co.kr/rmp400.</p>	

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Intended use

The RMP400 is a radio spindle probe that enables automated workpiece inspection and job set-up on multi-tasking machines, machining centres and gantry machining centres.

Safety

Information to the user

This product is supplied with non-rechargeable lithium metal batteries. Refer to the battery manufacturer's literature for specific battery operating, safety and disposal guidelines.

- Do not attempt to recharge the batteries.
- Replace the batteries only with the specified type.
- Do not mix new and used batteries in the product.
- Do not mix different types or brands of batteries in the product.
- Ensure that all batteries are inserted with the correct polarity in accordance with the instructions in this manual and indicated on the product.
- Do not store the batteries in direct sunlight.
- Do not expose the batteries to water.
- Do not expose the batteries to heat or dispose of the batteries in a fire.
- Avoid forced discharge of the batteries.
- Do not short circuit the batteries.
- Do not disassemble, apply excessive pressure, pierce, deform or subject the batteries to impact.
- Do not swallow the batteries.
- Keep the batteries out of the reach of children.
- If the batteries are swollen or damaged do not use them in the product and exercise caution when handling them.
- Dispose of waste batteries in accordance with your local environmental and safety laws.

Ensure that you comply with international and national battery transport regulations when transporting the batteries or this product with the batteries inserted. Lithium metal batteries are classified as dangerous goods for transportation and require labelling and packaging in accordance with the dangerous goods regulations before being offered for transportation. To reduce the risk of shipment delays, should you need to return this product for any reason, do not return any batteries.

In all applications involving the use of machine tools, eye protection is recommended.

The RMP400 has a glass window. Handle with care if broken to avoid injury.

Information to the machine supplier/installer

It is the machine supplier's responsibility to ensure that the user is made aware of any hazards involved during operation, including those mentioned in Renishaw product literature, and to ensure that adequate guards and safety interlocks are provided.

If the probe fails, the probe signal may falsely indicate a probe seated condition. Do not rely on probe signals to halt the movement of the machine.


Information to the equipment installer

All Renishaw equipment is designed to comply with the relevant EU and FCC regulatory requirements. It is the responsibility of the equipment installer to ensure that the following guidelines are adhered to, in order for the product to function in accordance with these regulations:

- Any interface **MUST** be installed in a position away from any potential sources of electrical noise (for example, power transformers, servo drives).
- All 0 V/ground connections should be connected to the machine "star point" (the "star point" is a single point return for all equipment ground and screen cables). This is very important and failure to adhere to this can cause a potential difference between grounds.
- All screens must be connected as outlined in the user instructions.
- Cables must not be routed alongside high current sources (for example, motor power supply cables), or be near high-speed data lines.
- Cable lengths should always be kept to a minimum.

Equipment operation

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Batteries	½ AA (3.6 V) lithium-thionyl chloride × 2			
	<p data-bbox="314 149 362 194">✓</p> <p data-bbox="400 149 623 169">Saft LS 14250</p> <p data-bbox="400 200 597 221">Tadiran SL-750</p> <p data-bbox="400 252 611 273">Xeno XL-050F</p>	<p data-bbox="703 149 751 194">✗</p> <p data-bbox="804 149 1028 169">Dubilier SB-AA02</p> <p data-bbox="804 200 992 221">Maxell ER3S</p> <p data-bbox="804 252 1076 273">Sanyo CR 14250 SE</p> <p data-bbox="804 304 1124 397">Tadiran SL-350, SL-550, TL-4902, TL-5902, TL-2150, TL-5101</p> <p data-bbox="804 428 1028 449">Varta CR ½ AA</p>		

Fitting the stylus

1



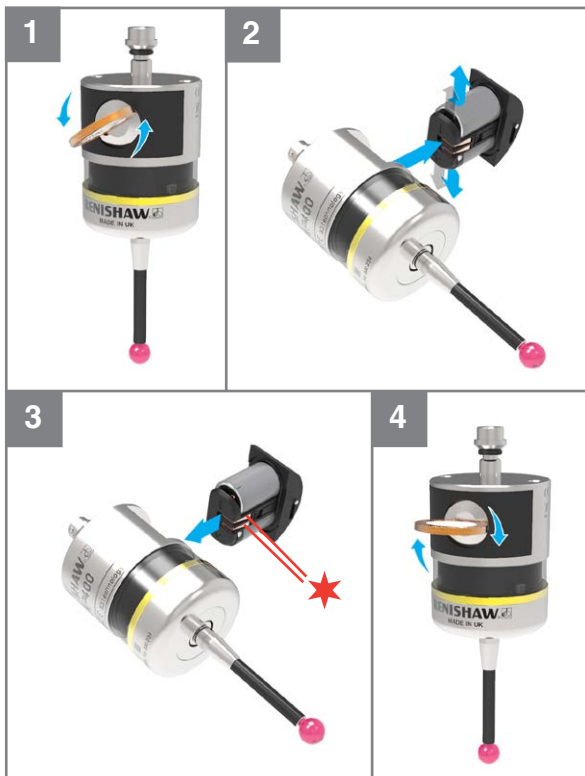
2



CAUTION

Remove the battery isolation device from the battery compartment before use.

★ Take care not to short the battery contacts as this may be a fire hazard. Ensure the contact strips are located securely.



EN

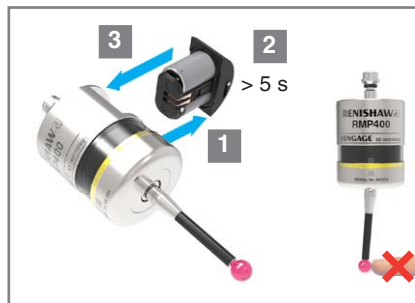
Configuring the probe



The following sections describe the process of reviewing and configuring the probe settings. The Trigger Logic™ app simplifies this process with clear, interactive instructions and informative videos. The app can also be used with radio probes for probe acquisition.

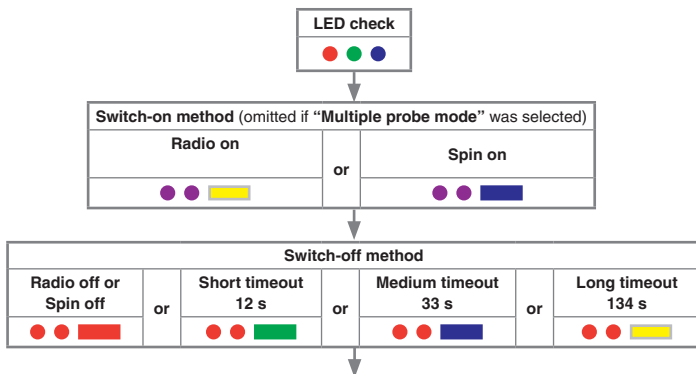


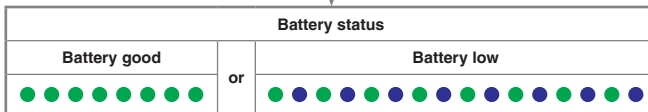
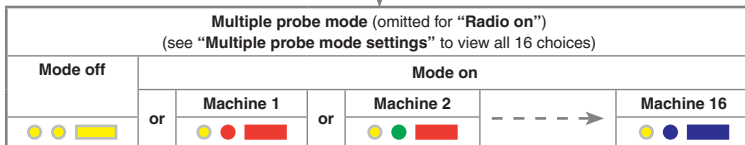
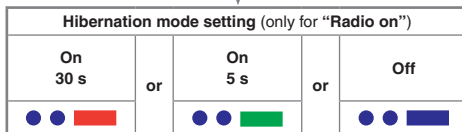
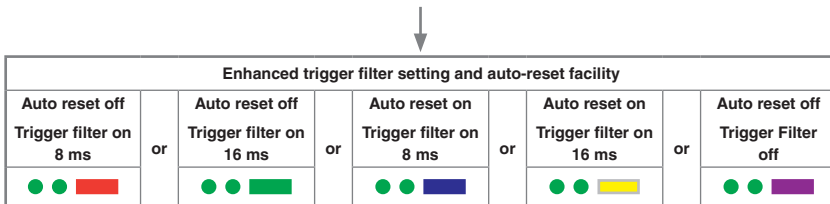
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Reviewing the probe settings



Key to the symbols	
	LED short flash
	LED long flash

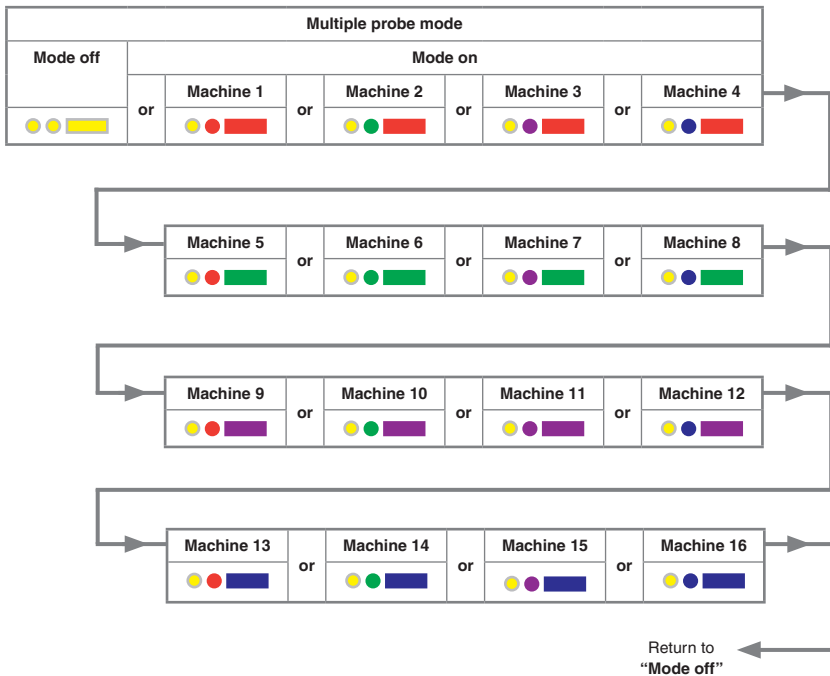




↓

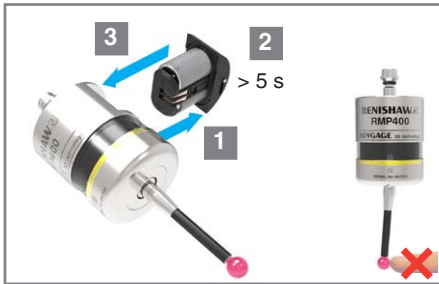
Probe in standby mode (after 5 seconds)

Multiple probe mode settings



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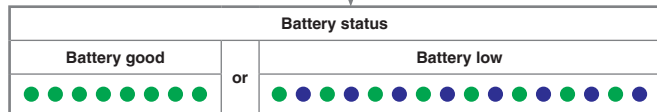
Probe partnering function



Key to the symbols	
	LED short flash
	LED long flash
	Deflect the stylus for less than 4 seconds to move to the next menu option.
	To exit, leave the stylus untouched for more than 120 seconds.
	Partnering successful. Probe is now in standby.

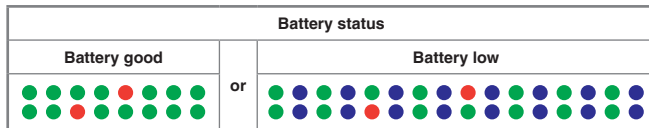


All probe settings will be shown, ending with "Battery status" being displayed.

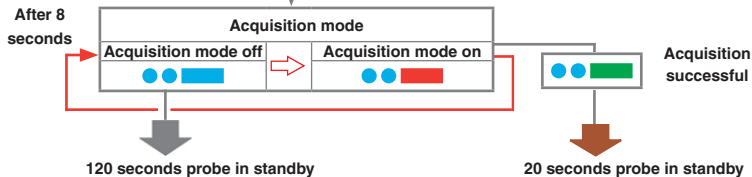




Whilst the **"Battery status"** is being displayed, deflect and release the stylus to enter **"Acquisition mode off"**. Probe status will flash red to acknowledge this.



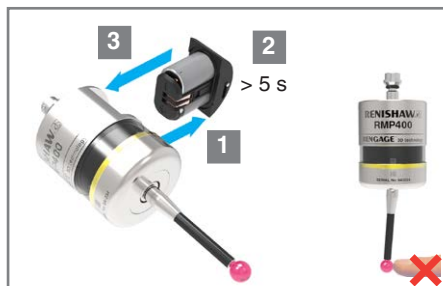
At this point turn on either the RMI or RMI-Q



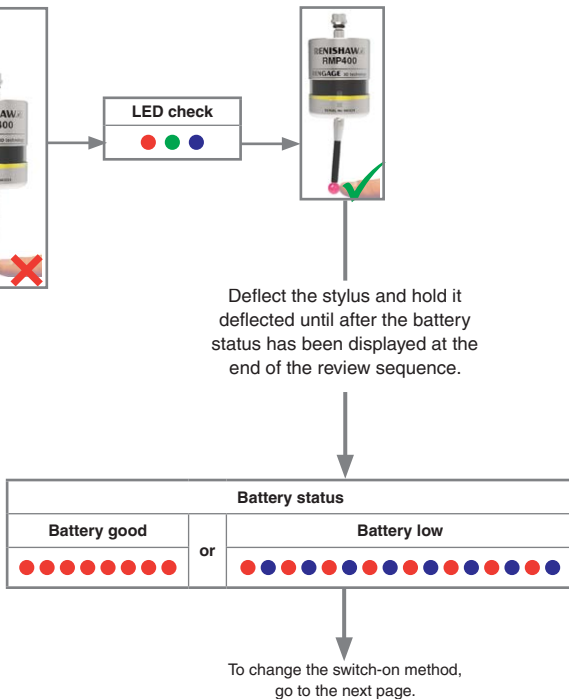
If partnering is unsuccessful **"Acquisition mode off"** will be displayed again after 8 seconds. Deflect the stylus for less than 4 seconds to select **"Acquisition mode on"** again.

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Placing the probe in configuration mode

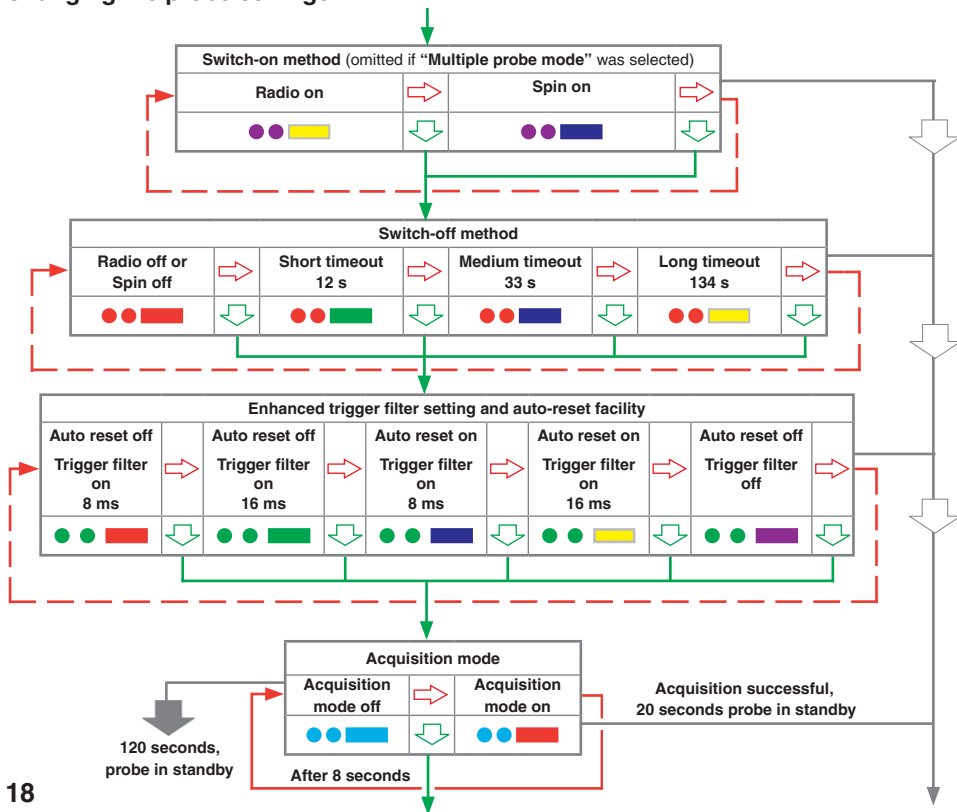


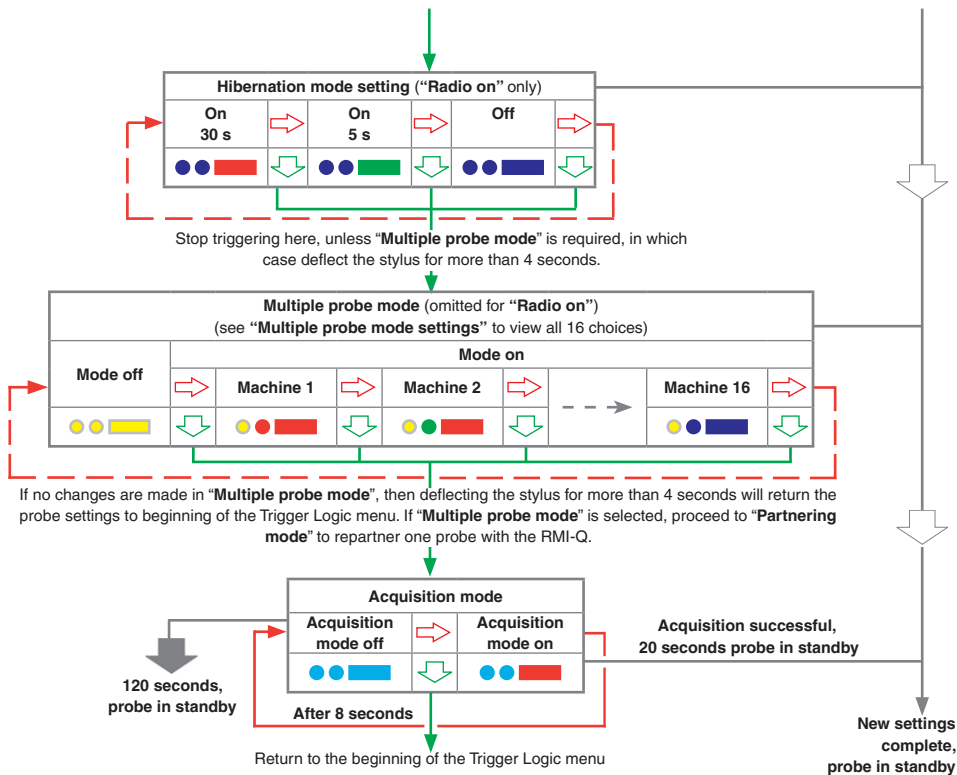
Key to the symbols	
	LED short flash
	LED long flash
	Deflect the stylus for less than 4 seconds to move to the next menu option.
	Deflect the stylus for more than 4 seconds to move to the next menu option.
	To exit, leave the stylus untouched for more than 120 seconds.
	To exit, leave the stylus untouched for more than 20 seconds.



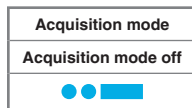
CAUTION: Do not remove the batteries whilst in configuration mode.
To exit, leave the stylus untouched for more than 20 seconds.

Changing the probe settings

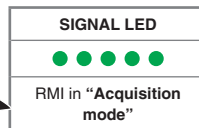




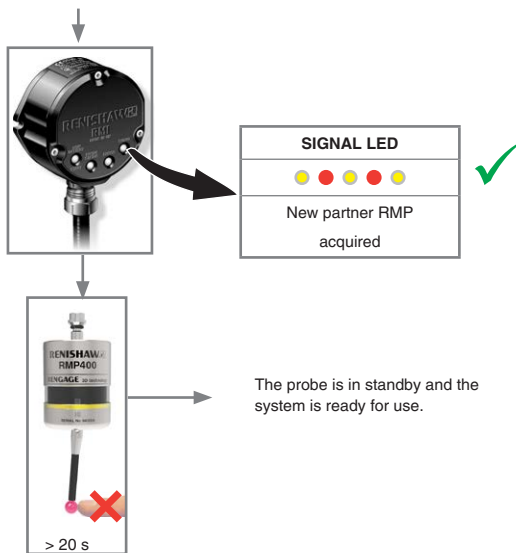
RMP400 – RMI partnership



Switch on the RMI

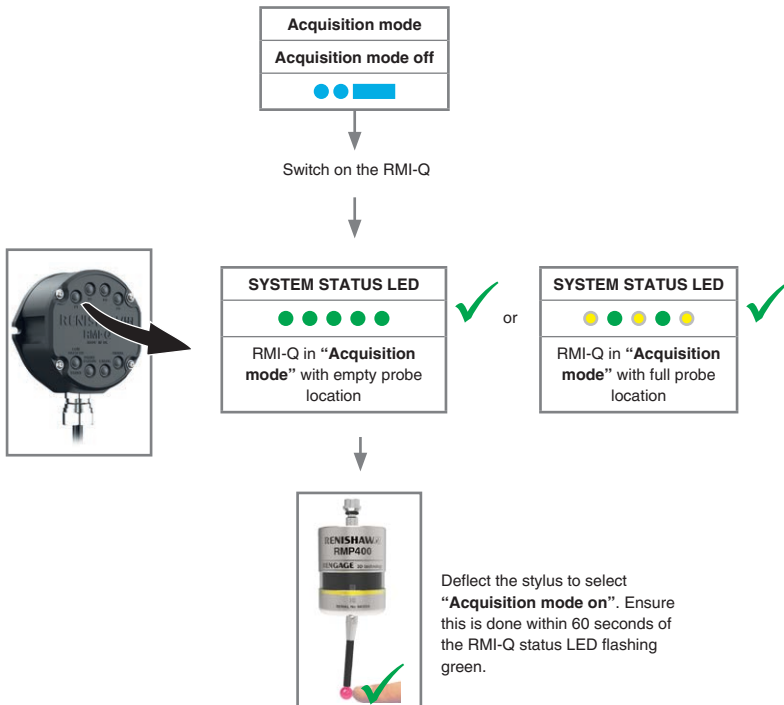


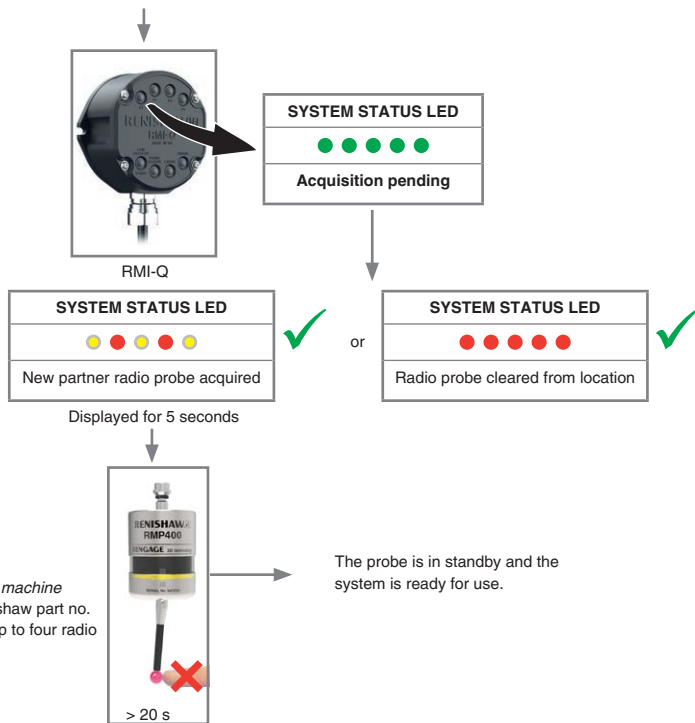
Deflect the stylus to select "Acquisition mode on". Ensure this is done within 8 seconds of the RMI signal LED flashing green.



NOTE: Refer to the *RMI radio machine interface* installation guide (Renishaw part no. H-4113-8554) when partnering the RMP400.

RMP400 – RMI-Q partnership







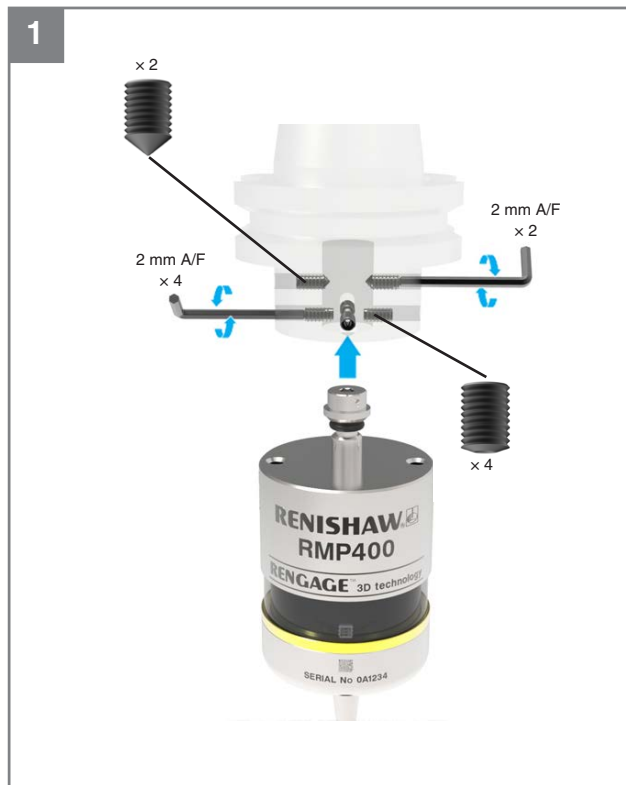
> 20 s

→

The probe is in standby and the system is ready for use.

NOTE: Refer to the *RMI-Q radio machine interface* installation guide (Renishaw part no. H-5687-8504) when partnering up to four radio probes.

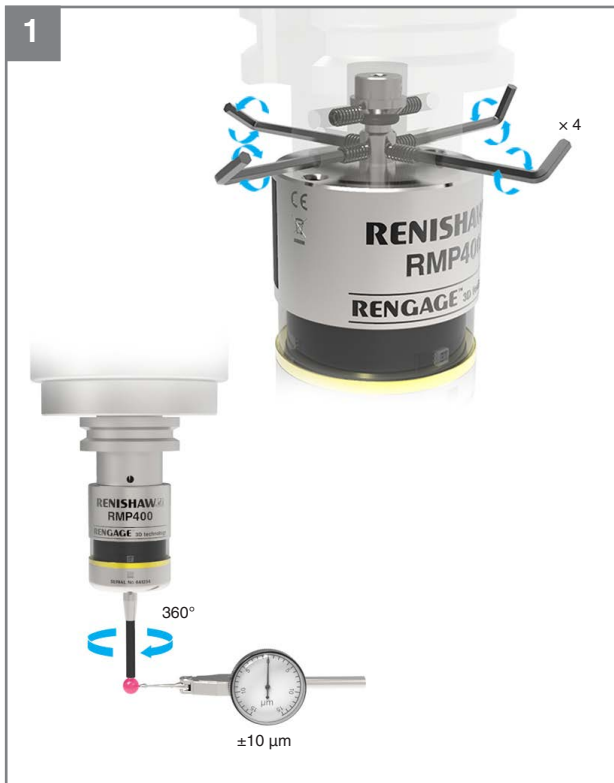
Mounting the probe on a shank



2



Stylus on-centre adjustment



2



3

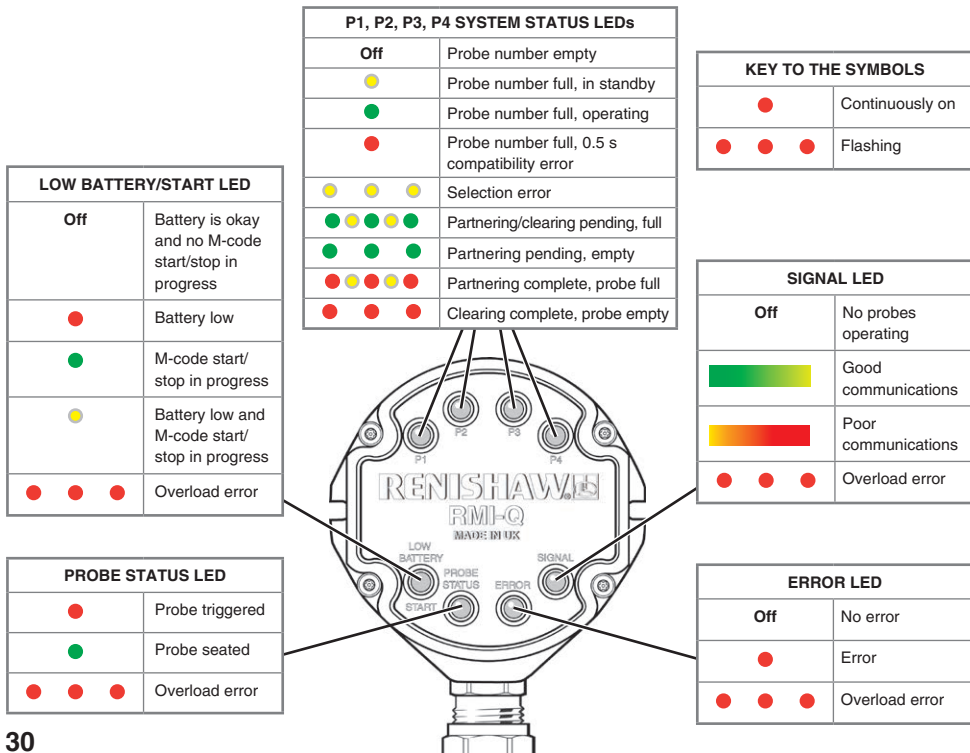


Cleaning

Use a clean cloth.



RMI-Q visual diagnostics

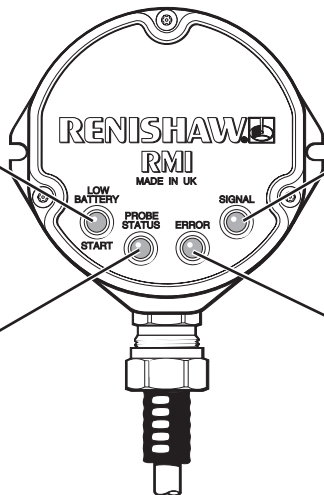


RMI visual diagnostics

LOW BATTERY/START LED	
●	Battery low
●	M-code start/ stop in progress
●	Battery is low and M-code start/stop in progress
Off	Battery is okay and no M-code start/stop in progress
● ● ●	Overload error

KEY TO THE SYMBOLS	
●	Continuously on
● ● ●	Flashing

SIGNAL LED	
●	Excellent communications
●	Good communications
●	Poor communications
Off	No probes operating
● ● ●	In acquisition mode
● ● ● ●	New partner RMP acquired
● ● ●	Overload error



PROBE STATUS LED	
●	Probe triggered
●	Probe seated
● ● ●	Overload error

ERROR LED	
●	Error
Off	No error
● ● ●	Overload error

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Warranty

Unless you and Renishaw have agreed and signed a separate written agreement, the equipment and/or software are sold subject to the Renishaw Standard Terms and Conditions supplied with such equipment and/or software, or available on request from your local Renishaw office.

Renishaw warrants its equipment and software for a limited period (as set out in the Standard Terms and Conditions), provided that they are installed and used exactly as defined in associated Renishaw documentation. You should consult these Standard Terms and Conditions to find out the full details of your warranty.

Equipment and/or software purchased by you from a third-party supplier is subject to separate terms and conditions supplied with such equipment and/or software. You should contact your third-party supplier for details.

Declaration of conformity



Renishaw plc hereby declares that the RMP400 is in compliance with the essential requirements and other relevant provisions of:

- the applicable EU directives
- the relevant statutory instruments under UK law

The full text of the declaration of conformity is available at:

www.renishaw.com/mtpdoc

Disposal of waste electrical and electronic equipment (WEEE)



The use of this symbol on Renishaw products and/or accompanying documentation indicates that the product should not be mixed with general household waste upon disposal. It is the responsibility of the end user to dispose of this product at a designated collection point for waste electrical and electronic equipment (WEEE) to enable reuse or recycling. Correct disposal of this product will help to save valuable resources and prevent potential negative effects on the environment. For more information, contact your local waste disposal service or Renishaw distributor.

Disposal of batteries



The use of this symbol on the batteries, packaging or accompanying documents indicates that used batteries should not be mixed with general household waste. Dispose of the used batteries at a designated collection point. This will prevent potential negative effects on the environment and human health which could otherwise arise from inappropriate waste handling. Contact your local authority or waste disposal service concerning the separate collection and disposal of batteries. All lithium and rechargeable batteries must be fully discharged or protected from short circuiting prior to disposal.

REACH regulation

Information required by Article 33(1) of Regulation (EC) No 1907/2006 ("REACH") relating to products containing substances of very high concern (SVHCs) is available at:

www.renishaw.com/REACH

China RoHS

For more information on China RoHS, visit:

www.renishaw.com/ChinaRoHS

FCC information to user (USA only)

47 CFR Section 15.19

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

47 CFR Section 15.21

The user is cautioned that any changes or modifications not expressly approved by Renishaw plc or authorised representative could void the user's authority to operate the equipment.

47 CFR Section 15.105

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Patents

Features of RMP400 and features of similar products are the subject of one or more of the following patents and/or patent applications:

CN 100416216	EP 1425550	IN 215787	US 6941671
CN 100466003	EP 1457786	IN 234921	US 7145468
CN 101142461	EP 1576560	IN 305341	US 7285935
CN 101171493	EP 1613921	IN 307453	US 7316077
CN 101198836	EP 1804020	IN 364693	US 7441707
CN 101476859	EP 1866602	IN 8707/DELNP/2008	US 7486195
CN 101482402	EP 1880163	WO 2004/057552	US 7603789
	EP 1893937	JP 4237051	US 7665219
	EP 1931936	JP 4575781	US 7689379
	EP 2154471	JP 4852411	US 7792654
	EP 2216761	JP 5238749	US 7812736
		JP 5283501	US 7821420
		JP 5308811	US 8140287
		JP 5357541	US 9140547
		JP 5390719	
		JP 5611297	
		KR 1001244	
		TW I333052	

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安全须知

用户须知

本产品随附非充电式锂金属电池。有关具体的电池工作、安全性和处置指导原则，请参阅电池制造商提供的资料。

- 请勿尝试给电池充电。
- 请仅使用指定类型的电池进行更换。
- 请勿在本产品中将新旧电池混用。
- 请勿在本产品中混用不同类型或品牌的电池。
- 请按照本手册中的说明和产品上的指示，确保所有电池安装的正负极方向正确。
- 请勿将电池存放在阳光直射的地方。
- 请勿使电池接触水。
- 请勿将电池加热或弃入火中。
- 请避免将电池强制放电。
- 请勿使电池短路。
- 请勿对电池进行拆解、穿透、施加过度压力，使其变形或将其暴露在易受到冲击的环境中。
- 请勿吞咽电池。
- 请将电池放在儿童无法接触的地方。
- 如果电池被吞咽或出现破损，请勿在产品上安装，并且应小心处理。
- 请按照当地的环境和安全法规处置用过的电池。

在运输电池或包含该等电池的产品时，请确保符合国际和国家电池运输条例。锂离子电池在运输中被归类为危险品，需要在发运前按照《危险品运输规则》(DGR) 的规定粘贴标签并包装。为了减少运输延期的风险，无论出于何种原因，若您需要将本产品返回雷尼绍，请勿包含任何电池。

在所有涉及使用机床的应用中，建议采取保护眼睛的措施。

RMP400有一个玻璃窗口。如果玻璃破碎，请务必小心，以免受伤。

机床供应商/安装商须知

机床制造商有责任确保用户了解操作中存在的任何危险，包括雷尼绍产品说明书中所述的危险，并确保提供充分的防护装置和安全联动装置。

如果测头测量失败，则有误发测头已复位状态信号的可能。切勿单凭测头信号来停止机床运动。

设备安装商须知

雷尼绍所有设备的设计均符合相关的EU和FCC监管要求。为使产品按照这些规定工作，设备安装商有责任保证遵守以下指导原则：

- 任何接口的安装位置**必须**远离任何潜在的电噪声源，如变压器、伺服系统驱动装置等；
- 所有0伏/接地连接都应当连接到机床接地终端上（“接地终端”是所有设备地线和屏蔽电缆的单点回路）。这一点非常重要，不遵守此规定会造成接地之间存在电位差；
- 所有屏蔽装置都必须按使用说明书中所述进行连接；
- 电缆线路不得与电机电源线等高电流源并行或靠近高速数据传输线；
- 电缆长度应始终保持最短。

设备操作

如果设备使用方式与制造商要求的方式不符，设备提供的保护功能可能会减弱。

Radio approvals

Australia:



Brazil:



06191-18-02812

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

Canada: IC: 3928A-RMP400

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

EU:



India:

ETA-949/2017-RLSO(SR)

Japan:



This device is granted pursuant to the Japanese Radio Law and the Japanese Telecommunications Business Law
This device should not be modified (otherwise the granted designation number will become invalid).

Malaysia:



RAVG/22Y/0818/S(18-3048)

Mexico:

ITF#RCPRERM18-1539

“La operación de este equipo está sujeta a las siguientes dos condiciones:

(1) es posible que este equipo o dispositivo no cause interferencia perjudicial y

(2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.”

New Zealand:



Singapore:



South Africa:



South Korea:



Class A Equipment (Industrial Use)

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Taiwan:



警語

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前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

USA:

FCC ID: KQGRMP400

Argentina Iceland Indonesia Liechtenstein Montenegro Norway Philippines Russia Switzerland Turkey

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