

# Safety information



## XM multi-axis calibrator



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Polski  
Magyar  
Svenska  
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Türkçe  
Português



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## Legal and safety information

### Terms and Conditions and 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.

### EC compliance

Renishaw plc declares that the XM multi-axis calibrator system complies with the applicable directives, standard and regulations. A copy of the full EC Declaration of Conformity is available upon request.



In compliance with BS EN 61010-1:2010 the product is safe to use in the following minimum environmental conditions:

- Indoor use only
- Altitude up to 2000 m
- Maximum relative humidity (non-condensing) of 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C
- Pollution Degree 2

### Innovation, Science and Economic Development Canada (ISED)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation Science and Economic Development Canada's licence-exempt RSS(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 ISEC 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.

### Class A Equipment Statement (Non-residential)

CAN ICES-003(A) / NMB-003(A).



## Legal and safety information

### FCC notice

### Supplier's Declaration of Conformity

### 47 CFR § 2.1077 Compliance Information

**Unique Identifier:** XM multi-axis calibrator

#### Responsible Party – U.S. Contact Information

Renishaw Inc.

1001 Wesemann Drive

West Dundee

Illinois

IL 60118

United States

Telephone number: +1 847 286 9953

Email: [usa@renishaw.com](mailto:usa@renishaw.com)

### 47 CFR section 15.19

This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
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 used in accordance with this 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 you will be required to correct the interference at your own expense.

### 47 CFR section 15.27

This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

## Legal and safety information



**NOTE:** Ensure that you read and understand the XM system user guide before using any XM system.

The XM system can be used in a variety of environments and applications. To ensure the safety of the user and other personnel in the vicinity it is therefore paramount that a comprehensive risk assessment is carried out for the machine under test before using the XM system.

This should be carried out by qualified users (requiring machine competency, applicable technical knowledge and a trained risk assessor) with consideration for the safety of all personnel. The risks identified must be mitigated prior to using the product. The risk assessment should pay particular attention to machine, manual handling, mechanical, laser, electrical, power and fibre optic safety.

Based on current research, the wireless devices used in this product would not seem to pose a significant health problem for the vast majority of pacemaker wearers. However, people with pacemakers may want to ensure a minimum distance of 3 cm between the XM system and the pacemaker.

## 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](http://www.renishaw.com/REACH)

## RoHS compliance

Compliant with EC directive 2011/65/EU (RoHS)

### China RoHS

For more information on China RoHS, visit:

[www.renishaw.com/en/china-rohs-calibration-products--44982](http://www.renishaw.com/en/china-rohs-calibration-products--44982)

## Packaging

Packaging component	Material	94/62/EC code	94/62/EC number
Outer box	Cardboard – 70% recycled content	PAP	20
Inserts	Cardboard – 70% recycled content	PAP	20
Bags	Low density polyethylene	LDPE	4



## Legal and safety information

### Radio communication

The wireless communication module used within the XM system is preapproved in a number of regions including EU, EFTA countries, USA and Canada.

Module manufacturer: Laird plc

Part number: TRBLU23-00200

FCC ID: FCC ID PI401B

Module ID No: 1931 B-BISMII

For details of national radio approvals for this device, see the Compliance with radio device regulations document on the Calibration product quality and conformance web pages.

Further radio approval country specific statements can be found below:

#### Singapore

Reg. No. N1116-17

Complies with

IDA Standards

DA104642

#### Mexico

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.

#### Taiwan

低功率電波輻射性電機管理辦法

第十二條經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。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。

## Legal and safety information

### Disposal of waste electrical and electronic equipment

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, please contact your local waste disposal service or Renishaw distributor



### Disposal of batteries

The use of the crossed out wheeled bin symbol on the batteries, packaging or accompanying documents indicates that used batteries should not be mixed with general household waste. Please 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. Batteries may contain hazardous materials such as lithium, nickel, cobalt, graphite, cadmium and lead. These cause soil and water contamination when disposed of incorrectly. Lead, cadmium and nickel are toxic to human and animal life. Lithium may cause a flammability hazard when placed in general waste sites.

Please contact your local authority or waste disposal service concerning the separate collection and disposal of batteries.

Lithium batteries are highly flammable when exposed to heat. All lithium chemistry batteries must be protected from short circuit (by placing in a sealed bag or placing insulation tape over both terminals) prior to being offered for recycling. In addition, all rechargeable lithium batteries must be discharged

### Battery safety: transportation

Ensure that you comply with international and national battery transport regulations when transporting batteries or XM system kits.

The XM system uses a lithium ion battery. Lithium batteries are classified as dangerous goods and strict controls apply on their shipment by air. To reduce the risk of shipment delays, should you need to return the XM system to Renishaw for any reason, do not return any batteries.

The operation of wireless appliances on aircraft is forbidden by many airlines to prevent interference with communications systems. Remove the battery from the receiver unit when boarding an aircraft and ensure it cannot be switched on inadvertently.



## Battery safety: rechargeable

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

Varta: <http://www.varta-microbattery.com/en/news-downloads/downloads.html>

- Use only the charger supplied with the product to recharge the batteries.
- Replace the batteries only with the specified type.
- Do not mix batteries with different states of charge in the product.
- Do not mix different types or brands of batteries within the product.
- Ensure that all batteries are always 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 batteries or this product with the batteries inserted.

Lithium ion 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 to Renishaw for any reason, do not return any batteries.

## Labelling symbols



There are no user-serviceable parts inside the XM system. Do not remove any part of the housing; to do so could expose the user to high voltages and/or Class 3R laser radiation.



## Mechanical safety

- When setting up and mounting Renishaw XM and XC-80 systems beware of pinch and/or crush hazards that may be created e.g. due to magnetic mounting bases.
- Beware of trip hazards that may be created when using the XM and XC-80 systems. e.g. due to trailing cables.
- Exercise caution if components are to be mounted to moving or rotating machinery. Beware of cables becoming entangled.
- Exercise extreme caution if XM and XC-80 system components are to be mounted to machinery that may accelerate rapidly or move at high speed, which could lead to items colliding or being ejected.
- If it is necessary to operate the machine with the guards or any safety feature removed or disabled, it is the responsibility of the operator to ensure that alternative safety measures are taken in line with the machine manufacturer's operating instructions or relevant codes of practice.
- If you are using a part program or error correction parameters generated by the Renishaw software, it is the responsibility of the user to validate these at low feedrate and be prepared to operate the emergency stop button if necessary.
- The XM system weighs approximately 24 kg in the case (31 kg with the machine tool fixture kit attached). Users should exercise caution and follow local manual handling guidelines.



## Laser optical safety

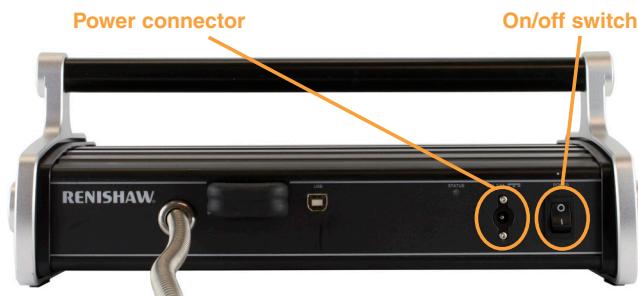
- In accordance with (IEC) EN60825-1, XM systems are Class 2M lasers and safety goggles are not required (under normal circumstances the eye will blink and look away before damage can occur).
- Do not stare directly into the laser beams or view them with optical equipment such as telescopes, convergent mirrors or binoculars as permanent retinal damage could occur.
- Do not direct the beam at other people or into areas where people unconnected with laser work might be present. It is safe to view a diffuse-reflected beam during system alignment.
- FDA compliance (USA) – Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Rotating the shutter to the closed position (the right hand position on the picture) ensures no beam is emitted.



## Electrical and power safety

- The power supply unit must not come into contact with fluids e.g. coolant on the floor.
- The power supply unit must not be positioned inside the machine volume.
- The XM system has been qualified for use with the power supply unit supplied with the system. A specification for this power supply unit can be found in the XM system user guide.
- In the event of damage to the single phase mains cabling section of the power supply (power lead), all power must be isolated from the equipment before any other action is taken.
- Never connect the system to devices not intended to be used with the XM system.



## Fibre optic safety

The XM system contains fibre optics. In the unlikely event that the flexible steel conduit is cut or severed, fibre optic splinters may be produced.

Fibre optic splinters can be very small and extremely sharp. Should any fibre optic splinter become embedded in the skin, medical attention should be sought immediately.

Should the fibre optic become damaged, the following procedure should be followed (be aware that the affected area might contain splinters of unattached fibre optic which can present a hazard):

- immediately power down the XM system,
- wear eye protection and protective gloves when handling damaged or exposed fibre optics,
- carefully remove the XM system from the machine and package in a suitable thick-walled cardboard box, clearly marked "Caution: exposed fibre optics, handle with care" on the outside of the box,
- return the unit to the nearest Renishaw office.

No attempt should be made to repair or dismantle the fibres from the laser unit.

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**NOTE:** Fibre optic splinters do not show up on X-rays.

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[www.renishaw.com/xm60](http://www.renishaw.com/xm60)

 #renishaw

 +44 (0) 1453 524524

 [uk@renishaw.com](mailto:uk@renishaw.com)

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