

Retrofit cabinet user's guide

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# Retrofit cabinet user's guide

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## Retrofit cabinet user's guide

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# General information

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 ORIGINAL LANGUAGE VERSION

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## 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, please contact your local waste disposal service or Renishaw distributor.

## 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.

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### Care of equipment

Renishaw probes and associated systems are precision tools used for obtaining precise measurements and must therefore be treated with care.

### Changes to Renishaw products

Renishaw reserves the right to improve, change or modify its hardware or software without incurring any obligations to make changes to Renishaw equipment previously sold.

### Company registration details

Renishaw plc. Registered in England and Wales. Company no: 1106260. Registered office: New Mills, Wotton-under-Edge, Gloucestershire, GL12 8JR, UK.

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# Product compliance

## EU declaration of conformity

Contact Renishaw plc or visit [www.renishaw.com/EUCMM](http://www.renishaw.com/EUCMM) for the full EU declaration.

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## UK declaration of conformity

Contact Renishaw plc or visit [www.renishaw.com/UKCMM](http://www.renishaw.com/UKCMM) for the full UK declaration.

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## EMC conformity

This equipment must be installed and used in accordance with this installation guide. This product is intended for industrial use only and should not be used in a residential area or connected to a low voltage power supply network which supplies buildings used for residential purposes.

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## ICES-001 (Canada only)

This ISM device complies with Canadian ICES-001(A) / NMB-001(A).

Cet appareil ISM est conforme à la norme ICES-001(A) / NMB001(A) du Canada.

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## 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)

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### China RoHS


Contact Renishaw plc or visit [www.renishaw.com/ChinaRoHSCMM](http://www.renishaw.com/ChinaRoHSCMM) for the full China RoHS tabulation.




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# Safety

 Where this symbol is displayed on the product the user must refer to the installation and user guide for information and safety advice.

If the equipment is used in a manner not specified by the manufacturer then the safety of the equipment may be impaired.

 **WARNING:** To prevent unexpected machine movement, the user is advised to switch off the electricity supply, compressed air, or any other energy sources supplied to the cabinet, in accordance with the machine manufacturer's instructions before entering the danger zone or performing any maintenance operations.

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# Warnings

Beware of unexpected movement. The user should remain outside of the full working envelope of probe head / extension / probe combinations.

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

Remove power before performing any maintenance operations.

There are no user serviceable parts inside Renishaw mains powered units. Return defective units to an authorised Renishaw Customer Service Centre.

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

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# International safety instructions

## BG - ПРЕДУПРЕЖДЕНИЕ

Моля, обърнете на приложение 1 и прочетете инструкциите за безопасност на вашия собствен език, преди за разопаковате и монтирате този продукт.

## CZ - VÝSTRAHA

Před rozbalením a instalací tohoto výrobku si přečtěte bezpečnostní pokyny ve vlastním jazyce uvedené v příloze 1.

## DA - ADVARSEL

Læs sikkerhedsinstrukserne i Appendix 1 FØR udpakning og installation af dette produkt.

## DE - WARNHINWEIS

Bevor Sie dieses Produkt auspacken und installieren, konsultieren Sie bitte Anhang 1 und lesen Sie die Sicherheitshinweise in Ihrer Sprache.

## EL - ΠΡΟΕΙΔΟΠΟΙΗΣΗ

Γυρίστε στο Κεφάλαιο 1 και διαβάστε τις οδηγίες ασφαλείας στη δική σας γλώσσα προτού ανοίξετε αυτό το προϊόν για να το εγκαταστήσετε.

## EN - WARNING

Before unpacking and installing this product, please consult Appendix 1 and read the safety instructions in your language.

## ES - ADVERTENCIA

Consulte el apéndice 1 y lea las instrucciones de seguridad en su idioma antes de desempaquetar e instalar este producto.

## ET - HOIATUS

Palun vaadake 1. lisa ning lugege enne selle toote lahtipakkimist ja paigaldamist ohutusjuhend läbi.

## FI - VAROITUKSIA

Lue liitteessä 1 olevat omalla kielelläsi kirjoitetut turvaohjeet ennen tämän tuotteen pakkauksen avaamista ja asentamista.

## FR - AVERTISSEMENT

Consulter l'annexe 1 et les instructions de sécurité dans votre propre langue avant de débiller et d'installer ce produit.



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### GA - RABHADH

Téigh chuig aguisín 1 agus déan na treoracha sábháilteachta a léamh i do theanga féin le do thoil sula ndéantar an táirge seo a dhíphacáil agus a shuiteáil.

### HR - NAPOMENA

Prije nego što proizvod izvadite iz ambalaže i ugradite ga, otvorite Prilog 1 i pročitajte sigurnosne upute na svom jeziku.

### HU – FIGYELMEZTETÉS

A termék kicsomagolása és telepítése előtt olvassa el az 1. számú függelékben található, az Ön anyanyelvén hozzáférhető biztonsági utasításokat.

### IT - AVVISO

Prima di aprire ed installare questo prodotto, leggere le istruzioni di sicurezza nella vostra lingua riportate nell'Appendice 1.

### JA - 警告

この製品を箱から取り出し設置する前に、付録 1 に記載された安全性に関する注意書きをお読みください。

### LT – ĮSPĖJIMAS

Prieš išpakuodami ir įdiegdami produktą, turite grįžti prie 1 priedo ir perskaityti nurodymus dėl saugos savo kalba.

### LV – BRĪDINĀJUMS

Pirms šī izstrādājuma izsaiņošanas un uzstādīšanas izskatiet 1. pielikumā sniegtās drošības instrukcijas savā valodā.

### MT - TWISSIJA

Jekk jogħġbok mur f'appendiċi 1 u aqra l-istruzzjonijiet tas-sigurtà fil-lingwa tiegħek qabel ma toħroġ dan il-prodott mill-ippakkjar u tinstallah.

### NL - WAARSCHUWING

Ga naar appendix 1 en lees de veiligheidsinstructies in uw eigen taal, voordat u dit product uitpakt en installeert.

### PL - OSTRZEŻENIE

Przed rozpakowaniem i zainstalowaniem tego produktu prosimy o zapoznanie się z Dodatkiem 1 i przeczytanie zaleceń dotyczących bezpieczeństwa w danym języku.

### PT - ADVERTÊNCIA

Você deve retornar ao Anexo 1 e ler as instruções de segurança em seu idioma antes de desembalar e instalar este produto.

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### RO - AVERTISMENT

Înainte de a desface ambalajul și a instala acest produs, vă rugăm să căutați Anexa 1 și să citiți cu atenție instrucțiunile de siguranță, în limba română.

### SK - VÝSTRAHA

Pred rozbalením a inštaláciou tohto produktu si pozrite prílohu 1 a prečítajte si bezpečnostné pokyny vo vašom jazyku.

### SL - OPOZORILO

Preden izdelek vzamete iz embalaže in ga vgradite, odprite Prilogo 1 in preberite varnostna navodila v svojem jeziku.

### SV - VARNING

Gå till bilaga 1 och läs säkerhetsinstruktionerna på ditt eget språk innan du packar upp och installerar denna produkt.

### TW - 警告

在拆開和安裝本產品之前，請翻頁至附錄 1 閱讀母語的安全指示。

### 中文 — 警告

在拆包和安裝本產品之前，請翻到附錄1，閱讀中文版安全說明。

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# Environmental conditions

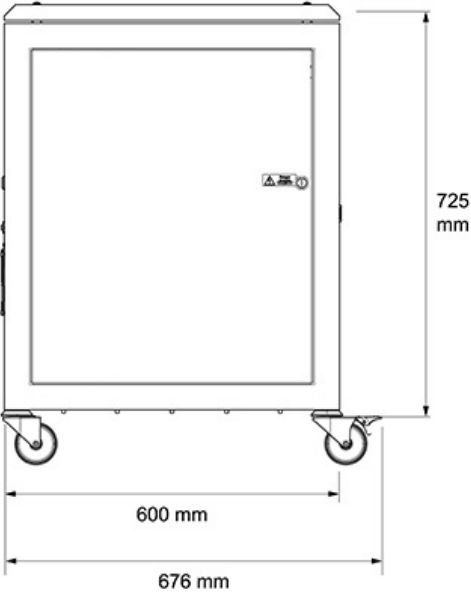
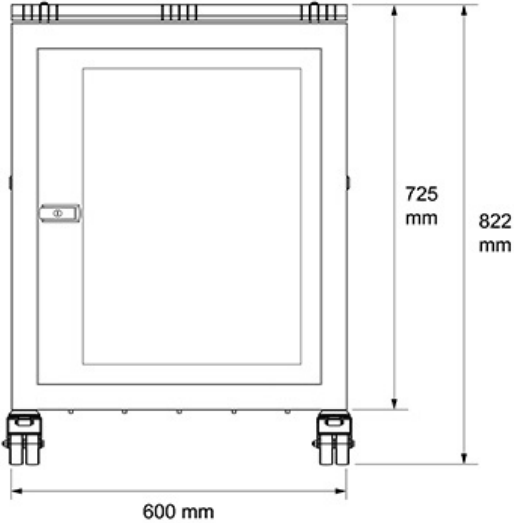
Indoor use	
Altitude	Up to 2000 m
Operating temperature	+5 °C to +40 °C
Storage temperature	-25 °C to +70 °C
Relative humidity	80% maximum (non-condensing) for temperatures up to +31 °C Linear decrease to 50% at +40 °C
Pollution degree	2

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# Specifications

Width	Depth	Height	Weight
600 mm	600 mm	725 mm (826 mm including castors)	Empty: 47 kg Fully equipped: Approximately 80 kg (depending on equipment used)



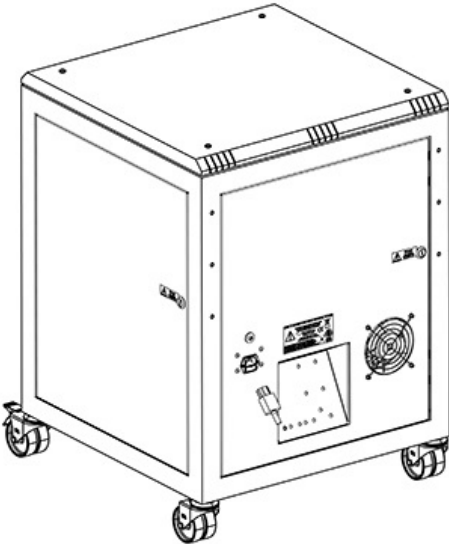
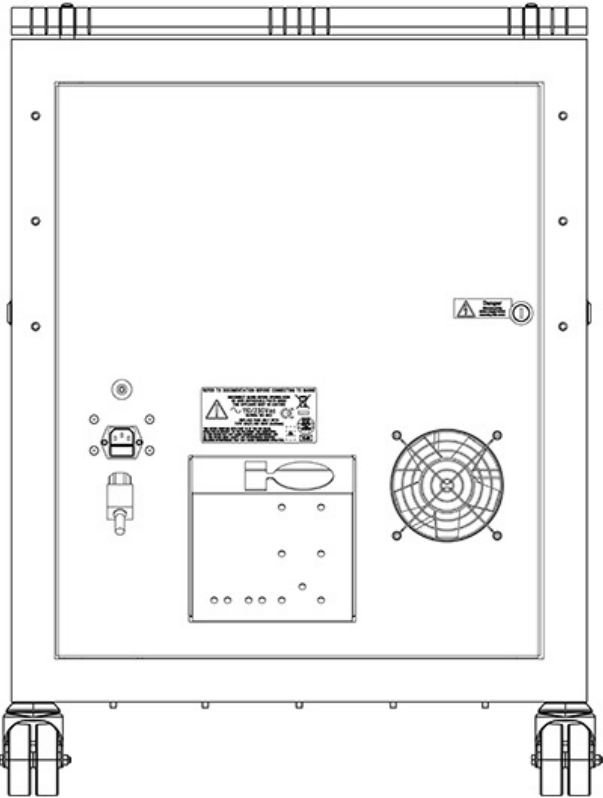
**i** NOTE: The maximum load of the castors is 80 kg.

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## Retrofit cabinet connections

### C14 input connection

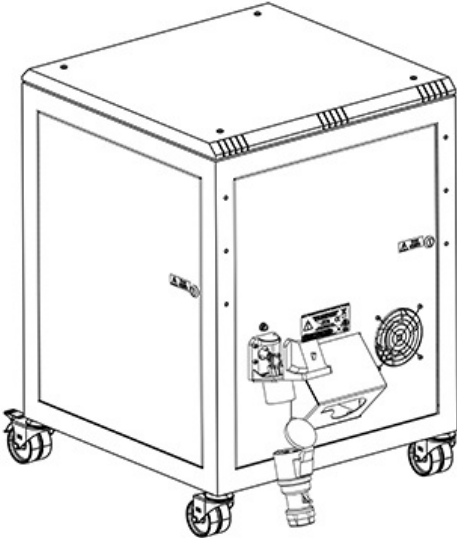
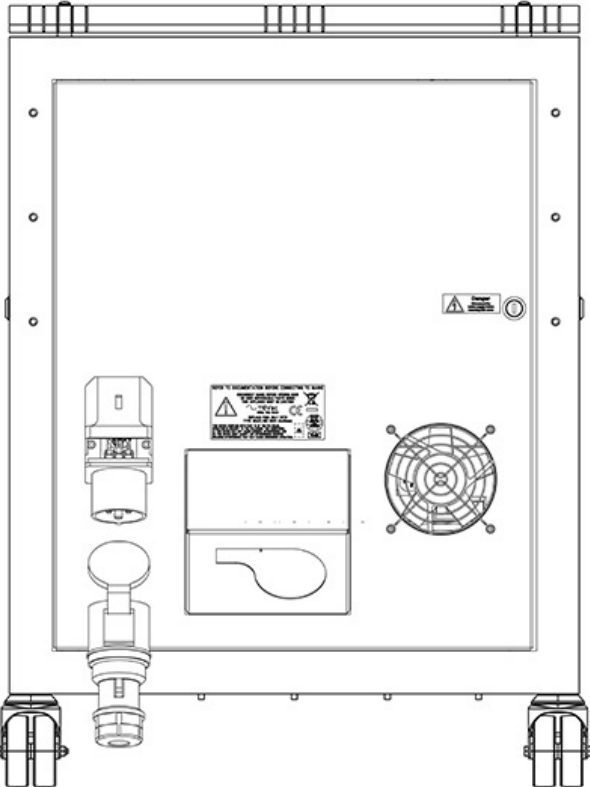


CMM cabinet type	Input connection	Electrical ratings	Certifications
A-5567-1000	C14 - IEC flange fused inlet	250 Vac @ 10 A	CSA 1425684, UL E92187, VDE 886700-1550-0716
A-5785-0100	C14 - IEC flange fused inlet	250 Vac @ 10 A	CSA 1425684, UL E92187, VDE 886700-1550-0716

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## CEE industrial socket input

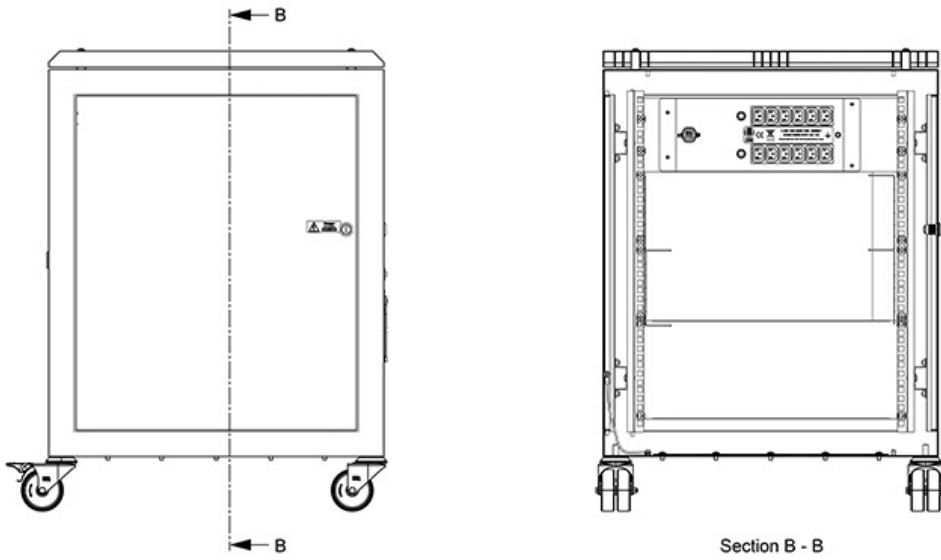


CMM cabinet type	Input connection	Electrical ratings	Certifications
A-5785-0200	3P CEE industrial socket	110 Vac @ 16 A	IEC 60309-1 and IEC 60309-2

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### Output connections



CMM cabinet type	Output connection	Electrical ratings	Certifications
All cabinets	IEC type F 6-way × 2	250 Vac @ 10 A	UL94V-0, IEC60320-1, UL498, CSA C22.2

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# Introduction

Renishaw's controller cabinet is a standard 19 inch rack mounting unit that is used for storing Renishaw's range of controllers, servo power amplifiers and interfaces. This cabinet provides a unique connection to the CMM resulting in a neat and tidy installation. As well as providing storage for all the Renishaw controller equipment the cabinet has an integral mains system with on / off switch.



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# Installation

The installation of the retrofit cabinet should only be performed by Renishaw or a Renishaw certified installation engineer.

Connection of CMM to the cabinet is either through an interface PCB or directly to the UCC / SPA units inside.

Refer to the relevant installation guides for the equipment to be fitted:

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

To ease installation it is possible to remove the side panels from the cabinet by unlocking them with the keys provided.

The cabinet can be used in conjunction with the Renishaw retrofit desk.



**CAUTION:** The control cabinet, whether empty or equipped, exceeds the limits for a two person lift. Please follow the instructions on the outer packaging in order to remove the cabinet from the pallet. The cabinet has been provided with integral wheels for moving it around. It is not permitted to lift a cabinet with lifting equipment - no lifting points are provided.

The installation engineer is responsible for positioning the cabinet correctly. Should it need moving you must do the following:

- Ensure a minimum clearance of 300 mm around all sides
- Keep cables tidy, secure from being easily pulled out and not anywhere where they may present a trip hazard
- Keep the working environment within specified environmental conditions
- Always match the cabinet to the CMM as the cabinet is configured specifically for each CMM installation
- Lock the cabinet wheels to prevent accidental movement
- Review the risk assessment
- A unique set of keys are provided with the retrofit cabinet (spares are available from Renishaw)

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### Electrical supply ratings

Retrofit cabinet model type	Voltage	Frequency	Current	Transient overvoltage category	Fuse type
A-5785-0100	230 Vac $\pm$ 10%	50 / 60 Hz	10 A maximum*	2	10 A quick blow fuse HBC 250 V (5 mm $\times$ 20 mm)
A-5567-1000	110 Vac / 230 Vac $\pm$ 10%	50 / 60 Hz	10 A maximum*	2	10 A quick blow fuse HBC 250 V (5 mm $\times$ 20 mm)
A-5785-0200	110 Vac $\pm$ 10%	50 / 60 Hz	16 A maximum*	2	16 A quick blow fuse HBC 250 V (5 mm $\times$ 20 mm)

\* It is the responsibility of the equipment installer to ensure that this maximum is not exceeded.

Refer to the label located near the mains input connector.



**WARNING:** Only use the installed mains supply cords.

### Mains service fuse replacement

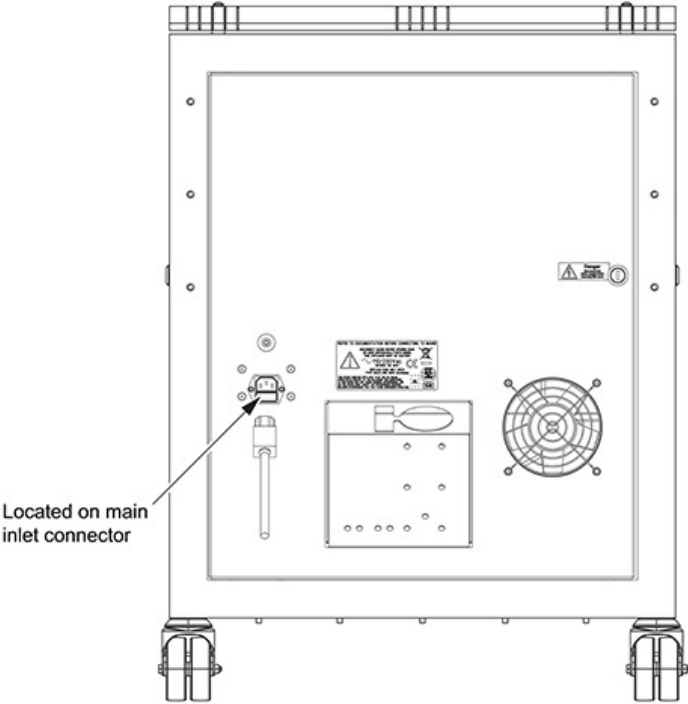


**NOTE:** A blown fuse indicates a defect within the cabinet. Please contact the installer or your local Renishaw office for advice.

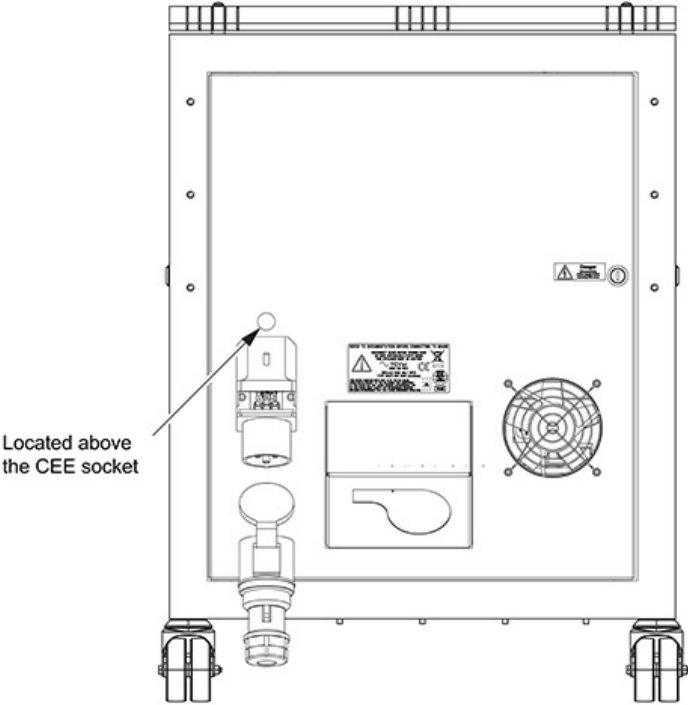
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## C14 input connection



## CEE industrial socket input



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### Protective bonding (earthing)



**WARNING:** The site operator is responsible for providing adequate earthing provisions.



**CAUTION:** Any interruption of the protective conductor can make the equipment dangerous.

This equipment must be connected to a protective earth conductor via a three core mains cable. The mains plug should only be inserted into a socket outlet with a protective earth contact.

The CMM should be bonded to the cabinet to provide an equipotential earth connection.

Make sure that the grounding requirements are strictly observed.

### Mains input connector

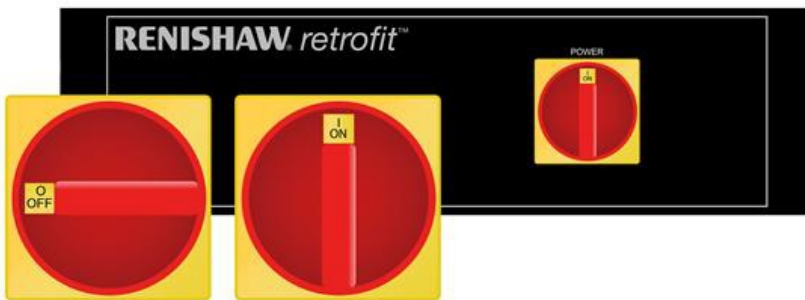
The chord used for connection to the mains must be rated to the minimum of supply specification detailed in '[Specifications](#)'.

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# Isolation

**CAUTION:** Remove electrical power from the cabinet before opening or removing any panel. Power is removed by disconnecting the mains leads on the rear panel (refer to the 'Installation' section).




The power switch is used to switch off the power to the internal equipment. If an additional means of isolation is required, it must be specified and fitted by the machine manufacturer or the installer of the product. The isolator must be sited within easy reach of the CMM operator and comply with IEC61010 and any applicable national wiring regulations for the country of installation.

**CAUTION:** If this switch is intended for use as an emergency isolation switch, then the door of the cabinet should be removed.

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# Maintenance

 **CAUTION:** Isolate the whole system before carrying out any cleaning operations (refer to the 'Isolation' section).

## Cleaning


The CMM controller cabinet should be cleaned with a dry, lint-free cloth.

Particular attention should be paid to ensure that the fan vents are clean and free of dust and dirt.

## Periodic checks

Periodic electrical tests should be performed on the cabinet by the machine manufacturer or installer of the product. These should include the following operations:

- Electrical safety inspection and tests, including earth bonding
- Inspection of cables / conduits entering the cabinet, including mains power cables
- Functional test of the CMM system, including limit switches, crash switches, low air or any other fault detection signal
- Emergency stop system test

 **NOTE:** It is the user's responsibility to define how regular these checks need to be performed in order to maintain a safe working environment.

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# Appendix 1 - International safety recommendations

## BG - Безопасност

Пазете се от неочаквано движение. Потребителят трябва да остава извън пълния работен обсег на комбинациите глава на пробника / удължител / пробник.

Препоръчва се защита на очите във всички приложения, включващи използване на машини или СММ.

Преди извършване на всякакви операции по поддръжката да се изключва захранването.

В приборите Renishaw с мрежово захранване няма части, които да се обслужват от потребителя. Дефектиралите прибори да се връщат в сервизния център за обслужване на клиенти на Renishaw.

Отговорност на доставчика на машината е да гарантира, че на потребителя са обяснени всякакви рискове по време на работа, включително онези, упоменати в документацията на продуктите Renishaw и да гарантира осигуряване на съответни предпазители и обезопасителни блокировки.

## CZ - Bezpečnost

Dejte pozor na nečekaný pohyb stroje. Uživatel by se měl zdržovat mimo pracovní rozsah stroje, zejména mimo místa pohybu snímací hlavy, prodloužení (nástavce) a sondy.

Při jakékoli práci s obráběcími stroji nebo souřadnicovými měřicími stroji (CMM) je doporučeno používat ochranu očí.

Před započetím jakékoliv údržby zařízení odpojte napájení.

Síťově napájené produkty Renishaw neobsahují žádné části opravitelné uživatelem. Vadné jednotky zašlete do centra autorizovaného servisu společnosti Renishaw.

Povinností dodavatele stroje je informovat uživatele o nebezpečích spojených s provozem i o nebezpečích zmiňovaných v dokumentaci k produktům společnosti Renishaw a zajistit dostatečné ochranné a bezpečnostní prostředky.

## DA - Sikkerhed

Pas på uventede bevægelser. Brugeren bør holde sig uden for hele probehovedets/forlængerens/probekombinationernes arbejdsområde.

I alle tilfælde, hvor der anvendes værktøjs- og koordinatmålemaskiner, anbefales det at bære beskyttelsesbriller.

Afbryd strømforsyningen, før der foretages vedligeholdelse.

Der er ingen dele inde i Renishawenhederne, som sluttes til lysnettet, der kan efterses eller repareres af brugeren. Send alle defekte enheder til Renishaws kundeservicecenter.

Det er maskinleverandørens ansvar at sikre, at brugeren er bekendt med eventuelle risici i forbindelse med driften, herunder de risici, som er nævnt i Renishaws produktdokumentation, og at sikre, at der er tilstrækkelig afskærmning af sikkerhedsblokeringer.

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### DE - Sicherheitshinweise

Achten Sie auf unerwartete Bewegungen. Der Anwender darf sich nur außerhalb des Messtaster-Arbeitsbereichs aufhalten.

Bei Arbeiten an Werkzeugmaschinen oder Koordinatenmessgeräten wird Augenschutz empfohlen.

Bevor Wartungsarbeiten begonnen werden, muss die Stromversorgung getrennt werden.

In mit Netzstrom versorgten Systemen von Renishaw befinden sich keine zu wartenden Bauteile. Senden Sie defekte Geräte an Ihren Renishaw Kundendienst zurück.

Es obliegt dem Maschinenlieferanten, den Anwender über alle Gefahren, die sich aus dem Betrieb der Ausrüstung, einschließlich jener, die in der Renishaw Produktdokumentation erwähnt sind, zu unterrichten und sicherzustellen, dass ausreichende Schutzvorrichtungen und Sicherheitsverriegelungen realisiert sind

### EN - Warnings

Beware of unexpected movement. The user should remain outside of the full working envelope of probe head / extension / probe combinations.

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

Remove power before performing any maintenance operations.

There are no user serviceable parts inside Renishaw mains powered units. Return defective units to an authorised Renishaw Customer Service Centre.

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

### ES - Seguridad

Tenga cuidado con los movimientos inesperados. El usuario debe permanecer fuera del área total de trabajo de las combinaciones de cabezal de sonda/extensión/sonda.

Se recomienda usar gafas de protección en todas las aplicaciones que implican el uso de Máquinas-Herramienta y máquinas de medición de coordenadas.

Quite la corriente antes de emprender cualquier operación de mantenimiento.

Las unidades de Renishaw que se alimentan de la red eléctrica no contienen piezas que puedan ser reparadas o reemplazadas por el usuario. Las unidades defectuosas deben ser devueltas a uno de los Centros de Servicio al Cliente en Renishaw.

Es responsabilidad del proveedor de la máquina garantizar que el operario sea informado sobre los peligros relacionados con el funcionamiento, incluidos los peligros mencionados en la documentación de los productos Renishaw, y garantizar que se suministran los dispositivos de protección y seguridad adecuados.



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### ET - Ohutus

Olge ettevaatlik ootamatute liikumiste suhtes. Kasutaja peab jääma väljapoole kogu sondi pea/laienduse/sondi kombinatsiooni tööpiirkonda.

Kõikide rakenduste puhul, mis kasutavad tööpinke või koordinaatmõõtemasinaid, on soovitatav kasutada kaitseprille.

Enne hooldustööde tegemist ühendage seade toiteallikast lahti.

Vooluvõrgus töötavates Renishaw' masinates ei ole selliseid osi, mida kasutaja peaks ise hooldama. Tagastage vigased seadmed volitatud Renishaw' klienditeeninduskeskusse.

Masina tarnija peab vastutama, et kasutaja oleks teadlik mis tahes tööga seotud ohtudest, sealhulgas Renishaw' toote dokumentatsioonis märgitustest, ja peab tagama piisavad ettevaatusabinõud ja ohutusblokeeringud.

### FI - Turvallsuutta

Varo odottamatonta liikettä. Käyttäjien on pysyttävä mittapään, jatkeen ja anturin yhdistelmän toiminta-alueen ulkopuolella.

Silmänsuojainten käyttö on suositeltavaa kaikkia työstökoneita ja koordinoituja mittauskoneita (CMM) käytettäessä.

Katkaise virta ennen huoltotoimenpiteiden suorittamista.

Sähköverkkoon kytkettävät Renishaw-tuotteet eivät sisällä käyttäjän huollettavia osia. Vialliset osat tulee palauttaa valtuutetulle Renishaw-asiakaspalvelukeskukselle.

Laitteen toimittajan vastuulla on varmistaa, että käyttäjä on tietoinen laitteen käyttöön liittyvistä vaaratekijöistä, mukaan lukien Renishaw'n tuotedokumenteissa mainitut vaaratekijät, ja varmistaa, että asiakas saa asianmukaiset suojalaitteet ja varmistimet.

### FR - Sécurité

Attention aux mouvements impromptus. L'utilisateur doit toujours rester en dehors de toute la zone de travail des installations multiples tête/allonge/palpeur.

Le port de lunettes de protection est recommandé pour toute application sur machine-outil ou MMT.

Mettre la machine hors tension avant d'entreprendre toute opération de maintenance.

Aucun produit Renishaw avec une alimentation secteur ne peut être réparé par l'utilisateur. Renvoyer tout matériel défectueux à un Centre Après-Vente Renishaw agréé.

Il incombe au fournisseur de la machine de veiller à ce que l'utilisateur prenne connaissance des dangers d'exploitation, y compris ceux décrits dans la documentation du produit Renishaw, et de s'assurer que des protections et verrouillages de sûreté adéquats sont prévus.

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### GA - Sábháilteacht

Fainic an chorrail gan choinne. Ba cheart don úsáideoir fanacht lasmuigh de chlúdach iomlán oibre Cheann an Tóireadóira/an tSínte/Chumaisc an Tóireadóira.

Moltar cosaint do na súile i ngach aon fheidhmiú lena mbaineann úsáid uirlisí meaisín nó CMM.

Bain an chumhacht de sula ndéantar aon oibríochtaí cothabhála.

Níl aon pháirteanna inseirbhíse úsáideora laistigh de phríomhaonaid chumhachta Renishaw. Seol aonaid fhabhtacha ar ais chuig Ionad údaraithe Renishaw um Sheirbhís do Chustaiméirí.

Tá freagracht ag soláthraí an mheaisín a áirithiú go dtugtar le fios don úsáideoir na guaiseacha a bhaineann leis an oibriúchán, lena n-áirítear iad sin a luaitear i ndoiciméadú táirgí Renishaw, agus a áirithiú go soláthraítear comhghlasáil agus cibé cosaint leordhóthanach eile atá riachtanach.

### GR - Ασφάλεια

Προσέξτε τις ξαφνικές κινήσεις. Ο χρήστης πρέπει να παραμένει εκτός του χώρου που επηρεάζεται από όλους τους συνδυασμούς λειτουργίας της κεφαλής του αισθητήρα, της προέκτασης και του αισθητήρα.

Σε όλες τις εφαρμογές που συνεπάγονται τη χρήση εργαλείων μηχανημάτων και εξαρτημάτων CMM, συνιστάται η χρήση συσκευής προστασίας των ματιών.

Αποσυνδέστε το μηχάνημα από το ηλεκτρικό ρεύμα πριν επιχειρήσετε οποιοσδήποτε εργασίες συντήρησης.

Στο εσωτερικό μονάδων της Renishaw που συνδέονται με το κεντρικό ηλεκτρικό ρεύμα δεν υπάρχουν εξαρτήματα που μπορούν να επισκευαστούν από το χρήστη. Επιστρέψτε τις ελαττωματικές μονάδες σε εξουσιοδοτημένο κέντρο εξυπηρέτησης πελατών της Renishaw.

Αποτελεί ευθύνη του προμηθευτή του μηχανήματος να εξασφαλίσει ότι ο χρήστης είναι ενήμερος τυχόν κινδύνων που συνεπάγεται η λειτουργία, συμπεριλαμβανομένων όσων αναφέρονται στο έντυπο συνοδευτικό υλικό των προϊόντων της Renishaw. Είναι επίσης ευθύνη του να εξασφαλίσει ότι υπάρχουν τα απαιτούμενα προστατευτικά καλύμματα και διακόπτες ασφάλειας.

### HR - Sigurnost

Budite oprezni zbog mogućnosti neočekivanog pomicanja. Korisnik treba ostati izvan punog radnog dometa kombinacija glave sonde/produžetka/sonde.

Kod svih primjena koje uključuju upotrebu alatnih strojeva ili CMM-ova preporučuje se zaštita očiju.

Isključite napajanje prije provođenja bilo kakvih radova održavanja.

Unutar uređaja Renishaw na električnu energiju nema dijelova koje korisnik može sam servisirati. Uređaje u kvaru vratite u ovlašteni korisnički servisni centar tvrtke Renishaw.

Dobavljač stroja dužan je osigurati da korisnik bude upozoren na sve opasnosti tijekom rada, uključujući one navedene u dokumentaciji proizvođača Renishaw, te mora osigurati odgovarajuće zaštite i sigurnosne blokade.

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### HU - Biztonság

Legyen óvatos a nem várt mozgások tekintetében. Tartózkodjon a tapintófej/hosszabbító/tapintó kombináció teljes mozgáskörzetén kívül!

Szerszámgépek és koordináta-mérőgépek használata során mindig javasolt a szemvédő viselése.

Karbantartási munkák előtt mindig áramtalanítsa a gépet.

A Renishaw hálózati tápellátású egységek nem tartalmazznak a felhasználó által szervizelhető alkatrészeket. A meghibásodott egységeket juttassa el egy hivatalos Renishaw Vevőszolgálati Központhoz.

A gép szállítója felelős azért, hogy felhívja a felhasználó figyelmét az üzemeltetéssel kapcsolatos veszélyforrásokra, beleértve a Renishaw termékdokumentációjában ismertetetteket is. Továbbá gondoskodnia kell a megfelelő védőburkolatok és biztonsági reteszelések meglétéről is.

### IT - Sicurezza

Fare attenzione ai movimenti improvvisi. Si raccomanda all'utente di tenersi al di fuori dello spazio operativo della testa della sonda, delle prolunghe e di altri accessori della sonda.

Si raccomanda di indossare occhiali di protezione in applicazioni che comportano l'utilizzo di macchine utensili o macchine CMM.

Prima di effettuare qualsiasi intervento di manutenzione, togliere la rete di alimentazione.

All'interno delle unità collegate all'impianto di alimentazione centrale di Renishaw non vi sono componenti idonei alla manutenzione da parte dell'utente. In caso di guasto, restituire l'apparecchio a uno dei Centri di Assistenza Renishaw.

Il fornitore della macchina ha la responsabilità di avvertire l'utente dei pericoli inerenti al funzionamento della stessa, compresi quelli riportati nelle istruzioni di Renishaw, e di fornire dispositivi di protezione e interruttori di esclusione adeguati.

### JA - 安全性

予想外の動作に注意してください。プローブシステムの可動範囲内に入らないでください。

工作機械や三次元測定機を使用する場合は、保護眼鏡の着用を推奨します。

メンテナンス作業を行う前には必ず、電源を切ってください。

機械本体から電源供給を受けて動作するレニショーユニットには、ユーザー自身で修理可能な部品は含まれていません。不具合のある製品は機械メーカーまたはレニショー認定のカスタマーサービスセンターにご返却ください。

レニショーの製品説明書に記載されている内容も含め、操作に伴うあらゆる危険性をユーザーへ周知してください。また、適切な保護機構とインターロックシステムの設置は、各工作機械メーカーの責任で行なってください。

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### LT - Sauga

Saugokitės netikėtų judesių. Naudotojui nerekomenduojama atidaryti veikiančios zondo galvutės / ilgintuvo / zondų junginio gaubto.

Atliekant visus darbus, kai naudojami įrenginio įrankiai, įrenginys valomas ir prižiūrimas, rekomenduojama užsidėti apsauginius akinius.

Prieš atlikdami techninę priežiūrą, išjunkite elektros srovės tiekimą.

„Renishaw“ prietaisuose, maitinamuose iš elektros tinklo, nėra detalių, kurias galėtų remontuoti pats naudotojas. Gražinkite sugedusius prietaisus įgaliojamam „Renishaw“ klientų aptarnavimo centrui.

Įrenginio tiekėjas atsako už tai, kad naudotojas būtų įspėtas apie pavojus, susijusius su įrenginio naudojimu, taip pat pavojus, minimus „Renishaw“ prietaiso techniniuose dokumentuose, kad būtų sumontuoti atitinkami saugos įrenginiai bei blokuotės.

### LV - Drošība

Uzmanieties no nejaušām kustībām. Lietotājam jāpaliek ārpus kontaktmērgalviņas/uzgaļa/zondes pilna darbības rādiusa.

Izmantojot darba iekārtas vai koordinātu mērīšanas ierīces, ieteicams izmantot acu aizsarglīdzekļus.

Atvienojiet izstrādājumu no strāvas pirms jebkuru apkopes darbu veikšanas.

Strāvai pievienotajās „Renishaw” ierīcēs nav daļu, kuru apkopi var veikt lietotājs. Bojātas ierīces nosūtiet atpakaļ uz tuvāko „Renishaw” klientu apkalpošanas centru.

Iekārtas piegādātājs atbild par to, lai lietotājs tiktu iepazīstināts ar jebkuriem draudiem, kas saistīti ar tās darbību (ieskaitot tos, kas minēti „Renishaw” izstrādājuma dokumentācijā), un lai būtu nodrošinātas atbilstošas aizsargierīces un aizsargbloķētāji.

### MT - Sigurtà

Ogħod attent għal moviment mhux mistenni. L-utent għandu jibqa' barra ż-żona kollha tal-operat tal-kombinazzjonijiet tar-Ras tas-Sonda/Estensjoni/Sonda.

Fix-xogħol kollu li jinvolvi l-użu ta' għodda tal-magni jew CMMs, il-protezzjoni tal-għajnejn hi rakkomandata.

Itfi d-dawl qabel tibda tagħmel xi xogħol ta' manutenzjoni.

Normalment m'hemm l-ebda partijiet li tista' tingħatalhom manutenzjoni mill-utent għol-units ta' Renishaw li jaħdmu bl-elettriku. Irritorna units difettużi lil Ċentru għas-Servizz tal-Klijenti ta' Renishaw awtorizzat.

Hi r-responsabbiltà tal-fornitur tal-magna li jiżgura li l-utent ikun konxju dwar kwalunkwe perikli involuti fit-tħaddim, inklużi dawk imsemmija fid-dokumentazzjoni tal-prodotti Renishaw, u li jiżgura li jkun hemm protezzjoni u l-interlocks tas-sigurtà adegwati pprovduti.

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### NL - Veiligheid

Pas op voor onverwachte bewegingen. De gebruiker dient buiten het werkbereik van de combinatie tasterkop/verlengstuk/meettaster te blijven.

Voor alle toepassingen waarbij bewerkingsmachines of CMM's worden gebruikt, wordt het dragen van een veiligheidsbril aanbevolen.

Schakel de stroom uit, voordat u onderhoudwerkzaamheden verricht.

De onderdelen van netspanning gevoede Renishaw-units kunnen niet door de gebruiker worden onderhouden. Stuur defecte units terug naar een van de klantenservicecentra van Renishaw.

De machineleverancier dient ervoor te zorgen dat de gebruiker de risico's kent die verbonden zijn aan het gebruik, inclusief de risico's vermeld in Renishaws productdocumentatie, en dat er voldoende afschermingen en veiligheidsschakelaars aanwezig zijn.

### PL - Bezpieczeństwo

Należy wystrzegać się nieskoordynowanych ruchów. Użytkownik powinien pozostawać poza pełną strefą roboczą kombinacji głowicy sondy/przedłużacza/sondy.

Podczas obsługi obrabiarek lub maszyn współrzędnościowych zaleca się stosowanie osłon na oczy.

Przed przystąpieniem do jakichkolwiek czynności konserwacyjnych należy odłączyć zasilanie energią elektryczną.

W zasilanych z sieci urządzeniach firmy Renishaw nie ma części, które mogą być serwisowane przez użytkownika. Niesprawne zespoły należy przekazywać do autoryzowanego centrum serwisowego firmy Renishaw.

Obowiązkiem dostawcy maszyny jest poinformowanie użytkownika o wszelkich zagrożeniach związanych z obsługą, w tym wymienionych w dokumentacji produktu Renishaw, oraz zapewnienie odpowiednich zabezpieczeń i blokad bezpieczeństwa.

### PT - Segurança

Tenha em atenção movimentos inesperados. O utilizador tem de permanecer afastado das combinações cabeça da sonda/extensão/sonda que estão em pleno funcionamento.

Recomenda-se a utilização de proteção ocular em todas as aplicações que envolvam a utilização de ferramentas de máquinas ou o CMM.

Desligue a alimentação antes de realizar quaisquer operações de manutenção.

Não existem peças operacionais para o utilizador no interior das unidades alimentadas pela rede elétrica da Renishaw. Devolva as unidades com defeito a um centro de assistência ao cliente autorizado Renishaw.

É da responsabilidade do fornecedor da máquina assegurar que o utilizador tem conhecimento de quaisquer perigos envolvidos no funcionamento, incluindo os mencionados na documentação do produto da Renishaw, e garantir que são fornecidas proteções e bloqueios de segurança.

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### RO - Instrucțiuni de siguranță

Atenție la deplasările neașteptate. Operatorul trebuie să rămână complet în afara zonei de acțiune a ansamblului cap palpator/prelungitor/palpator în combinații.

În toate aplicațiile care presupun utilizarea mașinilor unelte sau a MMC, se recomandă protejarea ochilor.

Înainte de executarea oricăror operații de întreținere, scoateți echipamentul de sub tensiune.

Nu există elemente care pot fi reparate de utilizator în interiorul surselor de alimentare Renishaw. Sursele defecte trebuie transmise Centrului de Service Renishaw pentru Clienți.

Este responsabilitatea furnizorului să se asigure că utilizatorul a fost înștiințat asupra oricărui pericol implicat de utilizarea echipamentului, inclusiv asupra pericolelor menționate în documentația produsului Renishaw, și de asemenea să se asigure că au fost prevăzute protecții și interblocări adecvate.

### SK - Bezpečnosť

Dávajte pozor na neočakávaný pohyb. Používateľ by mal zostať mimo plne funkčnej schránky hlavice sondy / prídavnej časti / kombinácií sondy.

Vo všetkých aplikáciách zahŕňajúcich používanie obrábacích strojov alebo súradnicových meracích prístrojov sa odporúča ochrana očí.

Pred každým vykonávaním údržby odpojte napájanie.

Vo vnútri zariadenia Renishaw ACR2 napájaného zo siete sa nenachádzajú žiadne diely, ktoré by mohli opravovať používateľ. Chybné zariadenia vráťte do autorizovaného zákaznického servisného centra spoločnosti Renishaw.

Zodpovednosťou dodávateľa stroja je zaručiť oboznámenie používateľa so všetkými rizikami súvisiacimi s prevádzkou vrátane tých, ktoré sú uvedené v dokumentácii k výrobku spoločnosti Renishaw, a zaručiť poskytnutie adekvátnych zábran a bezpečnostných blokovacích poistiek.

### SL - Varnost

Bodite pozorni na nepričakovane premike. Zadržujte se zunaj delovnega območja sonde/podaljška/merilne glave.

Pri vsaki uporabi obdelovalnih strojev ali koordinatnih merilnih strojev priporočamo uporabo zaščitnih očal.

Pred začetkom vzdrževanja stroj izklopite iz električnega omrežja.

Znotraj enot podjetja Renishaw z zunanjim napajanjem ni delov, ki bi jih uporabnik lahko popravljal sam. Pokvarjene enote vrnite v pooblaščen servisni center Renishaw.

Odgovornost dobavitelja stroja je, da uporabnika opozori na vse nevarnosti pri delovanju, tudi na tiste, ki so navedene v dokumentaciji Renishaw, in da zagotovi vsa potrebna varovala in varnostne zapore.

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### SV - Säkerhet

Se upp för plötsliga rörelser. Användaren måste befinna sig utanför arbetsområdet för alla kombinationer av sondhuvud/förlängning/sond.

Ögonskydd rekommenderas för alla tillämpningar, där verktygsmaskiner eller koordinatmätmaskiner används.

Koppla bort strömmen innan underhåll utförs.

Det finns inga delar som användaren kan utföra underhåll på inuti Renishaws nätströmsdrivna enheter. Returnera defekta delar till ett auktoriserat Renishaw kundcenter.

Maskinleverantören ansvarar för att användaren blir informerad om de risker som drift innebär, inklusive de som nämns i Renishaws produktokumentation, samt att tillräckliga skydd och säkerhetsförelagningar tillhandahålls.

### ZH-TW - 安全

謹防意外移動。使用者位置應保持在測頭座／延長桿／測頭組合件的整個工作包圍面以外。

在所有涉及使用工具機或三次元量床的應用中，建議要有眼睛保護措施。

執行任何維修工作前，請先關閉總電源。

Renishaw 由電源供電的裝置內不含可由使用者自行修理的部件。將有缺陷故障的裝置送回 Renishaw 授權客戶服務中心。

機器供應商有責任確保使用者在操作的環境中知道任何可能的危險狀況、包括那些標示在 Renishaw 產品使用說明中的狀況並確保提供足夠安全護具和安全互鎖裝置。

### ZH - 安全須知

謹防意外移動。用戶應該保持在測頭座/加長杆/測頭組合件的整個工作包圍面以外。

在所有涉及使用機床或坐標測量機 (CMM) 的應用中，建議採取保護眼睛的措施。

在執行任何維護作業之前，請先斷開電源。

雷尼紹公司由電源供電的裝置內不含可由用戶自行修理的部件。請將有缺陷故障的裝置送回雷尼紹公司授權客戶服務中心。

機床製造商有責任確保用戶了解操作中存在的任何危險(包括雷尼紹產品文件中提到的危險)，並應確保提供充分的防護裝置和安全聯鎖裝置。

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