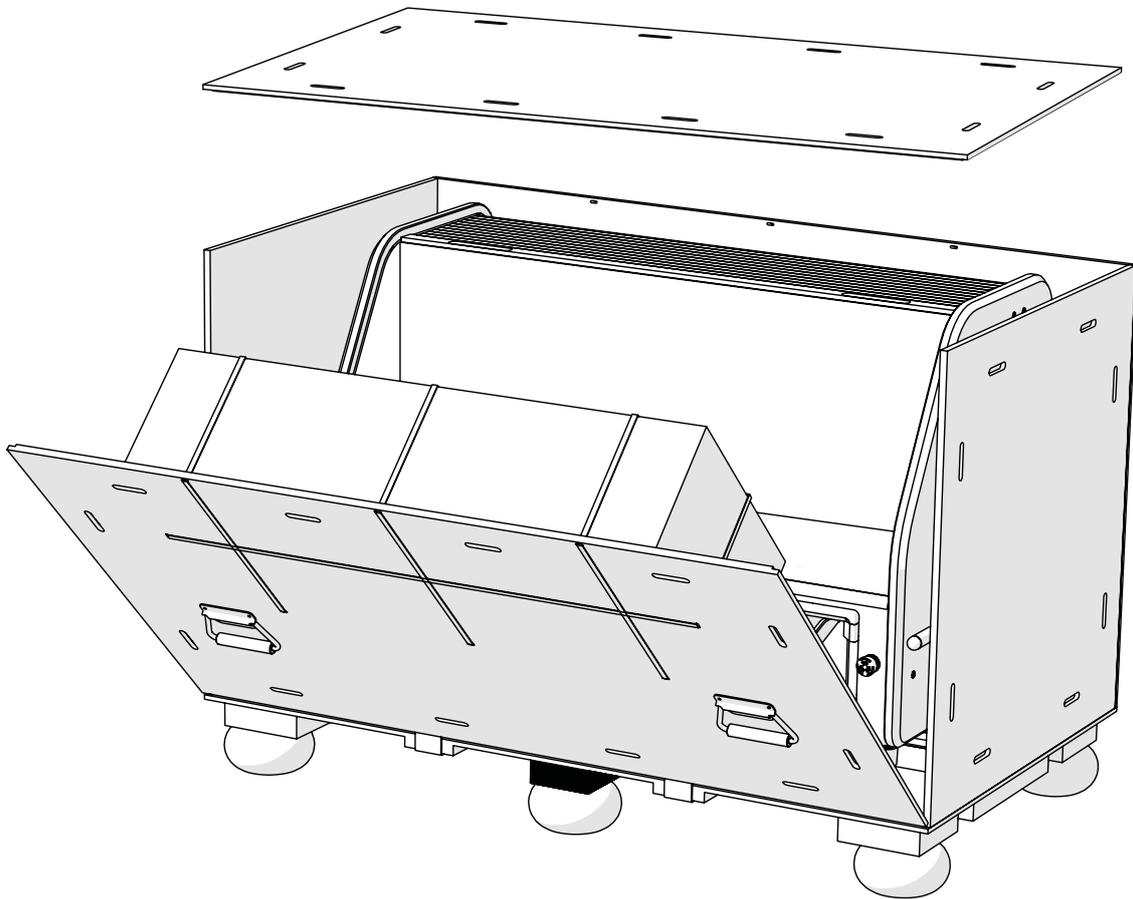




**SINGER  
INSTRUMENTS**  
A RESPONSIBILITY TO SCIENCE!

**ROTOR+™**

INSTALLATION  
GUIDE v1.6



## BEFORE YOU START!

- **Ensure you've read the ROTOR+ Pre-installation Guide.** Before delivery, your lab was sent a Pre-Installation Guide helping you to prepare for installation. Please pay particular attention to the electrical requirements.

A copy of the guide can be found: <https://bit.ly/ROTORPreInstall>

- **Heavy! Lifting requires 4 people.** The ROTOR+ weighs 110kg. It will require 4-5 people to lift it onto your bench. Always lift the ROTOR+ by its side transit handles. To reduce manual handling, ensure the ROTOR+ crate is unpacked close to the bench you plan to use the ROTOR+ on. Leave at least 1m around the crate to comfortably unpack the ROTOR+.
- **Don't forget to fill out the confirmation form when you're done.** This confirms that the installation has gone well or that additional support is required. The installation confirmation form can be found: <http://bit.ly/installconfirmation>



For more support  
resources visit  
**[bit.ly/ROTORhelp](http://bit.ly/ROTORhelp)**

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3	UNBOXING	13	Install the fluorescent lights
3	Open the crate	14	Install the UV light
7	Remove from the crate	16	Remove the side transit brackets
8	ROTOR+ ANATOMY	17	Insert the pad trays
9	ACCESSORY BOXES	18	Attach the MCI
10	INSTALLATION	23	Install the airline
10	Remove transit tape	24	Power up
11	Remove the internal transit brackets	25	Go forth and do science!
12	Set the pad head	25	Confirm your installation

## ROTOR+ INSTALLATION

The unboxing, assembly and installation of the ROTOR+ requires no special skills — you just need the instructions in this guide.

If you have any questions before or during installation, we're on hand to help:

Phone: +44 (0) 1984 640226

Email: [technicalsupport@singerinstruments.com](mailto:technicalsupport@singerinstruments.com)

When you have finished installation please fill out the installation confirmation form: <http://bit.ly/installconfirmation>

### ADDITIONAL TOOLS

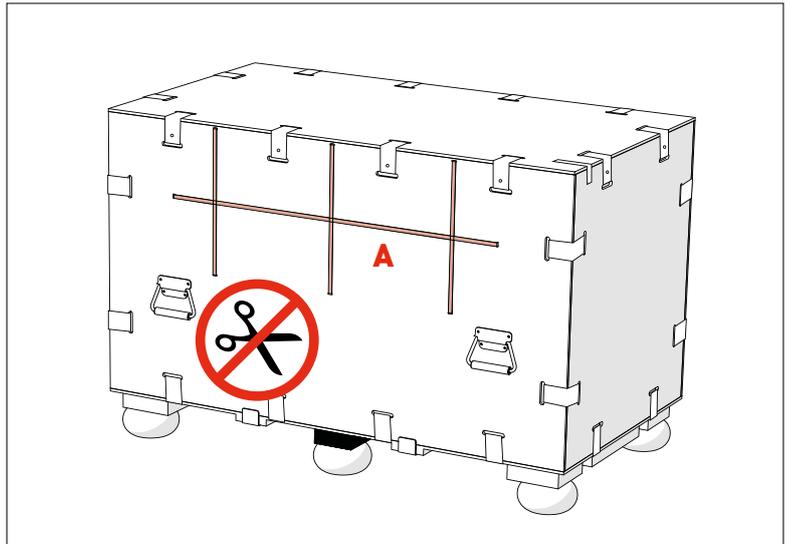
To complete your installation you will need the following tools:

- Pozidriv screwdriver
- Phillips head screwdriver
- 2x 17mm spanners
- 1x 10mm spanner
- Scissors

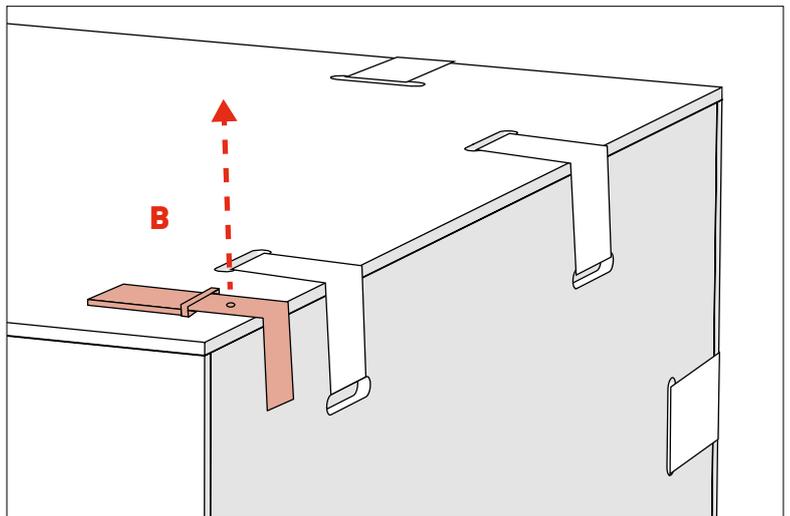
## UNBOXING

### 1. Open the crate

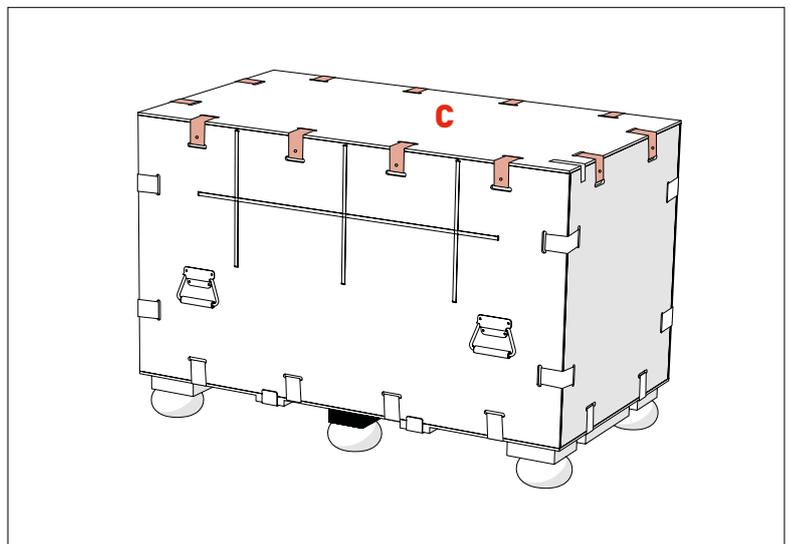
- Remove any banding on the crate lid. Be careful not to remove the internal banding shown here (A).



- Locate the clip tool on the top of the crate (B) and remove it using a Pozidriv screwdriver.



- The lid has 12 clips (C).

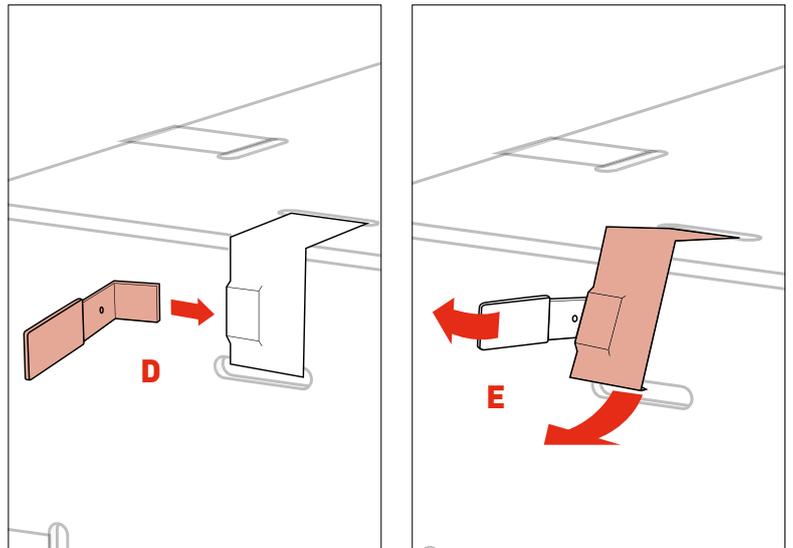


## UNBOXING

- Slide the clip tool under a lid clip (D) and use it as a lever to remove the clip (E).

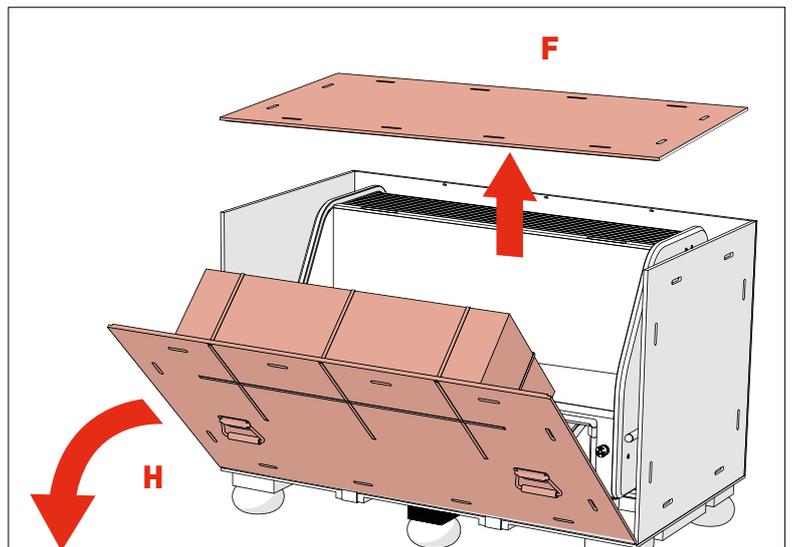
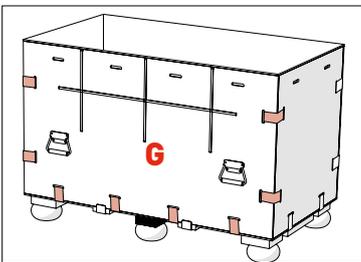
NOTE: Place your hand on top of the clip to stop it springing off too violently.

- Repeat this for all 12 lid clips.

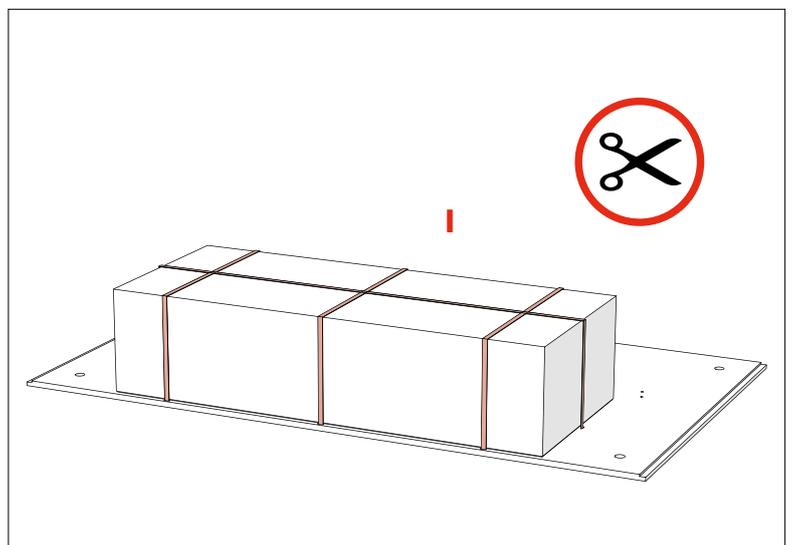


- Remove the crate lid (F).
- The front panel has an accessories box attached to it. Remove the front panel clips (G) and carefully hinge the panel away from the ROTOR+ (H).

**WARNING:** The accessories box is heavy. This step may require 2 people.



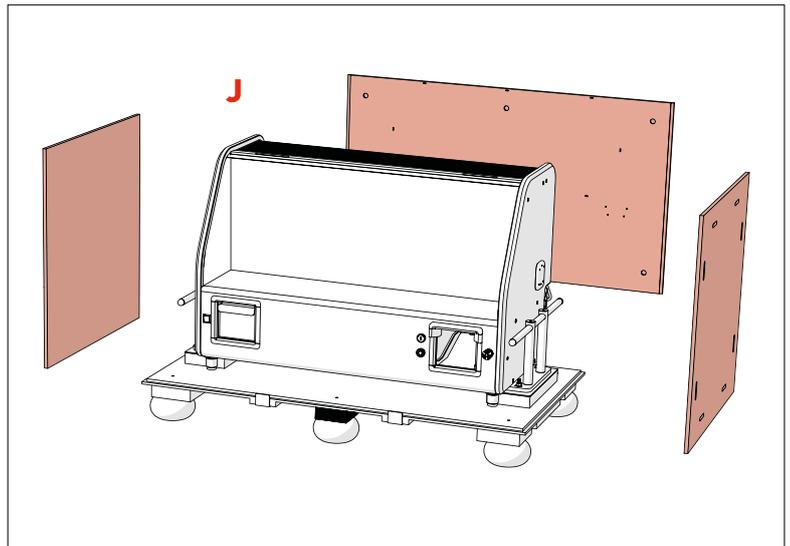
- Remove the banding with scissors and leave the accessories box to one side (I).



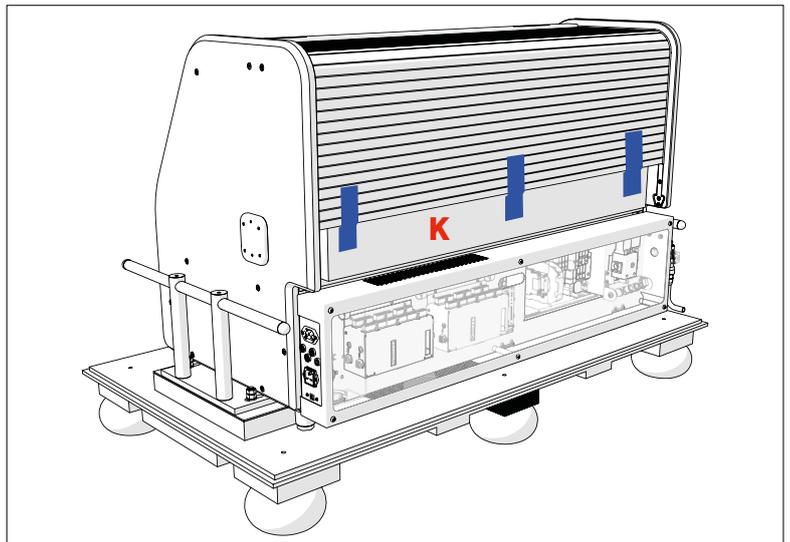
- Remove the rest of the clips and the 3 remaining side panels (J).

NOTE: This will be easier with 2 people: 1 to hold the panel while the other removes the clips.

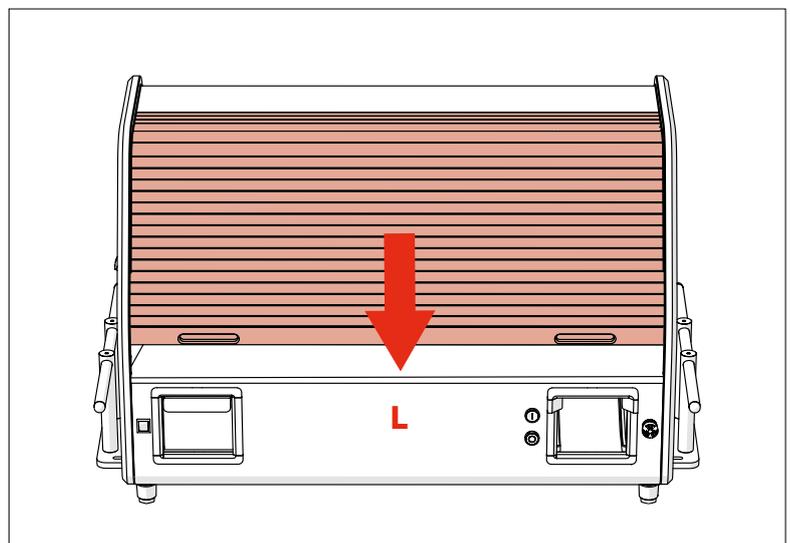
- Store all panels and clips somewhere safe together.
- Remove the plastic cover from the ROTOR+. Here you'll find your ROTOR+ user guide.



- Remove the blue tape at the back of the ROTOR+.



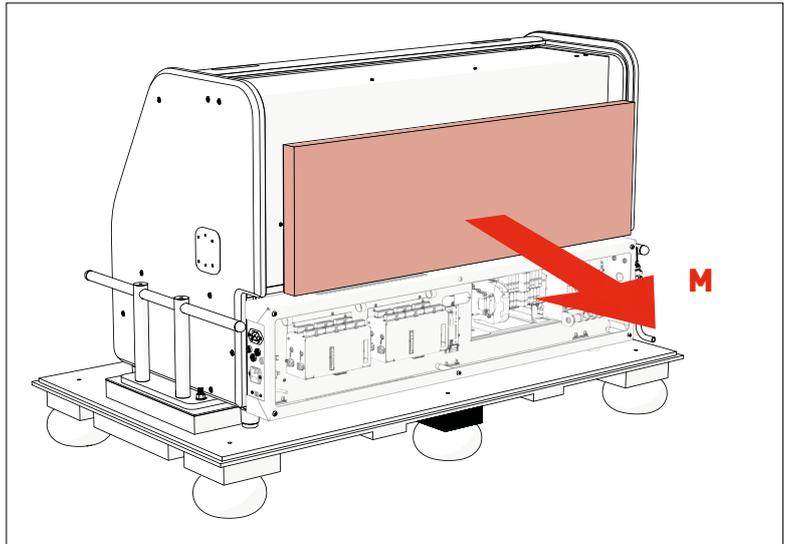
- Close the roller door (L).



## UNBOXING

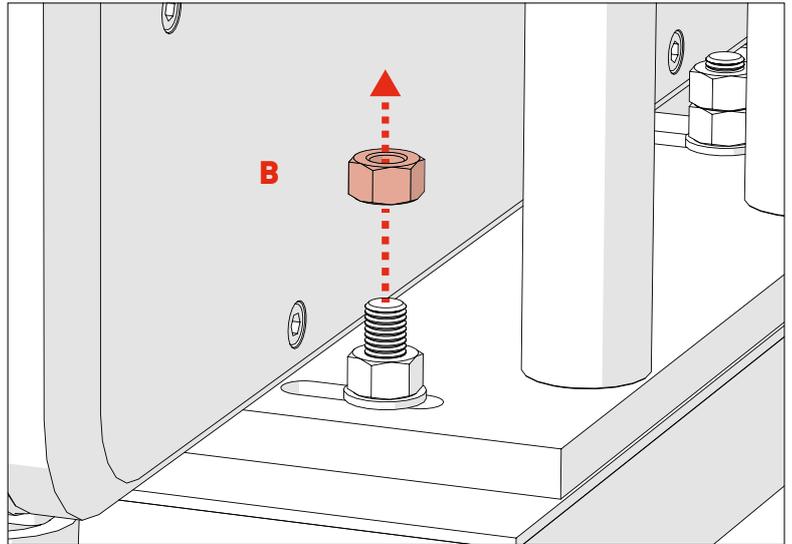
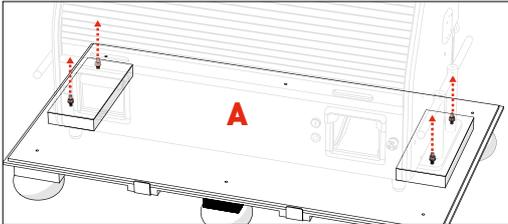
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- Carefully remove the lighting box taped to the back of the ROTOR+ (M) and keep to one side.
- **WARNING:** The lighting box contains glass tubes.

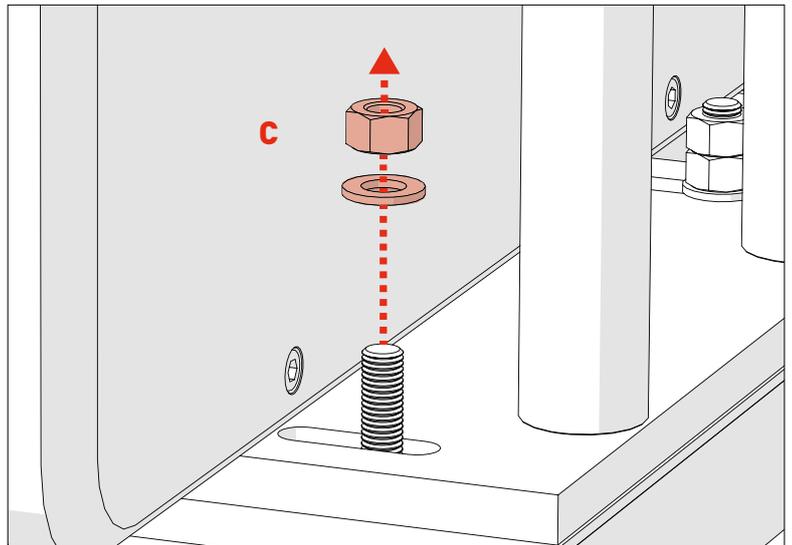


## 2. Remove from the crate

- The ROTOR+ needs to be detached from the base of the crate by removing the base nuts (A).
- Use one 17mm spanner to hold the bottom nut in place while using another 17mm spanner to remove the top bolt (B).



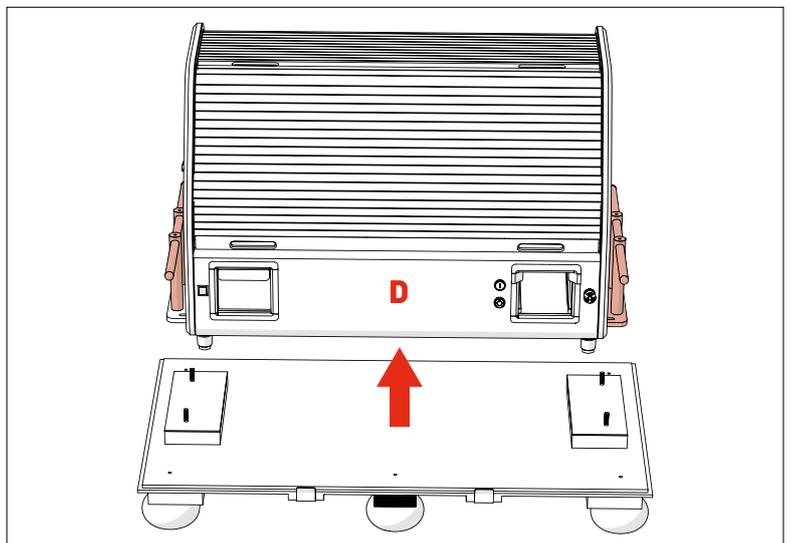
- Remove the bottom nut and washer using the 17mm spanner (C).
- Repeat this for all 4 positions (A).



- With 4 people (1 on the end of each handle) carefully lift the ROTOR+ onto its bench location (D). It might be useful to have a fifth person to hold the base down while the others lift.

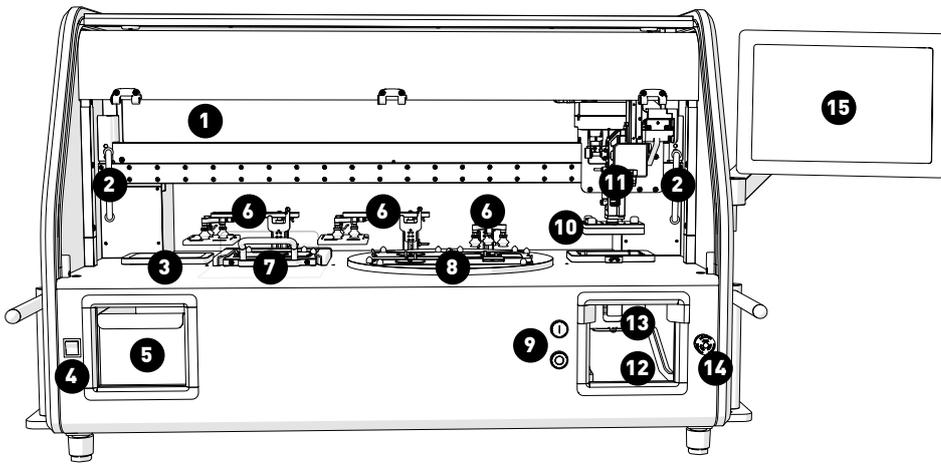
· **WARNING: The ROTOR+ is heavier on the back.**

- All packing materials can now be removed from the area. Make sure there's nothing left in the boxes.

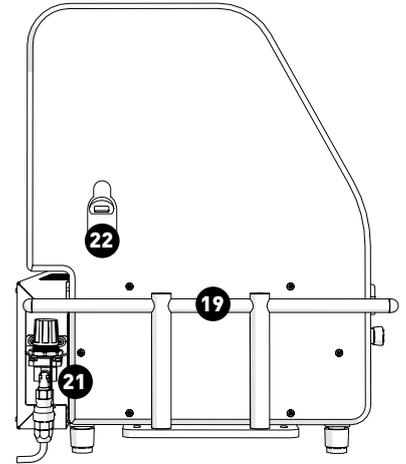


## ROTOR+ ANATOMY

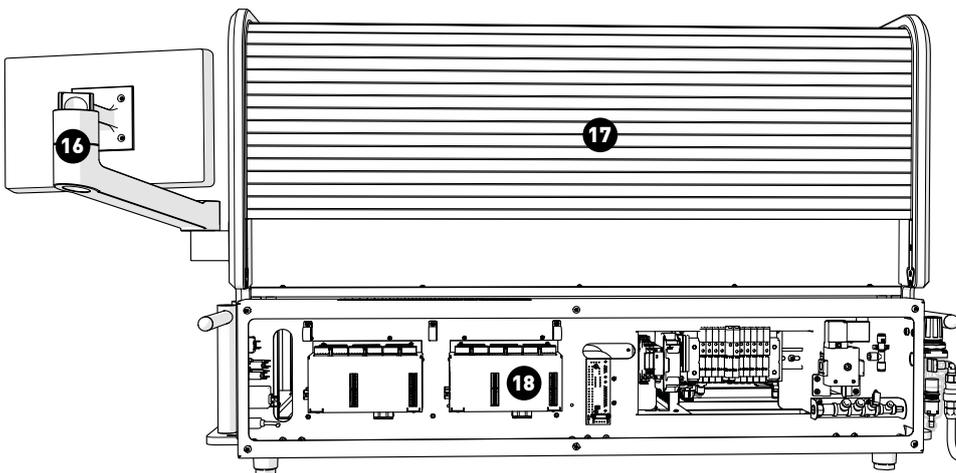
FRONT



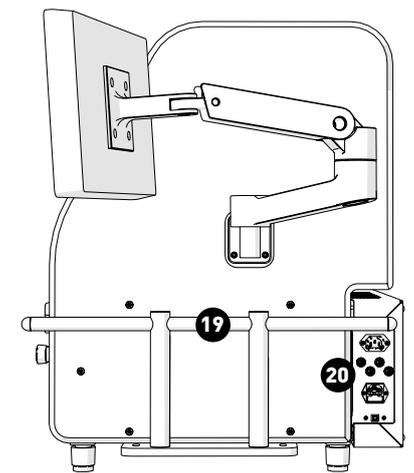
LEFT



BACK



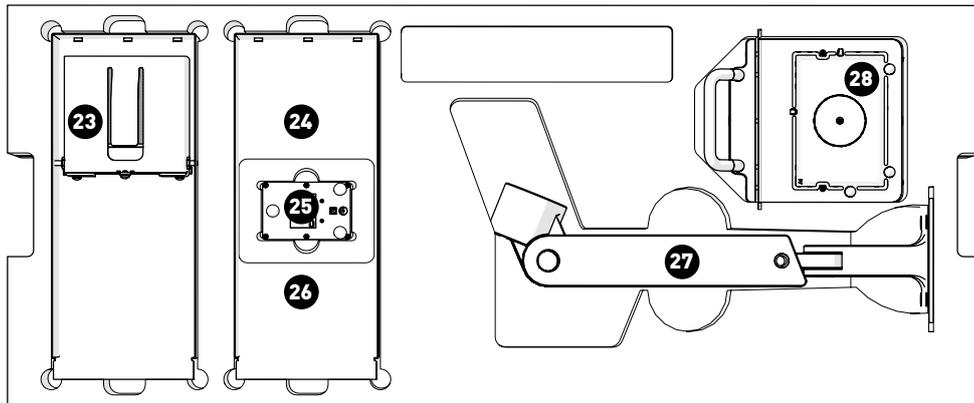
RIGHT



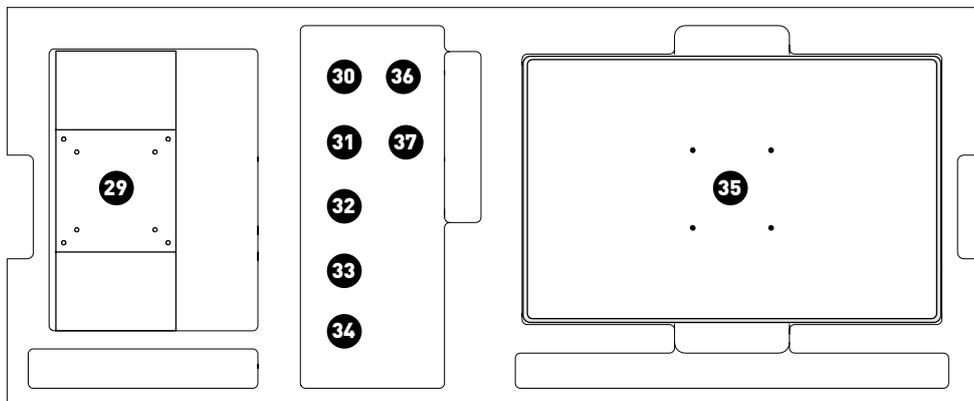
- |                      |                        |                              |
|----------------------|------------------------|------------------------------|
| 1. Protective Screen | 9. Fast Buttons        | 17. UV Decontamination Cover |
| 2. Screen Handles    | 10. Pad Head           | 18. Control Panel            |
| 3. Dump Zone         | 11. Carriage Arm       | 19. Transit Brackets*        |
| 4. Power Switch      | 12. Hopper Loading Bay | 20. Power Socket             |
| 5. Dump Drawer       | 13. Pad Hopper         | 21. Air Line Connection      |
| 6. Lid Lifters       | 14. Emergency Stop     | 22. Bottle Opener            |
| 7. Black Bay         | 15. MCI Touch Screen   |                              |
| 8. Turntable         | 16. MCI Mounting Arm   |                              |

\*Ensure to keep the Transit Brackets in a safe place incase the ROTOR+ ever requires moving.

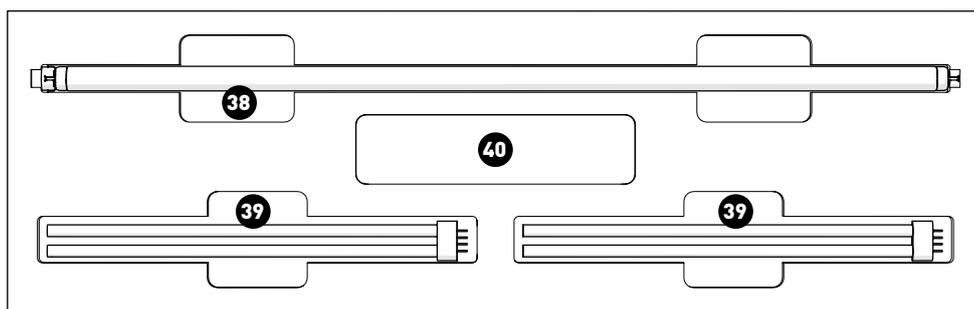
## TOP ACCESSORIES TRAY



## BOTTOM ACCESSORIES TRAY



## LIGHTING BOX



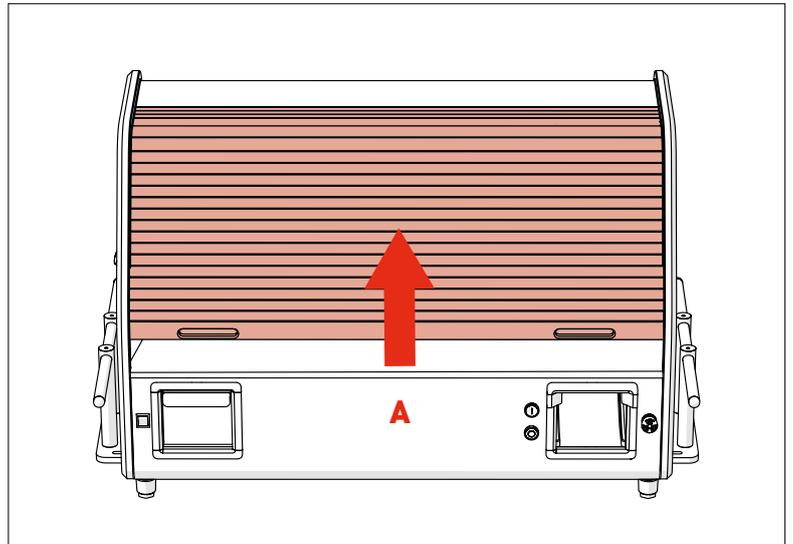
- |  |                           |                           |
|--|---------------------------|---------------------------|
| 23. Pad Hopper & Pad Support                     | 29. MCI Power Supply Tray | 36. Ethernet Cable        |
| 24. Dump Drawer                                  | 30. Flexible Keyboard     | 37. D-Sub Connector*      |
| 25. Pad Head                                     | 31. MCI Power Supply      | 38. UV Light              |
| 26. Tool Kit (Hex keys: 2mm,<br>2.5mm, 3mm, 5mm) | 32. IEC Power Lead        | 39. Fluorescent Lights x2 |
| 27. MCI Arm                                      | 33. ROTOR+ Power Lead     | 40. Safety Gloves         |
| 28. Black Bay                                    | 34. USB Hub               |                           |
|  | 35. MCI                   |                           |

\*Supplied as part of the Stinger package.

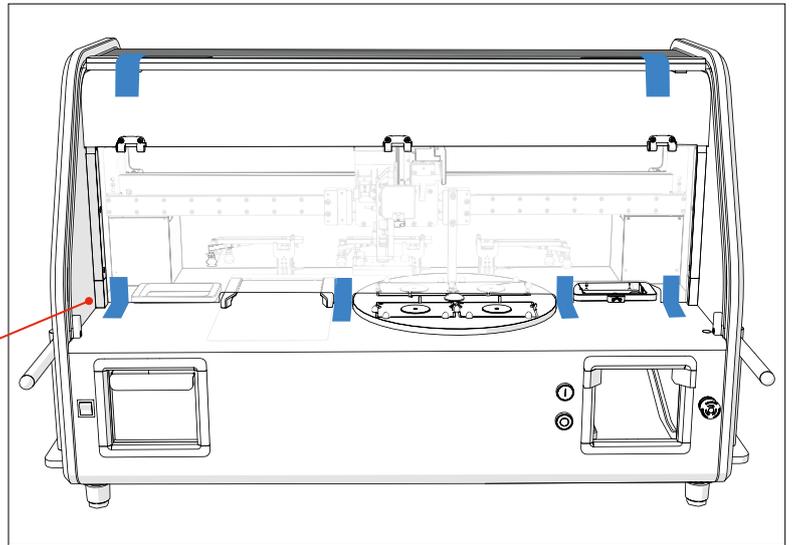
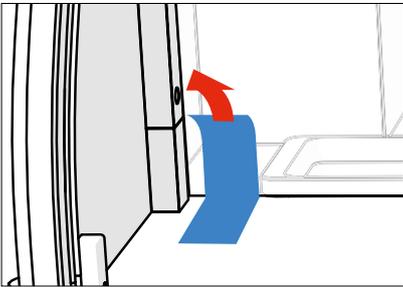
## INSTALLATION

### 1. Remove transit tape

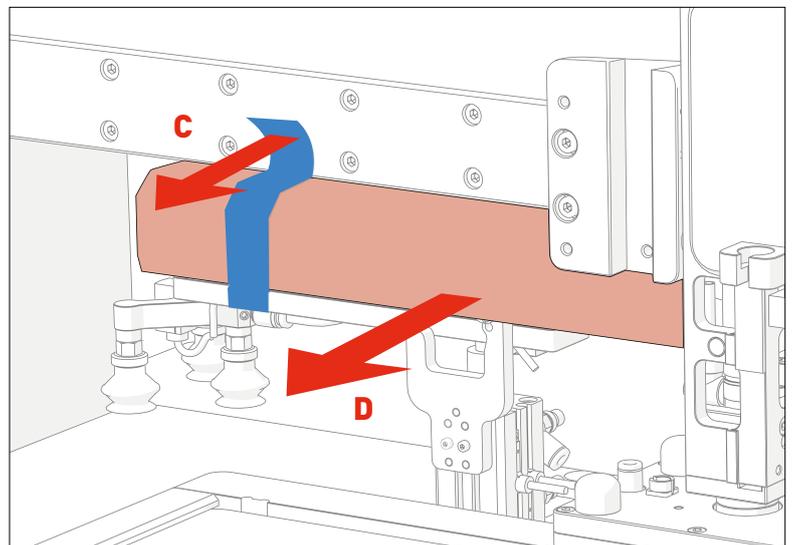
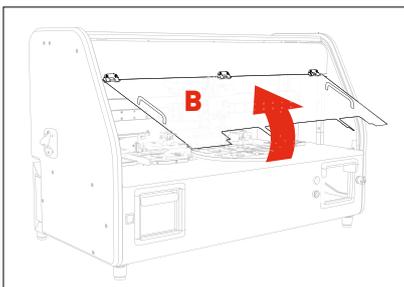
- Open the roller door (A).



- Remove all of the blue transit tape from the screen.

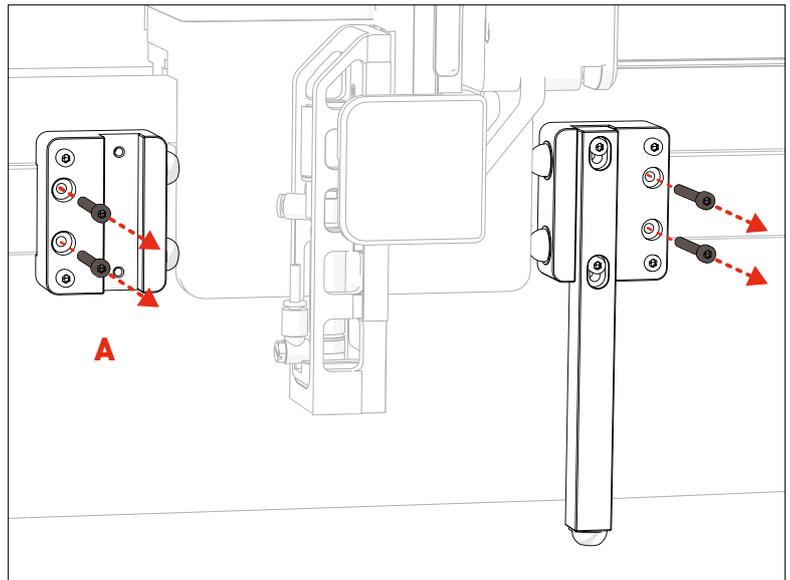


- Open the screen (B). Magnets will hold it open.
- Remove the transit tape from inside the ROTOR+ (C) and the transit cardboard (D).
- If you purchased a Stinger, remove that box from this location and set aside.

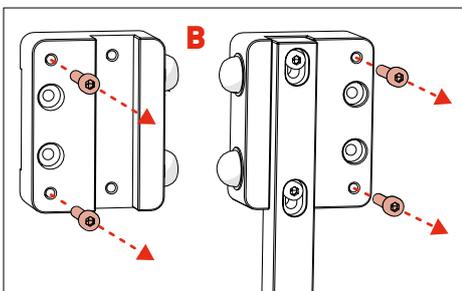


## 2. Remove internal transit brackets

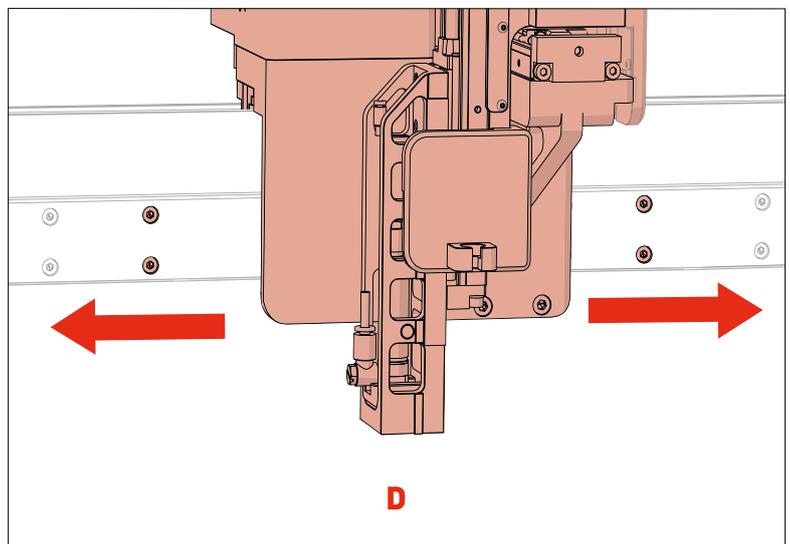
- Using the 3mm Hex key, remove the 4 black bolts from the red transit brackets (A).
- Remove the red transit brackets.



- Remove the 4 silver bolts indicated below from the transit brackets (B). These bolts are painted with red inside the hex hole.
- Install these 4 bolts into the ROTOR+ where the transit brackets were previously attached (C).  
**WARNING: Do not over tighten.**



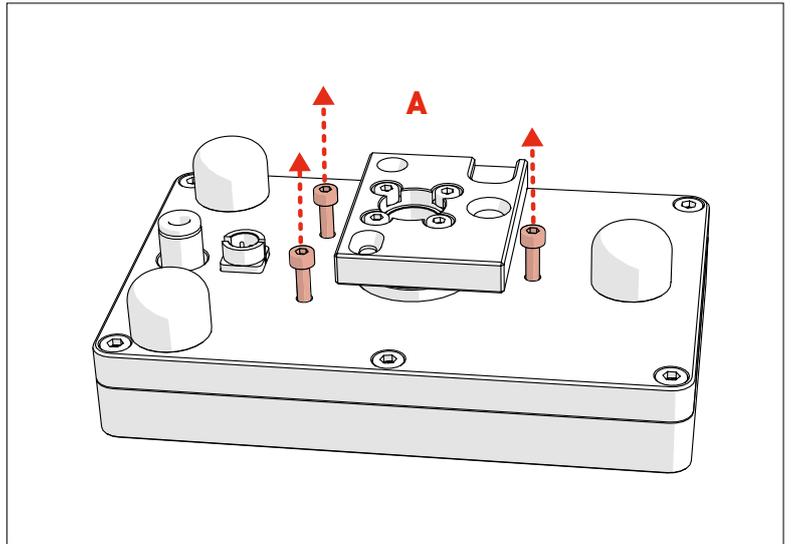
- Gently move the carriage arm to the left and to the right to ensure the bolts are installed correctly (D).
- If the carriage arm catches on the newly installed bolts, retighten and check again.



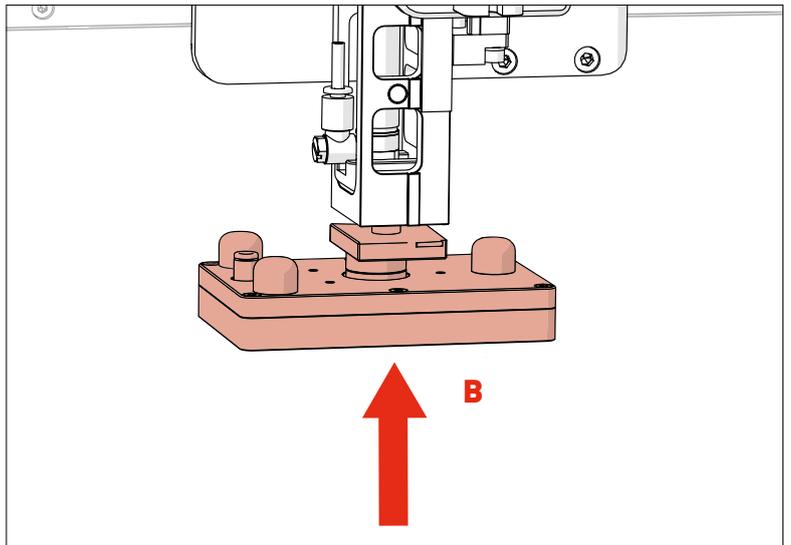
## INSTALLATION

### 3. Set the pad head

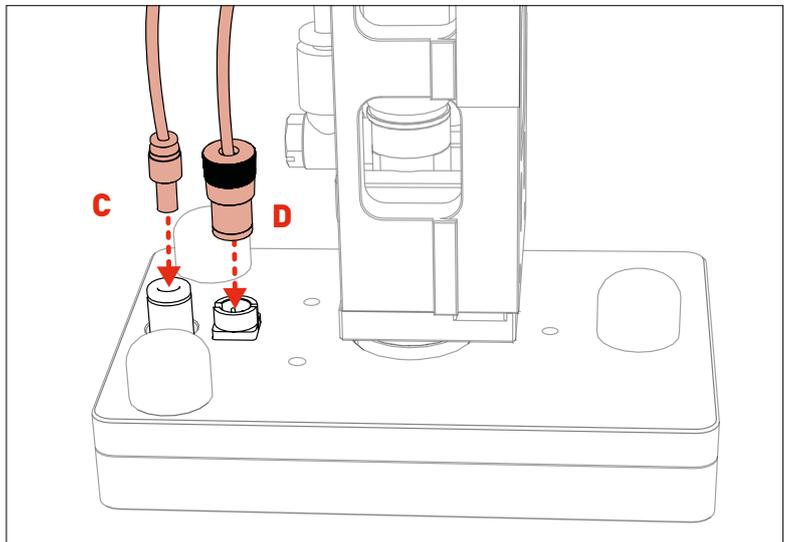
- Remove the Pad Head from the top accessories box.
- Remove the 3 red screws from the Pad Head using the 2mm hex key (A).
- Store these screws in the ROTOR+ toolkit.



- Carefully insert the Pad Head onto the base of the carriage arm (B).
- **WARNING:** The pad head is magnetised. Make sure you have a good grip to ensure a gentle attachment.

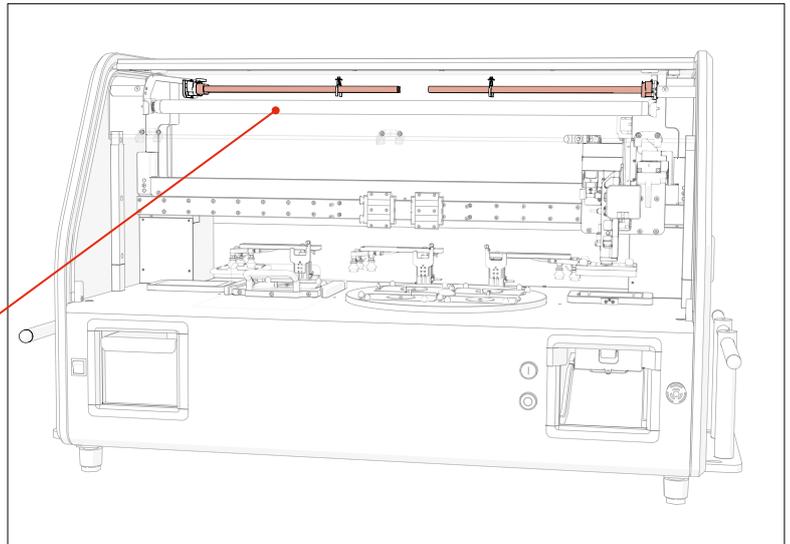
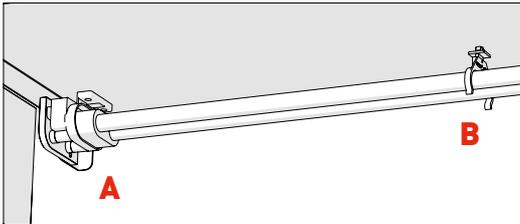


- Carefully attach the Air tube (C) and the Power Cable (D) into the Pad Head as shown.

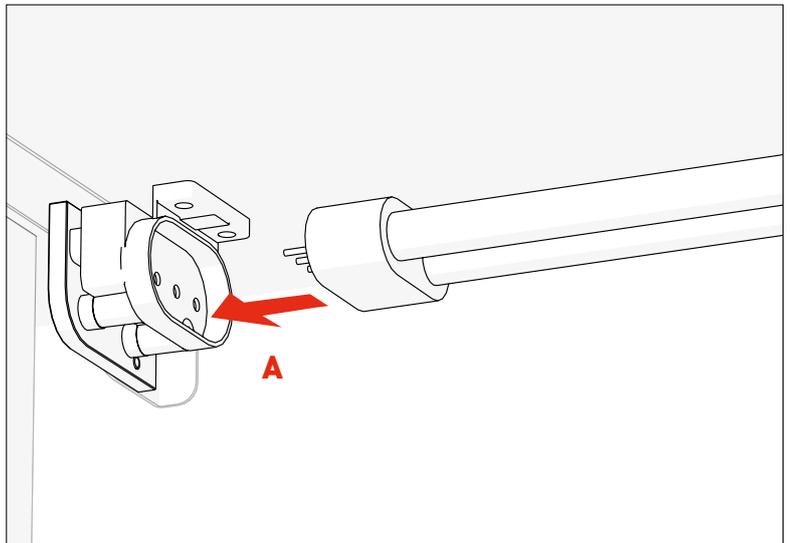


#### 4. Install the fluorescent lights

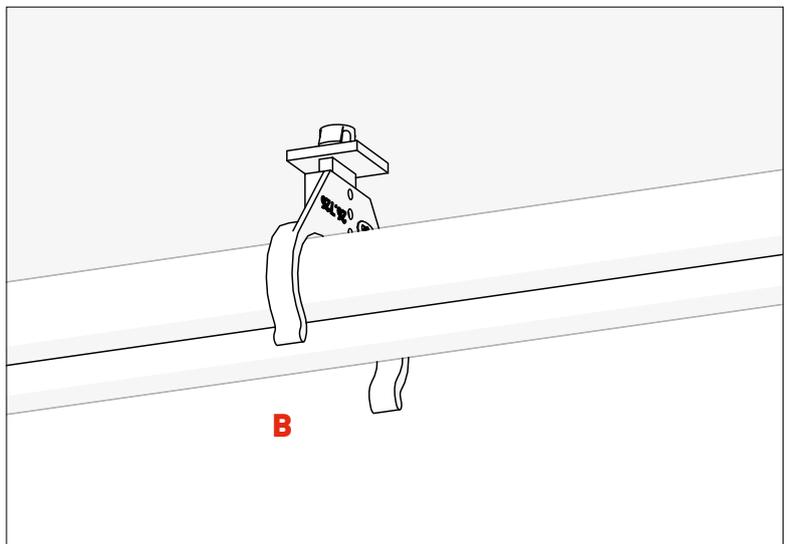
- **WARNING:** Wear the provided gloves when handling the fluorescent lights.
- The fluorescent lights need to be fitted into the back corners of the ROTOR+ interior.



- Gently insert one of the fluorescent lights into the light socket (A).



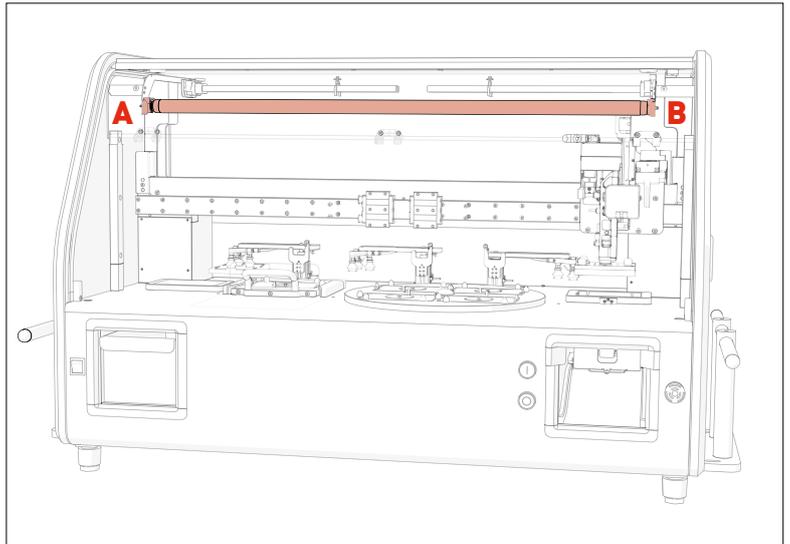
- Carefully push the other end of the light into the support clip until it clicks into place (B).
- Repeat these steps for the other fluorescent light on the opposite side.



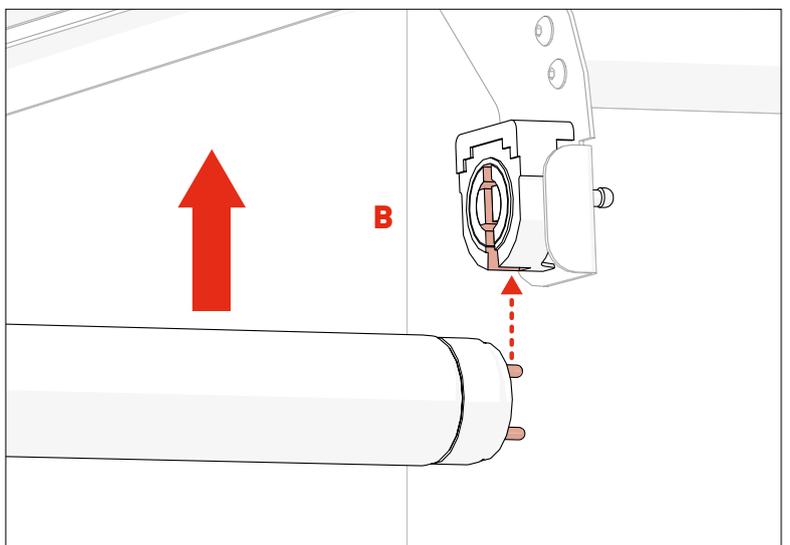
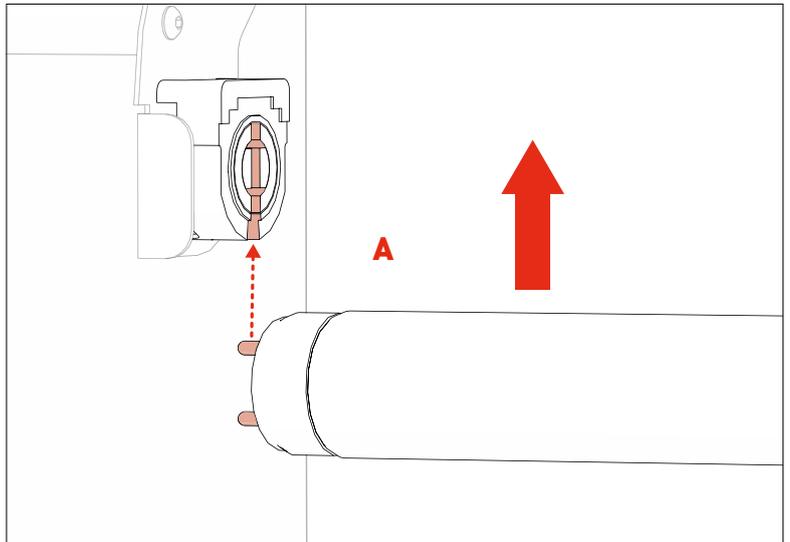
## INSTALLATION

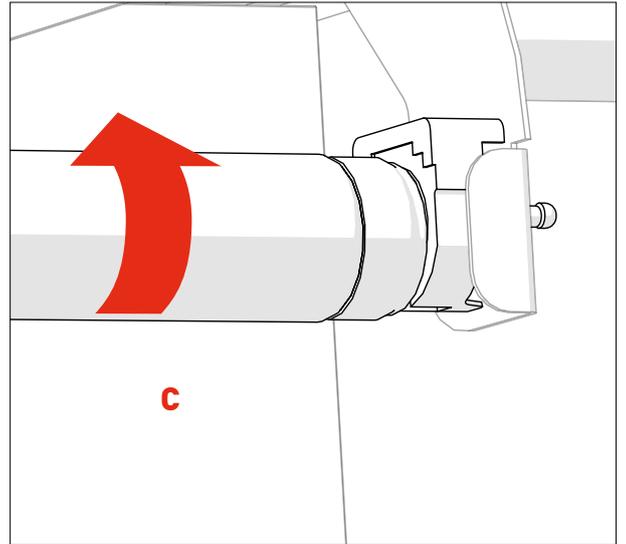
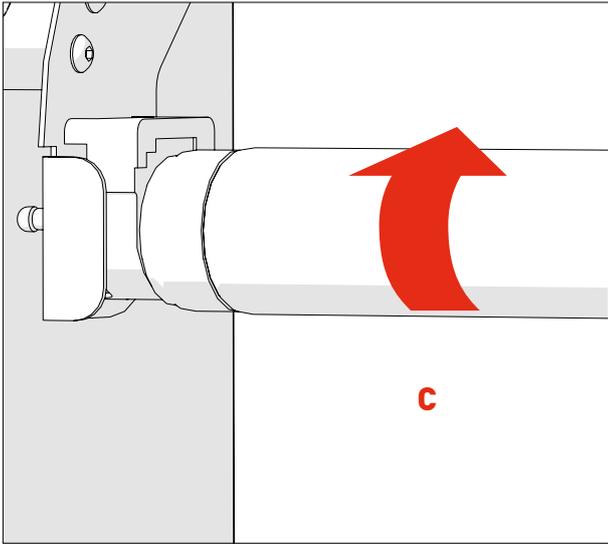
### 5. Install the UV light

- **WARNING:** Wear the supplied gloves when handling the UV lights.
- The UV light need to be fitted into the top front of the ROTOR+ interior. This can be a little tricky to see.



- Line up the pins on the left (A) and right (B) side of the UV light with the socket slots.
- Carefully slide the light fully into place.
- Rotate the light 90° to lock it into position (C).

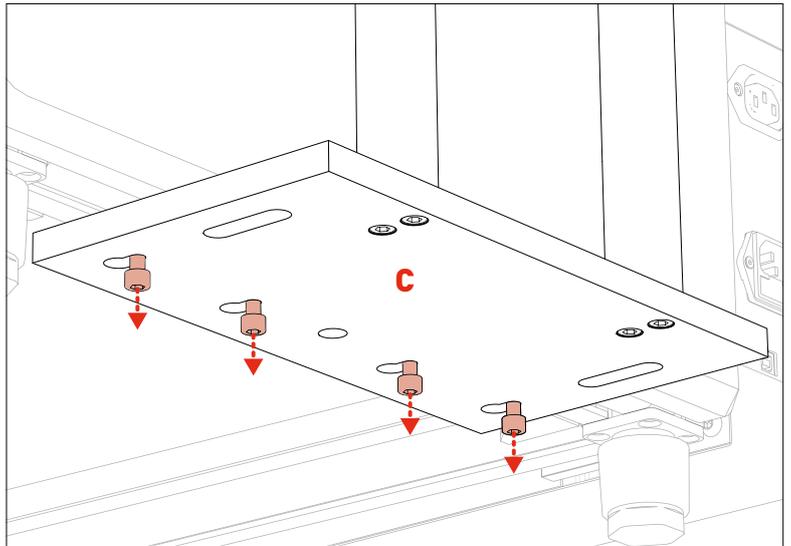
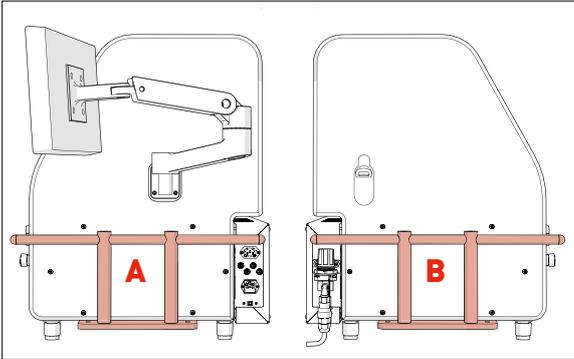




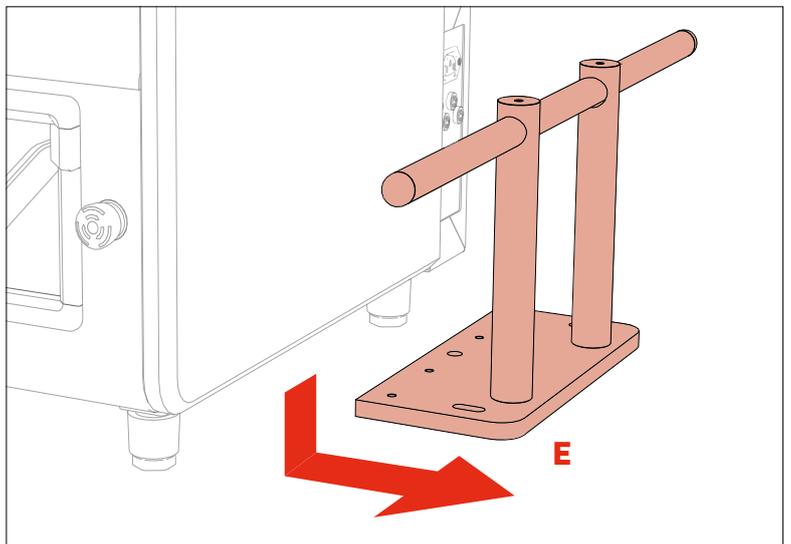
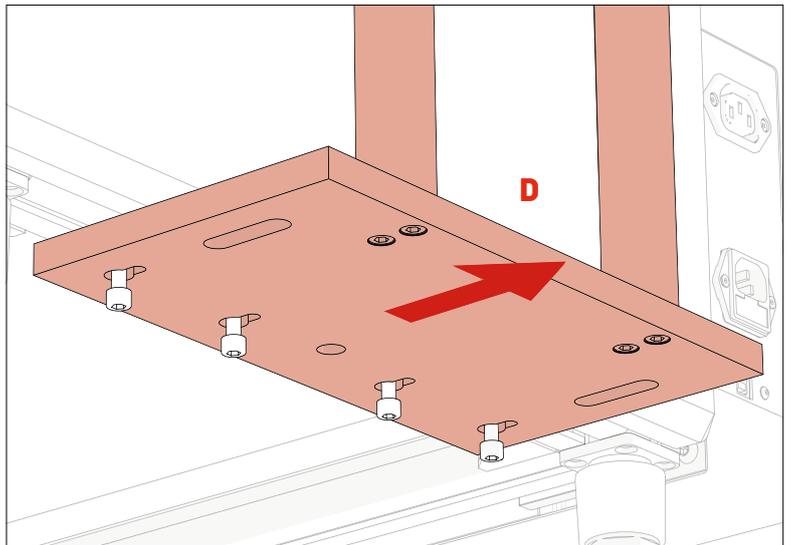
## INSTALLATION

### 6. Remove side transit brackets

- The transit brackets are located on each ROTOR+ side panel (A & B).

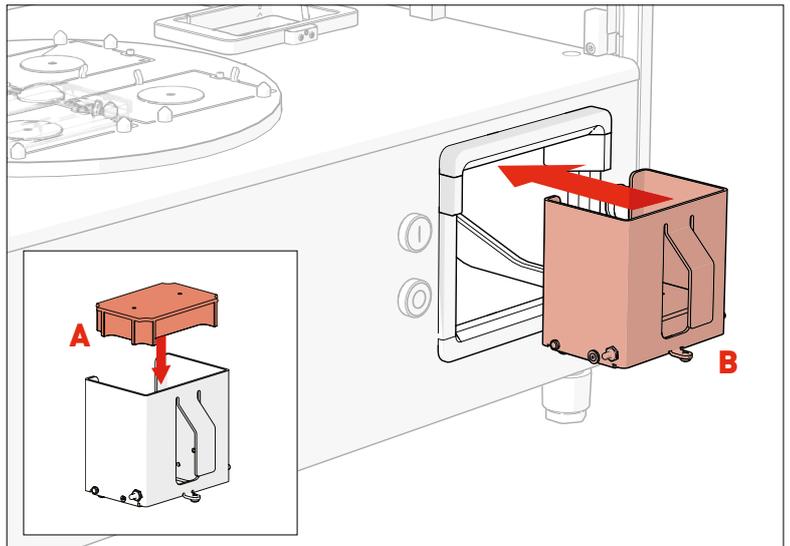
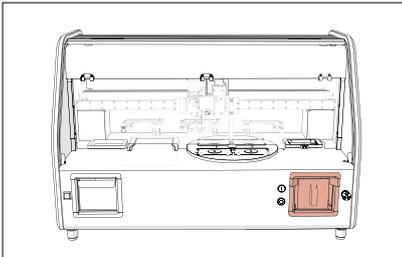


- Use a 10mm spanner to loosen the 4 bolts, located under the ROTOR+, that attach the bracket to the frame (C) and slide the bracket forward (D).
- The bracket can now drop down from the bolts and be removed (E).
- Repeat these steps for the transit bracket on the other side.
- NOTE: Keep all transit brackets in a safe place incase your ROTOR+ needs to be moved in the future.

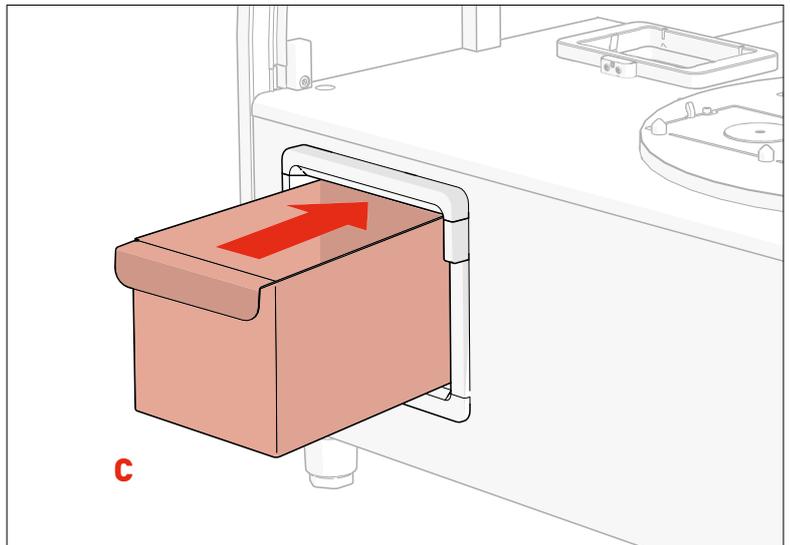
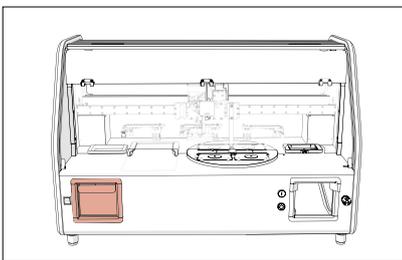


## 7. Insert pad trays

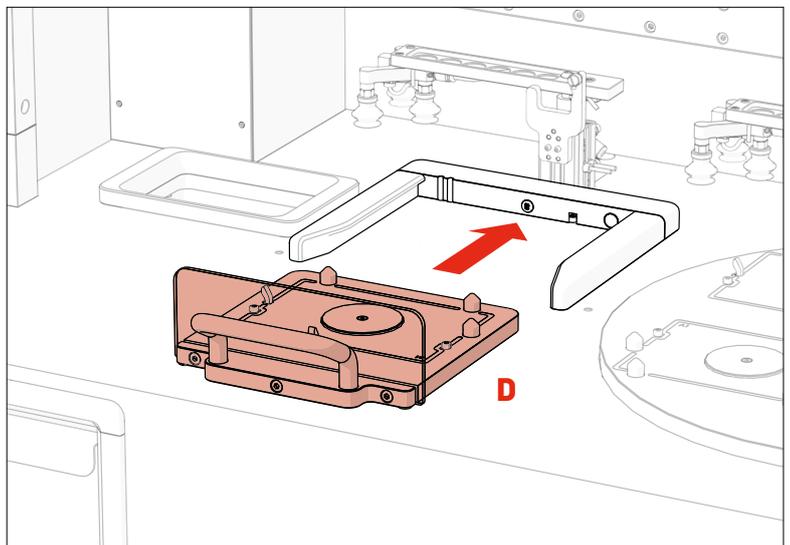
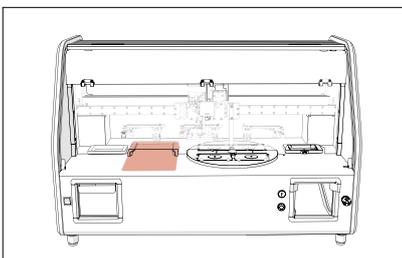
- Remove the Pad Hopper from its packaging and insert the Aluminium Pad Support (A) into the Pad Hopper.
- Place the Hopper into the hopper bay (B).



- Place the Dump Drawer into the dump bay (C).



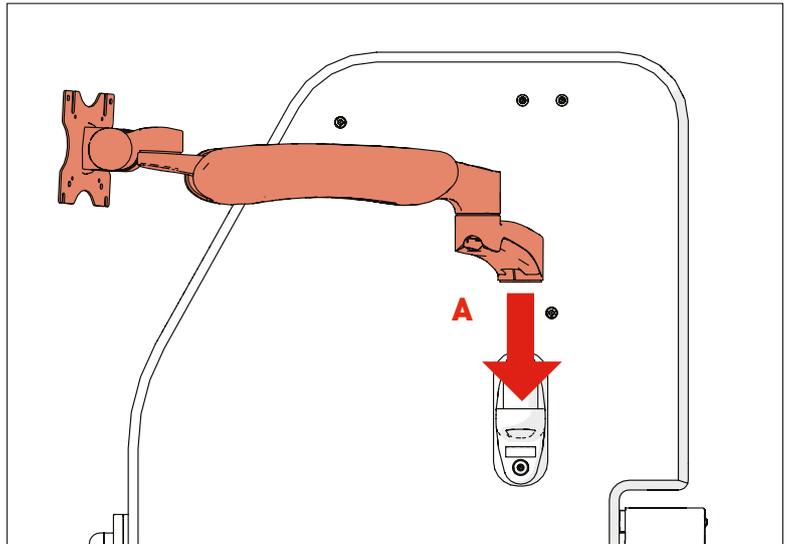
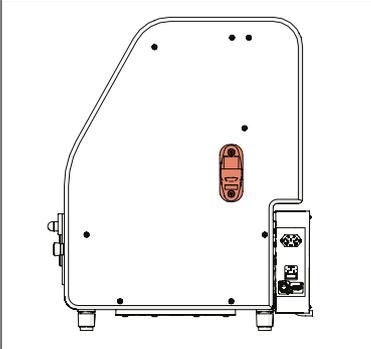
- Insert Black Bay into the ROTOR+ (D).



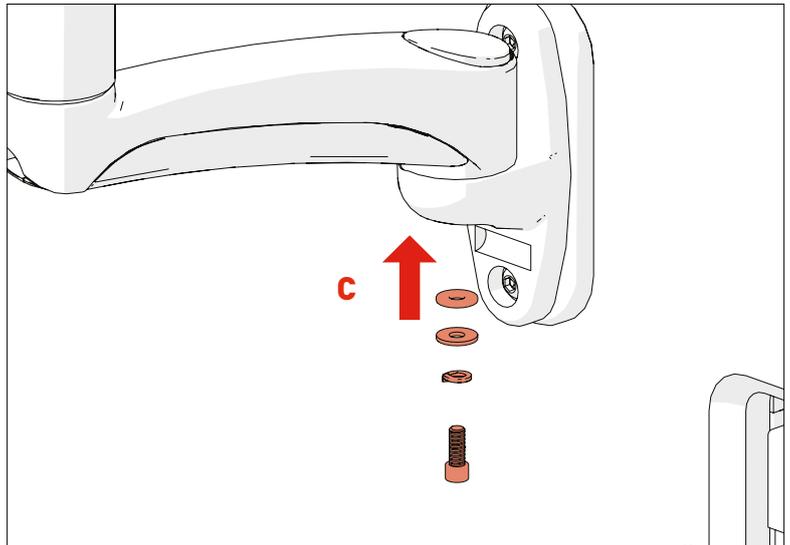
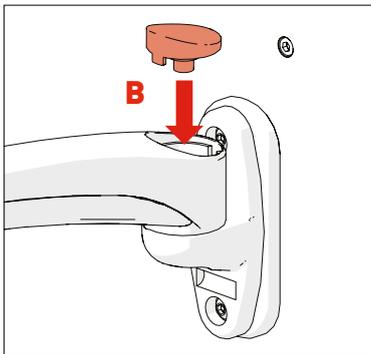
## INSTALLATION

### 8. Attach the MCI

- Slide the MCI arm onto the screen arm mount (A).

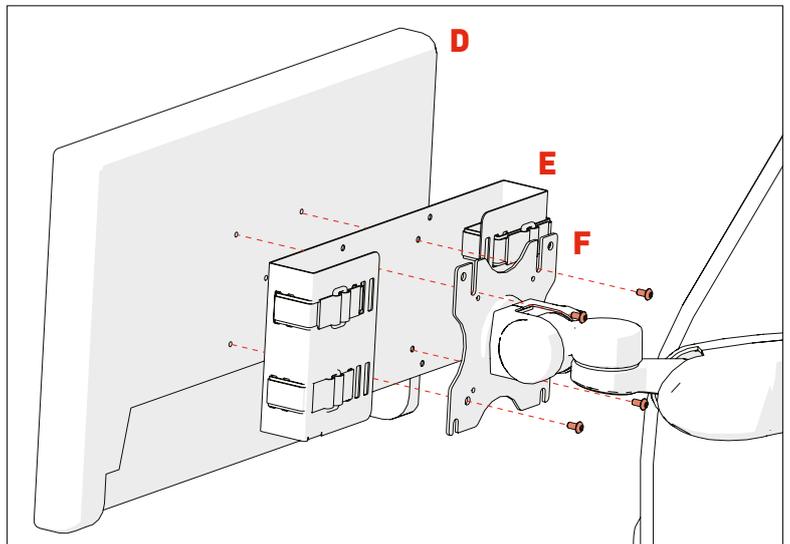


- Fit the screen arm Top Cap on top of the arm hinge (B) and then fit The supplied bolt and washers (C) The screw will screw into the top cap. Tighten enough that the arm is secure but still mobile.

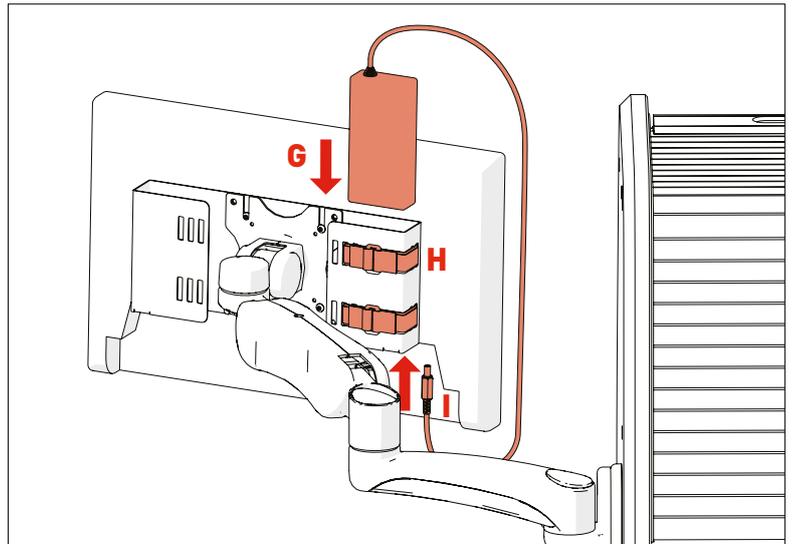
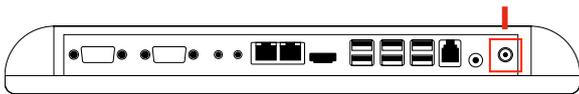


- Use the 4 MCI screws (attached to the MCI) to assemble the MCI (D), power supply tray (E) and the MCI arm (F).

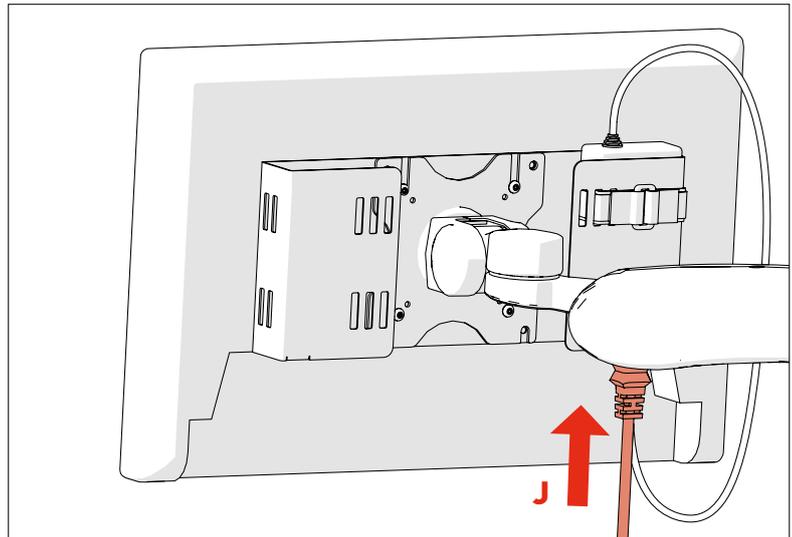
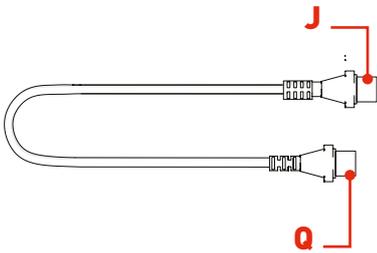
- NOTE: We recommend using 2 people. 1 to hold the MCI securely while the other tightens the screws.



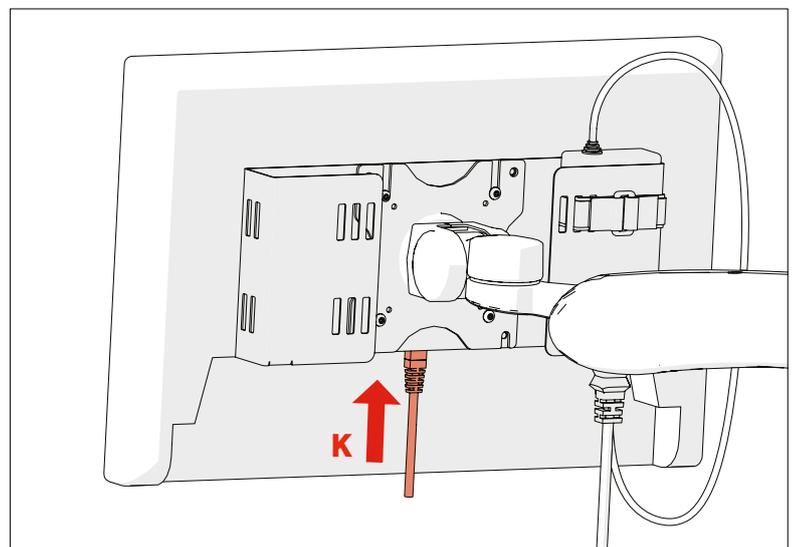
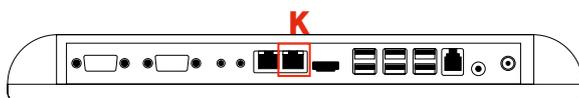
- Place the MCI power supply into the right bay (when viewed from behind) of the MCI tray (G). Tighten the velcro straps (H) to secure the power supply in place.
- Plug the lead into the bottom of the MCI (I). Tuck any lead slack back into the right bay.



- Plug the male side of the IEC cable (J) into the MCI power supply.



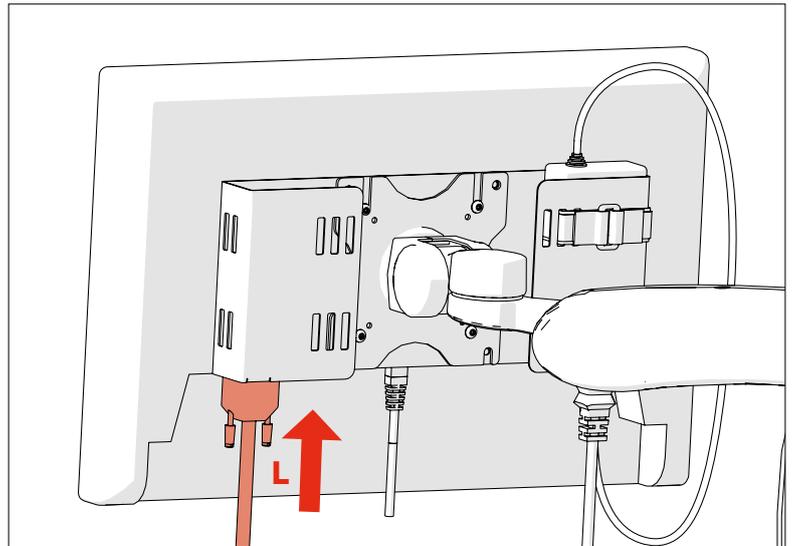
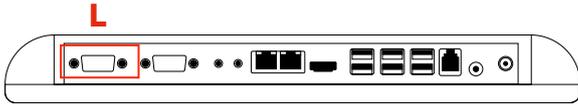
- Connect one end of the Ethernet cable into the right hand Ethernet socket on the MCI (K).
- NOTE: MCI screen viewed from the back.



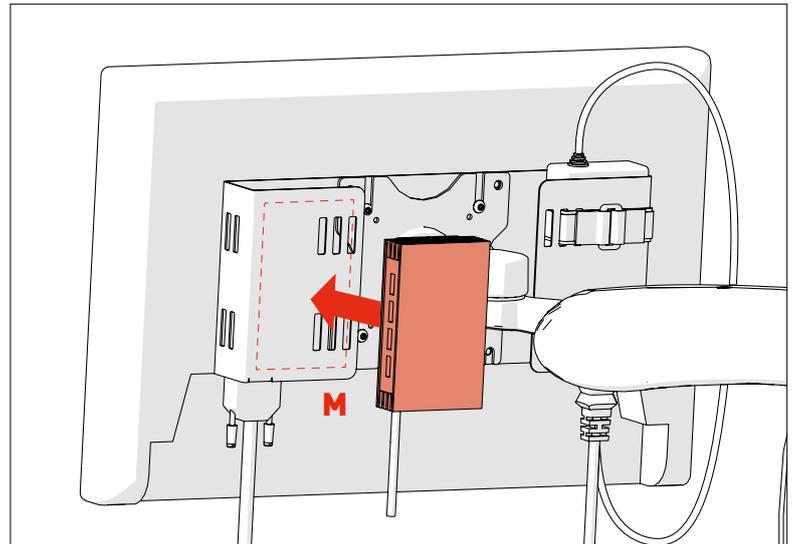
## INSTALLATION

### OPTIONAL (If using a Stinger)

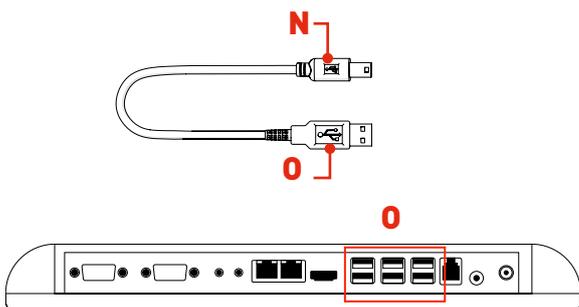
- Plug one end of the D-Sub cable into the left hand D-Sub socket (Port 1) on the MCI (L).
- NOTE: MCI screen viewed from the back.
- The cable must be connected to port 1 or Stinger will not connect to the machine.



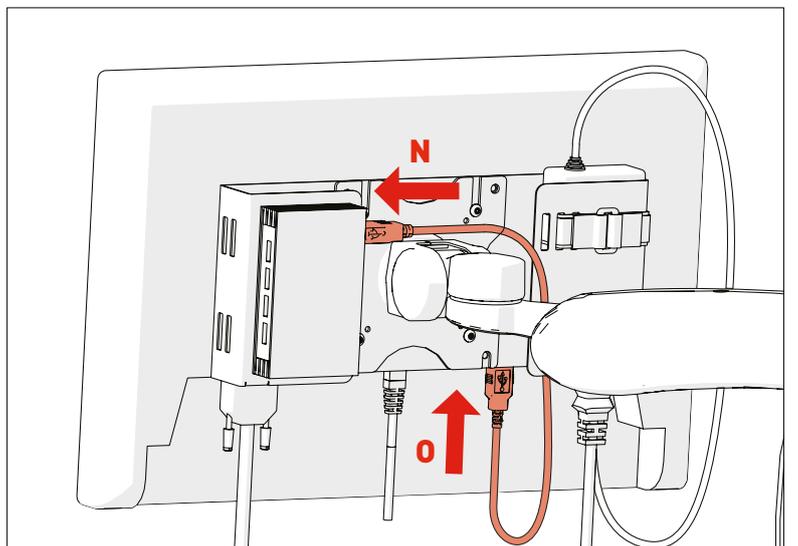
- Remove the USB Hub tape backing paper.
- Attach the USB Hub to the back of the MCI tray. Ensure the 4 USB ports are facing away from the MCI arm as shown (M).



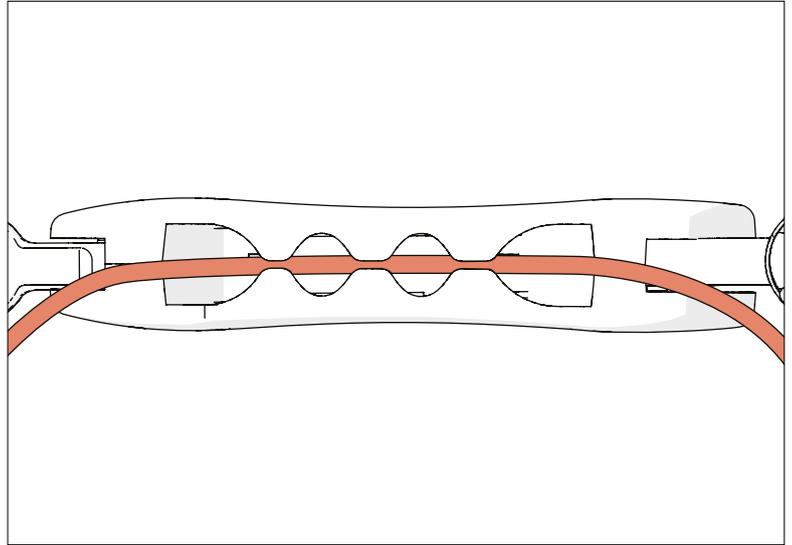
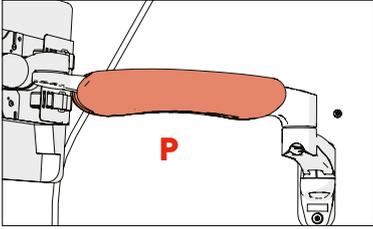
- Take the second USB cable and plug the square end into the Hub Box (N).
- Plug the other end into one of the available USB slots on the base of the MCI (O).



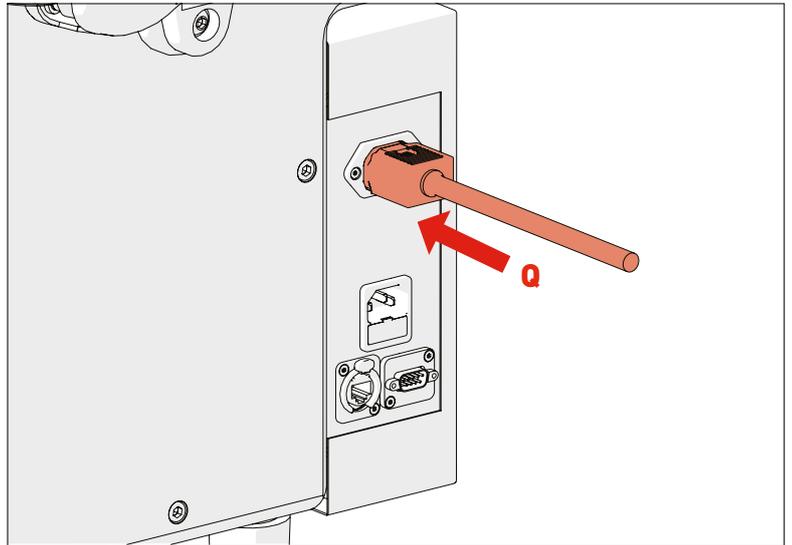
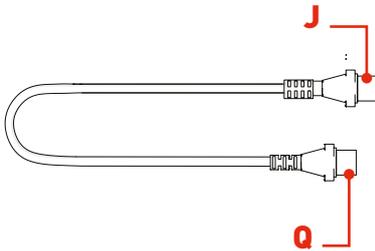
- NOTE: MCI screen viewed from the back.



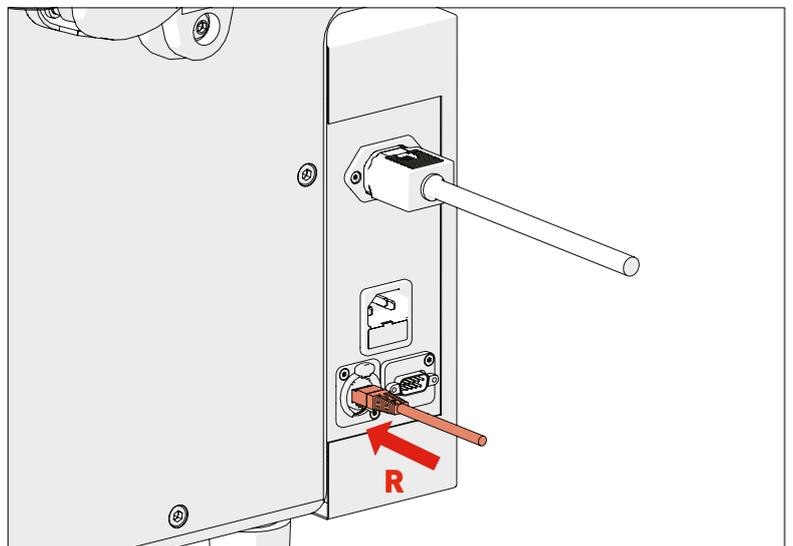
- Locate the cable clip under the MCI arm (P).
- Push the loose IEC power and ethernet cables into the cable clip.
- NOTE: It's wise to cable tie the lead in various places along the arm to keep it tidy. Make sure to allow enough slack to easily move the arm.



- Take the remaining IEC power lead connector from the MCI screen and plug into the top power socket on the Rotor+ Eletrical Cabinet (N).

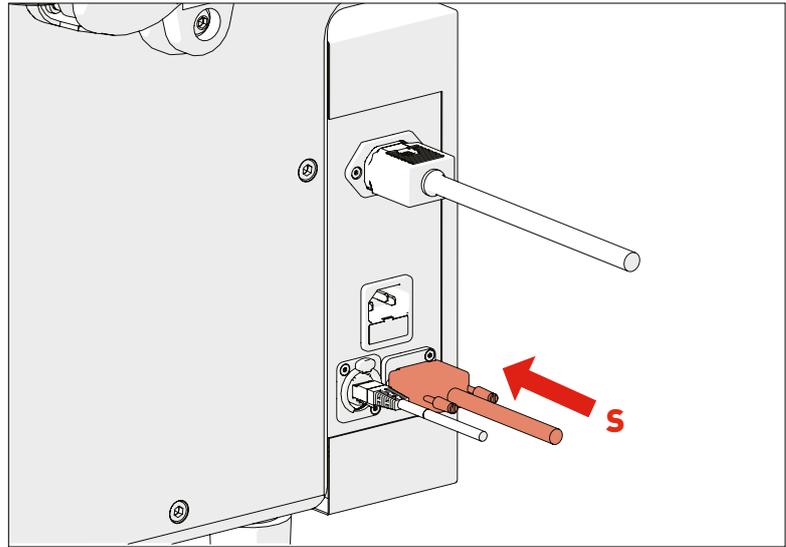


- Take the remaining Ethernet connector from the MCI screen and plug into the Ethernet socket on the Rotor+ Eletrical Cabinet (R).



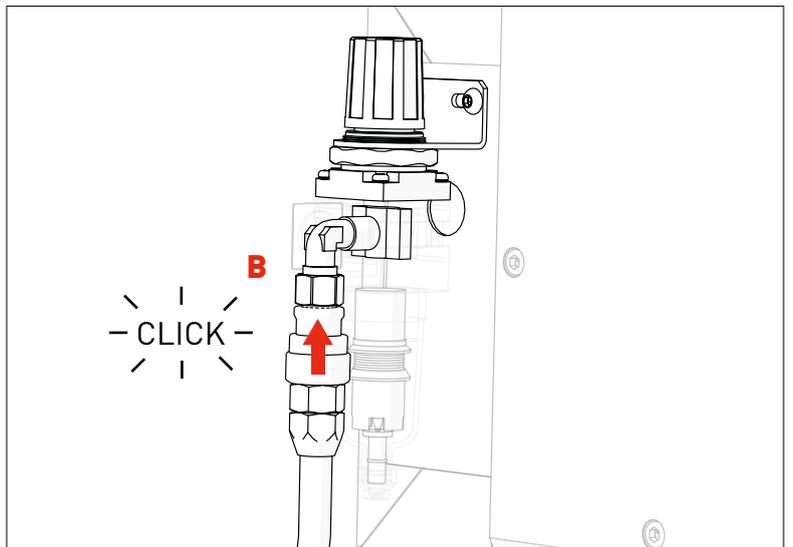
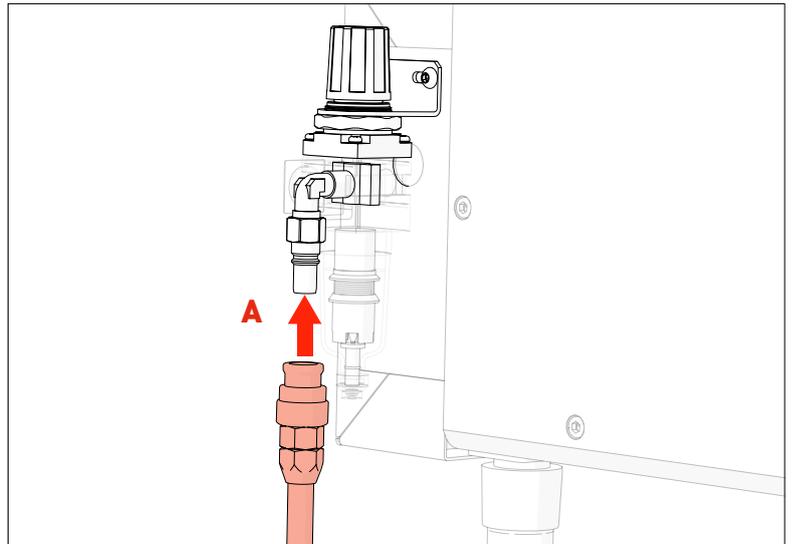
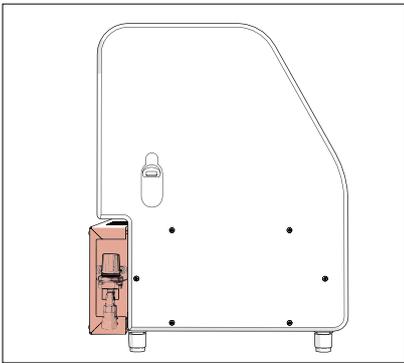
· **OPTIONAL (If using a Stinger)**

- Take the remaining D-Sub connector from the MCI screen and plug into the D-Sub socket on the Rotor+ Electrical Cabinet (S).



## 9. Install Airline

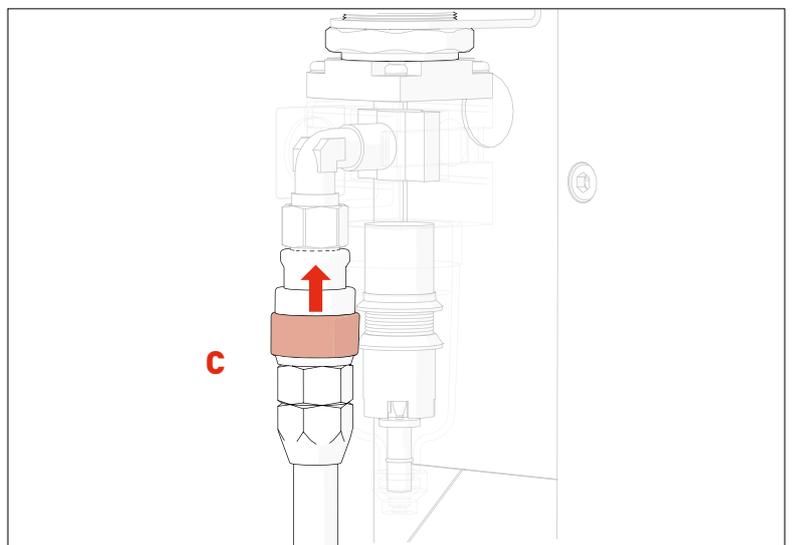
- Connect your air line to the ROTOR+ airline input (A). The connection is the same for both mains airline or compressor.
- Push until clicked into place (B).
- NOTE: If there's air in the tube there may be some resistance. If you are having trouble, remove the airline and check inside the connector. There is a plastic sleeve inside which should be in line with the hole.



- Lock the connector in place by pushing the sleeve up (C).
- Check out our video guide to installing the airline here:



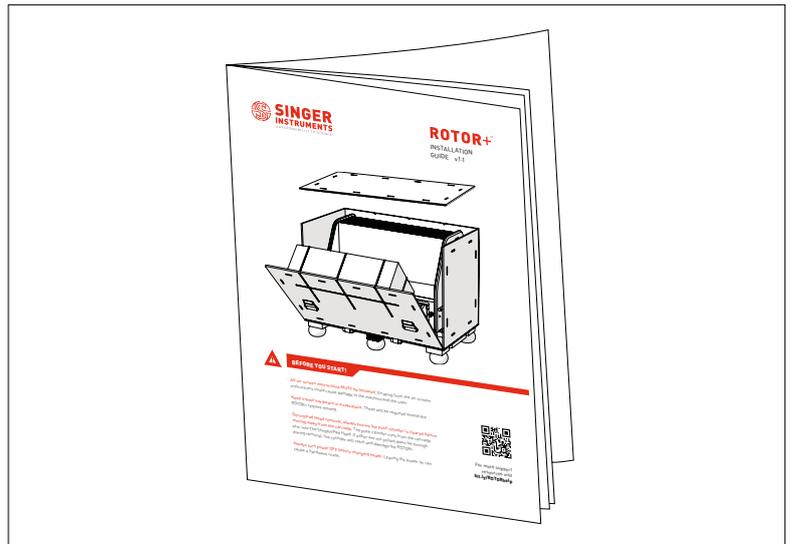
<http://bit.ly/ROTORairline>



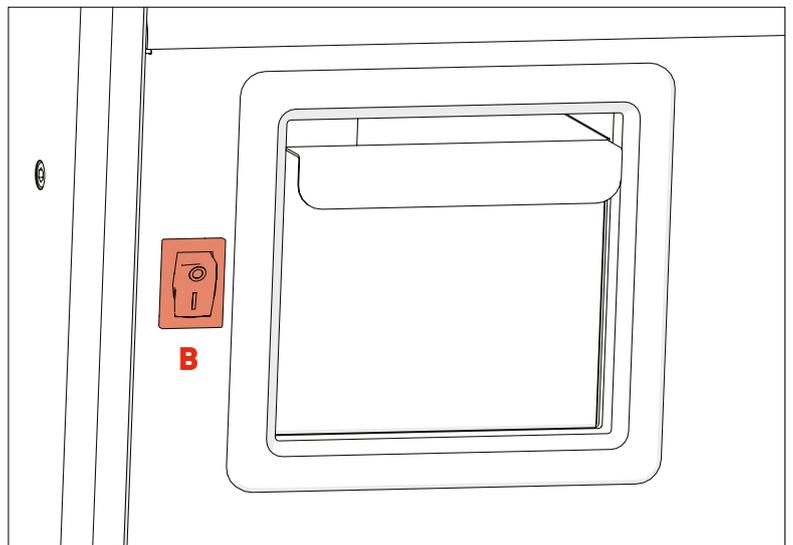
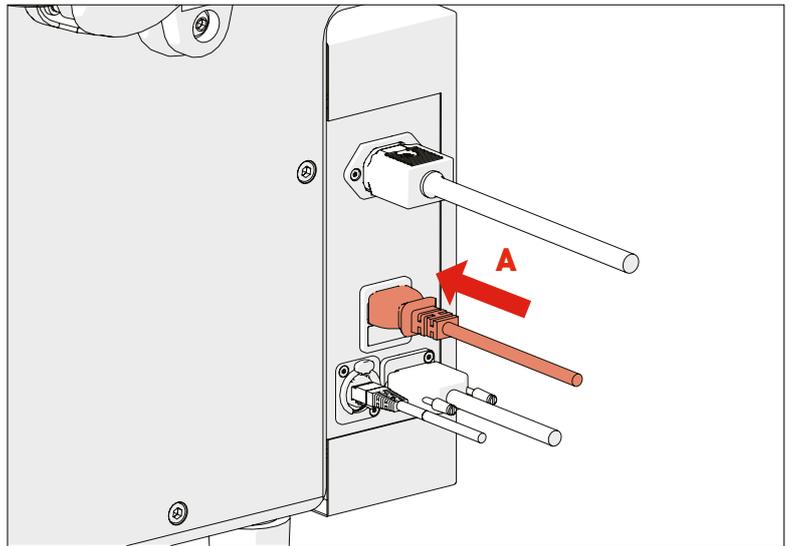
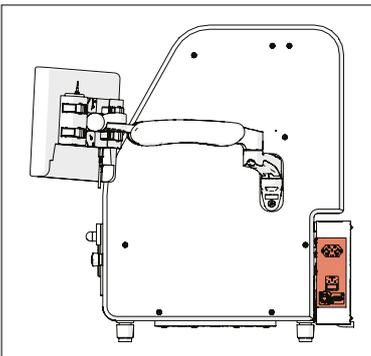
## INSTALLATION

### 10. Power up

- Before installing the mains power, just have a quick check back through this guide and ensure everything is fitted correctly.



- Insert the mains power lead into the ROTOR+ (A) and the other end into a reliable power source.
- Turn on the power switch (B).

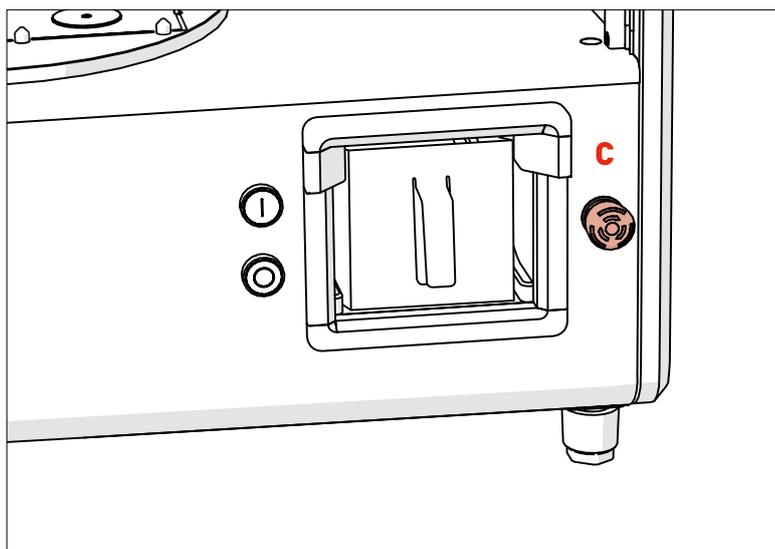


- The ROTOR+ lights will switch on and the MCI screen will boot up. If this doesn't happen, check that the emergency stop switch is released (C).
- NOTE: If there is a sudden loss of power after starting the ROTOR+, it is likely that the electrical safety switch for the main supply to the ROTOR+ has been tripped. Please speak to your lab's electrician to reset and/or replace the trip with a higher rating.

Check out your Pre-installation Guide for more power supply information:



<https://bit.ly/ROTORPreInstall>

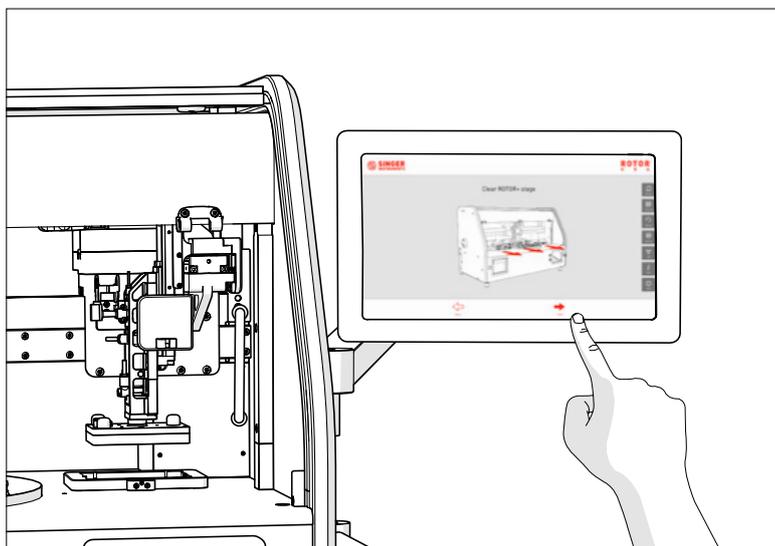


## 11. Go forth and do science!

- Your ROTOR+ is now ready to use! Simply follow the on-screen instructions to get started.
- Check out the User Guide for basic ROTOR+ help:



<https://bit.ly/ROTORGuide>



## 12. Confirm your installation online

- Once you have got your ROTOR+ up and running, please make sure to fill out the online Self Installation Confirmation Form:



<http://bit.ly/installconfirmation>

The screenshot shows the SINGER INSTRUMENTS website interface. At the top, there is a search bar and a 'Submit a request' button. Below the search bar, the 'SUBMIT A REQUEST' section is visible. It includes a dropdown menu to select the form type (currently 'Self Installation Acceptance form'). Below this are several required input fields: 'YOUR EMAIL ADDRESS', 'CUSTOMER NAME', 'LAB NAME/PI NAME', 'INSTITUTE / COMPANY NAME', 'COUNTRY', and 'SELECT INSTRUMENT INSTALLED'. Each field has a small asterisk indicating it is required.



# SINGER INSTRUMENTS

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AND TUTORIALS!**



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At Singer Instruments, we are constantly seeking to improve our products and adapt them to the requirements of modern research techniques and testing methods. This involves modification to the mechanical structure and optical design of our instruments. Therefore, all descriptions and illustrations in this user guide, including all specifications are subject to change without notice.