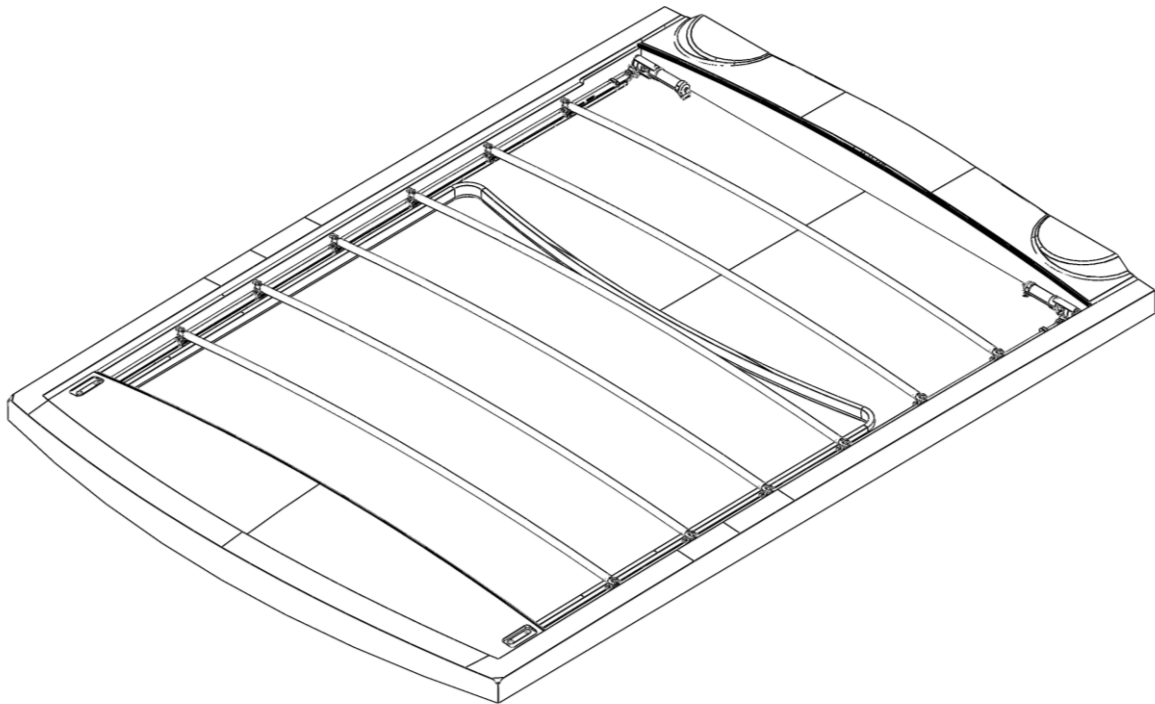


MAKEFAST GROUP

Narrow Track System Owners Manual

Installation and User manual



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VERSION 00

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SAFETY



DO NOT USE THE EQUIPMENT ABOVE +50°C (+122°F)



DO NOT USE THE EQUIPMENT BELOW -15°C (+5°F)



RISK OF ELECTRIC SHOCK



SOME PARTS CAN BE RECYCLED



INSTALLATION/USER MANUAL, READ BEFORE OPERATING THE EQUIPMENT



SPECIAL WARNING, READ CAREFULLY

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ICONS

VISUAL INSPECTION REQUIRED



DRILLING REQUIRED



SCREWDRIVER REQUIRED



SILICONE SEALANT REQUIRED



ALLAN KEY REQUIRED



MEASUREMENT REQUIRED



MARK WITH PENCIL



SPANNER REQUIRED

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TOOLS REQUIREMENTS FOR TYPICAL INSTALLATION**MAKEFAST TRACK WIDTH SETTING JIG (SUPPLIED WITH FIRST UNIT ONLY)****ELECTRIC DRILL**

DRILL BITS Ø: 3.5MM-6MM, 12MM
(M6 TAP MAY BE REQUIRED FOR SOME)

SCREWDRIVER: POZI DRIVE, ELECTRICAL SCREWDRIVER

ALLEN KEY: 2MM, 2.5MM, 3MM, 6MM

SPANNERS: 8MM, 13MM, ADJUSTABLE

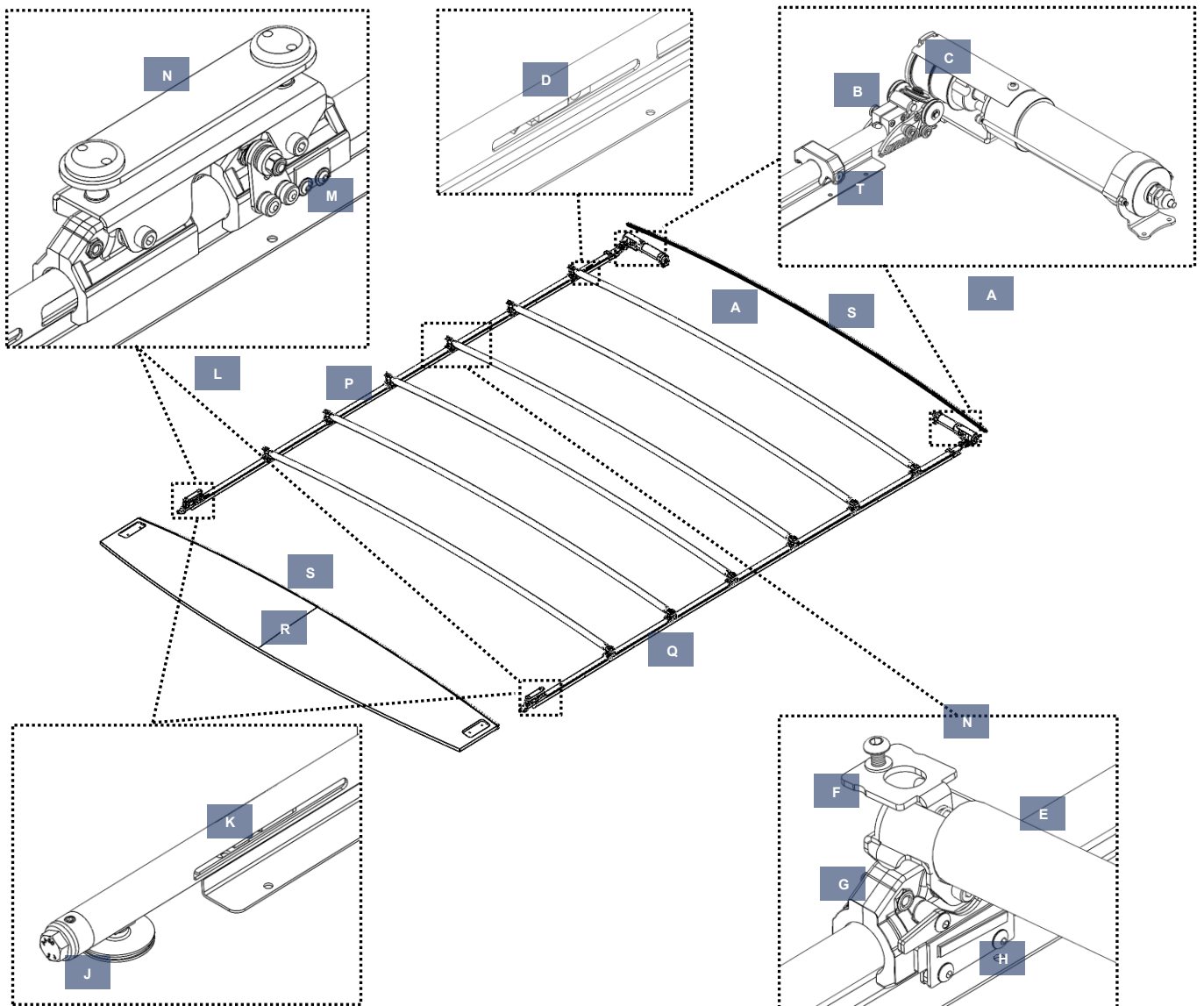
TAPE-MEASURE**NOSE KEY (SUPPLIED)****SILICON SEALANT****PENCIL****ADHESIVE TAPE**

SILICONE GREASE (SUPERLUBE),
NOTE: THIS MUST STAY WITH THE BOAT AFTER INSTALLATION

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POWERED STANDARD CANVAS SYSTEM OVERVIEW



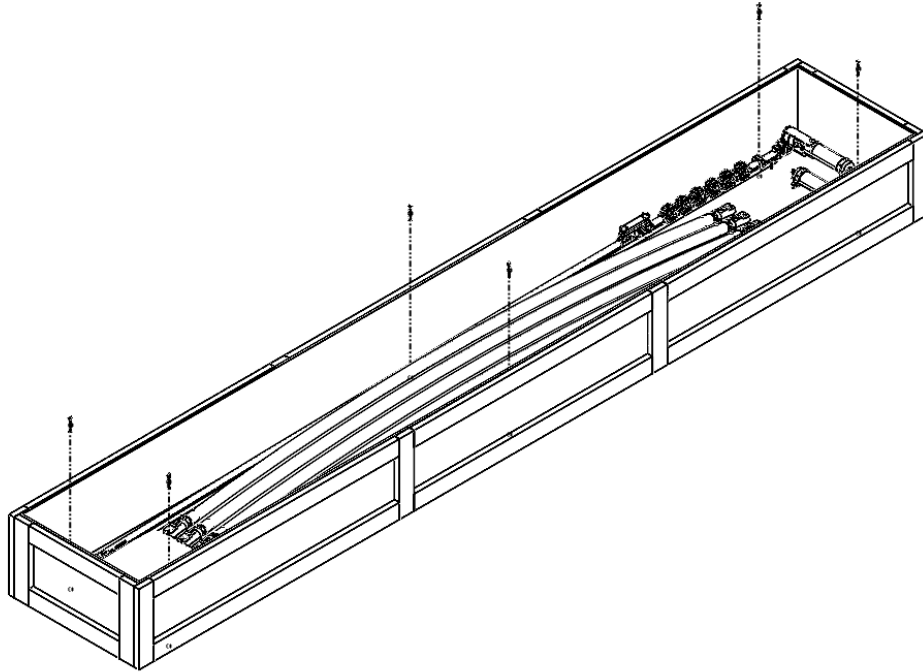
- | | | |
|-----------------------------|-------------------------------------|--------------------------------|
| A Motor Unit | H Constant Tension Mechanism | Q Port Track Assembly |
| B Cable Guide | J Forward Tension Unit | R Nose Cone |
| C Cable Drum | K Forward Sensor | S Canvas Securing Track |
| D Aft Sensor | L Drive Car Assembly | T Track End Stop |
| E Crossbeam Assembly | M Drive Car Magnet | |
| F Spring Clip | N Nose Cone Plate | |
| G Crossbeam Car | P Starboard Track Assembly | |

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UNPACKING THE BOX

1. To unpack the box, first remove all assemblies from the packing board by removing the 3 packing screws in each track assembly and the packing screws from the motor assembly.



WHAT'S INSIDE (TYPICAL)

- 1 x Port Track Assembly (Cars attached)
- 1 x Starboard Track Assembly (Cars attached)
- Cross beam assembly (Number depends on design)
- *2 x Canvas Securing Track (Some assemblies have 3)
- 1 x Control Box Assembly
- Fastener Pack
- Track Jigs (First unit only)
- Track Lube (Must stay with the boat not the installer)
- *Canvas Securing Track Opening Tool
- *Canvas Pack (Delivered inside the box unless otherwise specified)
- Installation and User Manual

*Only applies if canvas is supplied by Makefast

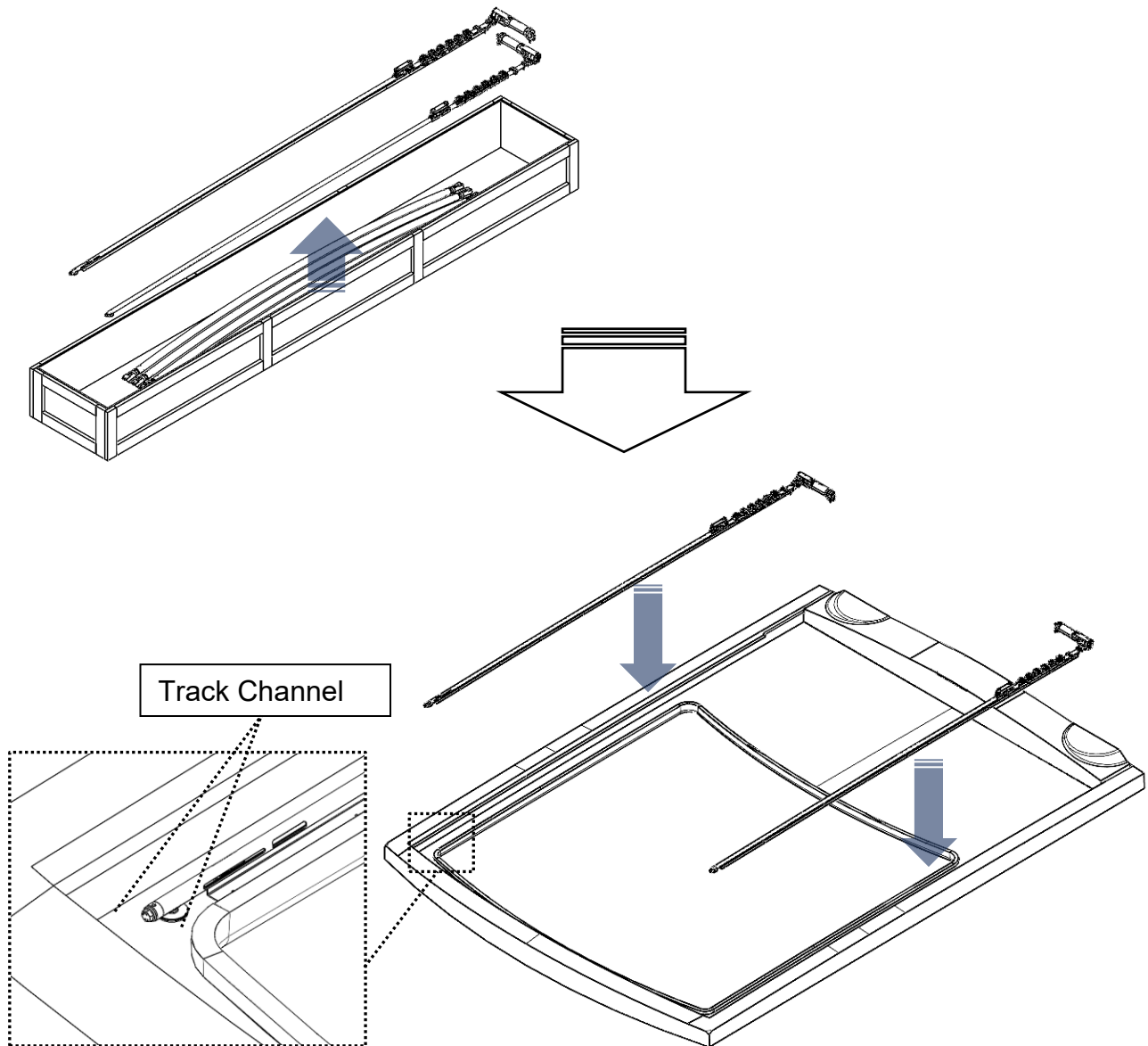
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INSTALLATION STAGE 1

NOTE: Do not remove drive cable clamps at this stage. (If supplied)

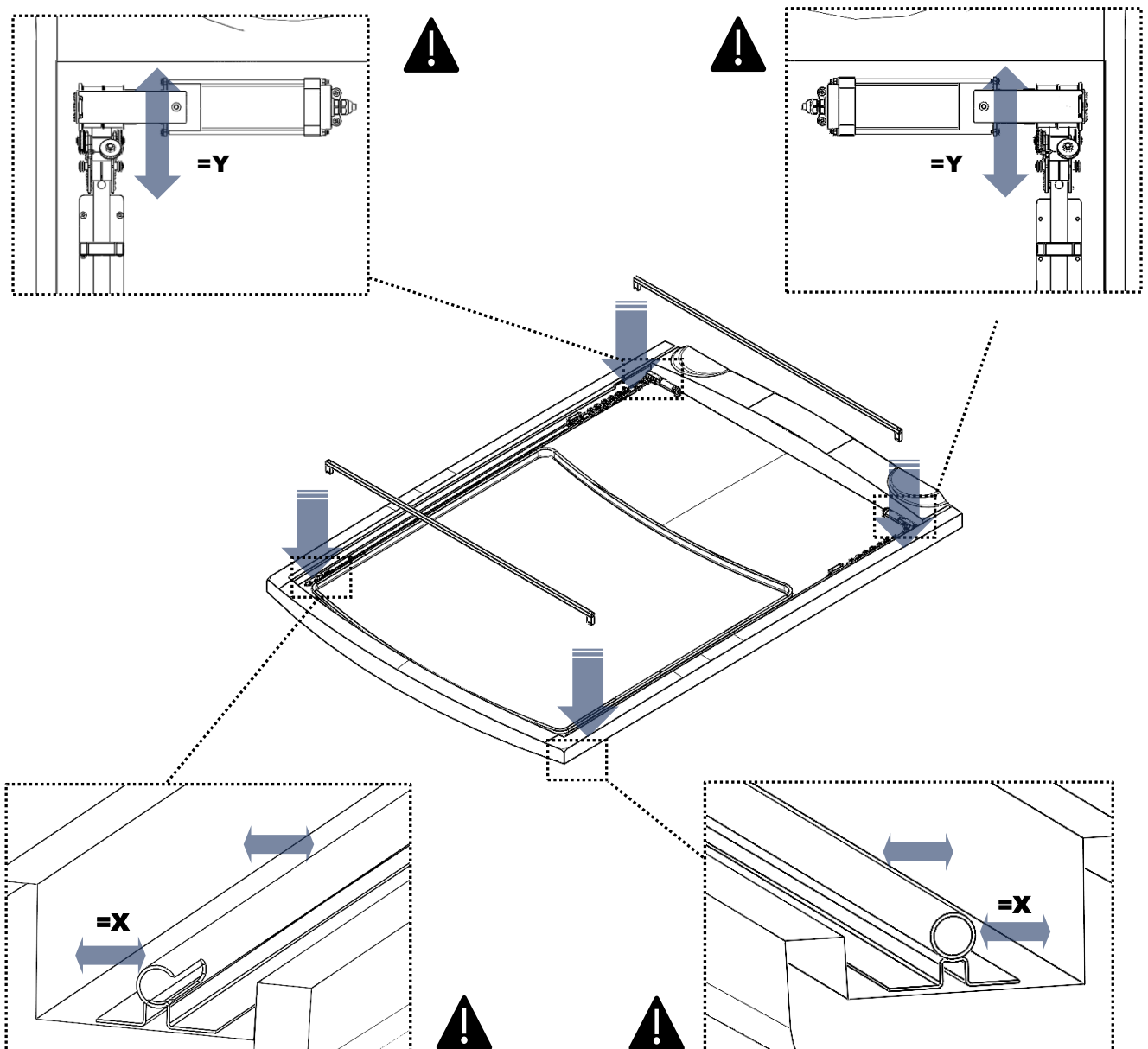
1. Place the tracks in the port and Starboard track channels.

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INSTALLATION STAGE 2

1. Move Cars forward of the end of the tracks (For constant tension systems press the lever on the aft most crossbeam car). This will allow for the setting jig to be placed the fwd and aft ends of the track.
2. Position Tracks and Motor as shown below.
3. Use the JIG Bars (supplied with first unit) to set the width of the tracks ensuring the tracks are equally spaced in channels. This should be checked along the length of the tracks.

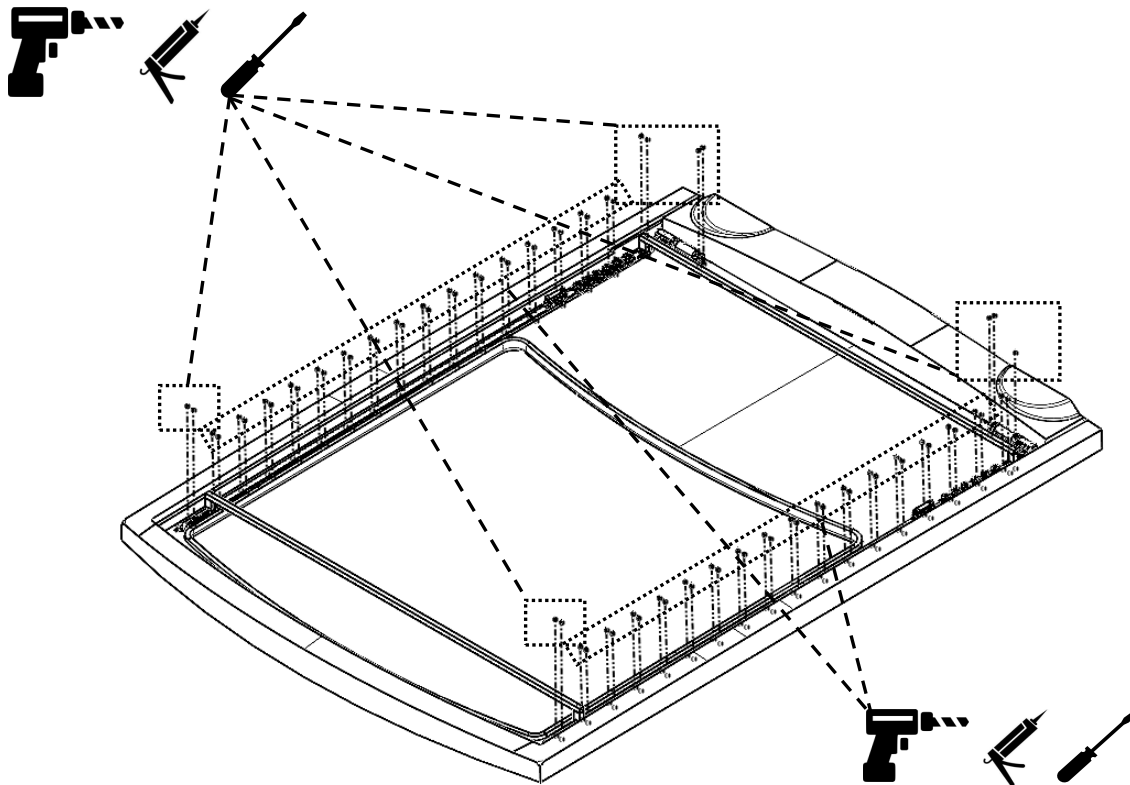
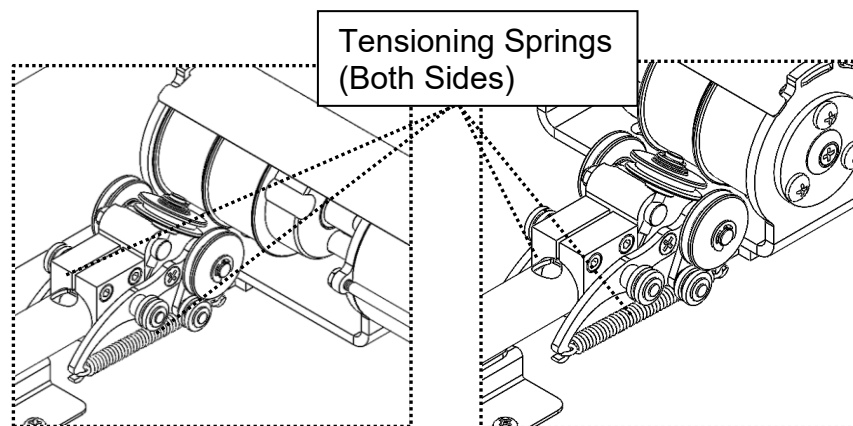
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INSTALLATION STAGE 3

IMPORTANT: Check tensioning springs (Both motor assemblies) are attached before screwing down the tracks.

1. With Jigs attached, pilot drill, apply silicone sealant to screws and screw fwd and aft most screws into GRP (track and motor),
2. Attach all remaining track fasteners (Drill, Silicone and screw).
3. Remove Jig Bars

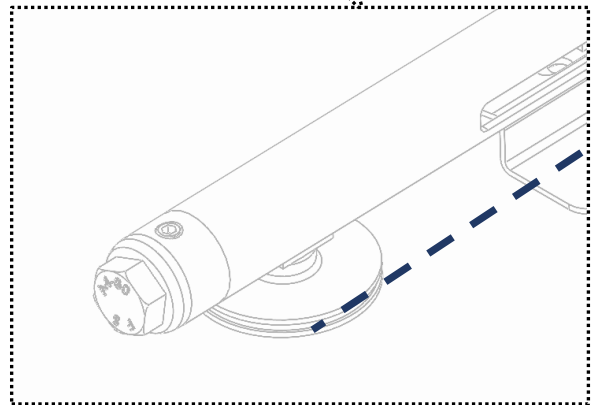
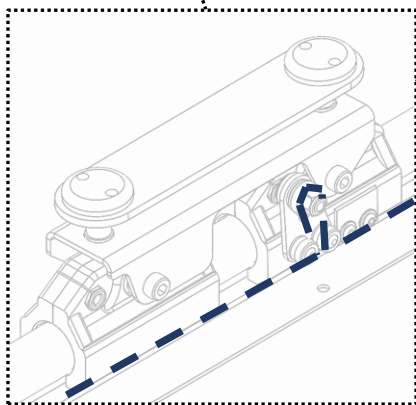
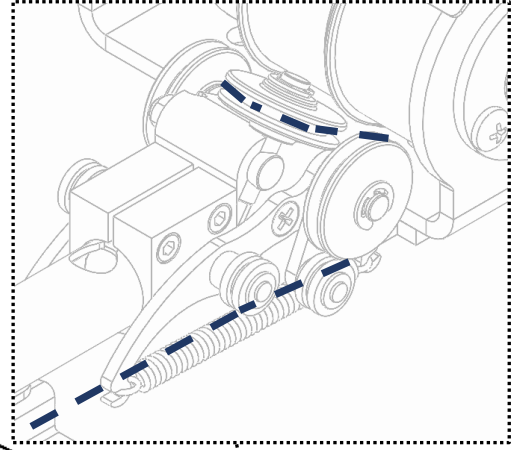
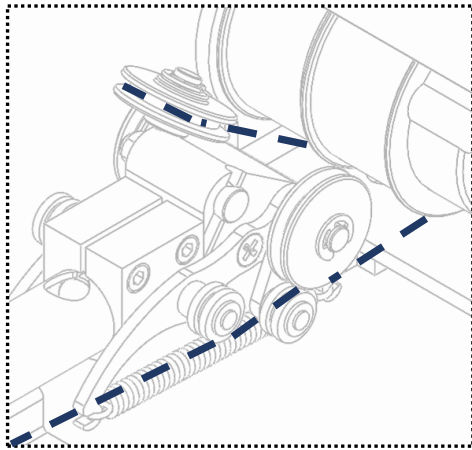
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CABLE INSPECTION



1. Ensure drive cable are running correctly in tensioned guide wheels. Cables should not be snagging on any parts and should be running within the channels on the wheels.

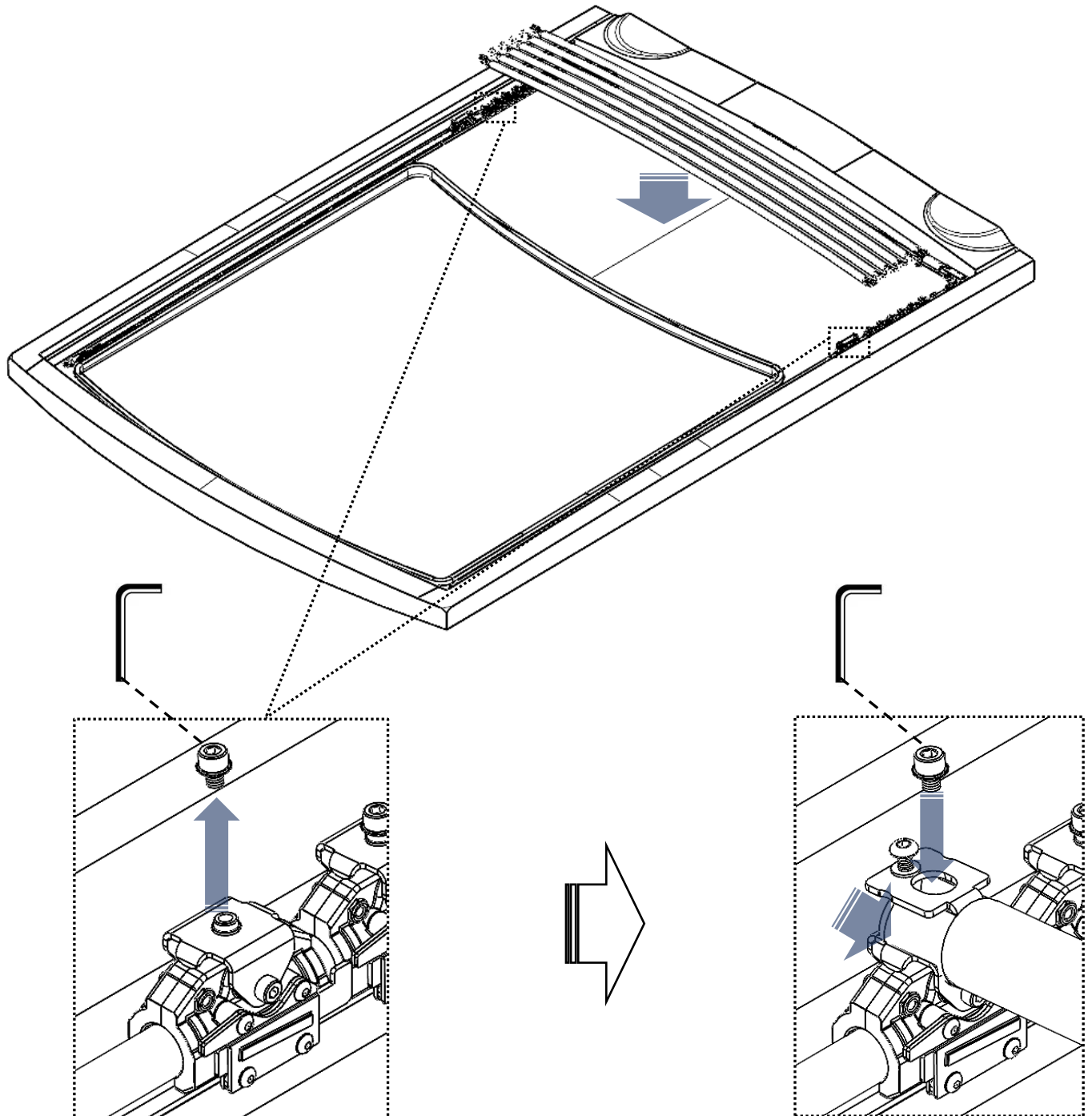


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INSTALLATION STAGE 4

1. Release cable ties holding canvas clips to cross beams.
2. Lay all crossbeams onto cars.
3. Use M6 cap head screw + washer secure crossbeam to cars. Spring clip must be pressed in, to allow access to securing point.
4. Remove Canvas fixings from clips.

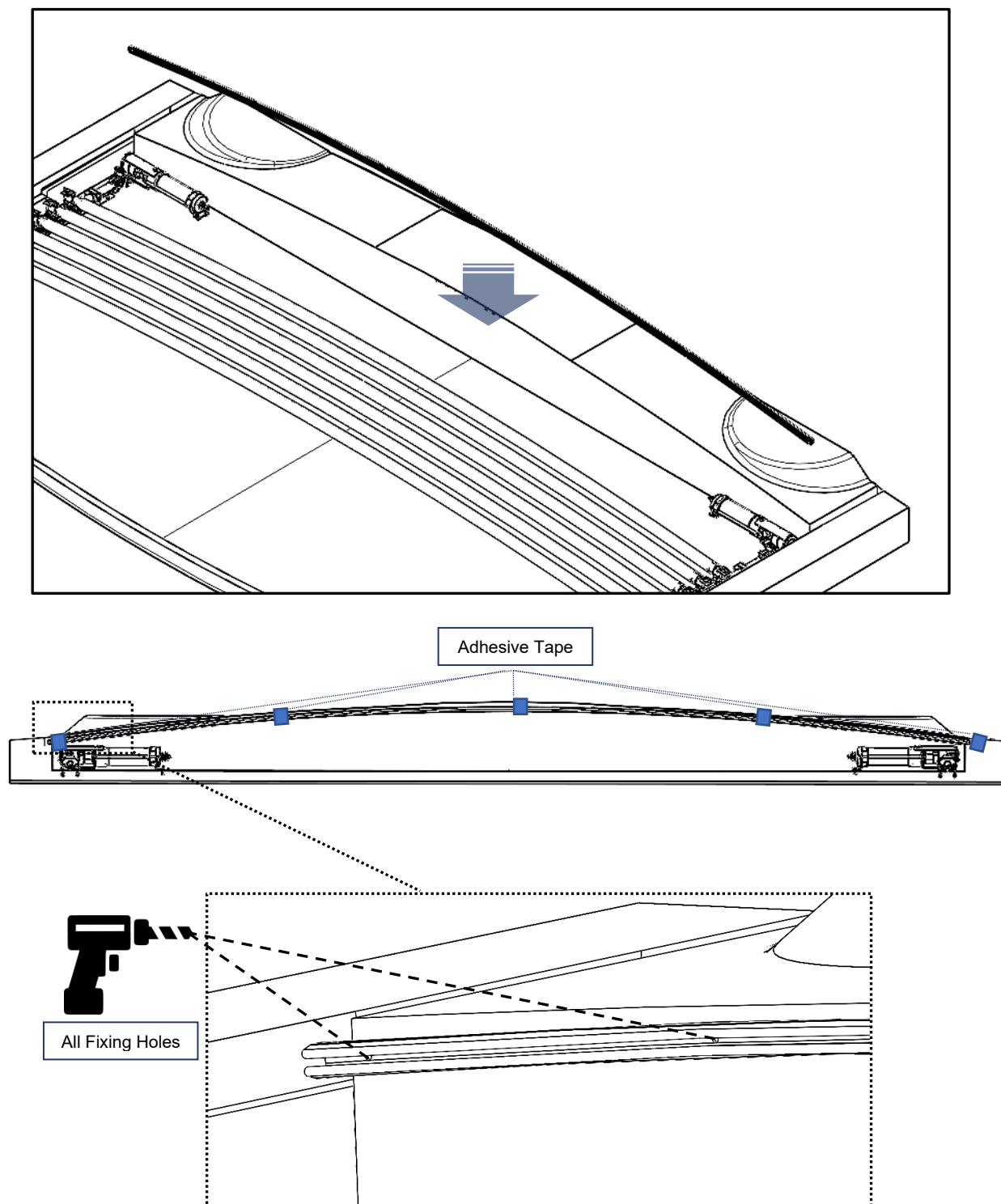
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INSTALLATION STAGE 5 (*only applies if canvas is supplied by Makefast)

1. Position aft canvas securing track temporarily with adhesive tape.
2. Drill Pilot hole (2mm) drill through all fixing holes.

TIP: Start by drilling and screwing in the middle 2 and then the outer 2 then the remaining.

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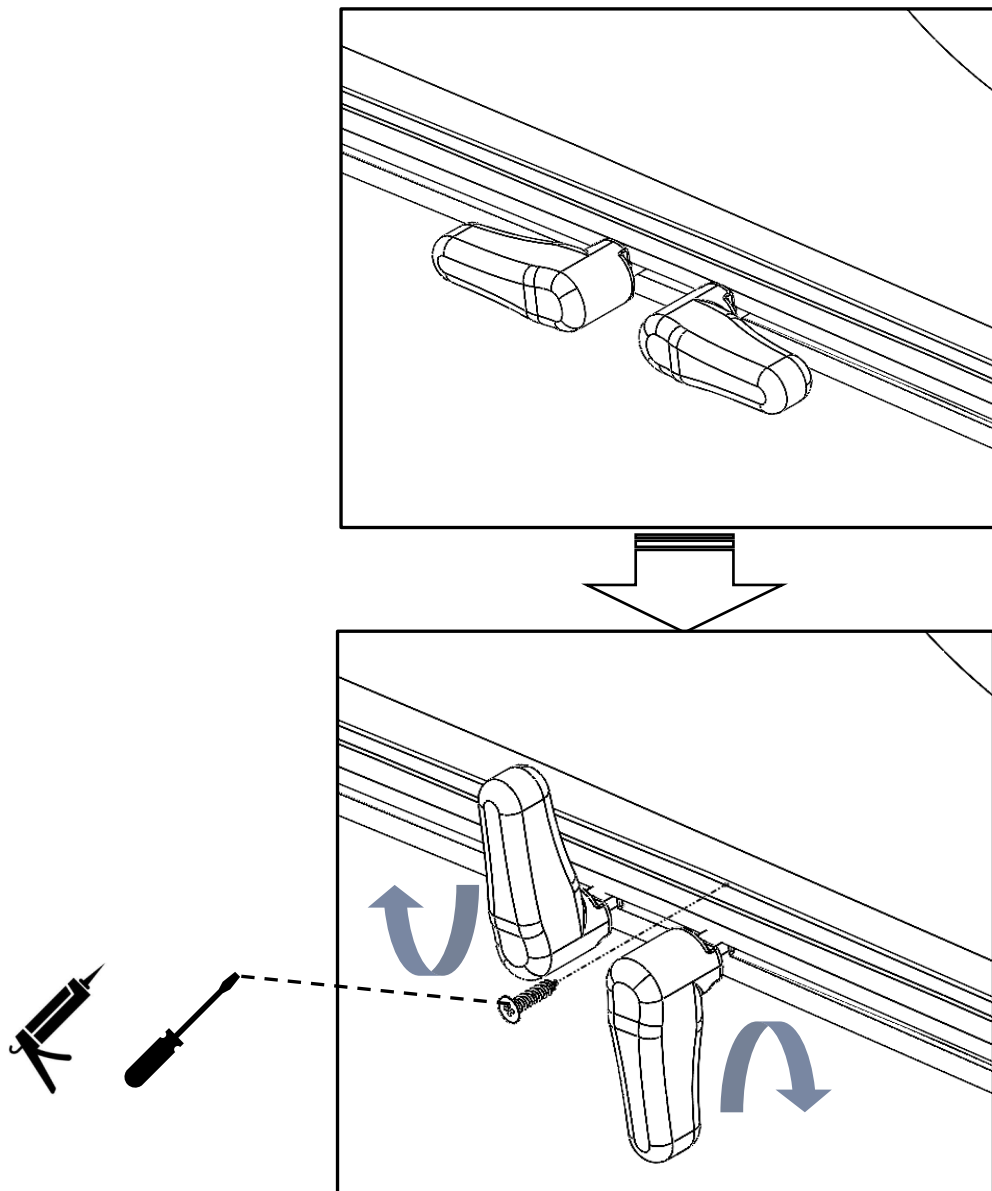
INSTALLATION STAGE 6 (*only applies if canvas is supplied by Makefast)

1. Use 2x canvas securing track opening tool (1 either side of fixing hole), Insert into track and rotated 90 Degrees.
2. Add Silicone sealant to Screw Thread. **TIP:** Dab the end of your screwdriver in silicon and screws will stay attached to screwdriver.
3. Screw fasteners in place (No 4*1/2" Self-Tapping Screw in A4).

! **NOTE:** Ensure screws are not overtightened or heads damaged during this process as this can cause damage to the canvas.

4. Repeat steps for all fixings.
5. Repeat this process for nose cone canvas securing track.

NOTE: Nose cone may have 1 or 2 canvas securing tracks, this depends on whether the inner canvas uses Velcro to attach to the nose cone.

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INSTALLATION STAGE 7

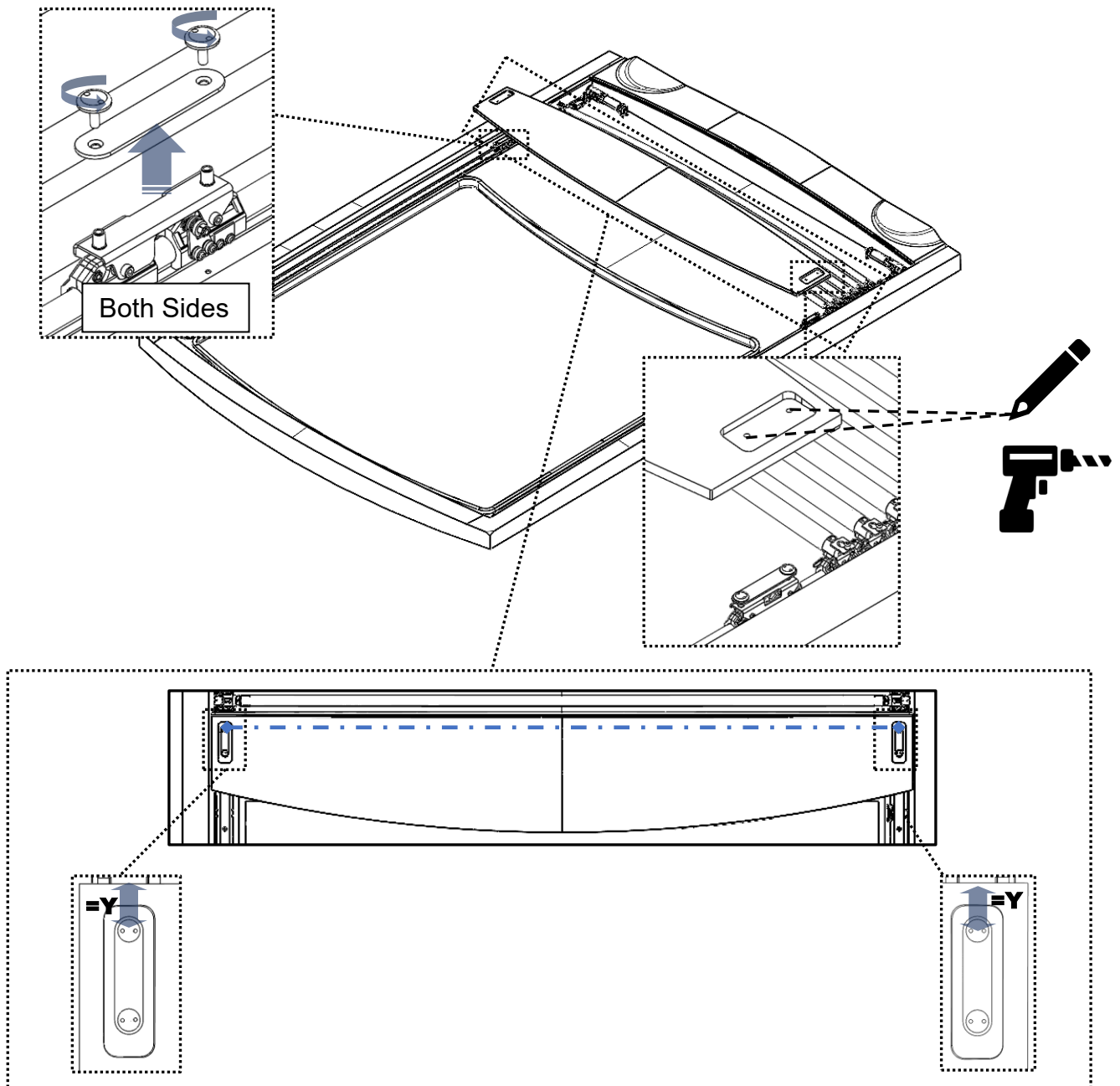
1. Remove nose cone connection plates.
2. Align Nose to the drive cars in their nominal position, drill 12mm holes in correct position for drive car attachment pins.



NOTE: Ensure nose cone is aligned and straight to end of grp.

NOTE: 12mm holes are the maximum size.

NOTE: Under no circumstances should the drive car position be modified in order to align to pre-drilled holes. This will put stress on the system and may cause failure.



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MOVING DRIVE CARS

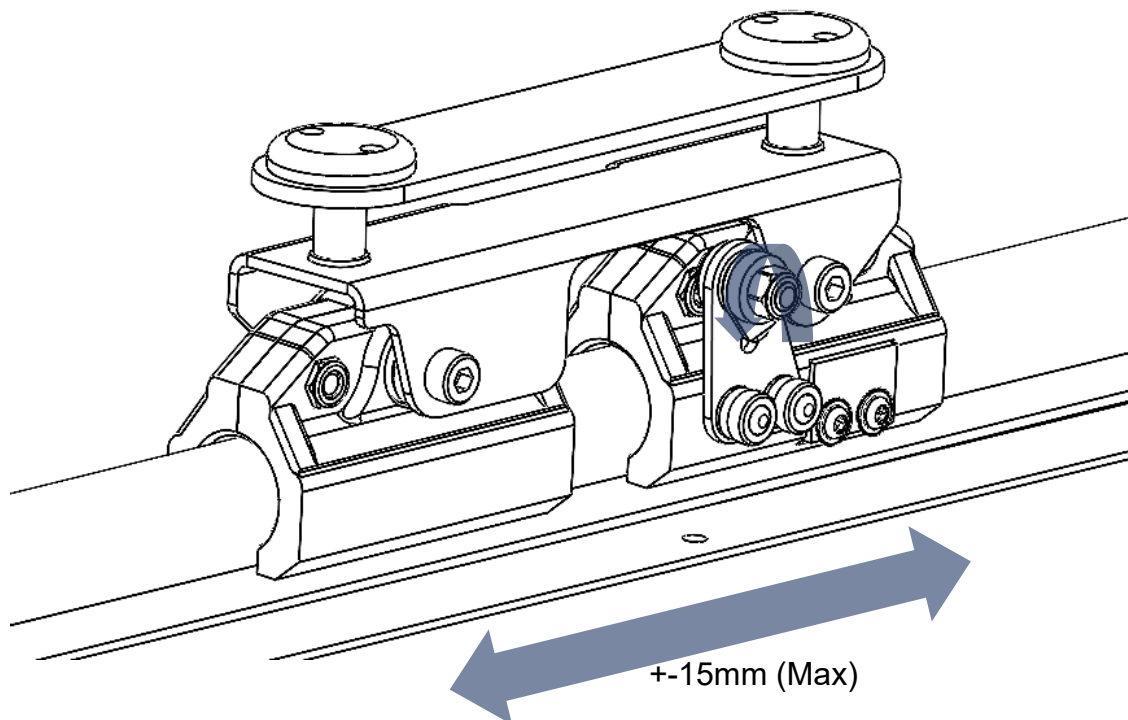
1. Loosen this bolt highlighted below.
2. Move the drive car.
3. Re-tighten the bolt.



IMPORTANT: Cars must be same distance from end on both port and Starboard.



NOTE: Drive cars should not need to be move more than $\pm 15\text{mm}$ max from pre-secured location.



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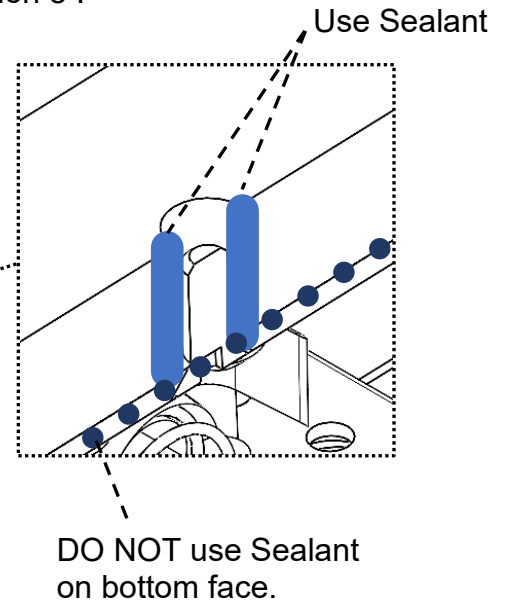
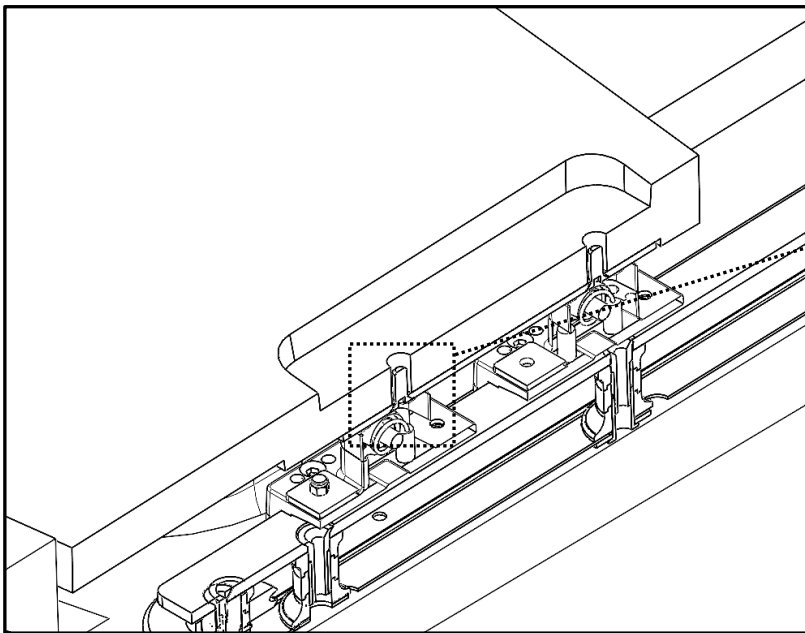
INSTALLATION STAGE 7 (Continued)

1. Slide the nose cone pins through the holes and attach the nose cone plate.
2. Use silicon sealant to fill drive car to nose connection holes to prevent water ingress.

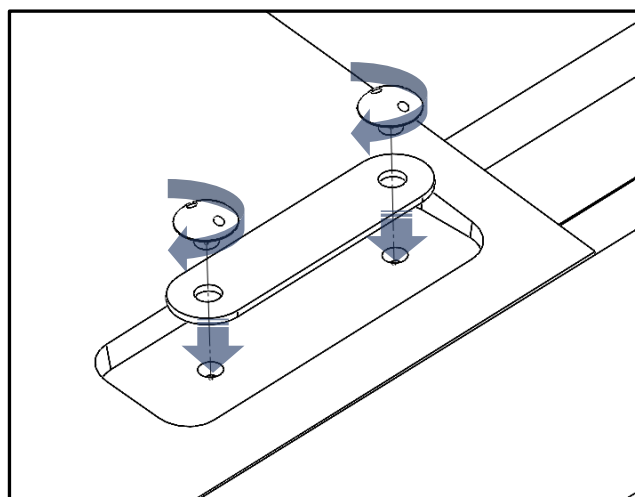


IMPORTANT: Do not use sealant on the underside of the drive car connection point.

3. Attach the Nose cone canvas securing track(s) – See Section 8 .



Section View of Driving Car –
Applies Both Sides



Both Sides

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INSTALLATION STAGE 8

NOTE: The Makefast control box should be installed in dry and accessible area behind a removable panel, should access be required.

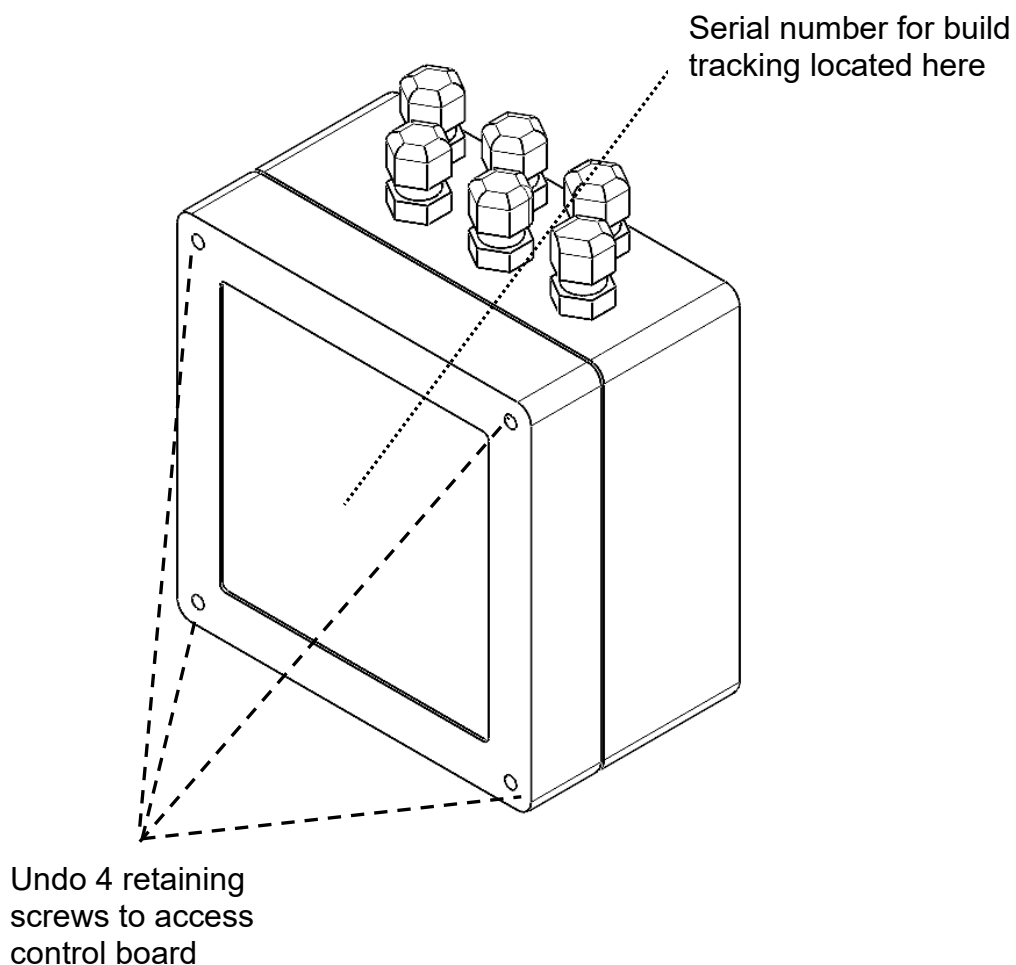
NOTE: The Makefast narrow track system is maintained parallel using a DC Parallel driver.

NOTE: The control box can run on both 12 volt & 24 volt.

NOTE: The control box is best placed as close to the sunroof as possible, for short cable runs from the tracks to motors.

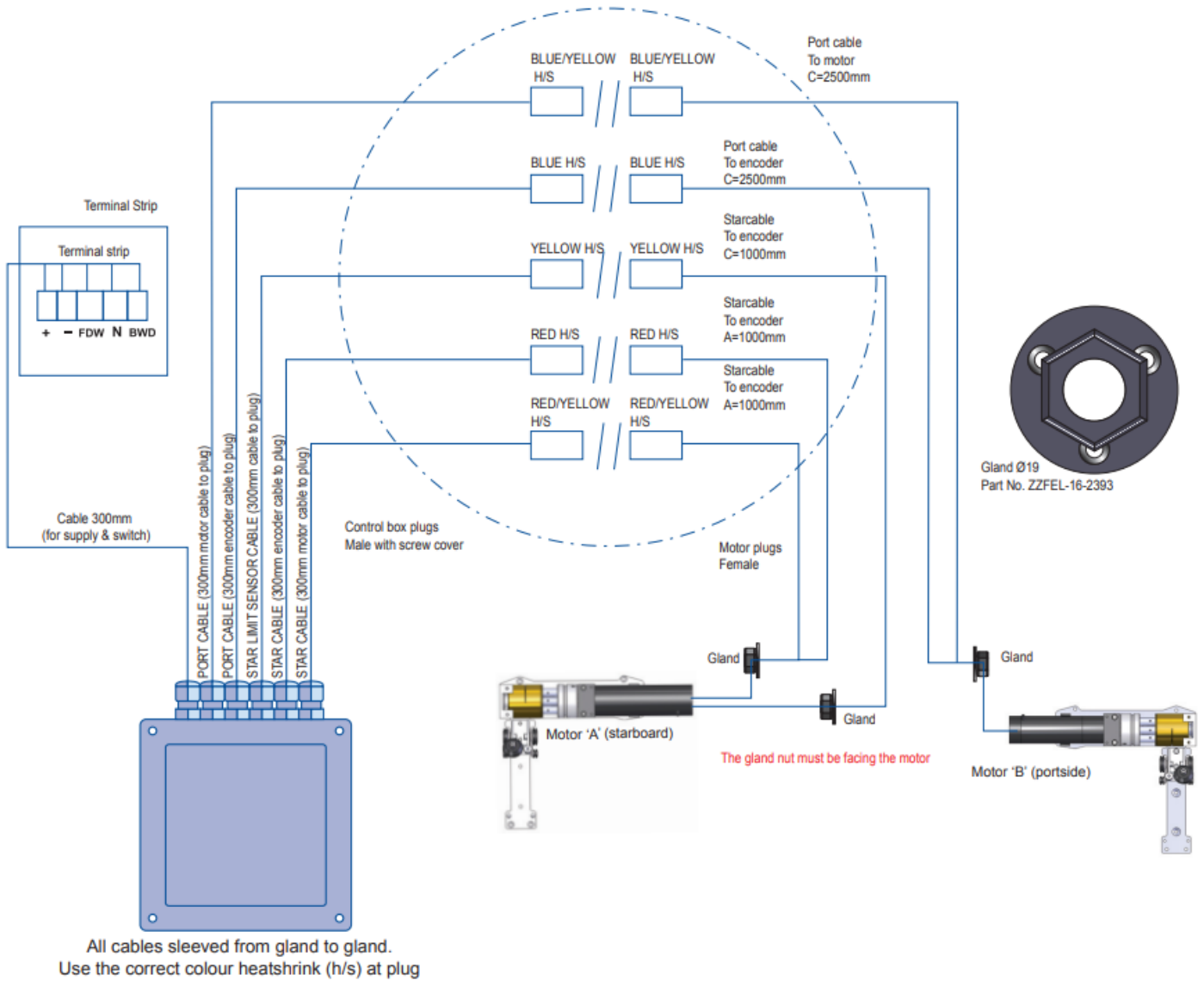
NOTE: You need to provide the sunroof DC voltage supply and the control rocker switch to the box.

NOTE: The supply voltage must be a filtered DC and the ripple should be less than 30% at full load.

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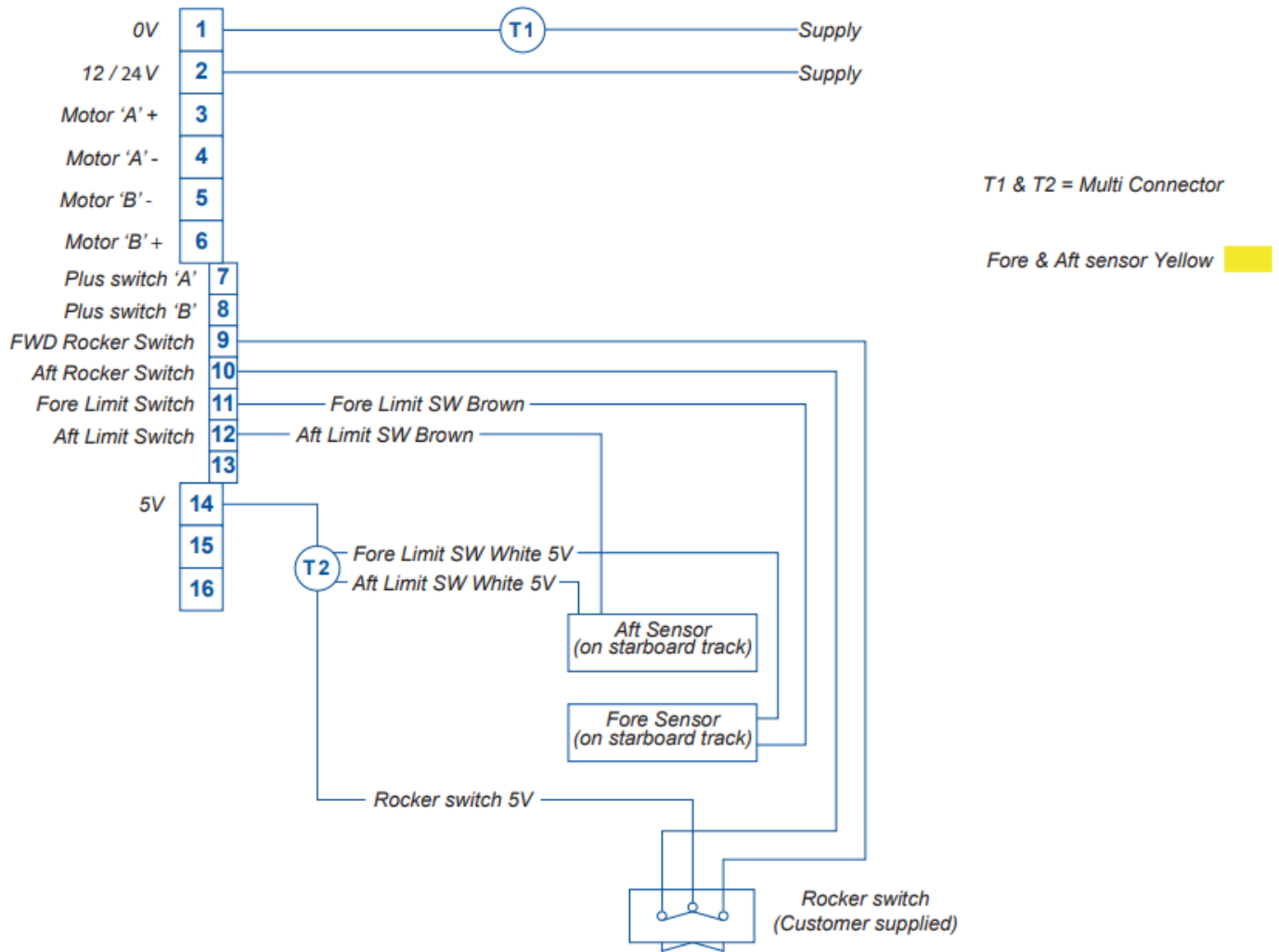
WIRING DIAGRAM 




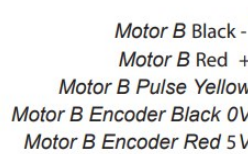
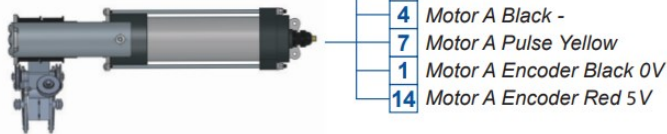
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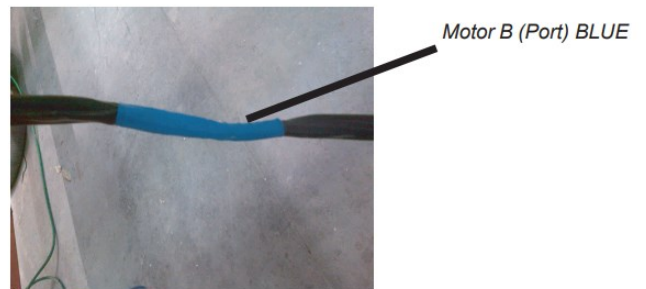
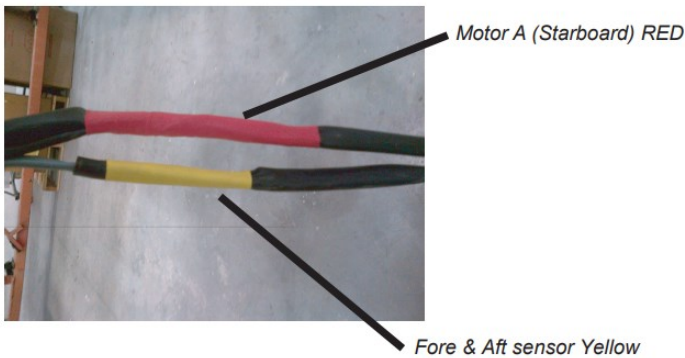
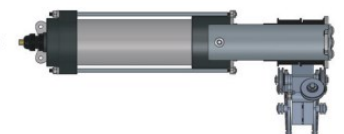
WIRING DIAGRAM (Continued) 



Motor A (Starboard) RED 



Motor B (Port) Blue 



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WIRING

To ensure the correct pulse switch is reading the correct motor, ensure the following:

- Motor 'A' (Terminals 3 & 4) must have its pulse switch plugged into terminal 7
- Motor 'B' (Terminals 5 & 6) must have its pulse switch plugged into terminal 8
- Ensure each limit switch is reading correctly (switches are located fore & aft of the star-board track). Power the system to the front and check that the car stops on the limit switch. If it does not stop the car it is commonly the two limit switches have been wired the wrong way around, so switch terminals 11 & 12 around.

If you are still having problems with the switches not stopping the cars see below under limit switches for how to check functionality.

Common electrical problems:

- If the motors are running in opposite directions to each other switch the polarity of Motor 'A' (terminals 3 & 4)

Control box fault indicators:

The control box has a red LED located on the PCB, this will flash if there is a problem or issue with the system.



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FAULT DETECTION

NOTE: If the system should develop a fault, please check all wiring at the inline connectors

The number of flashes relates to a certain fault as follows:

2 Flashes: This indicates that the current trip has been activated.

Solution: Check there are no obstructions along the track run or the roof is not jamming on the sides of the hardtop/Panel. Also check the tracks are clean. If there is no obvious jam/obstruction it may be a weight issue. Please contact your local Makefast representative who will make the necessary adjustment to the current limit setting.

3 Flashes: This indicates that the pulses have disappeared; these pulses come from the motor and they control the motor speed which keeps the roof parallel.

Solution: Contact Makefast for technical assistance.

4 Flashes: This indicates that there is too big a pulse difference between the motors, so the motors will go out of parallel.

Solution: Check terminals 7 & 8 are wired in correctly as per the wiring diagram.

Other Control Box notes:

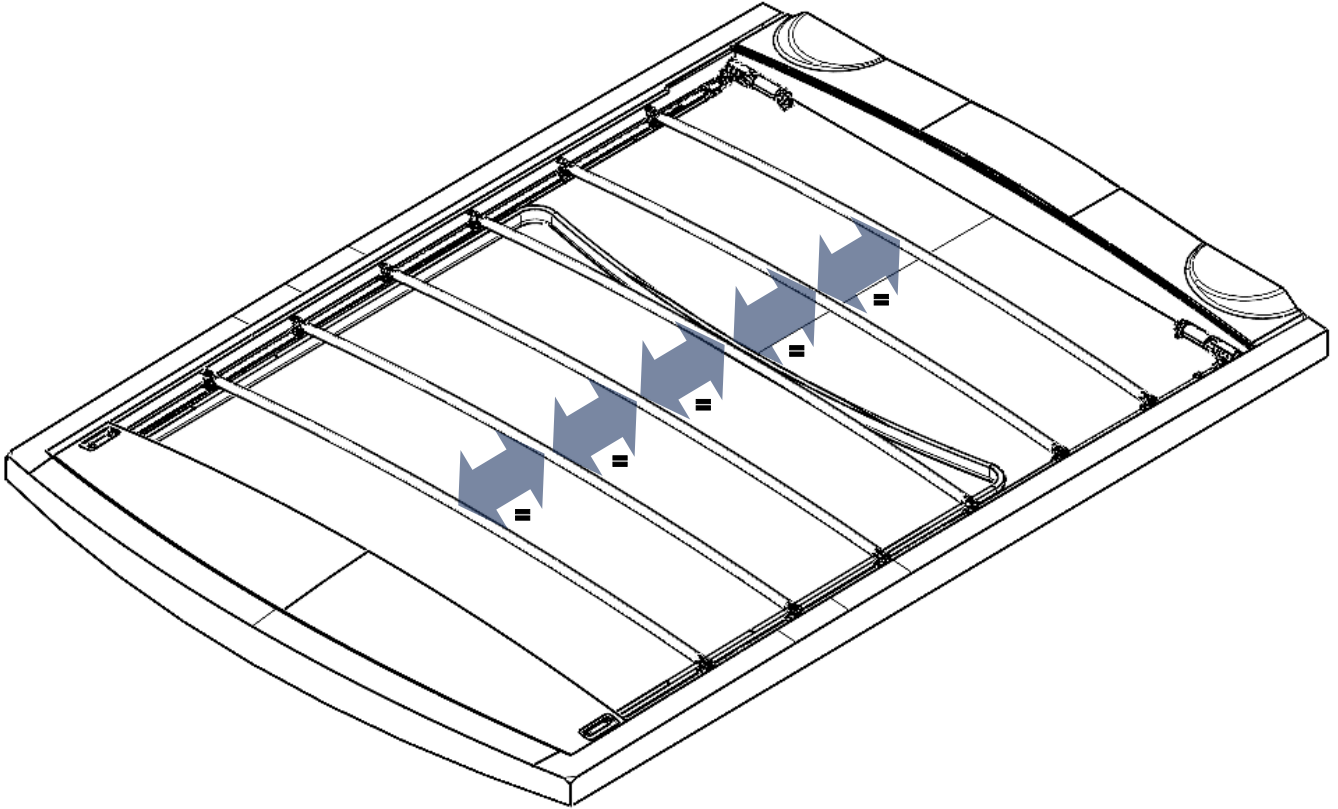
- The motors run at around 2.5 amps @12 volts and 1.25 amps @24 volts.
- There is soft start built into the controllers also.
- A 15-amp slow blow fuse should be fitted onto the positive line in.

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INSTALLATION STAGE 9 (*only applies if canvas is supplied by Makefast)

1. Space out crossbeams evenly along track with the roof in the closed position.

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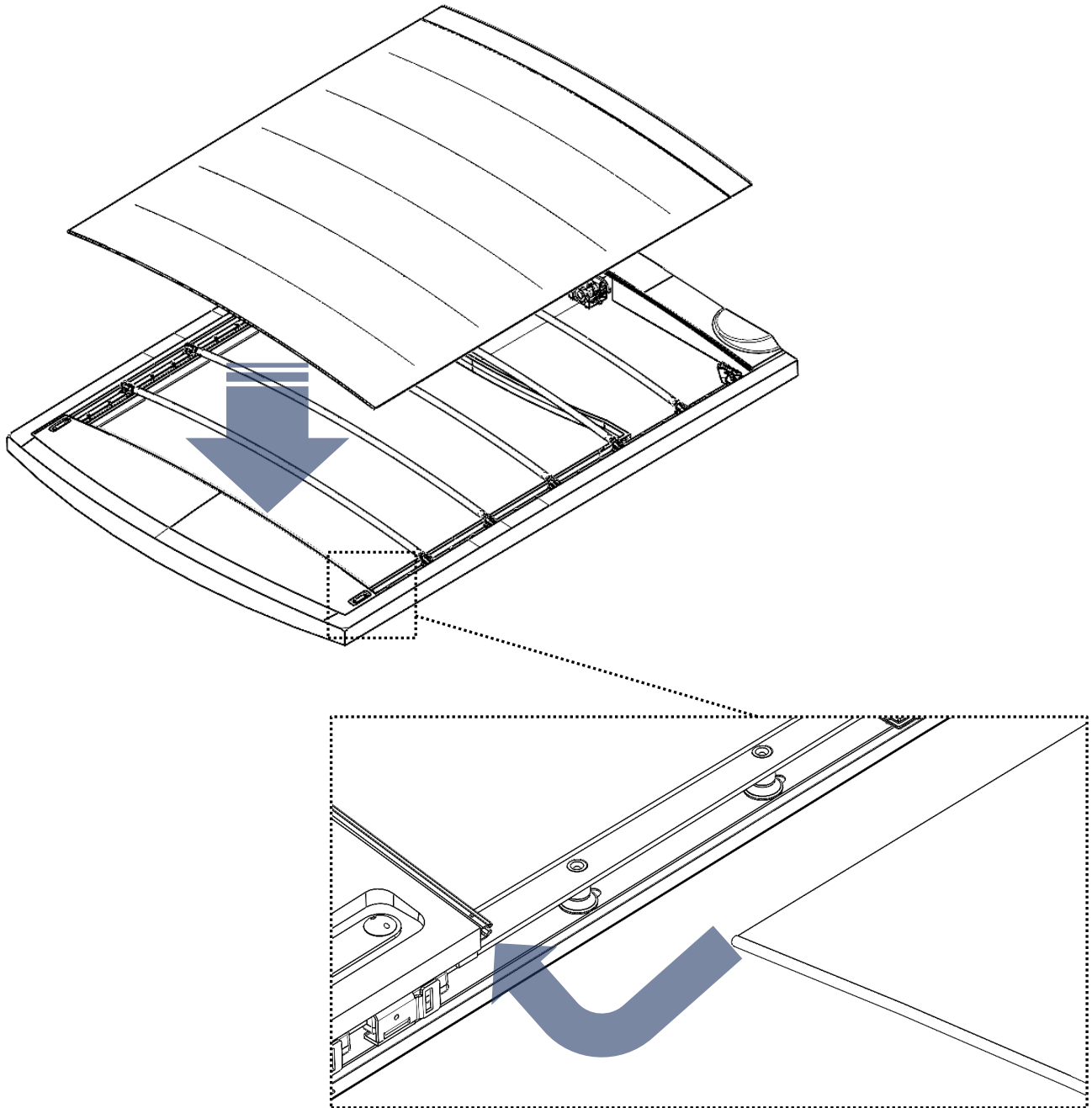
INSTALLATION STAGE 9 (Continued)

1. Slide the fwd end of the canvas piping into the trim track of the nose cone.

NOTE: Silicon grease can be used here to aid sliding.



NOTE: Before sliding in Canvas always double check the canvas securing track fixings are fully secured and there are no sharp edges protruding into trim track void, as this can damage the canvas.

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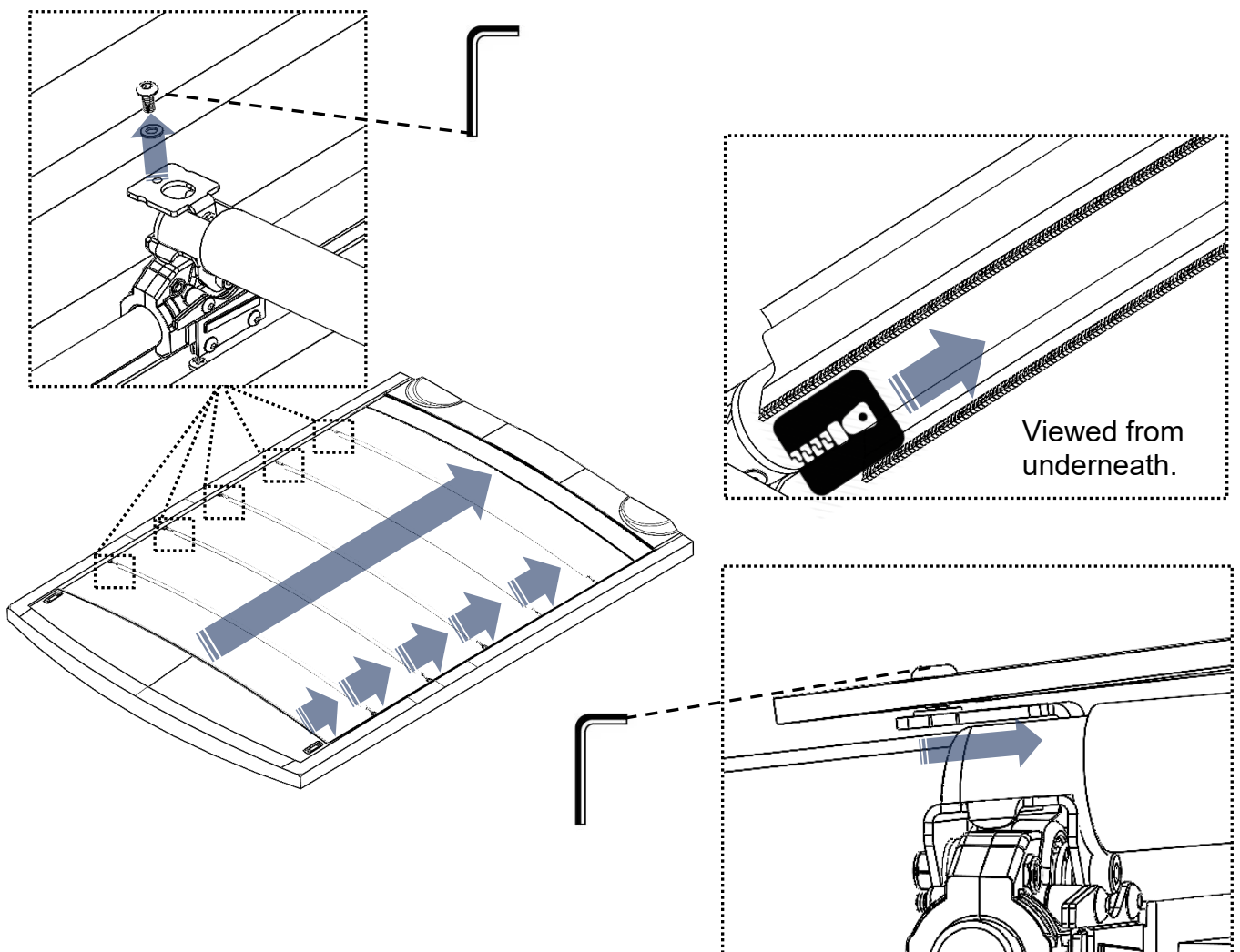
INSTALLATION STAGE 9 (Continued)

2. Remove Canvas securing Screw, and Nylon Washer from spring clip.
3. Pull canvas over the top of crossbeams.
4. Move the crossbeams to align with the zipped sleeves of the canvas
5. Secure the Canvas to the cross beam with zipped sleeves.
6. Push back the spring clip to align with the holes in the canvas. Use the canvas securing screw, and the nylon washer underneath the canvas
TIP: Crossbeams can be moved forward to aid this step.

Alternative: if no pockets, spring clips to be pushed back (both same ends) and canvas to be drilled and screwed to align with the tensioned spring clip.

TIP: Use blocks either end to push back spring clips and wedge between crossbeam and GRP

TIP: Compress spring clips, lay canvas centered inside roof, lift edge of canvas where it meets the spring clip and mark the securing hole on the face of the spring clip with a marker pen. Now press the canvas back into positions on the ink of the marker pen, to mark drilling positions.

**Legal note:**

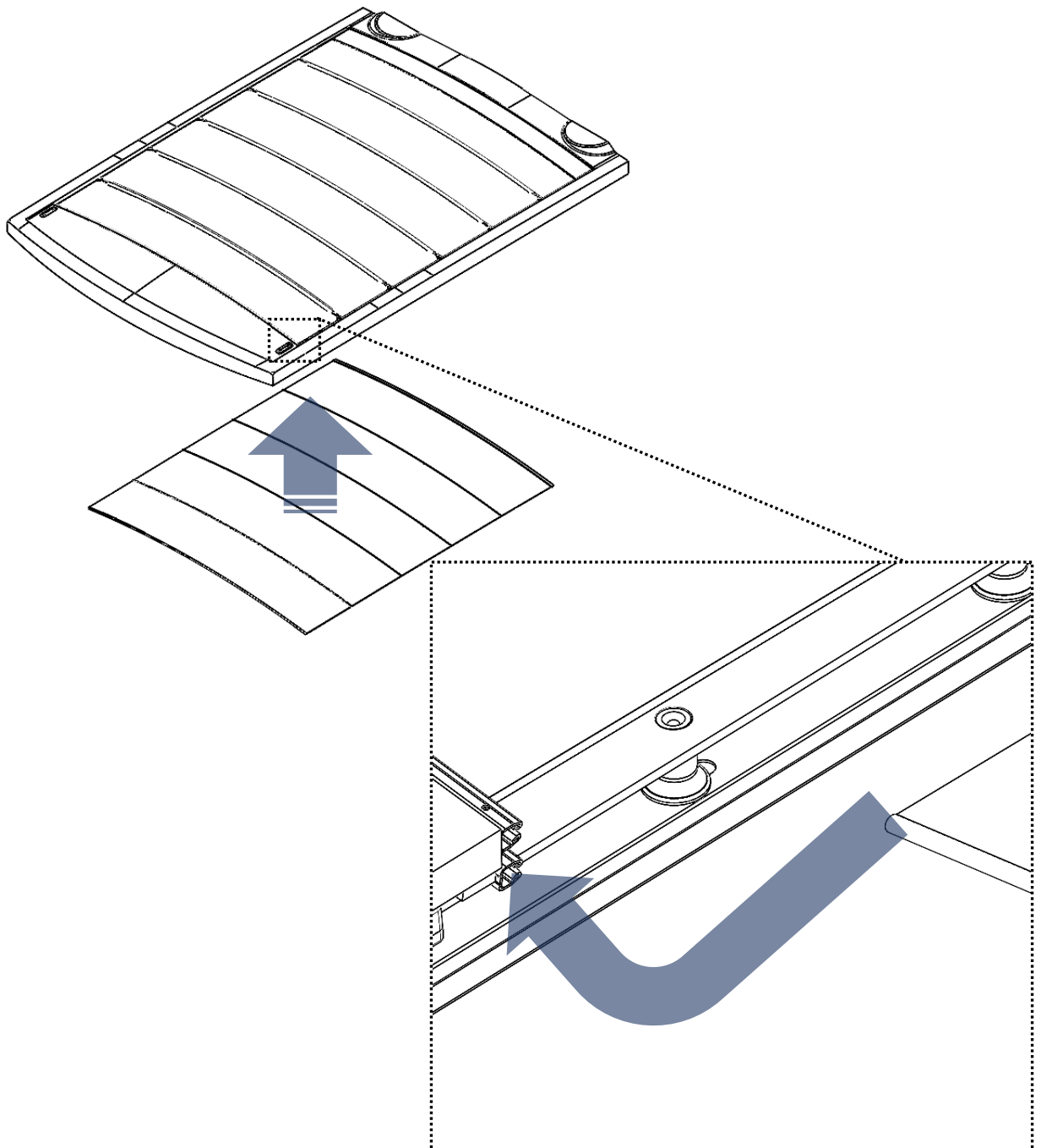
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INSTALLATION STAGE 10 (*only applies if canvas is supplied by Makefast)

1. Install inner liner, if using canvas securing track for attachment to nose cone, slide fwd end Piping of the inner liner into trim track. If no trim track is present for inner liner, then attach with Velcro at the end inner liner installation process.



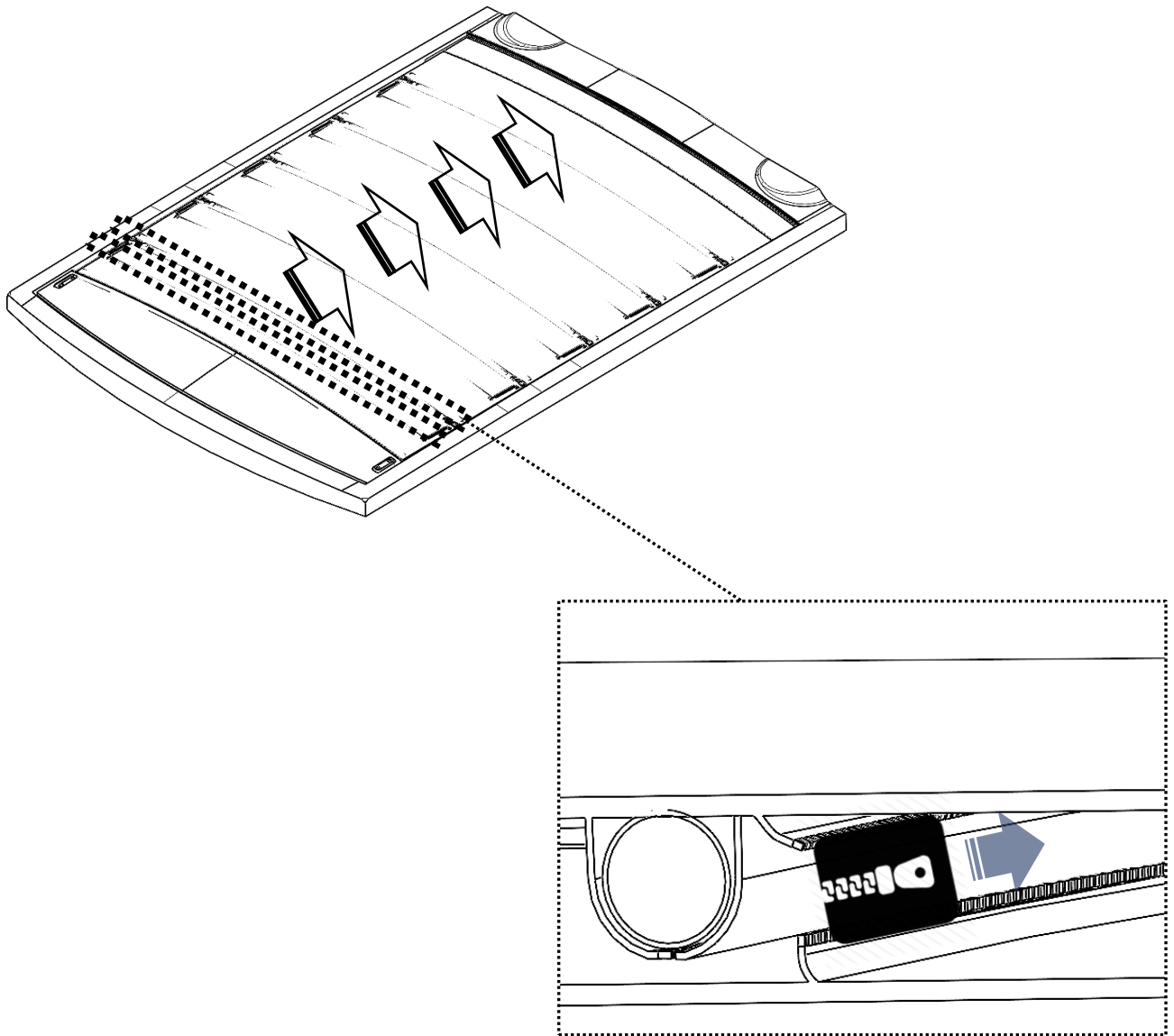
IMPORTANT: Ensure environment is dust and dirt free when installing the inner liner

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INSTALLATION STAGE 10 (Continued)

2. Attach the fwd end of inner to the zip on the fwd most crossbeam assembly.
3. Moving aft repeat this process until inner canvas is attached to all crossbeams.

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INSTALLATION STAGE 11 

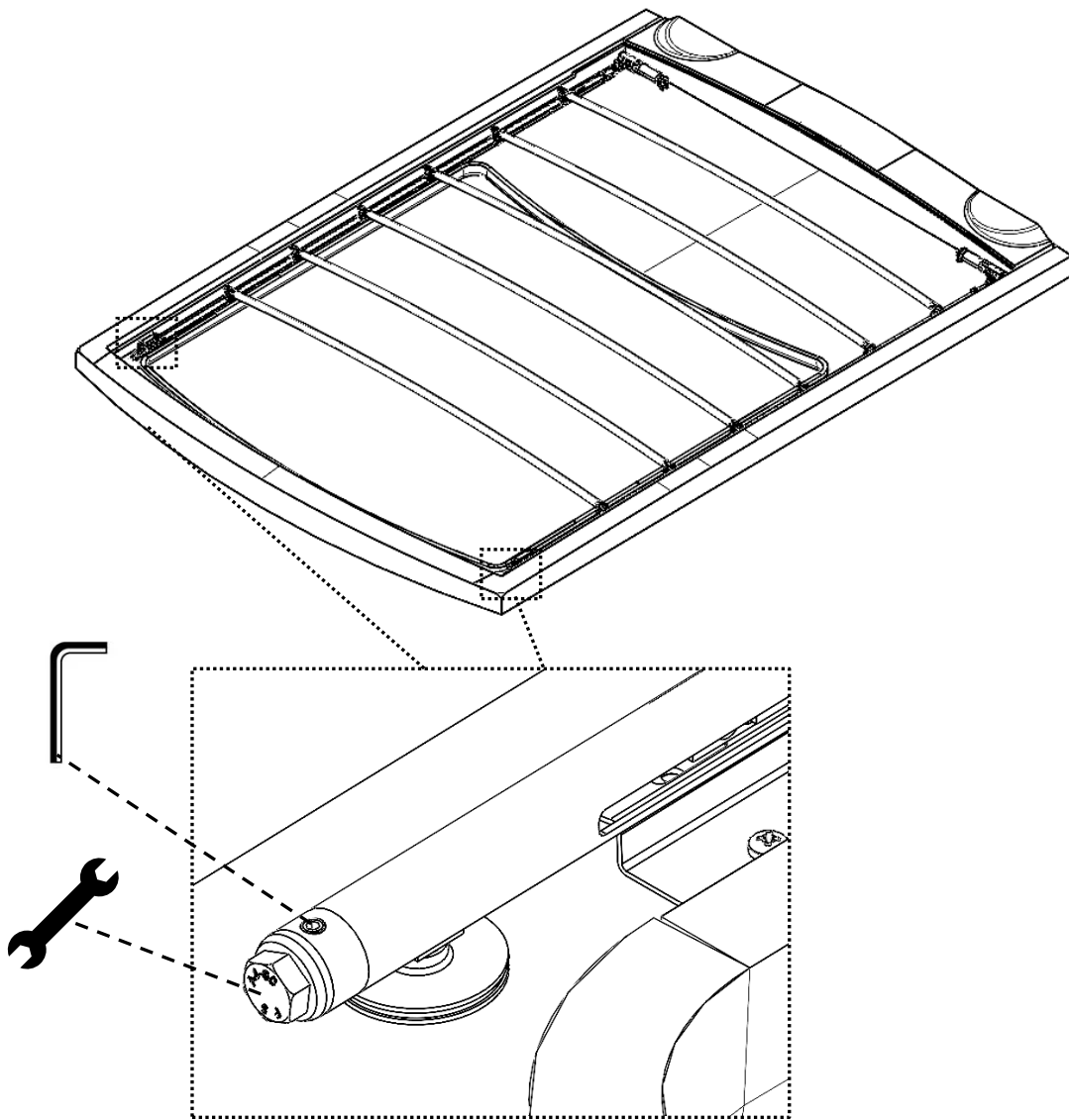
With nosing and canvas on, before the roof is operated the drive cables must be tensioned, using the forward tensioning wheel.

1. Open the roof approximately 300mm from the closed position to gain access to the drive cable tensioners.



IMPORTANT: Do not operate the roof fully open with the nosing and canvas attached until the cables have been tensioned and silicon grease applied to the tracks.

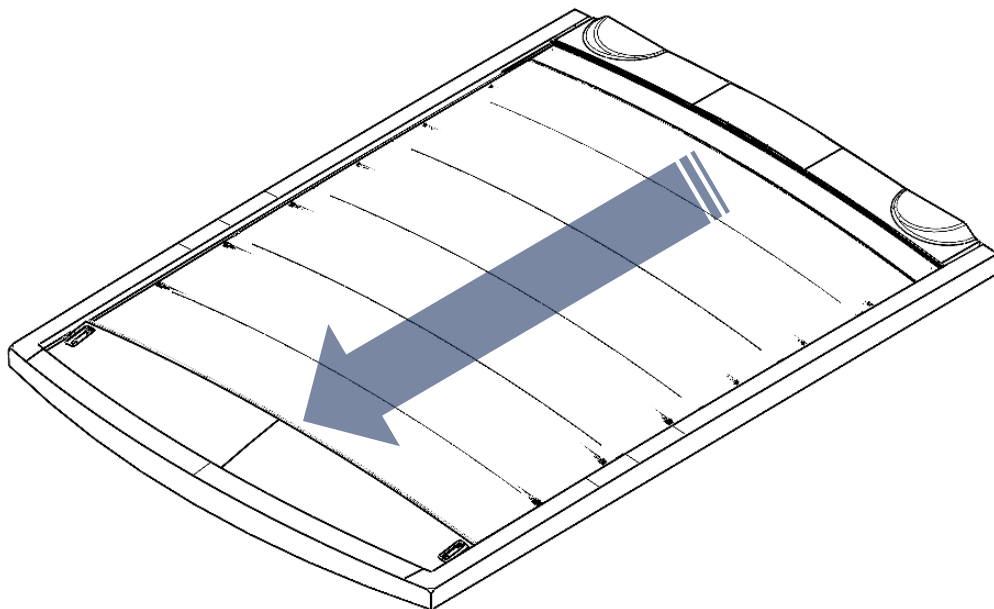
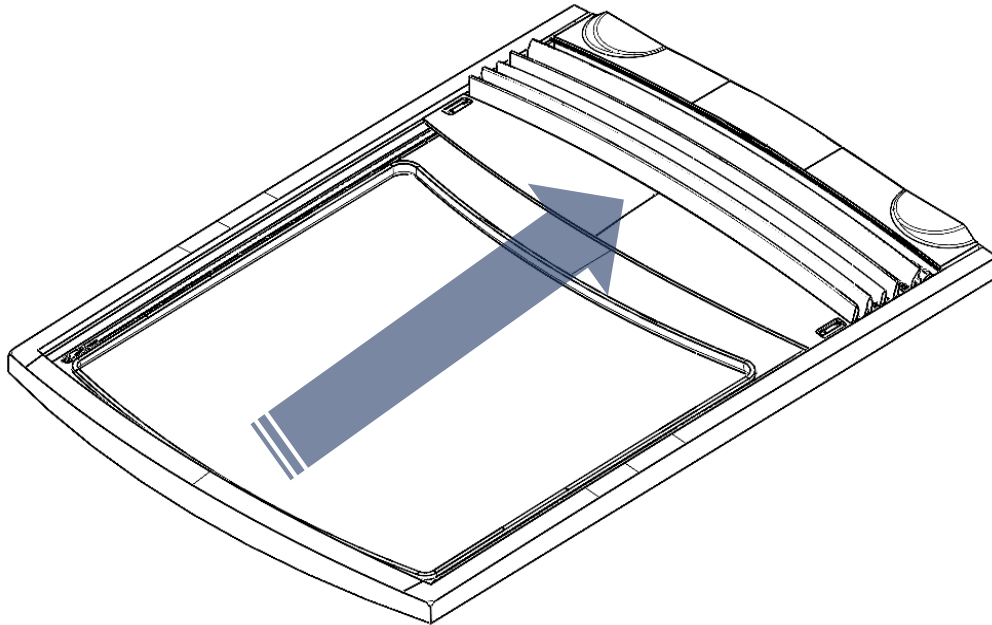
2. Release grub screw.
3. Rotate bolt using spanner until sufficient tension is achieved at the drive cables.
4. Grease tracks (all around the round) thin layer make sure it is added in all exposed areas including between cars.

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INSTALLATION STAGE 12 

- On first operation of roof move roof to fully open position to align and square all crossbeams.
- Move to closed position to secure canvas at aft.

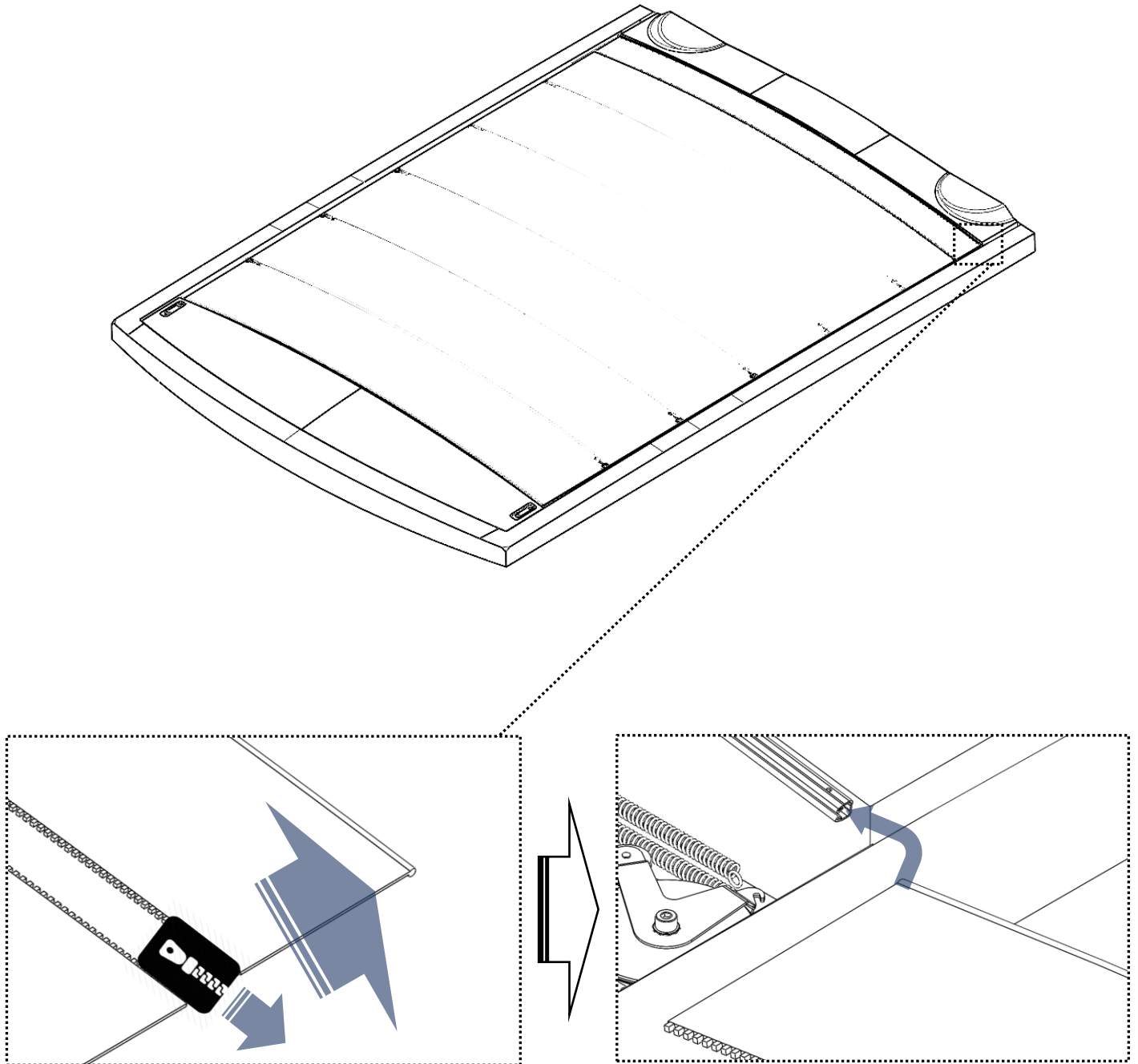
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INSTALLATION STAGE 13 (*only applies if canvas is supplied by Makefast)

1. Unzip the removable aft section.
2. Feed piping of removable section through Aft canvas securing track.

NOTE: Silicon grease can be used here to aid sliding.

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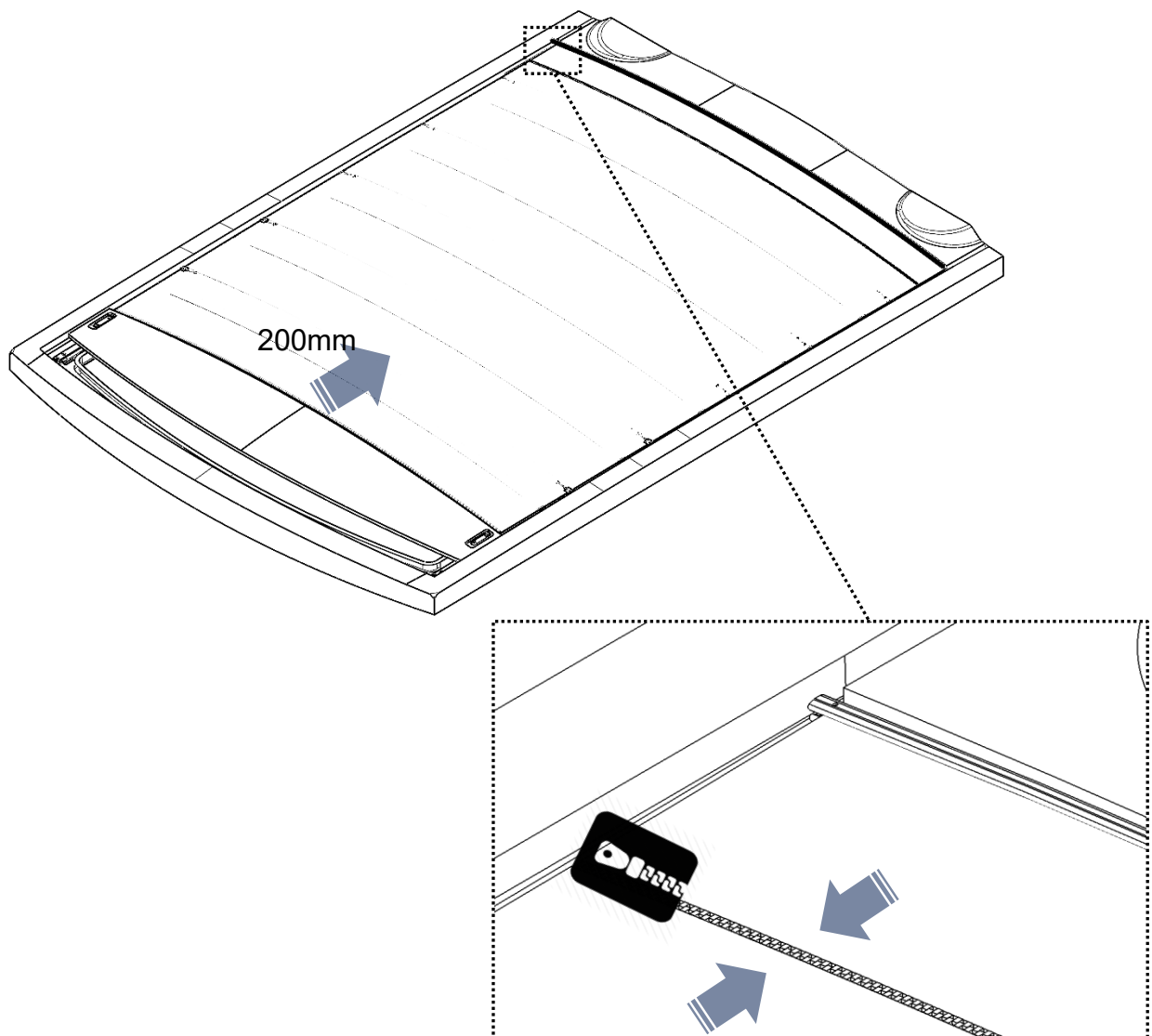
INSTALLATION STAGE 13 (Continued)

1. Open the roof 200mm (approximately).
2. Secure the main body of the canvas to the removable section via the zips.
3. Move system to fully closed position and cover removable section zips with Velcro flap.



NOTE: If system is using Velcro for fwd attachment of inner canvas liner, attach inner liner to Velcro at this stage with the roof closed.

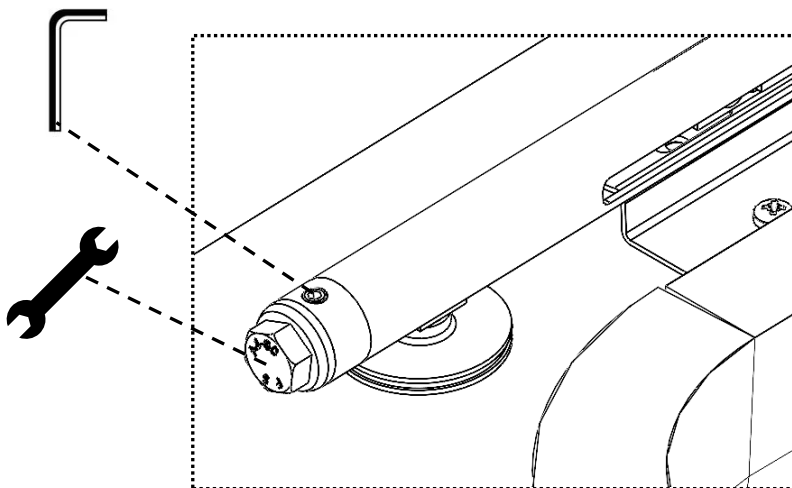
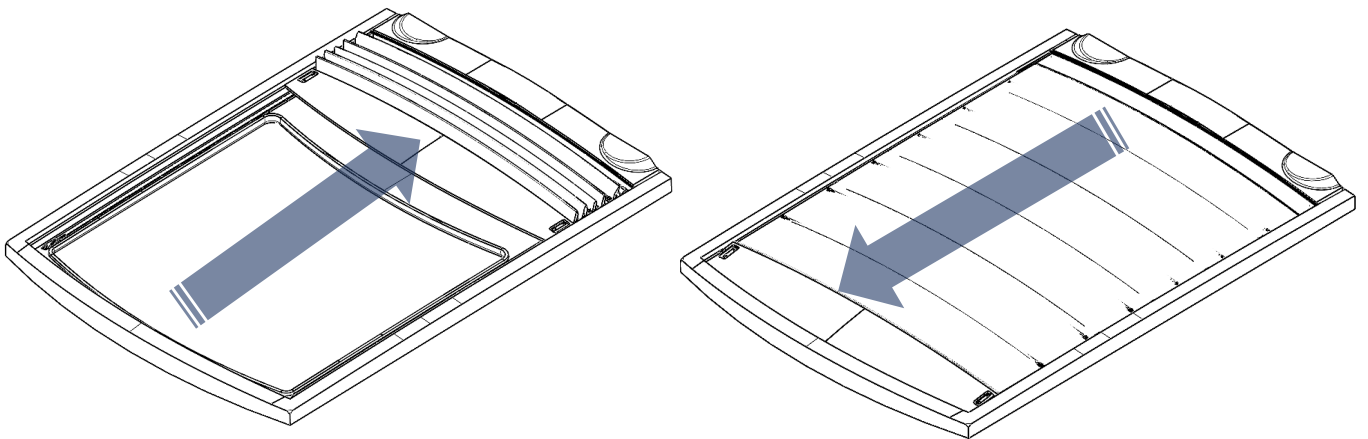
NOTE: If the Velcro flap is attached to the removable section with the roof in the open position this can stop the roof from closing fully.

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INSTALLATION STAGE 14

1. Move roof to full open and fully closed positions 3 times.
2. Re-tension the system at the FWD tension wheel.
3. Repeat steps 1-3 and check the cable tension and adjust if needed. This is to remove the stretch from the drive cables and allow the system to work correctly. **(System failure due to noncommissioned systems will not be covered under warranty)**

**Legal note:**

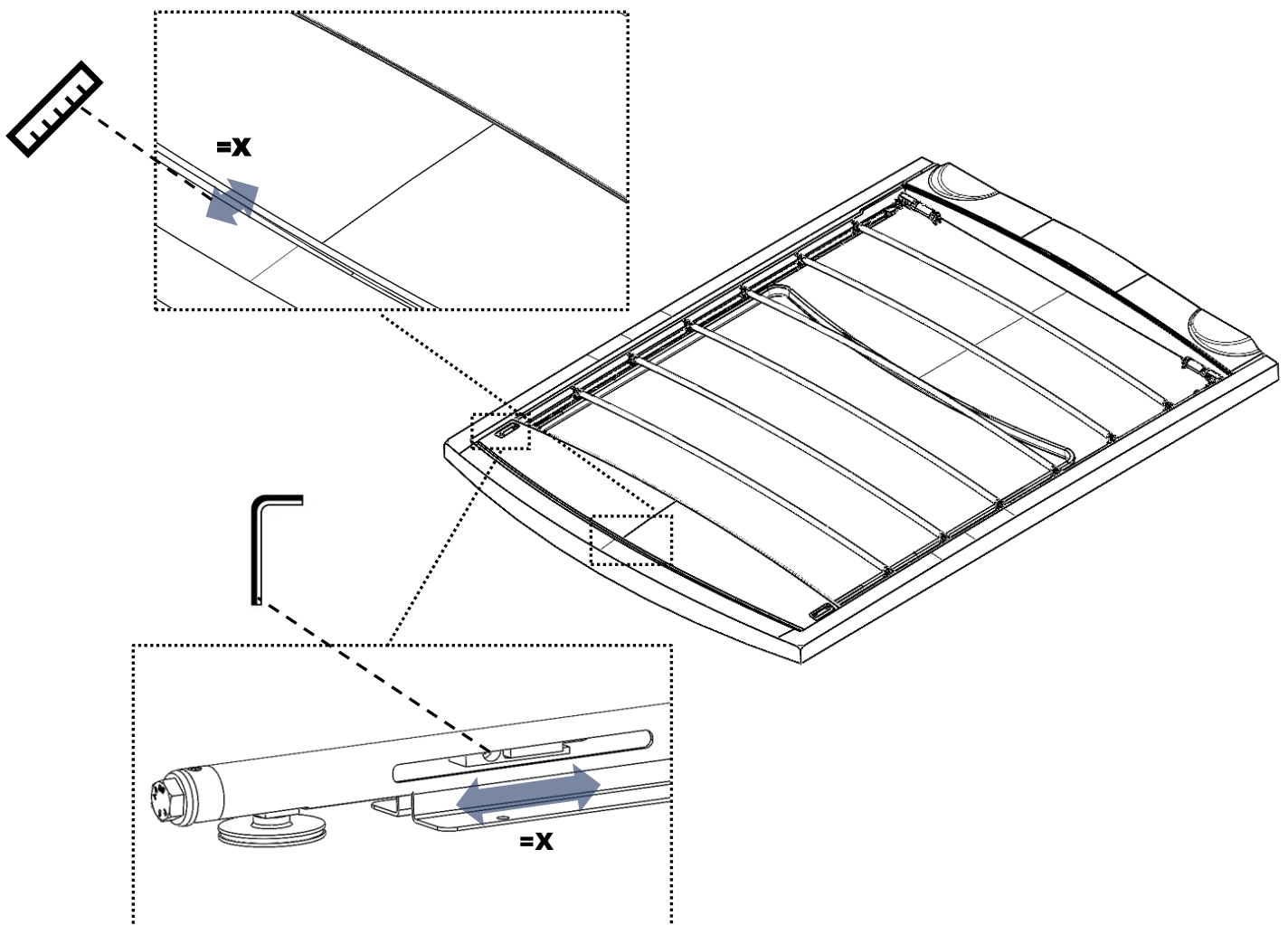
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INSTALLATION STAGE 15

NOTE: Sensors are preset in Starboard track, and will not allow the roof to fully open or close until adjusted

1. Move the roof to the closed position.
2. Measure distance between nose cone and GRP (X).
3. Move the sensor the same distance FWD (X), but releasing grub screw and moving. (Roof may need to be opened slightly in order to access sensor) .
4. Aft sensor position can be moved in the same manner as required.

! IMPORTANT: Always confirm the roof system is stopping on the sensors and not at the end of tracks, or from nose cone interference, to check this, fully close the roof and press the console switch to close the roof again, if no noise can be heard the sensor has activated, this should be repeated for open position.

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MAINTENANCE

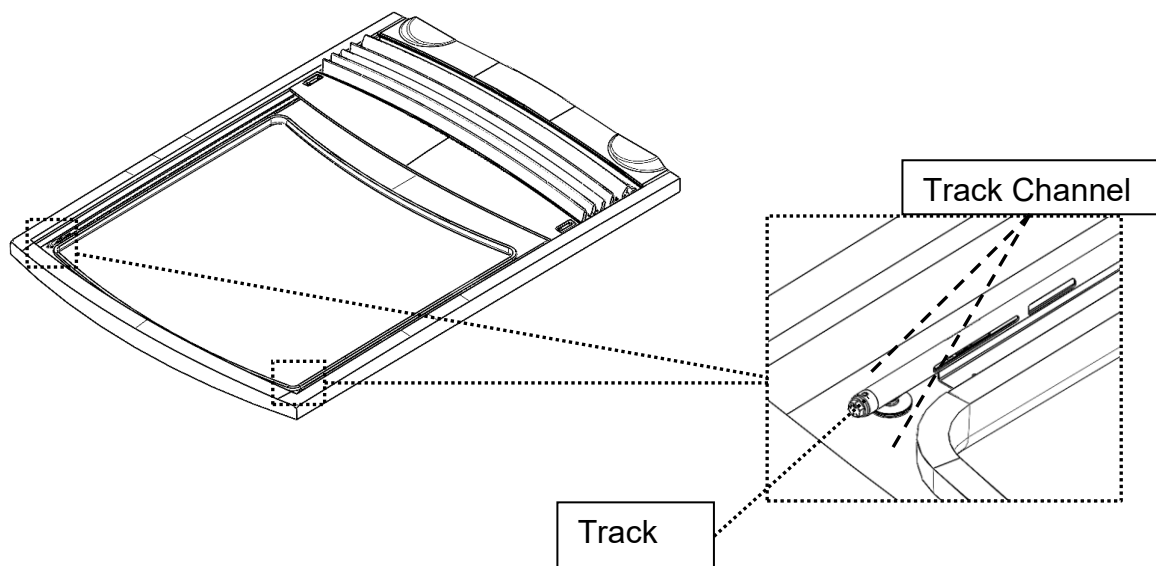
To ensure your sunroof operates smoothly and to prolong the life of your roof, the following tasks should be carried out at regular intervals.

The tracks on both sides should be cleaned down and lubricated after any long period of navigation or in 2 months intervals.

To clean the tracks:

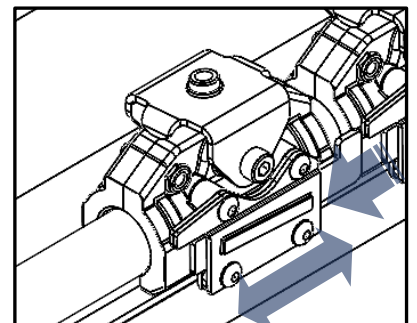
- Wipe down each track with fresh soapy water, remove any traces of dust or debris from the tracks.
- Remove any foreign objects from the track channels and clean the cable to minimize the amount of dirt.
- Lubricate track with Superlube Synthetic Grease.

NOTE: Grease track only, no grease to be applied to drive cables.

**MOVING THE CROSSBEAM CARS (CONSTANT TENSION)**

1. Depress the trigger at the aft of the crossbeam car.
2. Move the car as required.

NOTE: Ensure crossbeams remain perpendicular to track

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TROUBLESHOOTING

In the unlikely event of your sunroof failing to operate please refer to this page to help you solve the problem or give the dealer the correct information on what the malfunction is with the roof.

No movement:

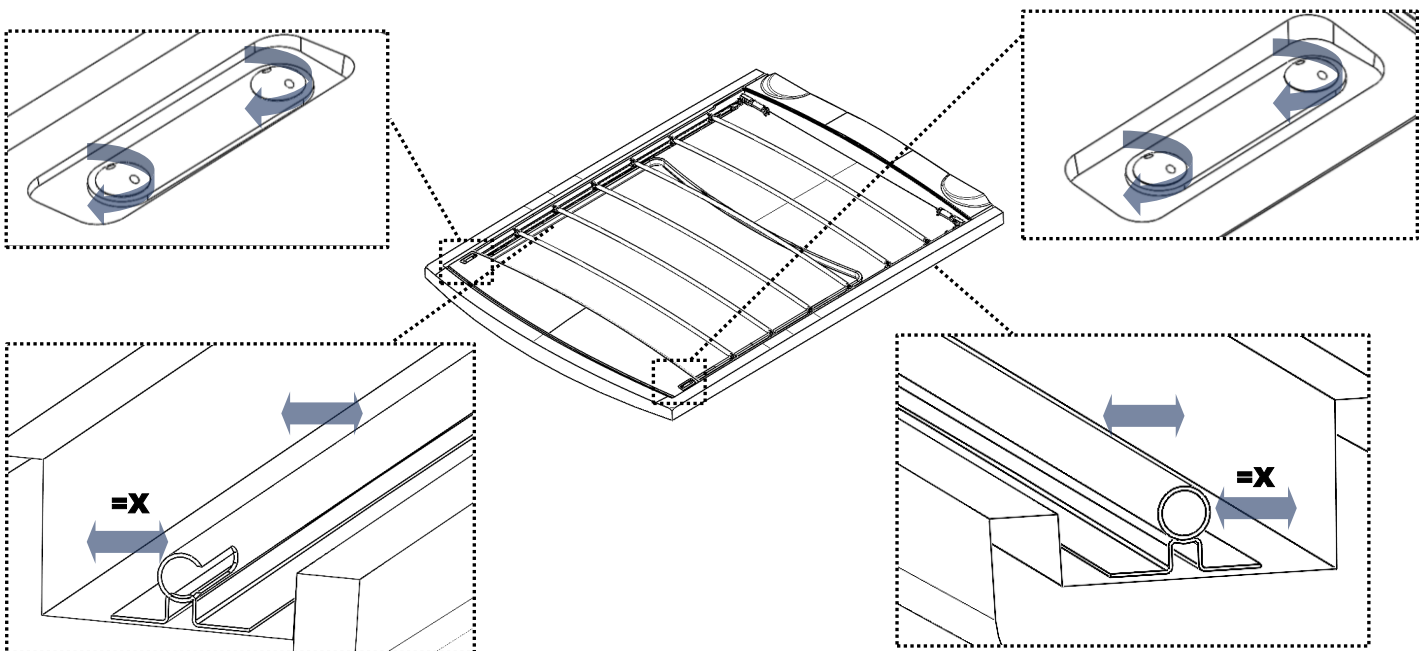
- Check power; ensure your batteries are fully charged and power is going to the roof i.e. no trips have been triggered (refer to boat manufacturer's guide).
- If you have power but still have no movement check the following:
 - Check that nothing is blocking the front of the roof travel as you may have triggered the trip.
 - Check that there is sufficient clearance between the moulding structure and nose/panel mouldings. **Contact dealer for assistance.**
 - Check the cables have not failed. **Contact dealer for assistance.**
 - If the roof still does not travel, if this is the case there is usually an electrical fault.
 - Roof runs one way but not the other. **Contact the dealer quoting a sensor problem.**

Roof is Bouncing

- Cables need tightening.
- Tracks need lubricating.
- Nose cone (canvas only) need balancing.

Sunroof is vibrating or noisy:

- If the roof is vibrating when in operation, please check the following:
- The tracks must be cleaned and lubricated as per maintenance guide.
- There should be no obstacles on the line of roof travel.
- Check the bolts on the nose mouldings are tight.
- Check the sunroof is parallel.



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WARRANTY

Any product defect notification must be accompanied by a serial number, date of purchase, contact name, address and daytime telephone number. If this information is not provided, Makefast Ltd may be unable to process your warranty claim.

1. Makefast Ltd (We, Our, Us) warrants this Product (excluding labour, travelling and expenses) to be in free of manufacturing defects during the period of warranty. The period of warranty is 24 months and commences on the date of despatch of the Product from Makefast Ltd. Extended Warranty is available beyond the manufacturers 2-year standard Warranty. Please contact Makefast or your Boat Broker for details.

2. The Warranty consists of (at Makefast's discretion) either repair or replacement spare parts only that will be provided on an exchange basis and will either be new, equivalent to new or re-conditioned. All replaced spare parts and Products shall become the property of Makefast, and are required to be returned to Makefast for analysis, and acceptance of warranty terms.

3. Unless agreed in writing, the Warranty will not apply: (a) because you have not used, stored or fitted the Product properly; or because you are in breach of the terms of this warranty or the Contract terms, or have not followed Our instructions in the product manual, or because of damage or defect due to wilful neglect or negligence by anyone; (b) to loss of quality, degradation of performance or actual damage that results from the use of spare parts or other replaceable items that are neither made nor recommended by Makefast; (c) to a loss of quality, degradation of performance or damage that results from the installation of, damage to, or modification to the Product by someone else other than Our representatives or because of damage that results from changes required by you or a Third Party; (d) to damage that results from your connection of other fittings or accessories to the Product which We have not approved or your connection of other equipment or software not approved by Us; (e) because of external causes outside Our control which shall include accident, fire disaster or burglary; (f) because of faults caused by shock or fall, sand, dust, dirt, damp or corrosion, leaky batteries, repair by unauthorised personnel; (g) because of any malfunction or specific requirement of any other item of hardware, which you have linked to the Product in respect of items not included in the Contract.

4. As far as the law allows, we will not be responsible for the following: (a) loss of income, profits (actual or anticipated), and contracts or for any other business-related loss; (b) indirect or consequential loss or damage howsoever caused; (c) compensation for fitting of replacement parts.

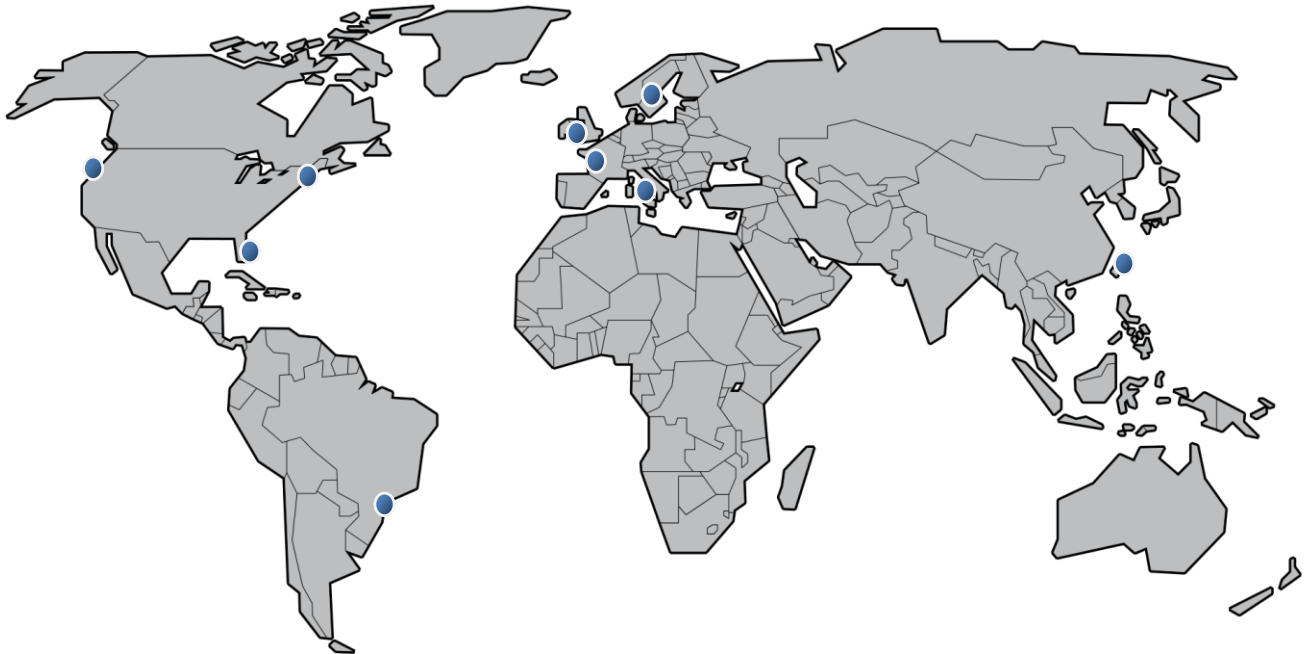
5. These conditions shall in all respect be governed and construed in accordance with English Law and subject to the exclusive jurisdiction of the English Courts.

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SERVICE CONTACT

Please ring Makefast Ltd +44 1686 629010 for contact details in the highlighted areas:



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