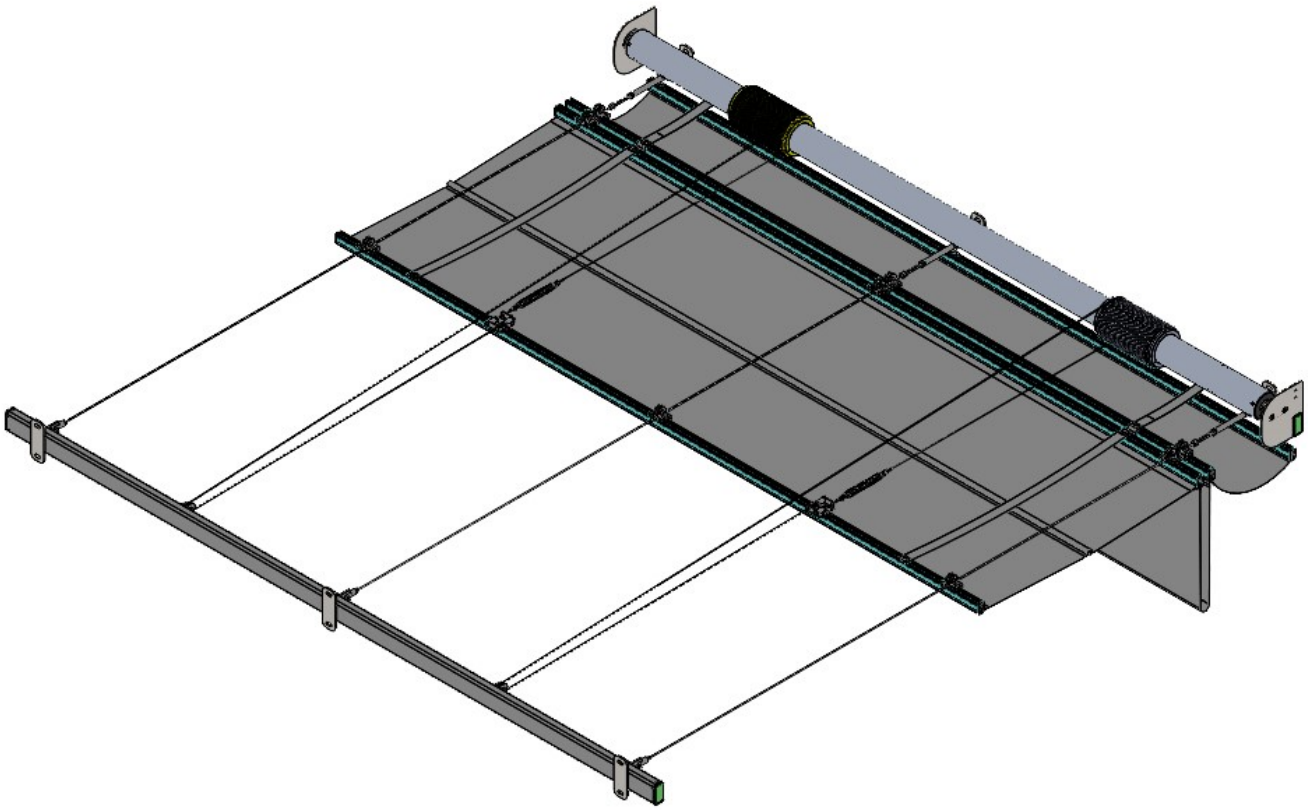
TESS™ 512

Installation Manual



Please read these instructions in full prior to starting your installation.

Guthrie Douglas

Important information about TESS Systems

Guthrie Douglas TESS Systems are technical products that require installation, servicing and maintenance by professionals with the appropriate skills. If in doubt, please contact us for further advice and training.

All products are designed, tested, and manufactured in line with relevant EU regulations. General certificates of conformity and declarations of performance are available on our website www.guthriedouglas.com .

Alternatively please contact us for any special local testing requirements.

As the product installer, you are responsible for ensuring that the installed product conforms with relevant standards and legislation and the installation is carried out in a safe manner following local regulations.

TESS Systems are designed to operate at temperatures between 0 and 55^{o}C, and within a wind classification as stated at the point of sale where appropriate.

If operating conditions are likely to exceed these limits, do not commission the systems.

Please contact us for advice.

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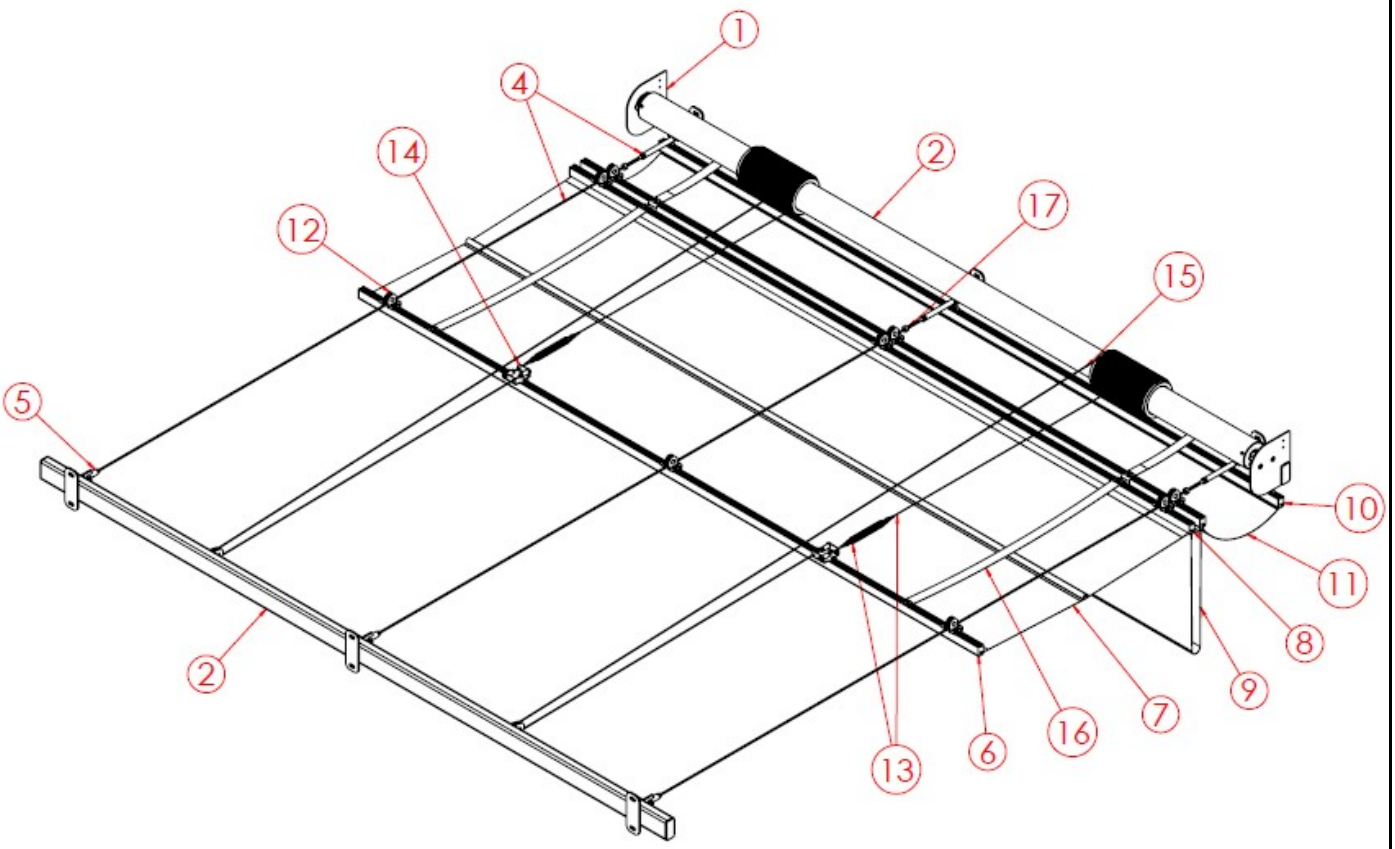
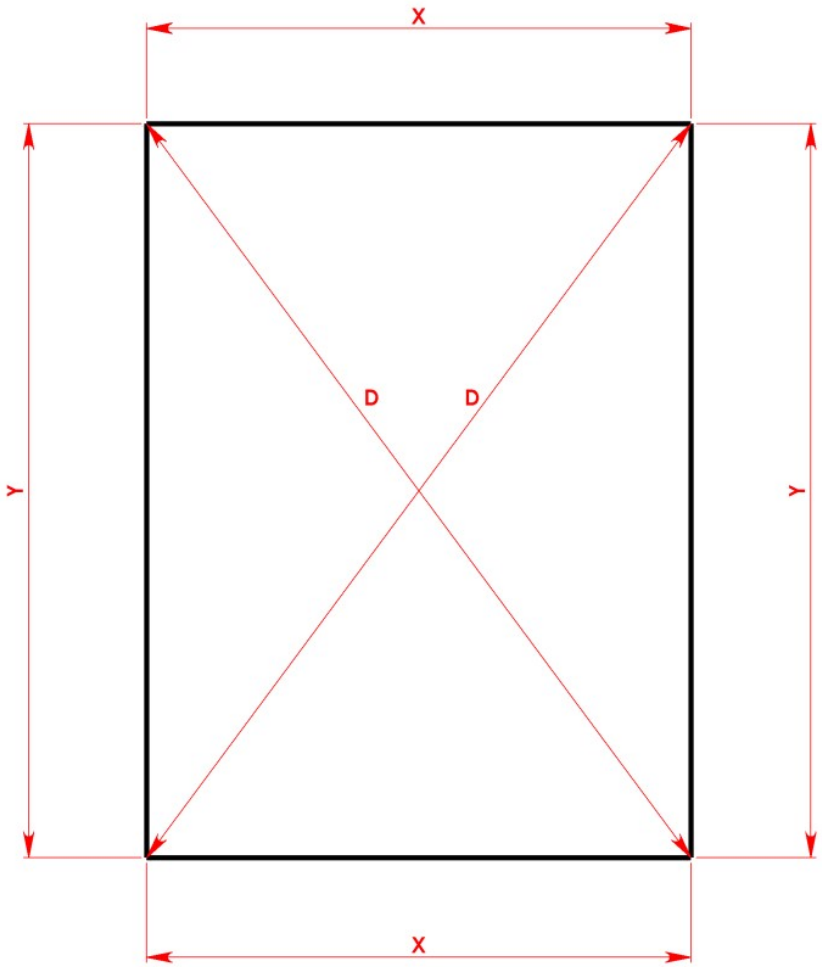
Contents

1. TESS 512 System



Part:		Qty:
1.	Main Frame	1
2.	Return Pulley Frame	1
3.	Barrel Assembly	1
4.	Turnbuckle and Support Cable	3
5.	Sta Lok Fork	3
6.	Lead Hem Bar	1
7.	Lead Fabric Panel	1
8.	Intermediate Hem Bar	Order Specific
9.	Intermediate Fabric Panel	Order Specific
10.	Fixed Hem Bar	1
11.	Fixed Fabric Panel	1
12.	Support Pulley	Order Specific
13.	Retract Cable Assembly (Spring Assy)	2
14.	Griplock Assembly	2
15.	Deploy Cable	2
16.	Webbing	2
17.	Clamp Ring	3

2. Site Installation



2.1

- Check the order, order reference and the delivered system sizes. Ensure that the fixing points match delivered system sizes.
- At the position the system is to be installed. Check / mark out the system width (X), the system draw (Y) and the diagonals (D).
- It is important that the diagonals are equal. Measure and adjust the marking out so the diagonals are equal.
- System width (X) and system draw (Y) must be parallel.
- Refer to the installation drawing supplied with the system and mark out the fixing positions.
- All wall fixings are to be supplied by the installer and are to be suitable for the material being fixed to. Fixings should be M10 size.

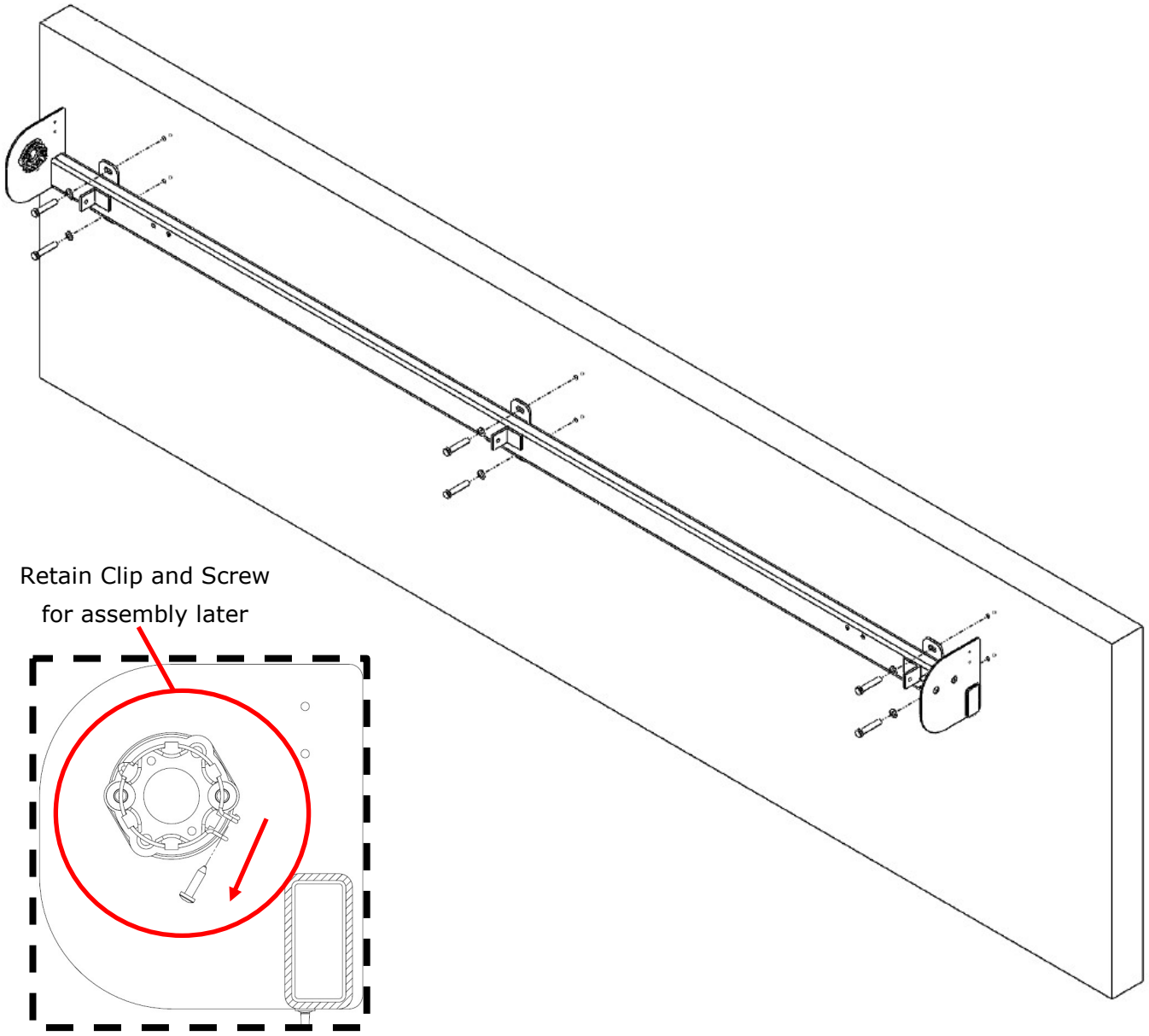
VERY IMPORTANT – DO NOT ATTEMPT TO INSTALL THE SYSTEM UNTIL SYSTEM AND FIXING POINT DIMENSIONS HAVE BEEN CHECKED AND FIXING POSITIONS ARE SQUARE.

2.2

<u>Electric power supply</u>

- Each system should be on a switched single spur, so as to isolate each system.
- Check with the site manager to ensure that electrics are set up correctly

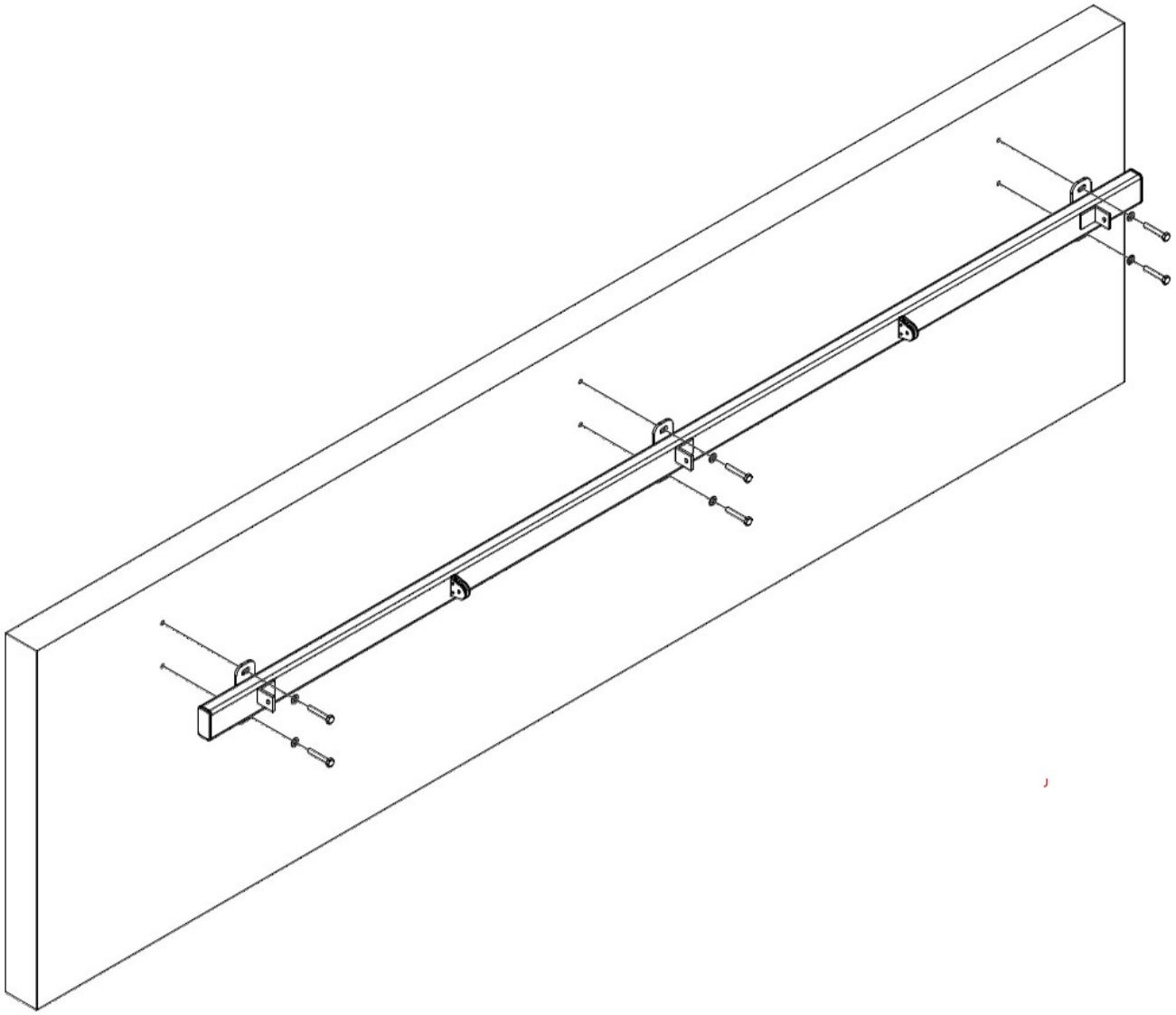
3. Fit Main and Return Pulley Frames



3.1

- BEFORE INSTALLNG THE MAIN FRAME, REMOVE THE BARREL.
- M10 fixings must be used (not supplied). Ensure that the fixings are suitable for a load of 400kg per support cable (approximately 200kg pull-out load on each bolt).
- Using the Installation Drawing mark out the fixing holes and fix the Main Frame.

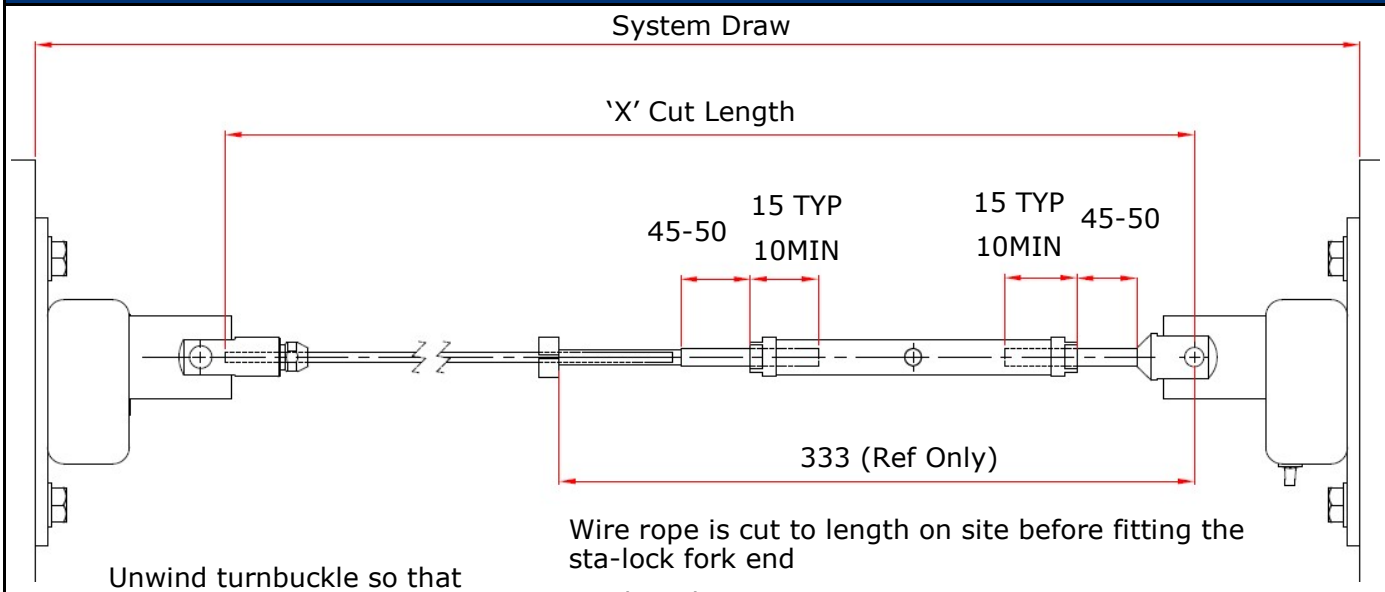
3. Fit Main and Return Pulley Frames



3.2

- Fit the Return Pulley Frame using the same method as the Main Frame.
- Ensure the frames are in alignment.
- Ensure the product is square at each end.

4. Cut and Install Support Cables



Unwind turnbuckle so that 45—50mm of thread is showing at each end

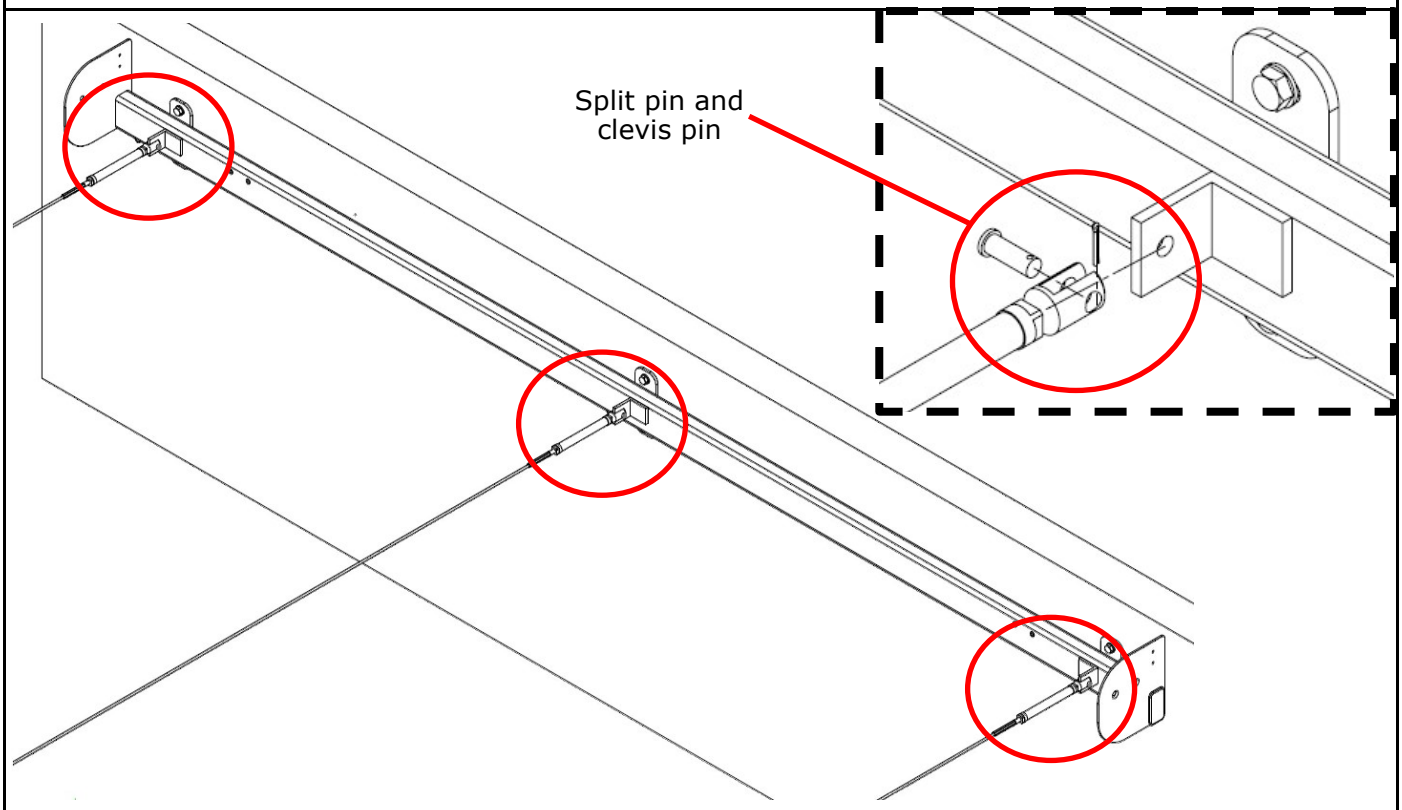
Wire rope is cut to length on site before fitting the sta-lock fork end

Cut length, X = System Draw — 135

Cutting the wire rope to this dimension leaves it slightly over length to allow for shortening if required

4.1

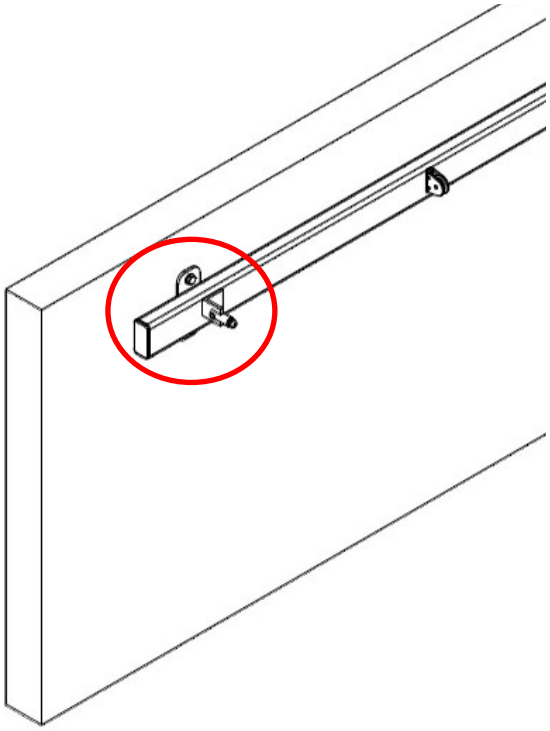
- WARNING—Cutting the cable too short will require a new cable.
- Assemble the turnbuckle with 10-15mm of thread engagement at each end, apply anti seize copper grease to threads.



4.2

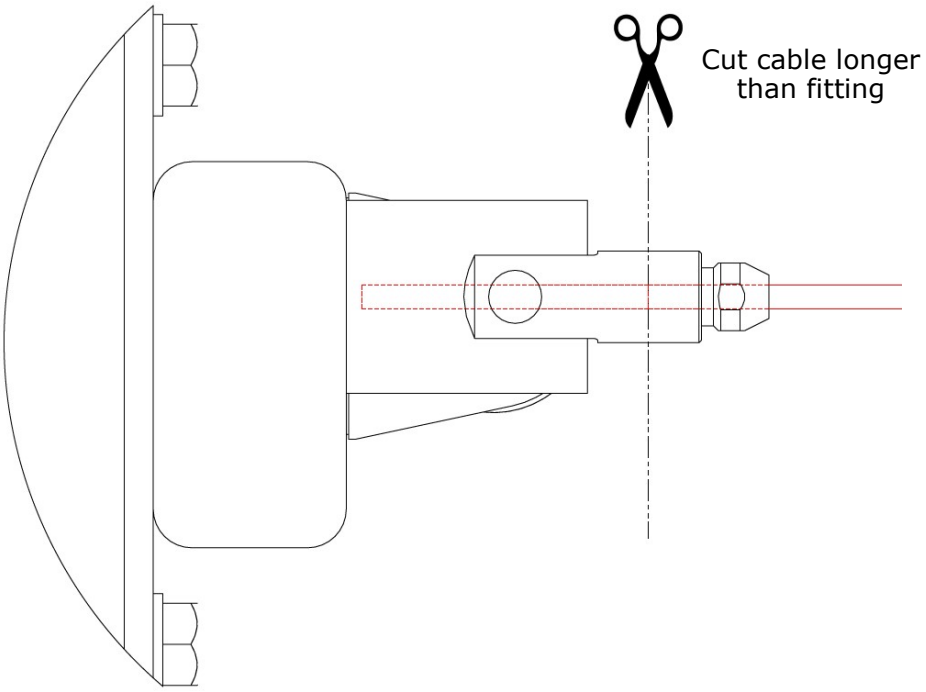
- Attach the turnbuckles to main frame, fitting the clevis pin through the holes on the frame and through the turnbuckle.
- Fit the split pin through the clevis pin ensuring the ends are split and will not allow the clevis pin to fall out.

4. Cut and Install Support Cables



4.3

- Temporarily attach a Sta-Lok fork fitting to the return pulley frame.



4.4

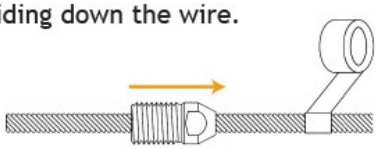
- Pull cable tight towards Sta-Lok fork and mark a cutting point, ensuring the cable and fitting will attach to the frame.
- Cut cable using a suitable tool.

4. Cut and Install Support Cables

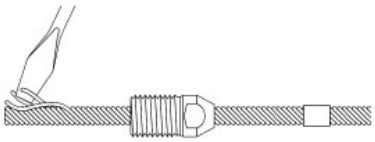
4.5

- Fit the Sta-Lok fork to the cut end of the cable, using the instructions below. Ensure the copper grease supplied is applied.

Step 1.
Slide socket component over the wire. TIP: Wind tape around wire approx. 12" (300mm) from the end. This will prevent the socket from sliding down the wire.



Step 2.
Unravel outer strands 2" to 3" (50-76mm) to expose the central core.



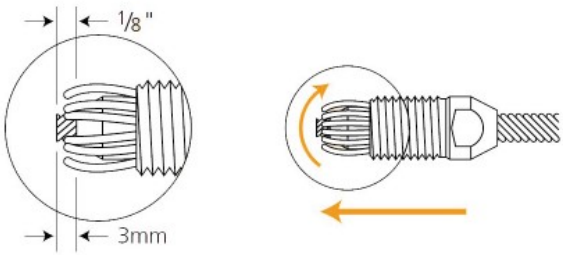
Step 3.
Slide wedge component over a central core of wire rope.

Step 4.
Reposition outer strands

Turn outer strands either clockwise or anti-clockwise, depending on the lay of the wire, around the wedge.

Ensure approx. 1/8" (2-3mm) of the central core protrudes from the end of the wedge.

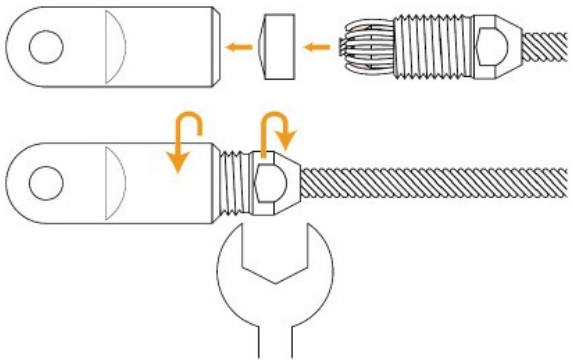
Outer strands should be evenly situated around the wedge. Work with care to ensure that a strand does not slip into the slit of the wedge. TIP: Push the socket towards the end of the wire, while repositioning the outer strands, this will help control.When wire strands are in position, push the socket firmly, as indicated to hold wires in position.



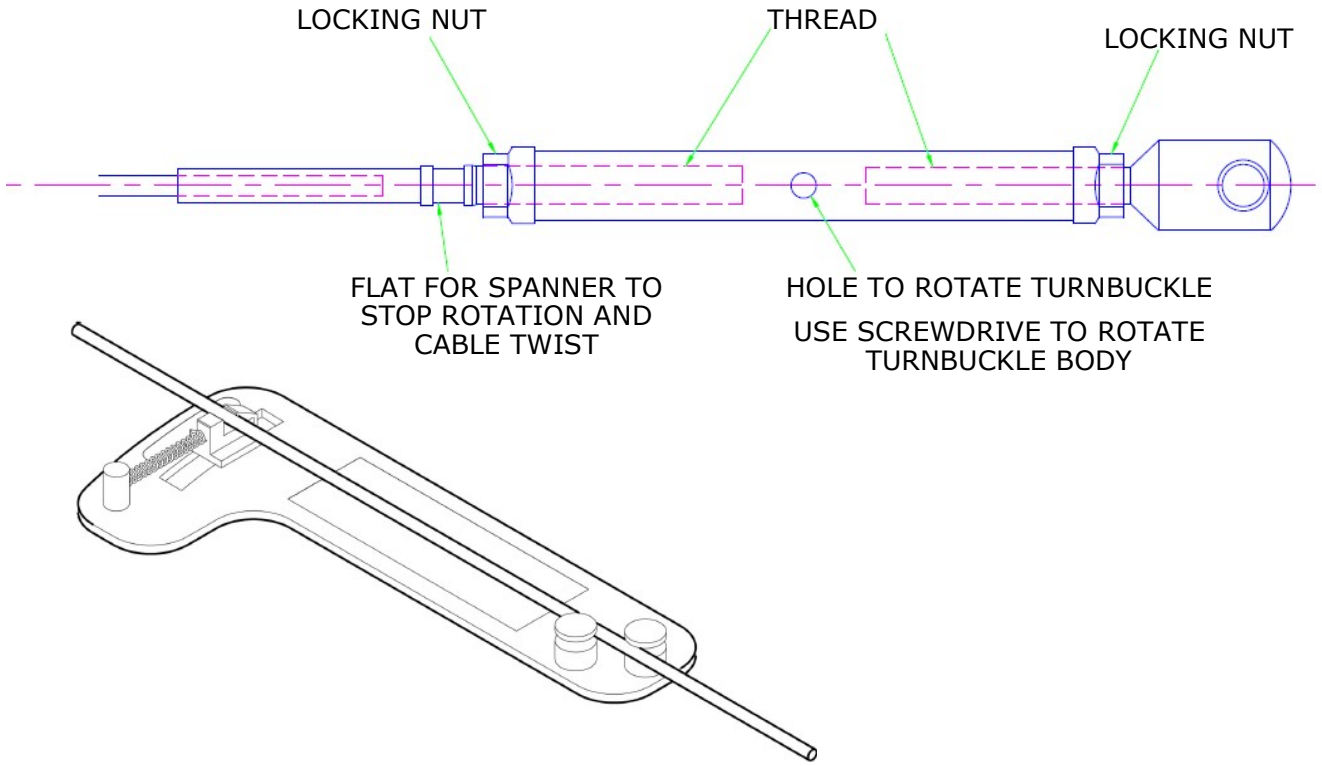
Step 5.
Final Assembly

Ensure the former component sits at the bottom of the end fitting. Screw socket assembly into end fitting and tighten with spanners. The assembly is now complete.

TIP: The wire does not require undue force to terminate it. Each terminal comes with fitting instructions.

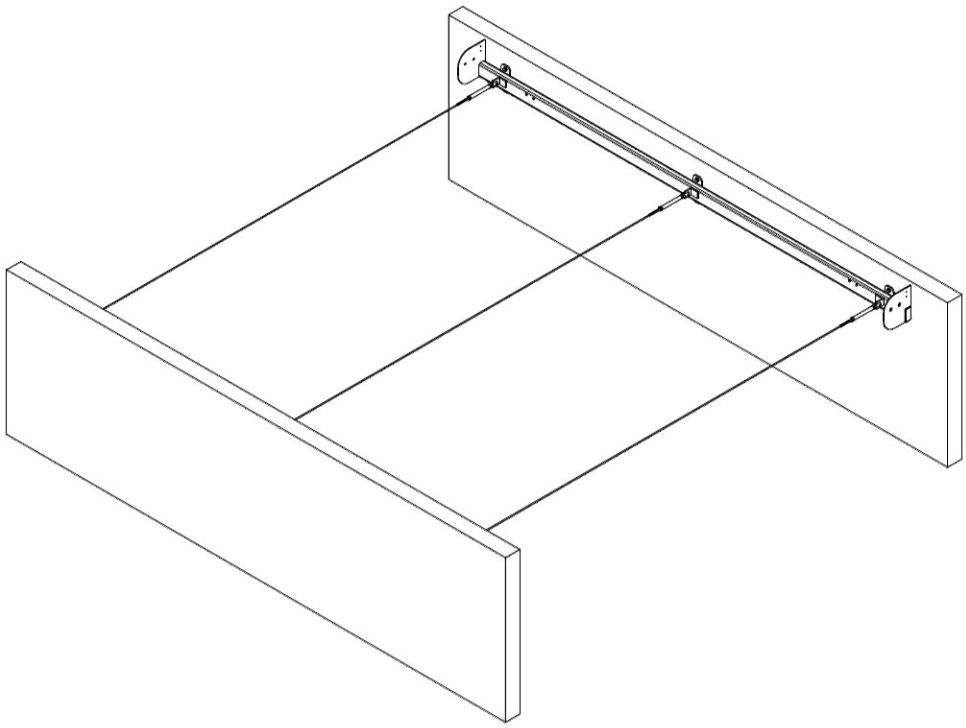


4. Cut and Install Support Cables



4.6

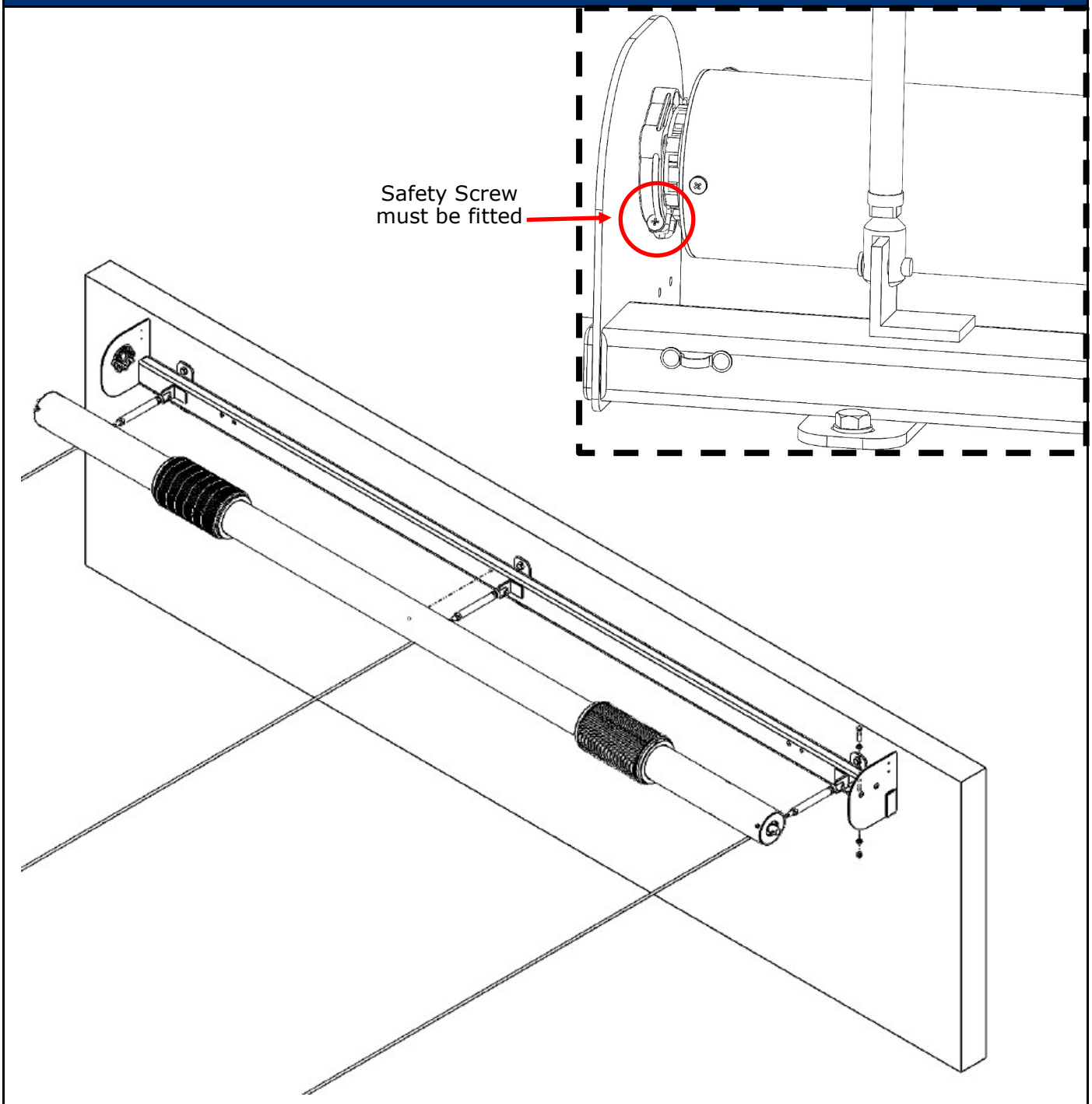
- Tighten the turnbuckle, and tension the cable to an appropriate tension – refer to the installation drawing. When tensioning hold a spanner on the flat or put a screwdriver through the hole to and do not allow the cable to twist.
- Use the tension gauge (shown above) to measure and set the tension.
- At appropriate tension, use the 2 locking nuts to lock the turnbuckle in place.



4.7

- Repeat the process for the remaining cables.

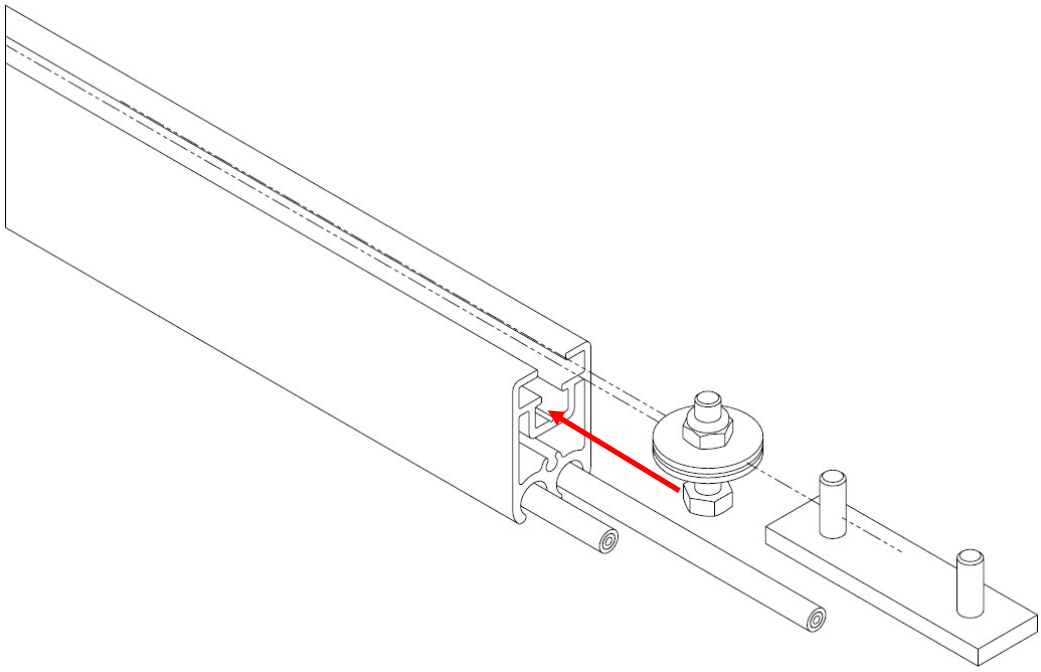
5. Fit Barrel Assembly



5.1

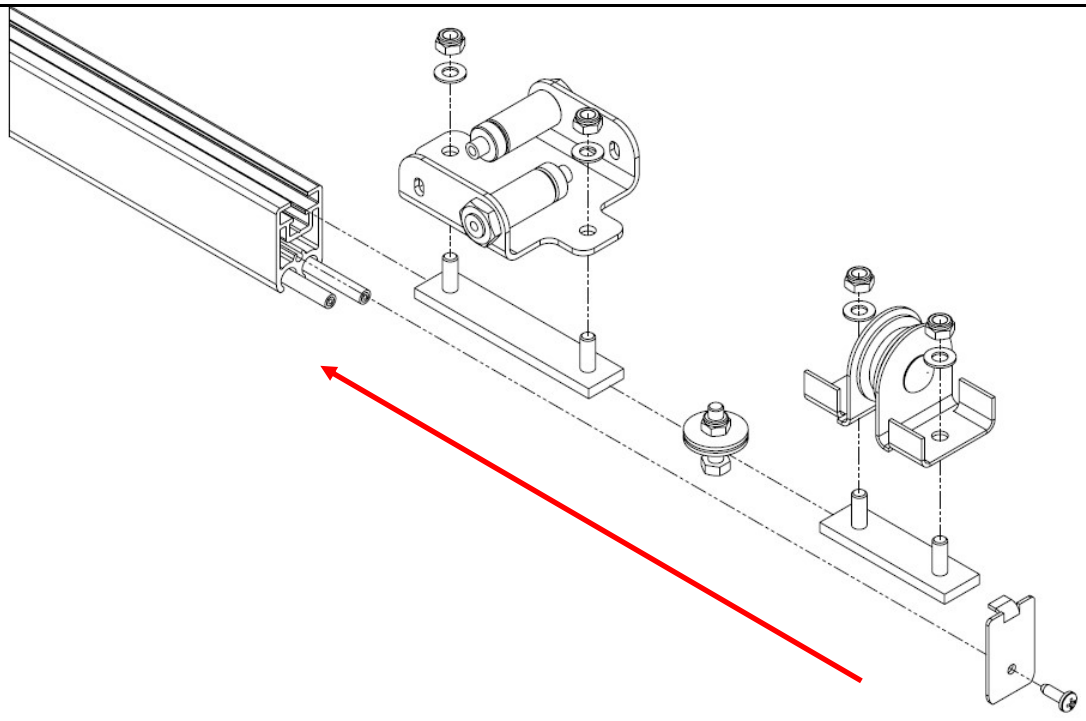
- Fit the barrel to the main frame using the fixings removed in 3.1.
- Ensure motor bracket safety screw (circled above) is secured. IF NOT ATTACHED DO NOT INSTALL THE SYSTEM, AND CONTACT GUTHRIE DOUGLAS.

6. Assemble Hem Bars and Fabric



6.1

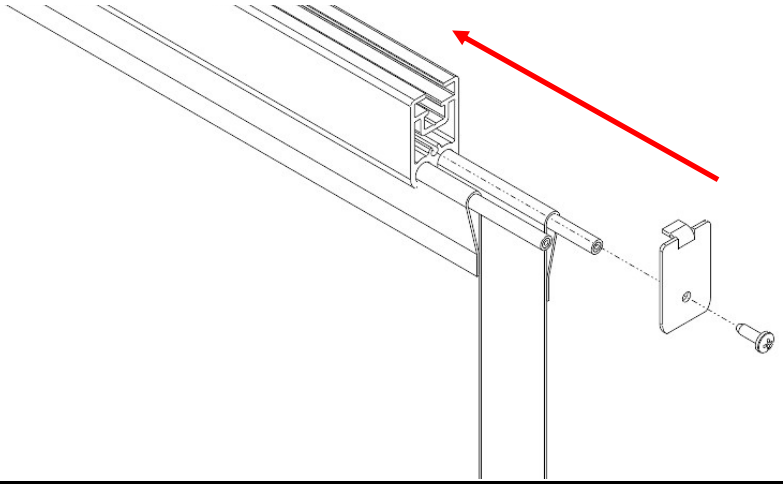
- Assemble the hem bars, as shown above. Move the parts to the appropriate positions, refer to the installation drawing. Ensure the M6 bolt sits in lower groove.
- Do not fix the position of support pulleys.
- Mark the centre of the hem bars to aid installation at a later stage.



6.2

- Assemble the lead hem bar as shown above. Move the parts to the appropriate position, refer to the installation drawing.
- Do not fix the position of the support pulleys.

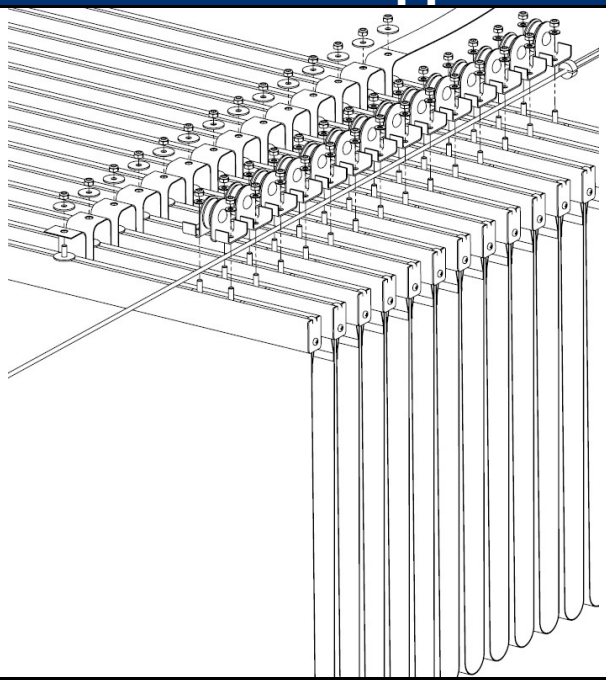
6. Assemble Hem Bars and Fabric



6.3

- Slide the fabric rods into the fabric pocket.
- Slide the fabric into the hem bar, fit the end caps, as shown above.

7. Fit Hem Bars and Fabric to Support Cables



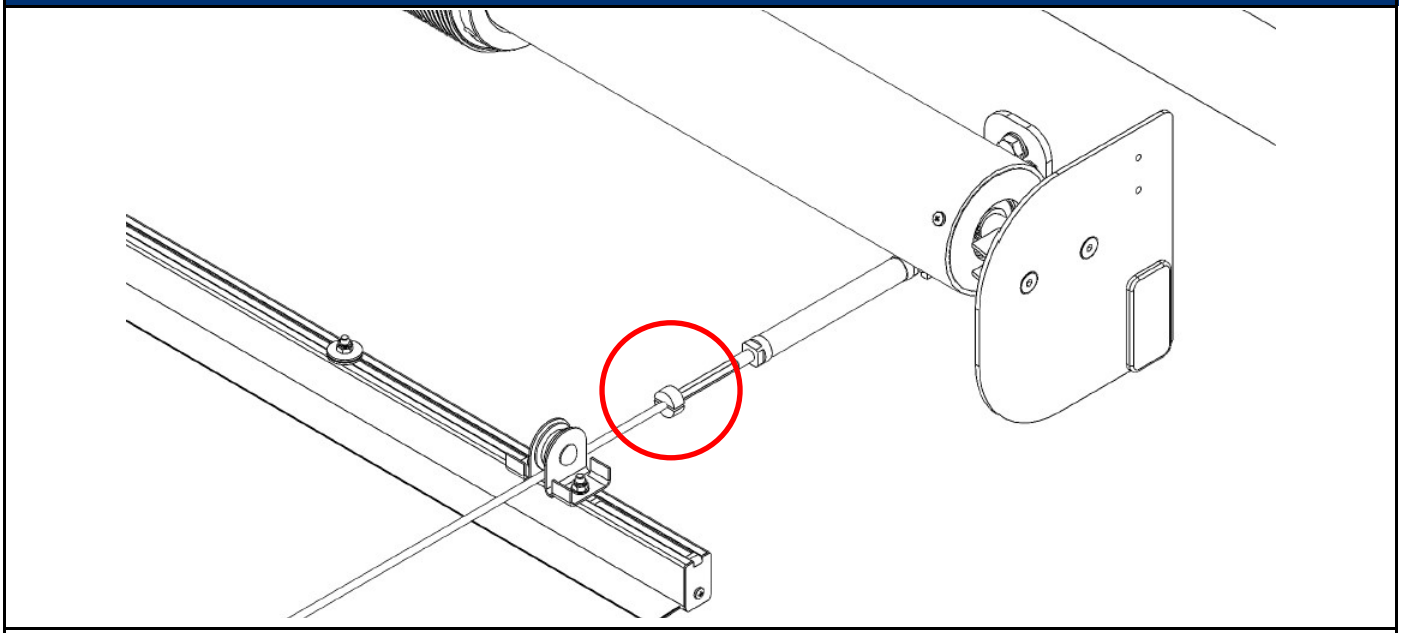
7.1

- Fit all hem bars and fabrics as shown above. It is recommended to start at the centre of the system. Attach the fixed fabric panel to the other hem bars, do not attach to the main frame at this stage.
- Fit the support pulley loosely to suspend the hem bars and fabric on the support cable.
- Adjust the support pulleys to their correct position, starting with the central support pulleys and then the outer pulleys.
- Tighten the support pulley fixings and repeat for all hem bars.

7.2

- Attach the webbing to the hem bars. The webbing will have been pre-punched at intervals to give the specified shape of the deployed fabric.
- Ensure webbing is straight when the system is deployed.

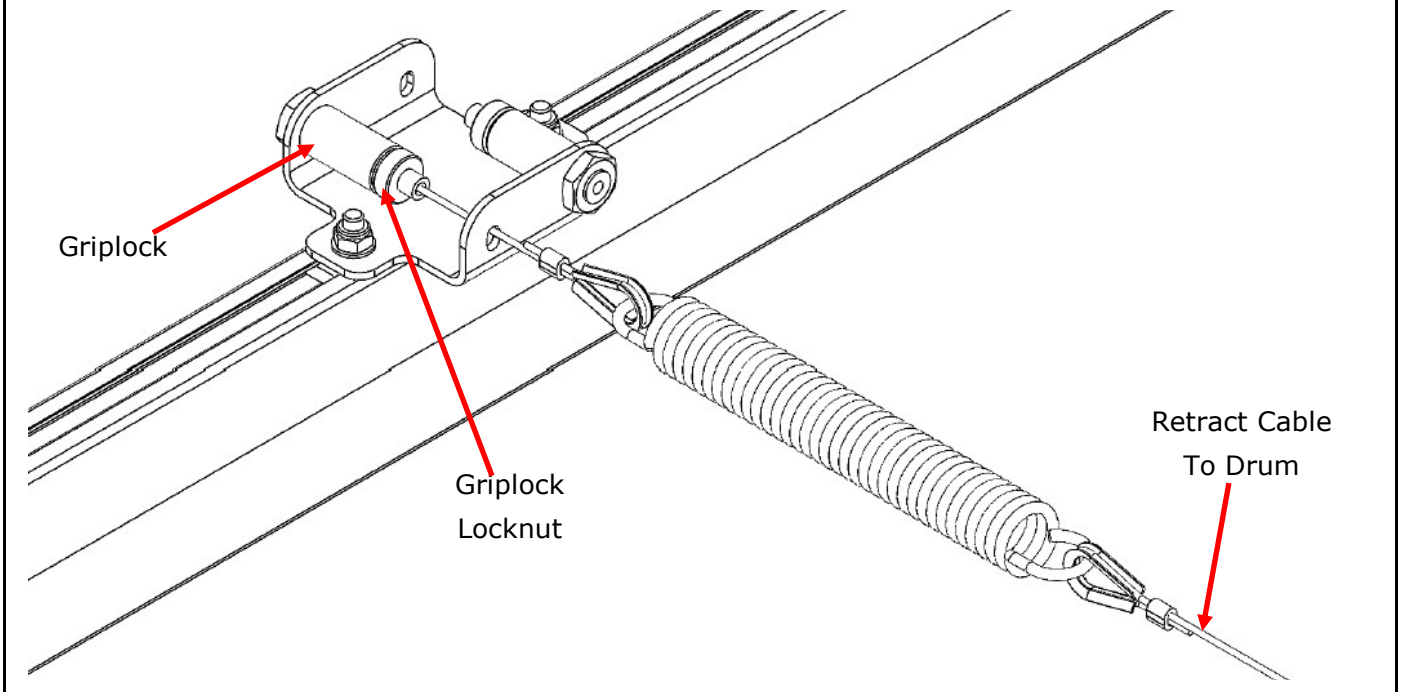
8. Check Position of Clamp Rings



8.1

- Check the clamp rings are securely fitted and are in the correct position as shown above.

9. Attach Retract and Deploy Cables



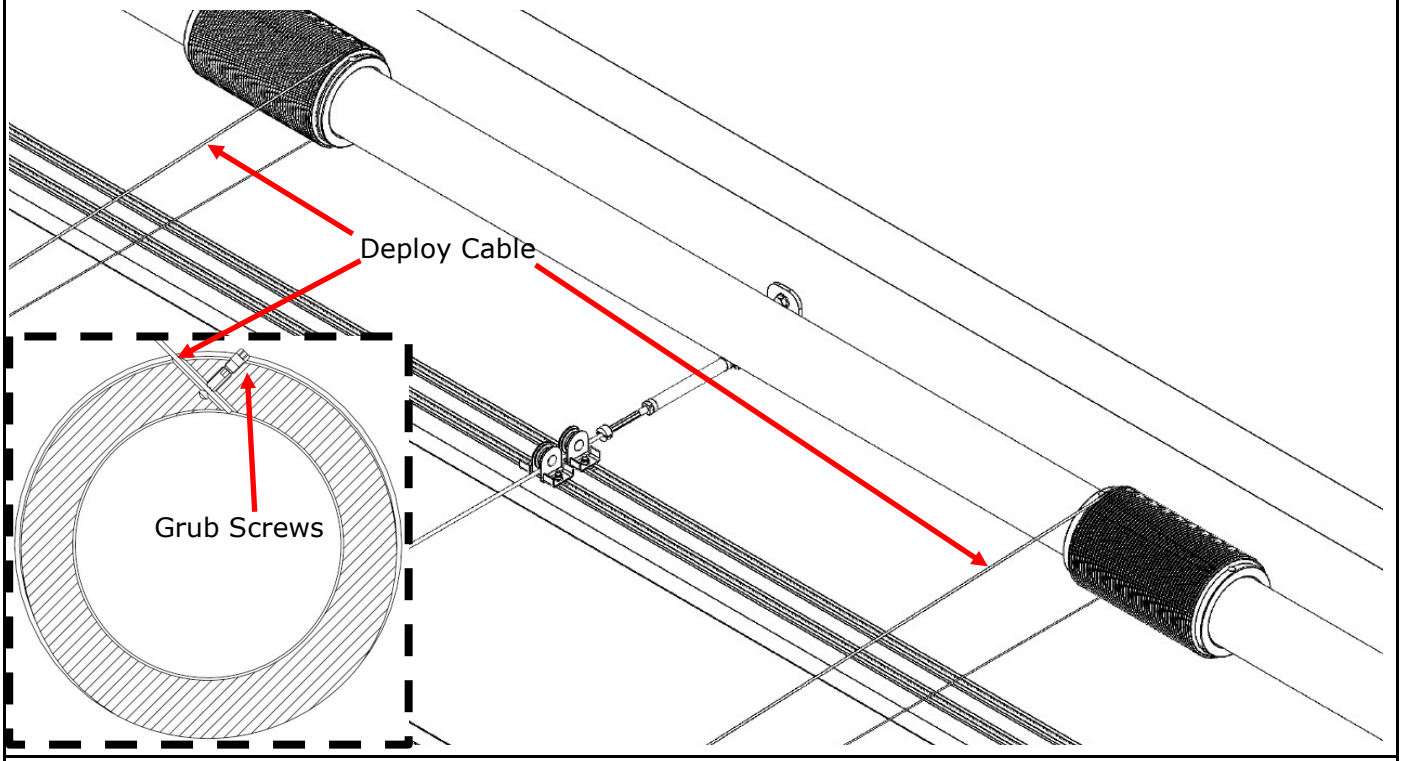
9.1

- Retract cable and spring assembly will already be fitted to the cable drum. Fit both cables into the griplock found on the lead hem bar, as shown above.
- Loosen the locknut and push the cable through, once fitted re-tighten the locknut.
- Keep tension on the cable, to stop it unspooling from the cable drum.

9.2

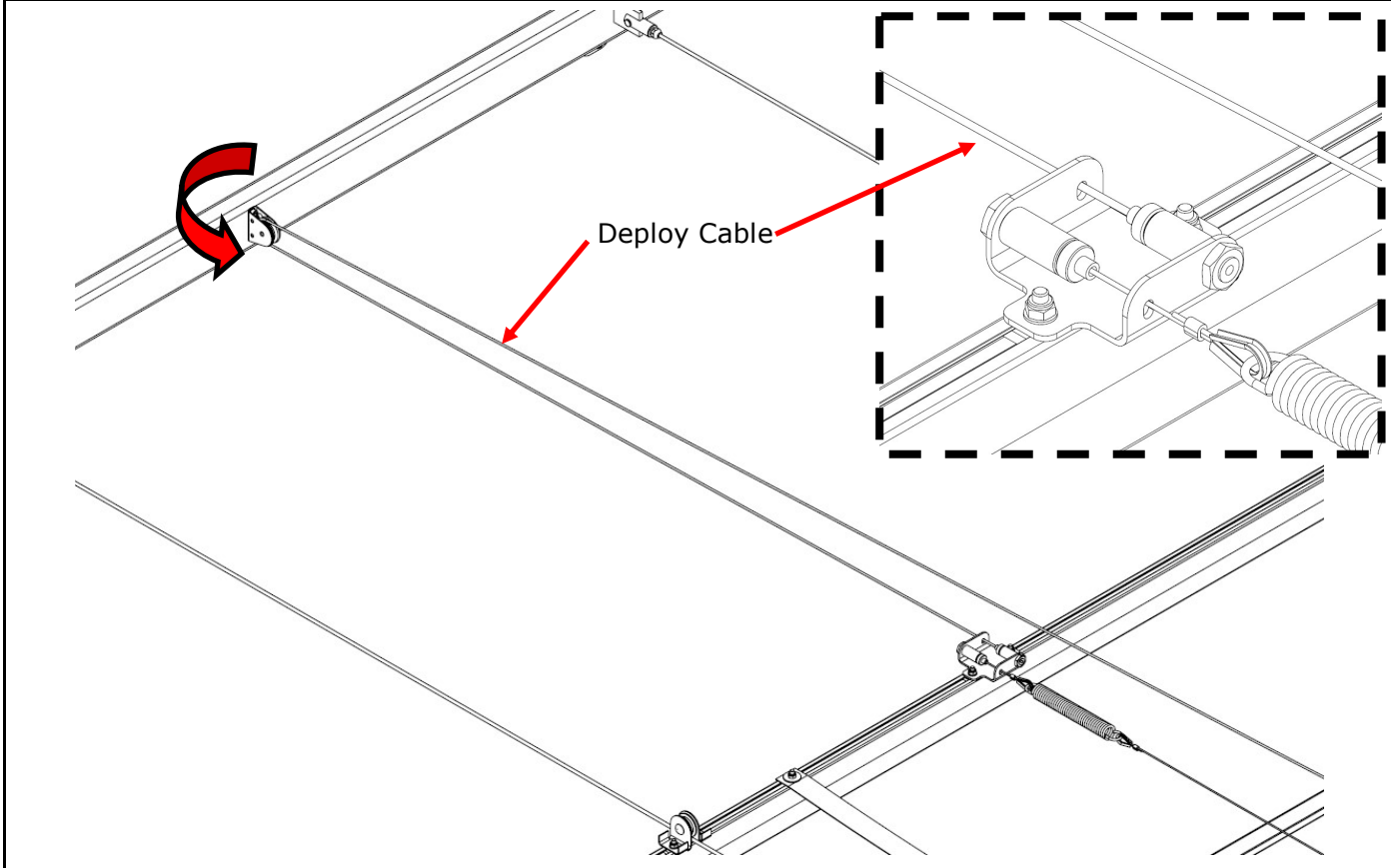
- Using the motor (refer to the motor manual), fully retract the system.
- CAUTION DO NOT TENSION THE SPRING.

9. Attach Retract and Deploy Cables



9.3

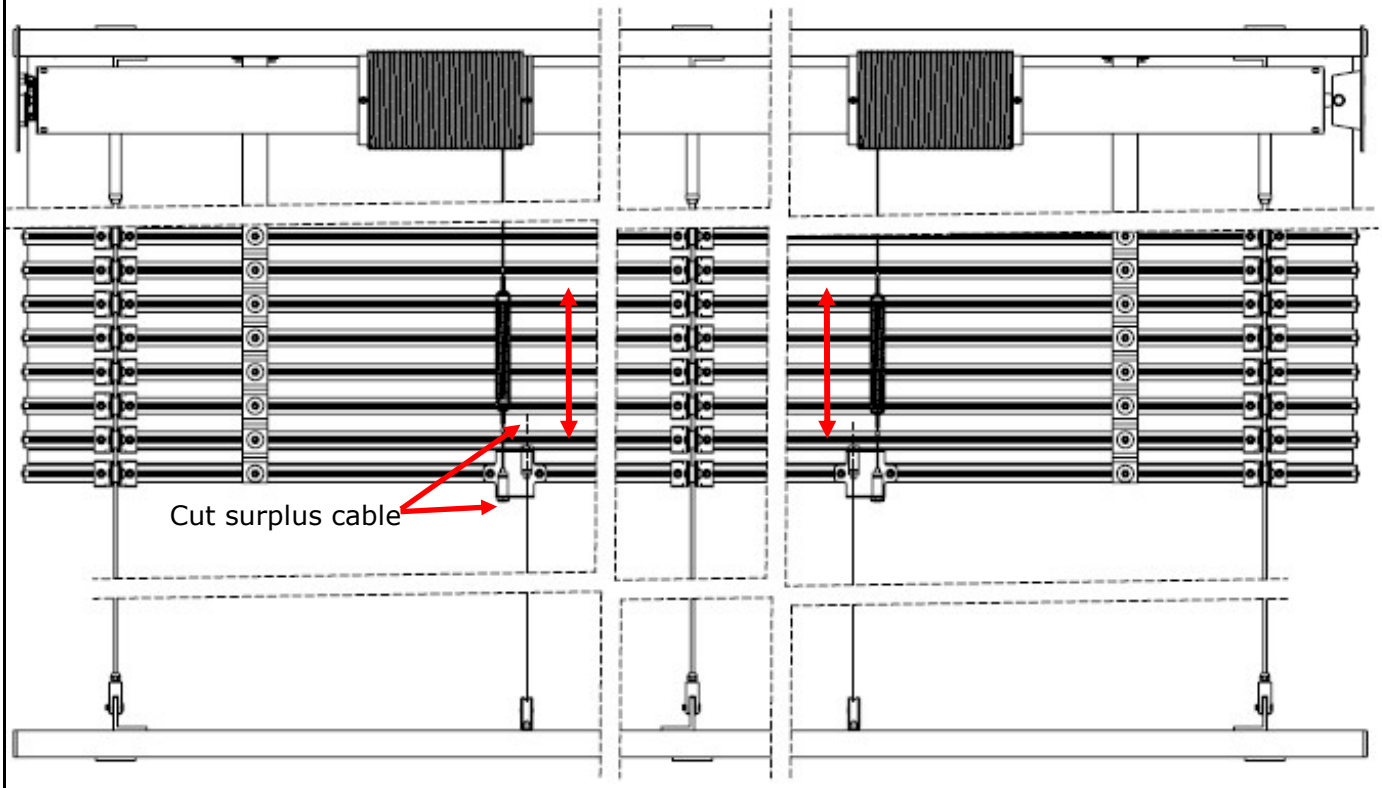
- Wrap 1 full turn of deploy cable onto the drum so that cable feeds onto the top of the drum.
- Insert the cable into the cable hole in the drum and lock with the grub screws provided. The cable will wrap over the top of the drum, as shown above.

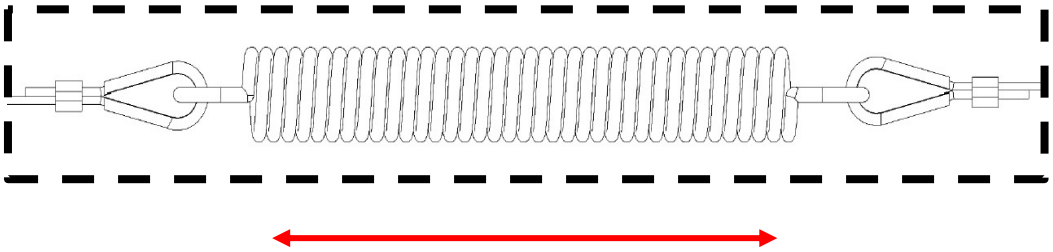


9.4

- Feed deploy cable around the return pulley and insert in the Griplock.

9. Attach Retract and Deploy Cables





25mm

9.5

- Loosen the deploy cable griplock locknut and pull deploy cable through griplock until the spring extends 25mm.
- Tighten griplock locknut to secure the deploy cable.
- This must be done on both springs.

9.6

- Cut off surplus cable 50mm from the end of the griplocks.
- Make any necessary adjustments to ensure both cables are the same length and tension.

10. Set Motor Limits

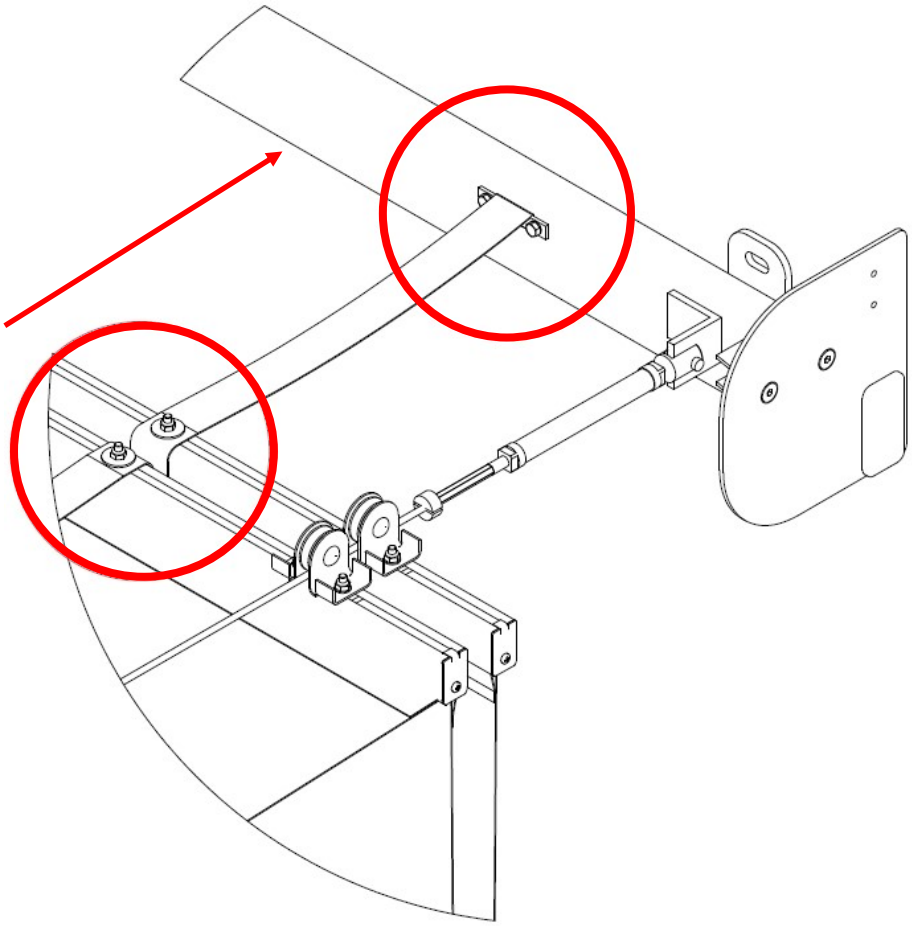
10.1

- Deploy the system until the lead hem bar stops around 100mm from the return pulley frame. At this point set the deploy limit.
- Check support pulleys are aligned correctly to the support cable, if necessary adjust the position of the support pulleys.

10.2

- Set the retract limit to the desired position.

11. Adjust Webbing



11.1

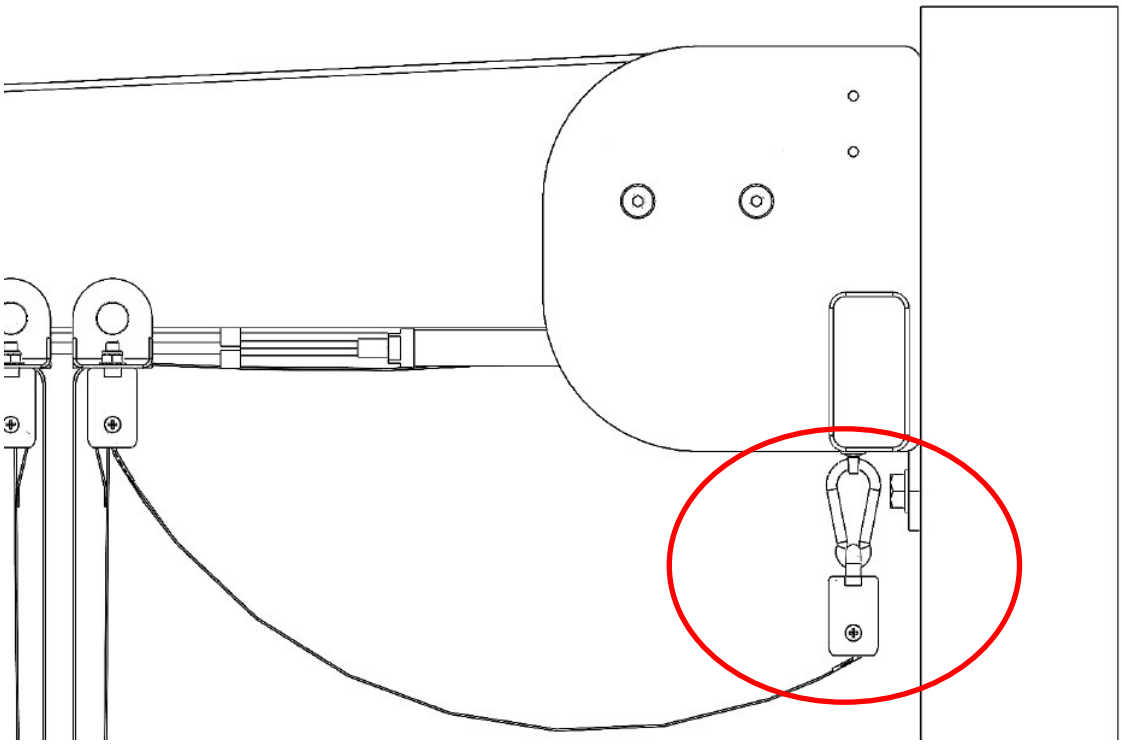
- Deploy the system. Using the webbing pull the hem bars towards the main frame until the closest hem bar to the main frame reaches the clamp rings.
- Pull the webbing through the clamp circled above and tighten the clamp to fix the webbing in position.
- Retract and deploy system to test webbing positions. On completion, surplus webbing can be cut.
- Adjust and set motor limit positions if required.

12. Verify Support Cable Tension

12.1

- Check the support cable tension using the tension gauge supplied. If any adjustment is needed retract the system to ease the adjustment of the turnbuckles. If the temperature is 15°C greater than normal operating temperatures the tension in each cable should be 50kg less than normal (400kg as per the installation drawing).

13. Fit Fixed Hem Bar and Fixed Fabric Panel



13.1

- Fit the fixed hem bar to the carabiner clip. The carabiner clip is attached to the deck eyes at the main frame.

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