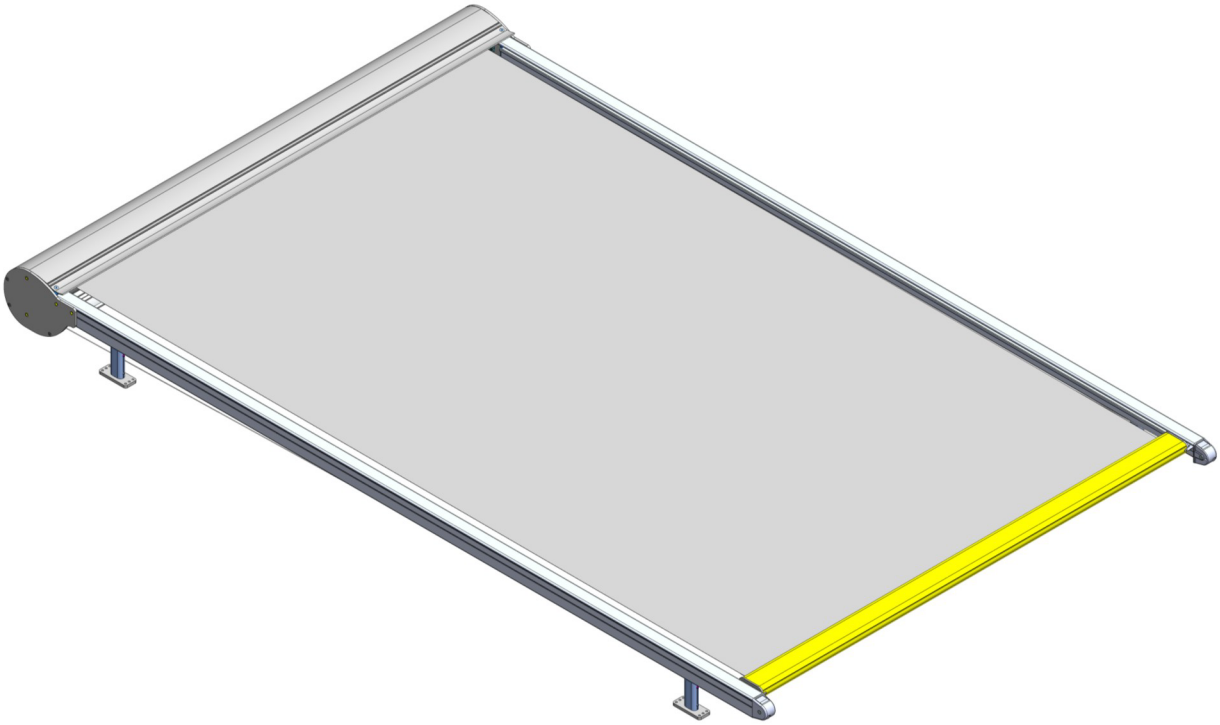
TESS™ 420
Installation Manual



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

horiso®

Guthrie Douglas

Notes

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1. 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.

TESS Systems are designed to operate at temperatures between 0 and 55°C, and in winds of less than 40Km/h. If operating conditions are likely to exceed these limits, do not commission the systems.
Please contact us for advice.

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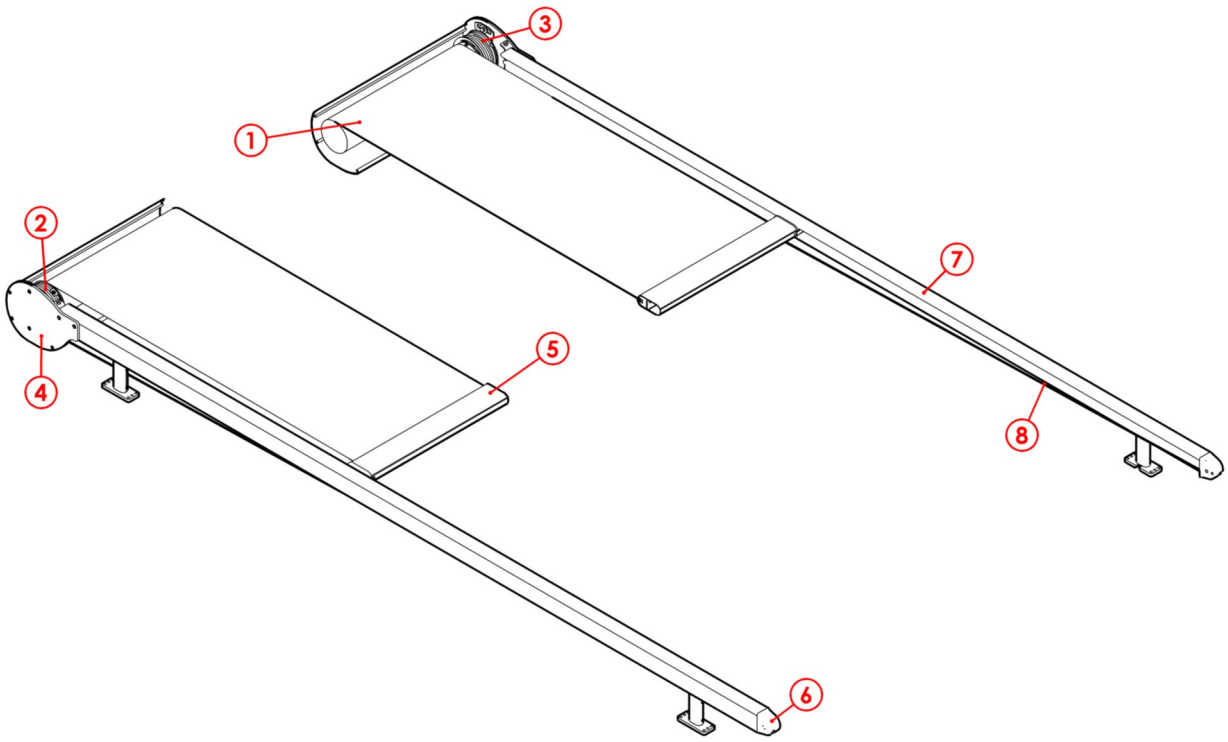
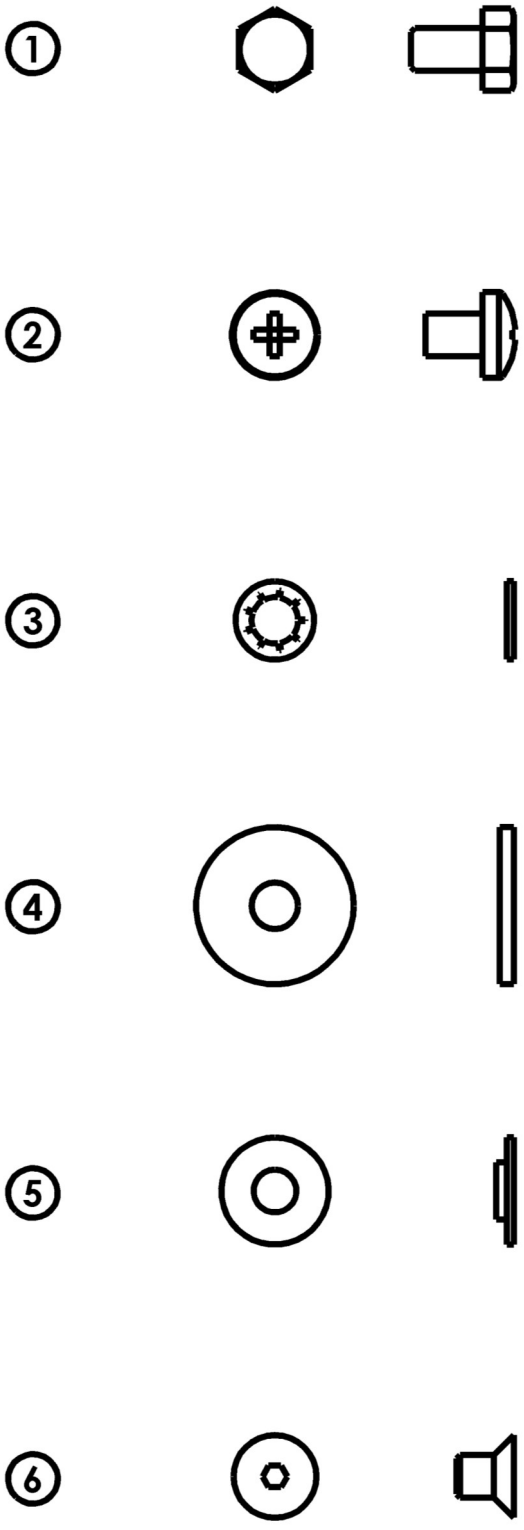
2. Tess 420 System

Standard components and assemblies supplied



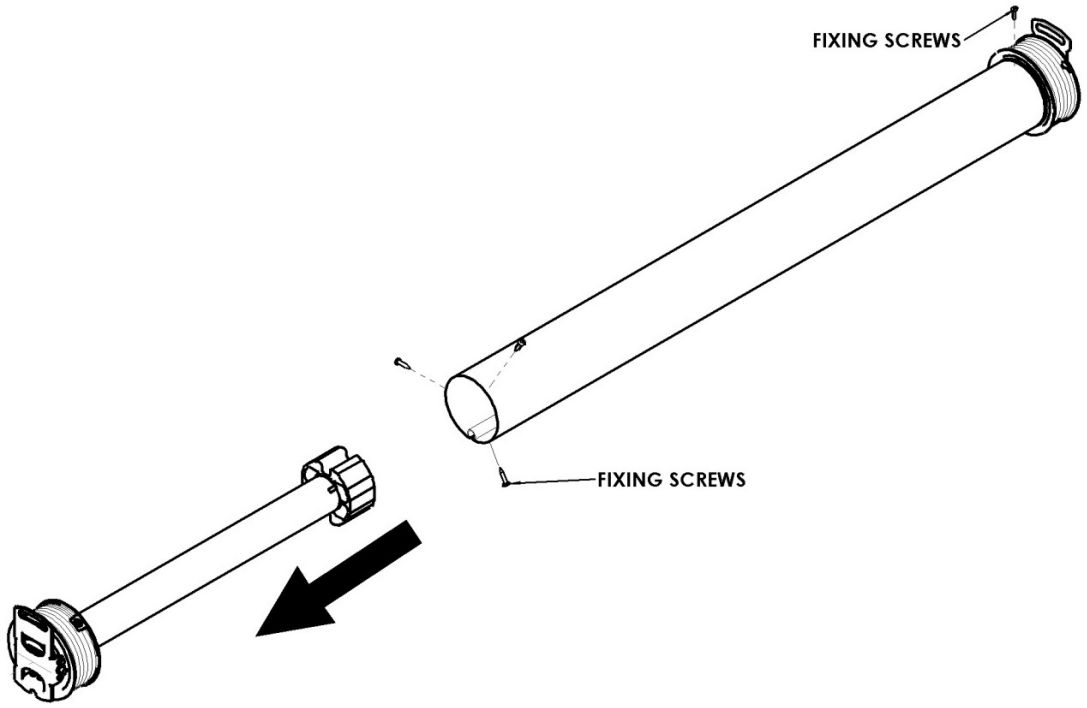
Description	Qty
1) Barrel Assembly 85mm Diameter (including fabric if supplied)	1
2) Motor Assembly	1
3) Spring Cassette Assembly	1
4) Headbox Assembly	2
5) Hem bar Assembly	1
6) Return Pulley	2
7) Side Guide	2
8) Guide Cable	1
	Variable. Refer to installation drawing.
	1
Fitting Kit	1
Tensioning tool	1
Limit adjuster	1
Installation Manual	

3. Fitting Kit



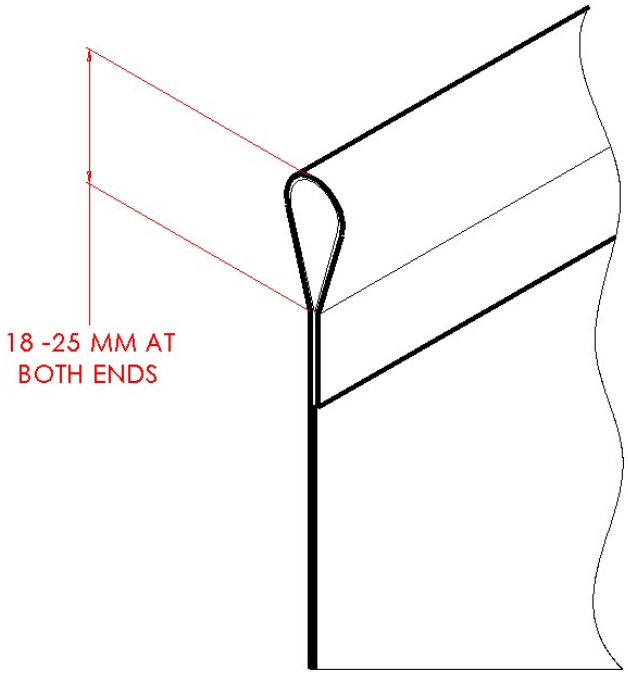
REF NO.	FIXING	WHERE USED
1	M6 x 10 BOLT	MOUNTING PLATE
2	M6 x 8 PAN HEAD	MOUNTING BRACKET
3	M6 SHAKE PROOF	MOUNTING PLATE
4	M6 WASHER	MOUNTING PLATE
5	M6 PLASTIC TOP HAT WASHER	MOUNTING BRACKET
6	M6 x 8 COUNTERSUNK	SIDE GUIDES

4. System Preparation – Fabric Fitting if not Pre-fitted



4.1.

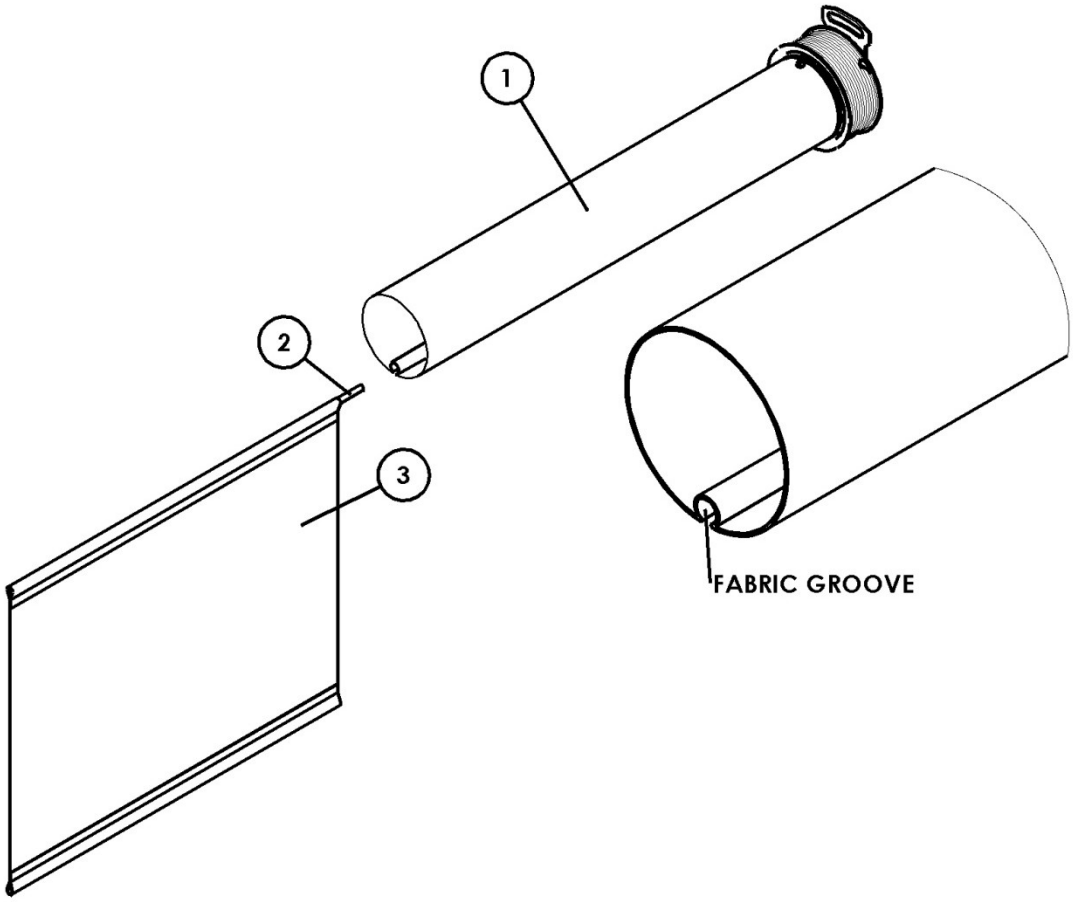
- Remove either the Motor Assembly or the Spring Cassette Assembly. Remove the fixing screws.



4.2.

- The fabric to be fitted is to have been manufactured in line with Guthrie Douglas specifications,

4. System Preparation – Fabric Fitting if not Pre-fitted Cont.....

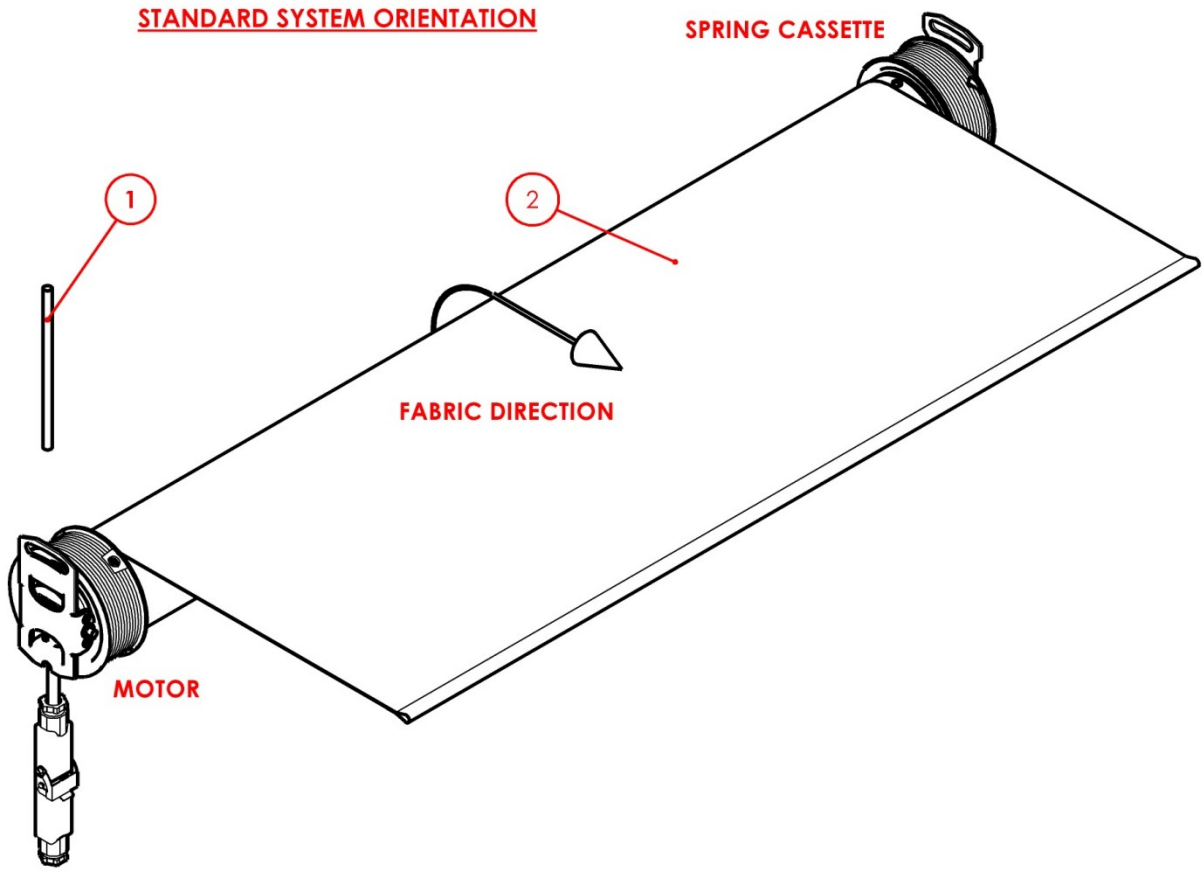


4.3

1. Barrel Assembly
2. Fabric Rod
3. Fabric

- Insert the fabric rod into the pocket on the fabric.
- Insert fabric and fabric rod into the fabric groove located on the barrel.

4. System Preparation – Fabric Fitting if not Pre-fitted Cont.....



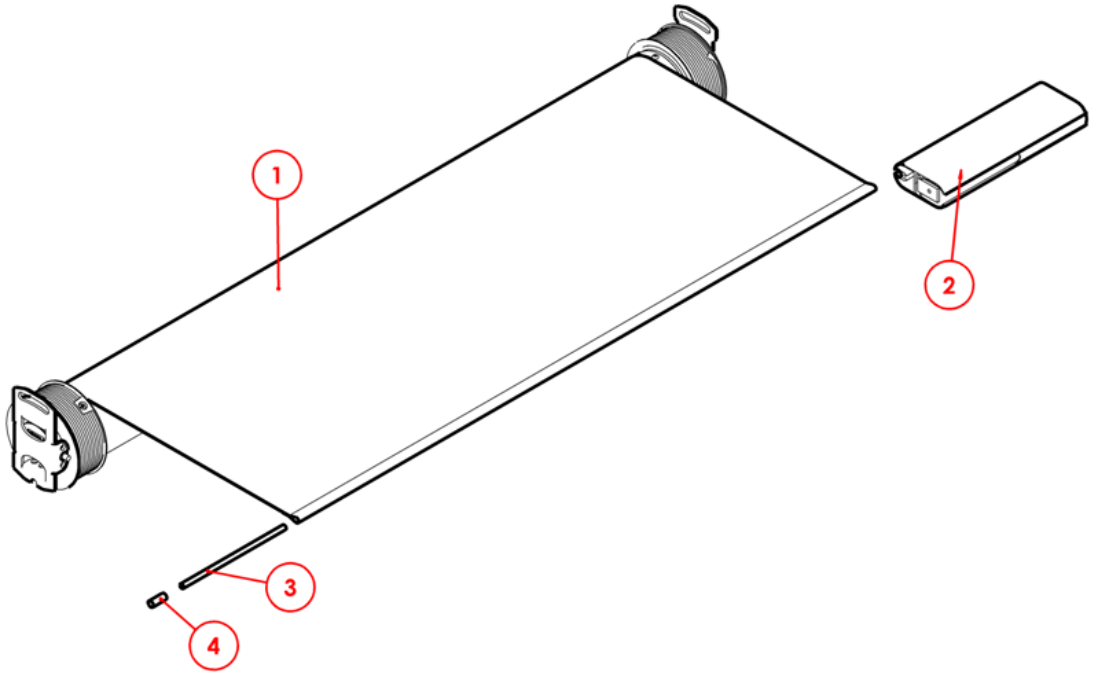
4.4.

1. Motor Limit Adjustment tool (required for Manual Limit Motors).
2. Barrel Assembly

- Refit motor/spring cassette assembly (refit all fixing screws previously removed).
- Wind the fabric onto the barrel, using a test lead.
- Leave a minimum of 200mm of fabric NOT wound onto the barrel.

VERY IMPORTANT – On a standard system the motor is positioned on the left as shown. If motor is required on the opposite side an Opposite Hand Spring Cassette (OPH) must be ordered.

4. System Preparation – Fabric Fitting if not Pre-fitted Cont.....



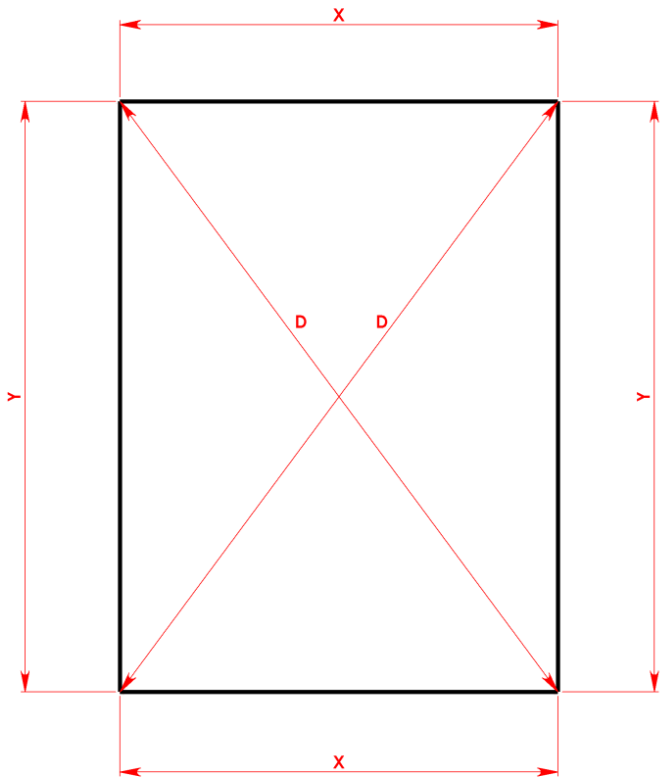
4.5.

1. Barrel Assembly
2. Hem bar Fabric Rod
3. Hem bar
4. Fabric spacer

- Remove one hem bar end cap.
- Insert the fabric rod into the pocket on the fabric.
- Insert one fabric spacer into the hem bar.
- Insert fabric and fabric rod into the fabric groove located on the hem bar.
- Insert second fabric spacer into the hem bar
- Reattach hem bar end cap.

This completes the barrel assembly.

5. Site Installation



5.1.

1. Check the order, order reference and the delivered system sizes. Ensure that the fixing points match delivered system sizes.
2. At the position the system is to be installed. Check / mark out the system width (X), the system draw (Y) and the diagonals (D).
3. It is important that the diagonals are equal. Measure and adjust the marking out so the diagonals are equal.
4. System width (X) and system draw (Y) must be parallel.
5. Refer to the installation drawing supplied with the system and mark out the fixing positions.
6. All wall fixings are to be supplied by the installer and are to be suitable for the material being fixed to. Fixings should be M8 size.

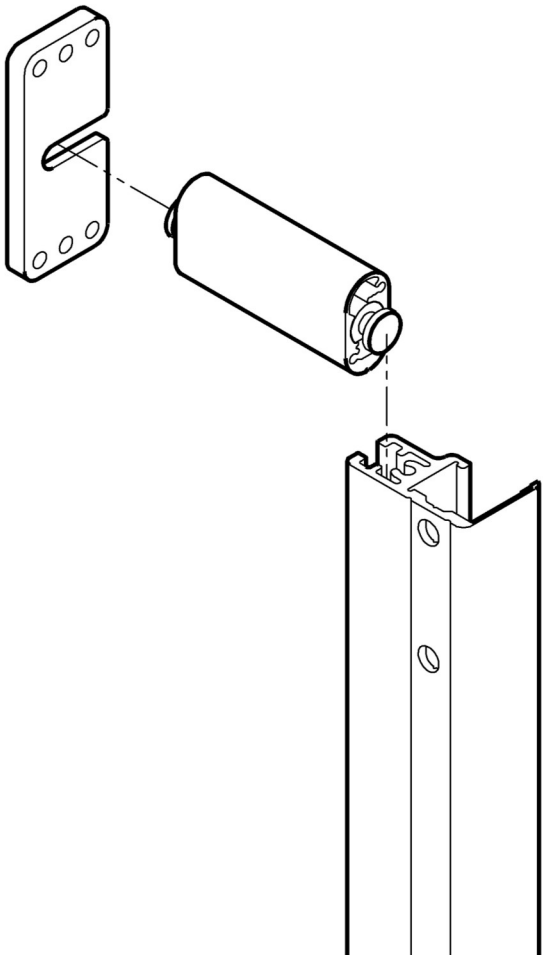
VERY IMPORTANT – DO NOT ATTEMPT TO INSTALL THE SYSTEM UNTIL SYSTEM AND FIXING POINT DIMENSIONS HAVE BEEN CHECKED AND FIXING POSITIONS ARE SQUARE.

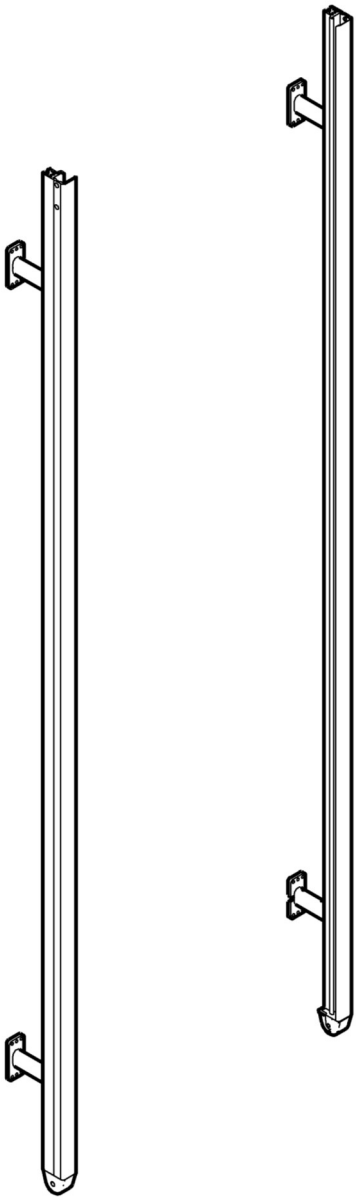
5.2.

<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

6. Side Guide Installation

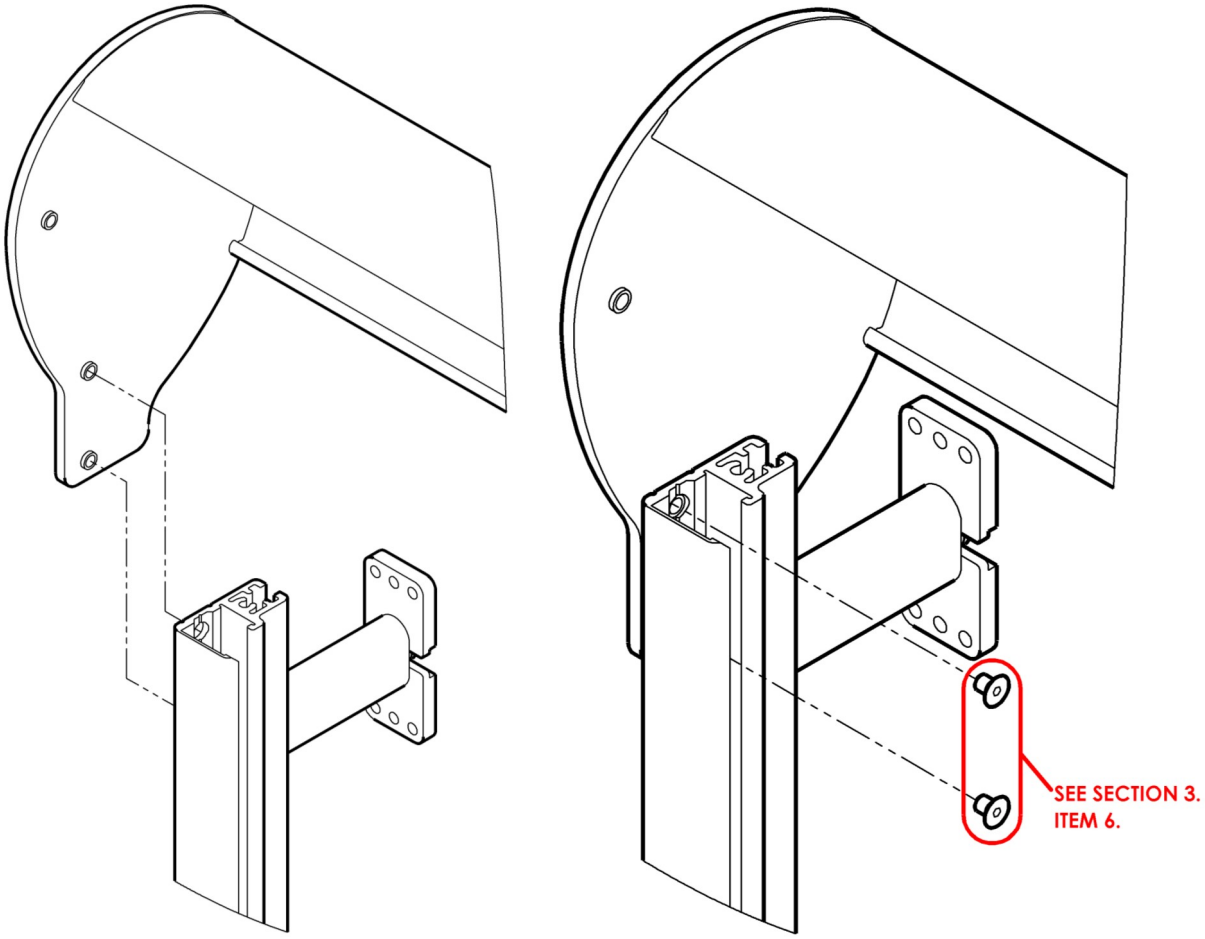




6.1.
Side Guide Fitting

- Fit mounting foot plate onto fixing wall
- Fit guide support into side guide foot.
- Fit side guide into guide support
- Position side guide (measure diagonal between both side guides).
- Tighten fixing screw on side guide support

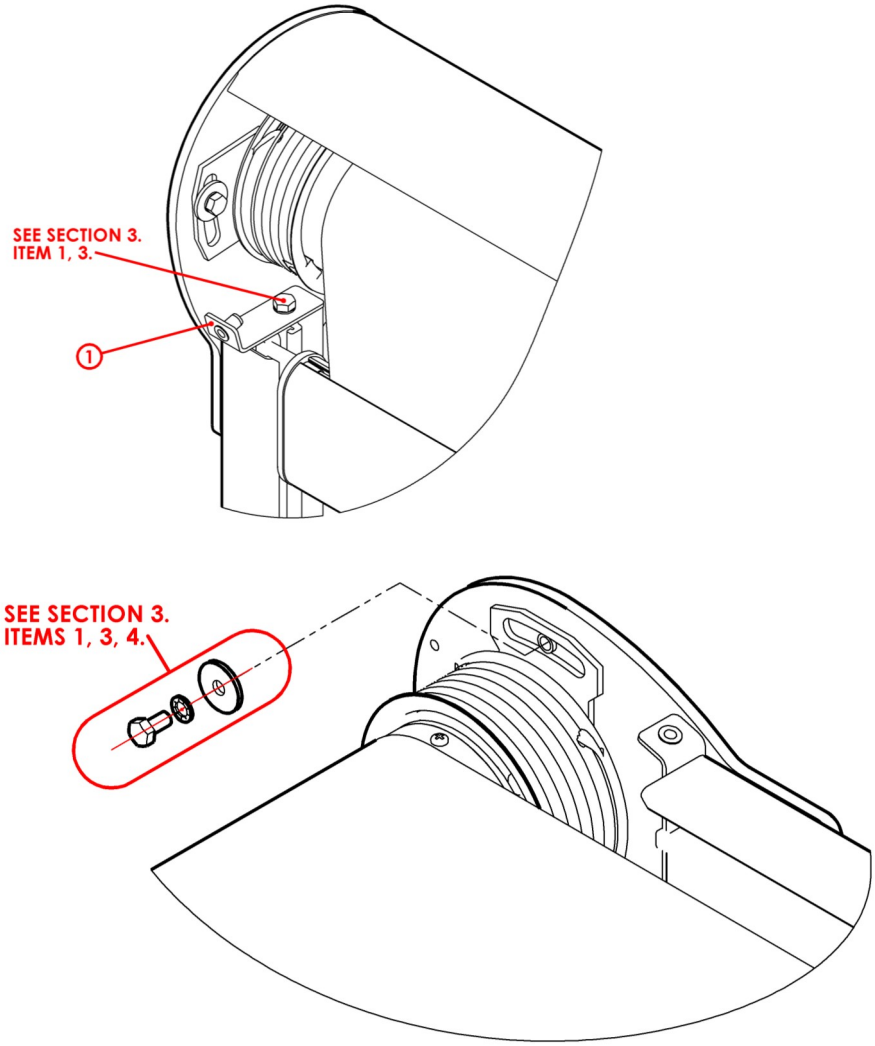
7. Head Box Installation



6.1.
Head Box Fitting

- Align headbox with side guides
- Fix head box with fixing screw

8. Barrel Assembly Fitting



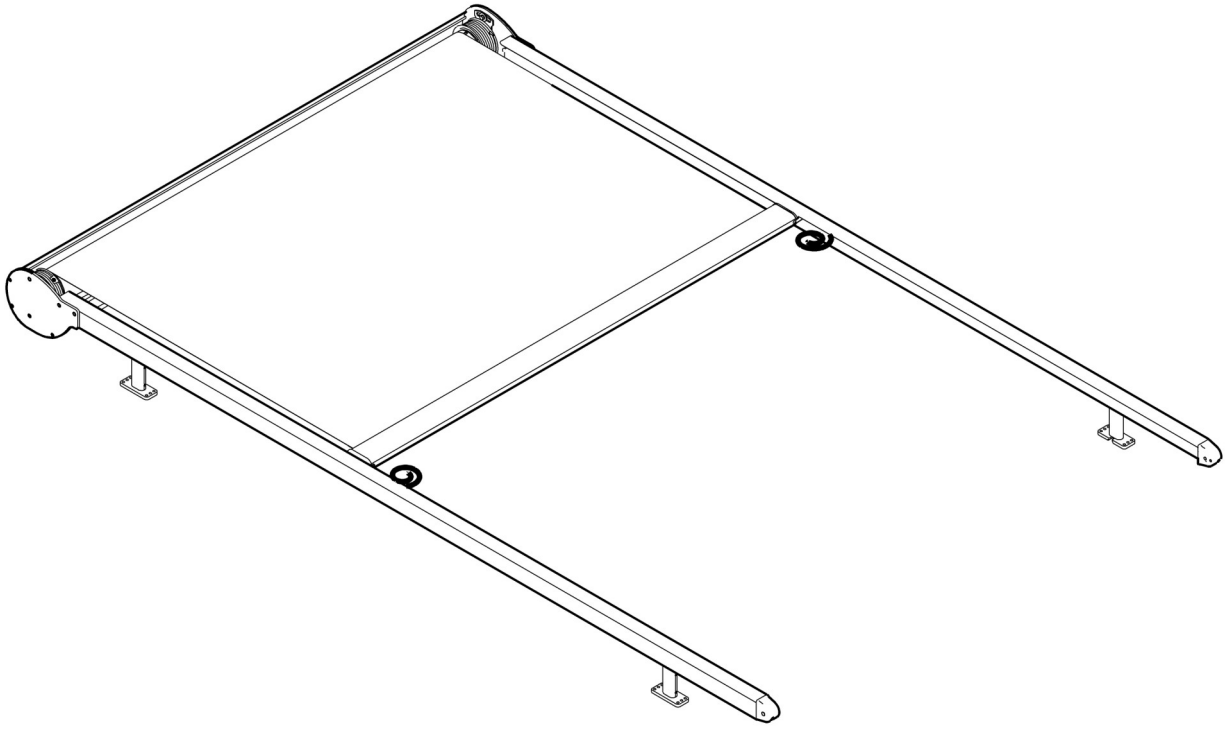
8.3.

1. Required fixings supplied in fitting kit – see section 3

Fit the barrel assembly between the end plates.

- Fit the hem bar into the side guide
- Fit lid fixing bracket

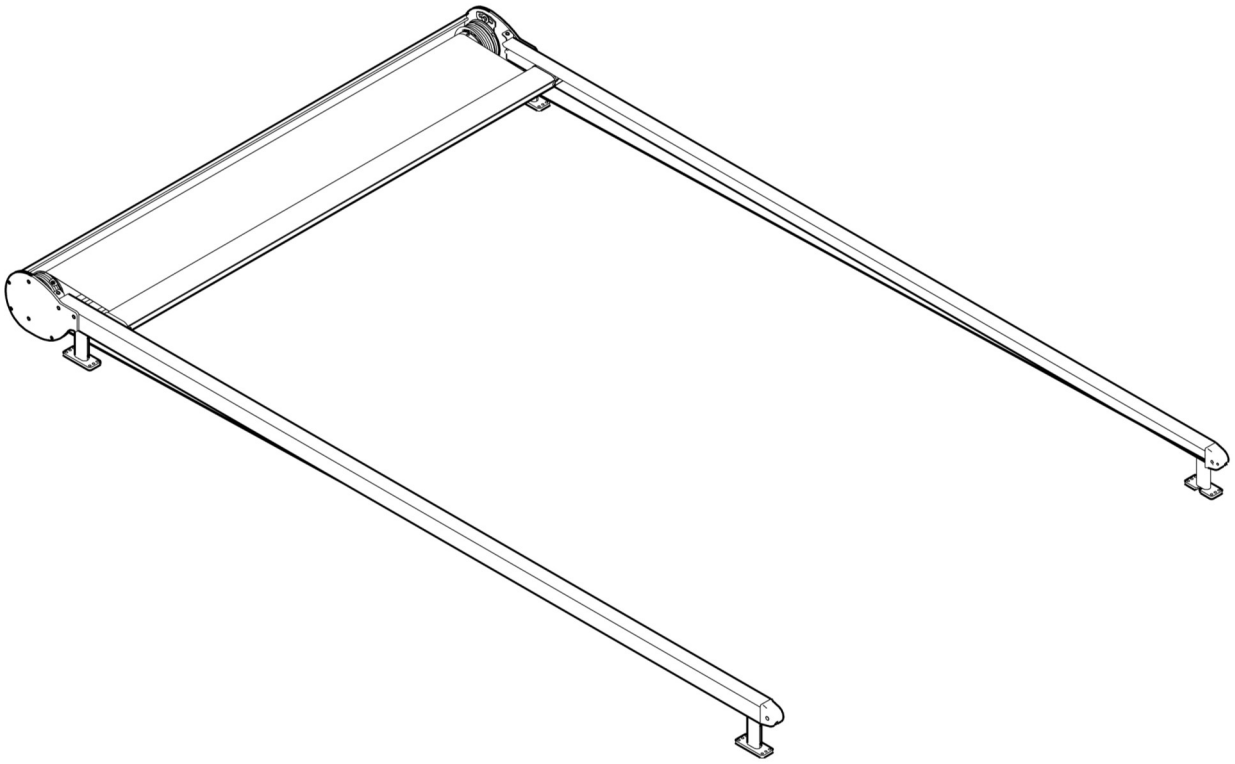
9. Control Cable Fitting



9.1.
Control Cable

Pull the tension cable through the hem bar. Do not cut the cable at this point

9. Tension Cable Fitting Cont...

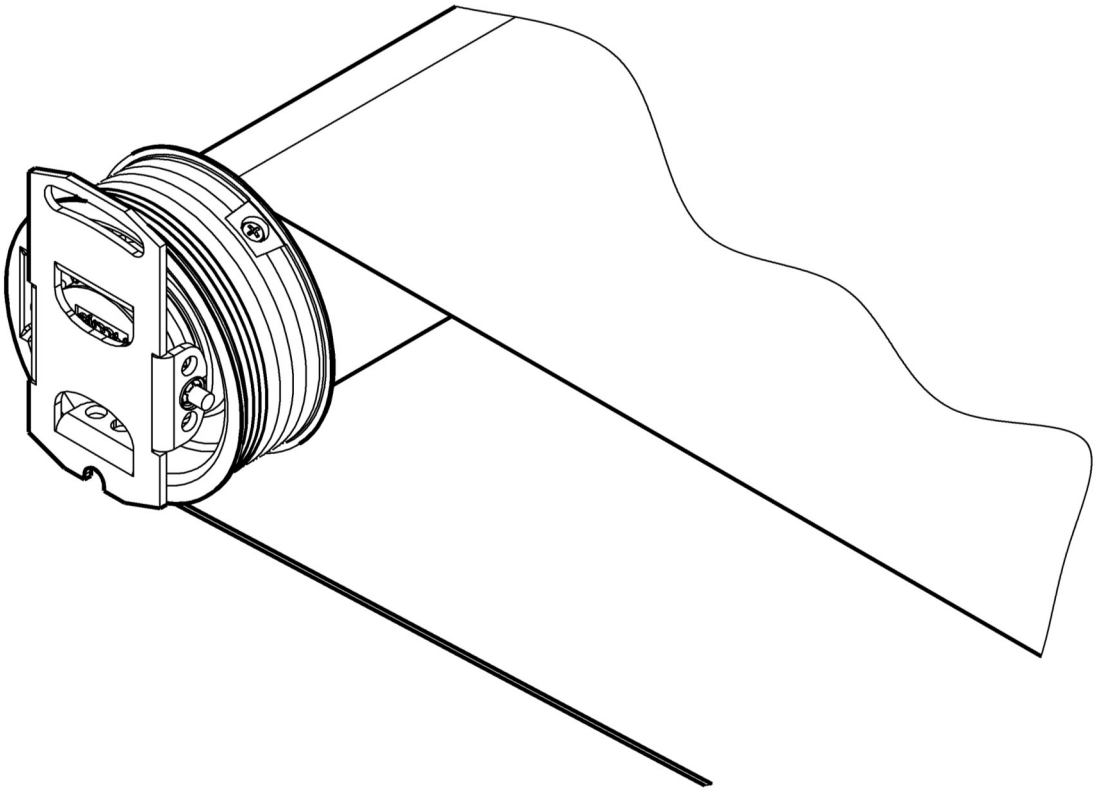


9.2.

1. Control Cable

- Pull the cable through both return pulleys and cable to the cable drums.

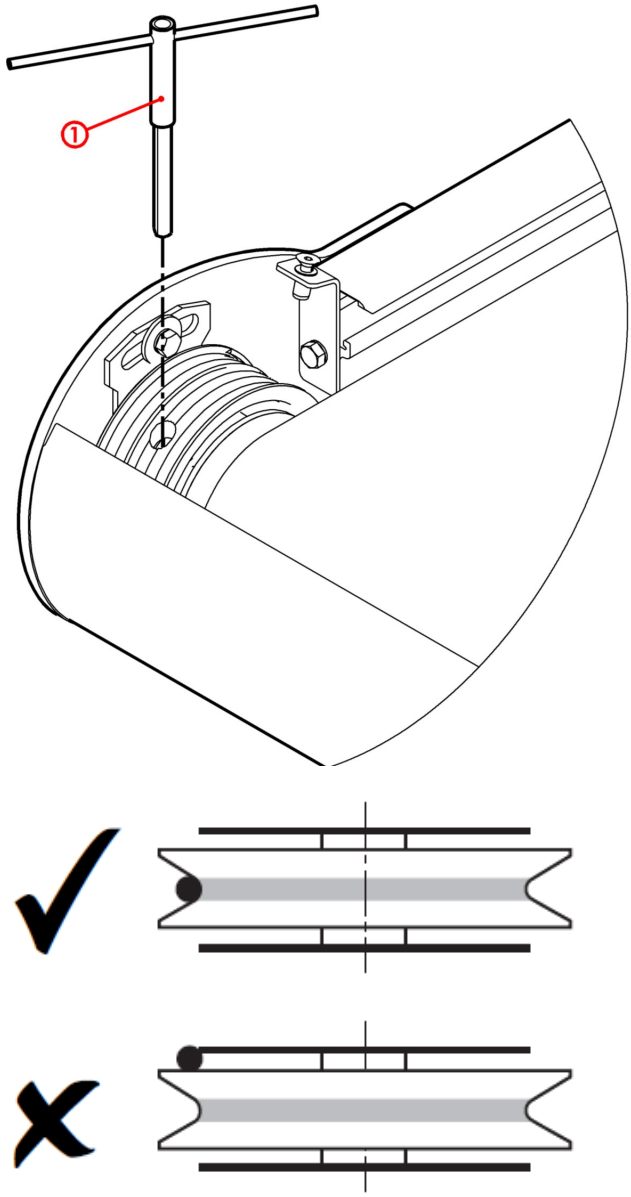
9. Tension Cable Fitting Cont...



9.3.

- With the system fully retracted, wind 2 turns of cable onto the cable drum (from inside to outside of spool at the motor end)
- Insert the cable into the cable drum locking device. (Motor side).
- Push the cable through and ensure it will not pull out. (cut excess cable from the rear of the spool, if required)
- Repeat process for spring cassette end, leave about 500mm slack in the system.

10. System Pre-tensioning



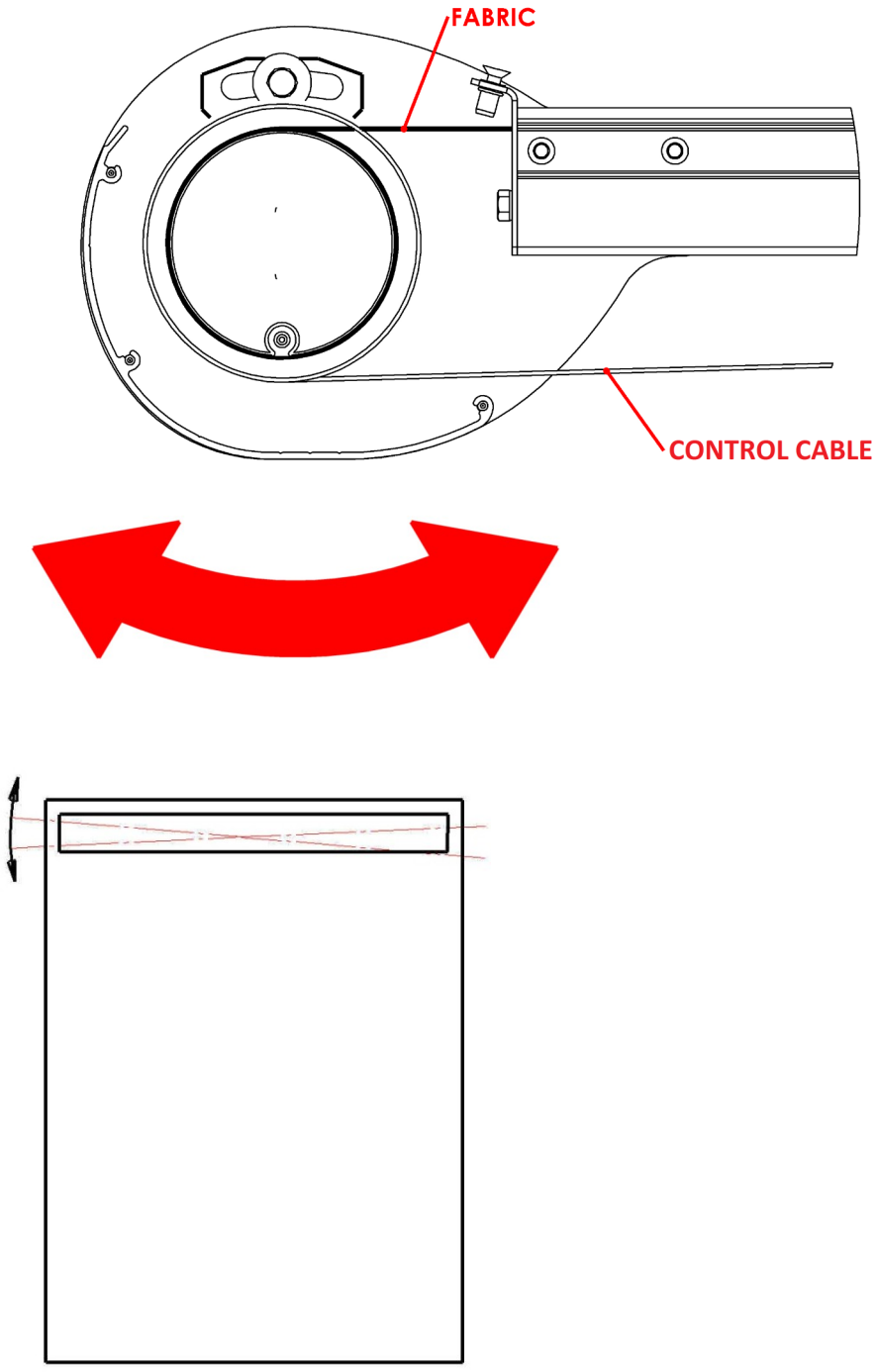
1. Tensioning Tool – Supplied in fitting kit.

- Insert tensioning tool as shown.
- Remove slack.
- Apply light tension – 5 full turns approx using the tensioning tool.

2. Operate the system to ensure correct system function.

Check:
- The fabric is tracking correctly.
- The tension cable is on the pulley wheels inside the hem bar and on the return pulleys.
- The cable is wrapping onto the cable drums neatly.

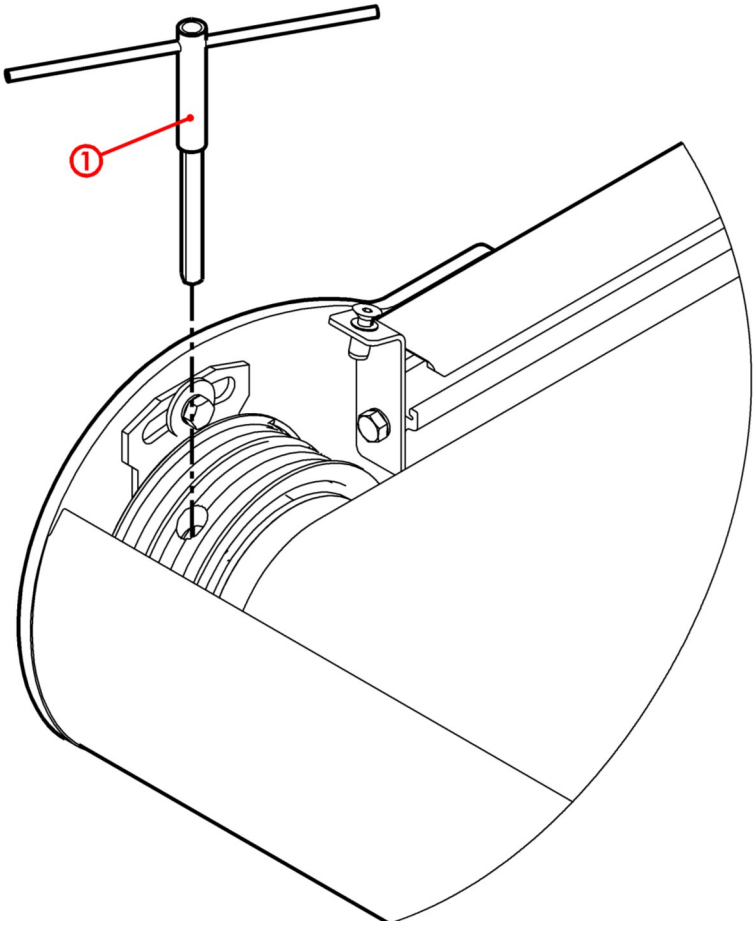
11. Fabric Tracking and Final Tension



11.1.
The TESS 420 system can be fine tuned to ensure good fabric tracking and long life. Tracking may need to be adjusted during product life.
The fabric when being retracted back towards the barrel should remain in position on the barrel; it should not wander towards one side. Long fabrics might move towards one side and then back towards the other.

- Taking care that the fabric does not crease — Deploy and retract system several times to give accurate indication of tracking,
- Adjust tracking as required by loosening mounting screw and rotating mounting bracket (this can be carried out at both sides).

11. Fabric Tracking and Final Tension Cont.....



11.2

1. Tensioning Tool – Supplied in fitting kit

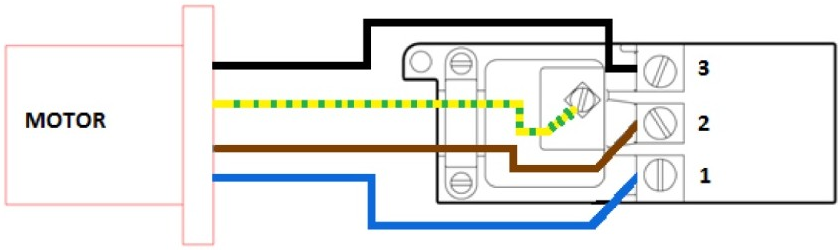
- Apply 10-20 FULL turns to the gear box by using the tension tool (provided)

INFORMATION

- Do not over tension system.
- The system is over tensioned if the spring cassette is locked. Simply check this by pulling onto the control cable to check for free movement of the spring cassette cable spool.

12. Hirschmann Fitting

HIRSCHMANN
STAS3

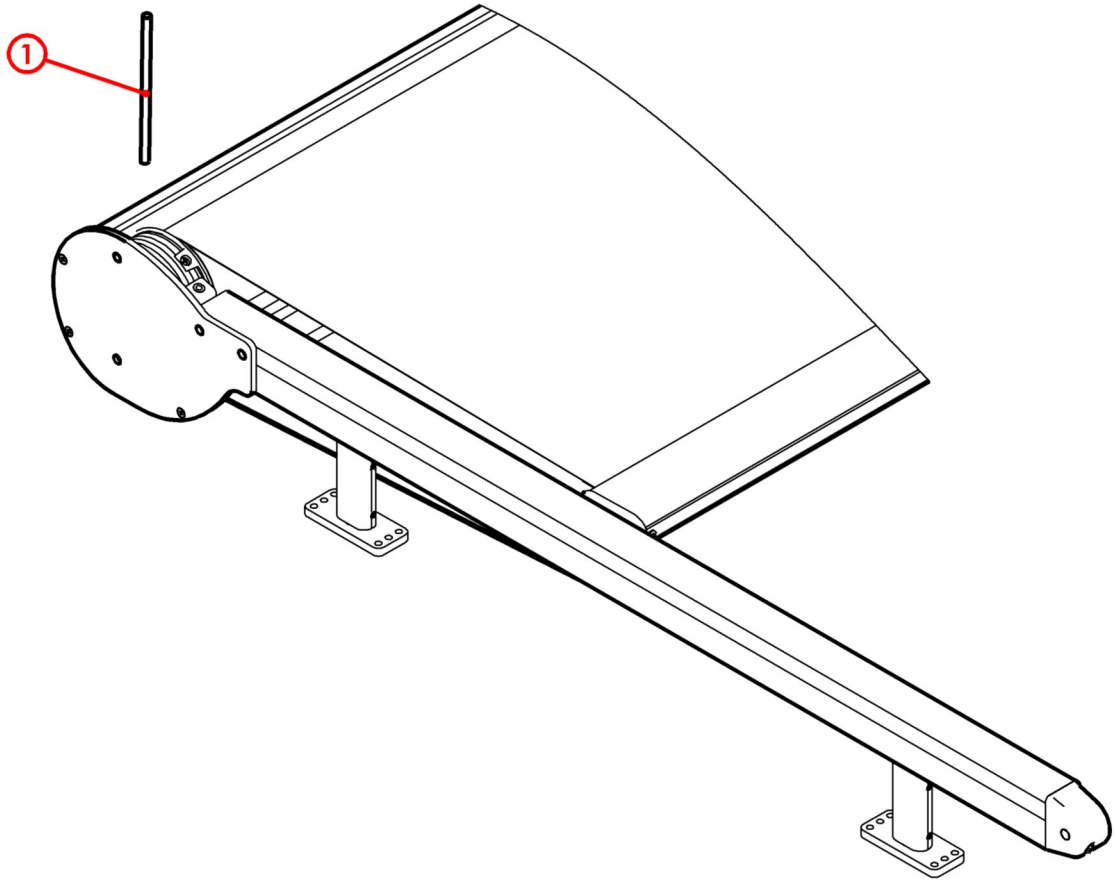


3. BLACK
2. BROWN
1. BLUE
GROUND. YELLOW/GREEN

Hirschmann Plug

- The diagram above shows the Hirschmann plug wiring as per Guthrie Douglas specification.

13. Manual Motor Limits Setting



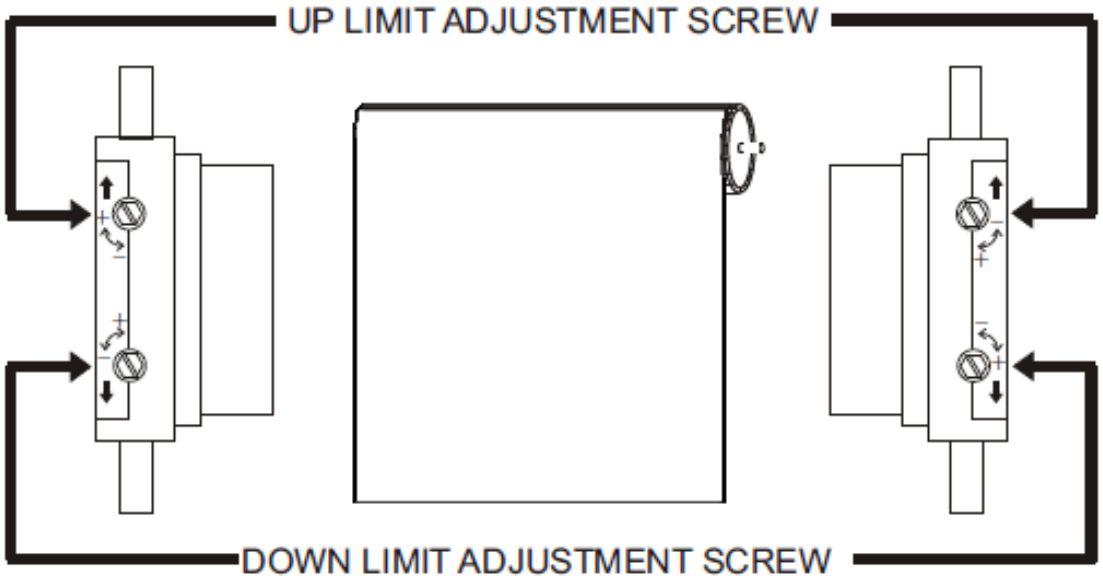
13.1

1. Motor limit tool

- Set the limit positions (refer to motor instruction in section 13.2 or 14)
- Refer to installation drawing.
- DO NOT allow the hem bar to touch the Jakob fitting or cable retaining bracket.

NOTE – all tube motors feature thermal overload protection. This is triggered after approx 4 minutes continuous run time. A motor cool-down period of approximately 20 minutes may be required before the motor can be run again.

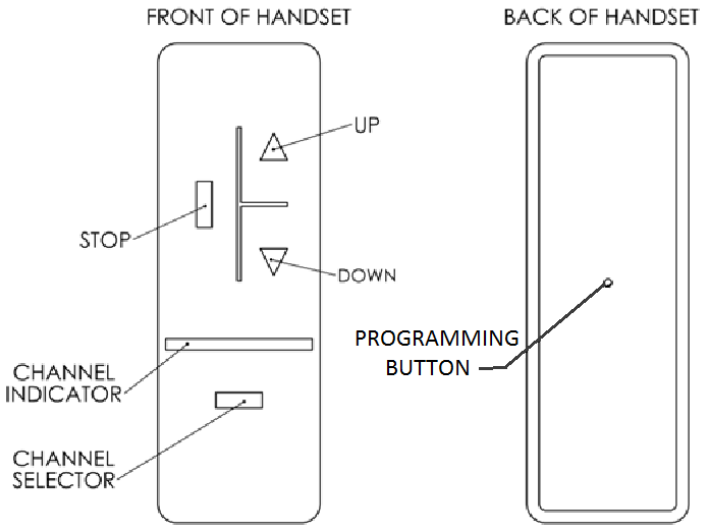
13. Manual Motor Limits Setting Cont....



13.2

- Identify the adjustment screw controls.
- When the material rolls down on the same side as the limit adjusters, the upper adjuster controls the upper limit and the lower adjuster controls the lower limit (note – these are reversed when the material rolls down on the opposite side to the limit adjusters).
- Upper limit – by turning the limit adjuster clockwise the barrel will continue to retract, turning the limit adjuster counter clockwise will lower the limit (when lowering the limit remember to deploy and retract the system using the hand controls to ensure that the limit is correct).
- Lower limit – by turning the limit adjuster clockwise the limit will become shorter, turning the limit adjuster counter clockwise will lower the limit (when lowering the limit remember to retract and deploy the system using the hand controls to ensure that the limit is correct).
- When close to the desired position make small adjustments to the limit adjusters, retract and deploy the system away from the limit by approximately 2-3 feet, this will allow you to accurately set the limit
- If the motor does not stop near to the limit position stop the motor with the hand controls and turn the limit adjuster counter clockwise, continue turning until the motor stops (this could be up to 120 turns of the adjuster)

14. Radio Motor Limits Setting



Important

- Only power up one motor at a time.
- Have the transmitter within 3m of the motor during setting process.
- Motors acknowledge by running briefly in both directions
- Motor will only run in deadman (impulse) mode until a transmitter is added to the memory.

Setting motor limits

1. Connect the mains supply to the motor. This should be via an isolator switch in case programming has to be wiped.
2. Press the up and down button at the same time to initiate programming, the motor will acknowledge. The motor operation will be impulse only at this stage.

Checking the motor direction

1. Press the up button on the transmitter. The blind should retract. If the motor direction is incorrect then press the middle stop button for approximately 3 seconds. The motor will acknowledge and the direction will have been reversed.

Setting the end limits

1. Press and hold the down button and the motor will deploy. Continue this until the required deployed position is reached, use the up/down buttons to achieve the correct position. To memorise the fully deployed position press the stop and up button simultaneously. The motor will then run automatically in the retract direction.
2. When the motor arrives at the desired retract position press the stop button. Should it be necessary to adjust the final position use the up/down buttons.
3. To memorise the limit position press the stop and down buttons simultaneously. The motor will now run in the deploy direction automatically.

Confirming the master transmitter

1. To validate the settings press and hold the stop button for 2 seconds (the motor will acknowledge) then press the programming button for approximately 1 second, the motor will acknowledge again. This is now the master transmitter and can be used to programme additional transmitters.

14. Radio Motor Limits Setting Cont.....

Programming additional transmitters

1. To program additional transmitters do the following: press the master transmitter programming key for approximately 3 seconds, the motor will acknowledge. Take the new transmitter and select the required channel. Press the programming key for 1 second, the motor will again acknowledge and is now programmed.

Re-adjustment of end limits

The end limits can be altered as follows:

1. Go to the required limit position.
2. Press simultaneously the up/down buttons for approximately 5 seconds, the motor will acknowledge.
3. Adjust the motor to the new position with the up/down buttons.
4. Validate the new position by pressing the stop button for 2 seconds; the motor will acknowledge.

Please note: the motor must be on the limit to be adjusted. If the limit cannot be reached then the programming will have to be cancelled and the re-started.

Cancelling the Programming & Settings

1. In order to undertake this successfully a mains power switch is essential and the timings are given to the minimum. If the timing is too quick then the programming will not be cancelled and will have to be repeated.
2. As a safety precaution, use the up/down button to deploy/retract the system to a central position away from either pre existing limits.
3. Turn off the power supply to all other motors that you do not want cancelled out of the programming. Failure to do so will cancel all programmed motors.
4. With the mains switch turn OFF the power supply for 2 seconds
5. Switch ON the power supply for 10 seconds
6. Switch OFF the power supply for 2 seconds
7. Switch the power supply back ON and the motor will run in a random direction for 5 seconds
8. Validate the programming by pressing and holding the “programming key” for more than 7 seconds. Maintain pressure on the programming key, the motor will acknowledge and a few seconds later the motor will acknowledge again. If this does not happen then the cancellation of the programming is not complete and it will have to be repeated from the beginning.

Faulty programming

1. If during the programming process the mains supply is turned off then back on then a situation could be encountered where the motor will do nothing. This is because the programming mode is still active.
2. Complete the operation by pressing the programming key. This will take the motor out of programming and it can then have the programming cancelled to restore it to “factory default” the programming process can then be repeated.

15. Maintenance

Maintenance must be considered with local conditions in mind but it is expected the installed system will be checked every year. For difficult conditions (external, dusty, sandy, cold, high wind etc) the systems could be checked on a more regular basis.

Every 12 Months

- Check tracking and fabric condition (creases)
- Check that tracking is correct and fabric is clear of spools
- Make adjustments where required (See 4)
- Check limit positions
- Do not allow the hem bar to touch the return pulleys, barrel or head box
- Make adjustments (See 2)
- Check fabric edges for small rips / cuts / damage
- Damaged edge will reduce the tear strength of the fabric
- Check tension cable (See 5)
- Ensure cable is spooling correctly and neatly
- Check the plastic coating is in place and not damaged
- Check for knots of damaged wire under the surface
- Replace cable if necessary
- Check for good pulley rotation
- Ensure cable is sat in the pulley V correctly
- Check fixing screws
- Tighten any loose screws
- Check for good relieving roller operation
- Check wind sensor operation
- Clean and remove any debris from the system

Every 5 Years (additional checks)

- Check hem bar end caps (TESS 120/140/420/440/660) for wear
- Replace if necessary
- Replace tension cable if not replaced already

Every 10 Years (additional checks)

- Check motor operation
- Depending motor usage and working conditions and consider replacement

Notes

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