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# **DRAPER FlexShade ST30 DC Window Shade Instruction Manual**

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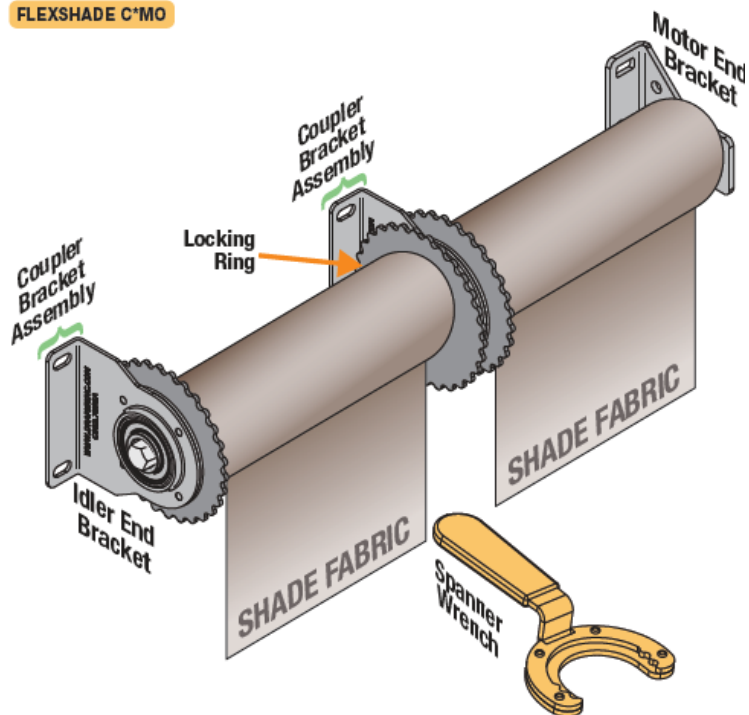
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## **DRAPER FlexShade ST30 DC Window Shade**



## **Components**



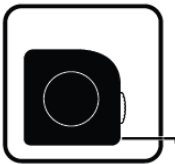
## PERSONNEL REQUIRED



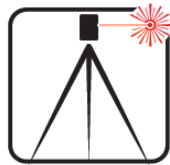
## TOOLS REQUIRED



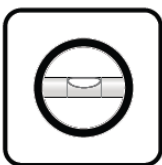
PENCIL



TAPE MEASURE



LASER LEVEL



LEVEL



POWER DRILL



HARDWARE (by others)

## CAUTION

Read and understand all warnings (Page 2 of this document) before beginning installation.

## Important Installation Information

### Caution:

1. Inspect all boxes to make sure you have received the proper shades and parts. Controls may be shipped separately, or in same carton as shades.
2. Open cartons lengthwise, taking care not to cut into cardboard shipping container.
3. Before mounting shades, verify measurements on label provided with shade, and ensure unit is installed at correct

width.

4. All endcaps, fascia, pocket headbox, and other hardware must be installed level. Shades must be level and square.
5. Read the following installation guidelines thoroughly and follow them carefully. Failure to do so may cause product to fall or otherwise fail, and invalidates warranty.
6. Installer is responsible for selecting mounting hardware appropriate for site conditions.

## **Safety Information**

### **WARNING**

Improper installation and use of the Motorized FlexShade® Coupled can result in serious injury or death. Primarily, injuries can occur if the unit falls due to imprecise installation, mishandling of the unit during installation, or installation on an insufficient wall or ceiling structure. Please use extreme care.

1. Please read the following installation guidelines thoroughly and follow them carefully. Failure to do so may cause product to fall or otherwise fail, and could result in serious injury.
2. Installation and calibration of the unit should only be performed by an authorized, qualified, and experienced professional. In particular, electrical work and wiring [indicated in diagram by dashed lines] must be completed only by a qualified professional electrician who has read this manual completely and is familiar with the construction and operation of this equipment and the hazards involved.
3. Do not affix the unit to wall or ceilings that have inadequate strength to permanently hold the unit during use. It is the owner's and installer's responsibility to confirm the wall or ceiling to which the unit attaches is sufficient to permanently hold the weight and stress loads of the unit at all times. Draper®, Inc., is not responsible for improper installation, application, testing, or workmanship related to the product at place of installation.
4. It is the installer's responsibility to make sure appropriate fasteners are used for mounting.
5. All brackets, fascia, headboxes, pockets, wall clips, and other hardware must be installed level. Unit must be level and square.
6. Never leave the area while operating the unit during installation, maintenance, or normal operation, unless it is secure and safe.
7. Before testing or operation, carefully inspect the entire area and path of the shade and areas underneath the shade to be sure no persons or objects are in the area.
8. Turn off power and any nearby equipment or cables carrying electricity before connecting switches, wires, controls, or electrical components.
9. Make sure the limit switches are pointed down or accessible when placing the motor in brackets/endcaps.
10. All motors should be tested and limits set using test cord before shades are wired.
11. Do not wire motors in parallel without written permission from Draper, Inc.
12. During testing or operation, carefully watch the surrounding area for any potential safety concerns including nearby persons or objects.
13. After installation, the entire system, including all sensors, should be carefully tested to ensure safe and normal operation. Extreme care should be taken during testing to remain clear of moving parts to avoid possible injury.
14. Operation of unit should be performed only by authorized and qualified personnel, who have been trained in the safe and effective operation of the unit and understand its safety features.
15. The safety features of the unit, including sensors, should never be disabled, bypassed, or overridden. The system should not be operated until all safety features, including the sensors, are properly and completely installed, calibrated, and tested.
16. Unit may need to comply with local, state, or district rules and regulations, in particular when installed in schools. All applicable rules and regulations should be reviewed before installation and use.
17. Failure to precisely follow installation guidelines invalidates all warranties.
18. Custom products/installations may not be reflected in this manual. Call Draper, Inc., if you have questions about the installation of custom products or any questions about your installation.

### **Before Beginning Installation**

1. Look for any job site conditions that could interfere with installation or operation of the system.
2. Read carefully and be sure to understand all installation instructions and all related operations manuals. These instructions are intended to serve as a guide for the installer and owner. They should be followed closely and combined with the expertise of experienced qualified installers. Draper, Inc., is not responsible for improper installation, application, testing, or workmanship related to the product at place of installation. Please retain all instructions for future use.
3. Open cartons lengthwise.
4. Locate and lay out all pieces.
5. Inspect all boxes to make sure you have received the proper shade and parts. Controls may be shipped separately, or in same carton as shade.
6. If you have any difficulties with installing, servicing, or operating your shade, call your dealer or Draper, Inc., 765-987-

## Field Adjustments

Each Draper Solar Control Shade is tested to ensure proper operation. Even with this testing, some field adjustments may be needed for telescoping.

If the shade is telescoping, place a piece of shiming fabric into the fabric roll when the shade is deployed on the side that the fabric will be drawn toward. For example: if the fabric is tracking to the left, place the shiming fabric on the right side.

## Cleaning and Maintenance

Window covering products manufactured by Draper, when properly installed, should require no operational maintenance or lubrication.

Most standard Draper fabrics may be cleaned at the window by vacuuming with a soft brush attachment. They also may be cleaned by using a sponge or soft cloth and mild solution of warm soapy water. A mild dishwashing liquid is recommended. A clean dry cloth is recommended for the metal finish.

**Please Note:** Exceptions are GreenScreen Evolve®, GreenScreen Revive®, and Phifer® SW7000 fabrics, which must be cleaned with a dry art sponge. (GreenScreen Revive® and GreenScreen Evolve® are registered trademarks of Mermet® USA. SheerWeave® is a registered trademark of Phifer® Incorporated.)

## Section 1 – Operating the Retractable Coupler Shaft

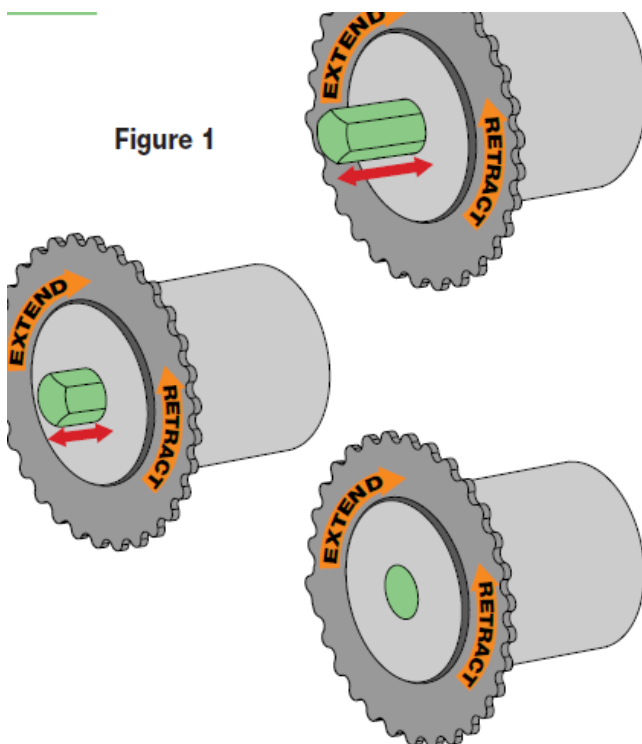
**Please Note:** Custom products/installations may not be reflected by this document.

Draper® Coupled FlexShades utilize a locking retractable shaft (Fig. 1) to hold roller assemblies in place and link panels together. The retractable coupler shaft on has three distinct positions: fully extended, intermediate, and fully retracted.

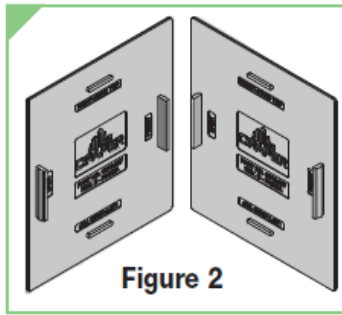
1. To retract the coupler shaft from fully extended to the intermediate position, grasp the roller with one hand while rotating the metal ring counterclockwise (as viewed facing the coupler assembly) approximately  $\frac{1}{2}$  of a turn with the other; this will leave the shaft extended approximately  $\frac{1}{2}$ ".
2. To retract the coupler shaft fully, rotate the metal ring counterclockwise (as viewed facing the coupler assembly) an additional  $\frac{1}{3}$ " of a turn.
3. To lock shaft in place when extended, rotate metal ring clockwise  $\frac{1}{4}$  turn.

**Please Note:** There is no retractable shaft in the idler end assembly on the idler end shade (furthest from the operator). This idler assembly utilizes a sliding pin and retainer clip.

**Please Note:** These instruction steps are for installing endcaps/brackets one at a time. Brackets/endcaps may also all be installed at the same time, prior to installing roller/fabric assemblies. If brackets/endcaps are installed first, please be certain of measurements and locations. For best results, assemble the unit on a flat, clean surface and verify measurements before attaching brackets/endcaps.



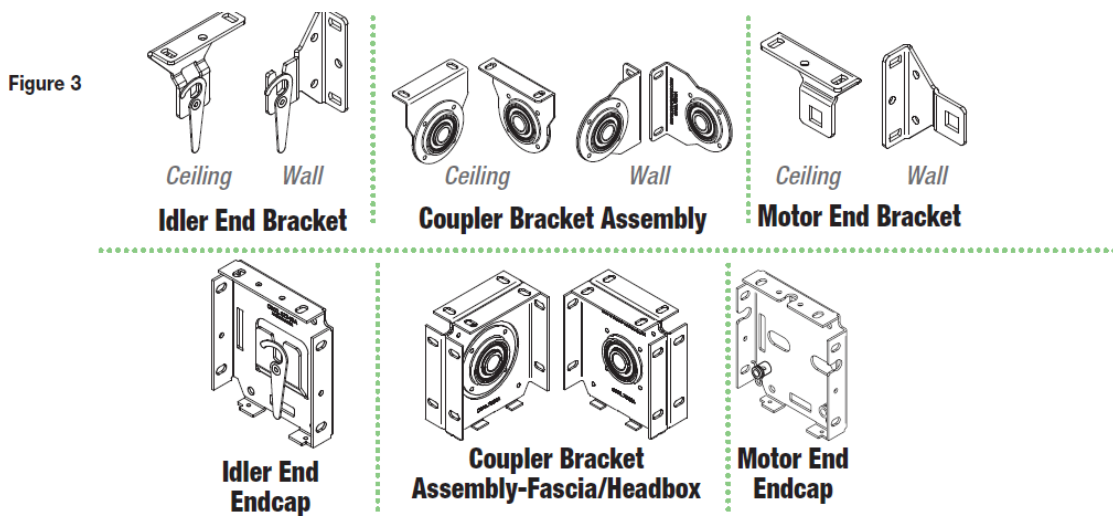
## Section 2 – Operator End Bracket/Endcap Assembly



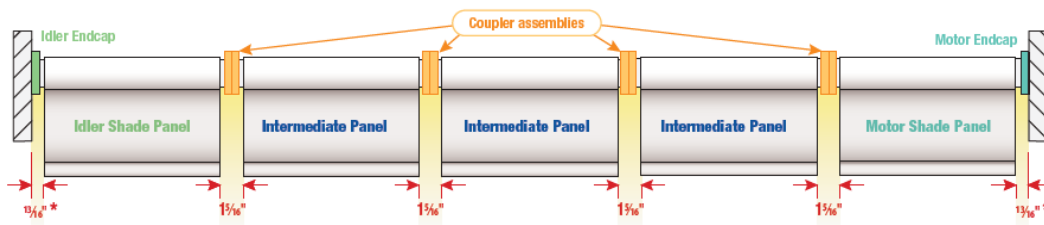
**Figure 2**

1. Before mounting shades, verify measurements on the card provided with the shade, and ensure the brackets are installed at the correct width.
2. Measure and mark wall, jamb or ceiling for placement of mounting brackets or endcaps. Mark a level line across all windows to ensure a level installation. Mark the outer edges of the operator- and idler-end brackets or endcaps, and the center locations of the coupler brackets. Locations are determined by:
  1. Operator-end panel width;
  2. Intermediate panel width (s); and
  3. Idler-end panel width.
3. ENDCAP, FASCIA OR HEADBOX UNITS: Install the endcap covers onto both the operator- and idler-end endcaps. Please note the correct orientation of the covers as indicated on the inside face (Fig. 2).
4. HEADBOX UNITS: Follow Step 2 above, marking and drilling holes in headbox for hardware, then install the headbox. Installer is responsible for selecting mounting hardware appropriate for site conditions.
5. Mount the operator-end bracket/endcap assembly (Fig. 3 for bracket and endcap types). Make sure the outside edge is aligned with the marked location. Installer is responsible for selecting mounting hardware appropriate for site conditions.

Caution: DO NOT use wall brackets for ceiling installations, and DO NOT use ceiling brackets for wall installations.



**Figure 4**



\* This dimension may be larger, depending on motor selection. Contact Draper for motor verification.

### Section 3 – Operator End Fabric/Roller Assembly

**Caution:** During installation and adjustment of coupled shades in headboxes or pre-existing pockets; fingers may slip, potentially causing severe cuts and/or scrapes. If possible, wear gloves that are flexible enough to allow adjusting the metal wheel but strong enough to protect hands.

1. Verify proper location of coupler bracket assembly:
  1. Installer #1 attaches operator end to operator end bracket/endcap assembly.
  2. Installer #2 slides the coupler bracket assembly onto the coupler shaft of the roller assembly to be installed, and holds in place.
  3. Verify and mark location and set fabric/roller assembly aside.
2. Install first coupler bracket assembly to mounting surface.
3. Ensure the operator-end fabric/roller assembly's coupler shaft is completely retracted (Fig. 1).
4. Raise first fabric/roller assembly into place. While Installer #1 inserts the operator end of fabric/roller assembly into the operator-end bracket/endcap, Installer #2 lifts the coupler end up next to the coupler bracket assembly, then extends the coupler shaft to the intermediate position by rotating the ring clockwise about 1/3 of a turn (Fig. 1). This will hold the first unit in place during installation of the next panel.
5. Connect power so the shade can be operated and adjusted.
6. Operate the unit to ensure proper fabric tracking and to set up and down limits (see sections on limit adjustment and field adjustments).
7. Raise shade to upper limit.

**If unit has three (3) or more panels:**

1. Install the next coupler bracket assembly to mounting surface.
2. Ensure that the end of the previously-installed coupler shaft is flush with the outside edge of the bearing.  
If it extends beyond the bearing, retract the coupler shaft of previously installed roller to the intermediate position (Fig. 1).
3. Lift both ends of the intermediate fabric/roller assembly into place and align between the brackets/endcaps.
4. Installer #1 fully extends coupler shaft of previously installed roller by rotating the metal ring clockwise ½ turn when viewing the face of the coupler assembly (Fig. 1), until the shaft extends fully into the receiver of the fabric/roller assembly being installed.  
Caution: Ensure that the metal ring is fully rotated counterclockwise (as viewed facing the coupler assembly) before operating the assembly. Momentarily lift each roller simultaneously and separately to ensure that the spring-loaded shaft is not in a bind and that it is fully extended into the height adjuster mechanism. The roller may fall if the shaft is not fully extended.
5. Installer #2 extends the coupler shaft of the fabric/roller assembly being installed to the intermediate position so the end of the shaft is flush with the outside edge of the bearing.
6. Operate the unit to ensure proper fabric tracking.
7. Lower the unit (all shades will operate simultaneously) to lower limit.
8. Fabric panel heights can be adjusted so that the bottom edges of the fabric panels are aligned. On large units, this procedure should be done on only one panel at a time to minimize the amount of fabric weight that must be supported during the adjustment procedure.
9. Repeat for additional intermediate panels.

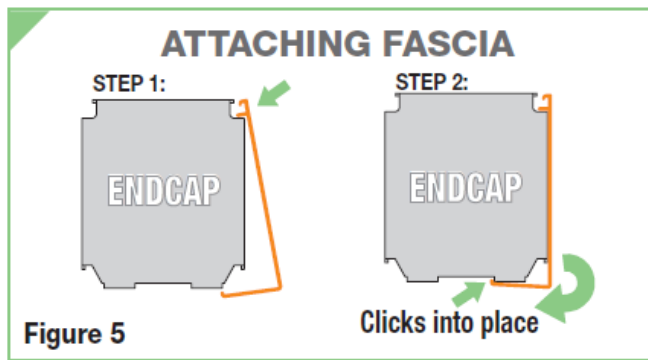
**Section 4 – Idler End Fabric/Roller Assembly**

1. Verify proper location of coupler bracket assembly.
2. Install idler-end bracket/endcap assembly.
3. Retract coupler shaft of previously installed roller to the intermediate position (Fig. 1). Ensure that end of the coupler shaft is flush with the outside edge of the bearing.
4. Lift both ends of the idler-end fabric/roller assembly into place and align between the brackets/endcaps.
5. Installer #1 places the idler-end sliding shaft onto the idler end bracket or endcap (Fig. 6). Lock shaft in place by placing retaining clip on shaft.
6. Installer #2 fully extends coupler shaft of previously installed roller by rotating the metal ring clockwise (as viewed facing the coupler assembly) about ½ of a turn (Fig. 1), until the shaft extends fully into the receiver of the idler-end fabric/roller assembly. Caution: Ensure shaft is locked in place with retaining clip on shaft.
7. Operate the unit to ensure proper fabric tracking.
8. Lower the unit (all shades will operate simultaneously) to lower limit.
9. If needed, the fabric panel heights can be adjusted so that the bottom edges of the fabric panels are aligned. On large units, this procedure should be done on only one panel at a time to minimize the amount of fabric weight that must be supported during the adjustment procedure.

**Section 5 – Attaching Fascia to Endcaps**

1. Place groove along top of fascia over endcaps, and snap into place (Fig. 5). Endcaps must be installed the correct distance apart for fascia to be properly attached with full engagement. Fascia is not fully seated until it clicks into

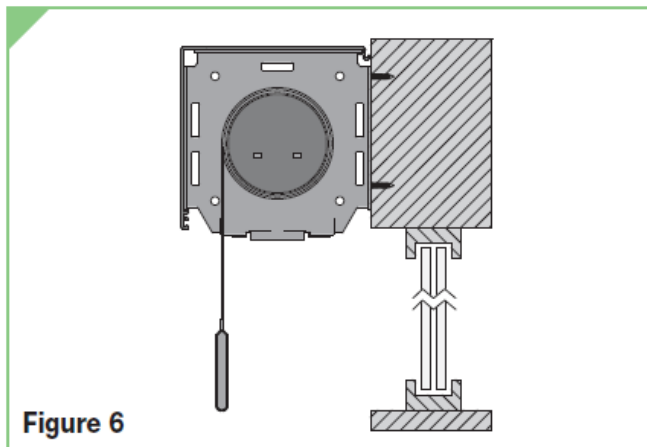
place on both ends. Once in place, check for secure fit. If not secure, use an appropriate fastener (not included).



#### Reverse Roll Fascia

1. Slide endcaps into extrusions.
2. Using provided holes in endcaps, mark the fascia for drilling.
3. Attach endcaps to fascia.
4. Mount Endcaps/Reverse Roll Fascia.
5. Install roller/fabric/operator assembly according to relevant instructions.
6. Attach endcap covers to endcaps. Use double-sided tape to help secure in place.

### Section 6 – Surface Headbox or Pocket Headbox

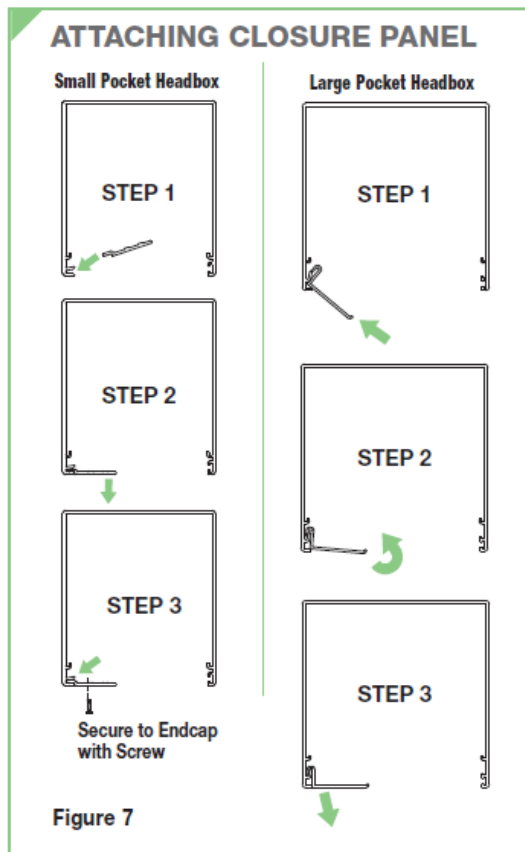


1. Snap endcap covers onto endcaps. (See Section 4.2 – Attaching Fascia to Endcaps Step 1).
2. Slide endcaps into the top/back portion of surface headbox or into pocket extrusion of large pocket headbox. Using provided holes in endcaps, mark headbox for drilling.  
**Please Note:** The installer is responsible for selecting mounting hardware appropriate for site conditions.  
**Caution:** Before mounting shades, verify measurements on the provided with shade, and ensure endcaps are installed at correct width.
3. Drill holes in back (wall mount) or top (ceiling mount), of or in a pocket.
4. Attach endcaps and Surface Headbox back/top or Large Pocket Headbox extrusion to wall, ceiling or pocket using mounting hardware appropriate for site conditions.
5. Install shade (See Section 4.1 – Mounting Endcaps for Fascia).
6. Attach headbox fascia or pocket closure (Fig. 7).

Note on surface style headbox:

Fascia is not fully seated until it clicks into place on both ends. Once in place, check for secure fit. If not secure, use an appropriate fastener (not included)



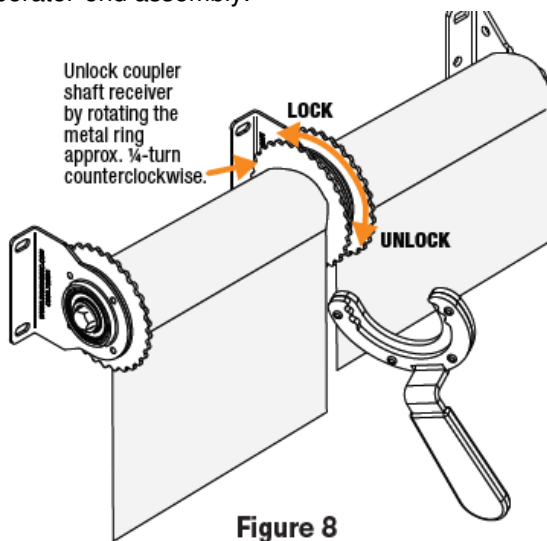


## Section 7 – Fabric/Roller Assembly Alignment (Steps are shown for right-hand operators)

**Please Note:** If needed, the fabric panel heights can be adjusted so that the bottom edges of the fabric panels are aligned. On large units, this procedure should be done on only one panel at a time to minimize the amount of fabric weight that must be supported during the adjustment procedure.

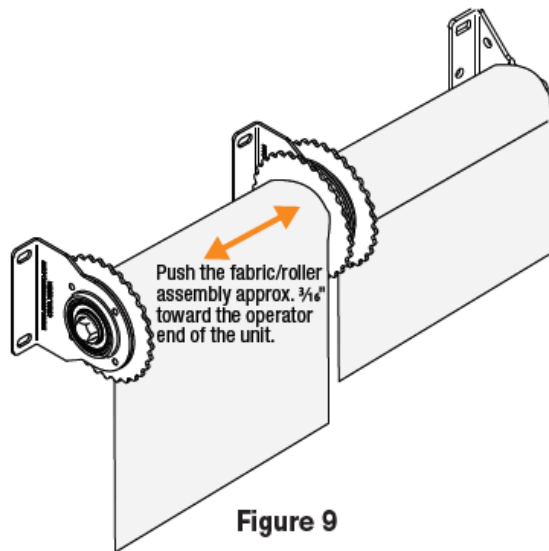
1. Unlock height adjuster mechanism (or coupler shaft receiver) located at the operator end of fabric roller assembly being adjusted by using the included Spanner to rotate the metal ring about  $\frac{1}{4}$  turn counterclockwise when viewing the face of the coupler assembly (Fig. 8).

**Please note:** Do not use this procedure to adjust the operator-end assembly. Use the limits to set the down travel of the operator-end assembly.



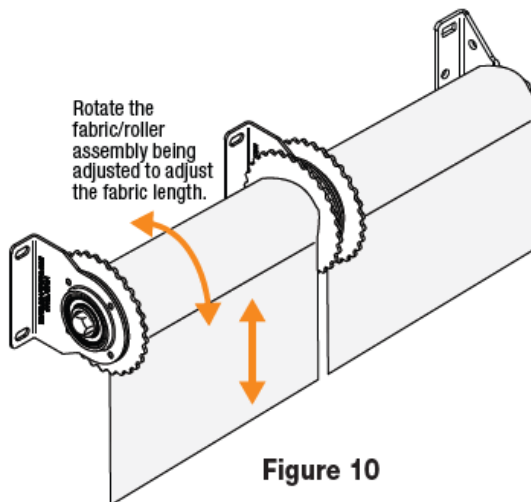
2. Push the fabric/roller assembly you are adjusting toward the operator- end of the unit. The fabric/roller assembly you are pushing will move approximately  $\frac{3}{16}$ " toward the operator end (Figs. 9 and 12).





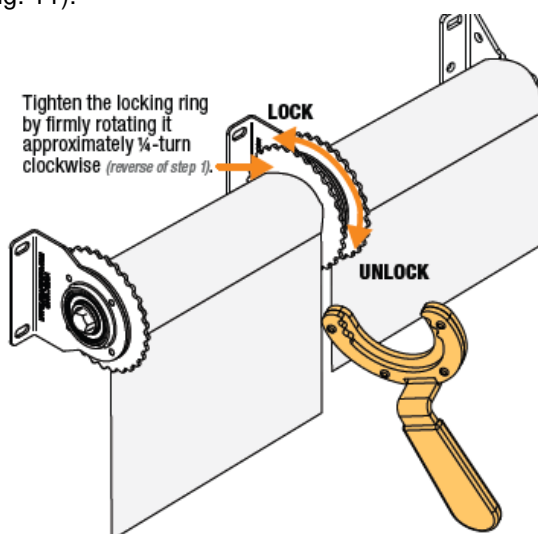
**Figure 9**

3. Rotate the fabric/roller assembly being adjusted in either direction to raise or lower the fabric panel (Figs. 10 and 12).



**Figure 10**

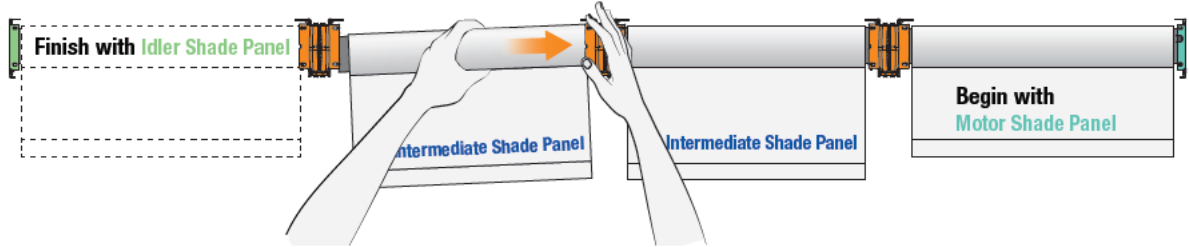
4. Allow the fabric/roller assembly being adjusted to move back away from the operator end of the unit, and check the position of the fabric panels.
5. Tighten the locking ring by using the included Spanner to rotate it approximately  $\frac{1}{4}$  turn clockwise (reverse of step 1) (Fig. 11).



**Figure 11**

6. Operate the unit to check for proper fabric position, tracking, etc. Caution: Make sure the locking ring on the idler end coupler assembly is fully tightened following height adjustment. Make sure you use the included Spanner to grip the locking ring. Tighten the locking ring until it is fully locked and you cannot rotate it any further. Check to make sure it is tight and will not work loose.

**Figure 12**



## Section 9 – Limit Switch Adjustments

### Standard and Quiet Motors (All procedures shown are for Standard Roll. Invert orientation for Reverse Roll)

#### Push Button Limits

1. Fully depress both limit switch push buttons, then operate wall switch to make sure system works properly.
2. Raise shade to desired “up” stop position.
3. Set upper limit by depressing proper (back) push button.
4. Lower shade to desired “down” stop position.
5. Set lower limit by depressing proper (front) push button.

#### Screw-Type Limits

1. Determine which direction of fabric travel corresponds with arrows on motor.
2. Operate shade to desired “down” stop position. Set limit by turning proper socket toward “+” to lower limit, and “-” to raise it.
3. Operate shade to desired “up” stopping position. Set limit by turning proper screw toward “-” to raise limit, and “+” to lower it.

#### Limit Adjustments (RS485 Motors)

For limit setting instructions on these motors, see instructions packaged with the RS485 Address/Limit Setting Tool (part# C156.241).

#### Limit Switch Adjustments (RTS Motors)

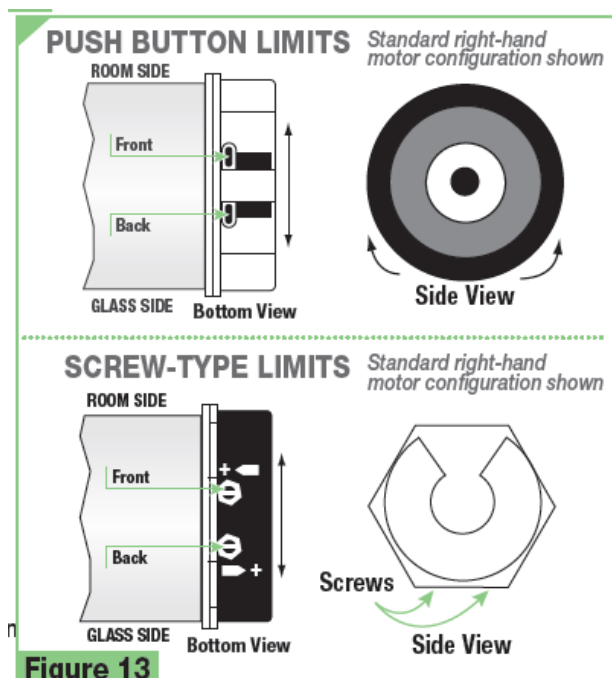
For limit setting instructions on these motors, see Radio Frequency Remote Control Programming Instructions (FS\_MO\_RFRC\_ProgInst).

#### Limit Switch Adjustments (IntelliFlex I/O Motors)

For limit setting instructions on these motors, see instructions packaged with the Motor Limit Setting Tool

#### Caution:

- Be sure all switches are in “off” position before adjusting limit switches.
- Be prepared to shut off manually while testing.
- Shade may be damaged by running shade fabric down too far to expose roller.
- If using a group control system, each limit switch must be set prior to connecting to system.
- Motor must be installed so limit switches are pointed down.



## Section 10 – Electrical Connections

Shade operates on 110-120V, 60 Hz. current. Shade is shipped with internal wiring complete and control switch(es) fully boxed, and standardly supplied with a 6' (1.8 m) cable lead. Longer lead can be substituted by removing two screws in motor end of roller, removing lead, plugging new lead in, and replacing screws. Wire to connect shade to switch(es) and switch(es) to power supply should be furnished by installer.

Connections should be made in accordance with attached wiring diagram, and wiring should comply with national and local electrical codes. DO NOT wire motors in parallel without written permission from Draper.

All operating switches should be "off" before power is connected.

**Please Note:** For low-voltage wiring requirements, Draper recommends consulting with a professional low-voltage electrical contractor. It is very important that shielded and stranded CAT 5 cable be used to prevent any electrical interference.

**Please Note:** A Draper Motor Test Cable (Part# 503109) and M12 Pigtail (Part# C107.089.60) are available for temporary power for testing and limit setting.

**IMPORTANT:** To reduce the risk of electric shock, equipment that features a grounding type attachment plug has a third (grounding) pin on the attachment plug. This plug will ONLY fit into a grounding type outlet. If the plug does not fit into the outlet, a qualified electrician must install the proper outlet.

Do not change the plug in any way.

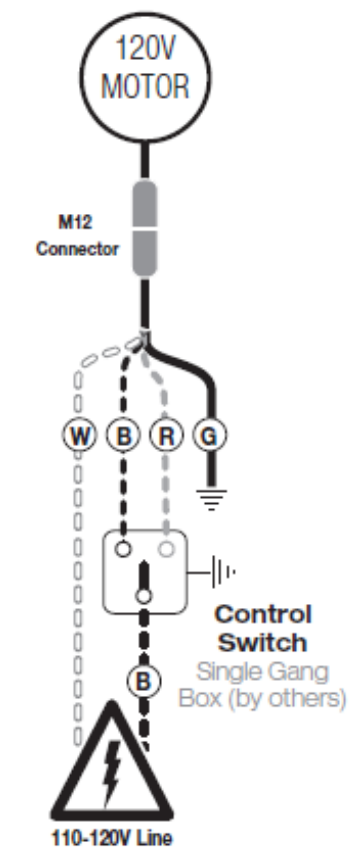
Do not use an extension cord. If the power supply cord is too short, a qualified electrician must install an outlet near the drapery operator.

### Controls & System Overview Sonesse® 120VAC Motors

**NOTE:** Test shade operation

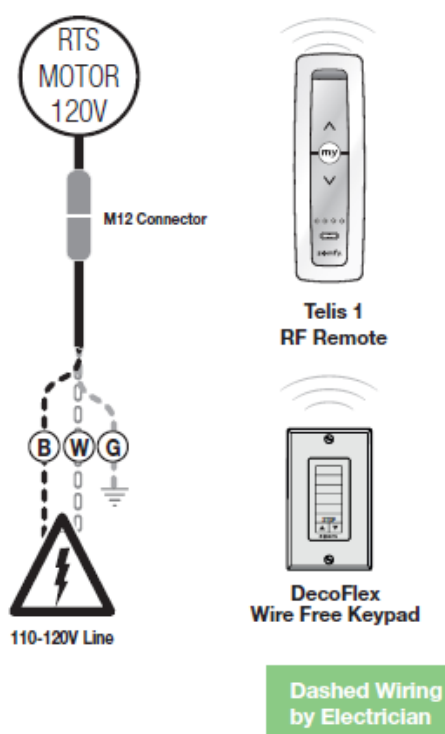
If shade direction does not correspond with the switch orientation, turn power off. Consult a licensed electrician to switch the red and black

wires from the motor to the switch. Do not wire motors in parallel without written permission from Draper®.

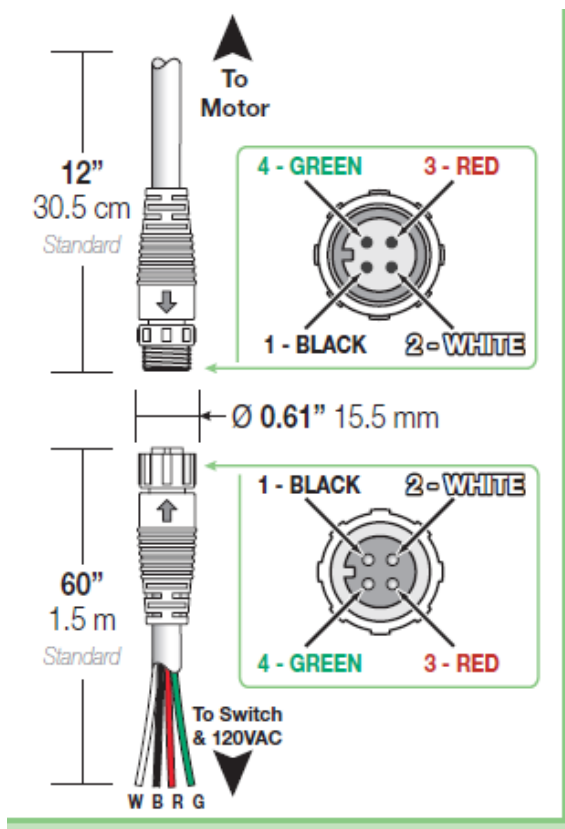


### Controls & System Overview

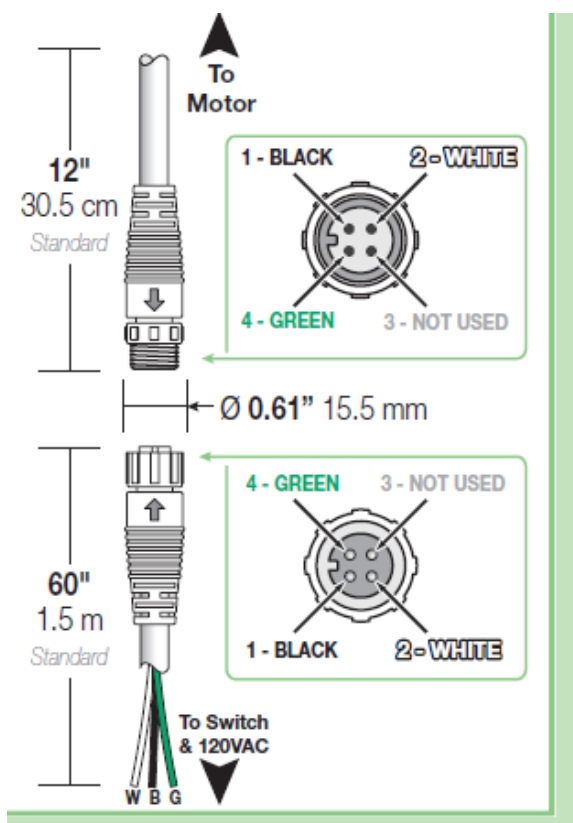
Sonesse® RTS 120VAC Motors



### M12 Connector for 4-Wire Motors

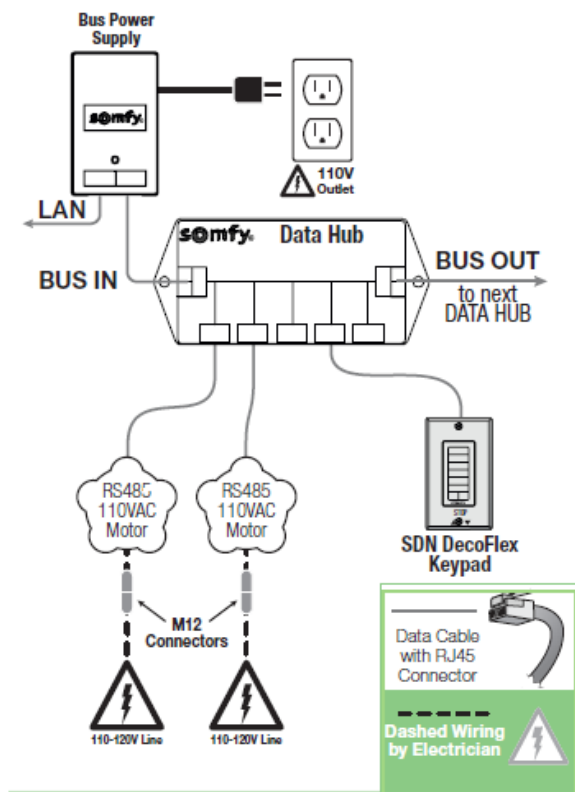


#### M12 Connector for 3-Wire Motors

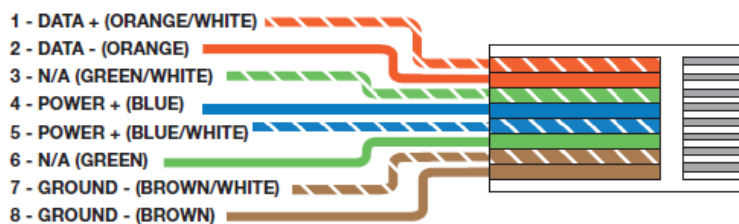


#### Controls & System Overview

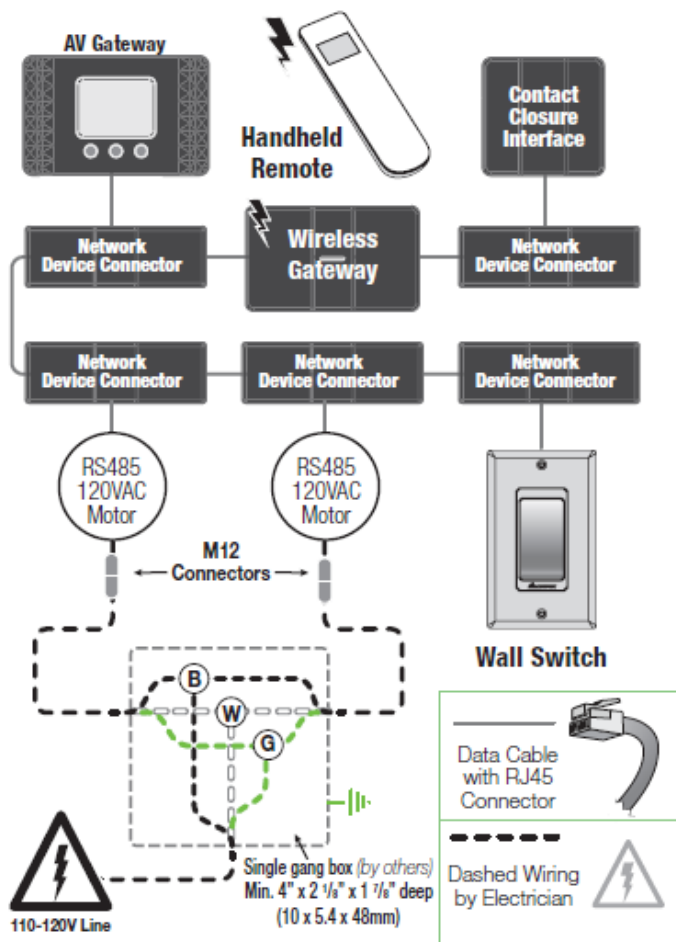
Sonesse® 485 120VAC Motors



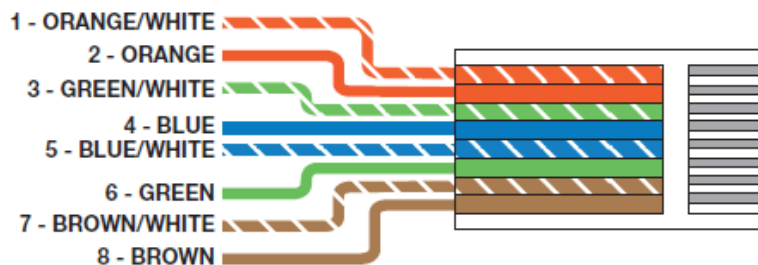
### Data Cable Pin-Out – RJ45 Connector



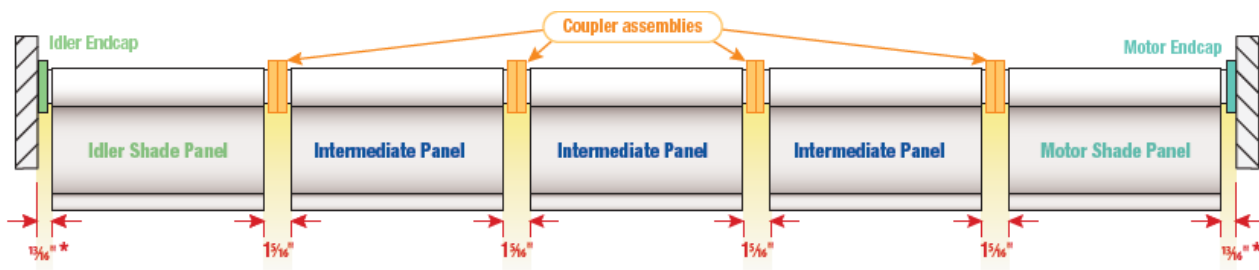
### Controls & System Overview



## Data Cable Pin-Out – RJ45 Connector



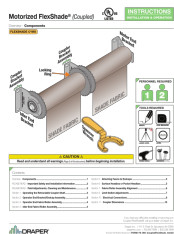
## Section 11 – Coupler Dimensions



\* This dimension may be larger, depending on motor selection. Contact Draper for motor verification.

## Documents / Resources





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FlexShade ST30 DC Window Shade, FlexShade ST30 DC, Window Shade

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