

# Installation Instructions

## Bottom-Up FlexShade—Motorized Dual Roller by Draper

### **⚠ 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.
- ③ For motorized units, before connecting switches, controls, or electrical, make sure power is off. Wiring indicated in diagram by dashed lines *must be completed by an electrician*.
- ④ For Clutch-operated units, if shades are to be installed in areas accessible to young children, be certain to use cord tension device and heed warning below.
- ⑤ Do not wire motors in parallel without written permission from Draper.
- ⑥ It is the installer's responsibility to make sure appropriate fasteners are used for mounting surface.
- ⑦ All endcaps, fascia, and other hardware must be installed level. Shades must be level and square.
- ⑧ **Please 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.**

### Mounting Endcaps

- ① Snap endcap covers onto endcaps (see Fig. 1).

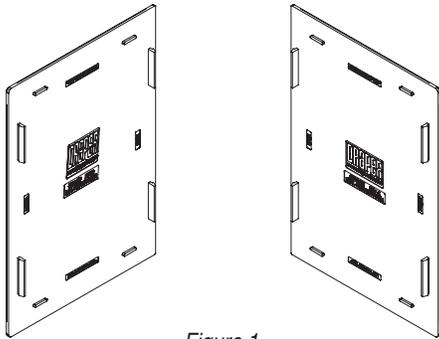


Figure 1

- ② Mark wall, jamb or ceiling for placement of mounting endcaps.
- ⚠ Caution: Before mounting shades, verify measurements on the card provided with the shade, and ensure the endcaps are installed at the correct width.**
- ③ Drill small starter hole (if necessary) in mounting surface.
- ④ Mount endcaps using appropriate fasteners for surface (see Fig. 2 for types). **The installer is responsible for selecting mounting hardware appropriate for site conditions.**

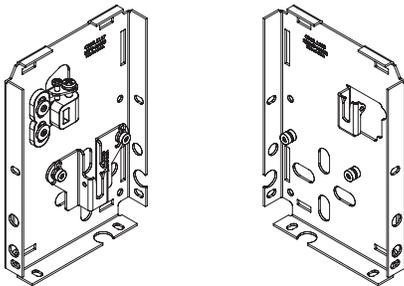


Figure 2

**Please Note:** Fabric retraction device will be located on the left-hand side for standard-roll units.

Reverse-roll is possible by locating the fabric retraction device on the right-hand side, but fascia cannot be used in this orientation. Using reverse-roll will also move the draw cables in front of the fabric panel.

The idler bracket may be re-relocated to the right-hand side if a left-hand motor is desired.

- ⑤ Install the motorized (take-up) Roller Assembly into the lower/back position. Place operator end into its endcap, then slide notched pin into idler endcap and attach Retaining Clip (see Fig. 3). The Retaining Clip must be installed around the idler-end shaft as shown to prevent the roller assembly from moving left or right during operation.

**Please Note: The Cable Attachment Studs and the limit switches must be facing outward, toward the installer.**

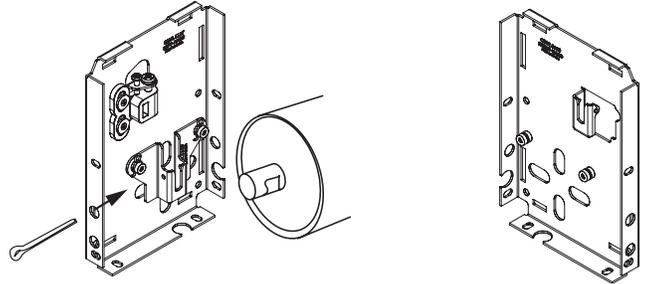


Figure 3

- ⑥ Install Draw Cable Pulleys (see Fig. 4). Place the pulleys according to specific locations provided by Draper. Pulley mounting screws are to be supplied by the installer, and must be suitable for the mounting surface to hold the weight of the fabric panel. The screws must be #4 Pan Head to insure that the draw cable does not contact the screw heads during operation, resulting in failure of the cable.

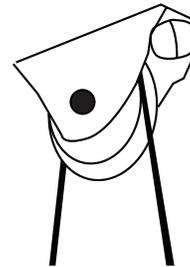


Figure 4

- ⑦ Rotate the operator roller until the cable attachment studs are facing outward, toward the installer.
- ⑧ Next the fabric retraction device on the fabric roller will need to be pre-tensioned. The assembly must be pre-tensioned to 3-5 revolutions. **Please Note: This number of pre-rotations assumes that the fabric is tightly wound around the roller (as though the shade is in its fully lowered/open position). Otherwise, the final number of pre-rotations could be less, resulting in not enough spring force to function properly by retracting the fabric.**

**CAUTION: Do NOT pre-tension the spring beyond 5 revolutions. Adding rotations to the fabric retraction device WILL NOT increase the retraction spring force on the assembly. The mechanism is only rated for a maximum of 25 revolutions throughout the operating height of the shade: up to 20 revolutions may be required for operation of the unit, plus a maximum of 5 pre-rotations. Operating the fabric retraction device beyond 25 revolutions may cause the device to fail, requiring replacement.**

The pre-tensioning procedure is as follows:

- a) Make sure there are zero pre-rotations on the device. This may be accomplished by first orienting the triangular shaped arrow on the end of the device so that it points up away from the ground (see Fig. 5a).



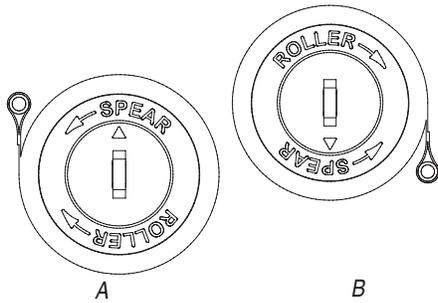


Figure 5

- b) While holding the roller in this position, the spear is rotated counter-clockwise, as indicated by the directional arrow, about 1/4-turn. Then, the spear must be restrained but allowed to slowly unwind clock-wise until it stops. Allowing the spear to unwind rapidly could result in damage to the mechanism.
- c) Insure that the fabric panel is wound tightly around the roller assembly.
- d) Orient the hem-bar and the triangular shaped arrow on the end of the fabric retraction device so that the arrow points down toward the ground (see Fig. 5b).
- e) While holding the spear with pliers in this position, rotate the roller clockwise, as indicated by the directional arrow. You will hear a slight "click" as the spring assist inside locks.
- f) Hold roller with arrow pointing down, and use pliers to rotate the spear in a counter-clockwise direction. The rotation will "lock" at each revolution by rotating the spear just beyond one full revolution, then, allowing it to slowly unwind until it stops at the point where the triangular shaped arrow is again pointing downward. Repeat this until the mechanism has 3-5 pre-rotations.

**Caution: The spear must never be rotated in the opposite direction indicated by the arrows. If the spear is forced to rotate in the opposite direction, the springs will be damaged.**

**The device must remain locked until the final step (when draw cables are attached to roller). Rotating the fabric roller as though the shade is being raised will unlock the device. The installer should insure that the hem-bar cannot move around the fabric roller if the device is unlocked before the installation is complete.**

**WARNING: DO NOT OPEN. ASSEMBLY CONTAINS HIGHLY STRESSED SPRINGS. UNIT IS NOT REPAIRABLE.**

- 9) Remove one of the endcaps from the fabric hem-bar (see Fig. 6).

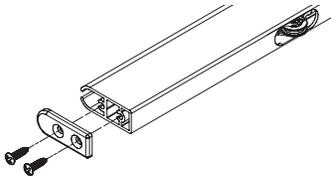


Figure 6

- 10) Remove fabric retainer from hem-bar and insert it into the fabric hem.
- 11) Attach the hem-bar assembly to the fabric panel by sliding it over the fabric and retainer, then then re-attach hem-bar endcap.

**CAUTION: Do NOT remove the draw cable from the hem-bar assembly during installation. Doing so may require that the hem-bar assembly be disassembled to re-install the cable.**

**WARNING: DO NOT OPEN. ASSEMBLY CONTAINS HIGHLY STRESSED SPRINGS. UNIT IS NOT REPAIRABLE.**

- 12) Slide the fabric roller assembly into the brackets, spear-end first (see Fig. 7). The triangular shaped arrow on the end of the device MUST now be pointed up away from the ground when installed (see Fig 5a). Pointing the arrow upward will insure that the mechanism will not "lock" during operation. Raising the hem-bar about 1/4-turn will "un-lock" the device, providing constant tension on the fabric panel. Insure that the hem-bar cannot move (counterclockwise) around the roller until the installation is complete.

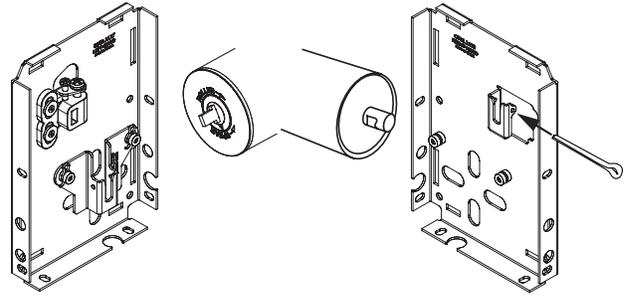


Figure 7

- 13) Install the  $\frac{3}{32}$ " diameter x  $\frac{7}{8}$ " long cotter pin through the fabric roller idler bracket to secure the roller (see Fig. 7). Bend one leg of the cotter pin down to lock it into place.
- 14) Carefully pull one side of the draw cable up through one of the Draw Cable Pulleys, then back down and around the back-side of the operator roller. (see Fig. 8) Wrap the cable 1.5 revolutions around the tube. Grip the end of the draw cable between the flat washer and roller tube, then, tighten the nut. **Do NOT** trim draw cables until after step 19.

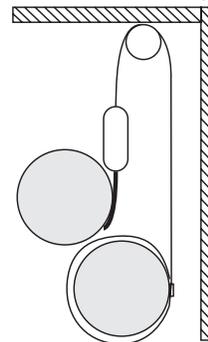


Figure 8

**Caution: Starting locations of the Cable Attachment Studs are provided by Draper with each shade. Although these locations can be adjusted, the installer needs to make sure any adjustments do not cause the hem-bar to run into the brackets, possibly damaging the unit.**

- 15) Repeat the above step for the other side of the draw cable. However, with this side, pull the hem-bar up so that the fabric retraction device "unlocks." Be careful NOT to let the hem-bar move around the roller until the installation is complete. This last end of the draw cable should be attached so that both ends have 1.5 revolutions around the operator roller when the hem-bar is at its lowest possible position. **Do NOT** trim draw cables until after step 19.
- 16) Slide both ends of the draw cable close to the attachment stud flat washers, then, raise the shade to its fully closed position and insure that the hem-bar is centered in the window. The upper pulleys determine position of the hem-bar in the window. Lower the shade to its fully retracted position and move one or both of the Draw Cable Attachment Studs to the left or right so that each run of the Draw Cable is hidden behind the front section of the cable.
- 17) Lower the shade to its fully retracted position and observe the tracking on the fabric roller. Adjust the tracking by loosening the smaller screw, then, raising or lowering the fabric roller with the larger screw, as needed See Fig. 9).

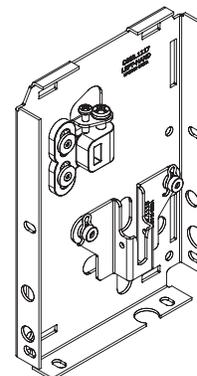


Figure 9

- ⑩ Tighten the smaller screw to lock the position of the roller. Re-test the fabric tracking and re-adjust if needed.
  - ⑪ Set the upper- and lower-limits of the unit's operating range. Insure that the hem-bar does not contact the fabric bundle, operator roller, pulleys, etc. throughout its range of operation.
  - ⑫ Trim any excess draw cable from both ends.
  - ⑬ Click the hem-bar Pulley Caps into place (see Fig. 10).
- Please note: Installer must insure that the cable is properly routed through the pulleys before the pulley caps are installed.**

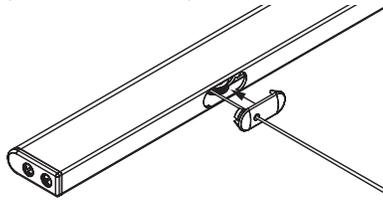


Figure 10

- ⑭ Install fascia. Place groove along top of fascia over endcaps, and snap into place (see Fig. 11). **Fascia is not fully seated until it clicks into place on both ends. Once in place, check for secure fit.**

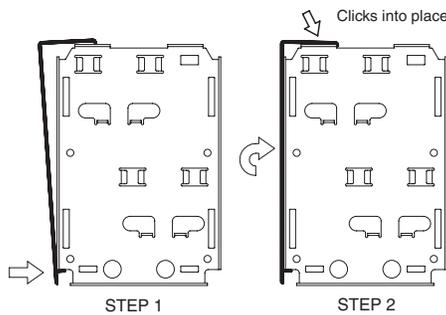


Figure 11

## 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' 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 CAT5 cable be used to prevent any electrical interference.

## Limit Switch Adjustments

**CAUTION:** Bottom-Up FlexShades are shipped without limits. Limits will need to be set before the unit is operated. Always be prepared to shut off manually when new adjustment is being tested. **Do not allow the shade roller to become exposed by running the shade fabric too far up.** Shade may be severely damaged if allowed to run too far up or down. **Each shade's limit switch must be set if using group control system. Motor should be installed so limit switches are pointed up or accessible.**

### Push Button Limits

Once shade is installed, fully depress both limit switch push buttons. Run the shade up (closed), stop it at the desired "closed" position, and set the limit by depressing the appropriate push button. Then, run the shade down (Open), stopping it at the desired "open" position. Set that limit by depressing the appropriate push button.

### Screw-Type Limits

**Please note these instructions are for motor location on the right (as viewed from inside the window)**

- ① Determine which direction of fabric travel corresponds with arrows on motor.
- ② Turn the proper socket toward the "+" to lower the limit (stop the shade closer to the top of the window). **Please note that each full rotation of the**

**limit screw equals approximately 5/8" of shade travel, so you may need to rotate the limit screw several times.**

- ③ Operate the shade up. It should stop when it reaches the upper limit. You can then continue turning the socket using a hand screwdriver and checking the shade's progress until you have the upper limit set at the desired position. If it does not stop, stop it manually using the switch, lower the shade until it is "up" just a few inches and repeat until you find the upper limit.

**Caution: DO NOT allow the hem-bar to hit the upper roller or fascia. This will damage the unit.**

- ④ Fine-tune the upper limit by turning the proper socket toward the "+" to close the shade further, and "-" to stop it further away from the top of the window.
- ⑤ Repeat the above steps for the lower (closed) limit by turning the proper screw toward the "-" to raise the limit (stop shade farther away from the Fascia), and "+" to lower it (stop shade closer to the Fascia). **Please note that each full rotation of the limit screw equals approximately 5/8" of shade travel, so you may need to rotate the limit screw several times.**

**Caution: DO NOT allow the hem-bar to hit the lower roller or fascia. This will damage the unit.**



## Wiring Diagrams

For wiring diagrams, see page 5.

### Limit Adjustments (ILT Motors)

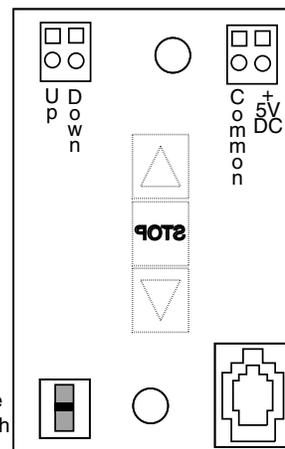
- ① Connect the ILT switch to the motor via the terminal blocks, or via the modular port using four conductor modular cable. When using modular cable, the cable connectors MUST NOT be crimped in reverse, as with standard telephone cable.
  - ② Press and hold down the STOP button for four seconds. This will set the switch directions to correspond with your shade operating directions.
  - ③ Set the slide switch to the lower position. Press and hold the DOWN button on the switch to move the viewing surface to the desired lower limit. If the shade moves in the opposite direction, release the DOWN button and press and hold down the STOP button again for four seconds. This will reverse the operation of the UP and DOWN switches.
  - ④ Move slider switch into center position. Wait a couple of seconds.
- Please Note: If you move the slider switch from down to up in one motion it sets the two limits in the same position.**
- ⑤ Set the slide switch to the higher position. Move the shade to the desired upper limit by pressing and holding the UP button on the wall switch.
  - ⑥ Return the slide switch to the center position to return to normal operation.
  - ⑦ To set the shade to an intermediate position, move the shade to the desired position and press the STOP button. Press and hold the STOP button for at least three seconds to record the position.

**Please Note:** Pressing and releasing the UP button on the switch will move the shade to its upper limit. Pressing and releasing the DOWN button will move the shade to its lower limit.

While the motor is in motion, pressing the STOP button for less than two seconds will stop the shade at its present position.

Once the motor is stopped, pressing the STOP button will move the shade to its intermediate position.

Pressing and holding the STOP button, when the motor is at rest or in motion, for at least three seconds will record a new position.



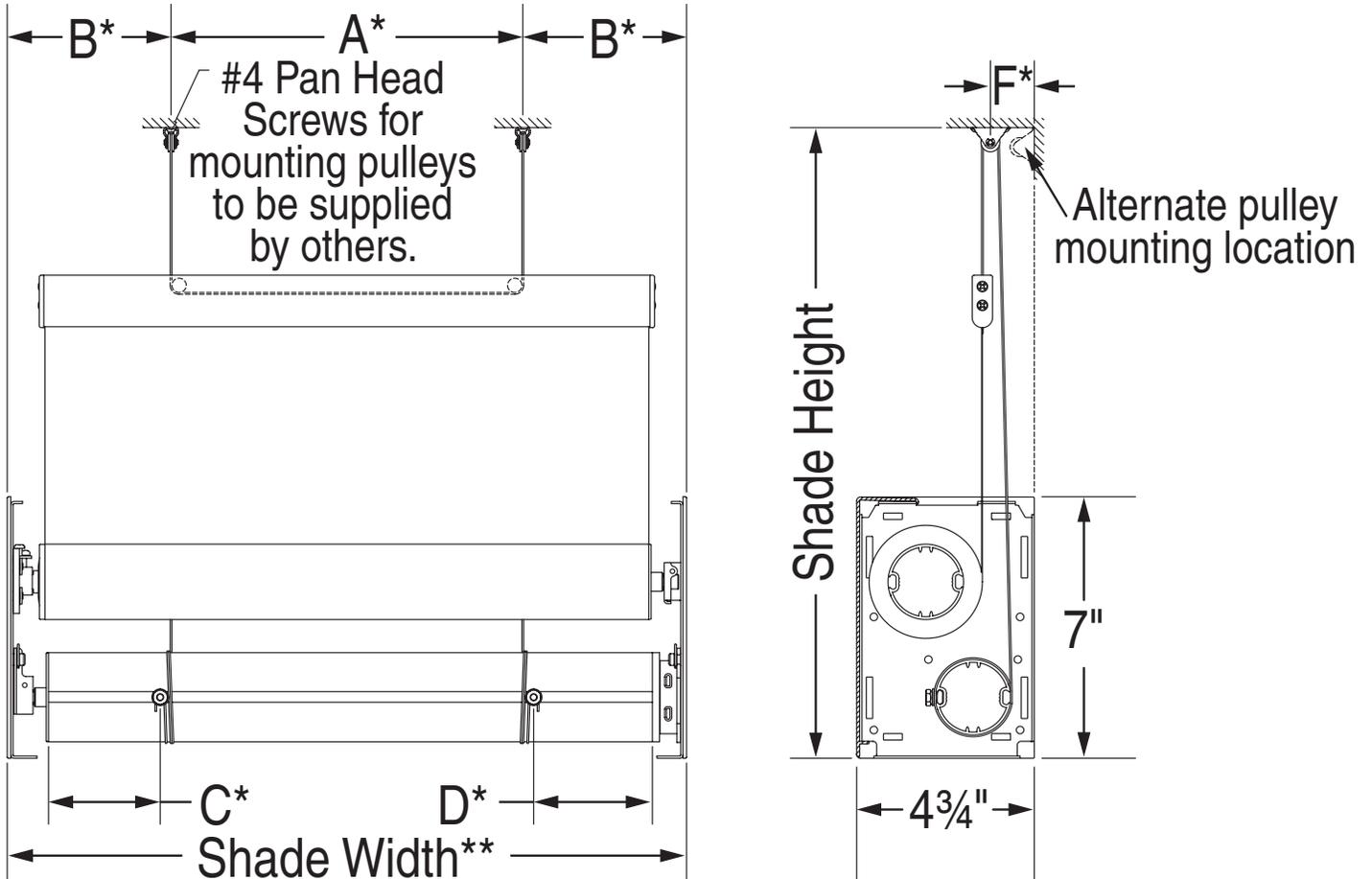
To Motor with Built-In Low Voltage

POSITION	FUNCTION
DOWN	Set LOWER limit
UP	Set UPPER limit
CENTER	Normal Operation

Slide Switch To Motor with Built-In Low Voltage

Back View

## Dimensions

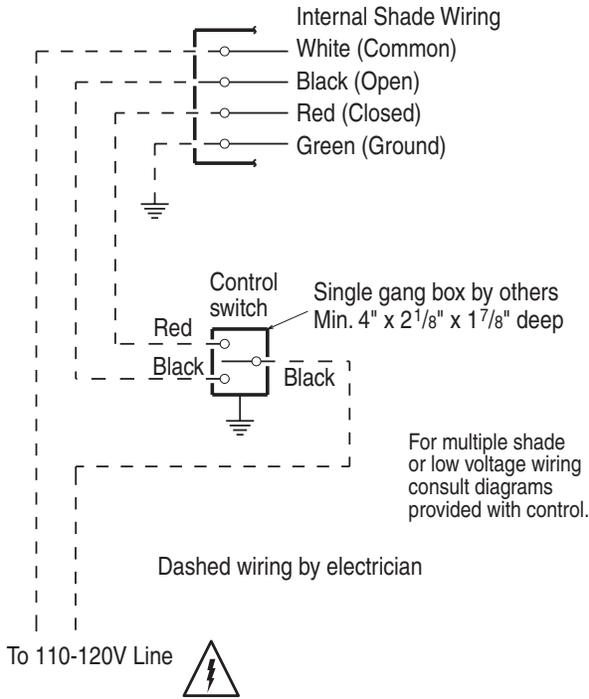


- \* These dimensions are different for each shade and are provided by Draper with your order.
- Dimension "A" is the vertical cable spacing.
- Dimension "B" is the distance from the vertical cable spacing to the vertical edge of the shade.
- Dimension "C" is the distance from the idler-end of the tube to the center of the cable attachment stud.
- Dimension "D" is the distance from the operator-end of the tube to the center of the cable attachment stud.
- Dimension "F" is the distance from the wall/jamb to the center of the cable pulley.

$$\text{Shade Width} = \text{Fabric Width} + A$$

Operator	Dim A
110-220V Standard/ILT	1 <sup>3</sup> / <sub>4</sub> "
110-220V Quiet	1 <sup>15</sup> / <sub>16</sub> "

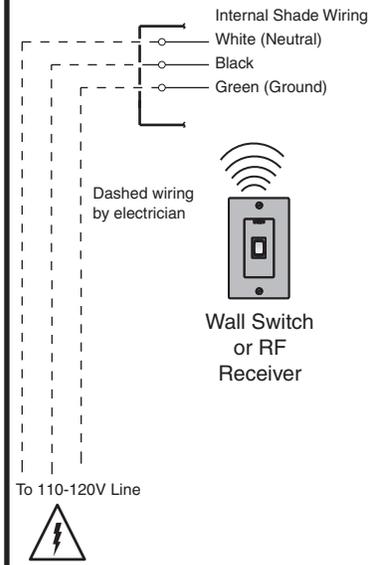
## 110-120V Standard and Quiet Shade Wiring Diagram



**NOTE:** This wiring diagram is for standard right-hand motor placement and fabric from rear of roller. For left hand motor placement with fabric from rear of roller, Red becomes "Open" & Black becomes "Closed."

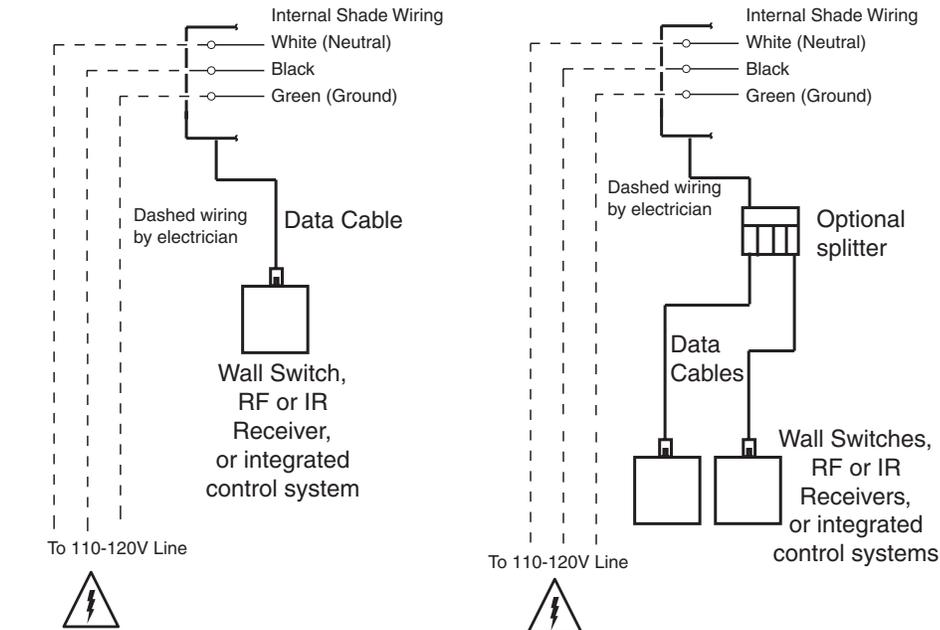
**NOTE:** Test shade operation. If shade direction does not correspond with the switch orientation, turn power back off then switch the red and black wires from the motor to the switch.

## Radio Technology 110-120V Motors



## 110-120V ILT Standard and Quiet Shade Wiring Diagrams

### Single Low Voltage Control Multiple Low Voltage Controls



## Multiple ILT Motors

