



Shaver Industries

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Assembly Instructions Motorized Vertical Vinyl Curtain Door

System Overview:

Your Shaver's Motorized Vertical Curtain Door is a high quality, high performance flexible door system based on proven components and our many years of experience in the vinyl partition fabrication business. We are confident that it will bring you and/or your customers years of reliable and trouble-free service.

Your specific system(s) is a motorized roll-up curtain door with “under-header” mount bracketry. Your unit is supplied with Shaver's Custom Vertical Extrusions that have been sized 9” less than the stated door opening height. Your Vinyl Curtain Door is 3” narrower than the stated door opening width. The gap between the curtain door and your door opening is covered and sealed with the Shaver's Custom Vertical Extrusions and EPDM seal strips.

Your system is designed for 115VAC, 60Hz operation with a maximum current draw of 3A per unit. The services of a qualified and/or certified electrician may be required to complete the installation.

Unpacking and Inspection:

Please unpack your systems carefully and notify the factory immediately if there are any shortages or if any items have been damaged during transit. Your kit(s) should have all of the necessary hardware and components for a complete installation with the following exceptions (installer-provided hardware):

1. Hardware and conduit associated with the professional electrical installation of the 115VAC source power.
2. Extrusion, Bracketry, and Valence Panel mounting fasteners that are unique to your specific building material and jamb composition.

System Assembly:

Custom Extrusion Mounting:

The Shaver's Custom Extrusion should be mounted “flush” to the inner building surface with the radius profile of the extrusion oriented as shown in the following diagram (Diagram 1). The bottoms of the extrusions should be at the floor elevation (resting on the floor). It is recommended that the extrusions be secured to the door opening with fasteners within approximately 5” of each end of the extrusions, and additional fasteners on at least 3’ centers. Specific fastener selection and mounting methodology is left up to the installer and “best practices for the door opening material. Be very careful when drilling the Vertical Extrusions as to not damage the EPDM seal strips.

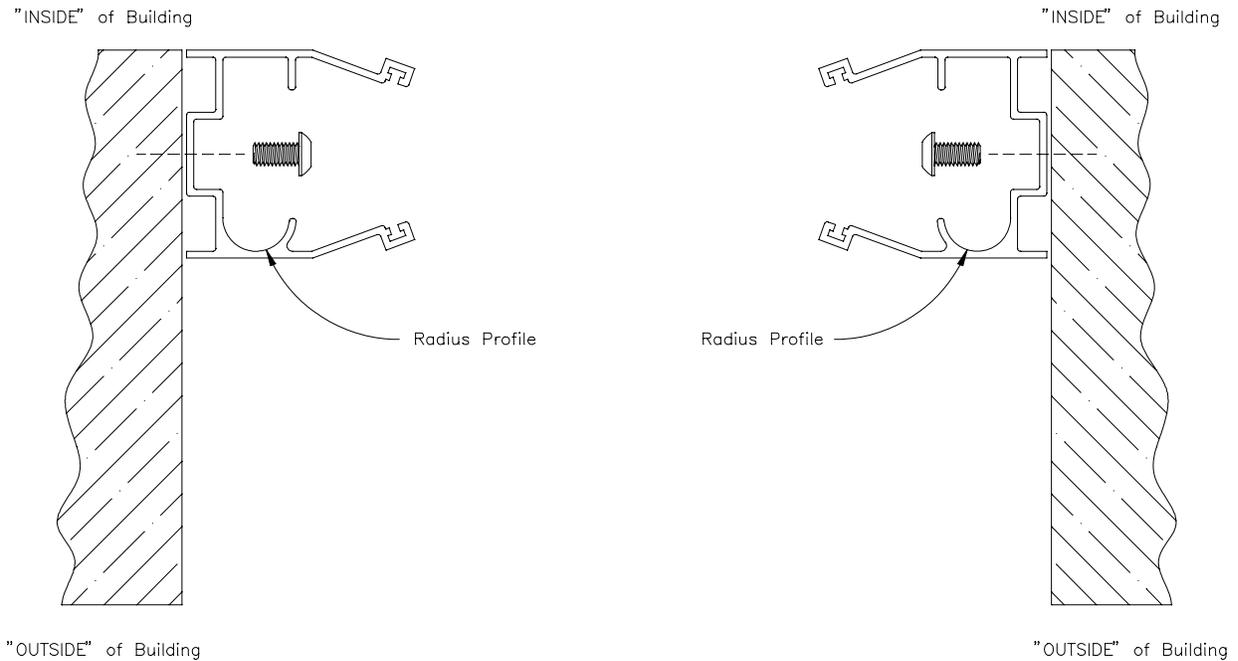


Diagram #1
(Extrusion and Opening Layout)

Motor and Idler Bracket Installation:

The Motor and Idler Bracket Assemblies should be mounted using the same “best practices” and fasteners as applied with the installation of the custom extrusions. On the motor bracketry it is important to use appropriately sized low-profile or flat-headed fasteners to ensure that there is not an interference with the motor and its wiring. As shown in the following diagram (Diagram 2) the “Idler End” bracket and hardware should be mounted on the LEFT side of the door opening when viewed from the exterior of the building. The “Motor End” bracket and hardware should be mounted on the right.

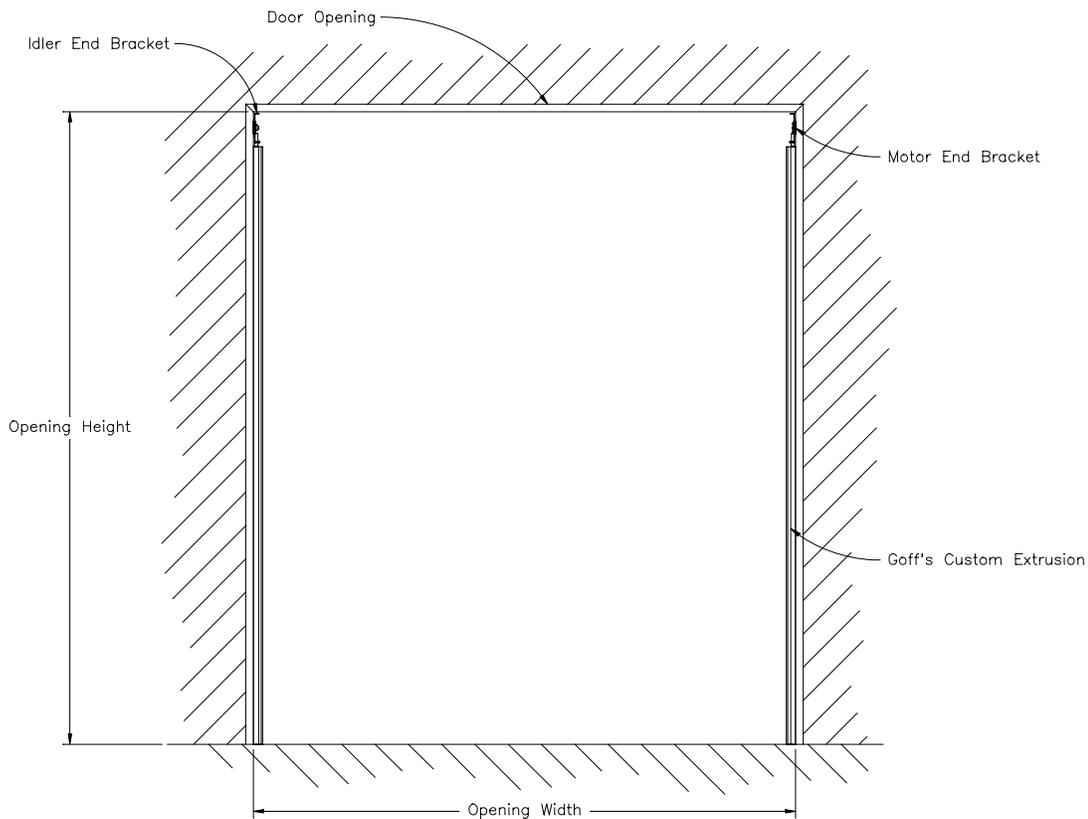


Diagram #2
(Bracketry and Opening Layout)

The extrusions and brackets have been sized to provide approximately ½” of clearance between the tops of the Idler and Motor brackets and the underside of the door opening header. This clearance will be beneficial when it comes time to install the “double-baffle” support bar.

Particular care must be taken with the positioning of the brackets with respect to the extrusions. As shown in Photo 1 (EPDM seal strips removed for clarity), the “funnel lead-in” of the bracket should be positioned directly above the custom extrusion, and should be

positioned in such a manner to provide a smooth transition into the extrusion track. Shim or otherwise adjust the position of the bracket to ensure that any misalignment does not exceed .10”.



Photo #1
(Bracket to Extrusion Alignment)

As shown in the following photo (Photo 2) the Idler hardware should be installed in the nest of the Idler End Bracket and secured to the door opening with the appropriate fasteners.



Photo #2
(Idler Bracket Mounting)

As shown in the following photo (Photo 3) the Motor mount should be installed in the nest of the Motor End Bracket and secured to the door opening with the appropriate fasteners. Orient the “cut and relieved” section of the motor bracket (circled in the photo) in the direction that you want the power cord to exit the bracketry (usually toward the interior side of the bracketry).

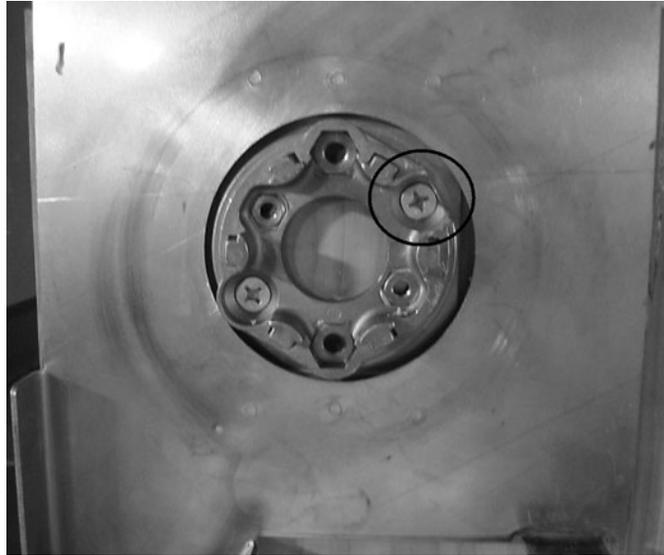


Photo #3
(Motor Bracket Mounting)

On some installations (header depth less than 8”) the Motor and Idler bracketry will extend past the exterior fascia of the building as shown in the following diagram (Diagram 3). This is typically not a problem and the “bulge” will be covered with the front valence panel. If the protrusion is excessive a valence panel stand-off may have to be fabricated. Please contact the factory if you need assistance.

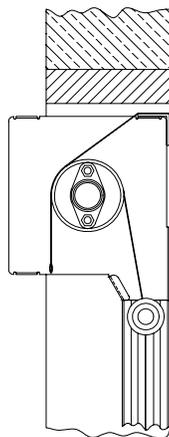


Diagram #3
(Bracketry Extension Past Fascia)

Motorized Roll Installation:

Prior to the installation of the motorized roll into the bracketry it should be fully inspected for completeness and proper assembly. Make sure that the motor is installed and fully seated in the aluminum tube, as is the spring-loaded idler unit on the opposite end. While the photographs will depict an installation with the track rollers loaded into the fiberglass pulltrusion bushings, it is often easier to perform this step without the rollers. There will be a section later in these instructions on the installation of the rollers after the motorized tube has been installed and programmed.

The installation of the motorized roller tube can best be accomplished by two workers on ladders or one worker on a scaffold or scissors jack (with at least a 6' platform). At all times be aware of the angle of the roller tube and make sure that no parts such as the rollers or motor "slide out" during the installation process.

Orient the roller tube so that the motor is on the "right side" of the door opening as you face the opening from the exterior side. Raise the complete tube assembly until both ends are within about a foot of their respective mounting brackets. Feed the motor power cable through the opening in the cast motor bracket as shown in the following photo (Photo 4):



Photo #4
(Motor Cord Routing)

Carefully tilt the idler end of the motorized tube up and engage the 12mm extension of the spring loaded idler cap into the corresponding bore of the ball-eye idler mount as shown in the following photo (Photo 5):



Photo #5
(Idler Shaft Engagement)

While feeding the service loop of the motor cord through the hole in the cast motor mount, rotate the motor end of the tube up into position. It will be necessary to apply a force along the axis of the tube in order to compress the spring loaded idler end and provide end clearance for the motor and the rollers.

Orient the motor so that the cable exit from the motor flange lines up with the cable exit opening in the cast motor mount. Pull on the free end of the motor cable to eliminate any slack or service loop and engage the body of the motor into the “fingers” of the cast motor mount. Press the motor/tube firmly into the cast mount until it fully seats and a “click” is heard as the spring ring captures the motor housing. It can take quite a bit of force to

overcome the spring ring and often it is necessary to slightly deflect the ends of the spring ring with a small screwdriver in order to get the motor to properly engage. Do not use the motorized roll door without the spring ring in place and properly engage with the motor housing.

Pro Tip: It is often difficult to get the motor to seat in the motor bracket and engage the spring ring. As an alternative assembly method you can completely remove the spring ring, engage the motor in the “fingers” of the cast motor mount, seat the motor in the mount, and then “slide” the spring ring around the assembly as shown in the following photo (Photo 6). Make sure that the spring ring properly engages the groove in the motor flange and the cast motor bracket.



Photo #6
(Spring Ring Installation)

After the motor and spring ring are installed the assembly should look like the following photo (Photo 7):

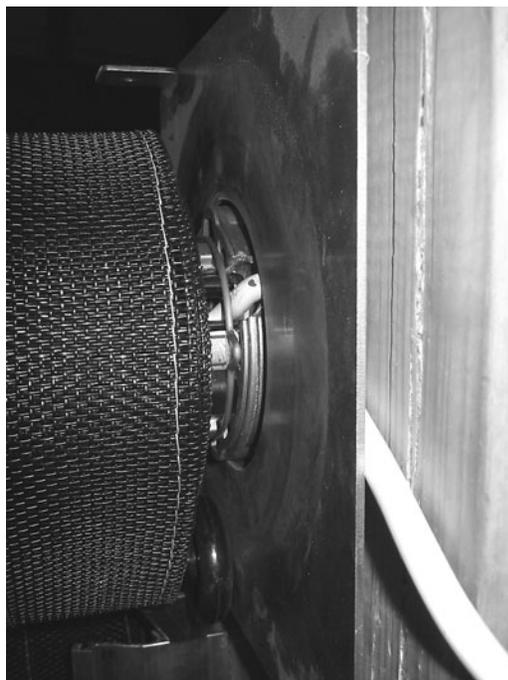


Photo #7
(Motor Housing Engagement)

If the rollers are installed you can manually unwrap one to two turns of material from the roll and check the engagement and transition of the roller from the side brackets into the custom extrusion. Adjust and/or shim the brackets as required to ensure a smooth and repeatable roller transition into the extrusion.



Photo #8
(Roller into Extrusion Transition)

If the rollers were not installed it will be necessary to apply power to the motors and do the initial programming before they can be added to the assembly. Please refer to the Addendum at the end of this document for those instructions.

Final Mechanical Assembly:

Double-Baffle Support Bar:

The Double Baffle Support Bar and Double Baffle come pre-assembled for ease of installation. The Double Baffle will be attached to the Motor and Idler Bracketry in the orientation shown in the following diagram (Diagram 4):

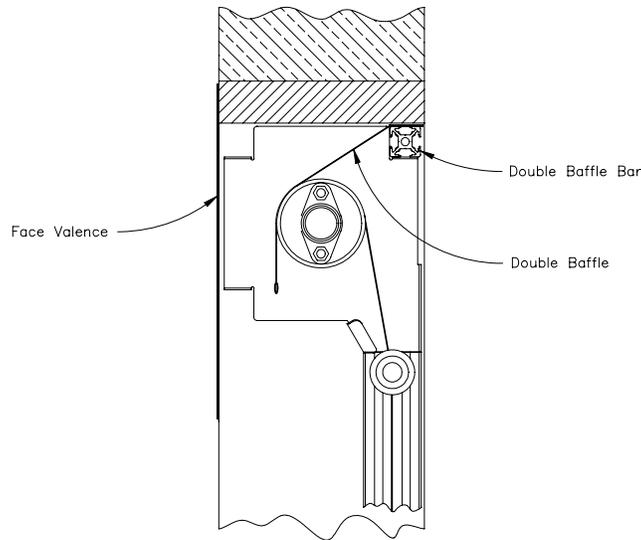


Diagram #4
(Double Baffle and Support Bar)

The double baffle should drape smoothly and uniformly over the body of the roller tube as shown in the following photo (Photo 9). Failure to install the double baffle will allow for the unwanted entrance of pests and debris.

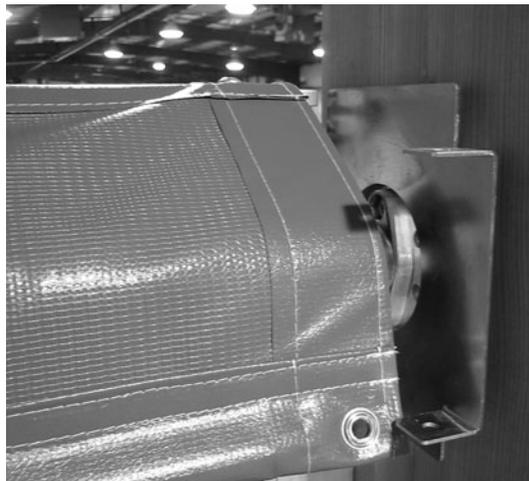


Photo #9
(Double Baffle Support Installation)

There are two standard methods for assembling the Double Baffle Support Bar to the Idler and Motor Bracketry. Both methods work equivalently well, and the only determining factor is the clearance and accessibility provided by your particular installation.

Method #1:

Pre-assemble the 1/4-20 x 3/8 Button Headed fasteners through the “ears” of the bracketry and into the 1/4-20 square nuts as shown in the following photo (Photo 10). Only engage the fastener into the nut by a few threads.

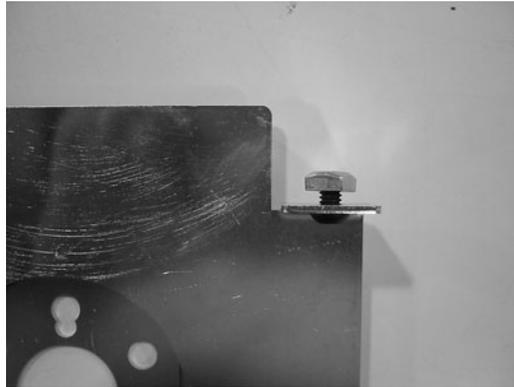


Photo #10
(Double Baffle Support Fastener)

Position the Double Baffle Support Bar over the top of the curtain roller tube and engage the square nut on one of the brackets into corresponding extruded groove of the support bar. Slide the support bar onto the nut and then engage the nut on the opposite bracket at the other end of the support bar into the groove. Slide the support bar until it is approximately centered over the curtain and firmly tighten both fasteners.

Method #2:

Pre-load a 1/4-20 square nut into the bottom groove at each end of the Double Baffle Support Bar as shown in the following photo (Photo 11). Position the nut approximately 1.5” inches in from the end of the bar.



Photo #11
(Double Baffle Support Nut)

Carefully position the Double Baffle Support Bar over the top of the curtain roller tube and rest it on the mounting flanges of the Idler and Motor End Bracketry. Be careful not to dislodge or move the 1/4-20 nuts. Install a 1/4-20 x 3/8 Button Headed screw through the hole of each mounting flange and into the nut. Slide the support bar until it is approximately centered over the curtain and firmly tighten both fasteners.

Valence Installation:

It is recommended that the bottom of the valence panel be in alignment (elevation) with the bottom of the curtain door when it is in the fully up (OPEN) position. The valence panel can be mounted via any “best practices” methodology using standard building fasteners with or without washers. It is recommended that the panel be roughly located on the building fascia (the use of a strong tape is often helpful) and the alignment checked before installing the fasteners. Starting with the top-center fasteners and pulling a small amount of “tension” into the panel before locating the rest of the holes generally leads to a more professional looking installation.

Electrical Connections:

There are two independent and unique aspects of the wiring configuration for your Motorized Vinyl Curtain Door. These are the 115VAC 60Hz power wiring and the low-voltage control wiring. While the low-voltage side of the control system can be configured and properly wired by anyone who has a rudimentary understanding of electrical circuitry, the power wiring should be performed by an electrical professional and done in such a manner to conform to all local and national wiring codes and regulations.

115VAC Power Wiring:

Locate the Eolis Industrial Switch Interface within a few feet of the motor end of the motorized roll. It is suggested that the unit be mounted on the building fascia using a “best practices” methodology, and that the enclosure be oriented with all of the conduit and fittings facing “down” to ensure drainage.

115VAC Power with ground should be brought to the Eolis enclosure in an approved manner. The maximum current draw of the Eolis (operating one motor) should not exceed 3A. Conductors and branch circuit current limiting should be sized accordingly.

The four conductor (ground, neutral, forward, and reverse) motor wiring should also be brought to the Eolis enclosure in an approved manner. If solid waterproof conduit is not used a vertical “service loop” should be employed that ensure that water will not follow the path of the wiring back into the motor housing.

The internal Eolis power and motor connections are shown in the following photo (Photo 12):

WIRING DIAGRAM

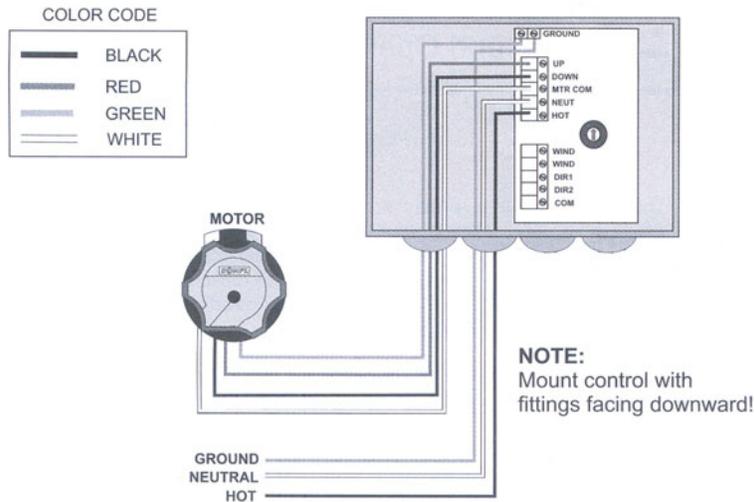


Photo #12

(Eolis Power and Motor Connections)

Per the label on the inside of the enclosure, the incoming 115VAC power should be connected to the two lower terminal locations on the top block. The “HOT” (Black) connection should connect to the bottommost terminal and the “NEUTRAL” (White) connection should connect to the next one up.

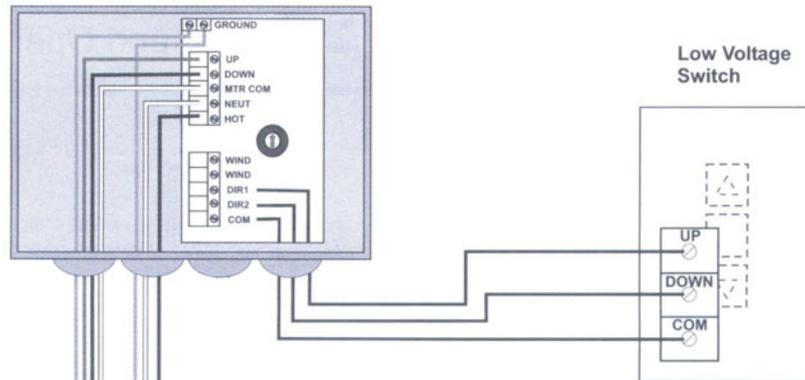
The motor connections are made to the three topmost terminal locations. The standard convention is that the “DOWN” (Close) motor wire (Black) be connected to the middle terminal. The “UP” (Open) motor wire (Red) is connected to the top terminal and the “MTR COM” (Neutral) motor wire (White) is connected to the bottom terminal. Do **NOT** connect the Black motor wire (DOWN) to the Black power connection (HOT). The GROUND (Green) motor and power wires should be connected to the green “Earth Ground” screw block located at the top of the board.

Control Connections:

The low-voltage control connections should be made with the 4-conductor “Thermo Wire” that was included with your kit. Although the color codes are arbitrary, Shaver's has selected the following standard:

- | | | |
|----------|---|--------------|
| 1. Green | - | Common |
| 2. Red | - | N/C |
| 3. Blue | - | Open (UP) |
| 4. White | - | Close (DOWN) |

Single-station control installations are performed by simply running the control wiring between the operator station and the Eolis, and attaching the appropriate wires to the terminals or wires as indicated in the following photos (Photo 13 and 14):



NOTE:
Mount control with fittings facing downward!

Photo #13
(Eolis Control Connections)

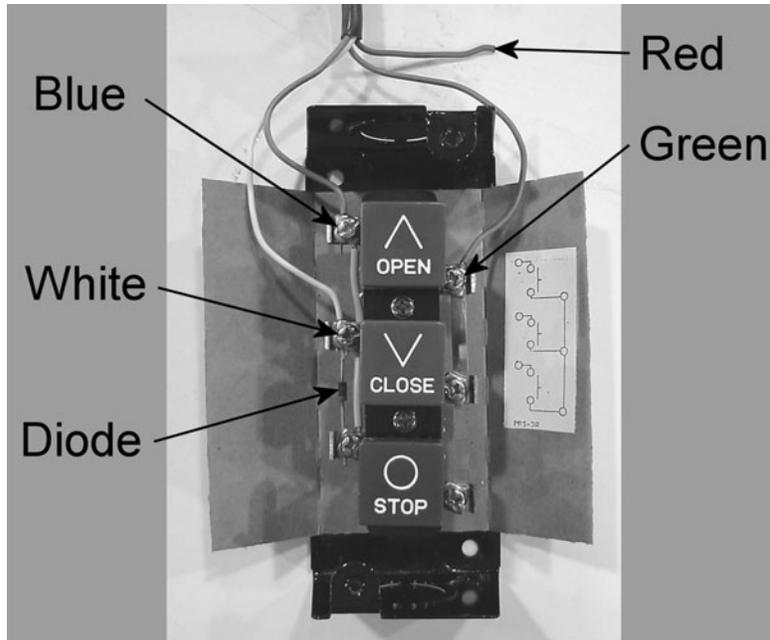


Photo #14
(NEMA 1 Connections)

NOTE: There are two diodes attached at the factory to the OPEN, CLOSE, and STOP terminals on the NEMA 1 Control Station. Do not disconnect or damage these connections while attaching the control wiring.

Setup and Operation:

After the power wiring has been installed (and power has been enabled to the unit) it will be necessary to check/modify the direction of motor rotation and set the curtain door end-stop positions. Care should be exercised during these operations to avoid damage to the assembly and ensure a long service life of the unit.

Check/Modify Motor Rotation:

To check the direction of motor rotation it is necessary to completely disable the end-stop limit switches for the motorized roll. To do this, first press the STOP button on the operator station. This is an important step since it ensures that the Eolis Controller has been disabled and that the end-stop limit switches are not active. Note the location of the Open and Close buttons as shown in the following photo (Photo 15): **(NOTE: The limit buttons on the motors are now flush with the motor body. It is necessary to use a pencil, screwdriver, or other object to depress them):**

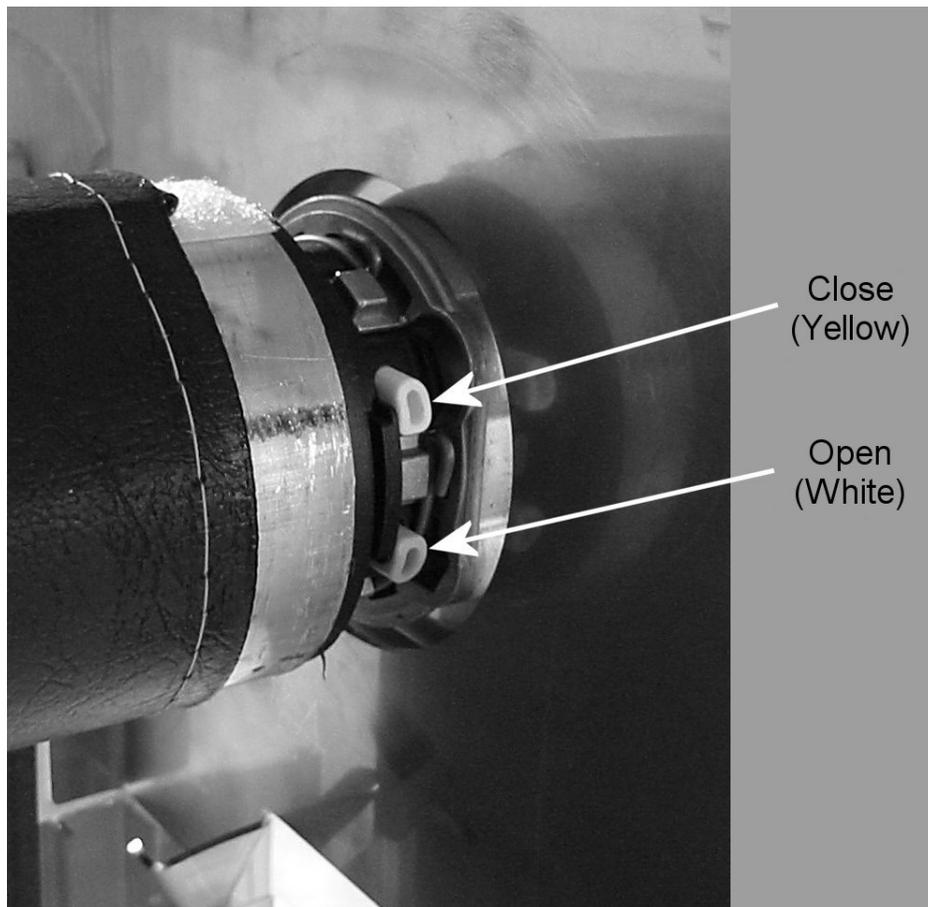


Photo #15
(Limit Switch Buttons)

To disable the limits, press each button firmly. The buttons should detent into a “depressed” position. It is wise to repeat this operation a few times to guarantee that the buttons have locked into the depressed position.

Press the “Close” (Down) button on the operator station and observe the direction of rotation of the motorized roll. Press the STOP button as soon as this has been determined. If the “Close” direction is correct and corresponds to the “unwrapping” of the curtain door then proceed to the next section (Setting End Stop Positions). If not, the direction control wiring must be reversed. This can most readily be accomplished by reversing the motor direction connections at the terminal block on the Eolis interface. Disconnect the Black (CLOSE/DOWN) and Red (OPEN/UP) connections from the motor terminals and reverse the connections. Please notify Shaver's Curtain Walls that this change was required. After the change has been made verify the proper directional operation of the door.

Setting End Stop Positions:

Once the direction control of the motorized roll has been verified it is necessary to set the end stop positions for the door. This is a two-step operation and either end stop can be modified at any time without upsetting the other position. To set the “Full Down” (Closed) position press the “Close” button on the operator station and monitor the position of the door. Press the “Stop” button as soon as the weighted bottom seal of the door contacts the floor and begins to compress. This exact position can be adjusted by using the “Open”, “Close”, and “Stop” buttons in quick succession in order to “jog” the door. After the position has been established lock it into the motorized roll memory by depressing the Yellow (Close) button. The button should release from the “depressed” position and “pop out”. You can repeat this process a few times to verify that the button is no longer depressed.

To set the “Full Up” (Open) position press the “Open” button on the operator station and monitor the position of the door. Press the “Stop” button as soon as the bottom set of rollers are within a few inches of the top of the vertical extrusions. **DO NOT** allow the curtain door to continue above this point. If it should happen to disengage the custom extruded tracks and completely wrap around the motorized roll it will become necessary to manually reset the rollers into the track and reestablish the “Full Down” position via the above procedure. The exact “Open” position can be adjusted by using the “Open”, “Close”, and “Stop” buttons in quick succession in order to “jog” the door. After the position has been established lock it into the motorized roll memory by depressing the White (Open) button. The button should release from the “depressed” position and “pop out”. You can repeat this process a few times to verify that the button is no longer depressed.

The assembly, installation, and set-up of your Shaver's Motorized Curtain Door is now complete and it is ready for typical operation. It is a virtually maintenance free unit and should give you years of reliable service.

We want to thank you again for your business and the opportunity to partner with your firm on this project. Please don't hesitate to contact us if you have any questions regarding these instructions or encounter any problems with the installation or performance of your door.

Addendum

Installation of Track Rollers after the Motor Tube is Mounted:

The track rollers can easily be installed after the Motor Tube and Curtain Assembly have been mounted. It is essential that the appropriate steps for applying power to the motor and setting the preliminary end stop positions have already been performed prior attempting this step.

The rollers can be installed on one side and then the other, or on both sides simultaneously. To install a roller into one of the middle pulltrusion (stiffener) tubes, index the motor until the pulltrusion pocket is approximately 8” below the junction of the bracket “funnel” and top of the custom extrusion. Stop the motor at that position and pull the edge of the pulltrusion pocket out of the track and clear of the edge of the building. Locate the nylon bushing at the end of the pulltrusion tube and slide the shaft of a roller into it as indicated in the following photo (Photo 16):



Photo #16
(Roller Installation)

Raise the roller up, slide it across the face of the Motor or Idler bracket, and drop it into the “funnel” of the bracketry as shown in the following photo (Photo 17):



Photo #17
(Roller Into Funnel)

Repeat this procedure for the remaining pulltrusion tubes, including the bottom tube directly above the chain pocket. Ensure that the rollers enter the custom extrusion properly and that the edges of the curtain “pop” into the extrusion and/or EPDM seals.

Adding Additional NEMA Controllers to the Eolis Interface

Additional NEMA 1 Operator Control Stations can be added to your Shaver's Eolis Interface. When adding the controllers, please observe the color codes and conventions used with the first (primary) control station. NEMA-4 stations will look different, but the color codes and conventions remain the same. See the following photo (Photo 18):

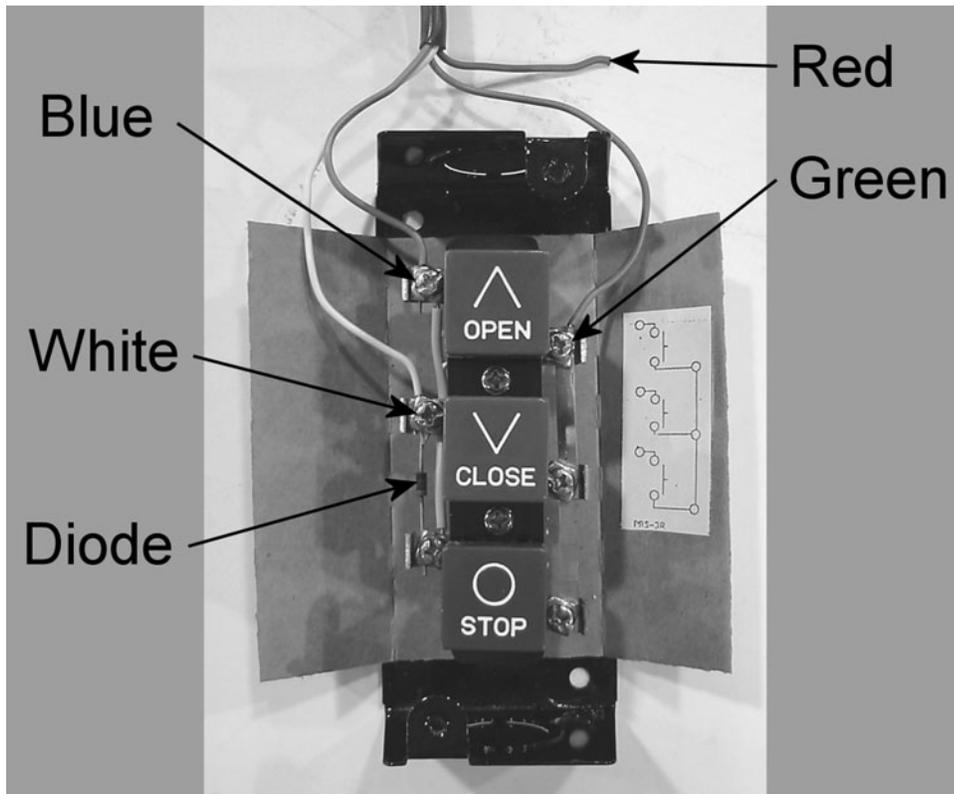
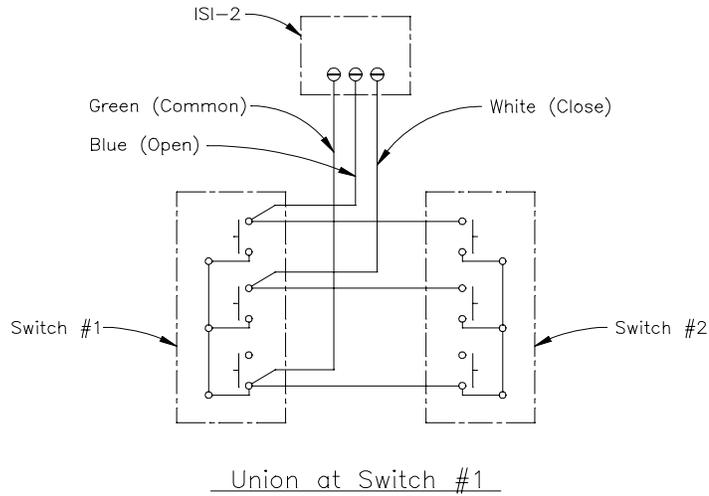


Photo #18
(NEMA 1 Connections)

NOTE: There are two diodes attached at the factory to the OPEN, CLOSE, and STOP terminals on the NEMA Control Station. Do not disconnect or damage these connections while attaching the control wiring.

The additional controller can be wired in a “daisy chain” fashion to the primary control station, or it can be wired in a “home run” manner all the way back to the Eolis (ISI-2) Interface. Please see the following diagram (Diagram 5):



OR

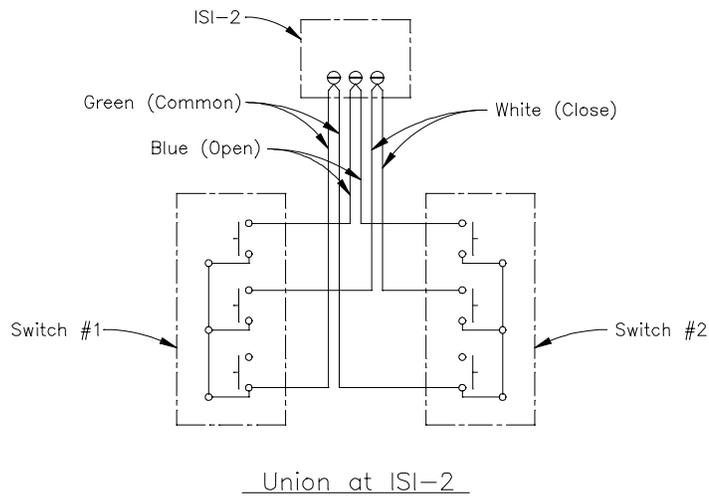


Diagram #5
(NEMA 1 Connections)

After the wiring is complete, check the operation of both control stations. They should be fully functional and should work completely independently of each other. If any function on either controller is not working properly, double check the wiring connections and ensure that none of the diodes have been displaced or damaged.