ADVANCING
ALTERNATIVES

LVM-60/100

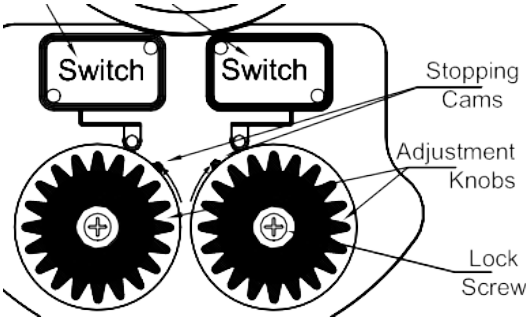
60 and 100 Nm Low Voltage Motors
Installation Instructions

Read these instructions completely before beginning your installation. Verify that these instructions are applicable to the items you've received.

Always wear eye and ear protection. Always use gloves and other necessary safety equipment. Metal can be sharp, handle carefully to avoid injury.

Qualified electricians should provide any electrical installation.

1. Adjustment knobs (or dials) on the limit switch housing allow you to set each rotation's extent. Moving the cams (see diagram) slightly away from their respective switches (perhaps 1/8") will result in short rotation "runs."



2. Use minor adjustments until you are comfortable with the motor's directions. When powering in one direction, the motor will stop when the cam reaches and contacts the switch. Reversing the motor wires within a junction box, at the controller or at the drill battery terminals, will change rotational direction.

3. Reverse the direction, again, with minor adjustments. Make careful note of which knobs adjust the directions. Remember, moving the cam away from its switch will increase the number of rotations and the movement of your ventilation asset. The motor will automatically restart as you move the cam away from it's respective switch.

4. As you approach the open or close extent of the ventilation asset, observe the component's movement and be sure to avoid collisions with the structure or other components. The motors are powerful and can cause damage, or even injury, if care is not taken.

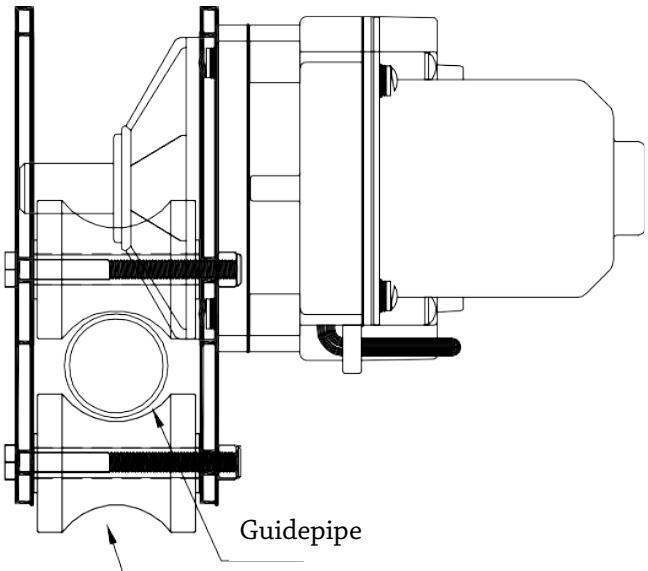
5. Assure that the lock screws on both dials are tightened once all limit switch adjustments have been made.

Motors equipped with guide wheels are shipped as "right" and "left" outputs. When motors are ordered in even numbers, they will be shipped in L/R pairs. Order odd numbers with left or right specified

The guide wheel set can be changed from right to left by removing the 4 metric machine screws that fasten the assembly to the motor.

The relationship of a curtain's roll-bar to the structure or vent opening is dependent upon the relationship of the guide pipe to the motor's output shaft. Your specific application may benefit by a right-output motor assembly used as a left-output or visa versa.

Note: If you are operating a "locking" ventilation curtain with your motor, an external limit switch is recommended to precisely stop the motor at the roll-bar locking extrusion. This compensates for the expansion/ contraction of the curtain fabric. (See instructions for the LSARL-LVM if provided with your system.)

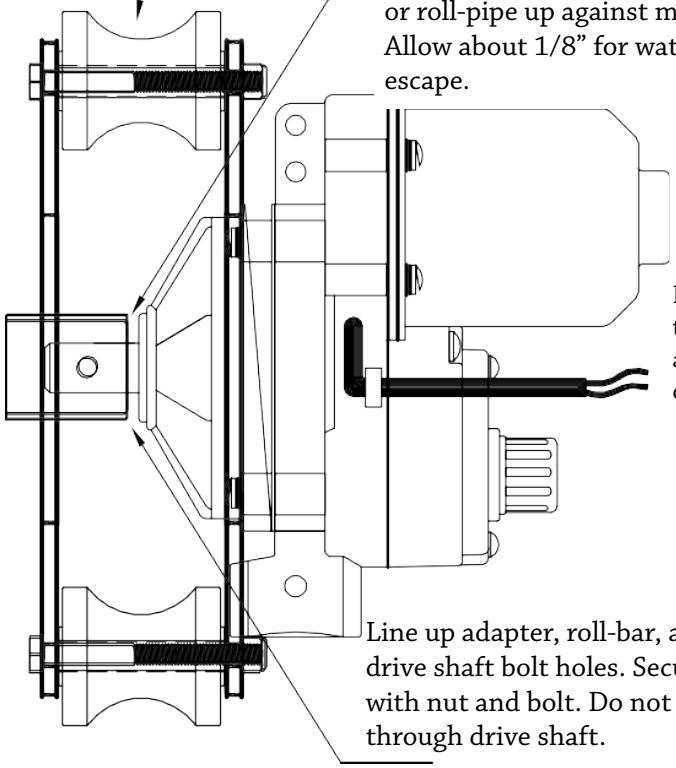


Guidepipe

Guidepipe goes thru wheel set

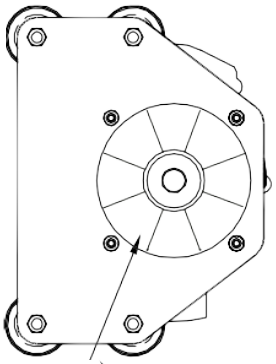
To prevent water infiltration, it is recommended to provide a “drip loop” in the cable prior to its penetration at the motor. If your motor utilizes a strain relief connector, make sure it is tightened.

Perform routine maintenance checks on all natural ventilation equipment, especially at the beginning of each season.



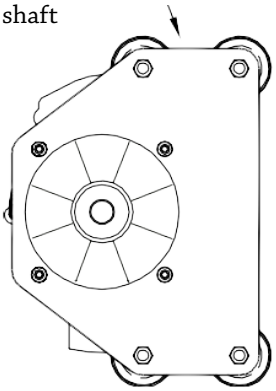
NOTE: Do not push roll-bar or roll-pipe up against motor. Allow about 1/8” for water to escape.

Line up adapter, roll-bar, and drive shaft bolt holes. Secure with nut and bolt. Do not drill through drive shaft.



Roll-bar goes thru large hole and bolts to output shaft

Guidepipe goes thru wheelset

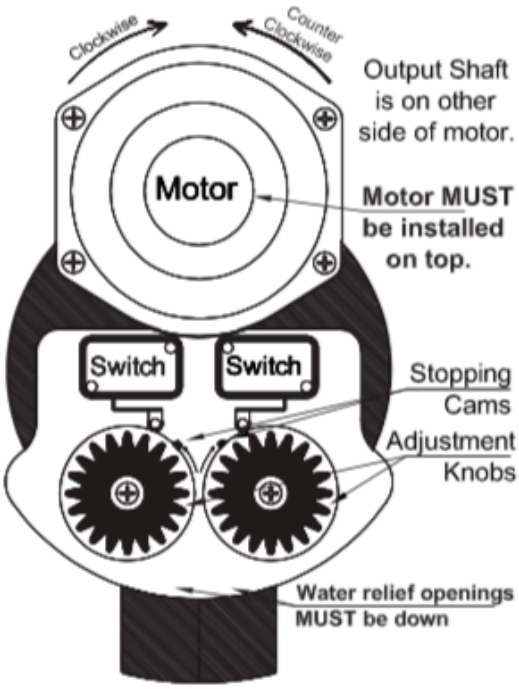


24 VDC motors require a specialized power supply that transforms 110 volt (or 220 volt) power to 24 volt power. The voltage must also be converted from AC to DC. Applying 110 VAC or 220 VAC to a low voltage motor will immediately and permanently damage the motor and void any warranty.

Advancing Alternatives offers thermostatic controllers that will provide 24 volt power and coordinate the motor's movement, helping to regulate a thermal zone's temperature. Interface boxes (CIBs) can also be purchased to provide 24 volt power while taking direction from an existing 3rd party controller. All controllers from Advancing Alternatives are properly fused to protect the motors when in operation.

Use #14 multi strand 2 conductor wire from your 24V power source to all motors. For distances greater than 120 LF, use #12 AWG multi strand wire. (Type SJEOW) (Follow local codes when they require a ground wire to 24V motors.)

During the installation phase when you are setting the limit switches (or during a power outage), the motors can be powered from a portable tool battery (24V or less). Using less than the 24 volts will result in slower speeds.



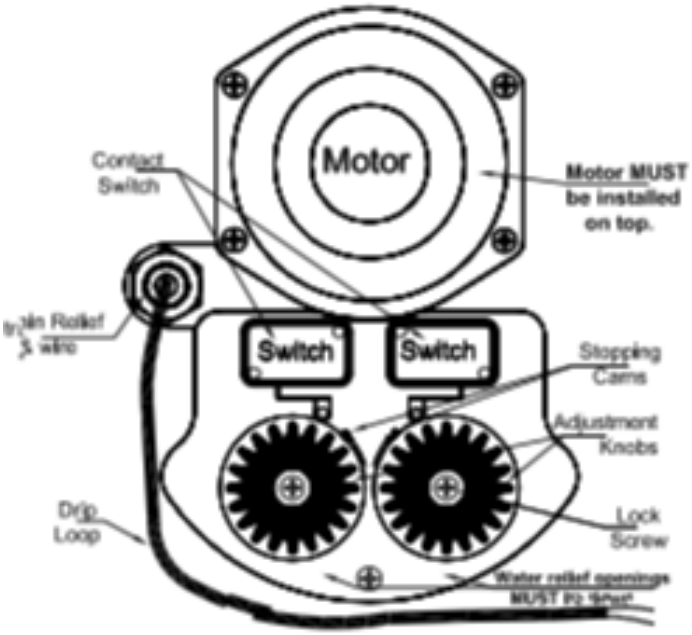
Align roll-bar, roll-bar adapter, and motor shaft bolt holes. Then, fasten securely with the bolt and nut.

It is imperative that the motor housing be oriented above the limit switch dials as shown below. Mounting otherwise will void the motor's warranty.

Connect the motor wire at the controller and activate for “open.” If the motor moves in the closed direction, simply reverse wire connections at the controller or junction box terminals.

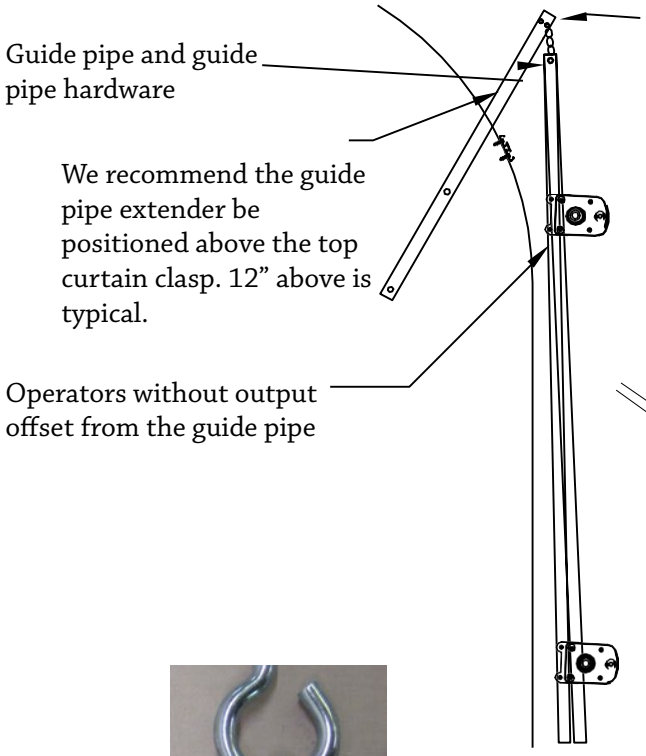
ADDITIONAL LIMIT SWITCH NOTES:

- It is imperative that the motor housing be oriented above the limit switch dials as shown below. Mounting otherwise will void the motor's warranty.
- Connect the motor wire at the controller and activate for “open.” If the motor moves in the closed direction, simply reverse wire connections at the controller or junction box terminals.
- “Cams” on each limit switch wheel will rotate when the motor is powered. One cam will move closer to it’s switch while the other cam will move away, thereby increasing open/close separation by up to 40 rotations.
- A small cam movement will result in considerable roll-bar or drive shaft rotation.
- Rotating an adjustment knob clockwise will move the cam in a counter clockwise direction and vice versa.
- Each adjustment knob has a locking screw. Slightly loosen the Lock Screw to turn the adjustment knob.
- Low voltage motors change directional rotation by reversing the polarity of the motor’s two wires. Reversing these wires at the controller terminal will reverse the open and close directions thereby allowing you to correctly assign the open and close designations of the controller.
- Your motor may have been supplied with an adapter designed for the roll-bar or drive shaft you are using. The adapter should fit inside the roll-bar (or drive shaft) while attaching to the output shaft of the motor.
- Attachment hardware is supplied with each adapter size.



GUIDE PIPE INSTALLATION INSTRUCITONS:

FIGURE A

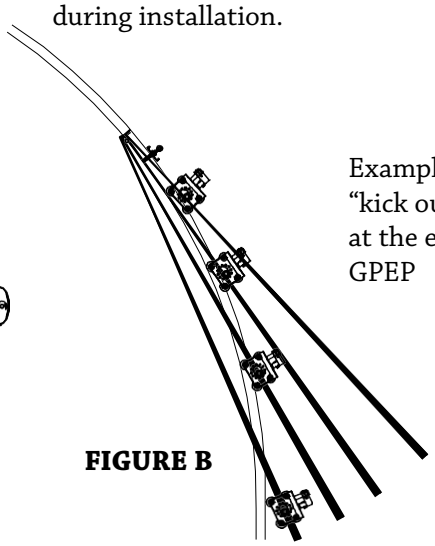


Guide pipe extender post (GPEP)

The guide pipe extender is a 4' aluminum post and is sold separately.

The guide pipe extender reduces or eliminates guide pipe movement as the motor and roll-bar travel the curved profile of a structure.

Be prepared to try different mounting positions during installation.



Example of guide pipe "kick out" when mounted at the end bow without a GPEP

FIGURE B

When using curtain operators, the guide pipe is positioned so that the operator extends beyond the end of the structure by approximately 2". This enables the curtain's roll-bar to roll against the structure or vent opening.

Determination of the guide pipe mounting location can be estimated by temporarily pivoting the guide pipe from various possible mounting points above the curtain opening. Figure A shows that by extending the guide pipe attachment point, the guide pipe stays closer to the greenhouse during its travel. Compare this to Figure B.