



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.

For Technical Support:

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LVM-60/100 INSTALLATION INSTRUCTIONS



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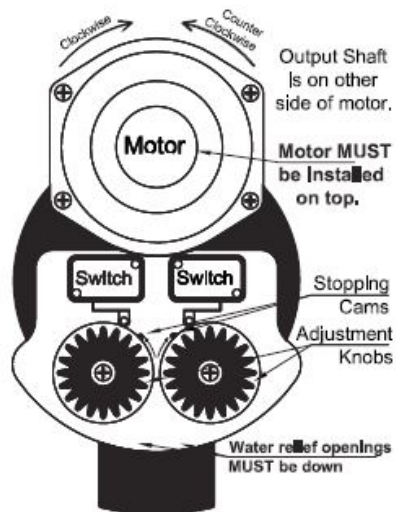
24 VDC motors require a specialized power supply that transforms 110 volt (or 220 volt) power to 24 volt power. The voltage must also be converted from AC to DC.

Please be aware: applying 110 VAC or 220 VAC to a low voltage motor will immediately and permanently damage the motor and void any warranty.

Tip: After motors have been installed and prior to wiring to a controller, the use of a portable tool battery, 24 volt or less, can simplify the setting of the motor's limit switches as the installer can stand close to the motor during the process. (motors will move slower using less than 24 volts).

Available from Advancing Alternatives are thermostatic controllers that will provide 24 volt power and coordinate the motor's movement thus regulating a thermal zone's temperature. Also available are interface boxes (CIBs) that will provide 24 volt power while taking direction from an existing 3rd party controller. All Advancing Alternatives' controllers 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.)



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



(Fig. 2)



(Fig. 3)



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Note: 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.

Tip: 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.

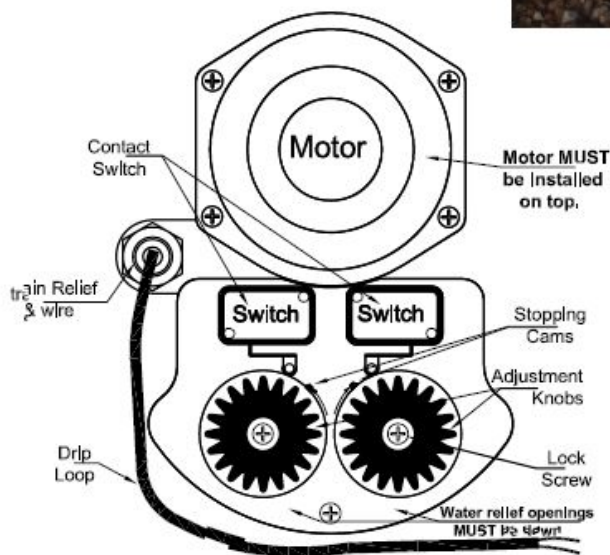
LIMIT SWITCH NOTES:

- "Cams" on each limit switch wheel will rotate at the when the motor is powered. One cam will move closer to it's switch while the other cam will move away from it's switch 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. (Some degree of tightness on the screw allows better control of the adjustment knobs.)

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.

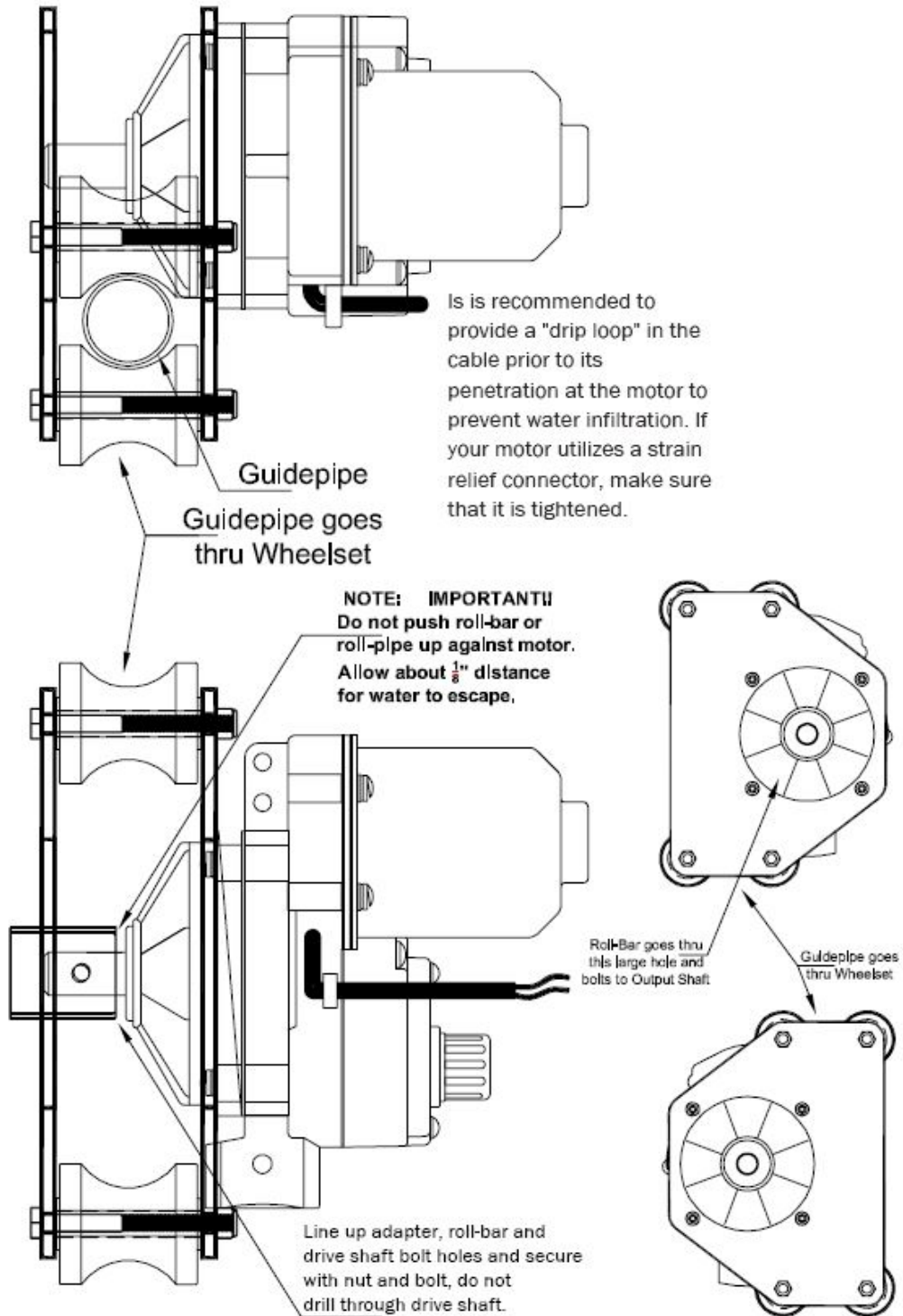
Your motor may have been supplied with an adapter designed for the roll-bar or drive shaft you are using. The adapter should fit inside the roll-bar (or drive shaft) while attaching to the output shaft of the motor.

Attachment hardware is supplied with each adapter size.





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Perform routine maintenance checks on all of your natural ventilation equipment, especially at the beginning and end of each season!



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1. Adjustment knobs (or dials) on the limit switch housing allows for setting each rotations extent. The moving of cams (see diagram) slightly away from their respective switches, (perhaps 1/8") will result in short rotation "runs".

2. When getting familiar with the settings, use minor adjustments to become comfortable with the motor's directions, and the resulting movement of each adjustment. When powering the motor in one direction it will stop when the cam reaches and contacts the switch.

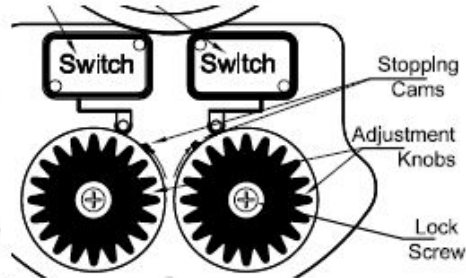
(Reversing the motor wires within a junction box, at the controller or at the drill battery terminals, will change rotational direction.)

3. Reverse the direction, again, with minor adjustments. Make careful note of which knob will adjust each direction. Remember that moving the cam away from its switch will increase the number of rotations and therefore, the movement of your ventilation asset. Notice how the motor will automatically restart as you move the cam away from its respective switch.

4. As you approach the open or close extent of the ventilation asset, observe the component's travel 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.

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.)



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)

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

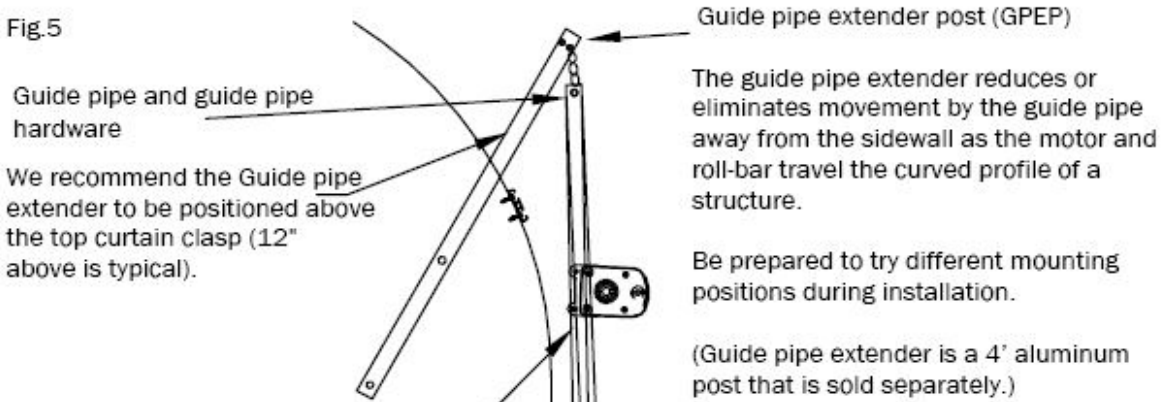


The relationship of a curtain's roll-bar to the structure or vent opening is dependent upon the relationship of the guide pipe to the motor's output shaft. Your specific application may benefit by a right-output motor assembly used as a left-output or visa versa.

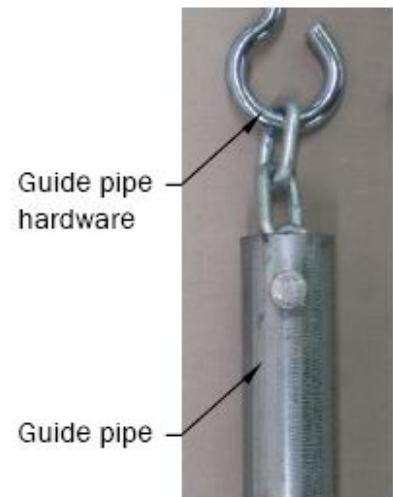
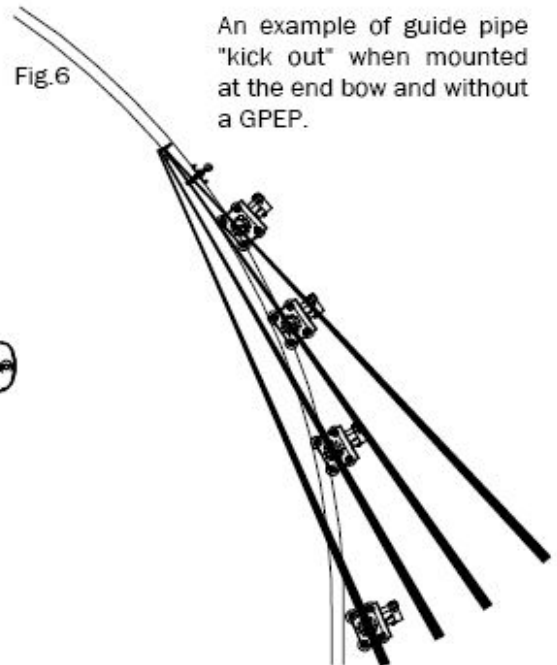




GUIDE PIPE INSTALLATION INSTRUCTIONS



Operators with output offset from the guide pipe.



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 5 shows that by extending the guide pipe attachment point, the guide pipe stays closer to the greenhouse during its travel (Compare with Fig. 6).