

LVM-200

200 Nm Low Voltage Motors

Installation Instructions



Read completely thru these instructions before beginning your installation, to familiarize yourself and compare what you received with the instructions.



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: 1-877-546-2257

info@advancingalternatives.com

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For the installation phase and for testing and setting the adjustments, or during emergency times, the motors can be run with a DC battery of 24 Volts, 18 Volts or 12 Volts. Using less than the 24 volts will result in less power and less than normal speed.

(Remember, it is only for short duration use for emergency and setting limit switches during installation).

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

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All low voltage motors REQUIRE a special power supply to change normal 110 volt power to 24 volt power. It must then also be changed from AC power to DC power. NEVER APPLY 110 VOLT AC or 220 VOLT AC to a low voltage motor. AC power will immediately destroy the motor, and void any warranty.

We offer Controllers that will provide these proper power sources, and at the same time control the movement of the curtain motor in stages, according to temperature. And we offer Controller Interface Boxes (CIBs) that will allow your controller to talk to and control the directional Opening/ Closing motion of these Low Voltage Motors.

Our Controllers and/or CIB's are also properly fused to protect the motors when they run in either direction. (Directional change comes from reversing the polarity of the DC power).

Use #14 multi strand 2 conductor wire from your power source to all motors. If the distance is greater than 120 LF, use #12 AWG multi strand wire. (SOJ type wire is good) (If your local codes requires a ground wire to 24 Volt motors, follow your local codes)



Always remember to perform routine maintenance checks on all of your equipment, especially at the beginning and end of each season!

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Guide pipe Fig.5 extender post Guide pipe and guide pipe Shown with opitional guide pipe extender. hardware The Guide pipe Extender lessons the We recommend the Guidepipe amount that the guide pipe "kicks out" Extender protrude above the top from the structure, as the motor and curtain clasp. (12" is typical) roll-bar climbs over the curvature of the The curvature of every house is 0. structure. different, and the distance back into the curvature varies by Be prepared to try different mounting customer needs. positions during installation. Guide pipe extender is a 4' long post sold seperately. **Operators** must have guidewheels offset from hoophouse structure. Fig.6 Guide pipe hardware

Guide pipe

These mountings methods are not recommended, use guide pipe extender post.

On hoop houses, when using manual gear crank operators, the guide pipe and entire operator must be suspended off the end of the structure, so that only the roll-bar will roll against the structure, and the operator will clear the structure by about 2" (See Fig. 5)

(NOTE: If the roll-up curtain is straight up & down in it's movement area, some customers insert the BOTTOM of the guidepipe into the ground, rather than hanging the pipe. But if you do this, we recommend the guidepipe can move or flex at the top.)

Determine how you want to mount the guide pipe. By temporarily pivoting the guide pipe from various possible mounting points above the top of the curtain, you can determine the best mounting position for the guide pipe as the operator rolls the curtain up along the arc of the greenhouse. Note in Fig. 5 that by extending the guide pipe attachment point above the top of the curtain and above the greenhouse, the guide pipe stays closer to the greenhouse during its various opening stages (Compared to in Fig. 6).

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These motors can have it's wheel-set facing away from a sidewall, or it's wheel-set facing toward the sidewall.

The "motor" MUST always be in the "up" position, above the limit switches.

Connect the motor to the motor's proper power supply (CIB or Controller) and trigger the motor to "Open" momentarily, to determine if it will rotate in the correct desired rotation direction. If the motor is rotating in the wrong direction to open correctly, change wire connections within the junction box located nearest the motor, and try it again.

LIMIT SWITCH NOTES:

- the "Cams" on each Limit Switch wheel. When the motor is turned on, both Cams will rotate around their respective wheels at the same speed. One Cam will move closer to it's switch while the other Cam will move away from it's switch.

- It only takes a small Cam movement to result in a fair amount of Roll-Bar motion. (The motors are capable of almost 40 revolutions of the roll-bar.)

- Either or Both Limit Switches can be adjusted. When you rotate an adjustment knob clockwise, it's Cam will rotate counter clockwise, and vice versa.

- Each "Adjusting Knob" has a "Lock Screw". Slightly loosen the Lock Screw to turn the Adjustment Knob. (Leaving some tightness on the screw allows better control on the adjustment knobs.)

Low voltage motors have their direction of rotation changed by reversing the polarity of the motor's two wires. Before permanently attaching the motor to the Roll-bar, you must determine if the motor will rotate in the correct rotation direction to "Open" and to "Close" that particular curtain, according to the Controller or the Controller Inteface Box.

Your motor should have been ordered with the correct adapter for the Roll-Bar you are using. The motor's adapter should fit inside your Roll-Bar. If the adapter has one attachment hole in it for one bolt, drill a 5/16"hole thru one side of your Roll-Bar at the correct offset distance from the Roll-Bars end. Align that hole with the hole in the motor's shaft and drill out thru the other side of the Roll-Bar.





When the motor is used to roll curtains "UP" to Open the Curtain and roll it "DOWN" to Close the curtain, attach the motor to the Roll-Bar, when the Roll-Bar is suspended fully downwards and hanging from it's maximum down position.

Must Be Down

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1. Move both "Cams" slightly away from their respective switches, (perhaps 1/8") so the motor can move either direction a small amount, so you can check movement direction and action.

2. When beginning to get familiar with the adjustments, use small adjustments until you become comfortable with the motor's directions, and how far it moves with a certain action. Turn the motor on, to Roll the curtain "UP" (If it's rolling direction is wrong, you may have to switch it's motor wires within the junction box closest to the motor.) It should stop shortly when it's Cam reaches that directional switch

3. Turn the motor to Roll the curtain "DOWN" and watch it reach the "Down" limit switch. Make careful note of which knob will adjust each direction If it goes too far, you can lessen a direction by propelling the motor in the opposite direction until it's Cam moves away from it's switch, and then readjust that switch.

4. Now, complete your adjustment of the "UP" direction. With the motor switched to "UP" or "Open" you can rotate the up limit switch a little at a time according to your comfort with the limits, and the motor will automatically restart as you move it's "Cam" away from it's respective switch. WARNING: Motors are powerful. Do not run the roll-bar so far that it damages the curtain or top clasp. Also observe the wheelset getting close to the Guidepipe attachment and avoid running the wheel-set too high.

5. Be sure to create a "Drip Loop" in the motor's cord so that water running down the motor's cable will drip off the cord rather than following the cord inside the motor, before it reverses back up. Plastic wire ties are included to assist in controlling the cord during the motor's movement.

6. Be sure to tighten the Lock Screws on each Adjustment Knob when your adjustments are complete.

Note: If your curtain is "LOCKING DOWN with a Roll-Lock when it closes, and must rise up under the Roll-Lock to "Lock Down" you will have to increase the "Down" or "Close" direction to have the motor climb the back side of the Fabric to stop properly at the Roll-Lock. (Also see instructions for the LSARL-LVM that would be included with that occurance.)



Motors are assembled and shipped as "Right" and "Left" outputs. When motors are ordered in even numbers, they will be shipped in pairs of "L" and "R". If you order odd numbers, we ship one more of a particular side. (unless you specified)

You may have to remove a set of guidewheels, and change it's output. It requires a 4 MM (metric) allen wrench. Be careful not to drop bolts or washers



At the end of a Greenhouse Structure, this set of wheels can be positioned with the 4 wheels & (therefore the guidepipe) closer to the center of the structure or facing away from the structure. The more room you have to work with can sometimes affect the



Always be sure the Strain Relief connector is tight to prevent water penetration, and always provide a downward Drip Loop before the wire enters the Strain Relief, to prevent water from trying to follow the wire down and into the motor.

Line up adapter, rollbar and drive shaft bolt holes and secure with nut and bolt, do not drill through drive shaft.

Always remember to perform routine maintenance checks on all of your equipment, especially at the beginning and end of each season!