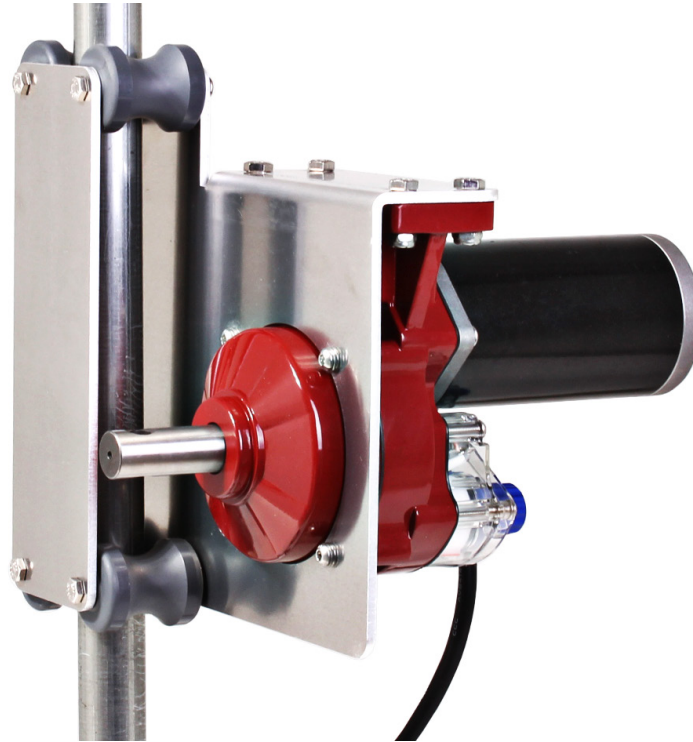




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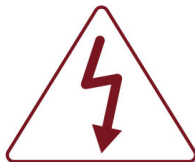
## 180 Nm Low Voltage Motor Package



Read completely through 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.



A qualified electrician should provide any electrical installation or connections.

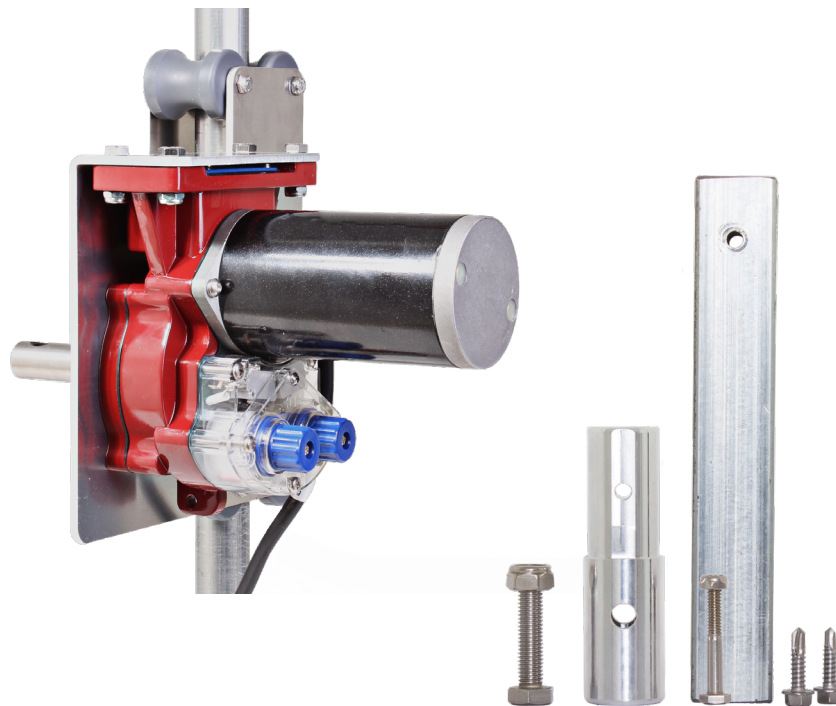
**For Technical Support:**

**1-877-546-2257**

**[info@advancingalternatives.com](mailto:info@advancingalternatives.com)**

***180 Nm Low Voltage Motor Package Contains:***

1	ea.	180 Nm Motor
1	ea.	Set of Guidewheels
1	ea	Roll Bar Adaptor
1	ea.	1.25"x1.25"x8" Square Tube
1	ea.	Guidepipe Hardware Kit
1	ea.	M10-1.5 x 1.75" SS Hex Bolt
1	ea	M10-1.5 SS Lock Nut
2	ea	#14 x 1" SS Tek Screws
1	ea	.25"-20x1.5" SS Hex Bolt
1	ea	.25"-20 SS Lock Nut
3	ea	4" Cable Tie



**If components are missing from you package  
please contact us prior to installation.**

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All low voltage motors REQUIRE a special power supply to change normal 110 volt power to 24 volt power & 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 Environmental 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)

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).

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 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.

Red Switch controls roll-bar's counter clockwise rotation. Red Cam stops motor when red cam deflects RED switch. Black Switch controls roll-bar's clockwise rotation and Black Cam stops motor when black cam deflects Black switch.

This Motor might be installed with Red Switch on top or with Black Switch on top, depending on which end of the roll-bar the motor is installed or on which end of the structure it is installed.

These motors can have it's wheel-set facing away from a sidewall, or it's wheel-set facing toward the sidewall. Also, any motor typically on one side of a structure with it's Red Switch up, will probably have it's Red switch down when on the other side of a structure. Therefore the motors' are fully versatile.

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.

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.

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.

#### LIMIT SWITCH:

- Note 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". Loosen the Lock Screw to turn the Adjustment Knob. (Leaving some tightness on the screw allows better control on the adjustment knobs.)

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.

1. Move both “Cams” slightly away from their respective switches, 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 roll-ing 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 the other 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 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 to follow the cord and try to get inside the motor’s Strain Relief Clamp. If the Strain Relief Clamp is at the top of the motor, run the cord down between the motor and the clear plastic limit switch cover and then reverse back up to create a drip loop. 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 ad-justments 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 the instructions for the LSARL-LVM that would be included with that occurrence.)



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*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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