

# TUBULAR MOTOR REPLACEMENT KIT

## FOR THE MOTORIZED FREEDOM WINDOW & OTD

### RV Kits

This operation can be done while the awning is mounted on the RV. Use care to avoid damaging the walls etc.

1. Disconnect power to the awning.

### ⚠ CAUTION

**FAILURE TO SECURE THE LEAD RAIL AS DESCRIBED WILL ALLOW THE SPRING ARMS TO EXTEND UNEXPECTEDLY POSSIBLY CAUSING PERSONAL INJURY AND DAMAGE TO THE AWNING.**

2. If the awning is extended:

- 2.1 Carefully push the lead rail toward the case so that the arms collapse. While holding the lead rail in this position, firmly tie the elbows of the spring arms together. Use a minimum 1/2" rope - do not use bungee cords. When tying the rope, use a non-slip knot such as a square knot or equivalent.
- 2.2 (Detail A) Remove the retaining screw holding the end cap.
- 2.3 The end cap snaps on and off the case end plate. Remove the end cap and set aside. Go to step 4.

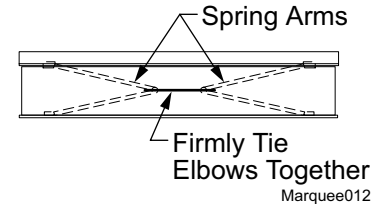


Figure 1. Tying the Arms.

3. If the awning is closed:

- 3.1 Firmly brace the lead rail in the closed position. A second person can hold the lead rail steady during the disassembly process.

**NOTE: If the awning is closed and cannot be opened, it will be necessary to drill through the end cap to access the end plate screws. This will require replacing the end cap to complete the repair.**

- 3.2 (Detail B) Drill three (3) 1/2" holes through the surface of the end cap. This is to provide access to the end plate attach screws.

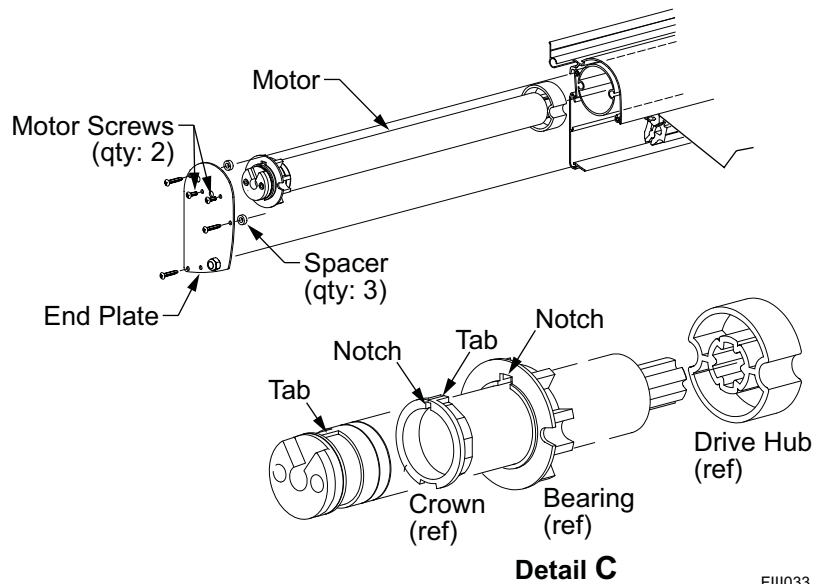
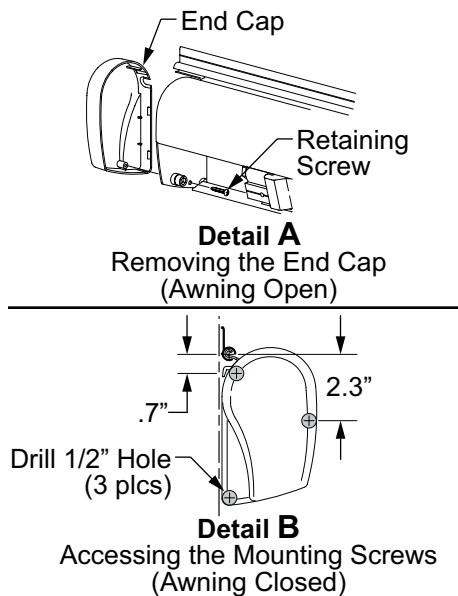


Figure 2. Replacing the Motor.

FIII033

4. Remove the 3 screws holding the end plate to the case, do not remove the motor attach screws at this time.

 **CAUTIONS**

**WHEN PULLING THE MOTOR OUT OF THE CASE, THE SERVICING TECHNICIAN MUST USE CARE TO NOT BREAK OR DAMAGE THE MOTOR CABLES.**

**WHEN PULLING THE MOTOR, DO NOT LET THE ROLLBAR COME OUT MORE THAN 1"; OTHERWISE THE ROLLBAR IDLER WILL DISENGAGE FROM THE OPPOSITE END PLATE. IF THIS OCCURS, REINSERT THE IDLER ONTO THE ENDPLATE BEFORE CONTINUING.**

5. Pull the end plate and motor partially out from the awning case.
6. Disconnect the motor wires from inside the coach and pull out or clip the motor wires. If cutting the motor wires be sure to leave enough wire that can be stripped and spliced.
7. Pull the motor, crown, roller bearing and drive hub out of the roll bar.

 **CAUTION**

**IF THE AWNING IS CLOSED WHEN THE MOTOR IS REMOVED THE SPRING ARMS WILL TRY TO OPEN. SUPPORT THE ROLL BAR AND ALLOW THE AWNING TO OPEN SLOWLY THEN SECURE THE ARMS BY TYING THE ELBOWS TOGETHER AS DESCRIBED PREVIOUSLY.**

8. If still attached, remove the end cap from the end plate then remove the attaching screws holding the motor to the end cap. Make note of the motor orientation on the end plate.
9. If not previously done, install the new crown, roller bearing and drive hub on the new motor.

**NOTE: The crown mounts in the groove at the end of the motor. The notch in the crown fits over the tab in the groove of the motor. The crown must be installed for the motor to operate correctly and to allow the motor limits to be set.**

10. Attach the new motor to the end plate paying attention to match the orientation from the old motor.
11. Partially slide the new motor assembly into the roll bar. Ensure that the motor drive gear and crown are properly aligned inside the roll bar.
12. Route the new motor wire into the coach and attach or if the wires were cut, splice the new wires to the existing wires. Ensure that the wire colors match (i.e. red to red and black to black). Use a quality silicone sealant to seal the wire hole into the coach.

**NOTE: If splicing the wires, allow enough lead wire from the motor so that the completed splices can be pushed into the wall before sealing. There is not clearance room in the case for the wires and splices.**

13. Attach the end cap to the case.
14. Remove the roll bar support.
15. To test, restore power then extend and retract the awning.
16. After replacing the motor, it will be necessary to adjust the motor limits. Follow the procedure on page 3.

## SETTING THE MOTOR LIMITS

The limit switches are located inside the case, near the end cap. It is necessary to extend the awning to access the switches. The "OUT" limit switch stops the motor when the awning is fully extended. The "IN" limit switch stops the motor when the awning is fully retracted.

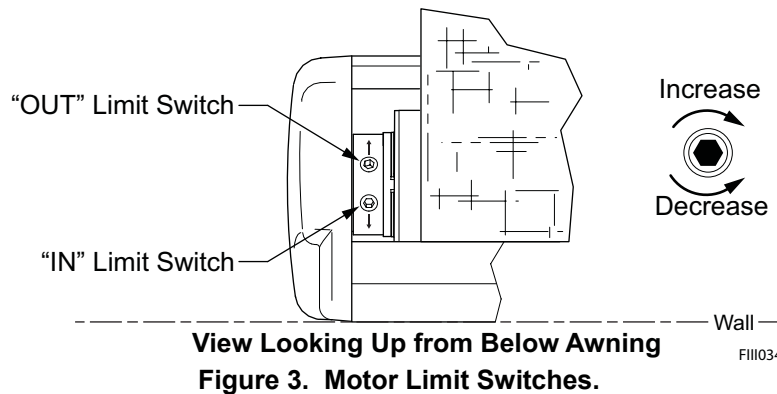


Figure 3. Motor Limit Switches.

### ADJUSTING THE OUT LIMIT SWITCH

1. Extend the awning out completely.
2. Confirm that the arms are fully extended. The motor should stop and the fabric should be tight. If the motor continues to run, the fabric will sag; or, if the motor quits before the arms are fully extended, it will be necessary to adjust the "OUT" limit switch.
3. Using a 4mm Allen wrench turn the "OUT" limit switch. CLOCKWISE increases time the motor runs during extension, COUNTERCLOCKWISE reduces the time the motor runs.

**NOTE: It is best to make the adjustments in increments of a single turn. 3 full turns of the screw equals approximately 2" of fabric extension.**

4. Extend and retract the awning several times to confirm that the adjustment is correct.
5. Repeat steps 3 and 4 as required until the awning extends correctly.

### ADJUSTING THE IN LIMIT SWITCH

#### ⚠ CAUTION

**THE IN-LIMIT SWITCH MUST BE SET TO SHUT OFF THE MOTOR WHEN THE AWNING IS CLOSED. THE MOTOR MUST NOT CONTINUE TO RUN AFTER THE AWNING CLOSES OTHERWISE DAMAGE TO THE MOTOR WILL OCCUR IF THE MOTOR CONTINUES TO RUN AFTER THE AWNING IS CLOSED.**

1. Retract the awning in completely.
2. Confirm that the arms are fully retracted. The motor must stop when the awning is fully retracted. If the motor continues to run; or, if the motor quits before the arms are fully retracted, it will be necessary to adjust the "IN" limit switch.
3. Using a 4mm Allen wrench turn the "IN" limit switch. Clockwise increase time the motor runs during retraction, counter clockwise reduces the time the motor runs.

**NOTE: It is best to make the adjustments in increments of a single turn. 3 full turns of the screw equals approximately 2" of fabric extension.**

4. Extend and retract the awning several times to confirm that the adjustment is correct.
5. Repeat steps 3 and 4 as required until the awning retracts correctly.