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LA-03
LATERAL ARM
AUTOMATIC AWNING
SERVICE MANUAL
FOR
810(XX)*(XX) .000U**
MODEL SERIES AWNING

SERVICE MANUAL

LA-03

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SAFETY INSTRUCTIONS

This manual has safety information and instructions to help users eliminate or reduce the risk of accidents and injuries.

RECOGNIZE SAFETY INFORMATION



This is the safety-alert symbol. When you see this symbol in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating instructions.

UNDERSTAND SIGNAL WORDS

A signal word, **WARNING OR CAUTION** is used with the safety-alert symbol. They give the level of risk for potential injury.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.


CAUTION used without the safety alert symbol indicates, a potentially hazardous situation which, if not avoided may result in property damage.

Read and follow all safety information and instructions.

A. GENERAL INSTRUCTIONS

WARNING

These instructions must be read and understood before repair or service is done on this awning. The repairs or service must be performed by a Dometic Service Center or a qualified service technician. Modification of this product can be extremely hazardous and could result in personal injury or property damage.

These instructions are written to guide the service person when replacing fabric, motor, lateral arms, roller tube, and lead rail on the A&E Lateral Arm Awning. In the Instructions a camera symbol  will be displayed suggesting a digital picture be taken for reference. If more assistance is needed call the Dometic Technical Service Department at 800-216-5115.

B. FABRIC REPLACEMENT

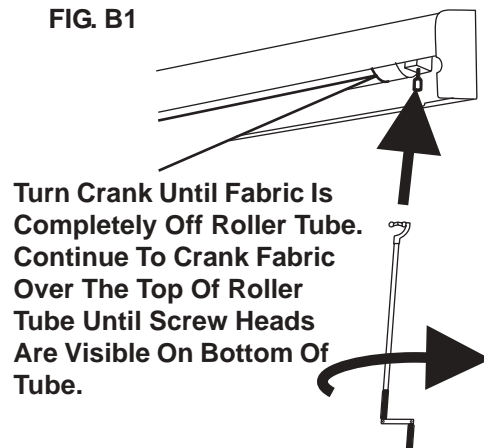
1. Extend the canopy until the motor is stopped by the limit adjustment.

WARNING

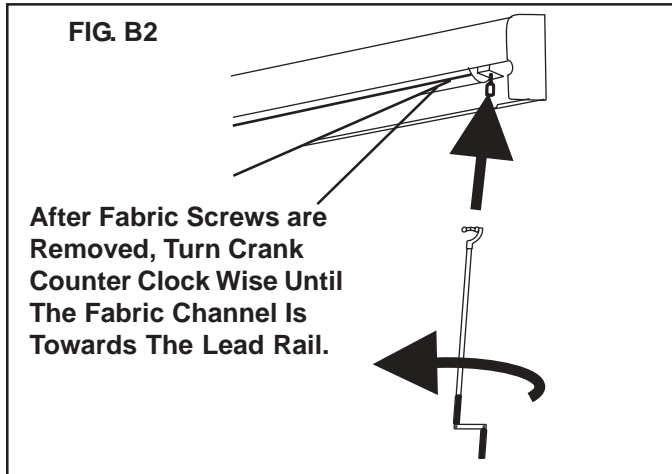
Disconnect 115 volt AC. Failure to follow these instructions could create a shock hazard or allow accidental operation causing death or severe personal injury.

2. To prevent accidental operation of the motor, the motor cable from the outlet box, and the power cord from the control should be disconnected.
3. Using the manual crank, turn the roller tube (clock wise) until the fabric is completely unwound off the tube. Continue to turn the crank rolling the fabric over the top of the roller tube until the two screws that hold the fabric to the roller tube are visible. See FIG. B1

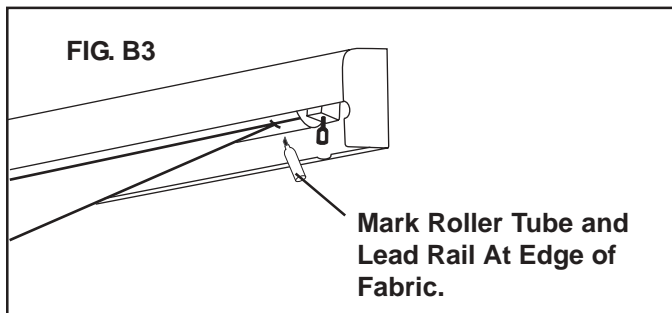
FIG. B1



4. Remove the two screws holding the fabric in the roller tube and save for reinstall on the new fabric.
5. After the screws are removed from the fabric, manually crank (counter clock wise) until the roller tube channel is towards the lead rail. See Fig. B2.

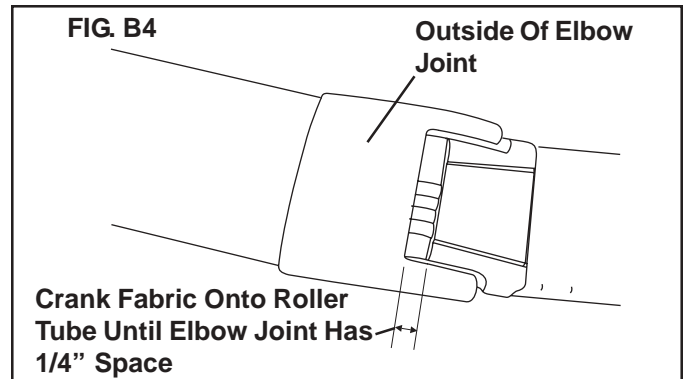


6. Mark the edges of the fabric on the lead rail and roller tube, to insure proper position of the new fabric. See FIG. B3.



7. Remove left hand decorative end caps from the side of the coach (if equipped). Remove the stamped end plate from the awning along with the left end cap of the lead rail.
8. Remove the TEK screws that secure the fabric in the lead rail.
9. Remove fabric from awning by grasping it in the middle (one person) and pull it out from the left side of the awning. If two people are removing the fabric, one should pull at the lead rail and the other at the awning case.
Note: The lead rail will sway considerably during this operation.
10. Lay the fabric on the ground stretched out as it came off the awning. Place the new fabric on top of the fabric in the same direction (edge hems on the down side), and inspect the fabric for size, color and damage. Cut off polly ropes even with the fabric edge.

11. The replacement is the reverse of steps 5 through 9. It is much easier if 4 people are available to handle the fabric. Two people guide the fabric into the channel on the lead rail and roller tube. The other two keep the fabric taut and in-line with the channels. Stop the fabric when the edges line up with the marks (placed on the lead rail and roller tube in step 6).
12. Pull fabric tight on the roller tube, while keeping the edge in alignment with the mark on the tube. If fabric is slightly longer or shorter center it between the marks or on the roller tube.
13. Manually crank the fabric over the roller tube in a clock wise direction. Replace the hold down screws removed in step 5. They are positioned about 3' from each end of awning.
14. Manually roll the fabric on the roller tube using the crank and turning in a counter clock wise direction (as viewed from bottom of awning case), rolling the fabric on the tube from the bottom. To prevent wrinkles pull on both sides of the fabric after the roller tube has rotated 1/4 of a turn. Keep doing this procedure until the elbows in the lateral arms show a gap of 1/4". See FIG. B4.



15. Reconnect the motor power cable to the outlet on the right end of the awning and plug in the control box power cord.
16. Use the key fob to finish rolling up the fabric.
17. Open the awning 3 - 4 feet and check the alignment of the elbow joints. All elbows should be in a straight line parallel with the coach wall. Grasp the lateral arm that is out of alignment. Move the arm into the proper position. The loose fabric should shift in the lead rail to allow the alignment. Check that the lead rail is centered inside the awning case. If lead rail is not centered, See F. LEAD RAIL REPLACEMENT, Step 13.
18. If the arms elbow joints are in alignment and parallel to the coach wall, and the fabric is centered with the markings on the lead rail the TEK screws can be reinstalled.
19. Replace the stamped plates and decorative end caps removed in step 7.

- 20 Extend and retract the awning canopy a couple of times to determine if the limit switches need to be adjusted. See Section D. Adjusting Limits.

C. MOTOR REPLACEMENT

⚠ WARNING

Disconnect 115 volt AC. Failure to follow these instructions could create a shock hazard or allow accidental operation causing death or severe personal injury.

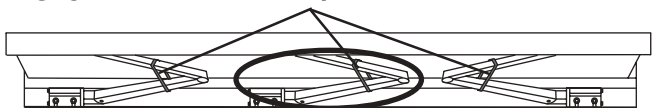
1. Disconnect the power supply to the awning by removing the control box power cord plug from the and motor cable from outlet box on side wall of coach.

⚠ WARNING

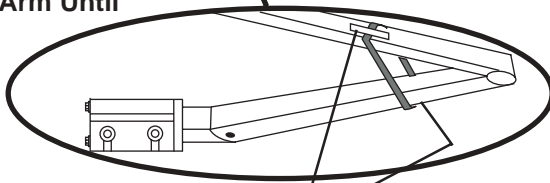
Lateral arms under spring tension are dangerous. Use extreme care. If not controlled the arms will extend quickly. Keep hands and clothing clear of awning arms, as personal injury may result.

2. Use the crank to open the awning canopy removing all the spring tension from the lateral arms.
Note: If the canopy cannot be rolled out completely, extend the lead rail a minimum of one foot. A strap, rope, belt or nylon banding making a 12 inch loop can be slipped over the end of the lateral arm elbow until it is snug. Place a piece of tape across the loop material to prevent it from sliding off the lateral arm. See FIG. C1. This will stop rapid extension of the lateral arms when the motor is removed from the roller tube.

FIG. C1 Place Loop On All Lateral Arms



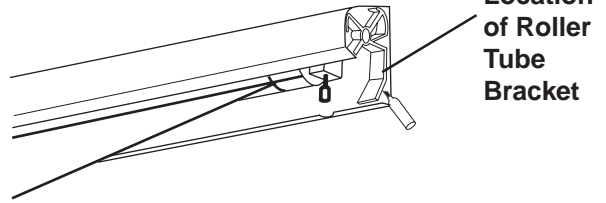
Slide Loop On Lateral Arm Until Snug.



Tape Loop On Both Sides of Elbow Joint To Keep From Sliding Off Arm

3. Remove right hand decorative end cap from the side of the coach (if equipped), and the stamped end plate off the awning.
4. Mark the location of the roller tube bracket on the awning case to reposition it correctly when reinstalled. See Fig. C2.

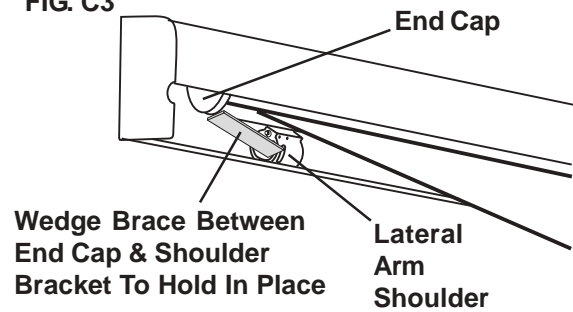
FIG. C2



Mark Location of Roller Tube Bracket

5. Loosen roller tube bracket screws, but do not remove bracket.
6. Remember and note the grommet orientation (must be replaced exactly the same), and slide out the motor cable and grommet.
7. The left end of the roller tube must be kept in place to keep idler shaft in its bushing. This can be accomplished by wedging a brace between the end cap and the left lateral arm shoulder. Tape brace to roller tube with duct tape to keep in place. See FIG. C3.

FIG. C3



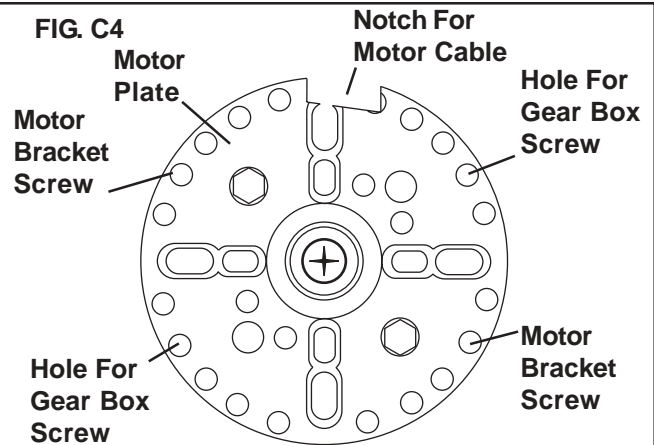
Wedge Brace Between End Cap & Shoulder Bracket To Hold In Place

End Cap

Lateral Arm Shoulder

8. Remember and note the location of the manual crank stirrup and with reference to the awning back case, It must be reinstalled in the same location.
9. Pull the motor out of the roller tube by grasping the bracket. Small up and out, down and out movement will allow the motor assembly to be inched out of the roller tube.
10. Place the motor assembly on a clean work surface and remove two screws that attach the motor bracket to the plate.

FIG. C4




Motor Plate
Motor Bracket Screw

Notch For Motor Cable

Hole For Gear Box Screw

Hole For Gear Box Screw

Motor Bracket Screw

11. The position of the plate must be  remembered and noted, so it can be reinstalled on the new motor in exactly the same location. Remove motor plate off the gear box assembly. See FIG. C4.
12. Place the motor plate on the new motor in the exact position as it was on the original motor. Tighten to a torque of 75-85 inch pounds. See Fig. C4.
13. Replace the motor bracket on the motor assembly in the same position as the original motor. Install the screws. Tighten to a torque of 75-85 inch pounds. See FIG. C4.
14. Check the left end of the roller tube to make sure the end cap shaft did not come out of the idler bushing and the brace is still in place. See FIG. C3.
Note: If idler shaft of the left end cap on the roller tube is out of the bushing it must be replaced before motor can be installed.
15. Insert the black nylon tube adapter into the roller tube, aligning the notch that positions the motor the closest to the its' correct orientation.
Note: The motor has a black nylon collar next to the gear box, with 4 equally spaced large notches. One of the notches is slightly larger than the others. This notch must be placed over the rope channel in the roller tube. You may need to use the manual crank to position the nylon collar.
16. Push the motor assembly into the roller tube. Lifting and aligning the roller tube will allow motor assembly to slide into the tube. Do not force.
17. Place the grommet on the motor cable into the slot on the back case. Position the grommet exactly as it was before removal.
18. The motor bracket must slide in the casing channels as the motor assembly is slowly pushed in the tube. When the black nylon collar is about to enter the tube, it can be turned by the manual crank in either direction until the largest notch fits over the rope channel.
19. Push the motor assembly into the roller tube until the mounting bracket aligns with the mark placed on the awning casing in step 4.
Note: If the motor bracket is not close to the mark and the stop on black nylon collar is against the roller tube, check the left end of the tube to be sure the end cap shaft is in the bushing.
20. Tighten the screws that hold the motor bracket in the case, and replace the metal cover. Connect the motor power cable to the outlet box. Replace the decorative end caps if used.
21. Insert the manual crank into the stirrup and roll up the fabric until the lateral arm elbows have a 1/4" space (only if repairs were done with the awning fully extended). Remove crank and reconnect control box power cable to the outlet box. See FIG. D4.
22. Depress and hold the black button on the key fob and allow the awning to close while monitoring its operation. If no problems are found. Depress and hold the green button on the key fob. See FIG. D1.
Note: The awning may not close or open completely. See Section D. ADJUSTING LIMITS.

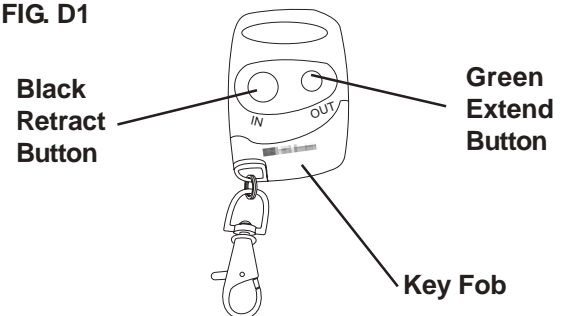
D. ADJUSTING LIMITS

WARNING

Pinch point hazards are present at the elbow joint and shoulder bracket of the lateral arm assembly, and between the lead rail and awning case. Keep arms and hands away from these objects when opening or closing awning.

1. The opening and closing of the awning is controlled by the motor limits. If adjustment is required use a 5/32" (4mm) Allen Wrench with a ball tip and the following procedure:
 - a. **Canopy not fully extended:**
 1. Hold the extend button on the key fob for 3 seconds and the control will continue to extend canopy. See FIG. D1.

FIG. D1



2. Place the Allen Wrench into the left limit adjustment and turn clockwise. The control is in the automatic extend mode and the canopy should extend as the adjustment are made. See FIG. D2 & D3.
Note: The left limit adjustment is above the lip on the front cover and hard to locate. A 3/8" hole can be drilled into the awning case to allow the Allen Wrench easier access to the limit adjustment screw. See FIG. D2 & D3.

FIG. D2

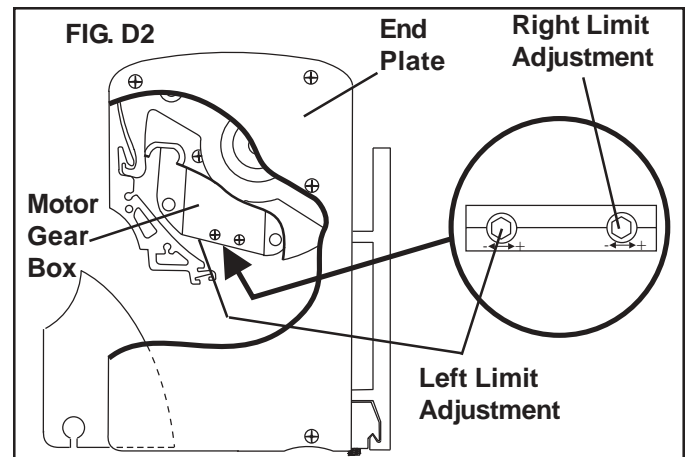
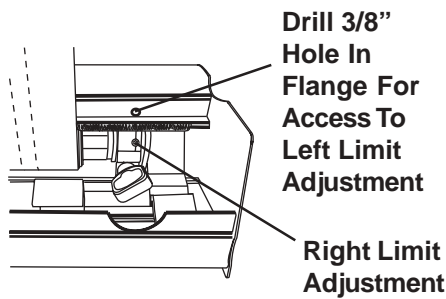


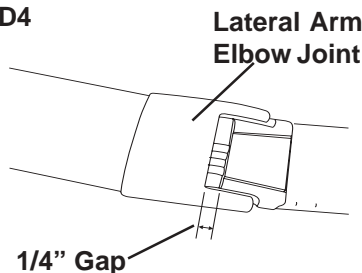
FIG. D3



Viewing Awning From Below

- Continue to adjust until the lateral arm elbow joint is 1/4" gap from its stop point. See FIG. D4.

FIG. D4



b. Canopy Over Extended:

- Push the retract button on the key fob and allow the fabric to retract several inches. See FIG. D1.
- Place the Allen Wrench in the left limit adjustment and turn counter clock wise 5 to 6 turns.
- Retract and extend the canopy to determine if it is still overextending. If it is then repeat (step 2) until it the canopy is not fully extended.

Note: When the canopy stops before it reaches the full extension then return to step "a. Canopy not fully extended" and adjust.

c. Canopy Will Not Retract Completely:

- Push the extend button on the key fob and allow the fabric to extend out several inches. See FIG. D1.
- Place the Allen Wrench in the right limit adjustment and turn clock wise for several turns. See FIG. D2 & D3.
- Push the retract button to check the adjustment. If awning does not close completely repeat steps 1 and 2 until awning is fully closed.

! CAUTION

This unit must be serviced by a qualified service technician. Modification of this product can be extremely hazardous and could result in personal injury or property damage.

E. ADJUSTING AWNING PITCH

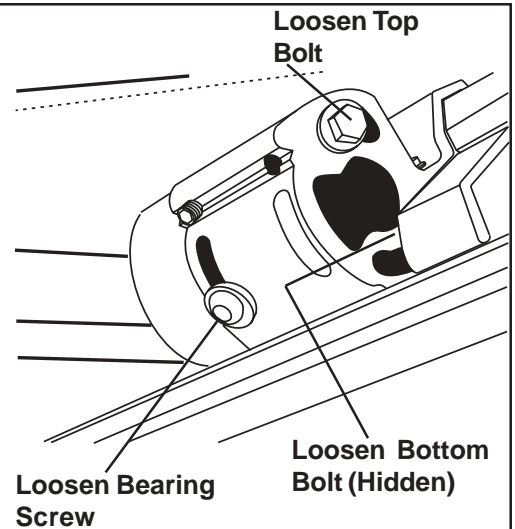
Note: The awning is factory preset with a 20° pitch. If minor adjustments are required to level the lead rail they **must maintain the 20° slope**. A slope of 20° is 4.38" of drop for each foot of extension of the awning.

! WARNING

Disconnect 115 volt AC. Failure to follow these instructions could create a shock hazard or allow accidental operation causing death or severe personal injury.

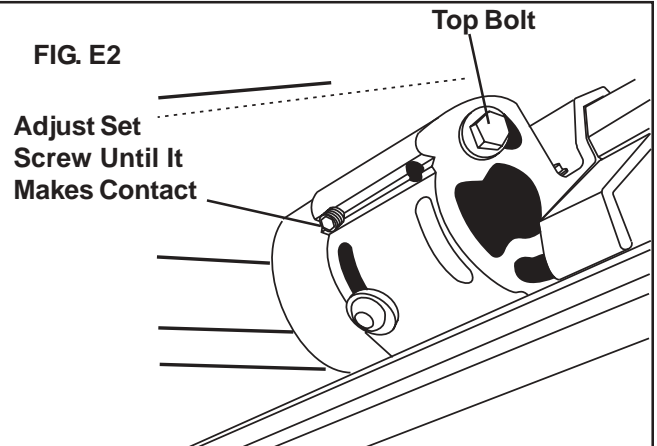
- Coach should be parked on a flat and level surface, such as a concrete garage floor.
- Extend awning canopy until it is about to make contact with the obstruction, or fully extended.
- To prevent accidental operation of the motor, the motor cable and the power cord from the control box disconnected.
- Loosen the top and bottom bolts and bearing screw on all of the rafter brackets. See FIG. E1.

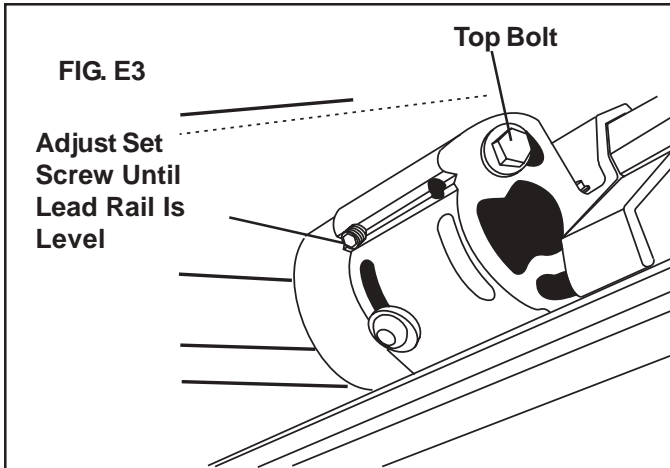
FIG. E1



- It is easier to adjust the set screw when load is removed; have a second person lift the lead rail while the set screw is being turned.
- To change the awning slope adjust the set screw in to raise or out to lower (each turn changes slope 4° per turn). See FIG. E2.

FIG. E2





7. Adjust the set screw in each of the rafter brackets until the awning rail is level. See FIG. E3.
8. Retighten the top and bottom bolts and the bearing screws loosened in step 4. See FIG. E1.
9. Retract and extend awning a couple times to verify the adjustment to be correct. Repeat steps 1 through 7 if necessary.
10. If lead rail is not centered in awning case, see section F. LEAD RAIL REPLACEMENT, step 13.

F. LEAD RAIL REPLACEMENT

1. Extend the canopy until the motor is stopped by the limit adjustment.
2. To prevent accidental operation of the motor, the motor cable and the power cord from the control box disconnected.

! WARNING

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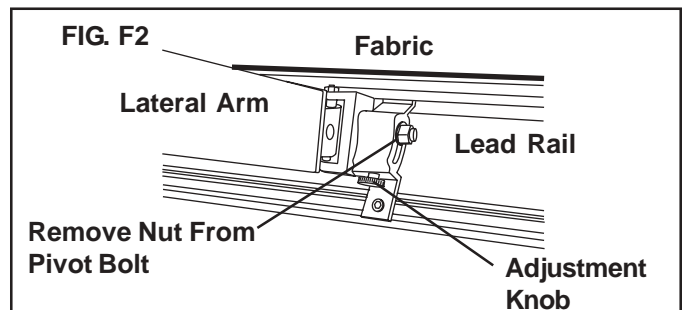
3. Using the manual crank, turn the roller tube (clock wise) until the fabric is sagging and loose. See FIG. F1.



! WARNING

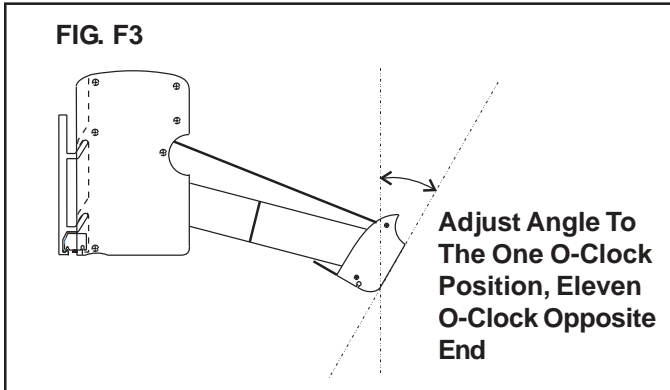
Lateral arms under spring tension are dangerous. Use extreme care. If not controlled the arms will extend quickly. Keep hands and clothing clear of awning arms, as personal injury may result.

4. Use a Phillips Screw Driver to remove the end caps from both ends of the lead rail. Save to be reinstalled on the new lead rail.
5. Remove the 2 TEK screws that hold the fabric in the lead rail (one in each side).
6. Remove the lock nut and washer from the lead rail pivot bolt on each lateral arm. See FIG. F2.



7. The next steps require two persons. Loosen the adjustment knob, and slide the pivot bolt out of the bracket on one end of the lead rail.
8. While one person holds the free end of the lead rail the other person repeats step 7.
9. When the lead rail is free from the lateral arms, slide the fabric and rope out. One person pull the lead rail off the fabric, while the other holds the fabric tight.
10. Loosen the screws holding the support brackets and lateral arm bracket tight in the lead rail. Slide the brackets out of the lead rail. Note the order and placement of the hardware and brackets, so they can be placed the exactly the same on the new lead rail.
Do not tighten brackets on the new lead rail, as it may be necessary to be reposition them.
11. Replace the lead rail in reverse of Steps 6 through 10.
12. When the fabric and lateral arms are in place, connect power to the controls and awning. Use the key fob to close the awning to with in 5 - 6 inches from the case.
13. Disconnect power (see warning in step 2) and check the alignment of the lead rail as follows:
 - a. Are all elbow joints on the lateral arms in a straight line parallel to the case. If not move the lateral arm bracket right or left to align.
 - b. Center lead rail between the awning case end plates, by sliding lead rail right or left until there is equal space on each end.
 - c. Make sure the support brackets on the lead rail match up with the brackets on the case.

- d. Connect power, extend and retract awning. Watch its alignment as it approaches the case. Stop retraction of awning 5 - 6 inches away from the case and recheck the previous steps "a" through "c".
 - e. Extend and retract awning as in step "d". If alignment is proper continue to roll the fabric into the case.
14. Extend the awning and disconnect power (see warning in step 2). Replace the two TEK screws removed in step 5.
 15. Adjust the angle of the lead rail to the one-o'clock position (eleven o'clock viewed from right end). See FIG. F3. Then replace end caps removed in step 4.



16. Connect power and check operation.

G. LATERAL ARM REPLACEMENT

1. Extend the canopy 2 - 3 feet.

! WARNING

Lateral arms under spring tension are dangerous. Use extreme care. If not controlled the arms will extend quickly. Keep hands and clothing clear of awning arms, as personal injury may result.

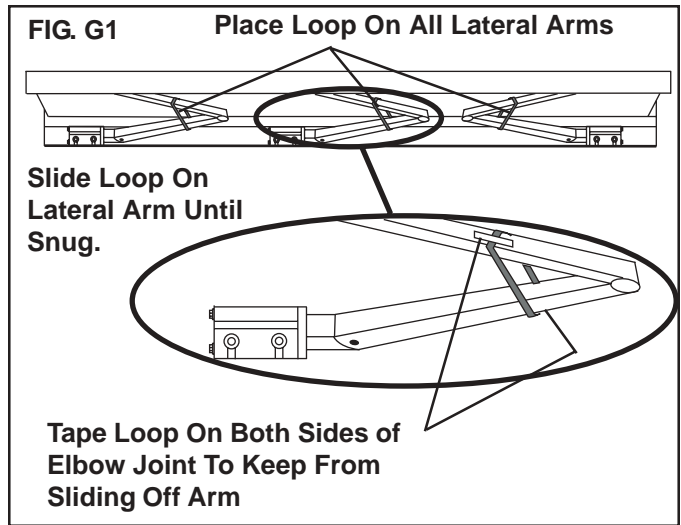
2. Secure each lateral arm to prevent it from extending rapidly.

Note: A strap, rope, belt or nylon banding making a 12 inch loop can be slipped over the end of the lateral arm elbow until it is snug. Place a piece of tape across the loop material to prevent it from sliding off the lateral arm. See FIG. G1.

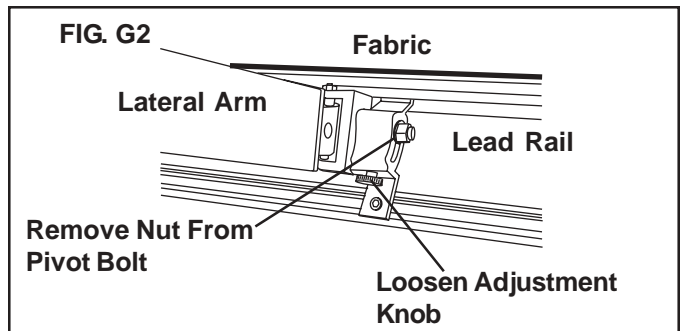
! WARNING

Disconnect 115 volt AC. Failure to follow these instructions could create a shock hazard or allow accidental operation causing death or severe personal injury.

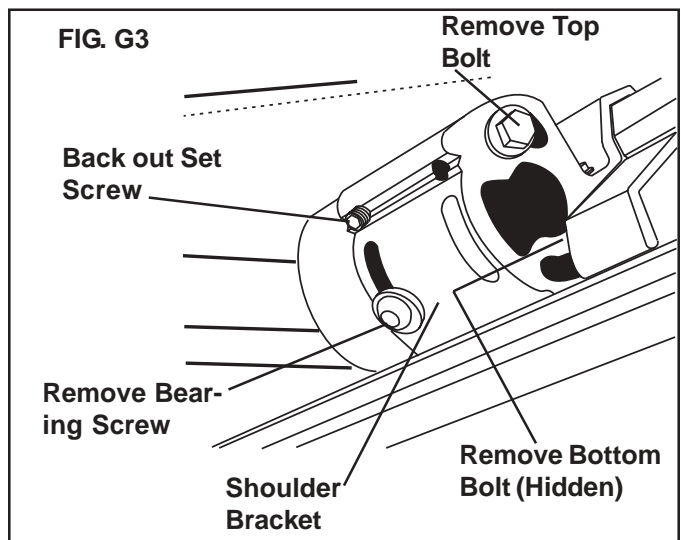
3. To prevent accidental operation of the motor, the motor cable and the power cord from the control box disconnected.



4. Remove the lock nut and washer from the lead rail pivot bolt on defective lateral arm, and loosen adjustment knob. See FIG. G2.



5. Back out the set screw until it will not interfere with the removal of the lateral arm from the shoulder. See FIG. G3.
6. Remove bearing screw out of shoulder bracket and save for reinstall later. See FIG. G3.



7. Remove top and bottom bolts from the shoulder bracket and save for reinstall.

Note: Next 4 steps requires two or three persons.

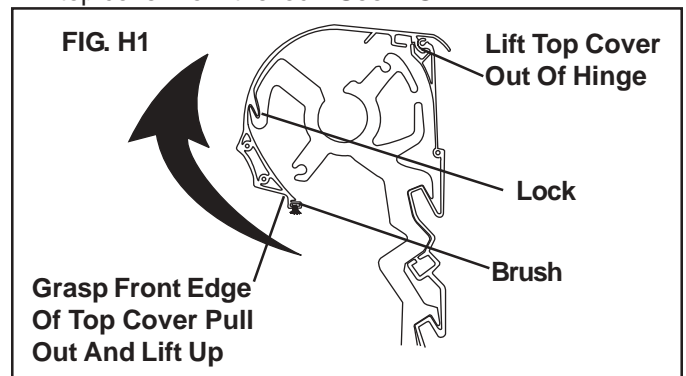
8. One person supports the end of the lead rail, while the second person removes the lateral arm from the bracket on the lead rail and shoulder (see warning in step 1).
Note: The restraint band should **not be removed** from lateral arm until instructed to do so.
9. The one person continues to support the lead rail (required if the right or left outside lateral arm is being changed), while the second person replaces the arm in the shoulder bracket.
10. Replace the top and bottom bolts removed in Section G, step 7, but only finger tight.
11. Replace the bearing screw removed in step 6, but only finger tight.
12. **Next step requires two persons.**
13. One person should be keeping the lateral arm in the folded position while the second person removes the restraining band. Together they slowly extend the lateral arm, and insert the stud bolt into lead rail bracket. Replace nut on the stud bolt and tighten.
14. Connect power and extend awning. Go to Section E. ADJUSTING AWNING PITCH.
15. When disposing of a defective lateral arm, it should be extended to relieve the spring tension. Two persons are needed to relieve the spring tension. One person compresses the arm to the floor while the second person removes the restraint band. Together the lateral is slowly allowed to extend. Once the lateral arm is straight it can be safely disposed.

1. Extend the canopy 2 feet from coach.
2. Lock each arm. See "C. Motor Replacement" Fig. C1.
3. Unroll six inches of fabric to create slack.

⚠ WARNING

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4. Disconnect power to the awning at the control box by removing the power cord from the outlet.
5. Remove Decorative end caps (if used) and the awning case end covers.
6. One service person on a step ladder at each end of the awning grasps the top cover and lifts up to release the top cover from the lock. See FIG. H1.



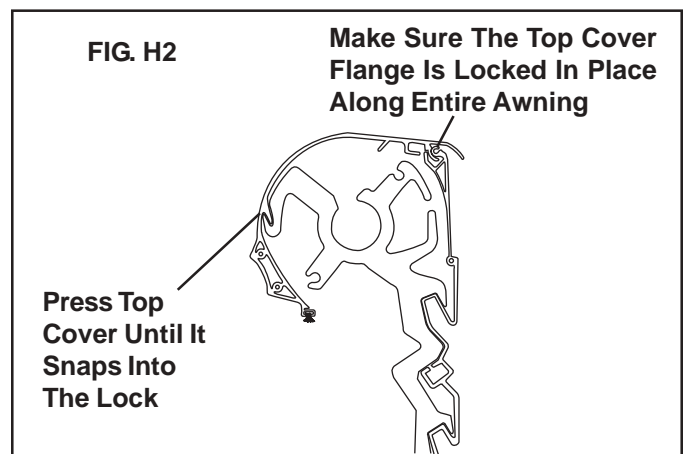
H. TOP COVER REPLACEMENT

⚠ WARNING

When utilizing a step ladder for this procedure, follow step ladder manufactures safety warning. Failure to follow these instructions could be extremely hazardous and could result in personal injury

Note: Two persons are required to make this repair. Caution must be exercised as removal of the top cover requires lifting to unlock, while standing on a step ladder. The force required to unlock the top cover may cause the shifting of the step ladder and cause the service person to fall. Repairs should be made in a location where step ladder can be placed on a firm surface (concrete floor).

7. Swing the top cover back toward the coach until it can be lifted out of the hinge. See FIG. H1.
8. Lay old cover out of the way. Compare new cover with the old for length.
9. Check new cover for brush. See Fig. H1. If missing, remove brush from old cover and install in new.
10. The top cover should be held at about 45° while the flange is inserted into the hinge on the rear cover. Make sure it is in the hinge the full length of the awning.
11. When the flange is in position, swing the top cover down over the roller tube. Be sure to push the top cover down in the hinge while it is being closed.
12. When the top cover is in position, carefully press the lock into the roller tube support bracket. A snap or click is heard when it is locked. See FIG. H2.



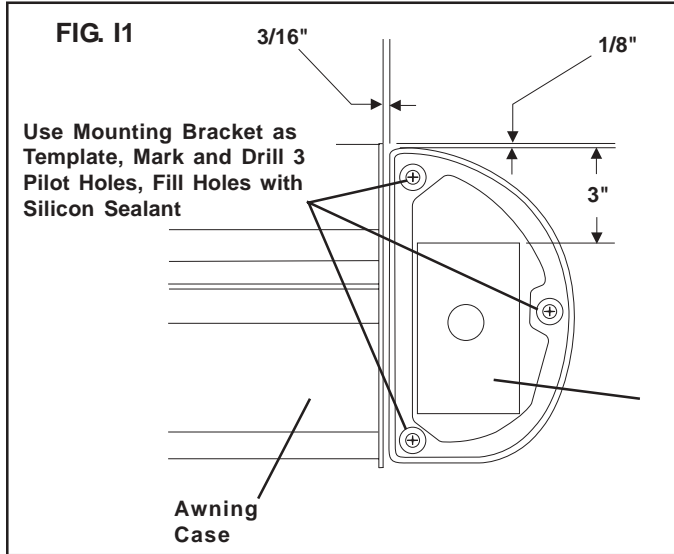
⚠ WARNING

Lateral arms under spring tension are dangerous. Use extreme care. If not controlled the arms will extend quickly. Keep hands and clothing clear of awning arms, as personal injury may result.

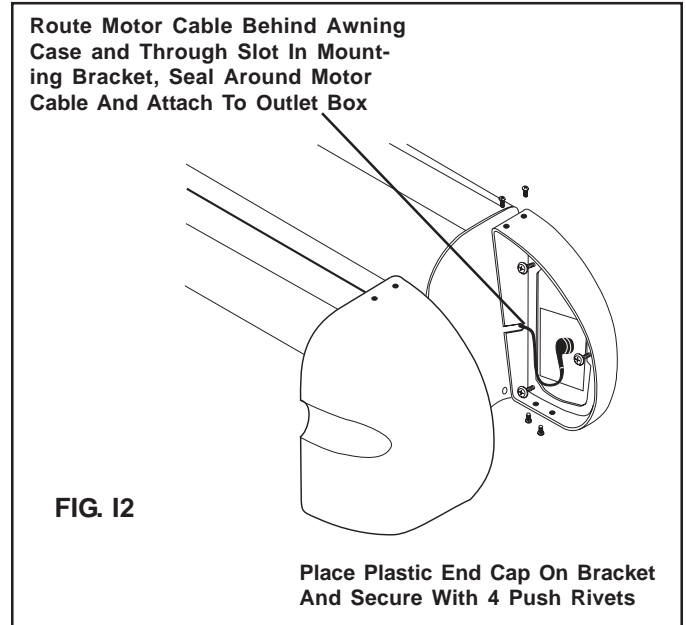
13. Visually check the top cover to make certain it is in the hinge full length of the awning. See FIG. H2.
14. Replace the awning case end plates.
15. Restore power to the Control box by plugging the power cord into the receptacle.
16. Retract fabric to remove slack.
17. Remove locking straps from the arms.
18. Extend the fabric 3 - 4 feet and visually recheck top cover to be sure it is still locked and the hinge is in place.
19. Extend the fabric completely and once again visually recheck the hinge and lock.
20. Retract the canopy and observe how it closes. Look for gaps and any interference in its operation. If it is not closing completely, See section "D. Adjusting Limits".

I. DECORATIVE END CAP REPLACEMENT

1. The Decorative End Caps require a open area 6" by 10" on each end of the awning case.
2. Place RH Mounting Bracket 1/8" below top of awning case and 3/16" from the RH end plate.
3. Use mounting bracket as a template and mark the 3 screw locations on the coach side wall. Be careful not to move the bracket when location of holes is marked.
Note: The electrical outlet box cover must be recessed flush with the side wall of the coach. It must be a minimum of 1-1/8" away from the RH end plate, but not more than 1-1/4" maximum. It must be 3-1/8" down from the top of the awning case. See FIG. I1.



4. Drill 3 pilot holes with the 1/8" drill bit and electric drill.
5. Fill hole with silicon sealant.
6. Place the bracket on the side wall and secure with the 3 screws and washers. Route the motor cable behind the awning case and into the notch in the mounting bracket. Apply silicon sealant around motor cable and attach to the outlet box. See FIG. I2.



7. Place the plastic end cap on the bracket, secure in place with the 4 push rivets (2 in the top and 2 in the bottom).
8. Repeat on left end of awning. Omitting steps for outlet box and motor cable.