

A&E PATIO AWNINGS by Dometic
SYMPTOM / CAUTION SECTION

This program will address the most common system problems associated with the A&E Patio Awnings supplied by The Dometic Corporation. Our intent is to provide you with a guideline of checks to make, should you encounter one of the following symptoms.

SYMPTOM	CAUSE	Refer To:	
		Pg.	Sec.
1. Black adjustment knob will not tighten	Nutsert Washer Stack-up	3	1A
		3	2A
2. Fabric leaks at the roller tube	Stitches	10	10B
3. Main support arms will not extend	Push button assembly Adjustable arm assembly	3	3A
		4	4A
4. Awning has bulges or wrinkles where pull strap rolls up	Operation	11	13B
5. Awning fabric will not roll up straight	Fabric position Out of square	6	1B
		6	2B
6. Weatherguard wrinkled	Seams	7	4B
	Vehicle sidewall	12	14B, 2
	Tek screws	11	12B
	Weatherguard	6	3B
	Out of square	6	2B
7. Fabric does not hang well	Out of square	6	2B
	Tube deflection	9	6B
	Tek screws	11	12B
	Seams	7	4B
	Vehicle sidewall	12	14B, 2
	Stitches	10	10B
8. Must lift main arm(s) to open or close the awning	Stop plug Bottom mounting brackets	4	7A
		4	6A
9. Awning arm(s) stay up against side of coach when trying to open awning	Top mounting bracket	4	5A
	Fabric position	6	1B
	Operation	11	13B
	Travel lock	11	13B, 4
10. Awning will not roll up	Rafters	5	8A
	Cam	10	9B
	Black adjustment knob	5	9A
	Torsions	9	8B
11. Awning will not stay in rolled down position	Cam	10	B
12. Awning billows out when traveling down the road	Cam	10	9B
13. Awning stops at guard when rolling up	Rafters	5	8A
	Stop plug	4	7A
	Operation	11	13B
	Torsions	9	8B
	Awning rail	12	14B
	Top mounting brackets	4	5A

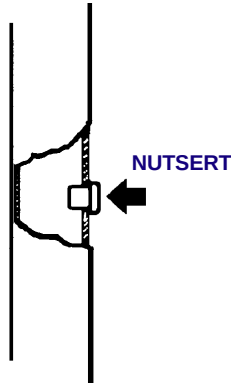
SYMPTOM	CAUSE	Refer To: Pg. Sec.	
14. Water leaks through guard	Operation	11	13B, 3
	Guard	7	5B
	Tube deflection	9	6B
	Awning rail	12	14B
15. Water drips down the side of coach	Rubber seal	9	7B
	Fabric	11	12B

SECTION A. HARDWARE COMPONENTS

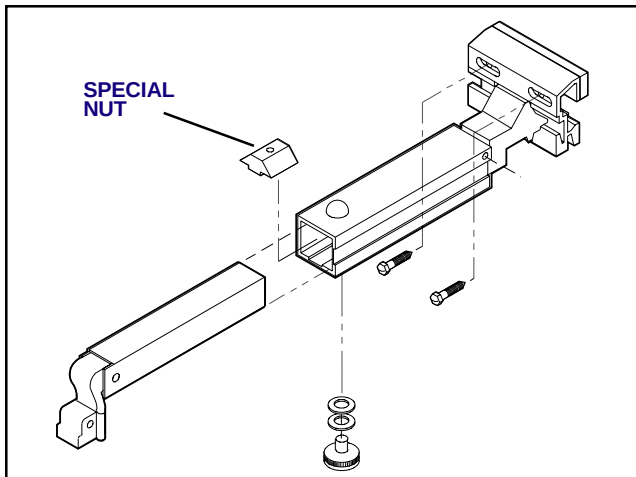
HARDWARE COMPONENTS

1A. NUTSERT OR SPECIAL NUT

The **nutsert** is simply a threaded fastening device used to tighten down the black adjustment knob. If the knob will not tighten, first remove the secondary rafter assembly from the hardware. Turn the knob to determine if the nutsert is stripped or spinning. If so, replace the nutsert. If you cannot turn the knob it will be necessary to replace both the nutsert and the black adjustment knob.



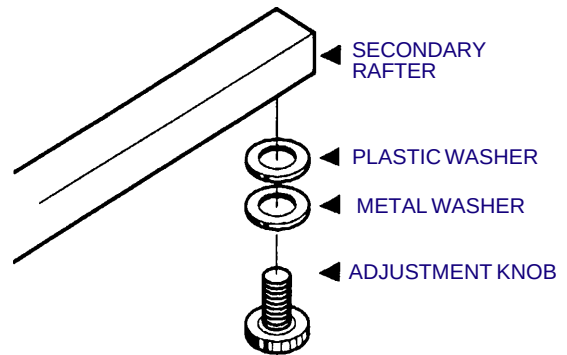
On some arm assemblies the nutsert has been replaced with a **SPECIAL NUT**. If the knob will not tighten, first separate the rafter assembly. Turn the knob to determine if the special nut is stripped. If so, replace the special nut. If you cannot turn the knob, it will be necessary to replace both the special nut and the back adjustment knob.



NOTE: The special nut could be a large hex nut as well as the one shown.

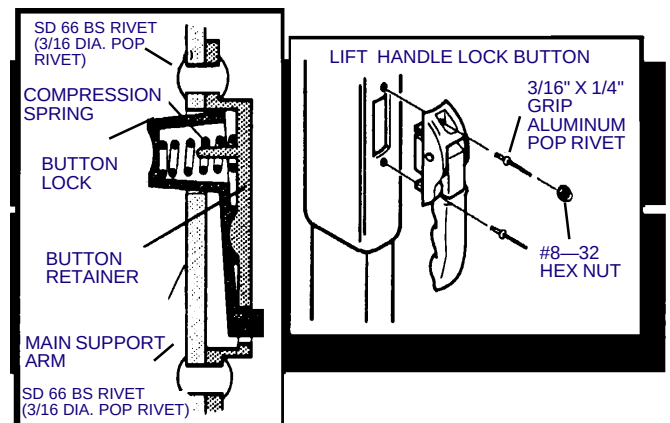
2A. WASHER STACK-UP

Washer stack-up merely means the proper positioning of the washers on the stud of the black adjustment knob. Remove the knob and check for proper washer position. The plastic washer should be against the main rafter, and backed by the metal washer for stiffness. If the stack-up is not proper it should be corrected.



3A. PUSH BUTTON ASSEMBLY

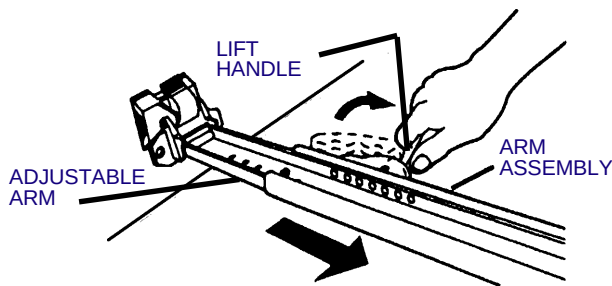
The push button assembly locks the main support arm to the adjustable arm assembly and controls the height of the awning in the open position. To check it, open the awning to full extension. Look inside the main support arm, and activate the push button to see if the locking pin is moving in and out of the hole in the adjustable arm assembly. If the locking pin does not move, or has been



broken off, the push button assembly must be replaced. At times the lock pin of the push button assembly can break off and jam between the push button housing and the adjustable arm assembly, making it difficult to extend the main support arm.

4A. ADJUSTABLE ARM ASSEMBLY

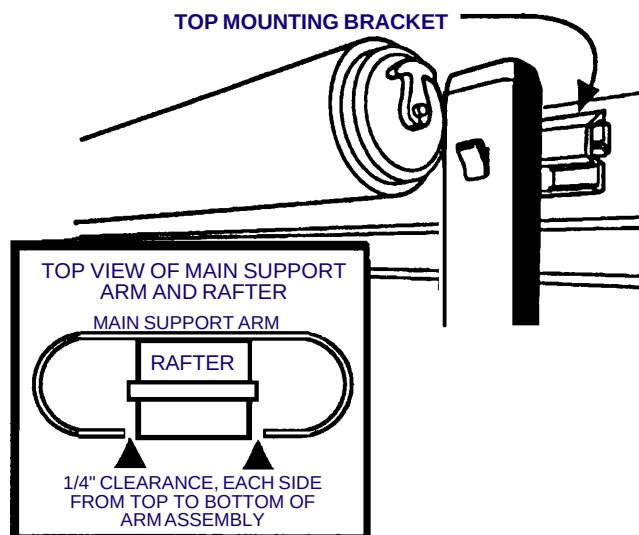
The adjustable arm assembly allows for telescoping height adjustment of the main support arm, and it connects to the bottom mounting bracket to support the weight of the awning. If the main support arm cannot be extended freely, the adjustable arm assembly should be checked. Remove the adjustable arm assembly and check for nicks, burrs, bends or twists. If any deflection is noted, the adjustable arm assembly must be replaced. For ease of operation apply GO-EASY, a special lubricant.



NOTE: GO-EASY is available from your distributor.

5A. TOP MOUNTING BRACKETS

The top mounting bracket supports the main rafter assembly to hold the awning in the open extended position, and allows the rafter to pivot into the "C" channel of the main support arm. Each top mounting bracket should be mounted directly over the awning rail

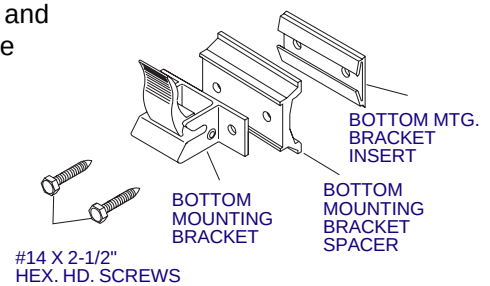


so the screws go through the "C" portion of the rail. On the Series 9000 awning the top mounting bracket can be mounted lower when possible. If the top mounting bracket is mounted above center of the awning rail, the aluminum guard may not cover the fabric completely in the closed position. If this is the case, relocate the top mounting bracket accordingly.

The top mounting brackets have slotted holes for the mounting screws, allowing them to be adjusted side to side. To adjust the brackets, close the awning and sight down the main support arm and the main rafter. The clearance on each side of the rafter should be approximately 1/4 inch. If clearance is not appropriate, adjust the top mounting bracket(s) as necessary.

6A. BOTTOM MOUNTING BRACKETS

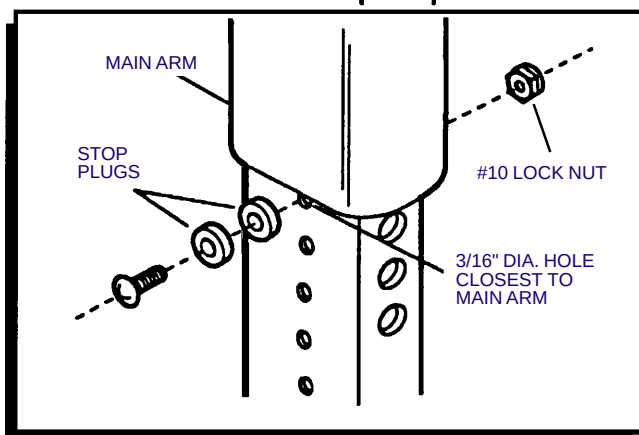
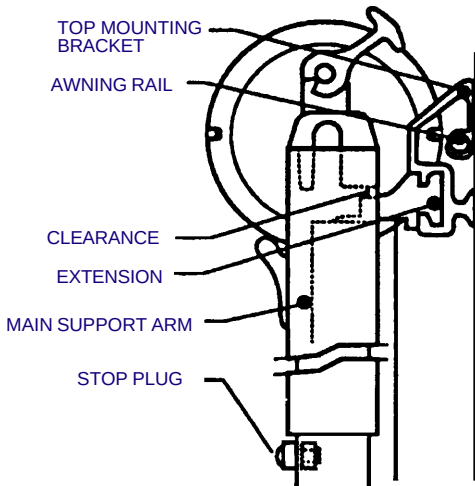
The bottom mounting brackets are screwed to the floor line of the unit, and they support the weight of the awning. They also provide a quick release to set up the awning in the patio position. If a



bottom mounting bracket settles, sags, or becomes loose it can reduce the clearance between the top casting of the torsion and the extension of the top mounting bracket, making operation difficult. Check the bottom mounting bracket for looseness or settling, and tighten or reposition it accordingly for proper operation.

7A. STOP PLUG

The stop plug is a mechanical stop that supports the main arm when opening and closing the awning. It controls the clearance between the top casting of the torsion to the extension of the top mounting bracket. This clearance should be 1/4 inch to 1 inch. To adjust the clearance, raise or lower the stop plug as needed. On the 9000 and 9500 Series awning the clearance should be kept to a minimum for best operation.



9A. BLACK ADJUSTMENT KNOB

The black adjustment knob tightens the secondary rafter to the main rafter to keep the fabric taut in the full open position.

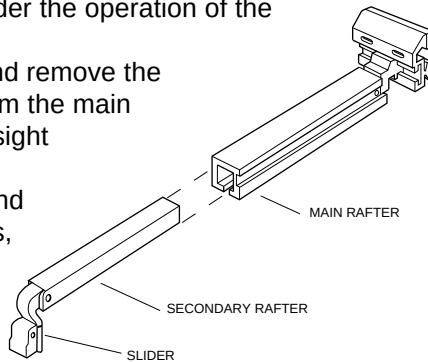
When closing the awning, the knob should not be tightened down until after the awning is rolled up and the travel lock is engaged.

Attempting to open the awning without first loosening the black adjustment knobs can damage the slider of the secondary rafter, making it difficult to open the awning.

8A. RAFTERS

The rafters telescope from the top mounting brackets to the main support arms to provide tension on the fabric in the full open position. If the rafters are bent or twisted, this will hinder the operation of the awning.

Open the awning and remove the secondary rafter from the main support arm. Now sight down the main and secondary rafters and check for any bends, twists or deflection. If one or the other rafter is not true it should be replaced.

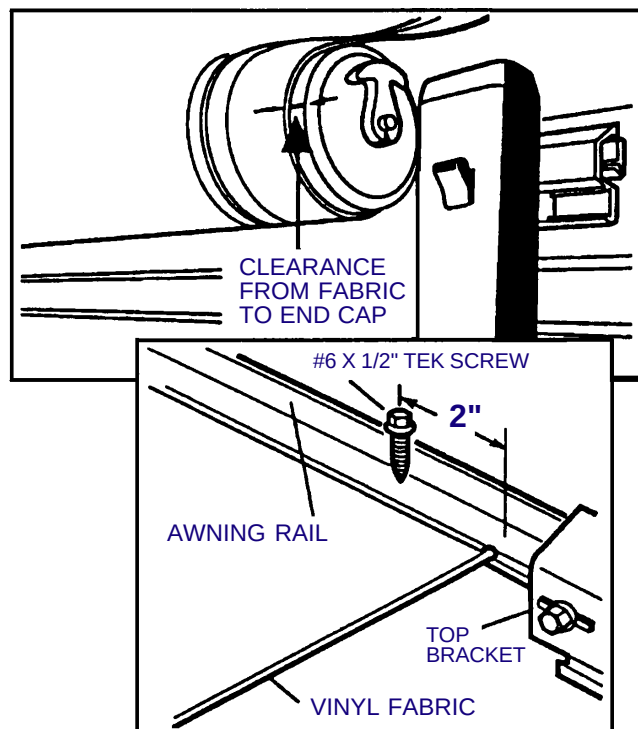


SECTION B. 8500 & 9000 FABRIC ROLLER TUBE ASSEMBLY (FRTA)

1B. POSITION

For the awning to operate properly the fabric must be positioned properly in the awning rail and on the roller tube.

Open the awning and check the position of the fabric between the top mounting brackets. If the fabric is not centered, remove the tek screws, center it, and replace the screws.



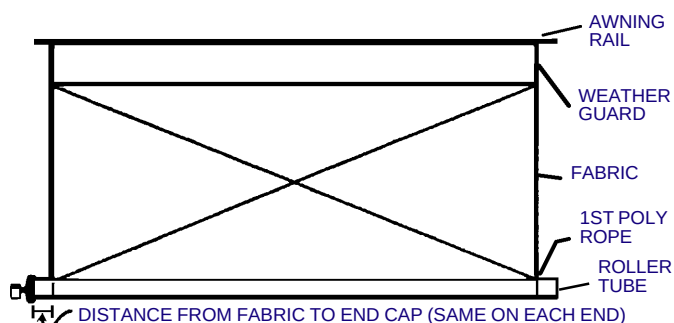
When the fabric is properly positioned, next check the position of the fabric on the roller tube. The clearance from the end cap of the torsion assembly to the edge of the fabric must be the same on each end. If it is not, adjust the fabric on the tube as necessary.

On the Elite 9000 and 9500 awning the fabric is held in place to the weatherguard with 1/8" pop rivets. Check the position of the fabric at each end of the weatherguard. If the fabric has shifted, remove the pop rivets, center the fabric and re-rivet.

2B. SQUARE

If the fabric on the awning is out of square, it could cause the fabric to telescope in one direction when rolling up, or to not hang properly in the open position. To check fabric for square, measure from the top right hand corner of the fabric (not the weatherguard) to the

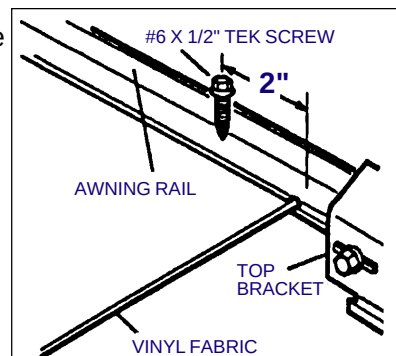
bottom left hand corner at the poly rope. Now measure from the top left hand corner to the bottom right hand corner as shown.



In this check, the difference of the two dimensions should be no more than one inch. If it is more, the fabric is out of square, and should be replaced.

3B. WEATHERGUARD

The weatherguard is the last 15 inches of the awning that encloses the fabric in the rolled up position. It protects the striped fabric from the environment and elements. The weatherguard is a heavy 17 oz. vinyl fabric.



When the vinyl weatherguard or fabric has excessive wrinkles, it will be necessary to stretch the weatherguard or fabric. Open the awning and allow the fabric to warm up. Remove one Tek screw, grasp the weatherguard, stretch it, and re-secure the screw. Repeat this procedure for the other end, making sure to stretch each side an equal distance, keeping the fabric centered between the top mounting brackets.

Close and reopen the awning three times. If wrinkles are still present, repeat the above stretching procedure. This may have to be done 4 or 5 times before all wrinkles disappear.

4B. SEAMS

The seams of the vinyl awning are electronically welded together with a heat seal. The welded seams are the strongest part of the fabric. If the fabric has wrinkles or sags, it may be due to improper seam welding. A close inspection may reveal the seams to be the source of the problem. If so, fabric replacement would be needed. Whenever wrinkles are detected in the fabric, stretching of the weatherguard should be performed before the fabric is condemned for bad seams. See 3B. for stretching instructions.

5B. ALUMINUM GUARD

The aluminum guard on the Elite 9000 and 9500 is the last 15 inches of the awning that encloses it in the rolled up position, and protects the woven acrylic fiber fabric from the environment and elements.

On 9000 awnings that have the hinge slat which fits into the awning rail:

When the awning is fully extended, the aluminum guard should have an arch of at least 2 inches. The arch helps water to run off rather than between the sections of the guard.

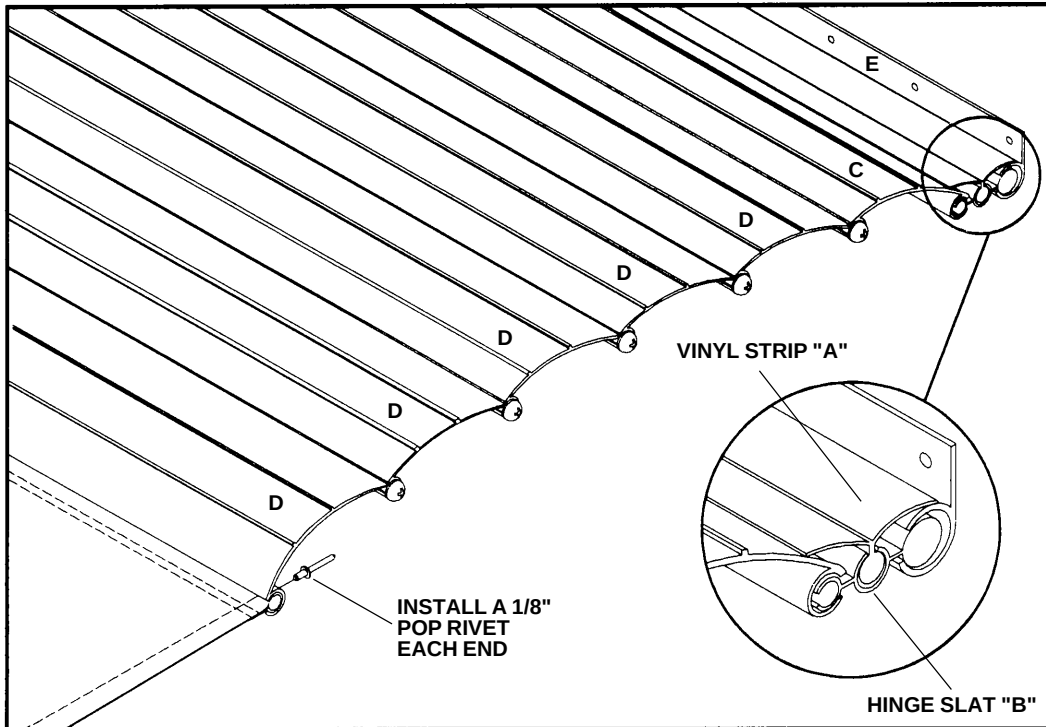
NOTE: The aluminum guard is not waterproof.

To check the aluminum guard for proper arch, open the awning to full extension, making sure the fabric is taut. Hold a flat edge to the bottom of the guard and measure from the flat edge to the inside of the arch at its highest point. If the measurement is less than 2 inches, the guard should be replaced.

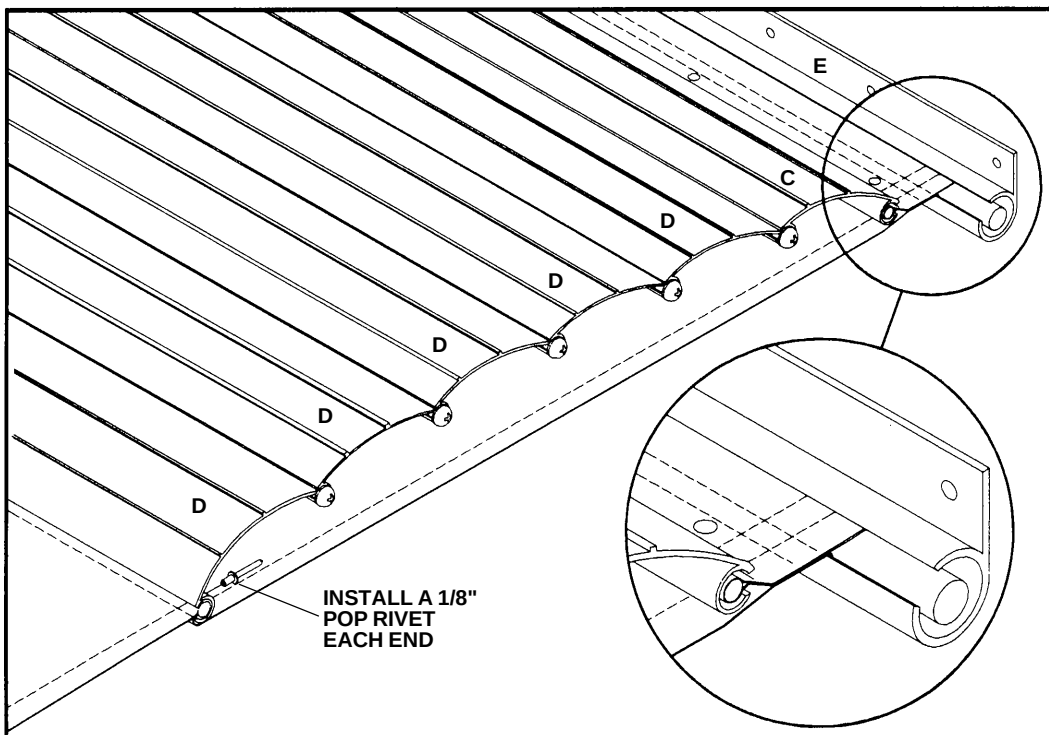
On both 9000 and 9500 awnings that DO NOT have the hinge slat:

The arch of the aluminum guard is not important as the fabric goes under the aluminum guard and attaches the awning to the awning rail.

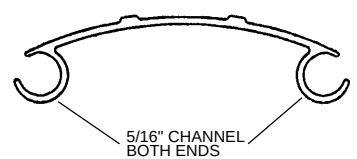
9000 WITH HINGE SLAT



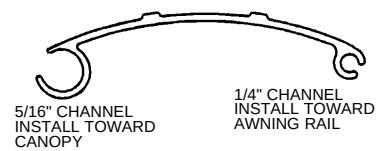
- A - VINYL STRIP
- B - HINGE SLAT
- C - TOP SLAT
- D - MAIN SLAT
- E - AWNING RAIL



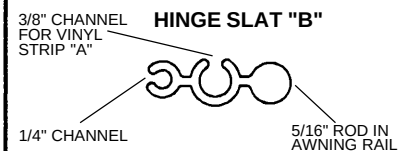
TOP SLAT "C"
VIEW RH END



MAIN SLAT "D"
VIEW RH END



HINGE SLAT "B"



VINYL STRIP "A"



9000 AND 9500 WITHOUT HINGE SLAT

6B. ROLLER TUBE

The roller tube is a 3-1/2 inch diameter tube. It has three symmetrical grooves to retain the poly ropes of the awning fabric.

If the fabric appears to have more than normal sag, the roller tube deflection must be taken into consideration.

Depending on the length of the awning, the roller tube can deflect from one to five inches with the awning in the open position.

Installing a tension rafter will usually remove 80 per cent of sag and roller tube deflection. All awnings 22 feet and longer should be installed with heavy duty hardware which includes a center tension rafter, a center supporter, and heavy duty adjustable arm assemblies.

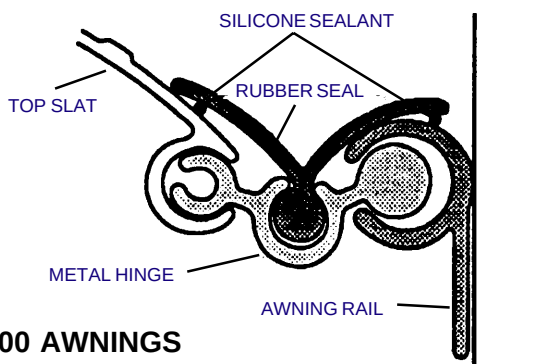
If the roller tube is bent, it will bounce up and down when opening and closing the awning. On the 9000 Series this can cause the aluminum guard to leak, because the guard assembly may not be tight.

7B. RUBBER SEAL

On the 9000 Series awning, an extruded black rubber seal is located at the awning rail of the coach. The seal slides into the metal hinge which connects the aluminum guard to the awning rail. This seal is designed to prevent water from running down the side of the coach.

To check, inspect the full length of the seal for proper positioning, and for cuts, tears or wrinkles. If any of these problems are found, the seal should be repaired or replaced.

On some units it may be necessary to silicone seal the lips of the rubber seal to the awning rail and the top slat of the aluminum guard as shown, to prevent water from running down the side of the RV.

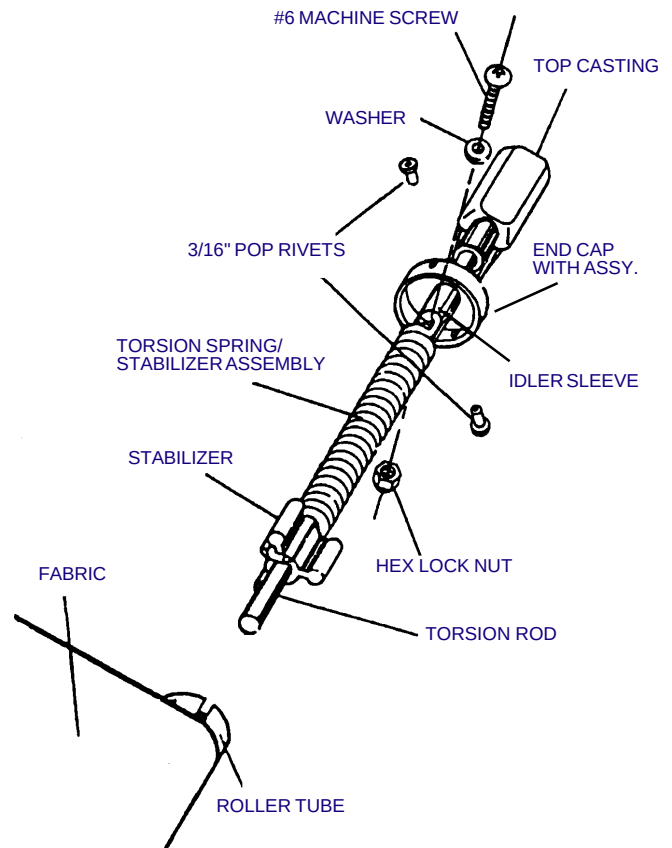


**9000 AWNINGS
WITH HINGE
SLAT**

8B. TORSION

The torsion assembly has a wound coil spring which provides tension on the roller tube to roll the awning up into the travel position.

The right hand torsion end cap contains a cam assembly which prevents the awning from billowing or unrolling during travel. It also allows one-person setup of the awning by preventing rollback.



When difficulties are experienced in rolling the awning up, the tension on the torsion should be checked. In most cases adding a few turns of torque to each end will correct the problem. If all tension has been lost, refer to the following chart and apply the specified number of turns as indicated. This must be done with the awning extended two feet away from the coach.

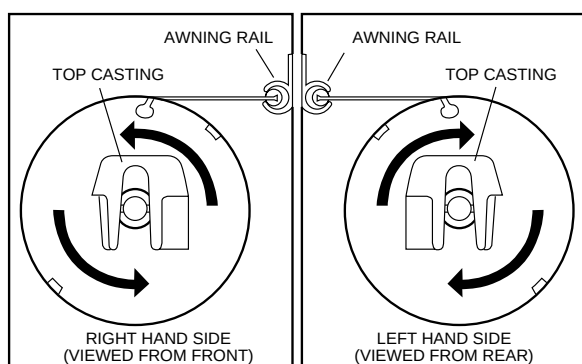
TORSION ASSEMBLY TORQUE SPECIFICATIONS

Awning Length (Ft.)	Number of Turns			
	MODEL NUMBER			
	5000	7000	7500 8000 8500 9000	9500 Grande Pavillion
8	6	-	8	-
9	6	-	8	-
10	6	8	8	-
10' 8"	6	8	8	-
11	6	8	8	-
12	6	8	8	-
13	7	9	9	-
14	7	9	9	-
15	8	10	10	-
16	8	10	10	6
16'6"	-	-	12	-
17	10	12	12	6
18	10	12	12	7
19	11	13	13	7
19'6"	-	-	13	-
20	11	13	13	-
21	11	13	13	8
22	12	-		8
23	12	-		8
24	12	-		9
25	12	-		9

SPRING IDENTIFICATION CHART		
	Standard	Heavy Duty
Wire Dia.	.120	.140
RH	Painted red cap end and no paint on stabilizer end.	Painted red cap end and white on stabilizer end.
LH	No paint on either end.	Painted white on cap end and no paint on stabilizer end.
Length	TURNS OF TENSION	
22'	14	8
23'	14	8
24'	14	8
25'	14	8



See Spring Identification Chart for No. of Turns



When winding the torsion, be sure to wind in the proper direction.

! WARNING

SEVERE INJURIES CAN RESULT FROM THE SPINNING TOP CASTING. USE VISE GRIPS® (NEVER BARE HANDS) TO GRASP TOP CASTING WHILE LOADING TORSION.

Note: Rewinding must be done with the Awning Fabric extended two feet away from the coach.

9B. CAM

The cam assembly locks the roller tube from turning in one direction or the other according to which way the cam lock lever is flipped.

To check the cam lock on the A&E awning, unlock the main support arms. Hook the pull rod into the pull strap and try to open the awning. Be sure the cam lock lever is in the roll-up position. If the roller tube rotates 1/2 turn or more the cam lock must be repaired or replaced.

To check the roll-down position of the cam lock, open the awning to full extension. Grasp the roller tube with your hands and try to turn the tube in the direction it will roll up. If the tube can be rotated 1/2 turn or more the cam lock must be repaired or replaced.

10B. STITCHES

The side hems and poly ropes of the awning are stitched in with a sewing machine. At times the stitches can allow water to leak through to the inside of the roller tube. On vinyl awnings the stitches should be sealed with seam sealer, available at sporting goods stores. This will stop the water from running down the inside of the roller tube. For the woven acrylic fabric of the 9000, 9500 Series awning, Acrylife is an approved sealant.

When sewing in the poly ropes of the fabric, if a straight line is not followed it could cause the fabric to hang improperly. A close inspection of the stitching could reveal the cause of a sag or pucker.

11B. FABRIC

A. 9000 AND 9500

The awning fabric is woven acrylic, not vinyl. It is water resistant but not waterproof. Once a year it should be cleaned with Canopy-Clean and resealed to maintain its water resistance. Acrylife is an approved sealant for the 9000, 9500 fabric. Follow the directions for application of Canopy-Clean and Acrylife.

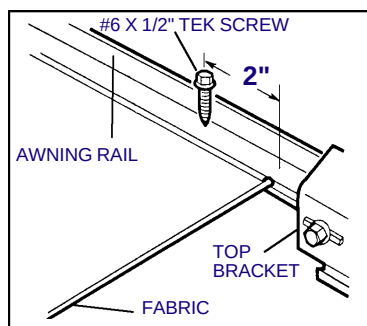
NOTE: Avoid touching the underside of the awning fabric when it is wet, as this breaks the surface tension of the water causing it to seep through.

B. 8500 AND GRANDE PAVILLION

The awning fabric is vinyl. It is waterproof. Once a year it should be cleaned with Canopy-Clean and treated with Vinyl Formula 201 to protect and extend the life of the fabric. Follow the directions for application for Canopy-Clean, and Vinyl Formula 201. Contact your distributor for these products.

12B. TEK SCREWS

The Tek screws are the two screws installed through the awning rail of the coach. They keep the aluminum guard from shifting in the awning rail. On vinyl and some acrylic awnings, they keep the fabric from shrinking with age. If one Tek screw is missing, the fabric will pull toward the remaining Tek screw causing the fabric to wrinkle.

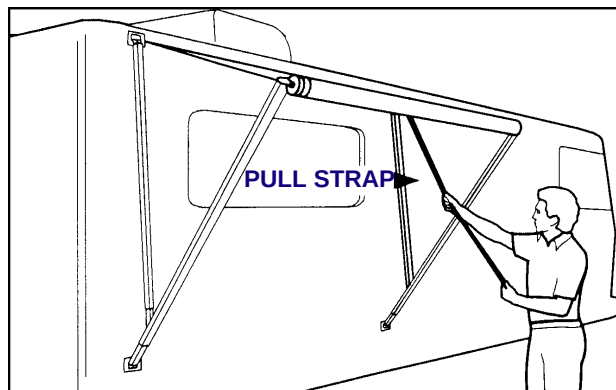


13B. OPERATION

1) PULL STRAP

When closing the awning the pull strap must be rolled up at an angle from the center of the roller tube. This will keep the awning from telescoping forward or rearward, and will prevent a bulge from forming in the area where the strap is rolled up.

If the pull strap is rolled up at one end of the awning, it can cause the fabric to telescope in that direction during roll-up, and create a bulge or wrinkles at that end. This could cause the awning arm to stay against the side of the coach when trying to open.



2) CLOSING

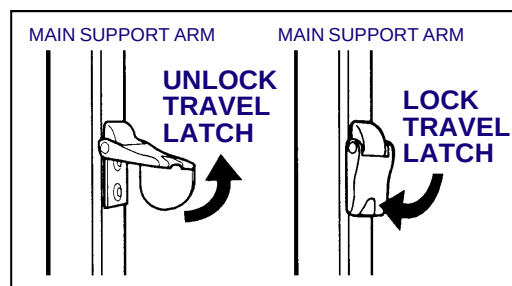
On the 9000 and 9500 Series, when rolling up the awning, the roller tube assembly should not be slowed down before reaching the aluminum guard. This could cause the roller tube to stall at the guard.

3) TAUTNESS

On 9000 Series awnings that utilize a hinge slat: To minimize water leakage through the aluminum guard, the fabric must be taut when the awning is extended. This will keep the sections of the aluminum guard tight against each other. Before tightening the black adjustment knob, be sure to apply enough downward force on the main support arm to pull the fabric taut.

4) TRAVEL LOCK

The travel lock must be fully released before trying to open the awning.



14B. AWNING RAIL

1) LEAKAGE

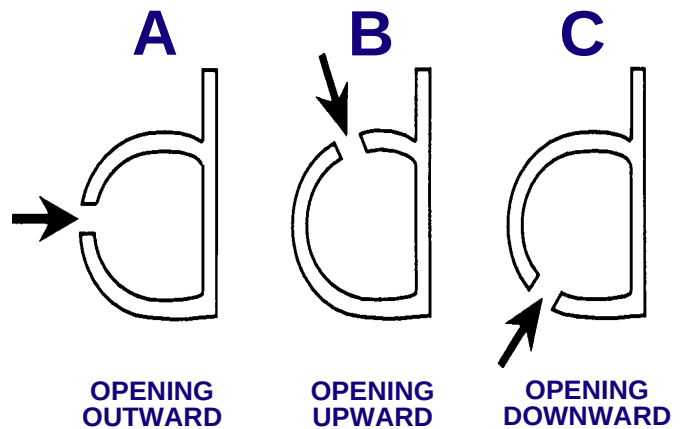
When water drips down the side of the coach, the seal between the coach and the awning rail must be checked. If improper seal is detected, reseal the awning rail.

2) STRAIGHT

Before condemning the fabric for sags or wrinkles, the awning rail should be checked. Open the awning and sight down the rail to see if the rail or sidewall varies up, down, inward or outward. This must be taken into consideration when checking a fabric.

3) TYPE

There are three types of awning rail used in the RV industry. Of these, type A and B (see below) are acceptable for use on the 9000 Series awning that utilizes a hinge slat. Type C should never be used on the 9000 Series that utilizes a hinge slat as it could cause a binding problem on the aluminum guard assembly, but it is acceptable on the vinyl awnings.



Two Step™

by Dometic

DIAGNOSTIC SERVICE MANUAL

This Service Manual is the result of the dedication of The Dometic Corporation and its engineers to providing service people the necessary instructions for making accurate analysis of certain conditions. Provided is a comprehensive guide designed to lead a qualified mechanic through the Service Manual to locate and solve symptoms that may occur. Dometic continues their commitment to providing the most up to date information about servicing Dometic RV accessories.

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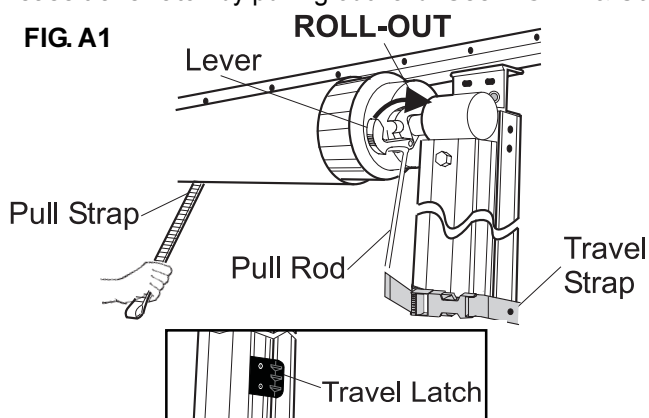
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Position	B1	3
Fabric Square	B2	3
Slat Assembly	B3	3
Roller Tube	B4	3
Torsions	B5	4
Safe-T-Lock™ Lever	B6	5
Stitches	B7	5
Fabric	B8	5
Tek Screws	B9	5
Pull Strap	B10	5
Hardware	C	6
Top Mounting Bracket	C1	6
Bottom Mounting Bracket	C2	6
Back Channel	C3	6
Gas Strut Assembly	C4	6
Ball Clip	C5	7
Rubber Boot	C6	7
Hose Clamp/Wire Tie	C7	7
Travel Strap	C8	7
Snap Ring	C9	7
Pins	C10	7
Lock Rod	C11	8
Spring Arm	C12	8
Awning Rail	C13	8
Travel Latch	C14	8
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Section A - Operation

A1. To Open

Release the travel strap or latch located midway up each arm assembly by squeezing the travel strap buckle or release travel latch by pulling outward. See FIG. A1 & C9.

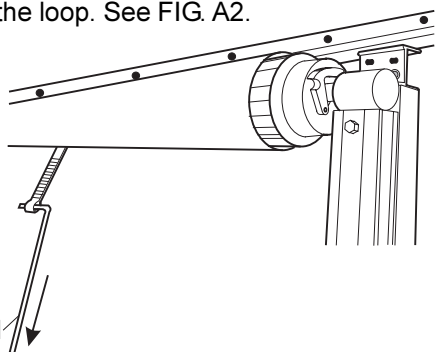
FIG. A1



Use the pull rod provided to rotate the Safe-T-Lock™ Lever to the **UNLOCK-OPEN** position. See FIG. A1.

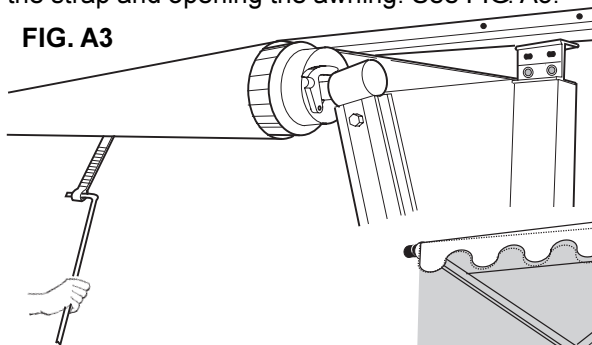
Locate the pull strap and insert the right angled end of the pull rod into the loop. See FIG. A2.

FIG. A2



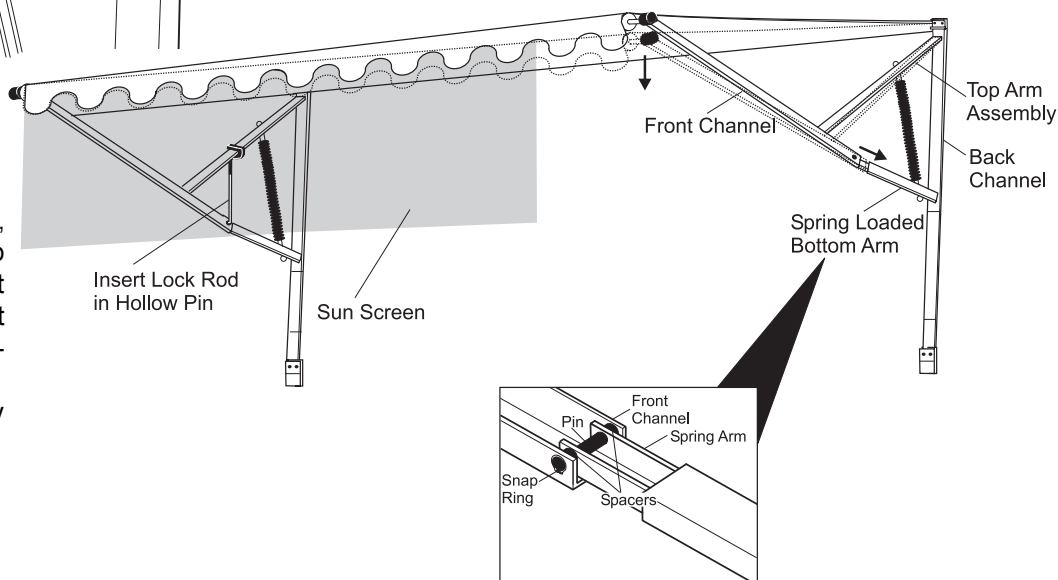
Walk backward with the pull rod in hand while pulling on the strap and opening the awning. See FIG. A3.

FIG. A3



When the awning is mostly open, stand in one spot and pull the strap until the awning stops. At this point the bottom arm assembly and front channel should be very close to being in a straight line. See FIG. A4. The awning is now open and ready for use.

FIG. A4



The lock rod is used to stabilize the knee joint between the front channel and the bottom arm assembly. This will keep one side of the awning in a semi-fixed position while the opposite side will allow the fabric to billow in moderate wind gusts. See FIG. A4.

⚠ CAUTION

The A&E Two Step Awning is extremely durable and can be operated during moderate rain and wind conditions. However, when periods of heavy rain and/or wind is expected, the awning should be closed and in the locked position. Damage caused by wind and rain is not covered by warranty.

Included in the hardware kit is a sunscreen. During certain conditions, you may want to use the sunscreen to create additional shade. Slide the sunscreen into the open groove on the roller tube at the left end of the awning. See FIG. A4.

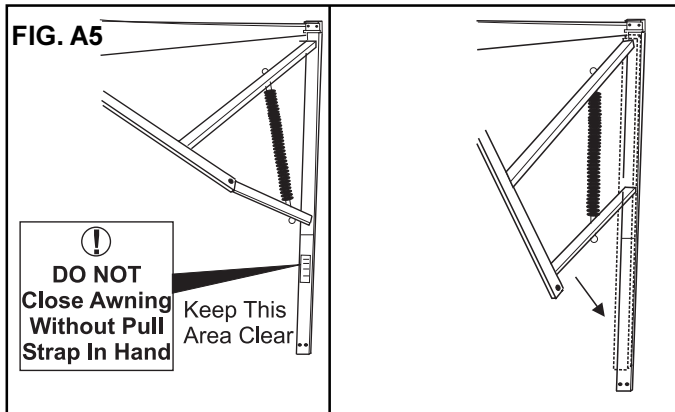
Section A - Operation, cont'd.

A2. To Close

Remove lock rod and sunscreen if installed. See FIG. A5.

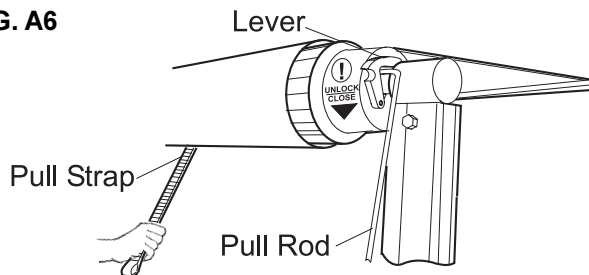
⚠ CAUTION

When awning is closed, bottom arm assembly will fold down and against back channel. To avoid personal injury and/or property damage, keep space beneath bottom arm assembly clear of objects and people.



Gently pull on the strap and use the pull rod to flip the Safe-T-Lock™ Lever down to the **UNLOCK-CLOSE** position. See FIG. A6.

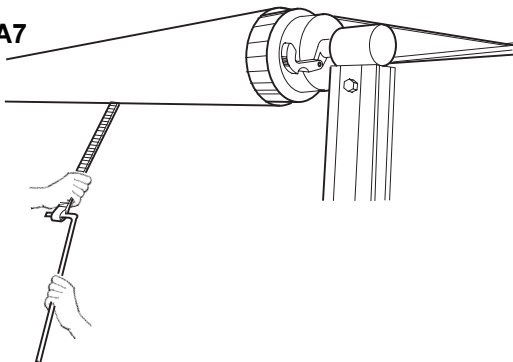
FIG. A6



Before the awning begins to roll up, insert the end of the pull rod in the pull strap loop and let the awning roll up, controlling the speed with the rod in hand. See FIG. A7

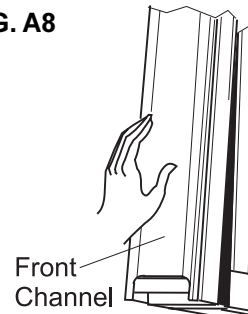
Note: On the 710XXXX.XXX model series awning the roller tube should not be slowed down before reaching the slat assembly.

FIG. A7



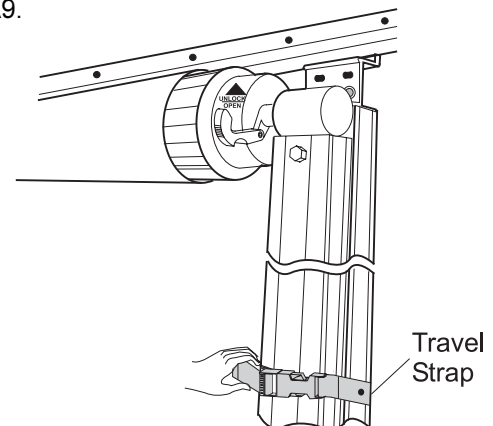
Push the bottom of the front channel to close if necessary. See FIG. A8.

FIG. A8



Secure each arm assembly by fastening each travel strap. See FIG. A9.

FIG. A9



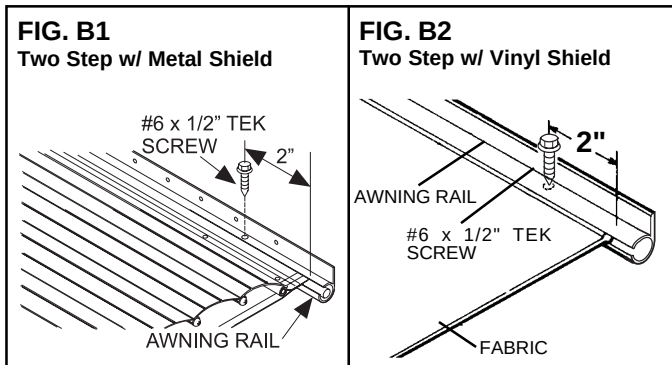
The awning is now closed and secure.

Section B - Fabric Roller Tube Assembly

B1. Position

The awning will operate properly when the fabric is centered between the top mounting brackets in the awning rail and on the roller tube.

Open the awning and check the position of the fabric/slat assembly between the top mounting brackets. If the fabric/slat assembly is not centered, remove the TEK screws, center the fabric/slat assembly and replace the screws. See FIG. B1 and B2.



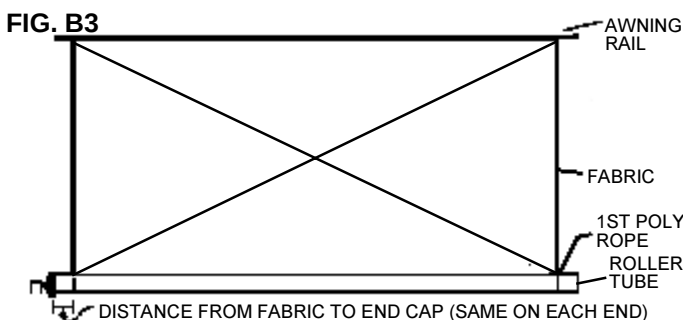
When the fabric/slat assembly is properly positioned in the awning rail, check the position of the fabric on the roller tube. The distance from the torsion end cap to the edge of the fabric must be the same on both ends.

If the fabric is not centered, remove the pop rivets that secure the torsions in the roller tube. Pull the torsions out of the tube a few inches on both ends and re-center the fabric. Replace the torsions and secure with pop rivets.

B2. Fabric Square

If the fabric is out of square, it could cause the fabric to telescope in one direction when rolling up; or not to hang properly in the open position.

To check the fabric for square, measure the fabric from corner to corner. See FIG. B3.



The difference between the two dimensions should be not more than one inch. If it is more, the fabric is out of square and replacement is necessary.

B3. Slat Assembly

The slat assembly encloses the roller tube in the rolled up position and protects the fabric from the environment and elements.

The slat assembly hinge joints must flex, allowing it to wrap the roller tube and fabric. If it binds, replace the slat assembly.

B4. Roller Tube

The roller tube is a 3-1/2" diameter tube. There are three grooves spaced an equal distance apart on the surface of the tube. The fabric poly ropes are retained in these grooves.

Some deflection of the roller tube is normal (1 to 5 inches). This varies with the length of the awning. If the roller tube is bent, it will wobble up and down when the awning is closed or opened.

Section B - Fabric Roller Tube Assembly, cont'd.

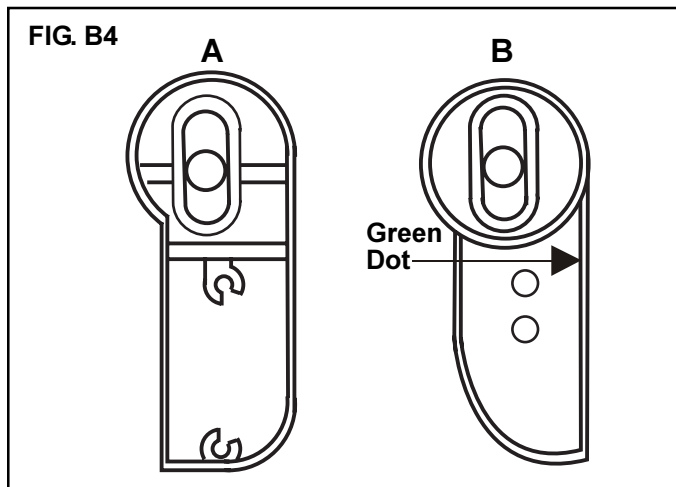
B5. Torsion Assembly

The torsion assembly has a wound coil spring which provides tension on the roller tube to roll up the awning to the travel position.

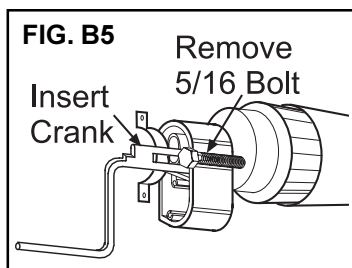
The right hand torsion end cap contains a cam assembly which prevents the awning from billowing or unrolling during travel. It also allows one person to operate the awning and prevents roll back.

When difficulties are experienced in rolling up the awning, the tension should be checked. The proper method for checking the correct tension is to completely unwind the spring and rewind torsion to the correct number of turns listed in the chart. See FIG. B4.

TORSION ASSEMBLY TORQUE SPECIFICATIONS				
Awning Length	Number of Turns Casting A*		Number of Turns Casting B*	
	Rolled Up	Extended	Rolled Up	Extended
12'	9	17	5	13
13'	10	18	5	13
14'	10	18	5	13
15'	10	18	5	13
16'	12	20	6	14
17'	12	20	6	14
18'	12	20	6	14
19'	13	21	6	14
20'	13	21	6	14
21'	13	21	6	14



Use the torsion winding crank 3108896.006 to remove and add tension. See FIG. B5.

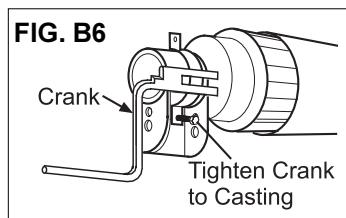


⚠ WARNING

Use extreme care. Springs under tension are dangerous. If not controlled they will unwind quickly. Keep hands and clothing clear of top casting, as personal injury may result.

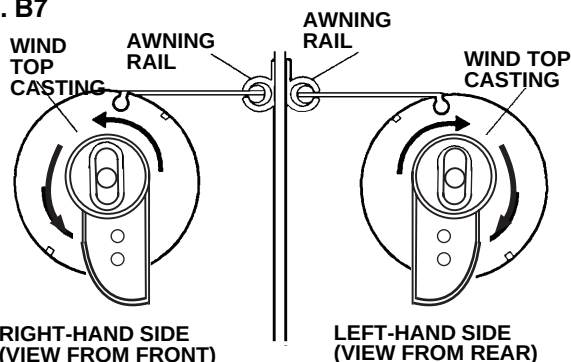
The crank is inserted into the end of the extruded end piece (casting A). See FIG. B4 and B5. A firm grip on the crank is required to prevent the rapid spin off of the tension.

The crank is bolted to the back side of the casting (casting B). See FIG. B4 and B6. A firm grip on the crank is required to prevent the rapid spin off of the tension.



When winding the torsion, be sure to wind in the proper direction. See FIG. B7.

FIG. B7



The right torsion should be pinned with a cotter pin (1/8 x 2-1/2"). The left torsion is pinned with a 5/16 x 5" bolt. Pinning the torsion will prevent the torsion spring from unwinding. If the cotter pin or 5/16 x 5" bolt is left in the torsion it will stop the roll up or down of the FRTA.

Section B - Fabric Roller Tube Assembly, cont'd.

B6. Safe-T-Lock™ Lever

The Safe-T-Lock™ Lever controls the direction (roll-up or roll-down) of the roller tube, depending on which way the lever is flipped.

Check the operation of the Safe-T-Lock™ Lever in the torsion as follows:

With the awning rolled up, loosen the straps on the arm assemblies and insert the pull rod into the pull strap. Place the Safe-T-Lock™ Lever in the ROLL-UP position. If pulling on the rod rotates the roller tube 1/4 turn or more, the Safe-T-Lock™ Lever is defective and the torsion must be replaced.

With the awning extended and the Safe-T-Lock™ Lever in the ROLL-DOWN position, grasp the roller tube with both hands and try to turn the tube in the roll up direction. The roller tube should be locked and should not rotate.

If the Safe-T-Lock™ assembly will not lock in the rolled up or down position, the torsion is defective and it must be replaced.

B7. Stitches

The side hems and the poly ropes of the awning are stitched into the fabric with a sewing machine. At times the stitches may allow water to leak through. The stitches can be sealed with a seam sealer, available at most sporting goods stores.

If the seam is not straight when the poly ropes are sewn into the fabric, the awning may not hang properly. Check for straight line seams and fabric square. See Section B2.

B8. Fabric

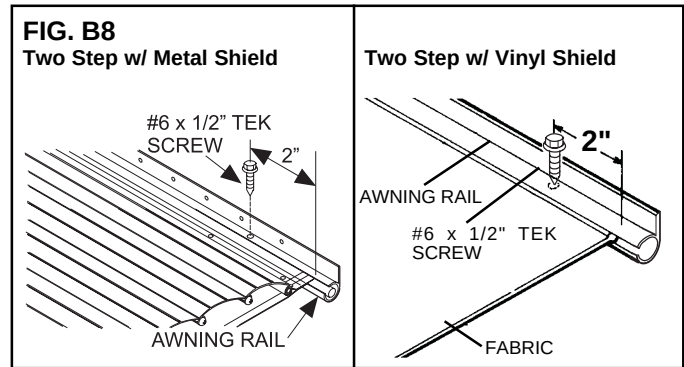
The awning fabric is vinyl and it is waterproof. To extend the fabric life, once a year it should be cleaned with a vinyl cleaner and treated with a vinyl protector. Check with local automotive parts stores for vinyl seat cover cleaner and protector.

When the awning gets wet and is rolled up it should be opened and allowed to dry completely. If the fabric remains rolled up for a long period of time, mildew will form and reduce the life of the fabric.

Mildew cannot form on the vinyl, only on dust and dirt. Periodically clean the fabric with a mixture of 1/4 cup of liquid dish soap, 1/4 cup of liquid bleach and 5 gallons of warm water. Apply this mixture to both sides of the fabric. While the awning is still wet, roll and unroll the fabric several times. This will cause the fabric to clean itself. Rinse the fabric with clean water and allow it to dry completely. Treat the fabric with a vinyl protector after it is dry.

B9. TEK Screws

The TEK screws are installed through the RV's awning rail and fabric poly rope at each end of the canopy. They keep the fabric from shifting in the awning rail. They also keep the fabric from shrinking with age. If one TEK screw is missing, the fabric will pull toward the remaining TEK screw causing the fabric to wrinkle. See FIG. B8.



B10. Pull Strap

When closing the awning the pull strap must be rolled up at an angle from the center of the roller tube. This will keep the awning from telescoping forward or rearward, and prevent a bulge from forming.

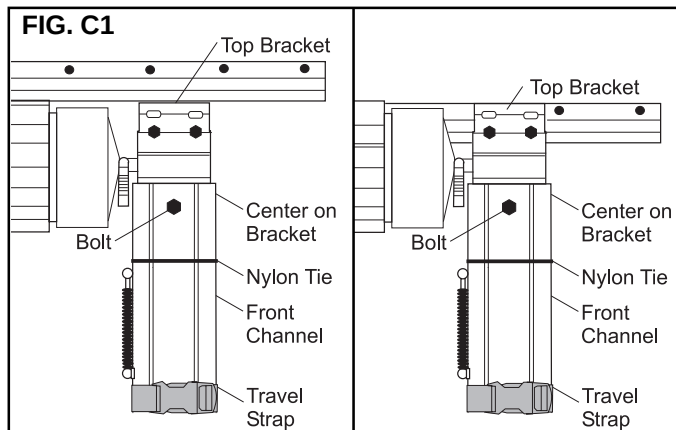
If the pull strap is rolled up at one end of the awning, it can cause the fabric to telescope in that direction during roll-up and cause a bulge or wrinkles at that end.

Section C - Hardware

C1. Top Mounting Bracket

Important: Structural backing is required where mounting screw will be installed through the side wall for securing the top mounting brackets.

The top mounting brackets are installed over the awning rail and the screws are sealed with silicone sealant. They can also be installed below the awning rail, provided there is solid structure to attach the mounting screws.

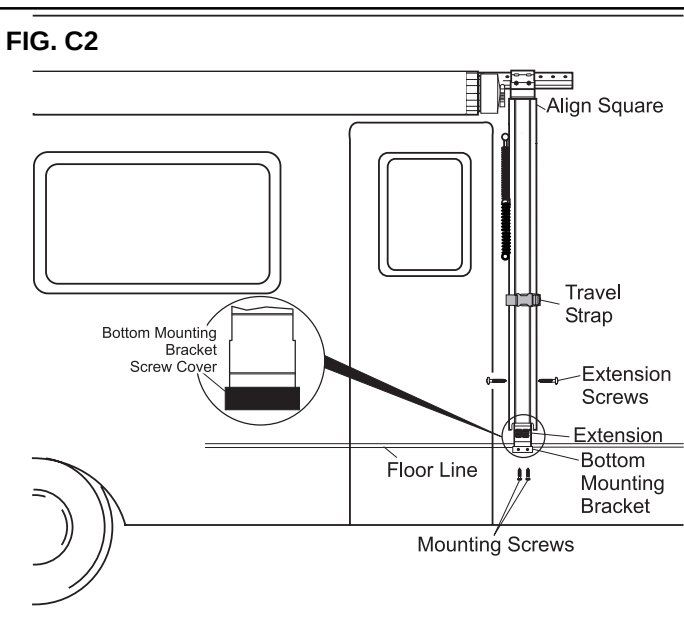


C2. Bottom Mounting Bracket

Important: Structural backing is required where mounting screw will be installed through the side wall for securing the bottom mounting brackets.

The bottom mounting bracket should be located at the floor line of the RV. Two screws secure the brackets to the RV. They must be sealed with silicon sealant. The extension is placed inside the back channel and secured with two screws through the sides of the lower back channel. See FIG. C2.

Note: Some models do not use bottom mounting bracket. See Section C3 - Back Channel.

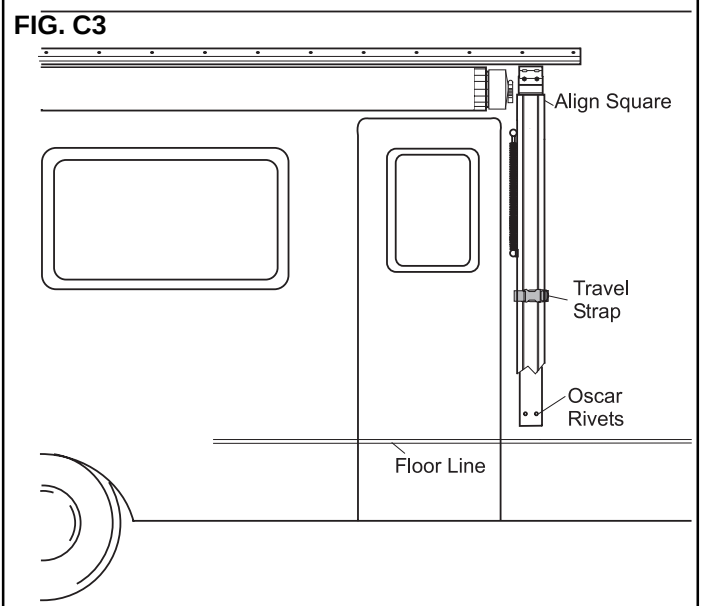


C3. Back Channel

The back channel must be square with the vehicle and the fabric roller tube assembly (FRTA). A door or window frame can be used as a reference point from which it can be measured. The back channel must be secured to the bottom mounting bracket extension with one screw from the sides. See FIG. C2.

In some applications the back channel is mounted directly to the side wall of the RV with two oscar rivets in each arm assembly. See FIG. C3.

Important: Structural backing is required where mounting screw will be installed through the side wall for securing the back channel.



C4. Gas Strut Assembly

The gas strut is used to open and close the awning and keep the fabric tight in the open position. The gas strut is filled with compressed air and dangerous if not treated with caution. When the arms are closed or the awning is in the rolled up position the gas strut is in the loaded position (will exert 150 pounds of force). Do not attempt to remove the gas strut or work on the FRTA when in this position.

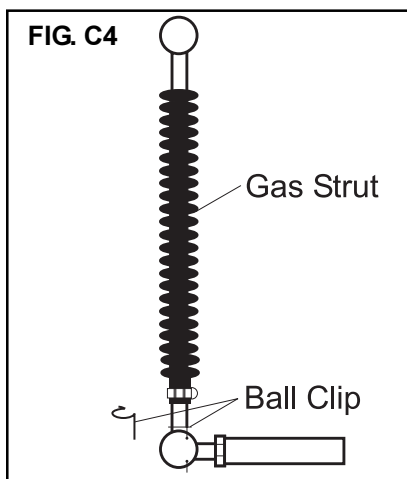
⚠ WARNING

Arms under tension from the gas strut 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.

When the arms are fully extended the gas strut is in the neutral position and can be safely removed from the assembly. If the strut's rod can be forced with less than 130 lbs. of pressure into the body of the gas strut it is defective and should be replaced. A properly operational gas strut cannot be moved by hand.

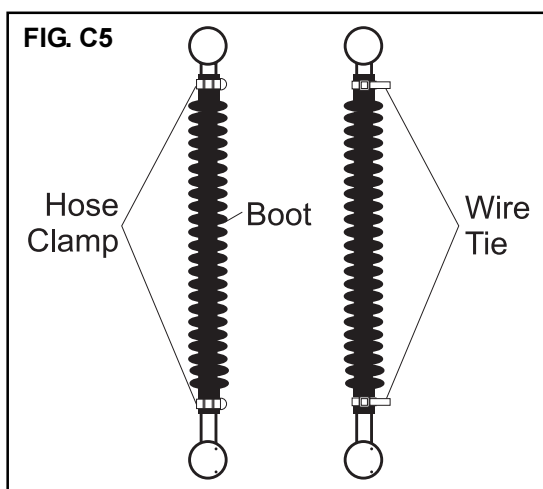
C5. Ball Clip

The ball clip is used to secure the end of the gas strut to the ball shaft. If the ball clip is missing or defective, the gas strut can come off of the arm assembly. Check the ball clip to make sure it is in good condition and snapped properly in place. If it is bent or loose it must be replaced. See FIG. C4.



C6. Rubber Boot

The rubber boot covers the gas strut assembly from damages caused from dust, rain etc. It is secured in place on the gas strut with hose clamps or wire ties. The accordion pleats in the boot allow it protect the gas strut in the extended or closed position. The lower end of the boot is notched to allow air to enter. If the rubber boot is torn or damaged it should be replaced. See FIG. C5.

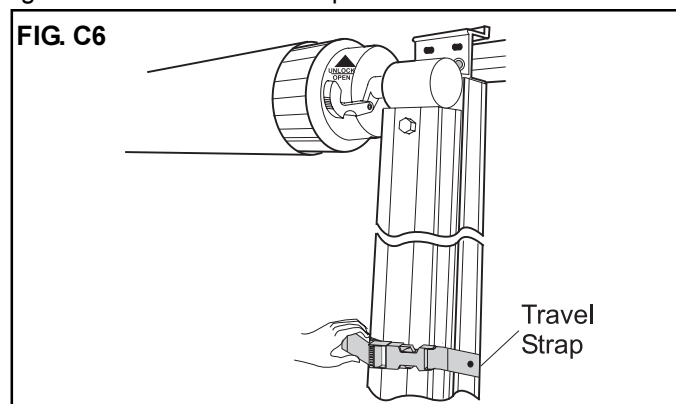


C7. Hose Clamp/Wire Tie

The hose clamps/wire tie are used to hold the rubber boot in its proper position on the gas strut. If they are loose or defective the rubber boot will not stretch with the movement of the gas strut. Tighten or replace as necessary. See FIG. C5.

C8. Travel Strap

The travel strap is used to hold the arm assemblies in the closed position. They consist of a strap and buckles. The buckles clip together like a dog collar and can be pulled tight with the end of the strap. See FIG. C6.

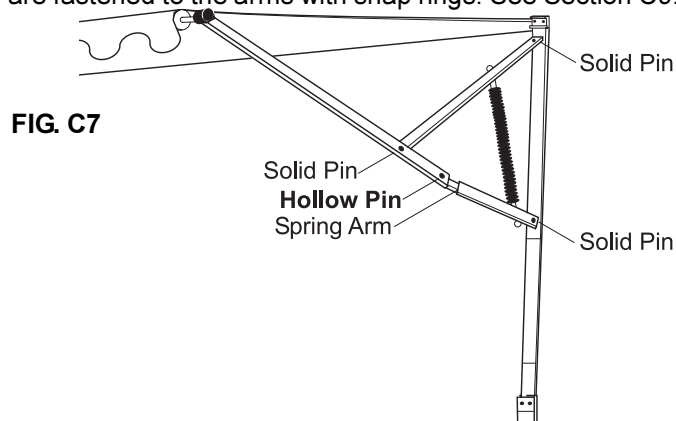


C9. Snap Ring

The snap rings are clipped onto the pins that hold the moving arms to the back channel. They must be removed using external snap ring pliers. Any snap rings that are not removed by this method or do not snap tightly into groove must be replaced. Forceful removal weakens and bends the snap rings. See FIG. C8.

C10. Pins

There are two different pins that are used to hold the arm assembly together. There are three solid 1/2 x 2-13/16" pins and one is a tube 1/2 x 2-13/16" with a 3/8" inside diameter hole. The location of the pins are shown in FIG. C7. Please note the location for the hollow pin. The pins are fastened to the arms with snap rings. See Section C9.



Section C - Hardware, cont'd.

C11. Lock Rod

The lock rod stabilizes the arm assembly in a rigid position. The lock rod is used on either arm, but only one arm at a time. This will allow the fabric to flex in moderate winds and rain. See FIG. A4.

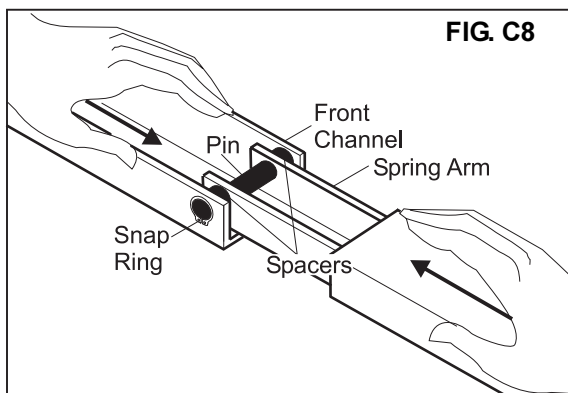
! CAUTION

The A&E Two Step awning is extremely durable and can be operated during moderate rain and wind conditions. However, when periods of heavy rain and/or wind is expected the awning should be closed and in the locked position. Damage caused by wind and rain is not covered by warranty.

C12. Spring Arm

The spring loaded bottom arm is installed in only one side of the hardware assembly. This arm assembly should be the farthest from the main entry door. The spring arm will automatically lower the end of the FRTA and allow water to drain off the awning canopy.

Check the bottom spring arm for proper operation by pulling down on the roller tube. The spring arm should collapse and spring back to within 1/2" of its full length. Grasp the front channel and the main body of the spring arm in each hand and compress the spring arm. No dragging or binding should be felt. If dragging or binding are present, replace spring arm. See FIG. C7 & C8.



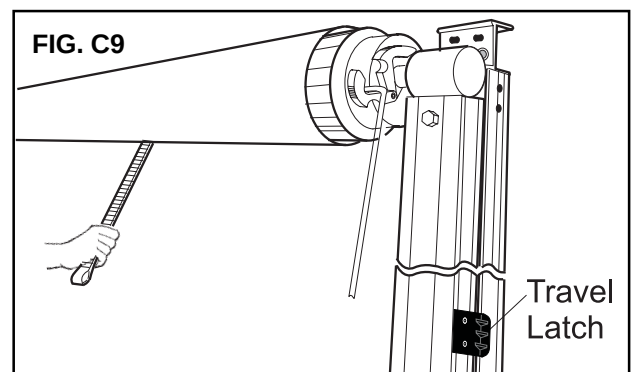
C13. Awning Rail

When water drips down the side of the coach, the seal between the coach and the awning rail must be checked. If improper seal is found, reseal the awning rail.

Before replacing a fabric for sags and wrinkles, check if the awning rail is straight. Open the awning and sight down the rail. If the rail varies up, down, in or out, this must be taken into consideration when checking fabric problems.

C14. Travel Latch

The travel latch is mounted on the front arm. It snaps into the flange on the back channel. If the lock is worn or will not clip the flange, it should be replaced. See FIG. C9.



Section D - Symptom/Cause Chart

A&E Two Step Awning

This program will address the most common system problems associated with the A&E Two Step Awning supplied by The Dometic Corporation. Our intent is to provide you with a guideline of checks to make, should you encounter one of the following symptoms.

SYMPTOMS	CAUSE	REFER TO	PAGE
1. Fabric leaks at roller tube	Stitches	B7	5
2. Awning has bulges or wrinkles where pull strap rolls up.	Operation	B10	5
3. Awning fabric will not roll up straight	Position	B1	3
	Fabric Square	B2	3
4. Fabric wrinkles with last few turns of the tube when rolling up.	Awning Rail	C13	8
	Tek Screws	B9	5
	Stitches	B7	5
	Fabric Square	B2	3
5. Fabric does not hang well	Awning Rail	C13	8
	Tek Screws	B9	5
	Fabric Square	B2	3
	Roller Tube	B4	3
	Stitches	B7	5
6. Awning will not open or is hard open	Travel Strap	C8	7
	Travel Latch	C14	8
	Torsion	B5	4
	Gas Strut Assembly	C4	6
7. Awning will not roll up	Safe-T-lock™ Lever	B6	5
	Torsion	B5	4
8. Awning will not stay in the rolled down position	Safe-T-Lock™ Lever	B6	5
	Torsion	B5	4
9. Awning billows out when travelling	Safe-T-Lock™ Lever	B6	5
	Torsion	B5	4