



SERVICE MANUAL

FREEDOM RM

ROOF MOUNTED LATERAL ARM AWNING

MANUAL AND MOTORIZED FREEDOM RM

RV



Read this manual before installing or using this product. Failure to follow the instructions and safety precautions in this manual can result in personal injury and/or cause the product to not operate properly.



MANUAL



MOTORIZED

The Freedom Awnings are state of the art lateral arm awnings. When retracted, the housing provides protection against the elements while the streamlined styling blends in with the coach sidewall. The full tension canopy fabric allows the awning to be partially or fully extended for best shade coverage.

Each unit is equipped with lateral support arms. No vertical arms interfere with coach sidewalls, custom graphics or equipment that may be mounted on the sidewalls.

Additional Features:

- Fully retractable and self-storing;
- Available as manual or motorized; (Note: 4.5 & 5 meter only available as motorized)
- The sealed awning motor operates on standard 12VDC (range 10VDC to 14VDC);
- Case and frame are constructed of high-strength aluminum extrusions.

These instructions apply to all models listed. Details and procedures unique to a specific model are labeled appropriately.

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PROPRIETARY STATEMENT

The Freedom RM Patio Awning is a product of Carefree of Colorado, located in Broomfield, Colorado, USA. The information contained in or disclosed in this document is considered proprietary to Carefree of Colorado. Every effort has been made to ensure that the information presented in the document is accurate and complete. However, Carefree of Colorado assumes no liability for errors or for any damages that result from the use of this document.

The information contained in this manual pertains to the current configuration of the models listed on the title page. Earlier model configurations may differ from the information given. Carefree of Colorado reserves the right to cancel, change, alter or add any parts and assemblies, described in this manual, without prior notice.

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SAFETY INFORMATION



This is the safety alert symbol. It is used to alert individuals to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible personal injury or death.



Indicates a hazardous situation, which if not avoided, could result in death or serious bodily injury.



Indicates a hazardous situation, which if not avoided, may result in minor or moderate bodily injury.



Indicates a situation that may result in equipment-related damage.

General Safety:



Shock Hazard. Always disconnect battery or power source before working on or around the electrical system.



Always wear appropriate safety equipment (i.e. goggles).



Always use appropriate lifting devices and/or helpers when lifting or holding heavy objects.



When using fasteners, do not over tighten. Soft materials such as fiberglass and aluminum can be "stripped out" and lose the ability to grip and hold.

CALIFORNIA PROPOSITION 65



This product contains chemicals known to the state of California to cause cancer or birth defects or other reproductive harm. California's Proposition 65 requires this warning to be given to customers in the state of California.

PRODUCT SPECIFICATIONS

Widths:	Available Sizes for Motorized Freedom RM							
	Available Sizes for Manual Freedom RM							
	centimeters	244	257	300	350	400	450	500
	inches	96	101	118	138	157	177	197
Extension:	180cm (72")	200cm (80")	250cm (98")					

NOTE: Actual awning Length: Motorized = 2.69" shorter than stated length;
Manual = 2" shorter than stated length

Note: 4.5 meter and 5 meter awnings are only available in the motorized configuration.

LEADING EDGE POSITION ACTUATION AND CONTROL

Power:	Lateral Arm Spring	<i>Minimum Tension:</i>	Open
Position Control:	<i>Motorized:</i>	Roll Out/In Controlled by Electrical Motor	SPDT, Center Off Switch
	<i>Manual:</i>	Roll Out/In Controlled by Manual Crank	

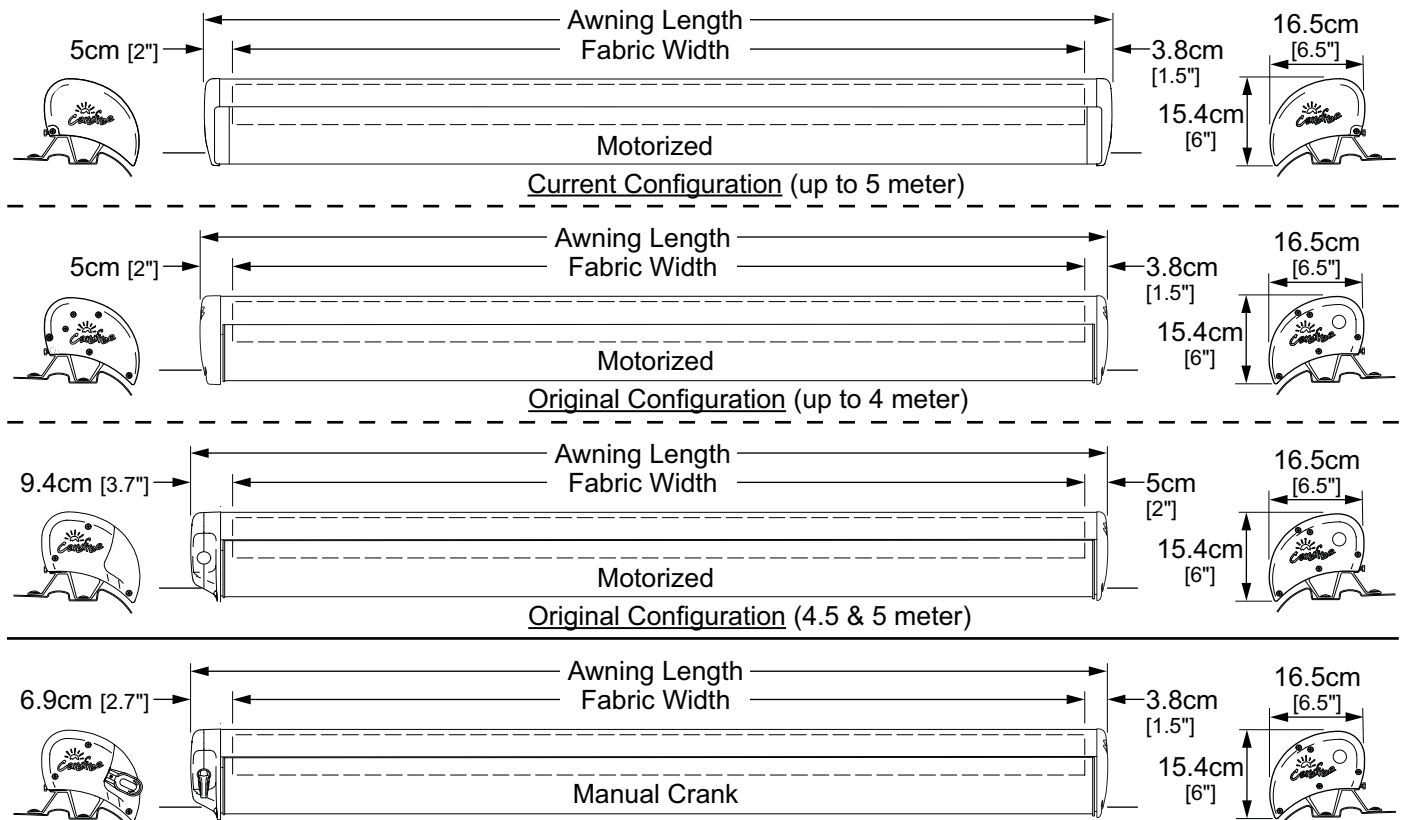
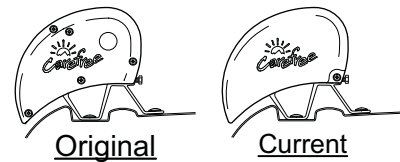
MOTOR SPECIFICATIONS

Motor Type:	Tubular
Power:	12VDC <i>Minimum:</i> 10VDC <i>Output:</i> 30 Watts
	<i>Nominal Current:</i> 2.5Amps <i>Max Current:</i> 14Amps (stall @ min voltage)
Power Source:	Motor and controls are routed and hardwired into the vehicle's 12V system
Speed	15 rpm

COLORS AVAILABLE

Case	Satin, White or Black
Fabric:¹	Vinyl

There are two configurations of the motorized Freedom RM.
The original configuration is identified by the five (5) screws in the endcap.
The current configuration has one (1) screw in the endcap.



Dimensions shown are given for reference only and may vary based actual installation.

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STANDARD SYSTEM ADJUSTMENTS

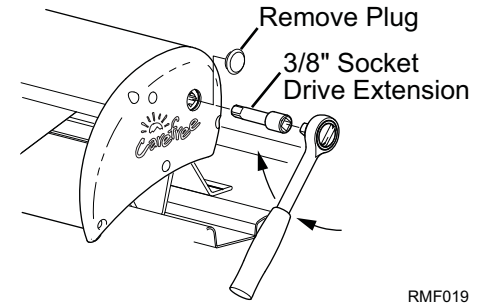
MANUAL OVERRIDE (MOTORIZED ONLY)

If power to the vehicle is not available, the awning can be safely retracted using the manual override located on the idler (right) end of the case.

NOTE: This procedure cannot be used to extend the awning.

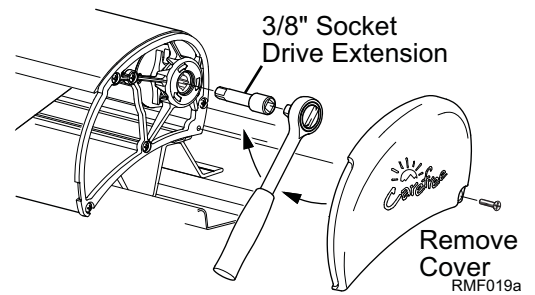
Original Configuration

1. Remove the plug from the right endcap and save.
2. Insert a 3/8" socket drive extension and handle into the square drive hole inside the end cap.
3. Turn the handle clockwise until the awning is retracted.
4. Reinstall the plug



Current Configuration

1. Remove the right outer endcap and save.
2. Insert a 3/8" socket drive extension and handle into the square drive hole inside the inner end cap.
3. Turn the handle clockwise until the awning is retracted.
4. Reinstall the outer cap.

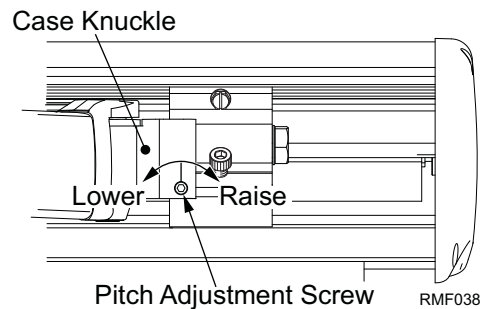


NOTICE After closing the awning with the manual override, the lead rail may move out from the case 1/4" -1/2". This is normal and the awning is secure for travel until power is restored or repairs are completed. Do not attempt to force the lead rail in with the override, serious damage can occur to the awning.

PITCH ADJUSTMENT

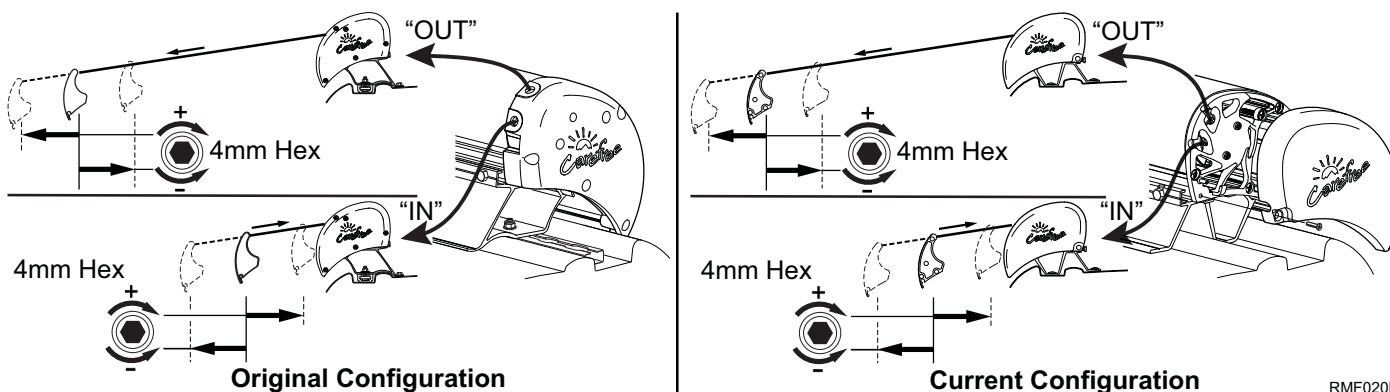
The awning opens and closes with a steep pitch. On low profile vans, the leading edge of the awning may hit the top of the sliding door if the door is open while extending or retracting the awning. To prevent this, the lower limit of the pitch can be adjusted upwards.

1. Open the awning to access the adjustment screws located on the arm case knuckles.
2. Have a second person lift up on the lead rail to relieve the pressure on the adjustment screws.
3. Using a 4mm allen wrench, turn the adjustment screw clockwise to raise the lead rail; turn the adjustment screw counterclockwise to lower the lead rail.
4. Repeat for each arm. Ensure that the lead rail is parallel with the awning case.



ADJUSTING THE MOTOR LIMITS

For service procedures, it may be necessary to reset 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.



The limit switches are located inside the LH motor endcap. To access the switches:

- For the original configuration remove the plugs from the rear of the endcap.
- For the current configuration remove the outer motor endcap.

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.

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.

3. If the fabric sags:
 - 3.1. Retract the awning until the fabric is tight then retract an addition 10"-12".
 - 3.2. Use a 4mm Allen wrench to turn the “OUT” limit switch COUNTERCLOCKWISE to reduce the motor run time.
 - 3.3. Extend to confirm that the adjustment is correct.
 - 3.4. Repeat the procedure until the awning extends correctly.
4. If the arms do not extend completely:
 - 4.1. Retract the awning approximately 10"-12".
 - 4.2. Use a 4mm Allen wrench to turn the “OUT” limit switch CLOCKWISE to increase the motor run time.
 - 4.3. Extend to confirm that the adjustment is correct.
 - 4.4. Repeat the procedure until the awning extends correctly.

IN Limit Switch

1. Retract the awning in completely.
2. Confirm that the arms are fully retracted. The motor should stop when the awning is fully retracted. If the motor quits before the arms are fully retracted; or, if the motor continues to run after the awning is closed, it will be necessary to adjust the “IN” limit switch.

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.

3. If the motor stops before the awning is fully retracted:
 - 3.1. Extend the awning 10"-12".
 - 3.2. Turn the “IN” limit switch CLOCKWISE to increase the motor run time.
 - 3.3. Retract the awning to confirm that the adjustment is correct.
 - 3.4. Repeat the procedure until the awning retracts correctly.
4. If the motor continues to run:
 - 4.1. Extend the awning approximately 10"-12".
 - 4.2. Turn the “IN” limit switch COUNTERCLOCKWISE to decrease the motor run time.
 - 4.3. Extend and retract to confirm that the adjustment is correct.

4.4. Repeat the procedure until the awning extends correctly.

STANDARD MAINTENANCE

Maintaining a Carefree Awning is easy. Just follow these basic steps:

- Always operate the awning according to the instructions.
- Periodically check that the fasteners are tight. Tighten if necessary.
- Keep the awning fabric and arms clean.

Fabric Care

⚠ CAUTION Do not use oil based cleaners or any caustic, granulated, or abrasive type cleaners on your Carefree product.

1. One of the best ways to keep the fabric looking good and to delay the need for deep or vigorous cleanings is to hose fabrics off on a monthly basis with clear water. This practice will help prevent dirt from becoming deeply imbedded in the fabric. In most environments, a thorough cleaning will be needed every two to three years.
2. When it's time for a thorough cleaning, the fabric can be cleaned while still on the awning frame.
 - For Vinyl Fabric – Use a soft brush and warm water with soap.
 - For Acrylic Fabric – Use a stiff brush and warm water with soap.
3. When cleaning the fabric, it is important to observe the following:
 - Always use a natural soap, never detergent.
 - Water should be cold to lukewarm, never more than 100°F.
 - Air-dry only. Never apply heat to the fabric.
 - Always allow the fabric to dry thoroughly before rolling up the awning.

Mildew

Mildew is a fungus growth that looks like dirt. Vinyl coated polyester fabrics are mildew resistant because of a chemical biocide in the vinyl coating. Under ordinary conditions, mildew will not appear. However, in areas where high temperature and humidity are common, mildew can be a problem and required the material to be washed more frequently. Thoroughly rinse the fabric with clean water and allow to air dry completely before rolling up the awning.

Pooling

When water collects on the top of the fabric, this is known as "pooling". This can occur during inclement weather or if a running air conditioner discharges over the awning. The water is dumped when the awning is retracted. It is recommended that if water accumulates on the top; retract the awning in steps (8"-12") to dump the water. This will help prevent the fabric from stretching or distorting.

The effects of wind and rain on an awning are unpredictable. Severe damage to the awning and the vehicle may result. IF WIND OR EXTENDED PERIODS OF RAIN ARE EXPECTED, ROLL UP THE AWNING AND SECURE FOR TRAVEL.

Hardware Maintenance

- Replace any parts that become damaged.
- Periodically check all mounting hardware, screws, lags, etc., and re-tighten when necessary.
- Locking knobs should be periodically loosened and removed then sprayed with a dry lubricant to prevent binding and locking.

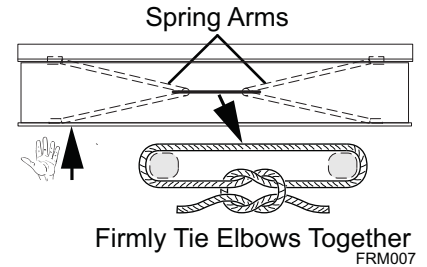
Motor Maintenance

- Check all wiring and connections for wear. Repair when needed.
- Check that the sealant is providing a good seal and no water is accumulating on the wiring.

CANOPY REPLACEMENT (ORIGINAL CONFIGURATION)

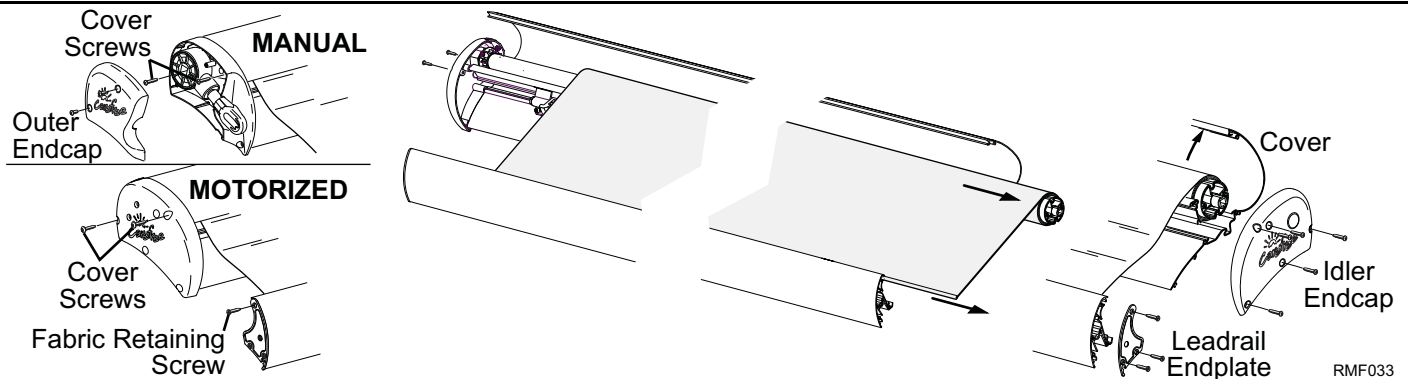
This procedure requires two people.

1. Open the awning 18"-24".
2. Disconnect power to the awning.
3. Carefully push the lead rail toward the case so that the arms collapse and the fabric is slack.
4. Hold the lead rail in this position and 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.



CAUTION

Failure to secure the lead rail as described will allow the spring arms to unexpectedly extend out possibly causing personal injury and damage to the awning.



1. On the LH (drive) side of the awning:
 - 1.1. Remove the fabric retaining screw from the lead rail endplate.
 - 1.2. *Manual awnings:* remove the outer end cap.
 - 1.3. Remove the two cover screws.
2. On the RH (idler) side of the awning:
 - 2.1. Remove the lead rail end
 - 2.2. Remove the idler endcap and set aside.
 - 2.3. Rotate the cover back and out of the way.
3. Pull the roller tube out the idler end of the case while pulling the fabric from the lead rail. Pull the roller tube straight, do not allow the roller tube to bend or twist.
4. Note the orientation of the old canopy then unwrap and remove from the roller tube.
5. Unfold the replacement fabric then slide the new fabric onto the roller tube and center.

NOTICE

While the awning fabric is fairly robust, care must be taken not to snag the fabric when sliding into the roller tube or lead rail.

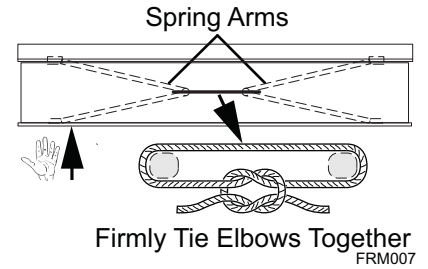
Tip: Lightly spraying the slots with a dry silicone lubricant will help the fabric slide into the slots without staining the material.

6. Roll the fabric onto the roller tube leaving enough material to reach between the case and the lead rail.
7. Slide the fabric into the lead rail and the roller tube into the case.
8. Align the roller tube with the motor drive and bearing or gear crank for manual awnings.
9. Support the roller tube and attach the RH end cap while aligning the RH end of the roller tube with the end cap bearing. It is not necessary to close and attach the cover at this time.
10. Open and close the awning to confirm that the fabric rolls and unrolls squarely. Adjust the fabric position in the lead rail as required.
11. Attach the RH lead rail end plate. **NOTE:** The top screw secures the fabric in the lead rail. The screw should be positioned to thread into the metal of the lead rail and the edge of the polycord.
12. Attach the fabric retaining screw into the LH lead rail end plate.
13. Close and secure the cover. There are two screws on each end of the awning.
14. For manual awnings, reattach the LH outer end cap.
15. It may be necessary to adjust the motor limits for motorized awnings. Refer to page 2.

CANOPY REPLACEMENT (CURRENT CONFIGURATION)

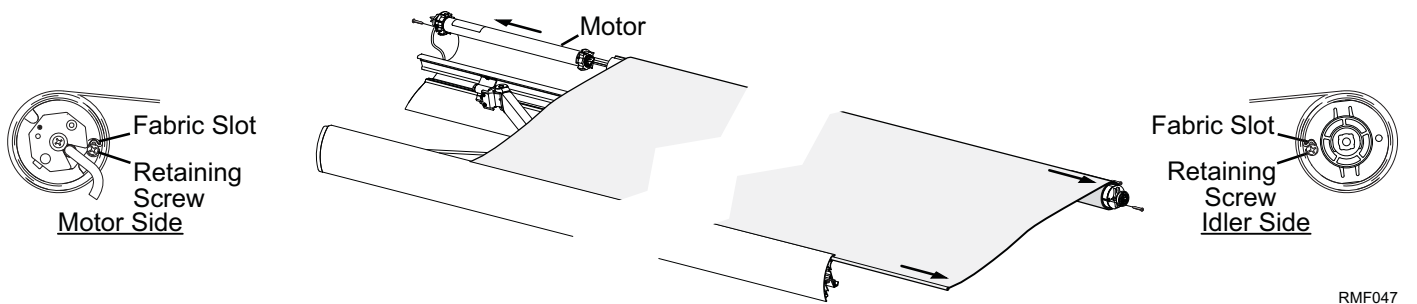
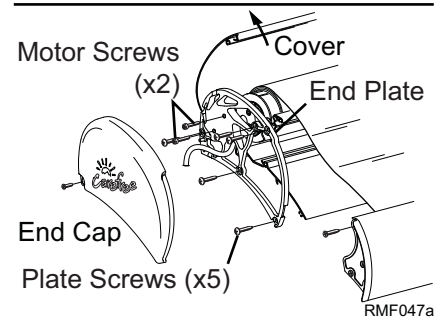
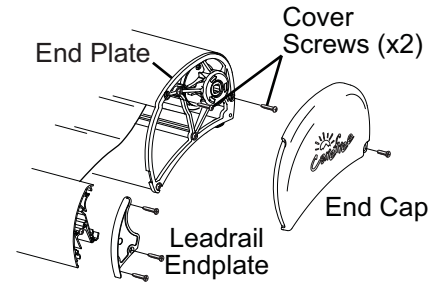
This procedure requires two people.

1. Open the awning 18"-24".
2. Disconnect power to the awning.
3. Carefully push the lead rail toward the case so that the arms collapse and the fabric is slack.
4. Hold the lead rail in this position and 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.



CAUTION Failure to secure the lead rail as described will allow the spring arms to unexpectedly extend out possibly causing personal injury and damage to the awning.

1. On the RH (idler) side:
 - 1.1. Remove the lead rail end plate and set aside.
 - 1.2. Remove the outer end cap and set aside.
 - 1.3. Remove the two (2) cover screws from the end plate.
2. On the LH (motor) side:
 - 2.1. Remove the fabric retaining screw from the lead rail endplate.
 - 2.2. Remove the outer end cap and set aside.
 - 2.3. Remove the five (5) plate screws and two (2) motor screws. Set parts aside.
 - 2.4. Slide the end plate along the motor cable so that it is out of the way.
 - 2.5. Remove the fabric retaining screw from the motor crown.
3. Rotate the top cover back and out of the way.
4. Partially pull the roller tube away from the idler plate until the idler plug is clear.
5. Carefully lift the roller tube up.



6. Do the following 2 steps at the same time.
 - 6.1. Pull the roller tube out the idler end of the case while pulling the fabric from the lead rail.
 - 6.2. Have a second person pull the motor assembly from the roller tube.
7. Note the orientation of the old canopy then unwrap and remove from the roller tube.
8. Unfold the replacement fabric then slide the new fabric onto the roller tube and center.

NOTICE While the awning fabric is fairly robust, care must be taken not to snag the fabric when sliding into the roller tube or lead rail.

Tip: Lightly spraying the slots with a dry silicone lubricant will help the fabric slide into the slots without staining the material.

9. Roll the fabric onto the roller tube leaving enough material to reach between the case and the lead rail.
10. Begin sliding the fabric into the lead rail and the roller tube into the case.

11. Align the one-way drive and bearing in the roller tube and slide the roller tube and fabric over the motor.
12. Seat the motor bearing in the end of the roller tube.
13. Secure the fabric on the roller tube with the retaining screws through the bearing and end plug. Note: The screw must be positioned to thread into the metal of the roller tube slot and the edge of the canopy polycord.
14. Finish sliding the fabric into the lead rail.
15. On the idler side, insert the roller tube end plug into the end plate.
16. Attach the end plate to the motor with the motor screws removed previously. Ensure that the motor is oriented with the limit switches pointed toward the access holes in the end plate.
17. Align the screw holes in the end plate and attach to the awning case.
18. Open and close the awning to confirm that the fabric rolls and unrolls squarely. Adjust the fabric position in the lead rail as required.
19. Attach the RH lead rail end plate. **NOTE:** The top screw secures the fabric in the lead rail. The screw should be positioned to thread into the metal of the lead rail and the edge of the polycord.
20. Attach the fabric retaining screw into the LH lead rail end plate.
21. Close and secure the cover. There are two screws on each end of the awning.
22. It may be necessary to adjust the motor limits for motorized awnings. Refer to page 2.
23. Attach the end caps.

SPRING ARM REPLACEMENT

⚠ CAUTION THE SPRING ARM IS UNDER TENSION TO OPEN. USE EXTREME CARE TO FIRMLY HOLD THE SPRING ARMS DURING ASSEMBLY AND DISASSEMBLY TO AVOID ANY SUDDEN OR UNEXPECTED MOVEMENT BY THE ARM. SERIOUS PERSONAL INJURY AND/OR PROPERTY DAMAGE COULD OCCUR.

NOTE: On replacement arms, the connector assemblies are not included and must be ordered separately if the parts are to be replaced.

The following procedure requires two people.

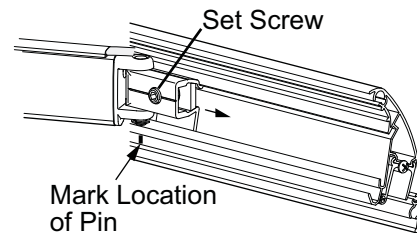
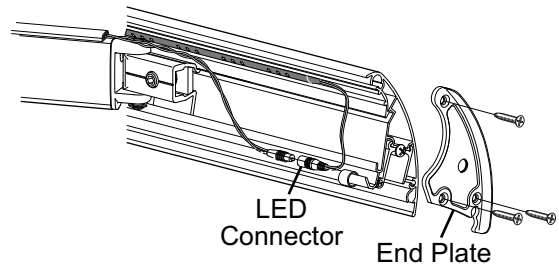
LEAD RAIL CONNECTOR

The current lead rail connectors are designed to allow the lead rail to close tightly. These are available for all configurations of the Freedom RM.

- If replacing original style connectors, it will be necessary to replace all the lead rail connectors.
- Lead rail connectors are marked LH and RH and must be installed for the correct side of the awning.

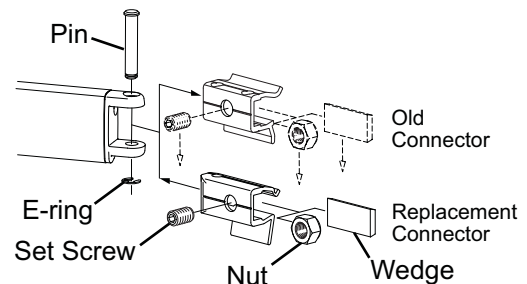
Removing the Lead Rail Connector

1. Open the awning to the maximum extension or as wide as possible. This will minimize the spring tension in the arms during this procedure.
2. Disconnect power to the awning.
3. Remove the end plate from the lead rail and set aside.
4. On the LH side of the lead rail:
5. If installed, disconnect the LED connectors on the LH side. Wrap or tape the wires from the LED strip out of the way.
6. On the lead rail, mark the location of the pivot pin.
7. Loosen the set screw in the lead rail connector.
8. While firmly holding the arm, slide the arm and connector from the lead rail. Allow the arm to extend to its maximum length below the lead rail. Support the unattached end of the arm.
9. Remove the pin and e-ring from the connector.



Attaching the Arm to the Lead Rail

1. Move the setscrew, nut and wedge from the old connector to the new connector. Tighten the setscrew until the screw lightly touches the wedge.
2. Attach the new connector to the arm using the pin and e-ring removed previously.
3. Slide the connector into the lead rail and align the pivot pin with the location mark made in step 5.
4. Tighten the set screw in the connector. Torque to 50-60 in-lbs.
5. If installed, connect the LED connectors.
6. Attach the end plate to the lead rail.



LH shown. Procedures are the same for the RH except as noted in the instructions.

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REPLACING THE ARM

1. Open the awning to the maximum extension or as wide as possible. This is to minimize the spring tension in the arms during this procedure.
2. Disconnect power.
3. Use a scaffold, ladder or other means to firmly support the lead rail.
4. If replacing the LH (motor side) arm, carefully remove the LED harness from the wire channel on top of the arm. Use care to not bend, break or compromise the harness.
5. Detach the arm from lead rail. Follow the instructions on page 8 **"Error! Reference source not found."**

6. In the case, loosen the large bolt on the side of the knuckle housing until the arm is free. Save the bolt, washer and bushing, these will be reused.

7. Remove the arm and set on a work surface.

8. On a work surface, remove the lead rail connector and the case knuckle from the old arm.

9. Install the lead rail connector onto the new arm.

10. Install the case knuckle onto the new arm. Ensure that the arm stop is positioned as shown. Secure the pin with the M5 setscrew, torque to 15-20 in-lbs.

11. Firmly hold the new arm closed, remove the shipping ties or wrap. Allow the arm to partially open approximately 6"-8" and temporarily tie the arm in that position.

12. If the LED Harness is routed on the replacement arm: Attach a piece of wire channel to the top of each section of the arm using double sided tape. If using new channel, cut each piece slightly shorter than the arm extrusion.

13. Lift the arm up and slide the arm and lead rail connector into the lead rail to the mark made previously.

14. Tighten the M10 connector setscrew. Torque to 50-60 in-lbs.

15. While firmly holding the arm, remove the temporary ties and allow the arm to extend.

16. Position the case knuckle and secure to the knuckle housing using the M10 x75mm bolt, washer and bushing that was removed previously. Torque bolt to 30-35 in-lbs.

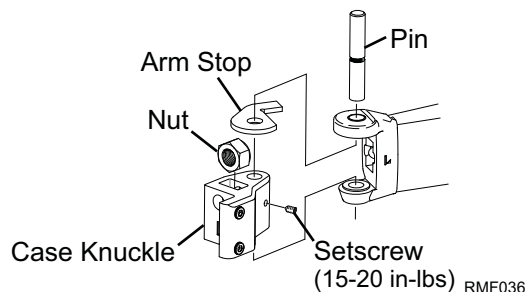
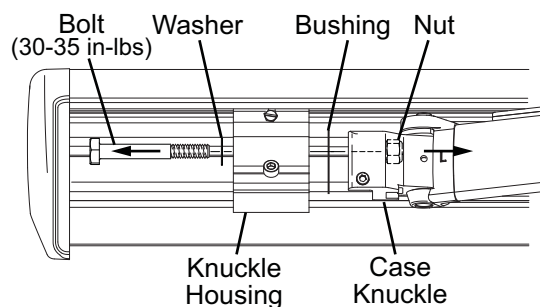
17. For the LH arm, route the LED harness through the wire channel. At the arm joints, arch the harness slightly to avoid binding. Do not twist the cable.

Tip: Use a small tool, such as a flat bladed screwdriver to gently spread open the channel then insert the cable. Do this for the entire length of the channel until the cable is fully inserted.

18. After replacing the arm, it will be necessary to adjust the pitch to align the lead rail and case. See page **Error! Bookmark not defined.**

19. Adjust the motor limits as required. See page 2.

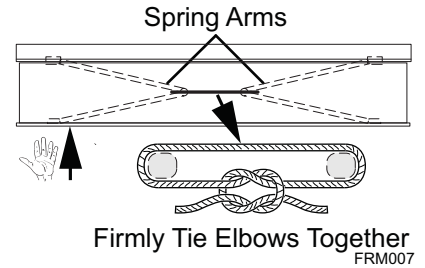
20. Attach the lead rail end plate. Torque screws to 25-30 in-lbs.



MOTOR REPLACEMENT

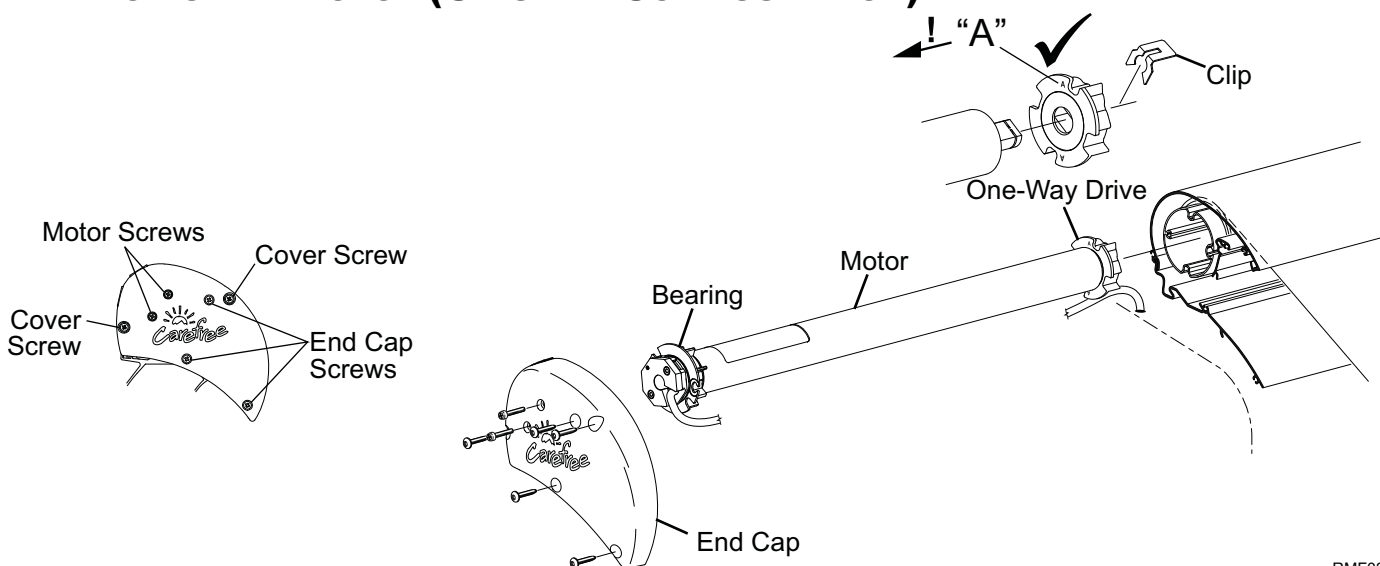
PRELIMINARY STEPS (ALL CONFIGURATIONS)

1. Disconnect power to the awning.
2. If the awning is extended: 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.
3. If the awning is closed: Firmly brace the lead rail in the closed position. A second person can hold the lead rail steady during the disassembly process.



CAUTION If the awning is closed when the motor and end cap screws are removed, the spring arms will try to extend out possibly causing personal injury and damage to the awning. Support the roller tube and allow the awning to open slowly then secure the arms by tying the elbows together as described above.

CAUTION Failure to secure the lead rail as described will allow the spring arms to unexpectedly extend out possibly causing personal injury and damage to the awning.

REPLACING THE MOTOR (ORIGINAL CONFIGURATION)

RMF024

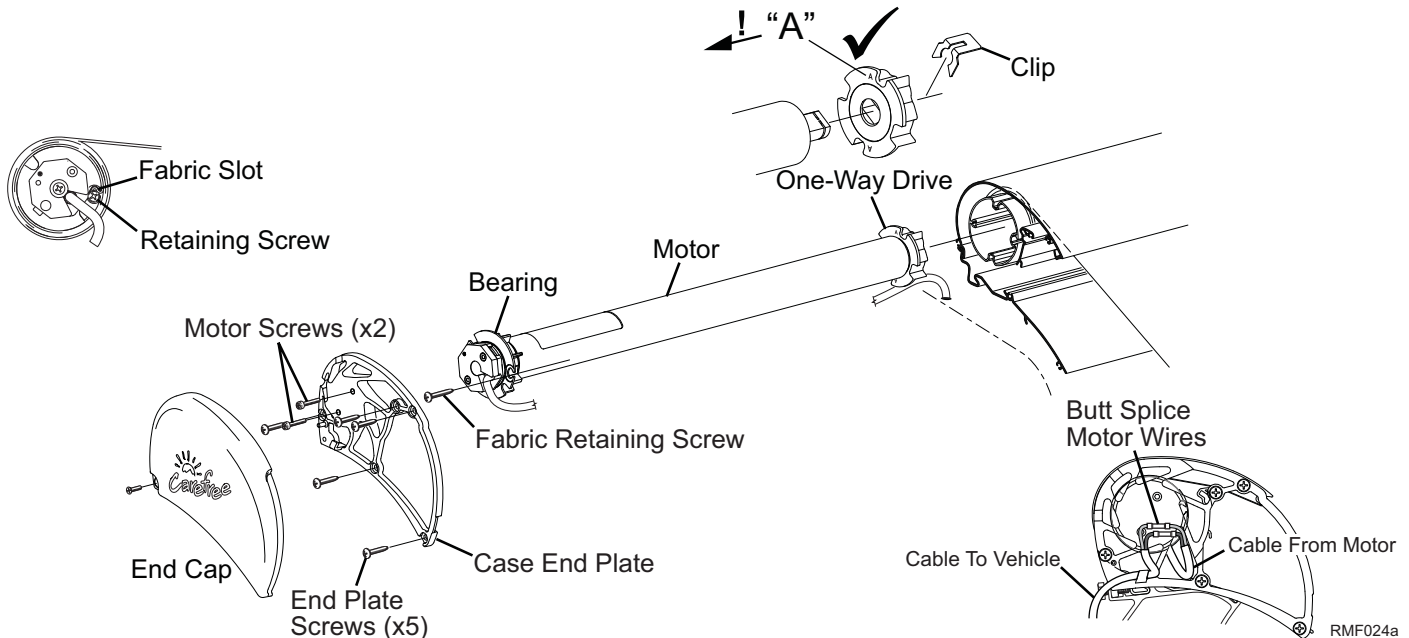
1. From the motor end cap remove the cover, end cap and motor screws.
2. Remove the end cap.
3. Disconnect the motor wires from inside the vehicle and pull out or clip the motor wires. If cutting the wires, cut them close to the motor to leave enough wire that can be stripped and spliced.
4. Pull the motor out of the roller tube and set aside.
5. Attach the one-way drive to the new motor with the "A" pointing toward the motor. Secure with the supplied clip.

NOTICE The one-way drive must be oriented with the "A" facing the motor. If the drive is not oriented correctly, the awning will not to operate and the arms will spring out when released.

6. Align the one-way drive with the roller tube and start sliding the new motor into the roller tube.
 7. Attach the end cap to the motor with the motor screws removed previously. Ensure that the motor is oriented with the limit switches pointed toward the access holes in the cap.
 8. Route the new motor wire into the vehicle and attach or if the wires were cut, splice the new wires to the existing wires. Match the wires (Blue to Blue and Brown to Brown. Push the splices into the vehicle then use a quality silicone sealant to seal the wire hole into the vehicle.
- 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.
9. Align the bearing on the motor and slide into the roller tube.
 10. Align the screw holes in the end cap and attach to the awning case.
 11. While holding the lead rail, carefully remove any roller tube supports and arm ties. Allow the lead rail to extend until the fabric is taunt. If the lead rail continues to extend after the fabric is taut, the one way drive was installed backwards. Retie the arms, remove the motor and orient the one way drive as shown above.
 12. To test, restore power then extend and retract the awning.
 13. After replacing the motor, it will be necessary to adjust the motor limits (page 2).

REPLACING THE MOTOR (CURRENT CONFIGURATION)

Refer to "Preliminary Steps" on page 10 before beginning this procedure.

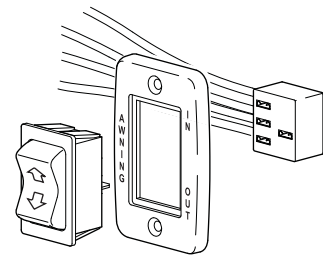
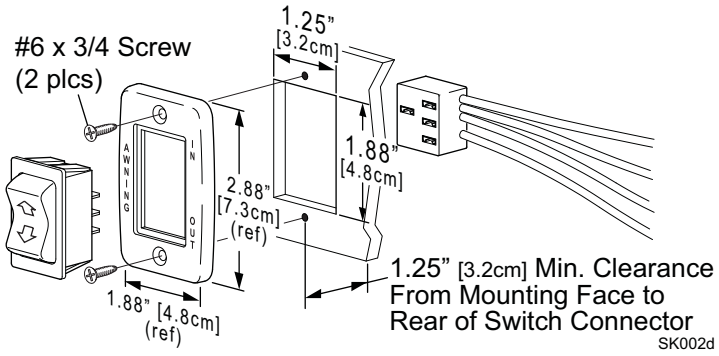


1. Remove the motor end cap and set aside.
2. Remove the motor screws (x2) and the end plate screws (x5) and set aside.
3. Cut the motor wire as close to the motor as possible to leave enough cable from the vehicle that can be stripped and spliced.
4. Remove the end plate and set aside.
5. Remove the fabric retaining screw from the motor bearing.
6. Pull the old motor out of the roller tube and set aside.
7. Place the one-way drive onto the new motor with the "A" pointing toward the motor. Secure with the new clip.

NOTICE The one-way drive must be oriented with the "A" facing the motor. If the drive is not oriented correctly, the awning will not operate and the arms will spring out when released.

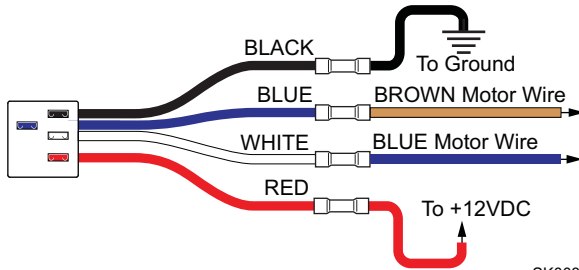
8. Align the one-way drive with the roller tube and start sliding the new motor into the roller tube.
9. Align the bearing on the motor and slide into the roller tube.
10. Attach the fabric retaining screw through the bearing and into the fabric slot. The screw must be positioned to thread into the metal of the roller tube slot and the edge of the canopy polycord.
11. Attach the end plate to the motor with the motor screws removed previously. Ensure that the motor is oriented with the limit switches pointed toward the access holes in the end plate.
12. Align the screw holes in the end plate and attach to the awning case.
13. Cut and splice the new motor cable with the existing cable. Ensure that the wire colors match (Blue to Blue and Brown to Brown).
14. Attach the outer end cap.
15. While holding the lead rail, carefully remove any roller tube supports and arm ties. Allow the lead rail to extend until the fabric is taut. If the lead rail continues to extend after the fabric is taut, the one way drive was installed backwards. Retie the arms, remove the motor and orient the one way drive as shown above.
16. To test, restore power then extend and retract the awning.
17. After replacing the motor, it will be necessary to adjust the motor limits (page 2).

SWITCH WIRING FREEDOM RM (MOTORIZED ONLY)

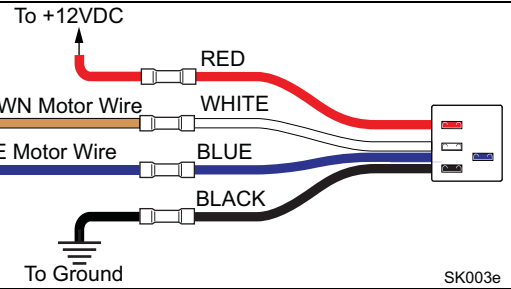


Left Side Orientation

SK002a



RH CONNECTOR ORIENTATION



LH CONNECTOR ORIENTATION

CONNECTOR WIRE COLOR

RED →	+12VDC		+12VDC	
WHITE →	BLUE (motor wire)		BROWN (motor wire)	
BLUE →	BROWN (motor wire)		BLUE (motor wire)	
BLACK →	Ground		Ground	

OPTIONAL LED LIGHTING

CAUTIONS:

- ⚠ The wire should be secured to the wall of the vehicle where it is exposed on the outside of the vehicle. Use a quality silicone sealant/adhesive.
- ⚠ Do not route the wire over sharp edges or heat sources that can cut or fray the wires or wire insulation.
- ⚠ Damage that is a result of improper routing may void warranty.

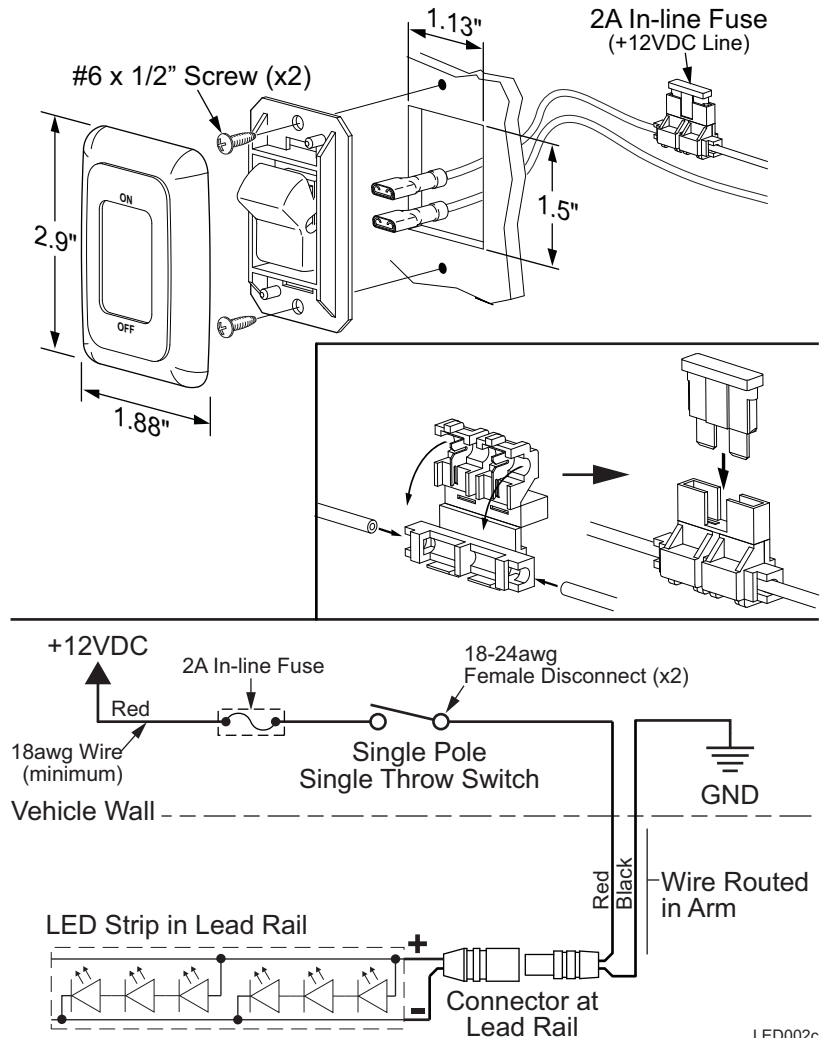
SWITCH INSTALLATION

NOTE: Installers may choose to furnish the control switch. The installation requires that the power line (+12VDC) be attached to a dedicated 2A circuit breaker or a 2A in-line fuse must be installed between the switch and power source. For easy access, locate the fuse close to the switch.

1. Determine the location of the switch.
2. At the switch location, cut a 1 1/8" x 1 1/2" hole.
3. Wire the switch as shown below. Wire terminals at the switch are .187, 18-24 awg female disconnects.

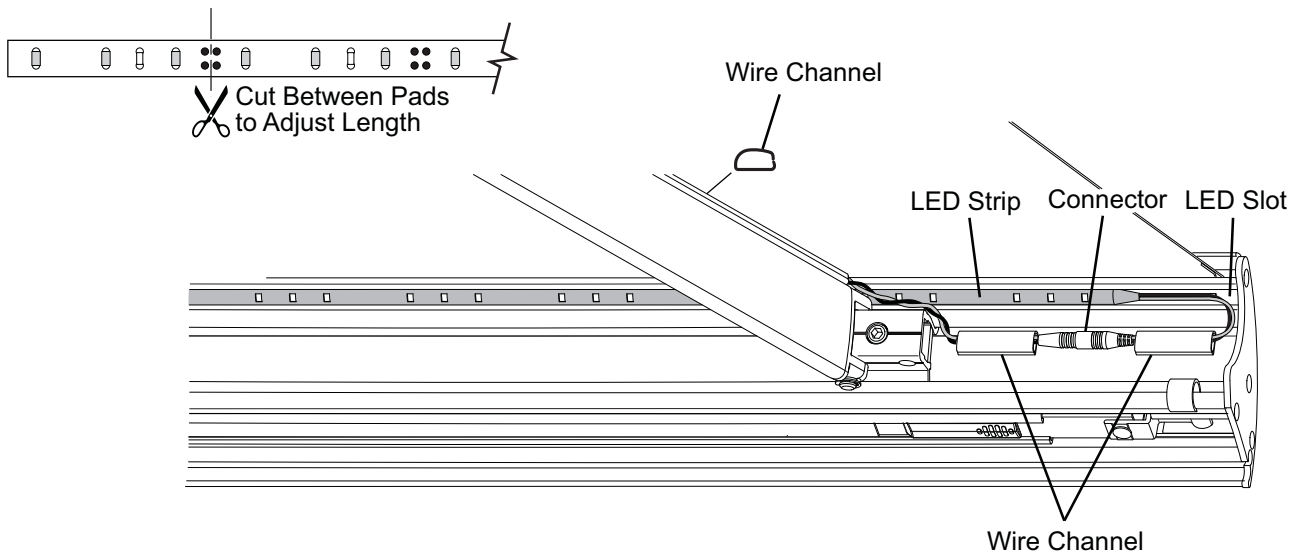
NOTE: Allow adequate slack in the 12VDC power line so that the in-line fuse (installed in step 4) can be accessed from behind the switch.

4. Install the in-line fuse:
 - 4.1. Near the switch, cut the red 12VDC power line to the switch. Do not strip the insulation.
 - 4.2. Insert a wire end into one of the wire channels until it butts up against the stop.
 - 4.3. Fold that half of the connector body over until the element contacts the wire. Use pliers to crimp the connector closed.
 - 4.4. Repeat for the second wire end.
 - 4.5. Slide the fuse into the fuse port. Ensure that is firmly seated.
5. Press the in-line fuse, wires and switch into the mounting hole. Secure the switch using two (2) #6 x 1/2" screws.



6. Snap the switch bezel over the switch frame.

REPLACING THE LED STRIP



WM043b

1. Extend the awning out completely.
2. Disconnect power to the awning and the LED strip.
3. Use a non-permanent marker to mark the location of the ends of the LED strip.
4. Inside the lead rail, disconnect the strip connectors.
5. Remove the existing LED strip from the lead rail.
6. Clean the slot to remove any dirt and tape residue.
7. Thread the new strip behind the lead rail connectors.
8. Starting at the reference mark on the harness end, press the new strip into the LED slot.
9. At the end of the lead rail, cut the LED strip to match the mark made previously. To trim the LED strip, always cut between the 4-pad cluster as shown.
10. Route the new LED strip wires as shown and connect to the harness.

NOTE: After attaching the connectors, insert the wires into the wire channel as shown.
11. Restore power and test.

HARNES REPLACEMENT

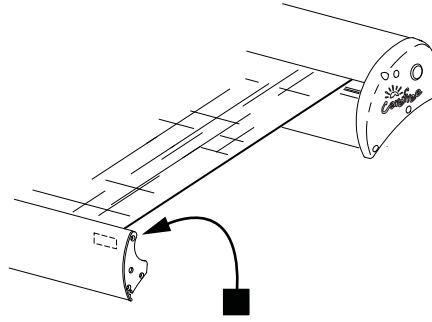
(refer to the figure on the previous page)

1. Extend the awning out completely.
2. Separate the LED connectors at the lead rail. Carefully pull the harness from the wire channel at the top of the arm.
3. At the awning case:
 - 3.1. Clip the harness.
 - 3.2. Clamp the harness going into the vehicle to prevent it from falling in the vehicle wall.
4. Connect the new harness to the LED strip.
5. Route the harness through the wire channel. At the arm joints, arch the cable slightly to avoid binding.

Tip: Use a small tool, such as a flat bladed screwdriver, to gently spread open the channel then insert the cable into the channel. Do this for the entire length of the channel until the cable is fully inserted.
6. At the vehicle wall:
 - 6.1. Route the new harness through the wall to the switch or dimmer module.
24. **Tip:** Tie the new harness to the old harness that was cut previously. Use the old harness to pull the new harness through the wall to the desired location.
 - 6.2. Seal the wall entrance hole and harness with a quality silicone sealant.
 - 6.3. Connect the new harness to the switch. Two (2) .187, 18-24 awg female disconnects are provided if connecting to a switch.
 - 6.4. Alternate method: At the wall, splice the new harness to the existing harness using 24 awg butt connectors. Push the connectors into the vehicle wall. Seal the wall entrance hole and wires with a quality silicone sealant.
25. **NOTE:** Be sure to allow enough harness from the arm to provide a slack in the harness and adequate length for the connectors to be pushed inside the wall before sealing the hole and harness with a quality silicone sealant.
- 26.

PART NUMBER LISTING

PART NUMBER/SERIAL NUMBER LOCATION

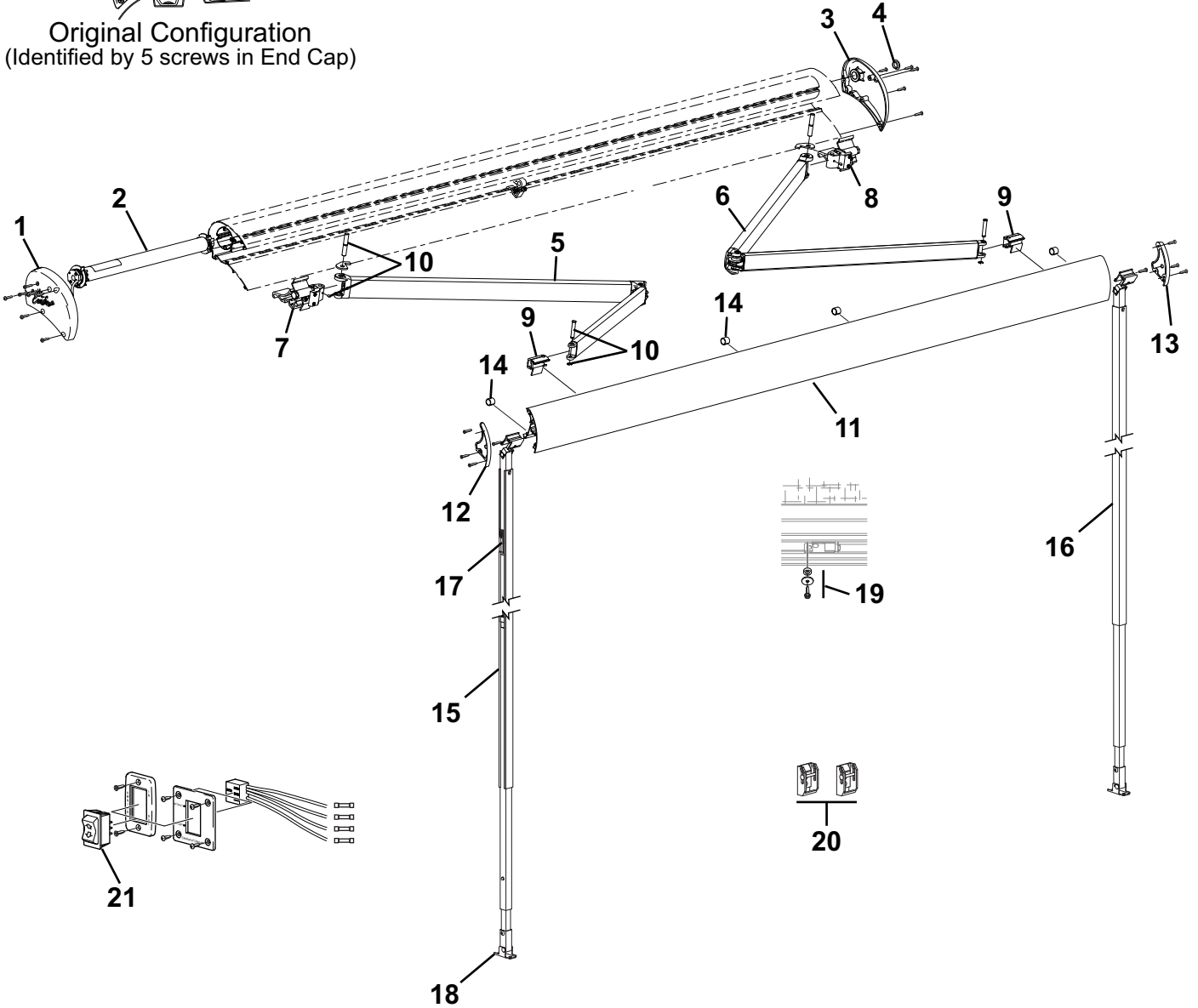


Serial# / Part# Located on the
Inside of the Right End of Lead Rail
RMF021

FREEDOM RM MOTORIZED (4M AND SMALLER ORIGINAL CONFIGURATION)



Original Configuration
(Identified by 5 screws in End Cap)

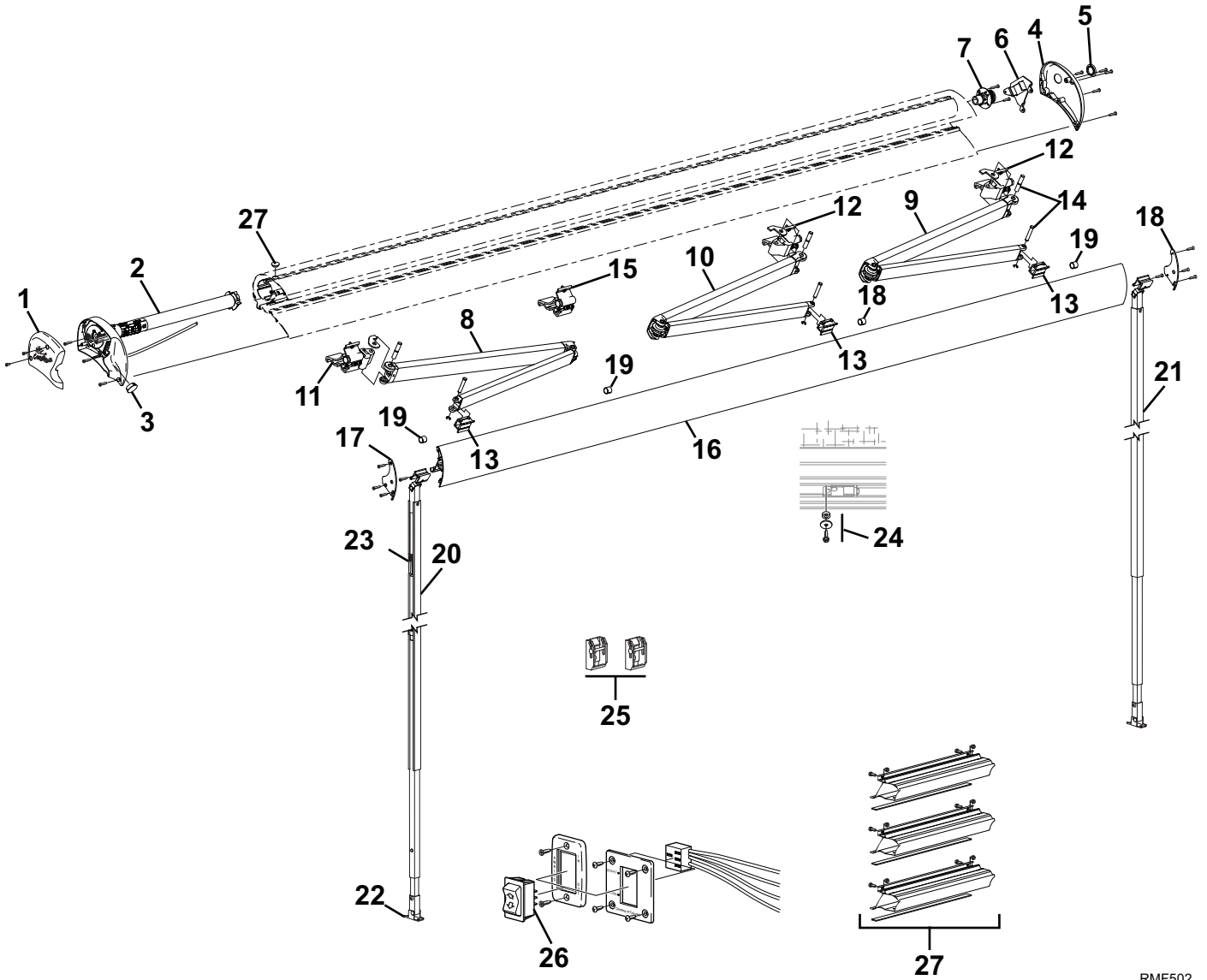


RMF501a

Item	Part Number	Description	Notes
1	R037382-005	Endcap, LH, White	
	R037382-006	Endcap, LH, Black	
	R037382-231	Endcap, LH, Satin	
2	R001651	Motor Assembly	2,3
3	R001594WHT	Endcap Assembly, RH, White	
	R001594BLK	Endcap Assembly, RH, Black	
	R001594SAT	Endcap Assembly, RH, Satin	
4	R040832-001	Plug, White	
	R040665-002	Plug, Black	
5a	R012530-TB68L	Spring Arm Assembly, LH	Used with 2.44 Meter 1
5b	R012530-TB76L	Spring Arm Assembly, LH	Used with 2.57 Meter 1
5c	R012530-TB94L	Spring Arm Assembly, LH	Used with 3 Meter & Up 1
6a	R012530-TB68R	Spring Arm Assembly, RH	Used with 2.44 Meter 1
6b	R012530-TB76R	Spring Arm Assembly, RH	Used with 2.57 Meter 1
6c	R012530-TB94R	Spring Arm Assembly, RH	Used with 3 Meter & Up 1
7	R019280-001	Connector Assembly, Case, LH	1,4
8	R019280-002	Connector Assembly, Case, RH	1,4
9	R001872	Connector Kit, Lead Rail	includes 1 LH and 1 RH connector 1,5
10	R001595	Hardware Pack, Arm Attach, 1 Arm	
11	R001819X-aa-xxx	Lead Rail	6
12	R035444-005	Lead Rail End Plate, LH, White	
	R035444-006	Lead Rail End Plate, LH, Black	
	R035444-001	Lead Rail End Plate, LH, Satin	
13	R035444-005	Lead Rail End Plate, RH, White	
	R035444-006	Lead Rail End Plate, RH, Black	
	R035444-001	Lead Rail End Plate, RH, Satin	
14	R001691	Lead Rail Guide Kit	pkg of 4
15a	R001655-003	Vertical Support Leg, LH	Used with 2.44 Meter
15b	R001655-001	Vertical Support Leg, LH	Used with 2.57 & 3 Meter
15c	R001655-002	Vertical Support Leg, LH	Used with 3.5 Meter & Up
16a	R001655-103	Vertical Support Leg, RH	Used with 2.44 Meter
16b	R001655-101	Vertical Support Leg, RH	Used with 2.57 & 3 Meter
16c	R001655-102	Vertical Support Leg, RH	Used with 3.5 Meter & Up
17	R001657	Flipper Latch Kit, Orange	
18	R00394	Carport Foot	
19	R001690	Leg Support Kit	(contains 2 ea. screw, washer and spacer)
20	R019283-005	Kit, Bottom Bracket, White	pkg of 2
	R019283-006	Kit, Bottom Bracket, Black	pkg of 2
	R019283-231	Kit, Bottom Bracket, Satin	pkg of 2
21	R001605	Switch Kit	

- Notes:
1. Attaching hardware not included with arm assemblies. Order item 10.
 2. Motor assembly (item 3) includes motor, bearing and one-way drive. Components not available separately.
 3. A motor upgrade kit (SR0098XXX) is available for manual crank awnings and includes end cap (item 1), motor assembly (item 2), switch kit (item 21) and attaching hardware.
 4. If replacing an original fixed pitch case connector, replace both case connectors.
 5. If replacing an original lead rail connector, replace both lead rail connectors.
 6. For Item 12 (lead rail): X= Color; B=Black, W=White, S=Satin. aa = LED; LO= w/ LED outside, LI= w/ LED Inside, XX=No LED. xxx= product order length.

FREEDOM RM MOTORIZED (4.5M & 5M ORIGINAL CONFIGURATION)



RMF502

Item	Part Number	Description	Notes
1	R037361-005	Endcap Outer, Manual, LH, White	
	R037361-006	Endcap Outer, Manual, LH, Black	
2	R001685WHT	Motor Assembly, White	2
	R001685BLK	Motor Assembly, Black	2
3	R001688WHT	Plug, LH, White	
	R001688BLK	Plug, LH, Black	
4	R001686WHT	Endcap Assembly, RH, White	
	R001686BLK	Endcap Assembly, RH, Black	
5	R001687WHT	Plug, RH, White	
	R001687BLK	Plug, RH, Black	
6	R001689	Roller Tube Guide	
7	R001623	End Plug, Roller Tube	
8	R012530-TB94L	Spring Arm Assembly, LH	1
9	R012530-TB94R	Spring Arm Assembly, RH	
10	R012530-TB94M	Spring Arm Assembly, Center	Used on 4.5 and 5 meter only 1,3
11	R019280-001	Connector Assembly, Case, LH	1,4
12	R019280-002	Connector Assembly, Case, RH	1,4
13	R001776	Connector Assembly, Lead Rail	1,5
14	R001595	Hardware Pack, Arm Attach, 1 Arm	1
15	R001692	Tray Support	1
16	R001819X-aa-xxx	Lead Rail	6
17	R035444-005	Lead Rail End Plate, LH, White	1
	R035444-006	Lead Rail End Plate, LH, Black	1
18	R035444-005	Lead Rail End Plate, RH, White	
	R035444-006	Lead Rail End Plate, RH, Black	
19	R001691	Lead Rail Guide Kit	pkg of 4
20	R001655-002	Vertical Support Leg, LH	
21	R001655-102	Vertical Support Leg, RH	
22	R00394	Carport Foot	
23	R001657	Flipper Latch Kit, Orange	
24	R001690	Leg Support Kit (contains 2 ea. screw, washer and spacer)	
25	R019283-005	Kit, Bottom Bracket, White	pkg of 2
	R019283-006	Kit, Bottom Bracket, Black	pkg of 2
26	R001605	Switch Kit	
27	R001594XXX	Plug	

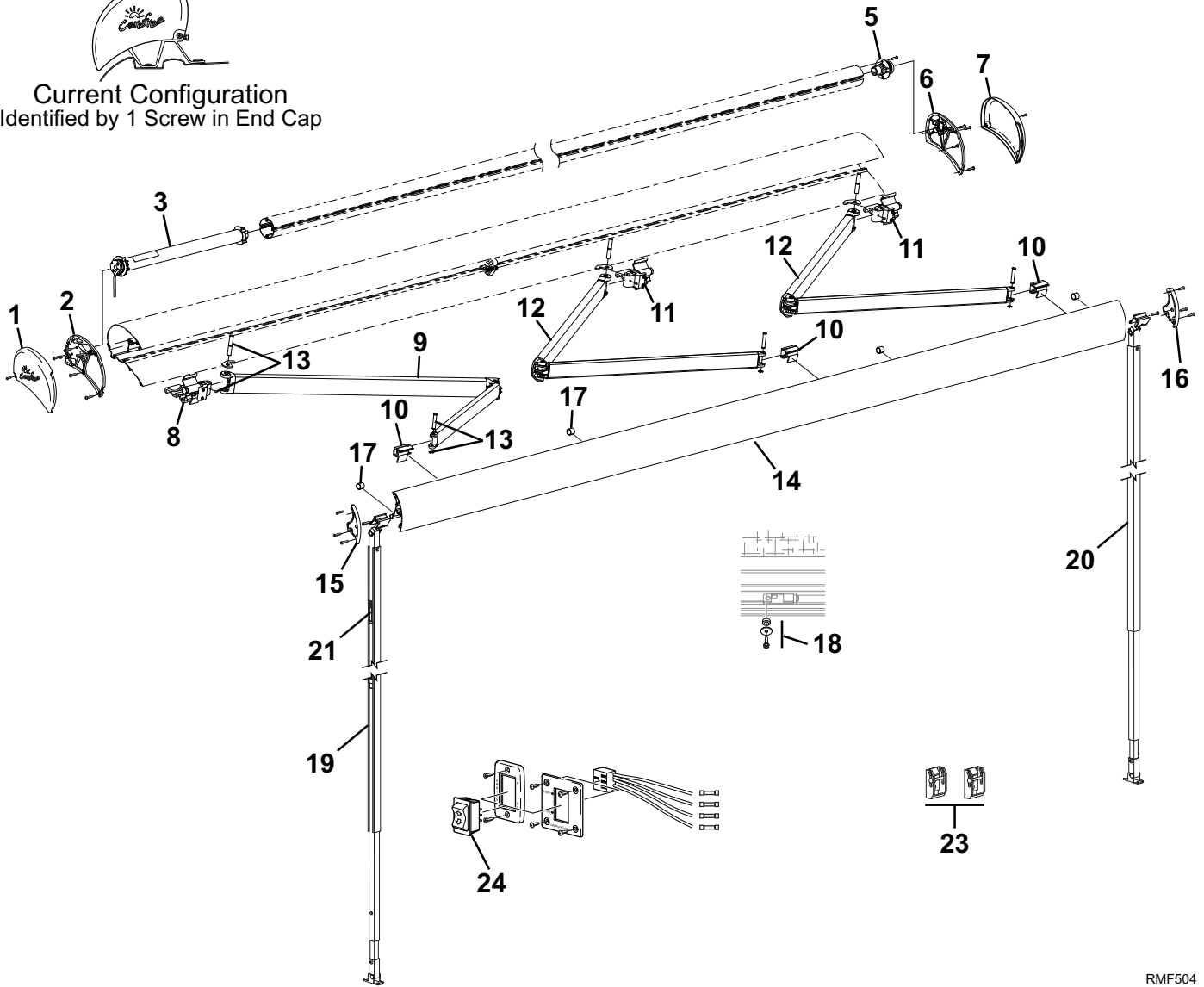
Notes:

1. Attaching hardware not included with arm assemblies. Order item 14.
2. Motor assembly (item 3) includes motor, bearing, one-way drive and end cap. Motor components not available separately.
3. The middle spring arm is different than the outer arms. Center arms can be identified by the blue dot located on or near the case connector of the arm. Do not use center arms for replacing outer arms, do not use outer arms to replace the center arm.
4. If replacing an original fixed pitch case connector, replace all case connectors.
5. If replacing an original fixed position lead rail connector, replace all lead rail connectors.
6. For Item 16 (lead rail): X= Color; B=Black, W=White, S=Satin. aa = LED; LO= w/ LED outside, LI= w/ LED Inside, XX=No LED. xxx= product order length.

FREEDOM RM MOTORIZED (CURRENT CONFIGURATION)



Current Configuration
Identified by 1 Screw in End Cap

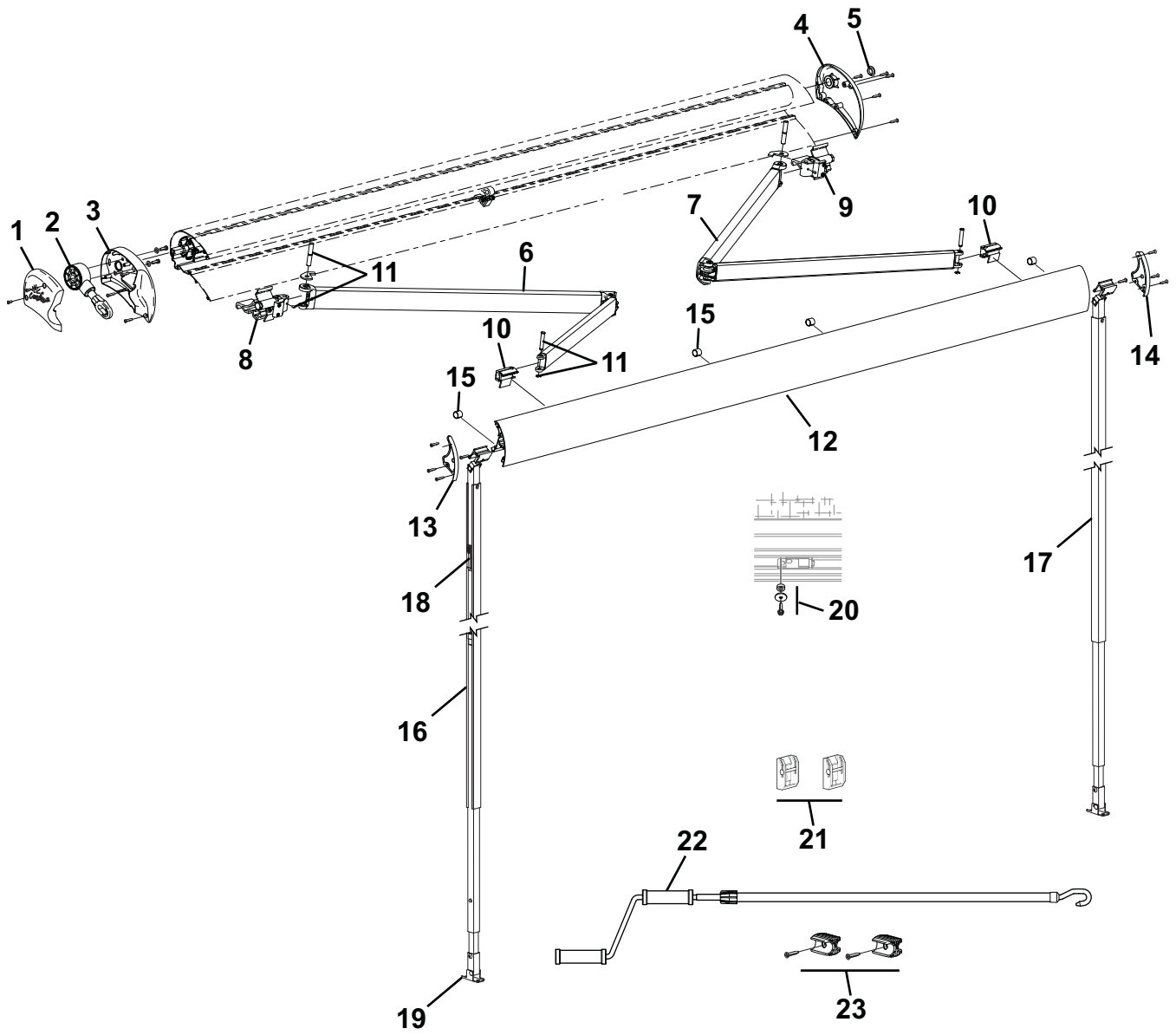


RMF504

Item	Part Number	Description	Notes
1	R037519-005	Endcap, LH, White	
	R037519-006	Endcap, LH, Black	
	R037519-231	Endcap, LH, Satin	
2	R037519-001	Case Endplate, LH	
3	R001651	Motor Assembly	2
4	610900-xxx.xx	Roller Tube	
5	R001623	End Plug	
6	R037516-001	Case Endplate, RH	
7	R037518-005	Endcap Assembly, RH, White	
	R037518-006	Endcap Assembly, RH, Black	
	R037518-231	Endcap Assembly, RH, Satin	
8	R019280-003	Connector Assembly, Case, LH	1
9a	R012530-TB68L	Spring Arm Assembly, LH	Used with 2.44 Meter 1
9b	R012530-TB76L	Spring Arm Assembly, LH	Used with 2.57 Meter 1
9c	R012530-TB94L	Spring Arm Assembly, LH	Used with 3 Meter & Up 1
10a	R001872	Connector Kit, Lead Rail	includes 1 LH and 1 RH connector
10b	R001873	Connector Kit, Lead Rail	includes 1 LH and 2 RH connectors 4
11	R019280-004	Connector Assembly, Case, RH	1
12a	R012530-TB68R	Spring Arm Assembly, RH	Used with 2.44 Meter 1
12b	R012530-TB76R	Spring Arm Assembly, RH	Used with 2.57 Meter 1
12c	R012530-TB94R	Spring Arm Assembly, RH and Center	Used with 3 Meter & Up 1,4
13	R001595	Hardware Pack, Arm Attach, 1 Arm	
14	R001819X-aa-xxx	Lead Rail	3
15	R041353-005	Lead Rail End Plate, LH, White	
	R041353-006	Lead Rail End Plate, LH, Black	
	R041353-231	Lead Rail End Plate, LH, Satin	
16	R041352-005	Lead Rail End Plate, RH, White	
	R041352-006	Lead Rail End Plate, RH, Black	
	R041352-231	Lead Rail End Plate, RH, Satin	
17	R001691	Lead Rail Guide Kit	pkg of 4
18	R001690	Leg Support Kit	(contains 2 ea. screw, washer and spacer)
19a	R001655-003	Vertical Support Leg, LH	Used with 2.44 Meter
19b	R001655-001	Vertical Support Leg, LH	Used with 2.57 & 3 Meter
19c	R001655-002	Vertical Support Leg, LH	Used with 3.5 Meter & Up
20a	R001655-103	Vertical Support Leg, RH	Used with 2.44 Meter
20b	R001655-101	Vertical Support Leg, RH	Used with 2.57 & 3 Meter
20c	R001655-102	Vertical Support Leg, RH	Used with 3.5 Meter & Up
21	R001657	Flipper Latch Kit, Orange	
22	R00394	Carport Foot	
23	R019283-005	Kit, Bottom Bracket, White	pkg of 2
	R019283-006	Kit, Bottom Bracket, Black	pkg of 2
24	R001605	Switch Kit	

- Notes:
1. Attaching hardware not included with arm assemblies. Order item 9.
 2. Motor assembly (item 2) includes motor, bearing and one-way drive. Components not available separately.
 3. For Item 14 (lead rail): X= Color: B=Black, W=White, S=Satin; aa = LED: LO= w/ LED outside, XX=No LED; xxx= product order length.
 4. Center arm used with 4.5m and 5m only.

FREEDOM RM MANUAL CRANK



RMF501

Item	Part Number	Description	Notes
1	R037361-005	Endcap, Outer, Manual, LH, White	
	R037361-006	Endcap, Outer, Manual, LH, Black	
	R037361-231	Endcap, Outer, Manual, LH, Satin	
2	R062777-005	Gearbox, Manual, White	
	R062777-006	Gearbox, Manual, Black	
	R062777-231	Gearbox, Manual, Satin	
3	R037360-005	Endcap, Inner, Manual, LH, White	
	R037360-006	Endcap, Inner, Manual, LH, Black	
	R037360-231	Endcap, Inner, Manual, LH, Satin	
4	R001594WHT	Endcap Assembly, RH, White	
	R001594BLK	Endcap Assembly, RH, Black	
	R001594SAT	Endcap Assembly, RH, Satin	
5	R040832-001	Plug, White	
	R040665-002	Plug, Black	
6	R012530-TB68L	Spring Arm Assembly, LH	Used with 2.44 Meter 1
	R012530-TB76L	Spring Arm Assembly, LH	Used with 2.57 Meter 1
	R012530-TB94L	Spring Arm Assembly, LH	Used with 3 Meter & Up 1
7	R012530-TB68R	Spring Arm Assembly, RH	Used with 2.44 Meter 1
	R012530-TB76R	Spring Arm Assembly, RH	Used with 2.57 Meter 1
	R012530-TB94R	Spring Arm Assembly, RH	Used with 3 Meter & Up 1
8	R019280-001	Connector Assembly, Case, LH	1,3
9	R019280-002	Connector Assembly, Case, RH	1,3
10	R001872	Connector Kit, Lead Rail	includes 1 LH and 1 RH connector 1,4
11	R001595	Hardware Pack, Arm Attach, 1 Arm	
12	R001819X-aa-xxx	Lead Rail	5
13	R035444-005	Lead Rail End Plate, LH, White	
	R035444-006	Lead Rail End Plate, LH, Black	
	R035444-001	Lead Rail End Plate, LH, Satin	
14	R035444-005	Lead Rail End Plate, RH, White	
	R035444-006	Lead Rail End Plate, RH, Black	
	R035444-001	Lead Rail End Plate, RH, Satin	
15	R001691	Lead Rail Guide Kit	pkg of 4
16	R001655-003	Vertical Support Leg, LH	Used with 2.44 Meter
	R001655-001	Vertical Support Leg, LH	Used with 2.57 & 3 Meter
	R001655-002	Vertical Support Leg, LH	Used with 3.5 Meter & Up
17	R001655-103	Vertical Support Leg, RH	Used with 2.44 Meter
	R001655-101	Vertical Support Leg, RH	Used with 2.57 & 3 Meter
	R001655-102	Vertical Support Leg, RH	Used with 3.5 Meter & Up
18	R001657	Flipper Latch Kit, Orange	
19	R00394	Carport Foot	
20	R001690	Leg Support Kit	(contains 2 ea. screw, washer and spacer)
21	R019283-005	Kit, Bottom Bracket, White	pkg of 2
	R019283-006	Kit, Bottom Bracket, Black	pkg of 2
	R019283-231	Kit, Bottom Bracket, Satin	pkg of 2
22	R001546-RP	Crank Handle	
23	901072	Crank Handle Clip	pkg of 2

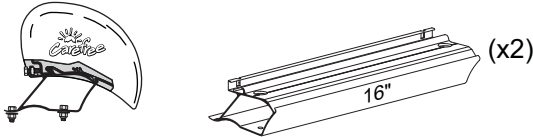
- Notes:
1. Attaching hardware not included with arm assemblies. Order item 11.
 2. A motor upgrade kit (SR0098XXX) is available for manual crank awnings and includes endcap, motor assembly, switch kit and attaching hardware.
 3. If replacing an original fixed pitch case connector, replace both case connectors.
 4. If replacing an original lead rail connector, replace both lead rail connectors.
 5. For Item 12 (lead rail): X= Color; B=Black, W=White, S=Satin. aa = LED; LO= w/ LED outside, LI= w/ LED Inside, XX=No LED. xxx= product order length.

FREEDOM RM BRACKET KITS

Bracket kits are ordered separately. Several types are available based on the application installation. Bracket mounting instructions are separate supplements of the installation manual.

Bracket kits are ordered separately. Several types are available based on the application installation. Bracket mounting instructions are separate instructions that supplement this manual.

BS0001



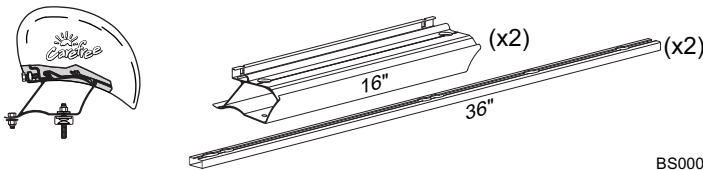
BS0001a

Flat Roof

4m and less
 Mill Finish
 Awning Hardware included
 Bracket Mounting Hardware Installer Furnished

Instruction Supplement: 052570-001

BS0002



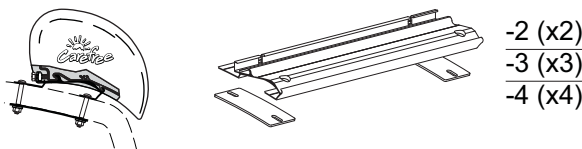
BS0002a

Sprinter

4m and less
 Mill Finish
 Bracket and Awning Hardware included

Instruction Supplement: 052570-002

BS0003



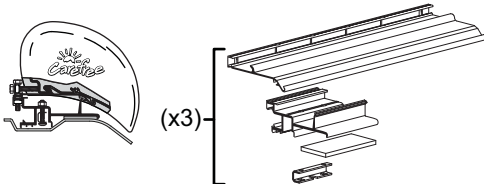
BS0003a

Hymer SX

(-2) 2 Brackets 3m and less
 (-3) 3 Brackets 3.5m & 4m
 (-4) 4 Brackets 4.5m & 5m
 Mill Finish
 Bracket and Awning Hardware included

Instruction Supplement: 052570-003

BS0009



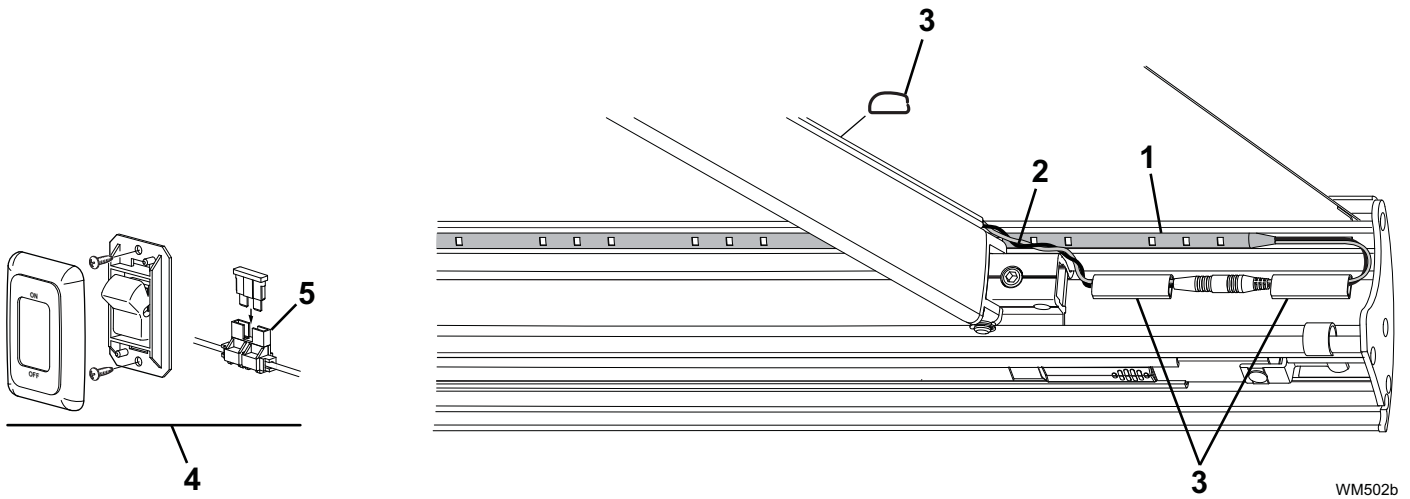
BS0009a

Dodge ProMaster; Fiat Ducato

4m and less
 Mill Finish
 Bracket and Awning Hardware included

Instruction Supplement: 052570-009

OPTIONAL LED LIGHTING



WM502b

Item	Part Number	Description	Notes
1	R060746-001	LED Strip	1
2	R060740-001	Harness	
3	R040616-206	Wire Channel	
4	SR0101	Switch Kit (includes item 5)	
5	R019493-001	Fuse Kit (includes in-line fuse holder and 5A fuse)	

Notes: 1. LED strip (item 1) is sent on a roll and cut to length during installation.



INSTALLATION MANUAL
FREEDOM RM AWNING

ROOF MOUNTED BOX AWNING

RV



PROPRIETARY STATEMENT

The Freedom Awning is a product of Carefree of Colorado, located in Broomfield, Colorado, USA. The information contained in or disclosed in this document is considered proprietary to Carefree of Colorado. Every effort has been made to ensure that the information presented in the document is accurate and complete. However, Carefree of Colorado assumes no liability for errors or for any damages that result from the use of this document.

The information contained in this manual pertains to the current configuration of the models listed on the title page. Earlier model configurations may differ from the information given. Carefree of Colorado reserves the right to cancel, change, alter or add any parts and assemblies, described in this manual, without prior notice.

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SAFETY INFORMATION



This is the safety alert symbol. It is used to alert individuals to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible personal injury or death.



Indicates a hazardous situation, which if not avoided, could result in death or serious bodily injury.



Indicates a hazardous situation, which if not avoided, may result in minor or moderate bodily injury.



Indicates a situation that may result in equipment-related damage.

General Safety:



Shock Hazard. Always disconnect battery or power source before working on or around the electrical system.



Always wear appropriate safety equipment (i.e. goggles).



Always use appropriate lifting devices and/or helpers when lifting or holding heavy objects.



When using fasteners, do not over tighten. Soft materials such as fiberglass and aluminum can be "stripped out" and lose the ability to grip and hold.

CALIFORNIA PROPOSITION 65



This product contains chemicals known to the state of California to cause cancer or birth defects or other reproductive harm. California's Proposition 65 requires this warning to be given to customers in the state of California.

PRODUCT OVERVIEW

The Freedom Awning is state of the art lateral arm awning. When retracted, the housing provides protection against the elements while the streamlined styling blends in with the coach sidewall. The full tension canopy fabric allows the awning to be partially or fully extended for best shade coverage.

Each unit is equipped with lateral support arms. No vertical arms interfere with coach sidewalls, custom graphics or equipment that may be mounted on the sidewalls.

Freedom Awning Specifications:

- Fully retractable and self-storing;
- Available as manual or motorized (Note: 4.5 & 5 meter only available as motorized);
- The sealed awning motor operates on standard 12VDC (range 10VDC to 14VDC);
- Case and frame are constructed of high-strength aluminum extrusions, protected with a polyester paint finish;

SPECIFICATIONS

Width:	Available Sizes for Motorized Freedom RM							
	Available Sizes for Manual Freedom RM							
	centimeters	244	257	300	350	400	450	500
	inches	96	101	118	138	157	177	197
Extension:	180cm (72")	200cm (80")	250cm (98")					

NOTE: Actual awning Length: Motorized = 2.69" shorter than stated length;
Manual = 2" shorter than stated length

Note: 4.5 meter and 5 meter awnings are only available in the motorized configuration.

LEADING EDGE POSITION ACTUATION AND CONTROL

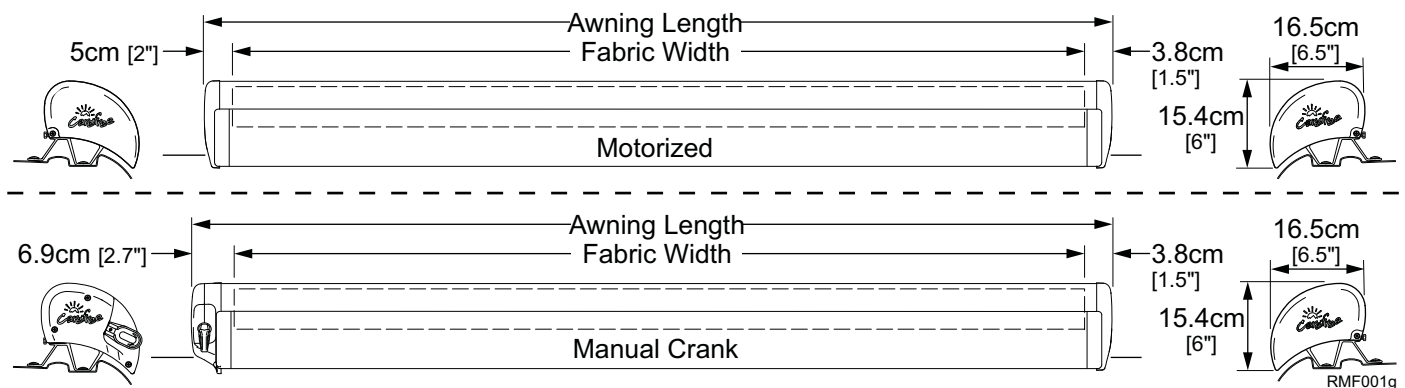
Power:	Lateral Arm Spring	Minimum Tension	Open
Position Control:	Motorized:	Roll Out/In Controlled by Electrical Motor	
	Manual:	Roll Out/In Controlled by Manual Crank	

MOTOR SPECIFICATIONS

Motor Type:	Tubular		
Power:	12VDC	Minimum: 10VDC	Output: 30 Watts
	Nominal Current: 2.5Amps		Max Current: 14Amps (stall @ min voltage)
Power Source:	Motor and controls are routed and hardwired into the vehicle's 12V system		
Speed	15 rpm		

COLORS AVAILABLE

Case	Satin, White or Black
Fabric: ¹	Vinyl

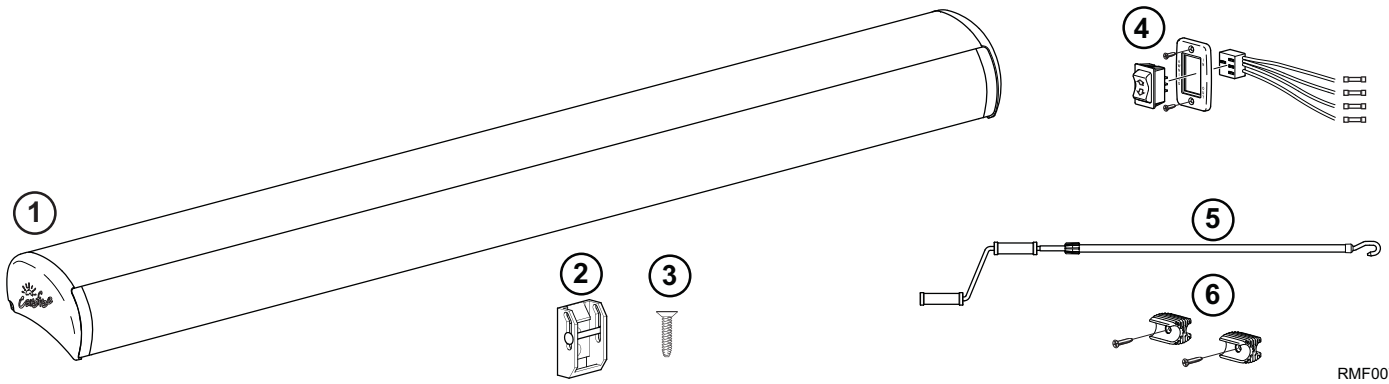


Special Note: Dimensions are provided in centimeters. Conversion formulas are provided below;

$$\text{Inches} = \frac{\text{Centimeters}}{2.54} = \frac{\text{Millimeters}}{25.4}$$

$$\text{Centimeters} = \text{Inches} \times 2.54 \quad \text{Millimeters} = \text{Inches} \times 25.4$$

COMPONENT CHECKLIST



RMF007

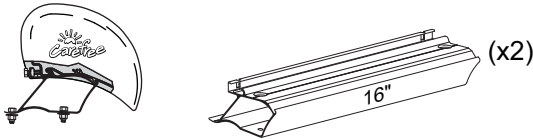
<input checked="" type="checkbox"/>	ITEM	DESCRIPTION	QTY	NOTE
<input type="checkbox"/>	1	Awning Assembly, Complete	1	
<input type="checkbox"/>	2	Bottom Bracket	2	
<input type="checkbox"/>	3	Screw, Flat Head #10 x 3/4"	4	
<input type="checkbox"/>	4	Switch Kit Used with Motorized Only	1	2,3
<input type="checkbox"/>	5	Manual Crank Handle Used with Manual Crank Only	1	4
<input type="checkbox"/>	6	Clip, Manual Crank Handle Used with Manual Crank Only	2	4

- NOTES:
1. Specific awning configuration is specified at time of order, including awning length, fabric, color etc. Check awning assembly against original purchase order.
 2. Switch kit (Item 4) used with motorized version only
 3. OEM's may choose to furnish the control switch. The switch must be a DC polarity reversing switch with dynamic brake.
 4. Crank Handle (item 12) and crank handle clip (item 13) used with manual crank version only.

FREEDOM RM BRACKET KITS

Bracket kits are ordered separately. Several types are available based on the application installation. Bracket mounting instructions are separate instructions that supplement this manual.

BS0001



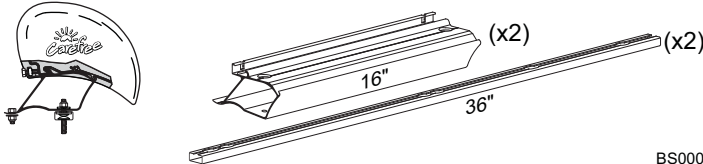
BS0001a

Flat Roof

4m and less
 Mill Finish
 Awning Hardware included
 Bracket Mounting Hardware Installer Furnished

Instruction Supplement: 052570-001

BS0002



BS0002a

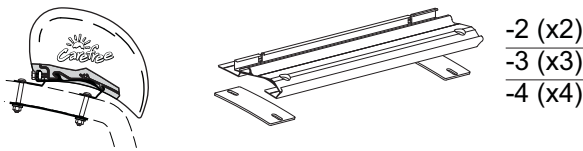
Sprinter

4m and less
 Mill Finish

Bracket and Awning Hardware included

Instruction Supplement: 052570-002

BS0003



BS0003a

Hymer SX

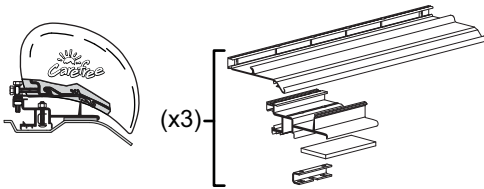
(-2) 2 Brackets 3m and less
 (-3) 3 Brackets 3.5m & 4m
 (-4) 4 Brackets 4.5m & 5m

Mill Finish

Bracket and Awning Hardware included

Instruction Supplement: 052570-003

BS0009



BS0009a

Dodge ProMaster; Fiat Ducato

4m and less
 Mill Finish

Bracket and Awning Hardware included

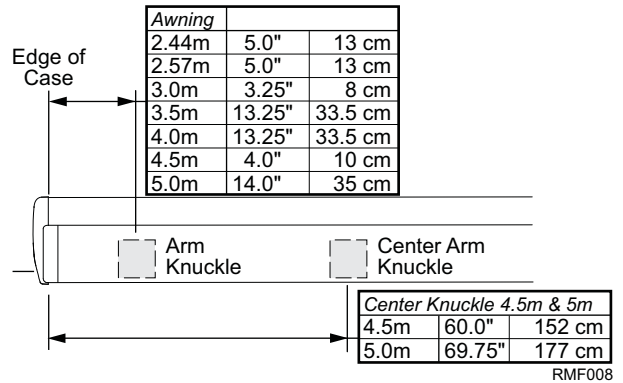
Instruction Supplement: 052570-009

INSTALLATION

BRACKET INSTALLATION

Install the mounting brackets according to the supplement instructions for the bracket kit.

NOTE: Install the brackets according to the bracket design. To correctly support the awning, the brackets must be positioned below the arm case knuckles. After the brackets are installed, go to "Mounting the Awning".



MOUNTING THE AWNING

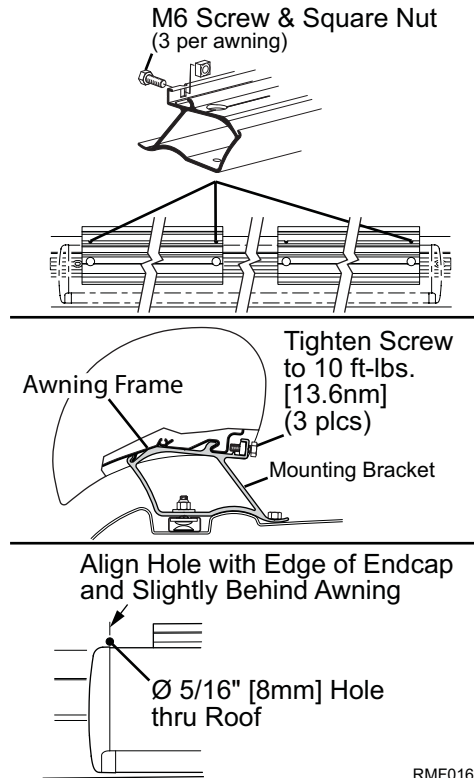
1. If not previously done, in the rear track of the mounting plate(s), start three (3) M6 x 20 screws and square nuts through the holes. Do not tighten at this time.

NOTE: Locate 1 screw and nut at each end of the awning, the third screw and nut should be located near the center of the awning.

2. Lift and set the awning into the hooks of the mounting brackets. Pull the case forward to engage the brackets fully.
3. Horizontally center the awning on the brackets.
4. Tighten the rear screws. Torque to 10 ft-lbs [13.6 nm].
5. *For motorized awnings:* The motor wires come out of the back of motor endcap. Drill a 5/16" [8mm] hole into the vehicle in the area shown.

NOTE: Locate the hole to avoid interior framing, cabinets and electrical components.

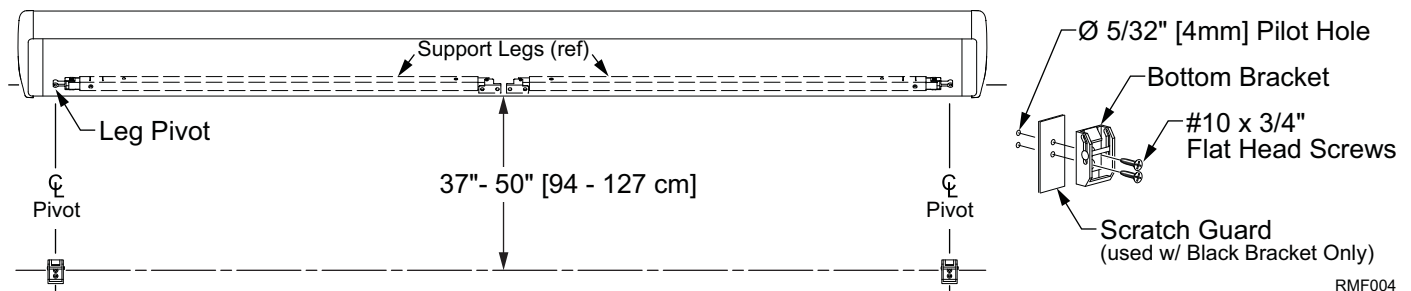
Ensure that the motor wires are accessible after routing.



MOUNT BOTTOM BRACKETS

The patio awning is equipped with vertical supports. These supports extend from the leading edge of the awning to a bracket mounted on the wall or may be used in a carport position on the ground.

1. Determine the location of the wall brackets:
 - 1.1. Open the awning enough to see the support legs in the leading edge.
 - 1.2. On the coach wall mark the location of the pivot point of the legs.
 - 1.3. From the bottom of the awning, measure down vertically 94-127 cm [37"-50"] and mark the location of the brackets.

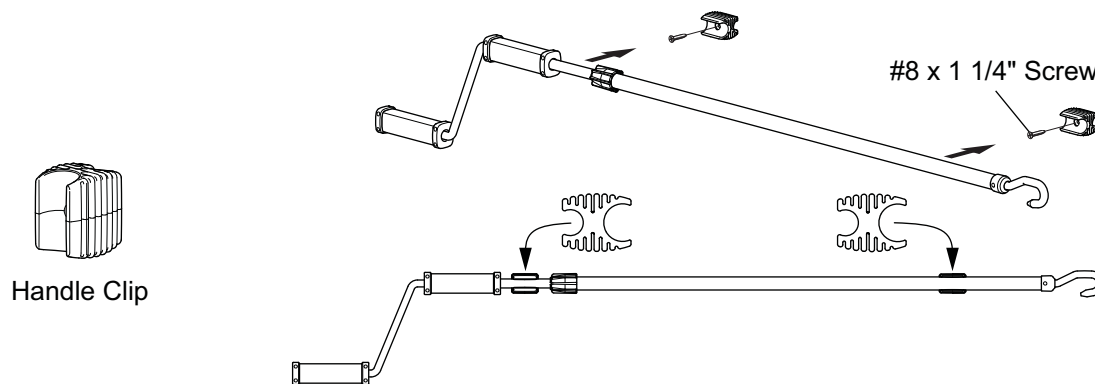


2. Center the brackets on the location marks, then using the bracket as a template, drill two (2) 5/32" [4mm] pilot holes. Attach the plate with two (2) #10 x 3/4" flat head screws. For black hardware, a scratch guard is included. The guard mounts between the bracket and wall as shown.

This completes the installation of the manual awning. For motorized awnings go to "Switch Installation" on page 6.

MANUAL CRANK HANDLE STORAGE CLIPS

Two clips are provided to store the manual crank handle. These may be mounted horizontally or vertically.



The clips are designed so that one side has a smaller diameter to fit the smaller tube of the handle. The other side has a larger diameter to fit the larger tube of the handle. The clips can be arranged as shown or the clips can be oriented so both attach to the larger tube (i.e. if the handle is fully collapsed for storage).

1. Snap the clips on to the crank handle.
2. Position the handle in the desired location and mark the locations of the clips.
3. Remove the clips from the crank handle and mount at the marks made previously. Use the #8 x 1 1/4" screws provided.

NOTE: The screws will go through the mounting surface approximately 1/2"; if the mounting surface material is thinner than 1/2" the screws will protrude through the opposite side.

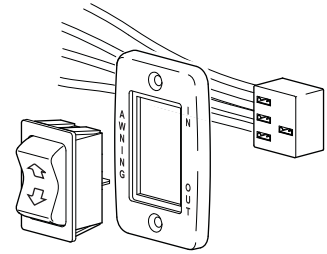
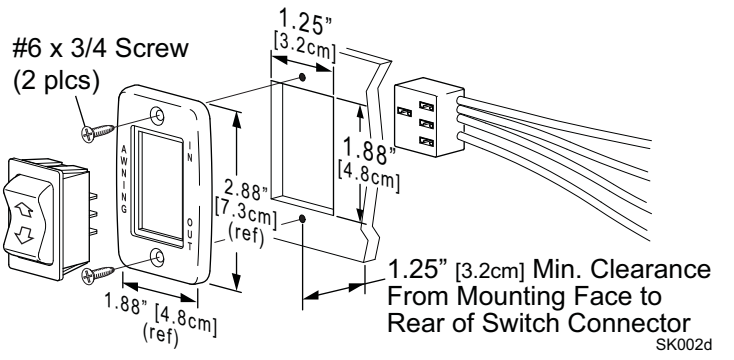
This completes the installation of the manual awning. For motorized awnings go to "Switch Installation".

SWITCH INSTALLATION (MOTORIZED AWNINGS ONLY)

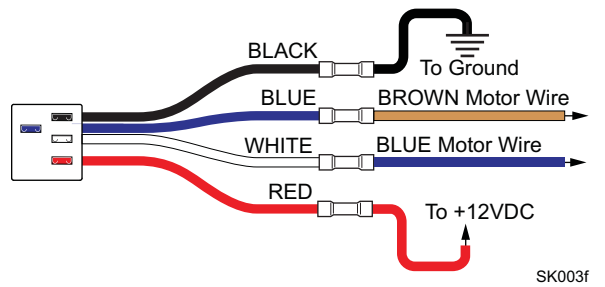
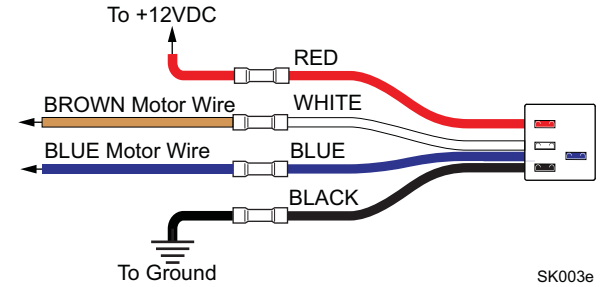


WARNING Shock Hazard. Always disconnect battery or power source before working on or around the electrical system.

- Determine the location for the switch.
 - There is approximately 70" [180cm] of wire from the awning motor. If the distance to the switch exceeds the furnished wire, the installer must furnish 16 awg wire and butt splice to the motor wires.
 - Location should provide the operator a view of the awning during operation.
 - The switch requires a 1 7/8" x 2 7/8" [4.8cm x 7.3cm] area on the mounting surface and a minimum clearance depth of 3.2cm [1.25"] from the mounting surface.
- At the switch location, cut a rectangular hole 1.25" [3.2cm] x 1.88" [4.8cm] through the mounting surface.



- Determine the switch orientation:
 - The wires of the connector extend from the side of the switch with 3 terminals on the back.
 - For wire routing on the right side of the switch as shown in Details A and B, orient the switch with the 3 terminals on the right.
 - For wire routing on the left side of the switch as shown in Detail C, orient the switch with the 3 terminals on the left.
 - Push the switch into the faceplate until the tabs on the switch "click" into place behind the faceplate. Ensure that the switch and faceplate are oriented so that the lettering is up and the wires are oriented as desired.
 - Set switch aside.
- Route the awning motor wires through the switch hole and attach to the switch connector:



CONNECTOR WIRE COLOR	LH CONNECTOR ORIENTATION	RH CONNECTOR ORIENTATION
RED →	+12VDC	+12VDC
WHITE →	BROWN (motor wire)	BLUE (motor wire)
BLUE →	BLUE (motor wire)	BROWN (motor wire)
BLACK →	Ground	Ground

- Run a minimum 14 awg wire from the power distribution panel (auxiliary battery circuit) or equivalent. The circuit should be protected by a 15-amp fuse.
- Run a minimum 14 awg wire to system ground.
- NOTE: If the wire run is 30 feet or longer, use 12awg wire to prevent voltage drop.**
- Route the two wires through the mounting hole. Butt splice the 12VDC wire to the RED connector wire. Butt splice the ground wire to the BLACK connector wire.

5. Attach the connector to the switch.
6. Restore power and test the switch operation.
7. If the awning operates opposite to the switch plate markings: Shut off power; Reverse motor wires connected to the blue and white connector wires. Restore power and test.
8. Push the wires, connector and switch into the mounting hole and secure the switch plate using two (2) #6 x 3/4" flat head screws.

OPTIONAL LED LIGHTING

Optional LED lighting may be mounted in the lead rail. The wiring runs along the top of the arm.

For motorized awnings: Route the LED wire harness with the motor cable.

For manual crank awnings: Route the harness through the end of the case. Drill a 3/16" hole into the vehicle wall as shown on page 7.

NOTICE The following information must be followed to avoid damage to the wiring during and after installation.

- a) The wire should be secured to the wall of the vehicle where it is exposed on the outside of the vehicle. Use a quality silicone sealant/adhesive.
- b) Do not route the wire over sharp edges or heat sources that can cut or fray the wires or wire insulation.
- c) Damage that is a result of improper routing may void warranty.

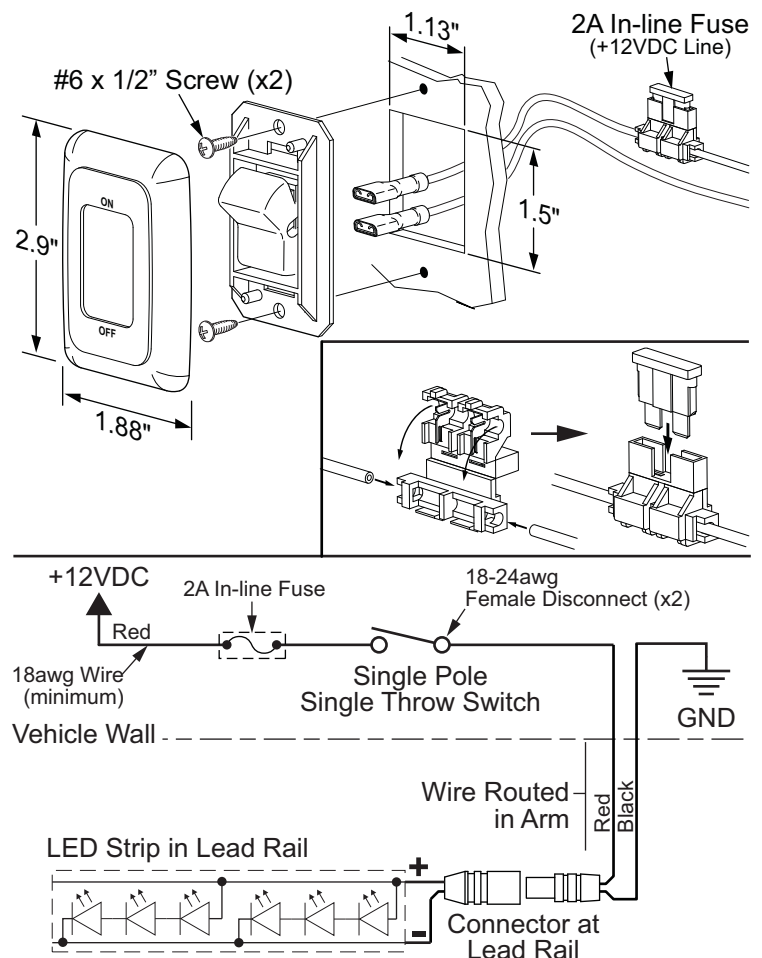
SWITCH INSTALLATION

NOTE: Installers may choose to furnish the control switch. The installation requires that the power line (+12VDC) be attached to a dedicated 2A circuit breaker or a 2A in-line fuse must be installed between the switch and power source. For easy access, locate the fuse close to the switch.

1. Determine the location of the switch.
2. At the switch location, cut a 1 1/8" x 1 1/2" hole.
3. Wire the switch as shown below. Wire terminals at the switch are .187, 18-24 awg female disconnects.

NOTE: Allow adequate slack in the 12VDC power line so that the in-line fuse can be accessed from behind the switch.

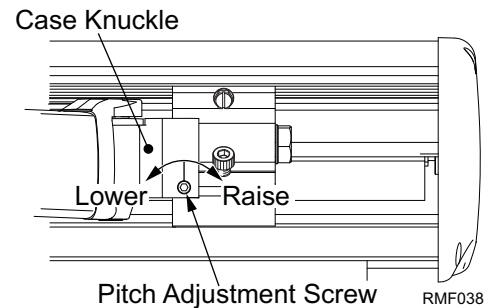
4. Install the in-line fuse:
 - 4.1. Near the switch, cut the red 12VDC power line to the switch. Do not strip the insulation.
 - 4.2. Insert a wire end into one of the wire channels until it butts up against the stop.
 - 4.3. Fold that half of the connector body over until the element contacts the wire. Use pliers to crimp the connector closed.
 - 4.4. Repeat for the second wire end.
 - 4.5. Slide the fuse into the fuse port. Ensure that is firmly seated.
5. Press the in-line fuse, wires and switch into the mounting hole. Secure the switch using two (2) #6 x 1/2" screws.
6. Snap the switch bezel over the switch frame.



PITCH ADJUSTMENT

The awning opens and closes with a steep pitch. On low profile vans, the leading edge of the awning may hit the top of the sliding door if the door is open while extending or retracting the awning. To prevent this, the lower limit of the pitch can be adjusted upwards.

1. Open the awning to access the adjustment screws located on the arm case knuckles.
2. Have a second person lift up on the lead rail to relieve the pressure on the adjustment screws.
3. Using a 4mm allen wrench, turn the adjustment screw clockwise to raise the lead rail; turn the adjustment screw counterclockwise to lower the lead rail.
4. Repeat for each arm. Ensure that the lead rail is parallel with the awning case.



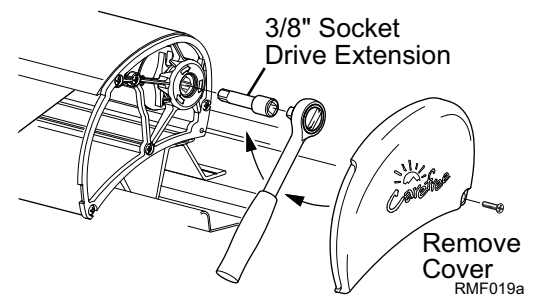
NOTE: No adjustment is required to the lead rail when the pitch is adjusted.

MANUAL OVERRIDE (MOTORIZED AWNINGS)

If power to the vehicle is not available, the awning can be safely retracted using the manual override located on the idler (right) end of the case.

NOTE: This procedure cannot be used to extend the awning.

1. Remove the right outer endcap and save.
2. Insert a 3/8" socket drive extension and handle into the square drive hole inside the inner end cap.
3. Turn the handle clockwise until the awning is retracted.
4. Replace the outer cap.



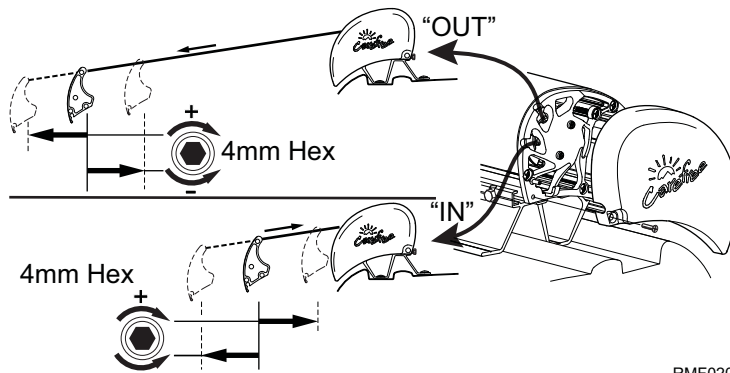
NOTICE After closing the awning with the manual override, the lead rail may move out from the case 1/4" -1/2". This is normal and the awning is secure for travel until power is restored or repairs are completed. Do not attempt to force the lead rail in with the override, serious damage can occur to the awning.

SETTING THE MOTOR LIMITS

The motor limit switches are preset at the factory for best operation of the awning. It may be necessary to reset 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.

The limit switches are located inside LH motor endcap. To access the switches:

- Remove the outer motor endcap
- Use a 4mm hex wrench through the holes of the inner endcap to adjust the 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.

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.

3. If the fabric sags:
 - 3.1. Retract the awning until the fabric is tight then retract an addition 10"-12".
 - 3.2. Turn the "OUT" limit switch COUNTERCLOCKWISE to reduce the time the motor runs.
 - 3.3. Extend to confirm that the adjustment is correct.
 - 3.4. Repeat the procedure until the awning extends correctly.
4. If the arms do not extend completely:
 - 4.1. Retract the awning approximately 10"-12".
 - 4.2. Turn the "OUT" limit switch CLOCKWISE to increase the time the motor runs.
 - 4.3. Extend to confirm that the adjustment is correct.
 - 4.4. Repeat the procedure until the awning extends correctly.

ADJUSTING THE IN LIMIT SWITCH

1. Retract the awning in completely.
2. Confirm that the arms are fully retracted. The motor should stop when the awning is fully retracted. If the motor quits before the arms are fully retracted; or, if the motor continues to run after the awning is closed, it will be necessary to adjust the "IN" limit switch.

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.

3. If the motor stops before the awning is fully retracted:
 - 3.1. Extend the awning 10"-12".
 - 3.2. Turn the "IN" limit switch CLOCKWISE to increase the time the motor runs.
 - 3.3. Retract the awning to confirm that the adjustment is correct.
 - 3.4. Repeat the procedure until the awning retracts correctly.
4. If the motor continues to run:
 - 4.1. Extend the awning approximately 10"-12".
 - 4.2. Turn the "IN" limit switch COUNTERCLOCKWISE to decrease the time the motor runs.
 - 4.3. Extend and retract to confirm that the adjustment is correct.
 - 4.4. Repeat the procedure until the awning extends correctly.



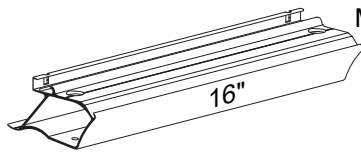
FREEDOM RM ADAPTOR BRACKETS

Kit No: BS0001

Kits

FLAT ROOF INSTALLATION 4M AND SMALLER

PACKAGE CONTENTS:



Mounting Bracket (x2)



Neoprene Strip



Square Nut, M6 (x4)

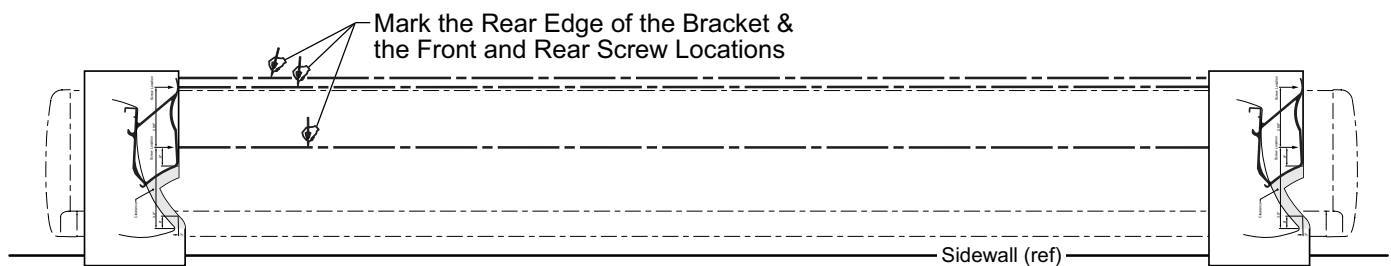


Screw, M6 x 20 (x4)

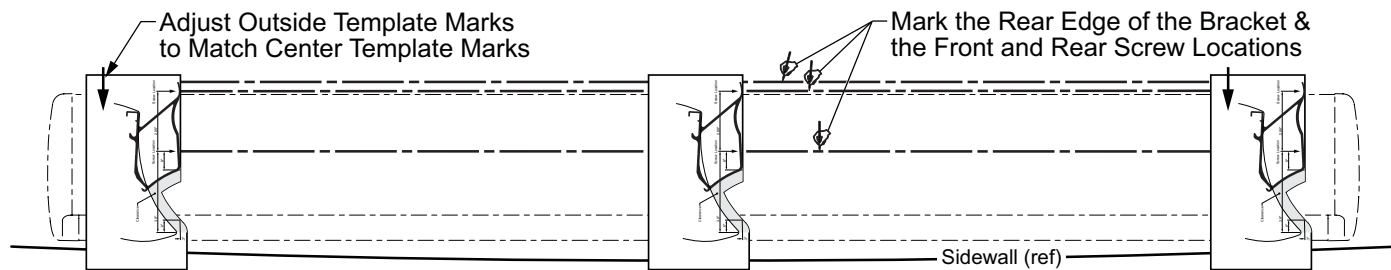
BS0001b

BRACKET LAYOUT

1. Determine the location of the awning.
2. To aid in positioning the brackets, a full size template is furnished on the last page of this manual. Copy and paste or tape the page to a piece of cardboard then cut along the dotted line.



Vehicles with Flat Sides



Vehicles with Tapered Sides

RMF015

3. On each end of the awning location, set the template on the roof and mark the position of the rear edge and the mounting hole locations. Connect the marks; these will be the installation guidelines.

For vehicles with tapered sides: Use the template and mark the locations in the center of the awning. Adjust the outer marks to align with the center marks. The brackets must be straight to properly mount the awning.

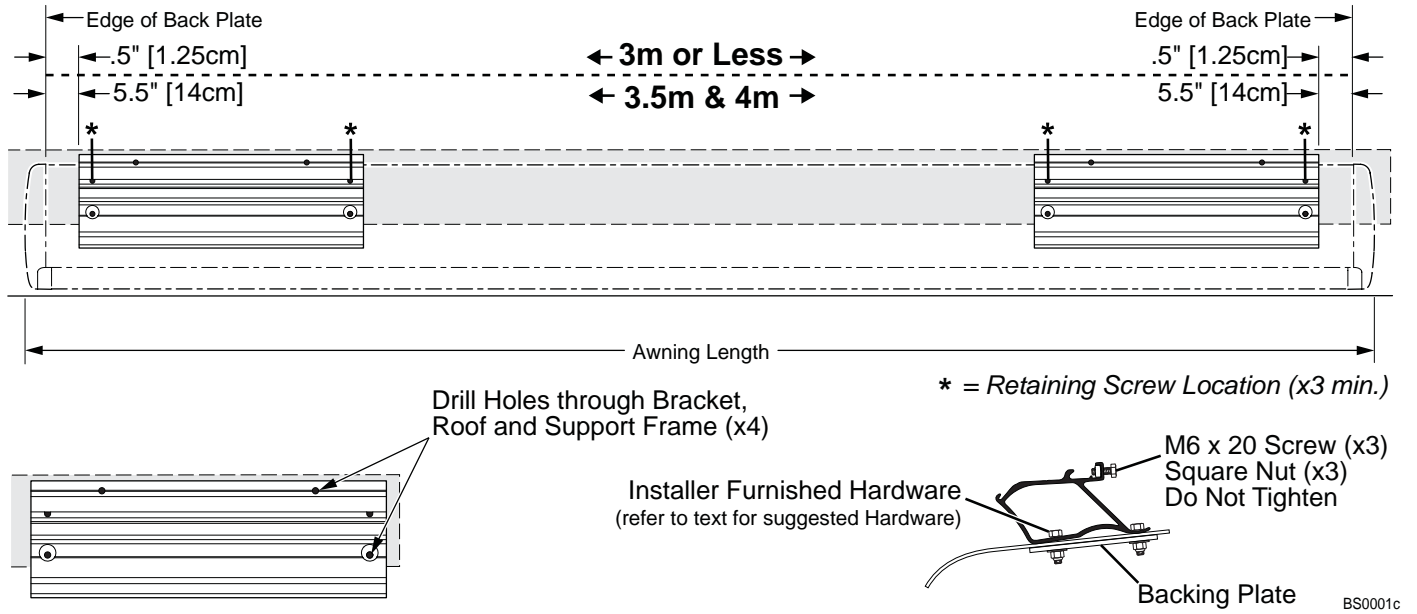
4. In the interior, there must be structural framing beneath the locations of the both the front and rear mounting hole locations. If there is none, the installer must furnish structural framing in these areas.

4.1. The brackets must be secured to a backing plate as large as the brackets. The backing plate must be fully attached to the structure of the vehicle.

- 4.1.1. Aluminum backing plates must be a minimum .125" thick.
- 4.1.2. Steel backing plates must be a minimum 13 gauge (.09" thick).
- 4.1.3. Wood backing plates must be thick enough to allow a minimum of 1.5" of thread engagement.

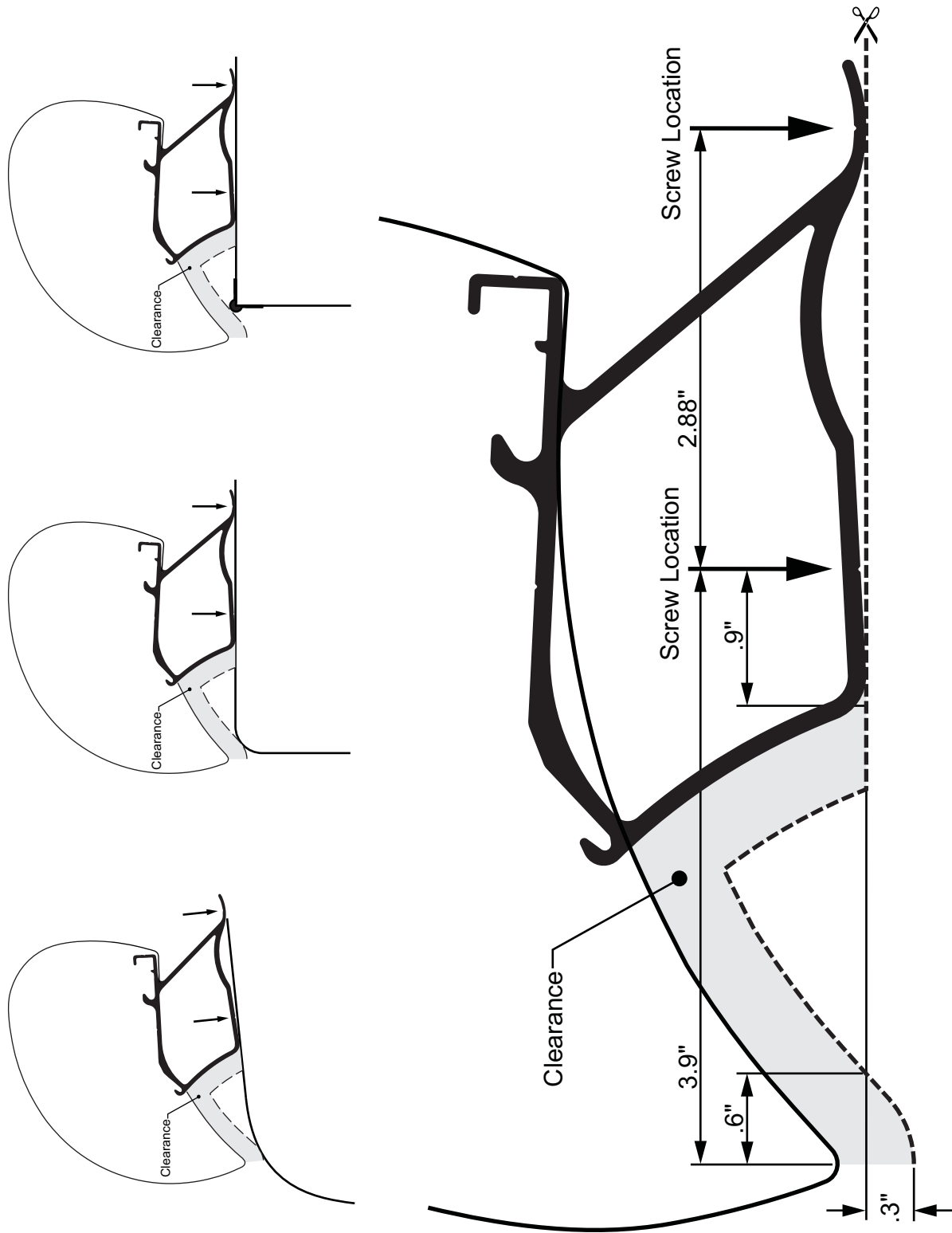
NOTE: For wood backing plates it is recommended to use 1/4" lag screws and washers. The screws must be long enough to provide a minimum of 1.5" of thread engagement in the wood.

BRACKET INSTALL



NOTICE For proper operation of the awning, the brackets must be placed under the arm knuckles. If it is necessary to position the brackets differently than above, use the knuckle positions shown in the awning install manual.

1. Position the brackets on the roof.
 - 1.1. The brackets must be fully supported by structure and/or the installer furnished backing plates.
 - 1.2. Make sure that the outer edges of the brackets are within the dimension range shown for the end of the awning. Adjust the bracket and awning position as necessary.
2. Drill four holes through the brackets, roof and structure as shown. Hole size will depend on hardware used.
3. Secure the brackets with the installer furnished hardware.
4. In the rear track of the mounting brackets, start four (4) M6 x 20 screws and square nuts through the retaining screw holes. Do not tighten at this time.
5. Mount the awning according to the installation manual for the awning.



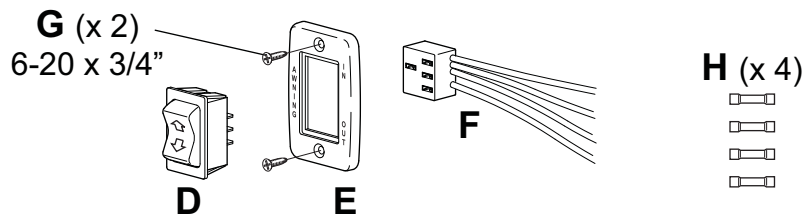
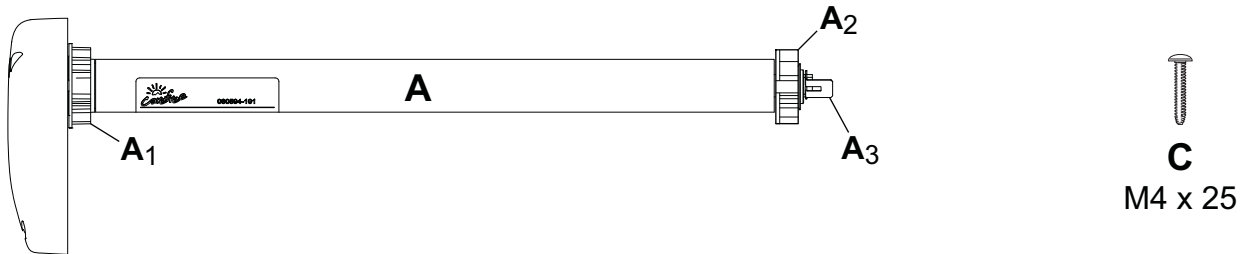


FREEDOM RM MOTOR UPGRADE

Kit No:SR0098

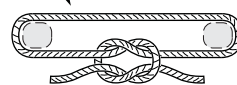
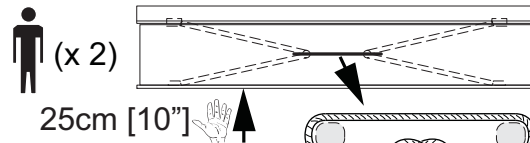
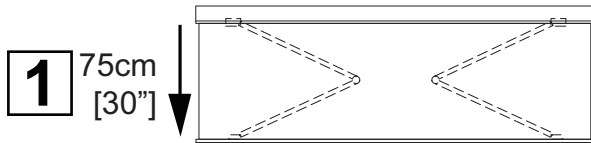
Kits

PACKAGE CONTENTS:



RM027

SECURE LEAD RAIL



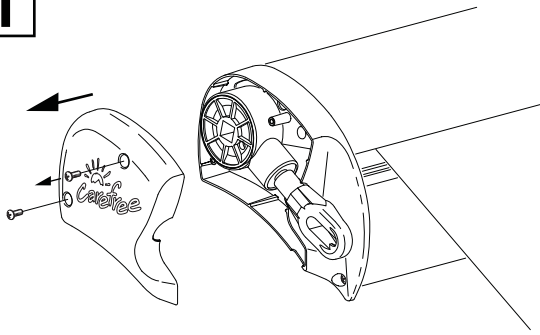
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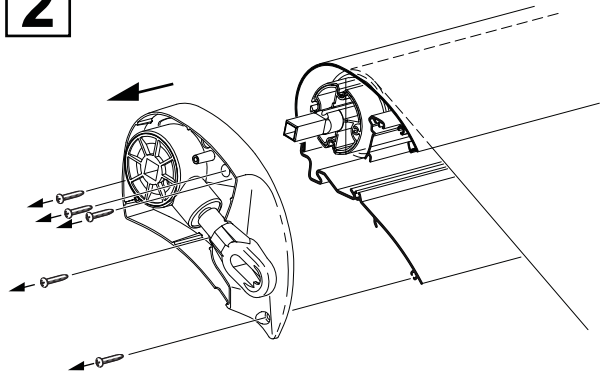
WM029

INSTALL MOTOR

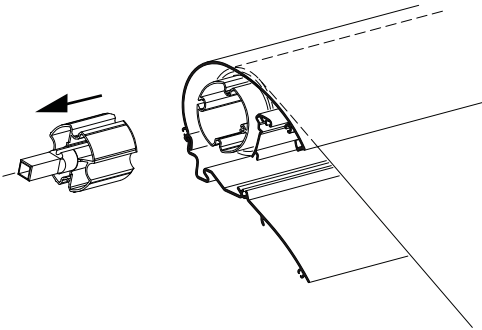
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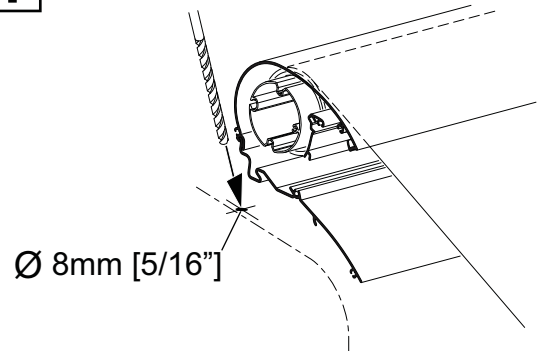
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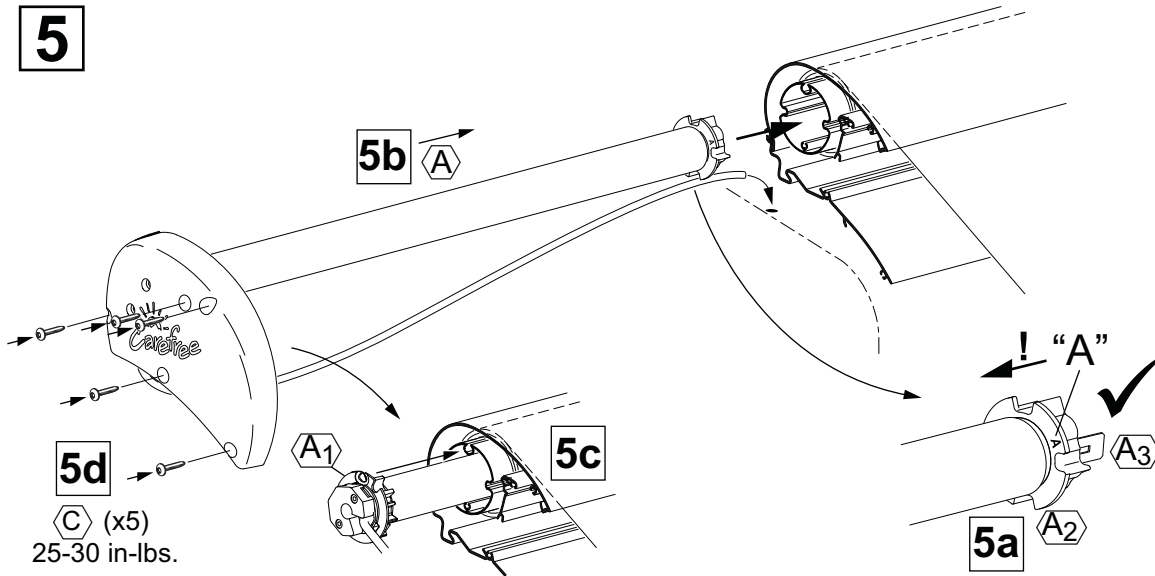
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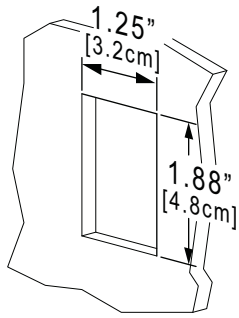


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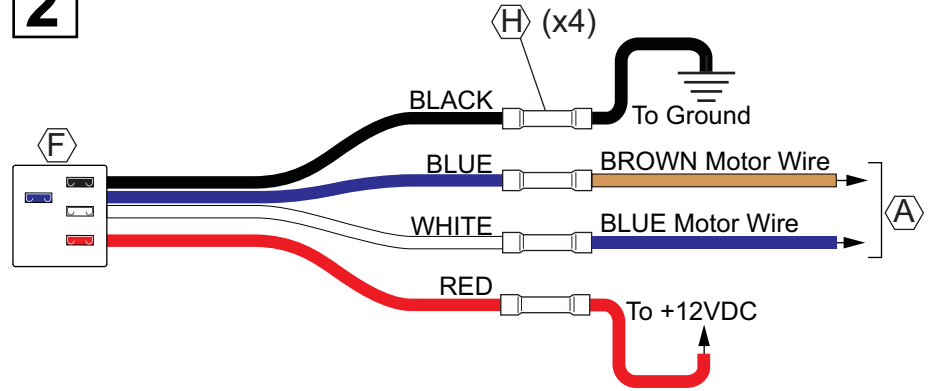


INSTALL SWITCH

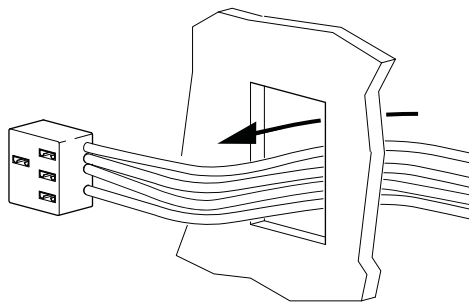
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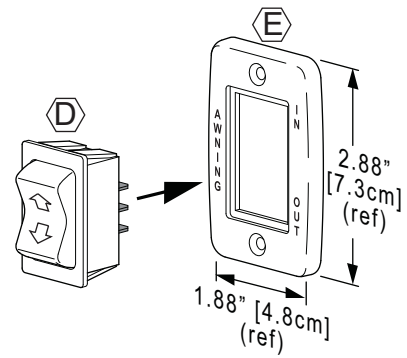
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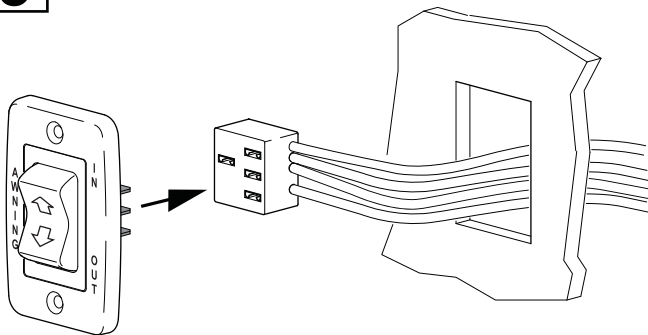
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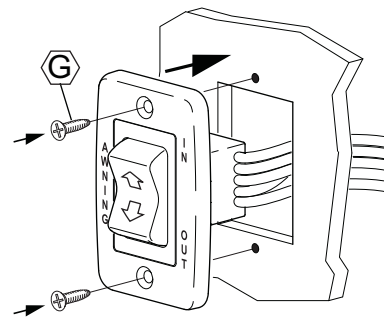
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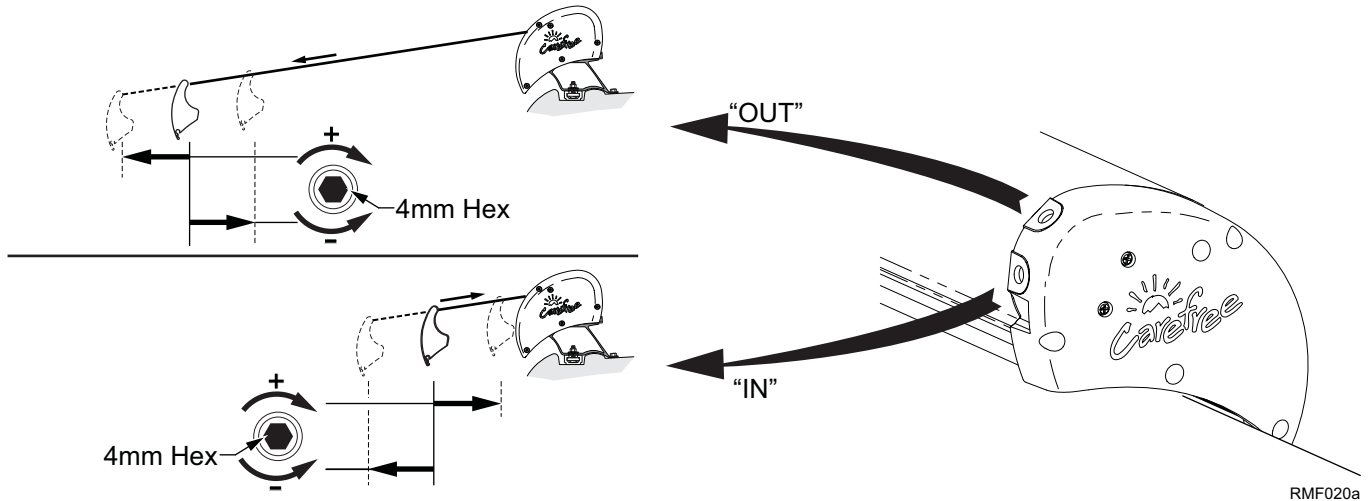
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6



ADJUSTING THE MOTOR LIMITS



RMF020a

OUT LIMIT SWITCH

The "OUT" limit switch stops the motor when the awning is fully extended

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.

IN LIMIT SWITCH

The "IN" limit switch stops the motor when the awning is fully retracted.

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 IS CLOSED 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, 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 retracts correctly.