



# INSTALLATION MANUAL

## FREEDOM RM AWNING

### ROOF MOUNTED BOX AWNING

RV



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## 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

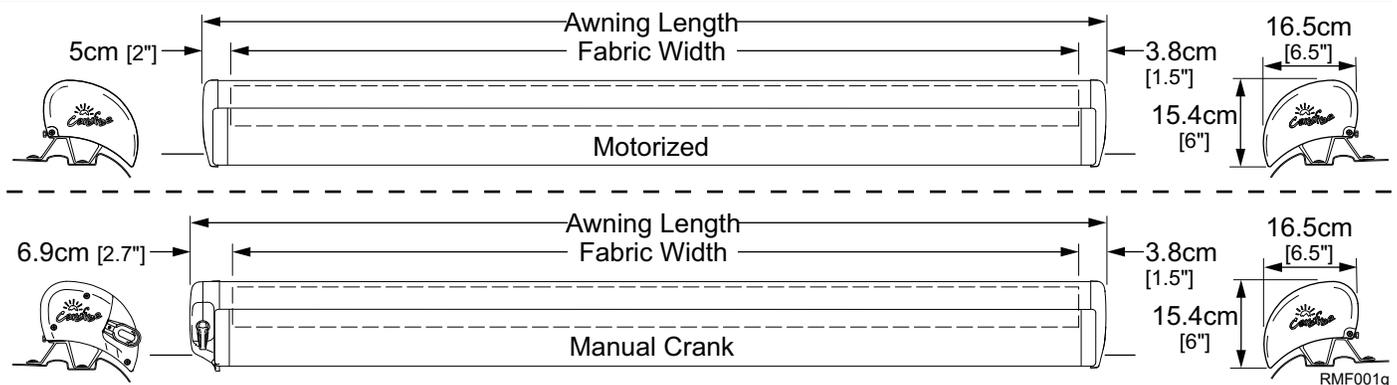
Power:	Lateral Arm Spring	Minimum Tension	Open
Position Control:	Motorized:	Roll Out/In Controlled by Electrical Motor	
	Manual:	Roll Out/In Controlled by Manual Crank	

### 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: <sup>1</sup>	Vinyl

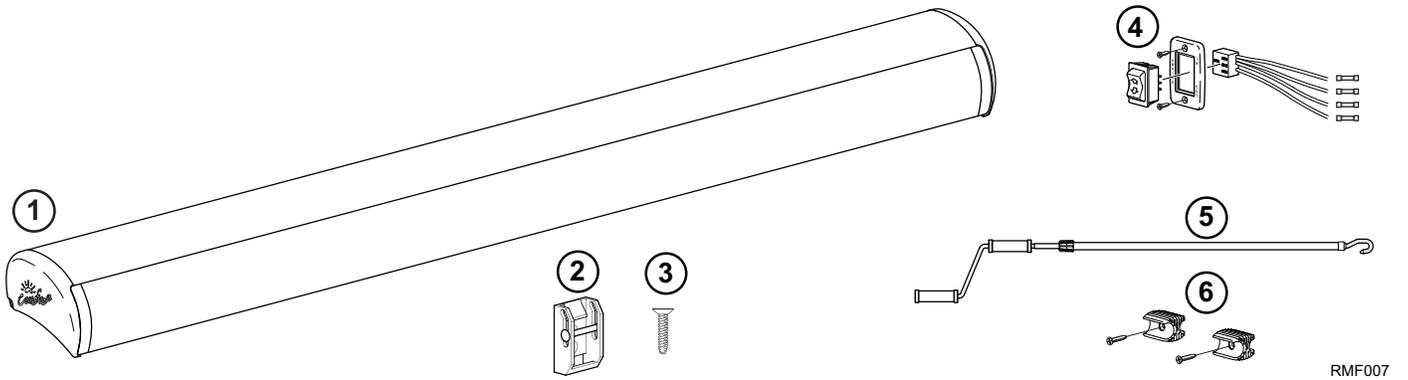


**Special Note: Dimensions are provided in centimeters. Conversion formulas are provided below;**

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

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

COMPONENT CHECKLIST



RMF007

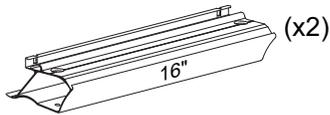
<input checked="" type="checkbox"/>	ITEM	DESCRIPTION	QTY	NOTE
<input type="checkbox"/>	1	Awning Assembly, Complete	1	
<input type="checkbox"/>	2	Bottom Bracket	2	
<input type="checkbox"/>	3	Screw, Flat Head #10 x 3/4"	4	
<input type="checkbox"/>	4	Switch Kit Used with Motorized Only	1	2,3
<input type="checkbox"/>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

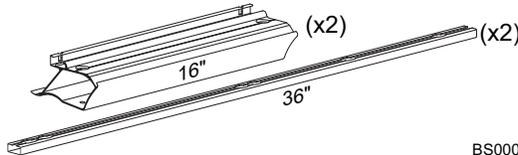
Mill Finish

Awning Hardware included

Bracket Mounting Hardware Installer Furnished

Instruction Supplement: 052570-001

**BS0002**



BS0002a

**Sprinter**

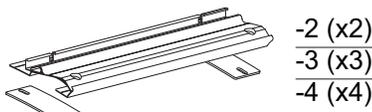
4m and less

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

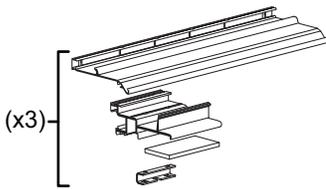
(-4) 4 Brackets 4.5m & 5m

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

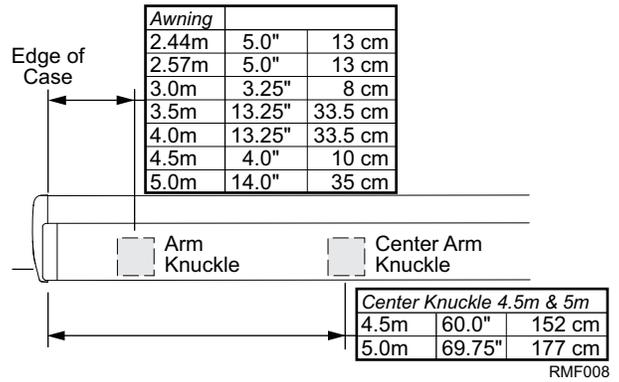
Instruction Supplement: 052570-009

# 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

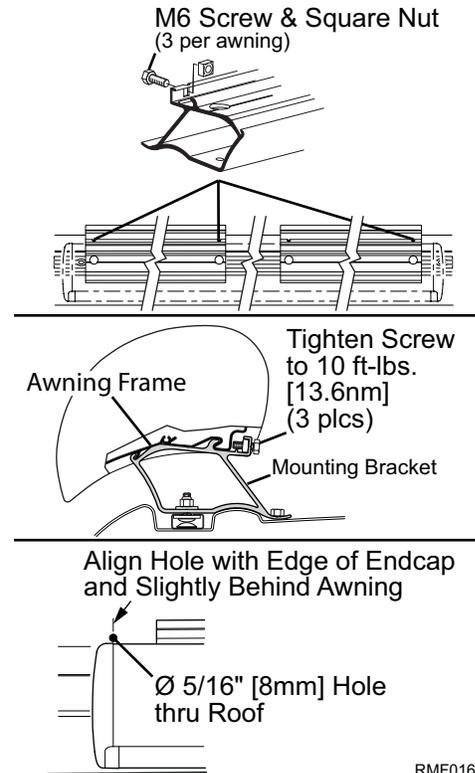
1. If not previously done, in the rear track of the mounting plate(s), start three (3) M6 x 20 screws and square nuts through the holes. Do not tighten at this time.

**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.

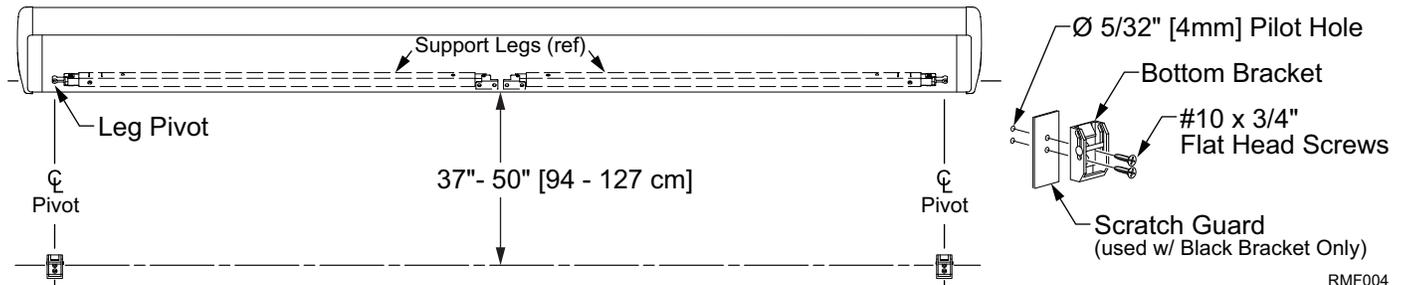
Ensure that the motor wires are accessible after routing.



## 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.

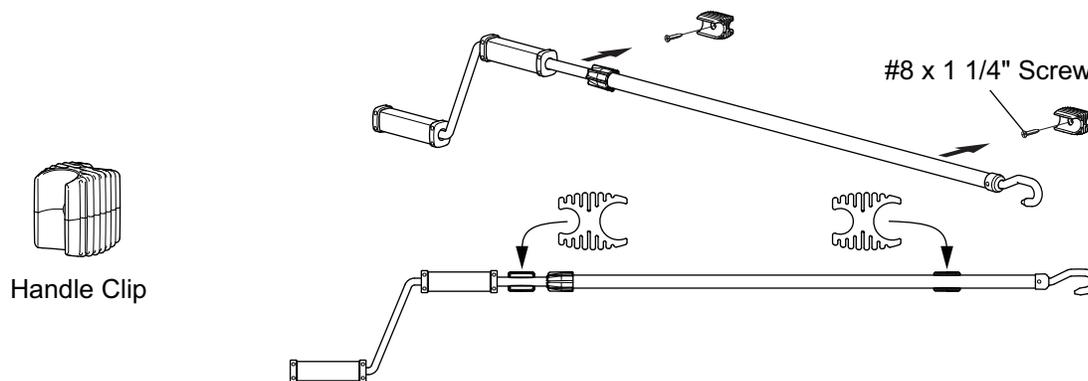


2. Center the brackets on the location marks, then using the bracket as a template, drill two (2) 5/32" [4mm] pilot holes. Attach the plate with two (2) #10 x 3/4" flat head screws. For black hardware, a scratch guard is included. The guard mounts between the bracket and wall as shown.

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.

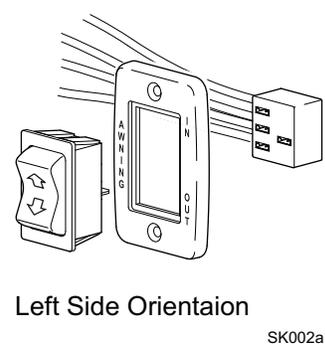
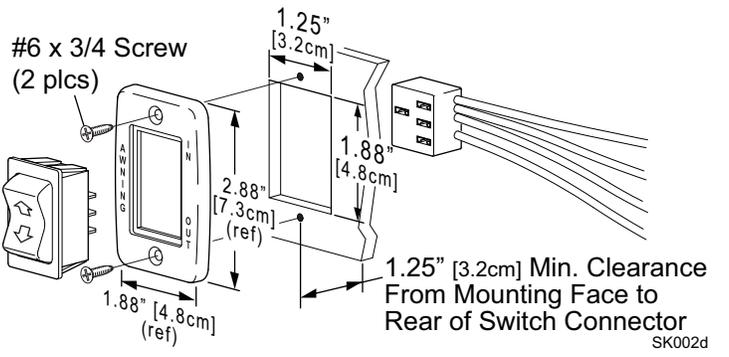
*This completes the installation of the manual awning. For motorized awnings go to "Switch Installation".*

# SWITCH INSTALLATION (MOTORIZED AWNINGS ONLY)

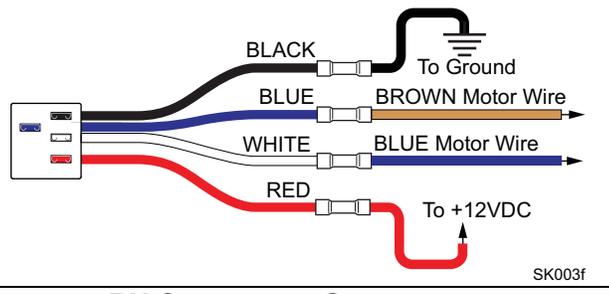
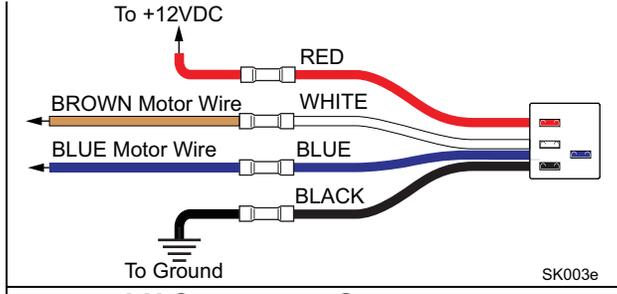


**WARNING** Shock Hazard. Always disconnect battery or power source before working on or around the electrical system.

1. 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.
1. At the switch location, cut a rectangular hole 1.25" [3.2cm] x 1.88" [4.8cm] through the mounting surface.



2. Determine the switch orientation:
  - 2.1. The wires of the connector extend from the side of the switch with 3 terminals on the back.
  - 2.2. 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.
  - 2.3. 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.
  - 2.4. 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.
  - 2.5. Set switch aside.
3. 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

5. 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.
6. 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.**
4. 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.

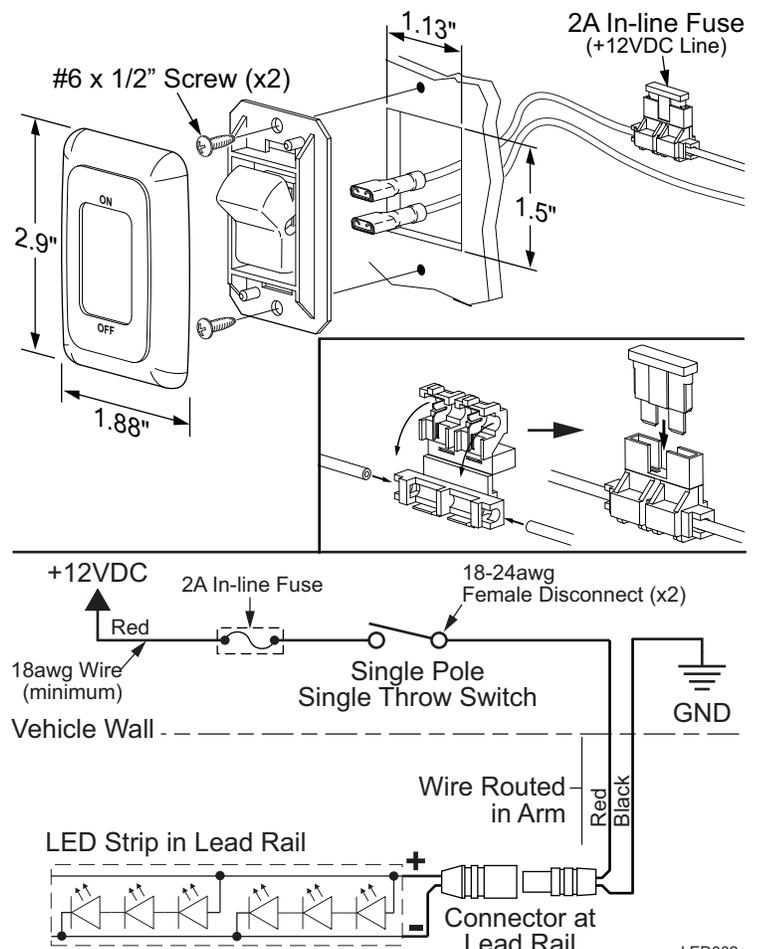
## SWITCH INSTALLATION

**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.

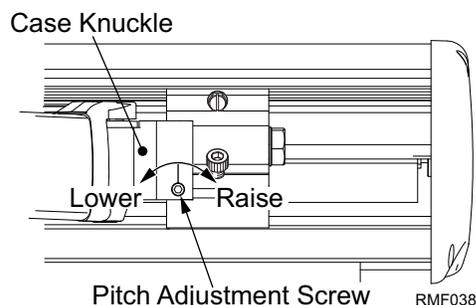
4. Install the in-line fuse:
  - 4.1. Near the switch, cut the red 12VDC power line to the switch. Do not strip the insulation.
  - 4.2. Insert a wire end into one of the wire channels until it butts up against the stop.
  - 4.3. Fold that half of the connector body over until the element contacts the 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.



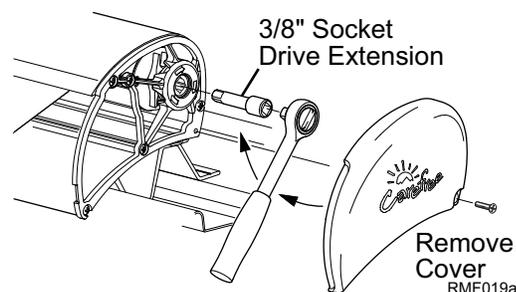
**NOTE:** No adjustment is required to the lead rail when the pitch is adjusted.

## 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.



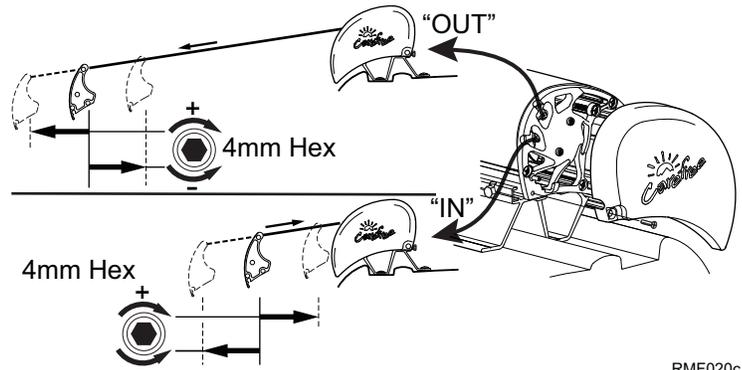
**NOTICE** After closing the awning with the manual override, the lead rail may move out from the case 1/4" -1/2". This is normal and the awning is secure for travel until power is restored or repairs are completed. Do not attempt to force the lead rail in with the override, serious damage can occur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

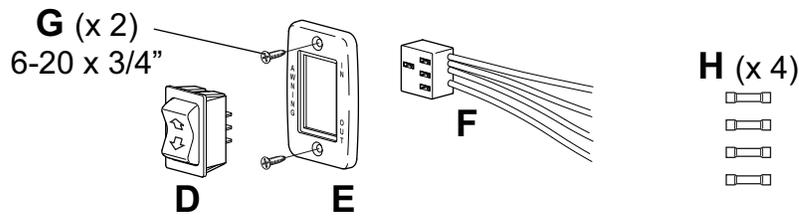
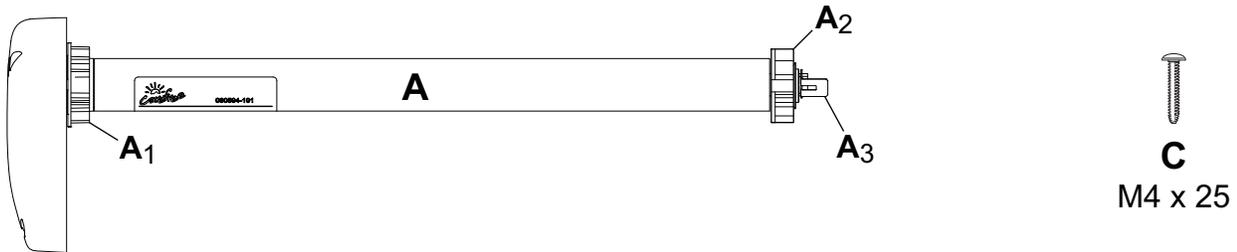


# FREEDOM RM MOTOR UPGRADE

Kit No:SR0098

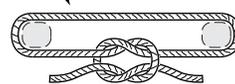
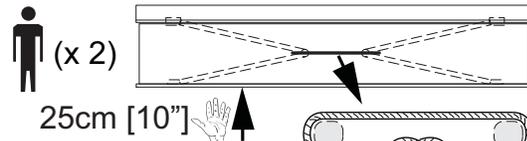
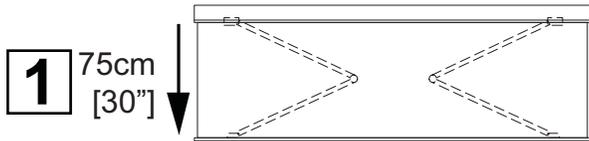
Kits

## PACKAGE CONTENTS:



RM027

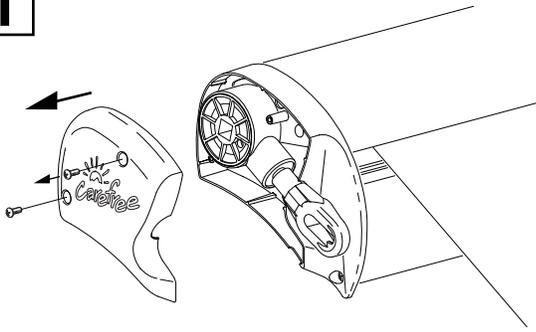
## SECURE LEAD RAIL



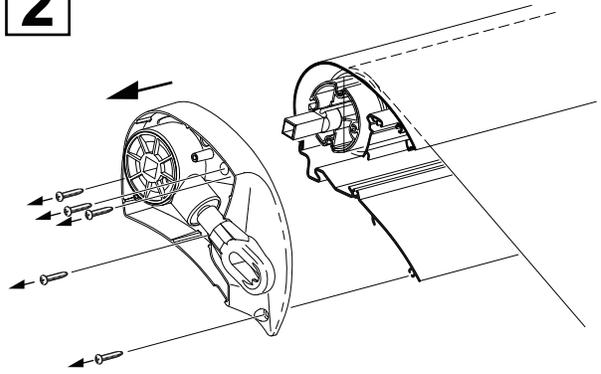
WM029

INSTALL MOTOR

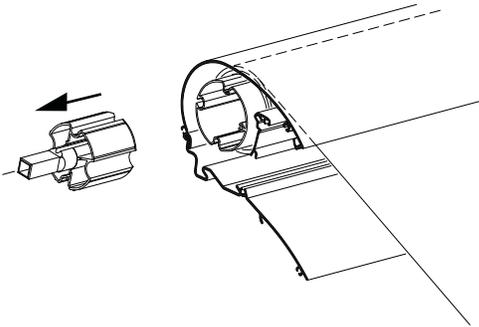
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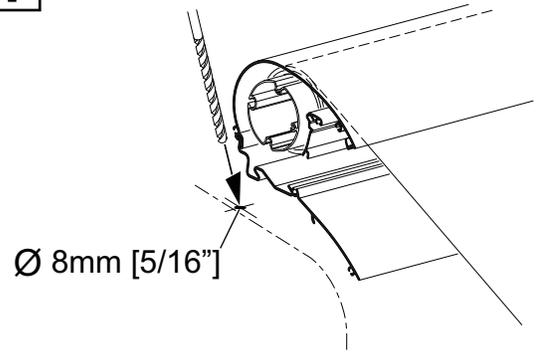
2



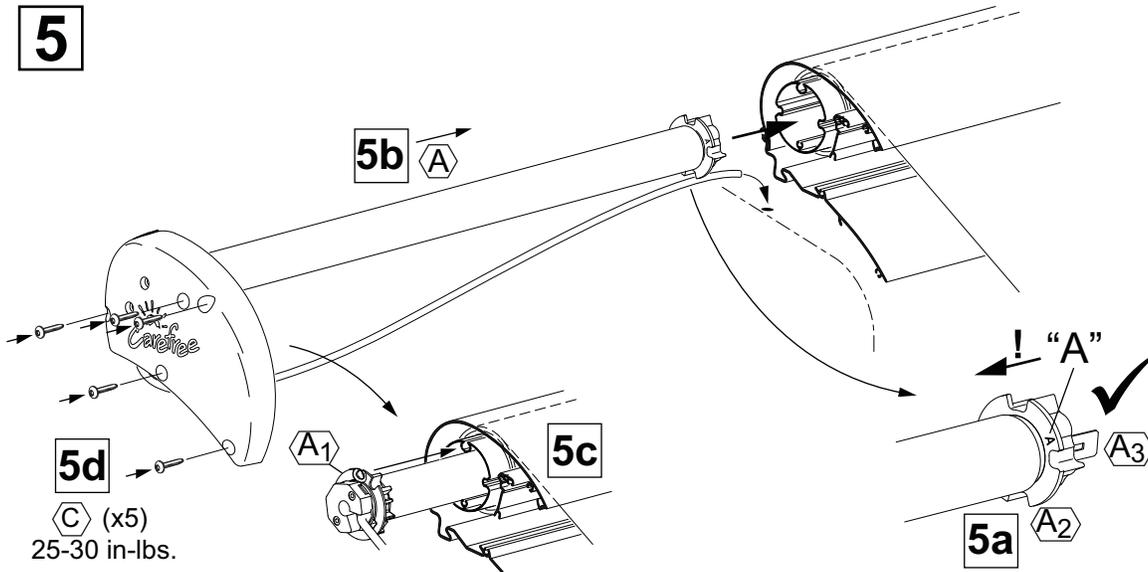
3



4

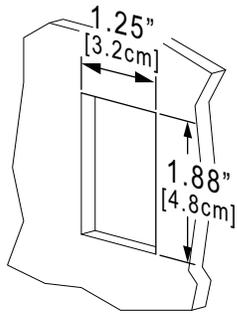


5

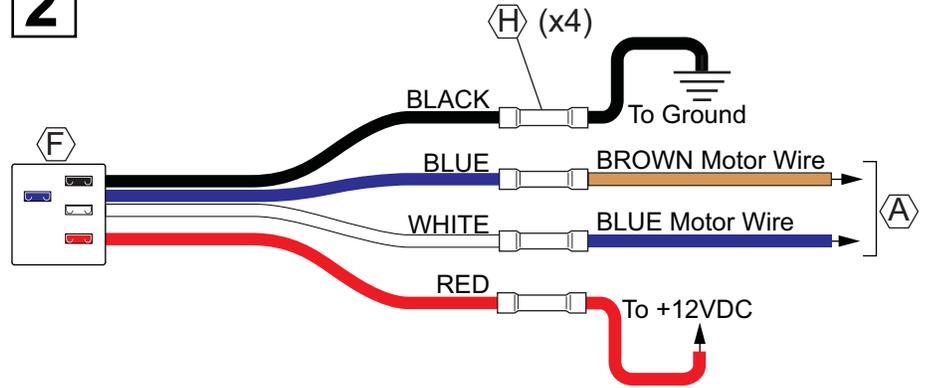


INSTALL SWITCH

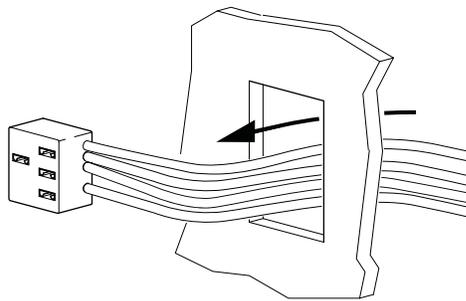
1



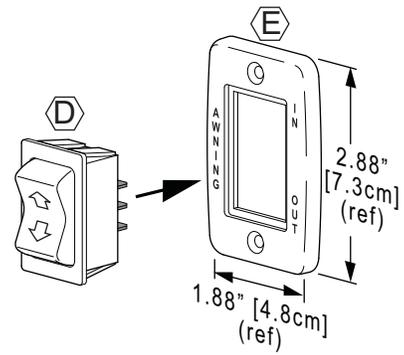
2



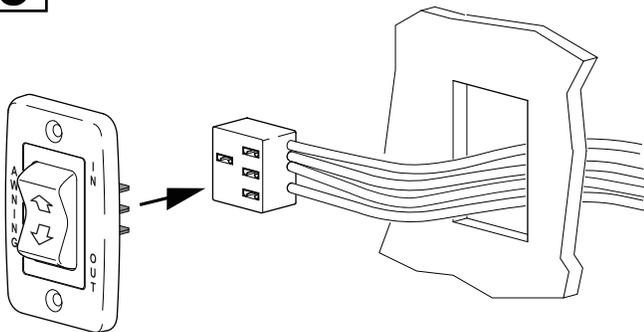
3



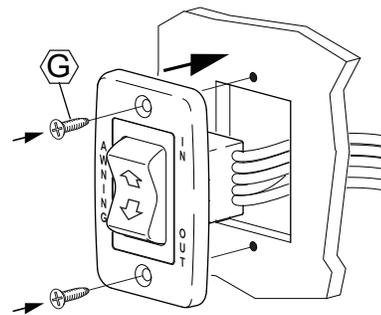
4



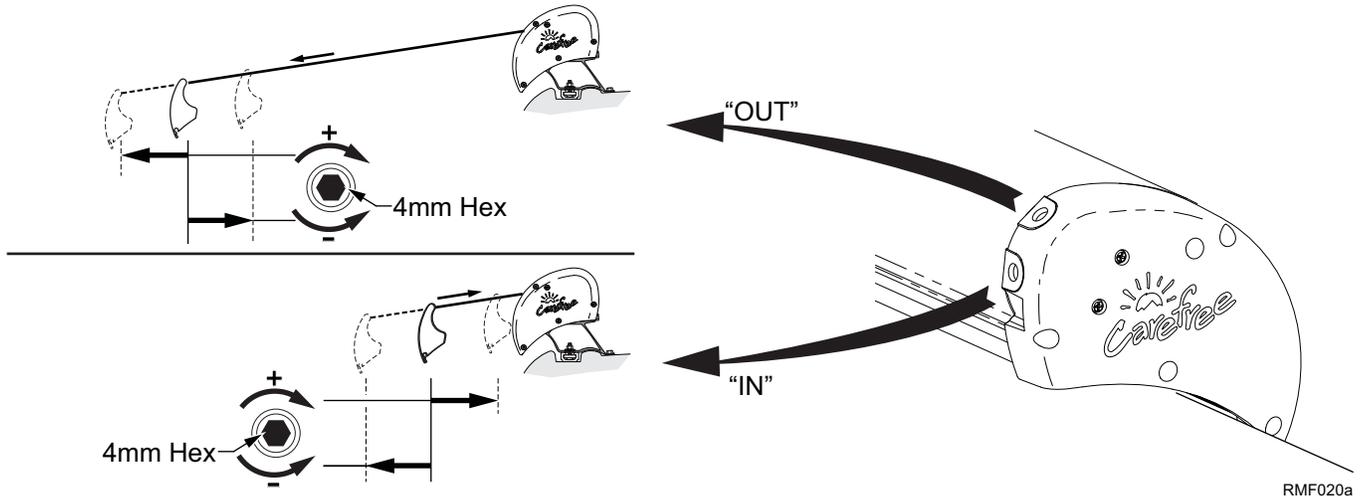
5



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.



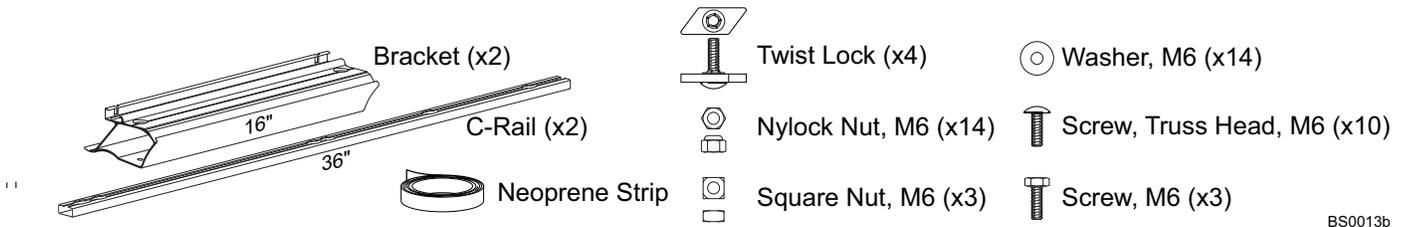
## FREEDOM RM ADAPTOR BRACKETS

KIT No: BS0002

Kits

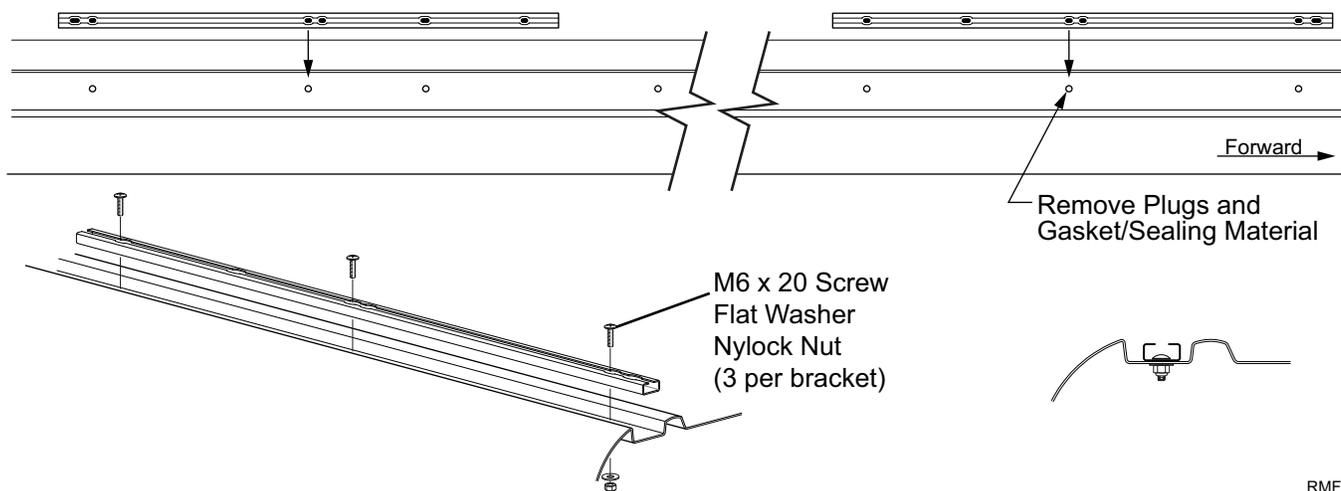
## 4M AND SMALLER SPRINTER BRACKETS

## PACKAGE CONTENTS:



## ATTACHING THE CAREFREE C RAILS

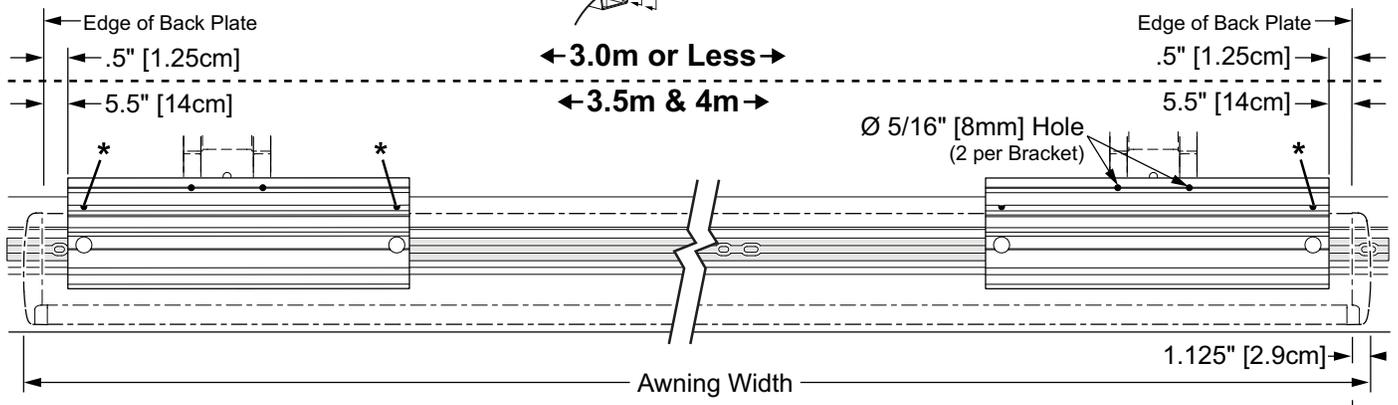
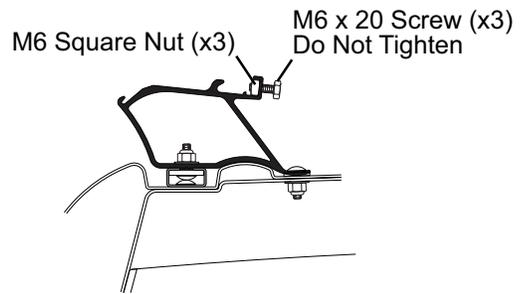
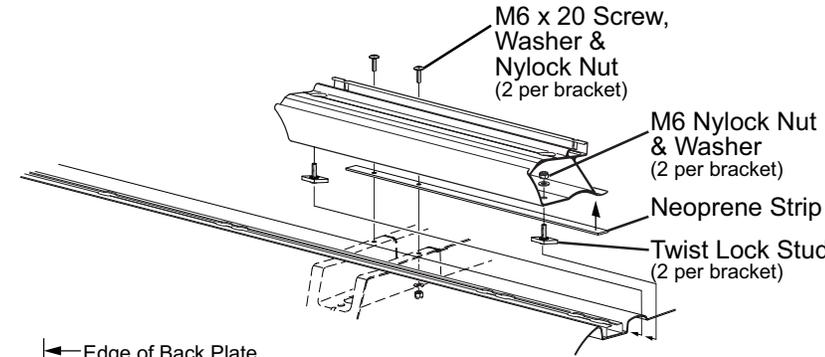
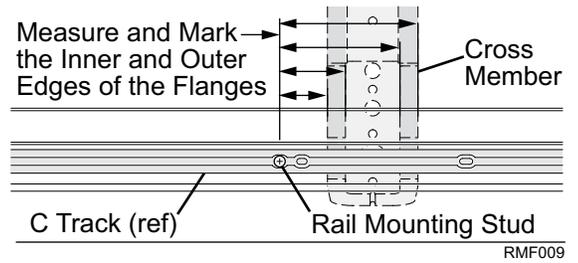
When the Sprinter van is not equipped with the OEM Sprinter mounting rails, two (2) c-rails are included in the mounting bracket kit. The rails are pre-drilled to match stud locations for the OEM rail.



1. Set the rails on the van to determine the correct mounting holes to be used. Each rail must be attached with 3 screws. It may be necessary to turn the rail mounted at the rear of the vehicle 180° to match the existing mounting locations.  
**NOTE: The rail must be positioned to support the entire length of the mounting bracket.**
2. Remove the hole plugs from the roof and clean any gaskets and sealing material.
3. Coat the bottom of the rails with a quality silicone sealant and place the rails in position.
4. Coat the hole locations with sealant then attach each rail to the roof using 3 ea M6-20 screws, flat washers and nylock nuts.
5. Seal the edges of the rail.

MOUNTING THE BRACKETS

1. Mark the position of the awning.
  - 1.1. On the interior of the van, determine which roof cross members the awning will cover. Generally, the awning is placed forward to go over the sliding door. The front cross member will be the first cross member above the door.
  - 1.2. Detach any wiring that is routed along the cross members to avoid damage during drilling and installation.
  - 1.3. Using a common reference point such as the center of a mounting stud location for the sprinter rail, measure the location of the inner and outer edges of the cross member flanges inside the vehicle. Do this for each of the cross members that the awning brackets will sit across.
  - 1.4. Using a non-permanent method of marking, on the exterior (using the same reference point) measure and mark the locations of the inner and outer edges of the flanges.



**NOTE:** To correctly support the awning, the brackets must be positioned under the arm case knuckles.

Align Inside Edge of Endcap with Corner of Front Door  
Rear Corner of Front Door

2. Remove the release paper from the neoprene strip and attach to the rear bottom face of the brackets. Trim for best fit.
3. On each bracket, loosely attach a twist lock stud with a flat washer and nylock nut to each end.
4. From one end of the track, slide the brackets onto the rail with the twist lock fasteners inside the rail.
5. Position the brackets on the roof.
  - 5.1. The brackets must straddle the roof cross members, they do not need to be centered over the cross members. Reference the marks made previously.
  - 5.2. Make sure that the outer edges of the brackets are within the dimension range (D) shown for the end of the awning. Adjust the bracket position as necessary.
6. Tighten the nuts for the twist lock fasteners.
7. For each bracket, drill two (2) 5/16" [8mm] holes through the bracket, roof and cross member flanges.
8. Secure the brackets to the roof using two (2) each M6 x 20 screws, flat washers and nylock nuts.
9. In the rear track of the mounting brackets, start three (3) M6 x 20 screws and square nuts through the retaining screw holes (these are marked with a "\*" in the above illustration). Do not tighten at this time.
10. Mount the awning according to the installation manual for the awning.