



# **SERVICE MANUAL**

## **FREEDOM RM**

**RV**

### **ROOF MOUNTED LATERAL ARM AWNING MANUAL AND MOTORIZED FREEDOM RM**



**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

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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:



This product can expose you to chemicals including Di-isodecyl phthalate (DIDP), Vinyl Chloride and Formaldehyde, which are known to the state of California to cause cancer or birth defects or other reproductive harm. For more information visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov)



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.

# PRODUCT SPECIFICATIONS

Widths:	Available Sizes for Motorized Freedom RM						
	Available Sizes for Manual Freedom RM					450	500
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	SPDT, Center Off Switch
	Manual:	Roll Out/In Controlled by Manual Crank	

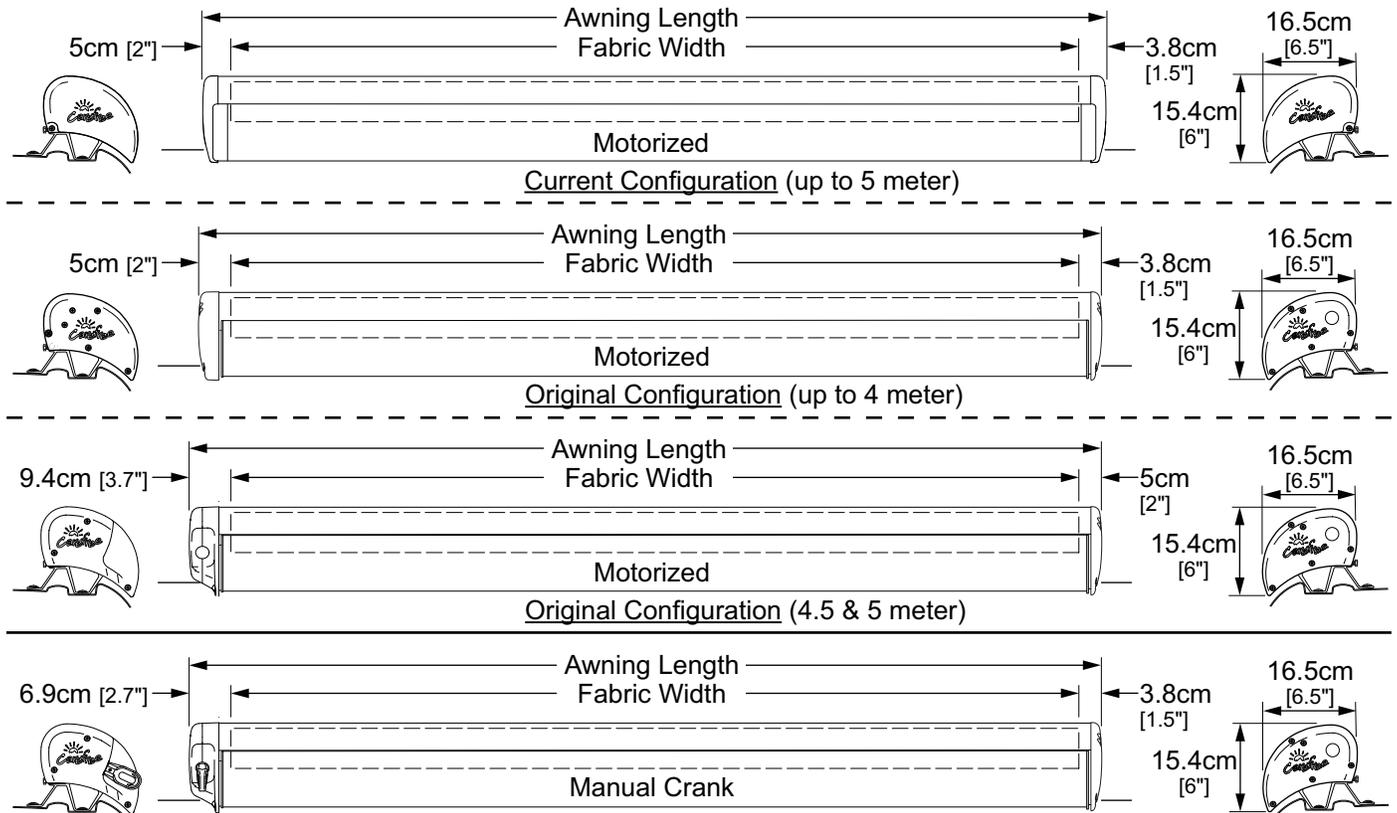
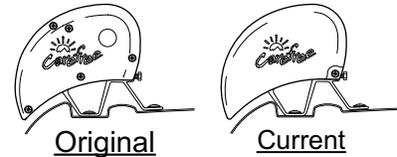
## MOTOR SPECIFICATIONS

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

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

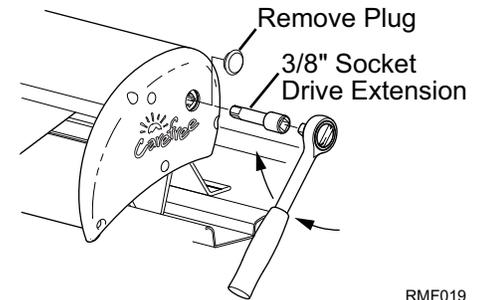
### MANUAL OVERRIDE (MOTORIZED ONLY)

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.

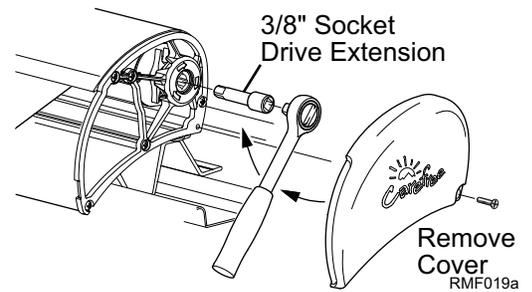
#### Original Configuration

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.

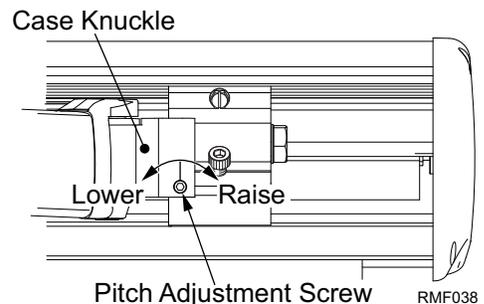


**NOTICE** After closing the awning with the manual override, the lead rail may move out from the case 1/4" -1/2". This is normal and the awning is secure for travel until power is restored or repairs are completed. Do not attempt to force the lead rail in with the override, serious damage can occur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

### PITCH ADJUSTMENT

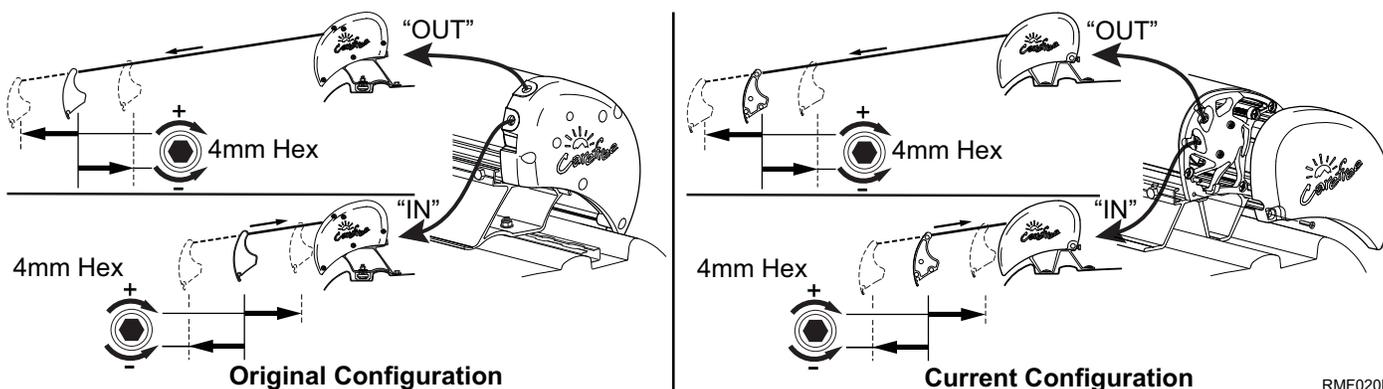
The awning opens and closes with a steep pitch. On low profile vans, the leading edge of the awning may hit the top of the sliding door if the door is open while extending or retracting the awning. To prevent this, the lower limit of the pitch can be adjusted upwards.

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.

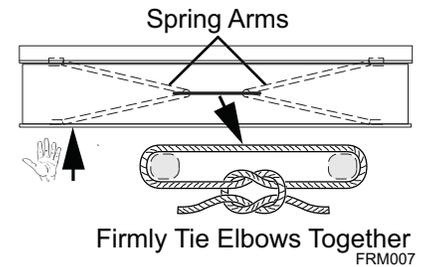
### ***Motor Maintenance***

- 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)

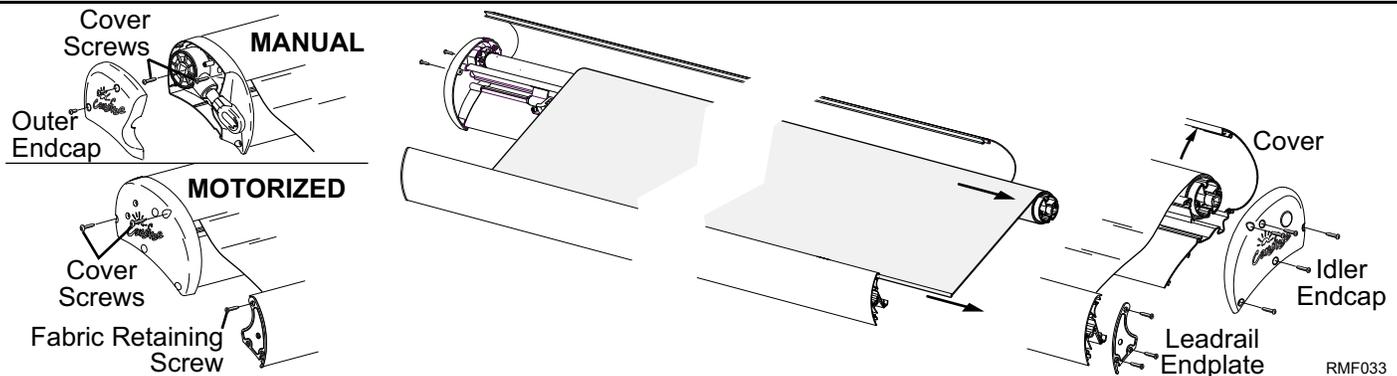
This procedure requires two people.

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.

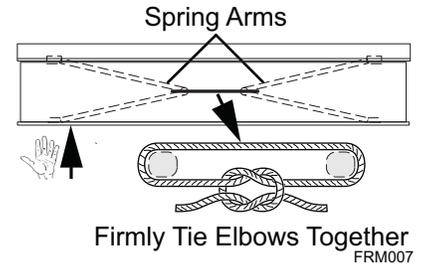
*Tip: Lightly spraying the slots with a dry silicone lubricant will help the fabric slide into the slots without staining the material.*

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.

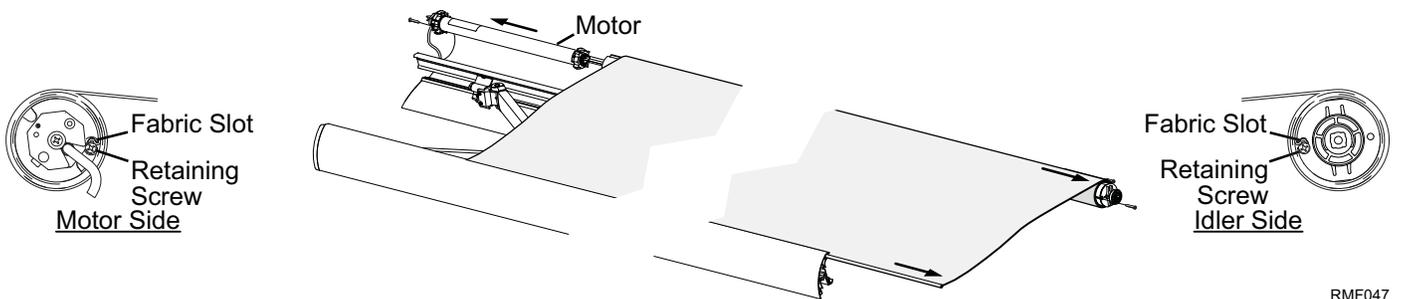
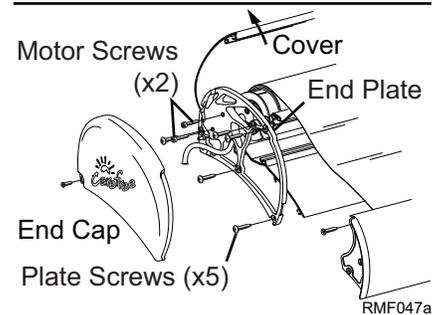
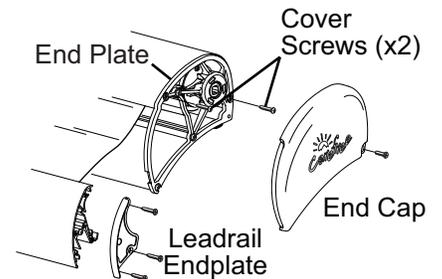
1. Open the awning 18"-24".
2. Disconnect power to the awning.
3. Carefully push the lead rail toward the case so that the arms collapse and the fabric is slack.
4. Hold the lead rail in this position and firmly tie the elbows of the spring arms together. Use a minimum 1/2" rope - do not use bungee cords. 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.

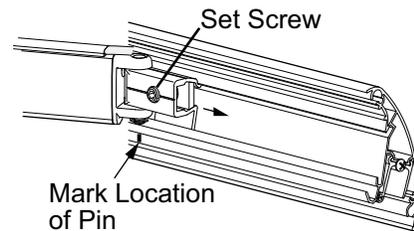
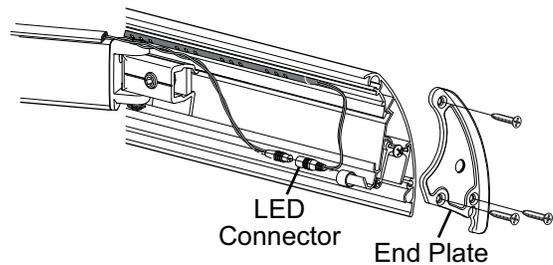
### **LEAD RAIL CONNECTOR**

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.

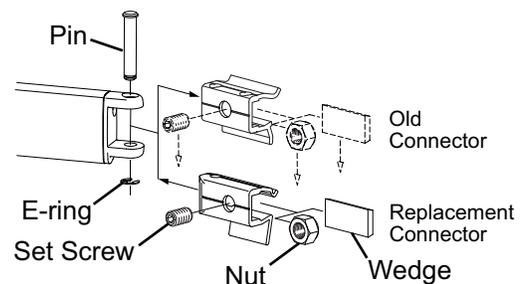
### ***Removing the Lead Rail Connector***

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.



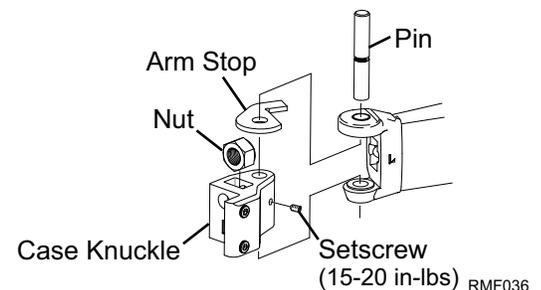
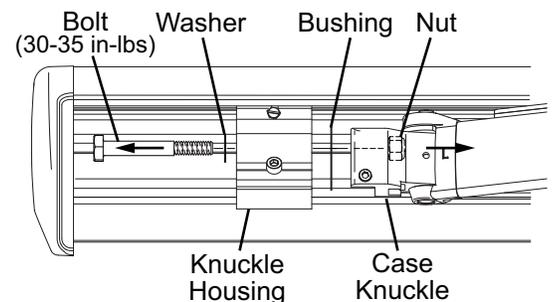
*LH shown. Procedures are the same for the RH except as noted in the instructions.*

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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.
 

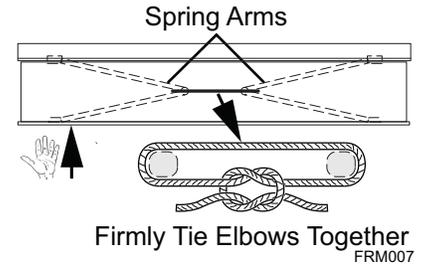
*Tip: Use a small tool, such as a flat bladed screwdriver to gently spread open the channel then insert the cable. Do this for the entire length of the channel until the cable is fully inserted.*
18. After replacing the arm, it will be necessary to adjust the pitch to align the lead rail and case. See 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

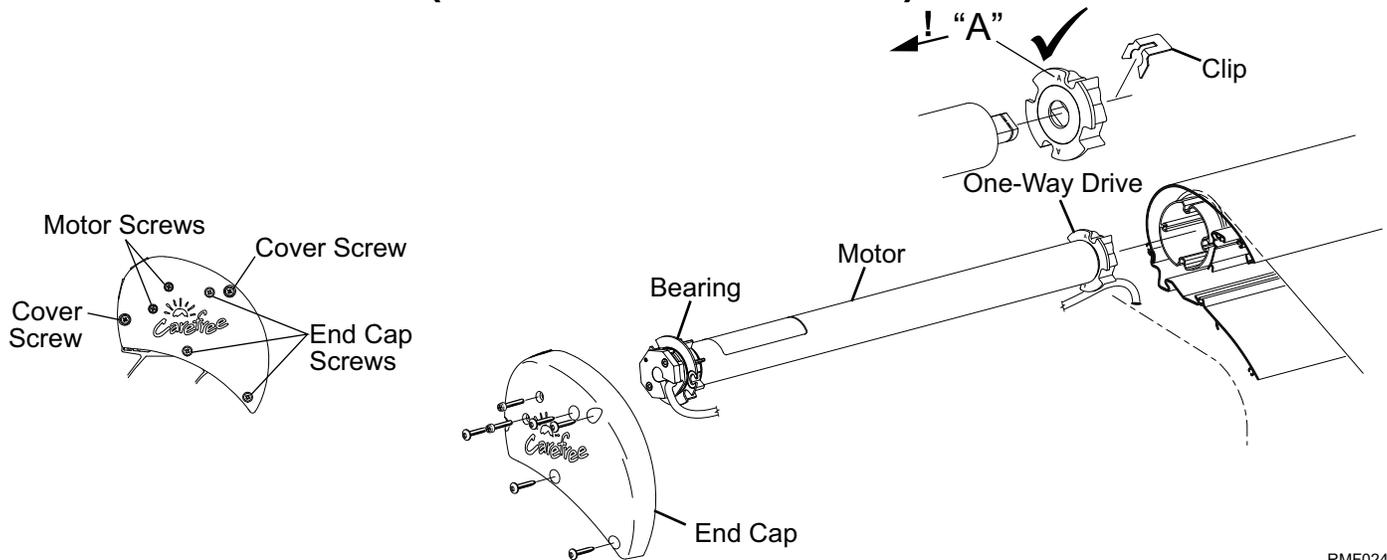
### PRELIMINARY STEPS (ALL CONFIGURATIONS)

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

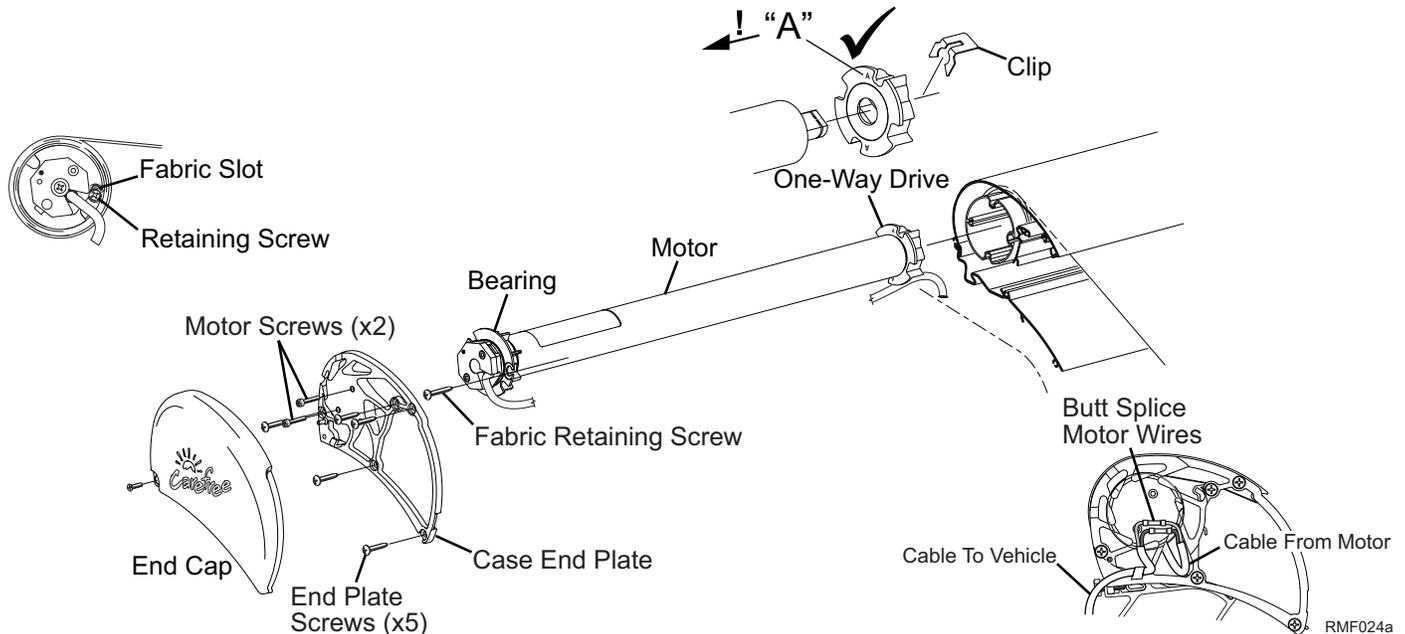
1. From the motor end cap remove the cover, end cap and motor screws.
2. Remove the end cap.
3. Disconnect the motor wires from inside the vehicle and pull out or clip the motor wires. If cutting the wires, cut them close to the motor to leave enough wire that can be stripped and spliced.
4. Pull the 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.

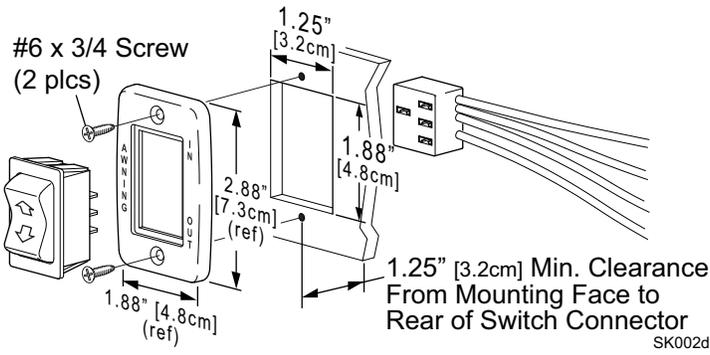


1. Remove the motor end cap and set aside.
2. Remove the motor screws (x2) and the end plate screws (x5) and set aside.
3. Cut the motor wire as close to the motor as possible to leave enough cable from the vehicle that can be stripped and spliced.
4. Remove the end plate and set aside.
5. Remove the 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.

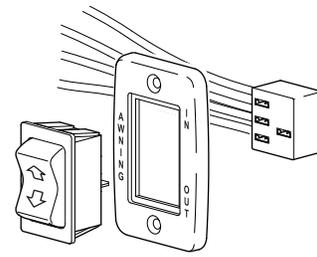
**NOTICE** The one-way drive must be oriented with the "A" facing the motor. If the drive is not oriented correctly, the awning will not operate and the arms will spring out when released.

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)

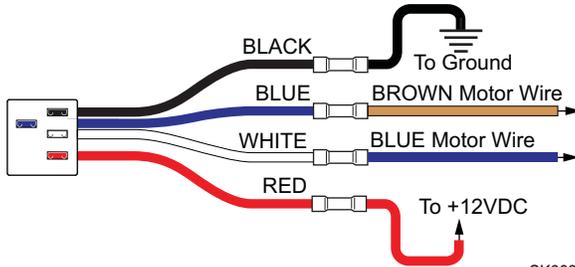


SK002d

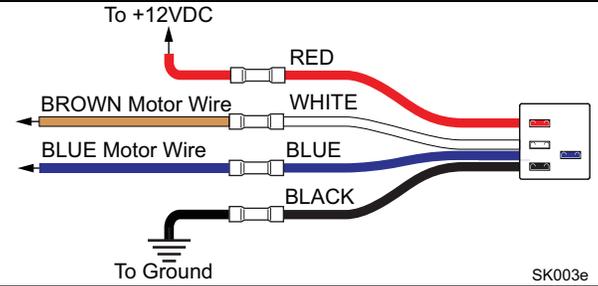


Left Side Orientation

SK002a



SK003f



SK003e

**CONNECTOR WIRE COLOR**

**RH CONNECTOR ORIENTATION**

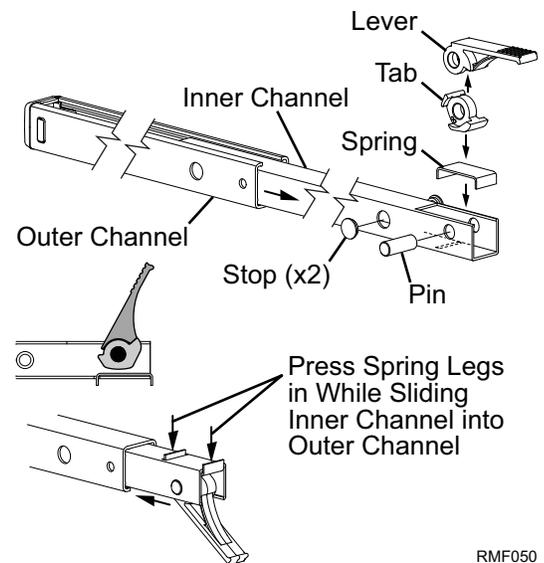
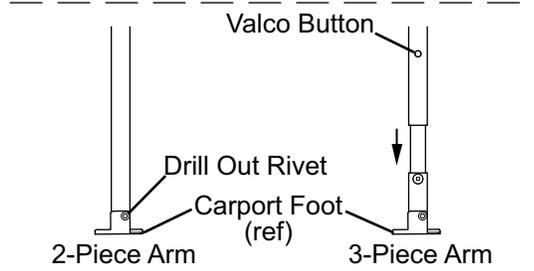
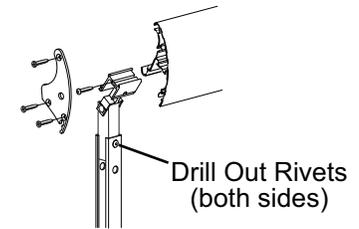
**LH CONNECTOR ORIENTATION**

<b>RED</b> →	+12VDC		+12VDC
<b>WHITE</b> →	BLUE (motor wire)		BROWN (motor wire)
<b>BLUE</b> →	BROWN (motor wire)		BLUE (motor wire)
<b>BLACK</b> →	Ground		Ground

## **FLIPPER LATCH REPLACEMENT (SUPPORT LEGS)**

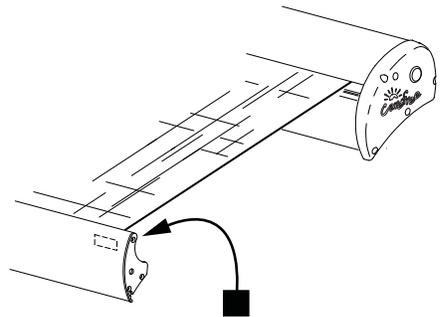
1. Open the awning to access the vertical support legs.
2. Remove the lead rail end plate and slide the support assembly out of the lead rail.
3. Drill out the rivets at the top of the support. Note the orientation and position of the parts. Separate the pivot assembly and set aside.
4. For 2-piece arms: Drill out the rivet holding the carport foot and set the foot aside. Note the position and orientation of the foot.
5. For 3-piece arms: Press in the valco button and remove the lower section with the carport foot from the channel.
6. Slide the inner channel out the top of the outer channel. Use care to not lose the latch parts or stops.
7. Remove the old lever and tab.
8. Ensure that the spring is set in the channel with one leg through the rectangular slot and the other leg is at the end of the channel.
9. Place the lever and tab together and secure into the channel with the large pin.
10. Place the lever in the open position to relieve the spring tension. Ensure that the stops are in the channel and slide the inner channel into the outer channel until the inner channel extends out the other end.
 

**NOTE:** It will be necessary to press the spring legs in to clear the channel. A flat blade screwdriver is helpful.
11. For 2-piece arms: Reattach the carport foot to the channel using the 3/16" x 1" rivet. This will require a roll rivet tool.
12. For 3-piece arms: Insert the bottom channel into the inner channel, align the valco button with the hole and slide the channel in.
13. Attach the pivot assembly to the support. Use two (2) pop rivets.
14. Reinstall the vertical support and end plate onto the lead rail.



# PART NUMBER LISTING

## PART NUMBER/SERIAL NUMBER LOCATION

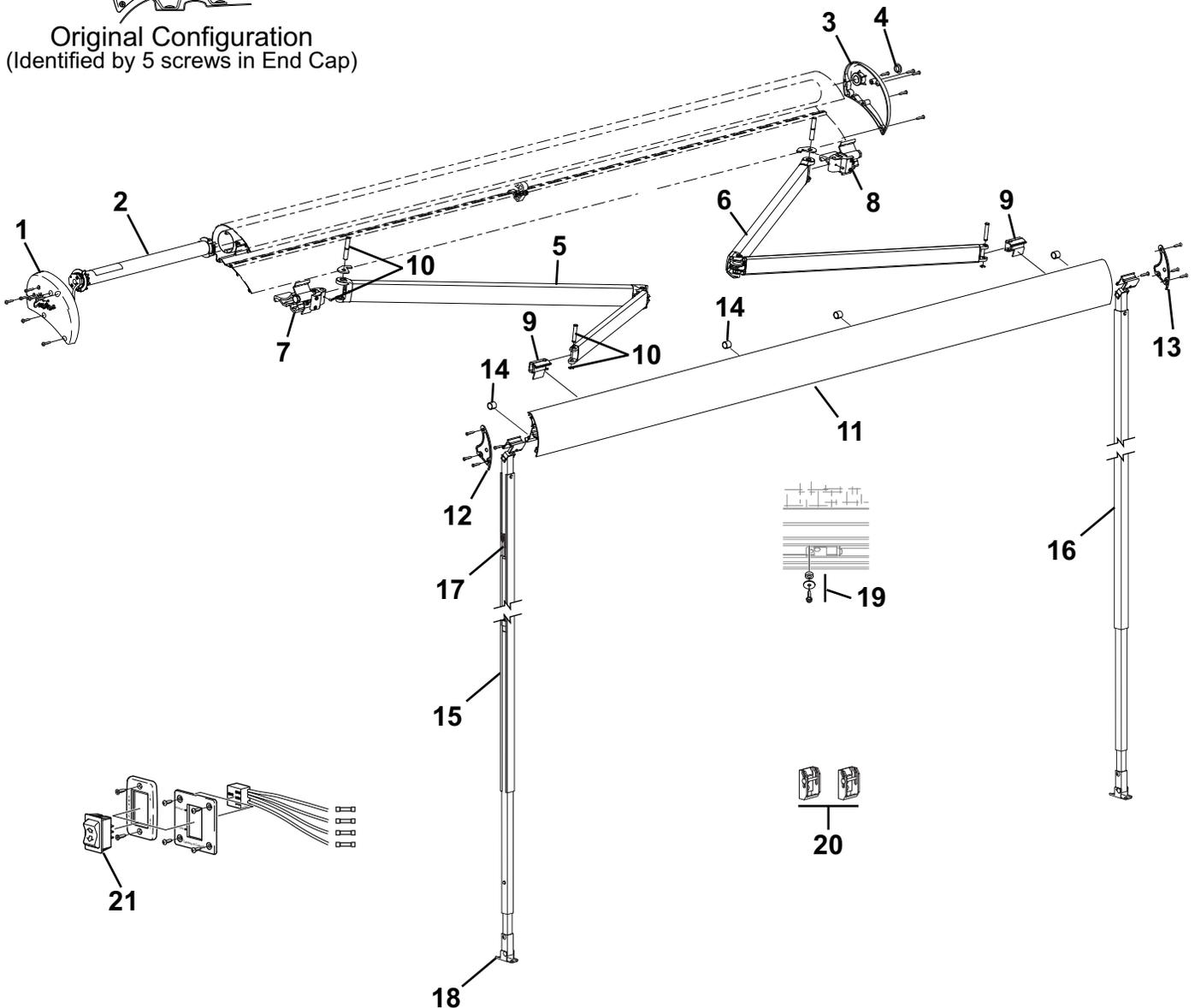


Serial# / Part# Located on the Inside of the Right End of Lead Rail  
RMF021

## FREEDOM RM MOTORIZED (4M AND SMALLER ORIGINAL CONFIGURATION)



Original Configuration  
(Identified by 5 screws in End Cap)

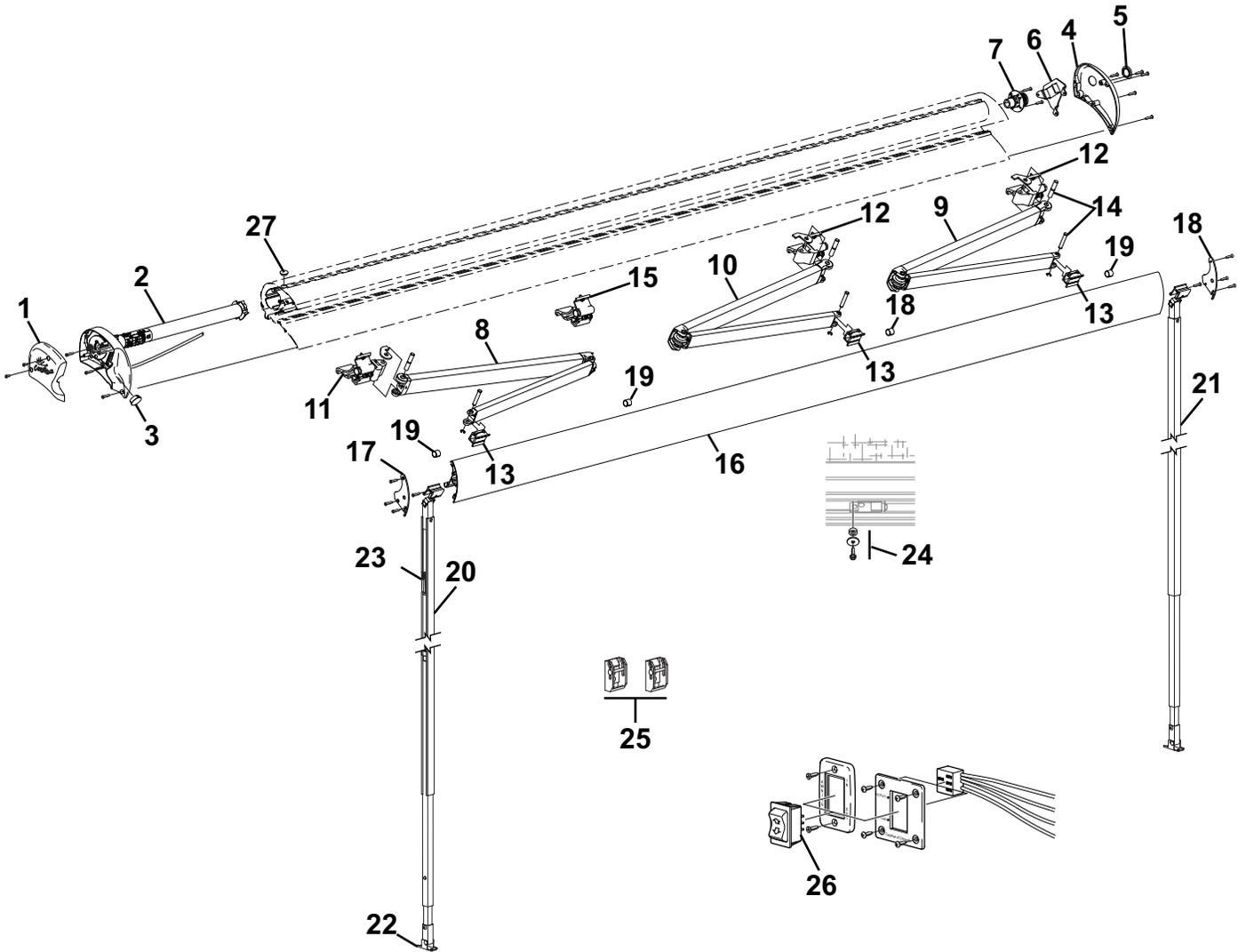


RMF501a

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	R040981-005	Lead Rail End Plate, LH, White	
	R040981-006	Lead Rail End Plate, LH, Black	
	R040981-231	Lead Rail End Plate, LH, Satin	
13	R040981-005	Lead Rail End Plate, RH, White	
	R040981-006	Lead Rail End Plate, RH, Black	
	R040981-231	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	R040832-001	Plug, RH, White	
	R040832-002	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	R040981-005	Lead Rail End Plate, LH, White	1
	R040981-006	Lead Rail End Plate, LH, Black	1
18	R040981-005	Lead Rail End Plate, RH, White	
	R040981-006	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	

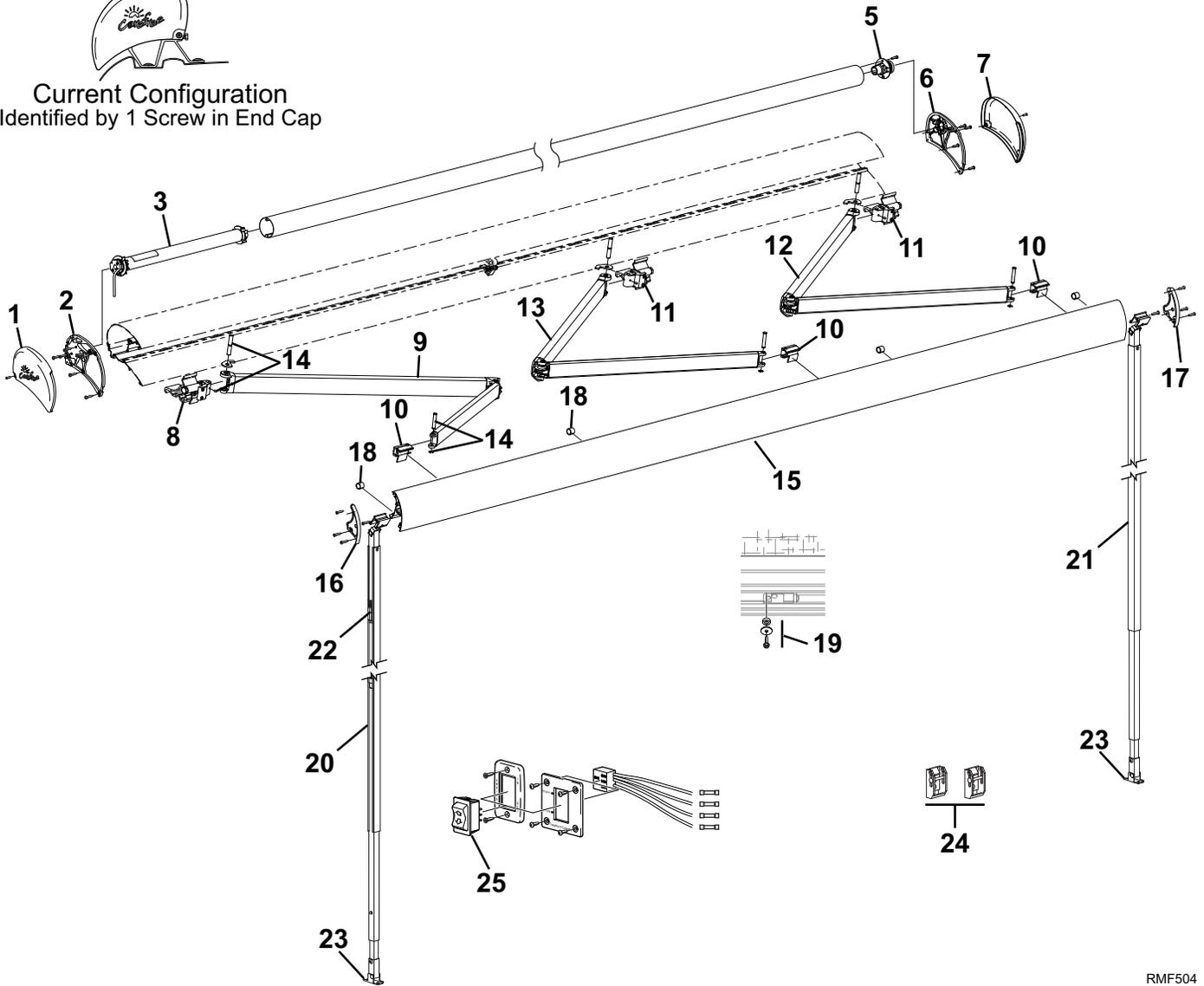
## Notes:

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

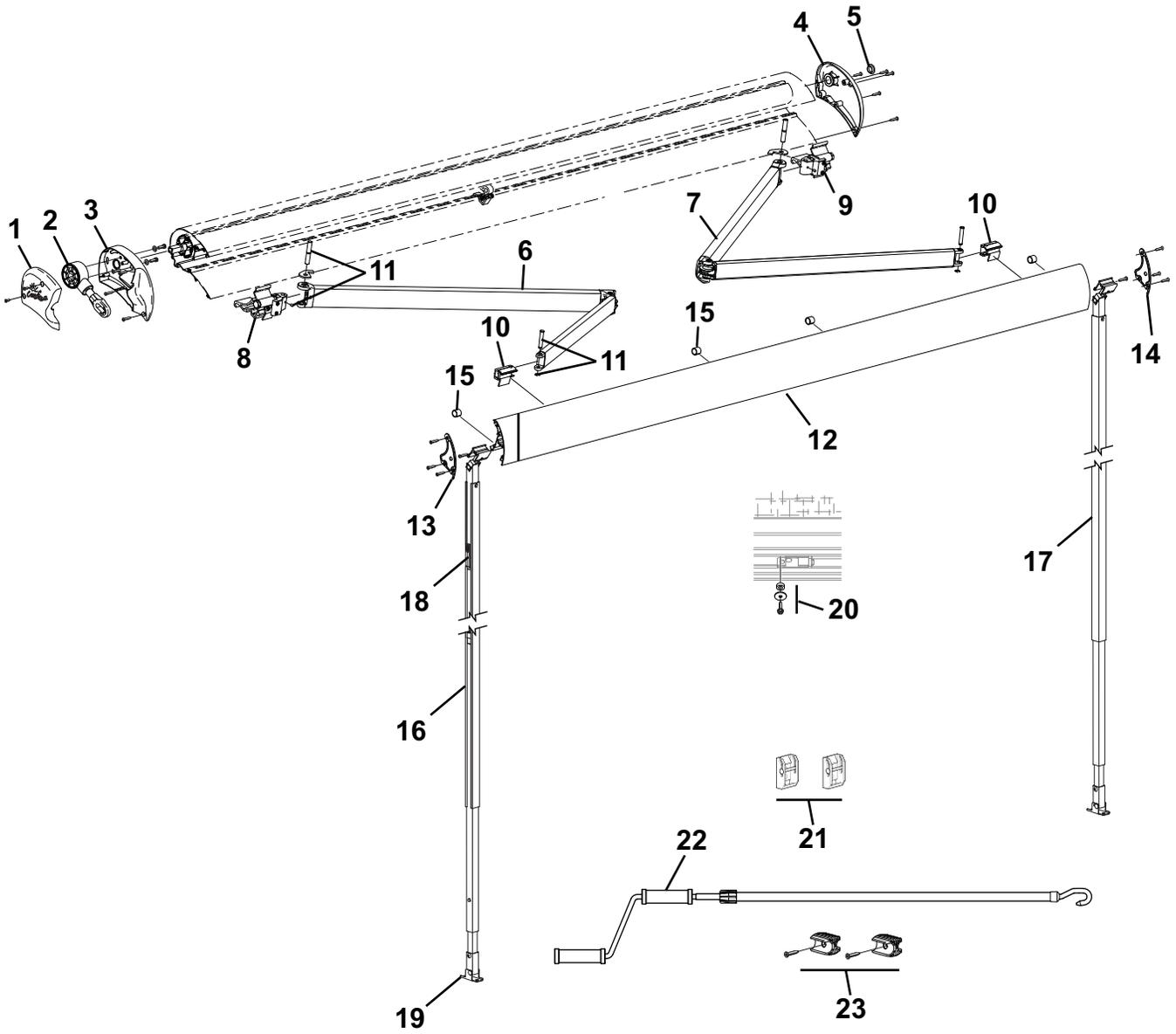


RMF504

Item	Part Number	Description	Notes
<b>1</b>	R037519-005	Endcap, LH, White	
	R037519-006	Endcap, LH, Black	
	R037519-231	Endcap, LH, Satin	
<b>2</b>	R037519-001	Case Endplate, LH	
<b>3</b>	R001651	Motor Assembly	2
<b>4</b>	610900-xxx.xx	Roller Tube	
<b>5</b>	R001623	End Plug	
<b>6</b>	R037516-001	Case Endplate, RH	
<b>7</b>	R037518-005	Endcap Assembly, RH, White	
	R037518-006	Endcap Assembly, RH, Black	
	R037518-231	Endcap Assembly, RH, Satin	
<b>8</b>	R019280-003	Connector Assembly, Case, LH	1
<b>9a</b>	R012530-TB68L	Spring Arm, LH 2.44 Meter	1
<b>9b</b>	R012530-TB76L	Spring Arm, LH 2.57 Meter	used thru 05/2017 1
<b>9c</b>	R012530-TB79L	Spring Arm, LH 2.57 Meter	used 06/2017 & ON 1
<b>9d</b>	R012530-TB94L	Spring Arm, LH 3 Meter & Up	1
<b>10a</b>	R001872	Connector Kit, Lead Rail	includes 1 LH and 1 RH connector
<b>10b</b>	R001873	Connector Kit, Lead Rail	includes 1 LH and 2 RH connectors
<b>11</b>	R019280-004	Connector Assembly, Case, RH	1
<b>12a</b>	R012530-TB68R	Spring Arm, RH 2.44 Meter	1
<b>12b</b>	R012530-TB76R	Spring Arm, RH 2.57 Meter	used thru 05/2017 1
<b>12c</b>	R012530-TB79R	Spring Arm, RH 2.57 Meter	used 06/2017 & ON 1
<b>12d</b>	R012530-TB94R	Spring Arm, RH 3 Meter & Up	1
<b>13</b>	R012530-TB94M	Spring Arm, Center 4.5 and 5 meter only	1,4
<b>14</b>	R001595	Hardware Pack, Arm Attach, 1 Arm	
<b>15</b>	R001819X-aa-xxx	Lead Rail	3
<b>16</b>	R041353-005	Lead Rail End Plate, LH, White	
	R041353-006	Lead Rail End Plate, LH, Black	
	R041353-231	Lead Rail End Plate, LH, Satin	
<b>17</b>	R041352-005	Lead Rail End Plate, RH, White	
	R041352-006	Lead Rail End Plate, RH, Black	
	R041352-231	Lead Rail End Plate, RH, Satin	
<b>18</b>	R001691	Lead Rail Guide Kit	pkg of 4
<b>19</b>	R001690	Leg Support Kit	(contains 2 ea. screw, washer and spacer)
<b>20a</b>	R001655-003	Vertical Support Leg, LH	Used with 2.44 Meter
<b>20b</b>	R001655-001	Vertical Support Leg, LH	Used with 2.57 & 3 Meter
<b>20c</b>	R001655-002	Vertical Support Leg, LH	Used with 3.5 Meter & Up
<b>21a</b>	R001655-103	Vertical Support Leg, RH	Used with 2.44 Meter
<b>21b</b>	R001655-101	Vertical Support Leg, RH	Used with 2.57 & 3 Meter
<b>21c</b>	R001655-102	Vertical Support Leg, RH	Used with 3.5 Meter & Up
<b>22</b>	R001657	Flipper Latch Kit, Orange	
<b>23</b>	R00394	Carport Foot	
<b>24</b>	R019283-005	Kit, Bottom Bracket, White	pkg of 2
	R019283-006	Kit, Bottom Bracket, Black	pkg of 2
<b>25</b>	R001605	Switch Kit	

- Notes:
- Attaching hardware not included with arm assemblies. Order item 9.
  - Motor assembly (item 2) includes motor, bearing and one-way drive. Components not available separately.
  - 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.
  - 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 arm to replace the center arm.

# 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	
6a	R012530-TB68L	Spring Arm, LH 2.44 Meter	1
6b	R012530-TB76L	Spring Arm, LH 2.57 Meter	Used Thru 05/2017 1
6c	R012530-TB79L	Spring Arm, LH 2.57 Meter	Used 06/2017 & ON
6d	R012530-TB94L	Spring Arm, LH 3 Meter & Up	1
7a	R012530-TB68R	Spring Arm, RH 2.44 Meter	1
7b	R012530-TB76R	Spring Arm, RH 2.57 Meter	Used Thru 05/2017 1
7c	R012530-TB79R	Spring Arm, RH 2.57 Meter	Used 06/2017 & ON
7d	R012530-TB94R	Spring Arm, RH 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	R040981-005	Lead Rail End Plate, LH, White	
	R040981-006	Lead Rail End Plate, LH, Black	
	R040981-231	Lead Rail End Plate, LH, Satin	
14	R040981-005	Lead Rail End Plate, RH, White	
	R040981-006	Lead Rail End Plate, RH, Black	
	R040981-231	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:
- Attaching hardware not included with arm assemblies. Order item 11.
  - A motor upgrade kit (SR0098XXX) is available for manual crank awnings and includes endcap, motor assembly, switch kit and attaching hardware.
  - If replacing an original fixed pitch case connector, replace both case connectors.
  - If replacing an original lead rail connector, replace both lead rail connectors.
  - 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.

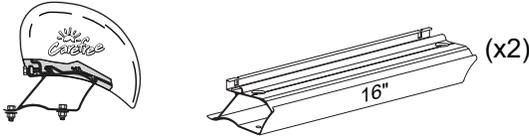
For LED replacement parts and service procedures refer to 070013-301 "LED Service Manual for Box Awnings" available on-line at [www.carefreeofcolorado.com](http://www.carefreeofcolorado.com)

## 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

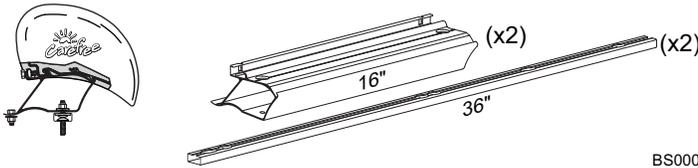
Mill Finish

Awning Hardware included

Bracket Mounting Hardware Installer Furnished

Instruction Supplement: 052570-001

### BS0002



BS0002a

#### Sprinter

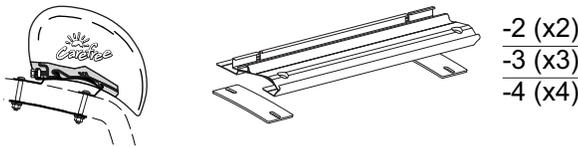
4m and less

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

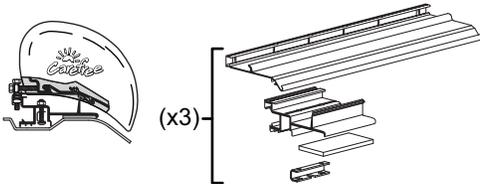
(-4) 4 Brackets 4.5m & 5m

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

