



SERVICE MANUAL
Freedom WM

RV



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PROPRIETARY STATEMENT

The Freedom WM 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.

Reference Publications located @ www.carefreeofcolorado.com:

- 052563-001 Freedom WM Installation Manual
- 052563-201 Freedom WM Owner's Manual
- 052573-001 Freedom Freestyle Installation Manual
- 052576-201 Freedom Freestyle Owner's Manual
- 052563-301 Service Manual

PRODUCT OVERVIEW

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.

Freedom Awning Specifications:

- Fully retractable and self-storing;
- Available as manual or 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;
- Stainless steel fasteners and hardware.

SPECIFICATIONS

Widths:	centimeters	220	244	257	300	350	400	450	500
	inches	87	96	101	118	138	157	177	197
Extension:		200cm (80")			250cm (98")				

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		
Torque	Continuous: 6Nm/4.5 ft.-lbs.		Tightening: 18Nm/13.2 ft.-lbs.
Speed	24 rpm		

COLORS AVAILABLE

Case	Satin, White or Black
Fabric: ¹	Vinyl

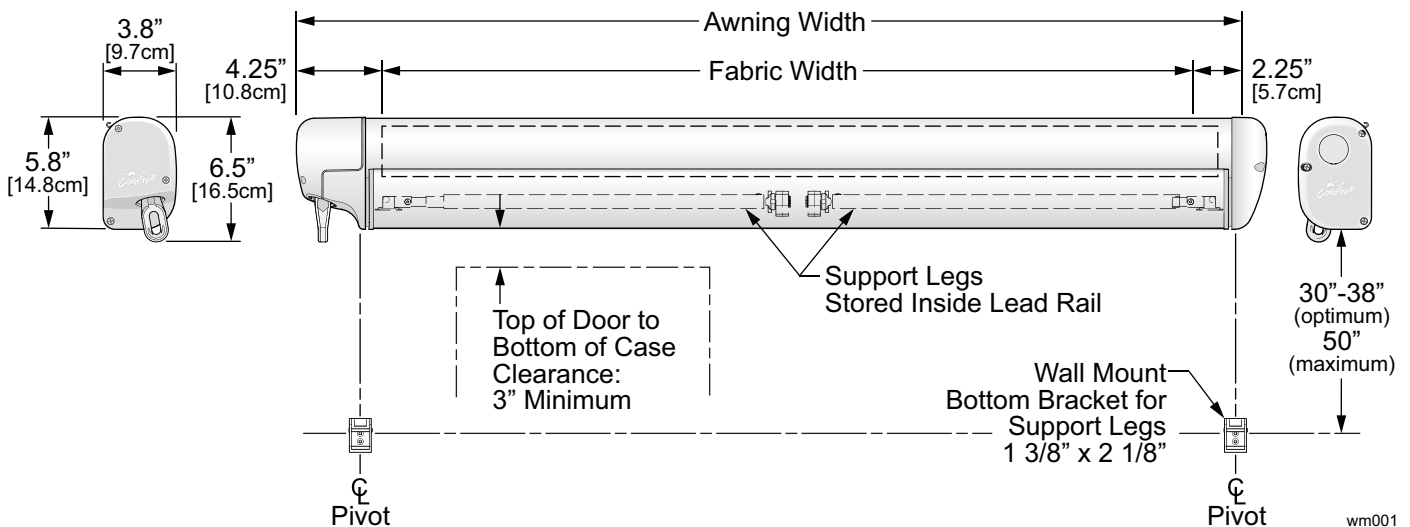


Figure 1. General Dimensions.

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

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

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

CANOPY REPLACEMENT - MANUAL CRANK

This procedure requires two people.

1. Open the awning 18"-24".
2. Carefully push the lead rail toward the case so that the arms collapse and the fabric is slack. 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.

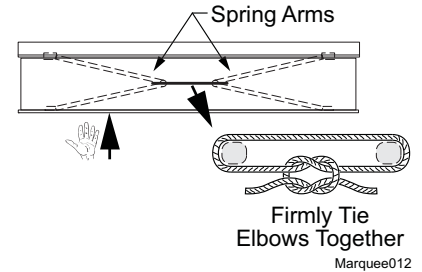


Figure 2. Tying the Arms.

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.

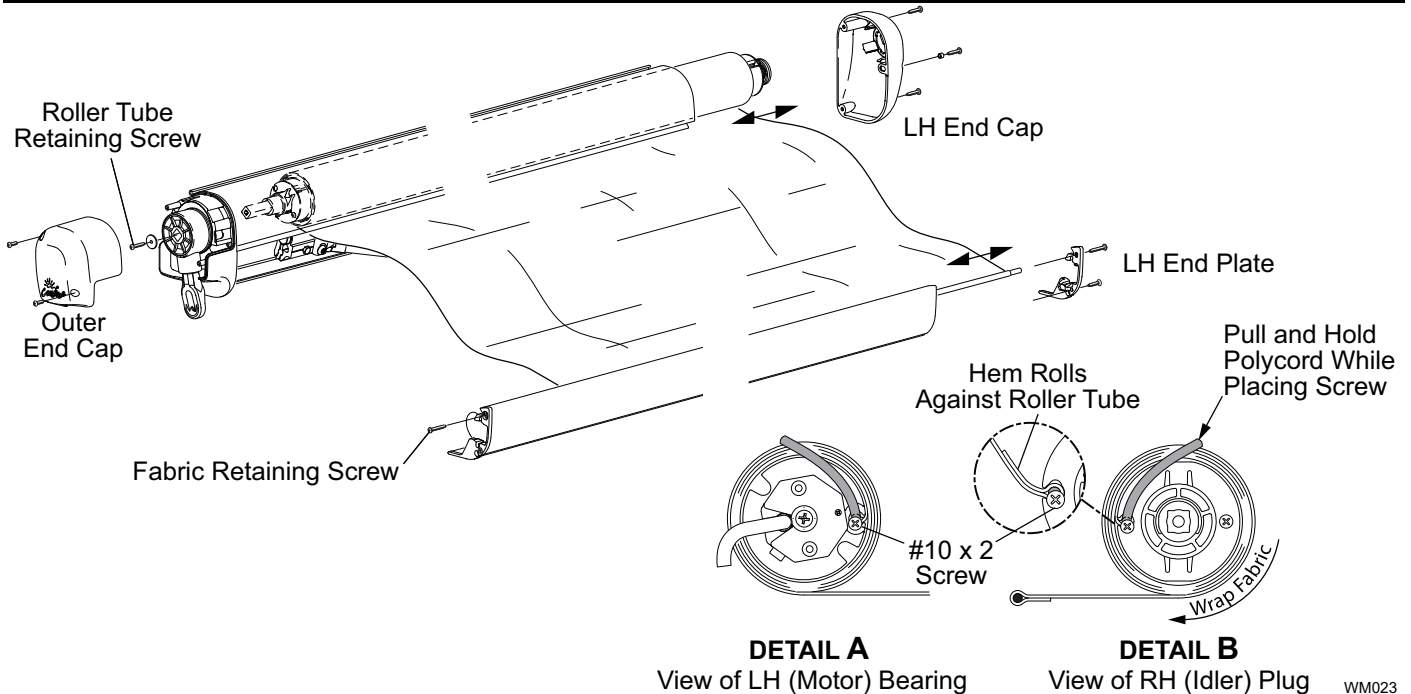


Figure 3. Fabric Replacement - Manual Crank.

1. Remove the LH outer end cap.
2. Remove the roller tube retaining screw and washer from the center of the crank assembly.
3. Remove the fabric retaining screw from the left lead rail end plate.
4. Remove the RH lead rail end plate and the RH end cap.
5. Slide the roller tube and fabric out of the case and lead rail.
6. (Detail A) Remove the fabric retaining screws located through the end plug on each end of the roller tube.
7. Unroll the old fabric and slide off the roller tube.
8. Unfold the replacement fabric.

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

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

9. (Detail A & B) Slide the black polycord of the fabric into the fabric slot. Orient the fabric with the hem on the top (the hem will then roll against the roller tube). Center the fabric in the roller tube.

10. (Detail B) After the fabric is centered, pull and hold the excess polycord to one side of the fabric slot. Place one (1) #10 x 2 PHSD screw through the fabric slot hole and polycord. The screw must be positioned to thread into the metal of the roller tube slot and the edge of the polycord. The screw action will pull the polycord further into the slot hole. DO NOT OVERTIGHTEN, maximum torque 16 in-lbs.
11. After the screw is installed, trim the excess polycord.
12. (Detail B) After tightening the fabric in the slot from one end of the roller tube to the other end, repeat step 5 and 6 to secure the fabric on the opposite end of the roller tube.
13. Roll the fabric onto the roller tube. Note the direction of the wrap as shown. Allow adequate fabric to extend past the roller tube to cover the distance to the lead rail..
14. Lift the roller tube and fabric up and slide the fabric polycord into the slot of the lead rail while sliding the roller tube into the case.
15. At the crank, align the square shaft with the crank assembly. Attach using the roller tube retaining screw removed previously.
16. Align the roller tube and RH end cap and attach the end cap to the case.
17. Center the fabric in the lead rail. Trim any excess polycord flush with the inside of the lead rail end plates.
18. Attach the RH end plate and the fabric retaining screws (both ends).

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.

CANOPY REPLACEMENT - MOTORIZED

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. 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.

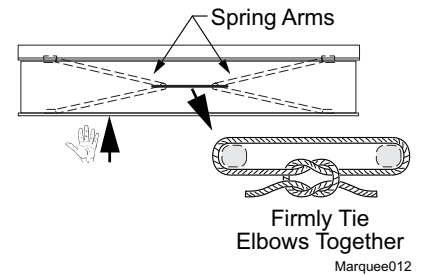


Figure 4. Tying the Arms.

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.

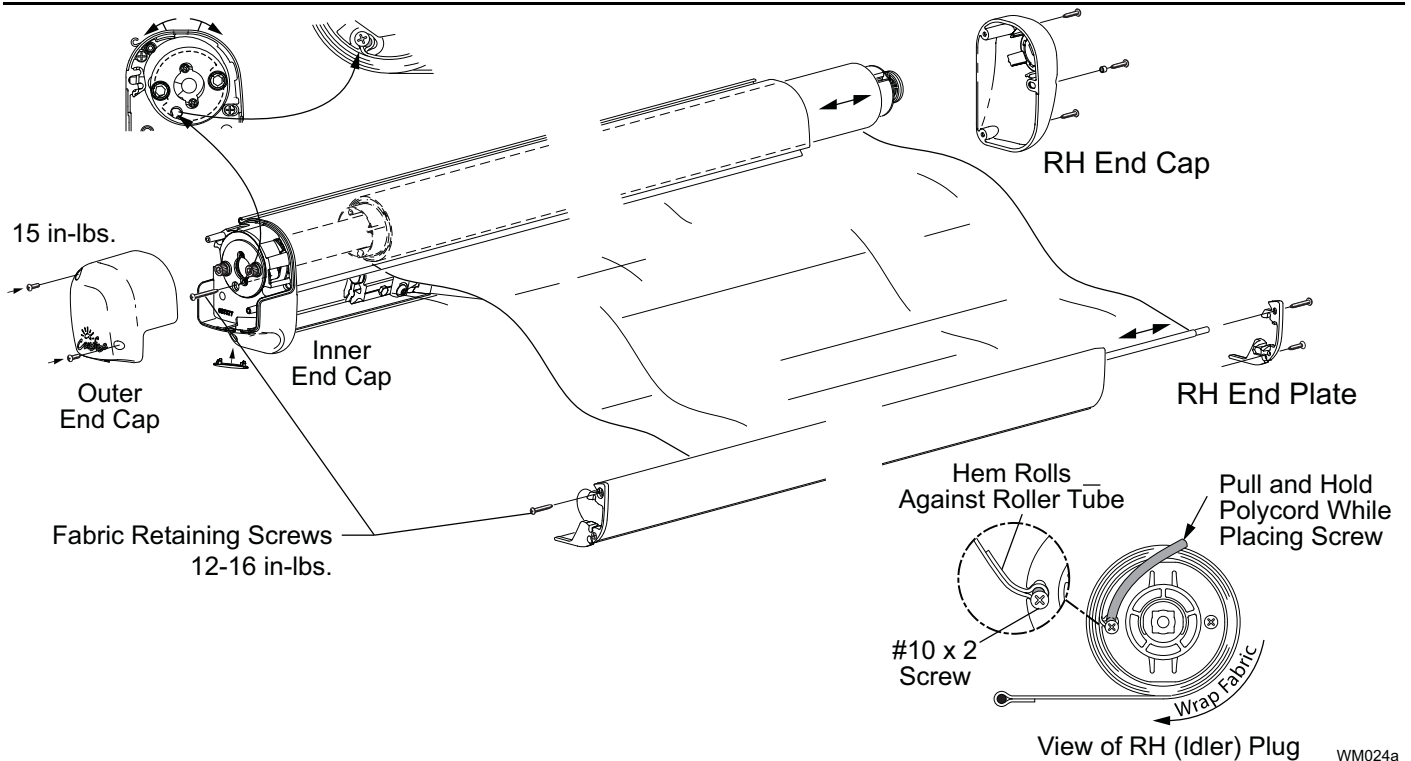


Figure 5. Fabric Replacement - Motorized.

1. Remove the two (2) screws holding the outer end cap. Set the cap and screws aside.
2. On the motor side, remove the fabric retaining screw. It may be necessary to rotate the roller tube to align the screw with the access hole in the inner cap.
3. Remove the fabric retaining screw from the left lead rail end plate.
4. Remove the RH lead rail end plate and the RH end cap.
5. Slide the roller tube and fabric out of the case and lead rail.
6. Remove the fabric retaining screw located through the RH end plug.
7. Unroll the old fabric and slide off the roller tube.
8. Unfold the replacement fabric.

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

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

9. Slide the black polycord of the fabric into the fabric slot. Orient the fabric with the hem on the top (the hem will then roll against the roller tube). Center the fabric in the roller tube.
10. After the fabric is centered, on the RH end plug, pull and hold the excess polycord to one side of the fabric slot. Place one (1) #10 x 2 PHSD screw through the fabric slot hole and polycord. The screw must be positioned to thread into the metal of the roller tube slot and the edge of the polycord. The screw action will pull the polycord further into the slot hole. DO NOT OVERTIGHTEN, maximum torque 16 in-lbs.
11. After the screw is installed, trim the excess polycord.
12. Roll the fabric onto the roller tube. Note the direction of the wrap as shown. The view is of the RH plug. Allow adequate fabric to extend past the roller tube to cover the distance to the lead rail..
13. Slide the fabric into the lead rail and the roller tube into the case.
14. Align the roller tube with the motor drive and bearing. Press the roller tube into the case.
15. Align the RH end cap with the roller tube and case and attach using the screws and spacer removed previously. Torque screws 15 in-lbs.
16. On the motor side, align the fabric slot of the roller tube and the access slot through the inner end cap.
17. Attach the fabric retaining screw through the motor bearing and into the roller tube.
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. Center the fabric in the lead rail. Trim any excess polycord flush with the inside of the lead rail end plates.
20. Attach the RH end plate and the fabric retaining screws (both ends).
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.
21. Reattach the outer end cap on the LH side. Torque screws to 15 in-lbs.
22. After installing the canopy, it may be necessary to adjust the motor limits for motorized awnings. Refer to "Adjusting the Motor Limits" on page 11.

REPLACING THE LEAD RAIL

This procedure requires a minimum of two people. This can be done while the awning is mounted on the vehicle. If being done before the awning is mounted, set the awning on a clean hard surface such as the floor of the shop.

- Open the awning completely. There should be some slack in the fabric. If necessary, adjust the motor limits so that the motor can extend far enough to create slack in the fabric (refer to page 11).

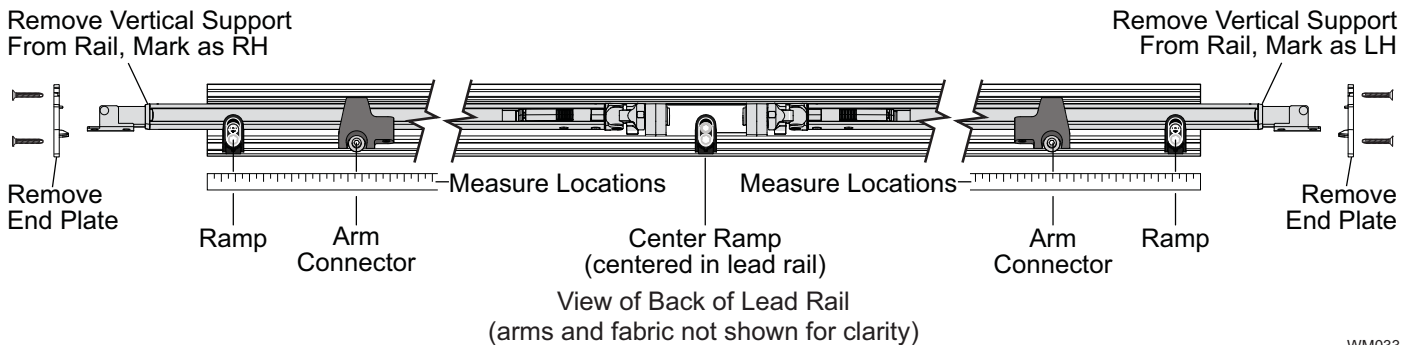


Figure 6. Replacing the Lead Rail.

- Remove the LH and RH end plates and set aside.
- Remove the vertical supports from the lead rail. Be sure to mark or note which is LH and which is RH.
- Carefully measure and record the locations of the ramps and arm connectors.
- Loosen and slide out the outer ramps.

NOTE: It will be necessary to hold and support the lead rail during the removal and assembly.
- Loosen the arm connector screw for one arm and slide the arm and connector out of the lead rail. Allow the arm to extend fully and support the arm with a ladder or scaffolding.
- Repeat for the second arm.

NOTE: If the unit has a center arm, loosen the screw. The arm connector is moved as the lead rail is slipped from the canopy.
- Loosen and slide out the center ramp.
- Slide the lead rail off the canopy fabric. If the unit has a center arm, slide the arm out of the lead rail while sliding the lead rail off the fabric.

INSTALLING THE NEW LEAD RAIL.

- Mark the new lead rail with the dimensions and locations measured previously.

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

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

- Lift the lead rail up and slide onto the fabric. Center the fabric in the lead rail. If the unit has a center arm, begin sliding the arm into the lead rail at the same time.
- Slide the center ramp into the lead rail. Do not tighten at this time.
- Slide one arm connector into the lead rail.
- Slide the other arm connector into the lead rail.
- Align the arm connectors with the measurement marks made previously and tighten the screws.
- Slide the outer ramps onto the lead rail and align with the measurement marks. Align the center ramp in the center of the lead rail. Tighten all screws to 25-30 in-lbs.
- Attach the end plates. The top screws are the fabric retaining screws.

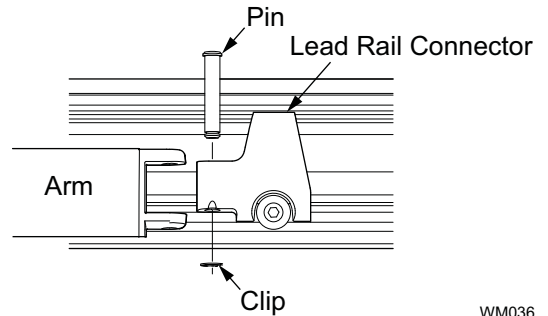
NOTE: The top screw secures the fabric in the lead rail. The screw should be positioned to thread into the metal of the lead rail and the edge of the polycord.

- After installing the lead rail, it may be necessary to adjust the motor limits for motorized awnings. Refer to "Adjusting the Motor Limits" on page 11.

ARM REPLACEMENT

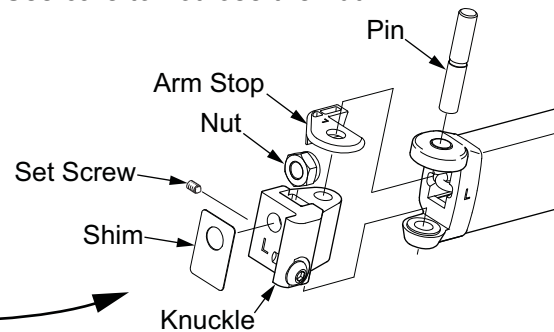
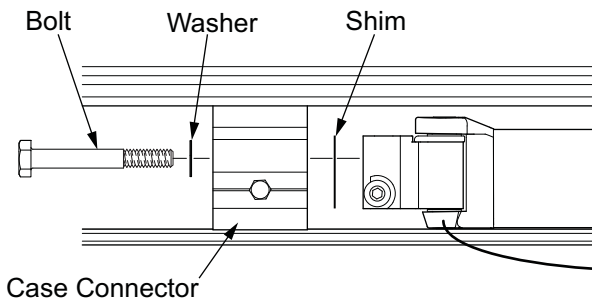
CAUTION The spring arm is under tension to open. Use extreme care to firmly hold the spring arms during assembly and disassembly to avoid any sudden or unexpected movement by the arm. Serious personal injury and/or property damage could occur.

1. Open the awning to the maximum extension or as wide as possible. Adjust the motor limits (see page 11) to allow the lead rail to over extend and create slack in the fabric. This is to minimize the spring tension in the arms during this procedure.
2. Disconnect power to the awning.
3. Use a scaffold or ladder to firmly support the lead rail.
4. At the lead rail, firmly hold the spring arm and remove the clip and pin that secures the arm to the lead rail connector. Set parts aside to be reused.
5. Allow the arm to extend below the lead rail. Support the end of the arm.
6. Remove the bolt, washer and shim from the case connector.



WM036

NOTE: The securing nut floats inside the knuckle. Use care to not lose the nut.



WM037

7. Remove the arm from the awning.

If replacing the rail connector, go to page 8 then return here.

If replacing the case connector, go to page 8 then return here.

8. Remove the knuckle from the arm by removing the set screw, pin and arm stop.
9. Install the knuckle and arm stop on the new arm using the pin and set screw removed previously. Torque set screw to 15-20 in-lbs.
10. Using two people firmly hold the new arm assembly and remove the shipping ties. Allow the arm to slowly open to its maximum extension.

CAUTION When the arm is closed, it can open with significant force. Use care when opening the arm.

Tip: Use a floor or ground cover and place one knuckle and arm half on the ground. Have one person firmly hold the arm half on the ground while the second person carefully opens the other arm half.

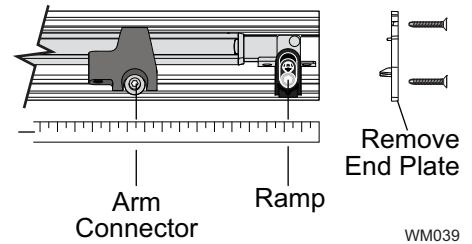
11. Lift the arm assembly into position.

Tip: The securing nut floats in the arm knuckle. Wedge a piece of foam, tape or similar material under the nut to temporarily hold it in line with the hole in the knuckle. This will aid when starting the bolt.

12. Attach the arm to the case connector using the bolt, washer and shim removed previously. Torque bolt to 30-35 in-lbs.
13. Slide the arm onto the lead rail connector and secure using the pin and clip removed previously.
14. Remove the supports from the lead rail.
15. After replacing the arm, it will be necessary to adjust the pitch to align the lead rail and case. See page 8.
16. Adjust the motor limits as required. See page 11.

REPLACING THE LEAD RAIL CONNECTOR

1. Remove the arm according to the instructions on page 7.
2. Remove the lead rail end plate.
3. Carefully measure and mark the location of the existing connector and ramp.
4. Loosen the securing screw and slide the existing connector from the lead rail.
5. Insert the new connector assembly into the lead rail and position at the marks made previously.



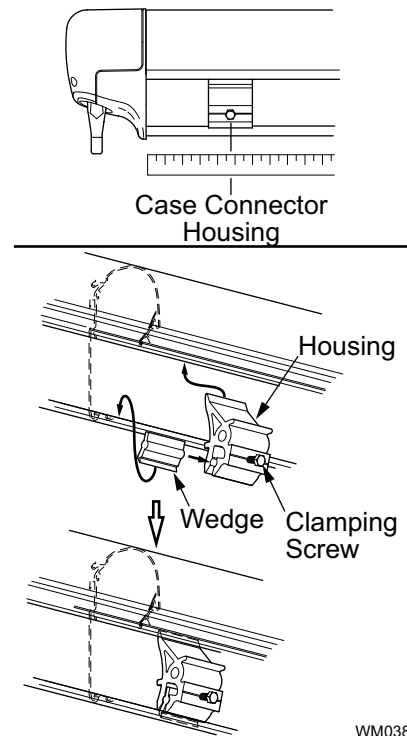
WM039

NOTICE Failure to position the connector correctly can cause the arm and lead rail to not close properly.

6. Tighten the outer securing screw.
7. Attach the lead rail end plate.
8. Return to Replacing the Arm on page 7.

REPLACING THE CASE CONNECTOR

1. Remove the arm according to the instructions on page 7.
2. Carefully measure and mark the location of the existing connector.
3. Loosen the clamping screw then slide the wedge from the housing. Lift both parts from the case.
4. Remove the knuckle and bolt from the new connector and separate the new wedge and new housing.
5. Slide the housing into the upper channel of the case and the wedge into the lower channel of the case.
6. Slide the wedge into the housing and position the housing at the marks made previously. Tighten the clamping screw to 25-30 in-lbs.



WM038

NOTICE Failure to position the connector correctly can cause the arm and lead rail to not close properly.

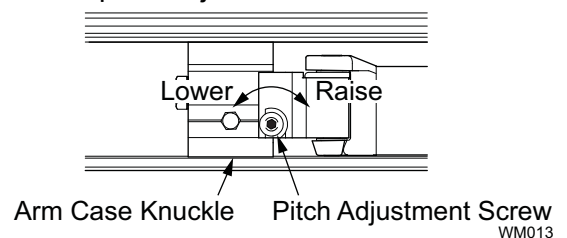
7. Return to Replacing the Arm on page 7.

PITCH ADJUSTMENT – FREEDOM WM

The Freedom WM provides minor pitch adjustment for aligning the lead rail with the case. This adjustment is only for fine-tuning the installation. It is not intended as an operational pitch adjustment.

NOTICE When the pitch of the awning is adjusted, it is important that the lead rail is parallel to the awning housing.

1. Open the awning to access the adjustment screw located on the arm case knuckle.
2. Have a second person lift up on the lead rail to relieve the pressure on the adjustment screw.
3. Using a 5mm 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 the other side as necessary.

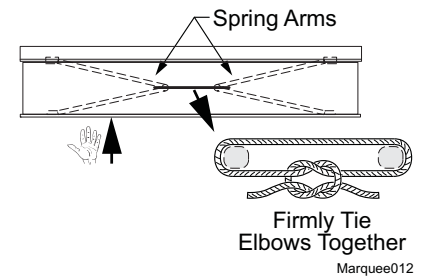


WM013

Figure 7. Pitch Adjustment.

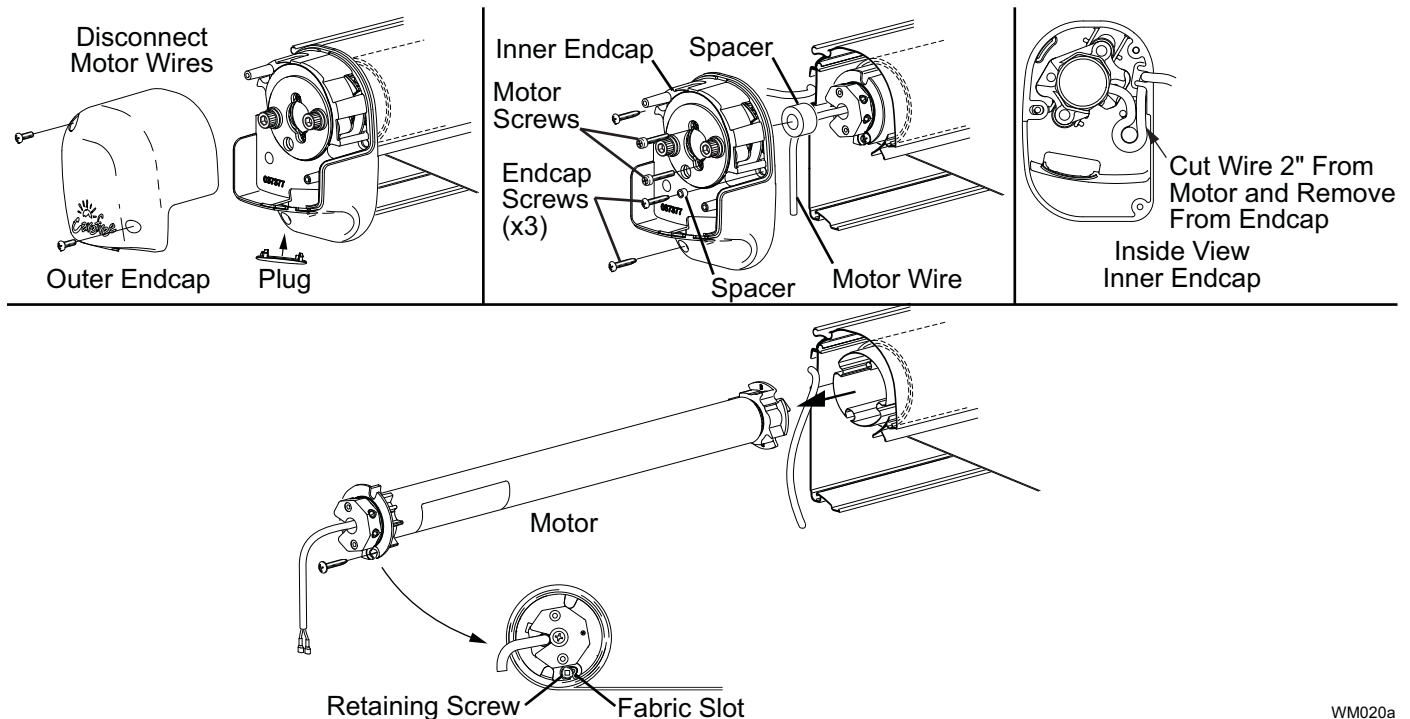
MOTOR REPLACEMENT

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

REMOVE OLD MOTOR



1. Remove the two (2) screws holding the outer end cap. Set the cap and screws aside.
2. Remove the three (3) screws and spacer holding the inner end cap to the case. Remove the two (2) motor screws.



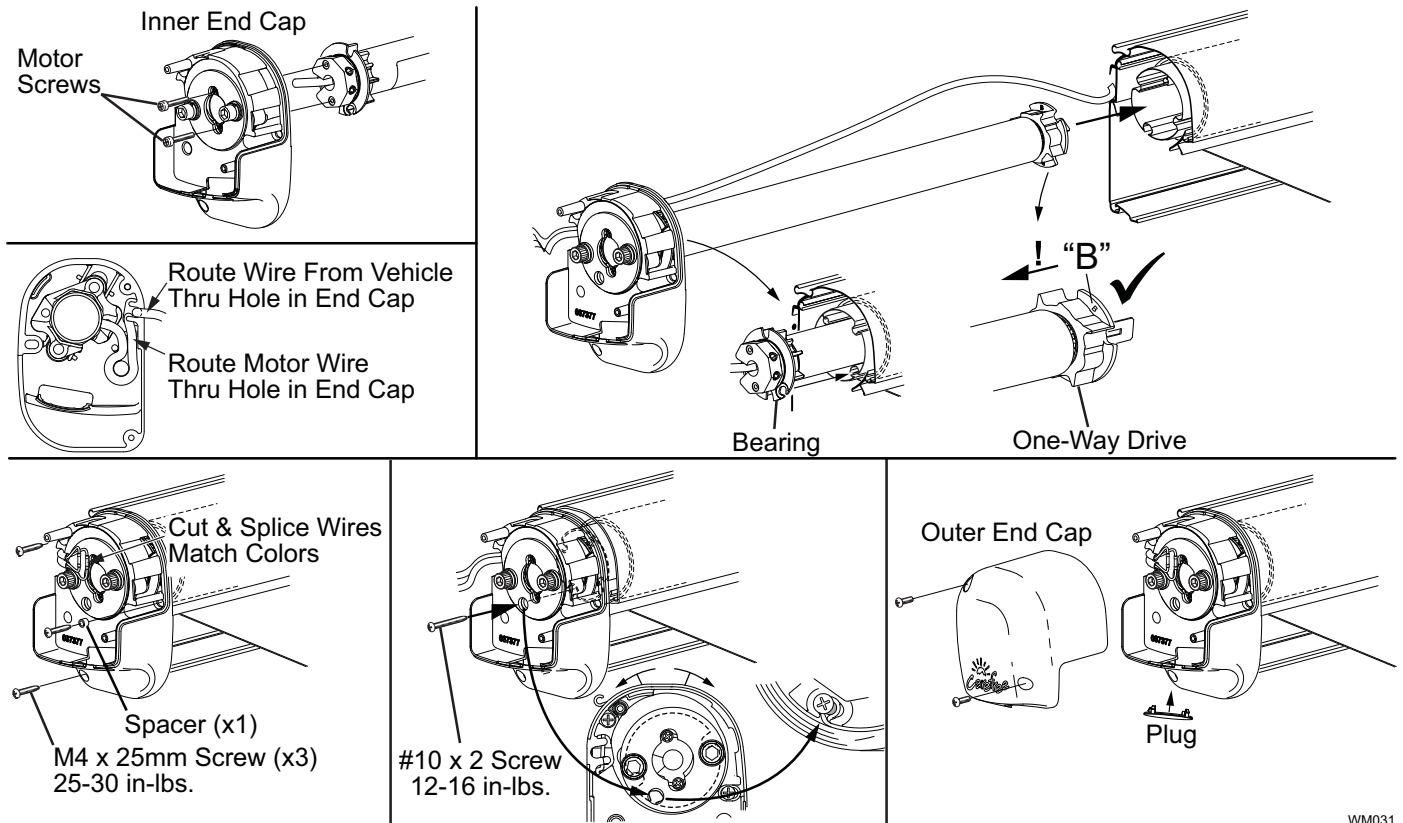
CAUTION If the awning is closed when the inner end cap is detached, the spring arms will try to open. Continue to hold the lead rail closed.

3. Carefully pull the inner end cap away from the case.
4. Cut the motor wire approximately 2" from the motor and remove the wire from the end cap. . Set the end cap aside.
5. Remove the fabric retaining screw.
6. Pull the motor out of the roller tube and set aside.




CAUTION If the awning is closed when the motor is removed, the spring arms will try to open. Support the roller tube and allow the awning to open slowly then secure the arms by tying the elbows together as described previously.

INSTALL THE NEW MOTOR



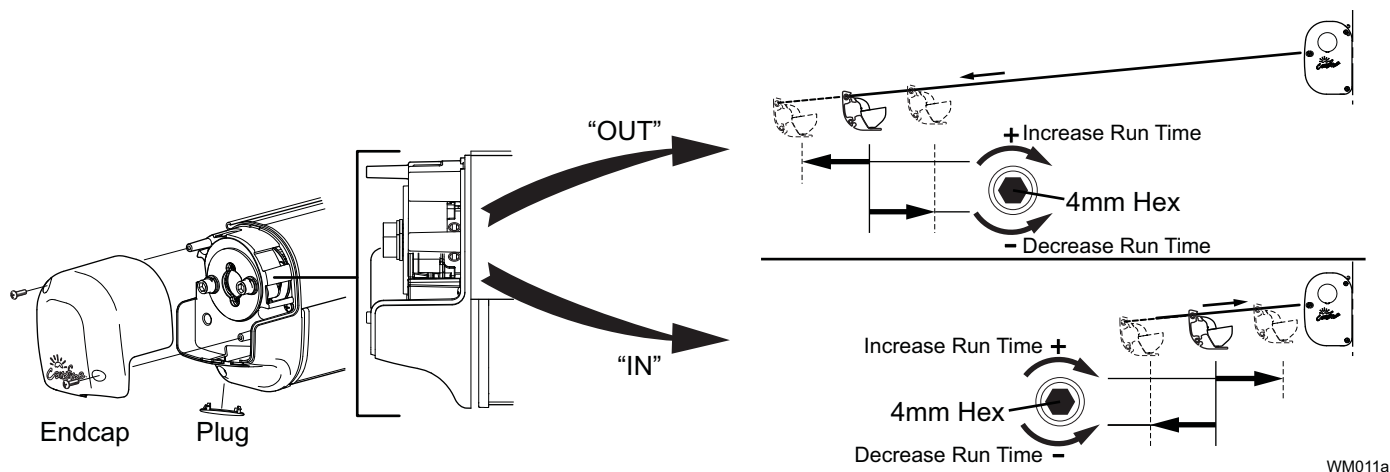
WM031

1. Check that the one-way drive is installed on the new motor assembly with the "B" pointing toward the motor.


CAUTION

The one-way drive must be oriented with the "B" facing the motor. If the drive is not oriented the awning not to operate and the arms will spring out when released.
2. Align the motor with the inner endcap and attach using the motor screws removed previously.
3. Route the new motor wire through the hole in the end cap.
4. Align the one-way drive with the roller tube and start sliding the new motor into the roller tube.
5. Route the wire from the vehicle through the hole in the end cap.
6. Align the bearing on the motor and slide into the roller tube.
7. Align the screw holes in the inner end cap and attach to the awning case using three (3) M4 x 25 screws and 1 spacer in the front attach hole.
8. Through the access hole in the inner end cap, attach the 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 polycord. It may be necessary to rotate the roller tube to align the access hole and fabric slot.
9. Trim the excess wire from the motor and vehicle then splice the motor wires to the vehicle wires. Match the wires (Blue to Blue and Brown to Brown). Fold and tuck the wires and splices to fit inside the outer end cap.
10. 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.
11. To test, restore power then extend and retract the awning.
12. After replacing the motor, it will be necessary to adjust the motor limits (page 11).
13. After testing and adjusting the motor limits, attach the outer end cap.

ADJUSTING THE MOTOR LIMITS

*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.

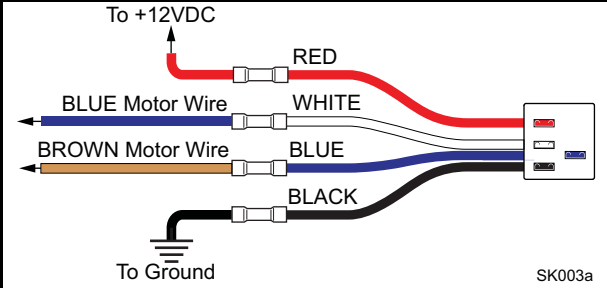
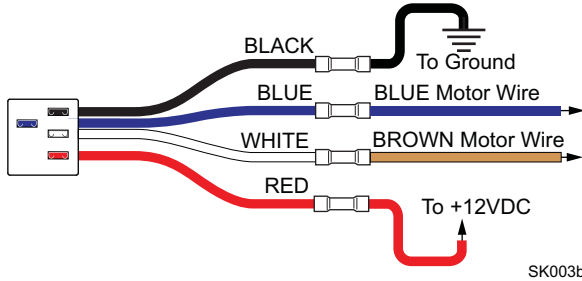
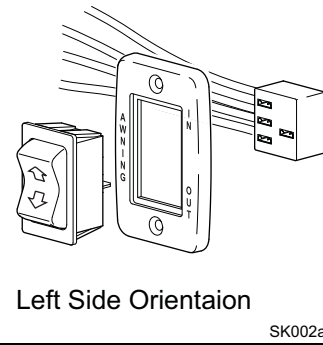
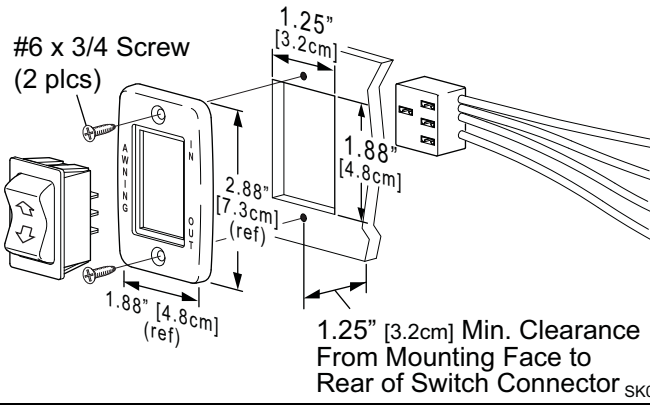
NOTICE The in-limit switch must be set to shut off the motor when the awning is closed. The motor must not continue to run after the awning is closed otherwise damage to the motor will occur if the motor continues to run after the awning is closed.

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, counter clockwise 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.

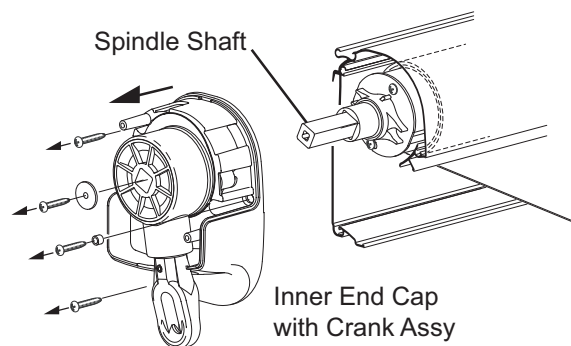
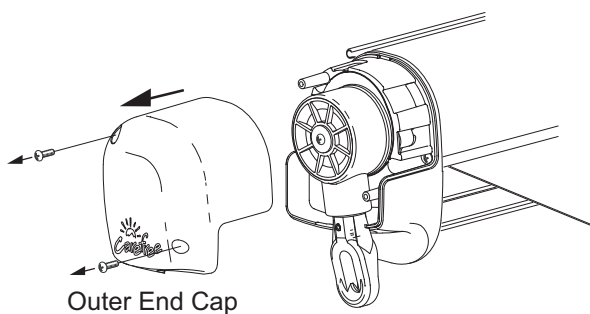
4. Extend and retract the awning several times to confirm that the adjustment is correct.
5. Repeat steps 3 and 4 as required until the awning retracts correctly.

SWITCH WIRING FREEDOM WM(MOTORIZED ONLY)



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

REPLACING THE CRANK



WM026a

1. Remove the 2 screws and outer end cap and set aside.
2. Remove the center screw and washer from the crank assy.
3. Remove the 3 screws and spacer from the inner end cap.
4. Slide the old crank assembly off the spindle shaft.
5. Slide the new crank assembly onto the spindle shaft.
6. Attach the inner end cap and crank assembly with the screws and spacer removed previously.
7. Attach the outer end cap with the screws removed previously.

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: The harness is routed through the end of the case, then through the vehicle wall.

NOTICE 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.

NOTICE 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.

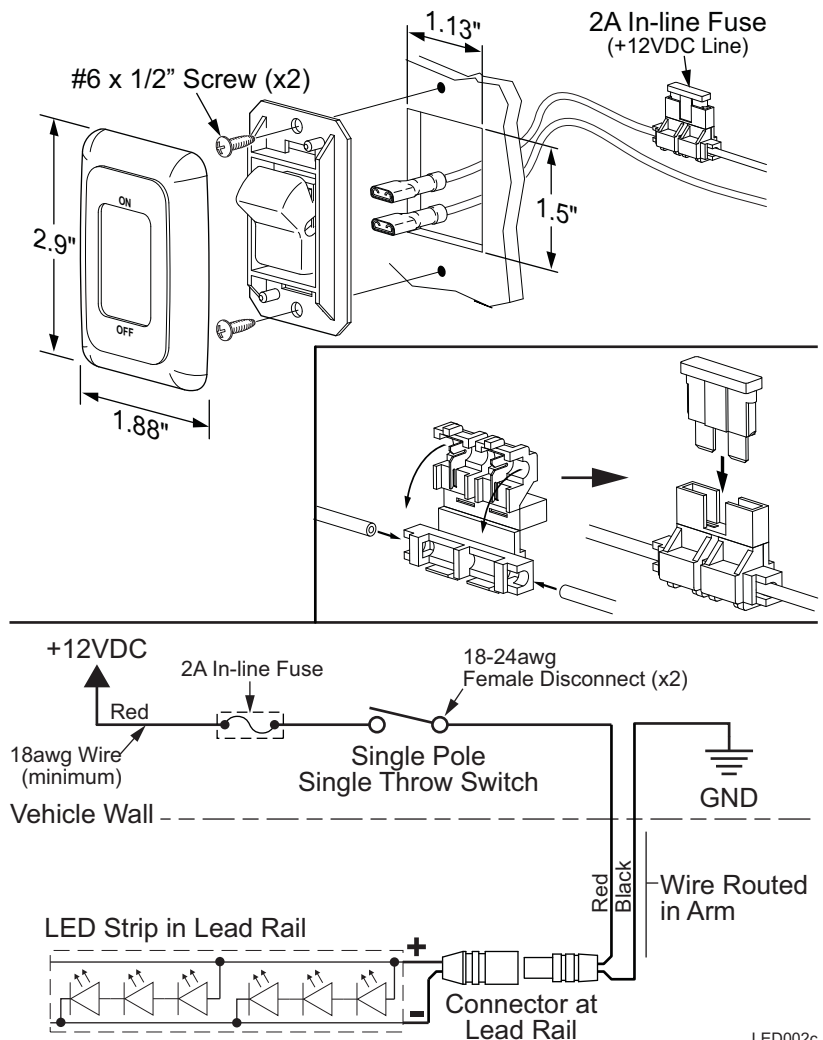
SWITCH INSTALLATION

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.

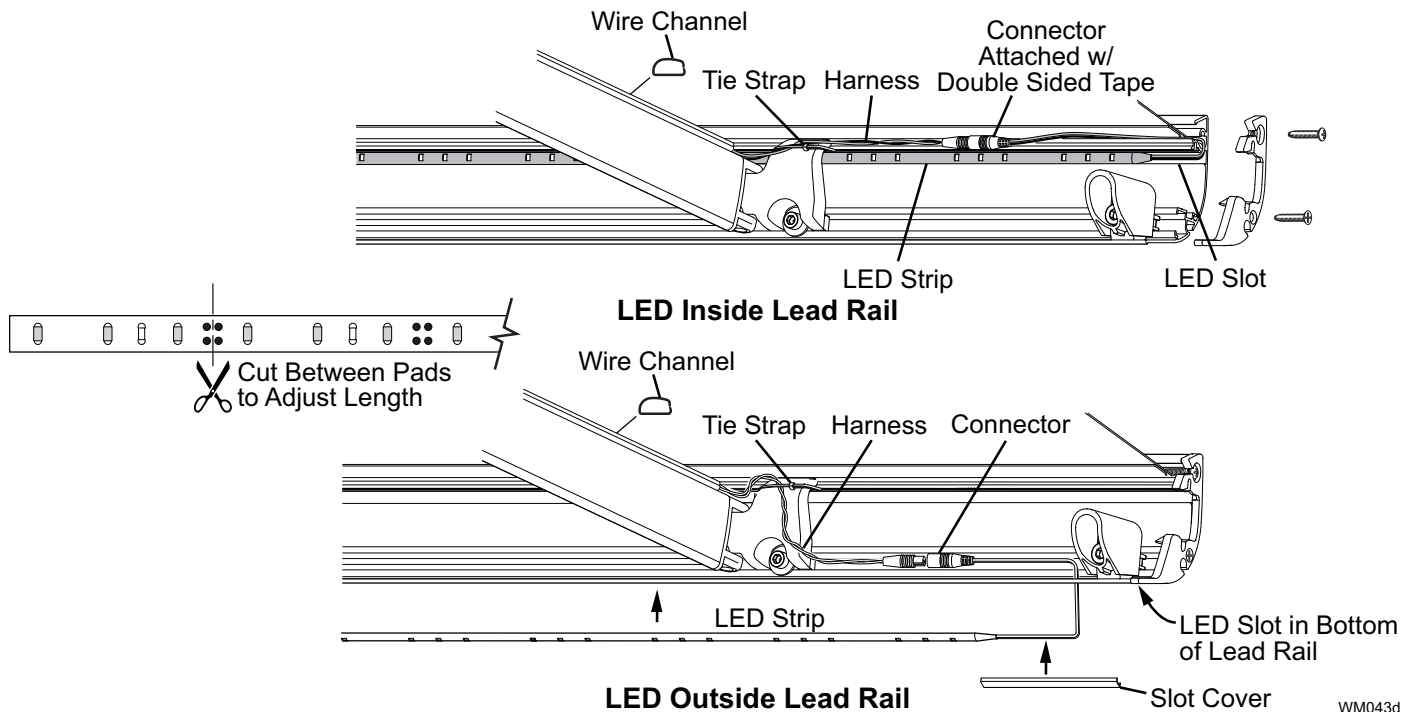
4. Install the in-line fuse:
 - 4.1. Near the switch, cut the red 12VDC power line to the switch. Do not strip the insulation.
 - 4.2. Insert a wire end into one of the wire channels until it butts up against the stop.
 - 4.3. Fold that half of the connector body over until the element contacts the wire.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



LED002c

REPLACING THE LED STRIP

Previous installations placed the LED strip on the inside of the lead rail. In later installations, the LED strip is mounted on the outside of the lead rail. Outside installations require the LED slot on the outside of the lead rail.



WM043d

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 connector.
5. LED strip inside the lead rail:
 - 5.1. Remove the lead rail end cap.
6. LED strip outside the lead rail:
 - 6.1. Remove the slot covers from the ends of the strip.
 - 6.2. Pull the lead wires and connector out through the hole in the lead rail.
7. Remove the existing LED strip.
8. Clean the slot to remove any dirt and tape residue.
9. Starting at the reference mark on the harness end, press the new strip into the LED slot.

Tip: For inside mount strips, thread the LED strip behind the connectors before pressing the strip into the slot.
10. 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.
11. Route the new LED wires as shown and connect to the harness.
 - 11.1. LED strip inside the lead rail: the connector is fixed to the lead rail with double sided tape. Replace the tape if necessary.
 - 11.2. LED strip outside the lead rail: The wire and connector goes in the empty slot as shown.
12. LED strip inside the lead rail: Attach the lead rail end plate. Ensure that the wire is in the cavity of the end plate and the wires are not pinched.
13. LED strip outside the lead rail: Press the slot covers into the LED slot.
14. Restore power and test.

HARNESS 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. *Freedom WM:* The wire is routed with the motor wire. To access the wire, it will be necessary to remove the outer end cap from the motor side.
 - 3.2. Clip the harness.
 - 3.3. 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.

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.

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.

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

NOTICE 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 require the material to be washed more frequently.

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; retract the awning in steps (8"-12") to dump the water. This will help prevent the fabric from stretching or distorting.

Leaking

On vinyl canopies, side hems and poly cords are stitched in with a sewing machine. On occasion, this stitching may allow water to seep or leak through the stitches. This is normal and not a defect covered by warranty. Treat the seams with a quality seam sealer.

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.

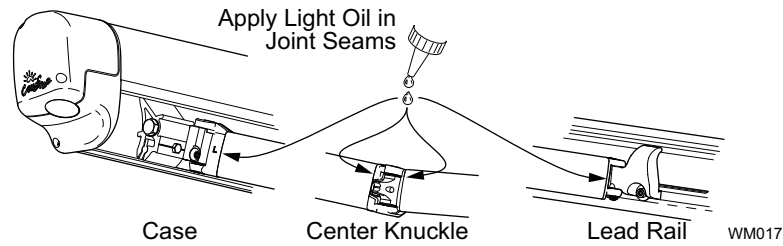
SUPPORT ARM CARE

The best method of keeping the support arms and braces operating smoothly is to clean them. Dirt and debris can cause the channels not to slide easily.

Periodically wash out the channels with running water (i.e. a hose) to keep them clean. If the channels still do not slide easily, lightly spray the joints and/or inside of the channels with a dry silicone lubricant after the arms have been cleaned and dried.

ARM NOISE

After a period of use, the arm knuckle joints may slide together slightly making a squeaking or squealing noise; this is normal and not a reason for concern. To reduce the sound, apply a few drops of multi-purpose oil (3-IN-1[®] ¹ or equivalent) on the knuckle joint seams. Operate the awning and repeat 3-4 times to allow the oil to penetrate into the joint.

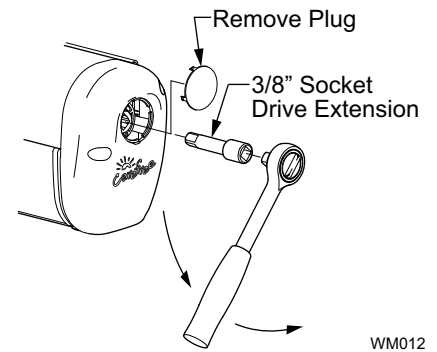


MANUAL OVERRIDE (MOTORIZED VERSIONS ONLY)

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.

1. Remove the plug from the right end cap 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 counterclockwise until the awning is retracted.
4. Replace the plug.

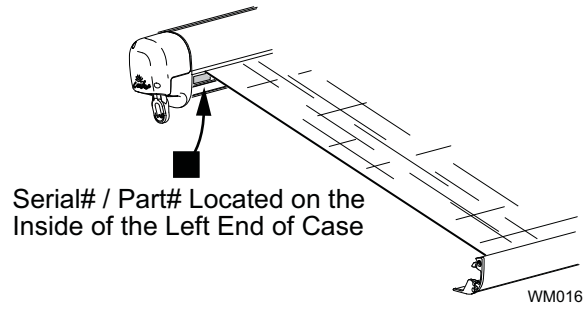


NOTICE After closing the awning with the manual override, the lead rail may move out from the case 1/4" -1/2". This is normal and the awning is secure for travel until power is restored or repairs are completed. Do not attempt to force the lead rail in with the override, serious damage can occur to the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

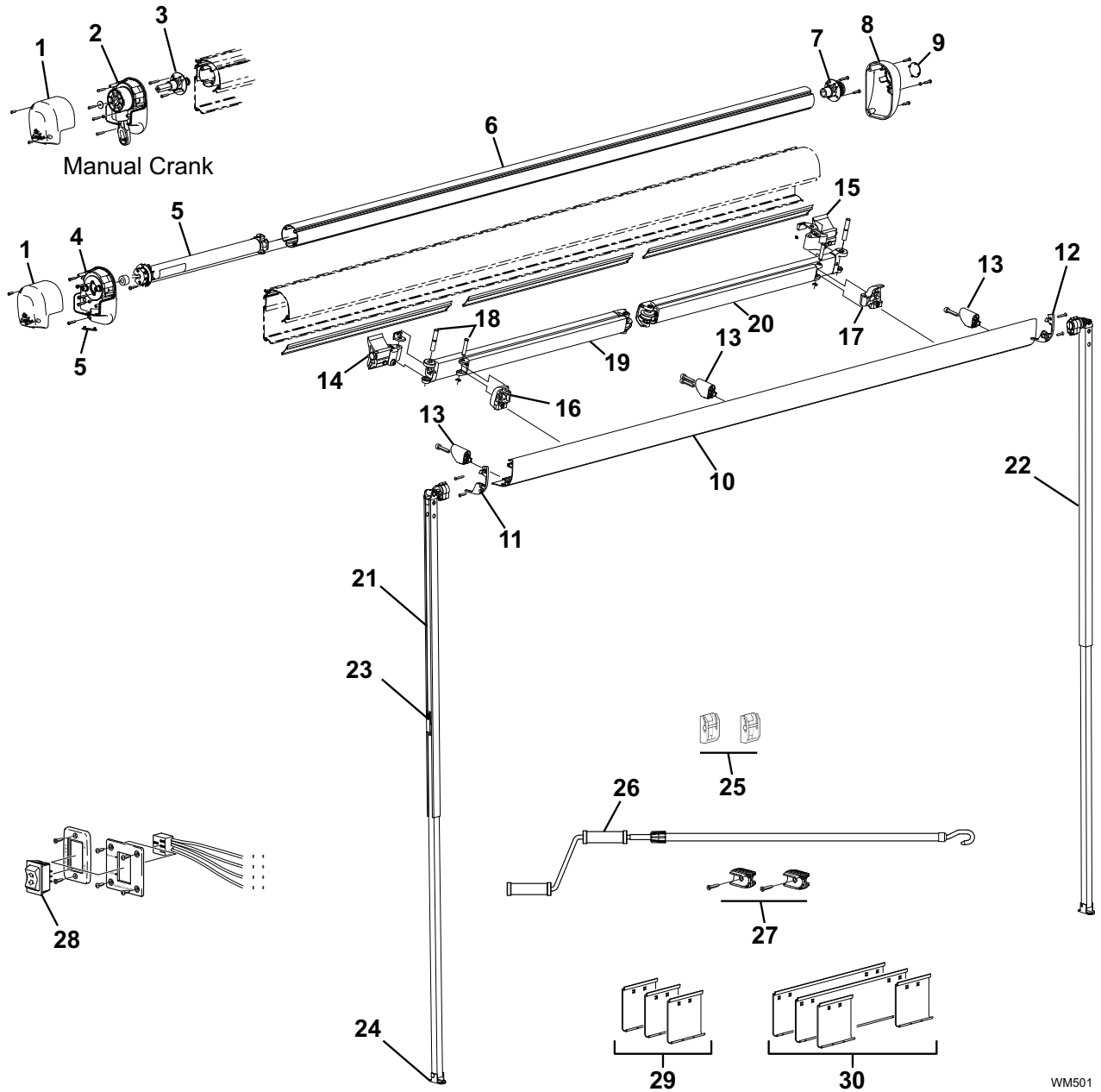
¹ 3-IN-1[®] is a registered trademark of the WD-40 company.

PART NUMBER LISTING

Serial Number/Part Number Location



FREEDOM WM ILLUSTRATED PARTS LIST



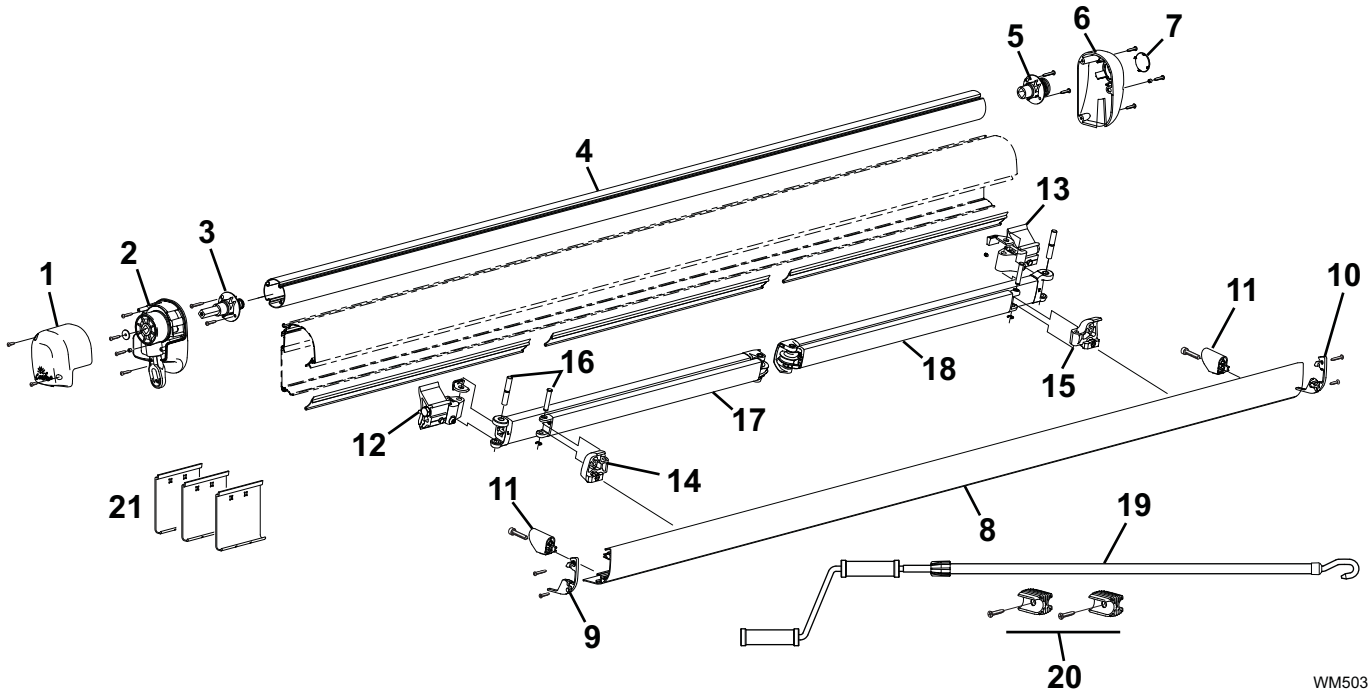
WM501

Item	Part Number	Description	Notes
1	R001618XXX	End Cap, LH, Outer	
2	R001619XXX	Gear Assy, Manual Crank	3
3	R001622	Roller Tube Endplug, LH, used with manual crank	
4	R001861XXX	Inner Endcap Assembly, used with motorized	
5	R001863	Motor Assy	4,6
6	610900-xxx.xx	Roller Tube	
7	R001623	Roller Tube Endplug, RH	
8	R001620XXX	End Cap, RH	
9	R040792XXX	Plug (-005=white;-006=black; -291=satin)	
10	R001811X-aa-xxx	Lead Rail	1,2,9
11	R001624XXX	End Plate, Lead Rail, LH	
12	R001625XXX	End Plate, Lead Rail, RH	
13	R001621	Ramp Kit, Leadrail	

Item	Part Number	Description	Notes
14	R001626	Knuckle Assy, Case, LH	5
15	R001627	Knuckle Assy, Case, RH	5
16	R001628	Assy, Pivot, LH	5
17	R001629	Assy, Pivot, RH	5
18	R001630	Hardware Pack, Arm Attach, 1 Arm	
19	R012530-TB56L	Spring Arm Assy, LH	Used with 2.2 Meter 5
	R012530-TB68L	Spring Arm Assy, LH	Used with 2.44 Meter 5
	R012530-TB76L	Spring Arm Assy, LH	Used with 2.57 Meter 5
	R012530-TB94L	Spring Arm Assy, LH	Used with 3 Meter & Up 5
20	R012530-TB56R	Spring Arm Assy, RH	Used with 2.2 Meter 5
	R012530-TB68R	Spring Arm Assy, RH	Used with 2.44 Meter 5
	R012530-TB76R	Spring Arm Assy, RH	Used with 2.57 Meter 5
	R012530-TB94R	Spring Arm Assy, RH	Used with 3 Meter & Up 5
20a	R012530-TB94M	Spring Arm Assy, Center, not shown	Used on 4.5 and 5 meter only 5,8
21	R001654-003	Vertical Support Leg, LH	Used with 2.2 Meter
	R001654-001	Vertical Support Leg, 3-piece, LH	Used with 2.44 & 2.57 Meter
	R001654-002	Vertical Support Leg, LH	Used with 3 Meter & Up
22	R001654-103	Vertical Support Leg, RH	Used with 2.2 Meter
	R001654-101	Vertical Support Leg, 3-piece, RH	Used with 2.44 & 2.57 Meter
	R001654-102	Vertical Support Leg, RH	Used with 3 Meter & Up
23	R001657	Flipper Latch Kit, Orange	7
24	R00394	Carport Foot	
25	R019283-231	Kit, Bottom Bracket, Satin	qty: 2
	R019283-005	Kit, Bottom Bracket, White	qty: 2
	R019283-006	Kit, Bottom Bracket, Black	qty: 2
26	R001546-RP	Crank, Telescoping	
27	901072	Crank Handle Clip	qty: 2
28	R001605	Switch Kit	6
29	R019311-004	Hardware Pack 2.43-4m	Manual Satin
	R019311-504	Hardware Pack 2.43-4m	Manual White
	R019311-604	Hardware Pack 2.43-4m	Manual Black
	R019311-001	Hardware Pack 2.43-4m	Motorized Satin
	R019311-501	Hardware Pack 2.43-4m	Motorized White
	R019311-601	Hardware Pack 2.43-4m	Motorized Black
30	R019311-005	Hardware Pack 4.5-5m	Manual Satin
	R019311-505	Hardware Pack 4.5-5m	Manual White
	R019311-605	Hardware Pack 4.5-5m	Manual Black
	R019311-003	Hardware Pack 4.5-5m	Motorized Satin
	R019311-503	Hardware Pack 4.5-5m	Motorized White
	R019311-603	Hardware Pack 4.5-5m	Motorized Black

- NOTES
1. XXX = Color WHT = White; BLK = Black; GRY = Satin
 2. -xxx = awning length (2.2m, 2.44m, 2.57m, 3m, 3.5m, 4m, 4.5m, 5m)
 3. Gear Assy (item 2) includes gear and inner End Cap assembled. Parts not available separately.
 4. Motor Assy (item 3) includes motor, bearing and one-way drive. Parts not available separately.
 5. Attaching hardware not included with spring arm assemblies. Order item 16.
 6. A motor upgrade kit (SR0097XXX) is available for manual crank awnings and includes motor assembly (item 3), switch kit (item 25) and attaching hardware.
 7. Original vertical support legs use a gray flipper latch. Replacement latch kit is R00144. If leg has orange flipper latch, Use replacement latch kit R001657.
 8. 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.
 9. For Item 15 (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 OTD ILLUSTRATED PARTS LIST

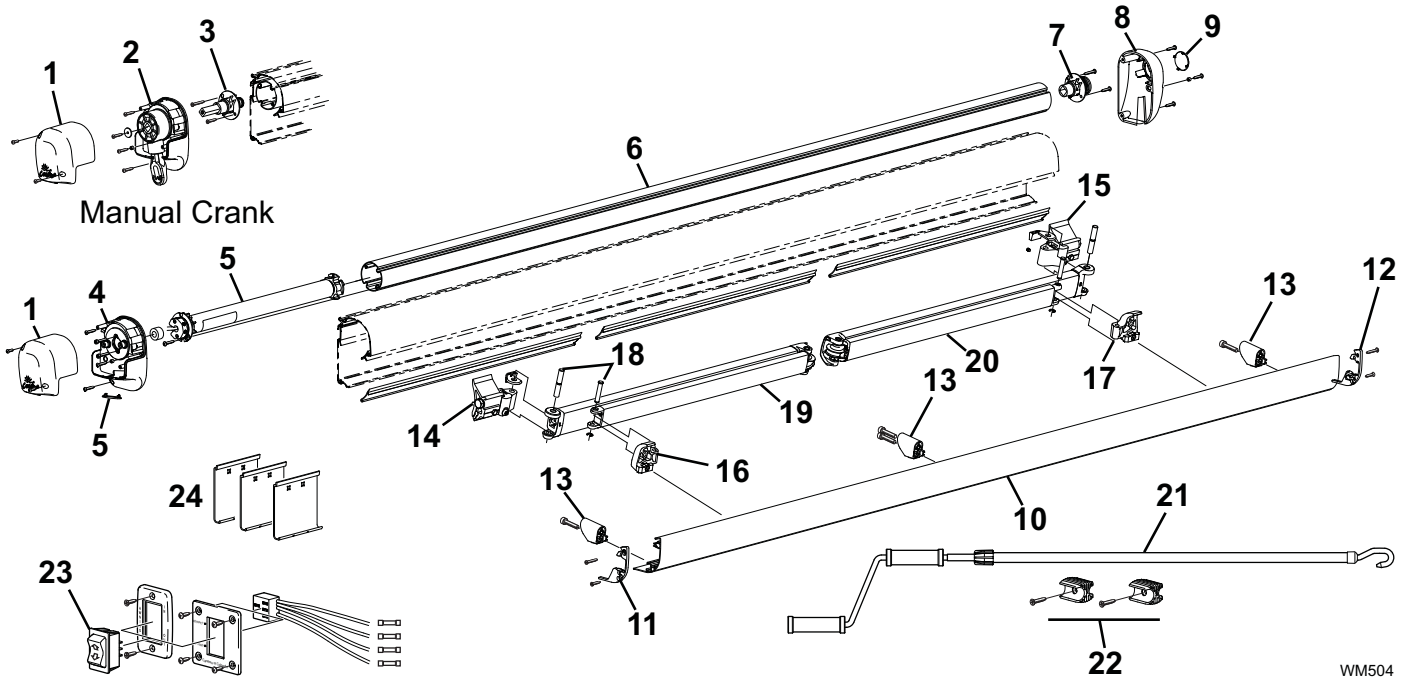


WM503

Item	Part Number	Description	Notes
1	R001618XXX	End Cap, LH, Outer	
2	R001619XXX	Gear Assy, Manual Crank	3
3	R001622	Roller Tube Endplug, LH	
4	610900-xxx.xx	Roller Tube	
5	R001623	Roller Tube Endplug, RH	
6	R001620XXX	End Cap, RH	
7	R040792XXX	Plug (-005=white;-006=black; -291=satin)	
8	R001695XXX-xxx	Lead Rail	1,2
9	R001624XXX	End Plate, Lead Rail, LH	
10	R001625XXX	End Plate, Lead Rail, RH	
11	R001621	Ramp Kit, Leadrail	
12	R001626	Knuckle Assy, Case, LH	4
13	R001627	Knuckle Assy, Case, RH	4
14	R001628	Assy, Pivot, LH	3
15	R001629	Assy, Pivot, RH	3
16	R001630	Hardware Pack, Arm Attach, 1 Arm	
17	R012530-TB32L	Spring Arm Assy, LH	4
18	R012530-TB32R	Spring Arm Assy, RH	4
19	R001546-RP	Crank, Telescoping	
20	901072	Crank Handle Clip	qty: 2
21	R019311-004	Hardware Pack	Satin
	R019311-504	Hardware Pack	White
	R019311-604	Hardware Pack	Black

NOTES 10. XXX = Color WHT = White; BLK = Black; GRY = Satin
 11. -xxx = awning length
 12. Gear Assy (item 2) includes gear and inner End Cap assembled. Parts not available separately.
 13. Attaching hardware not included with spring arm assemblies. Order item 16.

FREEDOM WMNL ILLUSTRATED PARTS LIST

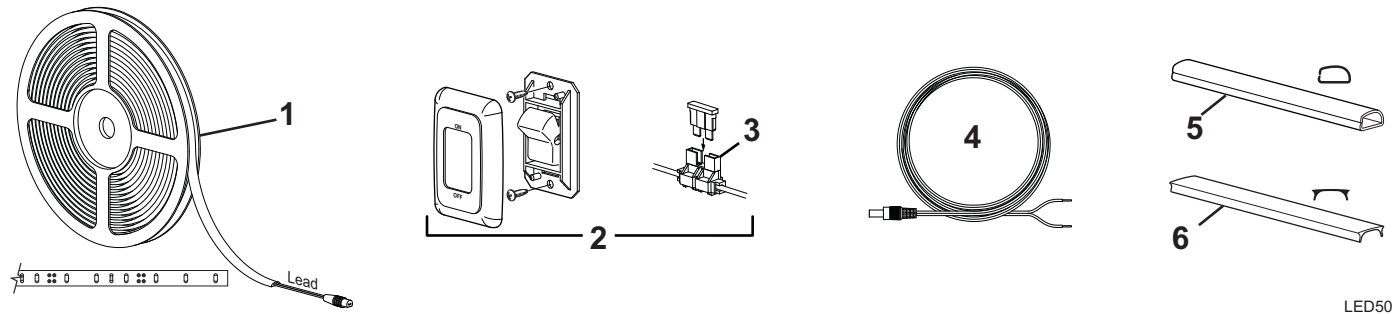


WM504

Item	Part Number	Description	Notes
1	R001618XXX	End Cap, LH, Outer	
2	R001619XXX	Gear Assy, Manual Crank	3
3	R001622	Roller Tube Endplug, LH, used with manual crank	
4	R001861XXX	Inner Endcap Assembly, used with motorized	
5	R001863	Motor Assy	4,6
6	610900-xxx.xx	Roller Tube	
7	R001623	Roller Tube Endplug, RH	
8	R001620XXX	End Cap, RH	
9	R040792XXX	Plug (-005=white;-006=black; -291=satin)	
10	R001811X-aa-xxx	Lead Rail	1,2,9
11	R001624XXX	End Plate, Lead Rail, LH	
12	R001625XXX	End Plate, Lead Rail, RH	
13	R001621	Ramp Kit, Leadrail	
14	R019381-001	Knuckle Assy, Case, LH	5
15	R019381-002	Knuckle Assy, Case, RH	5
16	R001678	Assy, Pivot, LH	5
17	R001680	Assy, Pivot, RH	5
18	R001630	Hardware Pack, Arm Attach, 1 Arm	
19	R012530-TB68L	Spring Arm Assy, LH	5
20	R012530-TB68R	Spring Arm Assy, RH	5
21	R001546-RP	Crank, Telescoping	
22	901072	Crank Handle Clip	qty: 2
23	R001605	Switch Kit	6
24	R019311-004	Hardware Pack	Manual Satin
	R019311-504	Hardware Pack	Manual White
	R019311-604	Hardware Pack	Manual Black
	R019311-001	Hardware Pack	Motorized Satin
	R019311-501	Hardware Pack	Motorized White
	R019311-601	Hardware Pack	Motorized Black

- NOTES
- XXX = Color WHT = White; BLK = Black; GRY = Satin
 - xxx = awning length (2.44m)
 - Gear Assy (item 2) includes gear and inner End Cap assembled. Parts not available separately.
 - Motor Assy (item 3) includes motor, bearing and one-way drive. Parts not available separately.
 - Attaching hardware not included with spring arm assemblies. Order item 17.
 - A motor upgrade kit (SR0097XXX) is available for manual crank awnings and includes inner end cap (item 4) motor assembly (item 3), switch kit (item 21) and attaching hardware.

OPTIONAL LED LIGHTING



Item	Part Number	Description	Notes
1	R060732-001	LED Strip, White, 16' Length	8" Lead 1
2	SR0101	Switch Kit (includes item 3)	
3	R019493-001	Fuse Kit (includes in-line fuse holder and 2A fuse)	
4	R060740-001	Harness	
5	R040616-206	Wire Channel	pkg of 2 (1' length ea)
6	R001716	Slot Cover	

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

