



RV

**MANUAL/MOTORIZED
STANDARD/AUTO-RETRACT/DIRECT RESPONSE**



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.

These instructions apply to all models listed. Procedures unique to a specific model are labeled appropriately.

For LED replacement parts and service procedures refer to 070013-301 “LED Service Manual for Box Awnings” available on-line at www.carefreeofcolorado.com



TABLE OF CONTENTS

Product Overview.....	d
Mirage Patio Awning Specifications.....	d
Standard Service Procedures	1
Standard Maintenance.....	1
Fabric Care	1
Mildew	1
Pooling	1
Arm Care.....	1
Motor Maintenance	1
Manual Override (motorized versions only)	2
Adjusting the Pitch.....	2
Adjusting the Motor Limits	3
OUT Limit Switch	3
Adjusting the IN Limit Switch.....	4
Setting the Wind Speed Sensitivity (standard electronics)	4
Programming the Remote (standard electronics w/ optional remote).....	4
Programming the Remote Receiver (Direct Response)	5
Operational Notes:	5
Canopy Replacement.....	6
Hand Crank Replacement.....	7
Motor Replacement	8
Spring Arm Replacement.....	10
Replacing the Arm	10
To Replace the Lead Rail Connector:	11
To Replace the Case Arm Support	11
Diagnostics/Troubleshooting	12
Common Operation Items	12
System Tests.....	13
Standard Electronics w/ Optional Auto-Retract.....	13
Direct Response w/ DKS Style Switch Panel.....	13
Testing the Key FOB.....	14
Electrical	19
Wiring Harness – Optional Light & Speaker End Caps	20
Wiring Diagram - Direct Connect (No Relay Control Box)	20
Wiring Diagram –Switches w/ Relay Control Box - Previous.....	21
Wiring Diagram –Switches w/ Relay Control Box	22
Wiring Diagram – Standard Electronics w/ Optional Auto Retract.....	23
Wiring Diagram – Direct Response Electronics.....	24
Wiring Diagram – Direct Response Winnebago	25
Sensor Replacement for Direct Response	26
Installing the Vertical Mount Bracket.....	26
Installing a New Sensor	26
Optional Manual Bypass Switch – Direct Response.....	27
Part Number Listing	28
Part Number/Serial Number Location.....	28
Illustrated Parts List	28
Electronics.....	30

PROPRIETARY STATEMENT

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

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

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SAFETY INFORMATION



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



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



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



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

General Safety:



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



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.

Electric components in this product have been tested by the following agencies:



Motor: UL Recognized (USA)
CSA Approved (Canada)

Controls: UL Listed (USA & Canada)



PRODUCT OVERVIEW

The Mirage Patio Awning offers the coach owner an awning system that provides as much or as little shade as required. The canopies are housed in an aluminum case that easily blends in with the coach side wall. The canopy is made from woven acrylic fabric.

Each unit is equipped with Mirage lateral support arms that are the strongest available on the market. No vertical arms interfere with coach sidewalls or equipment that may be mounted on the sidewalls or sidewall graphics. These arms can also be adjusted to vary the canopy pitch up to 2 feet (it is strongly recommended that service and adjustments be performed by trained technicians).

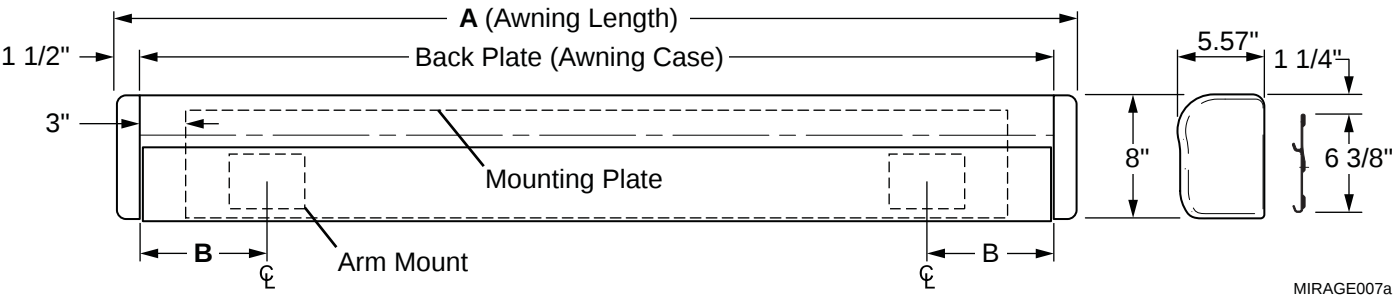
The unique and innovative 110V electronic control system provides Carefree's *Direct Response* system with interior pushbutton controls for standard extend/retract functions. When power is ON, the auto-retract system is engaged to automatically retract the awning in windy conditions. Sensitivity can be set to respond to a variety of wind speed conditions. An RF remote is standard with the *Direct Response* system.

MIRAGE PATIO AWNING SPECIFICATIONS

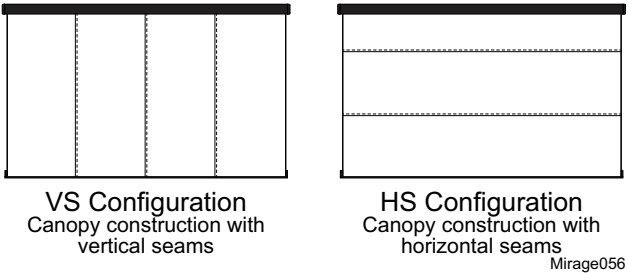
The following information is for reference only.

LENGTH		12' – 21' [3.66m - 6.4m] (in 1 foot [.305m] increments)				
EXTENSION:	10' [3m]	DROP @ MIN. PITCH: 10" [25cm]			DROP @ MAX. PITCH: 35" [89cm]	
	Values are approximate, actual dimensions may vary with specific installations.					
SUPPORT:	Lateral Spring Arms 2 for 12' - 18'; 3 for 19' - 21'					
MOTOR:	Tubular	Available in LH or RH configurations				
	Power:	120V, 60Hz, 2.5A	Torque:	60nm	Speed:	14 RPM
CONTROLS:	Direct Response™					
COLOR:	Hardware:	White or Black				
	Fabric:	Woven Acrylic (refer to sales literature for colors)				

APPROXIMATE WEIGHT (LBS.)								
Awning Length	Weight	Dim B	Awning Length	Weight	Dim B	Awning Length	Weight	Dim B
12	134	6.5in	15	160	11.25in	19	194	17in
13	143		16	169		20	203	
14	152		17	177		21	211	
			18	186		22	220	



There are two configurations of the Mirage based on the canopy construction as shown.



STANDARD SERVICE PROCEDURES

STANDARD MAINTENANCE

Maintaining the Carefree Manual Patio 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 an 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.

Arm Care

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

NOTE: Avoid introducing water into the motorized housings.

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 with a dry silicone lubricant. After the arms have been cleaned and dried thoroughly.

Motor Maintenance

- Check all wiring and connections for wear. Repair when needed.

MANUAL OVERRIDE (MOTORIZED VERSIONS ONLY)

If 110V power is not available to the vehicle, the awning can still be safely retracted using the manual override. The bypass may be accessed from inside the case on the motor housing or from the top of the case above the motor housing.

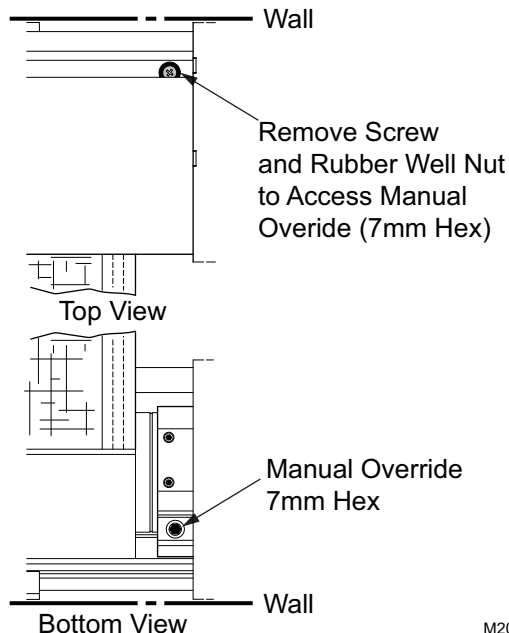
To use the inside bottom access: The awning must be open a minimum of 8" to afford access to the override.

To use the top bypass access: Remove the screw and well nut that is used to secure the end cap.

1. Chuck the 7mm hex key into a 3/8" battery powered drill.
2. Insert the hex key into the manual override on the awning. For the top access, it will be necessary to locate the hex by feel; it is not visible with the key inserted in the hole.
3. Operate the drill in the forward (clockwise) direction to close the awning. Reverse the drill to open the awning.

NOTE: When using the bottom override, the awning can only be closed within 6-8". It will be necessary to use the top access to close the awning completely.

4. When done, return the screw and well nut to the top of the case if removed.



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ADJUSTING THE PITCH

NOTICE During installation or when the pitch of the awning is adjusted, it is important that the lead rail is parallel to the awning housing.

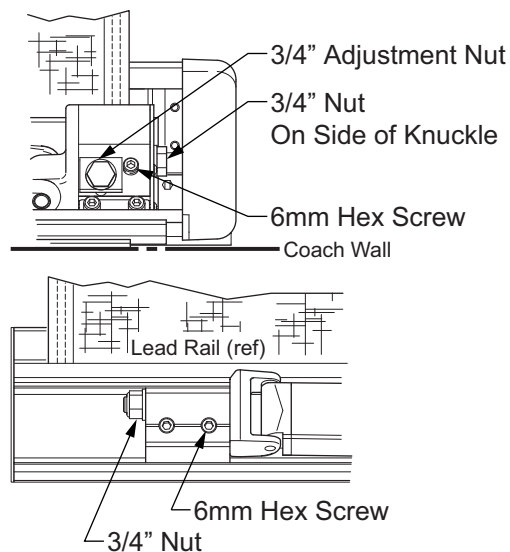
1. Extend the awning fully.
2. On one end, loosen the 6mm hex screw located on the spring arm knuckle.
3. SLIGHTLY loosen the 3/4" nut on the side of the knuckle.
4. Turn the 3/4" adjustment nut located on the bottom of the knuckle. CLOCKWISE raises the pitch, COUNTERCLOCKWISE lowers the pitch.

NOTE: When raising the pitch, it is helpful to have a second person lift up on the lead rail.

5. Repeat steps 2 through 4 for the other end. Note the caution information above.
6. When the pitch adjustments are completed, tighten the 6mm screw and the 3/4" nut on the side of the knuckle.

When the pitch is adjusted, it is necessary to adjust the angle of the lead rail for the awning to close correctly.

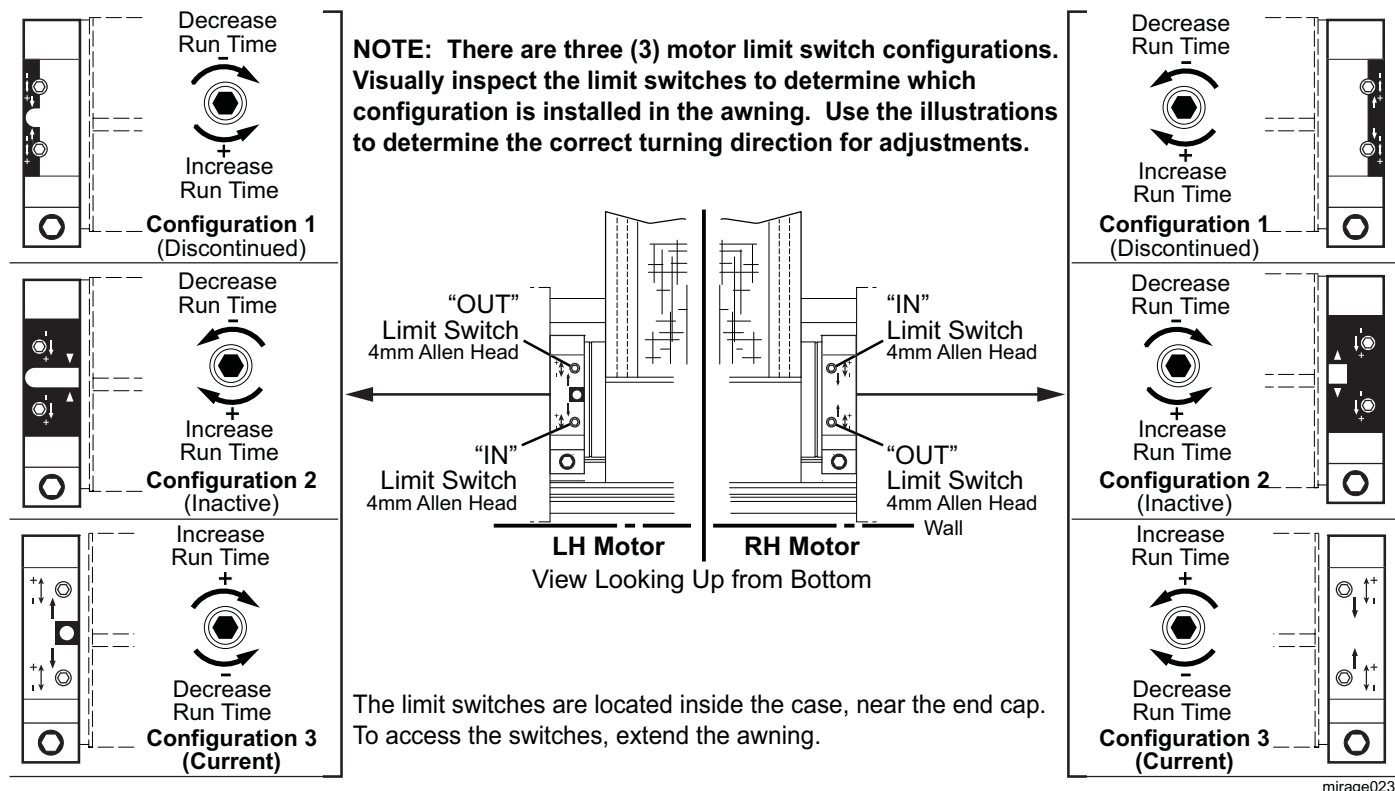
7. SLIGHTLY loosen the 3/4" nut on the side of each arm knuckle on the lead rail.
8. Turn the INSIDE 6mm hex screws of each knuckle to increase or decrease the angle of the lead rail. The face of the lead rail should be parallel with the coach wall.
9. When the lead rail adjustments are completed, tighten the 3/4" nut on the side of the knuckles.



MIRAGE024

ADJUSTING THE MOTOR LIMITS

The motor limit switches are preset at the factory for best operation of the awning. The “OUT” limit switch is used to stop the motor when the awning is fully extended. The “IN” limit switch is used to stop the motor when the awning is fully retracted. The “IN” limit is NOT USED when the *Direct Response* system is installed.



mirage023

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.

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. Using a 4mm Allen wrench turn the “OUT” limit switch to reduce the time the motor runs.
 - 3.3. Extend to confirm that the adjustment is correct.
 - 3.4. Repeat the procedure until the awning extends correctly.
4. If the arms do not extend completely:
 - 4.1. Retract the awning approximately 10"-12".
 - 4.2. Using a 4mm Allen wrench turn the “OUT” limit switch to increase the time the motor runs.
 - 4.3. Extend to confirm that the adjustment is correct.
 - 4.4. Repeat the procedure until the awning extends correctly.

Adjusting the IN Limit Switch

For motorized awnings w/ Direct Response:

NOTE: The "IN" limit switch is not adjusted when the Direct Response system is installed. The system electronics monitors the motor and shuts the motor off when the awning is fully retracted.

If the IN limit switch is accidentally adjusted, the motor may shut off before the awning is fully closed. If this occurs, turn the "in" adjustment screw to increase the motor run time. It is not necessary that the screw matches the closed position. The Direct Response electronics control the closed position.

NOTE: It is normal for the lead rail to slightly relax after the awning closes completely.

For motorized awnings w/ standard electronics:

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 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 to increase the run time to pull the awning into the case or decrease the run time so the awning does not try to over retract.

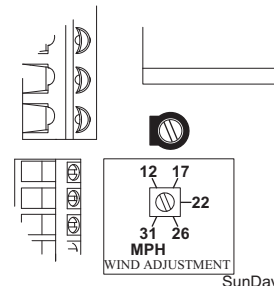
NOTE: It is best to make the adjustments in increments of a single turn. 3 full turns of the screw equals approximately 2" of fabric extension.

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

SETTING THE WIND SPEED SENSITIVITY (STANDARD ELECTRONICS)

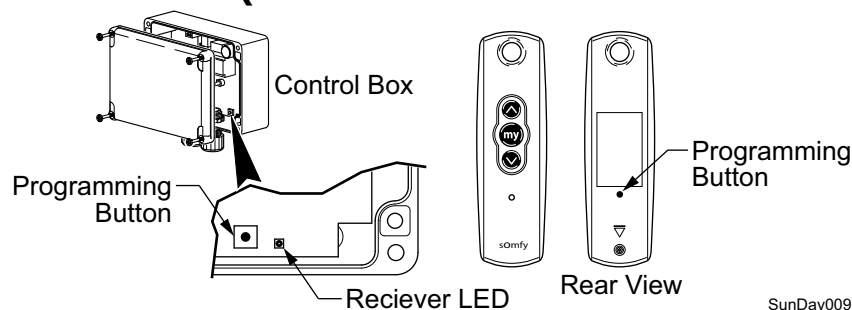
The wind sensitivity can be set for a preferred wind speed.

1. Open the control box.
2. In the center of the control board, locate the speed adjust switch.
3. Turn the switch to the desired setting. Turning to the left increases sensitivity (less wind); turning to the right decreases sensitivity (higher wind). The label next to the switch gives approximate values in miles per hour.



SunDay012

PROGRAMMING THE REMOTE (STANDARD ELECTRONICS W/ OPTIONAL REMOTE)



SunDay009

Figure 1. Programming the Remote.

Connect awning to power source.

1. Press the Programming Button (PROG) of the receiver located in wind sensor control box (lower right corner) until LED illuminates.

NOTE: The receiver exits the program after 60 seconds and the LED will extinguish.

2. Press the Programming Button on the back of the transmitter (remote) with a ballpoint pen until the receiver's LED blinks. The address of the transmitter is instantly memorized and the receiver automatically ends the programming mode.
3. Reinstall the control box cover.

PROGRAMMING THE REMOTE RECEIVER (DIRECT RESPONSE)

Early transmitters & receivers operate on a frequency of 418MHz. Models for 2007 & on operate on 433MHz. The transmitter and receiver frequencies must match. Identifying the transmitter frequency is described under the operational notes below.

1. Power to the control box must be on.
2. Press and release the "Press to Learn Transmitter" button on the bottom of the receiver box. The receiver is in program mode when the red light comes on.
3. For Gray Button Key FOBS: Press and release ANY button on the remote. It is recommended to use the STOP button. The red light will go out after the receiver learns the remote signal.

⚠ CAUTION

WHEN THE RECEIVER LEARNS THE TRANSMITTER SIGNAL THE SYSTEM WILL PERFORM THE OPERATION OF THE BUTTON PRESSED. EXAMPLE: PRESSING AN "EXTEND" BUTTON DURING THE LEARNING PHASE WILL CAUSE THE AWNING TO EXTEND WHEN THE RECEIVER LEARNS THE SIGNAL. USE CAUTION TO AVOID UNEXPECTED MOVEMENT BY THE AWNING.

4. For Key FOBS w/ Antenna: Press and release the STOP button on the remote. The red light will go out after the receiver learns the remote signal.

NOTE: Pressing the stop button will cause the blue up arrow button to default as the open (extend) function.

If a function button is pressed to train the receiver, it will be programmed as the open (extend) button. Example: Pressing the bottom button will program the bottom button for extend and the top button as retract.

5. Repeat for each additional remote.

Operational Notes:

- Transmitter and receiver must match in frequency (418 MHz or 433 MHz).

Key FOBS:

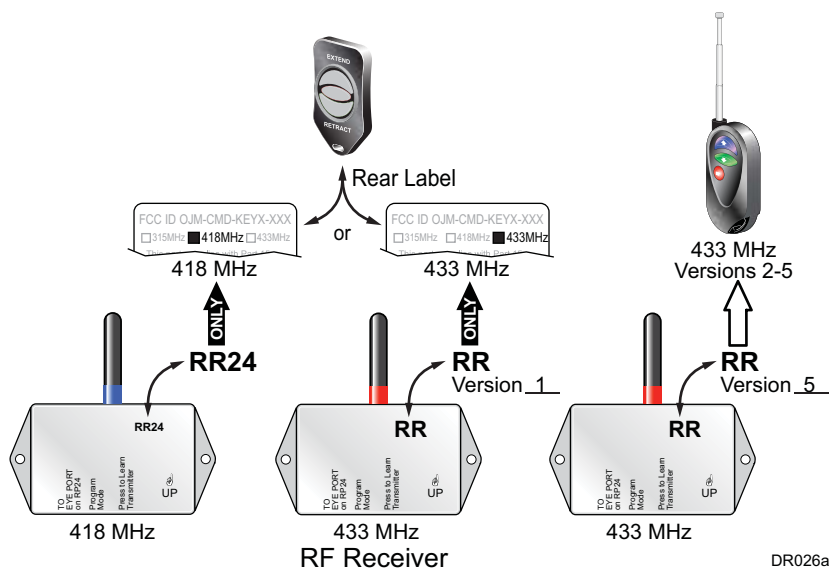
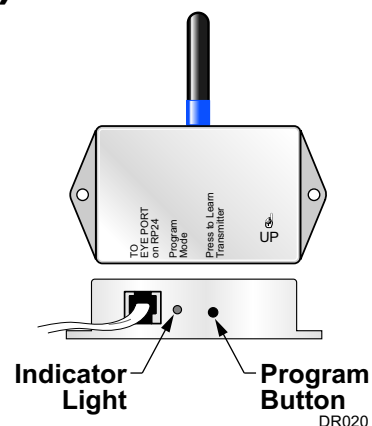
- The gray button Key FOBS are marked with a label for 418MHz or 433MHz.
- Key FOBS w/ antenna are 433MHz.

Receivers:

- 418 MHz receivers are marked "RR24".
- 433 MHz receivers marked "RR" Version 1 can only be used with the 433 MHz gray button Key FOB.
- 433 MHz receivers marked "RR" Version 2 can be used with either of the 433 MHz Key FOBS.

- If replacing the remote receiver, version 5 is compatible with 433MHz key fobs versions 2 thru 5. If the key fob is an older version, it will be necessary to replace the key FOB.

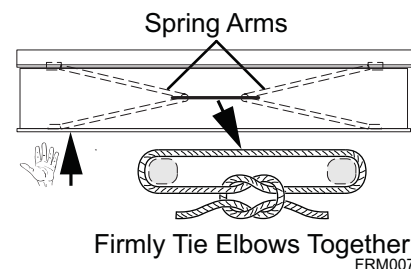
- The receiver exits the program mode after ten seconds.
- If the light does not come on above, the memory is full and must be cleared.
- If the light does not go out above, the receiver already knows the transmitter's signal or the battery in the remote needs to be replaced.
- To clear the memory: PRESS AND HOLD the transmitter learn button. While holding the button, the indicator light should be OFF for the full 5 seconds then come on.
- The system may be programmed for up to 5 remotes. Additional remotes may be ordered separately.



CANOPY REPLACEMENT

During the following instructions, use the manual override procedure on page 1 to open and close the awning. This procedure requires two people.

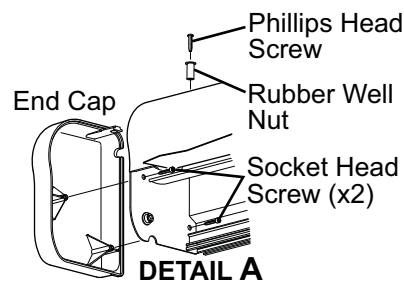
1. Open the awning 18"-24".
2. Disconnect power to the awning.
3. Carefully push the lead rail toward the case so that the arms collapse and the fabric is slack.
4. While holding the lead rail firmly tie the elbows of the outer spring arms together. Use a minimum 1/2" rope - do not use bungee cords. When tying the rope, use a non-slip knot such as a square knot or equivalent.



CAUTION

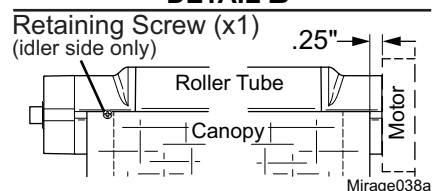
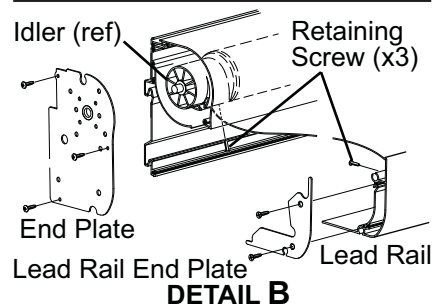
Failure to secure the lead rail as described will allow the spring arms to unexpectedly extend out possibly causing personal injury and damage to the awning.

1. Remove the fabric retainer screws in the lead rail and set aside.
2. (refer to Detail A) Remove the phillips head screw and rubber well nut from the top of the case and the (2) socket head screws that attach the end cap from the inside of the awning case.
3. Use the manual override (refer to page 1) to unroll the canopy until the slot in the tube is aligned with the case opening.
4. Remove the fabric retaining screw from the idler end of the roller tube. There is no screw on the motor side.
5. Remove the lead rail end plate from the idler side of the awning.
6. Remove the awning case end plate from the idler side.



NOTE: It will be necessary to firmly support the roller tube and keep it from coming out of the case.

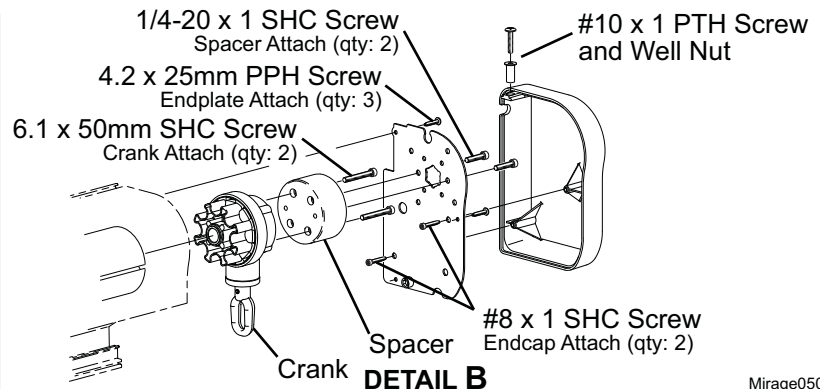
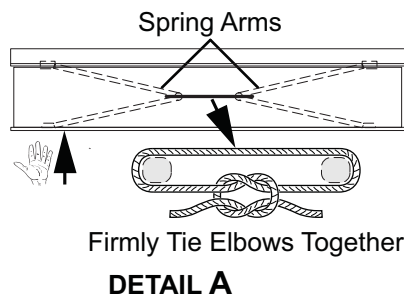
7. From the idler end of the roller tube, simultaneously slide the old canopy out of the roller tube and lead rail.
8. Inspect the slots in the roller tube and lead rail. Clean and deburr as required. Lightly spraying the inside of the slot with a dry silicone lubricant will aid in sliding the new fabric in.
9. Slide the new canopy into the lead rail and roller. Both edges must be done at the same time. Orient the fabric so that the large polycord goes into the lead rail, the smaller polycord goes into the roller tube. The hem should be on the down side.



10. The canopy should be approximately .25" from the end of the motor crown.
11. Secure the canopy to the roller tube with the retaining screw removed previously.
12. Remove any support material from the roller tube and install the case and lead rail end plates.
13. Use the manual override to roll the canopy onto the roller tube, the material rolls under the roller tube. Ensure the fabric rolls evenly onto the roller tube without wrinkling or folding.
14. Once the fabric is snugly rolled up, remove the rope used to tie the arms together.
15. Restore power to the awning.
16. Extend and retract the awning. Ensure the fabric rolls evenly onto the roller tube without wrinkling or folding. Adjust the canopy position in the lead rail as necessary.
17. Install the fabric retainer screws in the lead rail.
18. Install the end cap.
19. After installing the canopy, it may be necessary to adjust the motor limits. Refer to "Adjusting the Motor Limits" on page 3.

HAND CRANK REPLACEMENT

NOTE: Replacement crank assemblies have a shorter extension shaft. The eyelet does not extend below the case. If replacing an original crank, it is also necessary to replace the crank handle (crank handle p/n R001564).



Mirage050

1. Open the awning 12" inches to expose the arm elbows.
2. (refer to Detail A) Using a minimum 1/2" rope, firmly tie the elbows of the outer spring arms together, 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.

3. (refer to Detail B) Remove the phillips head screw and rubber well nut from the top of the case and the (2) socket head screws that attach the end cap from the inside of the awning case.

NOTE: It will be necessary to support the roller tube to keep it from coming out of the case. A rag can be stuffed between the tube and case to temporarily hold the roller tube in place.

4. Remove the attaching screws then pull the end plate and hand crank out from the awning case and roller tube.



NOTICE When removing the crank, do not let the roller tube come out more than 1"; otherwise, the roller tube idler will disengage from the opposite end plate. If this occurs, reinsert the idler into the endplate before continuing (refer to illustration on page 1 for idler description).

5. Remove the screws holding the spacer to the end plate. Set parts aside and save.
6. Remove the screws holding the crank to the spacer. Note the hole position and orientation of the parts. Set parts aside and save.
7. Attach the new crank to the spacer using the screws removed previously.
8. Attach the spacer to the end plate paying attention to match the orientation.
9. Calibrate the hand crank.

- *For LH cranks:*

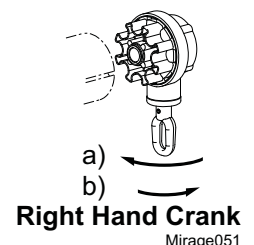
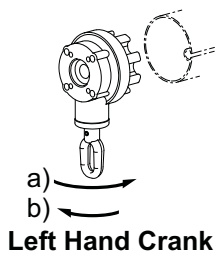
- a) Twist the eyelet clockwise until it stops.
- b) Twist the eyelet counterclockwise 4 turns plus (+) 4.5 turns for every 6" the awning was opened in step 1. (see sample below).

- *For RH cranks:*

- a) Twist the eyelet counterclockwise until it stops.
- b) Twist the eyelet clockwise 4 turns plus (+) 4.5 turns for every 6" the awning was opened in step 1. (see sample below).

- Sample of calculating turns: If awning was opened 12" in step one then the number of turns would be $4 + (2 \times 4.5) = 13$.

10. Attach the end plate to the case.
11. Remove the roller tube support.
12. Install the end cap.



Mirage051

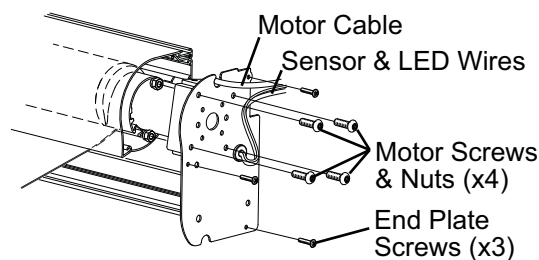
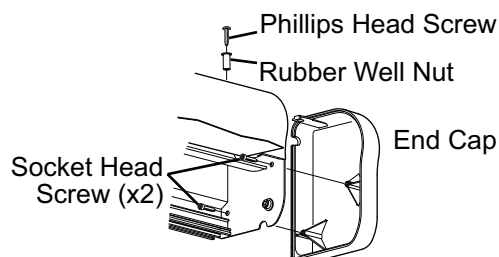
MOTOR REPLACEMENT



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

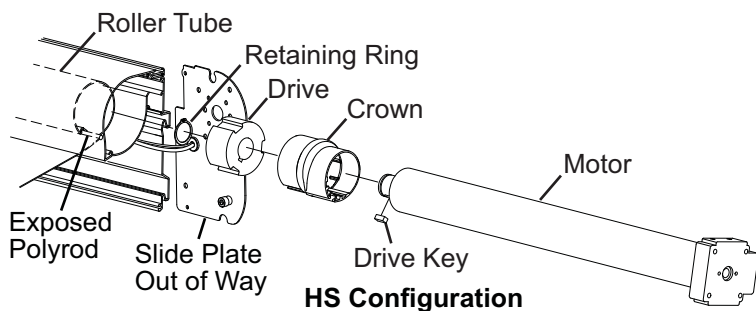
This procedure requires two people.

1. Disconnect power to the awning.
2. Disconnect the motor wires at the junction box or control box and pull out.
3. Using the manual override (refer to page 1) over extend the awning. The arms should be extended completely, the canopy should be relaxed and the fabric slot of the roller tube should point toward the fabric slot in the case.

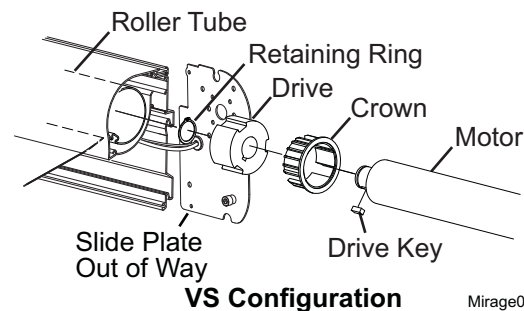


Mirage039b

4. Remove the outer end cap: remove the phillips head screw and rubber well nut from the top of the case and the (2) socket head screws that attach the end cap from the inside of the awning case.
5. (refer to Detail B) Remove the attaching screws for the end plate then carefully pull the end plate and motor partially out from the awning case.



HS Configuration



VS Configuration

Mirage039a

NOTICE When pulling the motor, do not let the roller tube come out more than 1"; otherwise the idler will disengage from the opposite end plate. If this occurs, reinsert the idler into the endplate before continuing

NOTICE When pulling the motor out of the case, the servicing technician must use care to not break or damage the sensor and LED cables routed through the end plate.

NOTE: When pulling the motor, it will be necessary to firmly support the roller tube to keep it from coming out of the case. Do not let the roller tube come out more than 1"; otherwise the roller tube idler will disengage from the opposite end plate. If this occurs, reinsert the idler into the endplate before continuing.

6. Remove the attaching screws and nuts holding the motor to the end plate. Make note of the motor orientation on the end plate.
7. Slide the end plate along the remaining wires and out of the way then remove the motor with the crown and drive.

Note: For the HS configuration: When the crown is removed the canopy edge with the polyrod will be exposed and extend past the roller tube.

8. For HS configuration: Remove the crown from the old motor. This will be used with the new motor. The crowns are configuration specific.

9. Assemble the new motor:

NOTE: The new and old motor components are not interchangeable.

- 9.1. Slide the crown onto the motor.

NOTE: For VS configurations, use the new crown that is included with the motor. For HS configurations, discard the included crown and use the existing crown that was removed previously.

- 9.2. Place the drive key into the slot of the motor shaft and slide the new drive onto the motor shaft and over the drive key.

- 9.3. Secure the drive using the supplied retaining ring.

10. Partially insert the new motor with the crown and drive into the roller tube. Ensure that the motor drive gear and crown are properly seated inside the roller tube.

NOTICE For the HS configuration: When the crown is seated in the roller tube, the canopy edge with the polyrod must be in the fabric groove of the crown.

11. Attach the end plate to the motor the using the new screws and nuts provided. Make sure to match the orientation from the old motor.
12. Route the new motor cable through the end plate.
13. Press the motor and end plate into the roller tube and attach the end plate to the housing using the screws removed previously.
14. Route the new motor wire into the vehicle and attach at the junction box or control box (refer to wiring diagrams on pages 20 - 24 for the appropriate control system). **All wiring must conform to NEC (National Electrical Code) and local codes.**
15. Use the manual override to roll the canopy onto the roller tube. The fabric must roll under the roller tube.
16. Install the end cap.
17. To test, restore power then extend and retract the awning.
18. It will be necessary to adjust the motor limits. Refer to page 3.

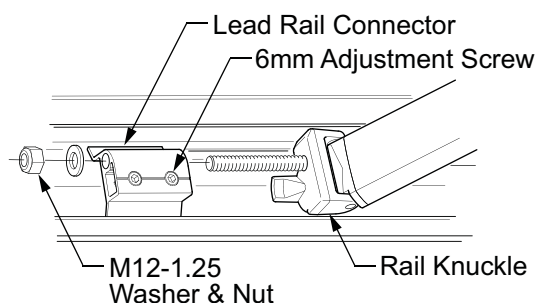
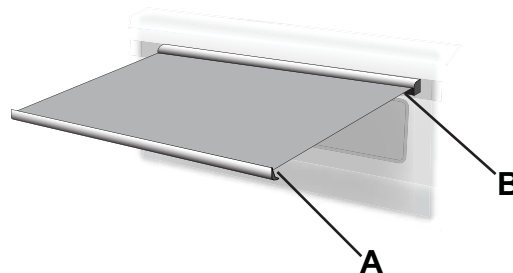
SPRING ARM REPLACEMENT

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.

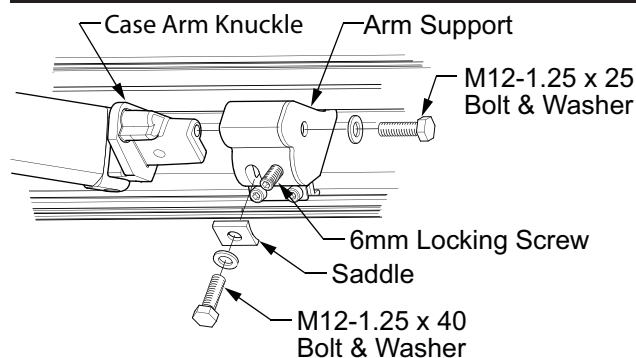
REPLACING THE ARM

The following procedure requires two people.

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 to the awning.
3. Use a scaffold, ladder or other means to firmly support the lead rail.
4. For arms with the sensor cable mounted, carefully remove the sensor cable from the wire channel on top of the arm. Use care to not bend, break or compromise the cable.
5. (refer to Detail A) At the lead rail, remove the M12-1.25 lock washer and nut from the arm and lead rail connector.
6. Slightly loosen the 6mm adjustment screw. DO NOT loosen the outer set screw.
7. Firmly grasp the spring arm and slide the lead rail arm knuckle out of the lead rail connector. Allow the arm to extend to its maximum length outside the lead rail. Have a second person hold or otherwise support the unattached end.
8. (refer to Detail B) Inside the case, remove the M12-1.25 x 25 bolt and washer from the side of the arm support. Remove the M12-1.25 x 40 bolt, washer and saddle from the front of the support.
9. Slightly loosen the 6mm locking screw.



Detail A (Lead Rail)



Detail B (Case)

Mirage037

10. Firmly grasp the spring arm and slide the case arm knuckle out of the arm support. Set the old arm aside.
11. If the arm has wire channel mounted for the sensor cable, carefully remove the channel from the arm to reuse on the new arm.
12. On the replacement arm assembly, remove the lead rail connector and arm support bracket from the arm knuckles.
- NOTE:** The lead rail connector and arm support bracket are included in case there is damage to the existing brackets. If there is no damage, it is not necessary to replace them with the arm.
13. If replacing the lead rail connector or case arm support, go to page 11 then return to step 14.
14. 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.

15. Lift the arm assembly into position.
16. (refer to Detail B) Slide the case arm knuckle into the support inside the case and secure with 1 each M12-1.25 x 25 bolt and washer and 1 each M12-1.25 x 40 bolt, washer and saddle. Do not tighten at this time.
17. (refer to Detail A) Insert the lead rail arm knuckle into the lead rail connector and secure with 1 each M12-1.25 bolt, washer and nut. Do not tighten at this time.
18. If the sensor cable is routed on the replacement arm:
 - a. Attach a piece of wire channel to the top of each section of the arm. If using new channel, cut each piece slightly shorter than the arm extrusion. Attach the channel using double sided tape.
 - b. Route the cable through the wire channel. At the arm joints, arch the cable 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.
19. Adjust the arm pitch as required. Follow the procedure for pitch adjustment on page 2.
20. After replacing the arm, it may be necessary to adjust the motor limits. Refer to "Adjusting the Motor Limits" on page 3.

To Replace the Lead Rail Connector:

1. Remove the lead rail end plate.
2. Carefully mark the location of the existing connector.
3. Loosen the 6mm securing screw and slide the existing connector from the lead rail. This is the outer hex screw.
4. Insert the new connector assembly into the lead rail and position at the marks made previously.
5. Tighten the outer 6mm securing screw.
6. Attach the lead rail end plate.

To Replace the Case Arm Support

1. Carefully mark the location of the existing support.
2. Remove the end cap if installed.
3. Remove the end plate.
 - For the idler side, slide the end plate off of the roller tube idler and set aside. (Refer to details on page 1.)
 - For the motor side, Support the roller tube and carefully pull the motor and end plate out 3"-4". (Refer to details on page 8.)

NOTICE When pulling the motor out of the case, the servicing technician must use care to not break or damage the motor cables.

When pulling the motor, do not let the roller tube come out more than 1"; otherwise the roller tube idler will disengage from the opposite end plate. If this occurs, reinsert the idler into the endplate before continuing (refer to illustration under Canopy Replacement on page 1 for idler description).

4. Loosen the clamping screws on the support and slide the old support out of the case.
5. Insert the new support assembly into the case and position at the marks made previously.
6. Tighten the clamping screws.
7. For an idler side replacement. Reinstall the end plate. Ensure that the idler pin of the roller tube is properly seated.
8. For a motor side replacement. Press the motor back into the roller tube. Ensure that the idler pin of the roller tube is properly seated on the opposite side. Reattach the end plate to the case.
9. Reinstall the end caps if previously installed.
10. Return to step 14 on the previous page.

DIAGNOSTICS/TROUBLESHOOTING

The following procedures are intended to aid the service technician to logically resolve operational issues with the Mirage installation. These procedures do not address conditions that may arise with the basic awning installation.

When procedures are system specific, the four electrical systems are designated as:

System #1 , Direct Connect (No Relay Box)	Reference Wiring Diagram - page 20
System #2 , Switches w/ Relay Control Box	Reference Wiring Diagram - page 21
System #3 , Standard Electronics w/ Optional Auto-Retract	Reference Wiring Diagram - page 23
System #4 , Direct Response Electronics	Reference Wiring Diagram - page 24
System #4 , Direct Response Electronics, Winnebago	Reference Wiring Diagram - page 25

Common Operation Items

1. For Direct Response: If the optional ignition lockout is installed, the system will disable the extend function while the vehicle ignition key is in the ON position. Operation will return to normal when the key is OFF.

⚠WARNING

ALWAYS DISCONNECT POWER WHEN CONNECTING OR DISCONNECTING 110VAC WIRES.

Procedures in this section:	Page
COMMON OPERATION ITEMS.....	12
SYSTEM TESTS	13
STANDARD ELECTRONICS W/ OPTIONAL AUTO-RETRACT.....	13
TESTING THE REMOTE.....	13
DIRECT RESPONSE	13
TESTING THE KEY FOB.....	14
D01 THE AWNING DOES NOT OPERATE	15
D02 THE AWNING OPERATES DIFFERENTLY THAN THE SWITCH MARKINGS.....	16
D03A AWNING DOES NOT AUTO-RETRACT IN WIND (STANDARD ELECTRONICS).....	17
D03B AWNING DOES NOT AUTO-RETRACT IN WIND (DIRECT RESPONSE)	17
D04A REMOTE DOES NOT OPERATE (STANDARD ELECTRONICS W/ OPTIONAL REMOTE).....	18
D04B REMOTE DOES NOT OPERATE (DIRECT RESPONSE)	18

SYSTEM TESTS

Standard Electronics w/ Optional Auto-Retract

1. Provide 110VAC and 12DC power to the awning system.
2. At the switch panel, turn the POWER SWITCH to "ON".
3. Press the button to extend the awning. The awning will continue to the maximum extension.
4. Pressing the button again will stop the awning.
5. Press the button a third time and the awning will retract.
6. Set the WIND SPEED switch to 12 mph. Refer to Setting the Wind Speed Sensitivity on page 4.
7. Extend the awning using the PATIO switch.
8. Spin the anemometer. The awning should retract automatically to the closed position.

NOTE: Do not hit the anemometer to spin. Using compressed air provides a constant pressure source and the output can be regulated to test the various sensitivity settings. DO NOT position the nozzle closer than 10 inches from the cups.

9. Repeat steps 7 and 8 two (2) more times with the Wind Speed switch set to a medium value and then to higher value.
10. Repeat steps 7 through 8 with the Power switch set to OFF. The awning should not move.

If the awning does not operate as described:

- If the awning extends, reverse the red and black motor wires. Refer to the wiring diagram.
- If the awning does not stop at maximum extend or retract, it may be necessary to adjust the "in" and/or "out" limit switches. Refer to page 3.
- If the awning does not operate, check the wiring and power according to the wiring diagram.

TESTING THE REMOTE

1. Turn the power switch to "ON".
2. On the remote, press and release the down arrow. The awning should extend.
3. Press and release the stop (center) button. The awning should stop.
4. Press and release the up arrow. The awning should retract and stop automatically when fully closed.

If the awning does not operate as described:

- If the awning moves in a direction opposite than described; in the control box, reverse the red and black wires from the motor.
- If the awning does not operate using the remote; program the remote following the directions on page 4.

Direct Response w/ DKS Style Switch Panel

When 110VAC power is removed from the system, the controller DOES NOT retain previous positioning information. When power is restored, positioning information is updated when the first function is initiated.

The function LEDs (extend, retract and stop) perform a dual function. When the button is pressed, the LED illuminates. The LED stays illuminated during the selected operation and after the awning has fully extended or retracted. This provides an indicator of the awning position. When the stop button is pressed, the LED will illuminate and stay on until a function is pressed. If on, it indicates that the awning is partially extended/retracted.

All function buttons are press ON/press OFF. The auto-functions will continue until the awning is fully extended/retracted or when the stop button is pressed.

1. While observing the control panel, have a second person initiate 110VAC power to the coach and awning system. The following should occur:
 - 1.1 The Auto-Retract and Wind Speed LEDs should illuminate briefly then extinguish.
 - 1.2 The Power ON/OFF and function/position LEDs will briefly illuminate.
 - 1.3 The system then goes to the default settings: The POWER "ON", AUTO-RETRACT "ON" and MEDIUM Wind Speed LED will be on.

NOTE: The function/position LEDs (extend, stop and retract) will not be illuminated. During power up the controller does not retain position information. The controller is updated with the first function used.

2. Press the POWER "OFF". ALL LEDs should extinguish. The POWER ON/OFF button disables all functions including Auto-Retract and the optional RF remote if installed. It does not disconnect the 110VAC power.
3. Press the POWER "ON". Press the EXTEND button, the LED should illuminate while the awning extends and stay on after the awning auto-stops. Observe the awning, it should fully extend. The system performs an auto-tension action when the awning is fully extended. The awning rolls in reverse to tension the fabric. The auto-tension feature works only with the extend function when the awning is fully extended or the stop button is pushed while extending.
4. After the awning is fully extended, press the RETRACT button, the EXTEND LED should extinguish and the Retract LED should illuminate while the awning is retracting. Press the STOP button.
5. When the STOP button is pressed, the awning will stop, the RETRACT LED should extinguish and the STOP LED should illuminate.
6. Press the RETRACT button, allow the awning to retract fully, the Retract LED will illuminate and stay lit.
7. Press the AUTO-RETRACT OFF. The AUTO-RETRACT and WIND SPEED LEDs should go out.
8. Press the AUTO-RETRACT ON. Press each Wind Speed button and confirm that the LEDs illuminate.
9. Test the Auto-Retract function:
 - 9.1 Fully extend the awning.
 - 9.2 With the AUTO-RETRACT ON, set the WIND SPEED to the lowest setting.
 - 9.3 Create a firm but gentle rocking motion with the leading edge of the awning. The awning should retract after 2-3 seconds of the motion.
10. *If the optional Ignition Sensor is installed:*
 - 10.1 Partially retract the awning.
 - 10.2 Turn the ignition key ON.
 - 10.3 Press the EXTEND button. The LED should flash for 2 seconds then shut off and the previous function LED will come back on.

Testing the Key FOB

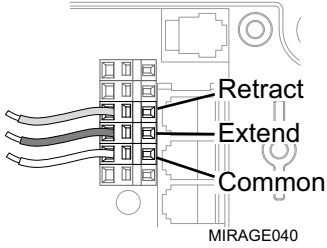
1. Ensure that the system is OFF at the switch panel.
2. Press each button on the Key FOB. The awning should not move.
3. Turn the system on.
4. Press and release the EXTEND button. The awning should extend automatically.
5. Press and release the RETRACT button on the Key FOB. The awning should retract automatically.
6. While the awning is retracting, press and release the STOP button on the Key FOB. The awning should stop when the button is pushed.

In the charts below, YES is a positive response to the test; NO is a negative response.

D01 THE AWNING DOES NOT OPERATE			
A	Confirm 110VAC power to control box.		
	1. Shut off power source. 2. Open control box. 3. On some early units a fuse is installed on the circuit board (if installed). Check that fuses on circuit boards are intact. 4. Check that 110VAC connections are correct and secure. Refer to correct system schematic.	YES	Power is present; go to test B
		NO	Check vehicle circuits and fuses. Repair as required and retest
B	Confirm awning motor is functioning		
	1 1.1 With power off, disconnect motor wires and AC power in from switches (system #1) or control box. 1.2 Connect awning motor directly to 110VAC power source. Motor White to Neutral (White) of AC cord Motor Green to Ground (Green) of AC cord Motor Red & Black are Motor Direction Control – connect Red to AC Hot (Black). 1.3 While observing awning, briefly apply power. 1.4 Disconnect power and attach other motor direction control wire (Black) to AC Hot (Black). 1.5 While observing awning, briefly apply power. 1.6 Does awning move when power is applied? Note: If the awning runs but does not extend or retract completely, it may be necessary to adjust the motor limits (refer to page 3).	YES	Awning motor is good, control circuit is defective – test and repair For System #1, 2, 3 – Go to Step C For System #4 – Go to Step D
		NO	Go to step B-2
	2 Test continuity and connections of motor wire between control box and junction box.	YES	Continuity is good, motor is defective – replace
		NO	Repair wire as required and retest
C	Test Control Switches (Systems #1, 2, 3 Only)		
	This test requires the use of a continuity tester. 1. Disconnect wires from switch to be tested. 2. Attach the first probe to the common (center) terminal; attach the second probe to the second terminal. 3. With switch in neutral or off position, does meter indicate an open circuit? 4. Activate switch, does meter indicate a closed circuit? 5. For double direction switches, move the second probe to the third terminal and repeat step 4.	YES	Switches are good, control box is defective – replace NOTE: Relay box for system #2 is no longer available. It will be necessary to replace with system #3 control box and switches. Follow the diagram on page 23.
		NO	If answer to any of question (3 – 5) is no, switch is defective – replace.

D01 Continued on next page

D01 THE AWNING DOES NOT OPERATE*(continued from previous page)*

D	Test Key pad (System #4 – Direct Response Only)		
	1 Confirm 110VAC power to control box 1.1 Shut off power source. 1.2 Open control box. 1.3 On some early units a fuse is installed on the circuit board. Check that fuses on circuit boards are intact. 1.4 Check that 110VAC connections and splices to board is correct and secure. Refer to system schematic. 1.5 While observing the circuit boards, have power restored. The LEDs on the boards should blink red then green.	YES	Power is present; go to test B
		NO	Check vehicle circuits and fuses. Repair as required and retest
	2 Press the "Power On" button on the touch-pad. The "Power On" LED should illuminate.	YES	Power is on, go to step D-4
		NO	LED does not illuminate, go to step D-3
	3 Check the cable between the switch and control box. As a continuity check, Pin 1 of connector 1 goes to Pin 1 of connector 2; pin 2 goes to pin 2; pin 3 goes to pin 3 and pin 4 goes to pin 4.	YES	Continuity OK; go to step D-4
		NO	Replace cable and retest
	4 Check the function of the Key pad 4.1 On the control board, locate the terminal strip next to the phone cord connectors. 4.2 Insert 3 wires into the terminals shown below 4.3 While observing the awning, short the wire ends between the Common and Extend terminals. Does the awning move? 4.4 Short the wire ends between the Common and Retract terminals. Does the awning move?	YES	Control Board is good, Key pad is defective - replace
		NO	Control Board is defective – replace control box. 

D02 THE AWNING OPERATES DIFFERENTLY THAN THE SWITCH MARKINGS*This condition generally occurs during new installations or when major components have been replaced.*

A	Does Awning operate in reverse of the switch plate labeling (i.e. extends when retract is pushed)?	YES	Motor wires from awning are reversed - locate motor wires in the control box, reverse the red and black wires.
----------	--	-----	--

D03A AWNING DOES NOT AUTO-RETRACT IN WIND (STANDARD ELECTRONICS)

NOTE: For standard electronics with the optional auto-retract anemometer; the auto-retract system is always on. Confirm that the sensitivity is set correctly (if set on highest level, system may appear not to function). Setting the sensitivity is in the Owner's manual and on page 4.

A	Confirm that the retract function works using the PATIO switch	YES	Function works using the switch; go to test B
		NO	Function does not work with switch; go to procedure D01
B	Test Anemometer		
	1 Do the anemometer cups spin freely?	YES	Go to step B2
		NO	Anemometer defective - replace
	2 Test signal from anemometer: 2.1 Remove anemometer wires from control box; 2.2 Place continuity tester between anemometer wires; 2.3 Have a helper slowly turn the anemometer: Does the circuit open and close? It should open and close once for every revolution.	YES	Control Box is defective - replace
		NO	The circuit stays open or stays closed; go to step B3
	3 Test the wire continuity between the control box and the anemometer.	YES	Continuity OK; replace anemometer
		NO	Repair or Replace wires as required

D03B AWNING DOES NOT AUTO-RETRACT IN WIND (DIRECT RESPONSE)

A	Press the power on button then press the auto-retract button. Does the auto-retract LED flash?	YES	The flashing LED indicates that the sensor has been disengaged or otherwise disabled. Go to step C.
		NO	Function does not work with switch; go to procedure D01
B	Confirm that the retract function works using the push buttons.	YES	Function works using the switch; go to test C
		NO	Function does not work with switch; go to procedure D01
C	Test Motion Sensor		
	1 Confirm cable is plugged into connector on box marked "Shaker"	YES	Go to step 2
		NO	Correct as required and test.
	2 2.1 Unplug sensor from control box. 2.2 Connect a second sensor into control box. 2.3 Set the control switches for the auto retract function 2.4 Hold the second sensor horizontally and gently move up and down.	YES	Awning retracts; original sensor defective - replace
		NO	Awning does not retract; control box defective - replace

D04A REMOTE DOES NOT OPERATE (STANDARD ELECTRONICS W/ OPTIONAL REMOTE)			
	1	Confirm normal operation with switches	If system does not operate, go to test D01
	2	Confirm batteries in remote are good. Pressing any button on the remote will illuminate the LED indicator on the remote	Replace as needed
	4	Confirm that the receiver is programmed for the remote	-- Refer to "Programming the remote on page 4 and retest. If system does not work; go to step 4
	5	Program a second remote and test	YES 2 nd remote works. 1 st remote is defective.
			NO 2 nd remote does not work; control box receiver is defective - replace

D04B REMOTE DOES NOT OPERATE (DIRECT RESPONSE)			
	1	Confirm normal operation with touch pad	If system does not operate, go to test D01
	2	Check the cable between the RR24 and control box. As a continuity check, Pin 1 of connector 1 goes to Pin 1 of connector 2; pin 2 goes to pin 2; pin 3 goes to pin 3 and pin 4 goes to pin 4. Cable must be plugged into the "BUS" port of controller #1.	YES Cable is OK. Confirm that cable is securely plugged in; go to step 4
			NO Repair or Replace cable as required.
	3	Confirm that the RR24 is programmed for the Remote	-- Refer to "Programming the Receiver" on page 5 and retest. If system does not work; go to step 5
	4	Program a second remote and test	YES 2 nd Key FOB works. Replace battery in 1 st Key FOB and retest, if no response, 1 st Key FOB is defective.
			NO 2 nd remote does not work; go to step 6
	5	Replace the Receiver and test. (it will be necessary to program receiver for remote)	YES System works OK. 1 st receiver is defective
			NO System does not work. Reinstall 1 st receiver; go to step 7
	6	Replace control box	--

ELECTRICAL



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

IMPORTANT NOTICES

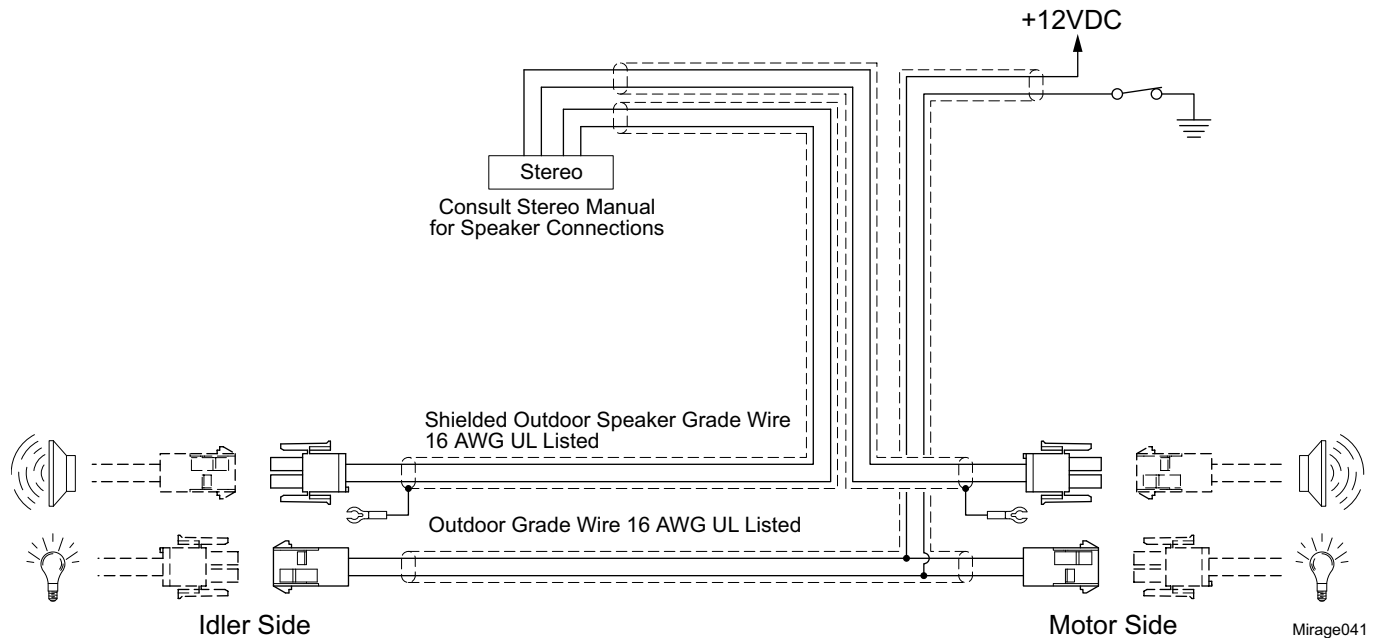
- Failure to follow the wiring instructions in this publication may void the motor warranty.
- All wiring must conform to NEC (National Electrical Code) and local codes.
- DO NOT wire two or more motors to one switch—No parallel wiring.
- The SO cable from the 110VAC awning motor can only pass directly through a wall, it can not be laid up in the wall and must be connected to NM wire or individual wires in conduit no more than 6 inches past the point of entry.
- For 110VAC installations, enclosed junction boxes are required for all wire splices and direct connection switch installations. Boxes are required in conformance with prevailing construction codes. The servicing technician or installer is required to furnish the flush mounted, UL approved electrical duplex boxes where required.

The 110V electronic control system provides the user with simple pushbutton controls for the awnings installed. Four configurations are available:

- 1) Direct Connect (reference as system #1). 110VAC is routed directly through the switches to the awning motor.
 - System includes: 1 power switch and 1 patio (extend/retract) switch.
 - This system is no longer offered.
- 2) Optional Relay Box (reference as system #2). 110VAC power is controlled by a relay control box. The switches use a 12VDC signal to control the relays. Switch installation is simplified; the switches do not require a duplex box.
 - System includes: 1 power switch, 1 patio (extend/retract) switch and 1 relay control box.
 - This system is no longer offered.
- 3) Standard Electronics w/ Optional Auto-Retract (reference as system #3). The optional auto-retract system detects adverse wind conditions and retracts the awning. Sensitivity is set by the user.
 - Standard system includes: 1 power switch, 1 patio (extend/retract) switch, 1 control box
 - An optional anemometer is available for the auto-retract system; and
 - An optional remote control is available.
- 4) Direct Response (reference as system #4). The 110V electronic control system provides the user with simple pushbutton controls for the awning. The *Direct Response* electronic system is a premier auto-retract system that detects motion from adverse wind conditions and retracts the awning. Sensitivity is set by the user
 - System includes: Control box, Master control panel (w/ pushbutton awning control and windspeed sensitivity setting), motion sensor.
 - An optional RF remote control is available with the *Direct Response* system.
 - An optional ignition lockout is available.
 - The switches use a 5VDC signal to operate the control box; thus eliminating the need for a junction box for the control panel.
 - Components are connected using terminated cables. Terminated cable is 4-wire RJ11 terminated phone cord (straight, no twist). This does not include 110VAC power in or awning motor power.

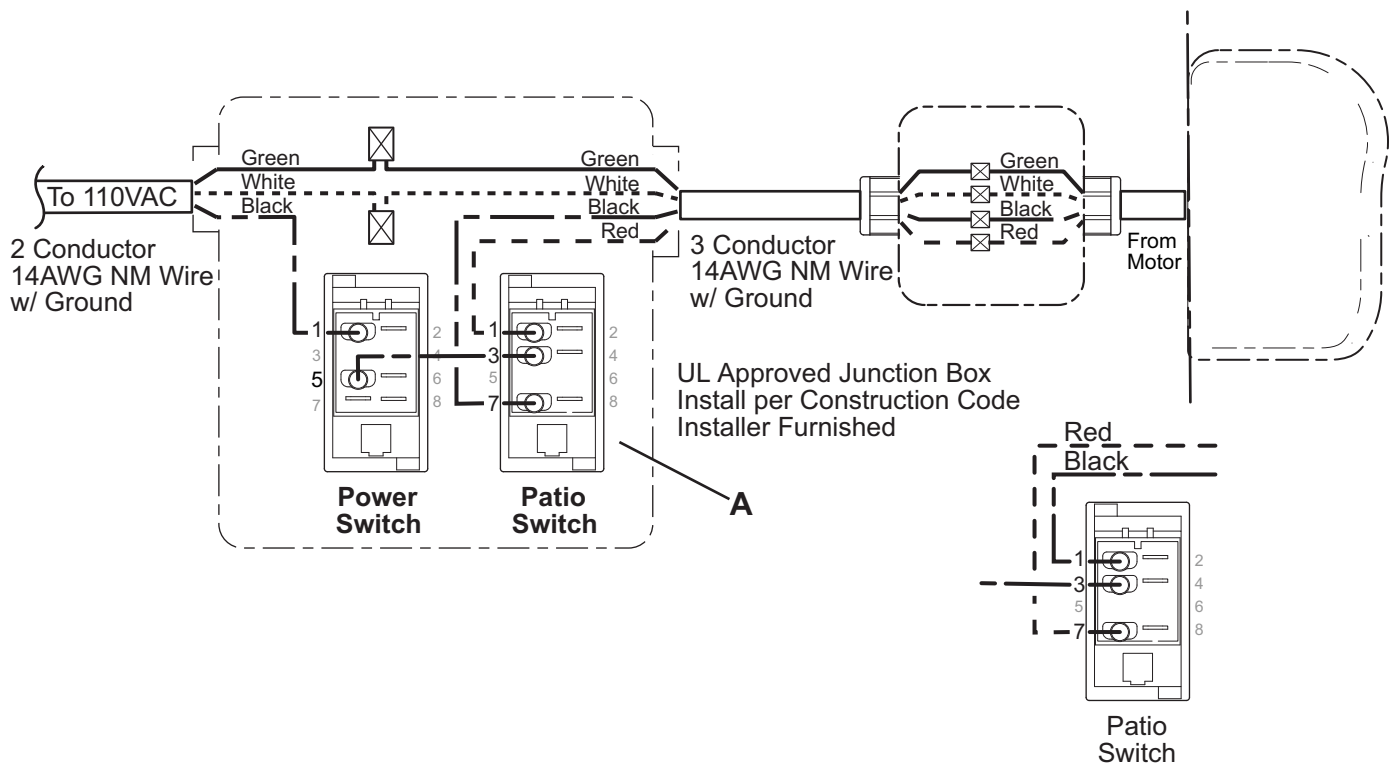
WIRING HARNESS – OPTIONAL LIGHT & SPEAKER END CAPS

(THIS SYSTEM IS NO LONGER AVAILABLE)



WIRING DIAGRAM - DIRECT CONNECT (NO RELAY CONTROL BOX)

SYSTEM #1 (THIS SYSTEM IS NO LONGER AVAILABLE)



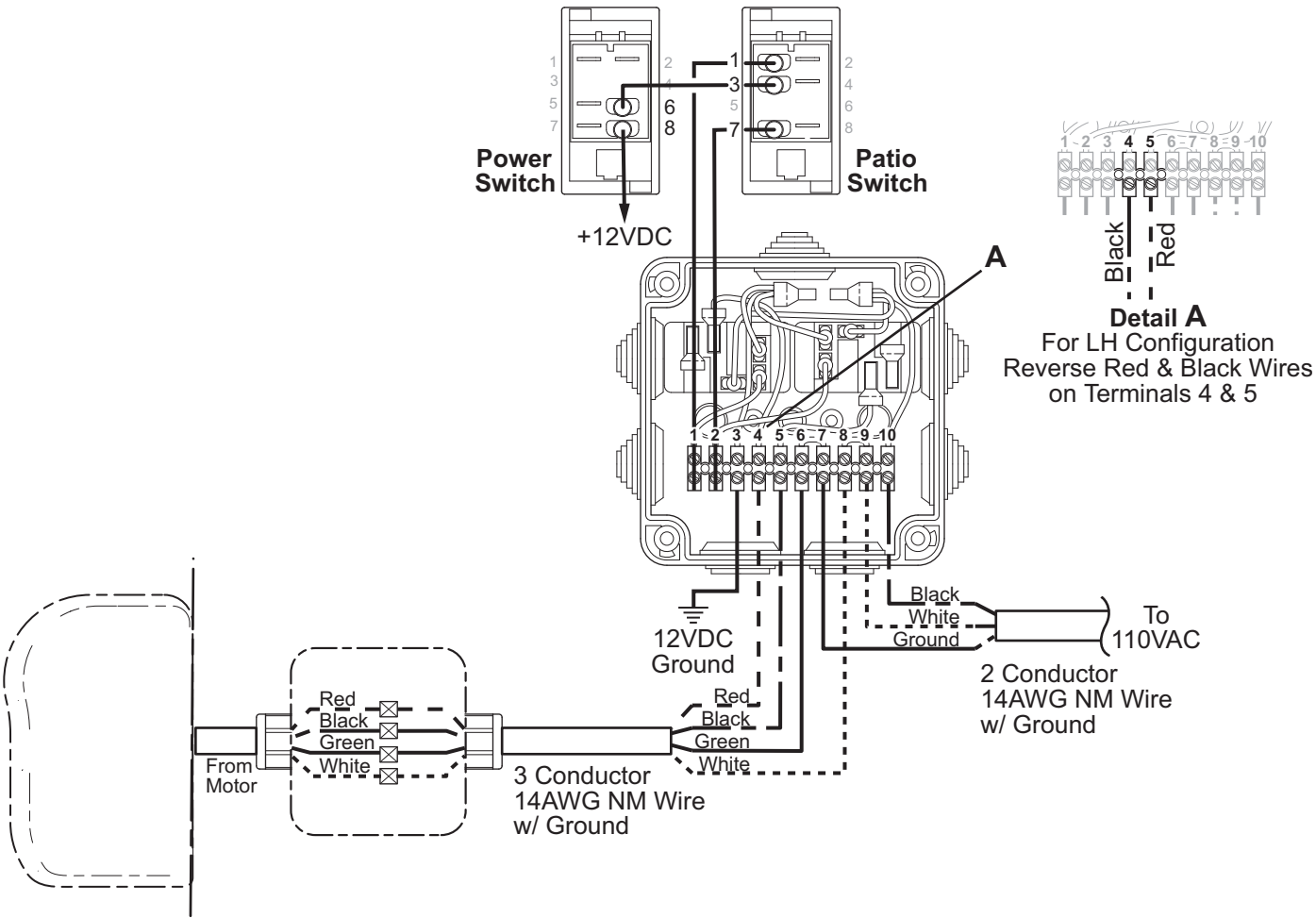
Detail A

For LH Configuration
Reverse Red & Black Wires
on Switch Terminals 1 & 7

MIRAGE015

WIRING DIAGRAM –SWITCHES W/ RELAY CONTROL BOX - PREVIOUS

SYSTEM #2 (THIS SYSTEM IS NO LONGER AVAILABLE) - The current configuration of this switch configuration has been updated to use R019468-006 switch kit. For switch replacement use R019468-006 kit and the wiring diagram on the next page.

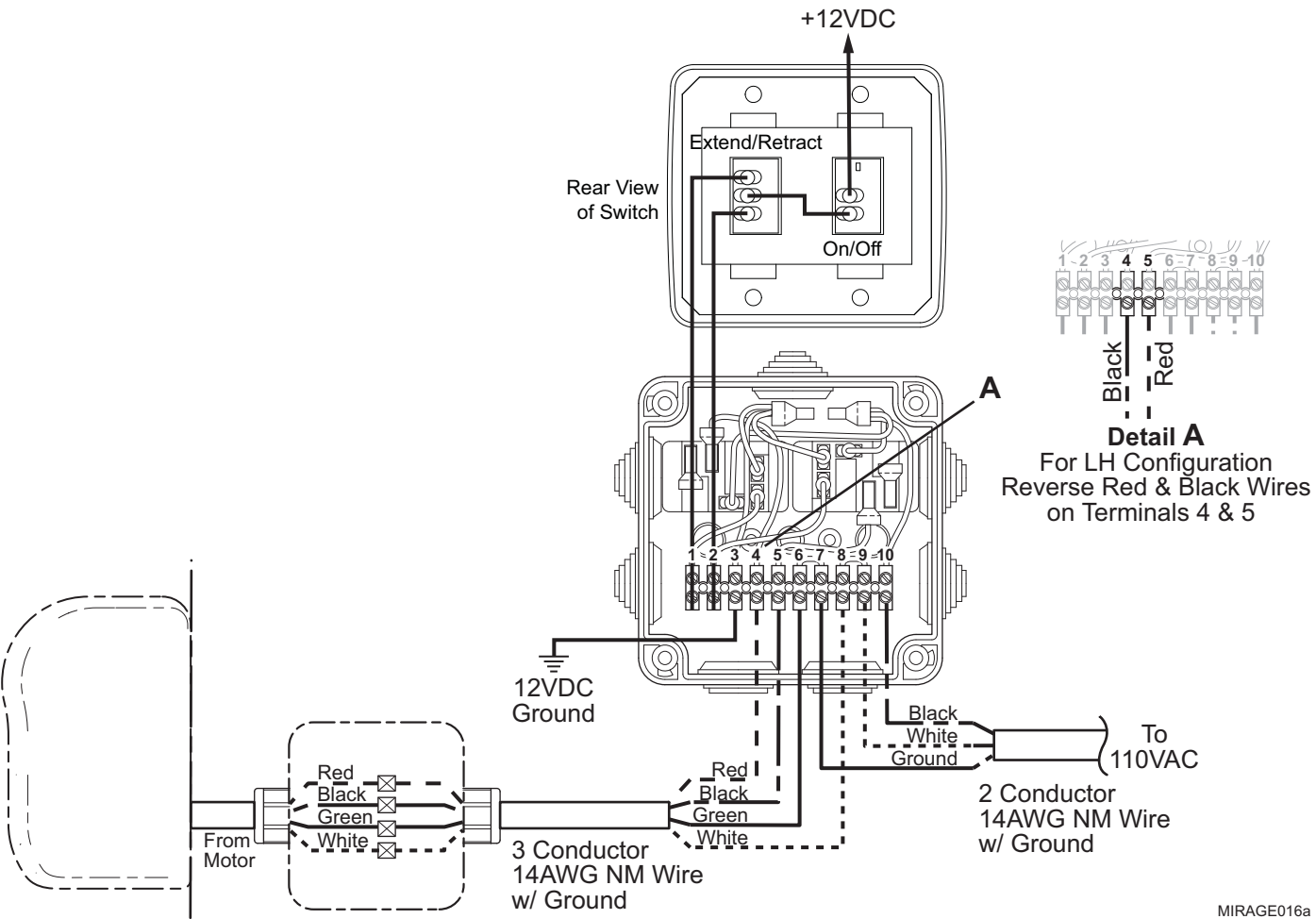


MIRAGE016

FROM		To (RH CONFIGURATION)		To (LH CONFIGURATION)	
Patio Switch	Terminal 1	Control Box	Terminal 1	Control Box	Terminal 1
	Terminal 7		Terminal 2		Terminal 2
Power Switch	Terminal 6	Patio Switch	Terminal 3	Patio Switch	Terminal 3
	Terminal 8	12VDC Power Source		12VDC Power Source	
Motor	Red	Control Box	Terminal 4	Control Box	Terminal 5
	Black		Terminal 5		Terminal 4
	Ground		Terminal 6		Terminal 6
	White		Terminal 8		Terminal 8
AC Power Source	Ground	Control Box	Terminal 7	Control Box	Terminal 7
	White		Terminal 9		Terminal 9
	Black		Terminal 10		Terminal 10

WIRING DIAGRAM –SWITCHES W/ RELAY CONTROL BOX

SYSTEM #2 (THIS SYSTEM IS NO LONGER AVAILABLE)

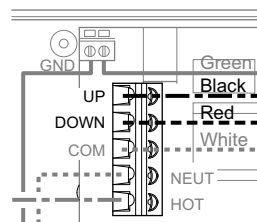
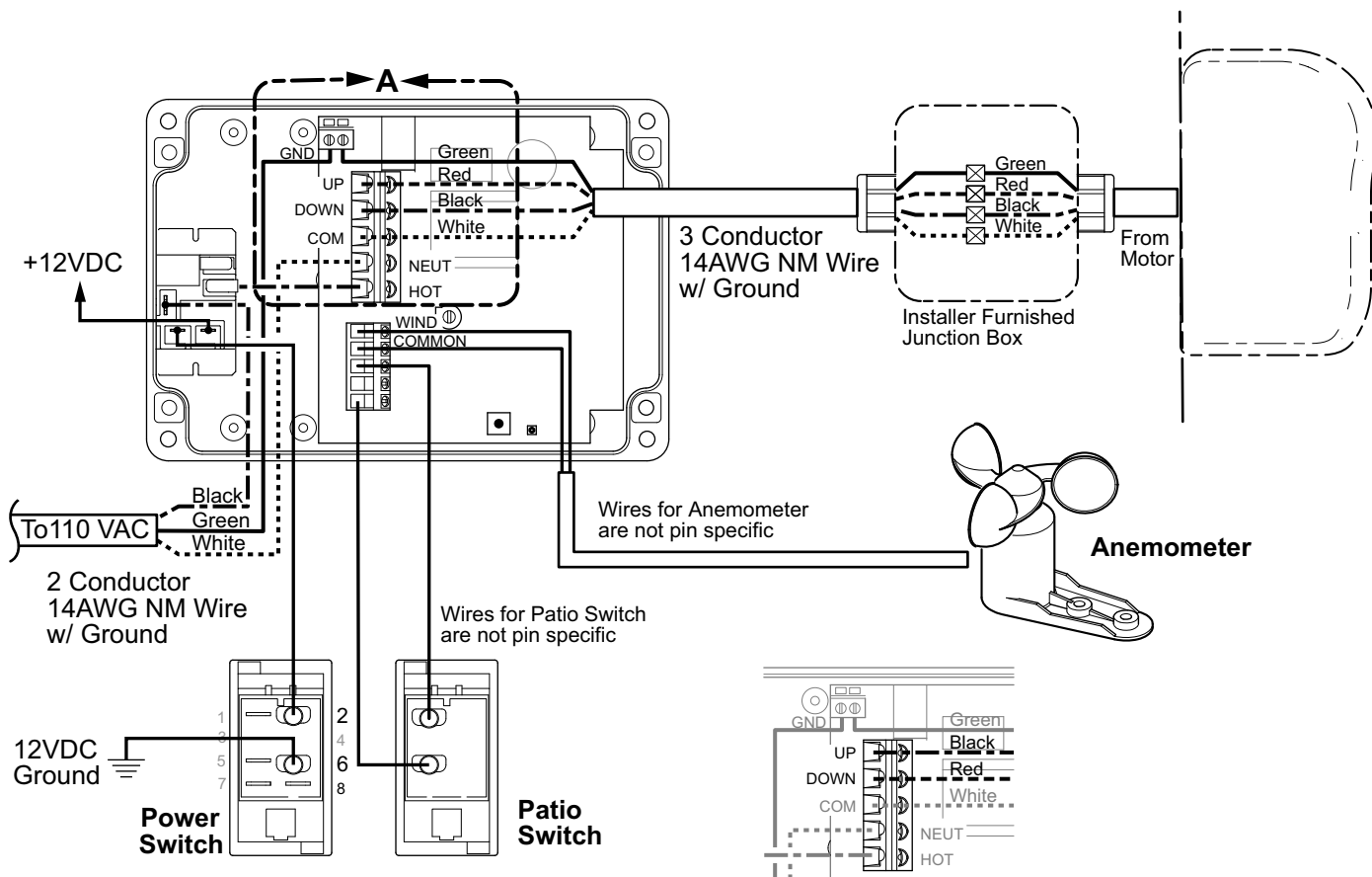


MIRAGE016a

FROM		To (RH CONFIGURATION)		To (LH CONFIGURATION)	
Extend/Retract Switch	Upper Terminal	Control Box	Terminal 1	Control Box	Terminal 1
	Lower Terminal		Terminal 2		Terminal 2
ON/OFF Switch	1st Terminal ¹	Extend/Retract Switch	Center Terminal	Extend/Retract Switch	Center Terminal
	2nd Terminal ¹				
Motor	Red	Control Box	Terminal 4	Control Box	Terminal 5
	Black		Terminal 5		Terminal 4
	Ground		Terminal 6		Terminal 6
	White		Terminal 8		Terminal 8
AC Power Source	Ground	Control Box	Terminal 7	Control Box	Terminal 7
	White		Terminal 9		Terminal 9
	Black		Terminal 10		Terminal 10

- NOTES:**
- Wires to ON/OFF Switch are not pin specific.
 - The SO cable from the 110VAC awning motor can only pass directly through a wall, it can not be laid up in the wall and must be connected to NM wire or individual wires in conduit no more than 6 inches past the point of entry.

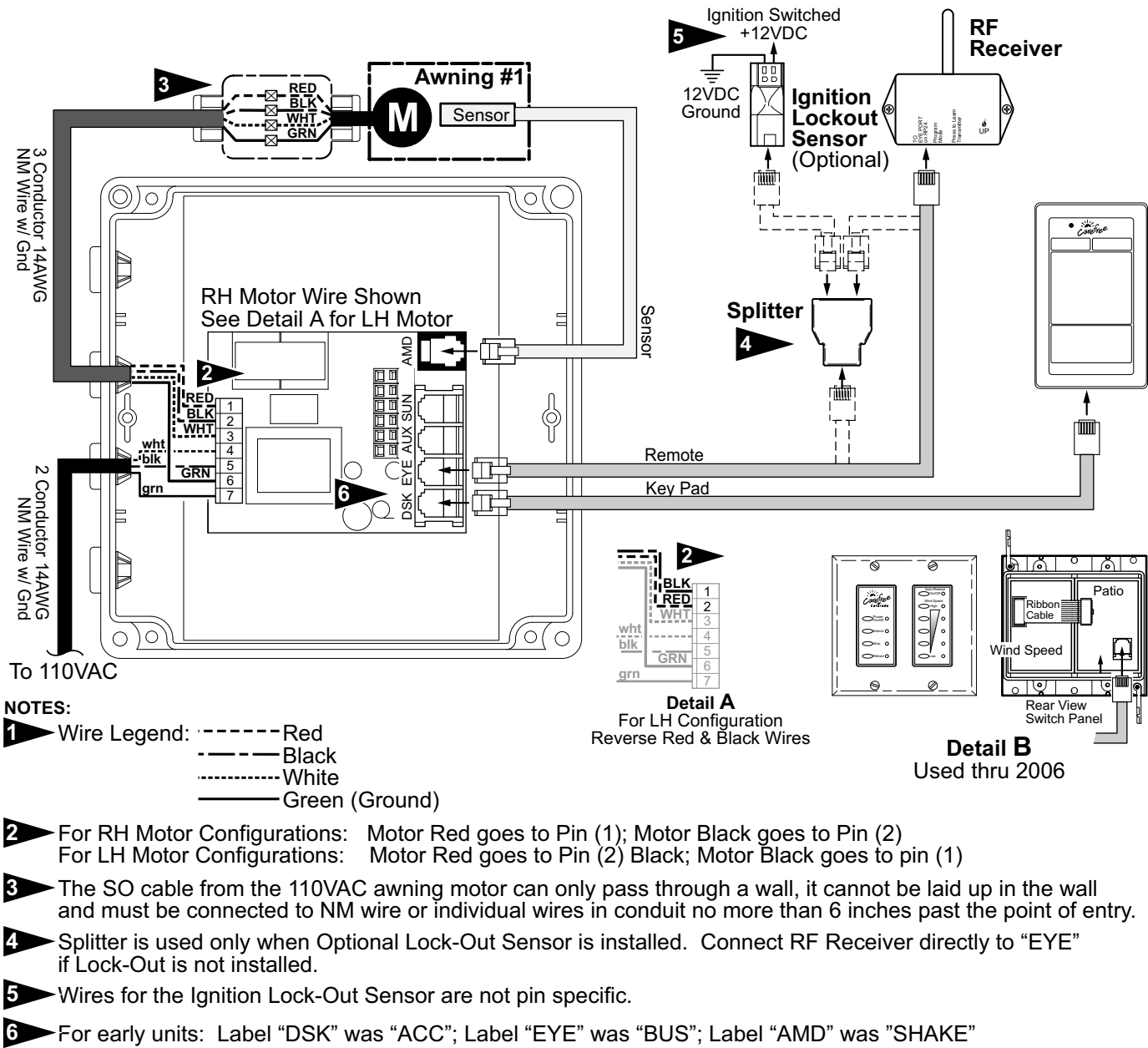
WIRING DIAGRAM – STANDARD ELECTRONICS W/ OPTIONAL AUTO RETRACT SYSTEM #3 (THIS SYSTEM IS NO LONGER AVAILABLE)



Detail A
 For RH motor configurations:
 Red Motor Wire goes to "DOWN" Terminal
 Black Motor Wire goes to "UP" Terminal

Mirage031

WIRING DIAGRAM – DIRECT RESPONSE ELECTRONICS

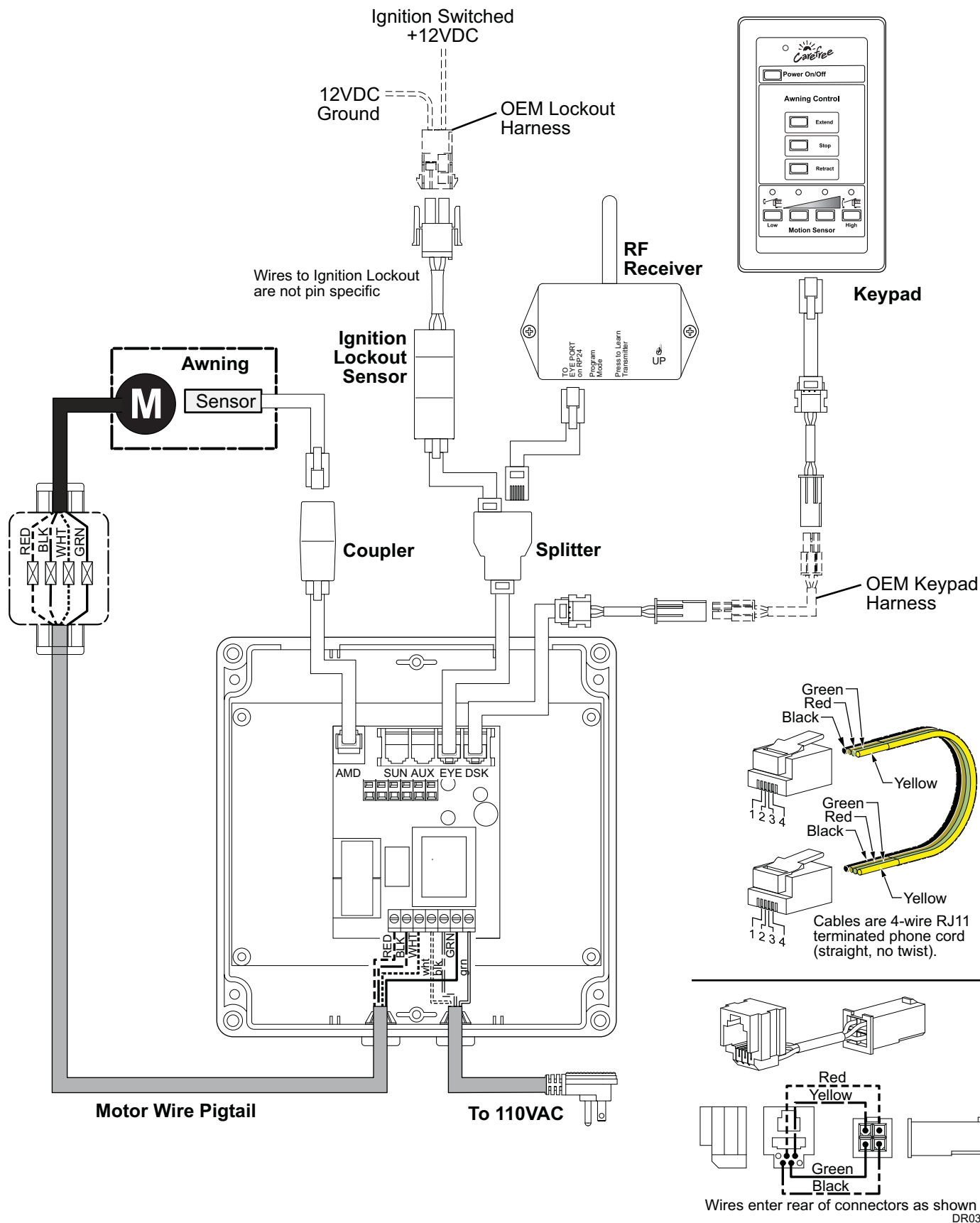


DR012a

Figure 2. Wiring Diagram – Direct Response System.					
FROM		To (RH CONFIGURATION)		To (LH CONFIGURATION)	
Motor	Red	Control Box	1	Control Box	2
	Black		2		1
	White		3		3
	Ground		6		6
AC Power Source	White	Control Box	4	Control Box	4
	Black		5		5
	Ground		7		7
Awning Sensor	10' Cable	Control Box	"AMD"	Control Box	"AMD"
Switch Assy	60" Cable	Control Box	"DSK"	Control Box	"DSK"
Splitter	60" Cable	Control Box	"EYE"	Control Box	"EYE"
Receiver	60" Cable	Splitter		Splitter	
Ignition Lockout	60" Cable	Splitter		Splitter	

Notes: 1. Cable lengths are the lengths of the furnished cables. If a connection requires a length greater than the supplied cable, the installer must provide a terminated jumper cable from the box location to the cable end.

WIRING DIAGRAM – DIRECT RESPONSE WINNEBAGO



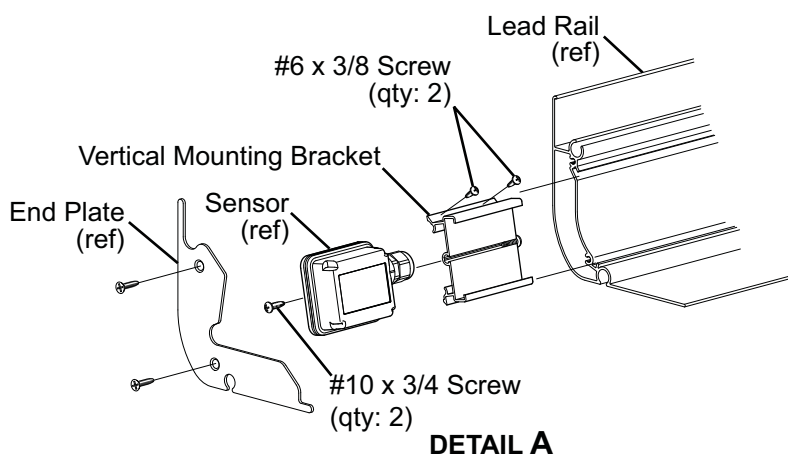
Mating Connectors:

Ignition Lock Out Harness - AMP female 2 pin Mat-N-Lok p/n 1-480699-0; 18-24 ga. pin p/n 350689-1.

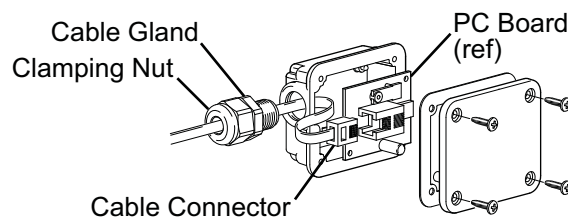
Key Pad Harness - Molex 4 pin Minifit Jr p/n 39-01-2040; 18-24 ga. female terminal p/n 39-00-0039.

SENSOR REPLACEMENT FOR DIRECT RESPONSE

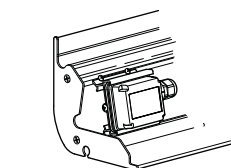
NOTE: The original Direct Response Shake Sensor was mounted horizontally on the inside of the lead rail. For product integrity, sensors are now mounted vertically. If replacing an original horizontally mounted sensor, it is necessary to install the vertical mounting bracket for the replacement sensor. Replacement sensors must be mounted vertically and will not work properly if mounted horizontally.



DETAIL A



DETAIL B



Completed Installation

Mirage043

Installing the Vertical Mount Bracket

(Detail A)

1. Remove the lead rail end plate and set aside.
2. Detach the existing sensor. The sensor is attached with a strong double sided adhesive tape. It will be necessary to use a putty knife or similar tool to carefully pry the sensor off. Use care to not bend or otherwise damage the lead rail. Allow the sensor to hang from the cord. **DO NOT CUT THE SENSOR CABLE.**
3. Use an acetone solvent and clean any glue residue from the inner surface of the lead rail. Follow the solvent manufacturer's directions.
4. The sensor is secured to the new bracket with a #10 x 3/4 screw on each side of the bracket. Insert one (1) screw into the edge of the bracket that will be pointed to the inside of the lead rail.
5. Slide the new vertical mount bracket into the grooves of the lead rail. Position in the approximate location of the old sensor.
6. Secure the bracket with two (2) #6 x 3/8" screws through the top of the bracket.

Installing a New Sensor

(Detail B)

The replacement sensor is furnished with a 25 foot cable. The cable is furnished in case the installed cable has been damaged or compromised.

NOTICE Do Not attempt to cut and splice the cable. If damaged, the cable must be replaced to ensure system integrity.

REMOVING THE OLD SENSOR

1. After detaching the sensor from the lead rail, loosen the clamping nut on the wire gland.
2. Unscrew the wire gland from the sensor case and slide down the wire and out of the way.
3. Remove the back of the sensor case to reveal the PC board.
4. Carefully remove the board from the case. In some instances, the board may be tacked with adhesive and must be pried out. Use care to not damage the cord or connector.
5. Disconnect the cable from the board and slip the connector out of the case. Set the old sensor parts aside.
6. Test the integrity (continuity) of the installed cable. Several cable testers are commercially available. If the cable is faulty, go to "Replacing a Sensor and Cable". If the cable is OK go "Installing a Sensor Only".

REPLACING A SENSOR AND CABLE

1. Remove the existing cable. Pay particular attention to the routing and attachment points of the existing cable.
2. Slide the new sensor into the vertical mounting bracket and secure with a #10 x 3/4 screw as shown.
3. Route the new cable and sensor to the control box. Arch the cable slightly at the arm joints 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.

INSTALLING A SENSOR ONLY:

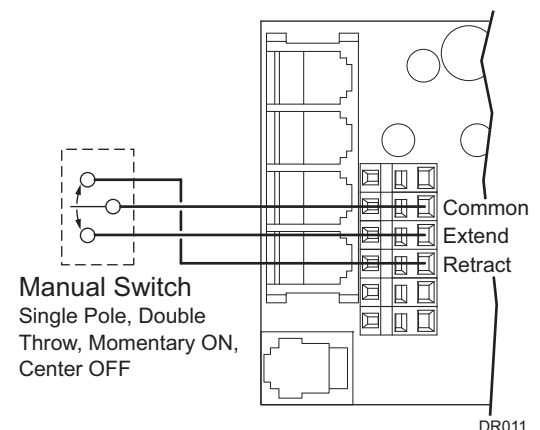
1. On the new sensor, loosen the clamping nut on the wire gland.
2. Unscrew the wire gland from the sensor case and slide down the wire.
3. Remove the back of the sensor case to reveal the PC board.
4. Carefully remove the board from the case.
5. Disconnect the cable from the board and slip the connector out of the case.
6. Slide the connector of the installed cable into the new sensor case.
7. Attach the wire gland to the case. Do not tighten the clamping nut at this time.
8. Attach the cable to the new board.
9. Reassemble the new sensor.
10. Tighten the cable gland clamping nut.
11. Slide the new sensor into the vertical mounting bracket and secure with a #10 x 3/4 screw as shown.

OPTIONAL MANUAL BYPASS SWITCH – DIRECT RESPONSE

Installers may elect to install a manual bypass switch for testing or emergency operation of the awning. The simple switch allows the operator to extend or retract the awning without using the keypad control panel. For multiple awning installations, a separate switch must be installed for each awning.

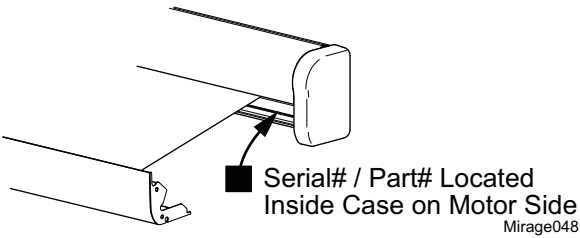
1. Open the control box and identify the terminal block next to the phone cord jacks.
2. Connect the switch to the terminal block as shown in the diagram.

The switch is a single pole, double throw, momentary ON, center OFF. Components are installer furnished.

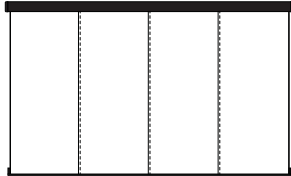


PART NUMBER LISTING

PART NUMBER/SERIAL NUMBER LOCATION



ILLUSTRATED PARTS LIST

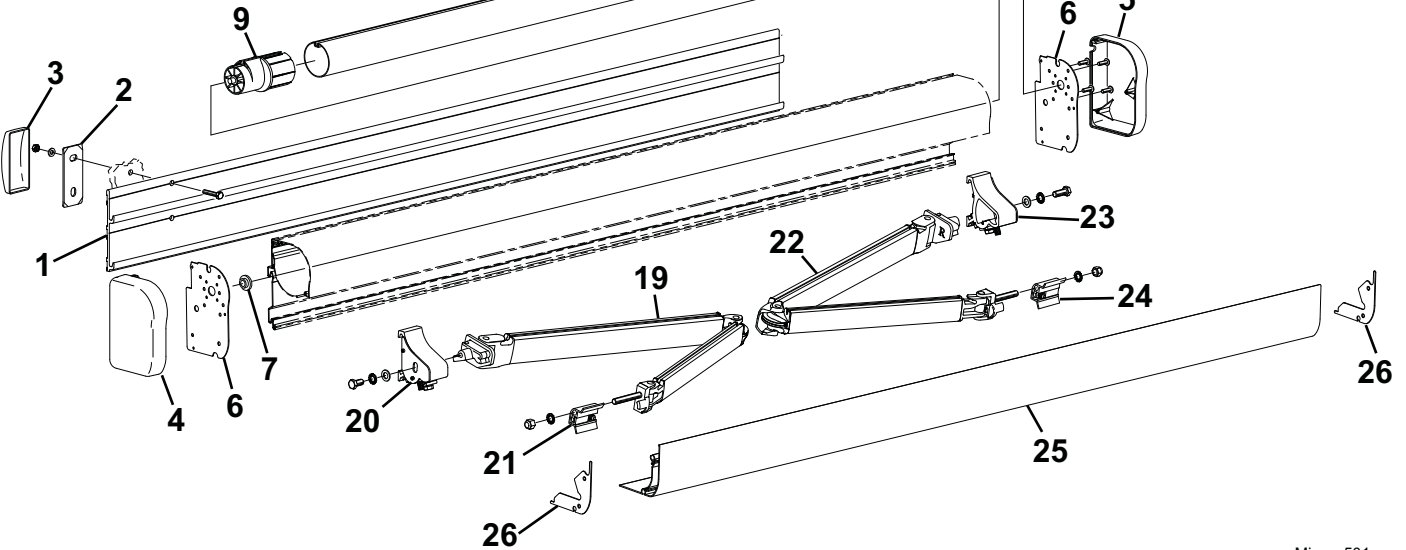
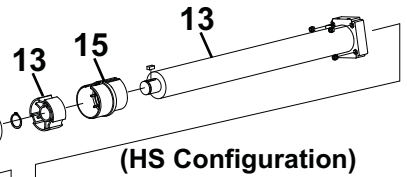
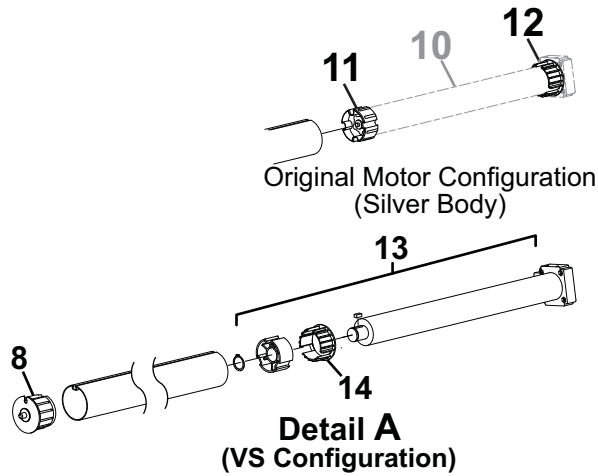
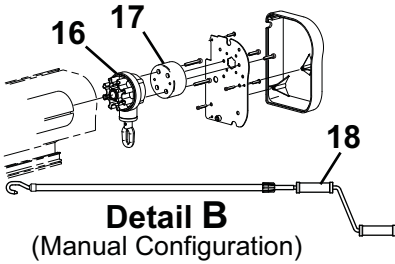


VS Configuration
Canopy construction with
vertical seams (previous)



HS Configuration
Canopy construction with
horizontal seams (current)

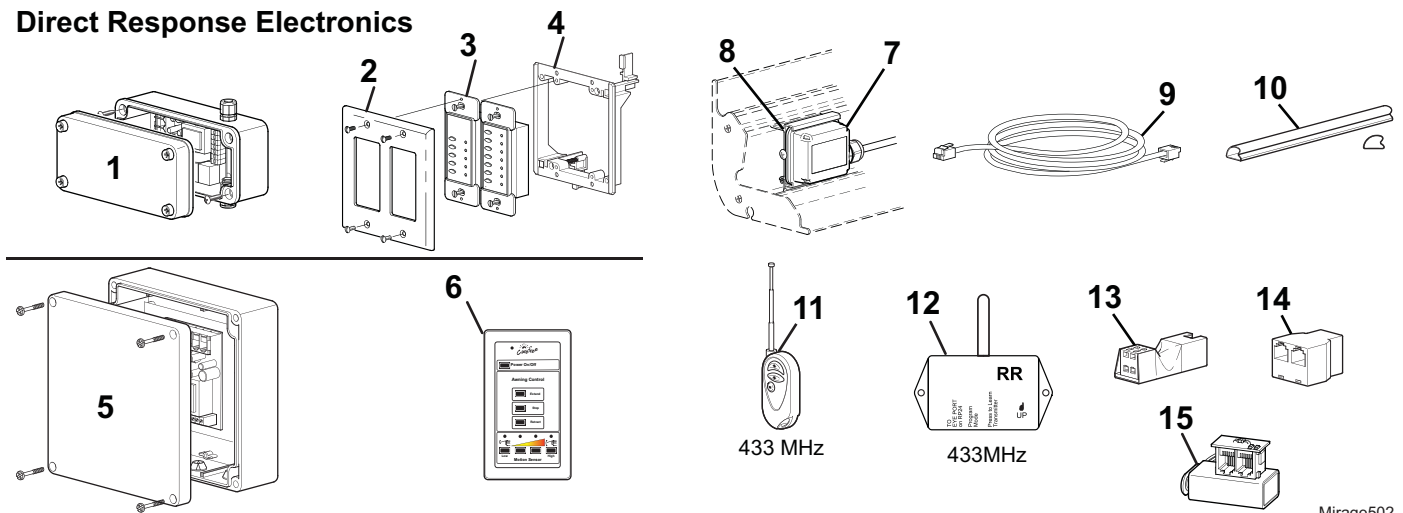
There are two configurations of the Mirage based on the canopy construction as shown above.



Item	Part Number	Description	Notes
1	R001077SAT-xxx	Mounting Plate	
2	R036333-001	Backing Plate	
3	R040548-001	Cover, Backing Plate	
4	R001051XXX	End Cap, Standard, LH	
5	R001056XXX	End Cap, Standard, RH	
6	R001052	End Plate, Housing	
7	R035310-002	Bushing, Used on Idler end plate	
8	R001054	End Plug, Roller Tube, Idler	Used with VS Configuration
9	R041335-001	End Plug, Roller Tube, Idler	Used with HS Configuration
10	NLA	Motor Assy, Silver Body	Discontinued FSO R001853
11	R030886-001	Drive Gear, Motor	Used with item 6
12	R030885-001	Crown, Motor	Used with item 6
13	R001853	Motor Assy, Orange Body	6
14	R041369-001	Crown	Used with VS Configuration
15	R041336-001	Crown	Used with HS Configuration
16	R062779-001	Gear Assy, Hand Crank	
17	R040551-001	Spacer	Used w/ Hand Crank
18	R001546-RP	Crank Handle Assy	
19	R001616SAT	Spring Arm Assy, LH & Center, Satin	2,4
	R001616BLK	Spring Arm Assy, LH & Center, Black	2,4
20	R019260-101	Case Connector, LH and Center, Mill	2,4
	R019260-JVL	Case Connector, LH and Center, Black	2,4
21	R019261-23L	Lead Rail Connector, LH	2,4
22	R001617SAT	Spring Arm Assy, RH, Satin	3
	R001617BLK	Spring Arm Assy, RH, Black	3
23	R019260-001	Case Connector, RH, Mill	3
	R019260-JVR	Case Connector, RH, Black	3
24	R019261-23R	Lead Rail Connector, RH	3
25	R001173-XXX-xxx	Lead Rail	
26	R001053	End Plate, Lead Rail	
27	R030796-001	Hex Key, Manual Override, 7mm	
28	R012458-001	Hardware Pack, Motorized, Aftermarket	not shown
29	R012459-001	Hardware Pack, OEM	not shown

- Notes:
1. XXX = Color; xxx = Length in inches.
 2. Item 19 (LH Spring Arm Assy) contains items 20 and 21 (LH Knuckle and Lead Rail Connector).
 3. Item 22 (RH Spring Arm Assy) contains items 23 and 24 (RH Knuckle and Lead Rail Connector).
 4. For awnings 19' and longer with 3 arms, use LH arm (item 19) for middle arm.
 5. End Plugs (items 8, 9) and crowns (items 14, 15) are configuration specific and are not interchangeable.
 6. Motor assembly (item 13) includes drive, crown (item 14) and attaching hardware. It does not include crown (item 15).

For LED replacement parts and service procedures refer to 070013-301 "LED Service Manual for Box Awnings" available on-line at www.carefreeofcolorado.com

Electronics**Direct Response Electronics**

Mirage502

1	R060525-001	Control Box	DSK	2
2	R060535-001	Switch Plate		2
3	R019474-001	Switch Assy, DSK style		2
4	R072141-001	Mounting Box, Switch		2
5	R060633-001	Control Box	110VDR	3
6	R060616-102	Key Pad		3
7	R060538-001	Motion Sensor w/ cable		5
8	R001355	Bracket Kit, Vertical Sensor Mount		5
9	R060434-001	Phone Cable, 60"		
10	R040616-206	Cable Channel	Black	
11	R060622-001	Key FOB, Remote, 433 MHz, Version 5		6,7
12	R060429-002	RF Remote Receiver, 433MHz, Version 5		6,7
13	R060532-001	Ignition Lockout Sensor, EL (Extend Lockout)	Optional	4
	R060532-002	Ignition Lockout Sensor, RTL (Retract Then Lock)	Optional	4
14	R060589-001	Splitter	used w/ Ignition Lockout Sensor	4
15	SR0095	Sensor Test Tool		
16	R012458-001	Hardware Pack, Motorized, Aftermarket	not shown	
17	R012459-001	Hardware Pack, OEM	not shown	

- Notes:
1. Direct Response system is standard. For early motorized models without Direct Response, an upgrade kit SR0035 is available.
 2. The DSK style switch assy must be used with item 1 control box.
 3. The keypad (item 6) must be used with the "110VDR" control box (item 5).
 4. Ignition Lockout Sensor is an option for the Direct Response System Only.
 5. Replacement motion sensors must be mounted vertically. If replacing a horizontal mount sensor, it will be necessary to order and install R001355 bracket kit.
 6. If replacing the key fob (item 11) it will also be necessary to replace the receiver (item 12).
 7. If replacing the remote receiver, version 5 is compatible with 433MHz key fobs versions 2 thru 5. If the key fob is an older version, it will be necessary to replace the key FOB.

For LED replacement parts and service procedures refer to 070013-301 "LED Service Manual for Box Awnings" available on-line at www.carefreeofcolorado.com



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