



## A/C ROOF KIT: 1ACCA14RFK (Fits, Club Car Carryall 4x2 Carryall 300, 500, 550 & 700)

Must be installed with Curtis Cab: 1CCCA-1 or 47587415001

Must be installed with Curtis Air Conditioner 1ACUNIT-G2

Must be installed with Curtis A/C Alternator Kit 1ACCA14DRK



### Approximate Installation Time \*

Experienced Dealer Technician – 45 Minutes

Average Dealer Technician – 1 Hour

Do-It-Yourself – 1.5 Hours

(\* = Not including cab & other accessories)

### Approximate Product Specifications

Ground to Top of Air Conditioner: 83 inches

Weight: 52 lbs. (not including 1ACUNIT-G2)

The contents of this envelope are the property of the owner. Leave with the owner when installation is complete.

Rev. A, 6-26-2018

p/n: IM-1ACCA14RFK

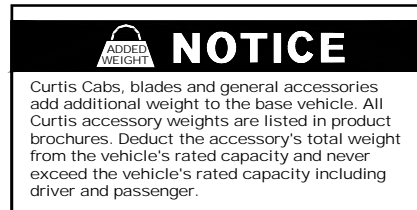
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## WARNINGS, TIPS, & REQUIRED TOOLS

*Curtis accessories feature an assembly of parts designed for your vehicle which require adjustment and alignment of components to accommodate vehicle variations and provide proper weather protection. For accurate installation, proper operation, and years of satisfaction, please read and understand the installation and owner's manual fully prior to installing the A/C Roof Kit.*

*From all of us at Curtis, we thank you for choosing our product.*



California Health and Safety Proposition 65 Warning: This product may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

## GENERAL INFORMATION BEFORE YOU START

### HELPFUL HINTS:

- To assist with installation, leave all fasteners loose for later adjustment unless otherwise specified.
- Read and understand all instructions before beginning.
- Apply a silicone sealant to seal any minor gaps that may occur due to vehicle variations.

### TOOLS REQUIRED

- Set of standard sockets (3/8" drive)
- 3/8" drive ratchet and extension
- #1 and #2 Phillips head screwdriver
- Set of standard open-end wrenches
- Cordless drill
- 3/16", 7/16" and 5/8" drill bits
- Anti seize

### ACCESSORIES REQUIRED

- Cab 1CCCA-1 or 47587415001
- Air Conditioner Alternator Kit 1ACCA14DRK
- Air Conditioner Unit 1ACUNIT-G2

# A/C ROOF KIT INSTALLATION

NOTE: for shipping purposes only, the inner and outer roof assemblies are held together with two thumb screws. Remove and discard thumb screws.

## STEP 1: (VEHICLE PREP)

- 1.1** Raise and secure the cargo box on the rear of the vehicle.  
OPTIONAL: Remove the cargo box from the vehicle for better access to the engine.

### Tools

9/16" wrench and socket

- 1.2** Remove the seat from the vehicle.  
OPTIONAL: remove the cab doors for better access inside the cab.

- 1.3** Disconnect both wires from the battery, negative then positive.

### Tools

9/16" wrench or socket

NOTE: If installing the air conditioner the same time as a new cab, use the A/C Roof in place of the standard cab roof, and install any accessories per the instructions in this manual.

- 1.4** Remove the interior mirror (if present) from its mount, then remove the four 1/4-20 screws from the corners of the overhead console. Allow the console to hang from the windshield support via the wire tethers in the console. Figure 1.4.

Skip this step if an overhead console is not installed.

### Tools

3/8" wrench or socket

- 1.5** If front LED lights are installed, disconnect the wires and remove the lights from the plastic roof.

If a Dome light or Beacon light is installed, remove the plastic roof from the inner roof pan. Disconnect wires and remove the lights from the roof. Save all hardware from this step for re-installation at the end of this procedure. Remove and retain any accessory wire harnesses and grommets inside the inner roof pan.

### Tools

3/16" Allen wrench (for upper roof bolts)

NOTE: If installing new accessories, follow the installation steps specific for the A/C in step 4.

- 1.6** Disconnect and remove the Wiper wire harness and grommets from the inner roof pan of the standard cab roof, and retain for re-installation. The wire and grommets may be pulled from underneath if the plastic roof has not been removed for accessories.
- 1.7** Remove the standard cab roof assembly via four bolts each (8 total) under the windshield support and upper rear panel. Figure 1.7.

The standard cab roof will not be reused and new roof hardware is provided in this kit.

### Tools

1/2" wrench or socket

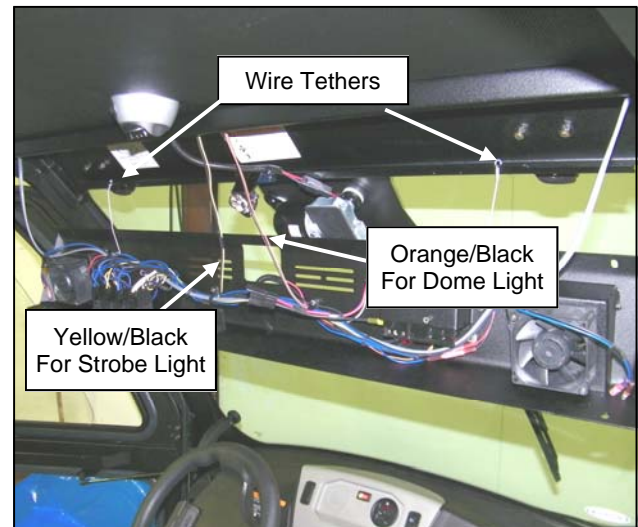


Fig. 1.4 (Disconnect Overhead Console)

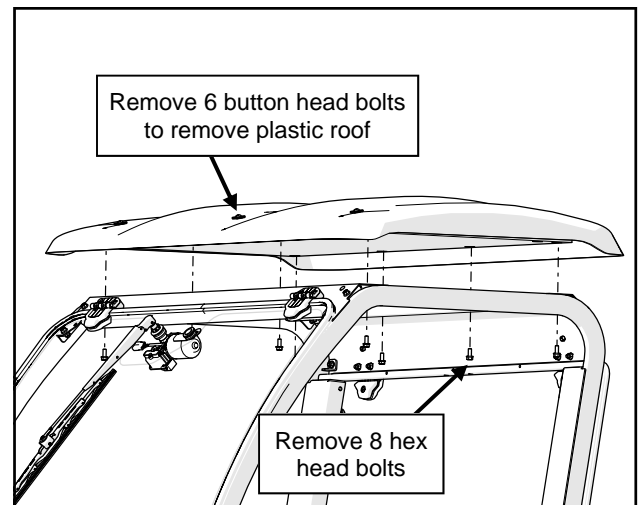


Fig. 1.7 (Remove Standard Cab Roof)

# A/C ROOF KIT INSTALLATION

## STEP 2: (ROOF INSTALLATION)

- 2.1** With assistance, lower the inner roof pan onto the top of the installed cab, with the two large square holes in the roof pan toward the front. Fasten the roof pan down as shown. Figure 2.1.

**NOTE:** If the bolt holes do not line up well, loosen all of the bolts around the side frame of the cab. This will allow the cab to shift or move as necessary.

**CAUTION:** Take care to properly align bolts into the threaded inserts on the roof. Improper alignment may result in cross-threading and failure of the insert.

### **Hardware Used**

5/16-18 x 3/4" flanged hex bolt

**Qty**  
8

### **Tools**

1/2" wrench or socket

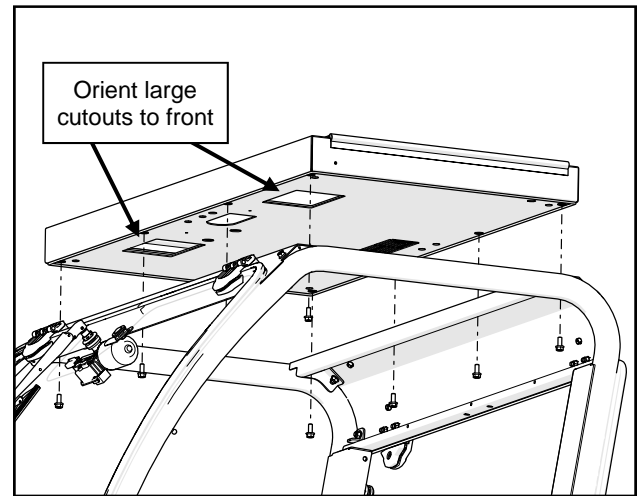


Fig. 2.1 (Install New Inner Roof Pan)

- 2.2** Adhere the strip of expanding foam to the upper surface of the roof pan, around the vent toward the rear of the pan, starting at the middle-front of the vent. Figure 2.2.

**NOTE:** The foam strip is supplied in a compressed state and will expand to fill the gap between the roof pan and the A/C unit. The foam may take several hours to fully expand.

### **Hardware Used**

Expanding foam

**Qty**  
36 inches

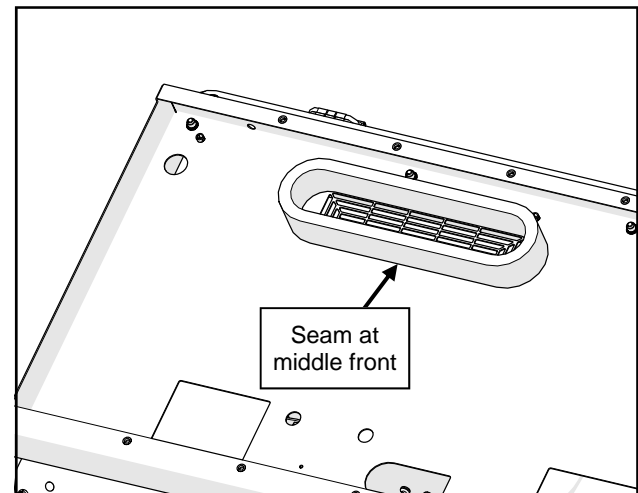


Fig. 2.2 (Install Foam Around A/C Intake Vent)

- 2.3** Remove the wiper wire/console power wires and associated grommets from the old roof pan. Re-install into the new roof pan as they were in the old one. Secure the wiper wire to the left side, front corner of the pan with a cable clamp, #10-32 screw and nut. Figure 2.3. Connect the wiper wire to the wire from the left side frame and to the wiper, or to overhead console if applicable.

Leave the wires loose at this time. The wires will be tucked into the roof after the A/C unit is installed.

### **Hardware Used**

3/8" nylon cable clamp

#10-32 x 1/2" Phillips machine screw

#10-32 lock nut

**Qty**  
1  
1  
1

### **Tools**

#2 Phillips Screwdriver

3/8" wrench or socket

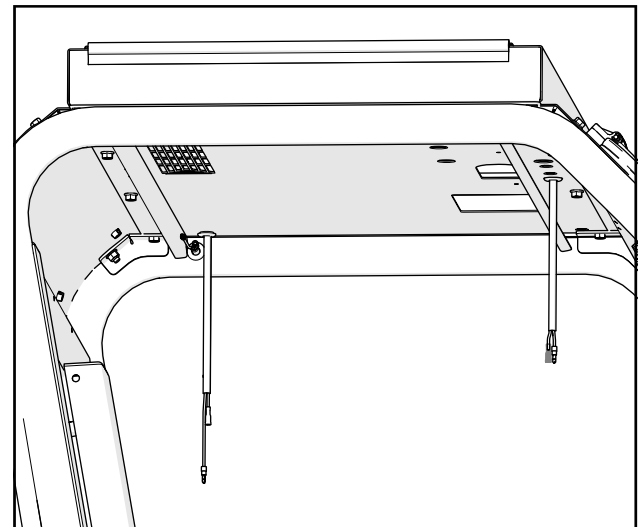


Fig. 2.3 (Install Wiper Wiring)

# A/C ROOF KIT INSTALLATION

## STEP 2: (ROOF INSTALLATION)

- 2.4** Locate the power supply harness (9SV-WH-00065). Route the power supply harness from the rear engine compartment, through the small hole below the rear panel, passenger-side end. Orient the harness so that the alternator plug and the fuses will all remain in the engine compartment. Feed through up to the large bundle of wires on the harness. Figures 2.4 and 2.4a.

### Hardware Used

A/C Power Supply Wire Harness  
(from A/C Alternator Kit)

### Qty

1

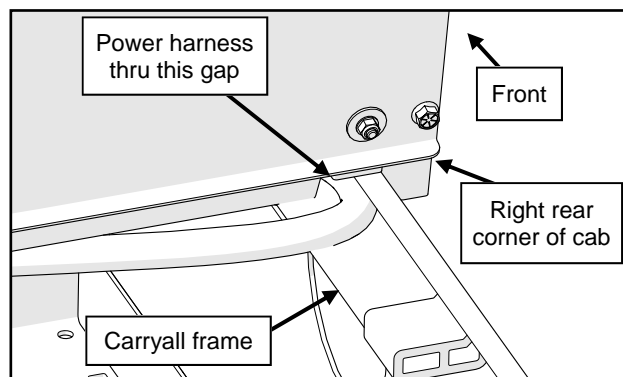


Fig. 2.4 (Power Harness Routing)

- 2.5** Locate two large grommets, one each on the Roof Kit and Alternator kit. Install the power harness and one grommet through the large hole toward the rear of the roof pan. Feed enough of the harness through to reach the front of the roof pan. Figure 2.5. If installing an electric heater kit, refer to the installation manual with that kit and run the required control wires at this time following the same routing as the power harness.

### Hardware Used

Rubber Grommet, 1-3/16" I.D.

(One each in A/C Alternator Kit and drive kit)

### Qty

1

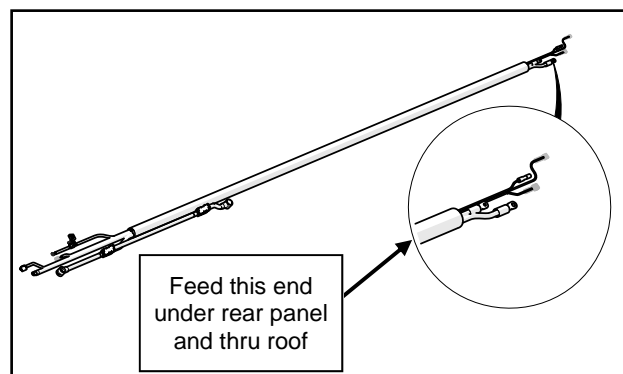


Fig. 2.4a (Power Harness)

**CAUTION:** Never turn the air conditioner upside down or on its side. Doing so will drain the compressor of its oil and will void the warranty .

- 2.6** Place the outer roof on a work bench, raised up to allow access to the underside and prevent damage to the side flanges of the roof. With assistance, place the air conditioner unit onto the outer roof, centered inside of the roof's rectangular opening.

Orient the unit to the roof as shown when installing. The A/C vents and switches will align with the holes in the inner roof pan.

Install fasteners to the roof and air conditioner along the left and right of the air conditioner only. After all of these fasteners are in place, fully tighten.

NOTE: Leave all holes in the front and rear of the A/C unit (10 total) empty. These will be used to fasten the outer roof to the inner roof pan.

### Hardware Used

1/4-20 x 3/4" flanged hex bolt

1/4" plastic washer

1/4-20 flanged lock nut

### Qty

8

8

8

### Tools

3/8" wrench or socket

7/16" wrench or socket

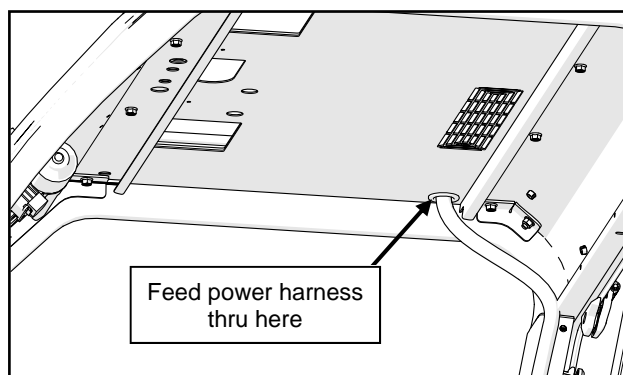


Fig. 2.5 (Harness Routing through Roof Pan)

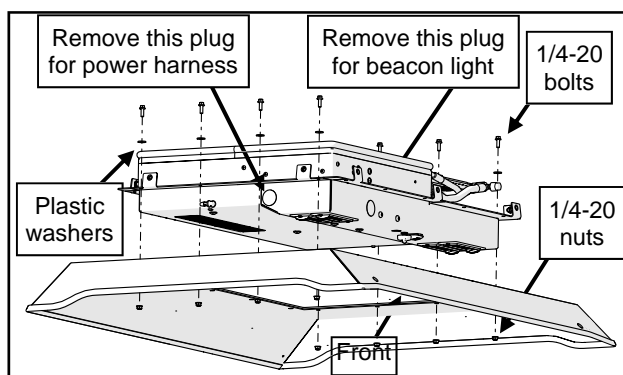


Fig. 2.6 (Install A/C Unit to Outer Roof)

# A/C ROOF KIT INSTALLATION

## STEP 2: (A/C CONTROLLER WIRING)

- 2.7** Locate the controller in the alternator kit (8SV-114-00019).

Install the controller to the air conditioner housing using the two fasteners already in place in the air conditioner.  
Figure 2.7

### Tools

11/32" wrench  
#2 Phillips screw driver

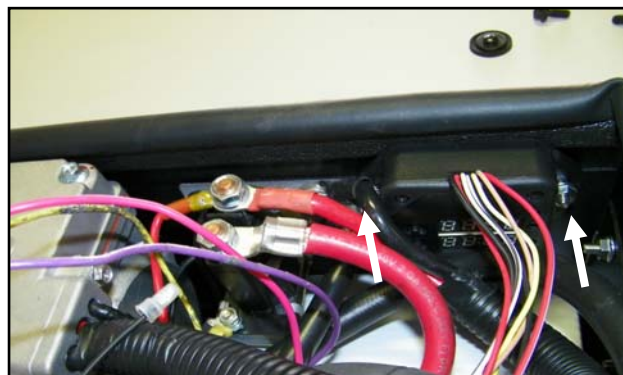


Fig. 2.7 (Fasten Controller)

- 2.8** Remove the plastic hole plug on the underside of the air conditioner next to the rotary and rocker switches. Replace this plug with the red push button switch found in the hardware box in the alternator kit.

Tighten the plastic nut for the button inside the A/C Unit, no more than 1/4 turn past finger tight.

Once installed, pushing this button will temporarily disengage the auxiliary alternator. This provides a power boost by removing the load on the alternator. The button does not need to be held down, the alternator will re-engage after a few moments.

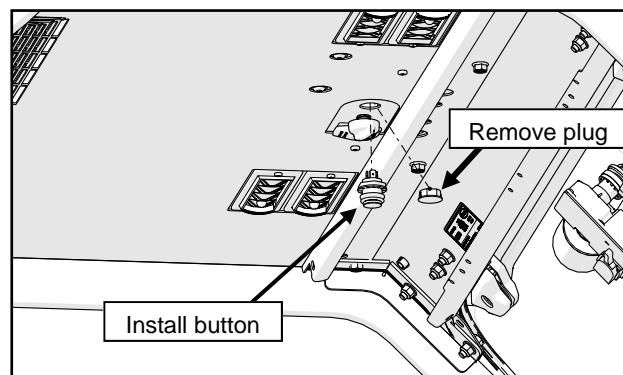


Fig. 2.8 (Button Installation)

### Hardware Used

Push Button

### Qty

1

### Tools

1-1/16" wrench or long needle nose pliers

# A/C ROOF KIT INSTALLATION

## 2.9 Locate relay wire harness in the alternator kit 9SV-WH-00074.

Connect the relay wire harness and controller wires:

NOTE: Not all connections will be made in this step. Several will take place once unit is positioned on top of the roof.

Relay Harness Terminal	Destination
Male Plug (White)	Female white plug of A/C
Female Plug (White)	Male white plug of Controller
Red Wires	Red wires of Controller (yellow terminal)
Green Wire	Terminal 1 of the alternator bypass button (Step 2.8)
Black Wire	Terminal 2 of the alternator bypass button (Step 2.8)

NOTE: Green and black wires may be connected to either of the parallel terminals on the bypass button.

Controller Wire	Destination
Green Wire (from relay socket) (blue push-on terminal)	Pink wire from A/C Case (located on wire harness connected to the trigger on the main power solenoid)

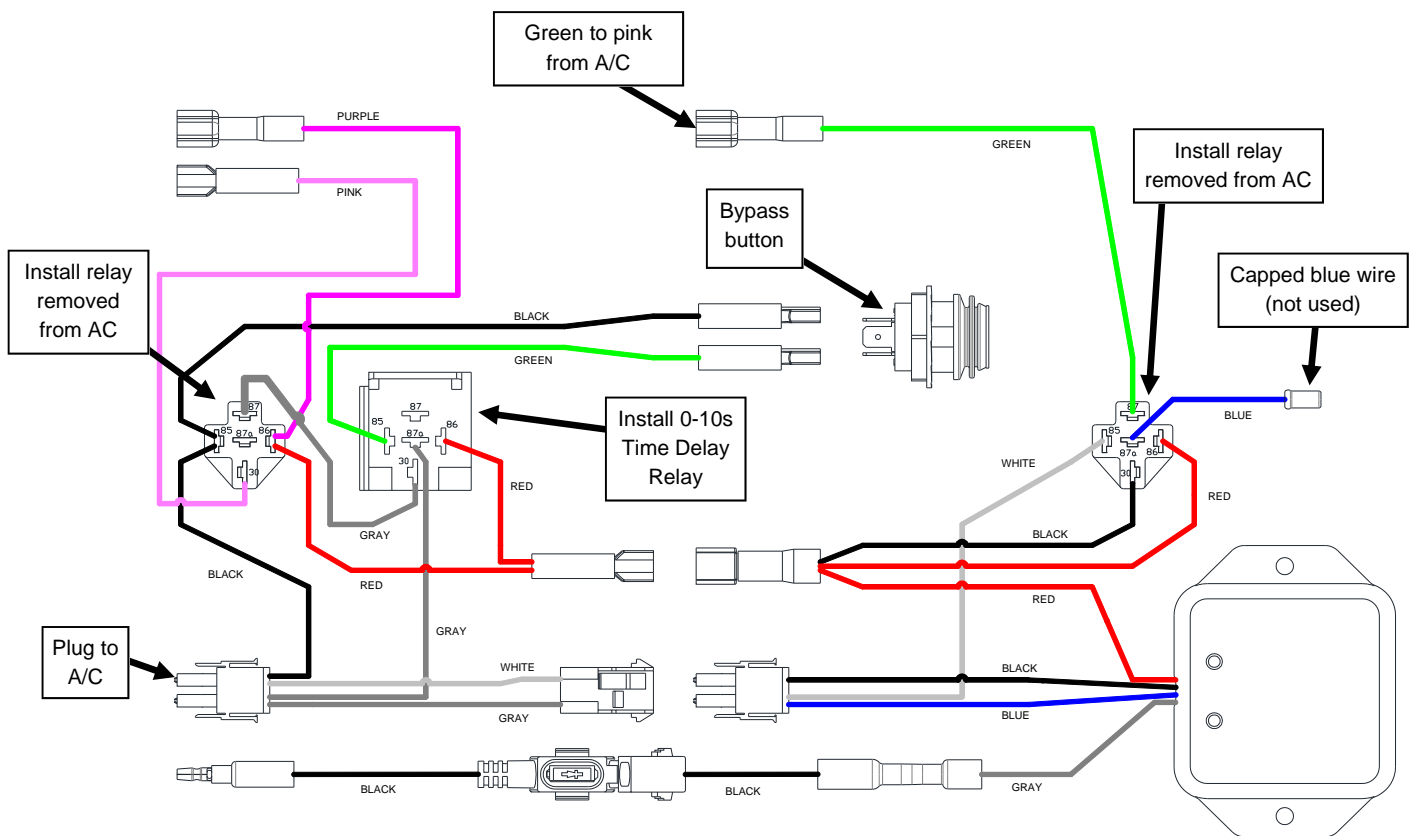


Fig. 2.9 (Connect Relay Harness)



# A/C ROOF KIT INSTALLATION

- 2.10** Remove relays from sockets 2 and 4 on the air conditioner unit (9SV-85-01-0022) as shown in figure 2.10 and re-install one of these relays into the relay socket on the Controller assembly as shown in figure 2.9 on the previous page.

The other relay will be installed onto the relay harness in step 2.12.

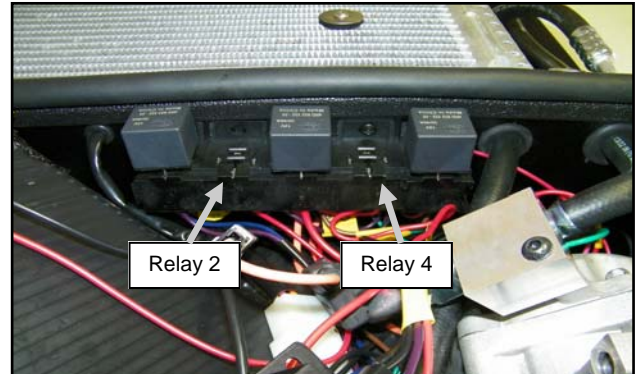


Fig. 2.10 (Remove Relays 2 & 4)

- 2.11** Install 2 relays into the A/C unit. See Relay Guide in Fig. 2.12b below for assistance identifying each relay.

Install the Beüler time delay relay (9SV-85-01-0031) into relay socket 2 of the air conditioner.

Leave socket 4 empty.

Install time delay solid state relay (0-2 min) off-delay (85-01-0029) into relay socket 6 of the Air Conditioner.

Note that relay socket 6 is attached to the harness feeding relay socket 4 and not attached to relay sockets 1-5.

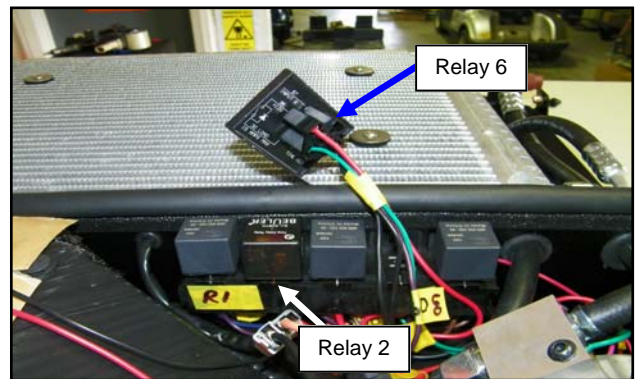


Fig. 2.11 (Install Timed Relays to Sockets 2 & 6)

- 2.12** Install one of the relays removed in STEP 2.10 into socket 1 of the relay harness. Figure 2.12a.

Install time delay solid state relay on-delay (9SV-85-01-0030) into socket 2 of relay harness. Note that the solid state relay can only fit into socket 2, due to its shape.

**NOTE:** Verify that all of the relays are in the correct positions.

**CAUTION:** Never replace any timed relay in this device with a standard automotive relay.

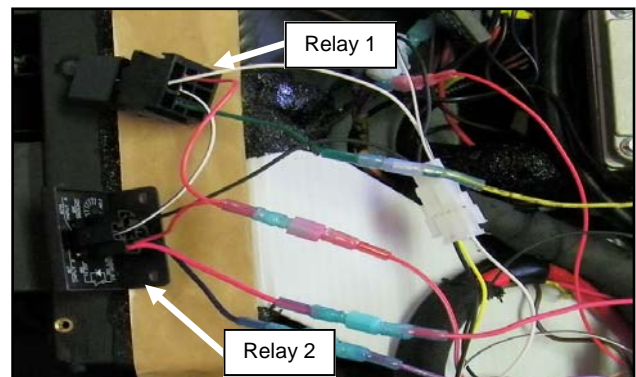


Fig. 2.12a (Install Timed Relays to Relay Harness)

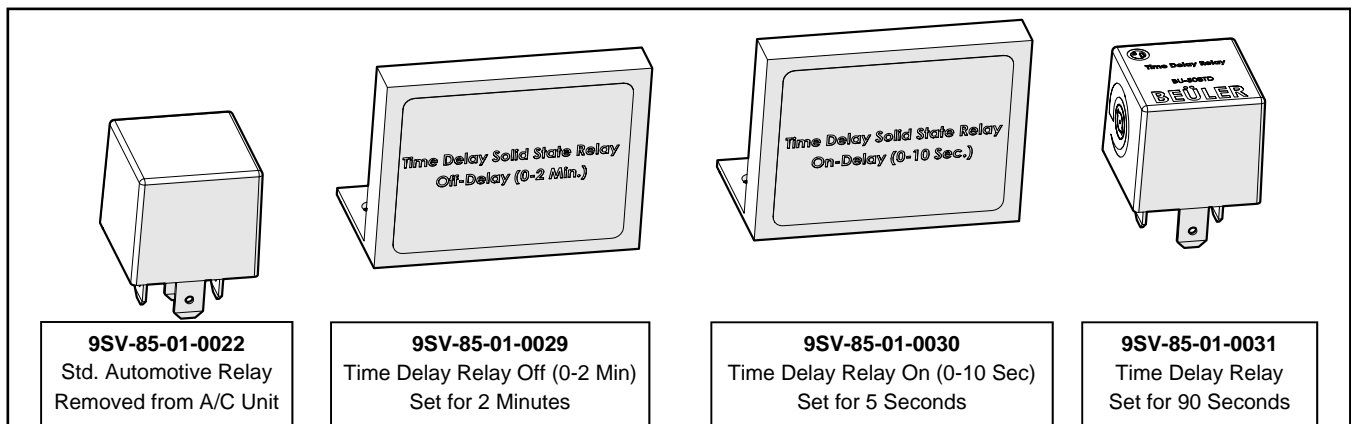


Fig. 2.12b (Relay Guide)

# A/C ROOF KIT INSTALLATION

## STEP 2: (ROOF INSTALLATION)

- 2.13** With assistance, place the outer roof and A/C assembly on top of the inner roof, with spacers at each corner holding the outer roof a few inches above the inner roof. Figure 2.13.

**NOTE:** Wood blocks or rigid foam packaging blocks can be used effectively for spacers.

**CAUTION:** Make sure the outer roof is stable on top of the spacers before proceeding.

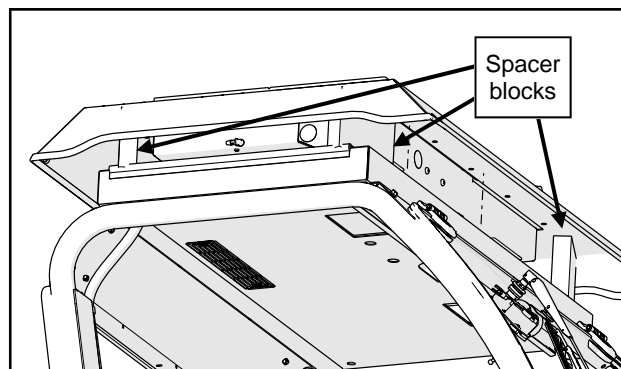


Fig. 2.13 (Place Outer Roof onto Inner Roof)

- 2.14** Feed one end of a drain tube through the hole in the rear of the inner roof pan. Rotate the nipple on the side of the A/C unit to the rear of the unit and attach the drain tube. Repeat for the other side. Figure 2.14.

**TIP:** Apply a little water to the nipple to lubricate and ease the installation of the drain tube.

**Hardware Used**

PVC Tube, 3/8" I.D.

**Qty**

2

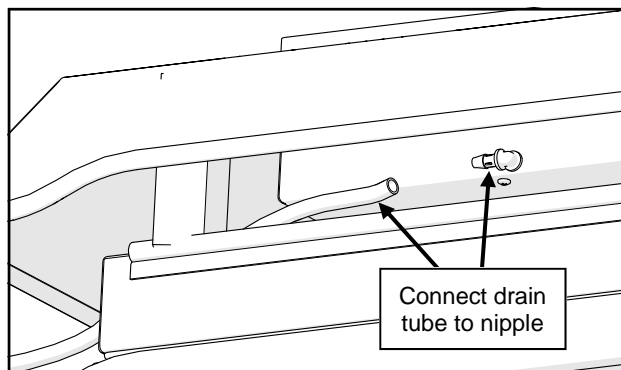


Fig. 2.14 (Install Drain Tubes)

- 2.15** Remove the large dome plug from the passenger's side of the A/C Unit (see Figure 2.15) and install the power harness and second large grommet through this hole. Feed enough of the harness through for the heavy gauge wires to reach the front of the A/C unit.

**Hardware Used**

Rubber Grommet, 1-3/16" I.D.

(One each in A/C Alternator Kit and drive kit)

**Qty**

1

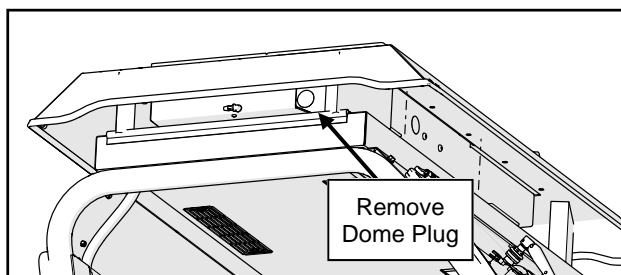


Fig. 2.15 (Remove Dome Plug)

- 2.16** Secure the heavy red wire to the unused lug of the solenoid at the front of the A/C unit. Figure 2.16.

Loosen the fastener holding A/C ground wires in place at the front of the unit, then secure the heavy black wire to the same location.

**CAUTION:** The heavy gauge wires from the power harness must be secured to the A/C Unit before completing the roof assembly, to ensure the wires do not pull free from the unit.

Pull down on the power harness through the grommet in the inner roof pan to remove any slack between the inner roof and A/C unit.

**Tools**

1/2" socket

7/16" wrench

5/32" Allen wrench

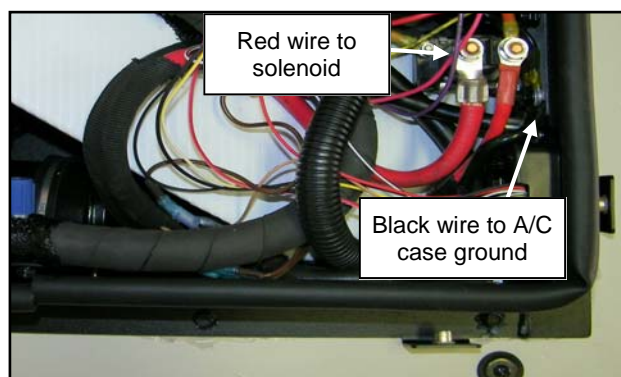


Fig. 2.16 (Connect Power Wires to A/C Unit)

# A/C ROOF KIT INSTALLATION

2.17 Continue connecting the relay wire harness and controller wires to the main power harness:

<u>Relay Harness Terminal</u>	<u>Destination</u>
Pink Wire	Pink wire of Main Power Harness
Purple Wire	Purple wire of Main Power Harness
<u>Controller Wire</u>	<u>Destination</u>
Gray Wire (with black diode holder)	Brown wire of Main Power Harness

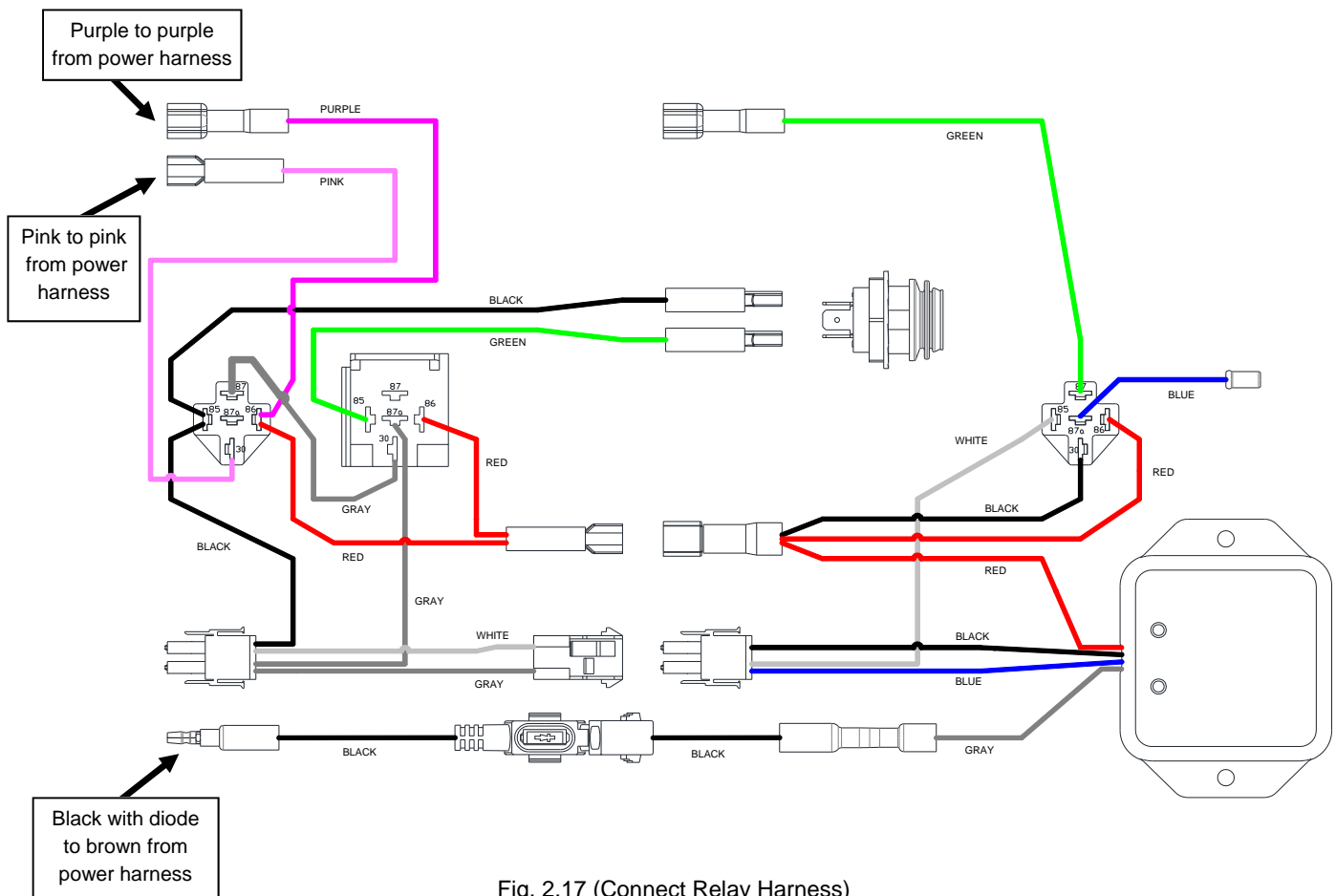


Fig. 2.17 (Connect Relay Harness)

# A/C ROOF KIT INSTALLATION

## STEP 2: (ROOF INSTALLATION)

**2.18** Skip this step if not installing a Beacon light.

If installing a Beacon light, install the yellow/black wire from the overhead console with a 1/4" I.D. rubber grommet through the hole in the roof pan, located centered and slightly to the left in the front of the pan. Remove the plug in the front of the A/C unit (see Figure 2.18) and route the wires into the A/C unit.

<b>Hardware Used</b>	<b>Qty</b>
Rubber grommet, 1/4" I.D.	1

**2.19** With assistance, remove the blocks holding the roof assembly above the roof pan and lower the roof into place. Ensure that no wires are pinched under the A/C unit or roof, then fasten the roof and A/C Unit to the lower roof pan, through the holes in the front and rear of the A/C unit. Fully tighten only after all 10 fasteners are in place. Figure 2.19

**CAUTION:** Take care to properly align bolts into the threaded inserts on the roof. Improper alignment may result in cross-threading and failure of the insert.

<b>Hardware Used</b>	<b>Qty</b>
1/4-20 x 3/4" flanged hex bolt	10
1/4" plastic washer	10

**Tools**  
3/8" wrench or socket

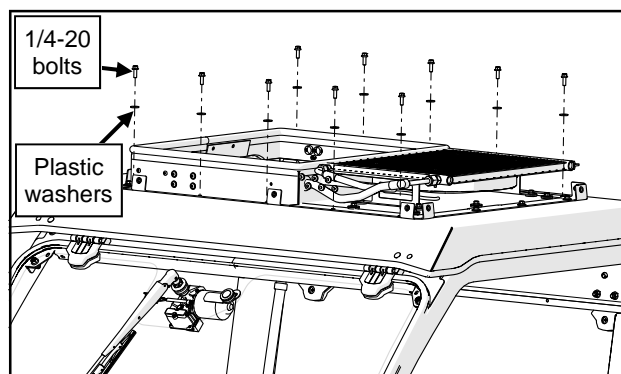


Fig. 2.19 (Install Outer Roof to Inner Roof)

**2.20** Pull out the slack in the drain tube at the driver's side rear of the roof pan. Pull carefully to avoid pulling it off the A/C unit. Secure the drain tube to the rear corner of the outer roof with a nylon clamp, #10-32 screw and nut, through the hole in the rear of the roof. Figure 2.20 Repeat for the other side.

<b>Hardware Used</b>	<b>Qty</b>
1/2" nylon cable clamp	2
#10-32 x 1/2" pan head screw	2
#10-32 lock nut	2

**Tools**  
#2 Phillips Screwdriver  
3/8" wrench or socket

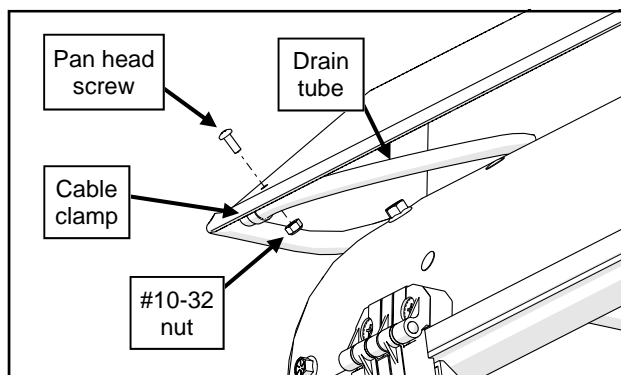


Fig. 2.20 (Attach Drain Tubes to Outer Roof)

**2.21** Install a #10 self-drilling screw into each of the two small holes at the front of the roof pan, behind the cab windshield support and to either side of the switches. Figure 2.21

<b>Hardware Used</b>	<b>Qty</b>
#10 X 1/2" self-drilling screw	2

**Tools**  
#2 Phillips Screwdriver (power driver recommended)

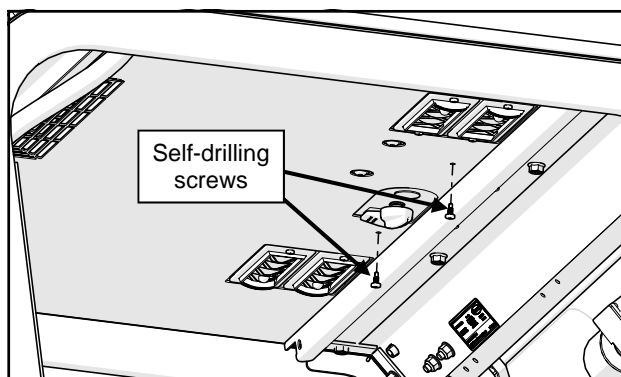


Fig. 2.21 (Secure A/C Unit to Roof Pan)

**2.22** Tuck the wiper wires and terminals at the rear left of the roof pan up into the roof, leaving only a short section of loom-covered wires visible.

# A/C ROOF KIT INSTALLATION

## STEP 2: (ROOF INSTALLATION)

**CAUTION:** The cab and vehicle assembly is certified as a ROPS (Roll Over Protective System) structure. Drilling holes into the ROPS structure may void the certification.

- 2.23** Attach the power supply harness to the passenger's side cab frame, through the existing hole in the frame, using a 7/8" P-clamp, 1/4-20 bolt and nut. Figure 2.23.

**NOTE: for non ROPS-Certified (1CCCA cabs only):**

If the metal box next to the rear window is not present, the 7/8" P-clamp may be installed with a self-drilling screw. Install the clamp 2 to 3 inches below the upper rear panel and flush to the front of the side frame.

Remove the 5/16" nut from the upper passenger's side of the lower rear panel and install a 2" P-clamp over the power harness and 5/16" bolt and re-install the nut.

Remove the 1/4" nut from the upper bolt through the rear panel and passenger's side hip restraint next to the seat. Install a 7/8" P-Clamp over the power harness and 1/4" bolt and re-install the nut.

**Hardware Used**

	<u>Qty</u>
(From A/C Alternator Kit)	1
7/8" P-clamp	2
2" P-Clamp	1
1/4-20 x 3/4" flanged hex bolt	1
1/4" flanged lock nut	1
#10 x 1/2" self-drilling screw (1CCCA cab only)	1

**Tools**

1/2" wrench and socket  
3/8" and 7/16" wrenches or sockets  
#2 Phillips bit and power driver (1CCCA cab only)

- 2.24** Pull on the power harness behind the cab rear panel to remove any slack. Attach the power harness to the existing hole in the seat frame panel with a heavy duty wire tie.

**Hardware Used**

	<u>Qty</u>
(From A/C Alternator Kit)	
Heavy duty wire tie	1

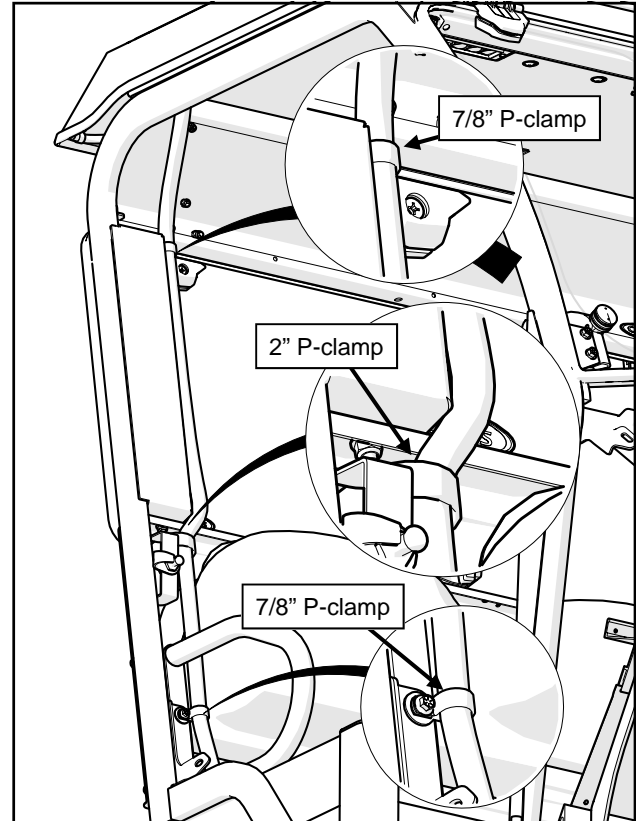


Fig. 2.23 (Secure Power Harness to Cab)

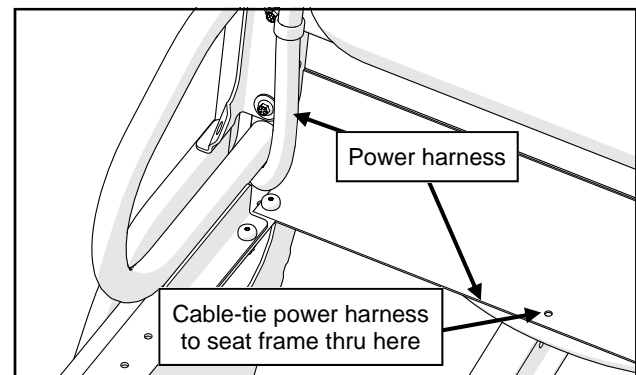


Fig. 2.24 (Secure Power Harness to Seat)

## STEP 3: (A/C ALTERNATOR KIT)

- 3.1** Refer to the A/C Alternator Kit Installation Manual specific to this vehicle. Follow those instructions to install the auxiliary alternator, electrically connect the air conditioner, and test its operation.

# A/C ROOF KIT INSTALLATION

## STEP 4: (INSTALL ACCESSORIES)

NOTE: Skip any steps that do not apply, for any accessories that are not installed or will not be re-installed.

- 4.1 Dome Light:** Curtis recommends installing the dome light onto the overhead console panel. Fully disconnect and remove the console from the cab. Use the template on page 15 to locate and drill holes in the console panel. Install the dome light onto the panel and connect the wires to the orange/black wires in the console. Use a cable tie to secure the wires. Hang the console from the cab windshield support and connect any other accessories and wiper wiring.

### Hardware Used

(From Dome Light Kit or prior install)

	Qty
#6-32 x 3/4" pan head screw	3
#6-32 lock nut	3

### Tools

#1 Phillips screwdriver  
5/16" wrench or socket  
Drill and 3/16" and 3/4" drill bits

- 4.2 Front LED Lights:** Install front lights into the pre-drilled holes in the A/C outer roof, with lights into the larger inner holes and wires with a grommet into the smaller outer holes, then install the wires with a grommet into the hole through the windshield support. Connect the wires to the blue/black wires inside the overhead console.

### Hardware Used

(From Light Kit or prior install)

	Qty
M8x1.25 x 25mm carriage bolt	2
M8x1.25 lock nut	2
M10x20mm flat washer	2
M8x24mm fender washer	2

### Tools

13mm wrench or socket

- 4.3 Beacon Light:** Curtis recommends installing the beacon light onto the top cover for the A/C unit. Install Beacon light through the roof pan and A/C unit (see section 2.10). Use the template on page 16 to locate and drill four 7/16" holes in the cover at the spots marked "A" on the template, referencing the cutout in the cover and the 3/8" hole marked "B" on the template. Install the Beacon light onto the A/C cover and connect to the yellow/black wires. Test the operation of the Beacon light before installing the cover onto the A/C unit.

### Hardware Used

(From Beacon Light Kit or prior install)

	Qty
1/4-20 x 3/4" button head screw	3
1/4-20 flanged lock nut	3
1/4 x 1" fender washer	3
Rubber grommet, 1/4" I.D.	5

### Tools

5/32" Allen wrench  
7/16" wrench or socket  
Drill and 7/16" drill bit

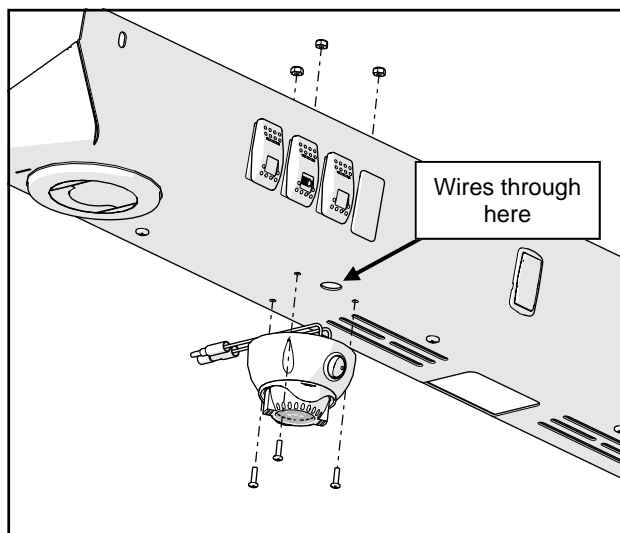


Fig. 4.1 (Dome Light)

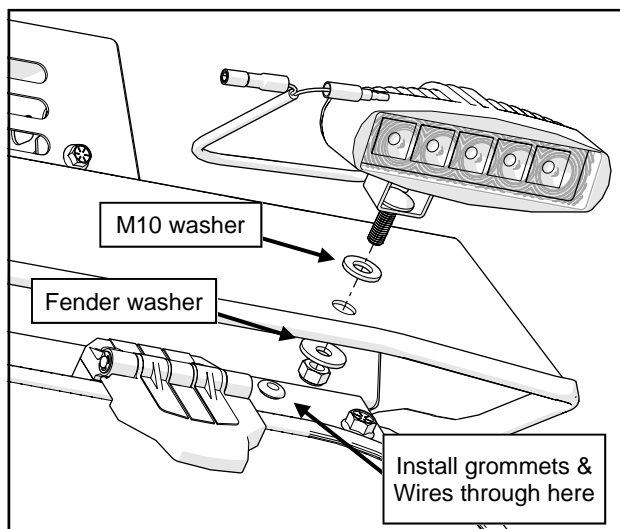


Fig. 4.2 (Front LED Lights)

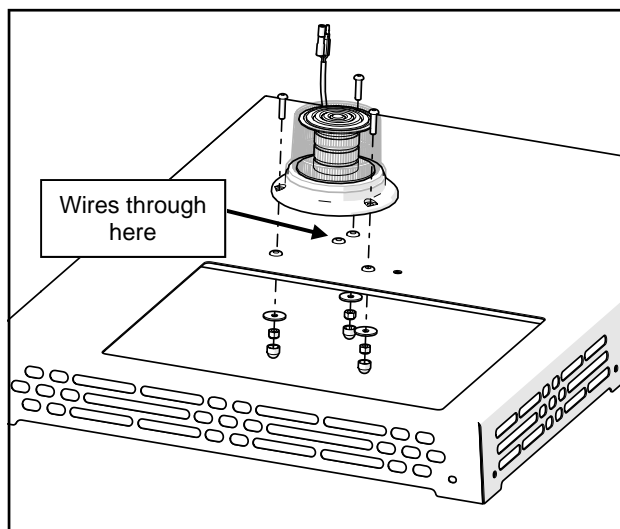
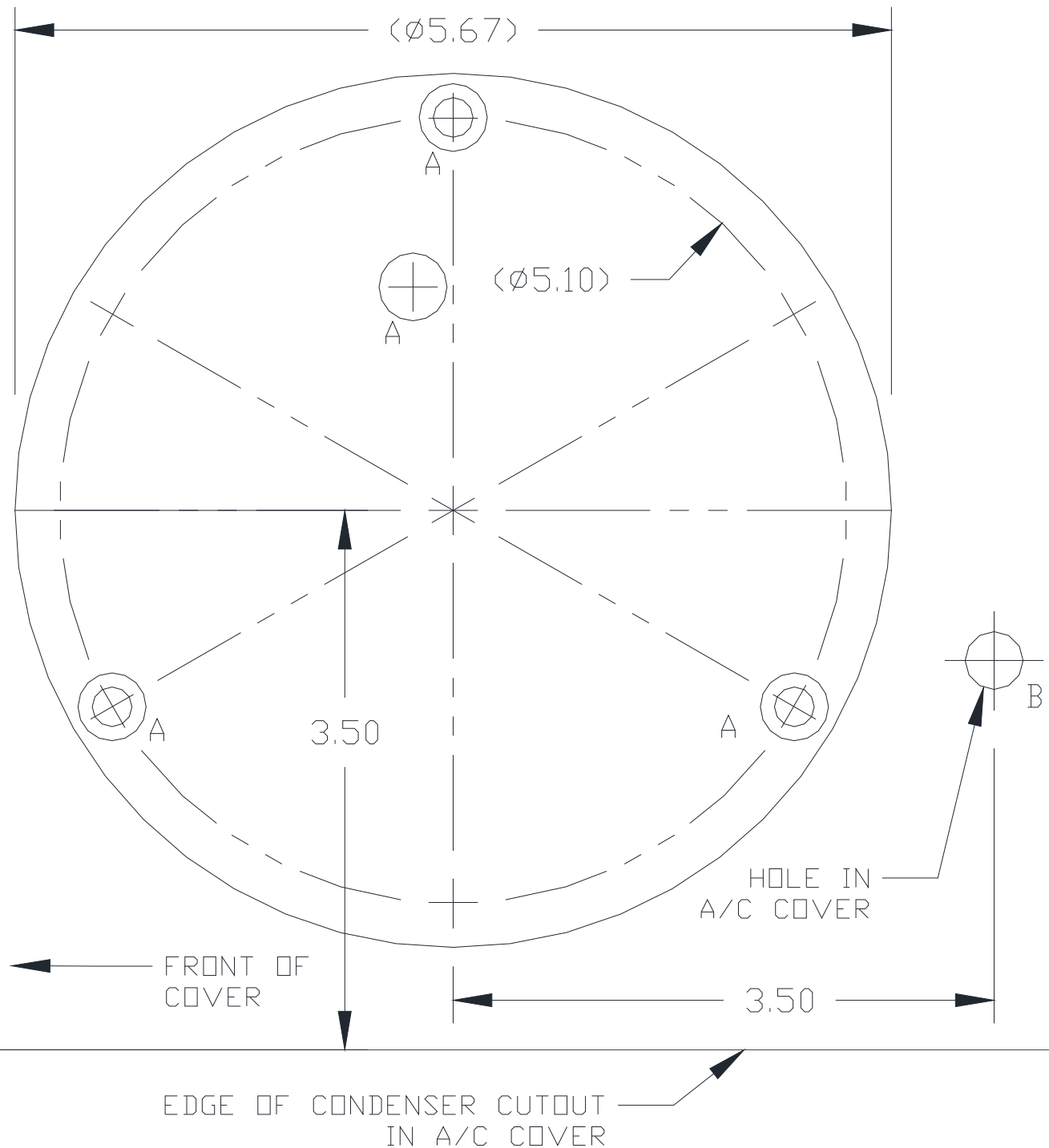


Fig. 4.3 (Beacon Light)

#

# BEACON LIGHT DRILL TEMPLATE



- Locate template from edge of condenser cutout and 3/8" hole marked "B" in A/C Cover
- Drill four (4) 7/16" diameter holes at all spots marked "A"

PRINT OR COPY THIS PAGE AT 100% SCALE ONLY (FULL, 1:1, Actual Size)



# A/C ROOF KIT INSTALLATION

## STEP 5: FINISHING TOUCHES

- 5.1** Install cover to air conditioner. Install the M6 screw first, then install the 1/4-20 bolts. Tighten all fasteners in this step.

### Hardware Used

	<u>Qty</u>
1/4-20 x 3/4" flanged hex bolt	10
M6X1 X 16mm truss head screw	1
M6 rubber Washer	1

### Tools

3/8" wrench or socket  
 #2 Phillips head screwdriver  
 Apply anti seize to bolt threads

- 5.2** Inspect for loose fasteners or wires. Tighten and secure as needed.
- 5.3** Install the cargo box back onto the rear of the Carryall.  
 Place the cab doors back onto the cab frame pins and re-connect the door gas shocks to the frame.

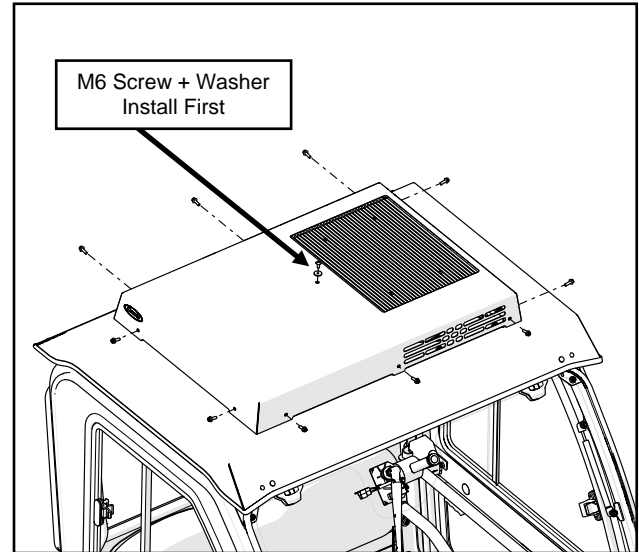


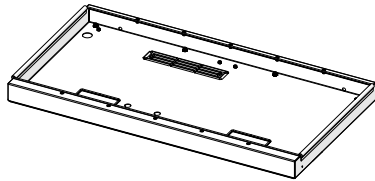
Fig. 5.1 (A/C Cover Fasteners)

## CARE AND MAINTENANCE

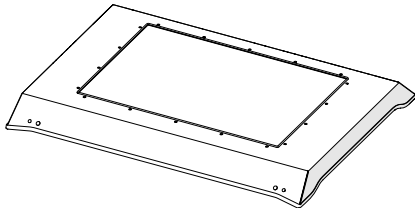
- Check and tighten hardware after 40 hours of operation. Periodically inspect and tighten hardware for the remainder of the unit's life.
- Wash the painted surfaces of the cab with commercial automotive cleaning products.

CLUB CAR CARRYALL 4X2 A/C ROOF KIT  
SERVICE PARTS

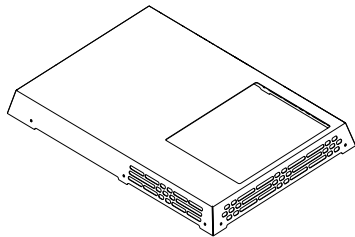
INNER ROOF ASSEMBLY  
8SV-113-00102



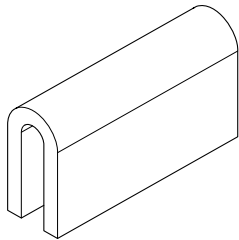
OUTER ROOF ASSEMBLY  
P/N: 8SV-101-00025



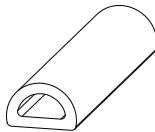
COVER ASSEMBLY, A/C,  
TEXT BLACK; P/N: 8SV-303-00003TB



TRIM LOK, STD, 1/16" - 1/8" GRIP  
P/N: 9SV-PRO1-20



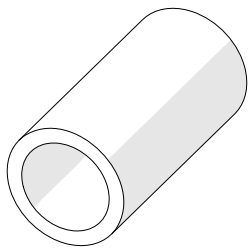
ARCH PSA RUBBER, .20 X .15  
9SV-PR53-15



EXPAND-A-FOAM, 2"  
9SV-PR40-5



DRAIN HOSE  
9SV-AC-00019-15



ADDITIONAL SERVICE PARTS




PART NUMBER	DESCRIPTION
9SV-HWK-00075	HARDWARE KIT, A/C ROOF KIT, CLUB CAR CARRYALL 4X2

# BOLT TORQUE

## GENERAL TORQUE SPECIFICATION TABLE

Use the following torques when special torques are not given. These values apply to fasteners as received from suppliers, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads. Remember to always use grade five or better when replacing bolts.

**IMPORTANT: On all PLATED GRADE 8 bolts, reduce torque 15% from listed bolt torque specification.**

SAE Grade No.		2				5				8*			
Bolt head identification mark as per grade. NOTE: Manufacturing Marks Will Vary													
Bolt Size		TORQUE				TORQUE				TORQUE			
Inches	Millimeters	Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1/4	6.35	5	6	7	8	9	11	12	15	12	15	16	20
5/16	7.94	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	9.53	20	23	27	31	35	42	48	57	45	54	61	73
7/16	11.11	30	35	41	47	54	64	73	87	70	84	95	114
1/2	12.70	45	52	61	70	80	96	109	130	110	132	149	179
9/16	14.29	65	75	88	102	110	132	149	179	160	192	217	260
5/8	15.88	95	105	129	142	150	180	203	244	220	264	298	358
3/4	19.05	150	185	203	251	270	324	366	439	380	456	515	618
7/8	22.23	160	200	217	271	400	480	542	651	600	720	814	976
1	25.40	250	300	339	406	580	696	787	944	900	1080	1220	1464
1-1/8	25.58	-	-	-	-	800	880	1085	1193	1280	1440	1736	1953
1-1/4	31.75	-	-	-	-	1120	1240	1519	1681	1820	2000	2468	2712
1-3/8	34.93	-	-	-	-	1460	1680	1980	2278	2380	2720	3227	3688
1-1/2	38.10	-	-	-	-	1940	2200	2631	2983	3160	3560	4285	4827

\*Thick Nuts must be used with Grade 8 bolts

## METRIC BOLT TORQUE SPECIFICATIONS

		5.6			8.8			10.9		
Size of Screw	Property Class	Course Thread			Fine Thread					
		Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters			
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-			
	8.8		5.8-9.4	7.9-12.7		-	-			
	10.9		7.2-10	9.8-13.6		-	-			
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23			
	8.8		17-22	23-29.8		19-27	25.7-36.6			
	10.9		20-26	27.1-35.2		22-31	29.8-42			
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3			
	8.8		34-40	46.1-54.2		35-47	47.4-63.7			
	10.9		38-46	51.5-62.3		40-52	54.2-70.5			
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6			
	8.8		51-59	69.1-79.9		55-68	75.9-92.1			
	10.9		57-66	77.2-89.4		62-75	84-101.6			
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7			
	8.8		81-93	109.8-126		90-106	122-143.6			
	10.9		96-109	130.1-147.7		107-124	145-168			
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.6-112.5			
	8.8		116-130	157.2-176.2		120-138	162.6-187			
	10.9		129-145	174.8-196.5		140-158	189.7-214.1			
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5			
	8.8		150-168	203.3-227.6		177-199	239.8-269.6			
	10.9		175-194	237.1-262.9		202-231	273.7-313			
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3			
	8.8		186-205	252-277.8		206-242	279.1-327.9			
	10.9		213-249	288.6-337.4		246-289	333.3-391.6			