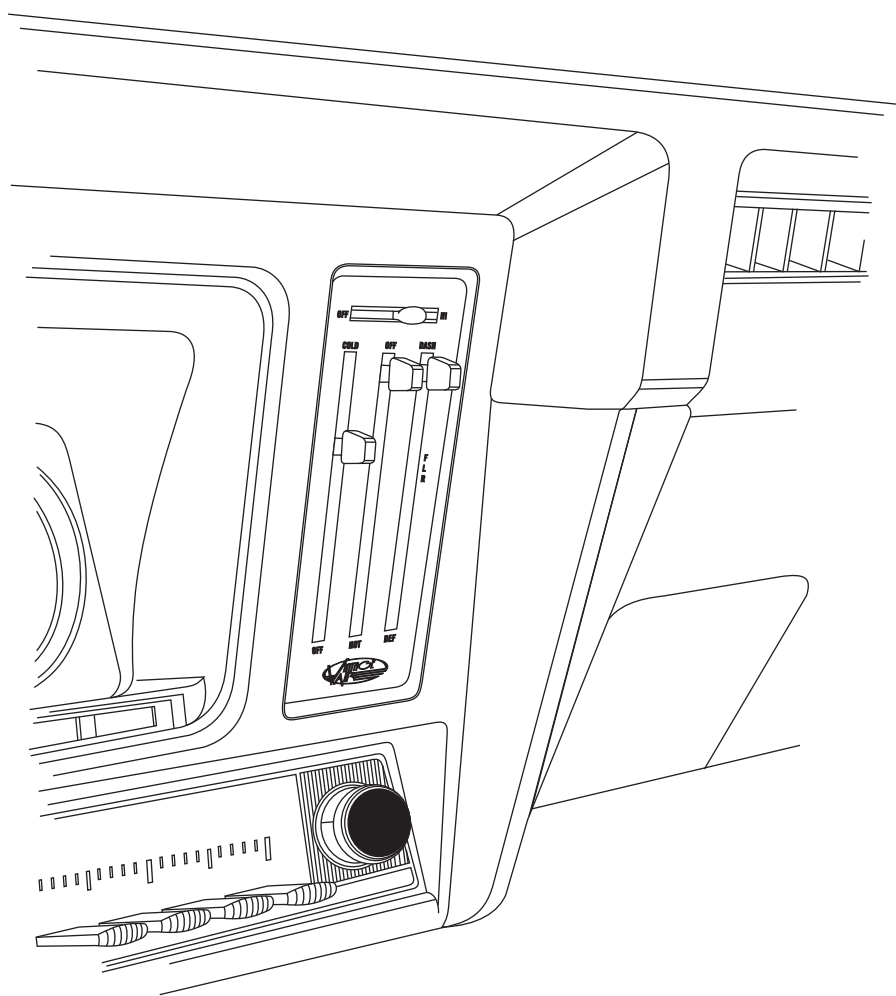




an ISO 9001: 2008 Registered Company

1969-72 NOVA

WITH AC CONTROL PANEL
CONVERSION KIT
474172



18865 GOLL ST. - SAN ANTONIO, TX. - 78266 ph.210-654-7171 - fax 210-654-3113



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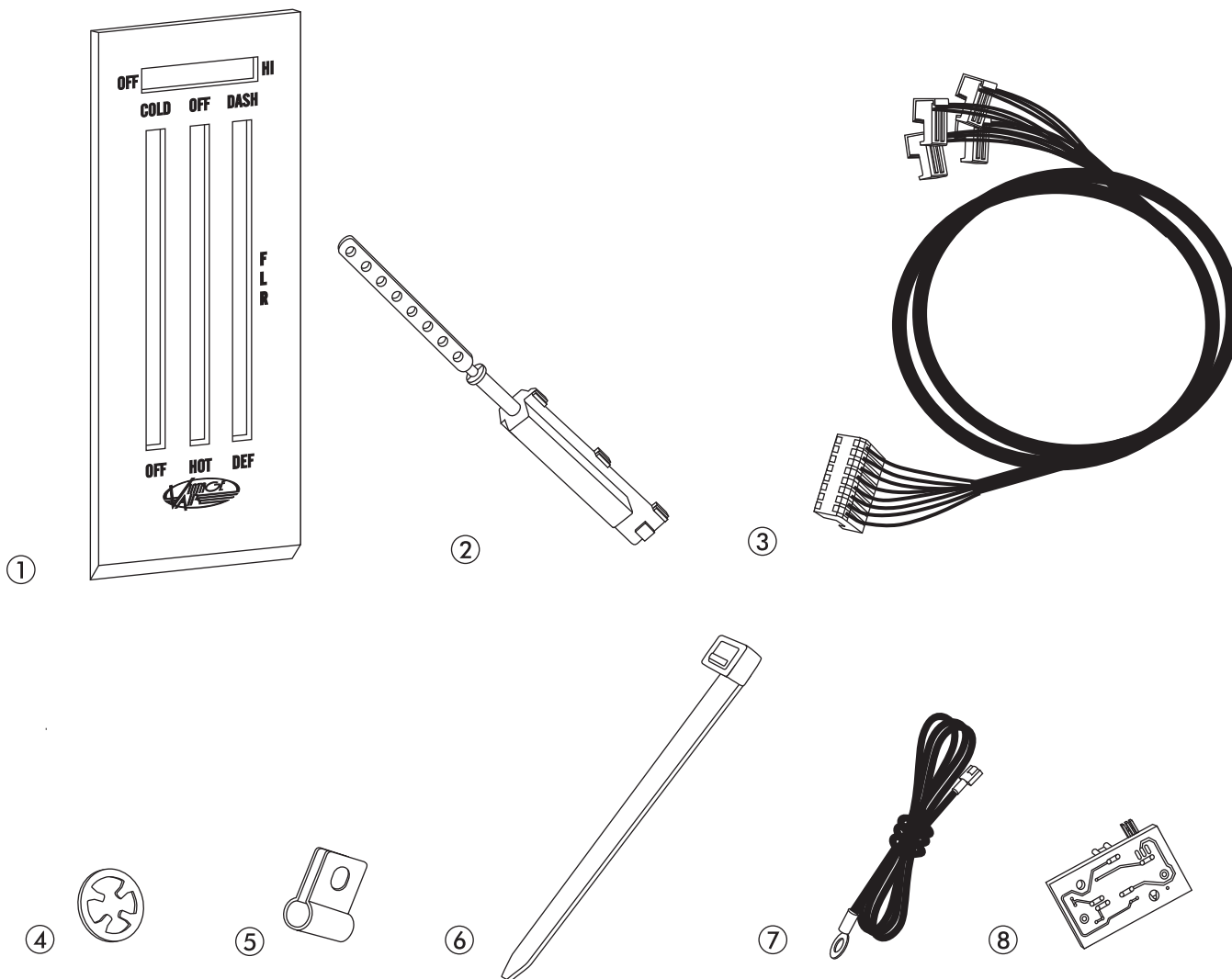


CONTROL KIT PACKING LIST

CONTROL KIT
474172

No	QTY	PART No.	DESCRIPTION
1.	1	484169-PCR	69 CAMARO w/ AC PLACARD w/ BLACK BACKING SHEET
2.	3	112002-SUA	CABLE CONVERTER ASM
3.	1	232002-VUA	GEN IV UNIVERSAL CONTROL HARNESS
4.	3	65976-VUE	3/16" PUSH-ON RING
5.	3	491010-VUR	CABLE CONVERTER CLAMP
6.	5	21301-VUP	4" TIE WRAP
7.	1	231520	GROUND WIRE
8.	1	246108-PUA	BLOWER SWITCH PC BOARD

**** BEFORE BEGINNING INSTALLATION OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.**





CONTROL PANEL CONVERSION INSTRUCTIONS FOR 1969-72 NOVA w/ AC

REMOVING OEM CONTROL PANEL

- ❑ REMOVE THE (3) OEM MOUNTING SCREWS FROM INSTRUMENT PANEL OF DASH SEE FIGURE 1 BELOW
- ❑ DISCONNECT CABLES AND WIRES FROM BACK OF CONTROL PANEL. **NOTE: MAKE SURE THE GLOVE BOX AND GLOVE BOX DOOR HAVE BEEN REMOVED.**
- ❑ REMOVE THE CONTROL PANEL FROM BEHIND THE DASH THROUGH THE GLOVE BOX OPENING IN DASH.

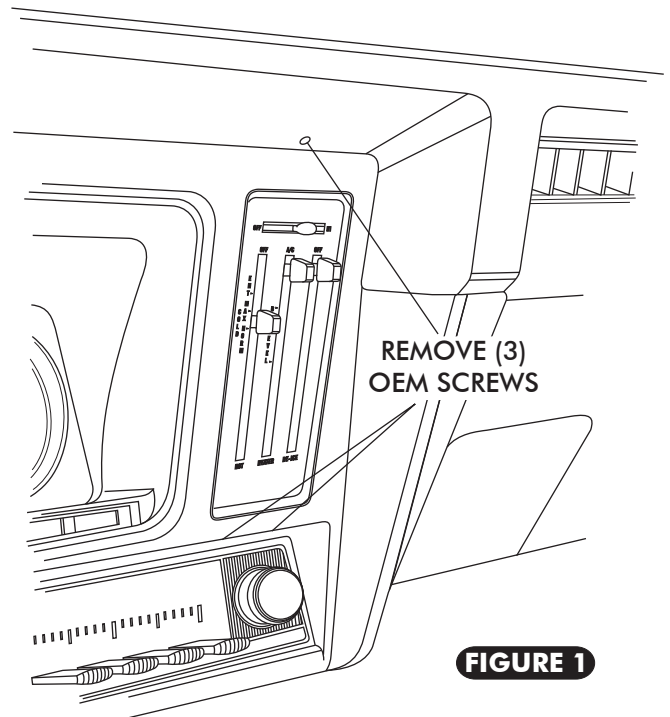


FIGURE 1

CABLE CONVERTER ASSEMBLY MODIFICATIONS

- ❑ LOCATE THE THREE CABLE CONVERTER ASSEMBLIES, AND USING A PAIR OF WIRE CUTTERS, CUT CABLE CONVERTER ACTUATOR RODS AS SHOWN BELOW IN FIGURE 2.

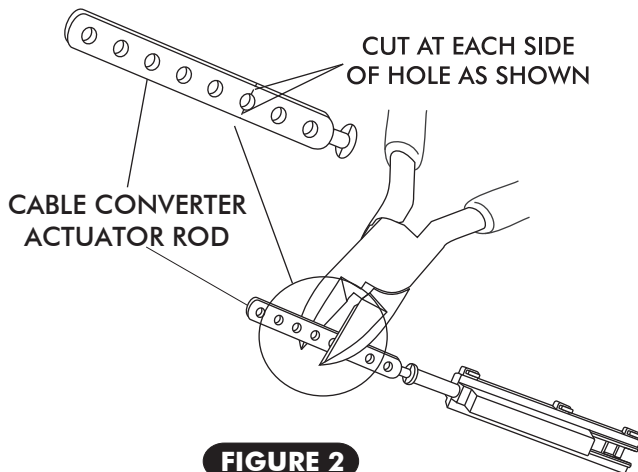
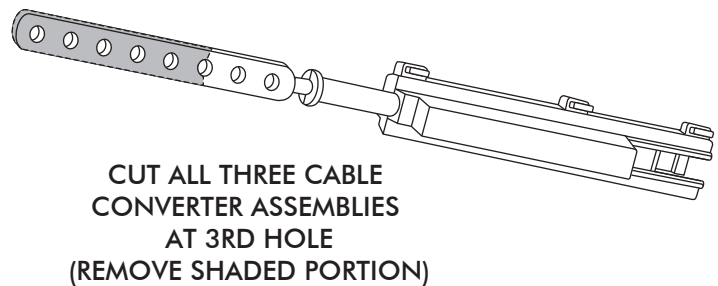


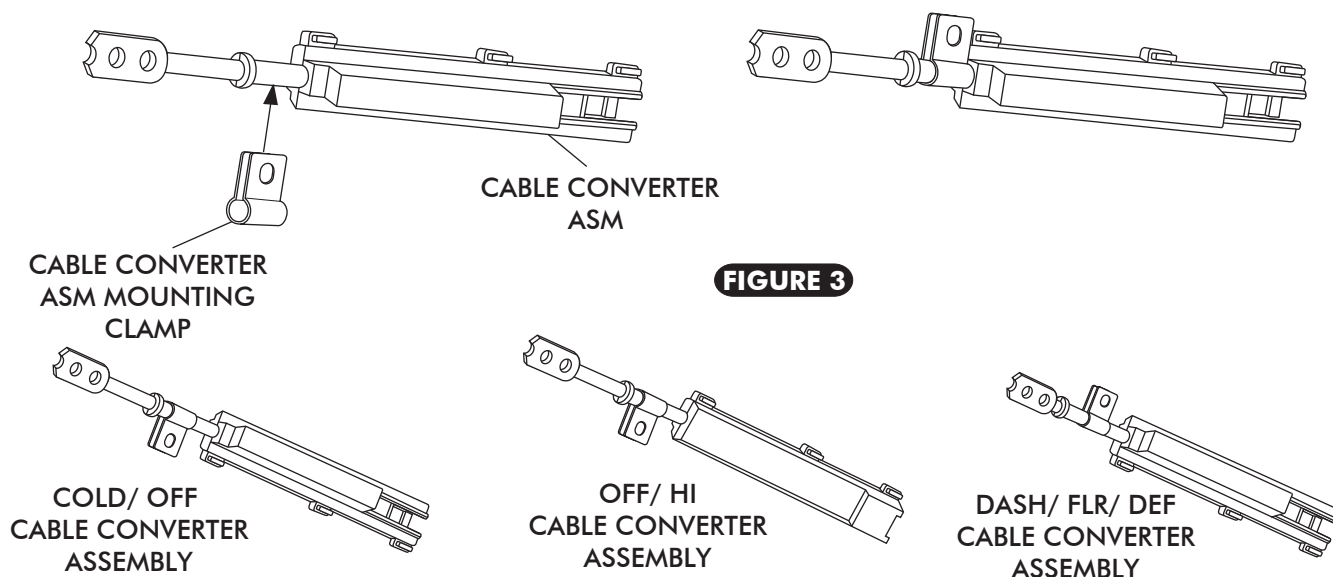
FIGURE 2





CABLE CONVERTER ASSEMBLY MOUNTING CLAMP INSTALLATION

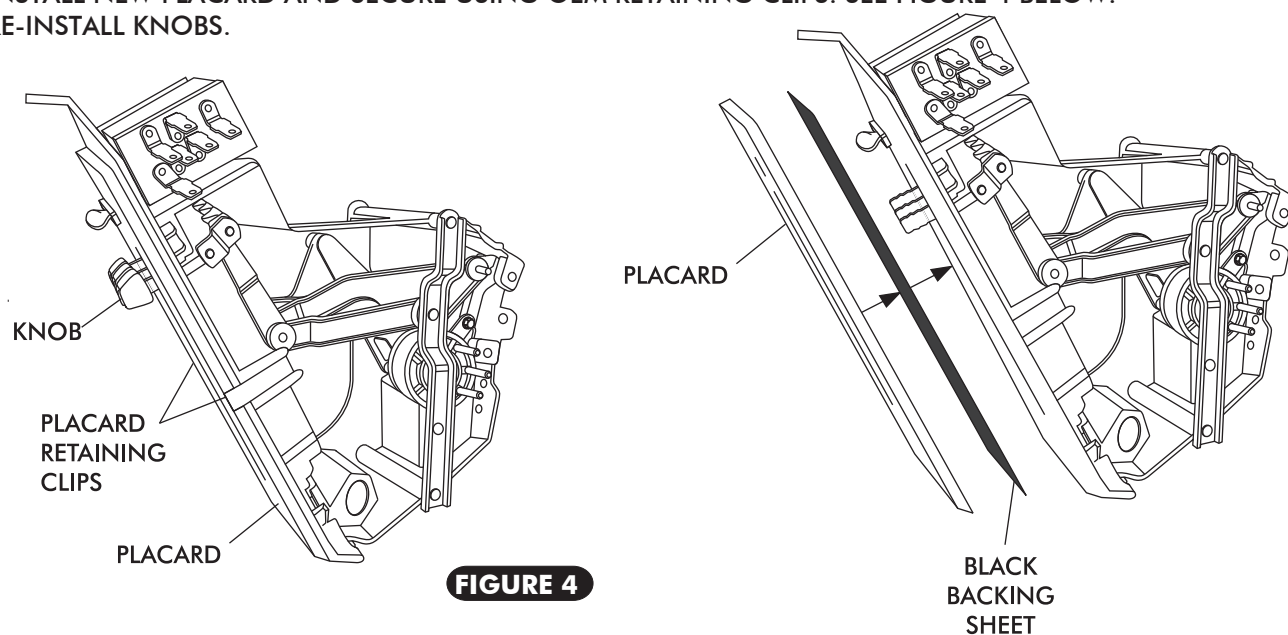
- INSTALL CABLE CONVERTER ASM MOUNTING CLAMPS. SEE FIGURE 3 BELOW



ORIENT CABLE CONVERTER ASSEMBLIES AS SHOWN AND INSTALL MOUNTING CLAMPS AS SHOWN. (NOTE: ORIENT CLAMPS IN RELATION TO THE (3) HOUSING SNAPS ON CABLE CONVERTER ASSEMBLY)

PLACARD INSTALLATION

- REMOVE LEVER KNOBS
- REMOVE PLACARD RETAINING CLIPS. SEE FIGURE 4 BELOW.
- REMOVE PLACARD & BACKING SHEET FROM CONTROL PANEL.
- INSTALL NEW BLACK BACKING SHEET ON CONTROL PANEL. SEE FIGURE 4 BELOW.
- INSTALL NEW PLACARD AND SECURE USING OEM RETAINING CLIPS. SEE FIGURE 4 BELOW.
- RE-INSTALL KNOBS.





CABLE CONVERTER ASSEMBLY INSTALLATION

DASH/ FLR/ DEF CABLE CONVERTER ASSEMBLY

- INSTALL CABLE CONVERTER ASM ON THE DASH/ FLR/ DEF LEVER. SEE FIGURE 5 BELOW.
- INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO OEM CABLE MOUNTING STUD ON LEVER. SEE FIGURE 5 BELOW.
- SECURE THE CABLE CONVERTER ASM TO THE CONTROL PANEL USING THE OEM SCREW IN THE OEM CABLE CLAMP MOUNTING LOCATION. SEE FIGURE 5 BELOW.
- SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION SLIDE POT ASSEMBLY SUCH THAT THE FLAT PART OF THE ROD IS AS CLOSE TO FLUSH AS POSSIBLE WITH THE END OF HOUSING AT THE LEVER'S INNER MOST POSITION. SEE FIGURE 5 BELOW.
- SECURE CABLE CONVERTER PUSH ROD ONTO OEM CABLE MOUNTING STUD USING 3/16" PUSH-ON RING AS SHOWN IN FIGURE 5 BELOW.
- REMOVE VACCUM MODULE (DISCARD) AS SHOWN IN FIGURE 5 BELOW.

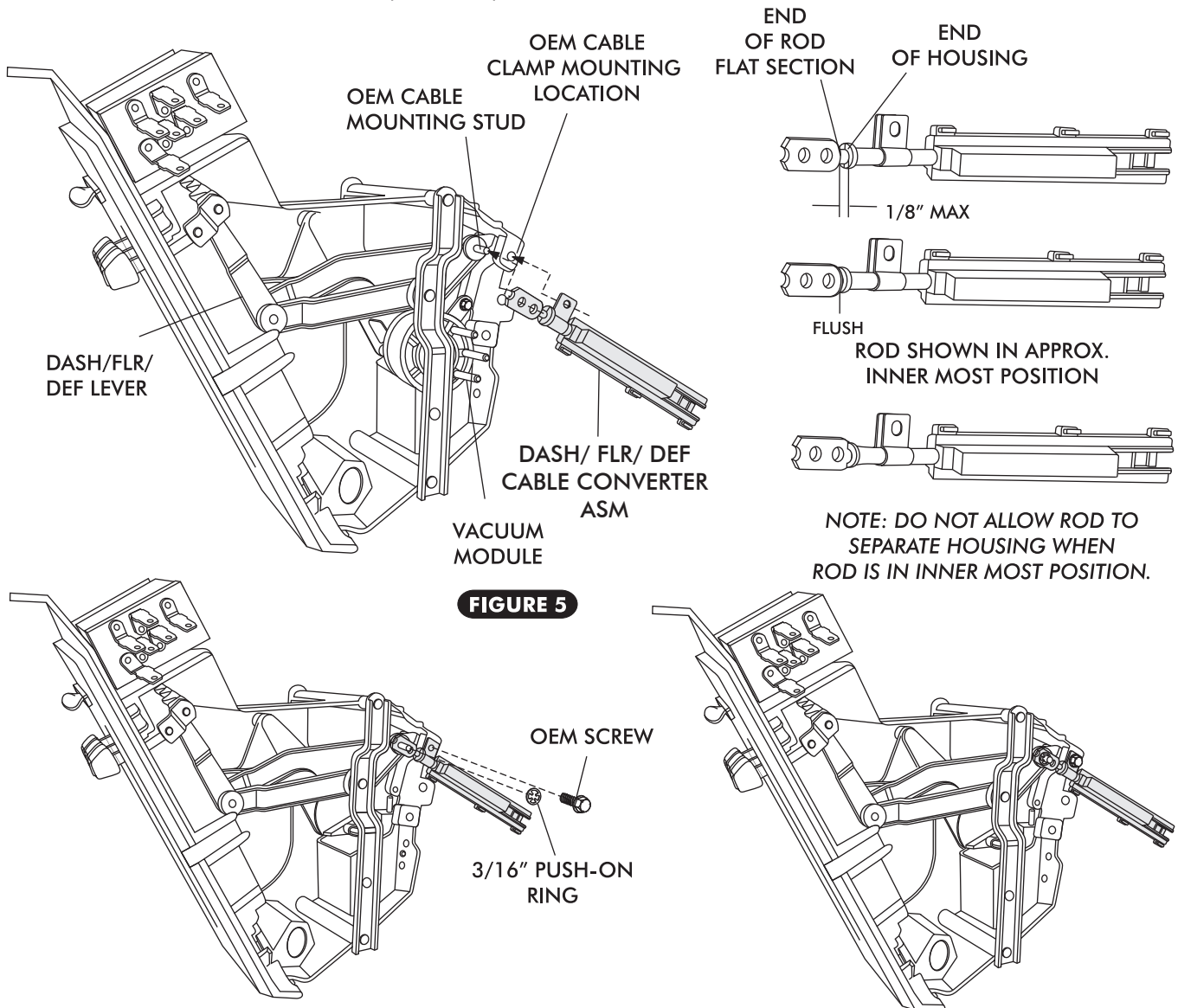
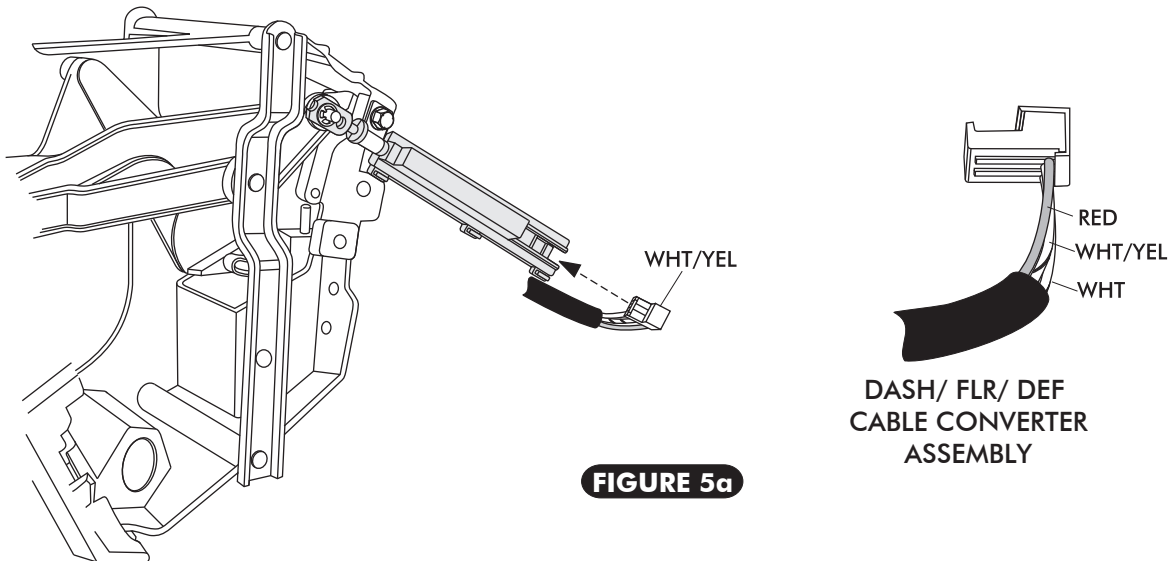


FIGURE 5

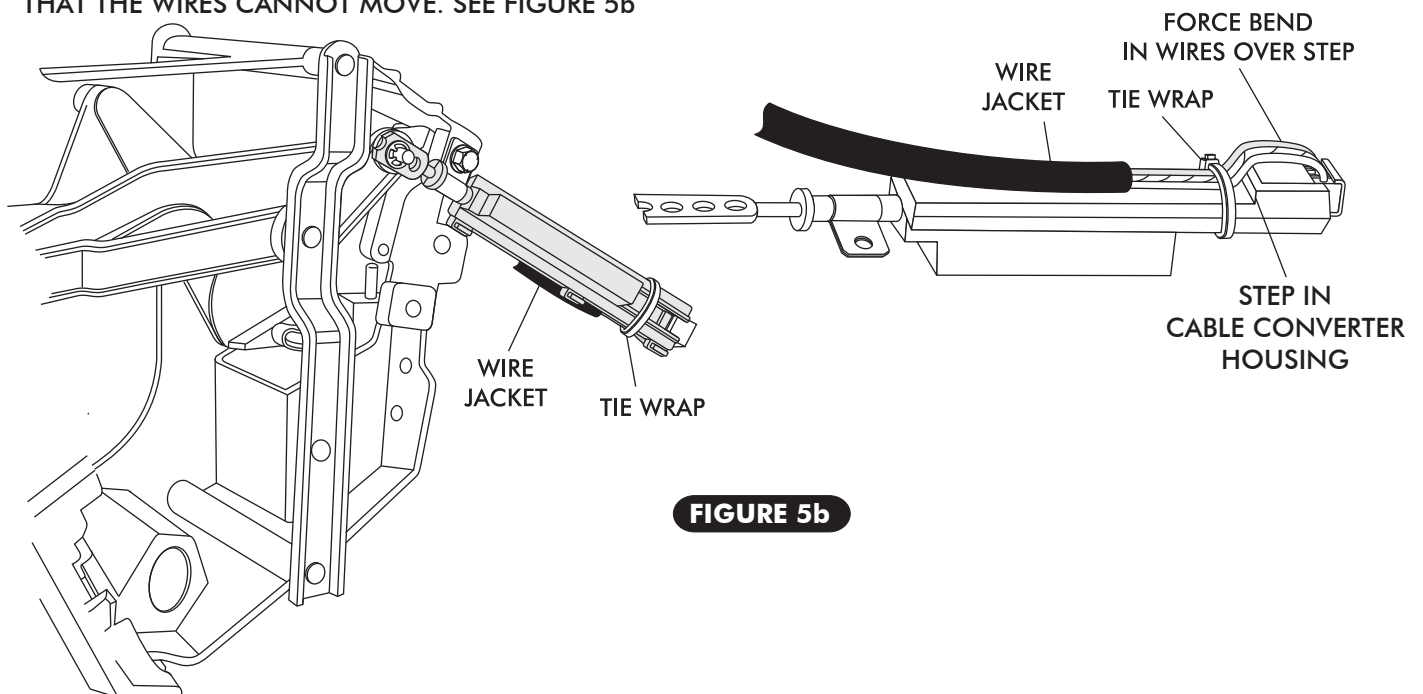


CONTROL HARNESS

- LOCATE THE CONTROL PANEL WIRE HARNESS AND PLUG THE CORRESPONDING WIRES INTO THE CORRECT SLIDE POT ASSEMBLY AS SHOWN IN FIGURE 5a BELOW.



- ONCE WIRES ARE CORRECTLY PLUGGED INTO CABLE CONVERTER ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED). SEE FIGURE 5b BELOW. THE TIE WRAP MUST BE LOCATED BETWEEN THE END OF THE WIRE JACKET AND THE STEP IN THE CABLE CONVERTER HOUSING FORCING A BEND IN EACH WIRE AS THEY PASS OVER THE STEP IN CABLE CONVERTER HOUSING. HEAD OF TIE WRAP MUST FALL ON EDGE OF HOUSING AS SHOWN TO REMAIN TIGHT. ENSURE THAT THE TIE WRAPS ARE SNUG ENOUGH THAT THE WIRES CANNOT MOVE. SEE FIGURE 5b





OFF/ HOT CABLE CONVERTER ASSEMBLY

- INSTALL CABLE CONVERTER ASM ON THE OFF/ HOT LEVER. SEE FIGURE 6 BELOW.
- INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO OEM CABLE MOUNTING STUD ON LEVER. SEE FIGURE 6 BELOW.
- SECURE THE CABLE CONVERTER ASM TO THE CONTROL PANEL USING THE OEM SCREW IN THE OEM CABLE CLAMP MOUNTING LOCATION. SEE FIGURE 6 BELOW.
- SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION SLIDE POT ASSEMBLY SUCH THAT THE FLAT PART OF THE ROD IS AS CLOSE TO FLUSH AS POSSIBLE WITH THE END OF HOUSING AT THE LEVER'S INNER MOST POSITION. SEE FIGURE 6 BELOW.
- SECURE CABLE CONVERTER PUSH ROD ONTO OEM CABLE MOUNTING STUD USING 3/16" PUSH-ON RING AS SHOWN IN FIGURE 6 BELOW.

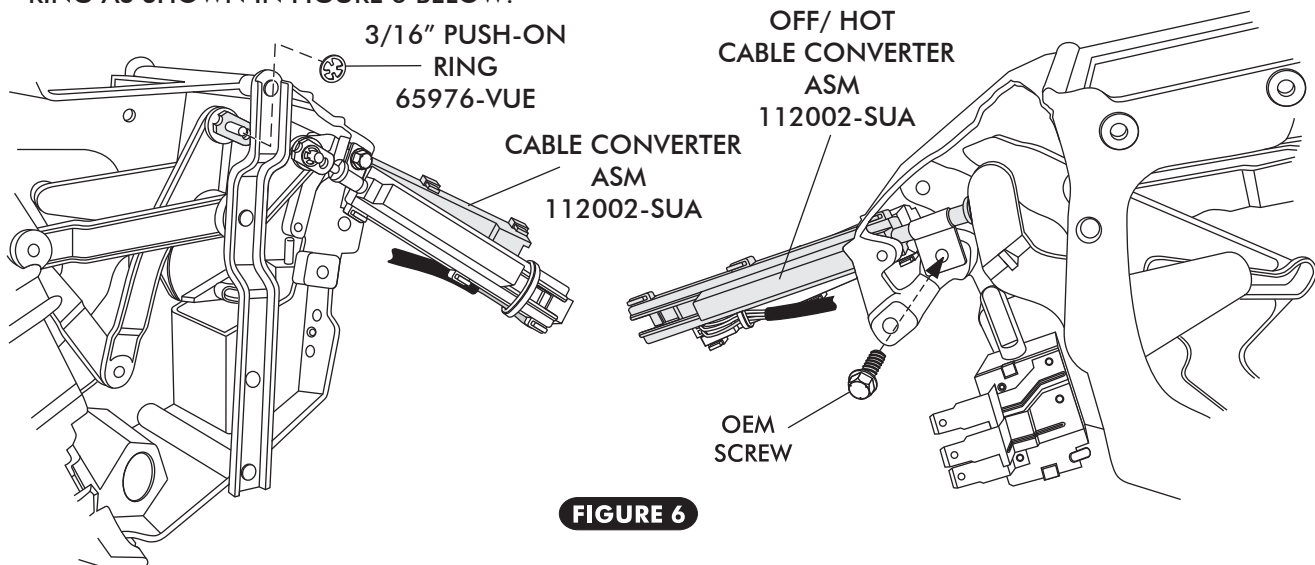


FIGURE 6

CONTROL HARNESS

- LOCATE THE CONTROL PANEL WIRE HARNESS, PLUG THE CORRESPONDING WIRES INTO THE CORRECT CABLE CONVERTER ASSEMBLY AS SHOWN IN FIGURE 6a BELOW.

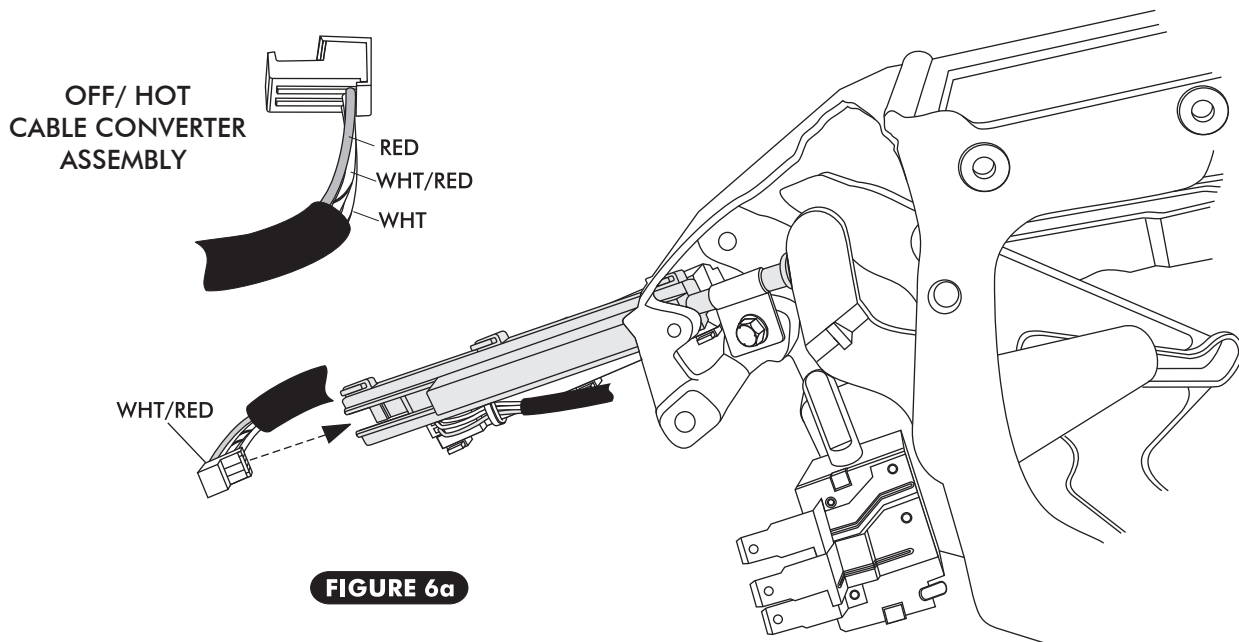


FIGURE 6a



CONTROL HARNESS CONT.

- ONCE WIRES ARE CORRECTLY PLUGGED INTO CABLE CONVERTER ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED). SEE FIGURE 6b BELOW. THE TIE WRAP MUST BE LOCATED BETWEEN THE END OF THE WIRE JACKET AND THE STEP IN THE CABLE CONVERTER HOUSING FORCING A BEND IN EACH WIRE AS THEY PASS OVER THE STEP IN CABLE CONVERTER HOUSING. HEAD OF TIE WRAP MUST FALL ON EDGE OF HOUSING AS SHOWN TO REMAIN TIGHT. ENSURE THAT THE TIE WRAPS ARE SNUG ENOUGH THAT THE WIRES CANNOT MOVE. SEE FIGURE 6b.

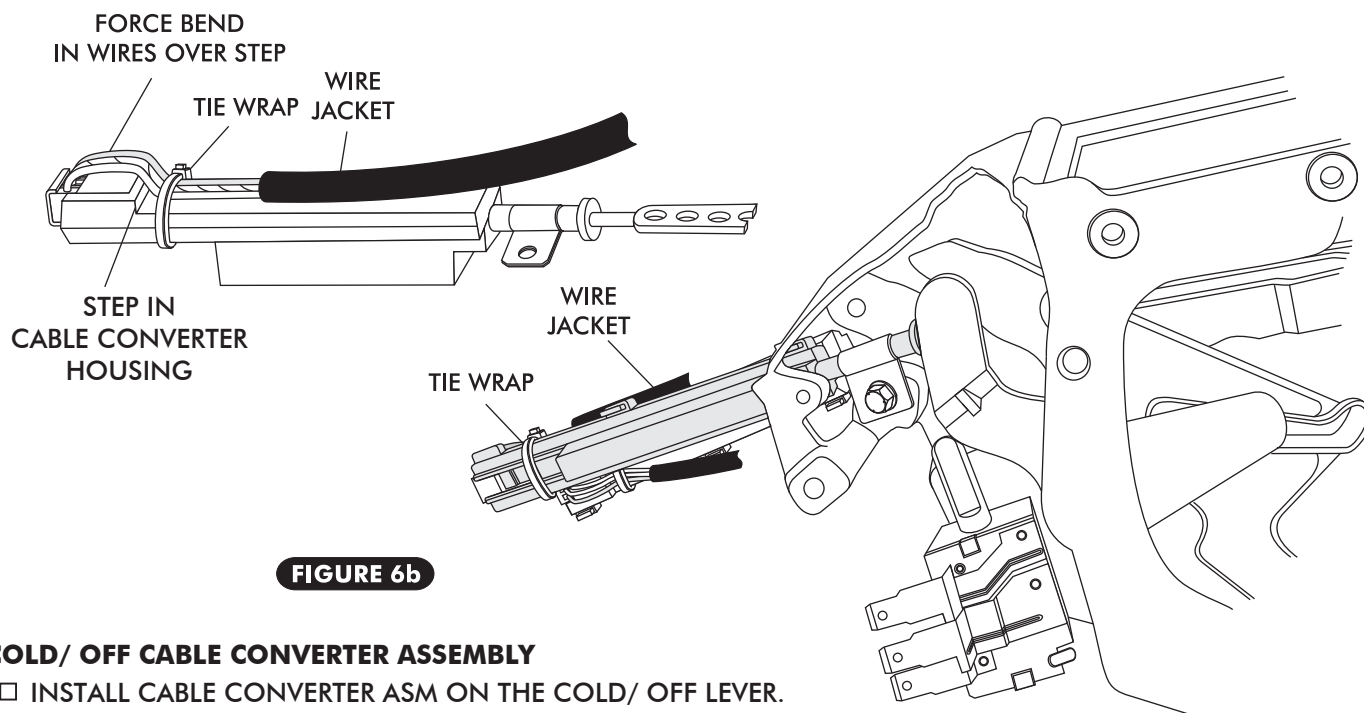


FIGURE 6b

COLD/ OFF CABLE CONVERTER ASSEMBLY

- INSTALL CABLE CONVERTER ASM ON THE COLD/ OFF LEVER. SEE FIGURE 7 BELOW.
- INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO OEM CABLE MOUNTING STUD ON LEVER. SEE FIGURE 7 BELOW.
- SECURE THE CABLE CONVERTER ASM TO THE CONTROL PANEL USING OEM SCREW IN THE OEM CABLE CLAMP MOUNTING LOCATION. SEE FIGURE 7 BELOW.
- SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION CABLE CONVERTER ASSEMBLY SUCH THAT THE FLAT ROD IS AS CLOSE TO FLUSH AS POSSIBLE WITH THE END OF HOUSING AT THE LEVER'S INNER MOST POSITION. SEE FIGURE 5, PAGE 6.
- SECURE CABLE CONVERTER LEVER PUSH ROD ONTO OEM CALBE MOUNTING STUD USING 3/ 16" PUSH-ON RING AS SHOWN IN FIGURE 7 BELOW.

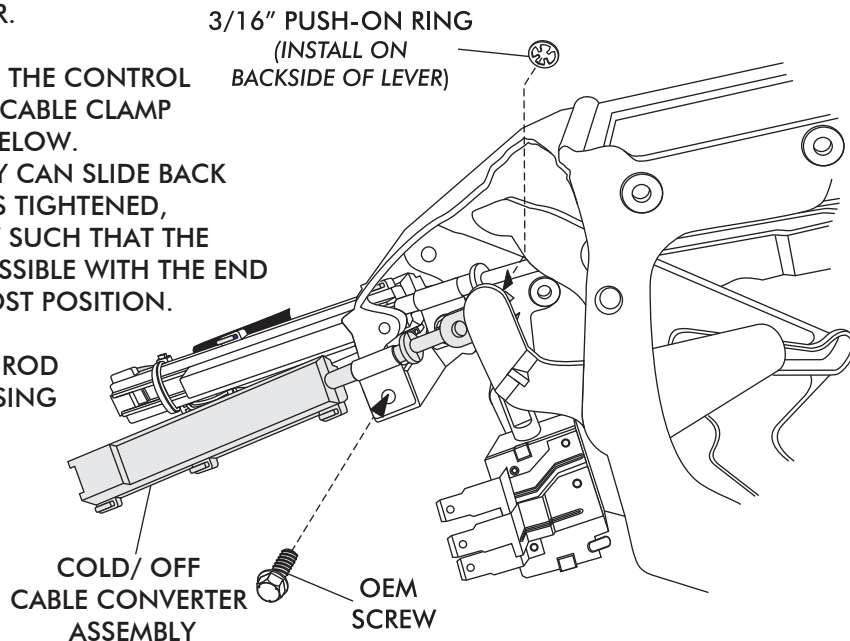


FIGURE 7



CONTROL HARNESS

- LOCATE THE CONTROL PANEL WIRE HARNESS AND PLUG THE CORRESPONDING WIRES INTO THE CORRECT CABLE CONVERTER ASSEMBLY AS SHOWN IN FIGURE 7a BELOW.

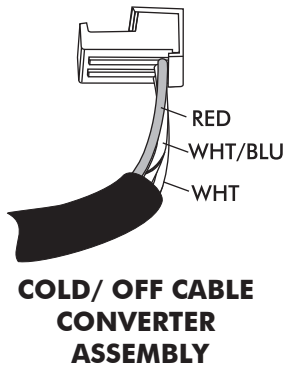
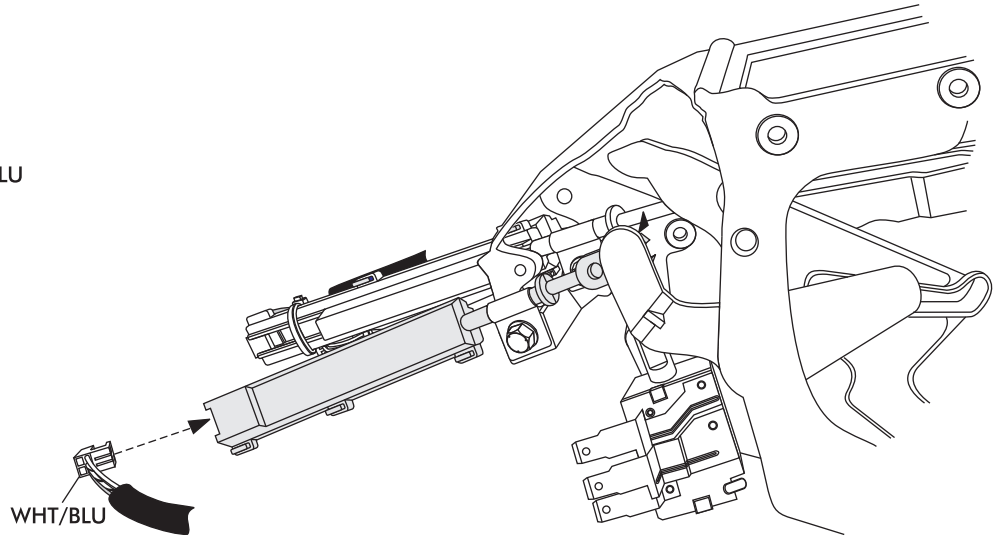


FIGURE 7a



- ONCE WIRES ARE CORRECTLY PLUGGED INTO SLIDE POT ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED). SEE FIGURE 7b BELOW. THE TIE WRAP MUST BE LOCATED BETWEEN THE END OF THE WIRE JACKET AND STEP IN CABLE CONVERTER HOUSING FORCING A BEND IN EACH WIRE AS THEY PASS OVER THE STEP IN CABLE CONVERTER HOUSING. HEAD OF TIE WRAP MUST FALL ON EDGE OF HOUSING AS SHOWN TO REMAIN TIGHT. ENSURE THAT THE TIE WRAPS ARE SNUG ENOUGH THAT THE WIRES CANNOT MOVE. SEE FIGURE 7b.

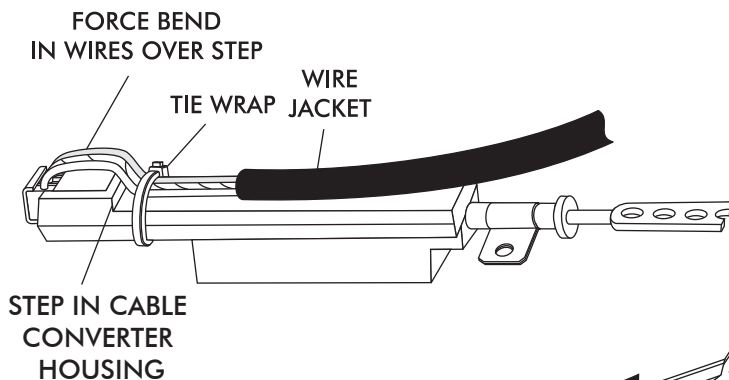
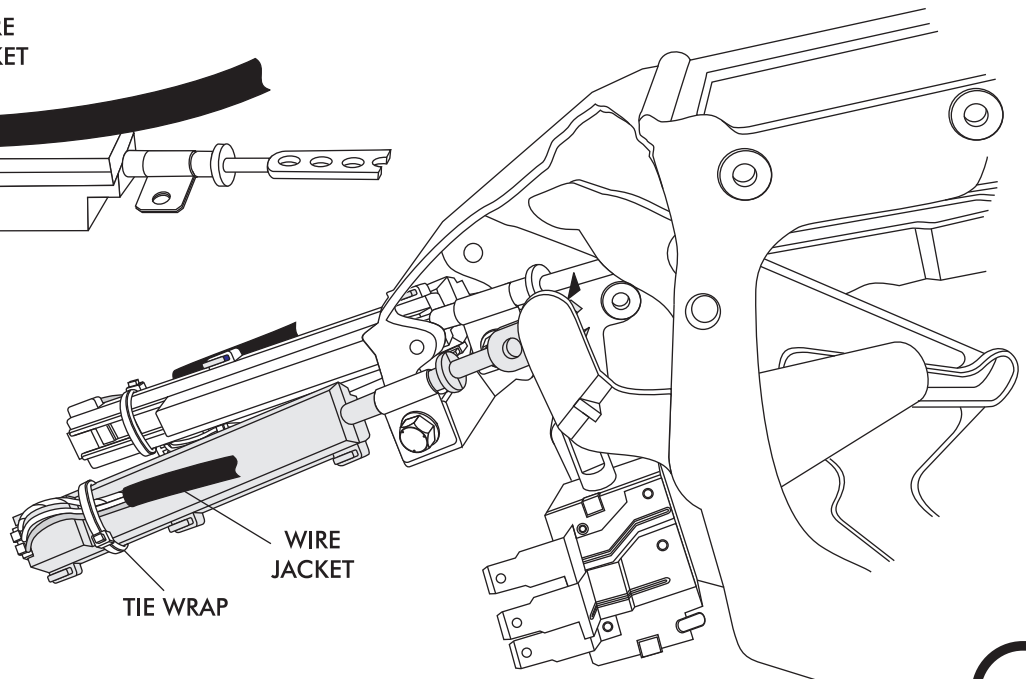


FIGURE 7b





BLOWER SWITCH PC BOARD INSTALLATION

- INSTALL THE BLOWER SWITCH PC BOARD ON O.E.M. BLOWER SWITCH AS SHOWN IN FIGURE 8 BELOW.
- PLUG IN THE REMAINING CONNECTOR WITH THE RED, WHT/ GRN & WHT WIRES INTO THE BLOWER SWITCH PC BOARD AS SHOWN IN FIGURE 8 BELOW.

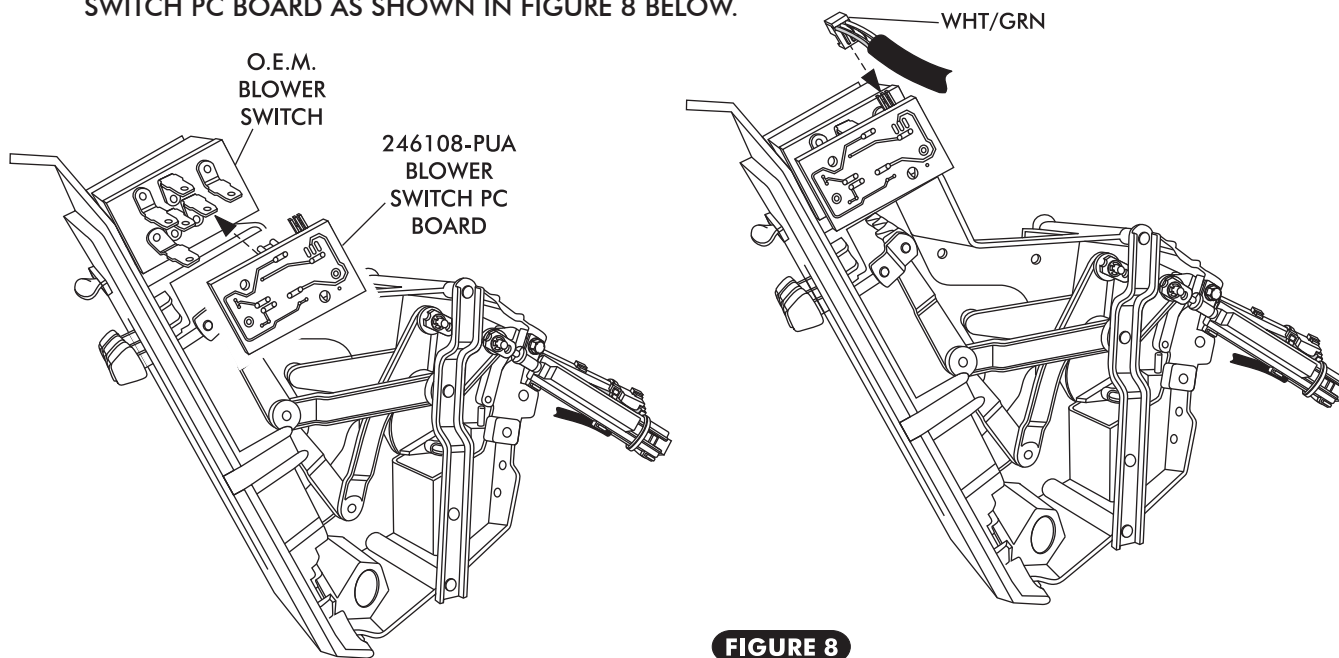


FIGURE 8

CONTROL HARNESS

- USING THE SUPPLIED TIE WRAPS, TIE THE WIRES TO THE CONTROL PANEL AS SHOWN IN FIGURE 9 BELOW. CONFIRM THAT WIRES ARE SECURED AND DO NOT INTERFERE WITH LEVER OPERATION OR CABLE CONVERTER ASSEMBLY.

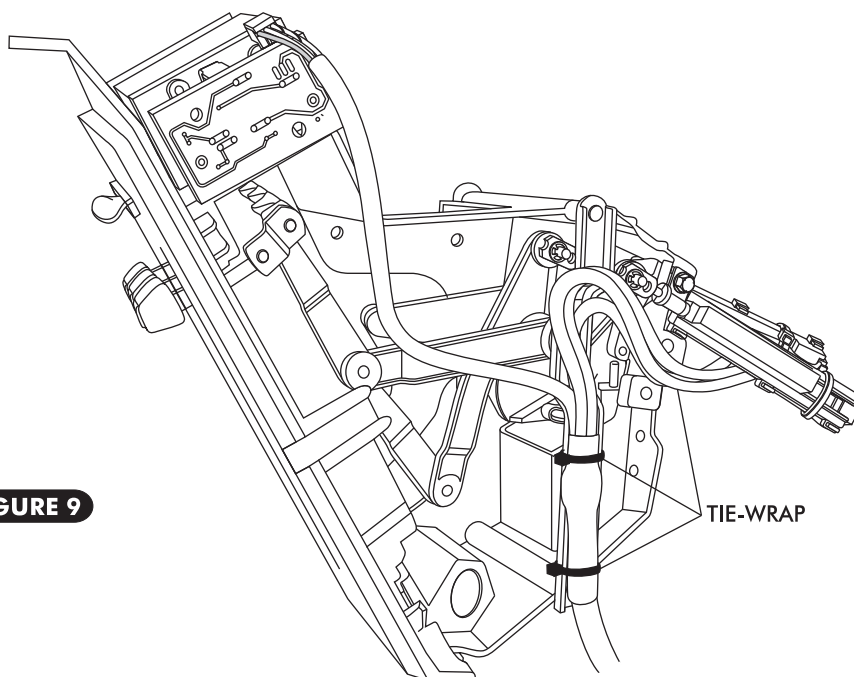


FIGURE 9



FINAL STEPS

- ☐ RE-INSTALL CONTROL PANEL IN DASH.
- ☐ PLUG THE WIRING HARNESS INTO THE ECU MODULE ON SUB CASE. SEE FIGURE 10 BELOW.
- ☐ WIRE ACCORDING TO WIRING DIAGRAM ON PAGE 15.
- ☐ CONTROL PANEL CALIBRATION PROCEDURE AND OPERATION INSTRUCTIONS:

CALIBRATING THE CONTROL PANEL WILL SET THE RANGE OF TRAVEL FOR THE CABLE CONVERTERS CONNECTED TO THE OEM CONTROL PANEL LEVERS. PERFORMING THIS PROCEDURE WILL SET THE LIMITS OF THE CABLE CONVERTERS AT THEIR HIGHEST AND LOWEST POINTS

LOCATE THE GRAY WIRE WITH AN UNUSED CONNECTOR IN THE WIRING HARNESS NEAR THE TWO CABLE HARNESS RELAYS. THE WIRE IS LABELED PRGM ON THE WIRING DIAGRAM ON PAGE 15.

IT WILL BE NECESSARY TO GROUND THE GRAY WIRE FOR APPROXIMATELY FIVE SECONDS WHILE MOVING THE CONTROLS SO IT IS SOMETIMES HELPFUL TO ATTACH ONE END OF THE WHITE JUMPER WIRE TO THE VEHICLE'S GROUND (FOR EXAMPLE THE CHASSIS) AND HAVE THE OTHER END READY TO CONNECT TO THE GRAY PRGM WIRE WHEN THE PROCEDURE REQUIRES IT.

TO CALIBRATE THE CONTROL PANEL FOLLOW THE CALIBRATION PROCEDURES ON PAGE 13 & 14.

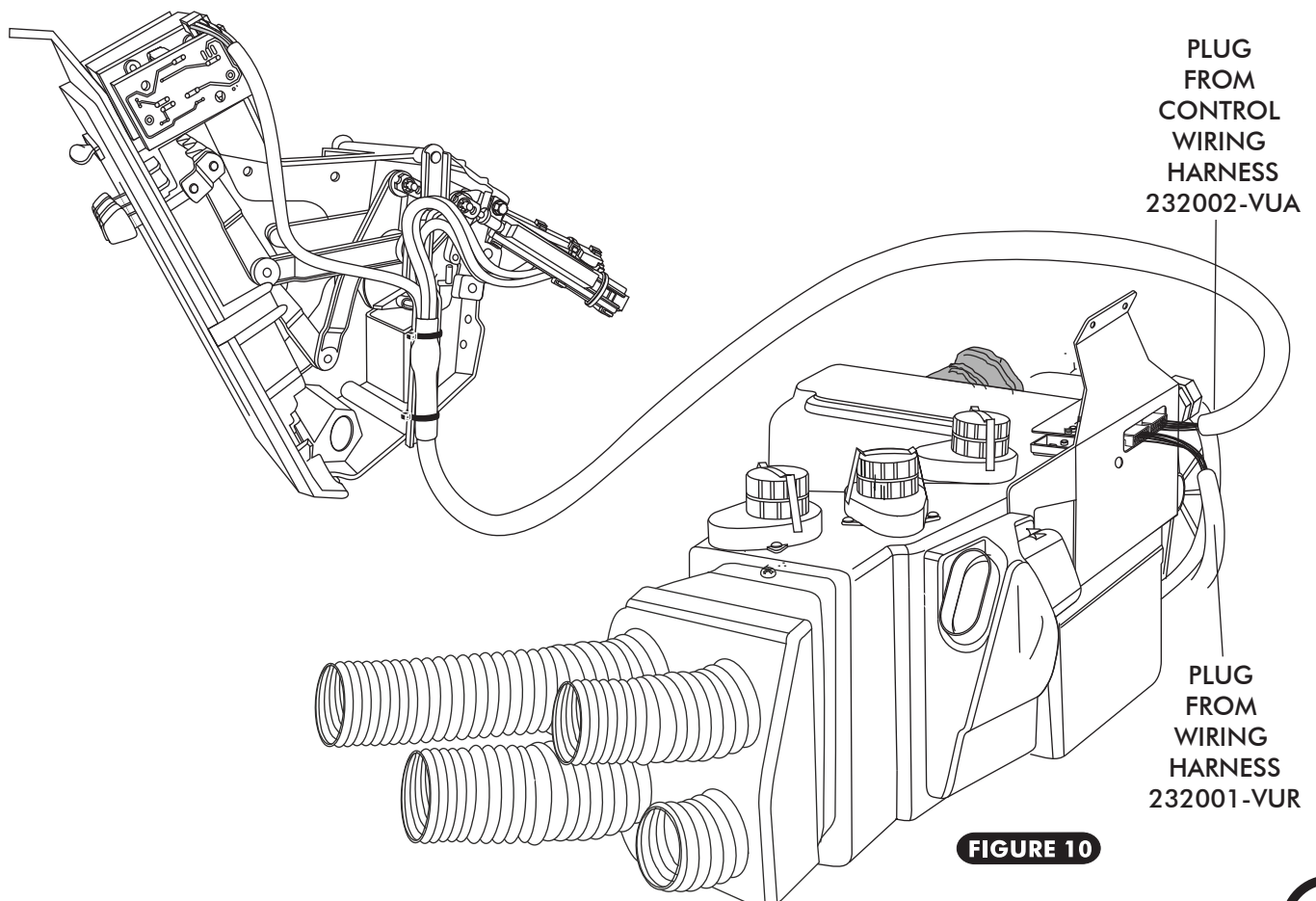


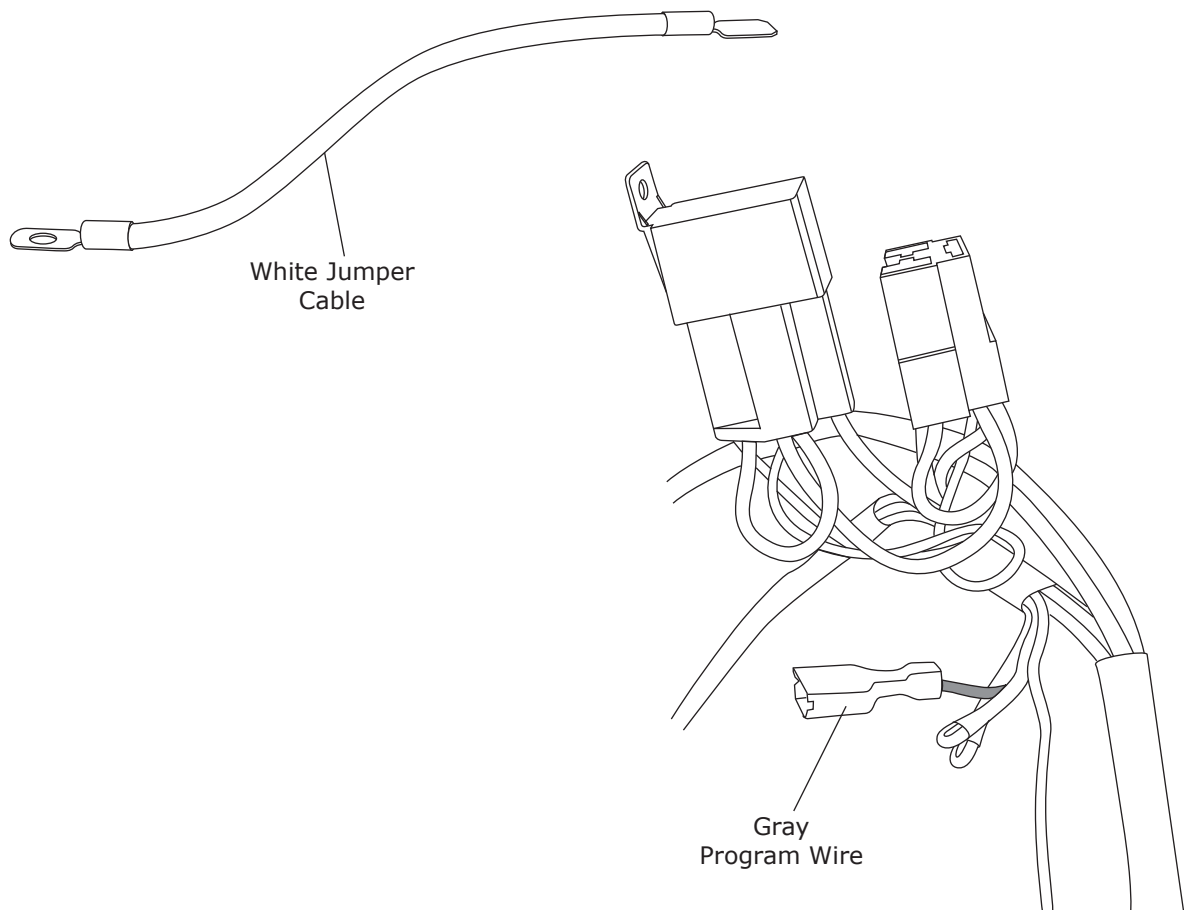
FIGURE 10



Control Panel Calibration Procedure

On Vintage Air Gen IV systems using factory controls, it is necessary to calibrate the system to your specific control panel. This procedure ensures that the stroke of your control panel levers or knobs is translated into precise control of the fan speed, temperature blend and mode door position. Please carefully read and understand these procedures before beginning. The procedure may be repeated as many times as necessary to get it right.

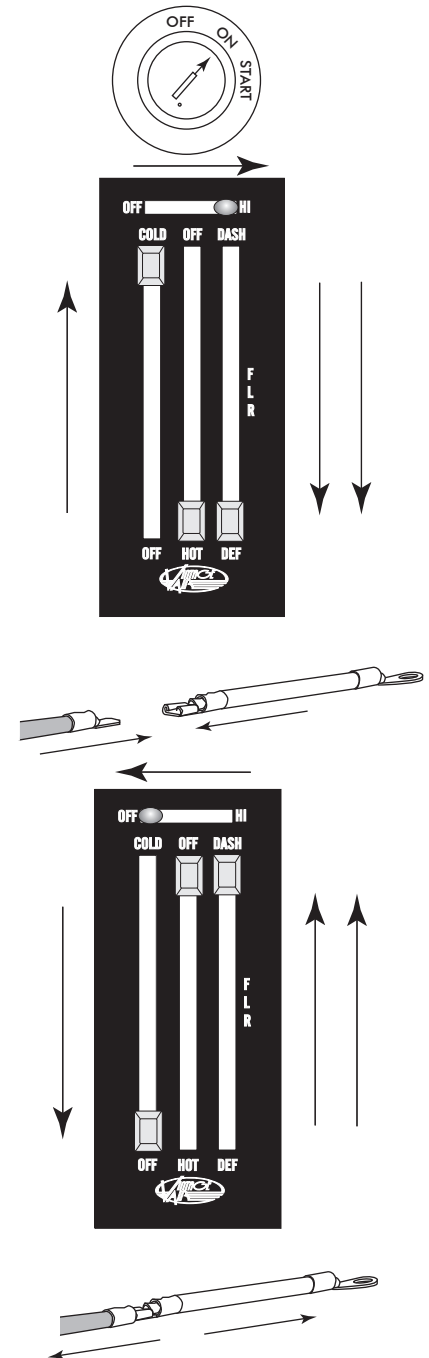
In preparation for calibration, you will need to attach the supplied white ground jumper wire to a suitable chassis ground. This jumper wire must be easily connected to the gray programming wire located in the main Gen IV wiring harness next to the relays. During the calibration procedure, you will connect the white jumper to the gray program wire, which will "teach" the Gen IV ECU the upper limits of the control levers or knobs. The blower will momentarily change speeds, signaling that the upper limits have been "learned". You will move the levers or knobs to opposite extreme positions of their travel and then disconnect the white jumper. The blower will again change speeds, signaling that the lower limits have been learned and that the calibration procedure is complete.

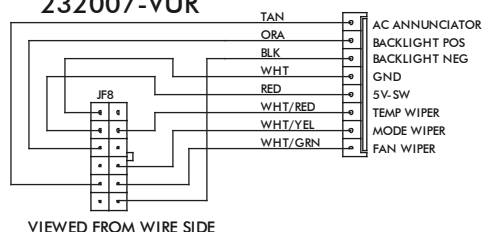




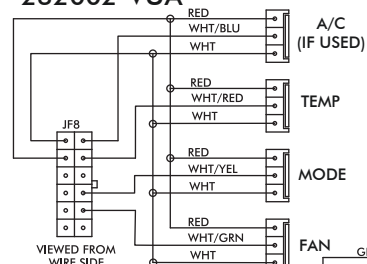
Control Panel Calibration Procedure (Cont.)

1. Turn on the ignition switch (Do not start the engine).
2. Move the control levers/knobs to the position shown.
3. Connect the white jumper wire to the gray program wire. Wait for the blower speed to change (Approximately 5 seconds).
4. Move the control levers/knobs to the positions shown.
5. Disconnect the white jumper wire from the gray program wire. The blower speed will change, indicating completion of the calibration procedure.
6. Confirm proper operation of controls. Repeat procedure if necessary. When finished, tape over program wire connector with electrical tape to prevent accidental contact with chassis ground.





VIEWED FROM WIRE SIDE



VIEWED FROM

PROGRAM

* DASH LAMP
(IF USED)

*** WIDE OPEN
THROTTLE
SWITCH
(OPTIONAL)

**** CIRCUIT
BREAKER
30 AMP**

COMPRESSOR

GEN IV ECU

GEN IV WIRING DIAGRAM
REV D, 5/6/2014

Diagram of the JM9 connector pinout. The connector is a 9-pin D-subminiature. The pins are labeled as follows: Pin 1 (top) is RED, Pin 2 is YEL/BLK, Pin 3 is WHT, Pin 4 is TAN, Pin 5 is VIO, Pin 6 is ORA, Pin 7 is BLU, Pin 8 is GRN, and Pin 9 (bottom) is GRY. The diagram is viewed from the wide side of the connector.

RED

RED



A horizontal line representing a wire, labeled "RED" at the left end. Two vertical lines connect the horizontal wire to two small circles below it, representing connection points.

4-114

86 87 85

COMPRESSOR
RELAY

[illegible]

ly With Type 2:

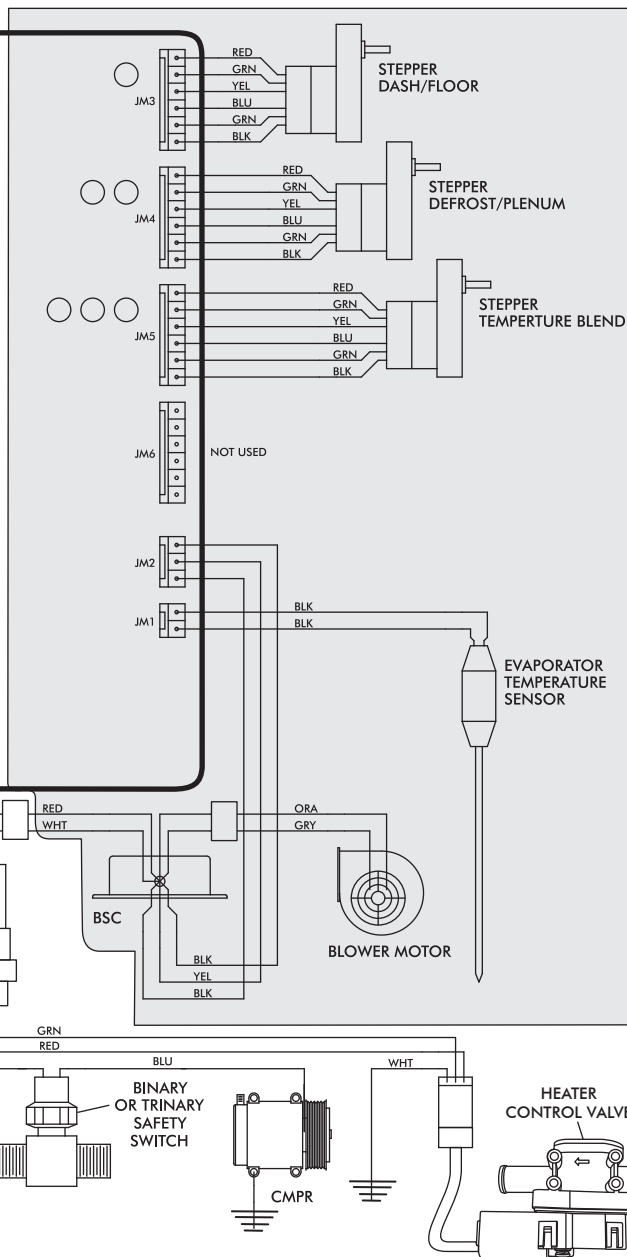
at Circuit Break


Maker Is Unprot

Switch Contacts C

904271 REV D 4

PRE-WIRED



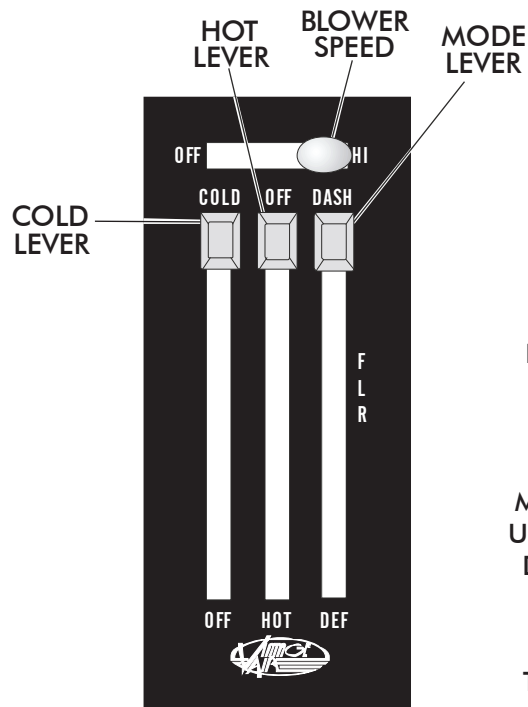
NOTE:  = CHASSIS GROUND

- **Dash Lamp Is Used Only With Type 232007-VUR Harness.**
- **Warning: Always Mount Circuit Breaker As Close to the Battery As Possible. (NOTE: Wire Between Battery and Circuit Breaker Is Unprotected and Should Be Carefully Routed to Avoid a Short Circuit).**
- **Wide Open Throttle Switch Contacts Close Only at Full Throttle, Which Disables A/C Compressor.**



OPERATION OF CONTROLS

NOTE: CONTROLS MUST BE CALIBRATED FOR PROPER OPERATION-REFER TO CONTROL PANEL INSTRUCTIONS.



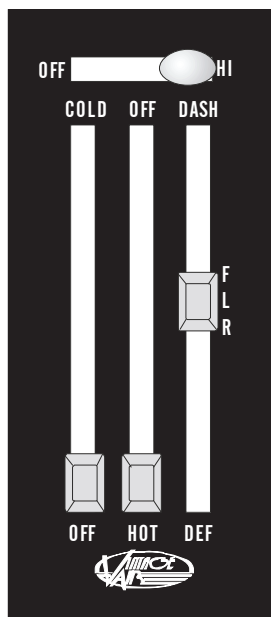
A/C MODE

BLOWER SPEED
ADJUST TO DESIRED SPEED

COLD LEVER
IN A/C MODE SLIDE THE COLD LEVER ALL THE WAY UP TO ENGAGE COMPRESSOR.

HEAT LEVER
SLIDE THE HEAT LEVER ALL THE WAY UP FOR MAX COLD. (SLIDE LEVER UP OR DOWN TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE "DASH" POSITION



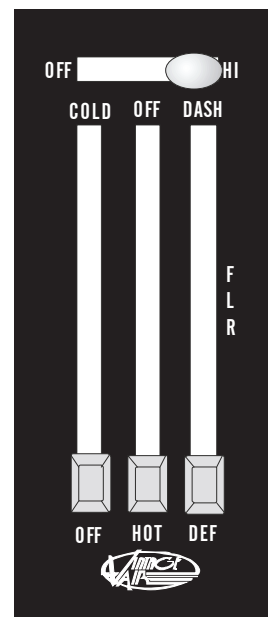
HEAT MODE

BLOWER SPEED
ADJUST TO DESIRED SPEED

COLD LEVER
SLIDE THE COLD LEVER ALL THE WAY DOWN.

HEAT LEVER
SLIDE THE HEAT LEVER ALL THE WAY DOWN FOR MAX HEAT (SLIDE LEVER UP OR DOWN TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE "FLOOR" POSITION



DEFROST/ DE-FOG MODE

BLOWER SPEED
ADJUST TO DESIRED SPEED

COLD LEVER
COMPRESSOR IS FORCED ON IN DEFROST MODE. THERE IS NO NEED TO ADJUST THIS LEVER.

HEAT LEVER
SLIDE HEAT LEVER ALL THE WAY UP. (SLIDE LEVER UP OR DOWN TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE "DEF" POSITION

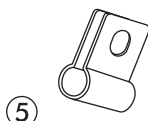
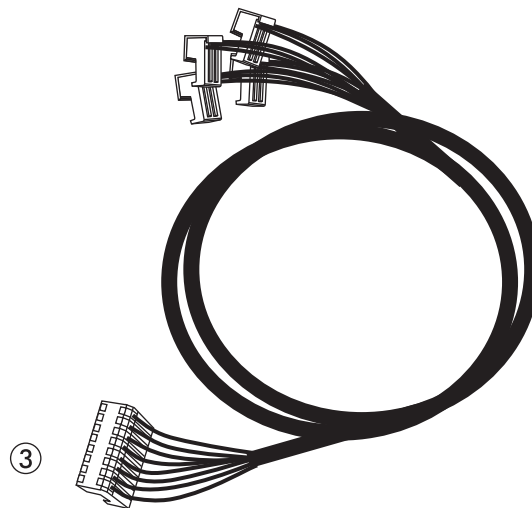
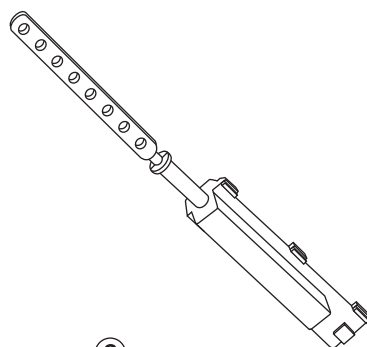
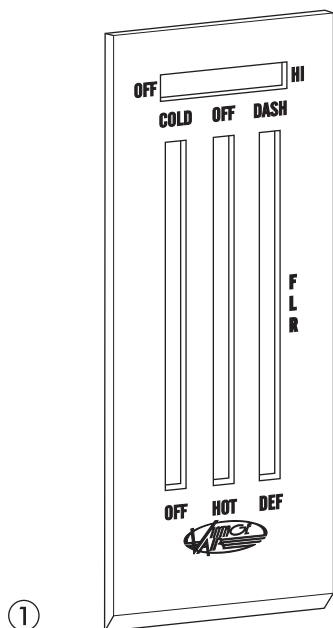


CONTROL KIT PACKING LIST

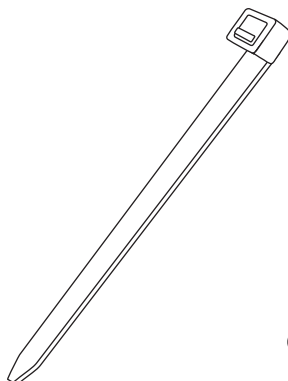
CONTROL KIT
474172

No	QTY	PART No.	DESCRIPTION	
1.	1	484169-PCR	69 CAMARO w/ AC PLACARD w/ BLACK BACKING SHEET	_____
2.	3	112002-SUA	CABLE CONVERTER ASM	_____
3.	1	232002-VUA	GEN IV UNIVERSAL CONTROL HARNESS	_____
4.	3	65976-VUE	3/16" PUSH-ON RING	_____
5.	3	491010-VUR	CABLE CONVERTER CLAMP	_____
6.	5	21301-VUP	4" TIE WRAP	_____
7.	1	231520	GROUND WIRE	_____
8.	1	246108-PUA	BLOWER SWITCH PC BOARD	_____

CHECKED BY: _____
PACKED BY: _____
DATE: _____



6



7



8

