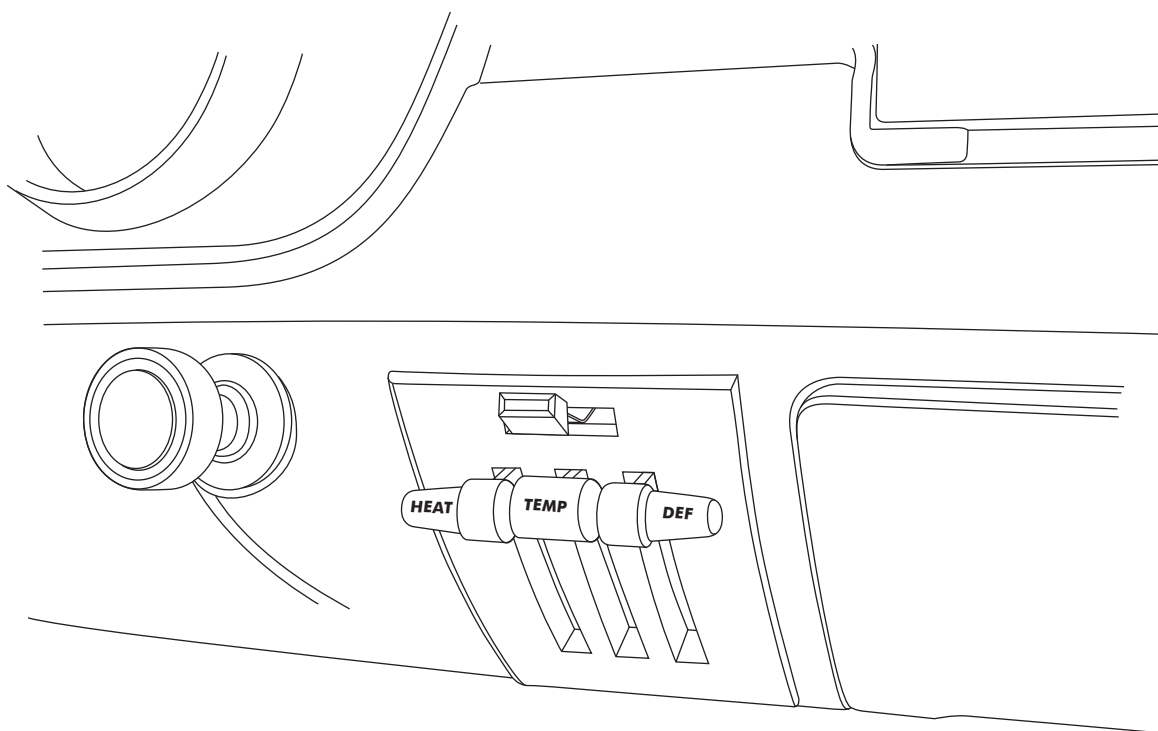




an ISO 9001: 2008 Registered Company

1964 $\frac{1}{2}$ -66 MUSTANG

CONTROL PANEL
CONVERSION KIT
471066



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



Table of Contents

PAGES

1. COVER
2. TABLE OF CONTENTS
3. PACKING LIST/ PARTS DISCLAIMER
4. REMOVING OEM CONTROL PANEL
5. CABLE CONVERTER ASSEMBLY MODIFICATIONS & CABLE CONVERTER ASSEMBLY MOUNTING CLAMP INSTALLATION
6. DASH/ FLR/ DEF CABLE CONVERTER ASSEMBLY INSTALLATION & CONTROL HARNESS
7. CONTROL HARNESS CONT. & COLD/ HOT CABLE CONVERTER ASSEMBLY INSTALLATION
8. CONTROL HARNESS & CONTROL HARNESS CONTINUED.
9. OFF/ HI CABLE CONVERTER ASSEMBLY INSTALLATION & CONTROL HARNESS
10. CONTROL HARNESS CONTINUED & CONTROL HARNESS FINAL STEP
11. FINAL STEP & FINAL STEPS CONTINUED
12. CONTROL PANEL CALIBRATION PROCEDURE
13. CONTROL PANEL CALIBRATION PROCEDURE CONTINUED
14. WIRING DIAGRAM
15. OPERATION OF CONTROLS
16. CONTROL PANEL KIT PACKING LIST



CONTROL KIT
471066

CONTROL PANEL KIT PACKING LIST

No.	QTY.	PART No.	DESCRIPTION
1.	3	112002-SUA	CABLE CONVERTER ASSEMBLY
2.	1	232002-VUA	GEN IV UNIVERSAL CONTROL HARNESS
3.	1	231520	GROUND WIRE
4.	5	21301-VUP	4" TIE WRAP
5.	3	491010-VUR	SLIDE POTENTIOMETER CLAMP
6.	3	18247-VUB	#10 x 1/2" SHEET METAL SCREW
7.	3	183998	4-40 x 1/2 PH PAN HEAD SCREW
8.	3	18412-VUB	4-40 NUT
9.	3	49701-VUI	NYLON BUSHING

**** 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.**

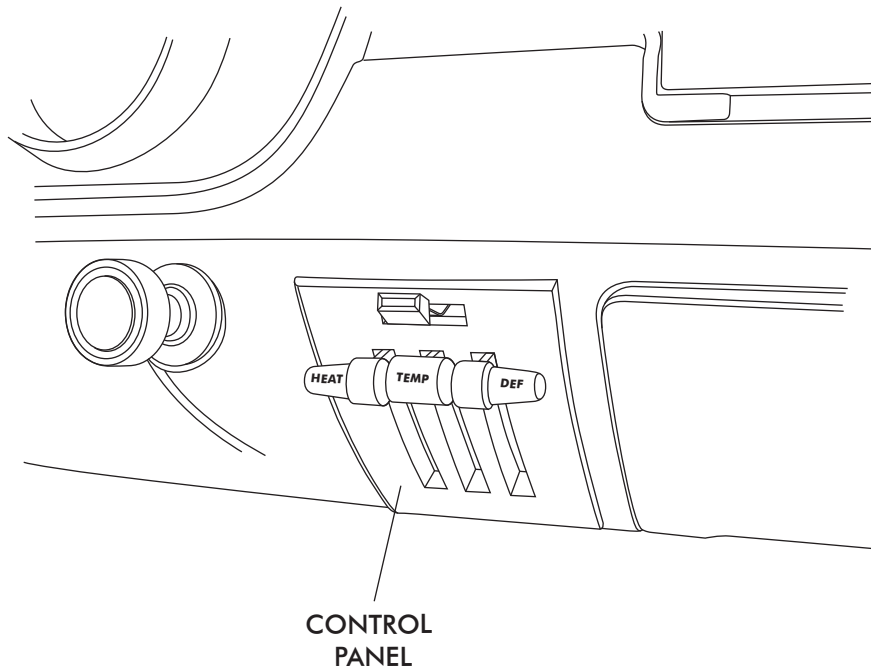




CONTROL PANEL CONVERSION INSTRUCTIONS FOR 1964½-66 MUSTANG

REMOVING OEM CONTROL PANEL

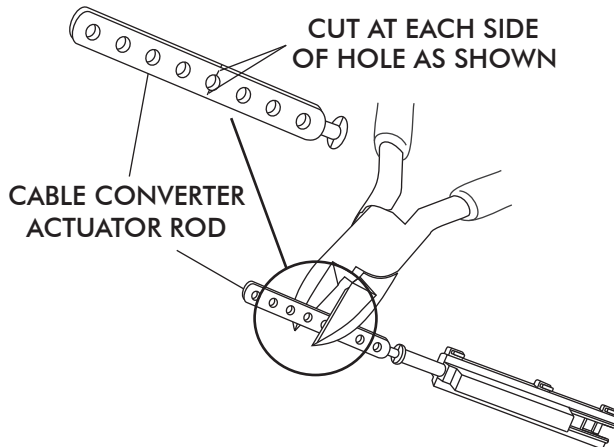
- ☐ REMOVE TWO OEM NUTS FROM TOP AND BOTTOM OF CONTROL PANEL (RETAIN NUTS).
- ☐ DISCONNECT CABLES, WIRES FROM BACK OF CONTROL PANEL.
- ☐ REMOVE THE CONTROL PANEL.



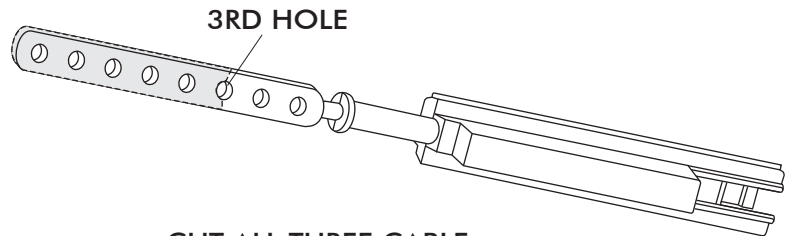
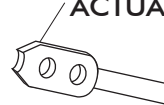


CABLE CONVERTER ASSEMBLY MODIFICATIONS

- LOCATE THE THREE CABLE CONVERTER ASSEMBLIES AND, USING A PAIR OF WIRE CUTTERS, CUT CABLE CONVERTER ACTUATOR RODS AS SHOWN.
- TRIM ALL CABLE CONVERTER ACTUATOR RODS AS SHOWN.



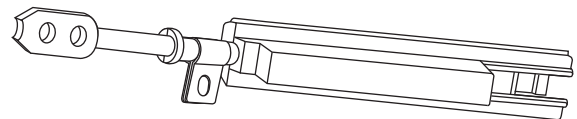
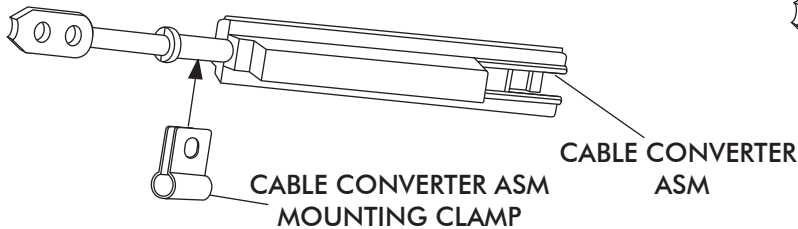
TRIM ALL CABLE CONVERTER ACTUATOR RODS



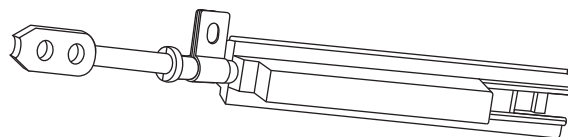
CUT ALL THREE CABLE CONVERTER ASSEMBLIES AT 3RD HOLE (REMOVE SHADED PORTION)

CABLE CONVERTER ASSEMBLY MOUNTING CLAMP INSTALLATION

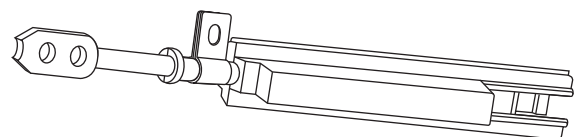
- INSTALL CABLE CONVERTER ASSEMBLY MOUNTING CLAMPS.



OFF/ HI CABLE CONVERTER



HOT/ COLD CABLE CONVERTER



DASH/ FLR/ DEF CABLE CONVERTER

ORIENT SLIDE POT ASSEMBLIES AS SHOWN AND INSTALL MOUNTING CLAMPS AS SHOWN. (NOTE: ORIENT CLAMPS IN RELATION TO THE THREE HOUSING SNAPS ON SLIDE POT ASSEMBLY)

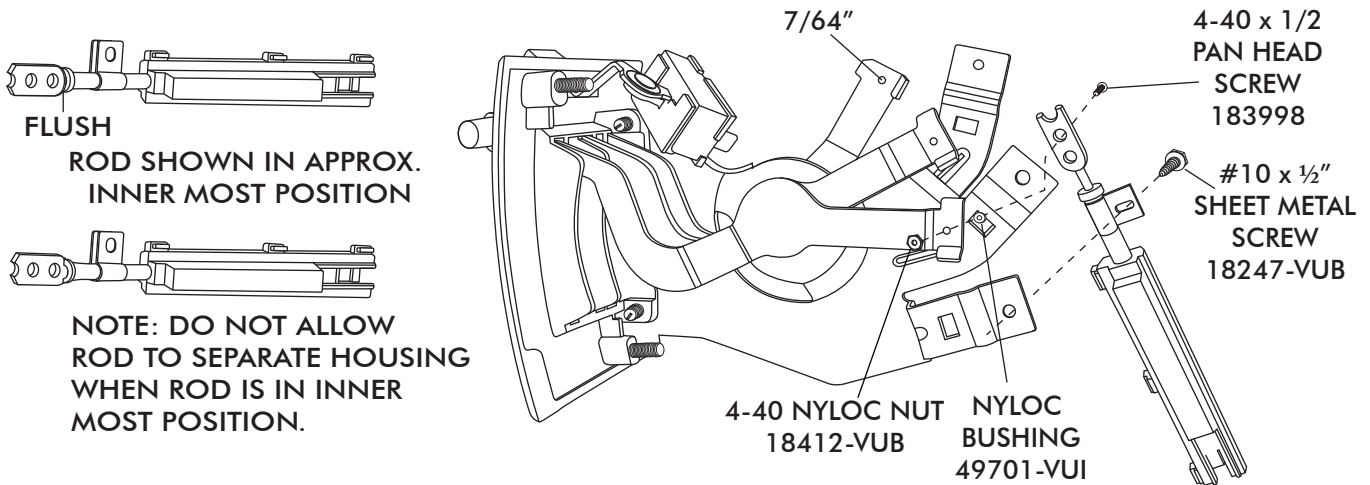


CABLE CONVERTER ASSEMBLY INSTALLATION

NOTE DRILL 7/64 HOLE IN ALL (3) LEVERS.

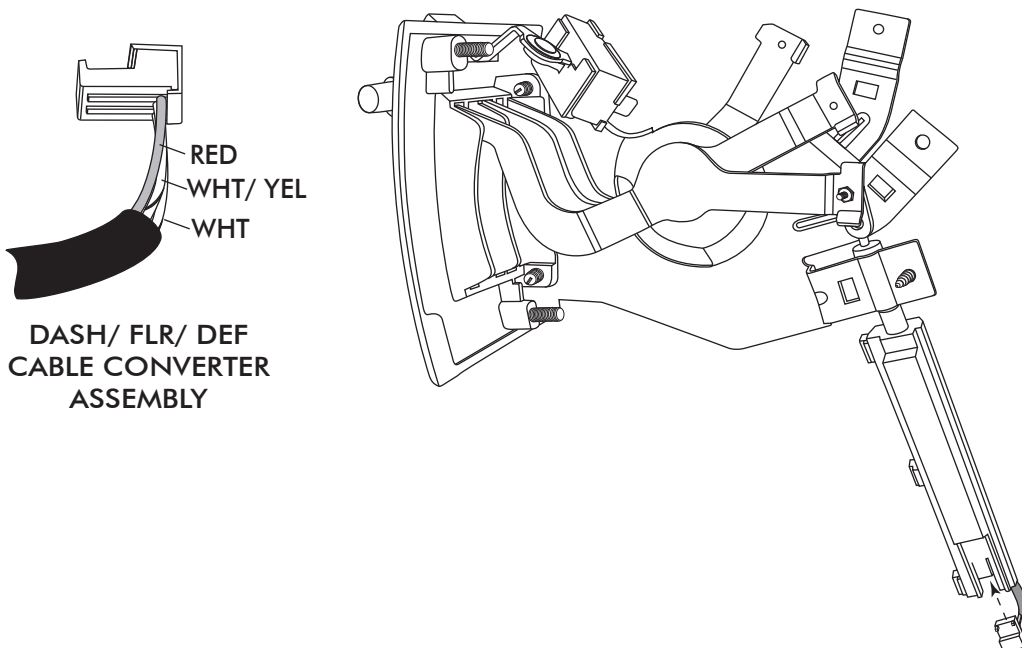
DASH/ FLR/ DEF CABLE CONVERTER ASSEMBLY

- ☐ INSTALL CABLE CONVERTER ASSEMBLY ON THE DASH/ FLR/ DEF LEVER.
- ☐ INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO CONTROL LEVER USING A 4-40 x 1/2" PAN HEAD SCREW, NYLON BUSHING AND 4-40 NYLOC NUT.
- ☐ SECURE THE CABLE CONVERTER ASSEMBLY TO THE CONTROL PANEL USING #10 x 1/2" SHEET METAL SCREW.
- ☐ SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION CABLE CONVERTER 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.



CONTROL HARNESS

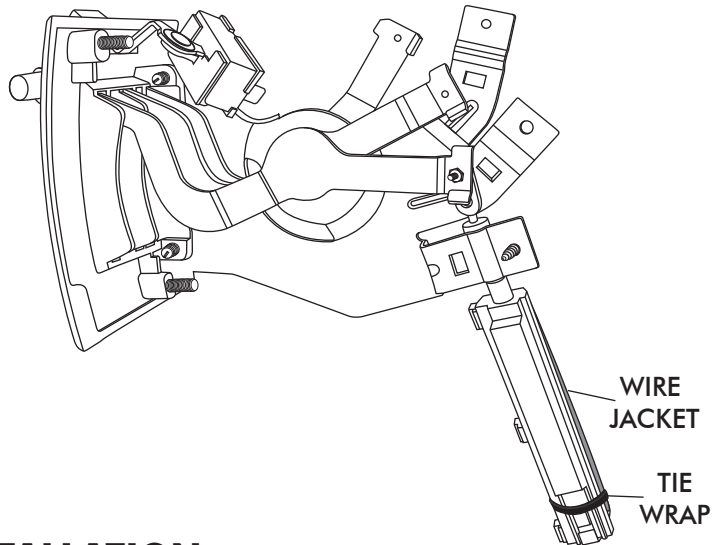
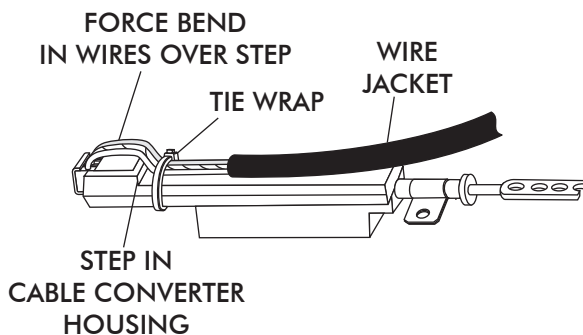
- ☐ LOCATE THE CONTROL PANEL WIRE HARNESS AND PLUG THE CORRESPONDING WIRES INTO THE CORRECT CABLE CONVERTER ASSEMBLY AS SHOWN BELOW.





CONTROL HARNESS CONT.

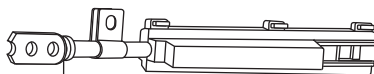
- ONCE WIRES ARE CORRECTLY PLUGGED INTO CABLE CONVERTER ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED) AS SHOWN BELOW. THE TIE WRAP MUST BE LOCATED BETWEEN THE END OF THE WIRE JACKET AND THE STEP IN THE CABLE CONVERTER HOUSING FORCING A BEND IN EACH WIRE AS THEY PASS OVER THE STEP IN THE 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.



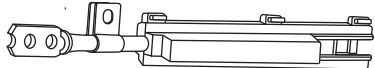
CABLE CONVERTER ASSEMBLY INSTALLATION

COLD/ HOT (TEMPERATURE BLEND DOOR) CABLE CONVERTER ASSEMBLY

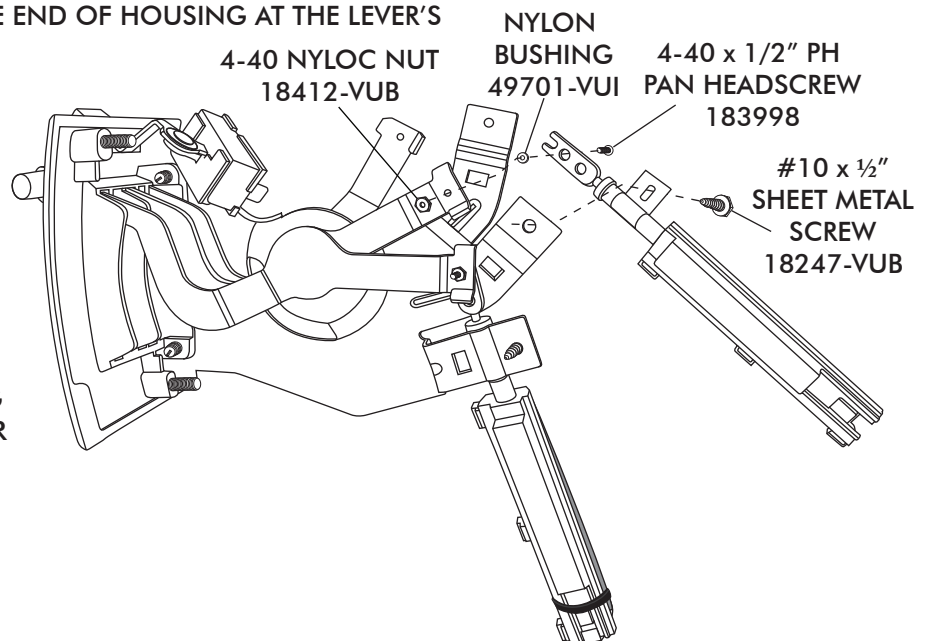
- INSTALL CABLE CONVERTER ASSEMBLY ON THE COLD/ HOT LEVER.
- INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO CONTROL LEVER USING A 4-40 x 1/2" PH PAN HEAD SCREW, NYLON BUSHING AND 4-40 NYLOC NUT.
- SECURE THE CABLE CONVERTER ASSEMBLY TO THE CONTROL PANEL USING #10 x 1/2" SHEET METAL SCREW.
- SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION CABLE CONVERTER 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.



FLUSH
ROD SHOWN IN APPROX.
INNER MOST POSITION



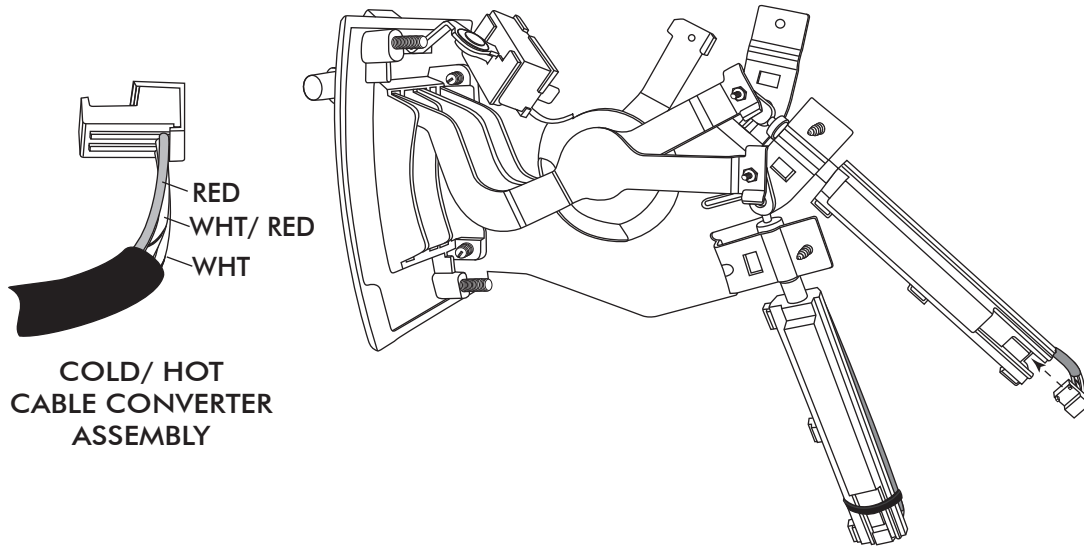
NOTE: DO NOT ALLOW ROD
TO SEPARATE HOUSING
WHEN ROD IS IN INNER
MOST
POSITION.





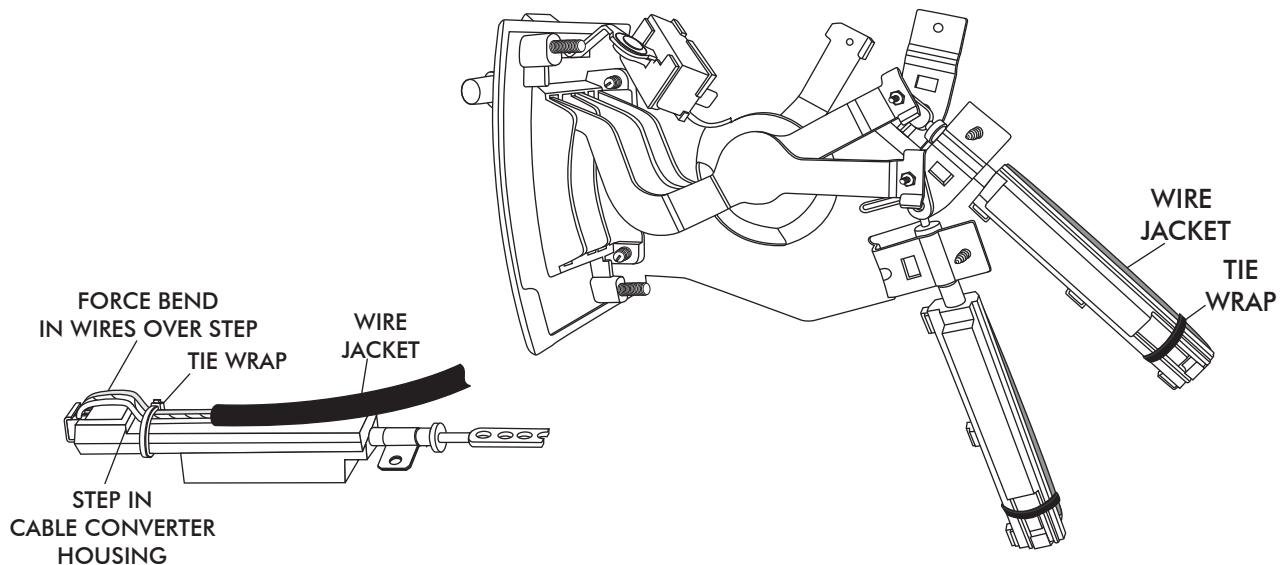
CONTROL HARNESS

- LOCATE THE CONTROL PANEL WIRE HARNESS AND PLUG THE CORRESPONDING WIRES INTO THE CORRECT CABLE CONVERTER ASSEMBLY.



CONTROL HARNESS CONTINUED

- ONCE WIRES ARE CORRECTLY PLUGGED INTO CABLE CONVERTER ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED). 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 THE 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.

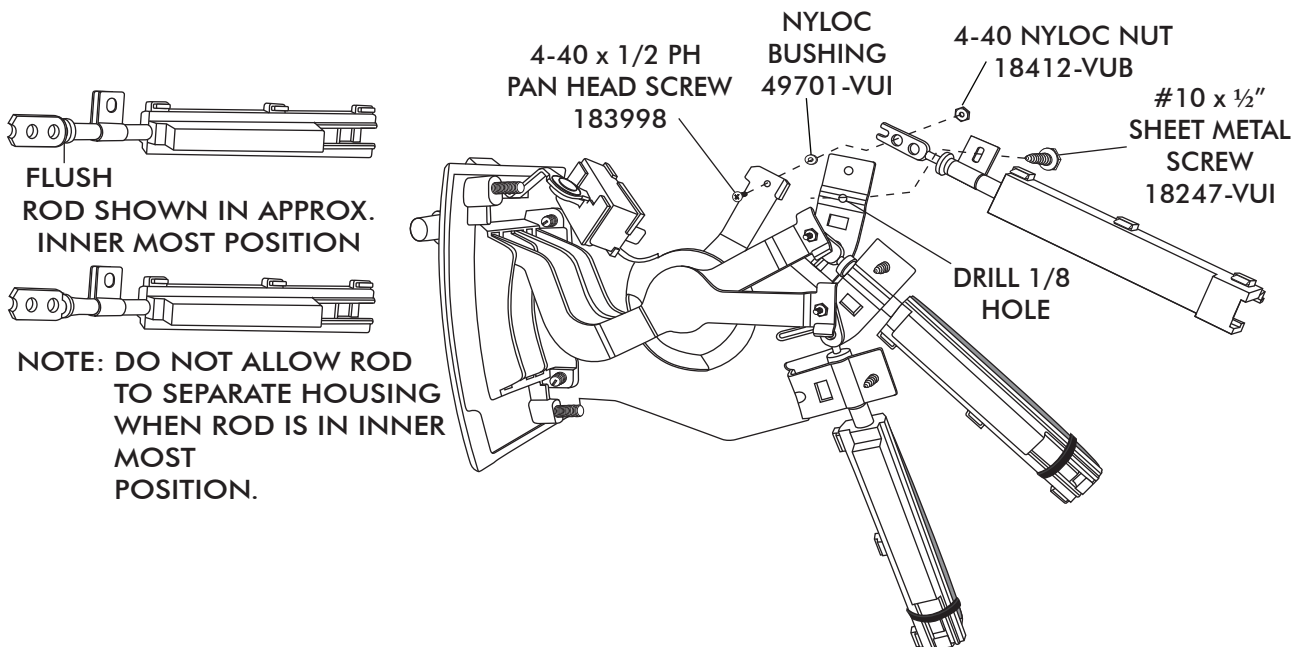




CABLE CONVERTER ASSEMBLY INSTALLATION

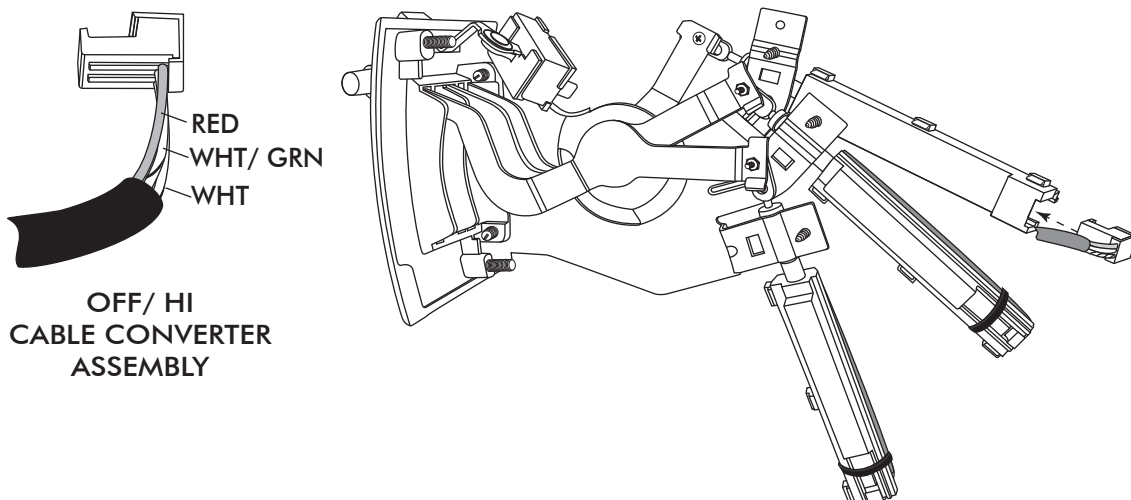
OFF/ HI CABLE CONVERTER ASSEMBLY

- ☐ DRILL 1/8 HOLE IN OFF/ HI OEM CABLE CONVERTER MOUNTING BRKT.
- ☐ INSTALL CABLE CONVERTER ASSEMBLY ON THE OFF/ HI LEVER.
- ☐ INSTALL CABLE CONVERTER LEVER PUSH ROD ONTO CONTROL LEVER USING A 4-40 x 1/2" PH PAN HEAD SCREW, NYLON BUSHING AND 4-40 NYLOC NUT.
- ☐ SECURE THE CABLE CONVERTER ASSEMBLY TO THE CONTROL PANEL USING #10 x 1/2" SHEET METAL SCREW.
- ☐ SINCE THE CABLE CONVERTER ASSEMBLY CAN SLIDE BACK AND FORTH IN CLAMP BEFORE SCREW IS TIGHTENED, POSITION CABLE CONVERTER 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.



CONTROL HARNESS

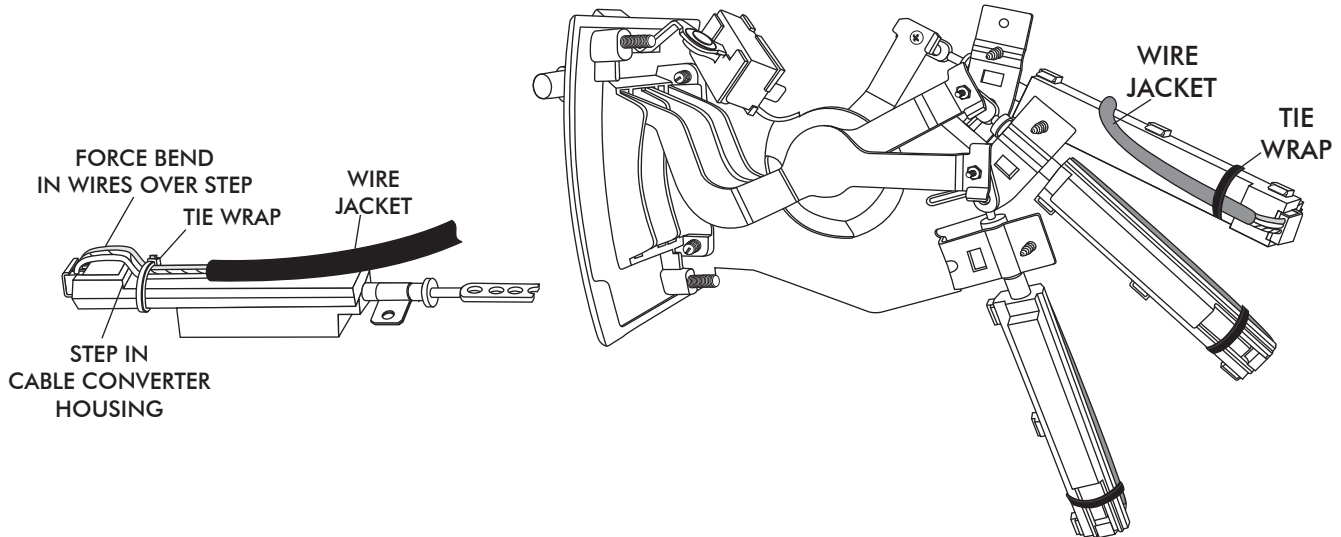
- ☐ LOCATE THE CONTROL PANEL WIRE HARNESS AND PLUG THE CORRESPONDING WIRES INTO THE CORRECT CABLE CONVERTER ASSEMBLY.





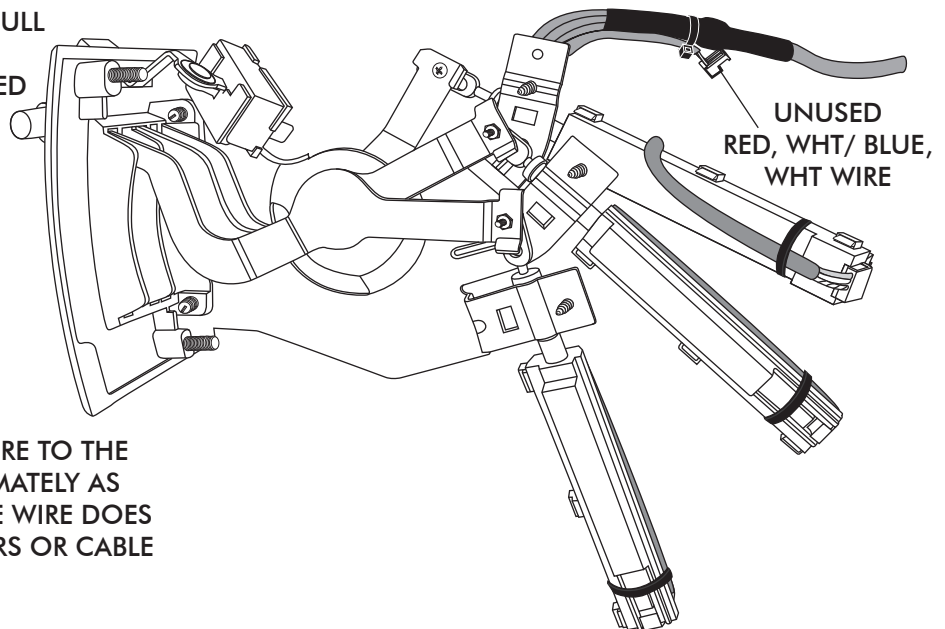
CONTROL HARNESS CONTINUED

- ONCE WIRES ARE CORRECTLY PLUGGED INTO CABLE CONVERTER ASSEMBLY, SECURE WIRES TO THE CABLE CONVERTER ASSEMBLY USING TIE WRAPS (SUPPLIED). 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 THE 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.



CONTROL HARNESS FINAL STEPS

- USING THE SUPPLIED TIE-WRAPS, TIE THE WIRES TO THE CONTROL PANEL.
- CONFIRM THAT WIRES ARE SECURED AND DO NOT INTERFERE WITH LEVER OPERATION OR CABLE CONVERTER ASSEMBLY.
- OPERATE LEVERS THROUGH FULL RANGE OF TRAVEL TO VERIFY CLEARANCE. LEVERS MAY NEED TO BE BEND SUCCESSFULLY TO CLEAR HARDWARE.

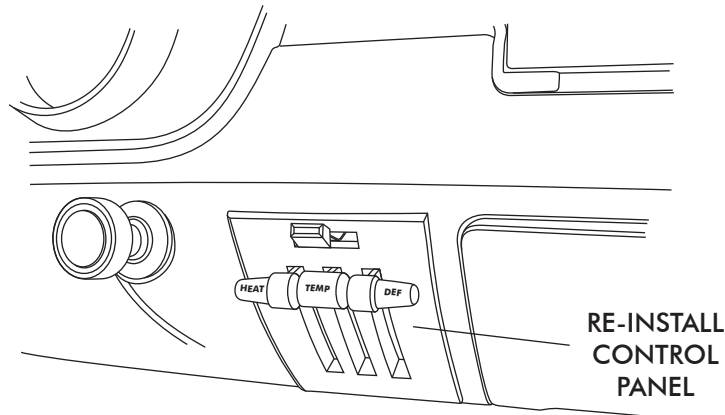


NOTE: TIE THE UNUSED WIRE TO THE CONTROL PANEL APPROXIMATELY AS SHOWN, ENSURE THAT THE WIRE DOES NOT INTERFERE WITH LEVERS OR CABLE CONVERTER ASSEMBLES.



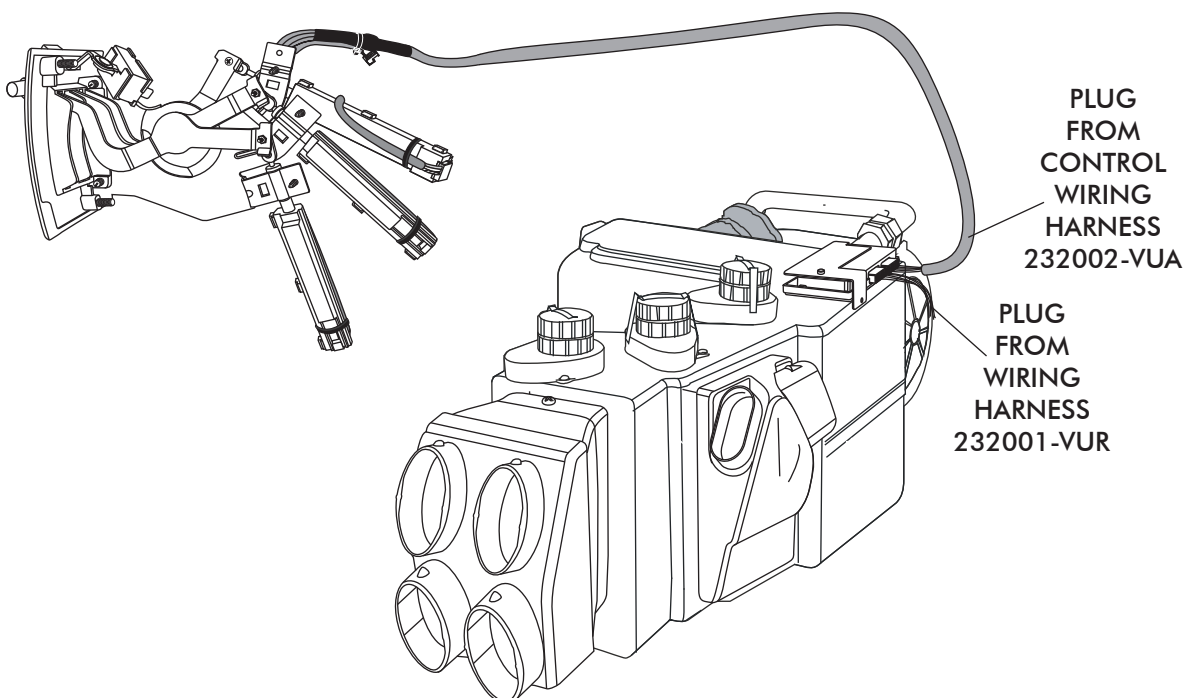
FINAL STEPS

- RE-INSTALL CONTROL PANEL IN DASH USING THE TWO OEM NUTS.



FINAL STEPS CONTINUED

- PLUG THE WIRING HARNESS INTO THE ECU MODULE ON SUB CASE AS SHOWN BELOW.
- 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 12 & 14.
 - 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 12 & 13.

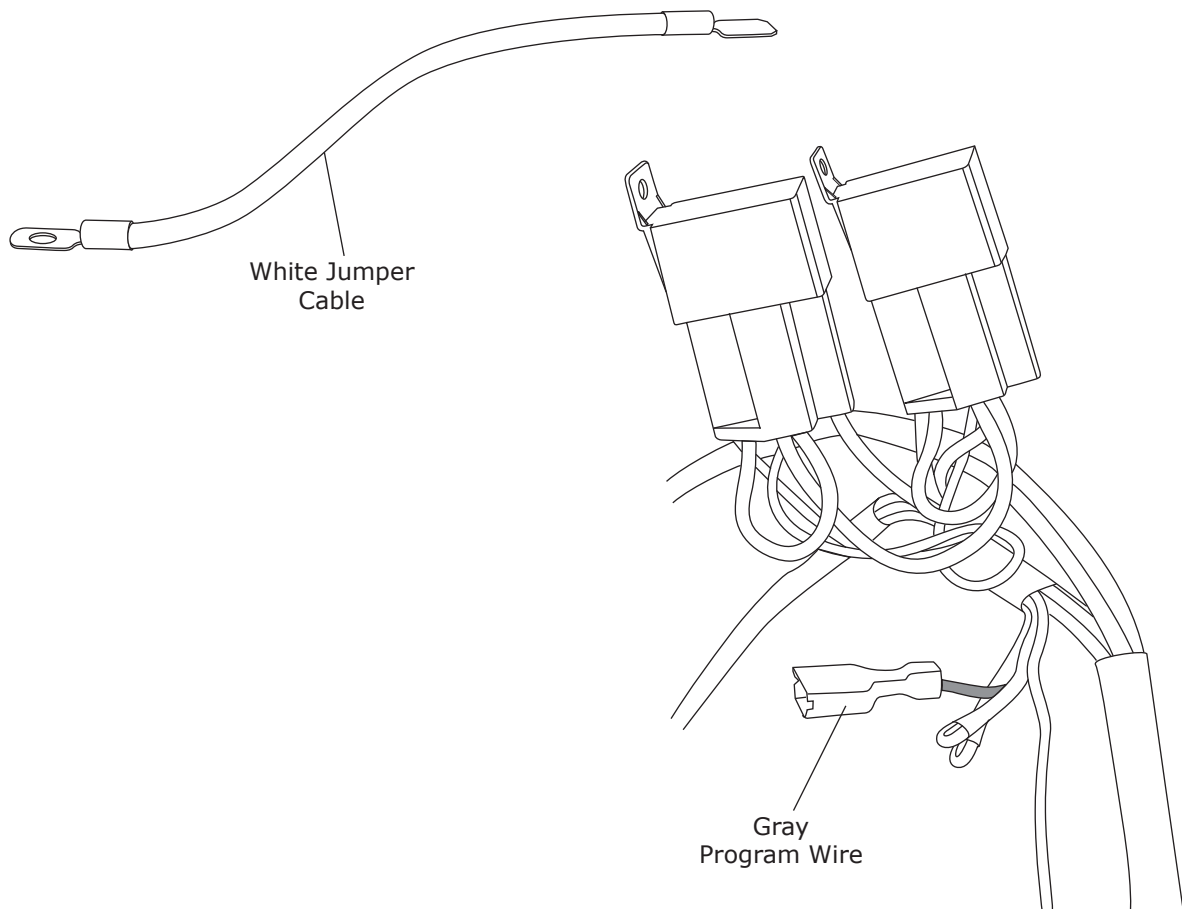




Control Panel Calibration Procedure

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.

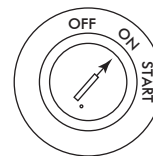
In preparation for calibration, you will need to attach the supplied white ground jumper wire to a suitable chassis ground. This jumper wire must be easily connected to the gray programming wire located in the main Gen IV wiring harness next to the relays. During the calibration procedure, you will connect 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.



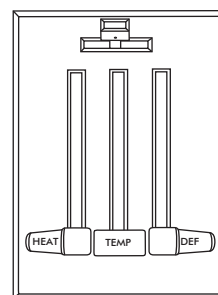


Control Panel Calibration Procedure (Cont.)

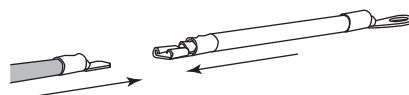
1. Turn on the ignition switch (Do not start the engine).



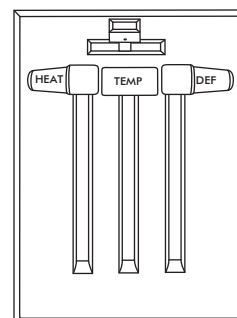
2. Move the control levers/knobs to the position shown.



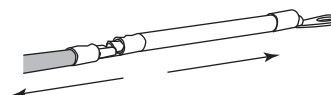
3. Connect the white jumper wire to the gray program wire. Wait for the blower speed to change (Approximately 5 seconds).



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.

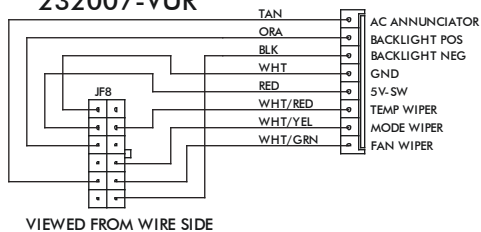


6. Confirm proper operation of controls. Repeat procedure if necessary. When finished, tape over program wire connector with electrical tape to prevent accidental contact with chassis ground.

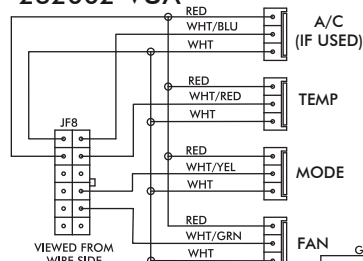


Wiring Diagram

232007-VUR

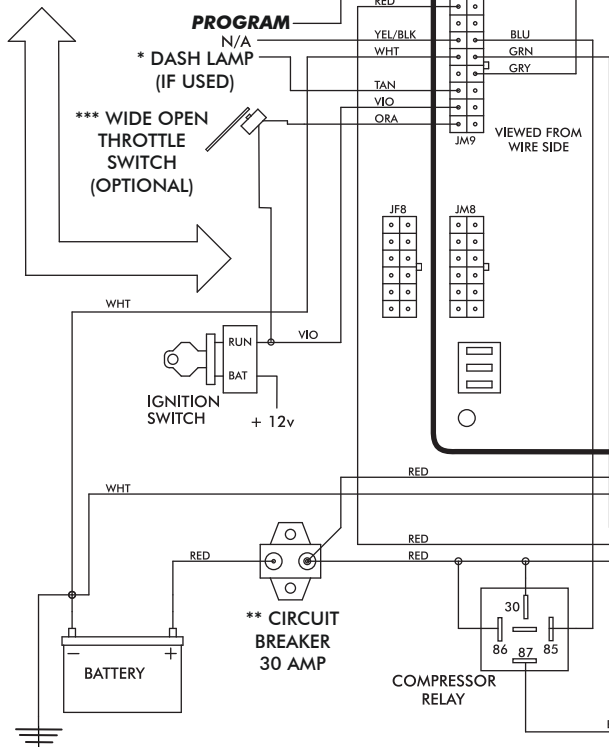


232002-VUA

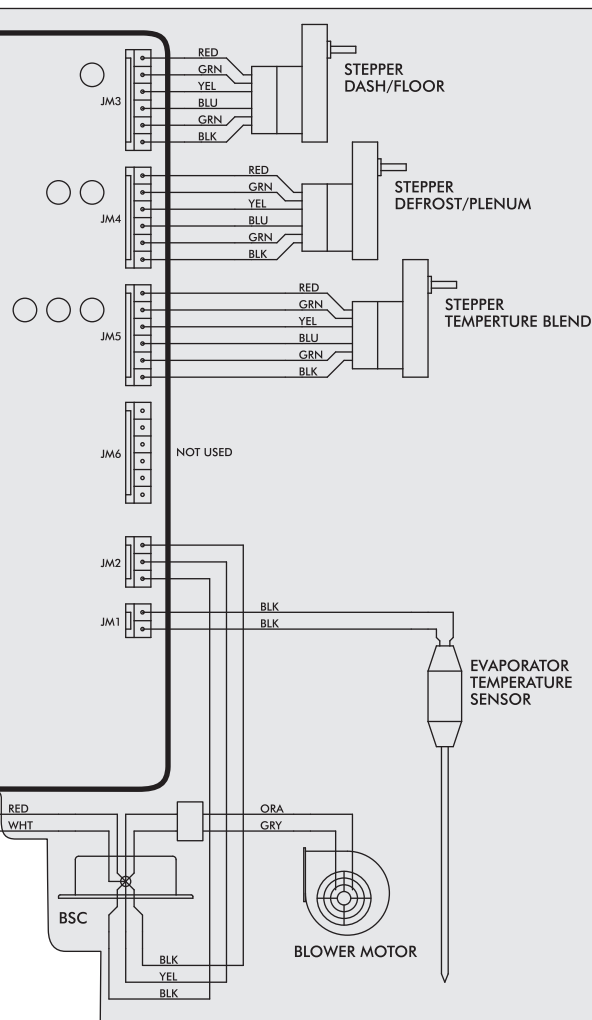


GEN IV ECU

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



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 Routd to Avoid a Short Circuit).
- Wide Open Throttle Switch Contacts Close Only at Full Throttle, Which Disables A/C Compressor.



Operation of Controls

On Gen IV systems with three lever/knob controls, the temperature control toggles between heat and A/C operations. To activate A/C, move the temperature lever/knob all the way to cold and then back it off to the desired vent temperature. For heat operation, move the temperature lever/knob all the way to hot and then adjust to the desired vent temperature. The blower will momentarily change speed, each time you toggle between operations, to indicate the change. **NOTE: For proper control panel function, refer to control panel instructions for calibration procedure.**

Blower Speed

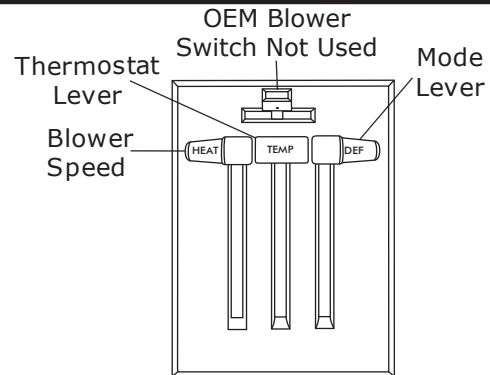
This lever/knob controls blower speed, from OFF to HI.

Mode Control

This lever/knob controls the mode positions, from DASH to FLOOR to DEFROST, with a blend in between.

Temperature Control

This lever/knob controls the temperature, from HOT to COLD.



A/C Operation

Blower Speed

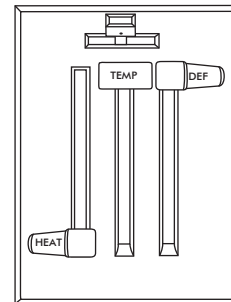
Adjust to desired speed.

Mode Control

Adjust to desired mode position (DASH position recommended).

Temperature Control

For A/C operation, adjust to coldest position to engage compressor (Adjust between HOT and COLD to reach desired temperature).



Heat Operation

Blower Speed

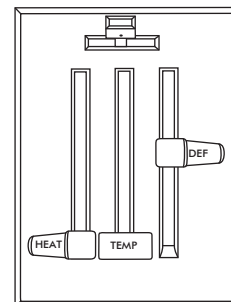
Adjust to desired speed.

Mode Control

Adjust to desired mode position (FLOOR position recommended).

Temperature Control

For maximum heating, adjust to hottest position (Adjust between HOT and COLD to reach desired temperature).



Defrost/De-fog Operation

Blower Speed

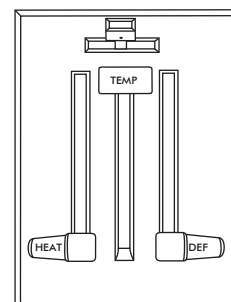
Adjust to desired speed.

Temperature Control

Adjust to desired temperature.

Mode Control

Adjust to DEFROST position for maximum defrost, or between FLOOR and DEFROST positions for a bi-level blend (Compressor is automatically engaged).





CONTROL PANEL KIT PACKING LIST

CONTROL KIT
471066

No.	QTY.	PART No.	DESCRIPTION	
1.	3	112002-SUA	CABLE CONVERTER ASSEMBLY	_____
2.	1	232002-VUA	GEN IV UNIVERSAL CONTROL HARNESS	_____
3.	1	231520	GROUND WIRE	_____
4.	5	21301-VUP	4" TIE WRAP	_____
5.	3	491010-VUR	SLIDE POTENTIOMETER CLAMP	_____
6.	3	18247-VUB	#10 x 1/2" SHEET METAL SCREW	_____
7.	3	183998	4/40 x 1/2 PH PAN HEAD SCREW	_____
8.	3	18412-VUB	4/40 NUT	_____
9.	3	49701-VUI	NYLON BUSHING	_____

CHECK BY: _____
PACKED BY: _____
DATE: _____

