Pantera Electronics Console
Switch Interface Installation Manual

Features and Benefits

> Provides "Express" window functions, one press to go *full down*, or an additional press to stop in any mid-position, another press to continue *down*. The same is true for up, one press to go *full up*, or an additional press to stop in any mid-position, another press to continue *up*. The motor current is continuously monitored and stops the window automatically from interfering objects or window mechanism travel stops.

> Provides 3 fan speeds:
When the A/C Thermostat is "ON" the fan is at low speed.
Center rocker switch position the fan is at medium speed.
Right rocker switch position the fan is at high speed.

> Converts the original courtesy light and additional interior lights to "Theater" or progressive brightness lighting. Opening either door will slowly ramp the lighting from off to full brightness and then slowly ramps from full bright to off. On-board terminal for additional interior lighting that have grounded sockets for one wire per light installation. Outputs for lighting in excess of 5 amps, and is compatible with incandescent and LED lighting devices.
Pantera Electronics LED Floor lighting is an excellent addition and connects to the Console Switch Interface terminal.

> Provides lighting for the rocker switches by green LEDs mounted on the CSI board.

> Simple installation, direct connection from the harness to the Console Switch Interface with on board wire color labels.

> Diagnostic on-board LED indicators for rocker switch contacts.

> Keep originality by transparent operation through the original Pantera switches.

Note: From this point to the end of this document "CSI" will refer to the Console Switch Controller.

Suggestions:

Disconnect the Battery by removing the negative or ground cable from the battery terminal

Remove all of the wiring from the switches first.
The gauge harness can be disconnected at the connector.

Its recommended to remove the rust from the metal console plates and paint before installing the CSI so that rust does not contaminate the CSI electronics. This was done in the installation pictures.

Leave the gauge harness off if it was removed until the switches are re-connected.

There is an optional *GAUGE CONNECTION INTERFACE* that can be seen in the pictures.
It is not included with the SCI but it improves the wiring and is more reliable than the factory harness.
Contact factory for more information about the Gauge Connection Interface.

Mechanical Installation:

Be careful of the 4 very small illumination LEDs on the backside of the CSI board.

The CSI is mounted to the rocker switches by holes in the board located near 2 of the rocker switches. The holes are for wire ties and wrap around the base of the rocker switch. There are 2 sets of holes for mounting, if the Pantera is an early year the console plate is manufactured from steel sheet metal. Later years the console plate is manufactured of plastic. Find the holes labeled for metal or plastic and use the wire ties to feed through the appropriate holes.

Note on metal console plates the wire ties feed through the clips on the rocker switches.
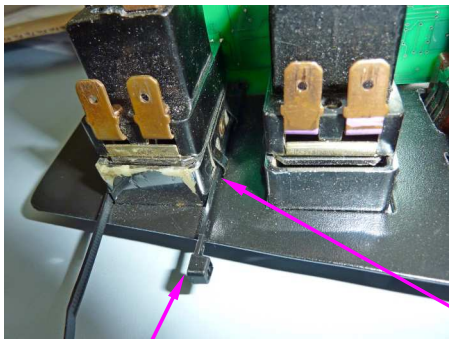
NOTE: It's important to keep this installation manual for future reference since revisions to this product change the contents of the installation manual.
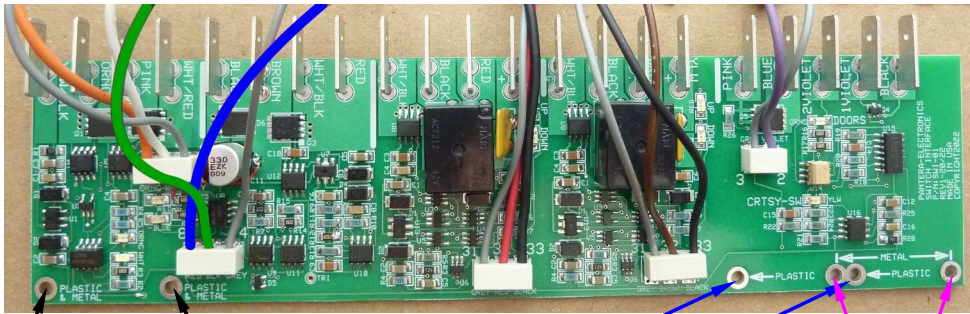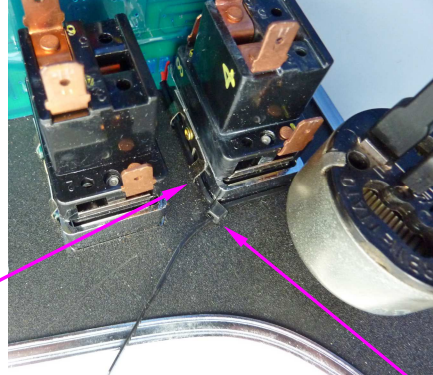
Use these holes for *either* metal or plastic console plate.
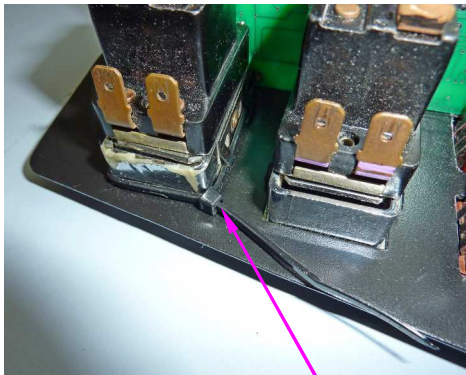
Use these holes for the plastic console plate

Use these holes for the metal console plate.

Note the direction and orientation of the wire tie latch.
Feed *and* pull to get the wire tie to wrap around the switch.

Note that the wire tie feeds under the switch mounting clip.
Note the direction and orientation of the wire tie latch.

Pull the wire tie tight and trim the end. The wire tie lock should be on the corner of the rocker switch housing.
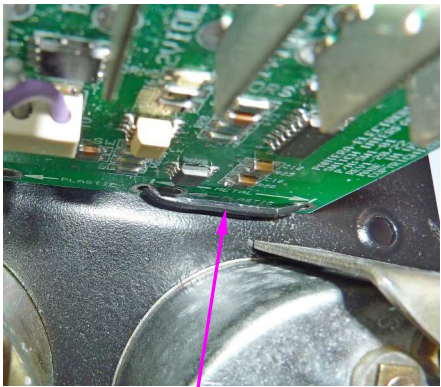
After tightening the wire tie it should look like this on the board on both switches.

Switch tab reference numbers.
Note this switch has all of the possible terminals but not all switches will have all of the terminals.
The number of terminals varies based on function or type of switch.

Switch tab reference numbers.
Note: the number of switch terminals varies based on function or type of switch.
This switch is commonly used for the Courtesy Light switch.
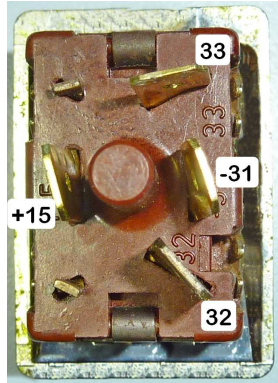
Rocker Switch Connections

Headlight Switch:
Connect the ORANGE wire from the CSI to headlight switch terminal tab #1.

Connect the WHITE wire from the CSI to headlight switch terminal tab #8.

Connect the GREY wire from the CSI to headlight switch terminal tab #4.

Fan Switch:
Connect the GREEN wire from the CSI to fan switch terminal tab #6.

Connect the BLUE wire from the CSI to fan switch terminal tab #8.

Connect the GREY wire from the CSI to fan switch terminal tab #4.

Courtesy Light Switch:
Connect the GREY wire from the CSI to Courtesy Light switch terminal tab #6.

Connect the VIOLET wire from the CSI to Courtesy Light switch terminal tab #7.

Switch tab reference numbers for power window switch

Note: The CSI does not use all 4 terminals of the power window switch, Terminal "+15" is not used.

Power Window Switch Connections
Driver Window Switch (factory)

Connect the GREY wire from the CSI to window switch terminal tab #-31.

Connect the RED wire from the CSI to window switch terminal tab #32.

Connect the BLACK wire from the CSI to window switch terminal tab #33.

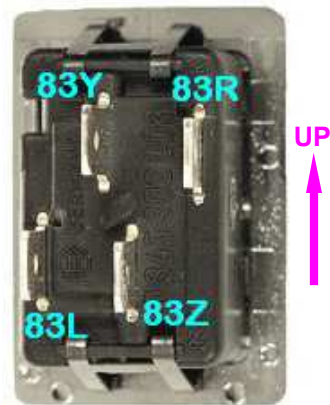**Passenger Window Switch (factory)**

Connect the GREY wire from the CSI to window switch terminal tab #-31.

Connect the BROWN wire from the CSI to window switch terminal tab #32.

Connect the BLACK wire from the CSI to window switch terminal tab #33.

Note: That switches other than de Tomaso switches were used as replacement switches in some Panteras. Commonly a Bosch switch may be installed which is electrically different than the de Tomaso switch.

Switch tab reference numbers for Bocsh power window switch
Note: The CSI does not use all 4 terminals of the Bosch power window switch.

Power Window Switch Connections
Driver Window Switch (Bosch)

Connect the GREY wire from the CSI to window switch terminal tab #83L.

Connect the RED wire from the CSI to window switch terminal tab #83Y.

Connect the BLACK wire from the CSI to window switch terminal tab #83Z.

**Passenger Window Switch (BOSCH)**

Connect the GREY wire from the CSI to window switch terminal tab #83L.

Connect the BROWN wire from the CSI to window switch terminal tab #83Y.

Connect the BLACK wire from the CSI to window switch terminal tab #83Z.

Reference of assembly

Note the factory gauge harness in the picture below was replaced with a Pantera Electronics *Gauge Connect System* for clarity of the SCI installation.

Consult factory for more information.

Reference of assembly

Note the side of the CSI board with the blue tape faces the rocker switches.

Headlight Switch

Fan Switch

Window Switches

Courtesy Switch

Blank Switch
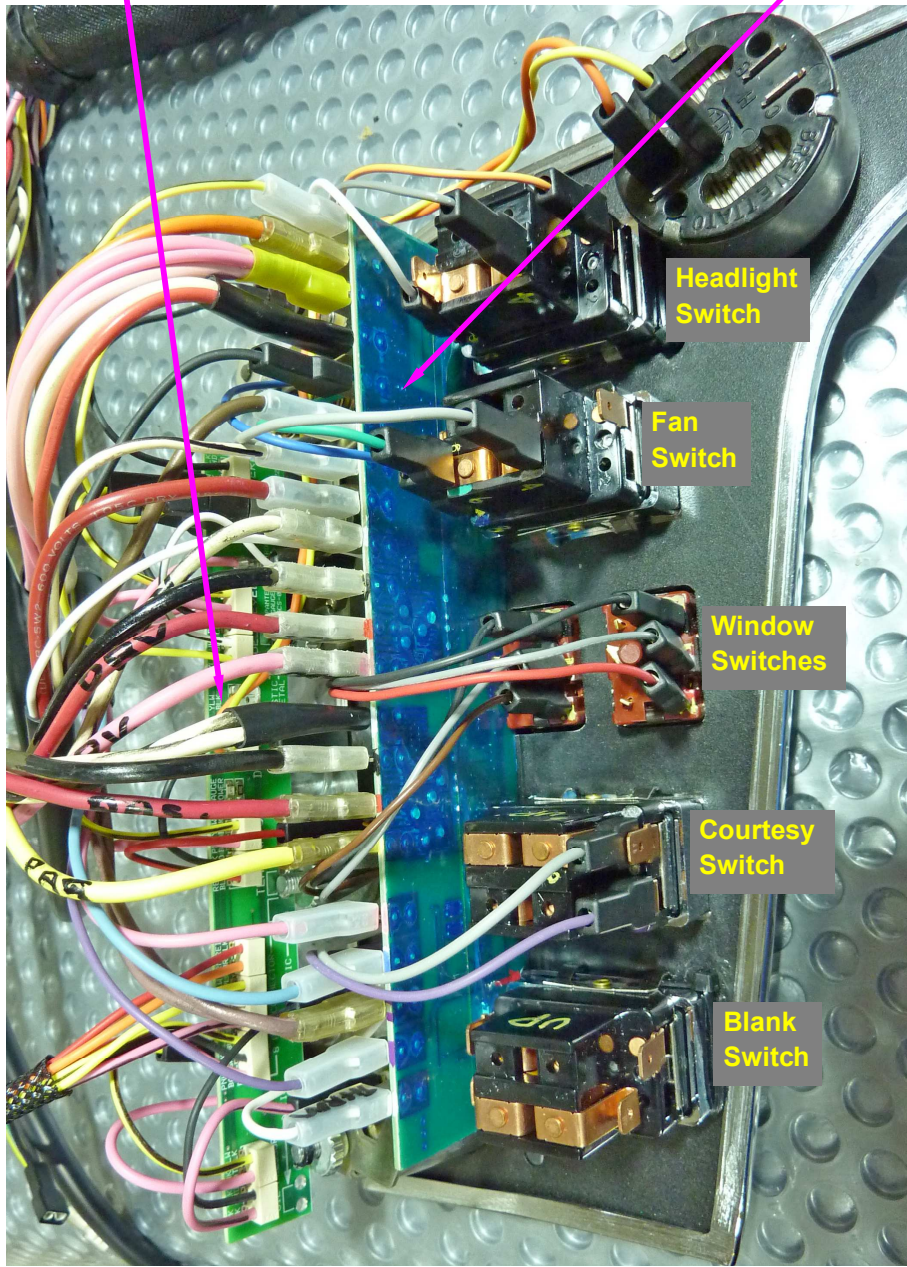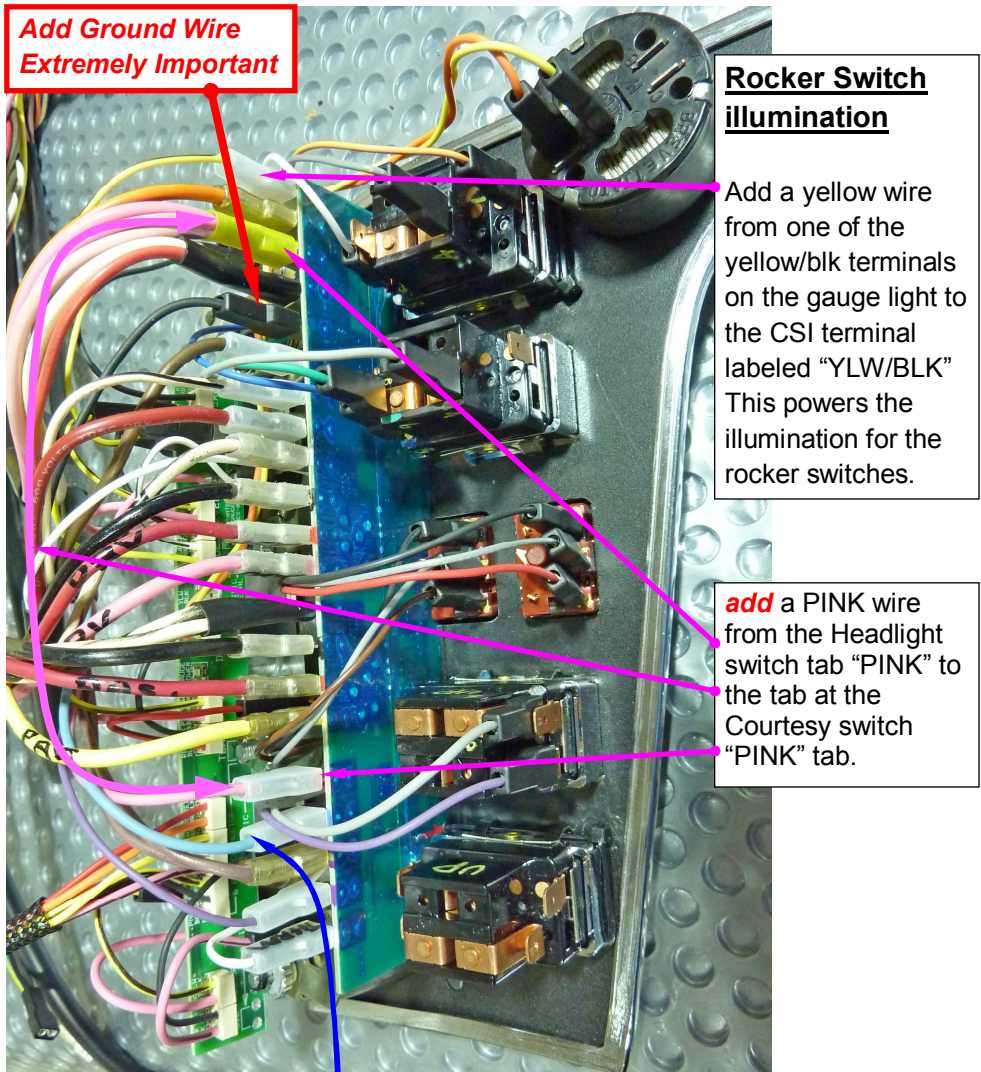
Add Ground Wire Extremely Important

Rocker Switch illumination

Add a yellow wire from one of the yellow/blk terminals on the gauge light to the CSI terminal labeled "YLW/BLK" This powers the illumination for the rocker switches.

add a PINK wire from the Headlight switch tab "PINK" to the tab at the Courtesy switch "PINK" tab.
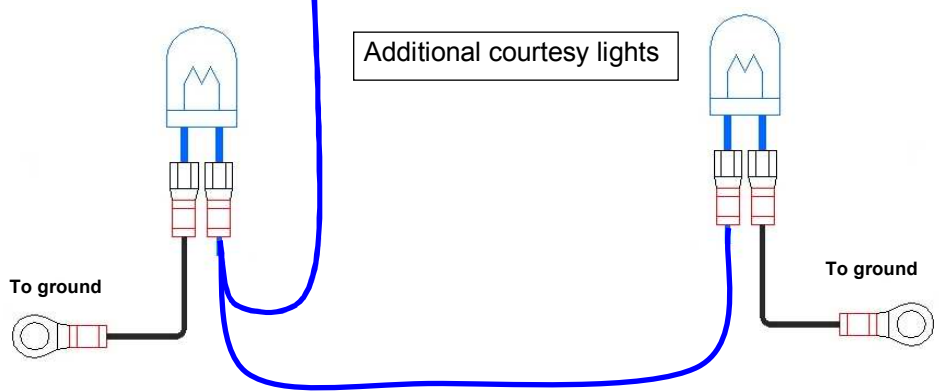
Additional courtesy lights

To ground

To ground

Connecting the Harness to the CSI

YEL/BLK terminal = Gauge lighting, **add** this wire from any gauge YELLOW/BLACK wire to the tab labeled "YLW/BLK".

Headlight Switch Wires:
ORANGE wire = Parking lights, connect to the tab labeled "ORNG"
PINK wire = +Power, connect to the tab labeled "PINK"
WHITE & RED wires = Headlights and lift motor, connect to the tab labeled "WHT/RED"

Ground Wire: (is not in the harness with any switch wires)
BLACK terminal = Ground, **add** a 18 AWG wire from any gauge BLACK wire to the tab labeled "BLACK".

Fan Switch Wires:
BROWN wire = +Power, connect to the tab labeled "BROWN"
WHITE/BLACK wire = Indicator in the speedometer, connect to the tab labeled "WHT/BLK"
RED or ORANGE = Fan motor, connect to the tab labeled "RED"

Driver Side Window Switch Wires:
WHITE/BLACK wire = Ground, connect to the tab labeled "WHT/BLK"
BLACK wire = Window motor, connect to the tab labeled "BLACK"
RED wire = Window motor, connect to the tab labeled "RED"
PINK/BLACK = +Power, connect to the tab labeled "PINK"

Passenger Side Window Switch Wires:
WHITE/BLACK wire = Ground, connect to the tab labeled "WHT/BLK"
BLACK wire = Window motor, connect to the tab labeled "BLACK"
BROWN wire = Window motor, connect to the tab labeled "BROWN"
YELLOW = +Power, connect to the tab labeled "YLW"
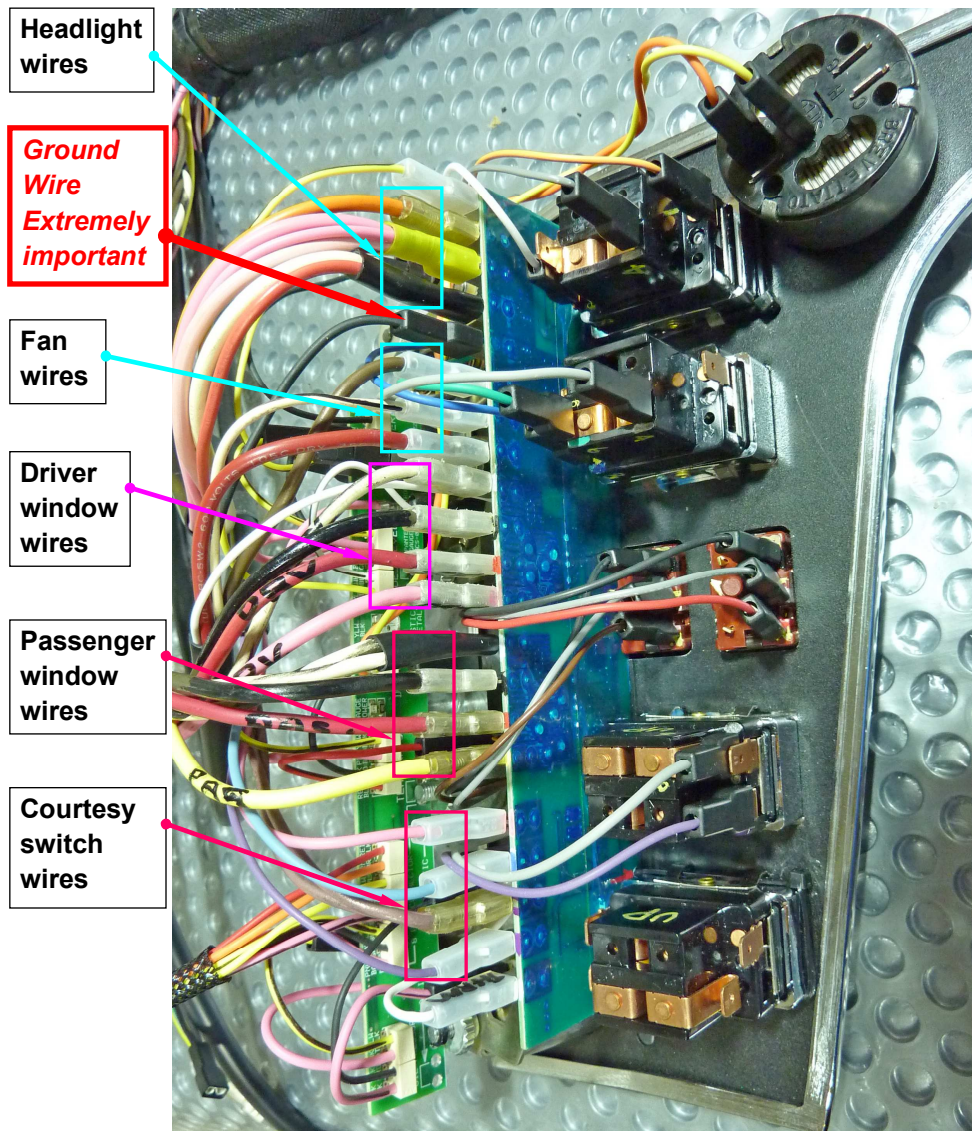
Courtesy Switch Wires:
WHITE/BLACK wire = +Power connect to the tab labeled "WHT/BLK" "FUSE #8"
BLUE wire- **Adding Courtesy Lights**
2 VIOLET wires in one terminal = connect to tab labeled "2 VIOLET" "DR-SW"
VIOLET wire = connect to tab labeled "1VIOLET" "Dome"
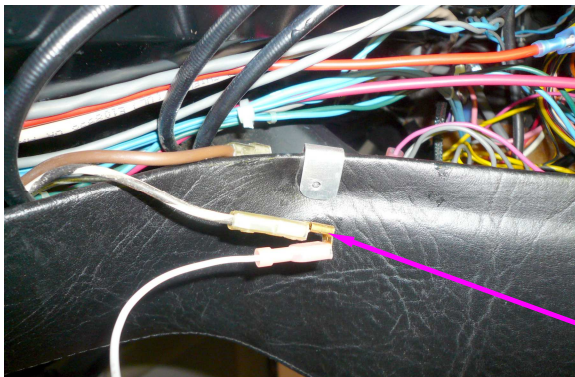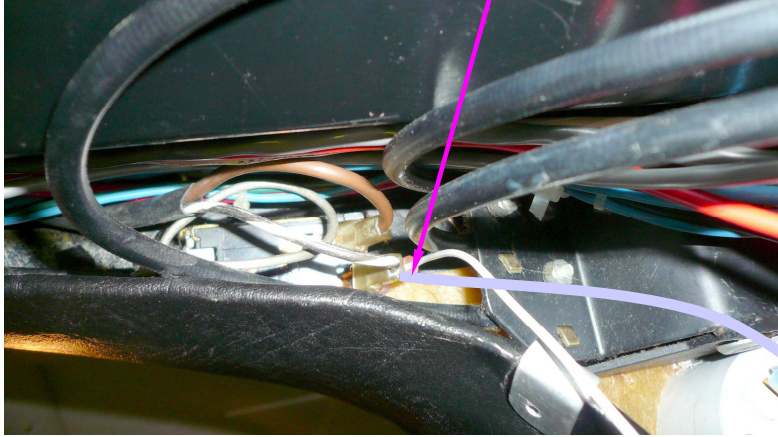
Extra Fan Control Wire:
WHITE/BLACK wire = connect to the tab labeled "WHT/BLK" "THMST"
**(see notes on page 10)**

Adding Courtesy Lights: A number of courtesy lights can be added either incandescent or LED types by connecting one wire to the CSI board and chassis ground. Install a courtesy light, connect one wire to chassis ground, usually this is a BLACK wire from the light housing. Crimp the other courtesy light wire to a length of 18 AWG BLUE wire and crimp a quick disconnect to the other end of the BLUE wire and connect to the tab labeled BLUE on the CSI board. Several courtesy lights can be added to the tab on the board and more than one wire can be added to a blue quick disconnect terminal as well.

Headlight wires

Ground Wire Extremely important

Fan wires

Driver window wires

Passenger window wires

Courtesy switch wires

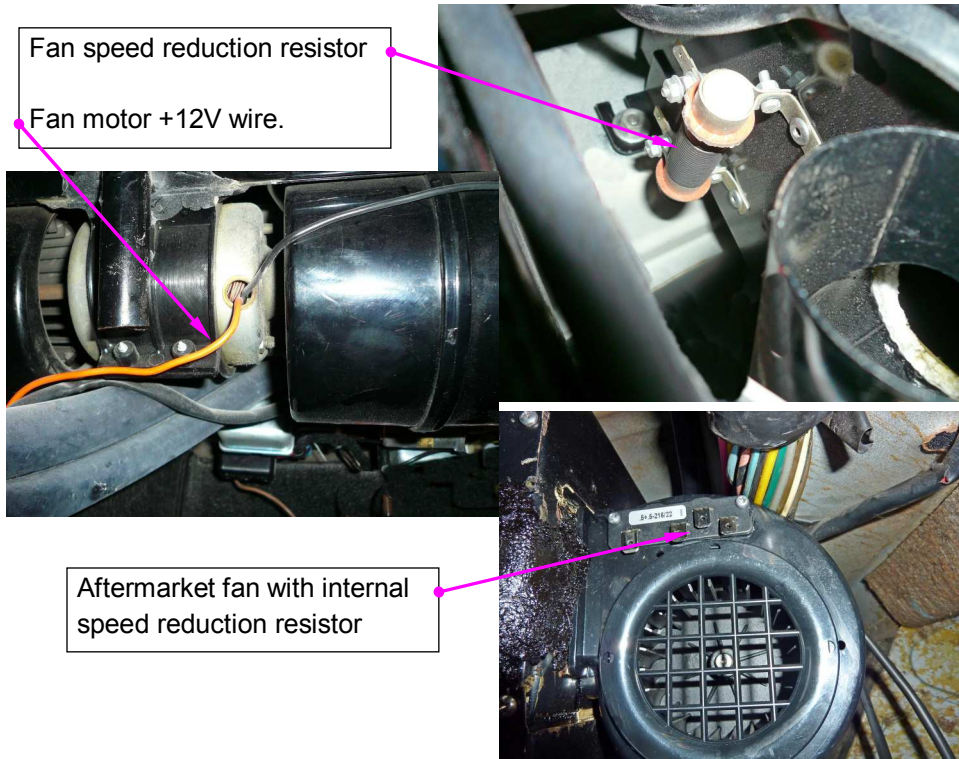Connect the "THERMOSTAT" tab to the white/black wire on the A/C thermostat control.

Use a piggyback terminal to make the connection to the thermostat control.
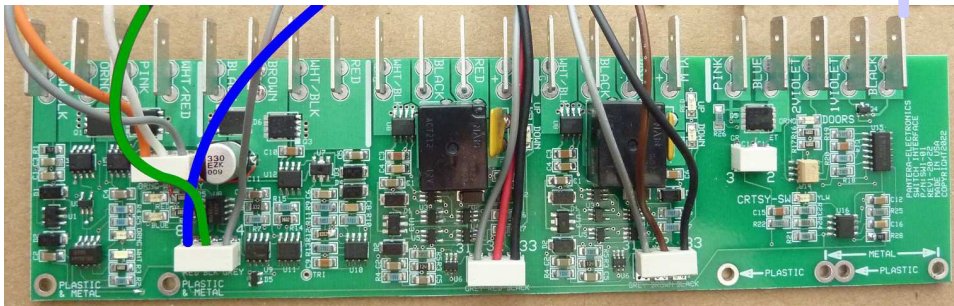
Important Notes:
Fan Motor Rewiring:
The fan motor has a speed reducing resistor that is not used with the CSI.
It can be left mounted on the motor but disconnected from the fan motor.
The fan motor has 2 wires, one is ground and the other is for +12V. Usually this wire is red orange or blue. This is the wire that connects to the CSI tab labeled "RED" in the fan wire group.

Fan speed reduction resistor

Fan motor +12V wire.

Aftermarket fan with internal speed reduction resistor

Very Important:

The window motor lift mechanism is assumed to be operating correctly and the motor gearbox has been up-graded with the brass gear replacement, cleaned and lubricated. The window regulator bearing points have been cleaned, lubricated and rust removed. This maintenance is a must for proper operation with the CSI. Over-loading the motor will cause the automatic current sensing to shut off the motor if the proper maintenance is not preformed.
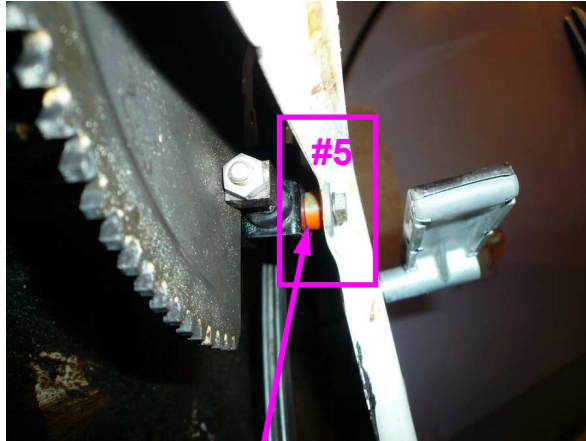
Use a current meter to measure the motor current after improving the window regulator. As a reference motor current for window "DOWN" is 5 to 6 amps and for window "UP" is 10 to 11 amps maximum.
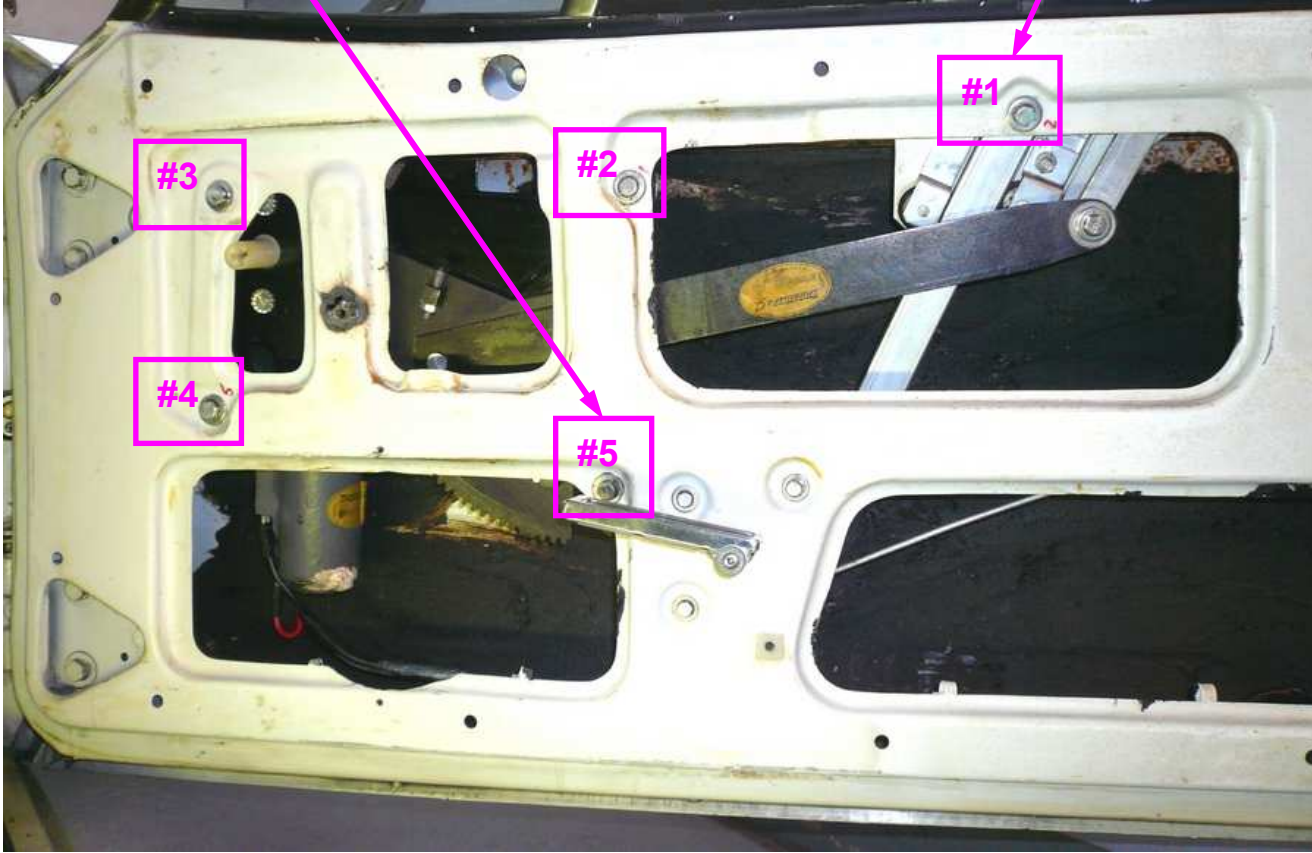
These are the bolts that mount the window regulator to the door frame, numbered 1 through 5.

#1

#2

#3

#4

#5

#5

Add 0.25" thick spacer between the vertical guide rail and the door in position #1 and #5.

#1

It's absolutely critical to verify that the windows regulators operate with the least amount of resistance as the windows move throughout the full travel. The CSI senses high motor current to stop the window as it hits the end stops. If the regulator has too much resistance to movement, the CSI will detect the increased current and stop the window after the switch is activated.

The glass has a curvature that should match the frame of the door as close as possible. To reduce the resistance, spacers 0.25" thick were installed between the door sheet metal and the window regulator mechanisms. Bolts #5 and #1 have the spacers and the other bolt locations do not. This may vary from car to car but by experimentation you should be able to determine which locations work best for your doors.

After installing spacers test the speed of the window, the faster the operation, the lower the resistance. 6mm washers can be stacked to get the desired thickness as an option to using spacers.

CSI Indicators:

There are board mounted indicators for the rocker switches and window switches. These are to detect when a switch is not functioning or incorrect at installation.
The CSI has circuitry that allows rocker switches to operate even with contacts that are worn and consumed from years of use. But rocker switches can be in such poor condition that it causes the indicator to flicker when turned ON. This means the rocker switch contacts are defective and may not function properly with the CSI. When checking for indicators make sure they do not flicker.

Headlight Rocker Switch Indicator:
Orange light indicates parking light contacts.
White light indicates headlight contacts.

Fan Rocker Switch Indicator:
Green light indicates increasing speed contacts.
Blue light indicates decreasing speed contacts.

Courtesy Light Rocker Switch Indicator:
Yellow light indicates rocker switch contacts.
Orange light indicates either door switch contacts.

Window Switches Indicators: (both)
Yellow light indicates window down contacts.
Red light indicates window up contacts.

> ***Important:***
> *After installation, make sure the battery is at full charge before testing the Console Switch Interface. In order for the Console Switch Interface power window controls to function properly the battery voltage should be at maximum or the engine running to keep the battery charged during testing.*

Testing:

Note: The CSI status indicators are located relative to the wire connected to the terminal for that function.

1. Re-connect negative or ground cable battery.

2. Press the headlight rocker switch to the Parking lights position, center position. The orange indicator should illuminate and the parking lights should be "ON".

3. Press the headlight rocker switch to the headlight position, far right position. The white indicator should illuminate and the headlights should be "ON".

Testing continued:

4. Fan switch in the left position the fan should be "OFF".

5. Turn the A/C thermostat "ON" and the yellow indicator should be illuminated. The fan should operate at low speed.

6. Fan switch in the center position the green indicator should be illuminated. The fan should operate at medium speed.

7. Fan switch in the right position the blue indicator should be illuminated. The fan should operate at high speed.

8. Momentarily press the driver power window switch, note that the YELOW indicator illuminates for window DOWN and RED indicator for window UP.

If the window only moves in small increments without complete travel then check window regulator for a mechanically binding condition.

9. Momentarily press the passenger power window switch, note that the YELLOW indicator illuminates for window DOWN and RED indicator for window UP.

If the window only moves in small increments without complete travel then check window regulator for a mechanically binding condition.

10. With the courtesy rocker switch in left position, open either door, the orange "DOORS" indicator and the courtesy lights should be "ON".

11. Press the courtesy rocker switch in center position the yellow "CRTSY-SW" indicator and the courtesy lights should be illuminated.
Note: Some LED replacements for incandescent blubs may not dim or ramp up and down in intensity. This is due to the internal design of the LED bulb.

12. Open either door and the orange "CRTSY-SW" indicator and the courtesy lights should be illuminated. Open the other door and the orange "CRTSY-SW" indicator and the courtesy lights should be illuminated.

13. Activate the parking lights and check that the green lights are "ON" that illuminate the rocker switches.

14. Testing complete.

Gauges other than Veglia

Other gauges can be used with the CSI but clearance for the components might have to be made. These are Autometer gauges installed and one place required clearance.
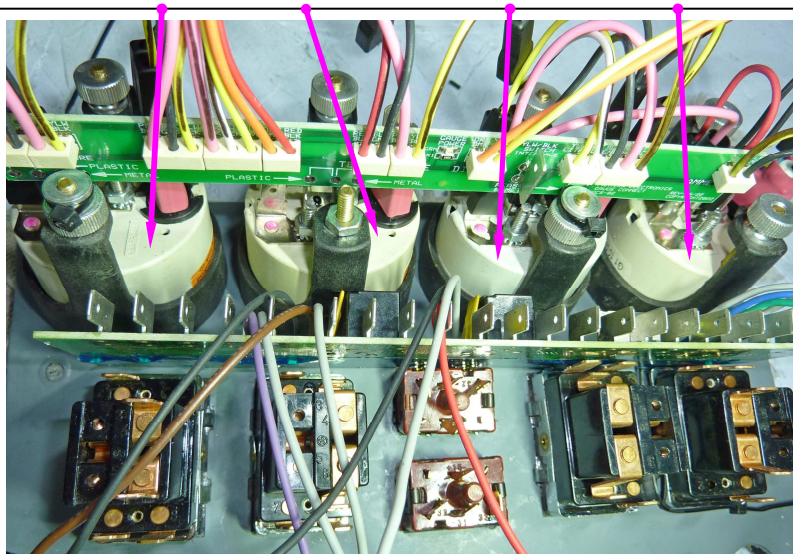
The gauge mounting bracket interferes with a component on the board. Since the gauge brackets are large just some grinding is needed to remove plastic from the bracket.