



# American Autowire

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# 1970-72 Chevelle (510030) Gauge Cluster Kit Installation Instructions

## Important facts about this kit.

1. The dash panel used in this picture is used by permission of Covan's Classic.
2. This kit requires some modification to your original under dash wiring harness. It is not intended to be a complete plug and play interface. We strive to make the integration of this product as easy as possible. However, in many cases there are no mating connectors due to obsolescence of original factory connectors. This requires substitution of components that will require modifications on the part of the installer.
3. As mentioned throughout the documentation included here, it is important to read the instructions that come with the gauges. This is important to identify the type of gauge used and any special requirements the manufacturer may have for installation.
4. This harness is designed to be used for Autometer Series I and Series II short sweep gauges. The harness is not compatible with Autometer full sweep gauges as they include their own sender harness assemblies. This harness assembly addresses connection of the water temperature, oil pressure, fuel, voltmeter, speedometer, and tachometer gauges, as well as indicator lights for turn signals, high beam lights, and emergency brake (if originally equipped).
5. Vehicle grounding and specifically instrument panel grounding are extremely important to the operation of you gauges. Check your grounds as this is the most common problem concerning proper operation of your gauges.



**STEP 1:**

Install the blade terminals to the back of each of the 4 small gauges one at a time by removing the existing nut and lock washer, installing the correct blade terminal, and reinstalling the lock washer and nut.



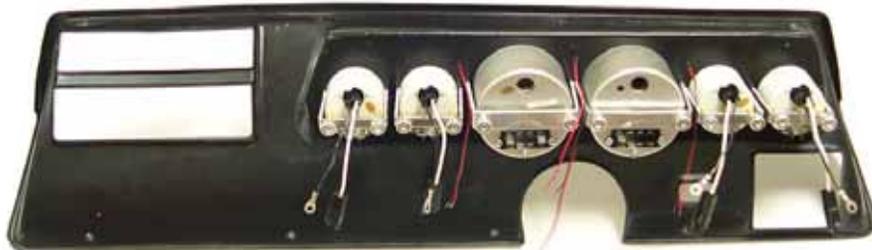
**NOTE1:** There are specific left, center, and right hand terminals. Install as shown in the photo.

**NOTE2:** The voltmeter uses the 'GRD' & 'I' terminal locations only.



**STEP 2:**

Plug the appropriate lamp socket pigtails into the 4 smaller gauges. This picture shows the lamp socket on a Series I gauge. Series II gauges have an integral blade terminal for the lamp power and ground connection.



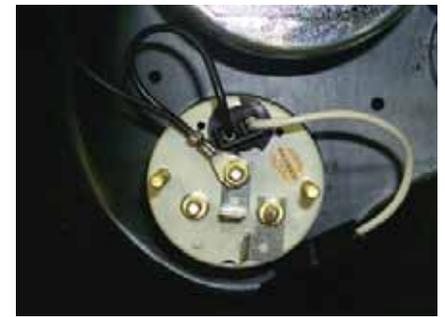
**STEP 3:**

Insert gauges into housing, in locations of your choosing. Install mounting clips on tachometer, speedometer, and all small gauges.

**STEP 4:**

Drill 4 mounting holes for LED's, using 5/32" drill bit, at desired locations. Insert LED's in hole from front of panel.

**NOTE:** The LED housings are a taper fit into the hole. Press the LED housing all the way in to tighten against the instrument panel.



**STEP 5:**

Connect the black ground wires from the lamp pigtails to the center ground studs of the smaller gauges as shown.

**NOTE 1:** This picture shows connection of individual light sockets as would appear on Series I gauges. The speedometer and tachometer have separate twist-in light sockets.



**NOTE 2:** This picture shows connection of lighting as would appear on Series II gauges. A separate blade terminal for power and ground exists for the internal lighting. The speedometer and tachometer have a specific lamp terminal within the 8 cavity plug.



**STEP 6:**

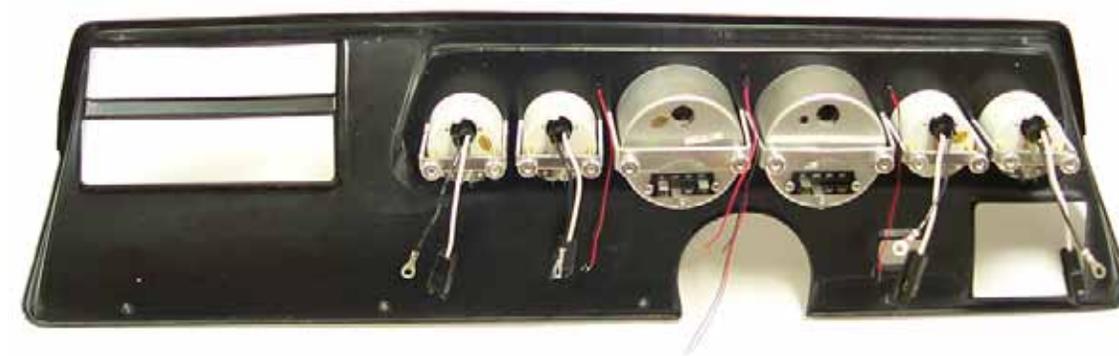
Connect the black ground wires from the lamp pigtails to the center ground studs of the smaller gauges as shown.

**NOTE:** The speedometer lamp ground and the tachometer lamp ground wires will connect on the ground studs of one of the smaller gauges located closest to the gauge as shown.



**STEP 7:**

Completed assembly ready for the connection of the wiring harness.



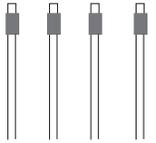
**LONG BARE LEADS**

lt green: connect to hi beam LED red lead  
 black: connect to hi beam LED black lead

lt blue: connect to LH turn LED red lead  
 black: connect to LH turn LED black lead

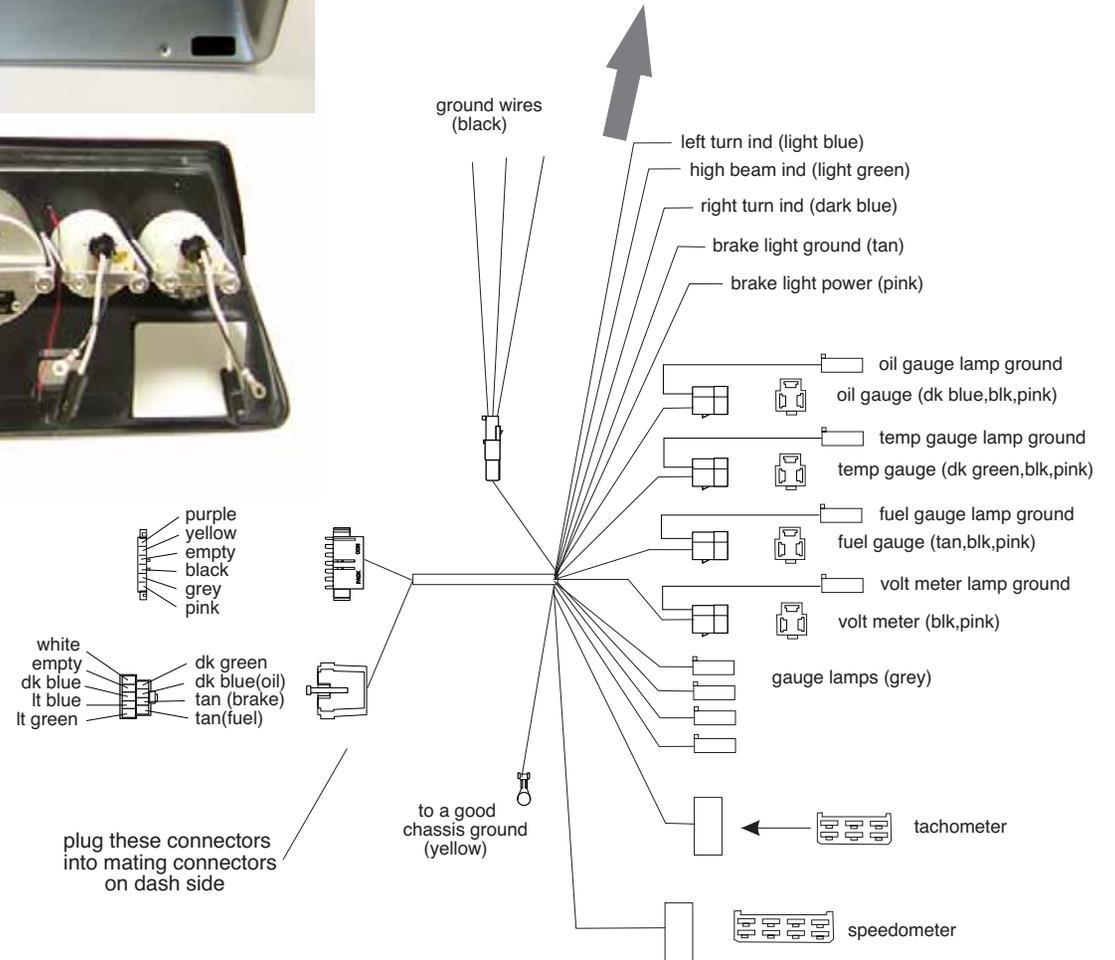
dk blue: connect to RH turn LED red lead  
 black: connect to RH turn LED black lead

tan: connect to the brake LED black lead  
 pink: connect to the brake LED red lead



**STEP 8:**

The diagram at the right shows the basic configuration of the supplied instrument cluster harness which will be used in the following steps to complete the installation of the instrument cluster assembly.

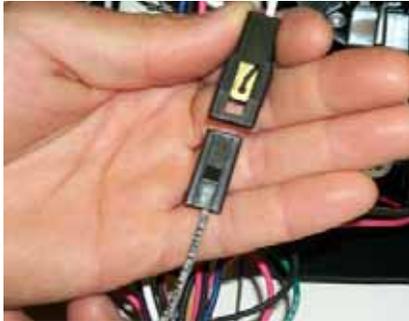




**STEP 9:**

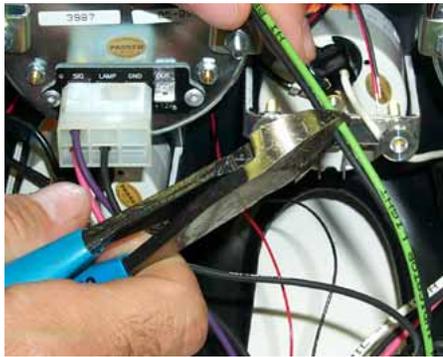
Plug in gauge connections, using supplied connectors, in the order shown below. (Typical plug-in shown in picture.)

- 1. FUEL pink / black / tan
- 2. TACH pink / black / white
- 3. TEMP pink / black / dk green
- 4. OIL pink / black / dk blue
- 5. VOLT pink / black
- 6. SPEEDO pink / black / purple



**STEP 10:**

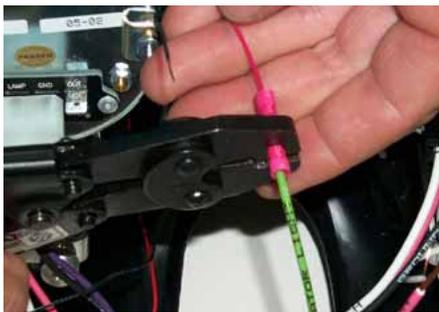
Plug each lamp power wire (white) into the mating connectors on each gray wire (DASH LIGHTS) on the new harness, as shown.



**STEP 11:**

Select an LED lamp from the panel, and attach the appropriate power lead wire from the harness, as noted below, to the LED red lead wire from the panel. Trim the wires from the harness to the desired length before applying butt connectors and crimping.

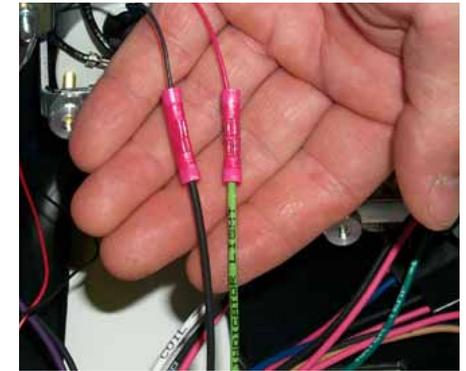
LED color	function	gauge harness signal lead color
blue	hi-beam	light green
red	brake	pink
green	left turn	light blue
green	right turn	dark blue



**STEP 12:**

Match the black wires from the LED lights identified in STEP 12 with the black ground wires from the gauge harness for all LED lights except the red brake warning LED. The brake warning LED light requires a separate ground which connects to a switch located on the emergency brake pedal assembly.

Select the red brake warning LED lamp and attach the tan brake signal ground wire (tan wire with no printing) to the LED black lead wire from the brake warning LED light in the panel. Trim the wires from the harness to the desired length before crimping.



This is a completed LED splice for the high beam indicator.

**STEP 13:**

The speedometer connection has a separate long yellow wire with a ring terminal on the end. This wire is twisted around the purple vehicle speed sensor lead that is plugged into the speedometer connector. The purpose of this wire is to cancel out any signal interference to the speedometer and must be grounded to a good chassis ground after the instrument cluster is finally installed.

**STEP 14:**

This completes the wiring of the gauge cluster. The next steps involve the preparation of the under dash harness to incorporate the mating plug connection for the gauge harness disconnect. There are two different instrument cluster designs for the 1970-72 Chevelle.

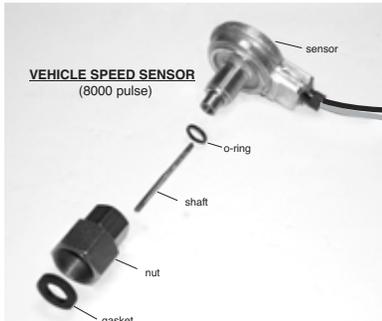
The first design is the sweep dash design found in base level Chevilles. Malibus, etc. that was only available with warning lights for oil pressure, and water temp., and generator.

The second design is the round gauge design found in "SS", Monte Carlo, "Heavy Chevy", etc. cars. This design was available with warning lights for oil pressure, and water temp., as well as factory gauges for tachometer, water temp., and ammeter.

Under dash connections differ for each type of dash design. The following pages will identify the connections for each dash design.

## DASH SIDE CONNECTIONS

The harness diagram below shows the connections that must be made to the vehicle in order to complete the disconnect plug for the new instrument cluster harness. If your existing dash is the round gauge design, proceed to STEP 17. If your existing dash is the sweep dash design continue with STEP 16.



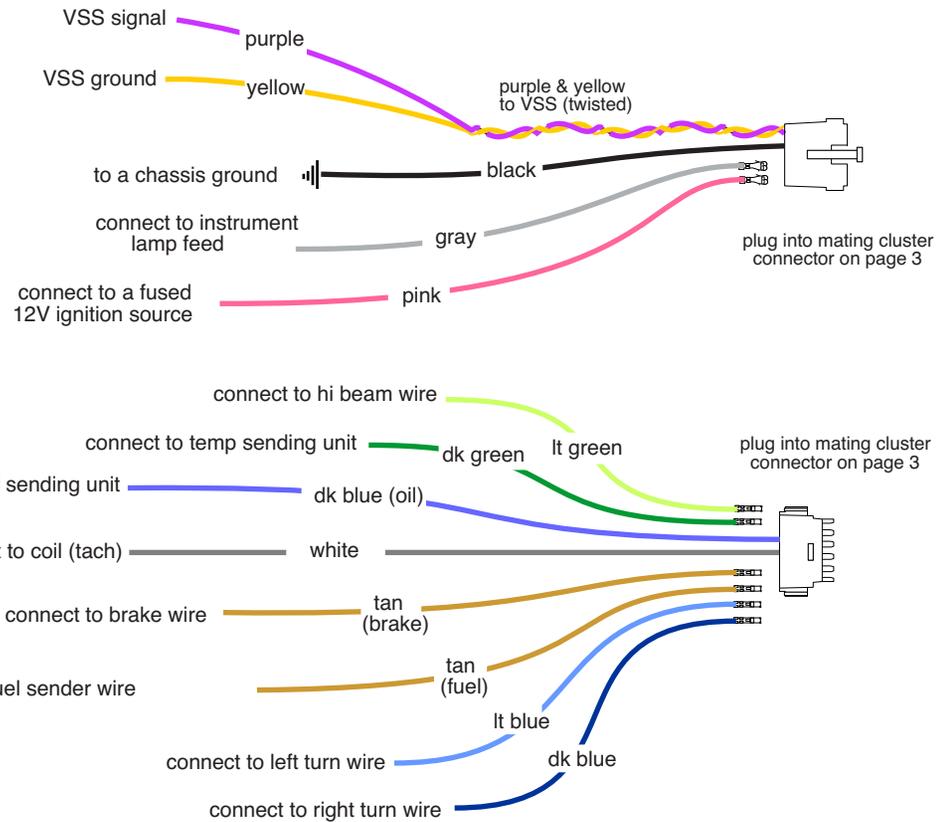
Typical 2 wire VSS connection



Typical 3 wire Autometer 5291 VSS connection

Note:  
This VSS requires a lead wire from the red wire to a 12 volt ignition source. This wire is not included in the kit.

connect to 12 volt ignition source



## STEP 15:

The connections to the dash side of the instrument cluster are shown in this photo. All sweep dash vehicles had warning and indicator lights mounted in either the 3 way or 5 way pods mounted horizontally across the original dash cluster. Each light has a power lead and a ground (signal) lead. In many cases, only one lead is necessary to use from each of the original instrument cluster pods. The bulbs should be removed from the sockets. The following instructions will identify each wire to be used.

### STEP 15a:

Select the three way female fuel gauge connector. Remove the terminals from the connector and install them in the new 3 way female connector supplied in the kit. Identify the tan GAS GAUGE wire, the pink 12V IGNITION feed wire, and the black GROUND wire from the dash side instrument cluster mating connectors. Cut to length and install the supplied male terminals. Install in the supplied mating 3 way male connector being sure to maintain color continuity with the wires installed in the female connector.

### STEP 15b:

Identify the light socket containing the gray and black wires. Remove the gray wire from the light socket and install a single male disconnect terminal. Identify the gray DASH LIGHTS wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal.

### STEP 15c:

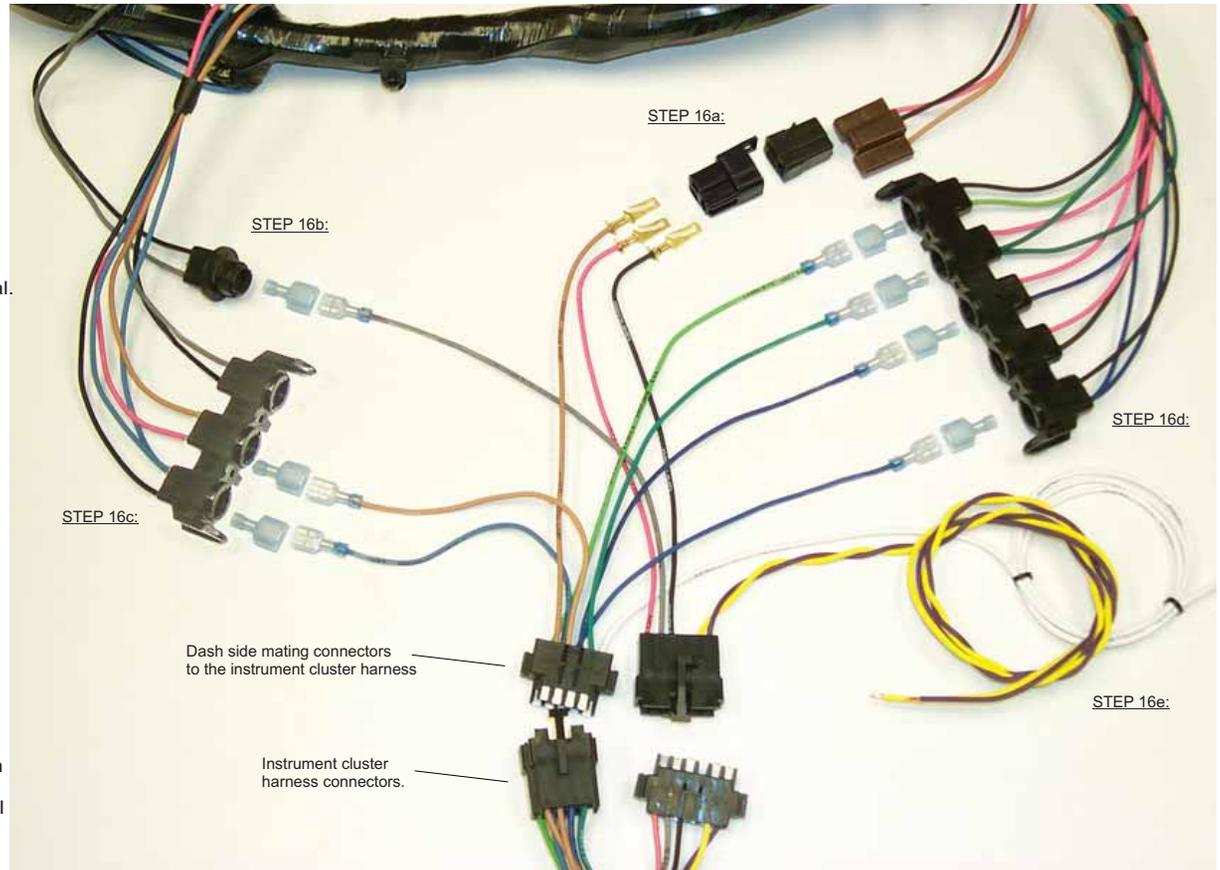
Identify the light socket containing the 3 warning light bulbs. The socket with the gray and black wires contains the column shift indicator light and will not be used. The socket with the pink and tan wires is the brake warning light. Remove the tan wire from the light socket and install a single male disconnect terminal. Identify the tan wire with no printing, cut to length, install the supplied single female disconnect terminal and plug into the male terminal. The socket with the light blue and black wires is the left turn indicator. Remove the light blue wire from the light socket and install a single male disconnect terminal. Identify the light blue LEFT DASH IND wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal.

### STEP 15d:

Identify the light socket containing the 5 warning light bulbs. The socket with the light green and black wires is the high beam indicator. Remove the light green wire from the light socket and install a single male disconnect terminal. Identify the light green HIGH BEAM INDICATOR LIGHT wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal. The socket with the dark green and pink wires is the temp warning indicator light. Remove the dark green wire from the light socket and install a single male disconnect terminal. Identify the dark green WATER TEMP SENDER wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal. The socket with the dark blue and pink wires is the oil pressure warning indicator light. Remove the dark blue wire from the light socket and install a single male disconnect terminal. Identify the dark blue OIL PRESSURE SENDER wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal. The socket with the dark brown and pink wires is the alternator warning light and will not be used. The socket with the dark blue and black wires is the right turn indicator. Remove the dark blue wire from the light socket and install a single male disconnect terminal. Identify the dark blue RIGHT DASH IND wire, cut to length, install the supplied single female disconnect terminal and plug into the male terminal.

### STEP 15e:

The white COIL--TACH wire must be routed to the distributor coil and connected to the "DIST" or "TACH" terminal. The purple and yellow wires are routed to the transmission mounted "Vehicle Speed Sensor". The purple wire is connected to the signal wire and the yellow wire is connected to the ground wire.



Adaptation of original "Sweep Dash" harness to accept disconnect plugs from new Instrument Cluster Harness.

### Note:

There are wires in the original dash harness warning light sockets that are not used in the new installation. In order to provide the best protection for these wires from any possible chassis contact, it is suggested they be left in the original light sock locations and secured back against the dash harness.

#### STEP 16:

All round gauge dash vehicles used a mylar printed circuit board on the back of the original instrument cluster. All connections to the cluster were made through the modular circuit board connector as shown in this photo. As previously mentioned, round gauge dash clusters were available with factory gauges or warning lights. It is important to know which type of original cluster exists in the vehicle as the modifications required to replace the original modular circuit board connector with the new mating connector supplied in this kit differ with each type of original cluster.

#### STEP 16a:

Locate the included chart "1970-72 CHEVELLE DASH PRINTED CIRCUIT CONNECTOR PIN LOCATION CHART".

This chart gives the function, wire color, and pin locations for each wire for either the factory gauge or warning light dashes.

#### STEP 16b:

Using the information on the chart, remove each wire necessary to build the new disconnect plug one at a time. If you are using the wires from your existing instrument cluster connector, use the following instruction sequence for each wire required. Do one wire at a time.

1. Remove the existing wire and terminal from the original modular circuit board connector.
2. Remove the existing terminal.
3. Terminate this wire with a new terminal supplied in the kit. Be sure to check the color continuity in the mating connector to determine the correct terminal to install.
4. Plug these wires into the new mating disconnect connector being sure that color continuity and functionality has been maintained with the instrument cluster mating connectors.

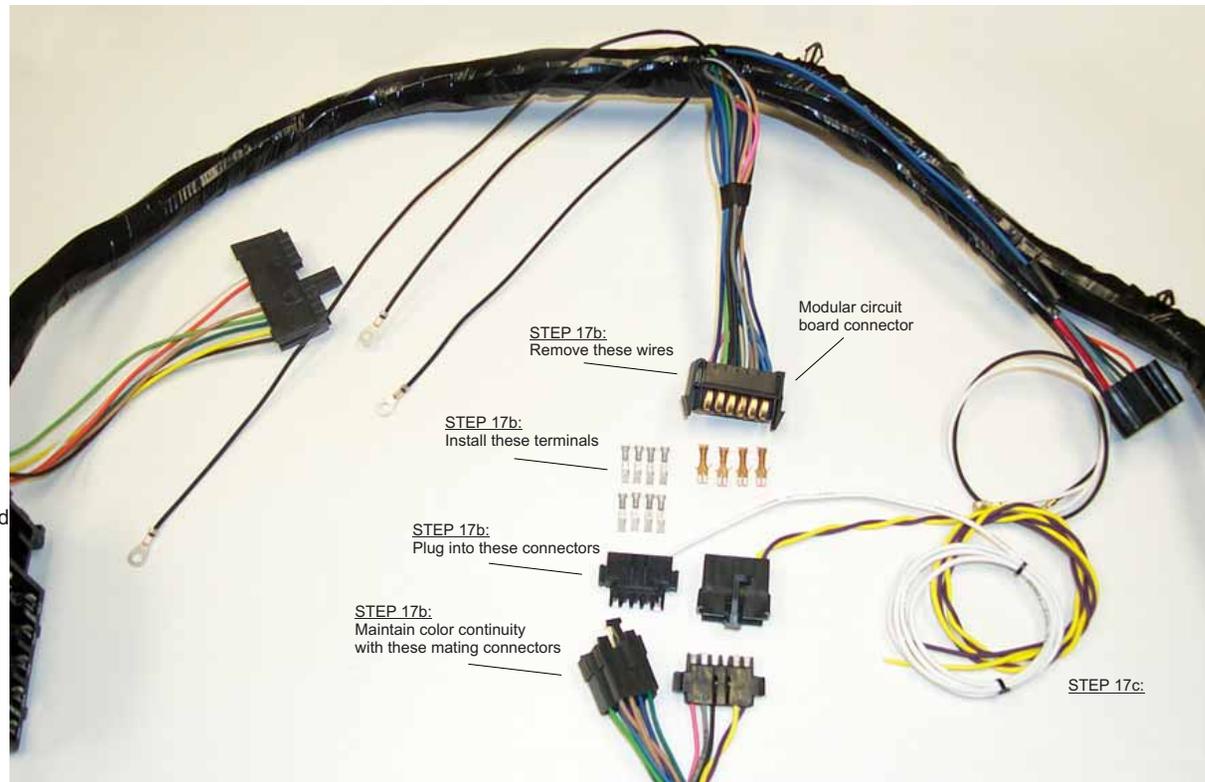
#### STEP 16c:

The white COIL--TACH wire must be routed to the distributor coil and connected to the "DIST" or "TACH" terminal.

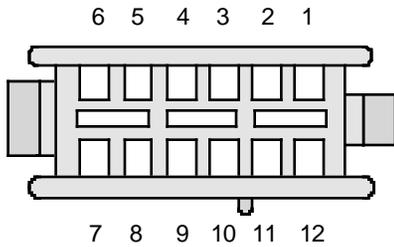
The purple and yellow wires are routed to the transmission mounted "Vehicle Speed Sensor".

1. For the 2 wire VSS supplied in the kit, the purple wire is connected to the black signal wire and the yellow wire is connected to the white ground wire.
2. For the 3 wire Autometer 5291 VSS follow the instructions supplied from the manufacturer. With this VSS, the purple wire is connected to the white signal wire and the yellow wire is connected to the black ground wire. The red wire from this VSS must be connected to a 12 volt ignition source. A wire for this connection is not included in this kit.

Extra wires are provided in the kit if it is necessary to complete the cluster connections.



## Printed Circuit Cluster Connector Pin Locations



## 1970-72 CHEVELLE DASH PRINTED CIRCUIT CONNECTOR PIN LOCATIONS

Circuit NO.	Function	Wire Color	SS warning lights Pin Loc	SS factory gauges Pin Loc	Notes
30	Fuel tank sender	tan	7	11	
39	12 Volt fused power	pink	5	7	
25	Alternator light	brown	3		note 1
33	Brake Warning ground	tan	8	8	
14	Left Turn Indicator	light blue	1	1	
31	Oil pressure sender	dark blue	10	6	
15	Right Turn Indicator	dark blue	12	12	
11	High Beam Indicator	light green	11	5	
8	Instrument Lights	gray	2	2	
35	Coolant temp sender	dark green	9	10	
105	Ammeter	black		4	note 2
106	Ammeter	black / white		3	note 2
121	Tachometer	brown		9	
Notes:					
1	Factory gauges cars were not equipped with an alternator charge light				
2	New gauge clusters use a voltmeter. The original ammeter circuits (105 and 106) will not be used. These wires must be isolated and protected from any possible short to ground before completing installation.				
3	70-71 Chevells require the original grounding wires for the headlight and wiper switches.				
4	72 Chevells have a headlight switch ground terminal as part of the dash harness and a wiper switch ground wire as part of the wiper switch connector.				