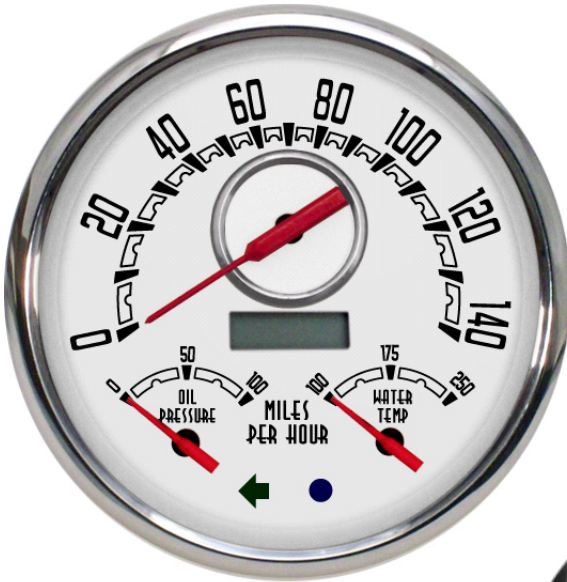




**NEW VINTAGE USA
DETROIT**

**NEW VINTAGE INSTRUMENT AND GAUGE KIT
INSTALLATION INSTRUCTIONS**



**3-1 INSTRUMENT KITS
SPEEDO/TACH KITS
3-3/8" STUDED SPEEDOMETERS**

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Thank you for choosing New Vintage USA products. We strive to provide the finest quality and design components available on the market. If you need technical assistance, please call 248.850.5482 or email info@newvintageusa.com

New Vintage USA 5-Year Warranty

New Vintage USA warrants all merchandise against defects in workmanship and materials for 60 months. After the 60 month period, a pro-rated service fee of no more than 50% production costs may be applied. This warranty applies to all instrumentation products, excluding senders. The warranty does not apply to a product used in a manner for which it was not designed, or if it has been altered in any way.; New Vintage USA LLC is not responsible for any damage or costs associated with any product that has been purchased. This is a limited warranty as identified in the Magnuson-Moss Warranty Act of 1975.

Warranty Service

Service can be obtained during the normal warranty period by contacting New Vintage and obtaining a Return Authorization Number (RZA#). New Vintage will repair or replace any item found to be defective and return ship to no cost via ground or post office services. Other shipping/international services will be applied at additional cost. Buyer is responsible for shipping to New Vintage for warranty repair. Return shipping will be the responsibility of the customer if the product is found to be damaged or out of warranty. An RZA number must be obtained and proper return/warranty form accompanied with the product.

Missing items>Returns

Missing items/returns must be processed within 15 days of end user receiving the product. All returned must be shipped back to the place of purchase. Any return shipping costs to New Vintage are the responsibility of the purchaser. An RZA number must be obtained and proper return/warranty form accompanied with the product. A restocking fee not to exceed 10% may be applied to items that must be repackaged. Any item returned in a non-usable condition will be returned or charged to the customer.

Missing items must be reported within 15 days of receiving the product. Items found to be missing will be shipped via ground or postal service at no charge. Expedited/international shipping options are available at an additional charge. It is the policy of New Vintage to quickly replace any items that may be missing in a timely manner but not to overnight or expedite shipping in any way at no cost.



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BEFORE YOU BEGIN:

Read these instructions completely.

Plan out your wiring scheme ahead of time. Use the included wiring diagrams to help guide your wire routing

Use 14 ga. wire on all connections to sending units.

Use electrical solder and heat shrink tubing or appropriate solder less connectors to make all wiring connections

Disconnect the vehicle's battery

Do not use thread sealer on the sending units, they have a tapered thread

Have a plan. Mock up parts or layout as needed. It takes a little more time, but will save time and money in the end.

Recommended Tools and Materials Needed for Installation

14 and 16 ga. stranded wire
Spade or Bullet connectors
Momentary push-button
Pressure sender for hour meter
Electrical solder (optional)
Heat shrink tubing (optional)
Soldering iron (optional)
Measuring tape or ruler
Engine adaptors for senders
Hole saw
Wire cutters
Wire stripper/crimper
Files
Various hand tools:
wrenches, screwdriver, etc

Installation of gauges:

1. Locate suitable positions for your gauges. Check gauge sizes. Take note of the anti-rotation notches and add this feature where required.
2. Slide gauge through hole and add backing clamp over the retaining studs. Using the included washers and nuts, tighten to a snug fit

Wiring the gauges:

Run the power wiring from the gauges to an appropriate positive (+) on the fuse block after the battery. This applies to the switched 12V+ and gauge lighting

Connect the ground to a good dedicated ground on the chassis

Run each wire to the appropriate sender and use the proper connector for each item (eyelet, spade, etc.) from the sender to the dash. Leave some extra slack in the wire and label it.

Ensure that wires will not chafe on holes by using grommets and that they will clear any moving objects.

Once wires are run from the appropriate sender location to the gauges location, connect to the corresponding wire on the Packard connector with solder and heat shrink tubing or a solder less connector.

Sender installation

You must use senders with the proper ohm match for your gauge, using mis-matched senders will result in improper readings on your gauge.

Water temperature 29.5-450ohm

The water temperature sender has a 1/8 NPT end. It should be installed close to the thermostat on the intake manifold. There are usually ports for temperature on the block in the water jackets, which can be used as well.

Oil pressure. 240-33ohm

The sender has a 1/8 NPT end on it. Check for your factory location for a pressure port and install.

Fuel level

This kit has several fuel level options, check your application for proper match before installing.
240-33: universal with sender
0-90 GM match Early 60s-late 80s
73-10 Mid 60s to late 70s Ford/Chrysler

Voltmeter

The voltmeter does not use a sender but picks up the voltage from the wiring harness (see wiring diagram)

SPEEDOMETER OPERATION

Your new speedometer features the latest in technology and advanced features for reliable operation, long service life and ease of installation. Read the entire operations manual before starting.

SPEEDOMETER SIGNAL:

This speedometer will function from any pulsed signal or waveform signal. This includes aftermarket speed senders, pulse generators, VSS, or any original equipment speed sender installed in the OE transmission. GPS speed senders will also operate the speedometer properly.

SPEEDOMETER SUPPLEMENTAL

Please review advanced speedometer functions in the back of this manual for further information on the speedometer.

SETTING THE SPEEDOMETER

Typically the speedometer is set using a drive a mile to calibrate function. Setting via drive a mile is as follows:

Calibrate (Drive A Mile)

Use the Drive A Mile function to calibrate the Speedometer. With the vehicle stopped and engine off, press the remote button while starting the engine. The display will show the SETUP menu after the self test is performed.



A short press of the remote button will cycle display. Press again until the display shows the Drive a Mile calibration screen.



A long push of the remote button will make the Speedometer go into the calibration mode. The screen will change and a group of numbers will be displayed and will flash. These numbers represent the current pulses per mile and will change after calibration.



Press the remote button and the screen will change to the starting position.



Drive a mile. Stop the vehicle. Press the remote button again. Restart engine. The Speedometer is calibrated.

The Speedometer has two modes “NORMAL” and “SETUP”. “NORMAL” operation has two functions, “Trip” and “Odometer”. The “trIP” mode is initially set. To switch between them, momentarily press the external button.

Trip “trIP”



Odometer “OdO”



In the Odometer mode the displayed mileage is in miles.



In Trip mode the displayed mileage is in tenths.



Reset the Trip Odometer

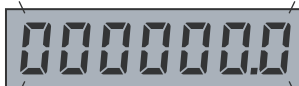
Hold the button down while the display is in “TRIP” mode,



the display will show “rESEt”



and will then show the trip mileage flashing.



A short button push will reset the trip mileage to zero, and a long push will return to the “ODO” mode with no change. After the trip is cleared, a long push will return to “ODO” mode.



TACHOMETER OPERATION

Your tachometer is designed using the latest technology for years of trouble free, accurate service. Review the wiring diagram for proper operation and cylinder selection.

CYLINDER SELECTION

Use the jumper wire (violet) on the P2 connector to connect to the proper wire for cylinder selection. Connect it to the P@ connector wire color as follows:

4 CYL: BR/BLK

6 CYL: BLUE

8 CYL: YELLOW

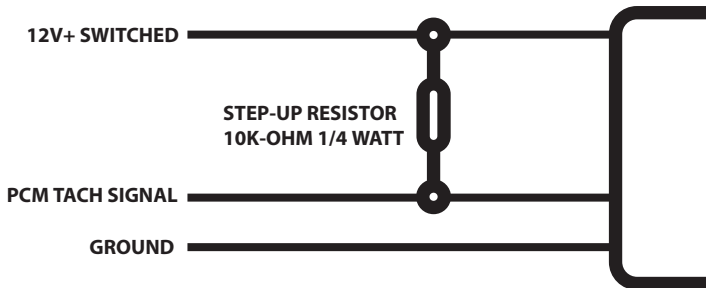
TACHOMETER SIGNAL

This tachometer will function from any pulsed input from any signal source. General connections are as follows:

Standard ignition systems: Connect input to negative (-) side of the coil

CDI or ignition boxes: Connect to the tach output on box or follow manufacturer's instructions.

PCM/ECU/Computer: Connect to tach signal output on box. On some outputs a very low output is used, a step-up resistor may be required see diagram below.

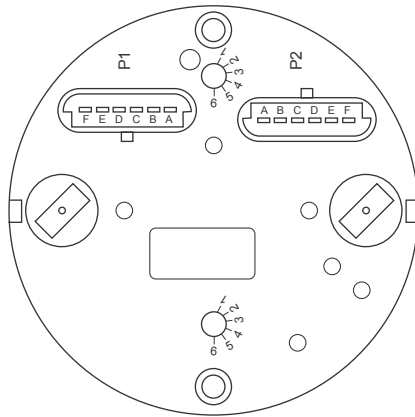


LIGHTING AND INDICATOR LAMPS

The gauges feature incandescent perimeter lighting or LED bulb lighting. Both are replaceable with 194 type bulbs. Wire according to diagram. LED lights are dimmable with LED dimmer 99003-04 available at most NVU retailers.

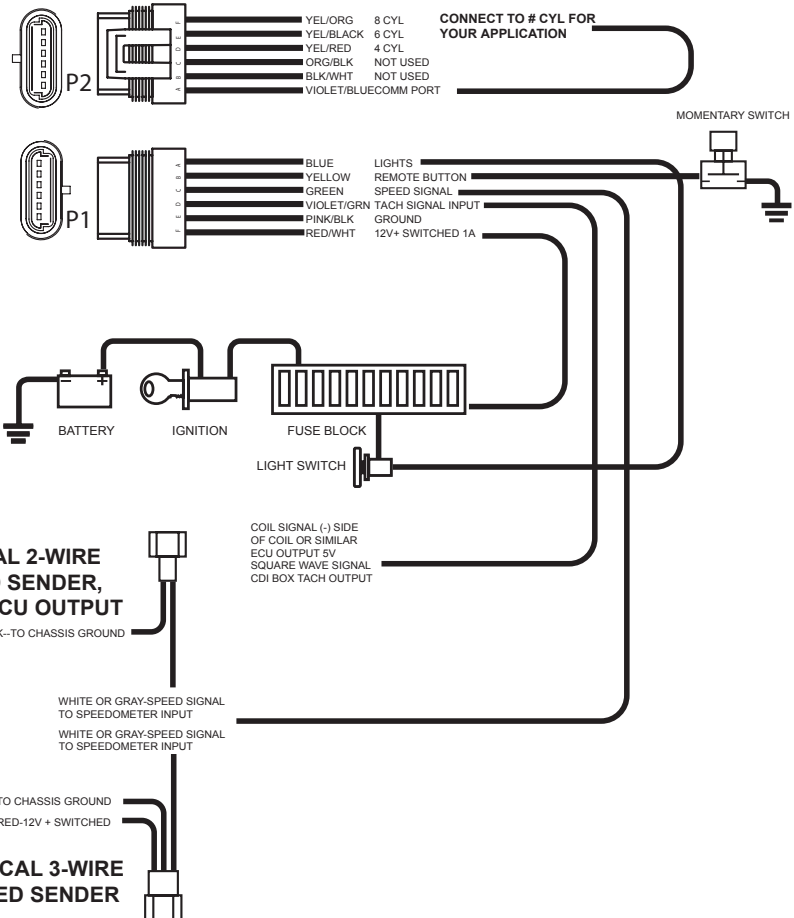
The indicator lamps are LED mounted inside the gauge and are not replaceable. All indicators are triggered by 12V+ and have a common internal ground.

Packard Connection Case-4-3/8" 3-1 and speedo/tach

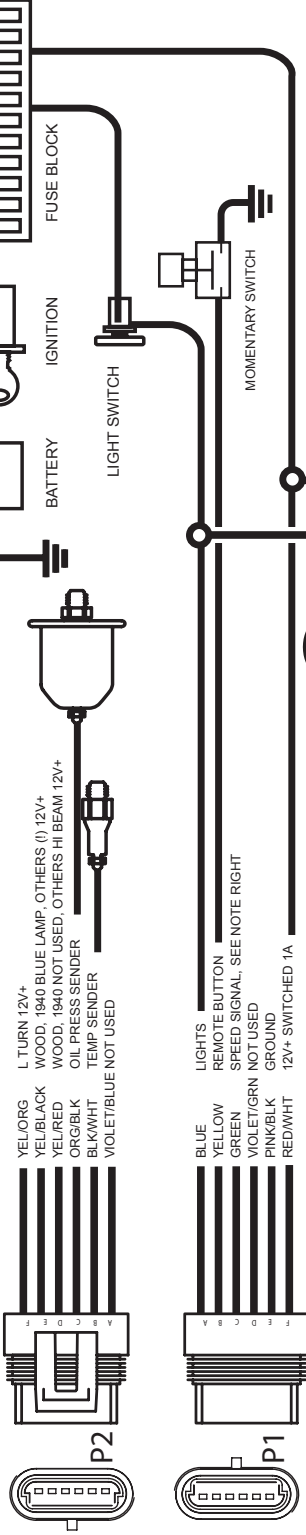


4-3/8" SPEEDOMETER/TACHOMETER COMBINATION GAUGE

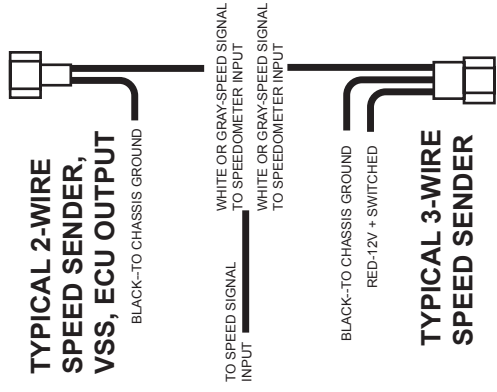
SPEEDOMETER TOP VIEW



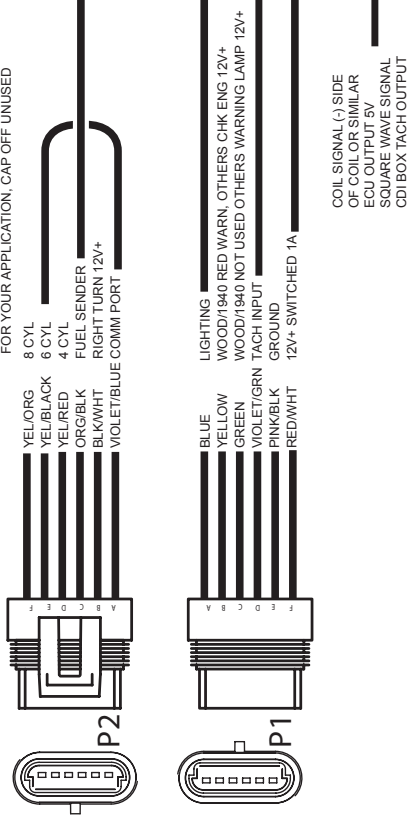
SPEEDOMETER TOP VIEW



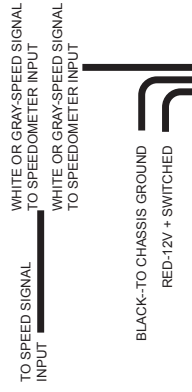
TYPICAL 2-WIRE SPEED SENDER, VSS, ECU OUTPUT



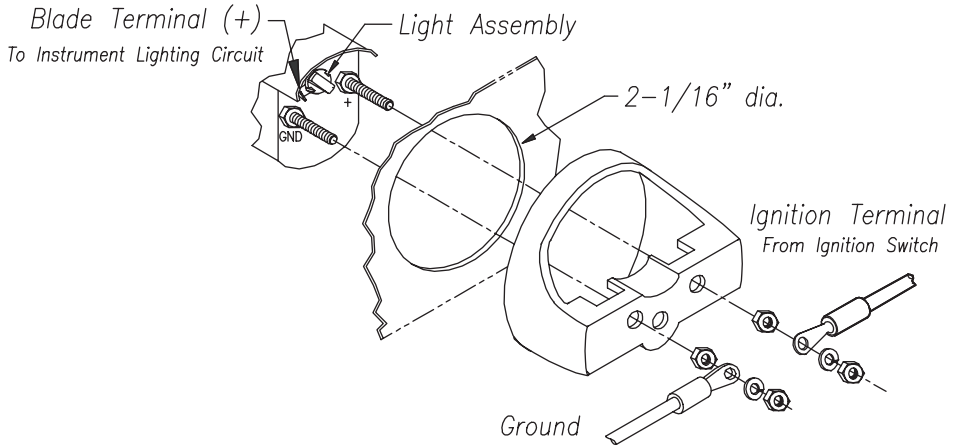
TACHOMETER TOP VIEW



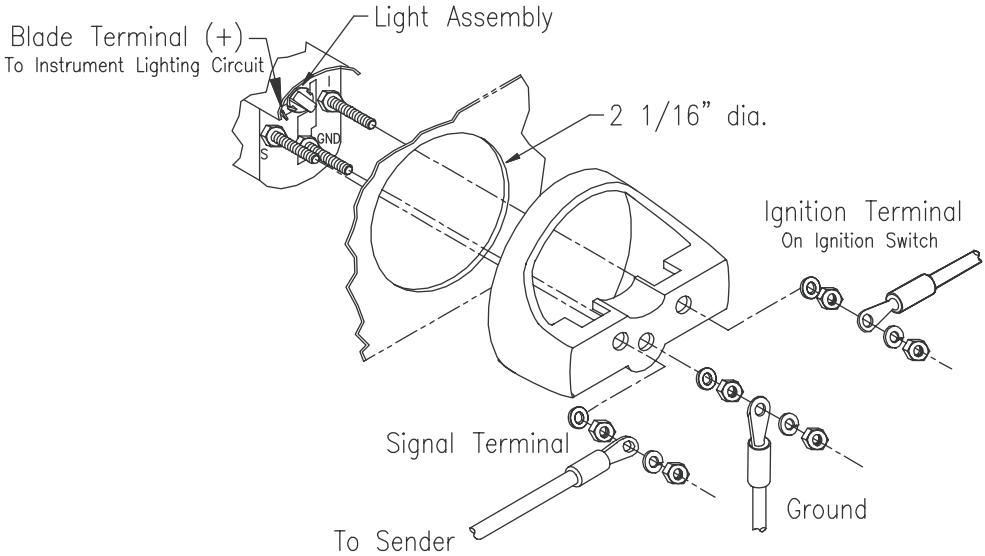
TYPICAL 3-WIRE SPEED SENDER



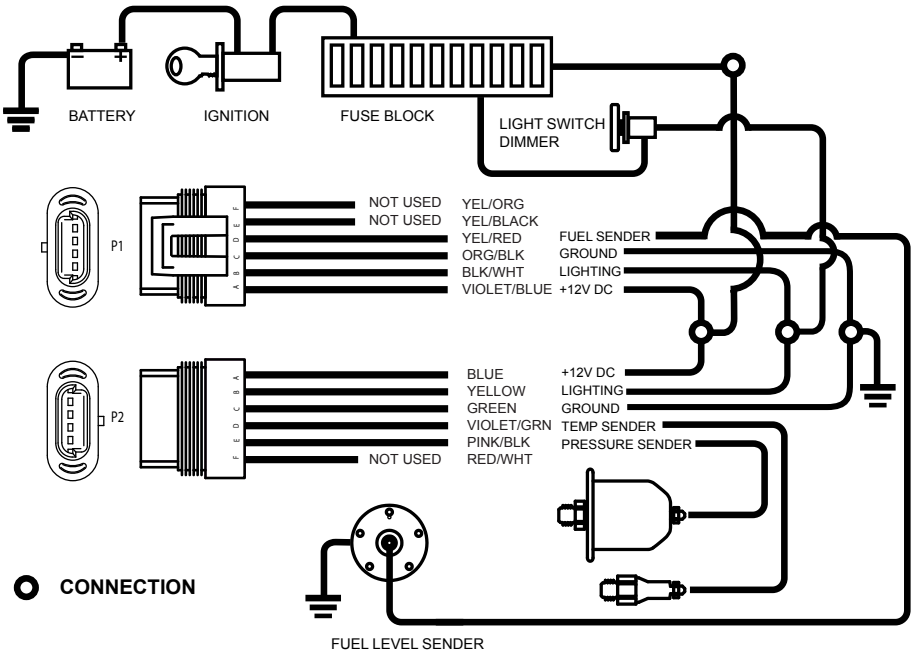
VOLTMETER AND CLOCK INSTALLATION 2-1/16"



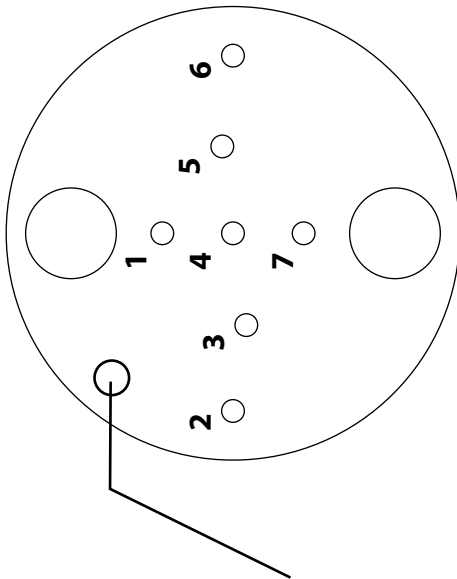
PRESSURE, TEMPERATURE AND LEVEL GAUGE INSTALLATION 2-1/16"



4-3/8" QUAD GAUGE WIRING



3-3/8" DUAL GAUGES



STUD ON MODELS SO EQUIPPED: 12v+ TURN SIGNAL

INCANDESCENT LIGHTING:

194 BULB IN TWIST-OUT HOLDER

VOLTMETER SOURCE INTERNAL TO GAUGE NO CONNECTION

DUAL GAUGE WIRING

VOLT/PRESSURE:

1. 12V LIGHTS
2. PRESSURE SENDER
3. NO CONNECTION
4. GROUND
5. NO CONNECTION
6. NO CONNECTION
7. 12V SWITCHED

TEMP/PRESSURE:

1. 12V LIGHTS
2. FUEL SENDER
3. NO CONNECTION
4. GROUND
5. NO CONNECTION
6. TEMPERATURE SENDER
7. 12V SWITCHED

PROGRAMMABLE SPEEDOMETER SUPPLEMENTAL

This portion of the manual goes through the various advanced features of the programmable speedometer. The speedometer has 2 modes in which it operates, NORMAL and SETUP.

Setup

To get into "SETUP" mode, hold the button down while powering up until the display shows "SET UP".



In the "SETUP" menu, a short button push will cycle through the selections; "CAL", "SIGnAL" and "PrG". A long push will select the function shown in the display.

CAL



"CAL" will allow you to set the Pulse Per Mile (PPM). Press the button with a short push. The display shows "SET".



After 3 seconds the display changes and shows the Pulse Per Mile display.



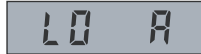
Each digit will flash and a short push will increment it. Wait 3 seconds and the next digit will flash. This will continue for all digits and start over. When you are done setting the PPM, a long button press will save it and return to the main "CAL" menu.



SIGnAL



"SIGnAL" will allow you to set the speedometer input sensitivity, low ("LO A"), medium ("b") or high ("HIGH C").

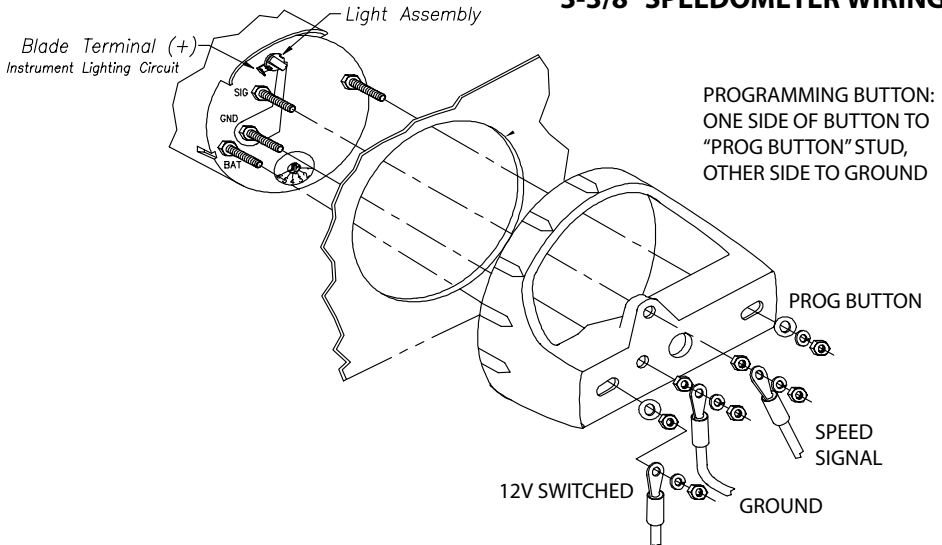


Note - Setting "b" is appropriate for most applications

A short button push will cycle through the three options and a long push will save the setting and return to the main "SIGnAL" menu.



3-3/8" SPEEDOMETER WIRING



GENERAL GAUGE TROUBLESHOOTING

Before you call, please check these items, they are sometimes obvious, but in the large scope of a build, sometimes can be missed.

Double check grounds! Instruments operate on resistance to grounds. The connections should be secure, soldered if possible. Remember, no Teflon or sealant on senders. Senders have a tapered pipe thread and do not require sealant.

Double check with the wiring diagrams. There are a lot of wires to hook up to a gauge set.

GENERAL

Gauge "sticks"

Loosen nuts that attach the back clamps. This can sometimes pull on the housing enough to distort the dial and contact the pointer.

Gauge inoperative/reading incorrectly

Check for 12V at the gauge on the + and ground. Check for the correct resistance on the sender

With power on, temporarily ground the sender lead, this will peg the gauge to its highest reading.

TACHOMETER TROUBLESHOOTING

Erratic reading:

This is caused 99% of the time by a loose connection. Check spade or ring connectors. Sometimes these are connected well enough to work for a while, but do not hold up.

Dead tach

Caused by no power, or no signal. Check for power. Turn on ignition and watch the pointer, it should "jump"

Reads too high/low:

Usually this is caused by the incorrect # of cylinders on the back of the gauge. When using a magneto or alternator to drive the tach, an adjustment pot. Is behind the label at the 8:00 position on the rear of the gauge.

SPEEDOMETER TROUBLESHOOTING

Speedometer problems are very similar to tachometer issues. Check the obvious first, grounds, power, correct connections. What type of sender are you using? Check for pointer "jump" These refer to all speedometer problems from dead to will not calibrate. Most speedometer problems can be traced to a problem with the signal to the gauge.

OE/Integrated sender test: Connect a multimeter on voltmeter function leads to ground and signal. Drive the vehicle. You should be getting an AC current of 10-15 V. If it is below 3 volts the sender is defective or there is a weak connection.

Another avenue to try is changing the signal input from L to N or H. This procedure is described under the SETUP section of this booklet. This is also a good way to remedy a "floating" pointer. When a pointer kind of roams but is not steady. This is usually from a weak signal to the speedometer.

Another option is to directly ground the sender and apply a switched 12V+ source to the positive input side of the sender.