

RON FRANCIS
Wiring

VR-1
Voltage Reducer

Reminder

Our voltage drop will not "fix" a 6 volt gauge that did not work before this conversion. Make sure the gauge and sender are from the same car/engine and are working properly before using this unit. Use for 1 to 3 gauges.

Instructions

For use with loads up to 1.5 amps (*) with proper air flow. Air flow is extremely important...capacity will be sharply reduced if not kept away from other heat sources in areas with good ventilation. This unit may be used to provide 6 volts to feed your gauges or other components using less than 1.5 amps. The manufacturer severely limits the warrantee on this reducer. Be careful! Mount this unit as close to the gauges as possible. Allow as much air flow as possible. DO NOT HIDE BEHIND UPHOLSTERY!

Connect all wires as indicated on the wires themselves. All units are tested before shipping. Exceeding 1.5 amps will smoke the reducer.

Positive Ground Systems

When using this reducer most 6 volt gauges are not sensitive to polarity and can be hooked up with a negative ground system. The gauges must be wired to the original ignition feed connection with the 6 volt wire from this voltage reducer. This gauge post is usually connected between other gauges (except the ammeter) with a buss bar type link to other gauge feeds. Ammeters do not require this reducer and will instantly smoke the unit if hooked up incorrectly.

Warning!

This voltage is preset for a steady 6 volts and is not to be abused. Any testing or checking out its circuits is unnecessary and will damage the unit. Do the wiring and that's it. Be sure of your connections. Original wiring must be removed. We are expecting you to be in the process of completely rewiring your car or truck for best results. If you are simply switching to 12 volts and using the original circuits and wires, be extra careful.

Connect all wiring as indicated.

There is no other way to make these connections. **This unit is for negative ground systems only.**

- ✓ Incorrect or improper wiring will damage (smoke) the reducer and we will not replace it.
- ✓ The red wire is connected directly to the accessory side of the ignition switch.
- ✓ The yellow wire is the 6 volt source to the 6 volt gauges you are using.(1)
- ✓ The black wire must be grounded.
- ✓ The terminal on the gauge marked (I) is usually ignition.
- ✓ The terminal marker (S) is usually the sender wire to the engine.
- ✓ Any terminal marked (G) or (GND) is usually grounded (2)

Wire Works has no control over this conversion other than providing a 6 volt feed to the gauges. User must determine that all connections are proper.

- (*) Most 6 volt gauges draw about 1/4 amp each.
- (1) Don't forget to fuse this circuit to the original amperage rating.
- (2) All gauges must be grounded in some fashion.

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OVER 

Changing from a 6 volt to 12 volt system.

If you are changing everything in the car to 12 volts, there is not much said here to help you. If you are keeping original gauges, radio, wiper or heater, read on.

Bulbs

All bulbs must be changed to 12 volt units. WIRE WORKS has these bulbs available in high candlepower for brighter and safer illumination. We carry most applications for exterior lights. This includes Super brite headlight bulbs for vehicles older than 1939. The sockets themselves will accept the 12 volt bulbs. Condition of the socket should be considered. Because of their age, (40-50 years old) it is important that all wires be replaced. Consider this part of an insurance policy that will keep your pet project in good health.

6 volt gauges

If you are keeping original gauges, you need a VR-1 electronic voltage reducer listed in this section of the catalog. Mechanical gauges only need 12 volt bulbs. Most GM cars have mechanical oil and water so you only have the gas gauge to worry about. Fords were all electric and you must use the sender out of the old engine block with the gauge in the new engine swap for accuracy.

All gas gauges need our VR-1 reducer (1.5 amp load limit). Early ammeters do not need a resistor as they are only sensitive to amperes. Several cautions must be mentioned. Some older vehicles use a voltmeter marked as an ammeter. The center "0" is actually 6 volts. If you wire this through our VR-1, it will stay at the 6 volt level and never change until your battery voltage dropped below that point. This of course is not much good. Another problem occurs if you wire the voltmeter like an ammeter. This causes smoke and embarrassment.

Look at the back of the gauge. If there is a loop for the wire to pass through, it's an ammeter. If there are two studs with heavy wires on them, this is an ammeter. If there is a brass buss bar running from this gauge to any of the others, it's a voltmeter. If there are small wires (thin) like the wires running to the other gauges, it's probably a volt meter. Oh, one more problem: Some Fords and other brands including some aftermarket gauges use a "shunt". This unit carries the electrical load of the ammeter but allows just enough to pass through the gauge to show the battery condition. Attempting to use "used" aftermarket gauges will make this difficult to determine unless you have the instructions for the gauges.

Reversed Polarity

Reversed polarity is not a problem. We have never seen a 6 volt gauge that you could not simply hook up to our reducer and be fine. The ignition wire is still hooked to the same ignition terminal on the gauge. Do not "reverse the gauge wires," only reverse the polarity at the battery. Keep in mind that our voltage reducer will not correct an already existing problem. It pays to test the gauges first with a 6 volt battery before purchasing the voltage reducer.

6 volt Heaters

Heaters need our VR-4 capable of 15 amps load. Sorry, we have never been able to find any records of what your unit draws. Please hook it to a 6 volt battery and using an ammeter, check the load. Our supplier does not accept returns on these voltage reducers. We have had excellent results with these over the past 10 years or so. But they can't take an overload.

6 volt Wipers

6 volt wiper motors hardly seem worth a voltage reducer. You can use a voltage reducer if you want but, replacement 12 volt units are easily available. The amperage here is questionable and we can only recommend the VR-4 unless you can stake your money on the wiper motor only drawing 1.5 amps under load.

6 volt Radios

Radios can be fun. If the original car was positive ground, get a new 12 volt radio. The entire case would have to be insulated from the dash to reverse this unit. Keep in mind that the original 6 volt radio will not have much to offer in the way of stations. I'd recommend a new one now.

Clocks

Clocks usually respond well to the voltage reducers as long as you consider they are not quartz like current clocks. This means accuracy is marginal. If you want that original look, go for it. Again, no info available on what the load is. Please test it on a 6 volt battery first to determine which voltage reducer you should use.

Converting the original engine

The six volt starter can stay. Simply install the new 12 volt battery with a negative ground and all is well. This might shorten its life some but not enough to notice. The car will start so fast the starter shouldn't get too hot and cause a problem. I doubt we have ever heard of a problem with this swap.

Up date your distributor by using a 12 volt coil. Joe Smith in Atlanta Georgia has conversions for flathead Fords. Most can simply use a 12 volt coil and condenser from a 60's GM engine. The points themselves just need new ones for maximum life. Since the ignition resistor on our wiring kit will reduce to about 8 volts, there isn't a lot of change.

Original engine now but planning a swap in a few years?

Convert the original motor to an alternator now. Use the model you want on the new engine. We can help with this. Just leave slack in the wires to the engine components for adjustment after the new engine is in.

Generators

WIRE WORKS does not recommend the use of a generator even after swapping for a 12 volt model. There are many reasons they stopped using generators on cars. Air conditioning, electric cooling fans and power accessories will need more juice than the generator can deliver. As far as reliability, the generator does not charge at an idle. Keep in mind that the generator has probably been rebuilt 4 or 5 times already and it's time to move up to reliable power supplies. If your building this vehicle to drive please consider the need for reliability. I don't like fixing my car on the side of the road. You know most auto parts stores are not going to have repair parts for generators available Sunday afternoon.

Flat head alternator swaps

Speedway and other companies make alternator brackets to allow a GM integral alternator to mount and adjust on a flathead.

Please call

If you want to get more serious than this, please call our tech line 1-866-330-1933. EXT#3. Our Order takers are limited to this information