

UNIVERSAL DIESEL WIRING MODIFICATIONS

During discussions on the Sailnet Ericson e-mail list about wiring problems with Universal diesel engines someone asked if it would be possible to write a wire by wire description of the changes we were talking about. I have endeavored to do that here.

Change "A" increases the battery charging current from the alternator by reducing the length of the wire between the alternator and the battery.

Change "B" eliminates a common problem with Universal diesel engines, that being insufficient power at the starter solenoid to start the engine. Increasing the wire size will resolve the problem and may extend the life of the starter switch as the contacts get dirty.

Change "C", which is not labeled on the wiring diagram but is shown there, uncouples the starter switch from the glow plug switch. This allows you to start the engine without holding in the glow plug switch. This is a convenience because the engine retains enough heat to start without glow plugs for several hours after being shut down.

April 25, 2001

UNIVERSAL DIESEL WIRING MODIFICATIONS

Turn the battery switch to “Off” before disconnecting any wires.

Change “A”: This change connects the alternator output directly to the solenoid battery connection without going to the engine instrument panel and back again. The ammeter on the instrument panel will only read the current going to the engine components (glow plugs, starter solenoid, fuel pump, blower, panel lights, and instruments. This is useful for troubleshooting if the engine has starting problems.

1. Disconnect the orange wire from the ammeter terminal on the panel.
2. Disconnect the other end of the orange wire from the alternator output terminal.
3. Install 2 new #10 wires, or one #6 or #8 wire, between the alternator output terminal and the solenoid power terminal. There is already a large (1/0) red wire on this solenoid terminal coming from the battery switch common terminal. [If you install a larger alternator this new wire should be #2 or larger. You should also add a black wire of the same size from the alternator ground terminal to the engine and battery connection point.]
4. If not doing change “B” tape both ends of the orange wire to prevent short circuits and to keep the wire from flopping around.

Change “B”: This change replaces the #16 wire between the “Start” switch and the starter solenoid. This small wire has caused starting problems in the past for many boaters.

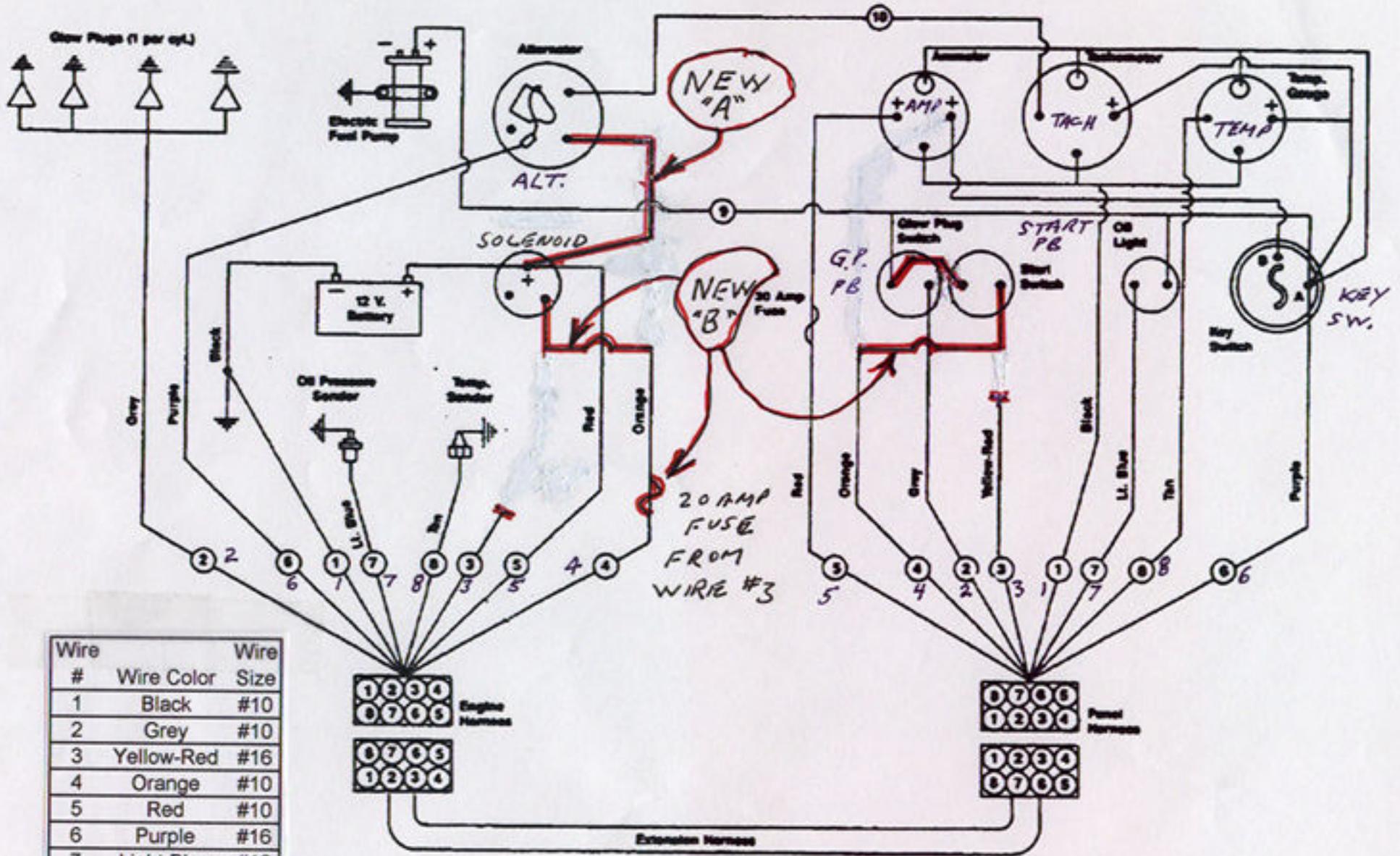
1. Remove the yellow-red wire from the terminal of the starter solenoid.
2. Remove the fuse holder from the yellow-red wire or purchase a new fuse holder with 20 amp fuses.
3. Connect the fuse holder to the orange wire disconnected in step 2 in change “A”.
4. Connect the fuse holder to the now empty terminal on the solenoid.
5. Remove the yellow-red wire from the starter switch.
6. Connect the other end of the orange wire to the now vacant terminal of the starter switch.
7. Tape both ends of the yellow-red wire to prevent short circuits and to keep the wire from flopping around.

Change “C” Shown, but not labeled on wiring diagram: This change has already been made on many engine panels. It changes the starter circuit so that the glow plug push button does not have to be pushed to operate the starter push button. It is primarily a convenience, but may extend the life of the glow plug switch.

1. Disconnect the gray (?) jumper from the starter switch on the glow plug switch and reconnect it to the other terminal of the glow plug switch. There is already a purple wire on this terminal.

Put the changes that you make into your owner’s manual so the next owner doesn’t bad mouth the PO.

WIRING DIAGRAM



Wire #	Wire Color	Wire Size
1	Black	#10
2	Grey	#10
3	Yellow-Red	#16
4	Orange	#10
5	Red	#10
6	Purple	#16
7	Light Blue	#16
8	Tan	#16
9	Open	
10	Grey	#16