

ELECTRICAL WIRING

ADDING LIGHTS OR ELECTRICAL DEVICES

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APPENDIX

Although there are many points in the truck electrical system to connect additional circuits certain connection points are recommended for reliability and convenience. This section defines the recommended connection points for each Ford Truck model and the maximum electrical loads allowable. **CAUTION:** Improper electrical tie-ins may affect vehicle operation (e.g., engine transmission).

After all electrical or vehicle modifications, perform the on-board diagnostics procedures as described in the powertrain control/emissions diagnosis manual to clear all diagnostic trouble codes (DTCs). Road test vehicle and rerun the on-board diagnostics to verify that no DTCs are present. If DTCs are generated, perform the appropriate diagnostic procedures and repairs. Vehicle operation (engine/transmission) may be affected if DTCs are not serviced.

Alternative connections or wiring practices are not recommended as certain modifications may result in other circuits becoming non-functional. Disconnect the battery negative (ground) cable and remove it from the battery carrier prior to any vehicle modification. Upon completion of body or equipment installation, all wiring should be checked for proper routing, etc. to preclude electrical shorts upon reinstallation of the battery negative cable.

Do not splice into the Powertrain System (PCM-V). Connecting to any component or wires to this system may adversely affect Engine/Transmission operation.

LIGHTS CONTROLLED BY HEADLAMP SWITCH

The head lamp switch used on the F-150, Super Duty F-Series and E-Series vehicles employs one main 30A maxi fuse for the head lamp system. The left- and right-hand low beam lamps are then fused individually using a 10A fuse located in the instrument panel fuse box (see schematic on page 208) the exterior lamps are fused using a 15A fuse while the interior lamps are fused using a 10A fuse located in the instrument panel fuse box (see schematic on page 208). A connection to any circuit in the system controlled by the head lamp switch must be done using an auxiliary relay. A marker lamp relay circuit 962 for SUB additions is provided for convenience as standard equipment on chassis cabs, optional on pickups. Do not connect to other OEM wires.

E-SERIES

- Rear Lights — Splice into circuit #14 (Brown) in crossover harness at rear of vehicle.
- Front Lights — Splice into circuit #14 (Brown) in engine compartment 12A581 wire assembly along right or left fender apron.

LIGHTS CONTROLLED BY STOP LAMP SWITCH AND TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch on vehicles with Electronically Controlled Transmissions can interfere with the proper functioning of PCM, speed control, and anti-lock brake electronic modules. This can:

- Affect EFI engine idle speed quality.
- Do not delete or deactivate the Center High Mount Stop Lamp unless it will be blocked by second unit body.
- Prevent the Powertrain Control Module torque converter clutch from applying at throttle openings less than half throttle.
- Deactivate anti-lock brake system operation
- Prevent the speed control from disengaging upon braking.

If your application involves splicing into the stop lamp switch of a Powertrain Control Module equipped vehicle, please consult the Truck Body Builders Advisory Service website at www.fleet.ford.com/truckbbas/ to obtain a copy of QVM Bulletin #10.

The stop lamp switch that is in use on Ford trucks is a mechanical switch operated by brake pedal. It is designed for maximum loads usually less than the fuse or circuit breaker in the circuit but ample for normal stop lamp loads. The maximum load is 15 amps. Under no circumstances are total loads in excess of this value permissible. (See schematic on page 203).

F-150, SUPER DUTY F-SERIES AND E-SERIES MODELS

Ford trucks are released with a mechanical stop lamp switch mounted on the brake pedal arm for E-Series (mounted on the pedal pin and master cylinder push rod for F-150 and Super Duty F-Series). This switch has a maximum allowable electrical load of 15 amps. If only stop lamp function is desired for the added lights, splice into the circuit #511 light green wire for E-Series. F-150 and Super Duty F-Series between the stop lamp switch and the turn indicator switch. This circuit is provided as standard equipment and is located at the rear of the vehicle.

If both turn signal and stop lamp function are desired for the added lights, splice into the tail lamp loom (circuit #64 dark green for F-150, Super Duty F-Series and E-Series right-hand lights and circuit #52 yellow for F-150, Super (See note below). These circuits are provided as standard equipment and are located at the rear of the vehicle. (See Figure B, Page 199 and page 202 and schematic on page 203).

NOTE:

1. The turn signal switch used on some light trucks has a maximum rated current of 6.5 amps for right and left turning functions and 10.4 amps for stop lamp function. Do not exceed these values on the turn signals.
2. The Super Duty F-Series utilizes an electronic flasher (F65B-13550-AA) for the turn signal and emergency flasher system.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

This section describes the connection points for added electrical accessories when these accessories are to be controlled by added switches not a part of the Ford-released vehicle. The added switches and wiring must have sufficient electrical capacity for the accessory load and must be protected by appropriate fuses or circuit breakers. Also, added current draw must not cause total loads to exceed capabilities of the base vehicle wiring.

RADIO FREQUENCY INTERFERENCE (RFI)

During modifications to the vehicle, manufacturers, service technicians, owners and users should take the necessary precautions to maintain the RFI integrity of components. (Both the United States and Canada have RFI regulation in effect). Precautionary procedures and components listed below are examples and do not necessarily represent a complete list.

1. All components required to suppress RFI emissions, which are removed during service, repair, or completion of the vehicle, must be reinstalled in the manner in which they were installed by Ford.
2. Do not modify or change any RF device in a manner not expressly approved by Ford Motor Company.
3. Shields on distributor and ignition coil must remain installed.
4. Replacement spark plugs, ignition wires, ignition coils, distributor caps and distributor rotor must be equivalent in their RFI suppression properties to original equipment.
5. Electrical grounds on all components must be retained.
6. Metallic components installed on the body or chassis must be grounded to the chassis.

7. Electrical circuits added to the vehicle should not be installed near the high tension ignition components.
8. Only “static conductive” accessory drive belts should be used.
9. Fan, water pump, power steering and other belts should be of the OEM type or equivalent that will not build up a static electrical charge.
10. For any completed vehicle, additional measures may be needed to adequately suppress RFI emissions.

CHECK ENGINE WARNING LIGHT

The check engine warning light is a device required on certain vehicles to indicate malfunctions of the Powertrain Control Module. For all vehicles except E-Series Super Duty Stripped Chassis (which is not equipped with a dashboard), if a warning light is required, it is Ford installed and operational. The light is also required for all gasoline powered E-Series Super Duty Stripped Chassis vehicles. The warning lamp is included in the supplied instrument cluster, located in the dunnage box. It should be recognized that this light is a requirement of Emission Certification.

If an alternate instrument cluster is utilized, the final stage manufacturer must install an operational light in the dashboard. This light must glow amber and display the acronym message, “SERVICE ENGINE SOON.”

Once the light has been completed by the final stage manufacturer, proper function can be determined by turning the key to the on position. The light should come on prior to engine cranking and go out when the engine starts. If the light does not come on as above, refer to Section 14 (Quick test step 7 — Diagnostics by Symptom) of Volume H (*Engine and Emission Diagnostic Manual*) of the *Car and Truck Service Manual* for diagnostic procedure.

NOTE: The final stage manufacturer is responsible for ensuring that final vehicle configuration meets all applicable regulatory requirements.

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2003
MODEL YEAR

