

Fig. 44 Hudson 1940 semi-electric overdrive control wiring diagram

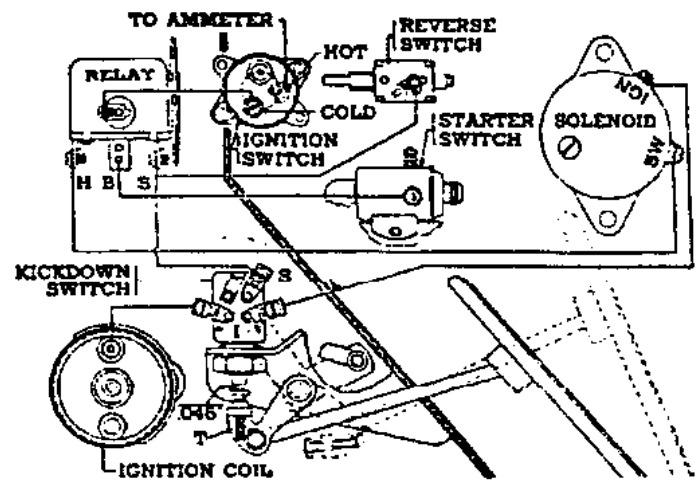


Fig. 45 Late 1939 Packard semi-electric overdrive control wiring diagram

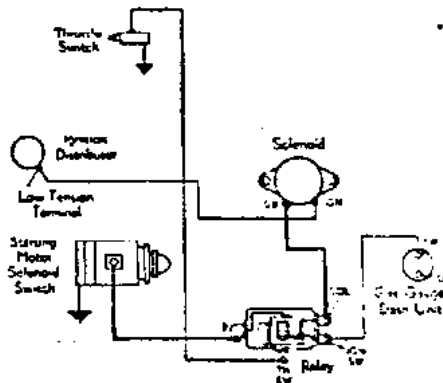


Fig. 43 Chrysler semi-electric overdrive control wiring diagram. Typical of 1939-40 Chrysler and De Soto; 1941 Chrysler Eight; Studebaker 1939 to early 1940 (except 1941-42 Presidents)

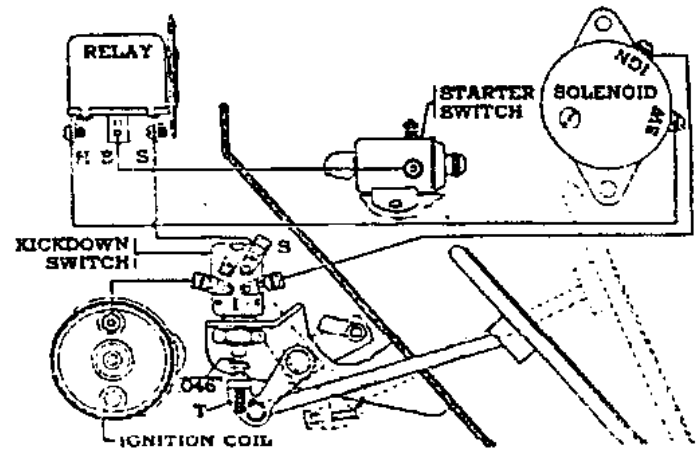


Fig. 46 Early 1939 Packard semi-electric overdrive control wiring diagram

ELECTRICAL SERVICE

SEMI-ELECTRIC TYPE

The electrical units for this type overdrive are only for the purpose of restoring conventional direct drive operation for quick acceleration. Normal engagement or disengagement of the overdrive is controlled by the centrifugal clutch.

In checking trouble turn on the ignition switch and depress the accelerator pedal to the floorboard. This may or may not result in a click being heard. A click or failure to click determines the procedure to follow as given below. (Figs. 43 through 46 illustrate wiring diagrams for the various cars employing this type overdrive.)

If a Click is Heard—A click at both the relay and solenoid indicates the trouble to be in the overdrive mechanical parts.

A click at the relay only calls for an

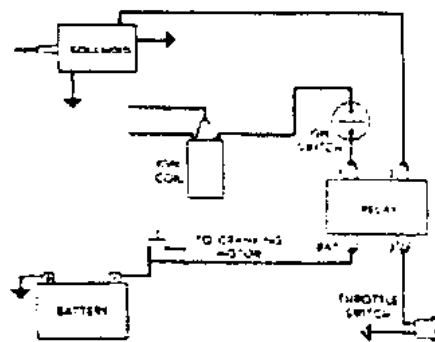


Fig. 47 Nash 1940-46 semi-electric overdrive control wiring diagram with Delco-Remy controls

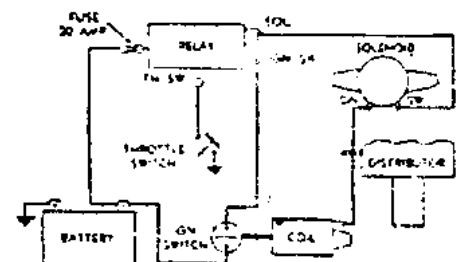


Fig. 48 Nash 1940-46 semi-electric overdrive control wiring diagram with Auto-Lite controls

inspection of the fuse and fuse holder. If the fuse is bad and a new fuse also burns out, look for a grounded wire from the solenoid to the relay. If this wire is not grounded, replace the solenoid.

If inspection showed the fuse to be not blown, connect a test lamp to the ignition terminal of the relay and a

ground. If the lamp fails to light, replace the wire connected to the terminal. However, if the test lamp glows, move it to the throttle switch terminal on the relay, establish ground and close the throttle switch. If the lamp fails to glow, replace the relay. If the lamp glows, continue testing as follows.

Connect the test lamp to the solenoid

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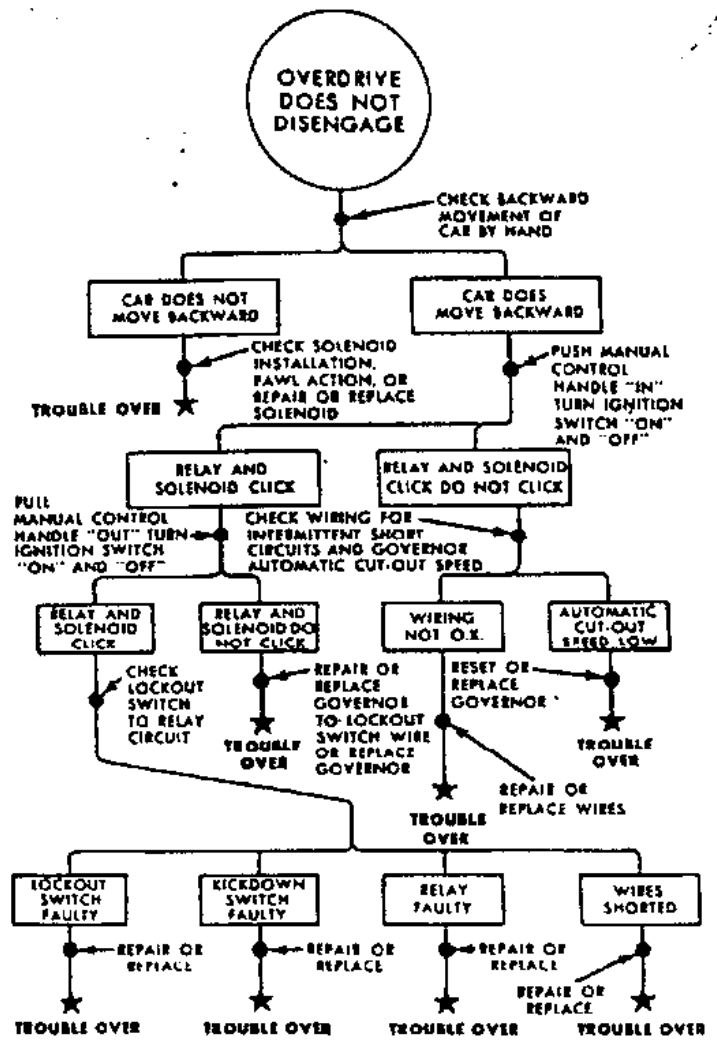
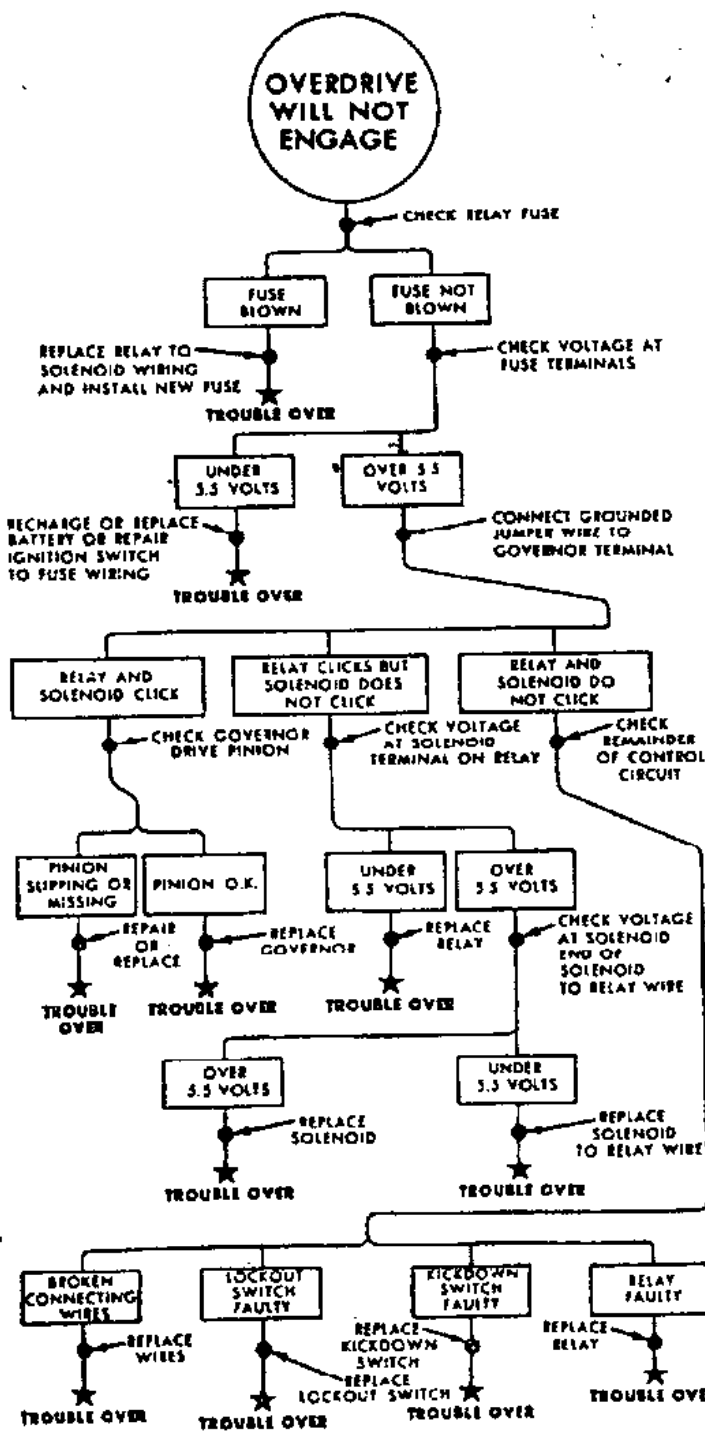


Fig. 50 Trouble shooting sequence when overdrive will not disengage

Fig. 49 Trouble shooting sequence when overdrive will not engage

"SW" terminal and ground and close the throttle switch. If the light burns, replace the solenoid. If it does not burn, replace the wire connected to the solenoid "SW" terminal.

If No Click Is Heard -- Operate the throttle switch by hand. If a click is heard, adjust the throttle linkage. If no click is heard, test as follows:

Connect a test lamp to the battery terminal of the relay and a ground. If the lamp burns, move the ground to the wire connected to the throttle switch. Then if a click is heard, replace the throttle switch. If the throttle switch fails to click when it is grounded, continue as follows:

Ground the throttle switch relay terminal. Then if no click is heard, replace the relay. A click on the other hand shows the "TH" relay wire is defective.

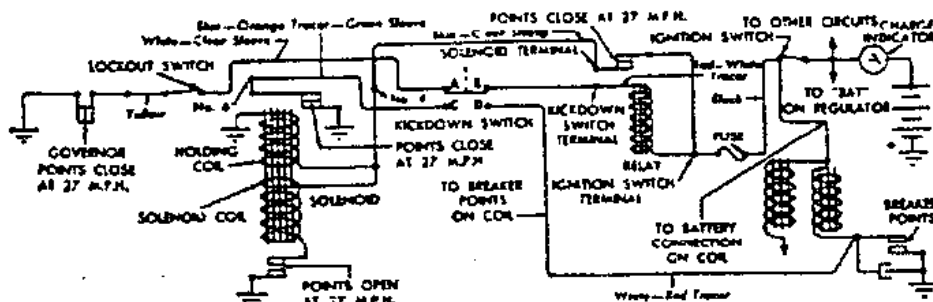


Fig. 53 Ford 1949-51 overdrive wiring diagram

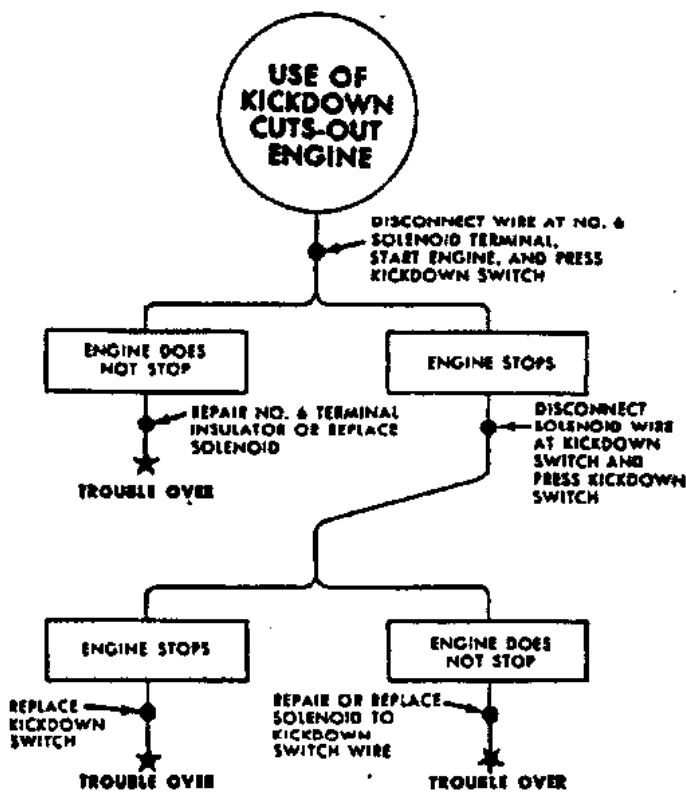


Fig. 31 Trouble shooting sequence when use of kickdown stops engine

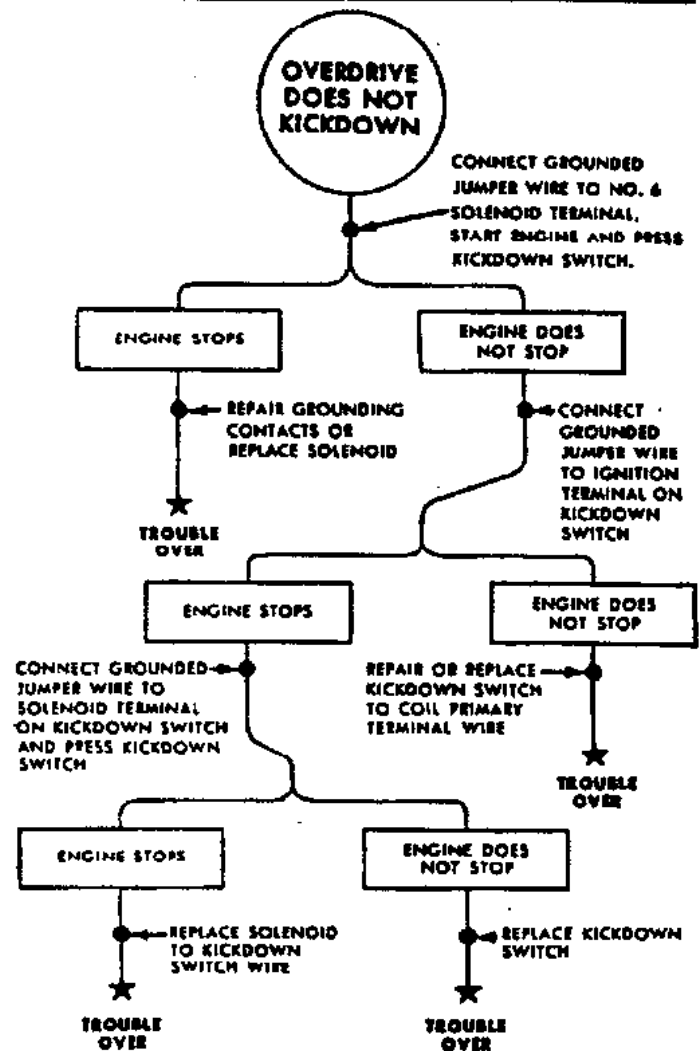


Fig. 52 Trouble shooting sequence when overdrive will not kickdown

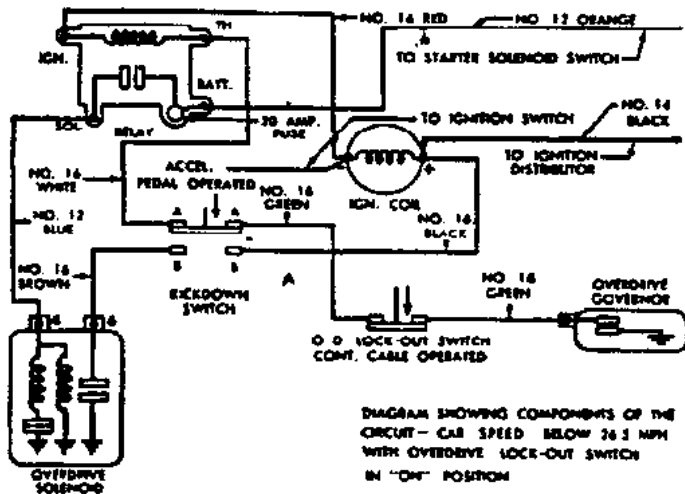


Fig. 54 Kaiser-Fraser 1947-51 overdrive wiring diagram

FULL ELECTRIC TYPE

In checking overdrive electrical troubles according to the procedure which follows, be guided by the wiring diagrams for the particular car being serviced. These wiring diagrams are shown starting with Fig. 53.

Overdrive Does Not Engage — This is usually caused by a failure in the overdrive electrical control system. With the ignition switch turned on, the relay is

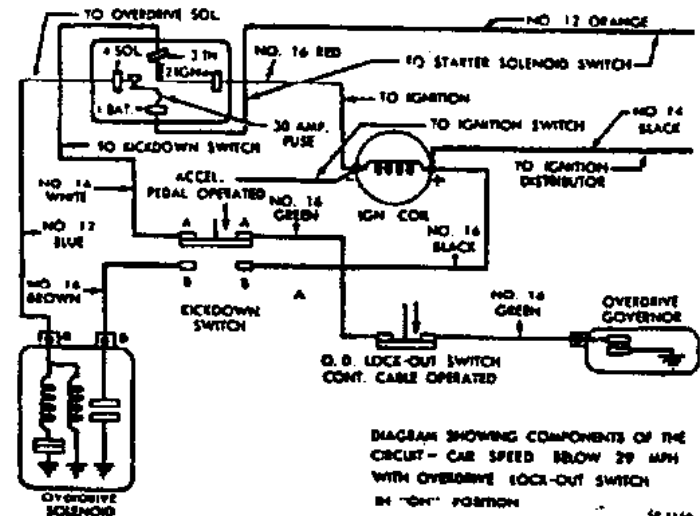


Fig. 55 Heavy J 1951 overdrive wiring diagram

OVERDRIVE

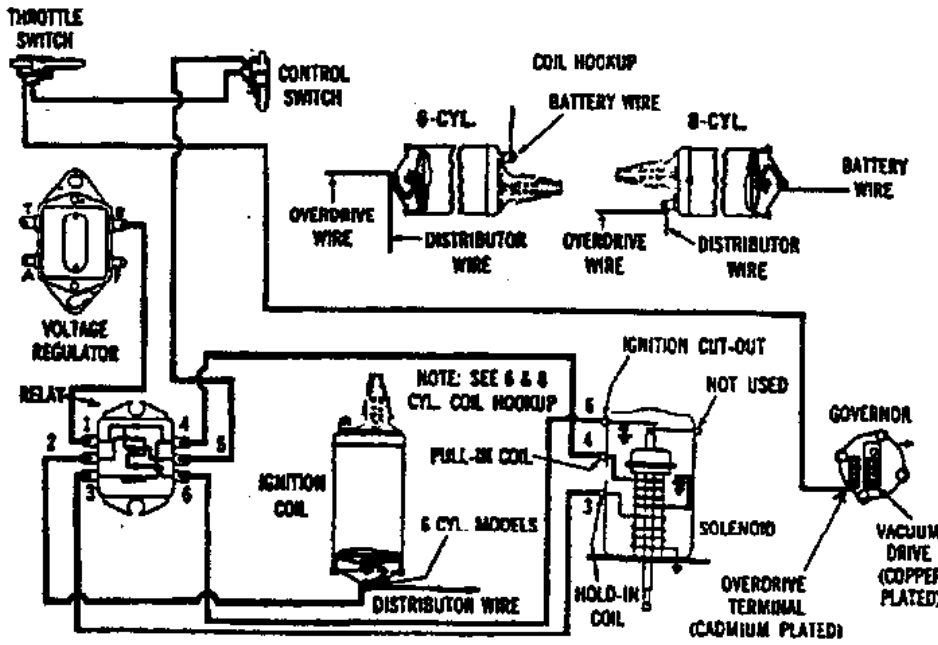


Fig. 56 Hudson 1941-47 overdrive wiring diagram

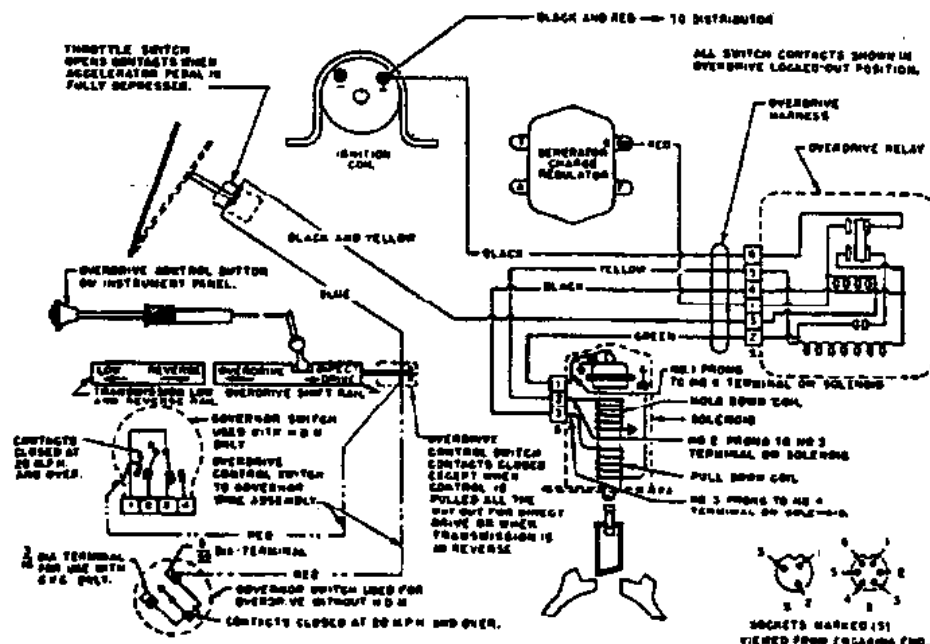


Fig. 57 Hudson 1948-49 overdrive wiring diagram

supplied with current. This current causes the relay points to close, provided the:

1. Fuse is good.
2. Kickdown switch is in the up position.
3. Lockout switch is closed, and
4. Governor points are closed.

When the relay points close, current will flow through the solenoid coil and solenoid holding coil. The solenoid now moves into the "energized" position and opens the points in the solenoid coil cir-

cut. When the solenoid coil points are opened, the solenoid coil is disconnected, but the holding coil will keep the solenoid in the energized position, forcing the pawl into engagement.

See the chart in Fig. 49. But before performing any of the following operations, make sure the manual control lever is pushed in, the ignition switch turned on and the transmission out of reverse gear.

Check the relay fuse. If it is blown, check the wiring from the solenoid to

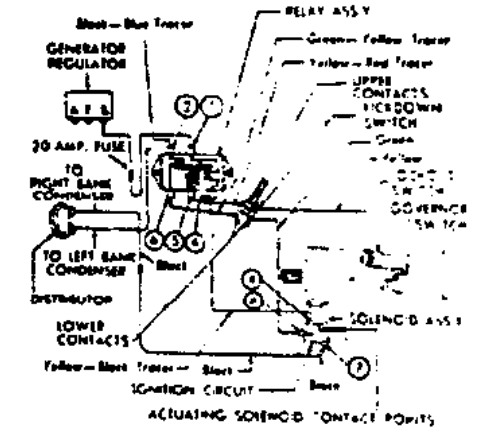


Fig. 59 Lincoln 1941 overdrive wiring diagram prior to November 10 production

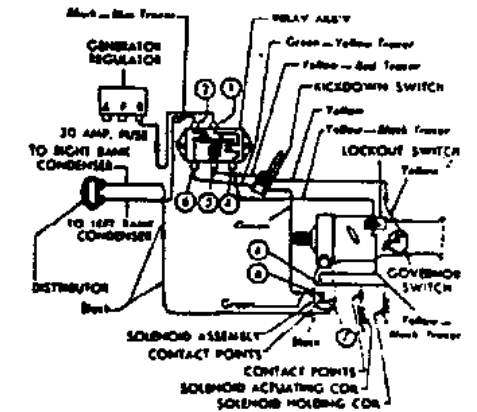


Fig. 60 Lincoln 1941 overdrive wiring diagram after November 10 production

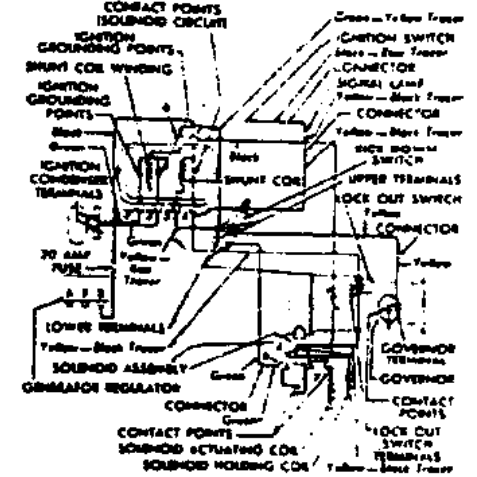


Fig. 61 Lincoln 1942 overdrive wiring diagram

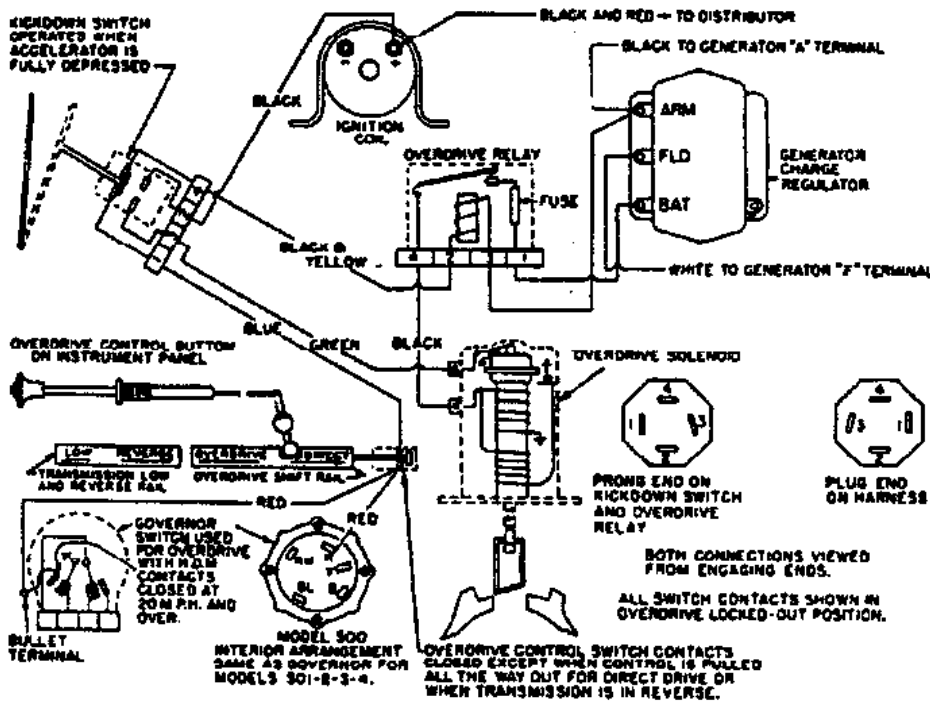


Fig. 58 Hudson 1950-51 overdrive wiring diagram

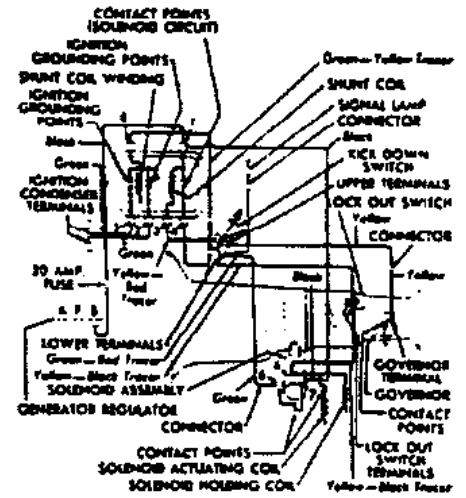


Fig. 62 Lincoln 1946-48 overdrive wiring diagram

the relay and relay terminals for a short circuit. Repair the insulation or replace the wire or relay as necessary. Install a new fuse.

If the fuse is not blown, check the voltage at the fuse terminals. If the voltage is less than 5.5 volts, proceed with paragraph (1) below. If the voltage is over 5.5, proceed with paragraph (2) below.

(1) If the voltage is less than 5.5 volts, recharge or replace the battery as necessary. If battery is fully charged, inspect wiring from fuse terminal back to ignition system for resistance (open circuit or partially broken wire). Repair or replace wiring as necessary.

(2) Check governor, relay and solenoid: Connect a grounded jumper wire to the governor terminal and listen for a click at the relay and solenoid. If the relay and solenoid click, proceed with paragraph (3) below. If the relay clicks but the solenoid does not click proceed with paragraph (4) below. If the relay and solenoid do not click, proceed with paragraph (5) below.

(3) If the relay and solenoid click, check for a missing or slipping governor drive pinion. If either of these conditions exist, repair or replace the drive pinion. If the drive pinion is in good condition, the trouble is in the governor assembly and it must be replaced.

(4) If the relay clicks but the solenoid does not click, check the voltage at the solenoid terminal of the relay. If the voltage is under 5.5 volts, proceed with paragraph (6) below. If the voltage is over 5.5 volts, proceed with paragraph (7) below.

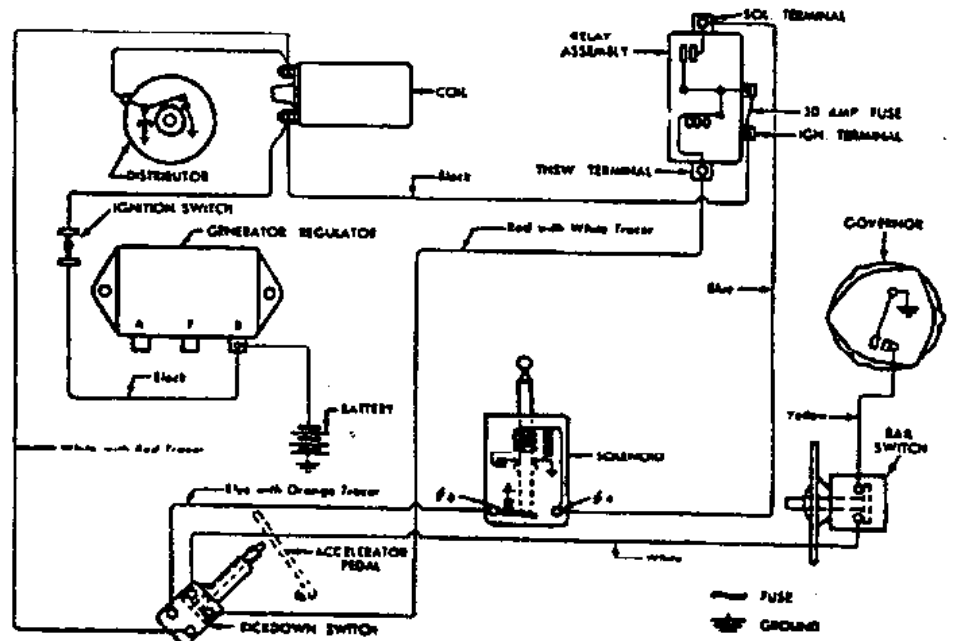


Fig. 63 Lincoln and Mercury 1949-50 overdrive wiring diagram

(5) If the relay and solenoid do not click, connect a grounded jumper wire to the governor terminal of the lookout switch. If the relay and solenoid click, replace the governor-to-lockout switch wire. If the relay and solenoid do not click, check the lockout switch by connecting a grounded jumper wire to the kickdown switch terminal on the lockout switch. Then if the relay and solenoid do not click, proceed with paragraph (8) below. If the relay and solenoid click, proceed with paragraph (9) below.

(6) If the voltage at the solenoid terminal on the relay is under 5.5 volts the trouble is in the relay and it must be replaced.

(7) If the voltage at the solenoid terminal on the relay is over 5.5 volts, check the voltage at the solenoid end of the solenoid-to-relay wire. If the voltage is under 5.5 volts, replace this wire. If the voltage is over 5.5 volts, replace the solenoid.

(8) If the relay and solenoid do not click, connect a grounded jumper wire to the lockout switch terminal on the

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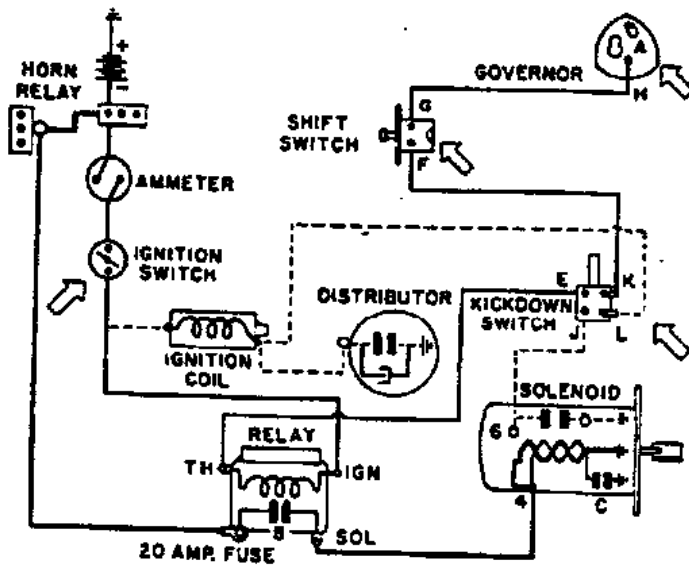


Fig. 64 Nash 1946-48 overdrive wiring diagram

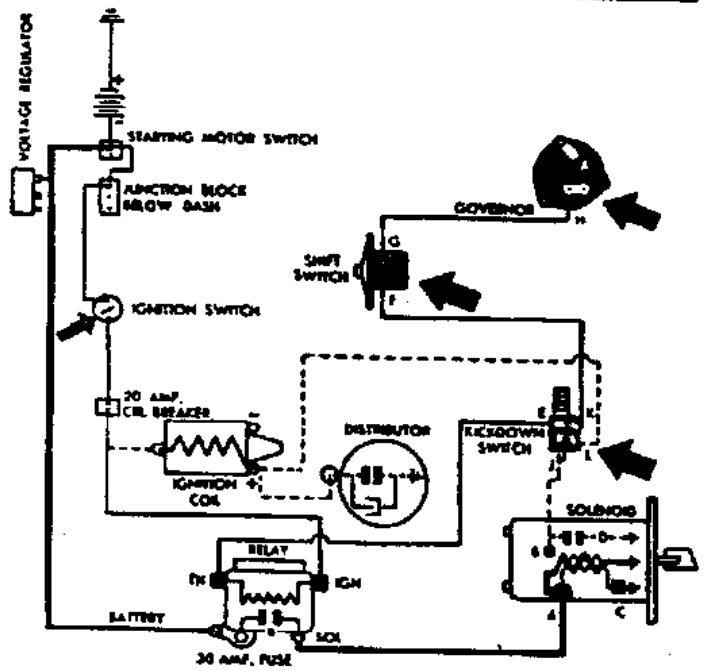


Fig. 65 Nash 1949-51 overdrive wiring diagram

kickdown switch. If the relay and solenoid click, replace the lockout switch-to-kickdown switch wire. If the relay and solenoid still do not click, connect a grounded jumper wire to the relay terminal on the kickdown switch. If the relay and solenoid do not click, proceed with paragraph (10) below. If the relay and solenoid click, proceed with paragraph (11) below.

(9) If the relay and solenoid click, check the manual control linkage by making sure that the manual control lever on the side of the overdrive housing moves all the way back when the manual control handle is pushed in. If the lever does not move all the way back, it may prevent the lockout from closing; also it may hold the shift rail in a position that will prevent the pawl from making a full engagement. To correct this condition, remove the manual control wire from the lever, pull the manual control handle out approximately 1/2", then connect the wire to the lever. If the manual control lever is functioning properly, check the overdrive-to-transmission alignment by disconnecting the manual control wire at the lever and moving the lever forward. If the lever moves forward more than 1/2", the overdrive is not properly aligned with the transmission. To properly align the overdrive with the transmission, loosen the cap screws attaching the overdrive to the transmission, tap the adapter plate and overdrive housing until the shift rail moves freely; then tighten the cap screws. If the overdrive was properly aligned with the transmission, the trouble is in the lockout switch and it must be replaced.

(10) If the relay and solenoid do not click, connect a grounded jumper wire to the kickdown switch terminal on the relay. If the relay and solenoid click, replace the kickdown switch-to-relay wire. If the relay and solenoid do not click, the trouble is in the relay and it must be replaced.

(11) If the relay and solenoid click, the trouble is in the kickdown switch

and it must be replaced.

Overdrive Will Not Disengage -- This may be caused by either an electrical or mechanical failure. See the chart shown in Fig. 50. But before performing any of the following operations make sure the ignition is off and the gearshift lever is in neutral before checking backward movement of car as described below.

If the car does not move backward by hand push, follow instruction in paragraph (1) below. If the car does move backward, proceed with paragraph (2) below.

(1) If the car does not move backward, remove the solenoid and check the pawl action. If the solenoid can be removed without rotating it 1/2", turn, it indicates that the solenoid is not properly

installed and it will not pull the pawl out of overdrive engagement. If the solenoid was properly installed, use pawl-pulling tool and attempt to withdraw from engagement. If it will not withdraw freely, the unit is probably damaged internally and must be repaired or replaced. If no such damage is apparent, the trouble is in the solenoid and it must be repaired or replaced.

(2) If the car does move backward, push the manual control handle in, turn the ignition switch on and off, and listen for a click at the relay and solenoid. If the relay and solenoid click, proceed with paragraph (3) below. If the relay and solenoid do not click, proceed with paragraph (4).

(3) Pull the control handle out, turn ignition switch on and off, and listen for a click at the relay and solenoid. If

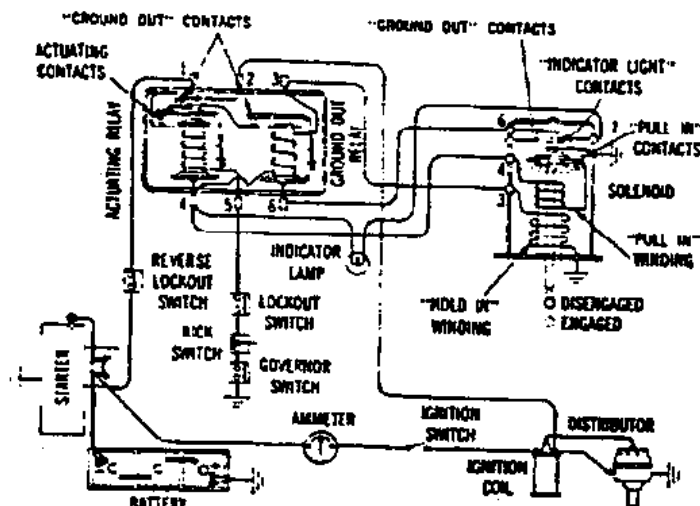


Fig. 66 Packard 1948-51 overdrive wiring diagram. 1941-47 is identical except no reverse lockout switch is provided

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the relay and solenoid click, proceed with paragraph (5) below. If the relay and solenoid do not click, proceed with paragraph (6) below.

(4) Check the overdrive electrical system wiring for intermittent short circuits. If the insulation is not in good condition, repair or replace the damaged wire. If the wiring is in good condition, remove the governor and check the automatic cut-out speed. If the governor does not cut out automatically at approximately 21 mph. Replace the governor.

(5) Push the manual control handle in, press the kickdown switch stem, turn ignition on and off, and listen for a click at the relay and solenoid. If the relay and solenoid click, proceed with paragraph (8) below.

(6) Push the manual control in, turn ignition switch on, and disconnect the governor. If the relay and solenoid do not click, replace or repair the governor-to-lockout switch wire.

(7) Disconnect wire from lockout switch to kickdown switch at the lockout switch. If the relay and solenoid click, repair or replace the lockout switch. If the relay and solenoid do not click, disconnect the lockout switch wire at the kickdown switch. If the relay and solenoid click, repair or replace the disconnected wire.

(8) Disconnect the wire running from the kickdown switch to the relay at the kickdown switch. If relay and solenoid click, replace kickdown switch. If relay and solenoid do not click, disconnect the wire running from the kickdown switch to the relay at the relay. If relay and solenoid click, repair or replace disconnected wire. If relay and solenoid do not click replace relay.

Use of Kickdown Cuts Out Engine - This trouble is usually caused by either wire connecting the two units. See Fig. 51 and follow the procedure given below. Before performing any of the following operations, make sure the gearshift lever is in neutral and the overdrive manual control pushed in.

Disconnect the kickdown switch wire at the solenoid. Start the engine and press the kickdown switch. If the engine does not stop, proceed with paragraph (1) below. If the engine stops, proceed with paragraph (2).

- (1) Repair kickdown switch terminal insulator at solenoid or replace solenoid.
- (2) Disconnect solenoid wire at kickdown switch and press kickdown switch. If engine stops, replace kickdown switch. If engine does not stop, repair or replace disconnected wire.

Overdrive Does Not Kickdown - This trouble is usually caused by a defective solenoid or kickdown switch or in the circuits supplying current to these units. See Fig. 52. But before performing any of the following operations, make sure the transmission is in neutral and the overdrive manual control handle is pushed in.

Connect a grounded jumper wire to the kickdown switch terminal at the solenoid. Start the engine and press the kickdown switch. If the engine stops, proceed with paragraph (1) below. If the engine does not stop, proceed with paragraph (2).

- (1) Repair grounding contacts inside solenoid, or replace solenoid.
- (2) Connect a grounded jumper wire to the ignition terminal of the kickdown switch. If engine stops, proceed with paragraph (3) below. If engine does not stop, proceed with paragraph (4).
- (3) Connect a grounded

jumper wire to solenoid terminal on kickdown switch and press kickdown switch. If engine stops, replace solenoid-to-kickdown switch wire. If engine does not stop, check for a bent kickdown switch plunger. If plunger is bent, loosen switch slightly and then see if engine stops. If it still won't stop, replace kickdown switch.

- (4) If engine does not stop, repair or replace wire from kickdown switch to ignition system.

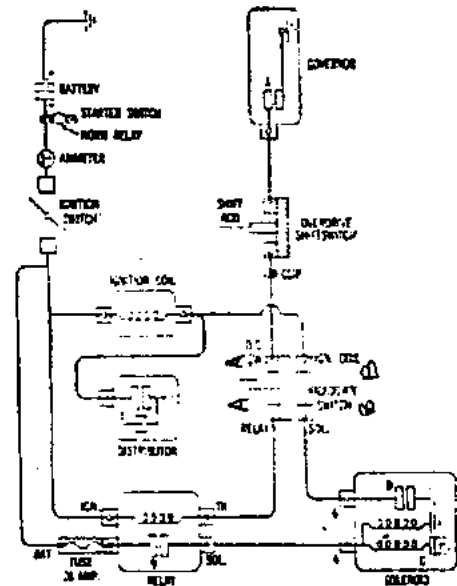


Fig. 68 Willys 1946-51
overdrive wiring diagram