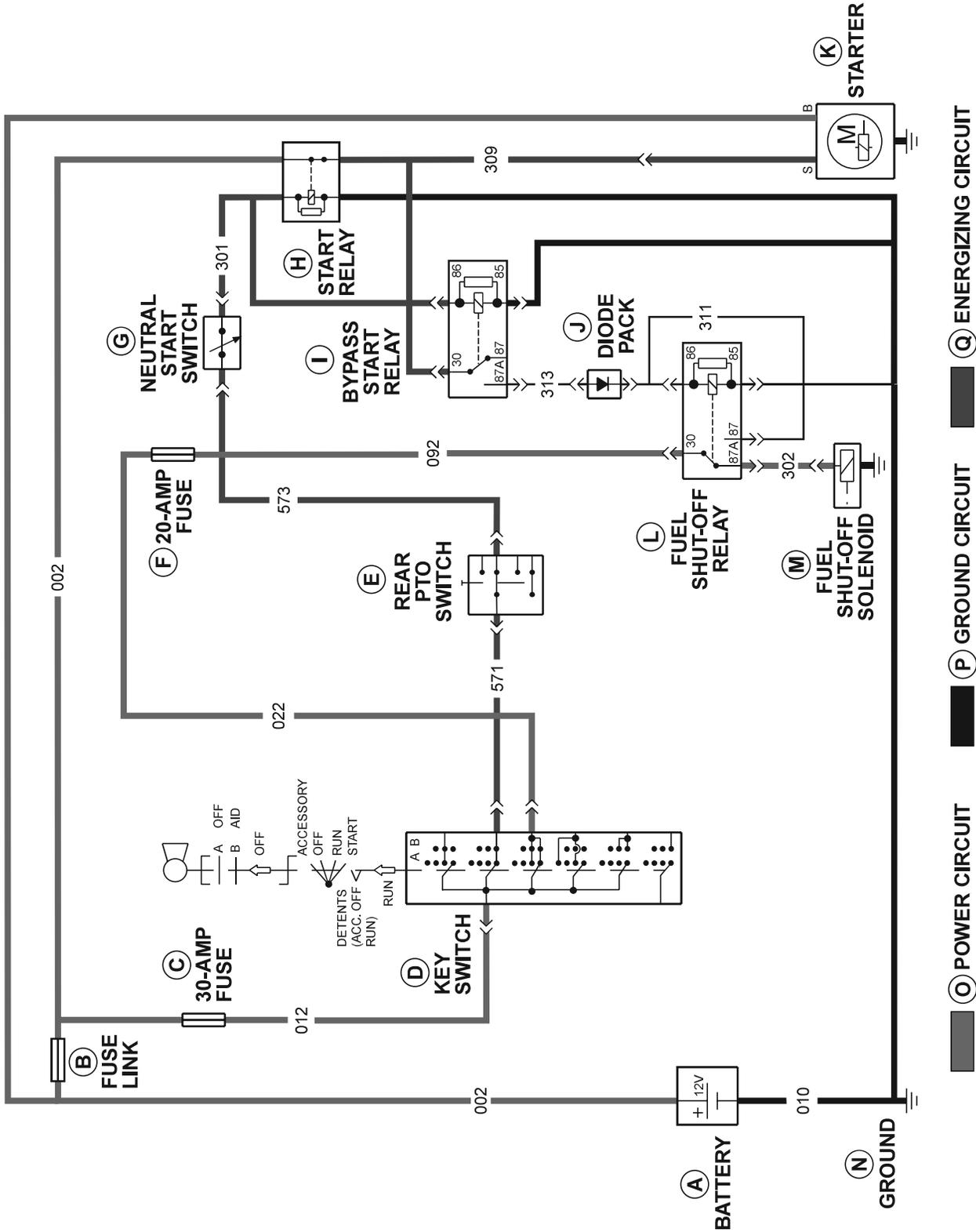


Starting System Operation—Normal



STARTING SYSTEM OPERATION — NORMAL

O POWER CIRCUIT   
  P GROUND CIRCUIT   
  Q ENERGIZING CIRCUIT

LVC4541

LVC4541 -19-06JAN00

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A—Battery  
 B—Fuse Link  
 C—30-Amp Fuse  
 D—Key Switch  
 E—Rear PTO Switch

F—20-Amp Fuse  
 G—Park position Start Switch  
 H—Start Relay  
 I—Bypass Start Relay

J—Diode Pack  
 K—Starter  
 L—Fuel Shut-Off Relay  
 M—Fuel Shut-Off Solenoid

N—Ground  
 O—Power Circuit  
 P—Ground Circuit  
 Q—Energizing Circuit

**FUNCTION:**

The starting system converts electrical energy into the mechanical force necessary to crank the engine. A safety interlock system composed of switches and relays prevents bypass starting.

**MAJOR COMPONENTS:**

- 30-Amp Fuse
- 20-Amp Fuse
- Key Switch
- Rear PTO Switch
- Park position Start Switch
- Start Relay
- Bypass Start Relay
- Fuel Shut-Off Relay
- Fuel Shut-Off Solenoid
- Starter

**THEORY OF OPERATION:**

When key switch (D) is turned to start position, current flows through 30-amp fuse (C), through contacts of key switch and out circuit 571. Current then flows through

rear PTO switch (E), circuit 573, and through Park position start switch (G). Current leaving the Park position start switch travels on circuit 301 to both the start (H) and bypass start (I) relays.

Current passing through start relay windings creates a magnetic field, which closes relay contacts. This connects circuit 002 to 309, providing a current path to the starter S terminal. The starter (K) then cranks the engine.

At the same time, current travels to the bypass start relay on circuits 301 and 309. Current through circuit 301 creates a magnetic field in the windings of the bypass start relay which pulls its relay blade into contact with terminal 87. Current flow then stops on circuit 309 because of an open circuit between relay terminals 30 and 87A.

During normal operation, fuel shut-off relay (L) remains inactive. However, circuits 302 and 092 are connected through normally-closed relay contacts between terminals 30 and 87A. This energizes the fuel shut-off solenoid (M) and allows fuel flow through the fuel injection pump.