

## TC30 SAFE OPERATION CIRCUIT (OPERATOR PRESENT)

### Run Circuit

**NOTE:** The Safe Operation circuit is shown with:

- **Operator Present**

1. Current starts at the battery, and flows through the positive (+) battery cable to the engine starter motor.
2. From the starter motor, current flows through the fusible link wire to terminal 30 of the key switch.
3. When the key switch is in the "Run" position, current crosses from terminal 30 to the "AC", terminal.
4. Current flows from the "AC" terminal of the key switch and reaches the fuse panel.
5. Current passes through the 5-amp fuse within the fuse panel to reach a wire splice. The wire splice splits the current into two paths.
- The one path sends the current to terminal 12 of the instrument panel.

Current enters terminal 12 and provides power to the charge, low oil pressure, and air restriction warning lights. These warning lights require a completed ground path to illuminate. The ground path to each of the lights is controlled by a switch. When the switch closes, the ground path to the warning light is completed and the light illuminates.

- The other path travels to a wire splice that sends the current to the control and functioning circuits of the kill relay.

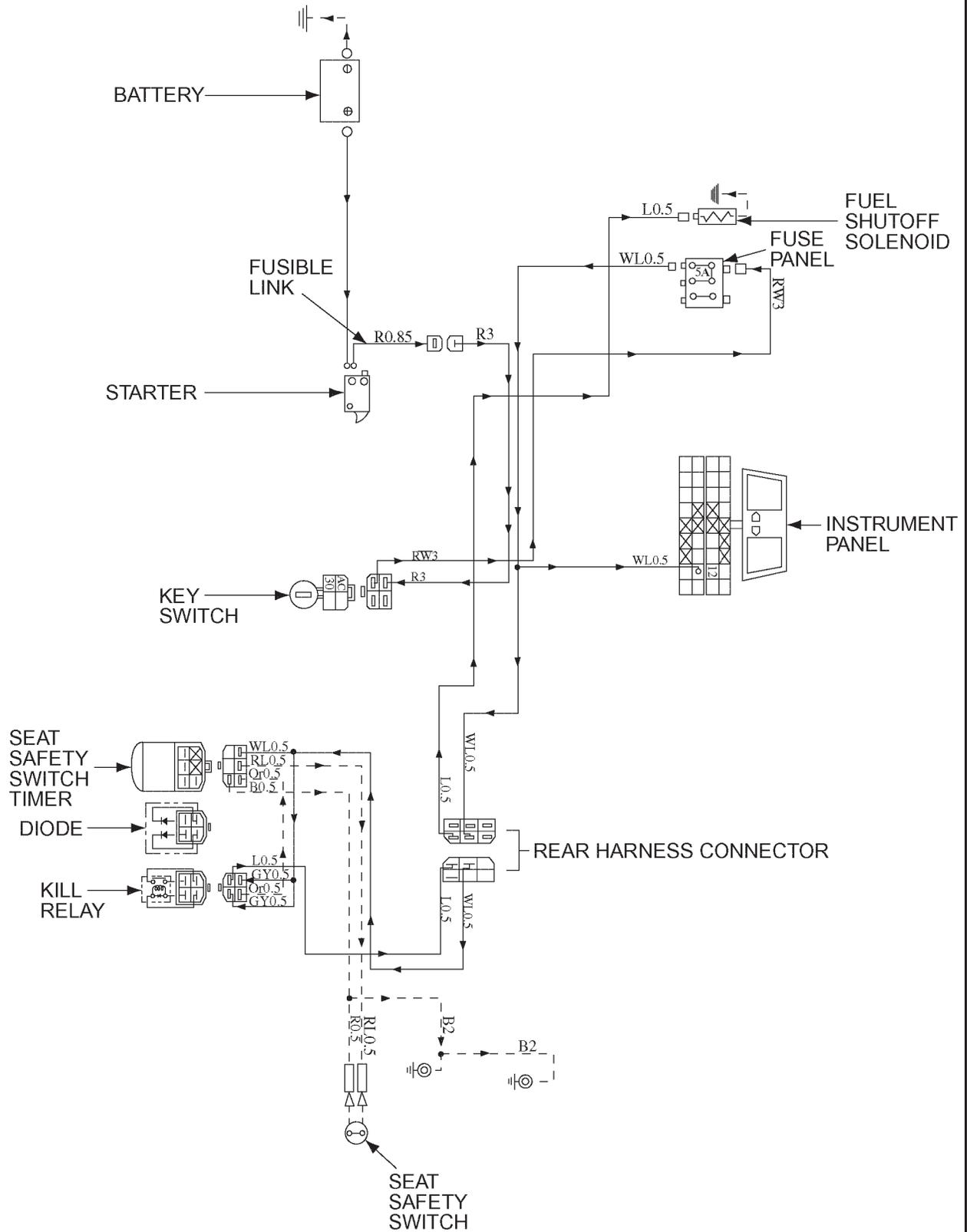
### Control Circuit of the Kill Relay

6. Current enters the coil within the kill relay. The ground path to the kill relay is controlled by the seat safety switch timer. When the operator is present, the seat safety switch closes to complete the ground path to the seat safety switch timer.
7. When the ground path to the seat safety switch timer is complete, the seat safety switch timer activates and latches.
8. When the seat safety switch timer latches, the ground path to the kill relay is complete. The kill relay energizes and latches.

### Functioning Circuit of the Kill Relay

The other path sends current to the functioning circuit of the kill relay. When the kill relay latches, current flows through the functioning circuit of the kill relay to the fuel shutoff solenoid. The fuel shutoff solenoid is grounded directly to the engine, allowing it to become energized. When the fuel shutoff solenoid energizes, the needle within the fuel shutoff solenoid retracts to permit fuel flow.

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## TROUBLESHOOTING

<b>SAFE OPERATION CIRCUIT (Operator Present)</b>		
<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>CORRECTION</b>
Engine does not continue to run while operator is not seated	Defective key switch	Test key switch and replace as necessary
	Malfunctioning fuel shutoff solenoid	Test fuel shutoff solenoid and replace as necessary
	Blown 5-amp fuse	Inspect fuse and replace as necessary
	Open wiring in safe operation circuit	Check for loose connectors, grounds, and wiring damage