

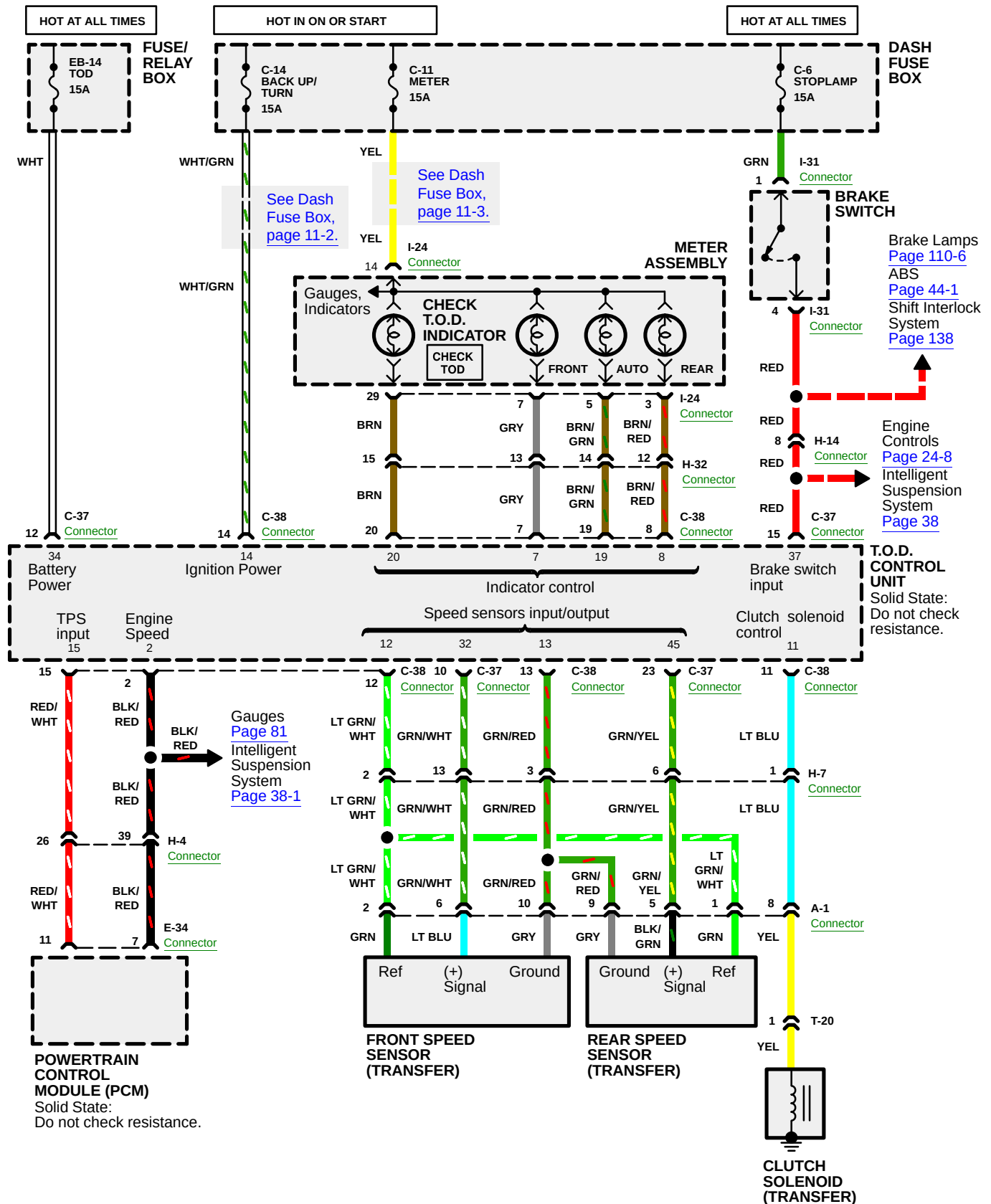
TORQUE ON DEMAND (T.O.D.) SYSTEM

Component Index

- 4 H/L Transfer Switch Assembly
- Automatic Transmission Mode Switch
- Brake Switch
- Clutch Solenoid (Transfer)
- Dash Fuse Box
- Data Link Connector (DLC) C-39 (16-BLK)
- Front Axle Motor Actuator
- Front Speed Sensor (Transfer)
- Fuse/Relay Box
- H-L Shift Motor Assembly
- Meter Assembly
- Powertrain Control Module (PCM)
- Rear Speed Sensor (Transfer)
- Shift-On-The-Fly Controller
- T.O.D. Control Unit

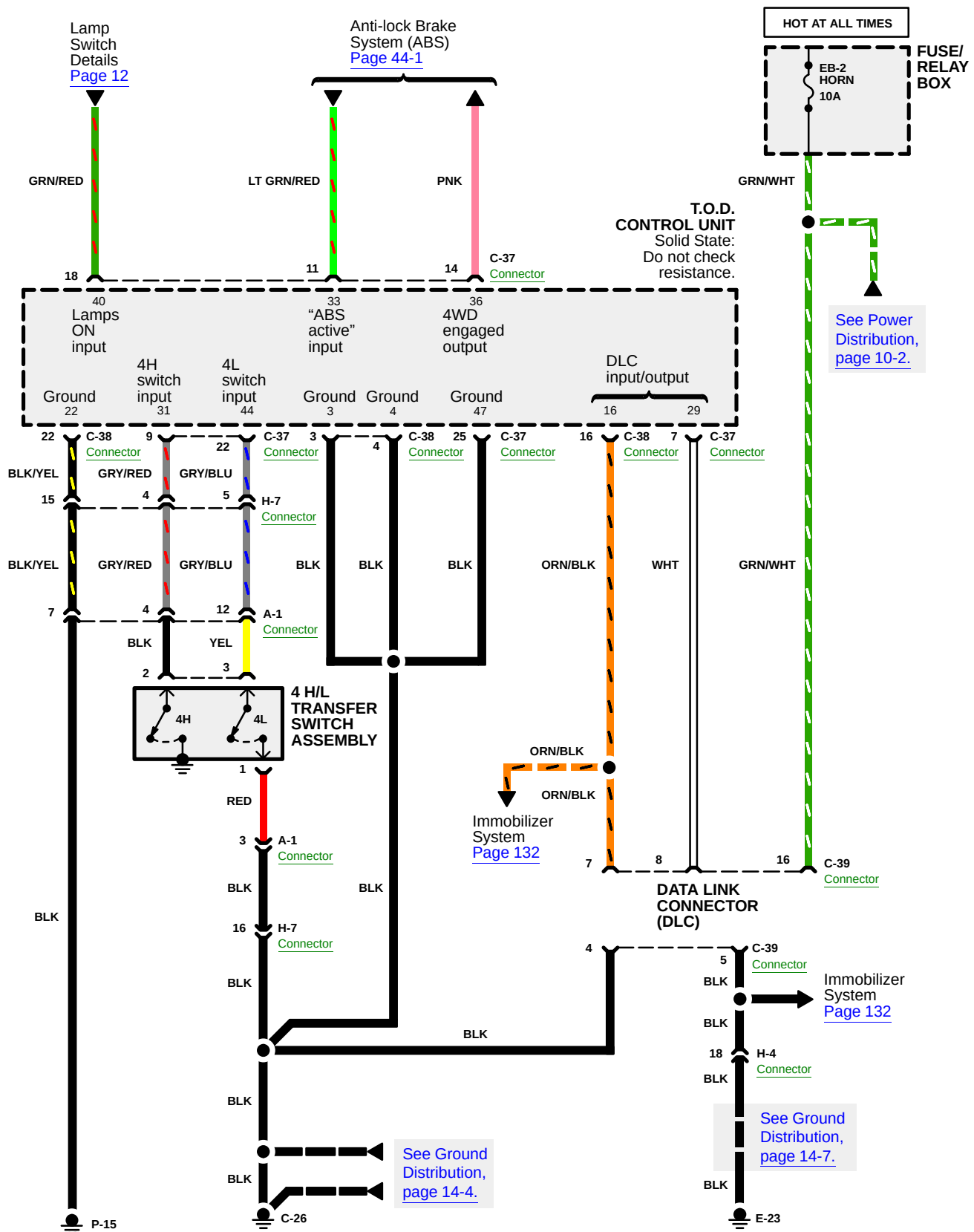
TORQUE ON DEMAND (T.O.D.) SYSTEM

Circuit Schematic



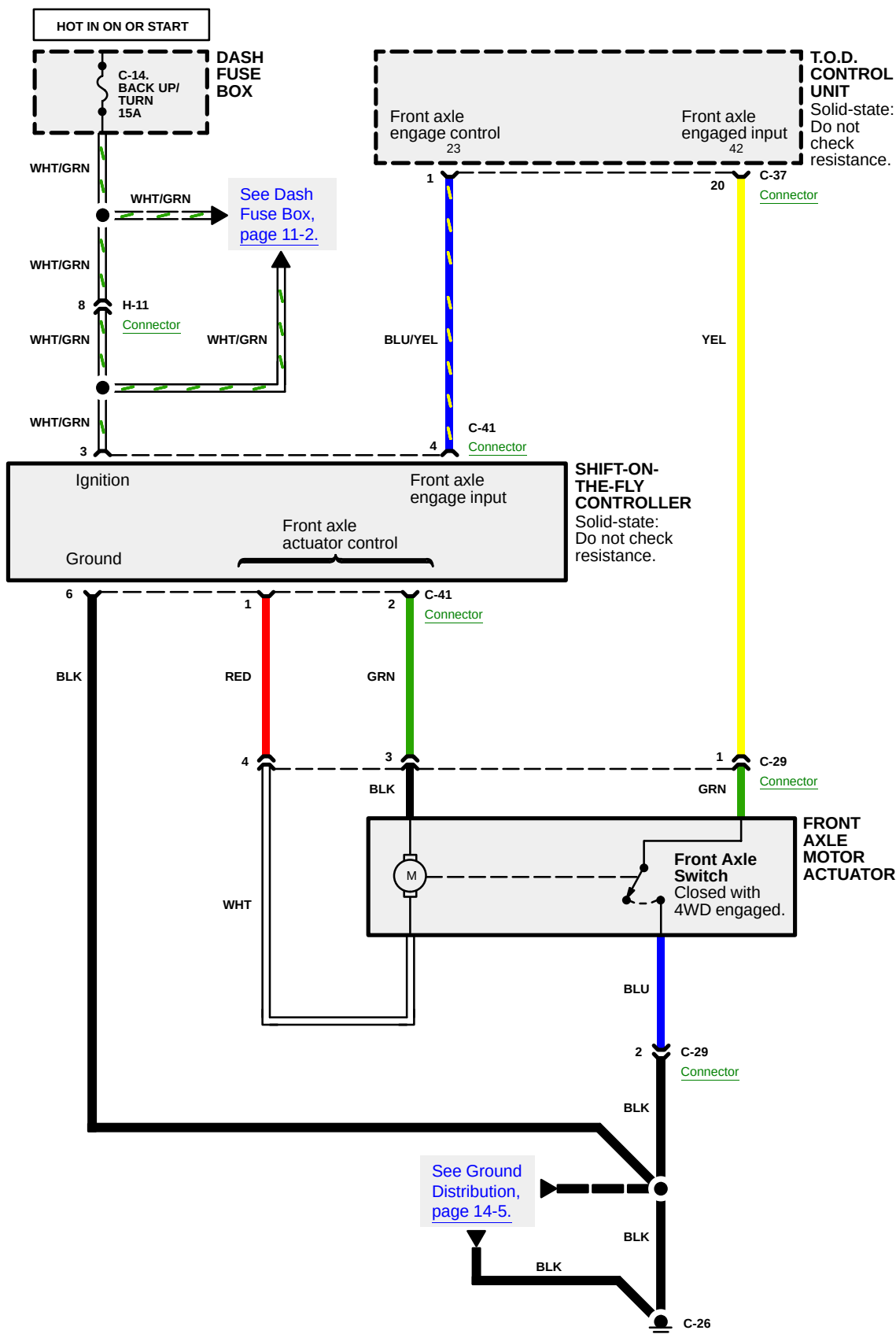
TORQUE ON DEMAND (T.O.D.) SYSTEM

Circuit Schematic



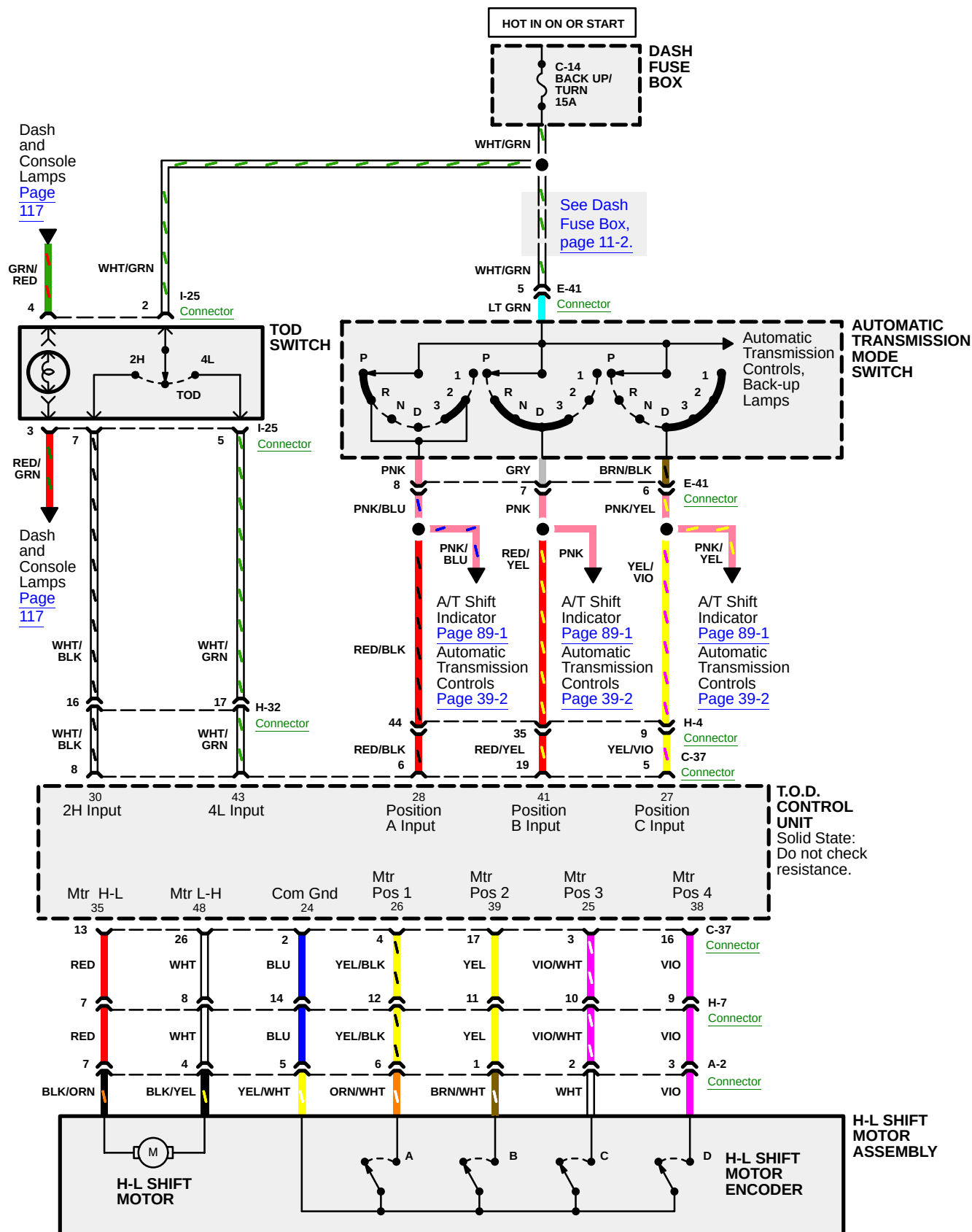
TORQUE ON DEMAND (T.O.D.) SYSTEM

Circuit Schematic



TORQUE ON DEMAND (T.O.D.) SYSTEM

Circuit Schematic



TORQUE ON DEMAND (T.O.D.) SYSTEM

Component Location Index

(Refer to Section 201 for photographs.)

Component	Photo No.
4 H/L Transfer	
Switch Assembly	Right side of transfer case 100
Automatic Transmission	
Mode Switch	Left side of automatic transmission 101
Brake Switch	Below left side of I/P 51
Clutch Solenoid (Transfer)	In the transfer case
Dash Fuse Box	Behind left I/P side trim panel 42
Data Link Connector (DLC)	
C-39 (16-BLK)	Below left side of I/P, near engine hood release 45
Front Axle Motor Actuator	Left side of front axle 39
Front Speed Sensor (Transfer)	Right rear of transmission 108
Fuse/Relay Box	Right side of engine compartment 8
H-L Shift Motor Assembly	On rear of transfer case 108
Meter Assembly	Left side of I/P 55
Powertrain Control Module	
(PCM)	Left side of engine compartment 26
Rear Speed Sensor (Transfer)	Right rear of automatic transmission 110
Shift-On-The-Fly Controller	Behind audio unit 67
T.O.D. Control Unit	Below left side of I/P 51
Connector	
A-1 (12-BLK/GRY)	Top of transfer case 98
A-2 (8-GRY)	Top of transfer case 98
C-29 (4-GRY)	Lower left rear of engine 97
C-41 (6-WHT)	Behind audio unit
E-41 (8-BLK)	Left side of transmission 101
H-4 (52-GRY)	Left side of engine compartment 31
H-7 (16-BLU)	Left front of engine compartment 6
H-11 (19-BLK)	Behind left kick panel 46
H-13 (19-WHT)	Behind right kick panel 62
I-24 (30-GRN)	Top of meter assembly 54
I-25 (10-GRY)	Left side of I/P
I-31 (4-WHT)	Below left side of I/P 51
T-20 (1-BLK)	Rear of transfer case 110
Ground	
C-26	Left side of engine compartment 25
E-23	Right side of engine 19
P-15	Top of transfer case 96

TORQUE ON DEMAND (T.O.D.) SYSTEM

Circuit Operation

Voltage is applied at all times through the TOD fuse EB-14 and voltage is applied with the starter switch in ON or START, through the BACK UP/TURN fuse C-14.

2H

Placing the T.O.D. switch in the 2H position places the vehicle in RWD or rear wheel drive mode. The T.O.D. system is not active in this mode and will be indicated by the T.O.D. indicator in the Meter Assembly.

T.O.D.

Placing the T.O.D. switch in the T.O.D. position places the vehicle in F4WD or electronically controlled torque split four-wheel drive mode. The T.O.D. control unit receives input from the front speed sensor (transfer) and the rear speed sensor (transfer) and determines if there is any variation between the front drive shaft and rear drive shaft speeds. In the event of a variation in speeds, voltage is applied to the clutch solenoid (transfer) to apply torque to the front wheels. While voltage is being applied to the clutch solenoid (transfer), the T.O.D. control unit is providing ground to the corresponding indicators in the meter assembly. The T.O.D. control unit receives input from the throttle position sensor (TPS) in order to determine acceleration and deceleration conditions. The T.O.D. control unit receives an input from the ABS system, when active, to apply voltage to the clutch solenoid (transfer). When the T.O.D. is active the shift on the fly controller will engage the front axle.

4L

Placing the T.O.D. switch in the 4L position places the vehicle in S4WD or low-speed mechanical lockup four-wheel drive mode. The High-Low shift motor engages the transfer case in to the 4-wheel drive low range and the shift on the fly controller will engage the front axle. The T.O.D. system is not active in this mode and will be indicated by the T.O.D. indicator in the Meter Assembly.