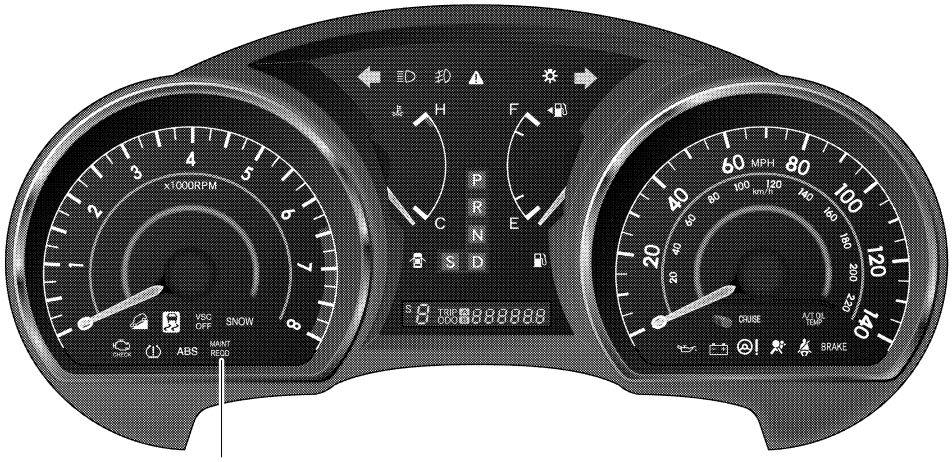
METER

■COMBINATION METER ASSEMBLY

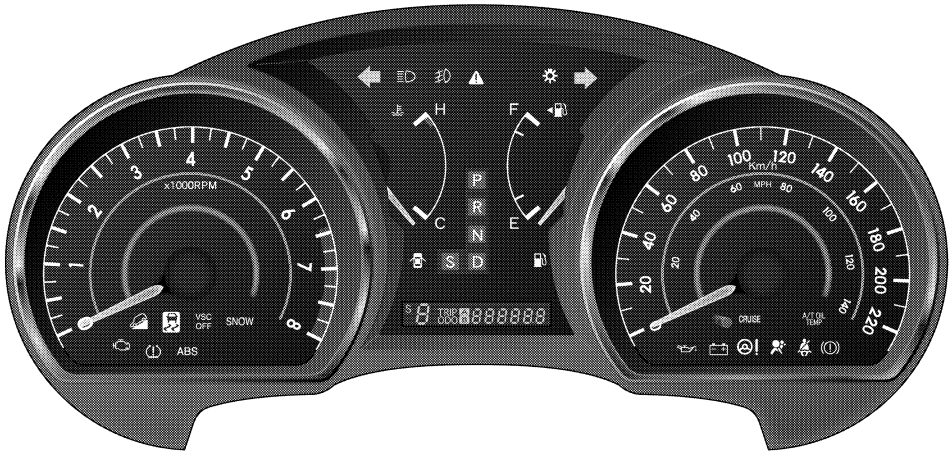
1. General

The combination meter assembly has the following features:

- The combination meter assembly is used an optitron display type. This type realizes excellent visibility through the use of smoke acrylic in the protective panel, and bright LEDs (Light Emitting Diodes) that have high contrast to illuminate the indicator and the dial.
- All the meters, gauges, indicator lights and warning lights use LEDs to reduce consumption of electrical energy.
- The combination meter assembly has a built-in Meter ECU and buzzer.
- An LCD (Liquid Crystal Display) combined odometer and trip meter is used.
- The oil replacement reminder light is used only for the U.S.A. model without multi-information display.



Oil Replacement Reminder Light **U.S.A. Models** 06J0BE25Z

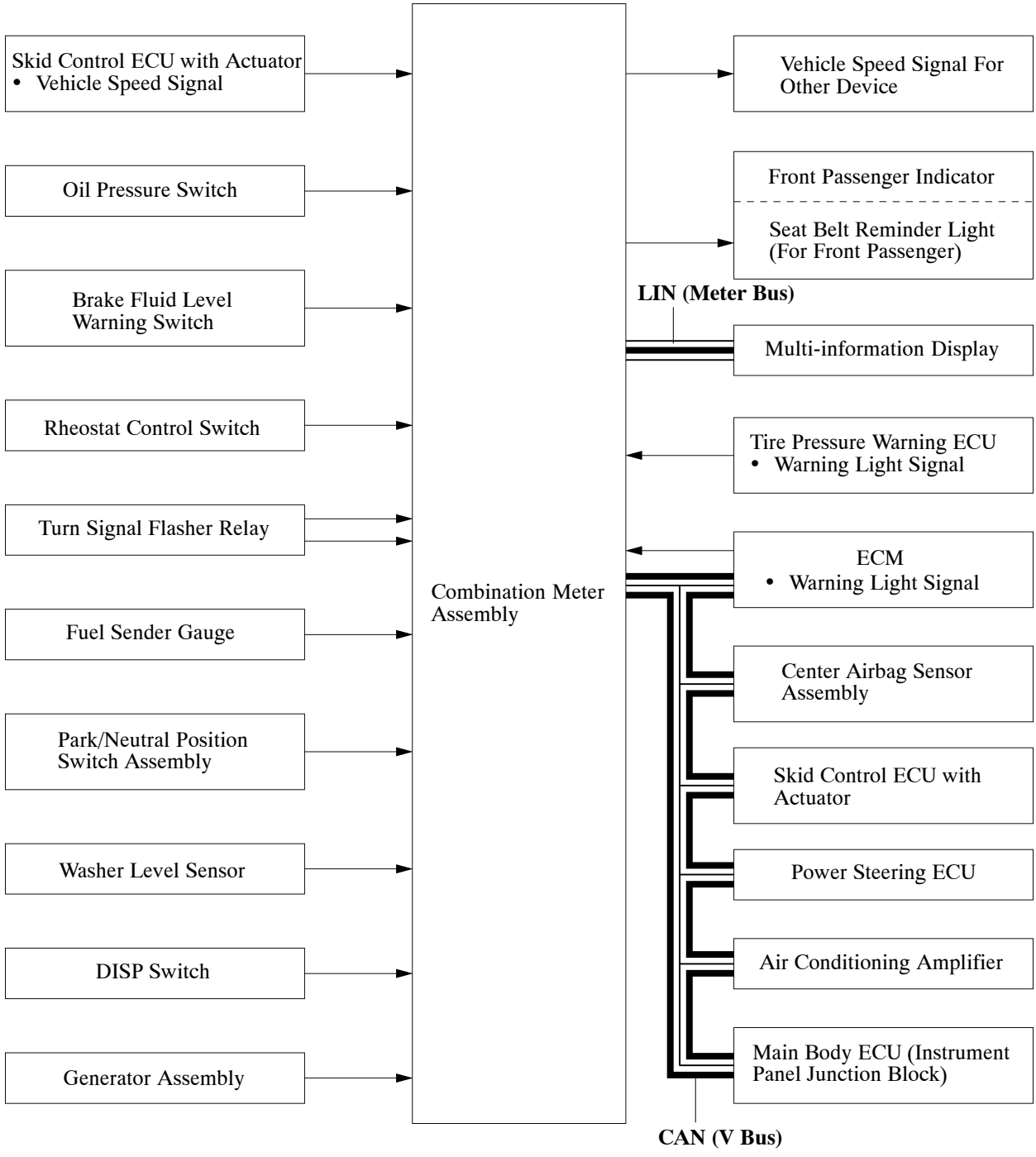


Canada Models 06J0BE26Z

Service Tip

If the LEDs malfunction, the entire combination meter assembly must be replaced. For details, see the 2008 HIGHLANDER Repair Manual (Pub. No. RM06J0U).

2. System Diagram



06J0BE52C

BE

3. Input Communication Signals to Combination Meter

Input Communication Signal	Transmitting ECU
• Starter Signal • Engine Type Signal • Cruise Control Signal • TACH Signal • Fuel Injection Information Signal • Engine Coolant Temperature Signal • ATF Temperature Signal • Current Gear Position Signal • Shift Position Signals (P, R, N, D) • Reject Buzzer Signal • Sport Mode Signal • SNOW Switch Signal	ECM
• Outside Temperature Signal	Air Conditioning Amplifier
• SRS Warning Signal • Occupant Classification Signal • Seat Belt Buckle Switch Signal (For Front Passenger)	Center Airbag Sensor Assembly
• Vehicle Speed Sensor Signal • Brake Warning Signal • ABS Warning Signal • Slip Indicator Signal • VSC OFF Indicator Signal • DAC Switch Signal	Skid Control ECU
• EPS Warning Signal	Power Steering ECU
• Courtesy Switch Signals • Seat Belt Buckle Switch Signal (For Driver) • Key Unlock Warning Signal • Light Control Switch Signal • Automatic Dimmer Signal • Parking Brake Signal • Sliding Roof Open Warning Signal	Main Body ECU (Instrument Panel Junction Block)

4. Buzzer

General

The table below shows the warning and reminder functions of the buzzer.

Function	Item
Warning	• Downshift Warning • Multi-information Display Warning Display (See page BE-42)
Reminder	• Key Reminder • Seat Belt Reminder (See page BE-223)

Downshift Warning

When downshifting is attempted on automatic transmission vehicles while driving at a vehicle speed at which downshifting is impossible, the buzzer sounds twice (approx. 0.25 sec. × 2) as a warning and the downshift is prohibited.

- The maximum speeds at which downshifting is possible are shown in the table below.

Shift Operation	Maximum Speed
4th → 3rd	150 km/h (93 mph)
3rd → 2nd	92 km/h (57 mph)
2nd → 1st	39 km/h (24 mph)

5. Oil Replacement Reminder Light

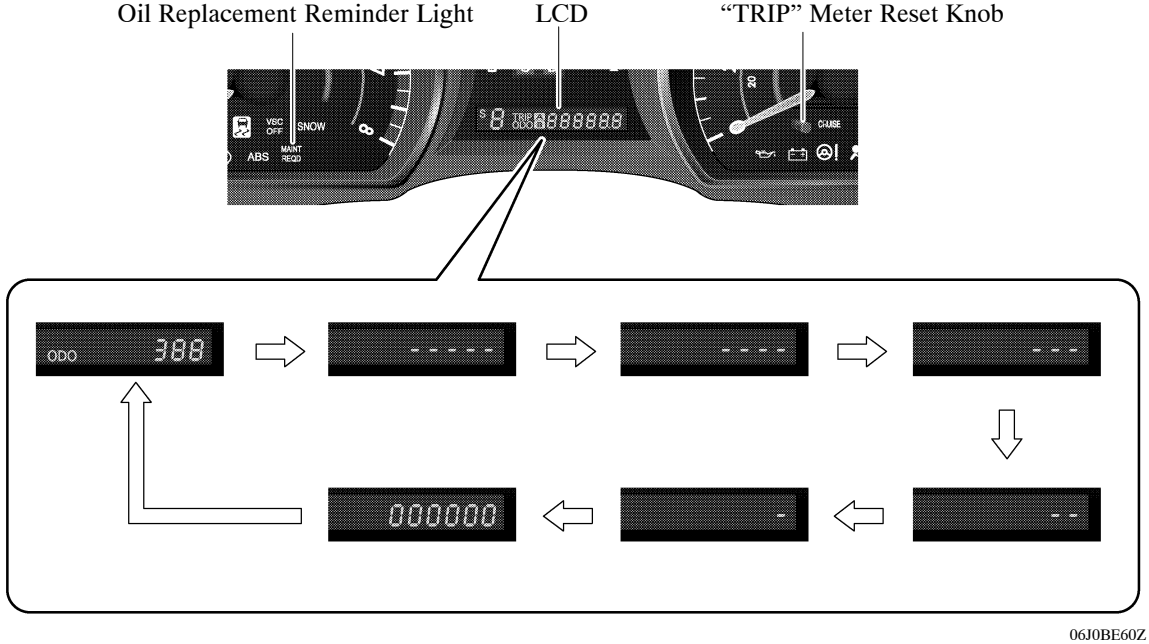
An oil replacement reminder light will light or flash, depending on the vehicle driving distance, to remind the driver to change the engine oil.

- Operation of the oil replacement reminder light is based on the accumulated vehicle driving distance memorized in the combination meter assembly.
- Combination meter assembly calculates the vehicle driving distance based on the signals from Skid Control ECU with actuator.
- There are two types of warnings: one is flashed when the vehicle driving distance is 4500 miles or more since the last time the system was reset, and the other is remained on when the driving distance is 5000 miles or more.
- The oil replacement reminder light flashes for approximately 15 seconds after the ignition switch is changed to IG-ON, and then goes off.
- The oil replacement reminder light remains on while the ignition switch is IG-ON.
- After the engine oil has been changed, accumulated vehicle driving distance is memorized in the combination meter assembly and should be reset by the “TRIP” meter reset knob. At this point, the accumulated vehicle driving distance is reset to zero.

Service Tip

The accumulated vehicle distance memorized in combination meter assembly can be reset using the following procedure.

1) Turn the ignition switch ON, and make sure that the odometer is displayed on the LCD.
2) Turn the ignition off. While pushing the “TRIP” meter reset knob, turn the ignition switch ON.
3) With the ignition switch on, keep holding the “TRIP” meter reset knob (for at least five seconds) with the LCD counting down as shown below. Release the “TRIP” meter reset knob when the resetting has completed.
4) As the resetting is completes, the LCD will display “000000” for one second. Then, the LCD will display the ODO meter.



06J0BE60Z