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Information and Message Center - Information and Message Center

Description and Operation

COMPONENT LOCATION

E76933

Item	Part Number	Description
1	-	Message center
2	-	Odometer

OVERVIEW

The message center is a Liquid Crystal Display (LCD) located in a central position in the instrument cluster. The message center displays system and vehicle status information to the driver.

NOTE: Vehicles before 2010 MY: The message center is fitted to high line instrument clusters only.

NOTE: Vehicles from 2010 MY: the message center is fitted as standard to all vehicles.

The instrument cluster receives message center data from the Central Junction Box (CJB) over the medium speed Controller Area Network (CAN) bus. The CJB generates this data based on medium and high speed CAN bus inputs and hardwired inputs received from various system control modules. Software contained within the instrument cluster converts the data from the CJB into display messages for the driver.

DISPLAY MODES

The message center has 8 different display modes as shown in the table below.

Display Mode	Description	Format
0	Blank	No display
1	Pre-check	System pre-check
2	Normal	Ambient air temperature display only
3	Trip computer	Ambient air temperature and trip computer display
4	Warning/Status message	Status and warning information only
5	Terrain Response	Terrain Response information available in 3 (A, B, and C) formats depending on active functions
6	Not used	Not used
7	Diagnostic	Test images displayed to check LCD function

Display Mode 0

This mode is entered when the ignition is switched off and the CAN bus network is asleep. No characters or symbols are displayed when in this mode. The mode is exited when either power mode 6 (ignition on) is active or the driver enters the customer configuration 'Information' mode.

Display Mode 1

This mode is entered when power mode 6 is first active. The full screen message 'SYSTEM CHECK IN PROGRESS' is displayed for approximately 3 seconds while the instrument cluster carries out an internal diagnostic routine. After the 3 second time period, display mode 2 will become active. If during the 3 second period the ignition is switched off, the message center will revert back to display mode 0.

Display Mode 2

This is the normal operating mode of the message center and will automatically become active after display mode 1.

Display Mode 3

This mode is entered by pressing the trip computer button when the message center is in display mode 2. Trip computer information will be displayed for 20 seconds after which time the display will revert back to display mode 2.

Display Mode 4

This mode is entered automatically if the message center receives warning or status messages from the CJB. The whole screen is used to display warning/status messages, over writing the ambient air temperature (display mode 2) and trip computer (display mode 3) information. Warning messages are displayed for 3 seconds, after which the display will return to the previous display mode (2 or 3). Status messages do not extinguish until the status is rectified, for example screen wash is added to the windshield washer bottle to remove the 'LOW WASHER FLUID' message. If more than 1 status message is present, the screen will scroll through each message at 3 second intervals.

All current warning/status messages are scrolled through at 3 second intervals when the vehicle first enters power mode 6, and when the ignition is switched off. These are displayed in order of priority, the most important message being displayed first.

Display Mode 5

Display mode 5 is entered when Terrain Response is selected. This mode has 3 formats. Format 5A displays the same information as display mode 3 with the addition of a Terrain Response icon in the top left hand (LH) corner of the screen, and a steering wheel direction icon displayed centrally at the top of the screen.

Depending on the Terrain Response CAN message received from the CJB, the screen will enter either display mode 5B or display mode 5C. When in display mode 5B the whole screen will be used to display Terrain Response messages, over writing the information shown in mode 5A.

If the screen adopts display mode 5C the top third of the screen will display all Terrain Response option icons. The lower two thirds of the screen will display Terrain response messages.

The instrument cluster provides a feedback signal to the Terrain Response control module informing it that the relevant Terrain Response information is being displayed. The Terrain Response messages for all 3 display mode 5 formats can be overwritten however if the message center receives a high priority warning/status message. If the message center is unable to display Terrain Response messages due to this occurrence, the instrument cluster changes the feedback signal to the control module from a value of 1 to a value of 0.

Display Mode 7

Display mode 7 is a diagnostic mode and can only be accessed using the Land Rover approved diagnostic system. The diagnostic routine can be found in '413-00 Instrument Pack and Panel Illumination' under the 'Content Model' menu.

When in display mode 7, 4 different patterns are displayed to check that all areas of the LCD are functional.

MESSAGE PRIORITY

Messages are assigned priorities which are defined by the effect on driving safely and the functional ability of the vehicle. New messages are displayed accompanied by a chime from the instrument cluster sounder. The messages are divided into 3 priority groups.

Priority Group 1

This group of messages have a direct effect on the driving ability and safety of the vehicle, 'ENGINE SYSTEM FAULT' for example. This message would require an immediate reaction from the driver in response to the message. Priority 1 messages will also be accompanied by the appropriate warning indicator flashing and a continuous chime from the instrument cluster. If more than one priority 1 message is present, each message is displayed in turn at 3 second intervals.

Priority Group 2

This group of messages do not directly affect the driving ability or safety of the vehicle, 'CHECK BRAKE PADS' for example. This message must be noted by the driver and the cause rectified as soon as possible. Each of these messages is displayed once when power mode 6 is entered or when the fault occurs for a predetermined time period. These messages can be recalled by the driver by pressing the trip reset button for more than 3 seconds.

Priority Group 3

This group of messages relate to low priority messages, 'LOW WASHER FLUID' for example. Depending on the message, some messages are only shown at the end of a journey to avoid annoyance to the driver. The messages will be accompanied by a chime when the ignition is switched off to alert the driver to their presence.

MESSAGE LIST

Messages are displayed in a language appropriate for the market specification of the vehicle. The language can be changed if required using the Land Rover approved diagnostic system.

NOTE: The list below is shown in alphabetical order.

Message	Other Warnings	Reason	Action
BONNET OPEN	None	Hood open or not fully closed	Close hood
CHECK ALL TYRE PRESSURES	Amber Tire Pressure Monitoring System	Advisory message. Low pressure warning limit reached in more than 1 wheel in low speed	Check all tire pressures and adjust accordingly

	(TPMS) indicator illuminated	mode or warning limit reached in any running wheel and no location specified by TPMS. For additional information, refer to: Wheels and Tires (204-04 Wheels and Tires, Description and Operation).	
CHECK ALL TYRE PRESSURES FRONT LEFT LOW	Amber TPMS indicator illuminated	Low pressure warning limit reached in front left tire in low speed mode	Check tire pressure and adjust accordingly
CHECK ALL TYRE PRESSURES FRONT RIGHT LOW	Amber TPMS indicator illuminated	Low pressure warning limit reached in front right tire in low speed mode	Check tire pressure and adjust accordingly
CHECK ALL TYRE PRESSURES REAR LEFT LOW	Amber TPMS indicator illuminated	Low pressure warning limit reached in rear left tire in low speed mode	Check tire pressure and adjust accordingly
CHECK ALL TYRE PRESSURES REAR RIGHT LOW	Amber TPMS indicator illuminated	Low pressure warning limit reached in rear right tire in low speed mode	Check tire pressure and adjust accordingly
CHECK SPARE TYRE PRESSURE	Amber TPMS indicator illuminated for 20 seconds and again at subsequent ignition cycles	Low pressure warning limit reached in spare tire	Check tire pressure and adjust accordingly
CRANKING WILL COMMENCE AFTER GLOW PERIOD	Glow plug indicator illuminated	Ambient air temperature below 0ºC (32ºF)	None
CRUISE CONTROL NOT PERMITTED	None	Vehicle operating parameters outside threshold for speed control operation	None
DPF FULL	Handbook symbol illuminated in message center	Diesel particulate filter requires regenerating	For additional information, refer to: Exhaust System - 2.2L Diesel (309-00 Exhaust System - 2.2L Diesel, Description and Operation).
DPF FULL VISIT DEALER	None	Regeneration of the diesel particulate filter was unsuccessful	Use the Land Rover approved diagnostic system to force regeneration of the diesel particulate filter.
DRIVER DOOR OPEN	None	Drivers door open or not fully closed	None
DSC SWITCHED OFF	Amber Dynamic Stability Control (DSC) indicator illuminated	System not available due to DSC switched off by driver	Press DSC switch to reactivate system
ECO STOP/START FAULT	Tell-tale light in the Eco switch extinguished	Stop/Start not available due to system or sub-system failure	Connect Land Rover approved diagnostic system to diagnose fault
ECO STOP/START OFF	Tell-tale light in the Eco switch extinguished	The Eco switch has been pressed	If required, press the Eco switch to reactivate the Stop/Start system
ECO STOP/START ON	Tell-tale light in the Eco switch illuminated	The system has been switched off and then later switched on within the same ignition cycle	If required, press the Eco switch to deactivate the Stop/Start system
ECO STOP/START UNAVAILABLE	Tell-tale light in the Eco switch extinguished	Either Hill Decent Control (HDC) or Terrain Response (TR) is active	Deselect HDC or TR if terrain conditions permit
ENGINE SYSTEM FAULT	Malfunction Indicator Lamp (MIL) illuminated	Engine Control Module (ECM) has detected a fault in the engine management system	Connect Land Rover approved diagnostic system to diagnose fault
FRONT LEFT TYRE PRESSURE NOT MONITORED	Amber TPMS indicator flashes for 75 seconds then remains illuminated	No transmission from front left TPMS pressure sensor	Connect Land Rover approved diagnostic system to diagnose fault
FRONT PASSENGER DOOR OPEN	None	Front passenger door open or not fully closed	None
FRONT RIGHT TYRE PRESSURE NOT MONITORED	Amber TPMS indicator flashes for 75 seconds then remains	No transmission from front right TPMS pressure sensor	Connect Land Rover approved diagnostic system to diagnose fault

	illuminated		
FUEL TANK CAP LOOSE OR MISSING	None	North American vehicles only. Diagnostic Monitoring of Tank Leakage (DMTL) pump unable to pressurize the fuel system. For additional information, refer to: Electronic Engine Controls - 3.2L (303-14 Electronic Engine Controls - 3.2L, Description and Operation).	Tighten or replace the fuel tank cap. Check fuel system for leaks.
GRASS GRAVEL SNOW	Grass Gravel Snow Terrain Response icon displayed in message center	Advisory message. Terrain Response rotary control has been moved to the Grass Gravel Snow position. Program will become active after 2 seconds	None
GRASS GRAVEL SNOW PROGRAM SELECTED	Grass Gravel Snow Terrain Response icon displayed in message center	Advisory message. Terrain Response Grass Gravel Snow special program has been selected for more than 2 seconds and is currently active	None
HDC FAULT SYSTEM NOT AVAILABLE	Single chime from instrument cluster sounder	Hill Descent Control (HDC) system fault. Drive with care and do not attempt to descend steep slopes. For additional information, refer to: Anti-Lock Control - Stability Assist (206-09 Anti-Lock Control - Stability Assist, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
HDC NOT AVAILABLE IN THIS GEAR	Green HDC active indicator flashes	Incorrect gear selected for HDC to operate. For additional information, refer to: Anti-Lock Control - Stability Assist (206-09 Anti-Lock Control - Stability Assist, Description and Operation).	Select correct gear before attempting descent
HDC NOT AVAILABLE SPEED TOO HIGH	Green HDC active indicator flashes	HDC not available as current vehicle speed is above operating threshold. For additional information, refer to: Anti-Lock Control - Stability Assist (206-09 Anti-Lock Control - Stability Assist, Description and Operation).	Reduce speed before attempting descent
HDC TEMPORARILY NOT AVAILABLE SYSTEM COOLING	Green HDC active indicator flashes	HDC system switched off while brake system is cooling	Wait until message is extinguished before attempting descent
HDC SWITCHED OFF	Single chime from instrument cluster sounder	HDC system switched off by driver, Terrain Response system or speed threshold has been exceeded	None
HIGH ENGINE SPEED FOR COOLING	None	Idle speed increased to assist engine cooling	None
KEY IN IGNITION	Continuous chime from instrument cluster sounder	Advisory message informing the driver that the remote handset has been left in the start control module, the ignition has been switched off, and the drivers door is open	Remove the remote handset from the start control module
LEFT REAR DOOR OPEN	None	Left rear door open or not fully closed	None
LIGHTS ON	Continuous chime from instrument cluster sounder	Advisory message that the exterior lamps are switched on, the remote handset has been removed from the start control module and the drivers door has been opened	Switch off exterior lamps
LOW COOLANT LEVEL	None	Engine coolant level below recommended level	Check engine cooling system for leaks and top up as necessary
LOW WASHER FLUID	Single chime from instrument cluster sounder at ignition on (power mode 6)	Washer fluid level below threshold	Add water and additive mixture to windshield washer bottle
MEMORY 1 SELECTED	None	Confirmation that memory function has been successfully carried out	None
MEMORY 2 SELECTED	None	Confirmation that memory function has been successfully carried out	None
MEMORY 3 SELECTED	None	Confirmation that memory function has been successfully carried out	None
MEMORY 1 STORED	Single chime from instrument cluster	Confirmation that settings have been stored in the memory	None

	sounder		
MEMORY 2 STORED	Single chime from instrument cluster sounder	Confirmation that settings have been stored in the memory	None
MEMORY 3 STORED	Single chime from instrument cluster sounder	Confirmation that settings have been stored in the memory	None
MUD RUTS	Mud Ruts Terrain Response icon displayed in message center	Advisory message. Terrain Response rotary control has been moved to the Mud Ruts position. Program will become active after 2 seconds	None
MUD RUTS PROGRAM SELECTED	Mud Ruts Terrain Response icon displayed in message center	Advisory message. Terrain Response Mud Ruts special program has been selected for more than 2 seconds and is currently active	None
OIL SERVICE REQUIRED VISIT DEALER	'SERVICE' displayed in odometer	Advisory message informing driver that a diesel particulate filter regeneration cycle has caused the engine oil to become diluted. For additional information, refer to: Exhaust System - 2.2L Diesel (309-00 Exhaust System - 2.2L Diesel, Description and Operation).	Carry out service and reset Service Interval Indicator (SII) using the Land Rover approved diagnostic system
PRESS BRAKE WHEN STARTING	None	Advisory message to allow engine starting. Vehicles with automatic transmission only	None
PRESS CLUTCH WHEN STARTING	None	Advisory message to allow engine starting. Vehicles with manual transmission only	None
PROGRAM CHANGE IN PROGRESS	Selected Terrain Response icon displayed in message center	Vehicle operating conditions prevent selection of special program. For additional information, refer to: Ride and Handling Optimization (204-06 Ride and Handling Optimization, Description and Operation).	If operating conditions change within 60 seconds selected program will be activated. For additional information, refer to: Ride and Handling Optimization (204-06 Ride and Handling Optimization, Description and Operation).
REAR LEFT TYRE PRESSURE NOT MONITORED	Amber TPMS indicator flashes for 75 seconds then remains illuminated	No transmission from rear left TPMS pressure sensor	Connect Land Rover approved diagnostic system to diagnose fault
REAR RIGHT TYRE PRESSURE NOT MONITORED	Amber TPMS indicator flashes for 75 seconds then remains illuminated	No transmission from rear right TPMS pressure sensor	Connect Land Rover approved diagnostic system to diagnose fault
RECOMMEND COMMAND SHIFT FOR DEEP SOFT SAND	Sand Terrain Response icon displayed center	Advisory message for Terrain Response special program. Only displayed on vehicles with automatic transmission	Select Command Shift if required
RECOMMEND STARTING IN 2ND GEAR FOR SLIPPERY CONDITIONS	Grass Gravel Snow Terrain Response icon displayed in message center	Advisory message for Terrain Response special program. Only displayed on vehicles with manual transmission once every ignition cycle	Select 2nd gear if required
REDUCED ENGINE PERFORMANCE	None	A fault has occurred that has reduced engine power output	Connect Land Rover approved diagnostic system to diagnose fault
RESTART REQUIRED PRESS CLUTCH	None	When an engine restart is required in a Stop/Start cycle but the driver's location is unknown. Either the driver's door or safety belt is unlatched	Depress clutch
RIGHT REAR DOOR OPEN	None	Right rear door open or not fully closed	None
SAND	Sand Terrain Response icon displayed in message center	Advisory message. Terrain Response rotary control has been moved to the Sand position. Program will become active after 2 seconds	None
SAND PROGRAM SELECTED	Sand Terrain Response icon displayed in message center	Advisory message to inform driver that Terrain Response Sand special program has been selected for more than 2 seconds and is currently active	None
SELECT NEUTRAL TO RESTART	None	The engine has been shutdown in a Stop/Start cycle and the driver has engaged a	Depress clutch and select neutral

		gear without depressing the clutch.	
SELECT PARK OR NEUTRAL TO START ENGINE	None	Advisory message to allow engine starting	None
SPECIAL PROGRAMS OFF	Special programs off icon displayed in message center	Advisory message to inform driver that system is in special programs off mode	None
SPECIAL PROGRAM TEMPORARILY NOT AVAILABLE	Current Terrain Response program icon displayed in message center	Temporary condition making special programs unavailable. Terrain Response defaults to special programs off mode	Drive off-road with care until temporary condition resolved
SYSTEM CHECK IN PROGRESS	None	Instrument cluster internal diagnostic routine	None
TAILGATE OPEN	None	Tailgate open or not fully closed	None
TERRAIN RESPONSE SPECIAL PROGRAMS NOT AVAILABLE	Single chime from instrument cluster sounder and special programs off icon displayed in message center	Terrain Response special programs not available due to system failure. Drive off-road with care. For additional information, refer to: Ride and Handling Optimization (204-06 Ride and Handling Optimization, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
TERRAIN RESPONSE SPECIAL PROGRAMS OFF	All 5 Terrain Response icons displayed in message center	Advisory message to inform driver that Terrain Response special programs are off	None
TERRAIN RESPONSE SYSTEM FAULTY	Single chime from instrument cluster sounder and special programs off icon displayed in message center	There may be a fault with the Terrain Response system rather than a sub-system fault. For additional information, refer to: Ride and Handling Optimization (204-06 Ride and Handling Optimization, Description and Operation).	Drive off-road with care until temporary condition resolved. Connect Land Rover approved diagnostic system to diagnose fault
TERRAIN RESPONSE SYSTEM NOT AVAILABLE	Single chime from instrument cluster sounder and special programs off icon displayed in message center	Terrain Response special programs not available due to system failure.	Drive off-road with care until temporary condition resolved. Connect Land Rover approved diagnostic system to diagnose fault
TRANSMISSION COMMAND SHIFT SELECTED	None	Advisory message. Movement of the selector lever in + or - positions when selector lever in M/S position	None
TRANSMISSION FAULT	None	Advisory message to inform driver that the Transmission Control Module (TCM) has detected a fault with the automatic transmission. For additional information, refer to: External Controls (307-05 Automatic Transmission/Transaxle External Controls, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
TRANSMISSION FAULT AND OVERHEAT	None	Advisory message to inform driver that the TCM has detected a fault with the automatic transmission and the temperature is too high. For additional information, refer to: External Controls (307-05 Automatic Transmission/Transaxle External Controls, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
TRANSMISSION FAULT LIMITED GEARS AVAILABLE	None	Advisory message to inform driver that the TCM has detected a fault with the automatic transmission and performance may be affected. For additional information, refer to: External Controls (307-05 Automatic Transmission/Transaxle External Controls, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
TRANSMISSION FAULT TRACTION REDUCED	Single chime from instrument cluster sounder	TCM has stopped transmitting CAN bus messages. Message also displayed if fault detected in active on demand coupling. For	Connect Land Rover approved diagnostic system to diagnose fault

		additional information, refer to: External Controls (307-05 Automatic Transmission/Transaxle External Controls, Description and Operation), Rear Drive Axle and Differential (205-02 Rear Drive Axle/Differential, Description and Operation).	
TRANSMISSION OVERHEAT SLOW DOWN	None	Advisory message to inform driver that transmission or active on demand coupling temperature too high. Slow down or stop to assist coolingFor additional information, refer to: External Controls (307-05 Automatic Transmission/Transaxle External Controls, Description and Operation), Rear Drive Axle and Differential (205-02 Rear Drive Axle/Differential, Description and Operation).	Check transmission and active on demand coupling for faults
TYRE PRESSURE MONITORING SYSTEM FAULT	Amber TPMS indicator flashes for 75 seconds then remains illuminated	TPMS fault, no transmission from more than one pressure sensor, or CAN bus signals missing. For additional information, refer to: Wheels and Tires (204-04 Wheels and Tires, Description and Operation).	Connect Land Rover approved diagnostic system to diagnose fault
TYRE PRESSURES LOW FOR SPEED	Amber TPMS indicator illuminated	Low pressure warning limit reached in high speed mode. For additional information, refer to: Wheels and Tires (204-04 Wheels and Tires, Description and Operation).	Check all tire pressures and adjust accordingly
AUXILIARY HEATER UNAVAILABLE LOW FUEL (vehicles from 2009MY with Fuel Fired Booster Heater (FFBH))	None	Fuel level in fuel tank is at or below threshold when FFBH 'ON' request is made.	Replenish fuel in fuel tank
AUXILIARY HEATER UNAVAILABLE LOW BATTERY (Vehicles from 2009MY with FFBH)	None	Battery voltage is below threshold when FFBH 'ON' request is made.	Investigate reason for low battery voltage. Follow the procedures in the Battery Care Manual to establish the condition of the battery.

TRIP COMPUTER

Trip computer information is shown in the bottom half of the message center when the screen is in display mode 3.

Trip Meter

A microprocessor in the instrument cluster calculates the trip data based on a wheel speed signal broadcast by the Anti-lock Brake System (ABS) module over the high speed CAN bus. The CJB acts as a gateway and transmits the wheel speed signal to the instrument cluster over the medium speed CAN bus.

The trip meter displays the distance the vehicle has traveled since the last trip meter reset. The trip meter can be reset by pressing and holding the trip computer button for more than 1 second. The trip meter can display up to a distance of 999.9 miles or kilometers. When this figure is exceeded the trip meter starts again from 0 miles or kilometers.

The trip data is stored in the instrument cluster Random Access Memory (RAM) and will be lost if the battery is disconnected.

Average Fuel Consumption

The instrument cluster receives 2 fuel tank level readings on the medium speed CAN bus via the CJB. The instrument cluster calculates an average value of the amount of usable fuel in the tank from the 2 signals. Every 200 meters of vehicle travel the instrument cluster re-calculates this value to determine how much fuel has been used. This value is then averaged over the last 31 miles (50 kilometers) of travel and displayed in the trip computer.

The distance traveled signal originates in the ABS module and is received by the instrument cluster over the medium speed CAN bus via the CJB.

Range

The range value is calculated using the average fuel consumption value (see above) and the fuel tank level value. By dividing the fuel tank level value by the average fuel consumption value the instrument cluster can calculate the distance the vehicle can travel with the current amount of usable fuel in the tank before refilling is necessary.

Average Speed

The average speed signal is calculated using the vehicle speed signal supplied by the CJB over the medium speed CAN bus. This signal originates in the ABS module and is an average of the 4 wheel speed signals. This value is divided by the time since the last trip computer reset to calculate the average vehicle speed.

ODOMETER

The odometer is located in the speedometer and displays the total distance the vehicle has traveled. This is calculated using the same signal as that used for the trip meter.

The odometer display can show 6 characters and distances up to 999,999 miles or kilometers. The value is stored in a protected area of the instrument clusters Electronically Erasable Programmable Read Only Memory (EEPROM) every 1.2 miles (2 kilometers) of vehicle travel. When the ignition is switched off, back up odometer values are also stored in the following modules:

- CJB
- ABS module
- ECM
- Restraints Control Module (RCM)
- Driver door module
- Passenger door module.

The odometer values in these modules are sent to the instrument cluster over the medium speed CAN bus within the first 2 seconds of the vehicle entering power mode 6. If the values received are the same, the cluster determines the odometer value has not been tampered with. If any value is outside of a 186 mile (300 kilometer) window the instrument cluster stores a Diagnostic Trouble Code (DTC) and will display the majority value. The DTC can be retrieved using the Land Rover approved diagnostic system.

Vehicle Operating Modes

The vehicle has 4 operating modes, which allow certain features to be enabled and disabled:

- Normal (nor)
- Factory (fact)
- Transport (transp)
- Crash (crash)

The current vehicle operating mode, shown in parenthesis above, is displayed in the odometer for 5 seconds when the vehicle first enters power mode 6.

NOTE: 'Nor' is only displayed in the Odometer when the vehicle operating mode is changed to normal from any of the other vehicle operating modes. Under all other conditions, 'Nor' is not displayed.

The vehicle operating mode can be changed using the Land Rover approved diagnostic system.

Gear Position

The gear position indicator shows the current automatic transmission selector lever position. During normal operation the display will show P (park), R (reverse), N (neutral) and D (drive). When the transmission is operated in 'CommandShift™' mode, the odometer displays the currently selected manual gear; 1, 2, 3, 4, 5 or 6.

In the event of either a CAN bus failure, or if the TCM detects a transmission overheat situation, the odometer will display the

letter 'E' in the same area of the display as the 'CommandShift™' selected gear information.

Supplemental Restrain System Warning Indicator

If the instrument cluster detects the Supplemental Restraint System (SRS) warning indicator has failed, the message 'SrS' will be displayed in the odometer and a DTC stored. The DTC can be retrieved from the instrument cluster using the Land Rover approved diagnostic system.

Service Interval Indicator

The Service Interval Indicator (SII) informs the driver when the next vehicle service is due. The instrument cluster monitors the distance the vehicle has traveled and the time elapsed since the last service.

If vehicle distance is the trigger for the SII, 'SERVICE' will be displayed in the odometer accompanied by a distance qualifier (either 'MILES' or 'KM' depending on the instrument cluster specification). A distance counter will also be displayed in the top Right Hand (RH) corner of the odometer. If the point at which a service is required is passed, the counter will display a negative value. When activated, the SII is displayed for 5 seconds when the vehicle enters power mode 6.

If time is the trigger for the SII, 'SERVICE' will be displayed in the odometer accompanied by a clock symbol. A counter will also be displayed in the top RH corner of the odometer. If the point at which a service is required is passed, the counter will display a negative value. Again, when activated the SII is displayed for 5 seconds when the vehicle enters power mode 6.

If both the distance and time triggers are activated, the SII will display the distance information for 5 seconds, followed by the time information for 5 seconds.

When a service has been carried out, the SII will need to be re-set. This can be done using the Land Rover approved diagnostic system or following a manual re-set procedure. The manual re-set mode is entered by carrying out the following routine:

- Press and hold the trip reset button with the vehicle stationary and in a power mode less than 6.
- While holding the trip reset button, enter the vehicle into power mode 6.
- Release the trip reset button within 10 seconds of entering power mode 6.

If the manual re-set mode has been successfully entered 'dISt' or 'DATE' will be displayed in the odometer, depending on which trigger has been activated.

To clear the 'dISt' trigger press, and hold the trip reset button for more than 5 seconds within 10 seconds of entering the manual re-set mode. If successful, 'RESET' will be displayed in the odometer for 5 seconds. If the date trigger has not been activated 'END' will then be displayed in the odometer.

NOTE: The distance trigger will not reset if the distance the vehicle has traveled is less than 20% of the next service interval value.

If the date trigger has been activated, 'DATE' will be displayed in the odometer. To clear the trigger, press and hold the trip reset button for more than 5 seconds within 10 seconds of 'DATE' being displayed. If successful, 'RESET' will be displayed within the odometer for 5 seconds followed by 'END'. The odometer will now exit re-set mode.

AMBIENT AIR TEMPERATURE

The instrument cluster can display the ambient air temperature reading in either degrees Celsius or Fahrenheit. The ambient air temperature signal originates in the ambient air temperature sensor. The sensor is a Negative Temperature Coefficient (NTC) thermistor, and is mounted in the LH door mirror. A temperature value is calculated by the ECM and broadcast over the high speed CAN bus to the instrument cluster.

If the temperature value falls below 4ºC (39ºF) the message center will flash the low ambient air temperature icon 5 times. This is accompanied by a chime from the instrument cluster sounder. The low ambient air temperature icon will be repeated if the ambient air temperature rises above 6ºC (43ºF) then drops below 4ºC (39ºF) again or a new ignition cycle is started.