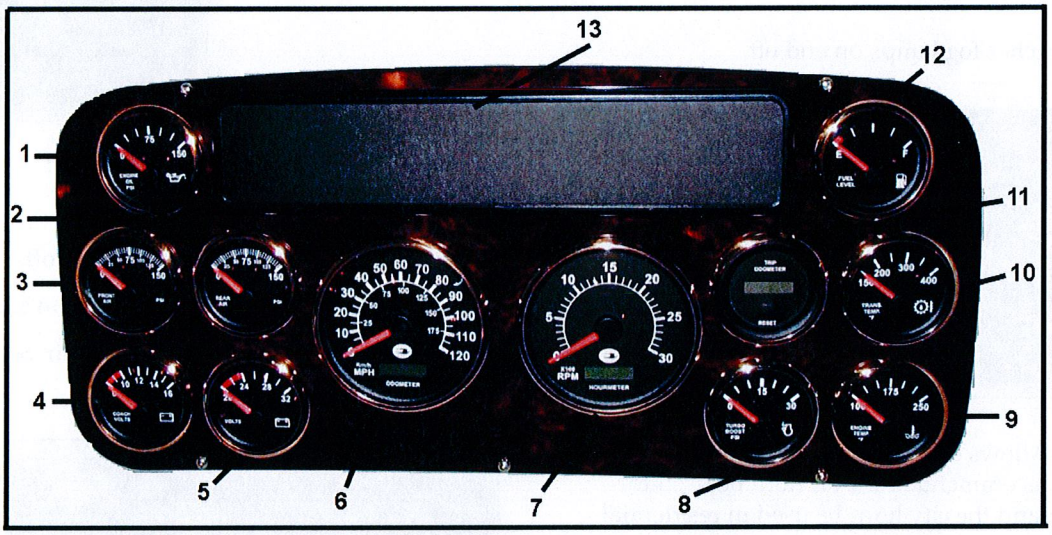
2-1 DASH AND MONITOR PANELS

2-1 Dash and Monitor Panels

This section is an overview of the Instrument and Control panels on your coach. Below you will find a illustration and an explanation for each button or dial that is installed in the coach. This is as it appears on a standard coach with all the standard options. Coaches purchased with different options may have a slightly different appearance.

2-1.1 Main Instrument Panel

This is the main instrument panel on the coach.



1. **ENGINE OIL GAUGE -** Gives constant reading of the engine oil in the supply line from the pump.
2. **REAR AIR GAUGE -** Normal: 110 to 135 psi. The Dual Air Service Brake Pressure systems are engine-operated and supply independent brake system air pressure for front and rear service brakes and the parking brake. During normal operation, each air pressure gauge reading will build up to 110 psi to 135 psi shortly after the engine is started.
3. **FRONT AIR GAUGE -** Normal: 110 to 135 psi. The Dual Air Service Brake Pressure systems are engine-operated and supply independent brake system air pressure for front and rear service brakes and the parking brake. During normal operation, each air pressure gauge reading will build up to 110 psi to 135 psi shortly after the engine is started.
4. **COACH VOLTAGE GAUGE -** Measures voltage of coach + 12v.
5. **VOLTAGE GAUGE -** Measures voltage on chassis +24 system.
6. **SPEEDOMETER IN MPH -** Measures miles per hour coach is traveling. Includes odometer.
7. **TACHOMETER IN RPM -** Measures engine revolutions per minute. Includes hourmeter which keeps track of how many actual hours engine has been used.
8. **TURBO BOOST PSI -** Registers the pressure of the Turbo Compressor outlet. This gauge should read an approximate maximum of 30 psi at maximum power.
9. **ENGINE TEMPERATURE GAUGE -** Monitors temperature of engine.
10. **TRANSMISSION TEMPERATURE GAUGE -** Indicates temperature of the transmission oil. If the WARNING LIGHT comes on, reduce speed or load.
11. **TRIP ODOMETER -** Allows user to track how long each trip is. This can be reset at any time to start counter over.
12. **FUEL GAUGE -** Indicates the amount of diesel fuel remaining in the fuel tank.
13. **INDICATOR BAR -** Serves as a message center for the coach. See Indicator Bar section later in manual for further explanation.

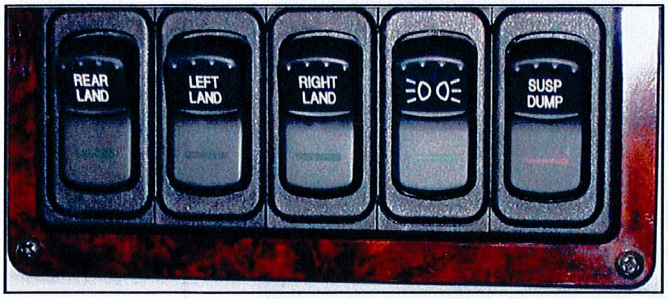
2-1.2 Left Side of Main Instrument Panel Controls

Described below are the panel buttons that are found on the left side of the main instrument panel. All buttons are explained left to right. When top portion of button is depressed, that turns on selected feature.

HEADLIGHTS, PARK AND CLEARANCE LIGHTS - Use this switch to select headlights, park and clearance lights.

PARK AND CLEARANCE LIGHTS - Use this switch to select your park and clearance lights only.

FOG LAMPS - Switches fog lamps on and off.



REAR LAND - Turns rear landing lights on/off.

LEFT LAND - Turns left landing lights on/off.

RIGHT LAND - Turns right landing lights on/off.

CLEARANCE LIGHTS - Turns clearance lights on and off.

SUSP DUMP - Switch for main suspension air. See Air Suspension System for operation.

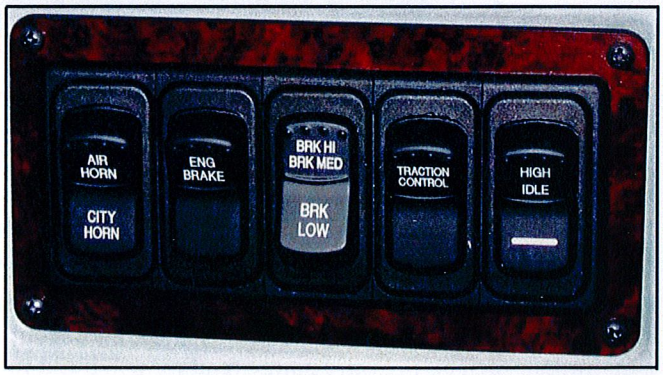
AIR/CITY HORN - Allows user to toggle between the air and city horns. It is recommended the air horn be used for highway travel, and the city horn be used in residential areas.

ENG BRAKE - Enables the engine brake.

BRK HI/LOW - Selects HI or LOW if engine brake is engaged.

TRACTION CONTROL - Allows driver to select traction control in slippery or adverse weather conditions.

HIGH IDLE - When the engine is cold, the engine can be placed in the high idle state by turning on this switch.



2-1.3 Right Side of Main Instrument Panel Controls

Described below are the panel buttons that are found on the right side of the main instrument panel.

120V AIR COMP - This switch operates the auxiliary air compressor (optional equipment), which is a 120 vac operated back up air compressor.

ENT AIR LOCK - Enables entrance air lock. Locks door and overrides 3mph speed sensor.

ENT DR LOCK - Locks/unlocks entrance door.

ENT STEP - When switch is selected step is set to the EXTENDED position, with the ignition off, activates a relay locking the outside entry step in the EXTENDED position. When the ignition is turned on, the entry step automatically extends when the door is opened and automatically retracts when the door is closed. The indicator reminds you that your switch is in the ON position.

RADAR - Turns on power to the radar detector. The radar detector is a high-sensitivity super heterodyne microwave radar detector. This unit is designed to activate when transmissions are received from radar-type speed detection equipment.

BAY LOCK/UNLOCK - Locks/unlocks bay area.

BRIGHT/DIM GAUGE - This switch adjusts the gauge lights from bright to dim.

GEN ON/OFF - Turns Generator on and off.

BATTERY CONNECT/

BATTERY DISC - This switch connects and disconnects the house and chassis batteries.

ENG PRE HT - This button is used to preheat the engine.

CAMERA A/CAMERA B - Camera A selects rear view. Camera B is available for future use.

BACK UP - Turns back up alarm on and off. Leave off when leaving RV park early in the morning. When top portion of switch is depressed, alarm is set to off.

HAZARD FLASHERS - Turns on emergency flashers. When the switch is used, both left and right turn signals will flash in unison.

MIRROR HEAT - This switch turns on a thermostatically controlled heater in the right and left outside mirrors (convex mirrors excluded). With the switch ON, the mirror heaters will automatically come on to defog the mirrors. Switch is shown in the off position.

LEFT/RIGHT VISOR - Use to raise/lower either left or right hand visor.

FRONT A/C - Turns front air conditioning on and off.

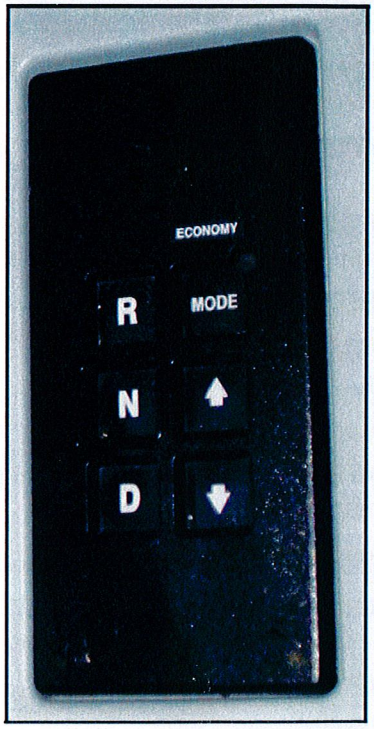
LIV RM A/C - Turns living room air conditioning on and off.

KIT/BATH A/C - Turns kitchen and bathroom air conditioning on and off.

REAR A/C - Turns rear air conditioning on and off.

2-1.4 Left Armrest Panel (under driver's window)

Transmission Gear Panel



This panel is used to switch gears and modes in the transmission. The top box lights up to reflect which gear/mode is selected.

R - Reverse - Puts transmission in reverse.

N - Neutral - Transmission is in neutral.

D - Drive - Transmission is in drive.

ECONOMY MODE - Puts transmission in economy mode. This shifts transmission from 2000 to 1800 rpm which will save on fuel.

ARROW UP - Allows driver to shift up one gear at a time. For instance from 4th to 5th gear.

ARROW DOWN - Allows driver to shift down one gear at a time. For instance shifts from 5th to 4th gear.

ARROW UP AND DOWN PUSHED TOGETHER - When these are pushed at the same time the transmission will go into diagnostic mode. To use this feature the coach has to have the engine running, transmission must be at normal operating temperature. This mode will check the transmission fluid level and transmission defect codes. If this mode is selected and you have not met the conditions stated the system will let you know.

HORN PWR - Select to turn power on to horn.

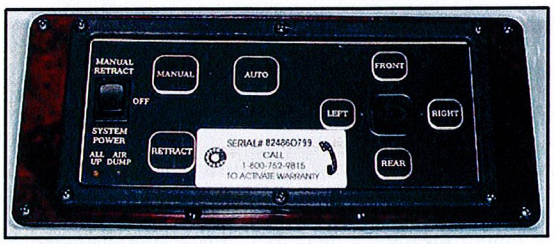
HORN SONG SEL - This will allow user to select the song to play on the horn.

HORN PLAY - Select to play the horn.

LEFT AND RIGHT OUTSIDE MIRRORS - Use these controls to adjust outside mirrors as needed.

2-1.5 Leveling Panel

This panel controls the functions of the leveling system. Complete instructions on operating the leveling apparatus can be found in the Leveling section found later in this manual.



2-1.6 Smart Wheel Controls

The steering wheel in the coach is a "Smart Wheel". Many functions can be performed from this wheel. The cruise control switches are located on the left hand side of the steering wheel and the windshield wiper functions are located on the right side of the steering wheel.

HEADLAMP FLASH - The button at the top left of the cruise panel flashes the headlights on and off.

CRUISE - Turns cruise control on and off.

NOTE: The coach must be traveling at least 35 mph before the cruise control will operate properly.

SET - Use this button to set the cruise control to the desired cruising speed. Once engine is at desired speed press the button and hold momentarily and this will lock in that speed.

RES - This allows coach to resume cruising speed that was previously set when the off button was selected. If the brake was pushed down the cruise would be cancelled until this button has been pushed.

ON OFF - This turns cruise on and off.

CLEARANCE LIGHTS INTERRUPT - This is the first button at the top on the right hand panel. Use this switch to turn off your clearance lights momentarily.

OFF - This turns windshield wipers off.

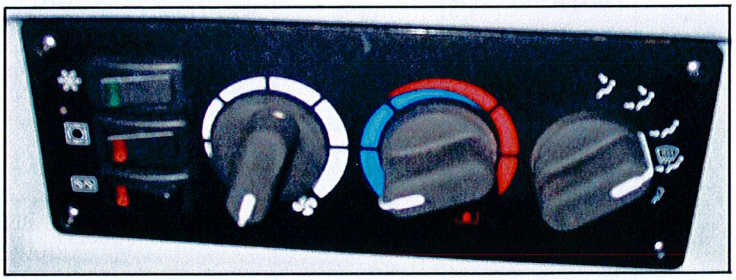
HI-LO - This controls two speeds at which the windshield wipers work, Hi or Lo.

BOTTOM LEFT - This switch is for the windshield washer fluid.

BOTTOM RIGHT - Is an intermittent switch. Use this when something other than HI-LO is needed. This regulates speed more accurately to allow for amount of moisture that is collecting on windshield. After off, press this switch once, wait the amount of delay you want in the wiper, and press the switch again. Wipers will continue to wipe at that delay.

2-1.7 Heat and Air Conditioning Dials

This panel is used to select the amount of heat and/or air conditioning that is needed, as well as defrost and fan.



2-1.8 Indicator Bar

The Indicator Bar shall contain the electronics necessary to interface to the vehicle system indicator inputs. The indicator bar shall have a maximum of 34 indicators, which shall be arranged with two rows of eleven indicators located on the top and bottom separated by a single center row of twelve indicators. The turn signals shall be housed in the center row, outer indicator locations. Refer to the following tables for indicator source information. When the Indicator Bar is first powered on and sees the ignition signal, it shall run a lamp check on all lamps for a two second sound delay.

See Table 1 for details on signal source, audible alarm requirements, symbol or nomenclature, color function, and location on indicator bar.

Table 1 - Indicator Definitions

Location	Indicator Lights	Signal Source	Audible Alarm	Symbol or Letters	Color	Function
1	Spare	N/A	-	SPARE	RED	SPARE
2	Spare	N/A	-	SPARE	RED	SPARE
3	Low Fuel	INSTR. ECU	-		AMBER	TURNS ON IF < 1/8 TANK
4	Traction Control (ATC)	ABS	-	ATC	RED	TURNS ON FOR DIAGNOSTICS, AND WHEN IN TRACTION CONTROL MODE
5	Park Brake	VEH	-		RED	TURNS ON WHEN PARK BRAKE IS SET
6	Hi Beam	VEH	-		BLUE	TURNS ON IF HI BEAM HEADLIGHTS ARE ON.
7	Stop Engine	ENGINE	BUZZER	STOP ENGINE	RED	TURNS ON IF ENGINE FAULT
8	WAIT TO START (GRID HEATER)	ENGINE	-	WAIT TO START	RED	TURNS ON WHEN ENGINE IS TURNING ON THE GRID HEATERS
9	ENGINE MAINTENANCE	ENGINE	-	ENGINE MAINT	AMBER	TURNS ON IF ENGINE NEEDS MAINTENANCE
10	LOW COOLANT	VEH	BUZZER		AMBER	TURNS ON IF COOLANT IS LOW
11	Spare	N/A	-	SPARE	RED	SPARE
12	LH TURN INDICATOR ARROW	VEH	CLICK		GREEN	TURNS ON IF LEFT TURN SIGNAL HAS BEEN ACTIVATED
13	Spare	N/A	-	SPARE	RED	SPARE
14	WATER IN FILTER (RACOR)	VEH	See Note 1	WATER IN FILTER	AMBER	TURNS ON IF WATER IN FUEL SENSOR DETECTS WATER
15	ABS	ABS	-		AMBER	TURNS ON IF ABS SYSTEM HAS A FAULT OR DIAGNOSTIC INFORMATION
16	LOW AIR	PRX1	See Note 2	LOW AIR	RED	TURNS ONIF AIR PRESSURE IS LESS THAN 62 PSI
17	ENGINE BRAKE	VEH	-	ENGINE BRAKE	RED	TURNS ON IF ENGINE BRAKE DASH SWITCH IS ON
18	ENGINE COMPARTMENT (Fire) ALARM	VEH	See Note 3		RED	TURNS ON IF ENGINE COMPT. FIRE SENSORS DETECT A FIRE
19	TRANSTEMP	TRANS	-	TRANS TEMP	RED	TURNS ON IF TRANSMISSION FAULT

Location	Indicator Lights	Signal Source	Audible Alarm	Symbol or Letters	Color	Function
20	CHECK ENGINE	ENGINE	BUZZER (See Note 4)	CHECK ENGINE	AMBER	TURNS ON IF ENGINE DETECTS A PROBLEM
21	HYDRAULIC OIL TEMP WARNING	VEH	BUZZER		AMBER	TURNS ON IF HYDRAULIC OIL TEMPERATURE IS EXCESSIVE (>200°f)
22	Spare	N/A	-	SPARE	RED	SPARE
23	RH TURN INDICATOR ARROW	VEH	CLICK		GREEN	TURNS ON IF RIGHT TURN SIGNAL HAS BEEN ACTIVATED
24	DRL	VEH	-	DRL	GREEN	TURNS ON IF DAYTIME RUNNING LIGHTS ARE ON
25	Spare	N/A	-	SPARE	RED	SPARE
26	Spare	N/A	-	SPARE	AMBER	SPARE
27	HEADLIGHT ALERT	VEH	BUZZER		AMBER	TURNS ON IF HEADLIGHTS ARE LEFT ON BUT THE KEY IS OUT OF THE IGNITION
28	LEVEL WARNING	VEH	BUZZER	LEVEL WARNING	RED	NOT ON 45 FOOT VEHICLES
29	SUSPENSION DUMP	VEH	BUZZER	SUSP DUMP	RED	TURNS ON AFTER SUSP IS DUMPED (2 SEC. ON DELAY) TURNS BACK OFF (AFTER 1 MINUTE) AFTER SUSP. PRESSURE BACK UP
30	TAG DUMP	VEH	-		RED	NOT ON 45 FOOT VEHICLES
31	CHECK TRANS	TRANS	-	CHECK TRANS	AMBER	TURNS ON IF TRANSMISSION FAULT
32	TV ANT/ SAFELINE	VEH	BUZZER (See Note 5)		FLASHING AMBER	TURNS ON IF SAFELINE PLUG IS LEFT PLUGGED IN AND IGNITION IS TURNED ON.
33	Spare	N/A	-	SPARE	RED	SPARE
34	Spare	N/A	-	SPARE	GREEN	SPARE

Audible Outputs: The Indicator bar shall have two audio transducers to produce the sounds listed in the table above. These sounds are identified as being a buzzer, a click, and a chime.

Click: The click output is used to indicate that the turn signals are flashing. Every time a turn signal indicator is turned on, the Buzzer output will be turned on for 10 ms.

Single Chime: The single chime output is used to indicate a Next Stop Request. The Indicator Bar will output 1.0 kHz for 1000 ms (including 800 ms of decay) when the Next Stop Request function is first activated, with a minimum sound pressure level of 85dB at 10cm.

Double Chime: The double chime output is used to indicate a Wheel Chair Next Stop Request. The Indicator Bar will output 1.0 kHz for 1000 ms (including 800ms of decay), then output 1.0 kHz for 1000 ms (including 800 ms of decay) when the Wheel Chair Next Stop Request function is first activated, with a minimum sound pressure level of 85dB at 10cm.

Buzzer: The buzzer output is the primary audible output. The Indicator Bar output 3.6 kHz +/- 0.5 kHz for as long as a buzzer function is activated, with a minimum sound pressure level of 90 dB at 10cm with 12 Volts applied.

Buzzer Notes:

Note 1: Water in Filter Buzzer. The Water in Filter (L14) input will activate the Buzzer during initial startup for a duration of 30 seconds, if the corresponding input was at ground when power was first applied.

Note 2: Low Air Buzzer. The buzzer and Low Air Indicator shall come on if the air pressure in EITHER front OR rear system has decreased to ≤ 62 +2/-0 PSI. Once the air pressure in EITHER front OR rear system falls below 62 +2/-0 PSI, the buzzer and indicator light shall remain on until the air pressure in BOTH front AND rear systems has reached a minimum of 70 + 1/-1 PSI.

Note 3: Engine Compartment Fire Alarm Buzzer. The Engine Compartment (Fire) Alarm (L18) input will activate the Buzzer at the rate of 2.0 Hz with a 50% duty cycle when the corresponding input is at +12 Volts.

Note 4: Stop and Check Engine (engine warning) Buzzer. The buzzer shall be continuously energized when either the stop engine OR check engine lamps are commanded by the engine AND critical limits are exceeded on EITHER the oil pressure data OR the coolant temperature data received off the data link. These limits shall be programmable. Default values for engine are in the following table:

Table 2

ENGINE	COOLANT TEMP	OIL PRESSURE
Deleted	Deleted	Deleted
C13	220	10

Note 5: TV/Safeline Buzzer. The TV/Safeline input will activate its indicator and the Buzzer at the rate of 1.0 Hz with a 50% duty cycle when the corresponding input is at ground.

Priority Buzzer: Priority shall be as follows with a priority 1 as the highest.

Table 3

BUZZER APPLICATION	PRIORITY
ENGINE COMPARTMENT FIRE ALARM	1
LOW AIR	2
ENGINE WARNING	3
TV / SAFELINE	4
WATER IN FILTER	5
TURN SIGNALS	7

Indicator Signal Source: See Table 4 for details on source for indicator light.

Table 4: 450 LXi Indicator or Bar Signal Sources

FUNCTION					
	CUM	WT	BENDIX	PRX 1	VEHICLE
LOW OIL PRES ALARM				GND	
HIGH COOL TEMP ALARM				GND	
TRANS TEMP		GND			
CHECK TRANS		GND			
STOP ENGINE	GND				
CHECK ENGINE	GND				
ENGINE MAINTENANCE	GND				
WAIT TO START	GND				
LOW AIR				GND	
ABS			GND		
TRACT CONTROL (ATC)			GND		
PARK BRAKE					GND
RH TURN IND ARROW					+12V
LH TURN IND ARROW					+12V
HIHG BEAM					+12V
HYD OIL TEMP WARNING					GND
LOW COOLANT					GND
DRL					GND
ENG COMP FIRE ALARM					+12V
ENGINE BRAKE					GND
LOW FUEL				GND	
WATER IN FUEL					GND
WATER IN FILTER					GND
SUSPENSION DUMP					+12V
TAG DUMP					GND
LEVEL WARNING					+12V
HEADLIGHT ALERT					+12V
SPARE					GND
SPARE					GND
TV/ANT SAFELINE					GND

Indicators that need to come on without Ignition On: RH indicator, LH indicator, High Beam indicator, Level Warning indicator, Headlight Alert indicator, and Engine Compartment (fire) alarm indicator.

Low Fuel Indicator: This indicator input shall come from the PRX1 module, which will have special requirements. See the section on the PRX module.

Power Up and Power Down Requirements: Upon start up the indicator lights will turn on for a two second delay.

Table 5: Indicator Bar Pin Assignments

450LXi			
SIGNAL NAME	**PIN #**	**SIGNAL NAME**	**PIN #**
Spare Indicator	B1	DRL	B8
Spare Indicator	B4	Spare Indicator	C18
Low Fuel SIGNAL	A1	Spare Indicator	C19
Tract. Control (ATC)	A3	Headlight Alert (Not Used)	B12
Park Brake	C4	Level Warning (Not Used)	C2
High Beam	C15	Suspension Dump	C5
Stop Engine	C7	Tag Dump (not used)	C10
Wait To Start	A8	Check Trans	C11
Engine Maintenance	C16	TV Ant/Safeline	A4
Low Coolant	C9	Spare Indicator	C12
Spare Indicator	B3	Spare Indicator	C14
LH Turn Indicator	A18	Coolant Temp SIGNAL	A5
Spare Indicator	B3	Oil Pressure SIGNAL	A6
Water in Filter	B5	Spare Buzzer 4	A16
ABS	A2	Spare Buzzer 5	A17
Low Air	C1	Spare Buzzer 6	A15
Engine Brake	C3	Spare Buzzer 1	A14
Eng. Compartment (Fire) Alarm	C6	Spare Buzzer 2	A12
Trans Temp	C8	Spare Buzzer 3	A13
Check Engine	C17	Switched +12V	B6
Hydraulic Oil Temp Warning	C13	Ground	B7
Spare Indicator	B9	Spare Indicator	B10
RH Turn Indicator	C20		