

# ELECTRONIC MODULATED AIR SUSPENSION (RHD)

## SYSTEM OUTLINE

This system consists of a pneumatic cylinder which has pressured air in an air chamber, an ECU which automatically switches vehicle height between two ranges (Normal and high) according to the driving conditions and also two (2) modes (Normal and high) which the driver can choose from according to preference.

Also, the damping force of the shock absorber is automatically switched by the ECU among nine levels (Soft to hard).

Combined control of vehicle height and damping force suppresses changes in the vehicle's attitude such as roll, nose dive and squat to provide outstanding riding comfort and controllability.

### 1. INPUT SIGNALS

(1) Steering sensor signal

Rotation angle of the steering wheel is input to TERMINALS SS2+ and SS2- of the air suspension ECU.

(2) Throttle position sensor signal

The throttle valve opening angle is detected and the signal is input to TERMINAL L1 of the air suspension ECU via the engine control module.

(3) Vehicle speed sensor signal

The vehicle speed is detected by the vehicle speed sensor and the signal is input to TERMINAL VH of the air suspension ECU.

(4) Height control SW signal

Whether the height control SW is in normal or high mode is detected and the signal is input to TERMINAL HSW of the air suspension ECU.

(5) Height control sensor signal

The vehicle height and the different levels of the road surface are detected by the height control sensor and the signal is input to the air suspension ECU.

### 2. AIR SUSPENSION OPERATION

\* High position

Signals from the vehicle speed sensor, height control sensor and so on are input to the air suspension ECU, which operates so that the current flows from the air suspension ECU to front and rear height control valve to open the pneumatic cylinder valve.

As a result, the passage is opened as far as the height control dryer. Then, the current flowing to the AIR SUS relay flows to the height control compressor. Control of this current by the air suspension ECU causes the compressor to operate and air flows into the pneumatic cylinder to raise the vehicle height.

\* Low position

Signals from the vehicle speed sensor, height control sensor and so on are input to the air suspension ECU, which operates so that current flows from the air suspension ECU to front and rear height control valve to open the pneumatic cylinder valve.

As a result, the passage is opened as far as the height control dryer. Then, the current flows to the height control exhaust valve installed in the height control dryer. Control of this current by the air suspension ECU causes the valve to open so that the air inside the pneumatic cylinder is expelled and the vehicle height is lowered.

### 3. BASIC OPERATION OF SUSPENSION CONTROL ACTUATOR

The suspension control actuator controls the damping force of the shock absorber inside the pneumatic cylinder in 9 steps. Based on signals from the acceleration sensors, vehicle speed sensor and stop light switch, etc., the suspension ECU controls the suspension control actuator to adjust the damping force of the shock absorber.

As the following table shows, the damping force of the shock absorber is changed by the current flowing from TERMINAL 2, 3, 4 and 5 of the suspension control actuators to TERMINAL 1 to GROUND.

B +	Ground	Position
Terminal 2 and 3	1	Soft 1 to 2
Terminal 3 and 4	1	2 to 3
Terminal 4 and 5	1	3 to 4
Terminal 5 and 2	1	4 to 5
Terminal 2 and 3	1	5 to 6
Terminal 3 and 4	1	6 to 7
Terminal 4 and 5	1	7 to 8
Terminal 5 and 2	1	8 to 9 Hard

## SERVICE HINTS

### A25 (C) AIR SUSPENSION ECU

(C)11-GROUND : Approx. 12 volts with ignition SW at **ON** or **ST** position

(C)22-GROUND : Always continuity

### ○ : PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A14	130 (RHD)	G1	131 (RHD)	J30	135 (RHD)
A21	130 (RHD)	H11	127 (RHD)	P3   A	132 (RHD)
A23   A	130 (RHD)	H12	127 (RHD)	R15	136 (RHD)
A24   B	130 (RHD)	H13	127 (RHD)	R16	136 (RHD)
A25   C	130 (RHD)	H14	127 (RHD)	R20	136 (RHD)
A27	130 (RHD)	H18	131 (RHD)	S6	129 (RHD)
A35	134 (RHD)	H21	131 (RHD)	S7	129 (RHD)
C6	130 (RHD)	H22	135 (RHD)	S9   A	133 (RHD)
C12	130 (RHD)	J3   A	128 (RHD)	S10   B	133 (RHD)
D1	131 (RHD)	J4   B	128 (RHD)	S12   B	133 (RHD)
D2	131 (RHD)	J7	128 (RHD)	S13   C	133 (RHD)
D12	134 (RHD)	J11	131 (RHD)	S17	133 (RHD)
D13	134 (RHD)	J13   A	131 (RHD)	S18	133 (RHD)
D14	134 (RHD)	J14   B	131 (RHD)	S21	133 (RHD)
D15	134 (RHD)	J17   A	131 (RHD)	S36	137 (RHD)
D25	134 (RHD)	J18   B	131 (RHD)	S37	137 (RHD)
E3	126 (RHD)	J19	131 (RHD)	T5	133 (RHD)
F5	127 (RHD)	J22	135 (RHD)	T9	133 (RHD)
F17	134 (RHD)	J24	135 (RHD)		

### ○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
2	82	Engine Room No.2 R/B (Engine Compartment Left)
4	85 (RHD)	Fusible Link Block (Engine Compartment Left)

### ○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
DC	99 (RHD)	Engine Room Main Wire and Driver Side J/B (Right Kick Panel)
DE	100 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
DF		
DG		
DH		
DI	101 (RHD)	Floor Wire and Driver Side J/B (Right Kick Panel)
LA	110	Floor No.2 Wire and Luggage Room J/B (Luggage Room Left)
PE	105 (RHD)	Instrument Panel Wire and Passenger Side J/B (Left Kick Panel)
PF		
PH		
PI	107 (RHD)	Floor No.2 Wire and Passenger Side J/B (Left Kick Panel)

# ELECTRONIC MODULATED AIR SUSPENSION (RHD)

## : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA1	154 (RHD)	Front Door LH Wire and Floor No.2 Wire (Left Kick Panel)
IC3	154 (RHD)	Instrument Panel Wire and Engine Room Main Wire (Cowl Side Panel LH)
IC4		
ID1	154 (RHD)	Instrument Panel Wire and Floor No.2 Wire (Cowl Side Panel LH)
ID3		
IH3	156 (RHD)	Instrument Panel Wire and Engine Room Main Wire (Cowl Side Panel RH)
II1	156 (RHD)	Front Door RH Wire and Floor Wire (Right Kick Panel)
BA2	158 (RHD)	Rear Door No.2 Wire and Floor No.2 Wire (Left Center Pillar)
BB2	158 (RHD)	Rear Door No.1 Wire and Floor Wire (Right Center Pillar)
BC1	158 (RHD)	Floor No.2 Wire and Floor Wire (Rear Floor Partition Panel LH)
BE2	158 (RHD)	Floor No.2 Wire and Floor Wire (Lower Back Panel RH)

## : GROUND POINTS

Code	See Page	Ground Points Location
EA	152 (RHD)	Radiator Side Support RH
EB	152 (RHD)	Cowl Top Side RH
ED	152 (RHD)	Under the Fusible Link Block
EF	152 (RHD)	LH Side of Cylinder Head
IG	154 (RHD)	Cowl Side Panel LH
IH	154 (RHD)	Left Side of Shift Lever
IK	154 (RHD)	Right Side of Instrument Panel
BL	158 (RHD)	Rear Floor Partition Panel LH
BM	158 (RHD)	Quarter Panel LH
BO	158 (RHD)	Quarter Panel RH

## : SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
E1	152 (RHD)	Engine Room Main Wire	I4	156 (RHD)	Instrument Panel Wire
E5			I5		

