

SYSTEM OUTLINE

1. ABS OPERATION

If the brake pedal is depressed suddenly, the ABS controls the hydraulic pressure of the wheel cylinders for all the four wheels to automatically avoid wheel locking and ensure the directional and steering stability of the vehicle. If the brake pedal is depressed suddenly, the ABS & TRC & VSC ECU controls the solenoids in the actuators using the signals from the sensors to move the brake fluid to the reservoir in order to release the braking pressure applied to the wheel cylinder. If the ABS & TRC & VSC ECU detects that the fluid pressure in the wheel cylinder is insufficient, the ECU controls the solenoids in the actuators to increase the braking pressure.

2. TRACTION CONTROL OPERATION

The traction control system controls the engine torque, the hydraulic pressure of the driving wheel cylinders, slipping of the wheels which may occur at start or acceleration of the vehicle, to ensure an optimal driving power and vehicle stability corresponding to the road conditions.

3. VSC OPERATION

Unexpected road conditions, vehicle speed, emergency situation, and any other external factors may cause large under- or over-steering of the vehicle. If this occurs, the VSC system automatically controls the engine power and wheel brakes to reduce the under- or over-steering.

To reduce large over-steering :

If the VSC system determines that the over-steering is large, it activates the brakes for the outer turning wheels depending on the degree of the over-steering to produce the moment toward the outside of the vehicle and reduce the over-steering.

To reduce large under-steering :

If the VSC system determines that the under-steering is large, it controls the engine power and activates the rear wheel brakes to reduce the under-steering.

VSC OFF SW

The VSC OFF SW is used to stop the VSC function. After the engine is started, the VSC system is stopped (turned off) and the VSC OFF indicator light lights up. When the VSC OFF SW is pressed again, the VSC system enters the stand-by mode. If the engine is stopped and restarted, the VSC system enters the stand-by mode regardless of the VSC OFF SW.

VSC indicator light

If an error occurs in the VSC system, the VSC indicator lights up to warn the driver.

4. MUTUAL SYSTEM CONTROL

To efficiently operate the VSC system at its optimal level, the VSC system and other control systems are mutually controlled while the VSC system is being operated.

Engine throttle control

The engine power does not interfere with the VSC brake control by controlling the opening of the throttle and reducing the engine output.

Engine control and ECT control

The strong braking force does not interfere with the braking force control of the VSC system by turning off the accel. and reducing changes in the driving torque at shift-down.

VSC system operation indication

The slip indicator light flashes and the buzzer sounds intermittently to warn the driver that the current road is slippery, while the VSC system is being operated.

5. FAIL SAFE FUNCTION

If an error occurs in the ABS & TRC & VSC ECU, sensor signals, and/or actuators, the ABS & TRC & VSC ECU inhibits the brake actuator control and inputs the error signal to the engine and ECT ECU. According to the error signal, the brake actuator turns off the solenoid and the engine and ECT ECU rejects any electronically controlled throttle open request from the VSC system. As a result, the vehicle functions without the ABS, TRC, and VSC systems.

SERVICE HINTS

A22 (A), A23 (B), A24 (C) ABS & TRC & VSC ECU

(C) 1-GROUND : Approx. 12 volts with ignition SW at **ON** or **ST** position

(B) 6-GROUND : Approx. 12 volts with ignition SW at **ON** or **ST** position

(C) 7-GROUND : Approx. 12 volts with stop light SW on

(A) 6, (A) 31, (B) 8, (B) 17-GROUND : Always continuity

A8, A9 ABS SPEED SENSOR FRONT LH, RH

1-2 : Approx. 1.60 k Ω (20°C, 68°F)

A34, A35 ABS SPEED SENSOR REAR LH, RH

1-2 : Approx. 1.10 k Ω (20°C, 68°F)

: PARTS LOCATION

Code		See Page	Code		See Page	Code	See Page
A5	A	82 (RHD)	C3		82 (RHD)	J36	88 (RHD)
A6	B	82 (RHD)	C11	A	86 (RHD)	J37	88 (RHD)
A7	C	82 (RHD)	C12	B	86 (RHD)	J38	88 (RHD)
A8		82 (RHD)	C14		86 (RHD)	J39	88 (RHD)
A9		82 (RHD)	D2		86 (RHD)	J41	88 (RHD)
A22	A	86 (RHD)	E6		82 (RHD)	J42	88 (RHD)
A23	B	86 (RHD)	H3		82 (RHD)	M1	84 (RHD)
A24	C	86 (RHD)	J25		84 (RHD)	N1	84 (RHD)
A25	D	86 (RHD)	J27	A	84 (RHD)	S12	88 (RHD)
A26		86 (RHD)	J28	B	84 (RHD)	V4	88 (RHD)
A34		90 (RHD)	J29		84 (RHD)	V5	88 (RHD)
A35		90 (RHD)	J31		88 (RHD)	Y1	88 (RHD)
B1		82 (RHD)	J32		88 (RHD)		
B6	A	86 (RHD)	J35		88 (RHD)		

: RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	54 (RHD)	Engine Room No.1 R/B (Engine Compartment Left)
2	55 (RHD)	Engine Room No.2 R/B (Engine Compartment Right)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

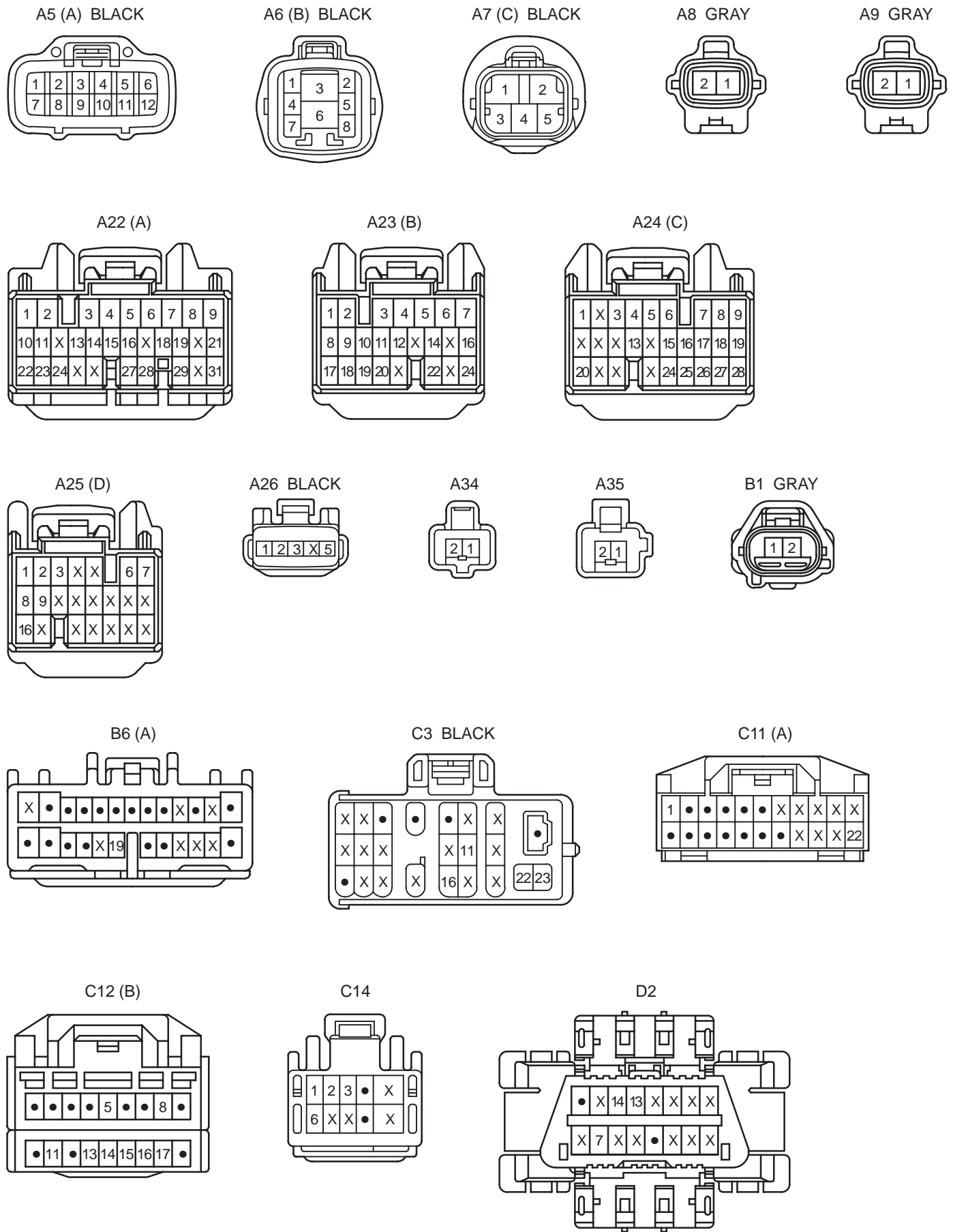
Code	See Page	Junction Block and Wire Harness (Connector Location)
1B	58 (RHD)	Engine Room Main Wire and Driver Side J/B (Right Kick Panel)
1D	58 (RHD)	Instrument Panel Wire and Driver Side J/B (Right Kick Panel)
1F	58 (RHD)	Cowl Wire and Driver Side J/B (Right Kick Panel)
1G	59 (RHD)	
1H		

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

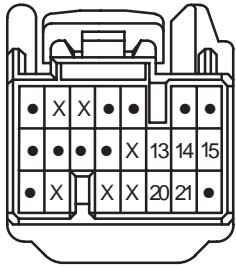
Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EA1	106 (RHD)	Engine Wire and Cowl Wire (Inside of the ECU Box)
EA2		
EA3		
IC1	108 (RHD)	Floor No.2 Wire and Cowl Wire (Left Kick Panel)
IJ1	110 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Steering Column)
IK3	110 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Driver Side J/B)
IM3	110 (RHD)	Floor No.1 Wire and Cowl Wire (Right Kick Panel)

: GROUND POINTS

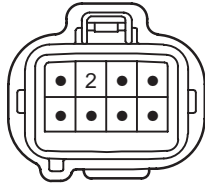
Code	See Page	Ground Points Location
EA	106 (RHD)	Right Fender
EE	106 (RHD)	Under the ABS & TRC & VSC Actuator
IF	108 (RHD)	Left Kick Panel
II	108 (RHD)	Cowl Side Panel RH



E6



H3 GRAY

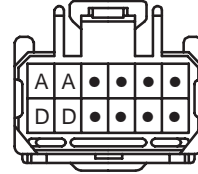


J25 BLACK



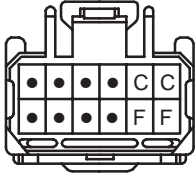
(Hint : See Page 7, 23, 39)

J27 (A)



(Hint : See Page 7, 23, 39)

J28 (B)



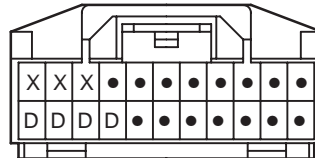
(Hint : See Page 7, 23, 39)

J29 BLUE



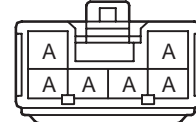
(Hint : See Page 7, 23, 39)

J31



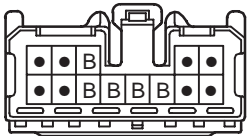
(Hint : See Page 7, 23, 39)

J32



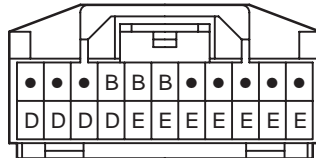
(Hint : See Page 7, 23, 39)

J35 GRAY



(Hint : See Page 7, 23, 39)

J36



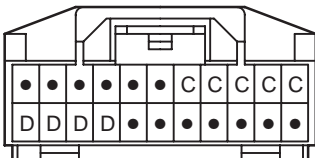
(Hint : See Page 7, 23, 39)

J37



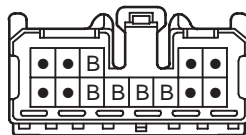
(Hint : See Page 7, 23, 39)

J38



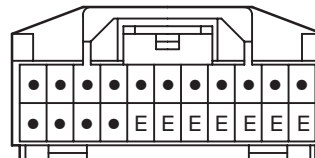
(Hint : See Page 7, 23, 39)

J39



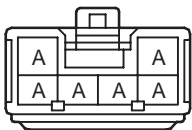
(Hint : See Page 7, 23, 39)

J41



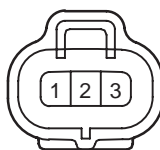
(Hint : See Page 7, 23, 39)

J42

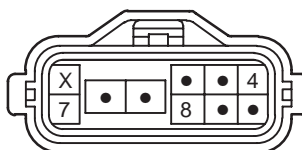


(Hint : See Page 7, 23, 39)

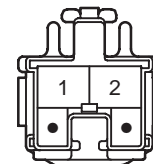
M1 BLACK



N1 GRAY



S12 BLUE



V4



V5 BLACK



Y1 BLACK

