SYSTEM OUTLINE

Previous automatic transmissions have selected each gear shift using mechanically controlled throttle hydraulic pressure, governor hydraulic pressure and lock–up hydraulic pressure. The electronically controlled transmission, however, electrically controls the line pressure, throttle pressure, lock–up pressure and accumulator pressure etc. through the solenoid valve. The ECT is a system which precisely controls gear shift timing and lock–up timing in response to the vehicle's driving conditions and the engine condition detected by various sensors. It makes smooth driving possible by shift selection for each gear which is the most appropriate to the driving conditions at that time, and by preventing downing, squat and gear shift shock when starting off.

1. GEAR SHIFT OPERATION

When driving, the engine warm up condition is input as a signal to **TERMINAL THW** of the engine and ECT ECU from the water temp. sensor and the vehicle speed signal from speed sensor (ECT) is input to **TERMINAL SP2+** of the engine and ECT ECU. At the same time, the throttle valve opening signal from the throttle position sensor is input to **TERMINALS VTA** and **VTA2** of the engine and ECT ECU as throttle angle signal.
Based on these signals, the engine and ECT ECU selects the best shift position for the driving conditions and sends current to the ECT solenoid.

2. LOCK–UP OPERATION

When the engine and ECT ECU decides based on each signal that the lock–up condition has been met, the current flows through **TERMINAL SLU+** of the engine and ECT ECU to **TERMINAL 4** of the ECT solenoid to **TERMINAL 10** to **TERMINAL SLU–** of the engine and ECT ECU to **GROUND**.

3. STOP LIGHT SW CIRCUIT

If the brake pedal is depressed (Stop light SW on) when driving in lock–up condition, a signal is input to **TERMINAL STP** of the engine and ECT ECU. The engine and ECT ECU operates and cuts the current to the solenoid to release lock–up.

4. ECT PATTERN SELECT SW CIRCUIT

When the ECT pattern select SW is switched to **PWR**, a signal is input to **TERMINAL PWR** of the body ECU No.2, and control signals are distributed to the engine and ECT ECU through communication control of the body ECU. This enables shift–up and shift–down at a higher speed range.

SERVICE HINTS

E1 ECT SOLENOID
2–8 : **5.1**–**5.5** Ω
3–9 : **3.5**–**3.9** Ω
4–10 : **5.1**–**5.5** Ω
5, 6, 11, 12–GROUND : **11**–**15** Ω

E11 ECT PATTERN SELECT SW
7–3 : Closed with select SW at **PWR** position
1–3 : Only closed with select SW at **SNOW** position

S1 SPEED SENSOR (ECT)
1–2 : **560**–**680** Ω

O1 O/D DIRECT CLUTCH SPEED SENSOR
1–2 : **560**–**680** Ω

E3 (B), E5 (D), E6 (E) ENGINE AND ECT ECU
BATT–E1 : Always approx. **12** volts
+B–E1 : Approx. **12** volts with ignition SW **ON** or **ST** position
B2–E1 : Approx. **12** volts with ignition SW **ON** or **ST** position
MREL–E1 : Approx. **12** volts with ignition SW **ON** or **ST** position
STA–E1 : Approx. **12** volts with ignition SW **ST** position and shift lever other than **P** or **N** position

N1 A/T INDICATOR LIGHT SW [NEUTRAL START SW]
4–7 : Closed with shift lever in **P** position
4–8 : Closed with shift lever in **R** position
4–10 : Closed with shift lever in **N** position
4–9 : Closed with shift lever in **D** position or **4** position
4–2 : Closed with shift lever in **3** position
4–3 : Closed with shift lever in **2** position or **L** position

○ **: PARTS LOCATION**

Code	See Page	Code	See Page	Code	See Page
A10	68 (LHD)	E7 F	82 (RHD)	J37	88 (RHD)
	82 (RHD)	E11	72 (LHD)	J38	88 (RHD)
A16	72 (LHD)		86 (RHD)	J39 B	88 (RHD)
	86 (RHD)	J1	70 (LHD)	J42	88 (RHD)
B5 A	72 (LHD)	J2	70 (LHD)	K3	74 (LHD)
	86 (RHD)	J3 A	70 (LHD)		88 (RHD)
C3	68 (LHD)	J4 B	70 (LHD)	M2	74 (LHD)
	82 (RHD)	J5	70 (LHD)		88 (RHD)
C11 A	72 (LHD)	J7 A	74 (LHD)	N1	70 (LHD)
	86 (RHD)	J8	74 (LHD)		84 (RHD)
C12 B	72 (LHD)	J9	74 (LHD)	O1	70 (LHD)
	86 (RHD)	J10	74 (LHD)		84 (RHD)
E1	68 (LHD)	J14	74 (LHD)	S1	70 (LHD)
	82 (RHD)	J15	74 (LHD)		84 (RHD)
E2 A	68 (LHD)	J18	74 (LHD)	S5	74 (LHD)
	82 (RHD)	J25	84 (RHD)		88 (RHD)
E3 B	68 (LHD)	J26	84 (RHD)	S12	74 (LHD)
	82 (RHD)	J27 A	84 (RHD)		88 (RHD)
E4 C	68 (LHD)	J28 B	84 (RHD)	T3	70 (LHD)
	82 (RHD)	J29	84 (RHD)		84 (RHD)
E5 D	68 (LHD)	J31	88 (RHD)	T5	74 (LHD)
	82 (RHD)	J32	88 (RHD)		88 (RHD)
E6 E	68 (LHD)	J34	88 (RHD)	W3	70 (LHD)
	82 (RHD)	J35	88 (RHD)		84 (RHD)
E7 F	68 (LHD)	J36	88 (RHD)		

: RELAY BLOCKS

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

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

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

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EA1	96 (LHD)	Engine Wire and Cowl Wire (Inside of the ECU Box)
	106 (RHD)	
EA2	96 (LHD)	
	106 (RHD)	
EA3	96 (LHD)	
	106 (RHD)	
EA4	96 (LHD)	
	106 (RHD)	
IA1	108 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
IA2	98 (LHD)	Engine Room Main Wire and Cowl Wire (Near the Driver Side J/B)
	108 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
IA3	108 (RHD)	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
ID1	108 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Blower Unit)
IE1	98 (LHD)	Instrument Panel Wire and Cowl Wire (Left Side of the Steering Column)
II1	100 (LHD)	Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B)
II4		
IJ1	100 (LHD)	Instrument Panel Wire and Cowl Wire (Left Side of the Blower Unit)
	110 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Steering Column)

: GROUND POINTS

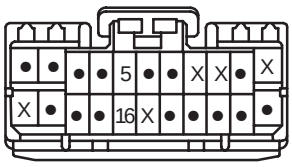
Code	See Page	Ground Points Location
EB	96 (LHD)	Left Fender
	106 (RHD)	
EC	96 (LHD)	Front Side of the Intake Manifold
	106 (RHD)	
ED	96 (LHD)	Rear Side of the Intake Manifold
	106 (RHD)	
EE	96 (LHD)	Under the ABS & TRC & VSC Actuator
	106 (RHD)	
IF	98 (LHD)	Left Kick Panel
	108 (RHD)	
II	98 (LHD)	Right Side of the Cowl Panel
	108 (RHD)	Cowl Side Panel RH

: SPLICE POINTS

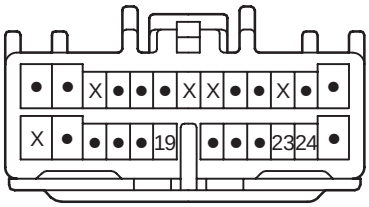
Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
E1	96 (LHD)	Engine Wire	E2	106 (RHD)	Engine Wire
	106 (RHD)		E4	96 (LHD)	Cowl Wire
E2	96 (LHD)			106 (RHD)	

A10 BLACK

A16



B5 (A)



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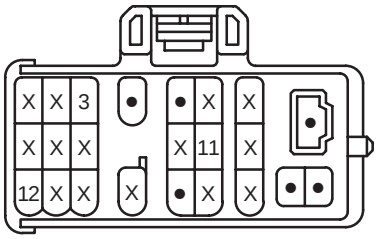

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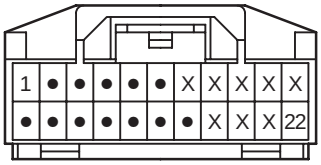
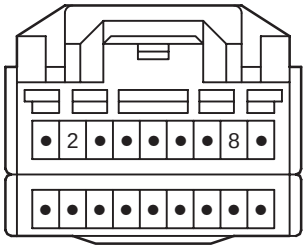
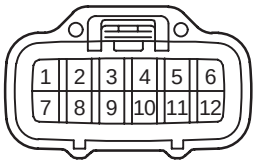


C12 (B)



E1 GRAY



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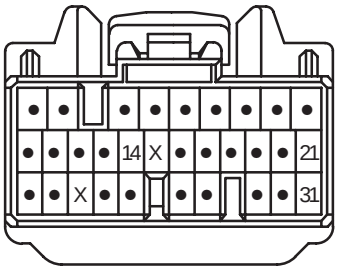

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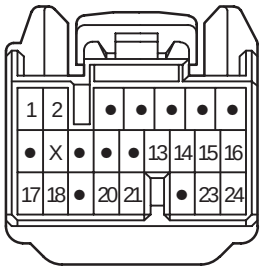
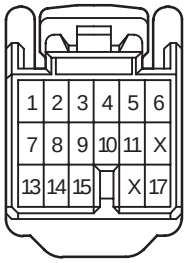
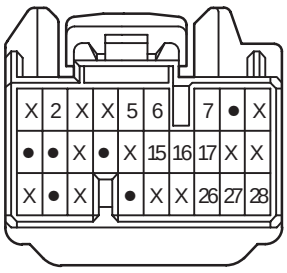


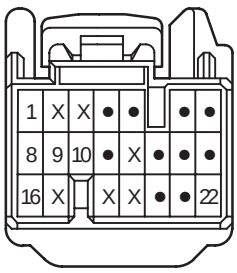
E4 (C)



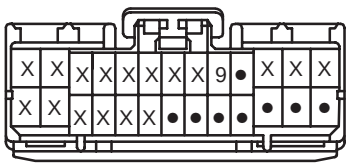
E5 (D)



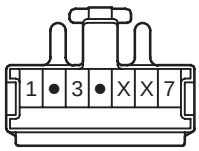
E6 (E)



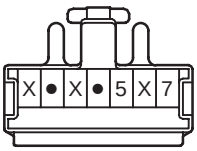
E7 (F)



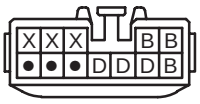
(Except G.C.C.) E11 BLACK



(G.C.C.) E11

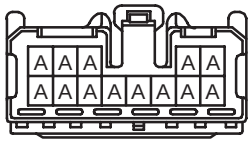


J1 BLACK



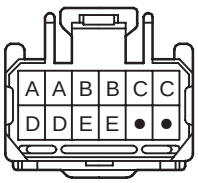
(Hint : See Page 7, 23, 39)

J2 ORANGE



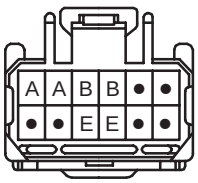
(Hint : See Page 7, 23, 39)

J3 (A)



(Hint : See Page 7, 23, 39)

J4 (B)

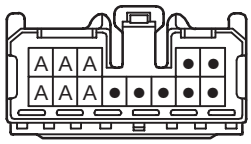


(Hint : See Page 7, 23, 39)

J5 BLUE

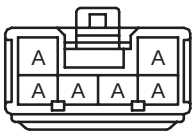
(Hint : See Page 7, 23, 39)

J7 (A) GRAY



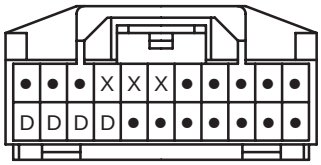
(Hint : See Page 7, 23, 39)

J8



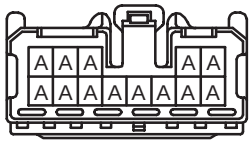
(Hint : See Page 7, 23, 39)

J9



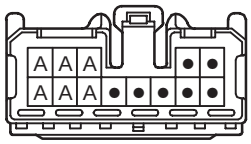
(Hint : See Page 7, 23, 39)

J10 ORANGE



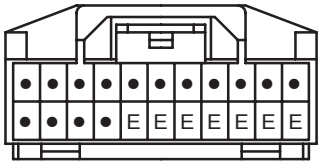
(Hint : See Page 7, 23, 39)

J14 GRAY



(Hint : See Page 7, 23, 39)

J15



(Hint : See Page 7, 23, 39)

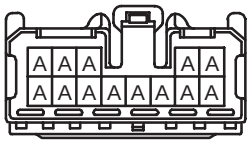
J18

(Hint : See Page 7, 23, 39)

J25 BLACK

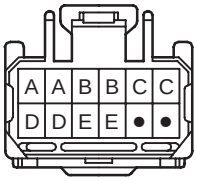
(Hint : See Page 7, 23, 39)

J26 ORANGE



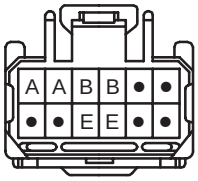
(Hint : See Page 7, 23, 39)

J27 (A)



(Hint : See Page 7, 23, 39)

J28 (B)

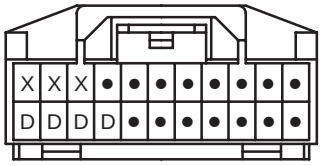


(Hint : See Page 7, 23, 39)

J29 BLUE

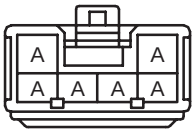
(Hint : See Page 7, 23, 39)

J31



(Hint : See Page 7, 23, 39)

J32

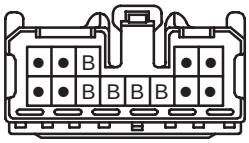


(Hint : See Page 7, 23, 39)

J34

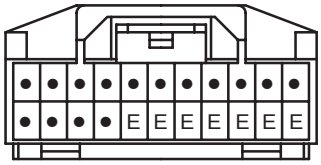
(Hint : See Page 7, 23, 39)

J35



(Hint : See Page 7, 23, 39)

J36

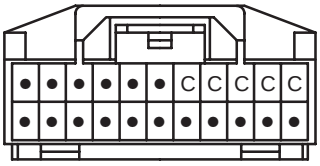


(Hint : See Page 7, 23, 39)

J37

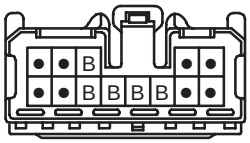
(Hint : See Page 7, 23, 39)

J38



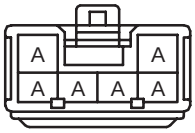
(Hint : See Page 7, 23, 39)

J39 (B)



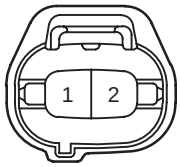
(Hint : See Page 7, 23, 39)

J42

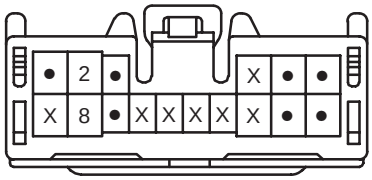


(Hint : See Page 7, 23, 39)

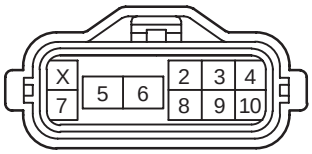
K3 BLACK



M2 BLUE



N1 GRAY



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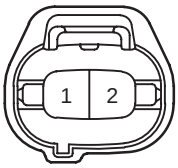

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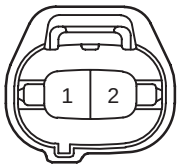
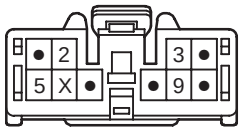


S5



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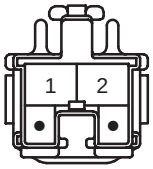

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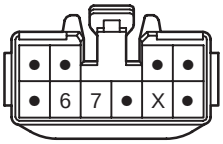

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