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EF

EFI SYSTEM (EJ-VE)

2. CONNECTING PROCEDURE FOR SST (EFI COMPUTER CHECK SUB-HARNESS)

When the ECU terminal voltage is measured with the ECU connector connected to the engine ECU, connect the SST, following the procedure given below.

NOTE:

- The terminal number of the SST connector is the same as the ECU connector (page EF-12).

- Turn OFF the ignition switch. Or, disconnect the battery ground cable from the negative (-) terminal of the battery with the ignition switch turned OFF. Disconnect the battery ground cable from the negative (-) terminal of the battery.

CAUTION:

- Be sure to memorize the malfunction code before disconnecting the battery cable. Otherwise the malfunction code(s) will be erased by disconnecting the battery cable.

- Remove the glove compartment sub assembly.

- Disconnect the wire harness connectors from the EFI ECU connectors at the cowl side of the passenger seat.
- Connect the following SST between the wire harness connectors and the EFI ECU connectors.

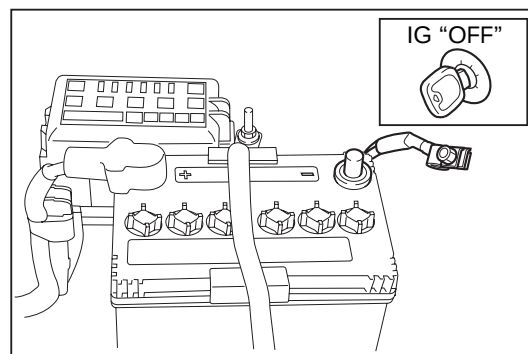
SST: 09842-97203-000

- Reconnect the battery ground cable to the negative (-) terminal of the battery.

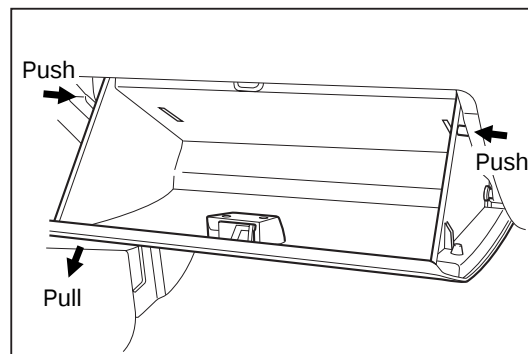
CAUTION:

- When disconnecting or reconnecting the EFI ECU connectors, be sure to disconnect the battery ground cable from the negative (-) terminal of the battery with the ignition switch and all accessory switches in the off state.
- When installing a new battery, care must be exercised not to mistake the battery polarity. Failure to observe this caution could cause ECU malfunction.
- Before using the SST, be sure to check to see if short or open wire exists between the terminals of the SST.

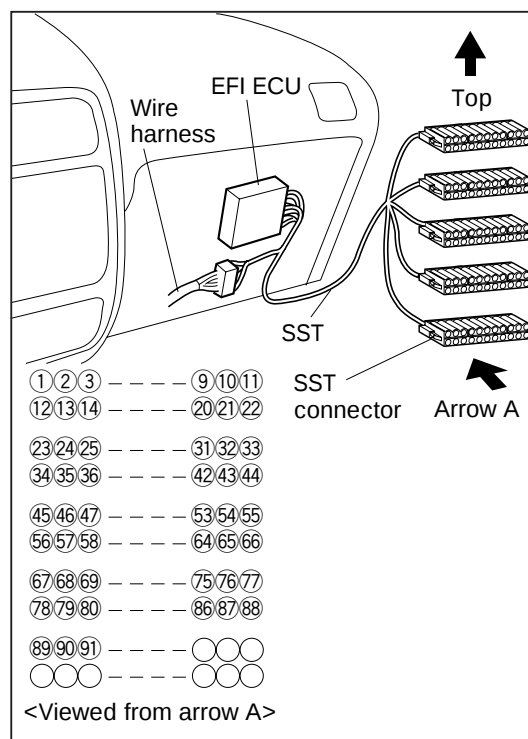
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MEF00018-00011



MEF00019-00012



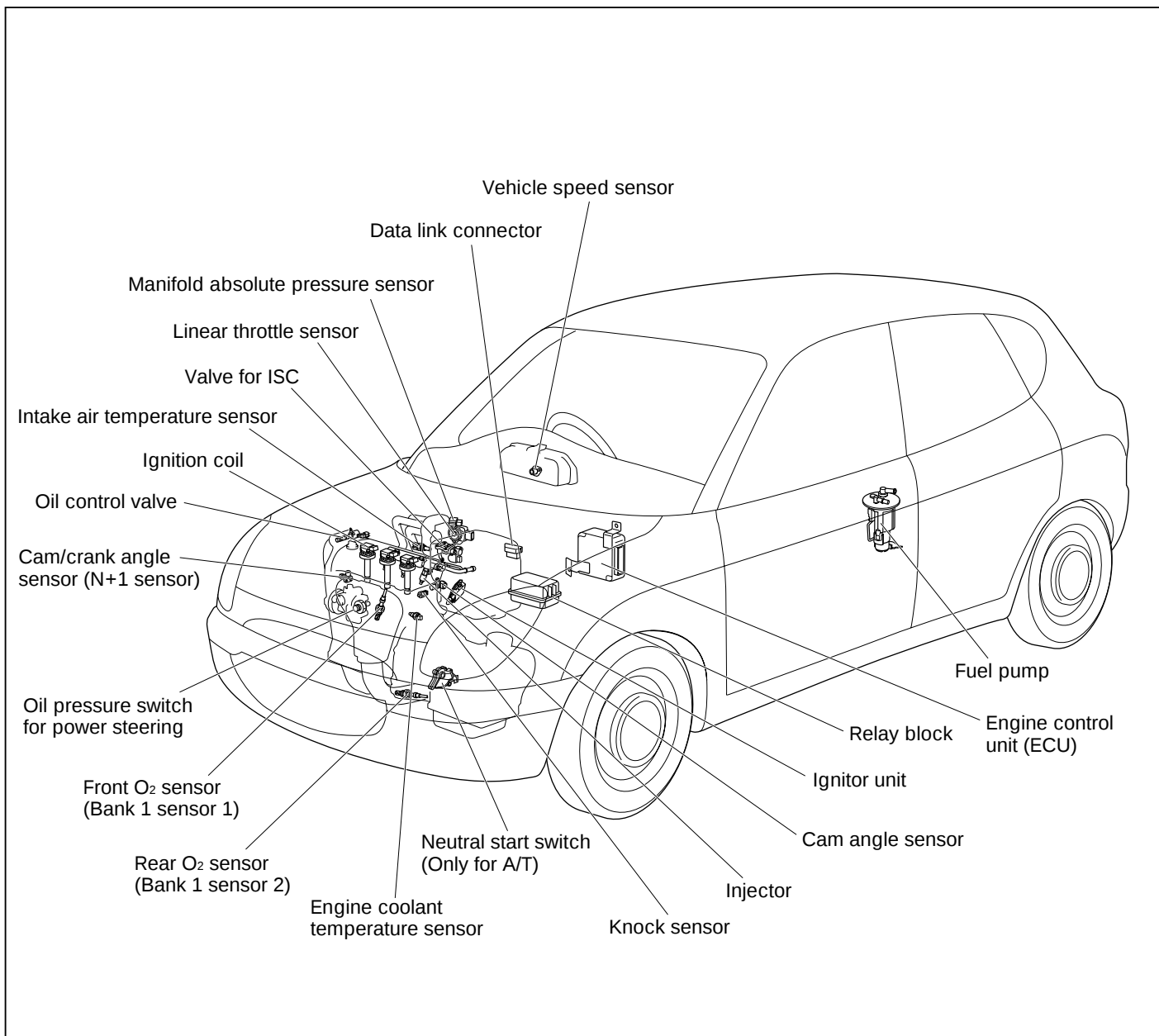
3. SYSTEM DESCRIPTION

3.1 LOCATION OF ELECTRONIC CONTROL PARTS

3.1.1 FOR EU SPECIFICATIONS OF M100 & M200

NOTE:

- This figure shows the location of the M100 vehicle. In the case M200 vehicle, the location is virtually the same.

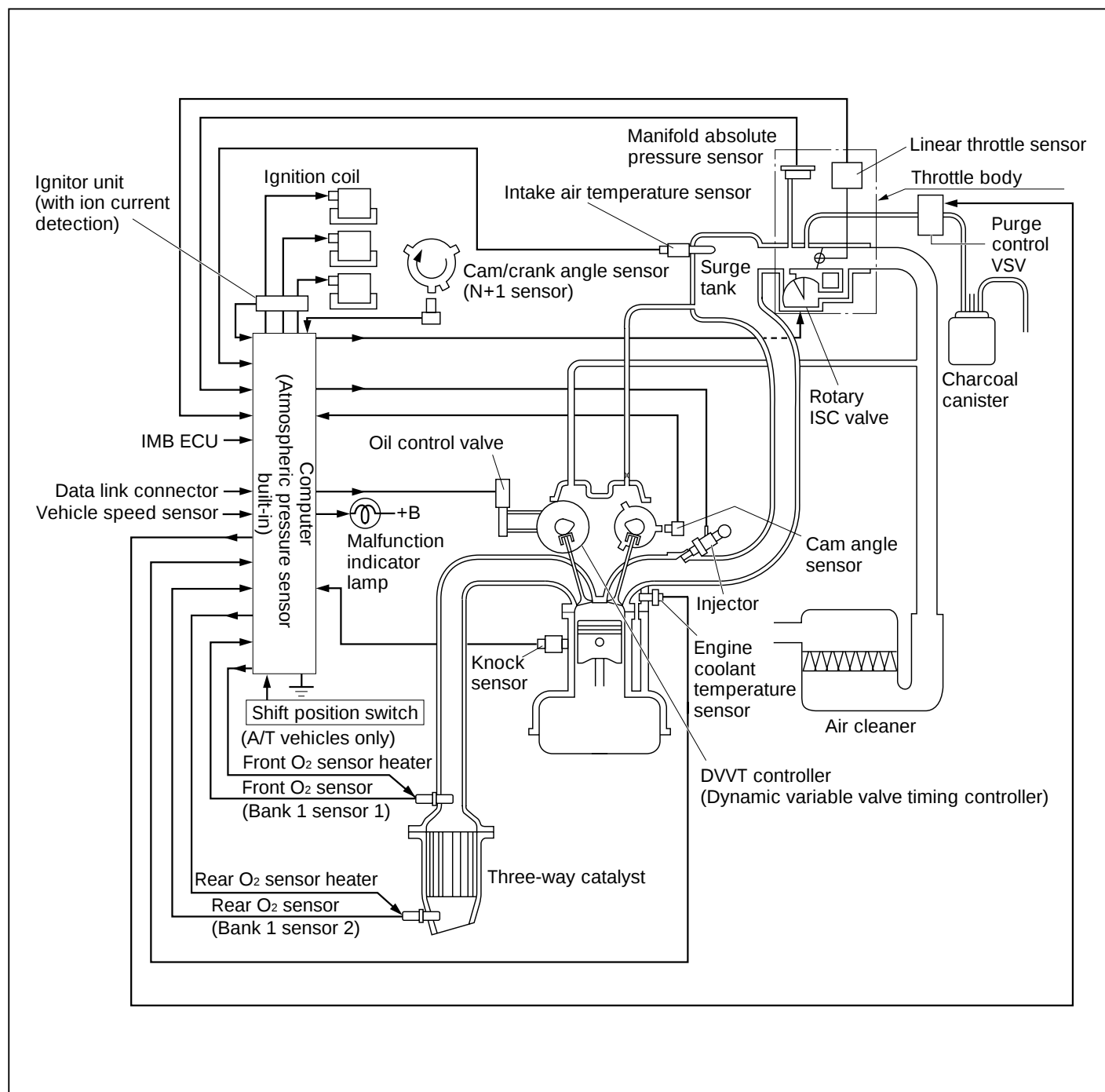


3.1.2 EXCEPT FOR EU SPECIFICATIONS OF M100 and M200

As for vehicles with specifications other than EU specifications, they are mounted with type EJ-DE engine. Therefore, refer to the Service Manual No. 9734 that has been already published.

3.2 SYSTEM DIAGRAM

3.2.1 FOR EU SPECIFICATIONS OF M100 & M200

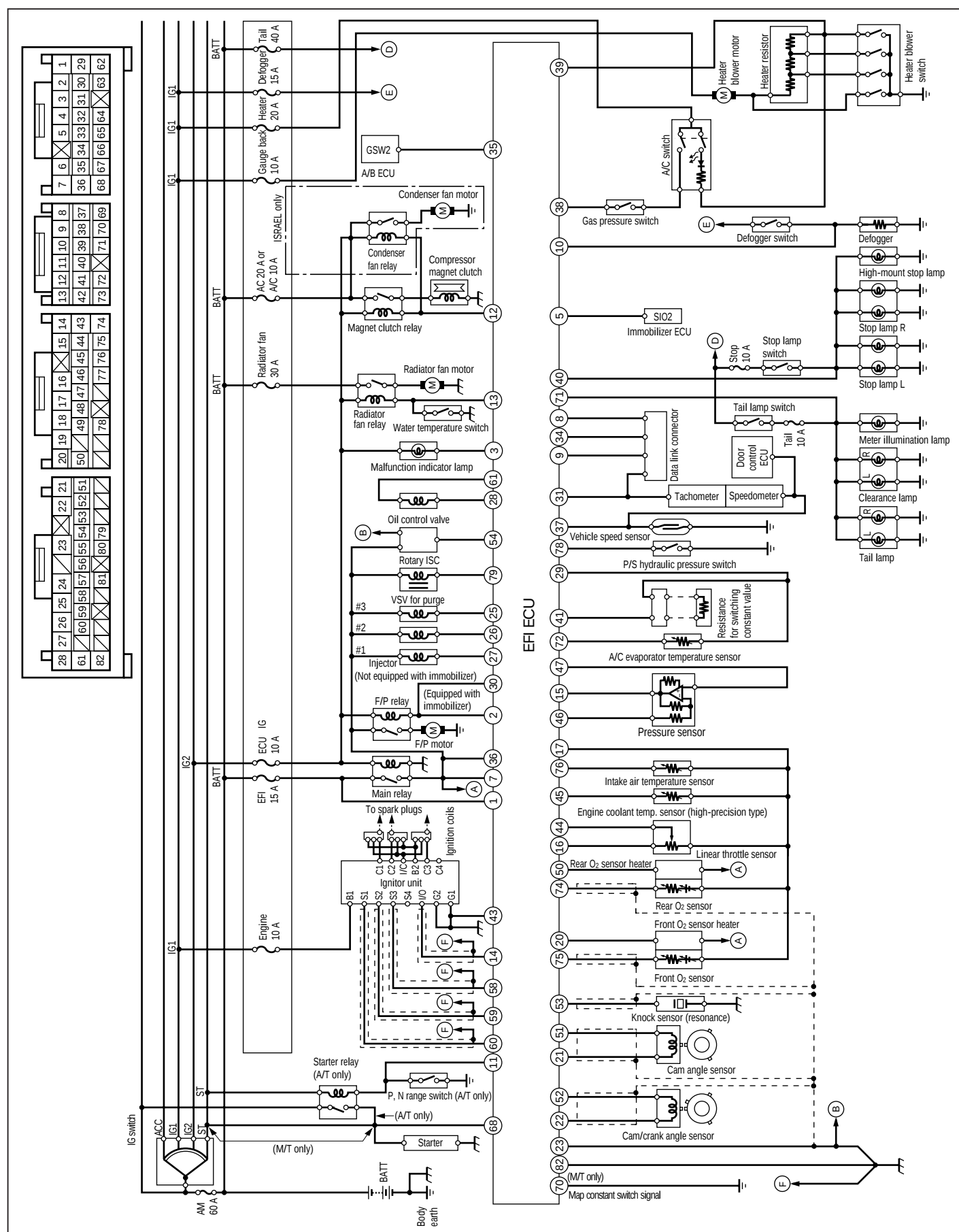


3.2.2 EXCEPT FOR EU SPECIFICATIONS OF M100 and M200

As for vehicles with specifications other than EU specifications, they are mounted with type EJ-DE engine. Therefore, refer to the Service Manual No. 9734 that has been already published.

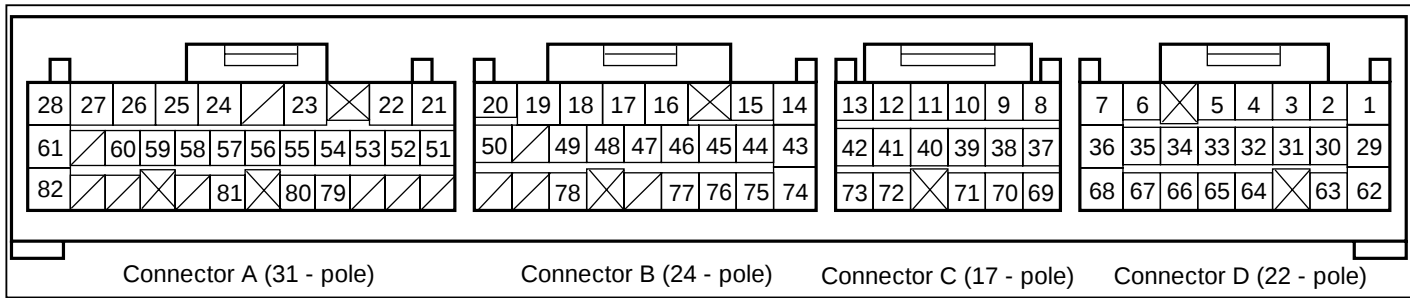
3.3 WIRING DIAGRAM

3.3.1 SPECIFICATIONS OF SYSTEM FOR EU SPECIFICATIONS OF M100 & M200



3.4 ARRANGEMENT OF EFI ECU TERMINAL

3.4.1 FOR EU SPECIFICATIONS OF M100 & M200



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CONNECTOR A

No.		Contents of connection	No.		
21	N1+	Cam angle sensor (+)	55	ALTC	—
22	N2+	Cam/crank angle sensor (+)	56	VSV2	—
23	E1	Sensor system ground	57	IG4	—
24	#40	—	58	IG3	Ignition signal (#3 cylinder)
25	#30	Injector (#3 cylinder)	59	IG2	Ignition signal (#2 cylinder)
26	#20	Injector (#2 cylinder)	60	IG1	Ignition signal (#1 cylinder)
27	#10	Injector (#1 cylinder)	61	OCV-	Oil control valve (-)
28	OCV+	Oil control valve (+)	79	PRG	Purge control VSV
51	N1-	Cam angle sensor (-)	80	VSV1	—
52	N2-	Cam/crank angle sensor (-)	81	ALT	—
53	KNK	Knock sensor	82	E01	Power supply system ground
54	ISC	Rotary ISC			

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CONNECTOR B

No.		Contents of connection	No.		Contents of connection
14	ICMB	Ignitor unit (With ion current detection)	46	VCPM	Pressure sensor power supply
15	PIM	Pressure sensor signal	47	E2PM	Pressure sensor ground
16	VC	Linear throttle sensor power supply	48	ACLK	—
17	E2	Sensor ground	49	ACEN	—
18	FCCP	—	50	OXH2	Rear oxygen sensor heater
19	VFP	—	74	OX2	Rear oxygen sensor
20	OXH1	Front oxygen sensor heater	75	OX1	Front oxygen sensor
43	IE	Ion current sensor ground	76	THA	Intake air temperature sensor
44	VTH	Linear throttle sensor	77	ACVR	—
45	THW	Engine coolant temperature sensor	78	PST	P/S Pressure switch

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CONNECTOR C

No.		Contents of connection	No.		Contents of connection
8	SIO1	Diagnosis tester	40	STP	Stop lamp switch
9	T	Test terminal	41	AUX	—
10	DEF	Defogger switch	42	FAN2	—
11	A/T	Neutral start switch (Only for A/T)	69	SEL2	—
12	MGC	A/C Magnet clutch relay	70	SEL1	Map constant switch signal (Only for M/T)
13	FAN1	Radiator fan relay (Without 2-step control)	71	H/L	Tail lamp switch
37	SPD	Vehicle speed sensor	72	ACEV	A/C Evaporator temp. sensor
38	ACSW	A/C Switch	73	OX3	—
39	BLW	Heater blower switch			

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CONNECTOR D

No.		Contents of connection	No.		Contents of connection
1	BAT	Memory back-up supply	33	ATNE	—
2	FC1	Fuel pump relay (With IMB)	34	VF	VF Monitor terminal
3	W	Malfunction indicator lamp	35	FPOF	Fuel pump relay OFF
4	ATTX	—	36	+B2	Power supply
5	SIO2	Serial port for IMB	62	VCO	—
6	TRRQ	—	63	VTHO	—
7	+B1	Power supply	64	IDLO	—
29	E21	A/C Evaporator temp. sensor ground	65	FCO	—
30	FC2	Fuel pump relay (Without IMB)	66	TRPR	—
31	REV	Engine speed signal	67	ACT	—
32	ATRX	—	68	STA	Starter signal

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5.11 SCAN TOOL DATA (ECU DATA)

The following data values given below are representative values obtained under the “normal condition,” using the scan tool. Please refer to these values.

However, there are cases where the system is functioning normally even if the measured value is different from the values listed here. Therefore, no judgment as to whether any malfunction is occurring or not should be made only on the basis of these data under the “normal condition.”

NOTE:

- The data monitor value may vary significantly, depending on slight difference in the measurement, difference in the measurement environment, deterioration due to passage of time in the vehicle, and so forth. Therefore, it is difficult to indicate the definite reference values. Hence, there are cases where malfunctions are occurring even when the measured value is within the reference value.
- With regard to minor phenomenon, such as hesitation and rough idling, it is necessary to make total evaluation, based on all the data monitor items, by sampling the data of the vehicle of the same type under the same conditions and comparing them.
- In the case of the OBD II generic scan tool, it is possible to take a reading of the values with an asterisk mark in the following table.
- When checking the data under a condition where the engine is “idling” or “racing,” the shift lever should be placed in the “N” or “P” range, the A/C switch should be turned OFF, and all accessory switches should be turned OFF.

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5.11.1 SCAN TOOL DATA FOR M100 & M200

1. Items specified by CARB

	DS-21 diagnosis tester display	Signal name	Vehicle condition	Reference values under normal condition
☆	FUEL SYSTEM (Fuel system status)	FSYS	At idle speed after warming up	02 (Closed loop)
☆	CALC LOAD (Calculated load value)	LOAD	At idle speed with no load after warming up	2 - 5 %
			At 2500 r/min. with no load after warming up	6 - 13 %
☆	COOLANT TEMP (Engine coolant temperature)	ECT	Cold start ~ Warming-up running	Value should be rising gradually.
			When engine has warmed up completely	80 - 100°C
			During fail-safe function (At time of starting)	20°C
			During fail-safe function (After starting)	80°C
☆	SHORT FT (Short term fuel trim)	SHRT	At idle speed after warming up	-20 - +20 %
☆	LONG FT (Long term fuel trim)	LONG	At idle speed after warming up	-16 - +16 %
☆	ENGINE SPEED	RPM	When engine is running at a constant speed	There should be no remarkable variation, rpm
			At idle speed with no load after warming up	EXCEPT for below
		M100	Israel spec.	800 - 900 rpm
		M200		850 - 950 rpm
				800 - 900 rpm
☆	VEHICLE SPEED	VS	During running (Compared with speedometer)	There should be no remarkable difference, Km/h
☆	IGN ADVANCE (Ignition timing advance for No. 1 cylinder)	ITA	At idle speed with no load after warming up.	5 - 15°
			When idle switch is OFF	Changes should be made according to running conditions, °
☆	INTAKE AIR TEMP	IAT	When engine is running	Changes should be made according to running conditions. °C
☆	MANI ABS PRESS (Intake manifold absolute pressure)	MAP	When ignition switch is ON (Vacuum hose is released to atmosphere)	Around 100 kPa
			When idling (After warming-up, with no load)	53 - 74 kPa
			During fail-safe function	M/T
				A/T
				42 - 74 kPa
				42 - 78 kPa

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