

2007 Mazda MX-5 Miata Sport

2007 ACCESSORIES & BODY, CAB Symptom Troubleshooting (Instrument Cluster) - MX-5 Miata

2007 ACCESSORIES & BODY, CAB

Symptom Troubleshooting (Instrument Cluster) - MX-5 Miata

SYMPTOM TROUBLESHOOTING [INSTRUMENT CLUSTER]

SYMPTOM TROUBLESHOOTING TABLE

No.	TROUBLESHOOTING ITEM	REFERENCE
1	Fuel gauge needle position incorrect	(See NO.1 FUEL GAUGE NEEDLE POSITION INCORRECT .)
2	All meters and gauges do not operate	(See NO.2 ALL METERS AND GAUGES DO NOT OPERATE .)
3	ABS warning light illuminates	(See NO.3 ABS WARNING LIGHT ILLUMINATES .)
4	MIL illuminates	(See NO.4 MIL ILLUMINATES .)
5	Brake system warning light illuminates	(See NO.5 BRAKE SYSTEM WARNING LIGHT ILLUMINATES .)
6	Instrument cluster illumination does not illuminate	(See NO.6 INSTRUMENT CLUSTER ILLUMINATION DOES NOT ILLUMINATE .)
7	Speedometer indication is defective	(See NO.7 SPEEDOMETER INDICATION IS DEFECTIVE .)
8	Tachometer indication is defective	(See NO.8 TACHOMETER INDICATION IS DEFECTIVE .)
9	Water temperature gauge indication is defective	(See NO.9 WATER TEMPERATURE GAUGE INDICATION IS DEFECTIVE .)
10	Oil pressure gauge indication is defective (oil pressure gauge needle does not move from the L position or less)	(See NO.10 OIL PRESSURE GAUGE INDICATION IS DEFECTIVE (OIL PRESSURE GAUGE NEEDLE DOES NOT MOVE FROM THE L POSITION OR LESS) .)

QUICK DIAGNOSTIC TABLE [INSTRUMENT CLUSTER]

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X: Applicable

No.	Troubleshooting item	Possible factor																							
		Poor connection of fuel gauge sender unit connector, terminal damage	Poor connection of instrument cluster connector, terminal damage	Fuel gauge sender unit	Instrument cluster	Fuel gauge sender unit is improperly installed	Open or short circuit in wiring harness between instrument cluster and GND	Open or short circuit in wiring harness between instrument cluster and fuel gauge sender unit	Fuse malfunction (METER)	Open or short circuit in power supply (IG1) wiring harness	Open or short circuit in GND wiring harness ABS HU/CM or DSC HU/CM	Poor connection of ABS HU/CM or DSC HU/CM connector, terminal damage	ABS HU/CM or DSC HU/CM	Short circuit in wiring harness between CAN-L, CAN-H and GND	Open circuit in CAN wiring harness (CAN-L, CAN-H)	CAN wiring harness (CAN-L, CAN-H) short each other	Poor connection of PCM connector, terminal damage	PCM	Poor connection of brake fluid level sensor connector, terminal damage	Brake fluid level sensor	Poor connection of Parking brake switch connector, terminal damage	Parking brake switch	Fuse malfunction (ROOM, ILLUMI)	Poor connection of oil pressure switch connector, terminal damage	Oil pressure switch
1	Fuel gauge needle position incorrect	X	X	X	X	X	X	X																	
2	All meters and gauges do not operate		X		X				X	X	X														
3	ABS warning light illuminates		X		X						X	X	X	X	X										
4	MIL illuminates		X		X									X	X	X	X								
5	Brake system warning light illuminates		X		X						X	X	X	X	X	X		X	X	X	X				
6	Instrument cluster illumination does not illuminate		X		X																		X		
7	Speedometer indication is defective		X		X						X	X	X	X	X	X	X								
8	Tachometer indication is defective		X		X									X	X	X	X								
9	Water temperature gauge indication is defective		X		X									X	X	X	X								
10	Oil pressure gauge indication is defective (oil pressure gauge needle does not move from the L position or less)		X		X									X	X	X	X							X	X

E5U903HW3001

Fig. 1: Instrument Cluster Quick Diagnostic Table
 Courtesy of MAZDA MOTORS CORP.

NO. 1 FUEL GAUGE NEEDLE POSITION INCORRECT

FUEL GAUGE NEEDLE POSITION INCORRECT POSSIBLE CAUSE TABLE

1	Fuel gauge needle position incorrect
	<ul style="list-style-type: none"> • Fuel gauge sender unit malfunction • Instrument cluster malfunction • Connector or pin malfunction

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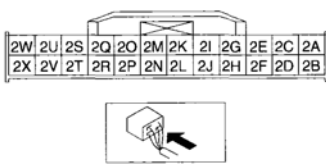
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POSSIBLE CAUSE

- Fuel gauge sender unit is improperly installed
- Open or short circuit in wiring harness between instrument cluster and GND
- Open or short circuit in wiring harness between instrument cluster and fuel gauge sender unit

DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Turn the ignition switch to the ON position. • Verify that the fuel gauge needle does not move after ignition switch is turned off, or the display does not indicate F even though fuel tank is full. • Is the fuel gauge normal? 	Yes Troubleshooting completed.
		No Go to the next step.
2	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Select the check code 22. • Display value is 7-206 ? 	Yes Go to the next step.
		No Go to Step 4.
3	<ul style="list-style-type: none"> • Perform the check code 23 inspection. • Is there any malfunction? 	Yes Replace the instrument cluster.
		No Go to the next step.
4	<ul style="list-style-type: none"> • Perform the check code 22 inspection. • Is there any malfunction? 	Yes Go to the next step.
		No Go to Step 6.
5	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? <div style="text-align: center;">  </div>	Yes Replace the instrument cluster.
		No Repair or replace the terminal.
6	<ul style="list-style-type: none"> • Turn the ignition switch to LOCK position. • Remove the instrument cluster. • Disconnect the instrument cluster connector. • Inspect for continuity between the following wiring harnesses. 	Yes Repair or replace the wiring harness between the instrument cluster and GND.

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	<ul style="list-style-type: none"> ○ 2R terminal-GND ○ 2T terminal-GND ● Is there continuity? 	No	Go to the next step.
7	<ul style="list-style-type: none"> ● Turn the ignition switch off. ● Inspect the fuel gauge sender unit connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). ● Are the terminals normal? 	Yes	Go to the next step.
		No	Repair or replace the terminal.
8	<ul style="list-style-type: none"> ● Turn the ignition switch to LOCK position. ● Inspect for continuity following the wiring harness between instrument cluster and fuel gauge sender unit. <ul style="list-style-type: none"> ○ 2R terminal-C terminal ○ 2T terminal-A terminal ● Is there continuity? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness between the instrument cluster and the fuel gauge sender unit.
9	<ul style="list-style-type: none"> ● Turn the ignition switch off. ● Is the fuel gauge sender unit installed properly? 	Yes	Inspect the fuel gauge sender unit.
		No	Reinstall the fuel gauge sender unit.

NO. 2 ALL METERS AND GAUGES DO NOT OPERATE

ALL METERS AND GAUGES DO NOT OPERATE POSSIBLE CAUSE TABLE

2	All meters and gauges do not operate
POSSIBLE CAUSE	<ul style="list-style-type: none"> ● Instrument cluster malfunction ● Connector or pin malfunction ● Fuse malfunction ● Open or short circuit in power supply (IG1) wiring harness ● Open or short circuit in GND wiring harness

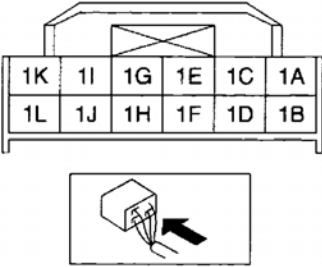
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> ● Turn the ignition switch to the ON position. ● Inspect the following: <ul style="list-style-type: none"> ○ Does the odometer/tripmeter illuminate? ○ Does the fuel gauge operate? ○ Does the MIL turn off within approx. 3 s? 	Yes	Troubleshooting completed.
		No	Go to the next step.

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2	<ul style="list-style-type: none"> • Inspect the METER fuse. • Is the fuse normal? 	Yes	<p>Go to the next step.</p> <p style="text-align: center;">Replace the fuse.</p> <ul style="list-style-type: none"> • If the fuse is melted, inspect the wiring harness for a short to ground. Repair or replace the wiring harness, then replace the fuse.
3	<ul style="list-style-type: none"> • Turn the ignition switch to LOCK position. • Remove the instrument cluster. • Disconnect the instrument cluster connector. • Inspect the voltage between instrument cluster wiring harness-side connector terminal 1G and terminal 1E. • Turn the ignition switch to the ON position. • Is the voltage B+ ? <div style="text-align: center; margin-top: 10px;">  <p>The diagram shows a 12-pin connector with terminals labeled 1K, 1I, 1G, 1E, 1C, 1A in the top row and 1L, 1J, 1H, 1F, 1D, 1B in the bottom row. A separate inset shows a close-up of a terminal with a wire being inserted, with an arrow pointing to the terminal.</p> </div>	Yes	<p>Go to the next step.</p>
		No	<p>Inspect the suspect wiring harness, then repair or replace.</p>
4	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? 	Yes	<p>Replace the instrument cluster.</p>
		No	<p>Repair or replace the terminal.</p>

NO. 3 ABS WARNING LIGHT ILLUMINATES

ABS WARNING LIGHT ILLUMINATES POSSIBLE CAUSE TABLE

3	ABS warning light illuminates
POSSIBLE CAUSE	<ul style="list-style-type: none"> • ABS HU/CM or DSC HU/CM malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H)

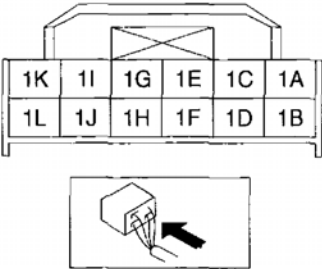
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- CAN wiring harness (CAN-L, CAN-H) short each other

DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Start the engine. • Does the ABS warning light turn off? 	Yes Troubleshooting completed.
		No Go to the next step.
2	<ul style="list-style-type: none"> • Are there a number of warning lights illuminated? 	Yes Go to Step 4.
		No Go to the next step.
3	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Does the ABS warning light turn off with a check code other than 26? 	Yes Inspect the ABS HU/CM or DSC HU/CM.
		No Replace the instrument cluster.
4	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the DLC-2 terminals F and E. • Is the resistance 54-66 ohms ? 	Yes Go to the next step.
		No Go to Step 6.
5	<ul style="list-style-type: none"> • Inspect the DLC-2 terminals F and E for short to power supply or GND. • Is there any malfunction? 	Yes Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No Replace the instrument cluster.
6	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? <div style="text-align: center;">  </div>	Yes Go to the next step.
		No Repair or replace the terminal.
7	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the instrument cluster connector terminals 1J and 1L. 	Yes Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No Replace the instrument cluster.

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- Is the resistance **114-126 ohms** ?

NO. 4 MIL ILLUMINATES

MIL ILLUMINATES POSSIBLE CAUSE TABLE

4	MIL illuminates
POSSIBLE CAUSE	<ul style="list-style-type: none"> • PCM malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

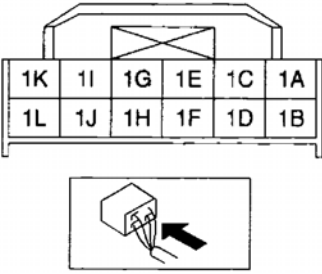
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Start the engine. • Does the MIL turn off? 	Yes Troubleshooting completed.
		No Go to the next step.
2	<ul style="list-style-type: none"> • Are there a number of warning lights illuminated? 	Yes Go to Step 4.
		No Go to the next step.
3	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Does the MIL turn off with a check code other than 26? 	Yes Inspect the PCM.
		No Replace the instrument cluster.
4	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the DLC-2 terminals F and E. • Is the resistance 54-66 ohms ? 	Yes Go to the next step.
		No Go to Step 6.
5	<ul style="list-style-type: none"> • Inspect the DLC-2 terminals F and E for short to power supply or GND. • Is there any malfunction? 	Yes Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No Replace the instrument cluster.
	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? 	Yes Go to the next step.

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6		No	Repair or replace the terminal.
7	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the instrument cluster connector terminals 1J and 1L. • Is the resistance 114-126 ohms ? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.

NO. 5 BRAKE SYSTEM WARNING LIGHT ILLUMINATES

BRAKE SYSTEM WARNING LIGHT ILLUMINATES POSSIBLE CAUSE TABLE

5	Brake system warning light illuminates
POSSIBLE CAUSE	<ul style="list-style-type: none"> • ABS HU/CM or DSC HU/CM malfunction • Brake fluid level sensor malfunction • Parking brake switch malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

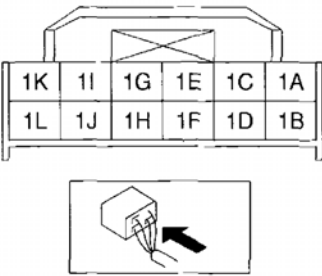
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION		ACTION
1	<ul style="list-style-type: none"> • Start the engine. • Release the parking brake. • Does the brake system warning light turn off? 	Yes	Troubleshooting completed.
		No	Go to the next step.
2	<ul style="list-style-type: none"> • Are there a number of warning lights illuminated? 	Yes	Go to Step 5.
		No	Go to the next step.
3	<ul style="list-style-type: none"> • Does the brake fluid need replenishment? 	Yes	Add brake fluid.
		No	Go to the next step.
	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. 	Yes	Inspect the ABS HU/CM, DSC HU/CM, brake fluid level sensor,

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4	<ul style="list-style-type: none"> Does the brake system warning light turn off with a check code other than 26? 	No	parking brake switch or connectors. Replace the instrument cluster.
		Yes	Go to the next step.
5	<ul style="list-style-type: none"> Disconnect the negative battery cable. Measure the resistance between the DLC-2 terminals F and E. Is the resistance 54-66 ohms ? 	No	Go to Step 7.
		Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
6	<ul style="list-style-type: none"> Disconnect the negative battery cable. Inspect the DLC-2 terminals F and E for short to power supply or GND. Is there any malfunction? 	No	Replace the instrument cluster.
		Yes	Go to the next step.
7	<ul style="list-style-type: none"> Turn the ignition switch off. Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). Are the terminals normal? <div style="text-align: center;">  </div>	No	Repair or replace the terminal.
		Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
8	<ul style="list-style-type: none"> Disconnect the negative battery cable. Measure the resistance between the instrument cluster connector terminals 1J and 1L. Is the resistance 114-126 ohms ? 	No	Replace the instrument cluster.
		Yes	Go to the next step.

NO. 6 INSTRUMENT CLUSTER ILLUMINATION DOES NOT ILLUMINATE

INSTRUMENT CLUSTER ILLUMINATION DOES NOT ILLUMINATE POSSIBLE CAUSE TABLE

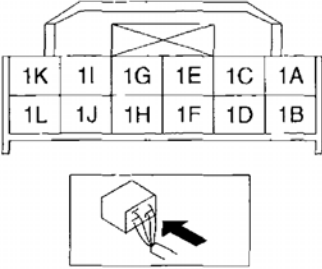
6	Instrument cluster illumination does not illuminate
POSSIBLE CAUSE	<ul style="list-style-type: none"> Instrument cluster malfunction Connector or pin malfunction Fuse malfunction

DIAGNOSTIC PROCEDURE

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DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> • Turn the light switch to the TNS position. • Does the instrument cluster illumination turn on? 	Yes	Troubleshooting completed.
		No	Go to the next step.
2	<ul style="list-style-type: none"> • Does the non-illumination include the entire instrument cluster? 	Yes	Go to the next step.
		No	Replace the instrument cluster.
3	<ul style="list-style-type: none"> • Inspect the ROOM and ILLUMI fuse. • Are the fuses normal? 	Yes	Go to the next step.
		No	Replace the fuse. <ul style="list-style-type: none"> • If the fuse is melted, inspect the wiring harness for short to ground. Repair or replace the wiring harness, then replace the fuse.
4	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? <div style="text-align: center;">  </div>	Yes	Replace the instrument cluster.
		No	Repair or replace the terminal.

NO. 7 SPEEDOMETER INDICATION IS DEFECTIVE

SPEEDOMETER INDICATION IS DEFECTIVE POSSIBLE CAUSE TABLE

7	Speedometer indication is defective
POSSIBLE CAUSE	<ul style="list-style-type: none"> • ABS HU/CM or DSC HU/CM malfunction • PCM malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

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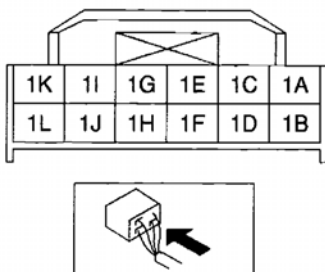
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> • Start the engine, and drive the vehicle. <ul style="list-style-type: none"> ○ Does the speedometer needle move smoothly? ○ Does the speedometer needle indicate correct speed? 	Yes	Troubleshooting completed.
		No	Go to the next step.
2	<ul style="list-style-type: none"> • Do the tachometer, the water temperature gauge, and the oil pressure gauge operate normally? 	Yes	Go to the next step.
		No	Go to Step 4.
3	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Inspect the speedometer using the check code 12. • Is the speedometer normal? 	Yes	Inspect the ABS HU/CM, DSC HU/CM, or connectors.
		No	Replace the instrument cluster.
4	<ul style="list-style-type: none"> • Start the engine. • Does the ABS warning light turn off? 	Yes	Inspect the PCM or connectors.
		No	Replace the instrument cluster.
5	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the DLC-2 terminals F and E. • Is the resistance 54-66 ohms ? 	Yes	Go to the next step.
		No	Go to Step 7.
6	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Inspect the DLC-2 terminals F and E for short to power supply or GND. • Is there any malfunction? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.
7	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? 	Yes	Go to the next step.
		No	Repair or replace the terminal.

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8	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the instrument cluster connector terminals 1J and 1L. • Is the resistance 114-126 ohms ? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.

NO. 8 TACHOMETER INDICATION IS DEFECTIVE

TACHOMETER INDICATION IS DEFECTIVE POSSIBLE CAUSE TABLE

8	Tachometer indication is defective
POSSIBLE CAUSE	<ul style="list-style-type: none"> • PCM malfunction • Instrument cluster malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

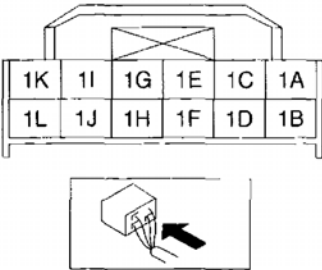
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> • Start the engine. <ul style="list-style-type: none"> ○ Does the tachometer needle move smoothly? ○ Does the tachometer needle indicate correct engine speed? 	Yes	Troubleshooting completed.
		No	Go to the next step.
2	<ul style="list-style-type: none"> • Do the speedometer, the water temperature gauge, and the oil pressure gauge operate normally? 	Yes	Go to the next step.
		No	Go to Step 4.
3	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Inspect the tachometer using the check code 13. 	Yes	Inspect the PCM or connectors.
		No	Replace the instrument cluster.

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	<ul style="list-style-type: none"> Is the tachometer normal? 		
4	<ul style="list-style-type: none"> Start the engine. Does the ABS warning light turn off? 	Yes	Inspect the PCM or connectors.
		No	Replace the instrument cluster.
5	<ul style="list-style-type: none"> Disconnect the negative battery cable. Measure the resistance between the DLC-2 terminals F and E. Is the resistance 54-66 ohms ? 	Yes	Go to the next step.
		No	Go to Step 7.
6	<ul style="list-style-type: none"> Disconnect the negative battery cable. Inspect the DLC-2 terminals F and E for short to power supply or GND. Is there any malfunction? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.
7	<ul style="list-style-type: none"> Turn the ignition switch off. Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). Are the terminals normal? 	Yes	Go to the next step.
		No	Repair or replace the terminal.
8	<ul style="list-style-type: none"> Disconnect the negative battery cable. Measure the resistance between the instrument cluster connector terminals 1J and 1L. Is the resistance 114-126 ohms ? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.

NO. 9 WATER TEMPERATURE GAUGE INDICATION IS DEFECTIVE

WATER TEMPERATURE GAUGE INDICATION IS DEFECTIVE POSSIBLE CAUSE TABLE

9	Water temperature gauge indication is defective
POSSIBLE CAUSE	<ul style="list-style-type: none"> PCM malfunction Instrument cluster malfunction Connector or pin malfunction Short circuit in wiring harness between CAN-L, CAN-H and GND

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- Open circuit in CAN wiring harness (CAN-L, CAN-H)
- CAN wiring harness (CAN-L, CAN-H) short each other

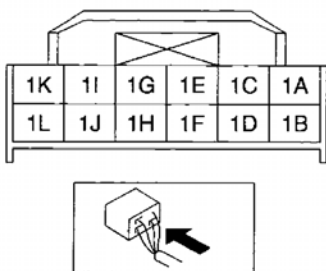
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Start the engine. • Does the water temperature gauge needle move to medium range gradually and stay there? 	Yes Troubleshooting completed.
		No Go to the next step.
2	<ul style="list-style-type: none"> • Do the speedometer, the tachometer, and the oil pressure gauge operate normally? 	Yes Go to the next step.
		No Go to Step 4.
3	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Inspect the water temperature gauge using the check code 25. • Is the water temperature gauge normal? 	Yes Inspect the PCM or connectors.
		No Replace the instrument cluster.
4	<ul style="list-style-type: none"> • Start the engine. • Does the ABS warning light turn off? 	Yes Inspect the PCM or connectors.
		No Replace the instrument cluster.
5	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the DLC-2 terminals F and E. • Is the resistance 54-66 ohms ? 	Yes Go to the next step.
		No Go to Step 7.
6	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Inspect the DLC-2 terminals F and E for short to power supply or GND. • Is there any malfunction? 	Yes Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No Replace the instrument cluster.
7	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? 	Yes Go to the next step.
		No Repair or replace the terminal.

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8	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the instrument cluster connector terminals 1J and 1L. • Is the resistance 114-126 ohms ? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.

NO. 10 OIL PRESSURE GAUGE INDICATION IS DEFECTIVE (OIL PRESSURE GAUGE NEEDLE DOES NOT MOVE FROM THE L POSITION OR LESS)

OIL PRESSURE GAUGE INDICATION IS DEFECTIVE POSSIBLE CAUSE TABLE

10	Oil pressure gauge indication is defective (oil pressure gauge needle does not move from the L position or less)
POSSIBLE CAUSE	<ul style="list-style-type: none"> • PCM malfunction • Instrument cluster malfunction • Oil pressure switch malfunction • Connector or pin malfunction • Short circuit in wiring harness between CAN-L, CAN-H and GND • Open circuit in CAN wiring harness (CAN-L, CAN-H) • CAN wiring harness (CAN-L, CAN-H) short each other

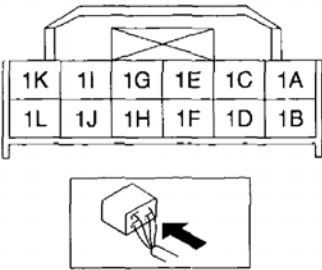
DIAGNOSTIC PROCEDURE

DIAGNOSTIC PROCEDURE

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none"> • Start the engine. • Does the oil pressure gauge needle indicate L position or more? 	Yes	Troubleshooting completed.
		No	Go to the next step.
2	<ul style="list-style-type: none"> • Do the speedometer, the tachometer, and the water temperature gauge operate normally? 	Yes	Go to the next step.
		No	Go to Step 5.
3	<ul style="list-style-type: none"> • Does the engine oil need replenishment? 	Yes	Add the engine oil.
		No	Go to the next step.

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4	<ul style="list-style-type: none"> • Start the instrument cluster input/output check mode. • Inspect the oil pressure gauge using the check code 28. • Is the oil pressure gauge normal? 	Yes	Inspect the PCM, oil pressure switch, or connectors.
		No	Replace the instrument cluster.
5	<ul style="list-style-type: none"> • Start the engine. • Does the ABS warning light turn off? 	Yes	Inspect the PCM or connectors.
		No	Go to the next step.
6	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the DLC-2 terminals F and E. • Is the resistance 54-66 ohms ? 	Yes	Go to the next step.
		No	Go to Step 8.
7	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Inspect the DLC-2 terminals F and E for short to power supply or GND. • Is there any malfunction? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.
8	<ul style="list-style-type: none"> • Turn the ignition switch off. • Inspect the instrument cluster connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Are the terminals normal? <div style="text-align: center; margin-top: 10px;">  </div>	Yes	Go to the next step.
		No	Repair or replace the terminal.
9	<ul style="list-style-type: none"> • Disconnect the negative battery cable. • Measure the resistance between the instrument cluster connector terminals 1J and 1L. • Is the resistance 114-126 ohms ? 	Yes	Inspect the wiring harness and CAN system-related module. Repair or replace the malfunctioning part.
		No	Replace the instrument cluster.