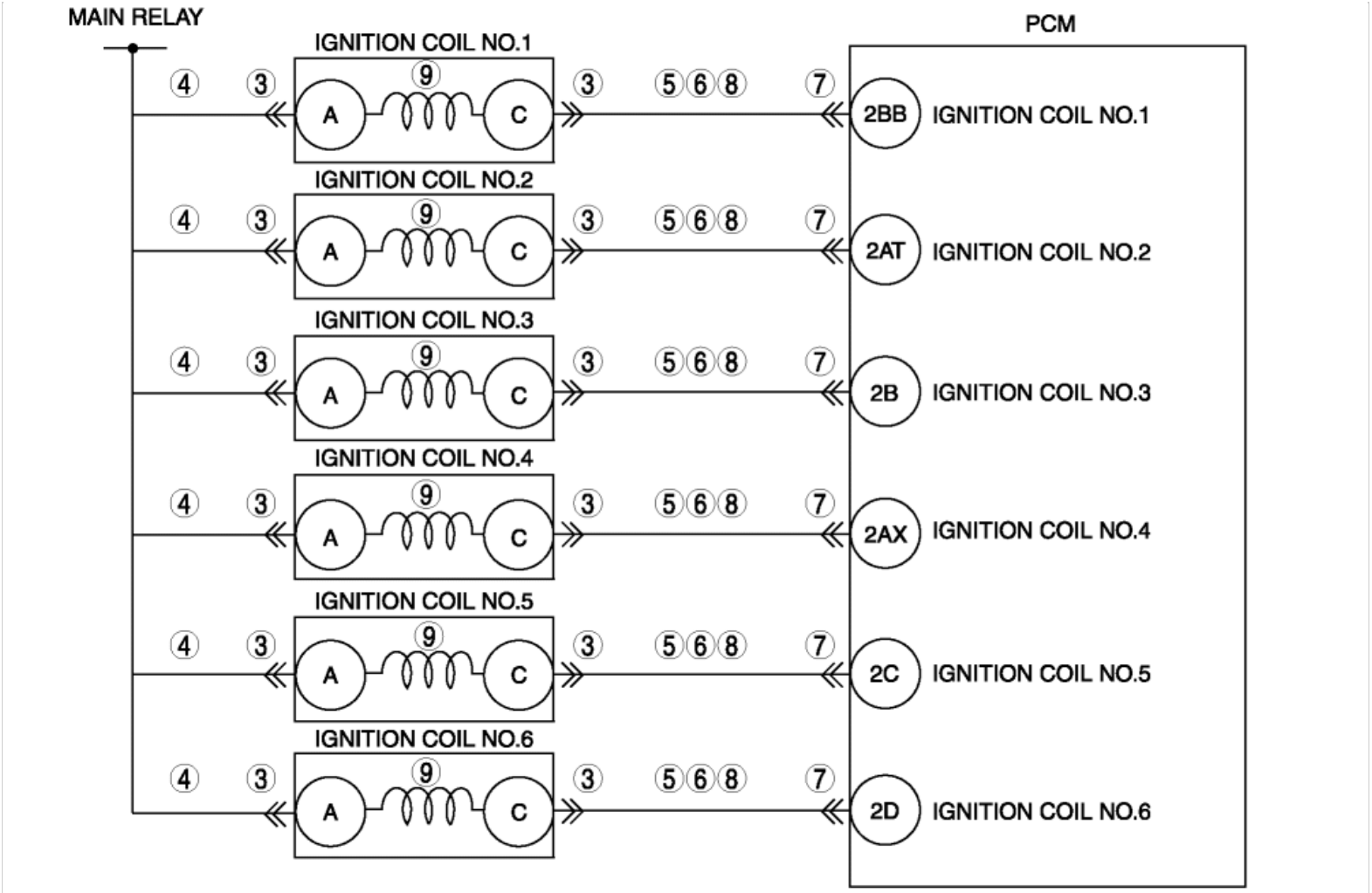
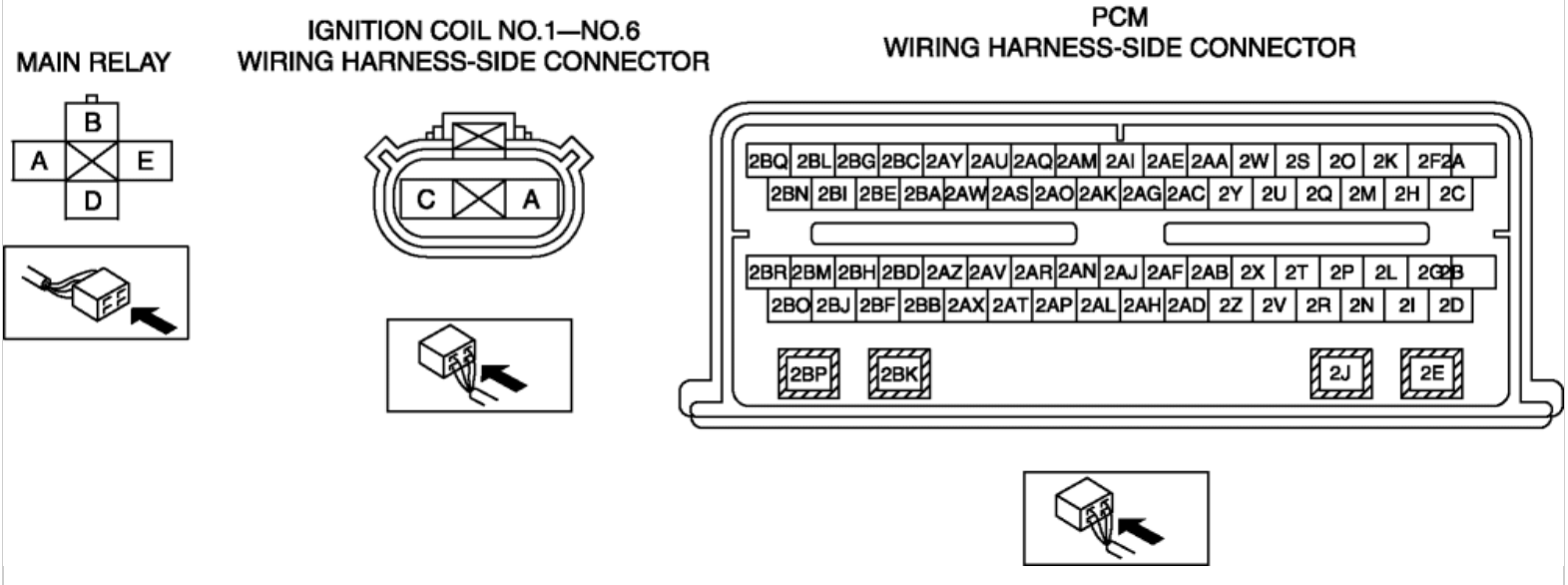
2012 - Mazda6 - Engine

DTC P0351:00, P0352:00, P0353:00, P0354:00, P0355:00, P0356:00 [MZI 3.7 V6]

DTC P0351:00	P0351:00: Ignition coil No.1 primary/secondary circuit
DTC P0352:00	P0352:00: Ignition coil No.2 primary/secondary circuit
DTC P0353:00	P0353:00: Ignition coil No.3 primary/secondary circuit
DTC P0354:00	P0354:00: Ignition coil No.4 primary/secondary circuit
DTC P0355:00	P0355:00: Ignition coil No.5 primary/secondary circuit
DTC P0356:00	P0356:00: Ignition coil No.6 primary/secondary circuit
DETECTION CONDITION	• Each ignition primary circuit is continuously monitored. The test fails when the PCM does not receive a valid ignition diagnostic monitor pulse signal from the ignition module (integrated in the PCM).
POSSIBLE CAUSE	• Connector or terminal malfunction • Open circuit between ignition coil terminal A and main relay terminal A • Short to power supply between ignition coil No.1 terminal C and PCM terminal 2BB • Short to power supply between ignition coil No.2 terminal C and PCM terminal 2AT • Short to power supply between ignition coil No.3 terminal C and PCM terminal 2B • Short to power supply between ignition coil No.4 terminal C and PCM terminal 2AX • Short to power supply between ignition coil No.5 terminal C and PCM terminal 2C • Short to power supply between ignition coil No.6 terminal C and PCM terminal 2D • Short to ground circuit between ignition coil No.1 terminal C and PCM terminal 2BB • Short to ground circuit between ignition coil No.2 terminal C and PCM terminal 2AT • Short to ground circuit between ignition coil No.3 terminal C and PCM terminal 2B • Short to ground circuit between ignition coil No.4 terminal C and PCM terminal 2AX • Short to ground circuit between ignition coil No.5 terminal C and PCM terminal 2C • Short to ground circuit between ignition coil No.6 terminal C and PCM terminal 2D • Open circuit between ignition coil No.1 terminal C and PCM terminal 2BB • Open circuit between ignition coil No.2 terminal C and PCM terminal 2AT • Open circuit between ignition coil No.3 terminal C and PCM terminal 2B • Open circuit between ignition coil No.4 terminal C and PCM terminal 2AX • Open circuit between ignition coil No.5 terminal C and PCM terminal 2C • Open circuit between ignition coil No.6 terminal C and PCM terminal 2D • Ignition coil malfunction





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has FREEZE FRAME DATA been recorded?	Yes	Go to the next step.
		No	Record FREEZE FRAME DATA on the repair order, then go to the next step.

2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related Service Bulletins available?	Yes	Perform repair or diagnosis according to the available Service Bulletins. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT IGNITION COIL CONNECTOR FOR POOR CONNECTION** • Switch the ignition to off. • Disconnect the ignition coil connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Are there any malfunction?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
4	**INSPECT IGNITION COIL POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT** • Disconnect the ignition coil connector. • Switch the ignition to ON (Engine off). • Measure the voltage between ignition coil terminal A (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Go to the next step.
		No	Repair or replace suspected part, then go to Step 10.
5	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between ignition coil terminal C (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
6	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR SHORT TO GROUND** • Switch the ignition to ON (Engine off). • Inspect continuity between ignition coil terminal C (wiring harness-side) and body ground. • Is there continuity?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
7	**INSPECT PCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition to off. • Disconnect PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
8	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Inspect continuity between the following circuits: ▪ Ignition coil No.1 terminal C (wiring harness-side) and PCM terminal 2BB (wiring harness-side) ▪ Ignition coil No.2 terminal C (wiring harness-side) and PCM terminal 2AT (wiring harness-side)	Yes	Go to the next step.
		No	Repair or replace suspected part, then go to Step 10.

	▪ Ignition coil No.3 terminal C (wiring harness-side) and PCM terminal 2B (wiring harness-side) ▪ Ignition coil No.4 terminal C (wiring harness-side) and PCM terminal 2AX (wiring harness-side) ▪ Ignition coil No.5 terminal C (wiring harness-side) and PCM terminal 2C (wiring harness-side) ▪ Ignition coil No.6 terminal C (wiring harness-side) and PCM terminal 2D (wiring harness-side) • Are there continuity?		
9	**INSPECT IGNITION COIL** • Inspect ignition coil. (See **IGNITION COIL INSPECTION [MZI 3.7 V6]**.) • Are there ignition coil normal?	Yes	Go to the next step.
		No	Replace the ignition coil, then go to the next step.
10	**VERIFY TROUBLESHOOTING OF DTC P0351:00, P0352:00, P0353:00, P0354:00, P0355:00 and P0356:00 COMPLETED** • Verify that all disconnected connectors reconnected. • Clear the DTC from the PCM memory using the M-MDS. • Perform the KOEO or KOER self-test. (See **KOEO/ KOER SELF TEST [MZI 3.7 V6]**.) • Is the PENDING CODE for the DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZI 3.7 V6]**.) Go to the next step.
		No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZI 3.7 V6]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZI 3.7 V6]**.)
		No	Troubleshooting completed.

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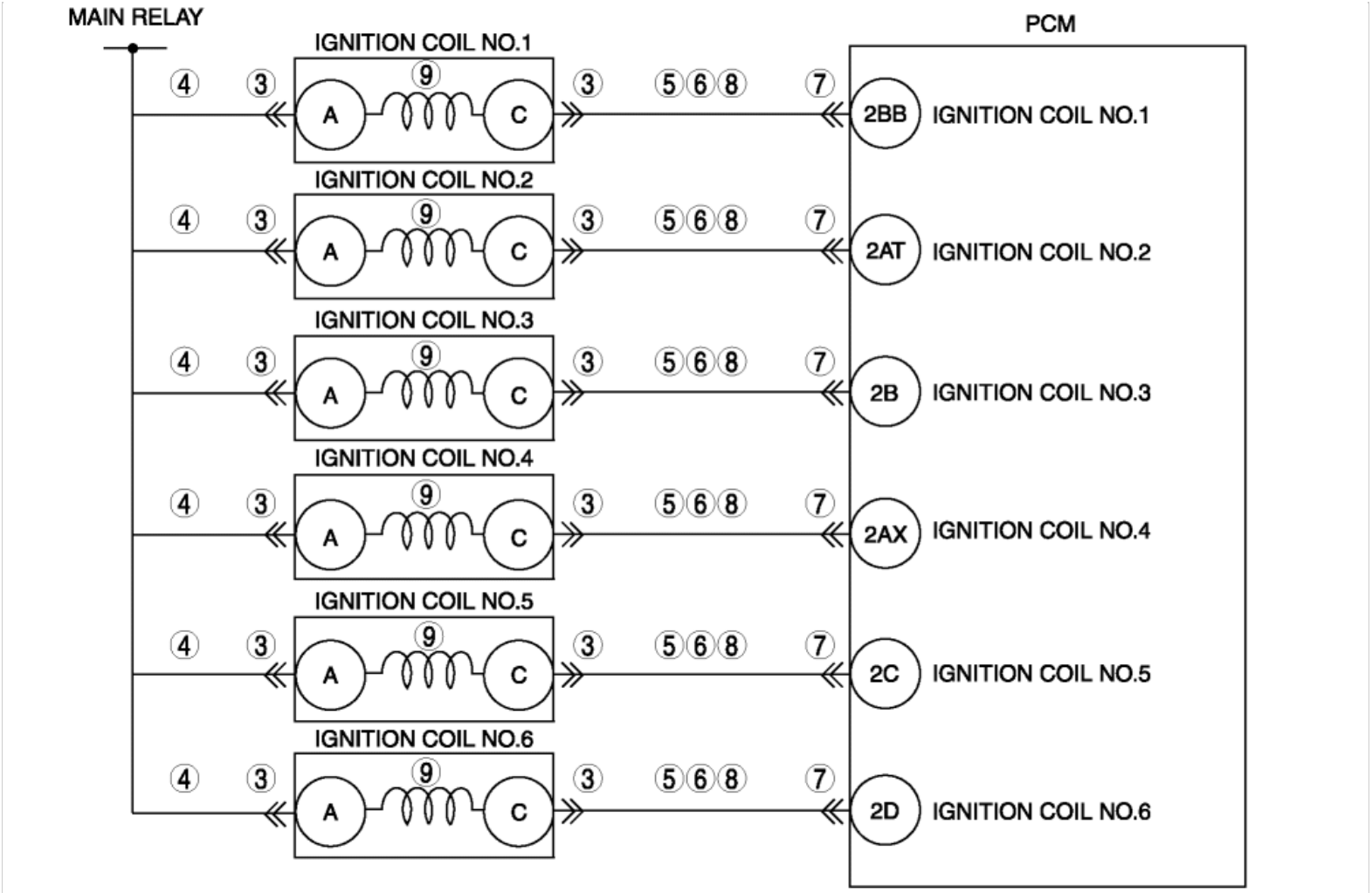
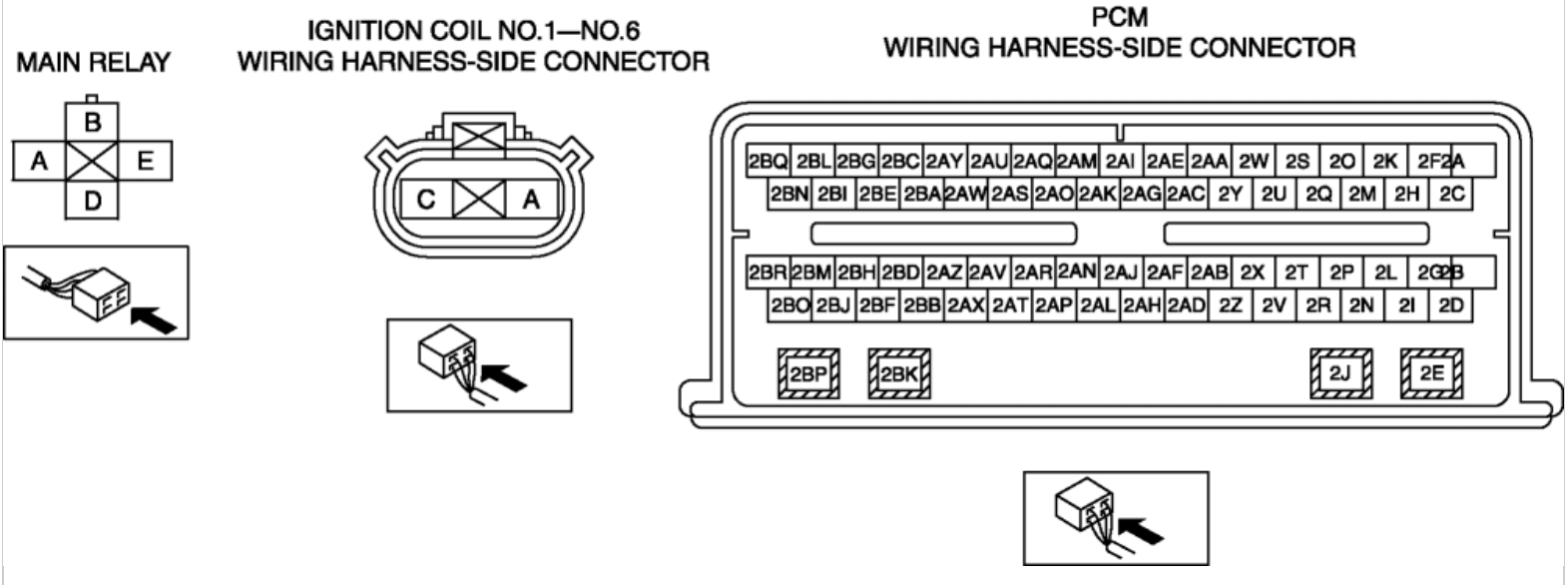
2012 - Mazda6 - Engine

DTC P0351:00, P0352:00, P0353:00, P0354:00, P0355:00, P0356:00 [MZI 3.7 V6]

DTC P0351:00	P0351:00: Ignition coil No.1 primary/secondary circuit
DTC P0352:00	P0352:00: Ignition coil No.2 primary/secondary circuit
DTC P0353:00	P0353:00: Ignition coil No.3 primary/secondary circuit
DTC P0354:00	P0354:00: Ignition coil No.4 primary/secondary circuit
DTC P0355:00	P0355:00: Ignition coil No.5 primary/secondary circuit
DTC P0356:00	P0356:00: Ignition coil No.6 primary/secondary circuit
DETECTION CONDITION	• Each ignition primary circuit is continuously monitored. The test fails when the PCM does not receive a valid ignition diagnostic monitor pulse signal from the ignition module (integrated in the PCM).
POSSIBLE CAUSE	• Connector or terminal malfunction • Open circuit between ignition coil terminal A and main relay terminal A • Short to power supply between ignition coil No.1 terminal C and PCM terminal 2BB • Short to power supply between ignition coil No.2 terminal C and PCM terminal 2AT • Short to power supply between ignition coil No.3 terminal C and PCM terminal 2B • Short to power supply between ignition coil No.4 terminal C and PCM terminal 2AX • Short to power supply between ignition coil No.5 terminal C and PCM terminal 2C • Short to power supply between ignition coil No.6 terminal C and PCM terminal 2D • Short to ground circuit between ignition coil No.1 terminal C and PCM terminal 2BB • Short to ground circuit between ignition coil No.2 terminal C and PCM terminal 2AT • Short to ground circuit between ignition coil No.3 terminal C and PCM terminal 2B • Short to ground circuit between ignition coil No.4 terminal C and PCM terminal 2AX • Short to ground circuit between ignition coil No.5 terminal C and PCM terminal 2C • Short to ground circuit between ignition coil No.6 terminal C and PCM terminal 2D • Open circuit between ignition coil No.1 terminal C and PCM terminal 2BB • Open circuit between ignition coil No.2 terminal C and PCM terminal 2AT • Open circuit between ignition coil No.3 terminal C and PCM terminal 2B • Open circuit between ignition coil No.4 terminal C and PCM terminal 2AX • Open circuit between ignition coil No.5 terminal C and PCM terminal 2C • Open circuit between ignition coil No.6 terminal C and PCM terminal 2D • Ignition coil malfunction





Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY FREEZE FRAME DATA HAS BEEN RECORDED** • Has FREEZE FRAME DATA been recorded?	Yes	Go to the next step.
		No	Record FREEZE FRAME DATA on the repair order, then go to the next step.

2	**VERIFY RELATED REPAIR INFORMATION AVAILABILITY** • Verify related Service Bulletins and/or on-line repair information availability. • Is any related Service Bulletins available?	Yes	Perform repair or diagnosis according to the available Service Bulletins. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	**INSPECT IGNITION COIL CONNECTOR FOR POOR CONNECTION** • Switch the ignition to off. • Disconnect the ignition coil connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Are there any malfunction?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
4	**INSPECT IGNITION COIL POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT** • Disconnect the ignition coil connector. • Switch the ignition to ON (Engine off). • Measure the voltage between ignition coil terminal A (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Go to the next step.
		No	Repair or replace suspected part, then go to Step 10.
5	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition to ON (Engine off). • Measure the voltage between ignition coil terminal C (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
6	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR SHORT TO GROUND** • Switch the ignition to ON (Engine off). • Inspect continuity between ignition coil terminal C (wiring harness-side) and body ground. • Is there continuity?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
7	**INSPECT PCM CONNECTOR FOR POOR CONNECTION** • Switch the ignition to off. • Disconnect PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace suspected part, then go to Step 10.
		No	Go to the next step.
8	**INSPECT IGNITION COIL SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Inspect continuity between the following circuits: ▪ Ignition coil No.1 terminal C (wiring harness-side) and PCM terminal 2BB (wiring harness-side) ▪ Ignition coil No.2 terminal C (wiring harness-side) and PCM terminal 2AT (wiring harness-side)	Yes	Go to the next step.
		No	Repair or replace suspected part, then go to Step 10.

	▪ Ignition coil No.3 terminal C (wiring harness-side) and PCM terminal 2B (wiring harness-side) ▪ Ignition coil No.4 terminal C (wiring harness-side) and PCM terminal 2AX (wiring harness-side) ▪ Ignition coil No.5 terminal C (wiring harness-side) and PCM terminal 2C (wiring harness-side) ▪ Ignition coil No.6 terminal C (wiring harness-side) and PCM terminal 2D (wiring harness-side) • Are there continuity?		
9	**INSPECT IGNITION COIL** • Inspect ignition coil. (See **IGNITION COIL INSPECTION [MZI 3.7 V6]**.) • Are there ignition coil normal?	Yes	Go to the next step.
		No	Replace the ignition coil, then go to the next step.
10	**VERIFY TROUBLESHOOTING OF DTC P0351:00, P0352:00, P0353:00, P0354:00, P0355:00 and P0356:00 COMPLETED** • Verify that all disconnected connectors reconnected. • Clear the DTC from the PCM memory using the M-MDS. • Perform the KOEO or KOER self-test. (See **KOEO/ KOER SELF TEST [MZI 3.7 V6]**.) • Is the PENDING CODE for the DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See **PCM REMOVAL/ INSTALLATION [MZI 3.7 V6]**.) Go to the next step.
		No	Go to the next step.
11	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See **AFTER REPAIR PROCEDURE [MZI 3.7 V6]**.) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **DTC TABLE [MZI 3.7 V6]**.)
		No	Troubleshooting completed.

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