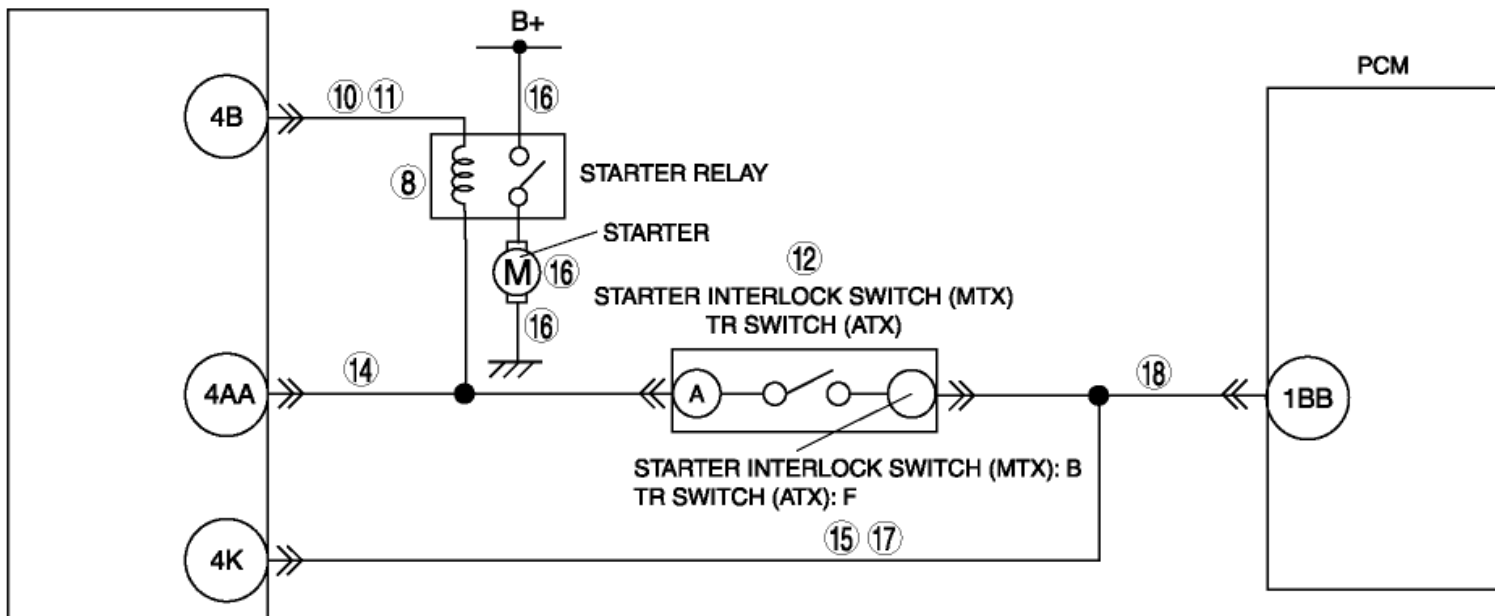


2012 - Mazda6 - Engine

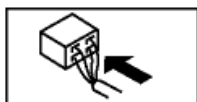
NO.3 WILL NOT CRANK [MZR 2.5]

3	WILL NOT CRANK
DESCRIPTION	• Starter does not work.
POSSIBLE CAUSE	• Open starter circuit between the ignition switch and the starter • TR switch malfunction (ATX) • TR switch misadjustment (ATX) • Starter interlock switch malfunction (MTX) • Open or short circuit in wiring harness between keyless control module and TR switch (ATX with advanced keyless entry and push button start system) • Open or short circuit in wiring harness between keyless control module and starter interlock switch (MTX with advanced keyless entry and push button start system) • Low or dead battery • Charging system malfunction • Starter malfunction • Seized/hydro locked engine, flywheel (MTX) or drive plate (ATX) • Immobilizer system and/or related circuit malfunction • Immobilizer system operating properly (Key is not registered.) • Advanced keyless entry and push button start system malfunction (with advanced keyless entry and push button start system)

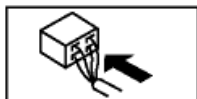
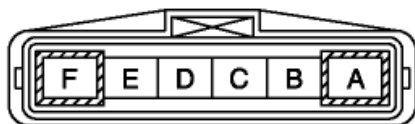
KEYLESS CONTROL MODULE



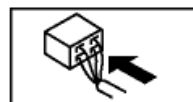
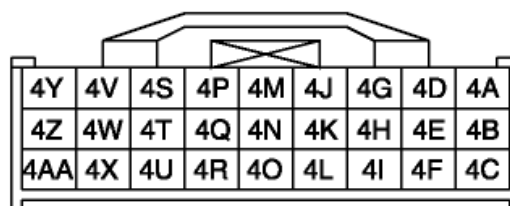
STARTER INTERLOCK SWITCH (MTX) WIRING HARNESS-SIDE CONNECTOR



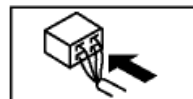
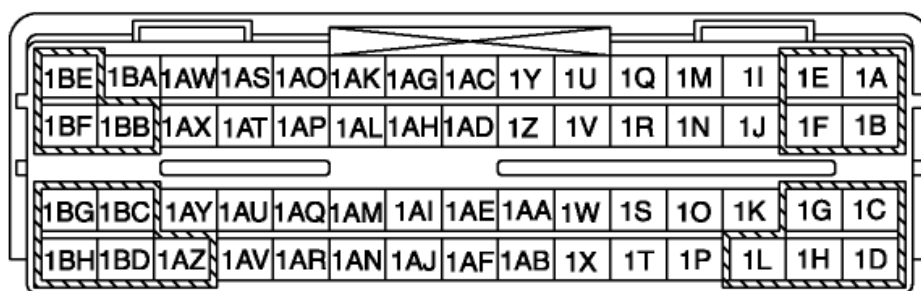
TR SWITCH (ATX)
WIRING HARNESS-SIDE CONNECTOR



KEYLESS CONTROL MODULE WIRING HARNESS-SIDE CONNECTOR



PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	RESULTS	ACTION
1	DETERMINE IF MALFUNCTION CAUSE IS ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM OR OTHER NOTE:	Yes	Inspect the advanced keyless entry and push button start system and repair or replace according to the inspection result.

	- The following test should be performed on the advanced keyless entry and push button start system. If not equipped, go to the next step. - Insert the emergency key in the emergency slot and start the engine. - Does the engine start?		(See SYMPTOM TROUBLESHOOTING CHART [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
		No	Go to the next step.
2	DETERMINE IF MALFUNCTION CAUSE IS IMMOBILIZER SYSTEM OR OTHER - Do the following conditions appear? - Engine does not start completely. - PCM DTC P1260:00 is displayed.	Yes	Both conditions appear: Go to Step 5.
		No	Either condition or other one appears: Go to the next step.
3	INSPECT COIL ANTENNA CONNECTOR CONNECTION Is the coil antenna connector securely connected to the coil antenna?	Yes	Go to the next step.
		No	Connect the coil antenna connector securely. Return to Step 1.
4	DETERMINE IF MALFUNCTION CAUSE IS INSTRUMENT CLUSTER OR OTHER Does the security light flash?	Yes	Go to the next step.
		No	Inspect the instrument cluster and wiring harness. (See INSTRUMENT CLUSTER INSPECTION .) Repair or replace the malfunctioning part according to the inspection results.
5	VERIFY IMMOBILIZER SYSTEM DTC - Retrieve the DTC for the immobilizer system. (See DTC INSPECTION [IMMOBILIZER SYSTEM (KEYLESS ENTRY SYSTEM)].) (See DTC INSPECTION [IMMOBILIZER SYSTEM (ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM)].) - Is there any DTC present?	Yes	Go to the appropriate DTC inspection. (See DTC TABLE [IMMOBILIZER SYSTEM (KEYLESS ENTRY SYSTEM)] .) (See DTC TABLE [IMMOBILIZER SYSTEM (ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM)] .)
		No	Go to the next step.
6	INSPECT IMMOBILIZER SYSTEM RELATED CIRCUIT - Inspect the following wiring harnesses and connectors: - With advanced keyless entry and push button start system: - Between coil antenna terminal C and keyless control module terminal 2B - Between coil antenna terminal D and keyless control module terminal 2D - Between PCM terminal 1AM and keyless control module terminal	Yes	Repair or replace suspected wiring harness and connector.
		No	Go to the next step.

	2G - Between PCM terminal 1AI and keyless control module terminal 2I - Without advanced keyless entry and push button start system: - Between coil antenna terminal C and instrument cluster terminal 2E - Between coil antenna terminal D and instrument cluster terminal 2G - Between PCM terminal 1AM and instrument cluster terminal 2X - Between PCM terminal 1AI and instrument cluster terminal 2W - Is there any malfunction?		
7	INSPECT POWER SUPPLY - Inspect the following: - Battery connection - Battery condition (See BATTERY INSPECTION [MZR 2.5].) - Fuses (See NO.1 MELTING OF MAIN OR OTHER FUSES [MZR 2.5].) - Selector lever is in P or N position (ATX) - Are all items normal?	Yes With advanced keyless entry and push button start system: - Go to the next step. Without advanced keyless entry and push button start system: - Go to Step 19.	
		No Service if necessary. Repeat Step 7.	
8	INSPECT STARTER RELAY - Inspect the starter relay. (See RELAY INSPECTION.) - Is the starter relay normal?	Yes Go to the next step.	
		No Replace the starter relay.	
9	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY PRIMARY COIL POWER SUPPLY OR OTHER - Remove the starter relay. - Measure the voltage of the connector terminal (primary coil power supply) on the starter relay wiring harness while cranking. - Is the voltage B+ ?	Yes Go to Step 12.	
		No Go to the next step.	
	INSPECT STARTER RELAY PRIMARY COIL POWER SUPPLY		

10	CIRCUIT FOR OPEN CIRCUIT - Switch the ignition to off - Disconnect the keyless control module connector. - Verify continuity between keyless control module terminal 4B and starter relay terminal (primary coil power supply). - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
11	INSPECT STARTER RELAY PRIMARY COIL POWER SUPPLY CIRCUIT FOR SHORT TO GROUND - Verify continuity between keyless control module terminal 4B and body ground. - Is there continuity?	Yes	Repair or replace suspected wiring harness and connector.
		No	Replace the keyless control module. (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
12	DETERMINE IF MALFUNCTION CAUSE IS TR SWITCH (ATX)/ STARTER INTERLOCK SWITCH (MTX) OR OTHER - Install the starter relay. - MTX: - Short the terminals of the starter interlock switch connector (2-pin) using a jumper wire. - ATX: - Short TR switch terminals A and F using a jumper wire. - Switch the ignition to start. - Does the engine start?	Yes	MTX: - Replace the starter interlock switch. ATX: - Replace the TR switch. (See TRANSAXLE RANGE (TR) SWITCH REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
13	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY CONTROL CIRCUIT OR OTHER Is the starter relay operation sound heard when the engine starting procedure is performed in Step 12?	Yes	Go to the next step.
		No	Go to Step 17.
14	INSPECT STARTER MONITOR SIGNAL CIRCUIT - Switch the ignition to off - Measure the voltage at keyless control module terminal 4AA. - Is the voltage specified? Specification - MTX: - Clutch pedal is not depressed: 1.0 V or less - Clutch pedal is depressed: 4.0 V or more - ATX: - Shift position is not P or N position: 1.0 V or less - Shift position is P or N position: 4.0 V or more	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.

15	INSPECT SHIFT POSITION (ATX)/ CLUTCH PEDAL POSITION (MTX) MONITOR SIGNAL CIRCUIT - Switch the ignition to off. - Disconnect the keyless control module, starter interlock switch (MTX)/TR switch (ATX) connectors. - Verify continuity between the following terminals: - MTX: - Between keyless control module terminal 4K and starter interlock switch - ATX: - Between keyless control module terminal 4K and TR switch terminal F - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
16	INSPECT STARTER AND STARTER POWER SUPPLY CIRCUIT AND GROUND CIRCUIT - Inspect the following: - Starter (See STARTER INSPECTION [MZR 2.5].) - Starter ground (installation) - Starter power supply (from battery through secondary starter relay, to starter) - Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Replace the keyless control module. (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
17	INSPECT SHIFT POSITION (ATX)/ CLUTCH PEDAL POSITION (MTX) MONITOR SIGNAL CIRCUIT - Switch the ignition to off. - Disconnect the keyless control module, starter interlock switch (MTX)/TR switch (ATX) connectors. - Verify continuity between the following terminals: - MTX: - Between keyless control module terminal 4K and starter interlock switch - ATX: - Between keyless control module terminal 4K and TR switch terminal F - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
18	INSPECT STARTER RELAY CONTROL SIGNAL CIRCUIT	Yes	Go to Step 27.

	Verify continuity between the following terminals: ▪ MTX: • Between starter interlock switch and PCM terminal 1BB ▪ ATX: • Between TR switch terminal F and PCM terminal 1BB • Is there continuity?	No	Repair or replace suspected wiring harness and connector.
19	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY CONTROL CIRCUIT OR OTHER • Is there continuity between PCM terminal 1BB and starter relay with P or N position (ATX)/clutch pedal depressed (MTX)?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
20	DETERMINE IF MALFUNCTION CAUSE IS TR SWITCH (ATX)/ STARTER INTERLOCK SWITCH (MTX) OR OTHER • ATX: ▪ Selector lever is in P or N position. • MTX: ▪ Depress the clutch pedal. • Is a clicking sound heard from the starter relay when the switch the ignition to start?	Yes	Go to Step 25.
		No	ATX: • Go to the next step. MTX: • Go to Step 22.
21	INSPECT TR SWITCH SIGNAL • Access the PCM PID TR using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) • Is the TR PID indicated P/N when selecting the P or N position?	Yes	Go to Step 23.
		No	Verify that the TR switch is adjusted properly. Inspect for an open or short circuit between TR switch and TCM. Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
22	INSPECT STARTER INTERLOCK SWITCH • Inspect the starter interlock switch. (See STARTER INTERLOCK SWITCH INSPECTION [MZR 2.5].) • Is the starter interlock switch normal?	Yes	Go to the next step.
		No	Inspect the starter interlock switch and related wiring harnesses. Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
23	INSPECT STARTER RELAY CONTROL CIRCUIT • Inspect the starter relay and the following wiring harnesses: (See RELAY INSPECTION.) ▪ Between starter relay and PCM ▪ Between starter relay and ignition switch	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.

	Are they normal?		
24	INSPECT IGNITION SWITCH AND RELATED CIRCUIT - Inspect the ignition switch and related wiring harnesses. (See IGNITION SWITCH INSPECTION [WITHOUT ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].) - Are they normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
25	INSPECT WIRING HARNESS OF STARTER POWER SUPPLY CIRCUIT - Inspect the following wiring harnesses: - Between starter relay and battery. - Between starter relay and starter. - Are they normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Go to the next step.
26	INSPECT STARTER AND GROUND CIRCUIT - Inspect the following: - Starter (See STARTER INSPECTION [MZR 2.5].) - Starter ground (installation) - Starter power supply (from battery through secondary starter relay, to starter) - Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
27	DETERMINE IF MALFUNCTION CAUSE IS BASE ENGINE OR OTHER - Inspect for a seized/hydro locked engine or flywheel (MTX) or drive plate (ATX). - Is the engine seized or hydro locked?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results.
28	VERIFY PCM DTC - Retrieve any continuous memory DTCs. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) - Are there any continuous memory DTCs displayed?	Yes	DTC is displayed: - Go to the appropriate DTC inspection. (See DTC TABLE [MZR 2.5].) Communication error message is displayed: - Inspect the following: - Open circuit in the wiring harness between main relay terminal B and PCM terminal 1Q - Open circuit in the wiring harness between main relay terminal D and PCM terminal 1A, 1B

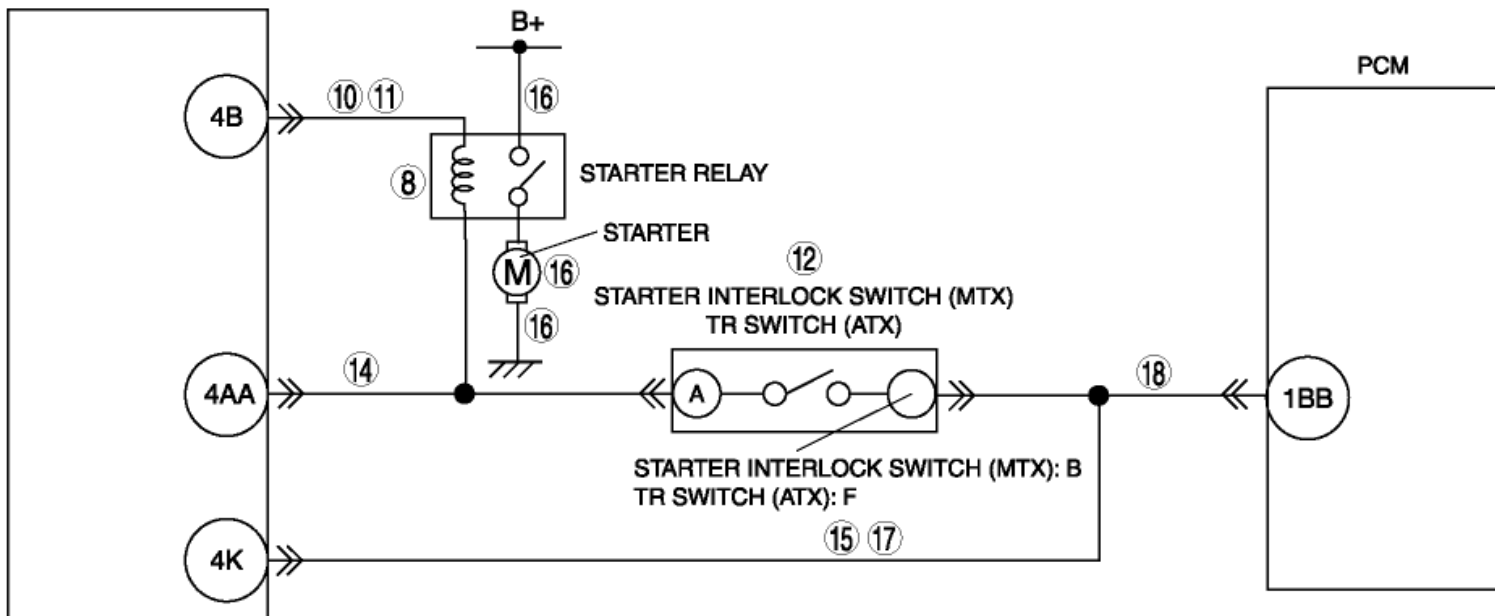
			▪ Main relay is stuck open. ▪ Open or short circuit in the wiring harness between DLC-2 and PCM terminals 1AM or 1AI ▪ Open or poor ground circuit (PCM terminal 1E,1F,1G, 1BE, or 1BF) ▪ Poor connection of vehicle body ground Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
29	VERIFY PRESENT MALFUNCTION DTC • Retrieve any KOEO DTCs using the M-MDS. (See KOEO/ KOER SELF TEST [MZR 2.5].) • Are there DTCs displayed during the KOEO self test?	Yes	Go to the appropriate DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	Inspect the following: • Start circuit in ignition switch • Open circuit in wiring harness between ignition switch and starter Repair or replace the malfunctioning part according to the inspection results.
30	• Verify test results. ▪ If normal, return to the diagnostic index to service any additional symptoms. (See SYMPTOM DIAGNOSTIC INDEX [MZR 2.5].) ▪ If a malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, reprogram the PCM if a later calibration is available. Retest.		

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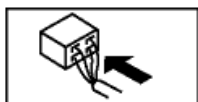
NO.3 WILL NOT CRANK [MZR 2.5]

3	WILL NOT CRANK
DESCRIPTION	• Starter does not work.
POSSIBLE CAUSE	• Open starter circuit between the ignition switch and the starter • TR switch malfunction (ATX) • TR switch misadjustment (ATX) • Starter interlock switch malfunction (MTX) • Open or short circuit in wiring harness between keyless control module and TR switch (ATX with advanced keyless entry and push button start system) • Open or short circuit in wiring harness between keyless control module and starter interlock switch (MTX with advanced keyless entry and push button start system) • Low or dead battery • Charging system malfunction • Starter malfunction • Seized/hydro locked engine, flywheel (MTX) or drive plate (ATX) • Immobilizer system and/or related circuit malfunction • Immobilizer system operating properly (Key is not registered.) • Advanced keyless entry and push button start system malfunction (with advanced keyless entry and push button start system)

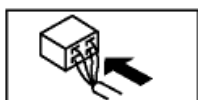
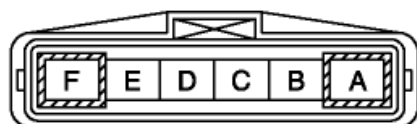
KEYLESS CONTROL MODULE



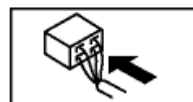
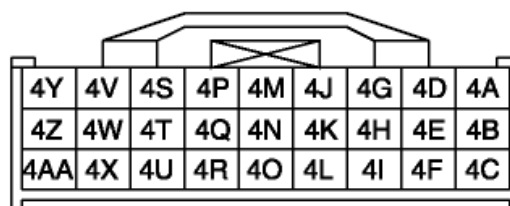
STARTER INTERLOCK SWITCH (MTX) WIRING HARNESS-SIDE CONNECTOR



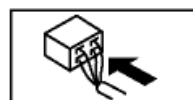
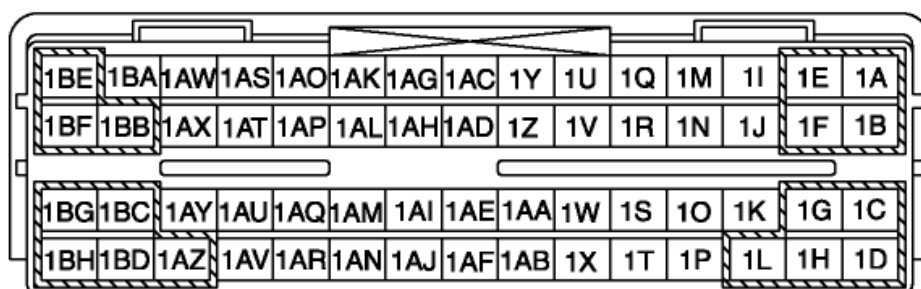
TR SWITCH (ATX)
WIRING HARNESS-SIDE CONNECTOR



KEYLESS CONTROL MODULE WIRING HARNESS-SIDE CONNECTOR



PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	RESULTS	ACTION
1	DETERMINE IF MALFUNCTION CAUSE IS ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM OR OTHER NOTE:	Yes	Inspect the advanced keyless entry and push button start system and repair or replace according to the inspection result.

	- The following test should be performed on the advanced keyless entry and push button start system. If not equipped, go to the next step. - Insert the emergency key in the emergency slot and start the engine. - Does the engine start?		(See SYMPTOM TROUBLESHOOTING CHART [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
		No	Go to the next step.
2	DETERMINE IF MALFUNCTION CAUSE IS IMMOBILIZER SYSTEM OR OTHER - Do the following conditions appear? - Engine does not start completely. - PCM DTC P1260:00 is displayed.	Yes	Both conditions appear: Go to Step 5.
		No	Either condition or other one appears: Go to the next step.
3	INSPECT COIL ANTENNA CONNECTOR CONNECTION Is the coil antenna connector securely connected to the coil antenna?	Yes	Go to the next step.
		No	Connect the coil antenna connector securely. Return to Step 1.
4	DETERMINE IF MALFUNCTION CAUSE IS INSTRUMENT CLUSTER OR OTHER Does the security light flash?	Yes	Go to the next step.
		No	Inspect the instrument cluster and wiring harness. (See INSTRUMENT CLUSTER INSPECTION .) Repair or replace the malfunctioning part according to the inspection results.
5	VERIFY IMMOBILIZER SYSTEM DTC - Retrieve the DTC for the immobilizer system. (See DTC INSPECTION [IMMOBILIZER SYSTEM (KEYLESS ENTRY SYSTEM)].) (See DTC INSPECTION [IMMOBILIZER SYSTEM (ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM)].) - Is there any DTC present?	Yes	Go to the appropriate DTC inspection. (See DTC TABLE [IMMOBILIZER SYSTEM (KEYLESS ENTRY SYSTEM)] .) (See DTC TABLE [IMMOBILIZER SYSTEM (ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM)] .)
		No	Go to the next step.
6	INSPECT IMMOBILIZER SYSTEM RELATED CIRCUIT - Inspect the following wiring harnesses and connectors: - With advanced keyless entry and push button start system: - Between coil antenna terminal C and keyless control module terminal 2B - Between coil antenna terminal D and keyless control module terminal 2D - Between PCM terminal 1AM and keyless control module terminal	Yes	Repair or replace suspected wiring harness and connector.
		No	Go to the next step.

	2G - Between PCM terminal 1AI and keyless control module terminal 2I - Without advanced keyless entry and push button start system: - Between coil antenna terminal C and instrument cluster terminal 2E - Between coil antenna terminal D and instrument cluster terminal 2G - Between PCM terminal 1AM and instrument cluster terminal 2X - Between PCM terminal 1AI and instrument cluster terminal 2W - Is there any malfunction?		
7	INSPECT POWER SUPPLY - Inspect the following: - Battery connection - Battery condition (See BATTERY INSPECTION [MZR 2.5].) - Fuses (See NO.1 MELTING OF MAIN OR OTHER FUSES [MZR 2.5].) - Selector lever is in P or N position (ATX) - Are all items normal?	Yes Without advanced keyless entry and push button start system: Go to the next step.	With advanced keyless entry and push button start system: Go to Step 19.
		No	Service if necessary. Repeat Step 7.
8	INSPECT STARTER RELAY - Inspect the starter relay. (See RELAY INSPECTION.) - Is the starter relay normal?	Yes No	Go to the next step. Replace the starter relay.
9	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY PRIMARY COIL POWER SUPPLY OR OTHER - Remove the starter relay. - Measure the voltage of the connector terminal (primary coil power supply) on the starter relay wiring harness while cranking. - Is the voltage B+ ?	Yes No	Go to Step 12. Go to the next step.
	INSPECT STARTER RELAY PRIMARY COIL POWER SUPPLY		

10	CIRCUIT FOR OPEN CIRCUIT - Switch the ignition to off - Disconnect the keyless control module connector. - Verify continuity between keyless control module terminal 4B and starter relay terminal (primary coil power supply). - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
11	INSPECT STARTER RELAY PRIMARY COIL POWER SUPPLY CIRCUIT FOR SHORT TO GROUND - Verify continuity between keyless control module terminal 4B and body ground. - Is there continuity?	Yes	Repair or replace suspected wiring harness and connector.
		No	Replace the keyless control module. (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
12	DETERMINE IF MALFUNCTION CAUSE IS TR SWITCH (ATX)/ STARTER INTERLOCK SWITCH (MTX) OR OTHER - Install the starter relay. - MTX: - Short the terminals of the starter interlock switch connector (2-pin) using a jumper wire. - ATX: - Short TR switch terminals A and F using a jumper wire. - Switch the ignition to start. - Does the engine start?	Yes	MTX: - Replace the starter interlock switch. ATX: - Replace the TR switch. (See TRANSAXLE RANGE (TR) SWITCH REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
13	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY CONTROL CIRCUIT OR OTHER Is the starter relay operation sound heard when the engine starting procedure is performed in Step 12?	Yes	Go to the next step.
		No	Go to Step 17.
14	INSPECT STARTER MONITOR SIGNAL CIRCUIT - Switch the ignition to off - Measure the voltage at keyless control module terminal 4AA. - Is the voltage specified? Specification - MTX: - Clutch pedal is not depressed: 1.0 V or less - Clutch pedal is depressed: 4.0 V or more - ATX: - Shift position is not P or N position: 1.0 V or less - Shift position is P or N position: 4.0 V or more	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.

15	INSPECT SHIFT POSITION (ATX)/ CLUTCH PEDAL POSITION (MTX) MONITOR SIGNAL CIRCUIT - Switch the ignition to off. - Disconnect the keyless control module, starter interlock switch (MTX)/TR switch (ATX) connectors. - Verify continuity between the following terminals: - MTX: - Between keyless control module terminal 4K and starter interlock switch - ATX: - Between keyless control module terminal 4K and TR switch terminal F - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
16	INSPECT STARTER AND STARTER POWER SUPPLY CIRCUIT AND GROUND CIRCUIT - Inspect the following: - Starter (See STARTER INSPECTION [MZR 2.5].) - Starter ground (installation) - Starter power supply (from battery through secondary starter relay, to starter) - Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Replace the keyless control module. (See KEYLESS CONTROL MODULE REMOVAL/ INSTALLATION [ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM] .)
17	INSPECT SHIFT POSITION (ATX)/ CLUTCH PEDAL POSITION (MTX) MONITOR SIGNAL CIRCUIT - Switch the ignition to off. - Disconnect the keyless control module, starter interlock switch (MTX)/TR switch (ATX) connectors. - Verify continuity between the following terminals: - MTX: - Between keyless control module terminal 4K and starter interlock switch - ATX: - Between keyless control module terminal 4K and TR switch terminal F - Is there continuity?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
18	INSPECT STARTER RELAY CONTROL SIGNAL CIRCUIT	Yes	Go to Step 27.

	Verify continuity between the following terminals: ▪ MTX: • Between starter interlock switch and PCM terminal 1BB ▪ ATX: • Between TR switch terminal F and PCM terminal 1BB • Is there continuity?	No	Repair or replace suspected wiring harness and connector.
19	DETERMINE IF MALFUNCTION CAUSE IS STARTER RELAY CONTROL CIRCUIT OR OTHER • Is there continuity between PCM terminal 1BB and starter relay with P or N position (ATX)/clutch pedal depressed (MTX)?	Yes	Go to the next step.
		No	Repair or replace suspected wiring harness and connector.
20	DETERMINE IF MALFUNCTION CAUSE IS TR SWITCH (ATX)/ STARTER INTERLOCK SWITCH (MTX) OR OTHER • ATX: ▪ Selector lever is in P or N position. • MTX: ▪ Depress the clutch pedal. • Is a clicking sound heard from the starter relay when the switch the ignition to start?	Yes	Go to Step 25.
		No	ATX: • Go to the next step. MTX: • Go to Step 22.
21	INSPECT TR SWITCH SIGNAL • Access the PCM PID TR using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) • Is the TR PID indicated P/N when selecting the P or N position?	Yes	Go to Step 23.
		No	Verify that the TR switch is adjusted properly. Inspect for an open or short circuit between TR switch and TCM. Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
22	INSPECT STARTER INTERLOCK SWITCH • Inspect the starter interlock switch. (See STARTER INTERLOCK SWITCH INSPECTION [MZR 2.5].) • Is the starter interlock switch normal?	Yes	Go to the next step.
		No	Inspect the starter interlock switch and related wiring harnesses. Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
23	INSPECT STARTER RELAY CONTROL CIRCUIT • Inspect the starter relay and the following wiring harnesses: (See RELAY INSPECTION.) ▪ Between starter relay and PCM ▪ Between starter relay and ignition switch	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.

	Are they normal?		
24	INSPECT IGNITION SWITCH AND RELATED CIRCUIT - Inspect the ignition switch and related wiring harnesses. (See IGNITION SWITCH INSPECTION [WITHOUT ADVANCED KEYLESS ENTRY AND PUSH BUTTON START SYSTEM].) - Are they normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Repeat Step 20.
25	INSPECT WIRING HARNESS OF STARTER POWER SUPPLY CIRCUIT - Inspect the following wiring harnesses: - Between starter relay and battery. - Between starter relay and starter. - Are they normal?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results. Go to the next step.
26	INSPECT STARTER AND GROUND CIRCUIT - Inspect the following: - Starter (See STARTER INSPECTION [MZR 2.5].) - Starter ground (installation) - Starter power supply (from battery through secondary starter relay, to starter) - Is there any malfunction?	Yes	Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
27	DETERMINE IF MALFUNCTION CAUSE IS BASE ENGINE OR OTHER - Inspect for a seized/hydro locked engine or flywheel (MTX) or drive plate (ATX). - Is the engine seized or hydro locked?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to the inspection results.
28	VERIFY PCM DTC - Retrieve any continuous memory DTCs. (See ON-BOARD DIAGNOSTIC TEST [MZR 2.5].) - Are there any continuous memory DTCs displayed?	Yes	DTC is displayed: - Go to the appropriate DTC inspection. (See DTC TABLE [MZR 2.5].) Communication error message is displayed: - Inspect the following: - Open circuit in the wiring harness between main relay terminal B and PCM terminal 1Q - Open circuit in the wiring harness between main relay terminal D and PCM terminal 1A, 1B

			▪ Main relay is stuck open. ▪ Open or short circuit in the wiring harness between DLC-2 and PCM terminals 1AM or 1AI ▪ Open or poor ground circuit (PCM terminal 1E,1F,1G, 1BE, or 1BF) ▪ Poor connection of vehicle body ground Repair or replace the malfunctioning part according to the inspection results.
		No	Go to the next step.
29	VERIFY PRESENT MALFUNCTION DTC • Retrieve any KOEO DTCs using the M-MDS. (See KOEO/ KOER SELF TEST [MZR 2.5].) • Are there DTCs displayed during the KOEO self test?	Yes	Go to the appropriate DTC inspection. (See DTC TABLE [MZR 2.5] .)
		No	Inspect the following: • Start circuit in ignition switch • Open circuit in wiring harness between ignition switch and starter Repair or replace the malfunctioning part according to the inspection results.
30	• Verify test results. ▪ If normal, return to the diagnostic index to service any additional symptoms. (See SYMPTOM DIAGNOSTIC INDEX [MZR 2.5].) ▪ If a malfunction remains, inspect the related Service Bulletins and/or On-line Repair Information and perform repair or diagnosis. • If the vehicle is repaired, troubleshooting is completed. • If the vehicle is not repaired or additional diagnostic information is not available, reprogram the PCM if a later calibration is available. Retest.		