

ON-BOARD DIAGNOSTIC [IMMOBILIZER SYSTEM]

FOREWORD

Caution

- When the engine does not start or stalls and the following DTCs are not indicated, go to engine symptom troubleshooting.

Note

- If engine condition is normal but light stays on, inspect for short circuit between security light and immobilizer unit connector terminal M. Repair or replace the wiring harness if necessary.

- Turn the engine switch to START position **for 2 seconds**, then back to ON position.
- Wait for **2 minutes**.
- Verify the security light condition and read the DTC if indicated.
- Verify the DTC with WDS or equivalent.
- If the DTC is indicated, go to troubleshooting referring to the DTC table.

DTC TABLE

DTC	Output pattern	Description	Page
01	 WALTPX0001	ID number unregistered in immobilizer unit is input after engine switch is turned to ON position or engine cranking.	(See 68 DTC 01)
02	 WALTPX0002	ID number format error (voltage range, frequency)	(See 68 DTC 02)
03	 WALTPX0003	ID number is not input into immobilizer unit after engine switch is turned to ON position or cranking engine.	(See 68 DTC 03)
11	 WALTPX0011	Coil or wiring harness between immobilizer unit and coil is open circuit.	(See 69 DTC 11)
21	 WALTPX0021	Code word/ID number stored in immobilizer unit EEPROM cannot be read.	(See 70 DTC 21)
24	 WALTPX0024	Open or short circuit in wiring harness between immobilizer unit and PCM.	(See 70 DTC 24)
30	 WALTPX0030	Immobilizer unit—PCM communication error	(See 71 DTC 30)

Note

- Perform the following if the security light stays on:
 - If engine stalls, go to symptom troubleshooting “NO.7 ENGINE RUNS ROUGH/ROLLING IDLE.” (See NO.7 ENGINE RUNS ROUGH/ROLLING IDLE.)
 - If engine will not start, go to symptom troubleshooting “NO.5 CRANKS NORMALLY BUT WILL NOT START.” (See NO.5 CRANKS NORMALLY BUT WILL NOT START)
 - If engine condition is normal but light stays on, inspect for continuity between the following wiring harness and body ground: security light and immobilizer unit connector terminal M. Repair or replace the wiring harness.

ON-BOARD DIAGNOSTIC (IMMOBILIZER SYSTEM)

DTC 01

DTC 01	ID number unregistered in immobilizer unit is input after engine switch is turned to ON position or engine cranking.
POSSIBLE CAUSE	ID number is unregistered in immobilizer unit.

Diagnostic procedure

STEP	INSPECTION	ACTION
—	—	Go to ID number input procedure. (See NO TAG Key Replacement or Addition)

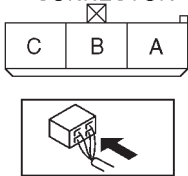
DTC 02

DTC 02	ID number format error (voltage range, frequency)
POSSIBLE CAUSE	Defective transponder in the key

Diagnostic procedure

STEP	INSPECTION	ACTION
—	—	Dispose of defective key. Duplicate key if necessary. (See NO TAG Key Replacement or Addition)

DTC 03

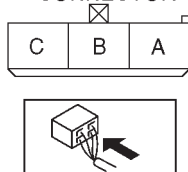
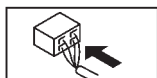
DTC 03	ID number is not input into immobilizer unit after engine switch is turned to ON position or cranking engine.
POSSIBLE CAUSE	- No transponder in the key - Defective transponder in the key (ID number is not output.) - Defective coil at steering lock - Defective wiring harness between coil and immobilizer unit
COIL HARNESS SIDE CONNECTOR  ZCF8170W102	

Diagnostic procedure

STEP	INSPECTION	ACTION
1	Does security light indicate DTC 11?	Yes
		No
2	Does security light indicate DTC 30?	Yes
		No
3	INSPECT FOR OTHER PROPER KEYS Does engine start with other proper keys?	Yes
		No
4	INSPECT COIL CIRCUIT FOR SHORT TO GND OR COIL CIRCUIT FOR CONTINUITY - Disconnect the coil connector. - Inspect for short circuits between coil connector terminals A and C and ground, and also between coil connector terminals A and C. - Is there a short?	Yes
		No

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DTC 11

DTC 11	Coil or wiring harness between immobilizer unit and coil is open circuit.												
POSSIBLE CAUSE	● Open circuit in coil ● Poor connection of coil connector ● Poor connection of immobilizer unit ● Defective wiring harness between immobilizer unit and coil												
COIL HARNESS SIDE CONNECTOR  IMMOBILIZER UNIT HARNESS SIDE CONNECTOR <table><tr><td>M</td><td>K</td><td></td><td>E</td><td>C</td><td>A</td></tr><tr><td>N</td><td>L</td><td></td><td>J</td><td>H</td><td>F</td></tr></table> 		M	K		E	C	A	N	L		J	H	F
M	K		E	C	A								
N	L		J	H	F								
ZCF8170W101													

Diagnostic procedure

STEP	INSPECTION	ACTION
1	INSPECT CONNECTOR CONNECTION • Is connector of coil or immobilizer unit connected securely?	Yes Go to next step.
		No Connect connector securely.
2	INSPECT COIL CIRCUIT FOR CONTINUITY • Is there continuity between coil terminals A and C?	Yes Go to next step.
		No Replace coil.
3	INSPECT COIL CIRCUIT FOR OPEN CIRCUIT • Disconnect coil connector and immobilizer unit connector. • Inspect for open circuit in wiring harness: — Immobilizer unit D to coil C, and immobilizer unit F to coil A — Immobilizer unit D to coil A, and immobilizer unit F to coil C • Is there an open? Note • Vehicle harness which is connected to immobilizer unit terminals D and F, uses a twisted pair wire. Because twisted pair wire does not have polarity, immobilizer unit connector terminal D may be connected to coil connector terminal A or C. Likewise, immobilizer unit connector terminal F may be connected to coil connector terminal A or C.	Yes Replace immobilizer unit and reprogram immobilizer system. (See NO TAG Immobilizer Unit Replacement)
		No Repair wiring harness between coil and immobilizer unit.

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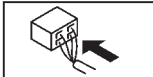
DTC 21

DTC 21	Code word/ID number stored in immobilizer unit EEPROM cannot be read.
POSSIBLE CAUSE	Defective immobilizer unit

Diagnostic procedure

STEP	INSPECTION	ACTION
—	INSPECT IMMOBILIZER UNIT - Turn engine switch from LOCK position to START position for 2 seconds. - Does security light indicate DTC 21 again?	Yes Replace immobilizer unit and reprogram immobilizer system. (See NO TAG Immobilizer Unit Replacement)
		No Immobilizer system is okay.

DTC 24

DTC 24	Open or short circuit in wiring harness between immobilizer unit and PCM													
POSSIBLE CAUSE	- Defective immobilizer unit - Defective PCM - Poor connection of connector - Defective wiring harness													
IMMOBILIZER UNIT HARNESS SIDE CONNECTOR <table><tr><td>M</td><td>K</td><td></td><td>E</td><td>C</td><td>A</td></tr><tr><td>N</td><td>L</td><td>J</td><td>H</td><td>F</td><td>D</td><td>B</td></tr></table> 		M	K		E	C	A	N	L	J	H	F	D	B
M	K		E	C	A									
N	L	J	H	F	D	B								

ZCF8170W103

ZCF8170W103

Diagnostic procedure

STEP	INSPECTION	ACTION
1	INSPECT CONNECTOR CONNECTION Are both immobilizer unit and PCM connectors connected properly?	Yes Go to next step.
		No Connect connectors properly.
2	INSPECT COMMUNICATION CIRCUIT FOR CONTINUITY - Disconnect immobilizer unit and PCM connectors. - Is there continuity between immobilizer unit connector terminal A and following PCM connector terminal? — Terminal 3S	Yes Go to next step.
		No Repair wiring harness between PCM and immobilizer unit.
3	INSPECT IMMOBILIZER UNIT FOR SHORT TO GND Is there continuity between immobilizer unit connector terminal A and ground?	Yes Repair short circuit in wiring harness between PCM and immobilizer unit.
		No Go to next step.

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STEP	INSPECTION		ACTION
4	INSPECT COMMUNICATION CIRCUIT - Connect PCM connector. - Turn engine switch to ON position. - Measure voltage at immobilizer unit connector terminal A. - Is voltage more than 10 V?	Yes	Replace immobilizer unit and reprogram immobilizer system. (See NO TAG Immobilizer Unit Replacement) Note Confirm that voltage at immobilizer unit connector terminal L is more than 10 V when turning engine switch to ON position after repairing malfunction of DTC 24. If not as specified, repair wiring harness between ENGINE 15 A fuse and immobilizer unit.
		No	Replace PCM and reprogram immobilizer system. (See NO TAG PCM Replacement) Note Confirm that voltage at immobilizer unit connector terminal L is more than 10 V when turning engine switch to ON position after repairing malfunction of DTC 24. If not as specified, repair wiring harness between ENGINE 15 A fuse and immobilizer unit.

DTC 30

DTC 30	Immobilizer unit—PCM communication error
POSSIBLE CAUSE	- Defective immobilizer unit - Defective PCM

Diagnostic procedure

STEP	INSPECTION		ACTION
—	INSPECT INNER CIRCUIT OF IMMOBILIZER UNIT - Replace immobilizer unit and reprogram immobilizer system. (See NO TAG Immobilizer Unit Replacement) - Does engine start?	Yes	Immobilizer unit was defective.
		No	Replace PCM and reprogram immobilizer system. (See NO TAG PCM Replacement)