10.Diagnostic Procedure with Diagnostic Trouble Code (DTC) A: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between IMM ECM and ECM

	Step	Check	Yes	No
1	PERFORM TEACHING OPERATION ON IG- NITION KEY. Perform teaching operation on all keys of the vehicle. Refer to teaching operation manual.	Is teaching operation for all keys completed?	END	Go to step 2 .
2	CHECK DTC.	Is there any DTC related to immobilizer except DTC P1571?	Eliminate the cause of DTC other than DTC P1571, and per- form the teaching operation again.	Replace the ECM and IMM ECM <ref. to<br="">FU(H4DOTC)-45, Engine Control Module (ECM).> <ref. sl-53,<br="" to="">Immobilizer Con- trol Module.>, and then replace all ignition keys (including the tran- sponder). Then perform teaching operation. Refer to the teaching oper- ation manual.</ref.></ref.>

B: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT) DTC DETECTING CONDITION:

Communication failure between IMM ECM and ECM WIRING DIAGRAM:



Step	Check	Yes	No
 CHECK IMM ECM POWER SUPPLY CIR- CUIT. Turn the ignition switch to OFF. Disconnect the harness connector from IMM ECM. Measure the voltage between IMM ECM harness connector terminal and chassis ground. Connector & terminal (B141) No. 2 (+) — Chassis ground (-): 	Is the voltage more than 10 V?	Go to step 2.	Check the harness for open or short between IMM ECM and fuse.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

	Step	Check	Yes	No
2	CHECK IGNITION SWITCH CIRCUIT.	Is the voltage more than 10 V?	Go to step 3.	Check the harness
	1) Turn the ignition switch to ON. (Engine		•	for open or short
	OFF)			between IMM
	2) Measure the voltage between IMM ECM			ECM and ignition
	harness connector terminal and chassis			switch.
	ground.			
	Connector & terminal			
	(B141) No. 24 (+) — Chassis ground (–):			
3	CHECK IMM ECM GROUND CIRCUIT.	Is the resistance less than 10	Go to step 4.	Repair the open
	 Turn the ignition switch to OFF. 	Ω?		circuit of IMMECM
	2) Measure the resistance between IMM ECM			ground circuit.
	harness connector terminal and chassis			
	ground.			
	Connector & terminal			
	(B141) No. 15, No. 25 — Chassis ground:			
4	CHECK HARNESS BETWEEN IMM ECM	Is the resistance less than 10	Go to step 5.	Repair the open
	AND ECM.	Ω?		circuit of harness
	1) Disconnect the harness connector from the			between IMM
	ECM and IMM ECM.			ECM and ECM.
	2) Measure the resistance between IMM ECM			
	harness connector terminal and ECM harness			
	connector terminal.			
	Connector & terminal			
_	(B141) NO. 10 — (B136) NO. 26:			D
5	CHECK HARNESS BETWEEN IMM ECM	Is the resistance less than 10	Go to step 6.	Repair the open
	AND ECM.	(2?		circuit of narness
	herness connector terminal and ECM herness			
	connector terminal			ECIMI ANU ECIM.
	Connector & terminal			
	(B141) No 23 — $(B136)$ No 34.			
6	CHECK HABNESS OF COMMUNICATION	ls the voltage 0 V2	Go to step 7	There is a short
U U	LINE			circuit in the hat-
	1) Turn the ignition switch to ON (Engine			tery voltage circuit
	OFF)			or ignition switch
	2) Measure the voltage between IMM ECM			"ON" circuit.
	harness connector terminal and chassis			Repair the har-
	ground.			ness between IMM
	Connector & terminal			ECM and ECM.
	(B141) No. 10, No. 23 (+) — Chassis			
	ground (–):			
7	CHECK HARNESS OF COMMUNICATION	Is the voltage 0 V?	Go to step 8.	There is a short
	LINE.	-		circuit in the bat-
	Measure the voltage between ECM harness			tery voltage circuit
	connector terminal and engine ground.			or ignition switch
	Connector & terminal			"ON" circuit.
	(B136) No. 26, 34 (+) — Engine ground (–):			Repair the har-
				ness between IMM
				ECM and ECM.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

Step	Check	Yes	No
 8 CHECK ECM BY COMMUNICATION LINE CHECK. Connect the harness connector to ECM. Disconnect the harness connector from IMM ECM. Perform communication line check. <ref. to<br="">IM(diag)-7, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.></ref.> 	Does "Communication Line not Shorted" appear on the screen?	Replace the IMM ECM <ref. sl-<br="" to="">53, Immobilizer Control Module.> and then replace all ignition keys (including the tran- sponder). Then perform teaching operation. Refer to the teaching oper- ation manual</ref.>	Replace the ECM. <ref. to<br="">FU(H4DOTC)-45, Engine Control Module (ECM).> Then perform teaching opera- tion. Refer to the teaching opera- tion manual.</ref.>

C: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:

Failure of IMM ECM to verify key (transponder) ID code

	Step	Check	Yes	No
1	CHECK IMM ECM FUNCTION.	Is the voltage –30 — 30 V?	Go to step 2.	Replace the IMM
	Insert the key to ignition switch (LOCK posi-	(Approx. 0.1 second after		ECM <ref. sl-<="" th="" to=""></ref.>
	tion), then measure changes in voltage	inserting the key) Is the voltage		53, Immobilizer
	between antenna connector.	0 V? (Approx. 1 second after		Control Module.>
	Connector & terminal	inserting the key)		and then replace
	(B142) No. 1 (+) — Chassis ground (–):			all ignition keys
				(including the tran-
				sponder). Then
				perform teaching
				operation. Refer to
				the teaching oper-
				ation manual.
2	CHECK IGNITION KEY (TRANSPONDER).	Does the engine start?	Replace the igni-	Replace the IMM
	 Remove the key from ignition switch. 		tion key (including	ECM <ref. sl-<="" th="" to=""></ref.>
	2) Start the engine using other keys that have		the transponder).	53, Immobilizer
	undergone the teaching operation.		Then perform	Control Module.>
			teaching opera-	and then replace
			tion. Refer to the	all ignition keys
			teaching opera-	(including the tran-
			tion manual.	sponder). Then
				perform teaching
				operation. Refer to
				the teaching oper-
				ation manual.

D: DTC P0513 INCORRECT IMMOBILIZER KEY

DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in IMM ECM)

Step	Check	Yes	No
1 PERFORM TEACHING OPERATION ON IG- NITION KEY. Perform teaching operation on all keys of the vehicle. Refer to the teaching operation man- ual.	Is teaching operation for all keys completed?	END	Replace all ignition keys (including the transponder). Go to step 2 .
2 PERFORM TEACHING OPERATION ON IG- NITION KEY. Perform teaching operation on all keys of the vehicle. Refer to the teaching operation man- ual.	Is teaching operation for all keys completed?	END	Replace the IMM ECM <ref. sl-<br="" to="">53, Immobilizer Control Module.> and then replace all ignition keys (including the tran- sponder). Then perform teaching operation. Refer to the teaching oper- ation manual.</ref.>

IMMOBILIZER (DIAGNOSTICS)

E: DTC P1576 EGI CONTROL MODULE EEPROM

- DTC DETECTING CONDITION:
- ECM malfunctioning
- Inaccessible ROM in ECM during key registration

	Step	Check	Yes	No
1	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration for all keys com- pleted?	Verify that the engine starts with all registered keys and finish the diag- nosis.	Go to step 2.
2	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration for all keys com- pleted?	Verify that the engine starts with all registered keys and finish the diag- nosis.	Go to step 3 .
3	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diag- nosis.	Replace the ECM. <ref. to<br="">FU(H4DOTC)-45, Engine Control Module (ECM).></ref.>

F: DTC P1577 IMM CONTROL MODULE EEPROM DTC DETECTING CONDITION:

- Body integrated unit malfunctioning
- Inaccessible ROM in body integrated unit

	Step	Check	Yes	No
1	PERFORM REGISTRATION ON IGNITION KEY.	Is registration for all keys completed?	Verify that the engine starts with all registered keys	Go to step 2.
	Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".		and finish the diag- nosis.	
2	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diag- nosis.	Go to step 3 .
3	PERFORM REGISTRATION ON IGNITION KEY. Perform registration on all keys of the vehicle. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration for all keys completed?	Verify that the engine starts with all registered keys and finish the diag- nosis.	Replace the body integrated unit. <ref. sl-50,<br="" to="">Body Integrated Unit.></ref.>

G: DTC P1570 ANTENNA DTC DETECTING CONDITION: Faulty antenna WIRING DIAGRAM:



	Step	Check	Yes	No
1	 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the harness antenna connector from the IMM ECM. <ref. antenna.="" immobilizer="" sl-54,="" to=""></ref.> 3) Measure the resistance of the antenna circuit. Connector & terminal (B141) No. 1 — No. 14: 	Is the resistance less than 10 Ω?	Go to step 2.	Replace the antenna. <ref. to<br="">SL-54, Immobi- lizer Antenna.></ref.>
2	CHECK ANTENNA CIRCUIT. Measure the resistance between antenna har- ness connector and chassis ground. Connector & terminal (B141) No. 1 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <ref. to<br="">SL-54, Immobi- lizer Antenna.></ref.>	Go to step 3.
3	CHECK ANTENNA CIRCUIT. Measure the resistance between antenna har- ness connector and chassis ground. Connector & terminal (B141) No. 14 — Chassis ground:	Is the resistance less than 10 Ω ?	Replace the antenna. <ref. to<br="">SL-54, Immobi- lizer Antenna.></ref.>	Go to step 4.
4	 CHECK ANTENNA CIRCUIT. 1) Turn the ignition switch to ON. (Engine OFF) 2) Measure the voltage between antenna harness connector and chassis ground. Connector & terminal (B141) No. 1 (+) — Chassis ground (-): 	Is the voltage 0 V?	Go to step 5.	Replace the antenna. <ref. to<br="">SL-54, Immobi- lizer Antenna.></ref.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

IMMOBILIZER (DIAGNOSTICS)

	Step	Check	Yes	No
5	CHECK ANTENNA CIRCUIT. Measure the voltage between antenna har- ness connector and chassis ground. Connector & terminal (B141) No. 14 (+) — Chassis ground (–):	Is the voltage 0 V?	Go to step 6 .	Replace the antenna. <ref. to<br="">SL-54, Immobi- lizer Antenna.></ref.>
6	 CHECK IMM ECM FUNCTION. 1) Turn the ignition switch to OFF. 2) Connect the antenna harness connector to IMM ECM. 3) Insert the key to ignition switch, then measure changes in voltage between antenna harness connector. Connector & terminal (B141) No. 1 (+) — Chassis ground (-): 	Is the voltage –30 — 30 V? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step 7.	Replace the IMM ECM <ref. sl-<br="" to="">53, Immobilizer Control Module.> and then replace all ignition keys (including the tran- sponder). Then perform teaching operation. Refer to the teaching oper- ation manual.</ref.>
7	 CHECK IGNITION KEY (TRANSPONDER). 1) Remove the key from ignition switch. 2) Start the engine using other keys that have undergone the teaching operation. 	Does the engine start?	Replace the igni- tion key (including the transponder). Then perform teaching opera- tion. Refer to the teaching opera- tion manual.	Replace the IMM ECM <ref. sl-<br="" to="">53, Immobilizer Control Module.> and then replace all ignition keys (including the tran- sponder). Then perform teaching operation. Refer to the teaching oper- ation manual.</ref.>

WIRING SYSTEM SECTION

WIRING SYSTEM

WI

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.

This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.

Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

WIRING SYSTEM

WI

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