

GROUP 54

CHASSIS ELECTRICAL

GENERAL

OUTLINE OF CHANGE

The following service procedure of the immobilizer system has been changed. The same procedures as before are applied except for the items shown below.

- The troubleshooting has been changed due to the addition to the 4D56 engine which complies with emission regulation step III.

IMMOBILIZER SYSTEM

The troubleshooting and the ignition key registration method other than below are the same as before. Refer to PAJERO '97 Workshop Manual. (Pub. No. PWJE9086-H)

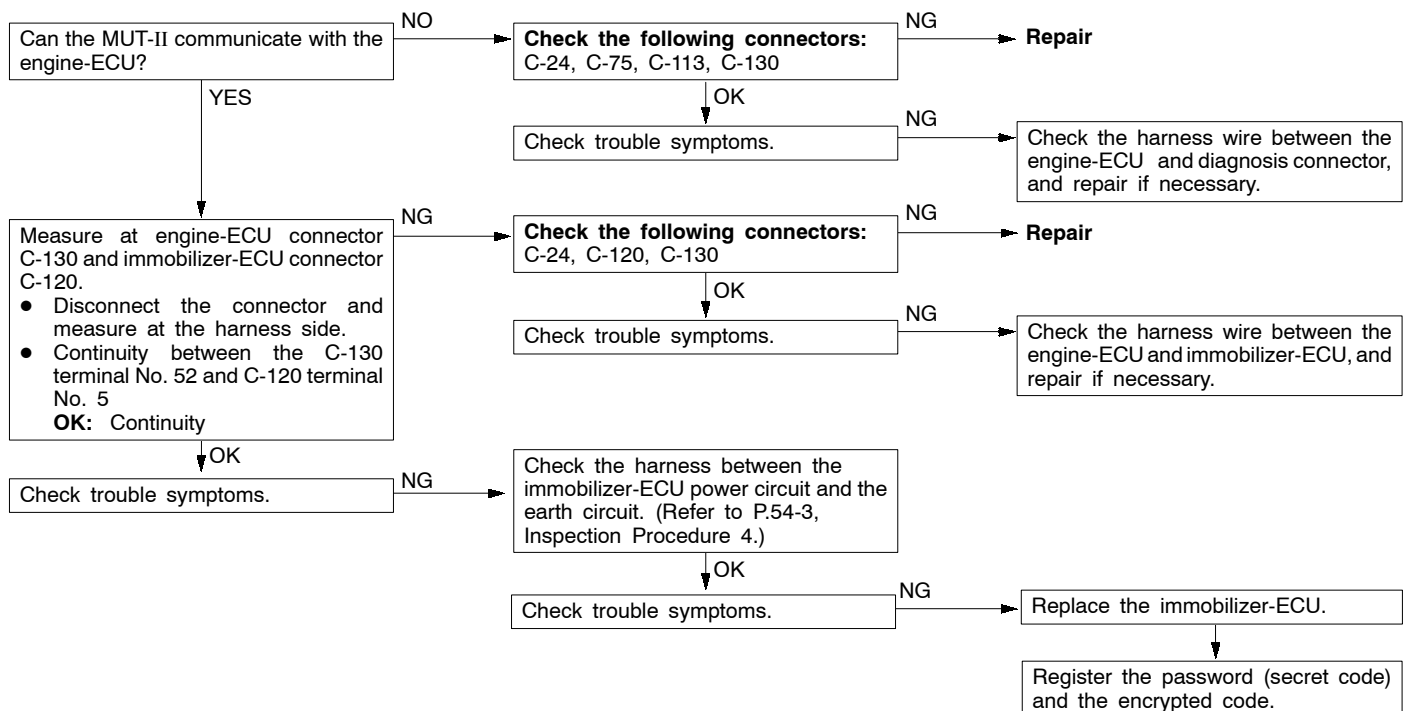
INSPECTION CHART FOR TROUBLE SYMPTOMS

Trouble symptom	Inspection procedure No.	Reference page
Communication with MUT-II is not possible.	1	54-1
Encrypted code cannot be registered using the MUT-II.	2	54-2
Engine does not start (Cranking but no initial combustion).	3	54-2
Malfunction of the immobilizer-ECU power source and earth circuit.	4	54-3

INSPECTION PROCEDURE FOR TROUBLE SYMPTOMS <4D56-Step III>

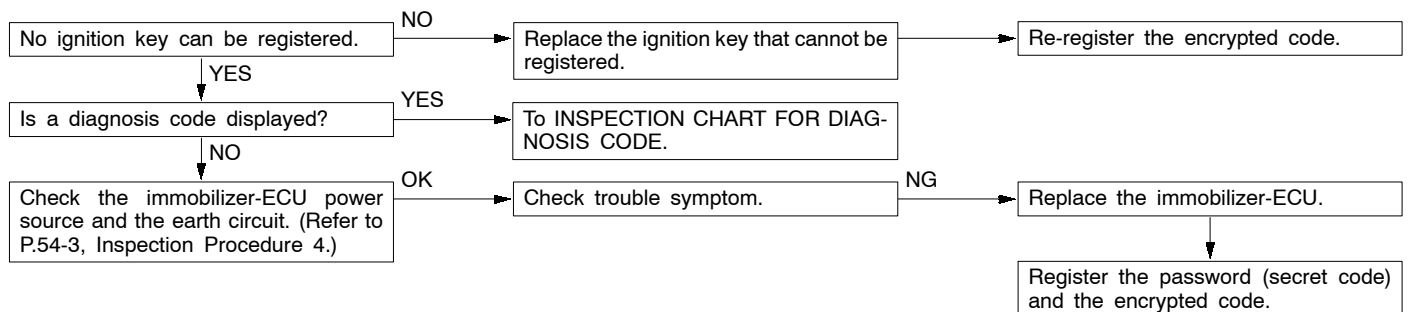
Inspection Procedure 1

Communication with MUT-II is impossible	Probable cause
The cause is probably that a malfunction of the diagnosis line or the immobilizer-ECU is not functioning.	<ul style="list-style-type: none"> Malfunction of diagnosis line Malfunction of harness or connector Malfunction of immobilizer-ECU



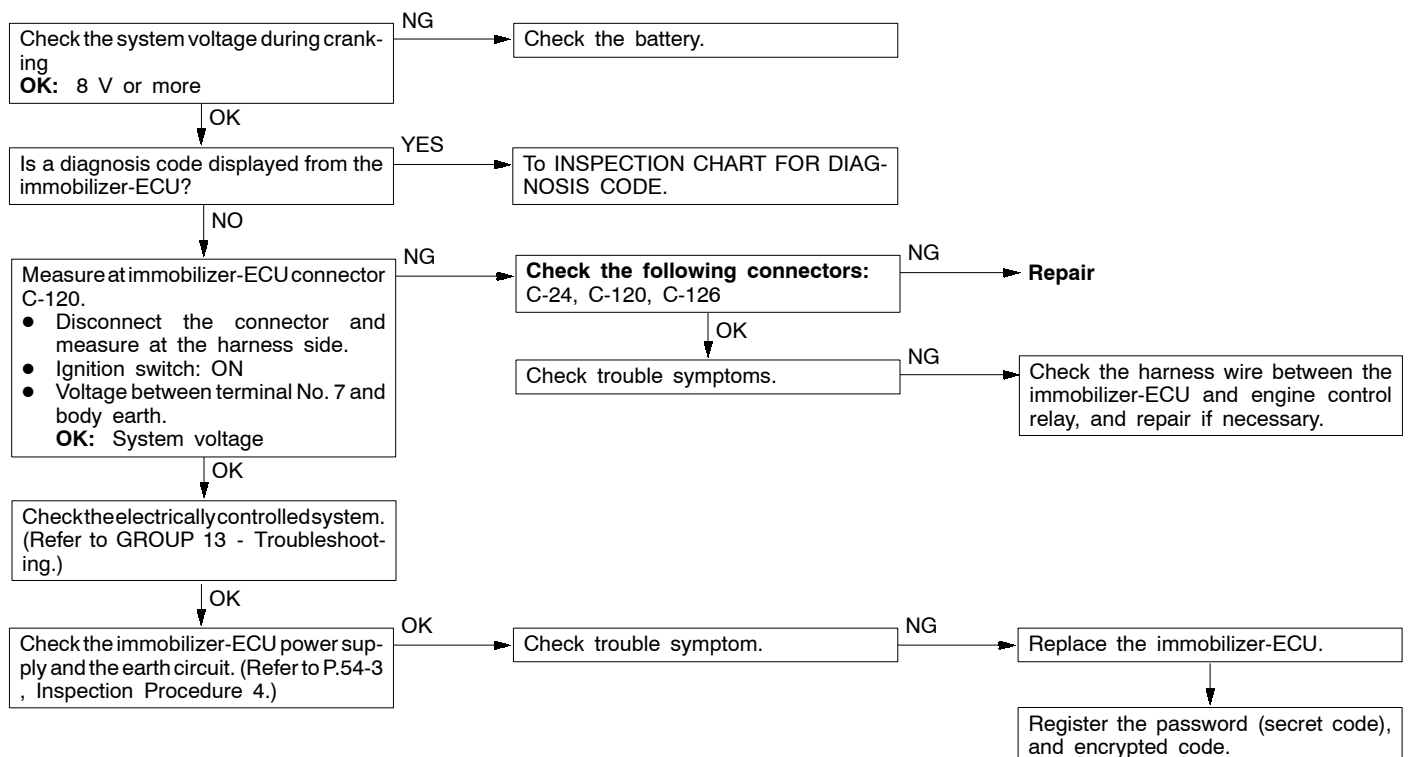
Inspection Procedure 2

Encrypted code cannot be registered using the MUT-II	Probable cause
The cause is probably that there is no encrypted code registered in the immobilizer-ECU or there is a malfunction of the immobilizer-ECU.	<ul style="list-style-type: none"> • Malfunction of transponder • Malfunction of ignition key ring antenna • Malfunction of harness or connector • Malfunction of immobilizer-ECU



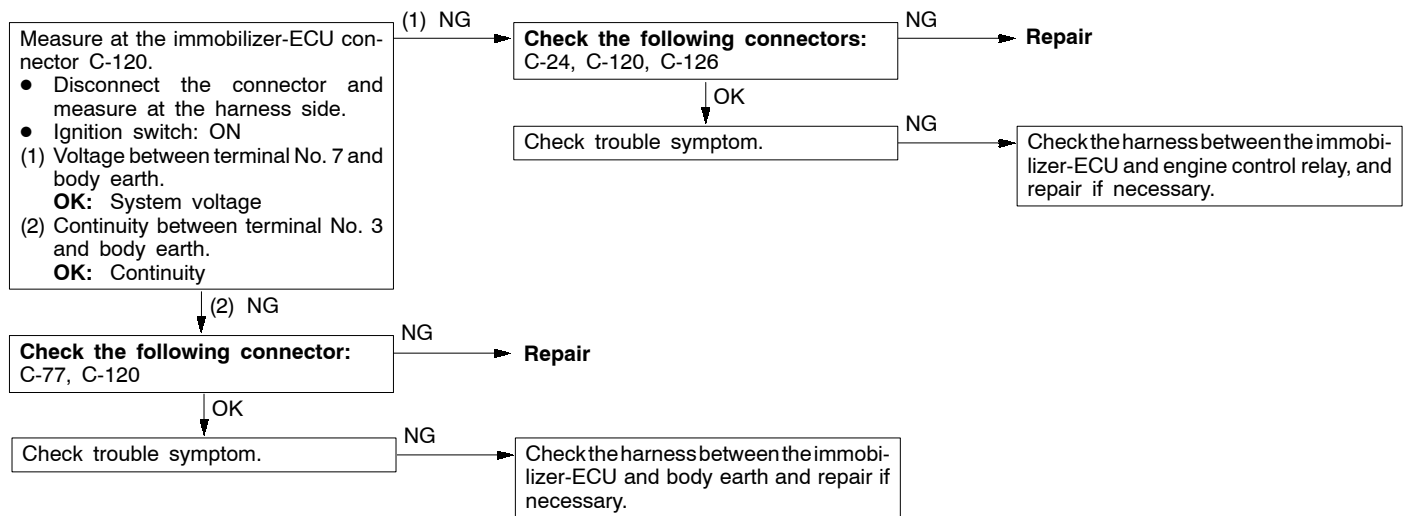
Inspection Procedure 3

Engine does not start (Cranking but no initial combustion).	Probable cause
If no fuel injection, there might be a problem with the fuel injection system in addition to a malfunction of the immobilizer system. It is normal for this to occur if an attempt is made to start the engine using a key that has not been properly registered.	<ul style="list-style-type: none"> • Malfunction of diesel fuel injection system • Malfunction of immobilizer-ECU



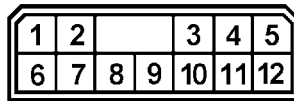
Inspection Procedure 4

Malfunction of the immobilizer-ECU power source and earth circuit



CHECK AT IMMOBILIZER-ECU

Terminal Voltage Check Chart



20F0191

Terminal No.	Signal	Checking requirements	Terminal voltage
3	Immobilizer-ECU earth	Always	0 V
7	Immobilizer-ECU power supply	Ignition switch: OFF or approx. 5 or more seconds after switch has been turned from ON to OFF.	0 V
		Ignition switch: ON or within approx. 5 or more seconds after switch has been turned from ON to OFF	System voltage