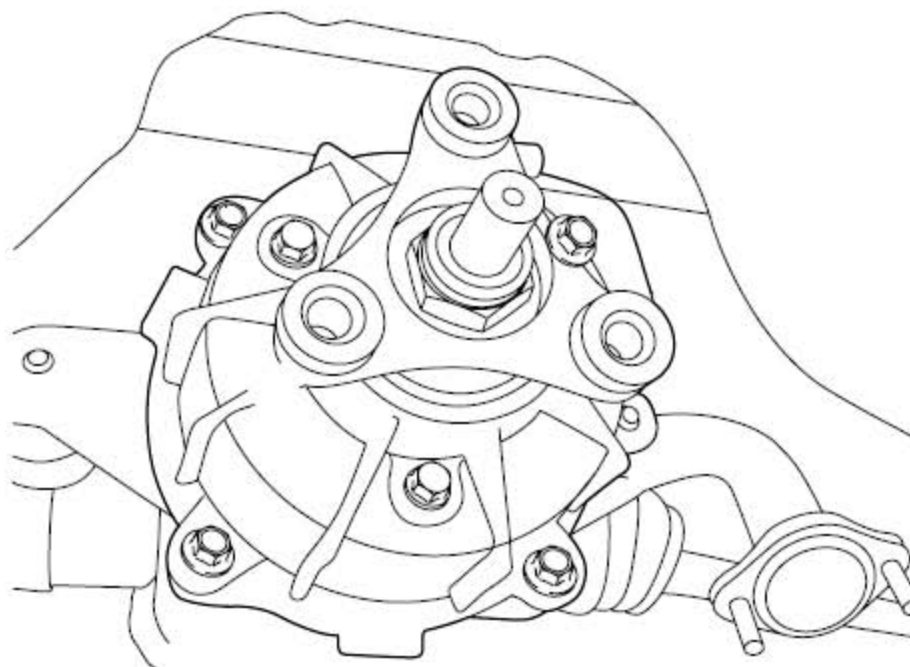


## P1770、 P1771 ECU THERMAL PROTECT

### COMPONENT LOCATION



### GENERAL DESCRIPTION

Vehicle uses 2WD(2 wheel drive) for driving at normal speed, but sometimes it uses 4WD (4 wheel drive) according to driving condition. (cornering or acceleration). EMC(Electric Magnetic Clutch) distributes proper torque to front wheel by controlling amount of current inside EMC coil. That time power pressing the multi plate clutch by apply cam is changed by a rate of EMC duty. after multi plate clutch start slip the force for acceleration at front/rear wheel is controlled at a range of 100:0 ~ 50 : 50. ITM system has 4WD-LOCK function that can make driving force to 50:50 by compulsion according to driver's intention.

### DTC DESCRIPTION

When the failure is set there is no signal in the warning lamp, just ITM-ECU sets and stores this code. If the ITM-ECU decides that the clutch(EMC) and oil are over-heated (above specified value) for more than 1s. When the failure is set there is no signal in the warning lamp, just ITM-ECU sets and stores this code.

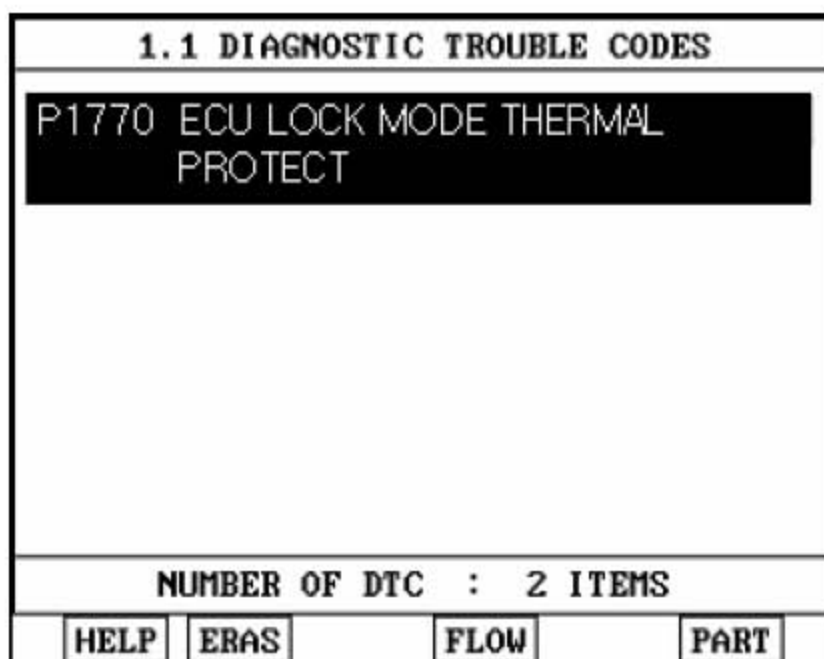
DTC	FAULT DESCRIPTION
P1770	ECU LOCK MODE THERMAL PROTECT
P1771	ECU SHUTDOWN THERMAL PROTECT

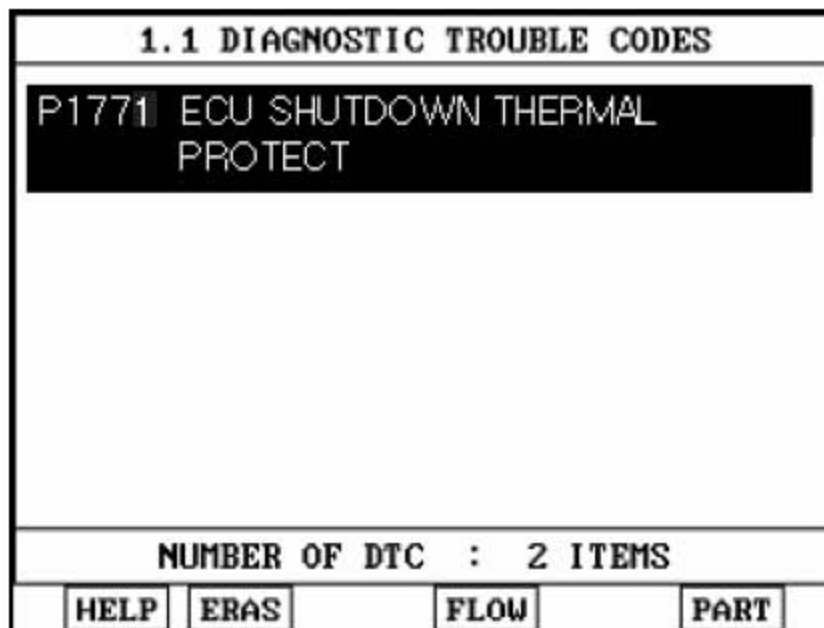
## DTC DETECTING CONDITION

Item	Detecting Condition	Possible Cause
DTC Strategy	EMC lock mode plate and oil temp thresholds exceeded	<ul style="list-style-type: none"> <li>• Faulty SWITCH(4WDLOCK)</li> <li>• Faulty EMC</li> <li>• Faulty TCCU</li> </ul>
Enable Conditions	Message present 1.0 sec self clearing	
Threshold Value	Thresholds exceeded for 1 second	
Diagnostic Time	1 sec	
MIL on condition		
Fail Safe	ECU will go into lock mode, Lock mode indicator on	

## MONITOR DTC STATUS

- 1). Connect scantool to Data Link Connector(DLC).
- 2). Warm up the engine to normal operating temperature.
- 3). Monitor DTC(Diagnostics Trouble Code) on the scantool.





4). Is the same DTC displayed again?

**YES**

- ▶ Check EMC, switch (4WD LOCK) condition.
- ▶ Repair or replace as necessary and go to "Verification of vehicle Repair" procedure.

**NO**

- ▶ Fault is intermittent caused by poor contact in the sensor' s and/or TCCU' s connector or was repaired and TCCU memory was not cleared. Thoroughly check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and go to "Verification of vehicle Repair" procedure.

## VERIFICATION OF VEHICLE REPAIR

- 1). Connect scan tool and select "Diagnostic Trouble Codes(DTCs)" mode.
- 2). Using scantool, Clear DTC.
- 3). Operate the vehicle within DTC Enable conditions in General information.
- 4). Are any DTCs present ?

**YES**

- ▶ Go to the applicable troubleshooting procedure.

**NO**

- ▶ System is performing to specification at this time.