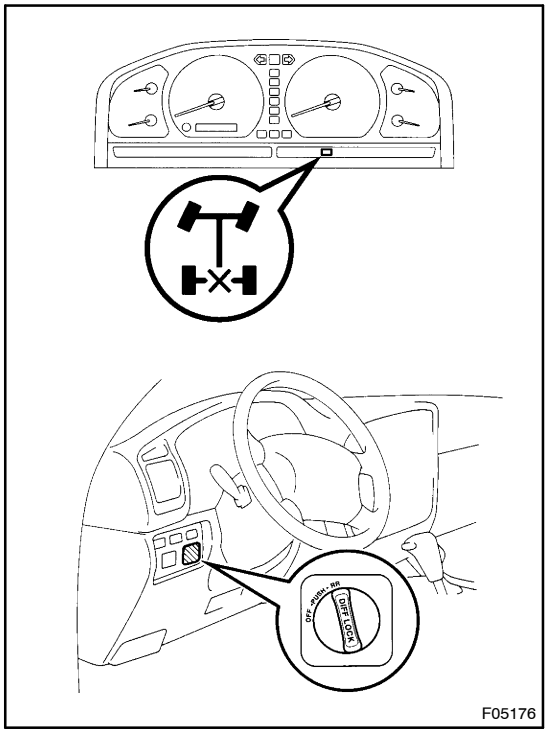


DIFFERENTIAL LOCKING SYSTEM (Independent Front Suspension)

SA165–04

ON–VEHICLE INSPECTION

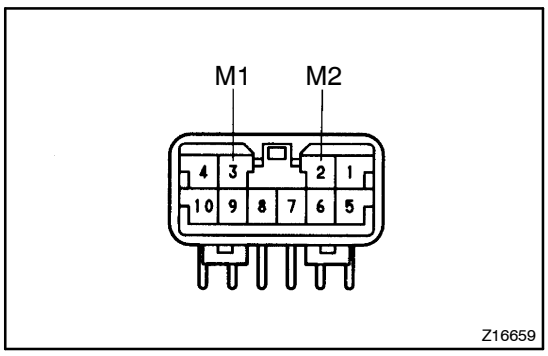
1. INSPECT DIFFERENTIAL LOCK SYSTEM

(a) Inspect the indicator light.
Check that the indicator light lights up for approx. 1 second when the ignition switch is turned ON.

(b) Inspect the differential lock operation.
(1) Jack up the vehicle then start the engine.
(2) Shift the transfer shift lever to L4 position.
(3) When the diff. lock control switch is set to the RR position, the indicator light is turned on.
Differential lock is applied to the rear wheel at this time.

HINT:
If the gears of the differential lock system are not meshed, the indicator light remains blinking, so rotate the tires to mesh the gear.

(4) When the diff. lock control switch is at the OFF position, the indicator light goes off.
Differential lock is released for the rear wheel at this time.



(5) Check the voltage between the terminals of the rear diff. lock control ECU when switching the diff. lock control switch with the speedometer, registering approx. 8 km/h (5 mph) or more.

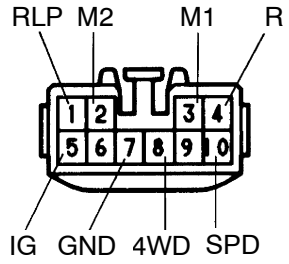
Swith position	Terminal	Specified value
ON	M1 – M2	0.5 V or less (No change)

(6) Return the diff. lock control switch to OFF.
(7) Stop the engine and lower the vehicle.

2. INSPECT DIFF. LOCK SYSTEM CIRCUIT

(a) Inspect the battery voltage.
Battery voltage: 10 – 14 V

WIRE HARNESS

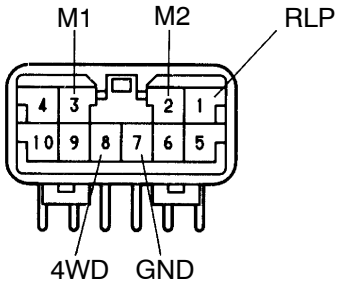


(b) Inspect the system circuit with the connector disconnected.
Disconnect the connector from the rear diff. lock control ECU and inspect the connector on the wire harness side, as shown in the table.

Symbols (Terminals No.)	Trouble part	Condition	Specified value
M1 – M2	RR Diff. Lock Actuator	–	Less than 100 Ω
GND – Body ground	Body ground	–	Continuity
SPD – Body ground	Speed sensor	Vehicle moves slowly	1 pulse each 40 cm (15.75 in.)
IG – Body ground	DIFF Fuse	Ignition switch ON	10 – 14 V
RLP – Body ground	Rear Diff. Lock Position Switch	Ignition switch ON with indicator light ON	About 0 V
		Ignition switch ON with indicator light OFF	10 – 14 V
4WD – Body ground	L4 position Switch	Ignition switch ON with T/F shift lever except L4	About 0 V
		Ignition switch ON with T/F shift lever L4	10 – 14 V
R – Body ground	Differential Lock Control Switch	Ignition switch ON with differential lock control switch RR	10 – 14 V
		Ignition switch ON with differential lock control switch OFF	About 0 V

HINT:
If the circuit is not as specified, check and repair or replace the trouble part shown in the table above.

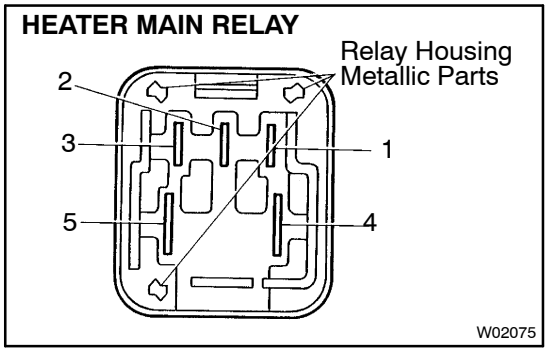
ECU



(c) Inspect the system circuit with the connector connected.
(1) Turn the ignition switch to the ON position.
(2) Shift the transfer shift lever to L4 position.
(3) Using a voltmeter, measure the voltage when the differential lock control switch is in the position, as shown in the table.

Tester Connection ⊕ – ⊖	Switch position	Specified valve
4WD – GND	–	10 – 14 V
RLP – GND	RR*	0.5 V or less
M1 – M2	OFF → RR	0.5 V or less → 10 – 14 V (Approx. 1 sec.) → 0.5 V or less
M2 – M1	RR → OFF	

*: The rear differential should be locked mechanically.
If the circuit is not as specified, replace the ECU.



3. INSPECT DIFF. LOCK COMPONENTS

(a) Inspect the relay operation.

(1) Jack up the vehicle.

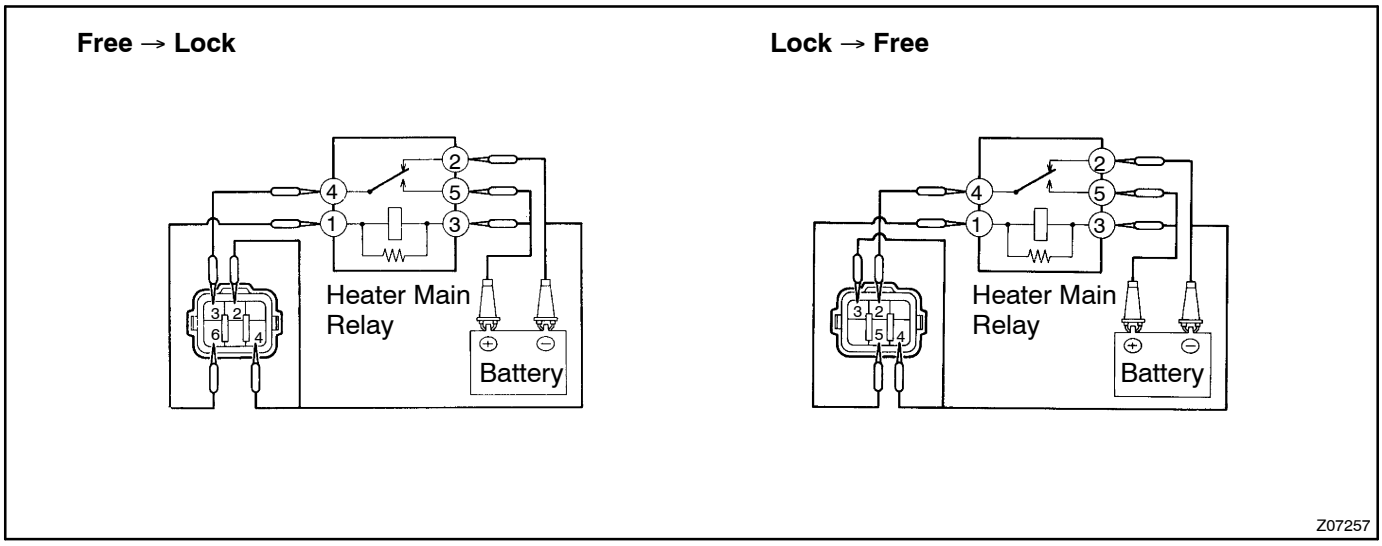
(2) Use a heater main relay and connect it, as shown below.

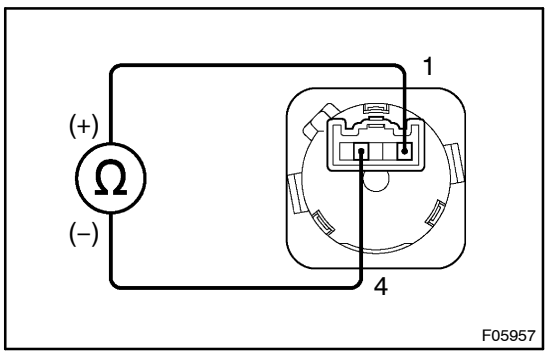
NOTICE:

Connect the terminals being careful not to touch the neighboring terminals or metallic parts of the relay housing.

(3) Rotate the tire and check that differential lock has occurred.

If operation is not as specified, replace the actuator.



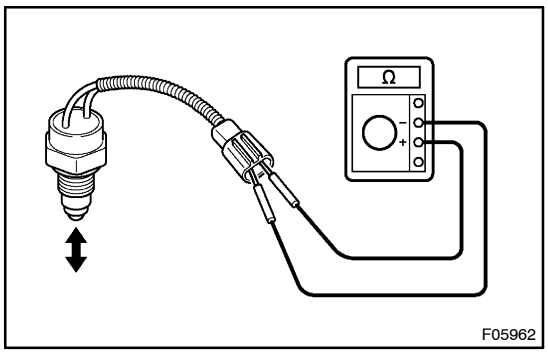


(b) Inspect the diff. lock control switch continuity.

Inspect the switch continuity between terminal 1 to terminal 4.

HINT:

If continuity dose not exist, replace the switch.



(c) Inspect the rear diff. lock position switch.

(1) Check that continuity between exists terminals when the switch is pushed (differential connected position).

(2) Check that no continuity exists when the switch is free (differential disconnected position).

HINT:

If operation is not as specified, replace the switch.

(d) Inspect the L4 position switch (See page TR–53).

(e) Inspect the vehicle speed sensor (See page BE–78).