

Test #5 / MAC meter - 6.26 constant, 6.07 - 6.23 while cranking  
 Blue Point Mda 6.28 constant, 6.12 while cranking

# PRODEMAND Test

YMMS: 1997 Toyota Land Cruiser  
 Engine: 4.5L Eng  
 VIN: JT3HJ85J8V0154564

Jun 20, 2022

License:  
 Odometer:

## Diagnosis & Repair

1. Check for spark at misfiring cylinder. See IGNITION CHECKS in BASIC TESTING article. If spark is present, go to next step. If spark is not present, go to step 4).
2. Check for open or short in IGF circuit between ECM and ignitor. Ignitor is located near left shock tower. See appropriate wiring diagram in WIRING DIAGRAMS article. Repair wiring as necessary. If circuit is okay, go to next step.
3. Disconnect ignitor 5-pin Gray connector. Access ECM behind right instrument panel speaker. Turn ignition on. Measure voltage between ground and terminal No. 17 (Black/Yellow wire) at ECM E4 connector. See Figure. If voltage is 4.5-5.5 volts, replace ignitor. If voltage is not 4.5-5.5 volts, replace ECM and retest.  
[Black/Yellow = Ignitor IGF wire (Return signal to ECM)]
4. Check for an open or short in IGT circuit between ECM and ignitor. See appropriate wiring diagram in WIRING DIAGRAMS article. Repair wiring as necessary. If circuit is okay, go to next step.
5. Access ECM behind right instrument panel speaker. Locate ECM E4 connector. See Figure. Backprobing ECM connector, measure voltage between ground and terminal No. 23 (Black/Green wire) at ECM E4 connector while cranking engine. If voltage is .1-4.5 volts, go to next step. If voltage is not .1-4.5 volts, replace ECM and retest.  
[Black/Green = Ignitor IGT wire (Supply signal to Ignitor)]
6. Disconnect ignitor 5-pin Gray connector. Backprobing ECM connector, measure voltage between ground and terminal No. 23 (Black/Green wire) at ECM E4 connector while cranking engine. If voltage is .1-4.5 volts, go to next step. If voltage is not .1-4.5 volts, replace ECM and retest.
7. Turn ignition on. Measure voltage between ground and terminal No. 3 (Black/Red wire) at ignitor wiring harness connector. See Fig 1. If voltage is 9-14 volts, go to next step. If voltage is not 9-14 volts, check and repair ignitor power source circuit. See appropriate wiring diagram in WIRING DIAGRAMS article.
8. Check for an open or short in wiring harness between ignition switch and ignition coil, and between ignition coil and ignitor. Repair wiring as necessary. If wiring is okay, go to next step.
9. Check ignition coil. See IGNITION CHECKS in BASIC TESTING article. Replace coil as necessary. If coil is okay, replace ignitor.

Fig 1: Ignition Ignitor Connector Terminal

Primary - 0.8  $\Omega$   
 Secondary - 11.8 k $\Omega$



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## IGNITION COIL RESISTANCE (DISTRIBUTOR TYPE IGNITION SYSTEM)

1. Disconnect wiring from ignition coil so ignition coil is isolated from the system. Using an ohmmeter, check ignition coil primary resistance between ignition coil positive (+) and negative (-) terminals. See Fig 1.
2. Check ignition coil secondary resistance between ignition coil positive (+) terminal and high tension terminal (coil wire tower). See Fig 2. Replace ignition coil if resistance is not within specification. See DISTRIBUTOR TYPE IGNITION SYSTEM IGNITION COIL RESISTANCE table.

### DISTRIBUTOR TYPE IGNITION SYSTEM IGNITION COIL RESISTANCE

Application	measured	Primary	measured	Secondary
Cold (1)	0.8	.36-.55	11800 $\Omega$	9000-15,400
Hot (2)		.45-.65		11,400-18,100
(1) Cold is with temperature of 14-122°F (-10-50°C).				
(2) Hot is with temperature of 122-212°F (50-100°C).				





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Fig 1: Identifying Engine Control Module (ECM) Connector Terminals

