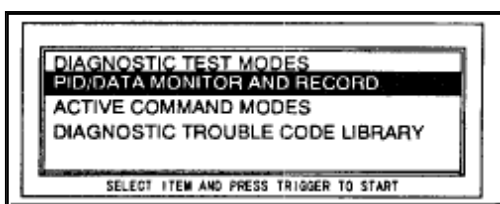


ENGINE TUNE-UP

Engine Tune-up Preparation

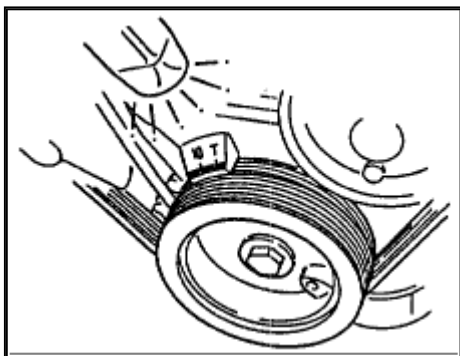
1. Warm up the engine to the normal operating temperature.
2. Shift transaxle into Neutral (**MTX**) or P position (**ATX**).
3. Turn off all electrical loads.
 - Headlight
 - Blower
 - Rear window defroster
 - Power steering
4. Verify that the battery is fully charged.



Zoom

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5. Connect the SSTs (NGS tester) to the data link connector and select the "PID/DATA MONITOR AND RECORD" function and press TRIGGER.
 6. Select "RPM" and press TRIGGER.
 7. Wait until the electrical fan stops.
 8. Select "START" to begin. [Ignition Timing Inspection](#)
1. Perform "Engine Tune-up Preparation".
 2. Verify that the idle speed is within the specification. **Specification: MTX: 550 - 850 (700 ±150) rpm ATX: 500 - 800 (650 ±150) rpm**
 3. If not as specified, adjust the idle speed.
 4. Connect a timing light to the high-tension lead of the No. 1 cylinder.



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5. Verify that the timing mark (yellow) is within the specification. **Specification: MTX: BTDC 6 ±18°(12°±6°) /55 - 850 rpm ATX: BTDC 6 ±18°(12°±6°) /50 - 800 rpm**
6. If not as specified, inspect the following.

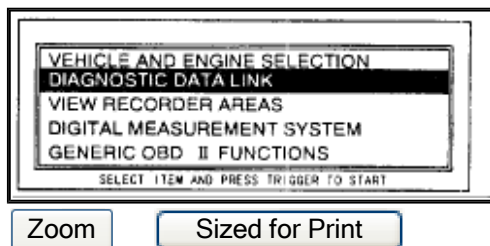
- Camshaft position sensor.
- Crankshaft position sensor.
- Throttle position sensor
- Engine coolant temperature sensor.
- Neutral switch (MTX).
- Clutch switch (MTX).
- Transaxle range switch (ATX).

7. If the devices are normal, replace the PCM. **Idle Speed Adjustment**

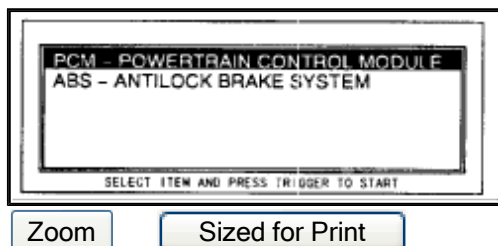
1. Warm up the engine to normal operating temperature.
2. Shift the transaxle into Neutral (MTX) or P position (ATX).
3. Turn off all loads.

- Blower motor.
- Power steering.
- Electrical loads. (i.g, headlight, rear window defroster)

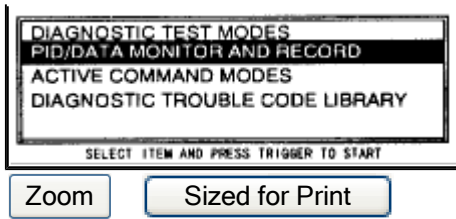
4. Verify that the battery is fully charged.
5. Connect the SSTs (NGS tester) to data link connector.



6. Select the "DIAGNOSTIC DATA LINK" and press the TRIGGER.



7. Select the "PCM - POWERTRAIN CONTROL MODULE" and press the TRIGGER.



8. Select "PID/DATA MONITOR AND RECORD" and press the TRIGGER.
9. Select the "RPM" and press the TRIGGER.
10. Wait until the electrical fans stop.
11. Verify that the idle speed is within specifications. **Specifications: MTX: 550 - 850 (700 - 150) rpm ATX: 500 - 800 (650 - 150) rpm**
12. If not within specifications, adjust the idle speed as follows. **CAUTION:** The air adjusting screw (**AAS**) must not be adjusted, when the headlight HIGH system is malfunctioning. Any improper adjustment may affect engine performance.

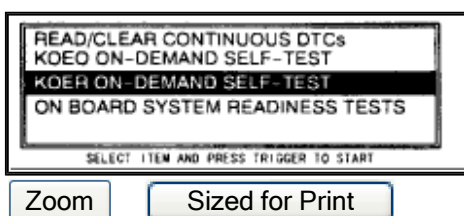
- (1) Select "HDLMP" in the "PID/DATA MONITOR AND RECORD" and press the TRIGGER.
- (2) Verify that the "HDLMP" status changes from OFF to ON when the headlight switch is turned to the passing position. If it does not change, inspect following harnesses, connectors and terminals of the headlight signal circuit. From battery to combination switch From combination switch to PCM.
- (3) Connect the inductive pick-up type tachometer to the high tension lead.

NOTE: The inductive pick-up type tachometer may indicate double engine speed.

- (4) Turn the ignition switch to off then restart the engine.

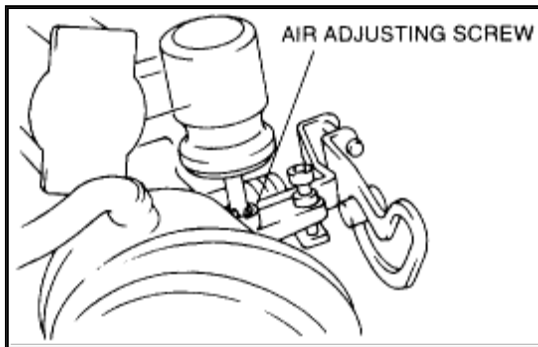
NOTE: Purge control will activate 3 minutes after engine start.

- (5) Select the "DIAGNOSTIC TEST MODES" and press the TRIGGER.



- (6) Select the "KOER ON-DEMAND SELF-TEST" and press the TRIGGER.
- (7) Turn the headlight switch to the passing position more than three times while each "passing" for 2 seconds after the "FOR EXAMPLE BOO, PSP AND TCS" is displayed.
- (8) Make sure the engine speed is fixed.

CAUTION: The throttle adjusting screw is set at the factory and must not be adjusted. Any adjustment may affect engine performance.



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- (9) Adjust the idle speed to the following specifications by turning the air adjusting screw within 2 minutes after the headlight switch is turned to passing position more than three times.

Specifications:

MTX: 550 - 850 (700 - 150) rpm

ATX: 500 - 800 (650 - 150) rpm

Idle-up Speed Inspection

1. Perform "Engine Tune-up Preparation".
2. Verify that the idle speed is normal.



Load condition	Idle-up speed (rpm)* ¹		
	MTX	ATX	
		N, P position	D range
E/L ON* ²	625—925	525—825	525—825
A/C ON* ³	625—925	500—800	500—800
P/S ON* ⁴	550—850	500—800	500—800

*¹ : Excludes temporary idle speed drop just after the electrical loads (E/L) are turned on.
*² : Headlight is on, Fan switch (3rd or higher) and Cooling fan are operating.
*³ : A/C switch and fan switch are on.
*⁴ : Steering wheel is fully turned.

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3. Verify that the idle-up speed is within the specification.
4. If not as specified with all load conditions, inspect the idle air control valve.
5. If not as specified with some load conditions, inspect related input switches, harnesses and connectors. **Idle Mixture Inspection**

1. Perform "Engine Tune-up Preparation".
2. Verify that the idle speed and [ignition timing](#) are within the specification.
3. Insert an exhaust gas analyzer to the tailpipe
4. Verify that the CO and HO concentrations are within the regulation.
5. If not, inspect the following.
 - On-board diagnostic system
 - Heated oxygen sensor (Front, Rear)
 - Intake manifold vacuum
 - Fuel line pressure
 - [Ignition timing](#) control
6. If the systems are normal, replace the three way catalytic converter.