

## D - ADJUSTMENTS

### Selected Block

1993 Mitsubishi Mirage

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Friday, April 19, 2002 01:45AM

### IGNITION TIMING

NOTE: Perform all adjustments with engine at normal operating temperature, cooling fan and accessories off, transmission in Park or Neutral, and front wheels in straight-ahead position.

NOTE: Adjustment of ignition timing cannot be performed on vehicles equipped with Distributorless Ignition Systems (DIS). If ignition timing is not within specification, see CRANKSHAFT POSITION SENSOR in I - SYS/COMP TESTS article in this section.

1) Locate ignition timing adjustment connector. See IGNITION TIMING ADJUSTMENT CONNECTOR LOCATION table. Connect jumper wire between ignition timing adjustment connector and ground. Check ignition basic timing.

2) If ignition basic timing is not within specification, loosen distributor and rotate to adjust timing if necessary. See IGNITION TIMING SPECIFICATIONS table. Remove jumper wire from ignition timing adjustment connector.

#### IGNITION TIMING SPECIFICATIONS TABLE (Degrees BTDC @ RPM)

Application	(1) Basic	(2) (3) Actual
1.5L .....	5 @ 650-850 .....	10 @ 650-850
1.8L .....	3-7 @ 650-850 .....	5 @ 650-850

(1) - With ignition timing adjustment connector grounded or vacuum hose (farthest from distributor) disconnected.

(2) - With ignition timing adjustment connector ungrounded or vacuum hose (farthest from distributor) connected. Ignition timing may fluctuate.

(3) - If vehicle altitude is more than 2300 ft. above sea level, actual timing may be advanced.

NOTE: Ignition timing adjustment connector is either round or oval with protective cover. Connector is either Black or Brown and is secured to harness with colored transparent tape.

#### IGNITION TIMING ADJUSTMENT CONNECTOR LOCATION TABLE

Application	(1) (2) Wire Color	Location
All Models .....	Black/Blue .....	(3)

(1) - Remove waterproof female connector (if equipped) for access to wire.

(2) - Ground connector at wire end for basic timing

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adjustment.

(3) - On main wiring harness, near center of firewall.

AA

**IDLE SPEED & MIXTURE**

NOTE: Perform adjustments with engine at normal operating temperature, cooling fan and accessories off, transmission in Park or Neutral, and front wheels in straight-ahead position.

**CURB (SLOW) IDLE SPEED**

NOTE: Curb idle speed is controlled by Idle Air Control (IAC) motor. Adjustment is usually not necessary. For curb idle speed specifications, see IDLE SPEED SPECIFICATIONS table under BASIC IDLE SPEED.

1) Check ignition timing and adjust if necessary. See IGNITION TIMING. Run engine at 2000-3000 RPM for more than 5 seconds. Allow engine to idle for 2 minutes. Check curb idle speed.

2) If curb idle speed is not within specification, check IAC system. See I - SYS/COMP TESTS article in this section. If IAC system is okay, adjust basic idle speed. See BASIC IDLE SPEED.

**BASIC IDLE SPEED**

NOTE: ALWAYS check TPS adjustment after adjusting basic idle speed. See THROTTLE POSITION SENSOR (TPS).

NOTE: For Data Link Connector (DLC) location, see G - TESTS W/CODES article in this section.

NOTE: Ensure vehicle is at normal operating temperature with all lights, cooling fan and accessories off. Shift transmission into Neutral or Park position.

1) Insert paper clip or appropriate probe into tachometer connector. See TACHOMETER CONNECTOR LOCATION table. Connect a primary voltage detecting type tachometer to paper clip.

2) Connect a jumper wire between data link terminal No. 10 and vehicle ground. See Fig. 1. Connect a jumper wire between ignition timing adjustment connector and vehicle ground. See IGNITION TIMING ADJUSTMENT CONNECTOR LOCATION table under IGNITION TIMING.

3) Start and run engine at idle. Check basic idle speed. See IDLE SPEED SPECIFICATIONS table. If idle speed is not within specifications, turn engine speed adjusting screw until correct engine speed is obtained. See Fig. 2. Access to speed adjusting screw is obtained by removing rubber plug on throttle body.

4) If idle speed cannot be lowered by adjusting engine speed adjusting screw, determine if fixed speed adjusting screw (stop screw contacting throttle lever) has been adjusted. See FIXED SPEED

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ADJUSTING SCREW for procedure.

5) After all adjustments are verified correct, possible cause of incorrect idle speed is deterioration of fast idle air control motor. Throttle valve must be replaced to correct symptom. Disconnect jumper wires and recheck idle speed.

TACHOMETER CONNECTOR LOCATION TABLE

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Application	Type	Location
All Models .....	1-Pin .....	(1)

(1) - Next to ignition timing adjustment connector.

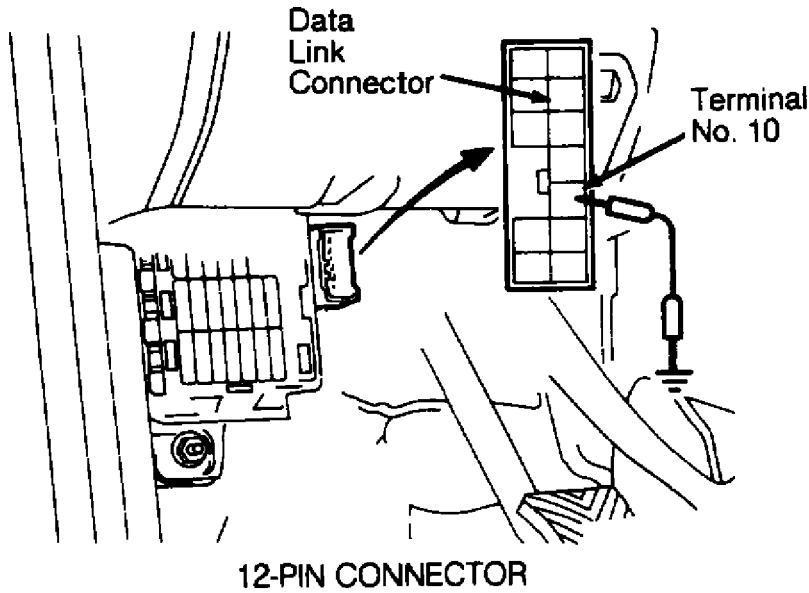
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IDLE SPEED SPECIFICATIONS TABLE

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Application	Curb Idle	Basic Idle
1.5L .....	650-850 .....	650-850

AA

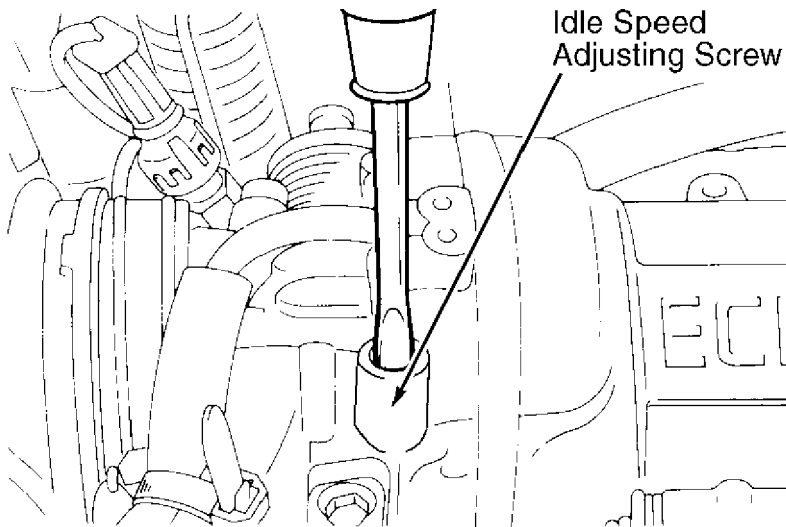


12-PIN CONNECTOR

93E78133

Fig. 1: Locating Data Link Connector (Typical)  
 Courtesy of Mitsubishi Motor Sales of America.

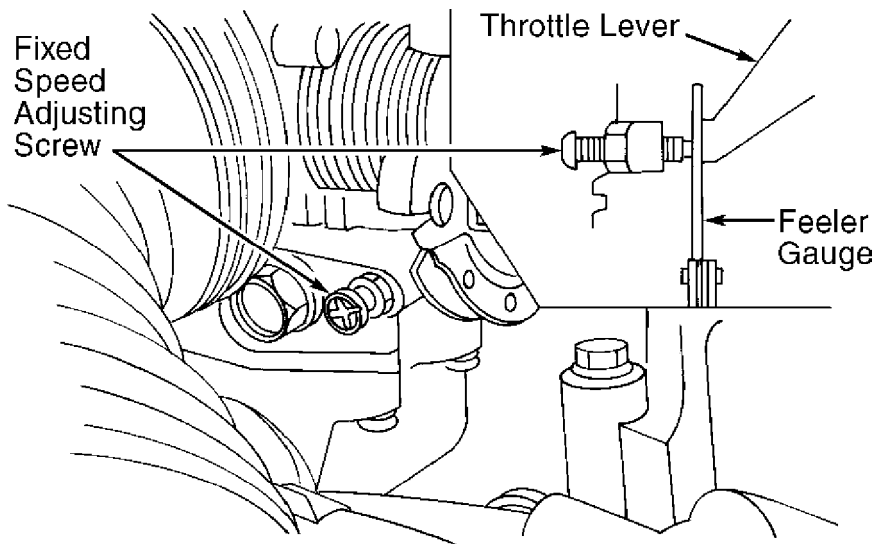
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Fig. 2: Adjusting Idle Speed (Typical)  
Courtesy of Mitsubishi Motor Sales of America.

**FIXED SPEED ADJUSTING SCREW**

**NOTE:** Fixed Speed Adjusting Screw (FSAS) is preset by manufacturer and usually does not require adjustment. Only adjust FSAS if other adjustment procedures require it, or if manufacturer's original setting has been changed.



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Fig. 3: Adjusting Fixed Speed Adjusting Screw (Typical)  
Courtesy of Mitsubishi Motor Sales of America.

**IDLE MIXTURE**

**NOTE:** Idle mixture is computer controlled on fuel injected engines and is nonadjustable. CO level specifications are not available from manufacturer.

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**THROTTLE POSITION SENSOR (TPS)**

**TPS ADJUSTMENT**

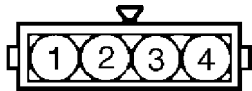
**NOTE:** Ensure basic idle speed is set to specification before adjusting TPS. See BASIC IDLE SPEED under IDLE SPEED & MIXTURE. Perform all adjustments with engine at normal operating temperature, front wheels in straight-ahead position, cooling fan and all accessories off, and transmission in Park or Neutral.

TPS SPECIFICATIONS TABLE

Application	(1) Volts
Mirage	.48-.52
All Others	.4-1.0

(1) - At idle.

- 1) Disconnect TPS connector. Using external ohmmeter, measure resistance between TPS terminals No. 3 and 4. See Fig. 4. Insert .256" (.65 mm) feeler gauge between fixed speed adjusting screw and throttle lever.
- 2) Loosen TPS mounting screws and rotate TPS fully clockwise. Ensure there is continuity between terminals No. 3 and 4. Rotate TPS counterclockwise until there is no continuity and tighten screws. Install Test Harness (MB991348) between TPS and harness connector.
- 3) Turn ignition on. Using external voltmeter, measure TPS output voltage between terminals No. 2 and 4. See TPS SPECIFICATIONS table. If voltage is not within specification, check harness and sensor. See I - SYS/COMP TESTS article in this section.



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 Fig. 4: Identifying & Adjusting TPS Connector  
 Courtesy of Mitsubishi Motor Sales of America.

**IDLE POSITION SWITCH**

**NOTE:** Idle position switch is preset by manufacturer. Adjustment is usually not necessary. If other procedures require adjustment of idle position switch or if switch setting has been changed, adjust switch as follows.

Idle position switch is incorporated into IAC motor and is automatically adjusted when TPS is adjusted. See TPS ADJUSTMENT.

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**END OF ARTICLE**