

D - ADJUSTMENTS

Article Text

1992 Dodge Colt

For a a a a

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Saturday, April 27, 2002 05:46PM

ARTICLE BEGINNING

1992 ENGINE PERFORMANCE

Chrysler Motors/Mitsubishi On-Vehicle Adjustments

Dodge; Colt, Colt 200

Eagle; Summit

Mitsubishi; Mirage

Plymouth; Colt, Colt 200

ENGINE MECHANICAL

Before performing any on-vehicle adjustments to fuel or ignition system, ensure engine mechanical condition is okay.

VALVE CLEARANCE

NOTE: Valve adjustment is possible on 1.5L engines only. All other models use hydraulic lash adjusters.

VALVE ADJUSTMENT - 1.5L

CAUTION: DO NOT rotate crankshaft in opposite direction of normal engine rotation.

1) Ensure engine is at normal operating temperature. Remove all spark plugs and valve cover. Rotate crankshaft to position cylinder No. 1 at TDC of compression stroke. Adjust intake valves on cylinders No. 1 and 2, and exhaust valves on cylinders No. 1 and 3. See VALVE CLEARANCE SPECIFICATIONS table.

2) Rotate crankshaft 360 degrees to position cylinder No. 4 at TDC of compression stroke. Adjust intake valves on cylinders No. 3 and 4, and exhaust valves on cylinders No. 2 and 4.

VALVE CLEARANCE SPECIFICATIONS TABLE

Application	(1) In. (mm)
1.5L (VIN A)	
Hot Engine	
Intake	.006 (.15)
Exhaust	.010 (.25)
Cold Engine	
Intake	.003 (.07)
Exhaust	.007 (.17)

(1) - Adjust valves with engine hot.

CHECKING HYDRAULIC VALVE LIFTERS - 1.6L

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1) Warm engine to normal operating temperature. Remove valve cover. Position No. 1 cylinder at TDC on compression stroke. Check intake rockers on No. 1 and 2 cylinders. Check exhaust rockers on No. 1 and 3 cylinders.

2) Push downward on end of rocker arm above lash adjuster. Rotate crankshaft 360 degrees and check intake rockers on No. 3 and 4 cylinders. Check exhaust rockers on No. 2 and 4 cylinders. If lash adjuster is normal, it will feel solid.

3) If lash adjuster moves downward easily when pushed, replace adjuster. If lash adjuster feels soft or spongy, air has probably entered lash adjuster. If this occurs, check engine oil level. If engine oil level is okay, check oil screen and oil screen gasket for damage.

4) After repairing cause of air leak, warm engine to operating temperature. Drive vehicle at low speed for approximately 5 minutes. Turn engine off for a few minutes.

5) Restart engine and drive at low speed for approximately 5 minutes. Repeat this step several times for about one hour. This helps remove air from engine oil.

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. Set curb idle speed to specification. See IDLE SPEED SPECIFICATIONS table under IDLE SPEED & MIXTURE.

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 (or crank angle sensor on engines with dual coil assembly) 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		
Colt, Colt 200 & Summit	5 @ 650-850	10 @ 650-850
Mirage	3-7 @ 650-850	10 @ 650-850
1.6L		
Mirage	3-7 @ 650-850	8 @ 650-850

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

(2) - With ignition timing adjustment connector ungrounded

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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.

IGNITION TIMING ADJUSTMENT CONNECTOR LOCATION TABLE

Application	(1)(2)	Wire Color	Location
1.5L & 1.6L	Yellow/Red	On main wiring harness, near center of firewall.

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

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

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 Speed Control (ISC) 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 ISC system. If ISC system is okay, adjust basic idle speed. See BASIC IDLE SPEED.

BASIC IDLE SPEED - 1.5L MIRAGE

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

1) Loosen throttle cable. Connect Multi-Use Tester (MUT) to diagnostic connector, located under left side of dash. Turn ignition on for more than 15 seconds. DO NOT start engine. Turn ignition off. This should fully retract ISC motor plunger.

2) Disconnect harness connector(s) from Idle Speed Control (ISC) motor. Ensure ISC plunger is in fully retracted position.

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Unscrew fixed Speed Adjusting Screw (SAS) slightly. See Fig. 1.

CAUTION: When cleaning throttle body, plug air by-pass hole in throttle body to prevent solvent from entering passage.

3) Start engine. Select item No. 22 and read basic idle speed. See IDLE SPEED SPECIFICATIONS table. If basic idle speed is within specification, go to step 6). If basic idle speed is not correct, clean throttle body bore and throttle valve. Recheck basic idle speed.

4) If basic idle speed is still incorrect after cleaning throttle body, adjust basic idle speed by turning idle Speed Adjusting Screw (SAS). See Fig. 1. After adjusting basic idle speed, turn fixed SAS screw clockwise until engine speed begins to increase.

5) Turn fixed SAS screw counterclockwise until engine speed decreases. Turn fixed SAS screw counterclockwise an additional 1/2 turn from point at which engine speed no longer decreases. Turn off engine.

6) Adjust throttle cable. Reconnect harness connector(s) at ISC motor. Start engine. Operate engine for about 5 minutes. Ensure engine idles within curb idle speed specification. See IDLE SPEED SPECIFICATIONS table.

7) Turn ignition off. Disconnect negative battery cable for at least 10 seconds to clear diagnostic trouble code. Reconnect negative battery cable. Operate engine at idle for about 5 minutes to ensure engine idles smoothly.

BASIC IDLE SPEED - 1.6L MIRAGE

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

1) Bring engine to normal operating temperature. Locate ignition timing adjustment connector. See IGNITION TIMING ADJUSTMENT CONNECTOR LOCATION table under IGNITION TIMING. Connect jumper wire between ignition timing adjustment connector and ground.

2) Locate diagnostic connector under left side of instrument panel. Connect jumper wire between diagnostic connector terminal No. 10 (White wire) and ground. See Fig. 2. Start engine and check basic idle speed. See IDLE SPEED SPECIFICATIONS table. If basic idle speed is okay, go to step 5). If basic idle speed is not correct, go to next step.

3) Clean throttle body bore and throttle valve. Recheck basic idle speed. If basic idle speed is okay after cleaning throttle body, go to step 5). If basic idle speed is still not correct, adjust idle position switch if necessary. See IDLE POSITION SWITCH under THROTTLE POSITION SENSOR (TPS).

4) If idle position switch is okay, fast idle air valve may be leaking. Replace throttle body if fast idle air valve is leaking. Reconnect jumper wires as indicated in steps 1) and 2). Check basic idle speed. If basic idle speed is within specification, go to next step. If basic idle speed is not within specification, adjust by

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turning idle Speed Adjusting Screw (SAS). See Fig. 3.

5) If basic idle speed is okay after turning idle SAS, cleaning throttle body or replacing fast idle air valve, turn ignition off. Disconnect jumper wires from ignition timing adjustment connector and diagnostic connector. Operate engine at idle for about 5 minutes. Ensure engine idles smoothly and within curb idle specification. See IDLE SPEED SPECIFICATIONS table.

BASIC IDLE SPEED - 1.5L COLT, COLT 200 & SUMMIT

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

1) Bring engine to normal operating temperature. Loosen accelerator cable. Connect tachometer to engine. Turn ignition on for at least 15 seconds. Turn ignition off. Disconnect idle speed control servo connector. Lock idle speed control servo plunger in retracted position.

2) Slightly unscrew fixed Speed Adjusting Screw (SAS). Start and idle engine. Check basic idle speed. If idle speed is not correct, adjust idle speed by turning SAS. After adjusting SAS, turn fixed SAS screw clockwise until engine speed begins to increase.

3) Turn fixed SAS screw counterclockwise until engine speed decreases. Turn fixed SAS screw counterclockwise an additional 1/2 turn from point at which engine speed no longer decreases. Turn off engine.

IDLE SPEED SPECIFICATIONS TABLE

Application	Curb Idle	Basic Idle
1.5L		
Colt, Colt 200, Mirage & Summit	650-850	650-850
1.6L		
Mirage	650-850	650-850

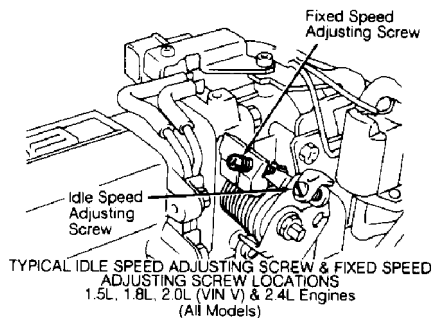


Fig. 1: Idle Speed & Fixed Speed Adjusting Screws (SAS) - 1.5L
Courtesy of Mitsubishi Motor Sales of America.

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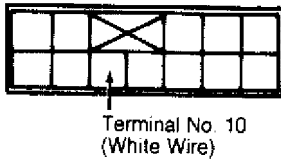


Fig. 2: Identifying Diagnostic Connector Terminal
Courtesy of Mitsubishi Motor Sales of America.

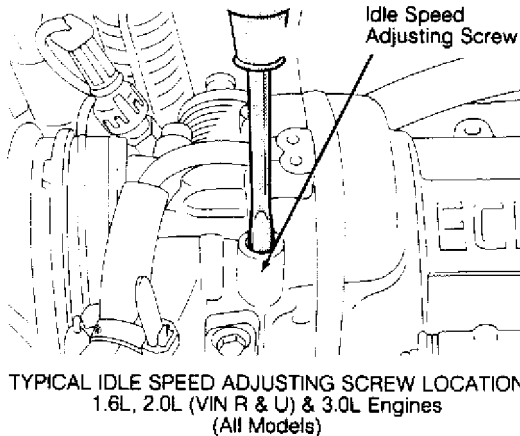


Fig. 3: Idle Speed & Fixed Speed Adjusting Screws (SAS) - 1.6L
Courtesy of Mitsubishi Motor Sales of America.

FIXED SPEED ADJUSTING SCREW

NOTE: Mirage 1.6L uses an idle position switch as the fixed Speed Adjusting Screw (SAS). For adjustment, see IDLE POSITION SWITCH under THROTTLE POSITION SENSOR (TPS).

NOTE: Fixed Speed Adjusting Screw (SAS) is preset by manufacturer and usually does not require adjustment. Only adjust fixed SAS if other adjustment procedures require it, or if manufacturer's original setting has been changed. To adjust fixed Speed Adjusting Screw (SAS), adjust basic idle speed. See BASIC IDLE SPEED under IDLE SPEED & MIXTURE.

IDLE MIXTURE

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

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

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position, cooling fan and all accessories off, and transmission in Park or Neutral.

1) Bring engine to normal operating temperature. On Precis, connect Digital Volt-Ohmmeter (DVOM) between throttle position sensor terminals No. 1 (Black wire) and 3 (Light Green wire), and between terminals No. 2 (Green/White wire) and 4 (Green/Black wire) on all others. Turn ignition on. DO NOT start engine. Note TPS output voltage. Output voltage should be .48-.52 volt.

2) If output voltage is not correct, loosen TPS mounting screws and rotate TPS until output voltage is within specification. Tighten TPS mounting screws. Turn ignition off. Disconnect negative battery cable for at least 15 seconds to clear diagnostic trouble code. Reconnect negative battery cable.

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.

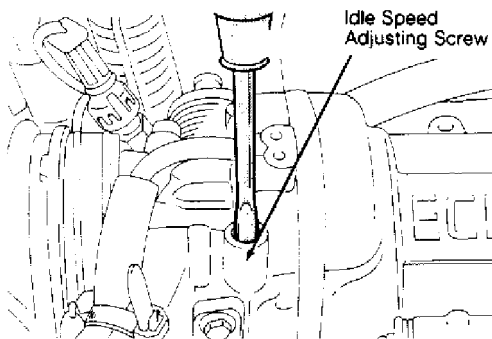
1.6L Mirage

1) Loosen throttle cable. Disconnect electrical connector from idle position switch. See Fig. 4. Loosen lock nut at base of switch. Turn switch counterclockwise until throttle valve is fully closed.

2) Connect ohmmeter between switch terminal and switch body (ground). Turn idle position switch clockwise until ohmmeter registers continuity. At this point, throttle valve should begin to open.

3) Turn switch 15/16 of a turn beyond contact point. Tighten lock nut at base of idle position switch, holding switch to prevent it from turning while tightening.

4) Adjust throttle cable. Adjust basic idle speed. See BASIC IDLE SPEED under IDLE SPEED & MIXTURE. Adjust TPS. See TPS ADJUSTMENT.



TYPICAL IDLE SPEED ADJUSTING SCREW LOCATION
1.6L, 2.0L (VIN R & U) & 3.0L Engines
(All Models)

Fig. 4: Locating Idle Position Switch - 1.6L
Courtesy of Mitsubishi Motor Sales of America.

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All Other Models

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

END OF ARTICLE