1982 Audi 4 Tune-Up

TUNE-UP

4000

ENGINE IDENTIFICATION

Engine number is stamped on left side of engine block near distributor.

ENGINE CODE

Application	Code
All Models	WT

COMPRESSION PRESSURE

Check compression with engine warm, all spark plugs removed and throttle wide open. Crank engine at least 6 strokes per cylinder to determine engine compression.

NOTE: Connect coil high tension wire to ground before cranking engine for compression test.

COMPRESSION SPECIFICATIONS

Compression Ratio	8.2:1
Compression Pressure	
Normal (New Engine)	131-174 psi (9-12 kg/cm²)
Minimum	102 psi (7 kg/cm²)
Max. Variation Between Cylinders	44 psi (3 kg/cm²)

VALVE CLEARANCE

1) Adjust valves with engine at normal operating temperature. Clearance adjustments are to be checked and made according to firing order sequence. Rotate crankshaft until cam lobes for No. 1 cylinder valves point upward. Measure valve clearances of No. 1 cylinder.

NOTE: When adjusting valves, rotate engine CLOCKWISE only, otherwise timing belt may slip.

2) If adjustment is necessary, use tappet depressor (VW546) and disc remover (10-208) to remove and install adjusting discs. Rotate camshaft until cam lobes no longer rest on adjusting discs of cylinder. Turn tappet until notches are at 90° to camshaft. Insert depressor (VW546) and depress tappet. Using disc remover (10-208), hold tappet disc and rotate it out from under camshaft.

3) Thickness is stamped on bottom side of disc. Use clearance measurement to determine thickness of adjusting disc needed. Discs are available in .002" (.05 mm) increments from .118-.167" (3.0-4.2 mm). Reverse removal procedures to install proper disc. Repeat procedure as required for remaining valves.

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance In. (mm)
Intake	.008-.012 (.2-.3)
Exhaust	.016-.020 (.4-.5)

VALVE ARRANGEMENT

E-I-E-I-I-E-I-E (Front to rear)

SPARK PLUGS

SPARK PLUG TYPE

Application	Bosch	Champion
Federal	W7D	N8Y
Calif.	WR7DS	N8GY

SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models	.028 (.7)	22 (29)

HIGH TENSION WIRE RESISTANCE

Carefully remove ends of wire from spark plug and distributor. Using an ohmmeter, check resistance while gently twisting wire. If resistance is incorrect, or fluctuates from infinity to any value, replace wire.

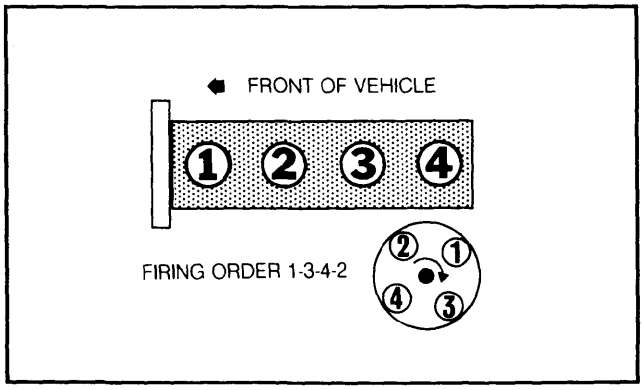
WIRE RESISTANCE

Application	Resistance (Ohms)
Spark Plug Wire Only	800-1400
Spark Plug Wire With Connector	800-7400
Coil Wire	1600-2400

DISTRIBUTOR

All models are equipped with breakerless electronic ignition systems that use a Hall Effect pick-up and an idle stablizer unit.

Fig. 1: Firing Order and Distributor Rotation



IGNITION TIMING

CAUTION: Do not connect any test instruments to terminal 15 (+) of ignition coil. Use fuse 10 terminal for connection.

1) Warm engine to normal operating temperature. Stop engine and disconnect oxygen sensor. Disconnect both plugs from idle stabilizer and connect them together.

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TUNE-UP (Cont.)

2) Pull PCV hose from valve cover. Adjust idle speed, and check ignition timing. Adjust timing by turning distributor. All vacuum hoses must remain connected.

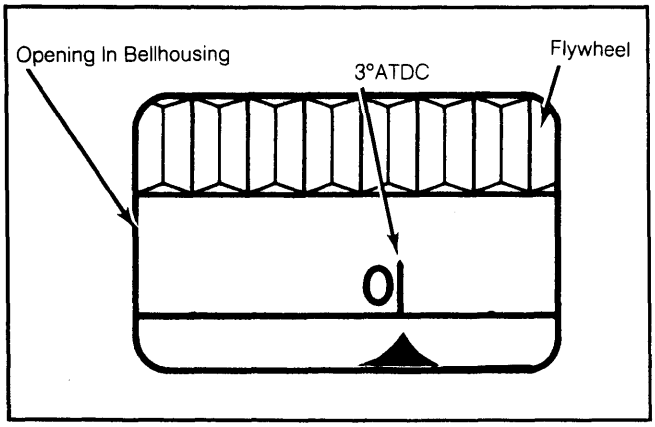
NOTE: Electric cooling fan must not run while adjustments are made.

IGNITION TIMING (Degrees ATDC@RPM)

Application	Timing
All Models	[1] 3@850-1000

[1] — With vacuum hoses connected.

Fig. 2: Ignition Timing Mark Location



Timing mark is located at 3° ATDC.

IDLE SPEED & MIXTURE

1) With engine at normal operating temperature, check and adjust ignition timing and valve clearance. Engine fan must come on at least once before adjustment, but must not be on during adjustment.

2) Pull PCV hose from valve cover and plug hose. Disconnect Green oxygen sensor wire. Disconnect both plugs from idle stabilizer and connect plugs together. Connect a dwell meter (set to 4-cyl. scale) to frequency valve connector near battery. Meter should read 40-50°.

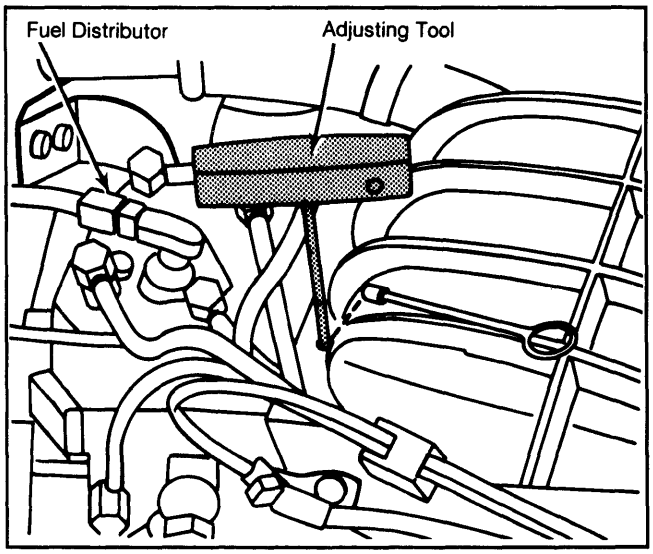
3) Remove cap from exhaust manifold test port and connect CO meter. Adjust idle speed with adjusting screw on side of throttle valve housing. Remove mixture plug from mixture control unit and adjust CO level using hex wrench.

4) Remove tool after each adjustment. Accelerate engine briefly before checking CO reading. Always adjust CO level from lean to rich.

CAUTION: Do not press down on tool while adjusting CO, and do not accelerate engine with tool in place.

5) Reconnect oxygen sensor wire. Dwell meter reading should begin to vary and CO level should be within specification. Stop engine and remove test equipment. Reconnect all wiring and hoses.

Fig. 3: Adjusting Idle Speed & Mixture



Always adjust idle mixture from lean to rich.

IDLE SPEED & CO LEVEL

Application	Idle RPM	CO%
All Models	850-1000	0.3-1.2

FUEL PUMP

FUEL PUMP PERFORMANCE

Application	Pressure psi (kg/cm²)	Volume in 30 sec. Pints (Liters)
All Models	68-78 (5.0-5.5)	2 (.9)

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with Bosch breakerless electronic ignition with idle stabilizer unit.

IGNITION COIL

RESISTANCE Ohms@68°F (20°C)

Application	Primary	Secondary
All Models	.52-.76	2400-3500

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GENERAL SERVICING (Cont.)

FUEL SYSTEMS

FUEL INJECTION

All models are equipped wih Bosch (CIS) Continuous Injection System. California models use an oxygen sensor system.

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Amp. Hr. Rating
Without A/C	55
With A/C	90

STARTER

All models are equipped with Bosch starters. Minimum cranking voltage is 8 volts.

ALTERNATOR

All models use a Bosch alternator.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
Without A/C	55
With A/C	75

ALTERNATOR REGULATOR

Motorola and Bosch regulators are used. Both are non-adjustable and integral with alternator.

REGULATOR OPERATING VOLTAGE@68°F (20°C)

Application	Voltage
All Models	12.5-14.5

SERVICE SPECIFICATIONS

BELT ADJUSTMENT

Application	[1] Deflection In. (mm)
All Belts	.3-.5 (10-15)

[1] — With moderate pressure applied midway between pulleys.

REPLACEMENT INTERVALS

Components	Miles
Oil Filter	15,000
Air Filter	30,000
Fuel Filter	15,000
PCV Valve	30,000
Oxygen Sensor	30,000
Spark Plugs	30,000

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	3.2 qts. (3.0L)
Cooling System	7.4 qts. (7.0L)
Man. Trans. (SAE 80W-90)	1.7 qts. (1.6L)
Auto. Trans. (Dexron)	3.2 qts. (3.0L)
Auto. Trans. Final Drive (SAE 90)	0.8 qts. (0.7L)
Fuel Tank	15.9 gals. (60.0L)