

1974-79 TUNE-UP PROCEDURES

Audi 5-Cylinder

1978-79 5000

ENGINE IDENTIFICATION

Engine number is stamped on left side of block, between distributor and No. 3 cylinder.

ENGINE CODES

Application	Code
Diesel	CN
Gasoline	
Federal	WD
Calif.	¹ WK, WE

¹ - California oxygen sensor equipped models.

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

The Vehicle Identification Number is embossed on rear wall of engine compartment, on left windshield pillar (visible through windshield), and on safety sticker on left door jamb.

ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature, throttle wide open, and engine at cranking speed.

COMPRESSION SPECIFICATIONS ¹

Application	Normal Pressure psi (kg/cm ²)	Min. Pressure psi (kg/cm ²)
Diesel	398-483 (28-34)	
Gasoline	142-184 (10-13)	107 (7.5)

¹ - Maximum difference per cylinder is 42 psi (2.95 kg/cm²) for gasoline engine, 71 psi (5.0 kg/cm²) for diesel engine.

VALVE CLEARANCE

1) Adjust valves with engine at normal operating temperature. Remove accelerator linkage and cylinder head cover. Clearance adjustments are to be checked and made according to firing order sequence (1-2-4-5-3).

2) Rotate crankshaft until cam lobes for No. 1 cylinder valves point upward; then measure valve clearances of No. 1 cylinder. If adjustment is necessary, use Disc Remover (US 4476) and Tappet Depressor (VW 2078) to remove and install adjusting discs.

3) Turn tappet until notches are at 90 degrees to camshaft. Insert tappet depressor and depress tappet. Using disc remover, grasp tappet disc and rotate it out from under camshaft.

4) Thickness is stamped on bottom side of disc. Using clearance measurement, determine thickness of adjusting disc necessary to bring valve clearance within specifications. Discs are available in .0019" (.05 mm) increments from .1181-.1673" (3.0-4.25 mm). Repeat procedure as required for remaining valves.

VALVE CLEARANCE SPECIFICATIONS

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

VALVE ARRANGEMENT

E-I-E-I-I-E-I-E-I-E - Front-to-rear.

SPARK PLUGS

SPARK PLUGS

Application	Specification
Gap	.035" (.9 mm)
Torque	22 ft. lbs. (30 N.m)

SPARK PLUG TYPE

Application	Champion
Gasoline Models	N8Y

HIGH TENSION WIRE RESISTANCE

Carefully remove ends of wire from spark plug and distributor. Using an ohmmeter, check resistance of wire while gently twisting wire. If resistance is not to specification, or fluctuates from infinity to any value, replace wire.

HIGH TENSION WIRE RESISTANCE

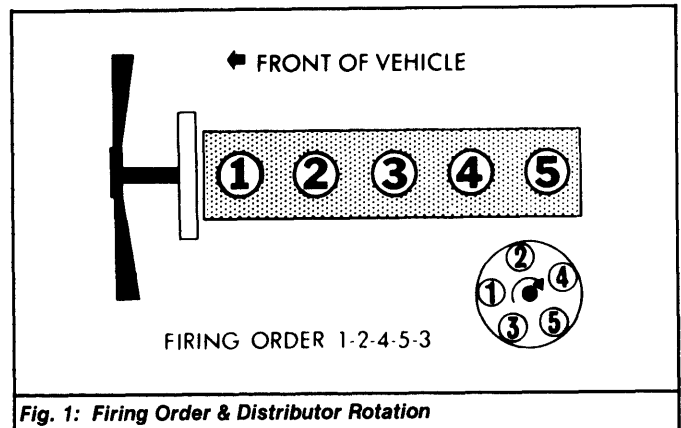
Application	Resistance (Ohms)
Gasoline Models	25,000-30,000

DISTRIBUTOR

All gasoline models are equipped with Bosch breakerless ignition system.

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Air Gap	.010" (.25 mm)
Dwell Angle (Non-Adjustable)	43-65°



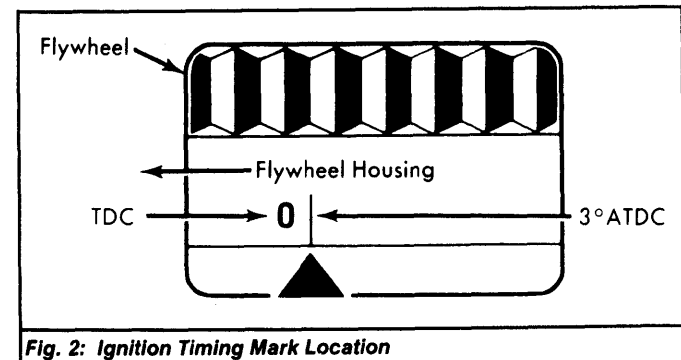
IGNITION TIMING

Connect timing light to No. 1 spark plug wire. With engine speed set to specified RPM and vacuum hoses connected, rotate distributor until specified timing is obtained.

IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Gasoline Models	850-1000	1°ATDC

¹ - Set to 6°BTDC on oxygen sensor equipped models.



1974-79 TUNE-UP PROCEDURES

Audi 5-Cylinder (Cont.)

IDLE SPEED & MIXTURE

1978-79 Models Without Oxygen Sensor – 1) With engine at normal operating temperature, check and make sure that ignition timing, valve clearance, spark plug gap and compression pressures are within specifications.

2) Turn headlights on high beam and air conditioning off (if equipped). With vacuum hoses connected, adjust idle speed to specifications by means of the idle control screw at the throttle plate housing.

3) To adjust CO% level, remove plug from mixture control unit between fuel distributor and venturi. Insert Mixture Adjustment Wrench (P 377) and turn clockwise to raise CO% level, counterclockwise to decrease CO% level until the specified CO% level is obtained.

4) Remove mixture adjustment wrench and accelerate engine briefly. Wait until CO meter has stabilized for idle speed reading. Check idle speed and CO% level and adjust if necessary.

NOTE: Engine will stall if pressure is exerted on mixture adjustment wrench. Use very small adjustments or CO% level will be changed greatly.

1979 Models With Oxygen Sensor – 1) With engine at normal operating temperature, turn headlights on high beam and turn air conditioning off (if equipped). Disconnect and plug crankcase breather hose at cylinder head.

2) Also disconnect hose between charcoal canister and air cleaner. Check and adjust ignition timing as necessary. Adjust idle speed to specified RPM using adjusting screw on side of throttle valve housing.

3) Remove cap from CO test receptacle on exhaust manifold and connect CO tester hose directly to test receptacle. Connect a dwell meter to frequency valve electrical connector. Zero dwell meter and set it to the 4-cylinder scale.

4) Disconnect oxygen sensor wire at connector and check dwell meter reading. Meter reading must be constant between 40-50 degrees. Adjust CO level to specifications using Mixture Adjustment Wrench (P 377). Turn adjustment wrench clockwise to increase CO% level and counterclockwise to decrease CO% level.

5) Reconnect oxygen sensor wire and check dwell meter reading. Meter reading should now pulsate. Reconnect all hoses, then recheck idle speed and adjust if necessary.

NOTE: Do not press down on mixture adjustment wrench when adjusting CO level. Also, do not accelerate engine with wrench in place. Remove wrench after each adjustment and accelerate engine briefly before reading CO% level. Always adjust CO% level from lean to rich.

IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Gasoline Models		
Federal	850-1000	0.9 Max.
Calif.	850-1000	¹ 0.3 Max.

¹ – Set to 0.8-1.2 percent on oxygen sensor equipped models.

1979 Diesel Models – With engine at normal operating temperature, turn idle speed control knob on instrument panel counterclockwise to stop. Connect Tester (VW 1367) following manufacturer's instructions. Adjust speed to specifications with idle adjusting screw. Lock screw and seal it with paint.

DIESEL IDLE SPEED SPECIFICATIONS

Application	Idle RPM
5000 Diesel	720-880

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	
Gasoline Models	65-75 psi (4.5-5.2 kg/cm ²)
Volume	1 qt. in 40 seconds
Injector Test Pressure	
Diesel Models	1706-1849 psi (120-130 kg/cm ²)

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION SYSTEM

DISTRIBUTOR

All gasoline models are equipped with Bosch breakerless ignition system.

Other Data & Specifications – See Bosch Breakerless Ignition System article in DISTRIBUTORS & IGNITION SYSTEMS section.

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Specification
Primary	
Gasoline Models95-1.4 Ohms
Secondary	
Gasoline Models	5500-8000 Ohms

FUEL SYSTEMS

FUEL INJECTION

All gasoline models are equipped with Bosch CIS Fuel Injection system.

Other Data & Specifications – See Bosch CIS Fuel Injection System article in FUEL SYSTEMS section.

DIESEL INJECTION

All diesel models are equipped with Bosch Diesel Fuel Injection system.

Other Data & Specifications – See Tune-Up and Bosch Diesel Fuel Injection system article in FUEL SYSTEMS section.