1982 Saab 4 Tune-Up

TUNE-UP

900, 900 Turbo

ENGINE IDENTIFICATON

Engine number is stamped on a machined pad on engine block below CIS throttle housing.

ENGINE CODE

Application	Code
900	
Man. Trans.	B 20 I M UC
Auto. Trans.	B 20 I A UC
900 Turbo	
Man. Trans.	B 20 S M UC
Auto. Trans.	B 20 S A UC

ENGINE COMPRESSION

Check compression with battery fully charged, engine at normal operating temperature, throttle fully open and engine at cranking speed.

COMPRESSION SPECIFICATIONS

Compression Ratio	
900	9.25:1
900 Turbo	7.2:1

VALVE CLEARANCE

1) Run engine until warm and let cool 30 minutes before checking valves. Position cam lobe opposite valve depressor. Install measuring tool (8391450) with dial indicator to valve depressor. With measuring point of dial indicator resting on tip of cam, zero dial indicator.

2) Lift valve depressor with special tool and note movement of dial indicator indicating present valve clearance. Any valve not within specifications should be adjusted as follows:

3) Remove camshaft, valve depressors and adjusting pads of valves needing adjustment. Measure thickness of adjusting pad with micrometer and calculate thickness of new pad required to bring valve clearance within specifications.

4) Measured valve clearance plus adjusting pad thickness equals total distance between valve and cam. This total distance less the specified valve clearance, determines thickness of new adjusting pad to be installed.

5) Install new adjusting pad, valve depressors, and camshaft and recheck that clearances are correct.

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance In. (mm)
900	
Intake	.008-.010 (.20-.25)
Exhaust	.016-.018 (.40-.45)
900 Turbo	
Intake	.008-.010 (.20-.25)
Exhaust	.018-.020 (.45-.50)

VALVE ARRANGEMENT

E-I-I-E-E-I-I-E (Front to Rear)

SPARK PLUGS

SPARK PLUG TYPE

Application	Champion No.	Bosch No.
All Models	N-9Y	W-175-T30

SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models	.026 (.7)	18-22 (24-30)

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check high tension wire resistance while gently twisting wires. If resistance is not to specifications, or fluctuates from infinity to any value, replace high tension wire(s).

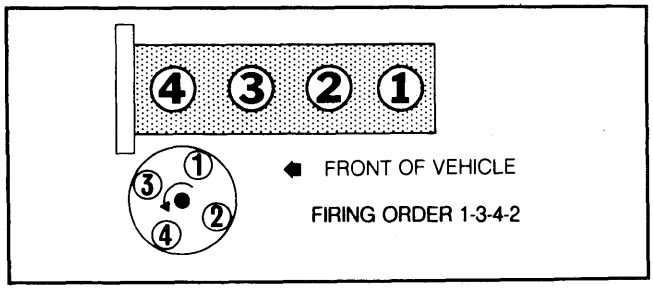
WIRE RESISTANCE

Application	Ohms
All Models	
Wires to Cylinders 1 & 2	2600-3900
Wires to Cylinders 3 & 4	2400-3600
Wires from Coil to Distributor	800-1200

DISTRIBUTOR

All models are equipped with Bosch breakerless electronic ignition systems. No adjustments are required for distributor.

Fig. 1: Firing Order and Distributor Rotation



IGNITION TIMING

1) Connect tachometer and timing light. Disconnect vacuum advance hose and place transmission in Neutral position. Check timing at 2000 RPM.

2) If not within specifications, loosen distributor retaining screw and rotate distributor housing until timing is set to specifications. Reconnect vacuum advance hose and adjust engine idle speed.

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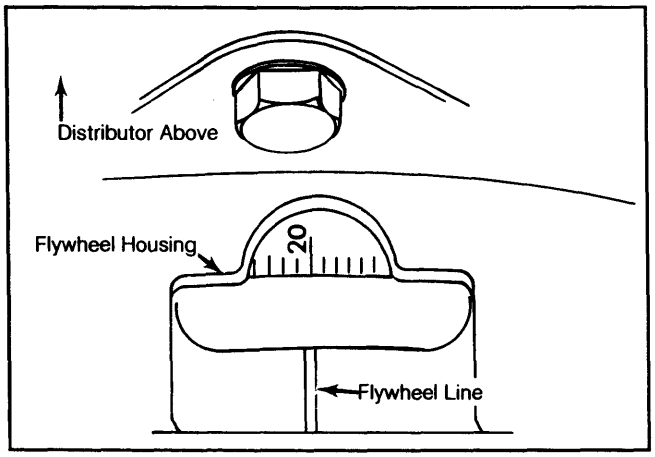
TUNE-UP (Cont.)

IGNITION TIMING (Degrees BTDC@RPM)

Application	Timing
All Models [1]	20@2000

[1] — Disconnect and plug vacuum advance hose.

Fig. 2: Saab Timing Mark Location

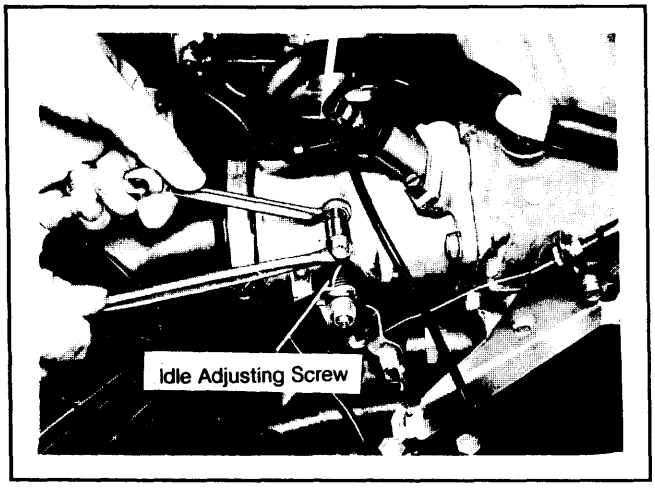


IDLE SPEED & MIXTURE

1) Warm engine to operating temperature and set ignition timing. Check and adjust engine idling speed, using idle adjusting screw on throttle valve housing.

NOTE: Mixture adjustment is not part of a normal tune-up procedure. Adjustment should be made only if mixture control unit is replaced or vehicle fails emissions testing.

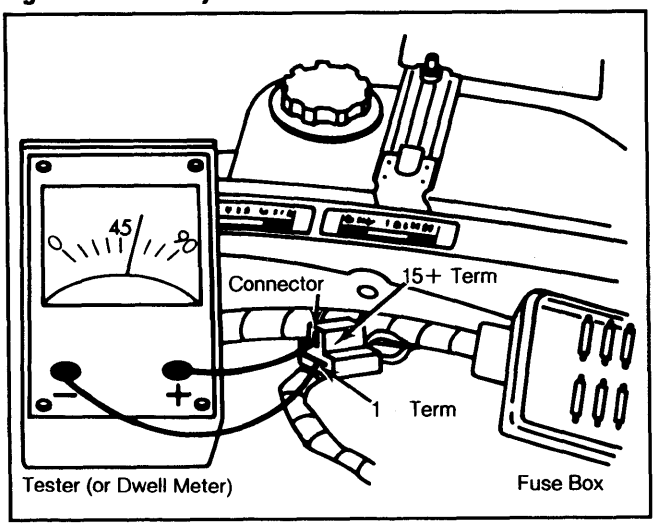
Fig. 3: Adjusting Idle Speed



2) Connect Bosch tester (KDJE7453) or dwell meter to test connector in front of fuse box. *See Fig. 4.* Start engine and observe scale on tester. If needle fluctuates between 10-90% on Bosch tester or 10-80° on dwell meter (4-cyl. scale), no adjustment is needed.

3) If adjustment is necessary, remove mixture control unit from vehicle. Disassemble sensor plate and lever. Drive out mixture adjustment plug with punch. Reassemble mixture control unit and install on vehicle.

Fig. 4: Mixture Adjustment Tester Connections



4) With engine idling, adjust mixture with Allen wrench until tester indicates 55-65% operation. Dwell meter will show 50-60° on 4-cyl. scale. Accelerate engine and recheck adjustment, then reinstall plug. Remove test equipment.

IDLE SPEED & CO LEVEL

Application	Idle RPM	CO%
All Models	875	.5-1.5

DASHPOT ADJUSTMENT

1) Bring engine to normal operating temperature. On Turbo models, disconnect and plug EGR hose. On all other models, disconnect and plug vacuum advance. Connnect tachometer and check idle speed. Adjust if necessary.

2) Rotate throttle lever and check that dashpot rod strikes the stop at 2100-2300 RPM on Turbo models, or 2400-2600 RPM on all others. If not, adjust by turning dashpot.

3) Accelerate engine to 3000 RPM and measure time from release of throttle until engine reaches idle speed. Deceleration time should be 3-6 seconds. If not, turn dashpot in toward stop to lengthen delay, or away from stop to shorten delay time.

FUEL PUMP

FUEL PUMP PERFORMANCE

Application	Pressure psi (kg/cm²)	Volume in 30 sec. Pints (Liters)
All Models	64-72 (4.5-5.1)	[1] 1.9 (.90)

[1] — Measured at return fuel line.

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

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GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with Bosch electronic breakerless distributors.

IGNITION COIL

RESISTANCE Ohms@68°F (20°C)

Application	Primary	Secondary
All Models	1.05-1.35	5500-8500

FUEL SYSTEMS

FUEL INJECTION

Saab uses Bosch Lambda (CIS) fuel injection.

ELECTRICAL

BATTERY

BATTERY SPECIFICATIONS

Application	Amp. Hr. Rating
All Models	60

STARTER

All models use Bosch starters.

STARTER SPECIFICATIONS

Application	Volts	Amps	Test RPM
All Models	11.5	35-55	6500-8500

ALTERNATOR

All models use Motorola or Bosch alternators.

ALTERNATOR REGULATOR

All alternators have built-in regulators which require no adjustment.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
Bosch	55
Bosch	65
Bosch	70
Motorola	70

SERVICE SPECIFICATIONS

BELT ADJUSTMENT

Application	[1] Deflection In. (mm)
Alternator Belt	.2 (5 mm)

[1] — Deflection is with 3.3 Lbs. (1.5 kg) pressure applied midway on longest belt run.

REPLACEMENT INTERVALS

Component	Miles
Oil Filter	
Turbo	5000
All Other Models	7500
Air Filter	30,000
Fuel Filter	30,000
Spark Plugs	30,000
Oxygen Sensor	30,000

FLUID CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	
Turbo	4.5 qts. (4.3L)
All Other Models	4.0 qts. (3.8L)
Cooling System	
All Models	10.5 qts. (10.0L)
Man. Trans. (SAE 10W-30) [1]	3.0 qts. (2.9L)
Auto. Trans. (ATF Type F)	8.5 qts. (8.1L)
Auto. Trans. Final Drive (SAE 80)	1.3 qts. (1.2L)
Fuel Tank	14.5 gals. (55.0L)

[1] — Including Final Drive.