EMISSION CONTROL SYSTEMS

The 1982 Saab has three distinct systems for controlling emissions to the atmosphere. The sections that follow briefly describe these systems.

I. The Crankcase Emission Control System
II. The Evaporative Emission Control System
III. The Exhaust Emission Control System

Engine Families

1982 Saabs imported to the United States are divided into two engine families (normally aspirated and turbocharged) that meet the emission control standards indicated below. The engine family and appropriate tune-up specifications are identified on a label affixed to the left front inner fender.

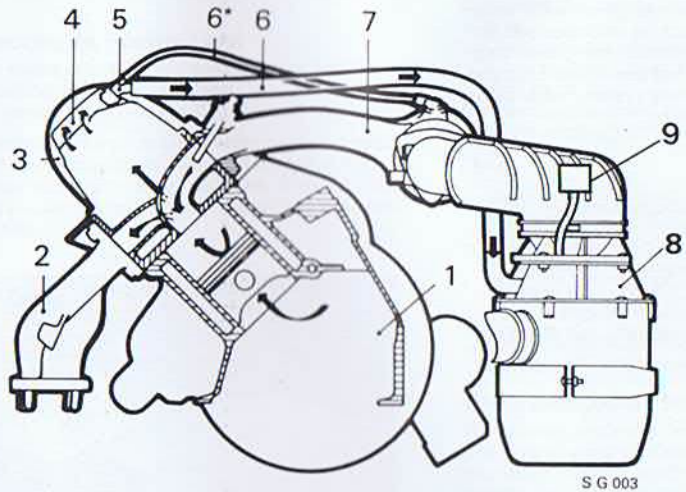
Both families meet U.S.A. Federal Standards and California State Standards.
CSA 2.0V6FNT3—Saab 900, 900S
CSA 2.0V6FTTX—Saab 900 Turbo

Saab engines are equipped with the following systems to ensure compliance with the applicable standards as described above:

A. Continuous Injection System
B. Lambda Control System
C. Three-way Catalyst
D. Decel Dashpot (automatic transmission)
E. Decel Fuel shut off (manual transmission)
F. Exhaust Gas Recirculation

I. CRANKCASE EMISSION CONTROL SYSTEM

A completely closed crankcase ventilation system is used. Crankcase fumes are drawn directly into the inlet manifold under all operating conditions except full load and high blow-by when some gases are diverted ahead of the throttle body. (On Turbo models all crankcase gases are diverted ahead of the throttle body). The oil separator in the valve cover also serves as a flame arrestor.

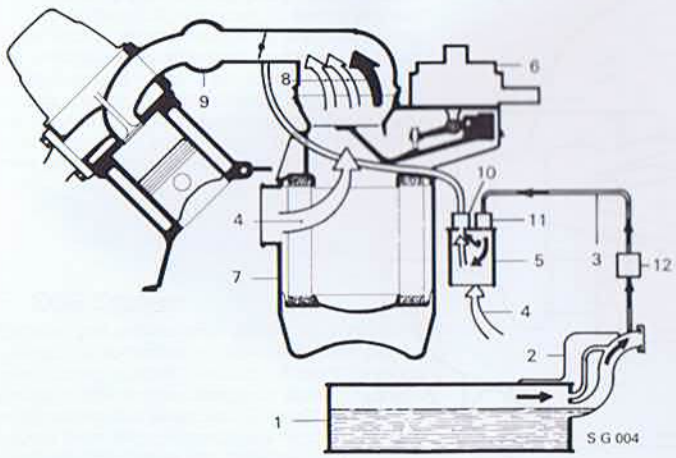


1. Crankcase
2. Exhaust Manifold
3. Camshaft Cover
4. Oil trap and flame arrestor
5. Nipple with orifice
6. Hose
7. Inlet Manifold
8. Air cleaner adapter

* except turbo

II. EVAPORATIVE EMISSION CONTROL SYSTEM

A sealed fuel system is used to prevent the emission into the atmosphere of vapors from the stored gasoline supply. Evaporated fuel is vented from the fuel system to the charcoal canister which is connected to the throttle housing. The evaporated fuel is purged from the charcoal canister and burned by the engine when it is running. The fuel tank is pressurized to about 1.5 psi by a valve in the ventilation line.

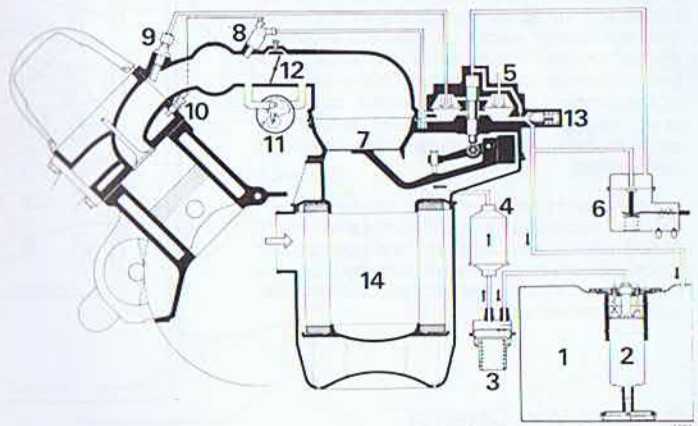


1. Fuel Tank
2. Fuel Tank Vent Lines
3. Ventilation Line to Charcoal Canister
4. Inlet Air
5. Charcoal Canister
6. Fuel Distributor
7. Air Cleaner
8. Inlet Air and Gas Vapors
9. Inlet Vapors
10. Check Valve
11. Pressure Valve
12. Rollover Valve

III. EXHAUST EMISSION CONTROL SYSTEMS

A. Continuous Injection System

The C.I. System allows precise fuel metering which results in low baseline emissions while retaining good driveability, performance and economy. The intake air flow volume determines the correct momentary quantity of fuel metered to the four intake port injectors for most efficient combusion. The engine draws in more or less air depending on its speed and the load applied.



1. Fuel Tank
2. Fuel Pump
3. Fuel Accumulator
4. Fuel Filter
5. Fuel Distributor
6. Warm Up Regulator
7. Air Flow Sensor Plate
8. Cold Start Valve
9. Injection Valve
10. Thermo-Time Switch
11. Auxiliary Air Valve
12. Throttle Plate
13. Pressure Relief Valve
14. Air Cleaner

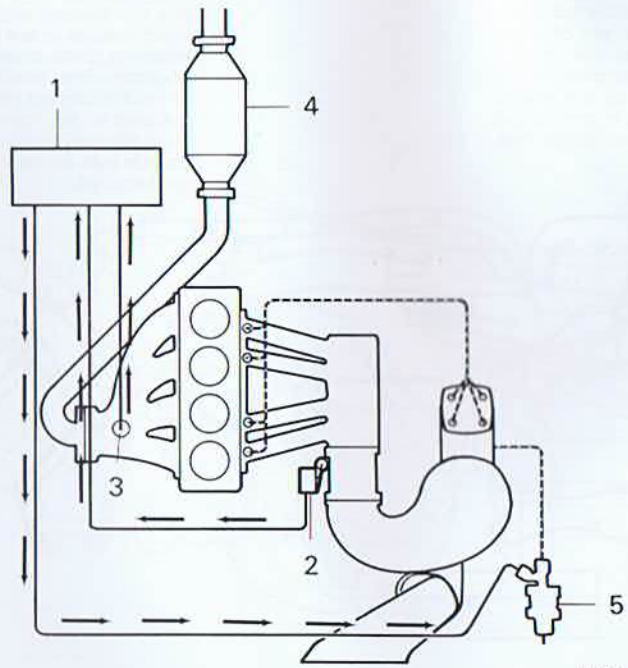
B. Lambda Control System

Lambda Control System is a closed loop feedback system adapted to the C.I. System to constantly maintain close air/fuel ratio control under all operating conditions. At an air/fuel ratio of 14.5 to one (Lambda = 1 at this ratio), all three regulated pollutants (hydrocarbons, carbon monoxides, oxides of nitrogen) may be simultaneously controlled efficiently by a special threeway catalyst. An oxygen sensor in the exhaust manifold monitors the oxygen content of the exhaust and sends a proportional signal to an electronic control unit (under the rear seat.) This signal is compared to a predetermined value and an output signal is sent to a fuel pressure modulating valve to make the necessary fine adjustment of the air/fuel ratio. Until the sensor warms up after the engine is started, the modulating valve will operate at a constant predetermined value. This is also true in the case of wide open throttle operation or engine speeds above 3800 RPM (Turbo Only) and in the event of sensor failure (the car will not be disabled).

A maintenance reminder lamp, labeled "EXH", on the instrument panel illuminates every 30,000 miles to indicate that the oxygen sensor is scheduled for replacement. (After this service is performed your dealer will reset the lamp actuating mechanism.)

C. Three-Way Catalyst

The catalytic converter contains a special platinum and rhodium coated dual segment substrate which simultaneously frees oxygen from oxides of nitrogen and oxidizes (burns) hydrocarbons and carbon monoxide. Unleaded fuel is required to protect the conversion efficiency of the catalyst.



1. Electronic Control Unit
2. Wide Open Throttle Switch (Turbo only)
3. Oxygen Sensor
4. Catalytic Converter
5. Modulating Valve.

D. Decel Dashpot (Automatic Transmission Only)

The decel dashpot acts upon the throttle linkage to minimize incomplete combustion during engine deceleration.

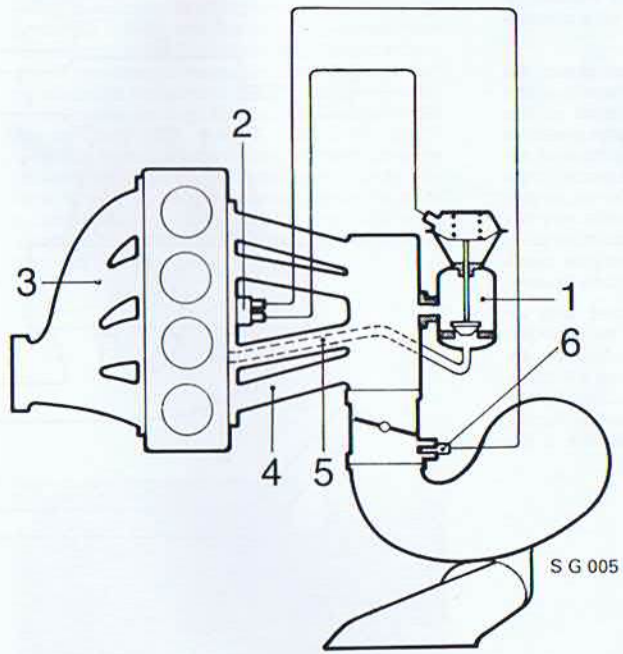
E. Decel Fuel Shutoff (Manual Transmission Only)

A solenoid operated air by-pass valve reduces air flow in the air flow sensor, lowering the fuel distributor plunger interrupting fuel flow during deceleration. The solenoid is controlled by an engine speed relay and a throttle contact switch. During deceleration at engine speeds above 1450 RPM the solenoid opens the by-pass valve. When the speed drops below 1250 RPM the system de-activates allowing normal operation.

F. EGR System

Exhaust gas recirculation (EGR) is employed to reduce the formation of oxides of nitrogen by introducing a small amount of inert gas (exhaust) to the intake charge to lower the peak combustion temperature. Exhaust gases are routed from the cylinder head through a valve controlled by intake and manifold vacuum and are introduced into the intake manifold. A thermostatic valve delays system operation until the engine is warm.

The EGR system on Turbo models employs a single port control signal while the normally aspirated engines have a two port control pickup at the throttle housing.



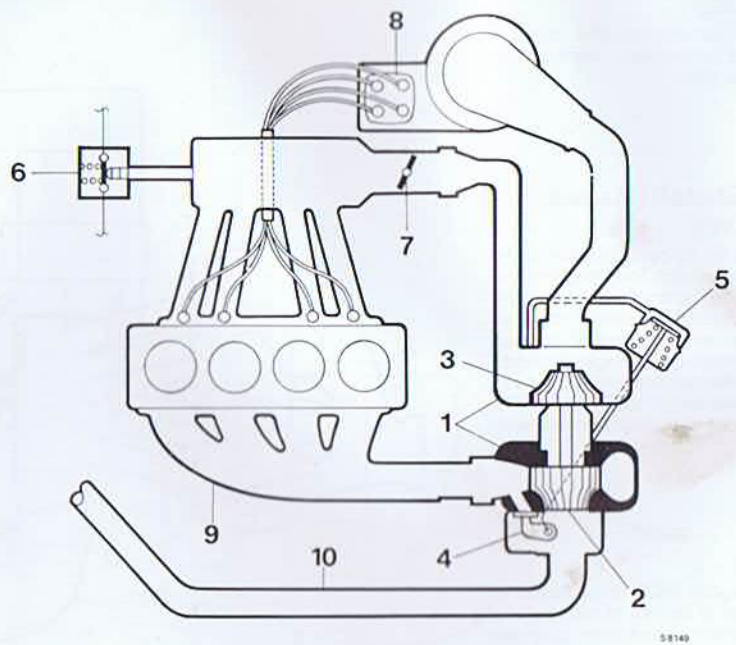
1. EGR Valve
2. Vacuum Signal Thermostatic Valve
3. Exhaust Manifold
4. Inlet Manifold
5. EGR Pipe
6. Two Port Outlet (Single port, 900 Turbo)

TURBOCHARGING SYSTEM (900 TURBO)

The turbocharger is an exhaust driven compressor that increases the flow and pressure of the air entering the cylinders. This allows induction and burning of a larger fuel charge thereby increasing power output over that of a conventional engine.

Being driven by the flow of exhaust gases, the speed of the turbocharger and, therefore, the charging pressure, are proportional to the speed and load of the engine. A charge pressure regulator (wastegate) controls the flow of exhaust gases to the turbine once a preset pressure limit has been reached. The regulator allows boost to develop quickly at relatively low engine speeds, but limiting the maximum pressure to a level which prevents the engine knock when fuel as low as 87 minimum octane is used.

Turbocharged engines are equipped with an engine oil cooler that is located at the lower left of the radiator. The impeller shaft bearing actually floats on a thin film of engine oil circulated through the turbocharger housing by the engine oil pump. Maintaining a clean oil supply is therefore important to the service life of the unit.



1. Turbocharger
2. Exhaust Turbine
3. Compressor Wheel
4. Charge Pressure Regulator (wastegate)
5. Wastegate actuator
6. Overpressure safety switch
7. Throttle plate
8. Fuel injection system
9. Exhaust manifold
10. Exhaust pipe

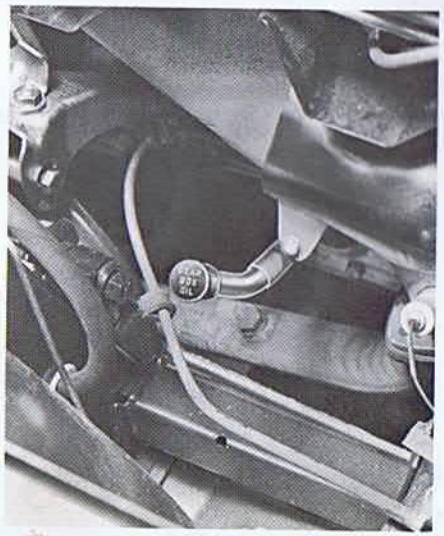
TRANSMISSION

The transmission and differential are located beneath the engine and assembled to form an integral unit with the engine. Part of the transmission case serves as the engine oil sump. The forward part of the transmission comprises a primary gear case which delivers power from the rear of the engine crankshaft via chains.

For suitable grades of oil, refer to the Specifications Section.

Manual Transmission

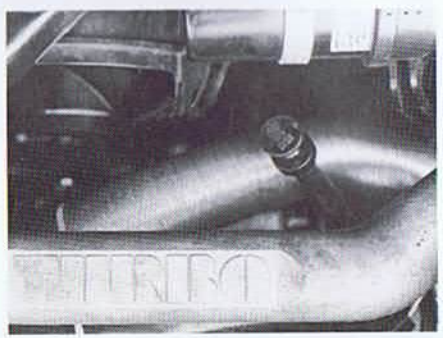
The dipstick is located on the right-hand side of the engine. The oil level should be between the MAX and MIN marks on the dipstick. To add oil, pour the oil into the dipstick pipe. The clutch fluid is supplied from the brake fluid reservoir.



Automatic Transmission

The dipstick has different markings for hot and cold oil levels.

Check the oil level as follows:
Set the hand brake and run the engine for at least 15 seconds at idling speed with the range selection lever in the D position. Then at least 15 seconds in the R position and 15 seconds in the P position, whereupon the check is performed with the selector lever still in the P position (Engine running). Graduations are provided for cold oil (104°F, +40°C) and hot oil (194°F, +90°C). Note that at very low temperatures the oil level can therefore lie considerably under the level for cold oil which has been graded for oil at a temperature of 104° (+40°C). The difference between the minimum and maximum levels is 1 pint (0.5 litres).



NOTE! Do not confuse the engine and transmission drain plugs. A special wrench is required for the transmission plug.

B. Electrical System

BATTERY

The battery is one of the most important components in the car and must, therefore, be carefully maintained. The electrolyte should be level with the lower edge of the filler pipes. Top up as necessary using distilled water only.

In the case of cars that are equipped with a maintenance-free battery, the electrolyte level does not need checking.

WARNING! The battery contains diluted sulphuric acid which is highly corrosive. Should the acid come into contact with your eyes, skin or clothing, rinse immediately with water. Call a doctor if the acid gets in your eyes. Batteries that are being charged or are fully charged give off flammable hydrogen gas.

The battery charge should be checked at regular intervals. This is especially important during the winter when the capacity drops due to low temperatures.

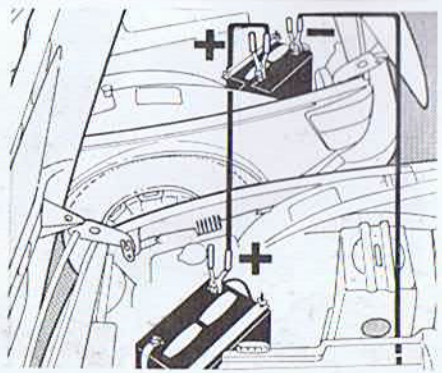
Never connect the battery cables to the wrong terminals.

BOOSTER CABLE CABLE CONNECTIONS

To start a vehicle with a discharged battery using a booster battery or another vehicle connect booster cables as follows:

A. Connect one booster cable from the positive (+) terminal of one battery to the positive (+) terminal of the other battery.
B. Connect one end of the second cable to the negative (–) terminal of the charged battery.
C. Connect the other end of the second cable to a solid, stationary metallic point on the engine of the car with the discharged battery (such as lifting ring on cylinder head).
D. Start engine of vehicle with discharged battery.
E. Remove booster cables by reversing the above procedure—Remove last negative (–) connection first.

Do not reverse the battery connections. If the cables are reversed, even momentarily, the alternator will be damaged. The insulated positive cable must be connected to the positive (+) post of the battery and the ground cable to the negative (–) post. The battery must not be disconnected from the car's electrical system while the engine is running.



ALTERNATOR

The alternator is located at the top of the engine near the firewall. It is driven by a V-belt from a pulley on the crankshaft. It is important that the V-belt be properly tensioned. If the belt is too slack, it can be tightened by loosening the screws and pressing the alternator outwards.

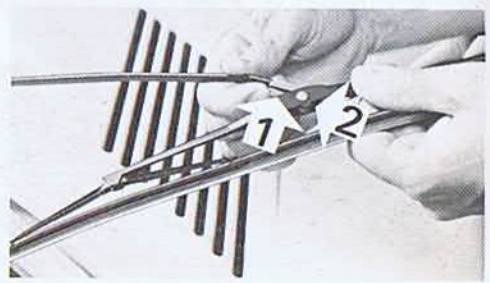
The belt should be tightened such that the center of the belt can be moved about one half inch (10-15 mm.)

WINDSHIELD WIPERS

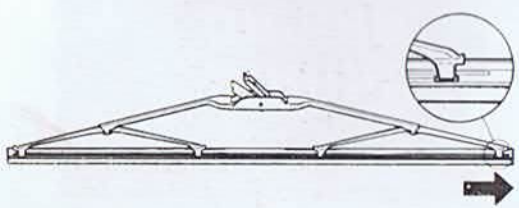
Inspect and clean the rubber blades of the windshield at regular intervals. Methyl Alcohol is recommended for cleaning. If the blades show signs of wear, they should be replaced. 400 mm. (16 in.) blades are specified.

Changing the Windshield Wiper Blades

Lift the wiper arm. Depress the plastic clip (1) and pull off the complete wiper blade (2) (see illustration).

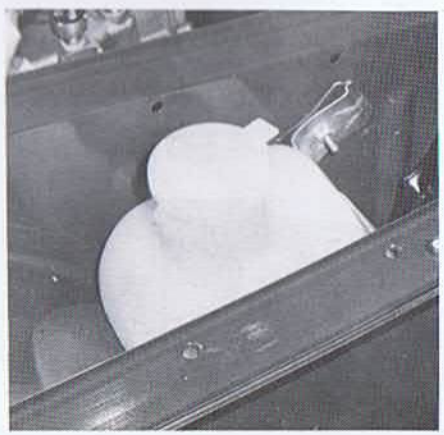


Free the rubber from the retainer (see illustration) by pressing together the two shiny metal pieces and twisting the rubber. The rubber can now be withdrawn through the other retainers. To fit the rubber, slide it through the four retainers and then tighten it so that the retainer at one end engages the recess in the blade rubber.



Washers

The reservoir holds 6.5 U.S. quarts. Fill up with washer fluid and water. The spray nozzles consist of rotatable balls; to adjust the direction of the jet, insert a needle in the hole of the nozzle.



HEADLIGHTS, BULB, FUSES

Headlights

The headlights are mounted in cradles and are provided with two adjustment screws which are accessible without removal of the headlight trim. The upper screw is used for vertical adjustment and the side screw for horizontal adjustment.

It is extremely important that the headlights be correctly adjusted to achieve the best possible lighting effect without any risk of blinding oncoming drivers.

All adjustments should be done by an authorized Saab dealer, according to specifications and/or applicable state laws.

Instrument Illumination, Control Illumination and Indicator Warning Lights

All the bulbs in the instrument assembly are mounted in bayonet fittings and are accessible from the back of the panel. The bulb for headlight switch illumination is located within the switch.

Changing Other Light Bulbs

Loosen the retaining screws and remove the glass. Change the bulb and check that the new one is securely in place and makes good contact. Wipe off the lamp assembly and replace the glass making sure that it fits tightly.

Fuses

The fuses are located in a fuse box with a transparent cover (retained by two thumb screws), located on the left in the engine compartment. Spare fuse holders are provided between the rows of fuses.

When a fuse has blown, the strip of metal running along the length of the fuse will have been burned through. When changing fuses, make sure that the new fuse has the same rating as the old one (see table). Fuses of the same rating have a common color. The rating is also marked on the fuse. Insert the fuse with the metal strip up.

If the same fuse blows repeatedly, take the car to an authorized Saab dealer and have the wiring and other electrical equipment checked.

No.	Function	Rating, Amperes
1	High beam, RH	8
2	High beam, LH	8
3	Low beam, RH	8
4	Low beam, LH	8
5	Radiator fan	25
6	Electric rear window defroster	16
7	Interior lighting	5
8	Fuel pump	16
9	Hazard warning flasher	8
10	Brake lights	8
11	Fan, air conditioning	8
12	Parking and tail light, RH	5
13	Parking and tail light, LH	5
14	Horn (and power windows)	16
15	Elec. side view mirrors	8
16	Electric heating, seat	16
17	Fan, heating and ventilation	25
18	Air conditioning	16
19	Warning lights	8
20	Direction indicators	8
21	Windshield wipers	8
22	Cornering lights	16

WIRING DIAGRAMS

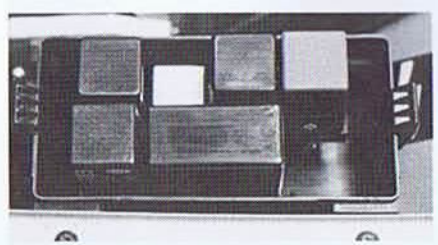
Wiring diagrams are given in the Saab 900 Service Manual, Section 3.

Relays

There are two relay panels located on the inner left front fender. Depending on equipment variations they may contain up to 16 relays.

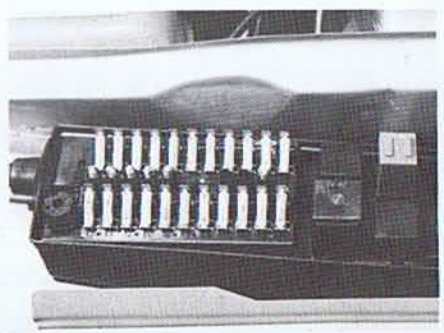
The front panel houses the following relays:

Position	Name	Part Number
A	Blank	—
B-C	Accel. Enrichment Time relay	8575151
D	Accel. Enrichment Pulse Relay	8574618
E	Decel System Relay (Manuals)	8574899
F	Hot Start Pulse Relay	8568271
G	Cold/Hot Start Ground Relay	8533176
H	Engine Speed Relay (Turbo)	8578346



The following relays may be found in the rear panel which also contains electrical system fuses:

Position	Name	Part Number
A-B	Headlight Relay	8562100
C	Rear Window Def. Relay	8522310
D	Air conditioning Relay	8572190
E	Ignition Lock Relay	8572943
F-G	Fuel Pump/RPM Limiter Relay (Turbo)	8579484
G	Fuel Pump Relay (except turbo)	8539728
H	Blank	—
J	Cooling Fan (AC) Relay	8522310
K	Horn Relay	8522310



C. Steering and Brakes

BRAKES

The footbrake system is power-assisted, with the result that the force applied to the brake pedal is amplified on braking. However, this additional power is only available when the engine is running. Much greater pressure on the brake pedal will be needed to brake the car when the engine is switched off, for example, when the car is being towed.

There are two warning lights on the instrument panel, one for the handbrake and one for the footbrake. The handbrake warning light will glow when the brake is set. The footbrake warning light will glow when the fluid level in the brake fluid reservoir has dropped below the MIN mark. This may be an indication that there is a leakage in the system. Since the brakes operate on a dual-circuit system, each circuit operating on diagonally opposed wheels, only one circuit will be affected at a given time, and the car can be driven carefully with a reduced braking effect to an authorized Saab dealer.

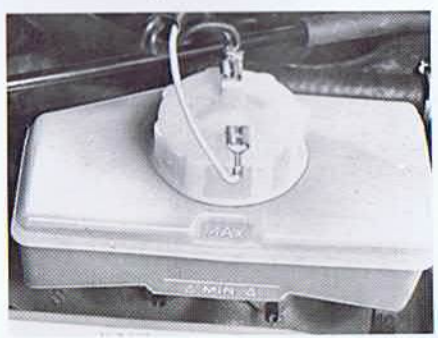
NOTE! If the brake pedal continues to move down under constant pressure or the car pulls to one side during braking or an abnormally loud or metallic noise is heard during braking see an authorized Saab dealer immediately to have the braking system inspected.

Both the footbrake and the handbrake are self-adjusting. It is therefore impossible to tell by the length of the pedal stroke whether the brake linings are worn out and need to be replaced. Consequently it is very important to check the thickness of the brake linings regularly as specified in the maintenance schedule.

NOTE! Brake pads should always be changed by an authorized Saab workshop. A special tool is required to turn back the parking brake automatic adjuster before new front brake pads can be installed. Fit only original Saab brake pads. Semi-metallic pads may be installed in the outboard front positions only.

Checking the Brake Fluid

The brake fluid reservoir (container) is transparent to facilitate checking of the fluid level. The level should be between the MAX and MIN marks. Use only recommended brake fluid.

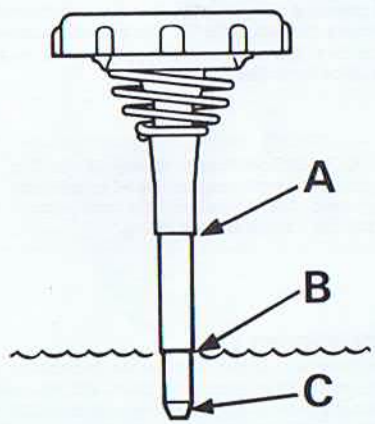


Over a period of time in use, the brake fluid will deteriorate, since it gradually absorbs water and oxidizes. It is therefore important that the fluid be changed as specified in the maintenance schedule. This work should be carried out by an authorized Saab dealer.

STEERING

All Saab 900's have rack and pinion type steering with power assist.

Check the fluid level in the servo reservoir regularly, with the engine off. The dipstick in the reservoir cap is graduated separately for cold and warm fluid. If the car has reached its normal running temperature, the fluid level should be between the marks for warm (A) and cold (B). If the fluid level is checked when the car is cold, the level should be between the cold fluid (B) mark and the tip of the dipstick (C). Top up with fluid labled "GM Power steering fluid". **DO NOT USE AUTOMATIC TRANSMISSION FLUID.**



D. Wheels and Tires.

A car's tires and wheels are components vital to motoring safety. The tubeless radial tires and wheels supplied with the Saab 900 have been specially selected for the different models and are major factors contributing to its exceptional roadholding and stability. Consult your Saab dealer before fitting nonstandard wheels or tires. See tire and wheel applications chart, Specificatons Section.

Tire Pressures

Check tire pressures regularly.

Adjust tire pressures to suit the load and speed normal for the car. See tire pressure table, Specifications Section. The recommended pressures are for tires when cold. Never reduce the pressure when the tire is warm. If tire pressures are checked when the tires are warm then the pressure should only be increased. Incorrect tires. See tire and wheel applications chart, Specifications Section.

NOTE! Do not forget to adjust the tire pressures if the load or speed is radically altered. Add 1.5 psi to light load value if the car has air conditioning.

Wear Indicators

The tires are fitted with wear indicators—a transverse strip (approx. 12mm, 0.5 in., wide) without a pattern appears when 1.6 mm (0.06 in.) of the tread remains. When this strip is visible the tire should be replaced.

Winter tires

The 185/65 SR15 standard steel-belted radial ply tires, if they have at least half their original tread depth, are also suitable for winter use in moderate climates where snow and ice are not too severe. The 900 Turbo 3-door model is equipped with wide profile tires which have been developed to give the greatest possible roadholding and stability under both wet and dry driving conditions with the result that the tread compounds and designs are not suitable for use on ice and snow. We therefore recommend winter tires or "all weather" tires for this model when driving on snow or ice. (See Winter Driving, Starting and Driving Section.)

Tire Rotation

The front-wheel drive causes the front tires to wear more than the rear tires. If it is desired to have the tires wear evenly, they should be exchanged front to rear after a certain period of driving so that the least worn tires are at the front. By switching the tires in this manner, the service life of all four tires will remain approximately equal. Make sure that the tires are always rotated in the same direction—the left front wheel should thus change place with the left rear wheel. Do not change radial tires side to side.

WHEEL CHANGING

The tool kit, jack and a compact type spare wheel are stored under a cover in the floor of the rear part of the luggage compartment.

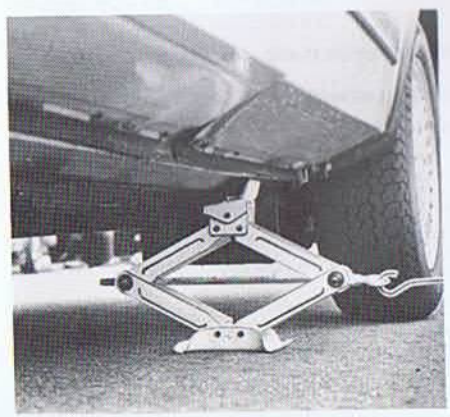
To jack up the car, install the jack in one of the jacking points (front or rear) located underneath the sill beams (see illustration).

If a garage jack is used, the lifting heads must be located under the reinforced parts of the underbody.

WARNING! Never crawl under the car when it is jacked up.

1. Apply the handbrake. Slide the jack into the attachment points and crank it down until it touches the ground.
2. To remove the hub cap, insert a screw-driver behind the cap and lever it off.
3. Back off the wheel nuts half a turn. Check that the jack has located properly against the flange on the sill beam and that the whole of the base is firmly in contact with the ground.
4. Jack up the car until the wheel is clear of the ground, then remove the wheel nuts and the wheel.
5. Mount the wheel and tighten the wheel nuts loosely. Check that the wheel and nuts are correctly positioned.
6. Lower the car. Tighten the wheel nuts in the order shown in the illustration below. Tighten to 65-80 ft. lbs. Never use an impact wrench for final tightening of wheel nuts. Carefuly observe the torque limit to avoid wheel damage.

NOTE! The original equipment road wheels are designed to be mounted using nuts with a conical seating surface. These nuts are suitable for mounting the compact spare. Certain accessory wheels available from Saab dealers require special shouldered nuts which do not fit the spare wheel. Purchase four conical nuts for the spare if the car is to be so equipped.



E. Specifications

GENERAL

Overall length incl bumpers	(4764mm)	187.6"
Overall width	(1690mm)	66.5"
Overall height (empty)	(1420mm)	55.9"
Road clearance (at curb weight)	(150mm)	6"
Track, front wheels	(1430mm)	56.3"
Track, rear wheels	(1440mm)	56.7"
Wheelbase	(2517mm)	99.1"
Turning radius	(5.6m)	220.5"

WEIGHT

Curb weight	2584-2859 lb.*
Gross vehicle weight rating	3600-3810 lb.*
Weight distribution,	
at curb weight	59-62% front
at gross vehicle weight rating	49-51% front
Trunk volume (SAE) Hatchback	14.9 cu. ft.
Hatchback, parcel shelf removed	19.1 cu. ft.
Sedan	14.2 cu. ft.
Vehicle capacity weight, five persons and 180 lb. luggage	(422 kg) 930 lb
Max roof rack load	(100 kg) 220 lb
Max trailer weight	
with trailer brakes	(900 kg) 2,000 lb
without trailer brakes	(450 kg) 1,000 lb
Max trailer tongue weight	(90 kg) 198 lb

*Weight variation depends on model, configuration and options.

ENGINE

Type	4 cyl. 4 stroke inline OHC with continuous fuel injection
Cylinder Bore	3.543"
Stroke	3.071"
Displacement	121 cu. in.
Order of Firing (Cylinder 1 nearest firewall)	1-3-4-2

Valve Clearance, Cold Engine:

Intake, all	(0.15-0.30mm)	0.006"-0.012"
Exhaust, Standard	(0.35-0.55mm)	0.014"-0.020"
Exhaust, Turbo	(0.40-0.50mm)	0.016"-0.020"

Ignition Advance Setting	20° BTDC @ 2000 RPM (vac. hose plugged)
Spark Plug gap	0.024-0.028"
Engine Idling Speed in Neutral (A.C. off)	875 ± 50 RPM

Aspiration	Turbocharged	Normally Aspirated
Engine Family Number	CSA2.0V6FTTX	CSA2.0V6FNT3
Power Rating, SAE Net HP @ RPM	135 @ 4800	110 @ 5250
Max. Torque at 3500 RPM	160 ft. lbs.	119 ft. lbs.
Compression Ratio	7.2:1	9.25:1
Dashpot Adjustment* (Automatic)	2200 ± 100 RPM	2500 ± 100 RPM
Decel Fuel Shutoff (Manual)	Activates above 1450 RPM, Throttle Closed; deactivates below 1250 RPM	
Oil Capacity Including Filter	4.5 U.S. qts.	4 U.S. qts.
Recommended Fuel (16.6 U.S. gal capacity)	Unleaded 87 (91 RON min.)	Unleaded 87 (91 RON min.)
Wastegate Setting**	0.5 ± 0.05 bar	N/A

*Adjust plunger to contact throttle lever with engine operating at above specification.
(Disconnect EGR on Turbocharged engines.)

**3000 RPM, engine under full load.

OIL VISCOSITY

Hot weather	SAE 10W40, API Service SE or SF
Normal . . (Alternate: SAE 10W30)	SAE 10W40, API Service SE or SF
Cold Weather below 0°F	SAE 5W20, API Service SE or SF

FUEL SYSTEM

Type	Bosch K-Jetronic (CIS)
Fuel Pump	Electric, in fuel tank
Fuel Tank: Capacity	16.6 U.S. gallons
Material	HDPE (High density polyethylene)

COOLING SYSTEM

NOTE! The Radiator air flow must not be blocked off.

Coolant volume incl. heating system ..... (10 liters) 10.5 U.S. qts., 8.8 Imperial qts.

Thermostat opens at ..... (88°C) ..... 190°F

Anti-freeze .....Ethylene glycol, with aluminum corrosion protection properties, 50-70% mixed with water

DRIVE BELTS

	Saab		Gates		Dayco
Waterpump-Alternator	83 84 927	.....	8210	.....	15390
Power Steering	93 39 409	.....	8216	.....	15495
Air Conditioning	93 44 623	.....	8256	.....	17470

MANUAL TRANSMISSION

Type ..... 5 speed, all synchromesh with final drive and differential

Oil capacity ..... (2.5 liters) ..... 3 U.S. qts.

Oil Specifications ..... SAE 10W30 (Service SE acc. to API)

Hydraulic clutch ..... Single dry plate with spring-loaded hub

Gear ratios total (includes primary and final ratios):	5-Speed
1st gear	13.97:1
2nd gear	7.89:1
3rd gear	5.30:1
4th gear	3.82:1
5th gear	3.08:1
Reverse	15.34:1

Recommended Shift Points For Economical Driving

Gear Change	5 Speed 900, 900S Speed	5 Speed Turbo Speed	High Altitude Driving (All) Speed
1st to 2nd	12 mph	15 mph	18 mph
2nd to 3rd	22 mph	25 mph	28 mph
3rd to 4th	30 mph	40 mph	43 mph
4th to 5th	40 mph	45 mph	48 mph

AUTOMATIC TRANSMISSION

Type ..... 3-speed with torque converter, final drive and differential

Selector positions P-R-N-D-2-1

Oil volume, automatic transmission ..... 8.5 U.S. qts, 7.2 Imperial qts. (8.0 liters)

Grade of oil for automatic transmission fluid ..... Type "F" (M2C33F)

Oil Volume, final drive (1.25 liters) 1.3 U.S. qts., 1.1 Imperial Qts.

Grade of oil for final drive ..... EP oil SAE 80 in accordance with API-GL-5, or GL-4

Primary gear ratio: Normally aspirated 0.97:1
Turbocharged 0.878:1

Gear ratios (transmission):
1st gear 2.39:1
2nd gear 1.45:1
3rd gear 1:1
Reverse gear 2.09:1

Final Drive ratio 3.89:1

BRAKE SYSTEM

Make ..... Girling & A.T.E.

Footbrake ..... Hydraulic disc brakes with power assist, two circuit system serving diagonally opposed pairs of wheels.

Brake and clutch fluid ..... DOT 4 Brake fluid

Disc diameter:
Front ..... (280mm) ..... 11.02"
Rear ..... (269.5mm) ..... 10.63"

Swept areas:
Front wheels ..... (1432cm²) ..... 222 in.²
Rear wheels ..... (1095cm²) ..... 170 in.²
Total ..... (2527cm²) ..... 392 in.²

Handbrake .....Mechanical, acting on front discs

Brake pads ..... Use original equipment type; semi-metallics pads are only to be fitted at the outer front positions.

SUSPENSION

Suspension elements, front and rear ..... Coil springs

Total spring compression/elongation:
Front ..... (180mm) ..... 7.1"
Rear ..... (170mm) ..... 6.7"

Shock absorbers:
Type ..... Hydraulic, telescopic (900S, Turbo—Gas pressure)

Maximum working stroke, fitted to car:
Front ..... (96mm) ..... 3.8"
Rear ..... (158mm) ..... 6.2"

Steering:
Steering gear ..... Rack and pinion

Wheel turns, lock to lock:
Power steering 3.65

Oil specification, Power Steering ..... GM Power steering fluid

WHEELS AND TIRES

Wheel sizes:

Saab 900: ..... 5½ J x 15 CH (steel)
Saab 900S and Turbo: ..... 5½ J x 15 H2 (aluminum alloy)
Spare wheel (All): ..... 4 J H1 x 15"

Tire dimensions:

ALL 900 (except Turbo 3-Dr.) ..... 185/65 SR 15
900 Turbo 3-Dr. ..... 195/60 HR 15
Compact Spare T115/70 D15

TIRE PRESSURE (cold tires)

Tire Size	Recommended Pressure Light Load Ft./Rear	Max. Load Ft./Rear
185/65 SR 15	27/29	30/32
195/60 HR 15	27/29	30/32
Compact Spare (All)		60 PSI

Check tire pressure with cold tires.

Front Wheel Alignment:

Toe-in (measured at rims) ..... (2 ± 1mm) ... 0.08 ± 0.04 in.
Camber ..... ½° ± ½°
Caster ..... 2° ± ½°

ELECTRICAL SYSTEM

Voltage 12V
Battery capacity 60AH
Starter capacity ..... 1.1 HP
Alternator, max. charging current/voltage 72 Amps/14V

Spark Plugs:
Type ..... NGK-BP 6ES; Champion N8Y; Bosch W175 T30;

Thread M14
Thread Length ..... (8mm) ..... 0.7"
Electrode gap ..... (0.6mm-0.7mm) ... 0.024"-0.028"
Fuses and relays ..... See Technical Information Section, Electrical System.

Light Bulbs:	Power	SAE Trade No.	Quantity
Headlights high/low beam	65/55W	6052	2
Optional halogen headlights	65/55W	H-6052	2
Front direction indicators/sidemarker	21/5W	1157	2
Rear direction indicators	21/5W	1157	2
Cornering lamps/parking lights	21/5W	1157	2
Rear lights	5W	67	2
Brake lights	21W	1156	4
Back-up lights	21W	1156	2
Side back-up lights	21W	1156	2
License plate light	5W	*	2
Interior lighting:			
Dome	10W	*	1
Rear-view mirror	5W		1
Glove compartment	5W		1
Luggage compartment	10W	*	1
Switch lighting:			
Light switch	1.2W	**	1
Hazard warning flashers	1.2W	**	1
Electrically heated rear window	1.2W	**	1
Control lights:			
Charging	2W	**	1
Oil pressure	1.2W	**	1
Brakes	1.2W	**	1
Direction indicators	1.2W	**	2
Electrically heated rear window	1.2W	**	1
High beam	1.2W	**	1
Handbrake	1.2W	**	1
Seat belts	1.2W	**	1
Fuel tank	1.2W	**	1
Other lighting:			
Instruments	3W	161	2
Ignition switch	2W	53	1
Heating and ventilation control	1.2W	**	1
Cigarette lighter	1.2W	**	1
Ashtray	1.2W	**	1

* Cartridge bulb

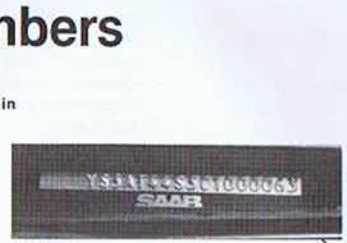
** Glass fitting

TOOL KIT

Jack with crank handle
Tool kit comprising:
- Combination pliers
- Philips screwdriver
- Screwdriver
- Socket wrench for wheel nuts
- Socket wrench for spark plugs
- Socket screw key for removing and installing front passenger seat.

F. Identification Numbers

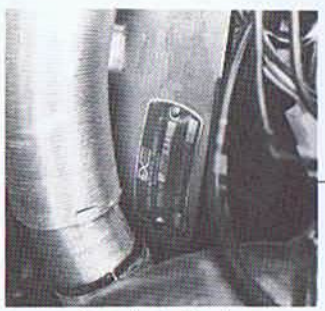
Please quote the vehicle identification numbers (V.I.N.) in all correspondence concerning your vehicle



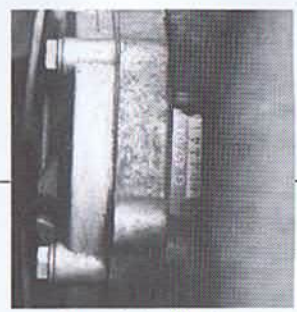
Vehicle identification Number (V.I.N.)

Color Code

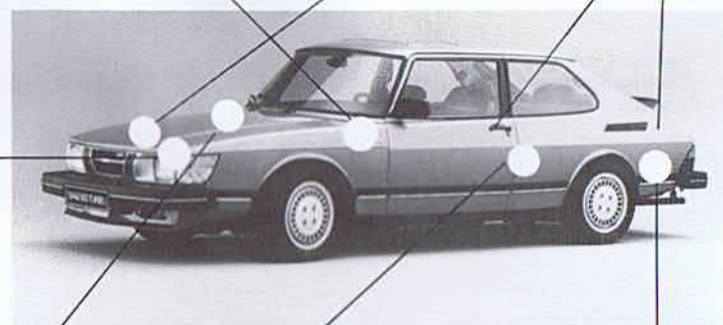
Trim Code



Transmission Number, Automatic Transmission

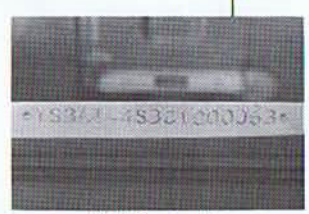


Transmission Number, Manual Transmission



Engine Number

Vehicle identification Number (V.I.N.)



V.I.N. Punched in Car Body

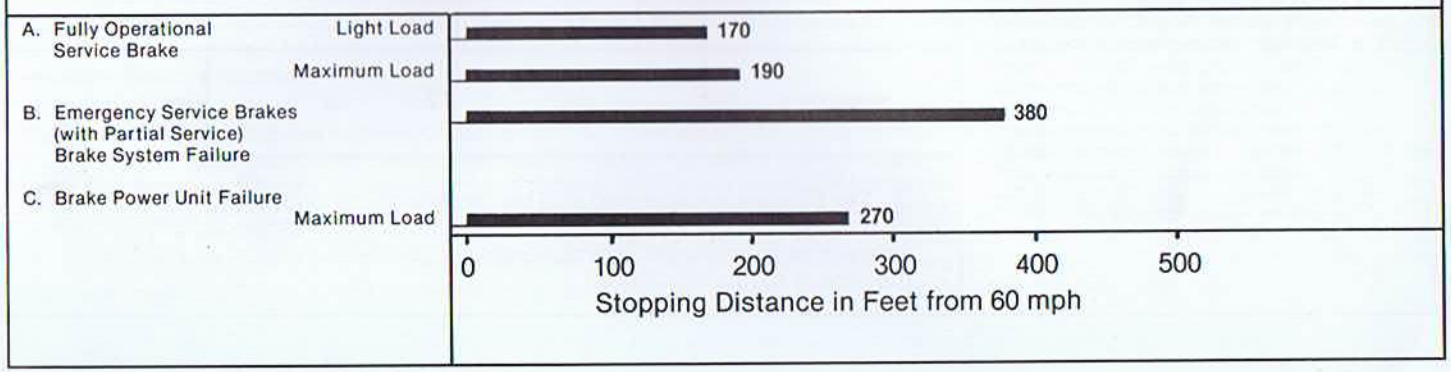
G. Consumer Information

The following information is provided in accordance with the requirements of the Code of Federal Regulations, Part 575—Consumer Information as it pertains to Saab automobiles. Procedures established by the National Highway Traffic Safety Administration are used in conducting the tests and the information may be used for comparison with other makes.

Vehicle Stopping Distance

This figure indicates braking performance that can be met or exceeded by the vehicles to which it applied under different conditions of loading and with partial failures of the braking system. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

This table applies to all 1982 Saab 900 models.



Tire Reserve Load

Refer to the Tire Information Label on the left side vehicle doorpost to determine the tire size that your vehicle is equipped with.

This table lists the tire size designations recommended by Saab for use on the vehicles to which it applies, with the recommended inflation pressure for maximum loading and the tire reserve load for each of the tires listed. The tire reserve load indicated is met by each vehicle to which this table applies.

This table applies to all 1982 Saab 900 models

WARNING: Failure to maintain the recommended tire inflation pressure or to increase tire pressure as recommended when operating at maximum loaded vehicle weight, or loading the vehicle beyond the capacities specified on the tire information placard affixed to the vehicle, may result in unsafe operating conditions due to premature tire failure, unfavorable handling characteristics, and excessive tire wear. The tire reserve load percentage is a measure of tire capacity, not of vehicle capacity. Loading beyond the specified vehicle capacity may result in failure of other vehicle components.

RECOMMENDED TIRE SIZE DESIGNATIONS	RECOMMENDED COLD INFLATION PRESSURE FOR MAXIMUM LOADED VEHICLE WEIGHT		TIRE RESERVE LOAD PERCENTAGE*
	FRONT	REAR	
195/60 HR 15	30	32	18.4% (3-Dr.)
185/65 SR 15	30	32	19.3% (3-Dr.)
			17.1% (4-Dr.)

* The difference, expressed as a percentage of tire load rating, between (a) the load rating of a tire at the vehicle manufacturer's recommended inflation pressure at maximum loaded vehicle weight and (b) the load imposed upon the tire by the vehicle at that condition.

Tire Quality Grading

Radial tires manufactured after Oct. 1, 1980 must be graded and labeled in accordance with new Federal regulations. Standard tests are conducted to measure performance in the areas of treadwear, traction and temperature resistance. Refer to the tire sidewall for the specific quality grades of the tires provided on your new Saab. Compact spare tires are exempt.

DOT QUALITY GRADES
TREADWEAR
TRACTION ABC
TEMPERATURE ABC

ALL PASSENGER CAR TIRES MUST CONFORM TO FEDERAL SAFETY REQUIREMENTS IN ADDITION TO THESE GRADES.

TREADWEAR
The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one half (1½) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices, and differences in road characteristics and climate.

TRACTION
The traction grades, from highest to lowest, are A, B, C, and they represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. *Warning:* The traction grade assigned to this tire is based on braking (straightahead) traction tests and does not include cornering (turning) traction.

TEMPERATURE
The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. *Warning:* The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

III. SERVICE AND MAINTENANCE

The 1982 Saab 900 is covered by the following warranties:

- Limited 12 months/Unlimited Mileage Vehicle Warranty.
- 3 Year Corrosion Perforation Warranty.
- Federal (or California, as applicable) Vehicle Emission Control Warranty.
- Federal Emission Performance Warranty.

Detailed warranty information can be found in the Saab 900 Warranties/Service Record Booklet which accompanies this Owner's Manual. The booklet, if lost or misplaced, may be ordered through a Saab dealer or may be obtained by calling the nearest regional office of Saab-Scania of America, Inc. The September, 1981 edition of the booklet has Saab order No. 0291278.

A. Scheduled Maintenance

MAINTENANCE SCHEDULE

The Maintenance Schedule prescribes a program of instructions to the purchaser/operator of a 1982 Saab for maintenance which is reasonable and necessary to ensure the proper function, durability, and safety of the Saab automobile in normal use. The Schedule is divided into two parts: Emission System Maintenance and Vehicle Maintenance. The **Emission System Maintenance** instructions specify operations to ensure proper and safe function of Saab emission control systems throughout the useful life of the automobile. Additional maintenance is specified for certain components when operated under certain severe conditions. **Maintenance, replacement, or repair of the emission control devices and systems may be performed by any automotive repair establishment or individual using any automotive part which has been certified according to U.S. EPA regulations governing voluntary aftermarket part self-certification.** The **Vehicle Maintenance Instructions** are specified to ensure proper and safe functioning of the Saab automobile and its subsystems.

Note to California Residents Only: The Emission System Maintenance schedule is divided into two parts: Required Maintenance and Recommended Maintenance. This is done in compliance with provisions set forth by the California Emission Control System Warranty Regulations and applies to California purchasers/operators only. However, it is suggested that according to the applicable California regulations, "required maintenance" is that which must be performed to be eligible for coverage under the California Emission Control System Warranty. In not performing "recommended maintenance" California Emission Control System Warranty rights are in no way invalidated. Refer to the written warranty for further information pertaining to specific purchaser/operator rights and obligations.

NOTE! The Maintenance Schedule includes a break-in service at 1,000 miles. This important service will be done by your Saab dealer at no charge except for fluids and oil filter (which are to be paid for by the Saab owner). The car is equipped with a special break-in oil filter which must be changed at the break in service.

SERVICE RECORD RETENTION

Service coupons and record stubs are provided in the Saab 900 Warranties/Service Record booklet*. When scheduled services are performed your dealer will tear out the applicable coupon, check off the operations performed and enter it into the service file at the dealership. The servicing dealer's stamp, along with date and mileage at which the service was performed should be entered on the coupon stub which remains in your booklet. This is *your* permanent record that recommended maintenance has been performed. Authorized Saab dealers regularly receive up-to-date Service Manuals and bulletins from Saab-Scania of America, Inc. and are able, through their franchise agreement with Saab-Scania of America, Inc., to attend Saab service schools and purchase special tools and original equipment spare parts.

*Supplied when you purchased your new Saab.

IMPORTANT! It is advisable to retain receipts and, if possible, copies of shop work orders for all service and repair work, wherever performed.

EMISSION SYSTEMS MAINTENANCE PROGRAM

Required	Recommended	A. EMISSION SYSTEM MAINTENANCE	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
•		**Valve Clearance**—Check; if necessary adjust to specification (cold engine). Wash and blow clean oil separator in camshaft cover.	X			X—Every 15,000 miles.
•		**Engine Head Bolts and Manifolds**—Torque to specifications (including Turbocharger attachment bolts—Turbo).	X			
•		**Spark Plugs**—Replace and adjust gap to specification.				X—Every 30,000 miles. (1a.
•		**Air Cleaner Insert**—Replace.				X—Every 30,000 miles. (1b.
	•	**Fuel Filter**—Replace.				X—Every 30,000 miles. (1c.
	•	**Evaporative Emission Controlled Fuel System**—Check fuel filler cap, vent lines, canister, and connections for wear, deterioration and/or damage which could cause leakage. Tighten any loose connections and/or replace any leaking components.				X—At 60,000 miles or 48 mos. and every 12 mos. thereafter.

3

1. Under the following severe driving conditions, replace every 15,000 miles:
   a. Spark Plugs—Extensive idling, stop-and-go driving, towing, high speed driving, driving in cold climates over repeated short trips without sufficient engine warm-up.
   b. Air Cleaner—Dusty conditions.
   c. Fuel Filter—Dusty conditions or if clogged (accompanied by an increase in fuel pump operating noise level).
3. These columns refer to provisions of the California Emission Control System Warranty and apply only to residents of California.

3 Required	Recommended	A. EMISSION SYSTEM MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
	*	**Charcoal Canister**—Replace.				X—Every 60,000 miles.
	*	**Crankcase Ventilation**—Check connections and hoses. Tighten or replace as necessary.				X—At 60,000 miles or 48 mos. and every 12 mos. thereafter.
	*	**Secondary Ignition Wires**—Clean and inspect for cuts, burns, or abrasions. Replace any damaged wires.				X—At 30,000 miles. or 24 mos. and every 12 mos. thereafter.
	*	Check resistance of ignition wires and replace, if necessary.				X—At 60,000 miles.
	*	**Distributor Cap and Rotor**—Replace. Check and adjust ignition timing to spec.				X—Every 60,000 miles.
*		**Ignition System**—Check spark control system				X—Every 60,000 miles
*		**Oxygen Sensor**—Replace sensor [all] and check operation of enrichment microswitch [Turbo only]. (Reset service reminder lamp.)				X—Every 30,000 miles
*		**Oil and Oil Filter Change**—(NOTE: Standard engine-7500 mi/6 mos.; Turbo—5,000 mi/6 mos.)	X	X		(2.

2. Under severe operating conditions (dusty conditions, frequent trailer towing or mountain driving, extensive idling, stop-and-go driving, driving in cold climates over repeated short trips without sufficient engine warm-up), change every 5,000 miles or 4 months (Turbos-3750 miles or 4 months), whichever comes first.

3. These columns refer to provisions of the California Emission Control System Warranty and apply only to residents of California.

3 Required	Recommended	A. EMISSION SYSTEM MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
*		**Idle Speed**—Check idle speed and adjust to specification, if necessary.	X			X—At 60,000 miles (and whenever the vehicle is relocated for a prolonged period of operation at a different altitude).
*		**Deceleration System**—Check operation; adjust to specification, if necessary.	X			X—At 60,000 miles.
*		**EGR System**—Clean and inspect EGR valve and inlet pipe. Check the EGR system operation.				X—Every 60,000 miles.
	*	**Charging Pressure**—Check; adjust to specification, if necessary. Reseal with anti-tampering wire. [Turbo only]	X			X—Every 15,000 miles.
	*	**Overpressure Safety Switch**—Check operation. [Turbo only]				X—Every 15,000 miles.

3. These columns refer to provisions of the California Emission Control System Warranty and apply only to residents of California.

VEHICLE MAINTENANCE PROGRAM

B. VEHICLE MAINTENANCE	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
ENGINE				
V-Belts—Check; if necessary adjust tension or replace.	X			X—At 30,000 miles or 24 mos. and every 12 mos. thereafter.
Cooling System—Check hoses and connections for leaks. Tighten clamps or replace clamps or hoses if necessary. Check coolant level and anti-freeze content.	X	X		
Engine Coolant—Flush system and replace with approved mix.				X—At 30,000 miles or 24 mos. and every 15,000 miles or 12 months thereafter.
Fuel Injection System Safety Check—Inspect components, electrical cables, fuel hoses, and all connections for wear, damage, and/or deterioration. Tighten any loose connections and/or replace any damaged components.			X	
Exhaust System—Check for leakage and ensure that all fasteners and hangers are secure. Correct as necessary.	X	X		

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
MANUAL TRANSMISSION				
Gearbox Oil Level—Check;add as necessary		X		
Gearbox Oil—Change, clean magnetic drain plug. (Be careful not to confuse drain plugs for engine and gearbox.)	X			
AUTOMATIC TRANSMISSION				
Gearbox Oil Level—Check; add as necessary.		X		
Adjust automatic transmission gear selector control cable and retighten cover bolts under gearbox	X			
Differential Oil Level—Check; add as necessary. ...		X		
Differential Oil—Change	X			

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
ELECTRICAL SYSTEM				
Battery—Check electrolyte level (batteries with fill caps). Tighten cable terminals and coat with petroleum jelly.	X	X		
Functional Check—Headlights, stoplights, directional lights, warning flashers, back-up lights, indicator lights, buzzers, horn, rear defogger, electric mirrors (if equipped), power windows (if equipped), power door locks (if equipped), windshield wipers, heater fan. Correct as necessary.	X	X		
Headlights—Check for proper aiming; if necessary adjust (per State requirements as applicable).			X	
CHASSIS				
Suspension—Tighten bolts of rear axle crossbar and bolts which hold control arms to body (front) and spring links to body (rear).	X			
Toe-in—Check; if necessary adjust.		X		
Wheel Alignment—Measure, if necessary adjust camber, caster, toe-in.	X		X	
Upper and Lower Ball Joints and Tie-Rod Ends—Check both sides of vehicle for wear. Also check steering gear universal joint. Correct any unsafe condition.			X	

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000-Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
Shock Absorbers—Check rubber bushings; replace shock absorbers when dampening action is no longer effective.			X	
Tires—Check tire tread depth and replace when wear bars in tread appear.		X		
Power Steering Fluid—Check; add as necessary	X	X		
General Inspection—Check all suspension and steering components, exposed fuel lines, and brake components for damage due to road hazards or driving conditions. Replace any damaged components.		X		
Check rubber bellows for inner and outer drive shaft joints, and rubber boots for ball joints and tie-rod ends. Replace any damaged boots.	X	X		
Brake System—Check condition of brake lines and hoses, tightness of master cylinder, calipers, and screw caps. Correct as necessary.	X	X		
Check power brake vacuum servo hose and connections. Correct any vacuum leaks.		X		
Check function of hand brake.	X	X		

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Where "miles" or "months" are shown, perform at whichever limit is reached first. Every 7,500 Mi. (5,000- Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
Remove wheels and check brake pad thickness. Replace pads when lining thickness is less than ⅛ inch.		X		
Grease sliding surfaces of front brake caliper yokes (special grease required).			X	X—Repeat, if necessary, whenever brake pads are changed.
Check brake fluid level; if necessary replenish fluid in master cylinders for brake and clutch (manual trans.).	X	X		
Replace brake fluid and bleed system.				X—Every 30,000 miles or 24 months.
MISCELLANEOUS				
Change ventilation air filter (except 900 with A/C) .			X	
Lubricate sparingly the door stops and hinges, throttle control, and engine hood lock mechanism.			X	
Test drive vehicle and check overall condition, noting especially the function of brakes and clutch	X	X		
Free corrosion inspection (see terms of Corrosion Perforation Warranty)				12-14 months and 24-26 months after purchase.

B. General Information

ENGINE TROUBLE SHOOTING

1. **Engine will not start—starter cranks engine in normal manner**
   A. No fuel in tank.
   B. Fuel pump not running—blown fuse, corroded connections, faulty relay or disconnected lead wire.
   C. No spark at spark plugs.
      a. Loose electrical connections.
      b. Moisture or cracks in distributor cap.
   D. Engine flooded—spark plugs fouled with gasoline.

2. **Engine starts—runs rough, misfires, low power.**
   (Note: Misfiring should be corrected immediately to prevent overheating of the catalytic converter.)
   A. Spark plugs fouled, worn or in need of adjustment.
   B. Spark plug cables not properly plugged into distributor cap or onto spark plugs.
   C. Loose or corroded connections—low voltage leads to coil.
   D. Engine oil filler cap or dipstick not seated admitting excess air through crankcase vent system.
   E. Fuel injection system in need of adjustment.

3. **Stalling at idle, rough operation during engine warm-up and hesitation or lack of power on acceleration.**
   A. Unscheduled servicing of the Lambda Control system may be necesary. If so, this should be performed by a Saab dealer.
   B. Unscheduled servicing of the EGR system may be necessary. If so this should be performed by a Saab dealer.
   C. Decel fuel shut off system may require unscheduled servicing.

4. **Improper idle speed—too fast or too slow.**
   A. Idle speed air bleed adjustment incorrect or lock nut loose.
   B. Decel dashpot out of adjustment (fast idle).
   C. Idle air/fuel mixture out of specification.
   D. Throttle stop screw incorrectly set. (Note: Stop screw is for adjusting butterfly rest clearance and is not to be used for making idle speed adjustments.)
   E. Decel fuel shut off malfunctioning.
   F. Idle speed is affected by large changes in attitude (idle increases as elevation increases due to reduced ambient pressure and vice versa).

5. **Charge indicator lamp fails to light when ignition is switched on.**
   A. Bulb burned out.
   B. Discharged battery or loose battery cable.
   C. Improper wiring to voltage regulator causing an open circuit.

6. **Charge indicator lamp lights up with engine running.**
   A. Broken or slack alternator drive belt.
   B. Malfunction in voltage regulator.
   C. Malfunction in alternator.

7. **Discharged battery**
   A. Slipping alternator drive belt.
   B. Defective or worn out battery.
   C. Frequent use of high drain equipment, such as headlights, combined with short trips.
   D. Malfunction in voltage regulator or alternator.

8. **Oil pressure indicator lamp lights up with engine running.**
   A. Malfunction in engine lubrication system causing low oil pressure.
   B. Oil level in sump extremely low.

9. **EXH indicator lamp illuminates**
   Illuminates every 30,000 miles as a reminder to perform emission control system maintenance. Must be reset by dealer after service. This lamp does not indicate engine malfunction.

APPEARANCE CARE

Care of paintwork

To keep its gloss and finish, the paintwork needs proper care. If the paintwork is damaged, e.g. by a flying stone, the spot can be cleaned and covered with air-drying touch-up paint. Touch-up in the standard Saab colors can be purchased from your Saab dealer.

Washing

The car should be washed frequently. When it is new, it should be washed by hand using only cold water and a clean, soft brush attached to a hose. Automatic car washes should be avoided during the first few months. After five to six months the paintwork has hardened and to make washing easier, a car shampoo or mild washing-up liquid may be added to the water, which may be warm but not hot. Even the underbody should be washed regularly and special attention should be given to the wheel hous-

ings. This is particularly necessary when automatic car washes are used as these do not generally include washing of the underbody.

Never wash the car in strong sunlight, and always wipe it dry with a clean chamois leather if streaks on the paintwork are to be avoided.

Windows are best cleaned with a chamois leather or soft linen cloth moistened in water.

Polishing

The general rule is that synthetic enamel should not be polished until it is absolutely necessary. In any event, it should not be polished until it has aged properly, which takes five or six months. Never use a polish containing abrasive substances on a new car. Only after some years will this be necessary to remove oxide and other deposits. The paintwork must be thoroughly cleaned before being polished as otherwise it may be scratched.

A new car must not be waxed until the paintwork is at least five or six months old.

Maintenance of undercoating

In addition to its rustproofing properties, undercoating has an important soundproofing function. To preserve its effectiveness it should be regularly inspected and touched up if necessary. This applies particularly to the fenders and wheel housings, which are constantly exposed to abrasion by flying gravel, etc. If the composition has worn or flaked off, the steel must be thoroughly cleaned and dried before a fresh coat is applied. The cleaning is best done with a scraper and a steel wire brush, followed by washing with solvent. Apply the new coating thinly, as otherwise it may run off or fall off when dry.

Engine Compartment Cleaning

The engine compartment should be cleaned with an engine detergent and then hosed with hot water. Cover the distributor before washing the engine. If you use a high-pressure hose, avoid directing the jet straight onto the distributor, alternator, starter motor, voltage regulator, or brake master cylinder reservoir.

Care of Carpets

Textile carpets should be cleaned with a brush or sponge using carpet shampoo and then rinsed thoroughly with water. Stubborn grease or oil stains can be removed with a commercial solvent formulated for this purpose.

Should the trunk carpet become soiled or stained it may be more easily cleaned if removed from the car. The carpet is fastened to two plywood panels that make up the forward floor section and the tool compartment cover. To remove, tilt up the tool compartment cover, disconnect the two rubber hinges from their button-like fasteners and remove the cover from the car. Grasp the forward floor section with both hands and pull straight back to disengage the retaining clips. Lift floor out of trunk.

Care of Upholstery

The fabric upholstery may be effectively cleaned with a cloth moistened in soap solution. Use lukewarm water.

Grease and oil stains can be removed with a commercial solvent formulated for this purpose.

Wet stains such as oil or softdrinks should be dried up immediately with an absorbing paper or similar material. Then apply a stain remover.

Plastic surfaces can be easily cleaned with lukewarm water and a synthetic detergent. A semistiff brush may be used.

Seat belts

Clean the seat belts with mild soap and lukewarm water.

RUST PREVENTION

What causes rust?

Steel body panels of automobiles are subject to rusting whenever air and moisture manage to penetrate the protective finish, and body panels may rust through if the process is unchecked.

Rusting can occur wherever water is trapped or where the car's panels are continuously damp.

Damage to paint and undercoating by stones, gravel and minor accidents immediately exposes metal to air and moisture.

Road salts used for de-icing will collect on the bottom of the car and promote rusting.

Areas of the country with high humidity have great potential for rust problems, especially where salt is used on roads or there is moist sea air.

Industrial pollution (fall-out) may also damage paint and promote rusting.

Preventive maintenance

The following procedures are necessary to help protect against rusting. Refer also to the terms and conditions of the Corrosion Perforation Warranty described in the warranty booklet.

1. **Wash the car frequently, and wax at least twice a year.**
   Under adverse conditions, where there is a rapid build-up of dirt, sand or road salt, wash your car at least once a week. After extreme exposure to salted snow or slush, evidenced by a white film on the car, wash the car immediately.

A. Begin washing by rinsing the entire car with water to loosen and flush off heavy concentrations of dirt (include the underbody).
B. Sponge the car with a solution of either a good quality car soap or mild general purpose (dish washing) detergent and water.
C. Rinse car thoroughly with clean water.
D. After washing, check and clear all drains in doors and body panels.
E. Wipe the car dry, preferrably using a chamois.

2. Clean the underside of the car during the winter.
Use high pressure water to clean the car's underside (floor panels, wheel wells) at least at mid-winter and in the Spring.

3. Inspect the car frequently for leaks or damage, and arrange for needed repairs promptly.
After washing or after heavy rain, check for leaks. When washing the car inspect body surfaces for paint damage.
While checking for leaks, lift the floor mats and check beneath them. Water can collect in these areas and remain for prolonged periods. Dry any wet areas including the floor mats. Have leaks repaired as soon as possible.
Use touch-up paint to repair small scratches or minor finish damage. Areas where metal is exposed will rust quickly and MUST be repaired immediately by touch-up or professional repainting. Rust must be removed, the bare metal primed and painted. Major body damage should be repaired immediately and new panels or exposed areas should be undercoated with anti-corrosion material.
Repairs of this type are the owner's responsibility and are not covered under warranty.

OWNER ASSISTANCE

Flat towing

The 900 is equipped with towing lugs at the front and rear. Flat towing over long distances is not recommended. Check applicable state and local laws to determine if flat towing is permitted.

Proceed carefully and never exceed the speed limit applicable to vehicles in tow. Try to keep the tow-line taut to prevent sudden jerking. Remember that power-assisted braking does not function when the engine is switched off. Consequently, considerably greater force than usual will have to be applied to the brake pedal.

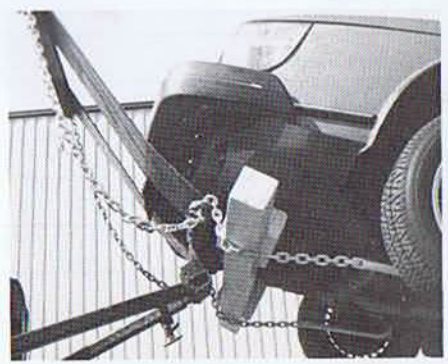
If a car with automatic transmission has to be towed, the following rules must be observed:
1. The selector must be at N.
2. The transmission case must be filled with oil to the correct level.
3. The maximum safe towing speed for cars with automatic transmission is 25 mph (40 km/h).
4. The maximum recommended towing distance is 25-30 miles (50 km). If the car has to be towed any greater distance, the front wheels must be lifted off the ground.
5. An engine with automatic transmisson cannot be started by towing or pushing.

Towing by Commercial Tow Truck.

Due to potential damage to the vehicle's transmission (manual and automatic), we recommend that this vehicle not be towed from the rear with the front wheels on the ground. If absolutely mandatory to tow the vehicle from the rear use a wheel dolly under the front wheels. Attach J-hooks to the rear axle, clear of the brake lines. Position the tow bar under the trunk floor. Attach safety chains to rear axle.

Proceed as follows to tow the vehicle from the front with a tow truck. Attach J-hooks to the lower control arms behind ball joints, placing 4" × 4" × 6' board crossways on the pan of the vehicle using spacer blocks to protect the lower body panel. Attach safety chains to the lower control arm.

WARNING! Never attach J-hooks or tow chains between the branches of the lower control arms or damage will result. Attach at outboard ends only, nearest ball joint.



Service Information

Service Manuals for Saab vehicles can be ordered through the dealer. The complete 900 Manual is comprised of ten paperbound sections in two ring-type binders. Sections may be ordered individually.

A list of authorized sales and service dealers is available from your local Saab dealer for those planning to travel in the United States and Canada.

Service problem assistance

The Warranties/Service Record booklet which accompanies this manual contains the new car and emission control system warranties and owner assistance information.

There is a Saab Consumer Relations Coordinator at each of Saab-Scania of America, Inc.'s three regional offices in the continental U.S. (Alaska is served by the Western Region. Puerto Rico is handled by an independent importer.)

Eastern Region:

P.O. Box 697
Orange, CT 06477
(203) 795-5671

Central Region:

10415 United Parkway
Schiller Park, IL 60176
(312) 671-4920

Western Region:

1225 East Artesia Blvd.
P.O. Box 6202
Carson, CA 90746
(213) 537-3901

NOTES

11-12-82 & 6875 miles-Remove Pirellis & Install Contis

3-10-83 & 12248 miles - Remove Contis & Install Pirellis (5473 miles on Contis)

11-18-83 & 23300 Miles - Remove Pirellis & Install Contis (17827 miles on Pirellis)

84/3/31 & 27900 Miles - Remove Contis & install Pirellis (10,073 miles on Contis)

9/15/84 32,500 miles at replaced front Pirelli Tires)

10/26/84 34,400 remove Pirellis and install Contis 24,328 on Pirellis

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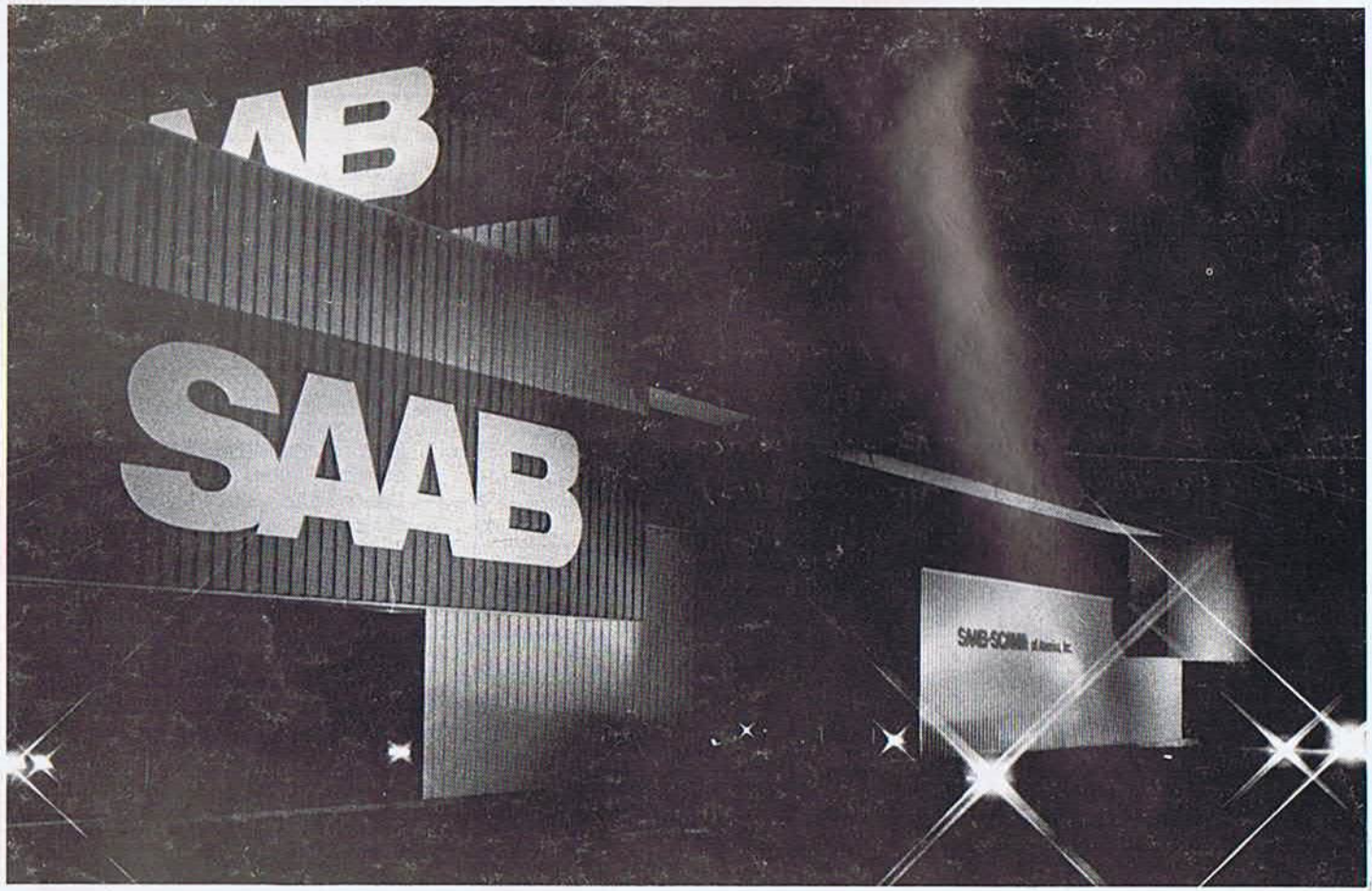
SAAB

AN INTRODUCTION TO SAAB-SCANIA

Saab automobiles are designed and manufactured by the Saab Car Division of Saab-Scania AB, one of Sweden's largest and most diversified companies. Saab-Scania's three other operating divisions produce diesel trucks and buses, specialized aircraft and aerospace products, and industrial fluid controls. Serving all of these divisions is Scandinavia's largest research and development organization for advanced technology.

Saab-Scania's automotive origins date back to 1897 when the first Swedish factory-built passenger car was produced by the company which was later to become the current Scania Division. In addition to its present mainstay, truck and bus production, the Scania Division has, since 1972, been responsible for development and manufacture of the modern 2.0 liter OHC four cylinder engine which powers the Saab 900 models. Scania's heavy duty vehicle experience contributed to the introduction of the award winning turbocharged version in 1977.

Manufacture of cars under the Saab name commenced in 1949 with the introduction of the Saab 92, the first in a succession of models renowned for their front wheel drive, innovative engineering and performance character. The main production plant for the current Saab 900 line is in Trollhättan, Sweden (near Gothenburg) where design, development and testing facilities are also located. For certain markets, Saabs are also assembled in Arlöv, Sweden; and Uusikaupunki, Finland. A modern, highly automated central spare parts warehouse serving Saab distributors worldwide is located in Nyköping (near Stockholm).

Importation and distribution of Saab automobiles and spare parts in the United States are handled exclusively by Saab-Scania of America, headquartered in Orange, Connecticut.

SAAB-SCANIA
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