Important operating, safety and maintenance instructions

1977

SAAB

owner's manual

SERVICE STATION INFORMATION

To open hood:	Pull hood release lever (located under left side of dash) Press the front edge of hood down slightly and release safety catch. Tilt hood forward. (CLOSE SLOWLY UNTIL SAFETY CATCH ENGAGES)
Recommended fuel:	BI 20PR Engines—Leaded or Unleaded, min 97 RON (93 AON)* BI 20CA Engines (catalyst equipped)—Unleaded, min 91 RON (87 AON)
Lubricants:	Engine oil: Hot weather SAE 10W40 Normal SAE 10W30, 10W40 Below 0°F SAE 5W20 Transmission: Manual—EP SAE 75, API-GL-5 Automatic—Type "F", (M2C, 33F) Final Drive: EP SAE 75, API-GL-4 or GL-5
Coolant:	Ethylene Glycol, permanent type MIL-E5559 or equivalent
Tire pressure:	Light load—27 PSI Front and Rear, Maximum Load 30 PSI Front and Rear
Tune-up information:	See V.E.C.I. decal, left front inner fender

CAUTION: The fuel injection system should be adjusted or disassembled only with the proper tools and according to prescribed procedures and only by qualified persons skilled in Bosch CIS servicing. Fuel lines must never be cut or spliced and all connections must be properly torqued on reassembly.

*If ignition timing is reset to an approved alternate specification, "Regular" (94 RON minimum) fuel may be used. For trailer towing use only "Premium" (97 RON). See your dealer.

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2. Combined direction indicator, headlight dimmer, and headlight flasher stalk
3. Horn control
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5. Zero button for trip meter
6. Speedometer, odometer, and trip meter
7. Clock adjustment button
8. Clock (optional tachometer/clock location)
9. Windshield wiper and washer control stalk
10. Defroster control for windshield and front side windows
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13. Headlight and parking light switch
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15. Rheostat for instrument and control illumination
16. Hazard warning switch
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24. Interior light switch
25. Handbrake lever
26. Ignition and gear selector lock
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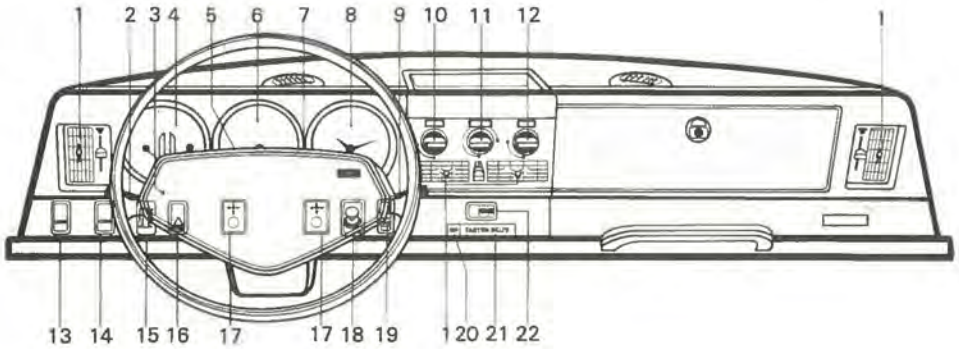
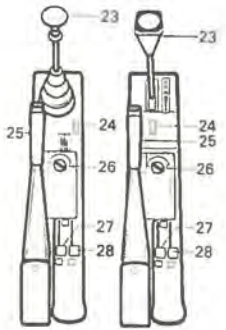




INSTRUMENTS

Combination Instrument. A fuel level gauge and coolant temperature gauge occupy the center of the instrument and are surrounded by the following warning indicator lights (clockwise from top).

Direction indicator light. A green flashing light appears in time with the direction indicator lamps.

LIGHT High beam warning light. A blue light is shown when the headlights are on high beam.

OIL Oil pressure warning light. Glows red to indicate dangerously low oil pressure. When starting, never drive the car until this light has gone out. If it lights up while you are driving, switch off the engine at once and investigate the cause.

FUEL Fuel warning light. Shows a steady amber glow when there are less than 2.5 U.S. gallons (10 liters) left in the tank.

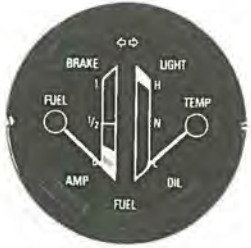
AMP Charge indicator light. If the light glows amber the alternator is not charging.

BRAKE Handbrake indicator and warning light. The light glows red when the handbrake is on or to indicate low pressure in one of the two brake line circuits. If the light illuminates during driving the reason should be investigated immediately and any necessary repairs carried out by an authorized Saab dealer.

Speedometer and Odometer. The zeroing button for the trip meter is located below the unit.

Clock. The setting button is located to the left of the clock.

Tachometer. Standard on EMS (includes clock).



Combination Instrument

Speedometer, Odometer and Tripmeter


Clock

Tachometer & Clock (EMS only)

IGNITION AND GEAR SELECTOR LOCK

The ignition and gear lock key also fits all other locks in the car. The key number is stamped into the plastic lug on the key ring. Detach and keep the lug so that the serial number is available if the key should be lost.

The ignition and gear lever lock has four positions: L—G—K—S

L— Lock Position. The gear selector lever must be placed in reverse position (manual transmission) or park (P) position (automatic transmission) before the key can be turned into the L position. In this way both the ignition and gear selector are locked simultaneously. Parking and hazard warning lamps may be activated.

G— Garage Position. All lights can be used.

K— Driving Position. The entire electrical system including ignition, is operative.

S— Starting Position. The switch is spring loaded to return to K position when key is released. On automatic transmission cars the starter motor can be operated ONLY when the gear selector lever is in the N or P positions.

Ignition Key on Console

NOTE! To ensure that the car is not left unlocked, a buzzer is activated if the left front door is opened with the key in the ignition lock.

LIGHTING AND ILLUMINATING SWITCHES

Headlights and Parking Lights

The rocker type switch has three positions: Top pushed in - off. Intermediate position—parking lights on (all positions of the ignition key). Bottom pushed in—headlights and parking lights on if the ignition key is in the G or K positions.

NOTE! The headlights and parking lights are automatically turned off if the ignition key is turned to the L position. The parking lights can be operated, however, if the switch is moved to the intermediate position.

Headlight Dimmer, High Beam Flasher, and Direction Indicator Control

The spring loaded lever is moved towards the steering wheel to switch from high beam or vice versa. The same action provides a warning high beam flash when the headlights are switched off. The direction indicator lights are operated by moving lever in the direction in which the steering wheel is turned. "Lane change" detents are provided.

Fog Lamps

Fog lamps are optional on the 99. They may be switched on with the parking lights or low beam of the headlamps. They are automatically switched off when the headlamps are switched to high beam. The switch is located to the right of the headlamp switch on the instrument panel.

Rheostat for Instrument and Control Illumination
Turn the knob downward to increase the intensity of the illumination. When the knob is in its uppermost position the light is off. This illumination can only be switched on when the parking lights or the headlights are in operation.

Combined headlight dimmer and flasher switch and direction indicator lever
1. High and low beam, headlight flasher. 2. Left direction indicator. 3. Right direction indicator.

Override Switch for Interior Lights (Console, Manual Transmission)

Door post lamp switch
1. Interior lights on when one of the doors is open. 2. Interior lights off. 3. Interior lights on, irrespective of whether the doors are open or closed.

Override Switch for Interior Lights (Console, Automatic Transmission)

Hazard Warning
When the rocker switch is in the on position all four direction indicator lights flash simultaneously. The warning system should only be used if the car is in a position where it is liable to endanger or obstruct other vehicles as a result of an accident, breakdown, etc. The switch flashes red when in use.

Interior Illumination
The interior illumination comprises three lights located: (1) above the left door post, (2) close to the rear view mirror, and (3) beside the ignition switch. This illumination is operated by the switch on the door post lamp. The switch has three positions (see illustration). The interior illumination may also be operated by means of a switch on the console between the front seats (see illustration). This switch can only be operated when the door post lamp switch is in the upper position (1).

NOTE! Be certain that the interior lights are switched off when parking the car.

HEATING AND VENTILATION CONTROLS

Air circulation in the passenger compartment is achieved by taking in fresh air through the heating and ventilation system and then expelling it through the louvers in the rear quarter panels.

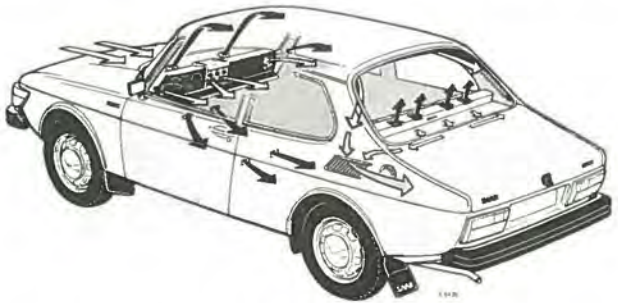


Diagram showing the heating and ventilation system

Fan

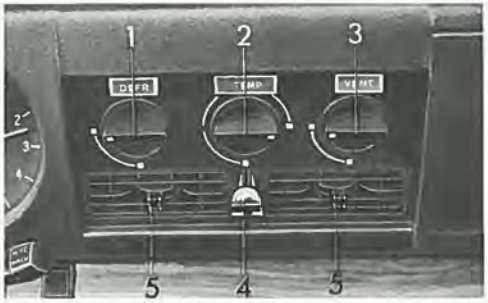
The air flow can be increased by the use of the fan. A three position rocker switch on the instrument panel controls a two speed fan.

Fresh Air Circulation Control

Fresh air vents are located at the middle and ends of the instrument panel. A slide control on the middle vent opens the vent when it is in the "down" position and closes it when in the "up" position. A slide control on each end vent opens the vent when it is in the "up" position and closes it when in the "down" position. The grilles on each vent are also adjustable as to flow direction.

Temperature Control

The temperature of the air from the heating system is set by means of the temperature control knob (TEMP). Maximum heat is obtained when the knob is turned fully clockwise to the red mark. To shut off the heater, turn the knob fully counterclockwise to the white mark. The heating effect can be increased by the two position lever at the left side of the ventilator fan housing above the firewall in the engine compartment. When the lever has been set to the "winter" position, the fresh air vents can also be used to supply warm air. NOTE: Since the valve shuts off the supply of fresh, outside air, it should be reset to the "summer" position in warm weather.



Controls for:

1. Windshield and front side window defroster
2. Thermostat regulated heat control
3. Air flow to floor area
4. Fresh air flow
5. Flow direction

Air Supply to the Windshield and Front Floor

The air flow to the windshield is regulated by the defroster (DEFR) knob. The air flow to the front floor is controlled by the ventilation

(VENT) knob. These controls are "on" when turned fully clockwise and are "off" when turned fully counterclockwise. Temperature of the air supplied by these controls is always regulated by the TEMP control setting.

Air Supply to the Rear Window and Rear Floor
Two slide levers located to the right of the handbrake lever between the front seats control the air flow to the rear of the passenger compartment. The controls are activated by sliding them rearward. Temperature of the air supplied is regulated by the TEMP control setting. GL 5-door models have an air flow duct to the rear floor only.

NOTE: Maximum windshield defrosting effect is obtained by turning the windshield defroster control and temperature control fully on and ascertaining that the rear window defogger is shut off.

Electrically Heated Rear Window
The rear window defroster grid is controlled by means of a rocker switch on the center of the instrument panel. A light behind the switch glows when the heating is on. Always switch the heating off as soon as the rear window is free from ice and mist. Avoid placing heavy objects on the parcel shelf as the heating wires may easily be damaged. Do not switch on the window heating before starting the engine.

AIR CONDITIONING (OPTIONAL)

Vehicles equipped with Saab air conditioning have two additional controls which are located in the center of the instrument panel. They are labeled AC Fan and AC Temp.

The AC Fan control is a four position switch which regulates the volume of air flow through the five adjustable outlets located along the lower edge of the instrument panel.

The AC Temp control is a rheostat type switch which is rotated clockwise to obtain the desired comfort level. When the AC unit is activated in a warm vehicle, it is suggested that this control be placed at the full clockwise position to obtain fastest cool down. After a comfortable temperature is obtained, rotate the control counterclockwise to maintain this level.

During the winter months in northern climates it is advisable to operate the AC unit occasionally for five to ten minutes to ensure proper internal lubrication of the compressor and prolong seal life.

Your AC unit should be inspected at regular intervals by a Saab dealer for proper freon charge, drivebelt tension, clutch operation, and compressor mounting plate torque.

WIPER AND WASHER CONTROLS

GL and EMS Models

The switch controlling the windshield wipers and washers has the following positions:

0—Off Position
1—Windshield Wipers, Spring Loaded Detent, Low Speed
2—Windshield Wipers, Low Speed, Constant
3—Windshield Wipers, High Speed, Constant
4—Windshield Washers

The windshield washers are operated for as long as the lever is pulled towards the steering wheel. If the lever is moved towards the steering wheel from the 0 position, it is possible to spray the windshield before the wipers are switched on.

GLE Models

Wiper and washer operation on GLE sedans incorporates an intermittent operation feature which is particularly desirable during periods of light drizzle where constant operation is not required.

The control lever has the following positions:

0—Off Position
1—Wipers, Intermittent Cycling
2—Wipers, Low Speed, Constant
3—Wipers, High Speed, Constant
4—Windshield Washers

In Position 0, the windshield washers will operate for as long as the control lever is pulled towards the steering wheel. The windshield wipers will automatically switch on at the same time, operate for a few strokes and stop. With the control lever in Positions 1 to 3 (wipers operating), the windshield washers will operate when the control lever is pulled towards the steering wheel.

Windshield Wiper and Washer Care

Inspect and clean the rubber blades of the windshield wipers at regular intervals. If they show signs of wear, they should be replaced. Soap and water is recommended for cleaning.

Use clean fluid for the washer and make sure that the container is free from dirt and the filter screen is in place while filling. Use suitable antifreeze in cold weather.

If the washer jets are blocked, the holes can be carefully cleaned and adjusted with a pin or similar tool. If the jets are out of alignment, the adjustable ball nozzles can be turned to the desired position.

GEAR SELECTOR LEVER

Four Speed Manual Transmission.
The gear positions are illustrated in the diagram below. To engage reverse, the collar on the gear lever must be pulled upwards.

Three Speed Automatic Transmission.
An illuminated scale beside the gear selector lever indicates the various positions by means of symbols.

P — Park
R — Reverse
N — Neutral
D — Drive
2 — 2nd gear
1 — 1st gear

The lever can be shifted freely between the N and the D positions. The other positions are blocked by a catch which is released by depressing the button in the center of the selector knob. The lever can, however, be shifted to D or N from Positions R, 2, or 1 without pressing down the button.

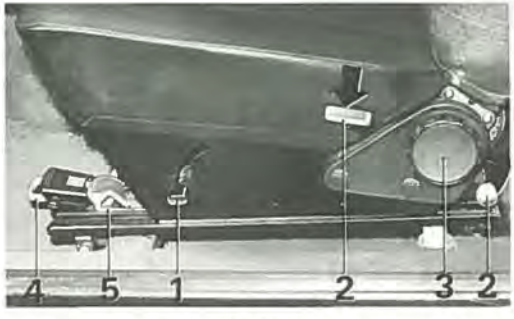
Gear positions, manual transmission

Gear selector lever, automatic transmission

SEATS

The backrest and cushion of the driver's seat have thermostat-controlled electric heating elements that warm up automatically when the ignition is switched on. The thermostat ensures that the heaters are switched on only when the seat is cold and switched off when the temperature exceeds 82°F. On the GLE the right front seat is also equipped with electrical heating. Both front seats are adjustable as to legroom, and the driver's seat can also be adjusted for height. The backrest angle is continuously adjustable from upright to reclining.

Legroom Adjustment
Release lever 1 (see illustration) and slide the seat to the desired position.



1. Legroom adjustment catch. 2. Backrest release (to drop backrest forward). 3. Backrest angle adjusting knob. 4. Vertical adjustment handle (driver's seat). 5. Latch.

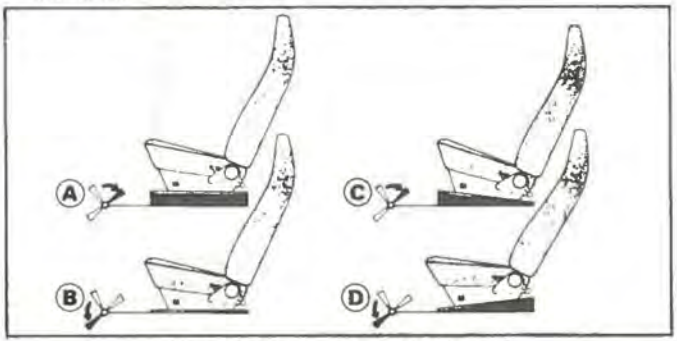
Moving the Backrest Forward (2- and 3-Door Models)
Move lever 2 and drop the backrest forward.

Backrest Angle Adjustment
The backrest angle can be infinitely adjusted between driving and resting position with knob 3.

Vertical Adjustment
The cushion of the driver's seat can be raised and lowered and also tilted to the front or rear. As the illustration shows, there are four possible positions.

Adjustments are made with the handle (see illustration) at the forward edge of the seat. Release the latch by pushing on the handle and moving it to the intermediate position. The seat can now be adjusted as follows:

A. Raised seat. Move the handle back without pressing down on the seat.
B. Lowered seat. Move the handle forward, pressing down on the seat.



Vertical adjustment of driver's seat

C. Seat tilted back. Move the handle back, pressing down on the seat.
D. Seat tilted forward. Move the handle forward without pressing down on the seat.

To Remove Driver's Seat
1. Disconnect the electric wiring (under the seat).
2. Release the seat by moving the handle 4 to the intermediate position.
3. Push back latch 5 and drop the backrest forward. Lift the seat by the forward edge, tip it backward and free it from its rear attachments. Install in the reverse order.

To Remove the Front Passenger Seat
Release the retaining screws from the seat rail using the special wrench provided in the tool kit. Disconnect the electric wiring under the seat (GLE) and it can then be lifted out.

REAR VIEW MIRRORS

The interior rear view mirror can be deflected to avoid glare by operation of the control button underneath it. The exterior mirrors are antiglare coated. The exterior rear view mirrors on the GLE are electrically adjustable by means of four way toggle controls located on each side of the steering wheel.

1. Day-Night Control Button

ASHTRAYS AND CIGARETTE LIGHTER

The slide out front ashtray is located underneath the central section of the instrument panel. The rear ashtrays are recessed into the back seat armrests. The cigarette lighter is located to the right of the steering wheel.

GLOVE COMPARTMENT

To lock the glove compartment, give the key a quarter turn counterclockwise. To open the compartment, turn the knob clockwise.

LUGGAGE AND CARGO SPACE (SEDAN)

When desired, the rear seat can be converted to extend the luggage/cargo compartment on all sedans and hatchback sedans.

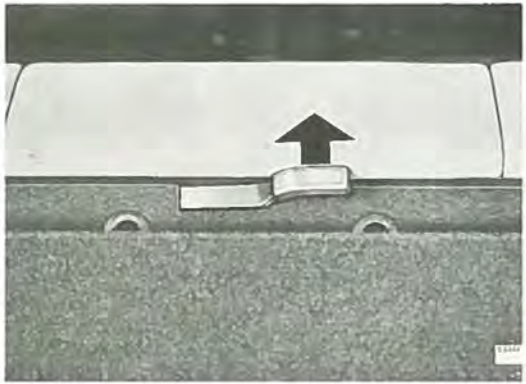
Release the seat latch and tip the seat cushion forward standing it on edge behind the front seats. In 2- and 3-door cars, the front edge of the seat must be lifted before it can be tipped forward.

Seat cushion latch,
2 and 3-door models

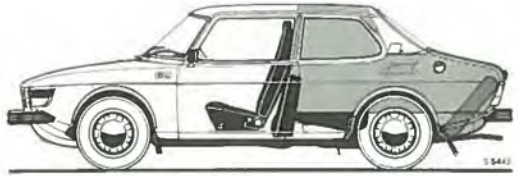
Seat cushion latch
4 and 5-door models

Next, release the backrest latch and drop the backrest forward. The parcel shelf in 3- and 5-door hatchback sedans can be removed and placed on the floor in the luggage compartment.

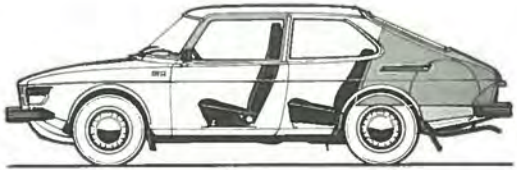
Rear Seat Backrest Latch
(Sedans)



Rear Seat Backrest Latch
(Hatchback Sedans)



Extended cargo space with back seat dropped (Sedans)



Cargo Space with package shelf removed
(Hatchback Sedans)

Extended cargo space with back seat dropped
(Hatchback Sedans)

DOORS

Two keys are supplied with the car. Both fit the ignition switch and all locks. The serial number of the key will be found engraved on a small plastic lug on the key ring. Keep the lug and make a note of the serial number in case the key is lost.

Both front side doors have lockable outside handles. These are locked and unlocked as follows:

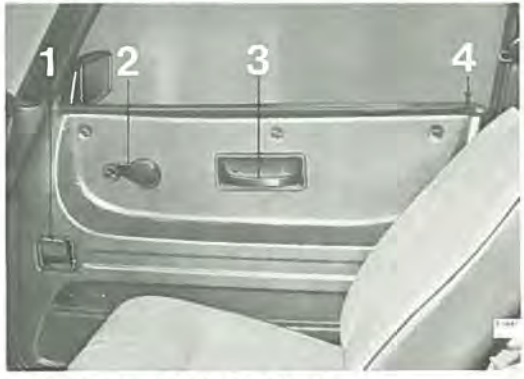
To Lock: Give the key a quarter turn rearward and let it spring back to the vertical position.

To Unlock: Give the key a quarter turn forward and let it spring back to the vertical position.

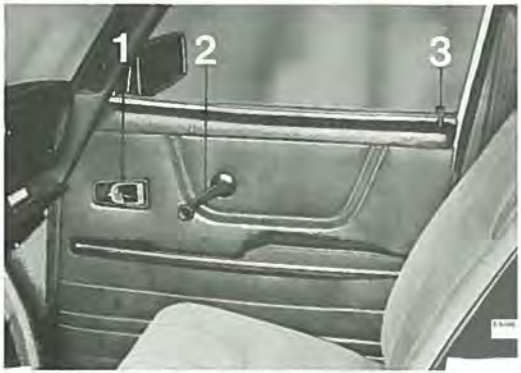
Exterior Front Door Lock,
Lefthand Door 1. unlock, 2. lock

All side doors are fitted with safety lock buttons with which they can be locked from the inside when closed. Lock buttons on front doors cannot be pushed down when the door is open.

Inside of door, (GL 2-Door)
1. Window crank.
2. Inside door handle.
3. Door lock button.



Inside of door, (EMS, GL 3-Door)
1. Inside door handle
2. Window crank
3. Door assist handle
4. Door lock button



Inside of door, (4 and 5-Door)
1. Inside door handle.
2. Window crank.
3. Door lock button

The rear doors of the 4- and 5-door models are provided with safety locks to prevent the doors from being unintentionally opened from the inside by children. When the lever is in the lower position (A), the doors can be opened from both inside and out, but when the lever is in the upper position (B), the door can only be opened from the outside.

TRUNK LID (SEDAN)

The trunk is locked and unlocked in the same way as the doors by means of the key lock centered in the handle.

1. Lock. 2. Unlock (Sedans)

REAR LID (HATCHBACK SEDANS)

The rear lid is unlatched by lifting up release lever A. The lid is locked or unlocked with the key lock on the right. An inside hand grip is provided to assist closing.

1. Unlock 2. Lock (Hatchback Sedans)

HOOD

The hood release handle is located under the instrument panel next to the inner left wheel housing.

To open the hood:

1. Pull the release handle under the instrument panel. The hood will then open to the half-locked position, retained by a safety catch at the leading edge.
2. Press the leading edge of the hood down slightly and push back the safety catch. The hood will then spring up and can be tilted without effort.

To close the hood:

1. Tilt hood rearward and down until the rollers make contact with the rear hood guides.
2. Press down slowly at the forward edge of the hood until the safety catch engages.
3. Press down firmly until the lock engages securely.

SEAT BELT RESTRAINT SYSTEM

Belt type restraints are provided at all seating positions for maximum comfort and safety of all occupants.

Driver and Front Seat Passenger

Each lap and shoulder restraint consists of a continuous belt, a latch stalk, and a locking retractor mechanism which allows passenger movement under normal circumstances and locks the belt in emergency deceleration situations.

To put the belt on, first grasp it near the shoulder belt guide loop and pull out a sufficient length of belt to reach the latch mechanism between the front seats. One section of the belt should now be lying over the hips and the other over the shoulder nearest the guide loop. Loop the belt around the latch bar as illustrated and press the bar down until it is latched securely in place. Pull up on the upper portion of the belt to take up any slack in the lap portion. The retractor mechanism will automatically adjust the shoulder portion. The belt is released by pressing the red button marked PRESS. The retractor will return the belt to its stored position.

When the belts are in use the retractor mechanism is normally unlocked. This allows freedom of movement for the restrained occupant automatically. The belt locking mechanism is activated by rapid belt motion and/or sudden vehicle deceleration. The vehicle motion sensor will cause the belts to lock during hard braking or when the vehicle is climbing or descending steep grades.

Looping Front Belt under Latchbar
1. Latchbar 2. Release button

Front Belt in the Latched Position;
upper part across chest,
lower part across hips

Rear Seat Passengers
Three lap belts are provided for rear seat passengers. The outboard belts are each equipped with an automatic retractor. The center belt must be adjusted manually.

Warning
1. **No alterations or additions should be made to this belt system.**
2. **The webbing must not be bleached or redyed.**
3. **Each belt is meant for one person only. The front belts must be used as a lap/shoulder restraint only. If in doubt on any matter concerning these belts or their use, please consult your dealer.**

Seat Belt Reminder System
Please see Section II—Starting and Driving for a complete description of this system.

II. STARTING AND DRIVING

BREAK IN

Every new car has a recommended break-in period. Saab owners are advised to drive with restraint for the first 1,000 miles of operation, avoiding heavy loads and high engine speeds, thus facilitating proper wearing in of the moving parts of the engine and drivetrain.

ECONOMICAL DRIVING

For maximum economy, the Saab 99, like any other car, needs to be driven moderately. Avoid unnecessary full throttle acceleration and high engine speeds, especially in the low gears.

Driving in congested areas and driving with a roof rack or trailer, all contribute to high fuel consumption.

Recommended shift points for economical driving are listed in the Specifications Section.

SEAT BELT REMINDER SYSTEM

This vehicle is equipped with a seat belt reminder system as required by Federal Motor Vehicle Safety Standard 208, Occupant Crash Protection. The purpose of this Standard is to reduce the number and severity of traffic accident injuries by promoting increased usage of seat belt systems. The vehicle may be started whether or not the seat belts are fastened. The audible buzzer of the seat belt reminder system is activated by the driver's seat and seat belt only.

The driver, upon entering the vehicle and turning the ignition key to the "start" position, activates the red reminder lamp on the instrument panel marked "Fasten Belts" for a period of four to eight seconds. If the driver's seat belt is fastened, no audible reminder will sound; however, if the belt is not fastened, a buzzer, located in the rear of the passenger compartment, will sound for four to eight seconds or until the belt is fastened, whichever occurs first.

It should be noted that if the driver's door of the vehicle is opened at any time while the key is in the ignition switch, a different buzzer, located under the dash panel, will sound for the period of time the door remains open, reminding the driver to remove the ignition key before leaving the vehicle.

STARTING PROCEDURE

1. Apply handbrake and place the gear selector in neutral (manual transmission) or either P or N (automatic transmission). NOTE: Cars with automatic transmissions can only be started in P or N.
2. Depress the clutch pedal (manual transmission).
3. Turn the key to "start" (S), letting it spring back to "drive" (K) when the engine starts. While starting do not crank the engine more than ten seconds at a time. Normally, it is not necessary to touch the accelerator pedal. If the engine is warm and the outdoor temperature is high, however, a slight depression of the accelerator pedal will assist starting. If the engine is cold it should be allowed to idle for a few seconds before driving off.

GEAR CHANGING

Manual Transmission

When shifting gears, release the clutch pedal smoothly and carefully. There are only two proper clutch positions for driving: Either out (pedal fully depressed) or in (pedal released). It is poor practice to drive with a slipping clutch or with the foot resting on the clutch pedal, as this causes heavy wear on the clutch assembly. When the car is standing still with the engine running, the gear lever should be in neutral and the clutch pedal released. In all shifts, move the lever gently but firmly and with a slight, barely perceptible, pause in neutral. The gear selector must be in reverse in order to remove the ignition key.

Automatic Transmission

The following basic rules for operation of the automatic transmission should be kept in mind:

1. Always press on the footbrake or have the handbrake on when shifting the selector lever if the car is at a standstill with the engine idling, otherwise, the car will start to move when a gear is selected.
2. The engine should be at idling speed when you shift the selector lever while the car is at a standstill. Racing the engine while shifting the lever will cause abnormal wear on the transmission mechanism. Similarly do not shift to R or P while the car is in motion.

Selecting Gears

There are six shift lever positions marked on the shift quadrant. Starting from the forward position, they are P — R — N — D — 2 — 1.

D— Drive (D) position is for normal driving. The transmission will automatically select the correct gear to match the vehicle speed and engine load.

2— This position permits the transmission to shift from first to second speed but locks out third or top gear. Position 2 may be selected at speeds below 55 mph for additional engine braking effect on deceleration or downhill operation.

1— Position 1 prevents the transmission from shifting above first gear. This gear may be used to obtain maximum engine braking on steep down grades. Do not engage this position above 12 mph. First gear should also be used in climbing very steep hills to avoid transmission overheating.

N— No gear is engaged. Vehicle will move on downgrades unless handbrake is applied. Starter may be operated in this position.

R— Reverse. Do not engage while vehicle is in motion.

P— Park (P) position is selected when parking the car. The lever must be in this position before the ignition key can be turned to the "lock" position and removed from the switch.

Driving Away

1. Shift the selector lever to the desired position (normally D for forward driving).
2. Release the brake and accelerate.

Kickdown

To obtain maximum acceleration it is possible to effect an instant downshift at speeds below 50 mph by pushing the accelerator pedal down to the kickdown position. Upshift to the next higher gear is automatic as soon as the engine reaches maximum RPM for the gear engaged or when the accelerator pedal is eased up.

CAUTIONS, CARS EQUIPPED WITH CATALYTIC CONVERTER

Use only unleaded fuel to preserve the efficiency of the catalyst. Keep the vehicle in proper operating condition by observance of the maintenance schedule outlined elsewhere in this manual.

Failure to do so will not only result in a loss of fuel economy but could also damage the catalytic converter.

Malfunctions involving fuel or ignition systems, resulting in misfire or loss of performance, may lead to overheating of the catalyst. Do not continue to operate your vehicle in this condition. Have it serviced by your Saab dealer as soon as possible.

Do not park, idle, or drive converter equipped cars in areas where dry grass or other combustible materials can come into contact with the hot exhaust and be ignited.

WINTER DRIVING

1. In the winter season it is advisable to occasionally use one quart of gasoline antifreeze (dry gas) to one tank full of gasoline. Gasoline antifreeze removes accumulated moisture from the fuel system. Condensation in the system is minimized by keeping the tank as full as possible.
2. Special antifreeze and lock lubricants are available to prevent door and trunk locks from freezing in damp, cold weather. If a lock cylinder should freeze, be careful not to damage the key when trying to open the lock. Thaw the ice by heating the key or lock.
3. Before driving in winter time, free possible frozen windshield wiper blades from the windshield glass. Remove any snow from the air intake for the passenger compartment at the rear edge of the front hood.
4. If snow tires are used, they should be mounted on all wheels. Studded tires (in states where permissible), if used, should also be mounted on both the front and rear wheels.
5. Tire chains (in states where permissible). Snap-on links should not be used due to space limitations, as they might damage the disc brakes. Ordinary snow chains can be used on both the front and rear wheels. Drive carefully, since chains may scrape against the body on large bumps or sharp turns.

DRIVING WITH A TRAILER

A special towing hitch is available as an optional accessory for the Saab 99. Bolt holes are already provided to facilitate mounting of the attachment.

It is inadvisable to hook an excessively heavy trailer to a car, and the following points should, therefore, be borne in mind:

1. Legal restrictions on towing speed, trailer weight, and trailer braking equipment in the state concerned must be complied with.
2. The weight limit of the trailer is 1000 lbs. for a trailer without brakes and 2000 lbs. for a trailer equipped with brakes. Tongue weight should be 5% to 7% of the trailer weight with a maximum permissible tongue weight of 200 lbs.
3. If the car has an automatic transmission, Position 1 should be selected for climbing steep grades in order to best utilize the torque available from the engine. The same applies for down gradients so as to obtain maximum engine braking effect.
4. When towing a trailer, avoid grades of 15% or more, as in such conditions the weight on the front driving wheels is so low that they may lose traction and stop the car. For the same reason, the handbrake effect may be so reduced that the car and trailer cannot be held stationary on very steep uphill grades by the handbrake alone without the wheels starting to slide. When driving with a trailer on very long hills, you can help the engine cooling by turning on the heater for a time and running the fan at full speed.
5. The load distribution in the trailer is most important. In a two-wheeled trailer the load should be placed low down and concentrated as much as possible over the wheels.
6. When driving with a trailer, always make allowance for the altered handling characteristics and longer stopping distance. The brakes, suspension, shock absorbing equipment, and light system of the trailer are very important in towing a trailer safely.

III. VEHICLE SYSTEMS

ENGINE

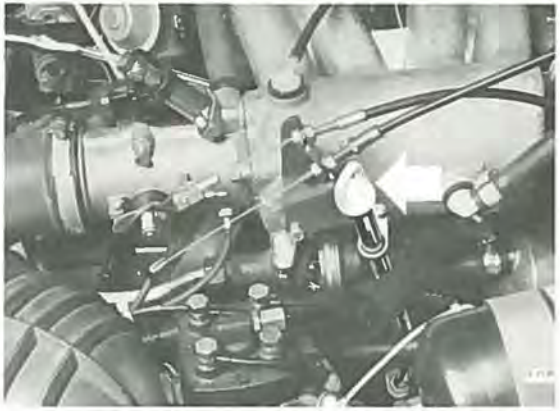
The car has a four cylinder, in-line, liquid cooled engine with overhead camshaft.

The cylinder block is canted 45° to the right and the cylinder head is of a cross-flow type; i.e., with inlet ports on one side and exhaust ports on the other. The crankshaft has five main bearings. A separate idler shaft drives the oil pump, water pump, and distributor through gears.

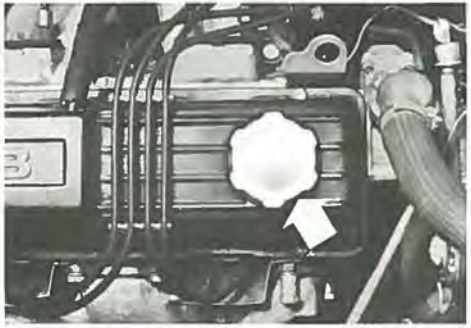
Engine Oil.
Check the oil level at regular intervals, after the engine has been stopped for at least one minute. Do not permit the level to fall below the lower mark on the dipstick, but do not fill beyond the upper mark as this will cause excessive oil consumption.

The distance between the upper and lower marks corresponds to a volume of approximately 1 U.S. quart (1 liter). Top up with oil of recommended grade as necessary. After checking the oil and topping up as necessary, push the dipstick all the way down and tighten the cap securely.

NOTE: Do not confuse the engine and transmission drain plugs. See illustrations under Transmissions for location of plug.



Oil dipstick, engine



Oil filler cap

COOLING SYSTEM

The cooling system is of a pressurized type with a cross-flow radiator and expansion tank.

Until the engine has reached its operating temperature, the radiator inlet is closed by a thermostat and the coolant circulates through the engine and the fresh air heater until it reaches the temperature at which the thermostat opens.

The radiator fan is electrically operated and is regulated by a thermostatic switch. The fan is only operative when the temperature of the radiator coolant is higher than the cut-in temperature of the thermostatic switch.

Air flow to the radiator must not be blocked off. The thermostat is designed to maintain correct coolant operating temperature under all climatic conditions.

NOTE: Always loosen the cap gently and allow steam to escape before taking the cap off. The coolant level in the expansion tank should be between half and full (cold engine) or full (warm engine).

Checking the Coolant Level.
Check regularly to make sure that the coolant is up to the recommended level. When necessary, top up with equal parts of clean water and coolant. (See Recommendations in Specifications Section.) After an empty expansion tank has been topped up, the engine should be run until warm and the tank topped up again, if necessary.

Changing Coolant

Draining
1. Set the heater control to maximum heat.
2. Loosen the pressure cap on the expansion tank (3). (See illustration.)
3. Open the radiator drain cock (13) which is located towards the bottom of the radiator on the left-hand side (see illustration).
4. Open the engine drain cock (14) located to the left of the engine, under the exhaust manifold (see illustration).

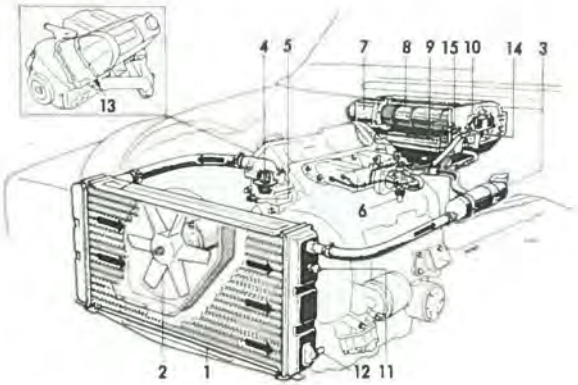
Filling
1. Close the drain cock and ensure that the heater control is set to maximum heat.
2. Fill the system with coolant until the expansion tank is filled. Replace cap.
3. Run the engine until warm, remove the pressure cap, and top up the expansion tank.
4. Switch off the engine and check coolant level in the expansion tank. The expansion tank should be between half and full (cold engine) or full (warm engine).

ANTIFREEZE COOLANT MIXTURES

Cars delivered from the Factory are filled with antifreeze coolant mixtures year round.

During cold weather the coolant must be mixed with antifreeze, as pure water is liable to freeze and burst the radiator and the cylinder block. Ethylene glycol is recommended as an antifreeze fluid. For maximum security against freezing and rusting, the glycol mix should be 40-50%. Use only glycol recommended. The antifreeze can be used all year round but should be changed every two years. If pure water is used during the summer season, a rust-proofing agent should be added.

NOTE: When antifreeze is added, it should be premixed with a suitable quantity of water, as full circulation cannot take place until the thermostat opens. If pure antifreeze is added, there is still a risk of the engine being damaged by ice if the antifreeze does not mix with the engine coolant quickly enough.



1. Radiator
2. Radiator fan
3. Expansion tank with pressure cap
4. Thermostat
5. Temperature transmitter
6. Coolant pump
7. Fan Motor
8. Impeller
9. Heater Core
10. Thermostatically controlled fan
11. Thermostat switch, radiator valve
12. Radiator drain cock
13. Engine drain cock
14. Air venting nipple
15. Fresh air control

FUEL SYSTEM

The engine is fitted with Bosch Continuous Fuel Injection (C. I. System). The fuel tank is placed underneath the car, between the rear wheels. The fuel lever transmitter is fitted in the top of the tank. The fuel pump is electric and is located inside the fuel tank. The fuel filter is located on the left hand side of the engine compartment. The fuel filter and the charcoal canister filter should be replaced at intervals given in the maintenance program. Only properly trained and equipped technicians should service the C. I. System.

Air Cleaner

The air cleaner is located on the left hand side of the engine. The replaceable cleaner insert should be changed in accordance with the maintenance schedule. Under dusty conditions the filter should be changed more frequently. The filter element is made of a special type of paper and must not be washed or moistened, although it may be carefully cleaned with low pressure compressed air. The air cleaner housing and cover should be wiped off from time to time.

ALTERNATOR

The alternator is driven by a V-belt from a pulley on the crankshaft. It is important that proper tension be maintained. If too slack, loosen the alternator retaining bolts and move the alternator to increase tension on the belt. Proper tension will be indicated when the belt can be depressed at a mid point approximately one half inch with finger pressure.

On cars equipped with air conditioning the AC compressor and the alternator are driven by a common belt. Adjustment is accomplished through movement of the alternator. Due to the greater length of this belt, it may stretch and loosen during the

break-in period. Occasional checking and readjustment to 90 lbs. tension, will prolong belt life.

BATTERY

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. If a booster battery is used for starting, it must be connected positive to positive and negative to negative (in parallel).

Disconnect the battery from the electrical system when using a **fast charger.** The battery is one of the most important components of the car and should be given the most careful attention. Check the electrolyte level at least once a month in winter and every two weeks in summer. It should be ¼" - 1/3" (6-8mm) above the tops of the cell plates. Top up as necessary using **distilled water only.**

You should check the state of charge from time to time. Grease the post screws and clamps with petroleum jelly to prevent oxidation, removing any old oxide deposits before applying the petroleum jelly. Check that the battery is securely retained and that the post clamps and ground connections are fully tightened.

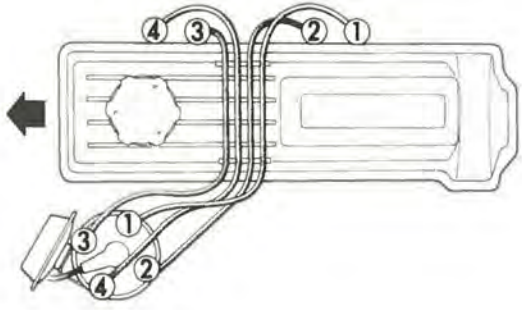
Avoid prolonged and heavy discharge of the battery. When making repeated attempts to start, give the battery a chance to "recover" between discharges.

SPARK PLUGS

The spark plugs have been carefully selected to obtain maximum power from the engine. The recommended types of plugs must be used. If the electrode gap is incorrect, the side electrode should be adjusted.

NOTE: If the spark plugs are removed, take care that no dirt enters the cylinders.

The order of firing is 1 — 3 — 4 — 2 (cylinder no. 1 is closest to the firewall).



EMISSION CONTROL SYSTEMS

Your 1977 Saab 99 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

1977 Saabs imported to North America are divided into two engine families 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.

1. BI 20PR—U.S.A. Federal Standards (certified for first sale below 4,000 feet above sea level).
2. BI 20CA—U.S.A. Federal Standards (certified for sale at all altitudes) and California State Standards.

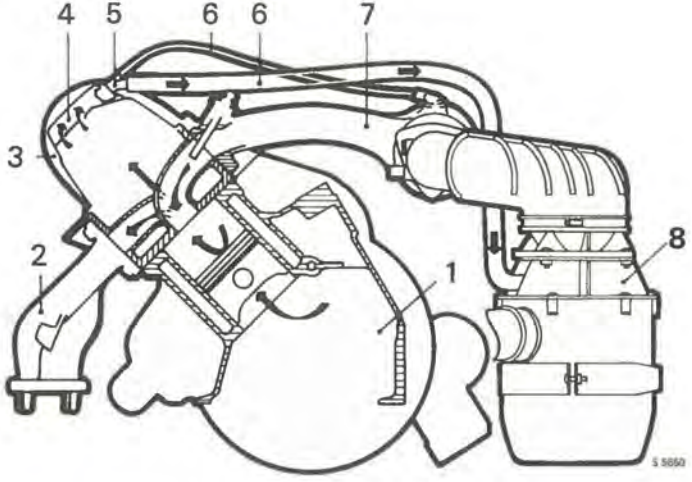
The engine families differ with respect to exhaust emission controls as follows:

System	Application
A. Continuous Injection System	All Families
B. Proportional Exhaust Gas Recirculation System	BI 20PR
C. Pulse Air Injection System	BI 20PR
D. Lambda Control System	BI 20CA
E. Three-way Catalyst	BI 20CA
F. Decel Valve	All Families

I. CRANKCASE EMISSION CONTROL SYSTEM

Application: All Engine Families

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. The oil separator in the valve cover also serves as a flame arrestor.

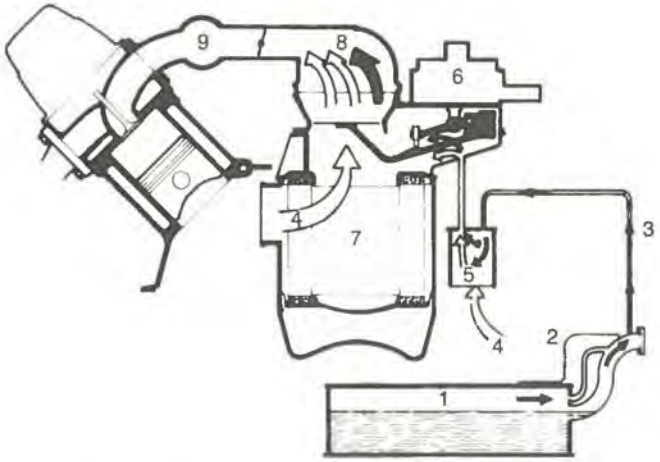


(1) Crankcase
(2) Exhaust Manifold
(3) Camshaft cover
(4) Oil trap and Flame arrestor
(5) Nipple with orifice
(6) Hose
(7) Inlet Manifold
(8) Air cleaner adapter

II. EVAPORATIVE EMISSION CONTROL SYSTEM

Application: All Engine Families

A sealed fuel system is used to prevent the emission of vapors from the stored gasoline supply. Evaporated fuel is vented from the fuel system to the charcoal canister which is connected to the engine air cleaner. The evaporated fuel is purged from the charcoal canister and burned by the engine when it is running.

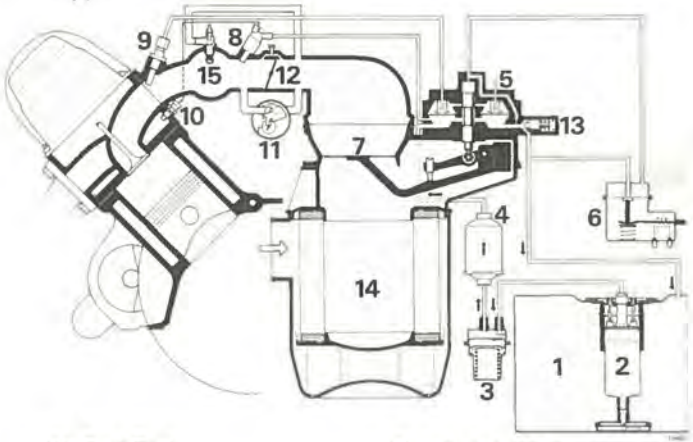


(1) Fuel Tank
(2) Fuel Tank Vent Lines
(3) Ventilation Line to Charcoal Canister
(4) Inlet Air
(5) Charcoal Canister
(6) Fuel Distributor
(7) Air Cleaner
(8) Inlet Air and Gas Vapors
(9) Inlet Vapors

III. EXHAUST EMISSION CONTROL SYSTEMS

A. CONTINUOUS INJECTION SYSTEM (All)

The C. I. System allows precise fuel metering which results in low baseline emissions while retaining good 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 combustion. The engine draws in more or less air depending on its speed and the load applied.

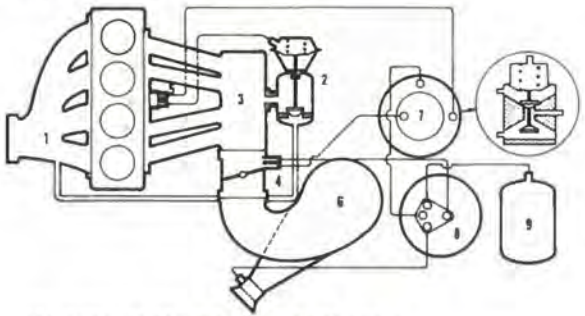


(1) Fuel Tank
(2) Fuel Pump
(3) Fuel Accumulator
(4) Fuel Filter
(5) Fuel Distributor
(6) Warm Up Regulator
(7) Air Flow Sensor Plate
(8) Cold Start Valve
(9) Injection Valve
(10) Thermo-Time Switch
(11) Auxiliary Air Valve
(12) Throttle Plate with Decel Valve
(13) Pressure Relief Valve
(14) Air Cleaner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

B. PROPORTIONAL EGR SYSTEM (BI 20PR)

Exhaust gas recirculation (EGR) is employed to reduce 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 exhaust manifold through a proportional valve controlled by an amplified intake venturi vacuum signal and are introduced in the intake manifold downstream of the throttle. A thermostatic valve delays system operation until the engine is warm. A diaphram valve cuts out system operation during acceleration.

A maintenance reminder lamp, labeled "EXH", on the instrument panel illuminates every 15,000 miles to indicate that EGR system inspection and cleaning is required. (After this service has been performed your dealer will reset the lamp actuating mechanism.)



(1) Exhaust Manifold (2) EGR Valve
(3) Inlet Manifold (4) Venturi Vacuum Signal Pick-up
(5) Vacuum Signal Thermostatic Valve (6) Air Horn
(7) Vacuum Signal Disconnect Diaphragm Valve
(8) Vacuum Amplifier (9) Vacuum Tank

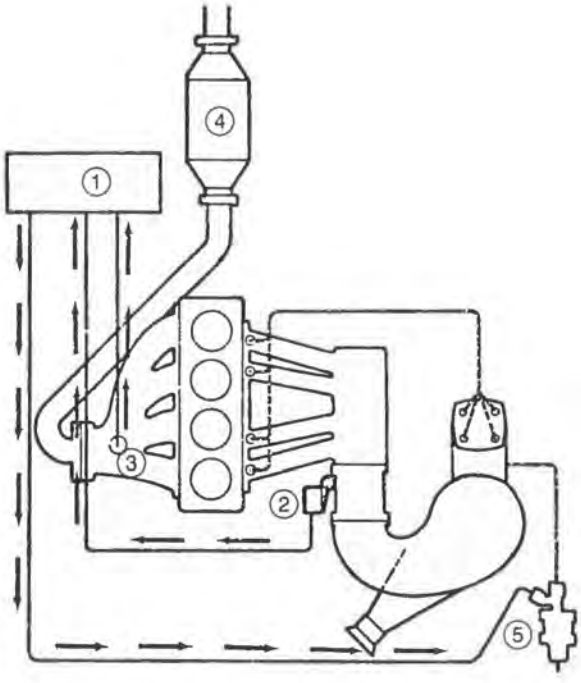
C. PULSE AIR INJECTION SYSTEM (BI 20PR)

Air injected at the exhaust ports is used to oxidize carbon monoxide and unburned hydrocarbons. Filtered air is drawn by exhaust pulsations through two check valves to the air injection nozzles.

D. LAMBDA CONTROL SYSTEM (BI 20CA)

Lambda Control System is a 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 three-way 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. 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. During engine warm-up and wide open throttle operation the modulating valve assumes a predetermined fixed position.

A maintenance reminder lamp, labeled "EXH", on the instrument panel illuminates every 15,000 miles to indicate that the oxygen sensor is scheduled for replacement. (After this service is performed your dealer will reset the lamp actuating mechanism.)



1. Electronic control unit
2. Wide open throttle switch
3. Oxygen sensor
4. Catalytic converter
5. Modulating valve

E. THREE-WAY CATALYST (BI 20CA)

The catalytic converter contains a special platinum and rhodium coated honeycomb 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.

F. DECEL VALVE (AII)

The decel valve is located in the intake manifold downstream of the throttle body. Air is metered around the throttle during initial deceleration to minimize incomplete combustion when the accelerator pedal is released.

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 section delivering power from the engine to the gearbox.

The car is supplied with either a 4-speed, all synchromesh manual transmission or a 3-speed, automatic transmission. See the Service and Maintenance Section for details of oil changing and oil level checking.

A special wrench is required for the transmission drain plugs. This is to avoid confusion between the engine and transmission drain plugs.

The automatic transmission has different graduations for hot and cold oil levels. Use the following procedure for checking the oil level:

1. Run the engine at idling speed with the selector in P position.
2. Check that the oil level is between the maximum and minimum marks on the dipstick. The distance between the marks is

equivalent to one U.S. quart of oil. Oil is refilled through the pipe in which the dipstick is located.

3. If the oil needs topping up, the engine must be idled again before the oil level is rechecked.

   Use a nylon rag, lint-free paper, or chamois leather to wipe off the dipstick. Do not use rags that may leave debris on the dipstick. The most scrupulous cleanliness must be observed during filling. In cars with manual transmission the clutch fluid container should be well filled with a recommended brake fluid.

4. The Saab 99 with manual transmission is equipped with a self-adjusting clutch release bearing requiring no regular maintenance.

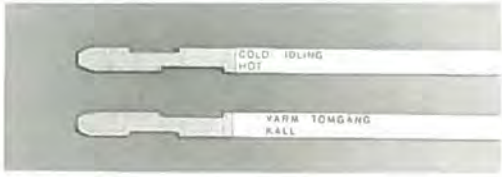
Oil filling and level plug, manual transmission

Oil level plug, final drive, automatic transmission

Drain plugs, automatic transmission
1. Engine. 2. Final drive

Drain plugs, manual transmission
1. Engine. 2. Transmission

Location of dipstick, automatic transmission



Dipstick, automatic transmission

POWER STEERING (OPTIONAL)

The steering gear which is of rack and pinion type is equipped with a servo unit in order to facilitate easier maneuvering at low speeds. The oil level in the power steering fluid container (see illustration) should be checked in accordance with the maintenance program. The oil should be level with the strainer in the container. The container should be topped up with automatic transmission fluid. See Specifications Section.

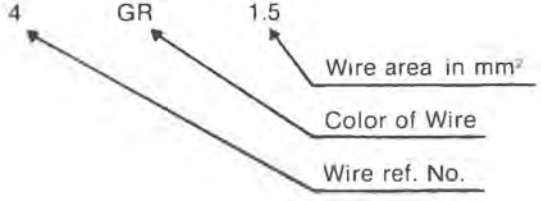
ELECTRICAL SYSTEMS

WIRING DIAGRAMS

Color code

BL	Blue
BR	Brown
GL	Yellow
GN	Green
RD	Red
SV	Black
VT	White
BL/VT	Blue/White
BR/VT	Brown/White
GN/VT	Green/White
RD/VT	Red/White

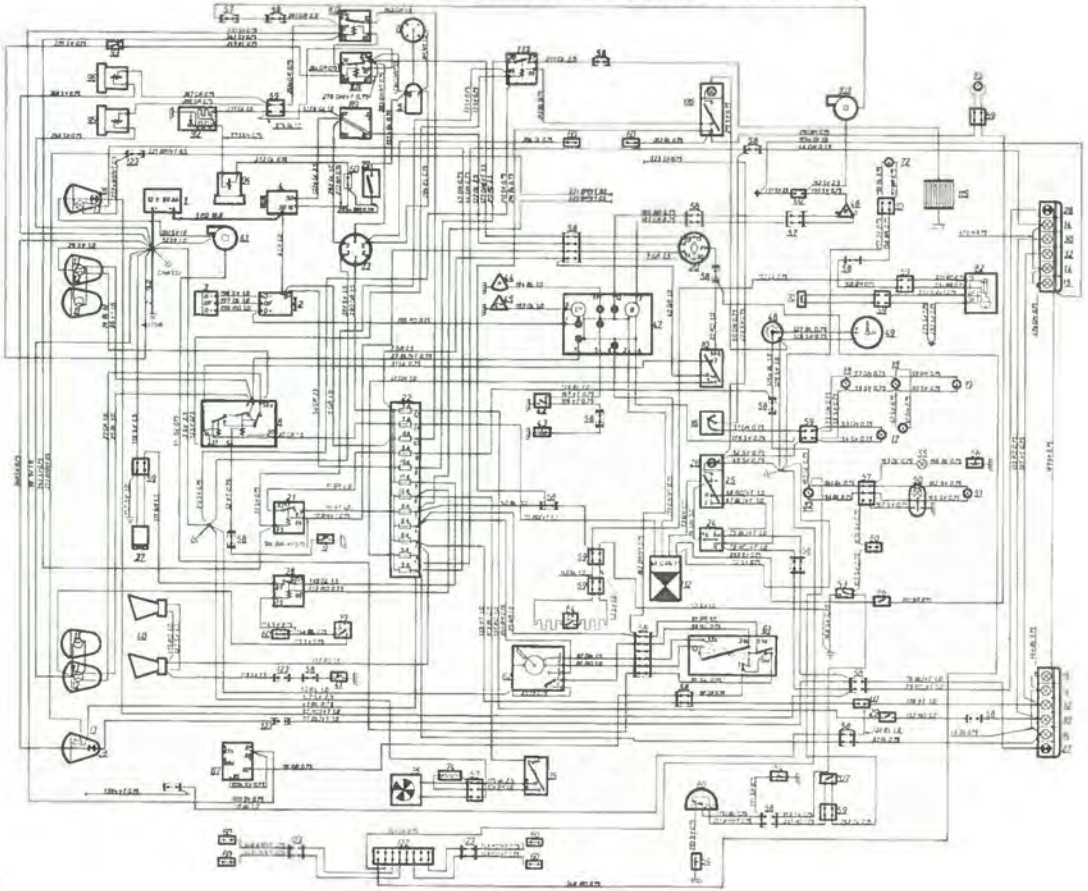
EXAMPLE



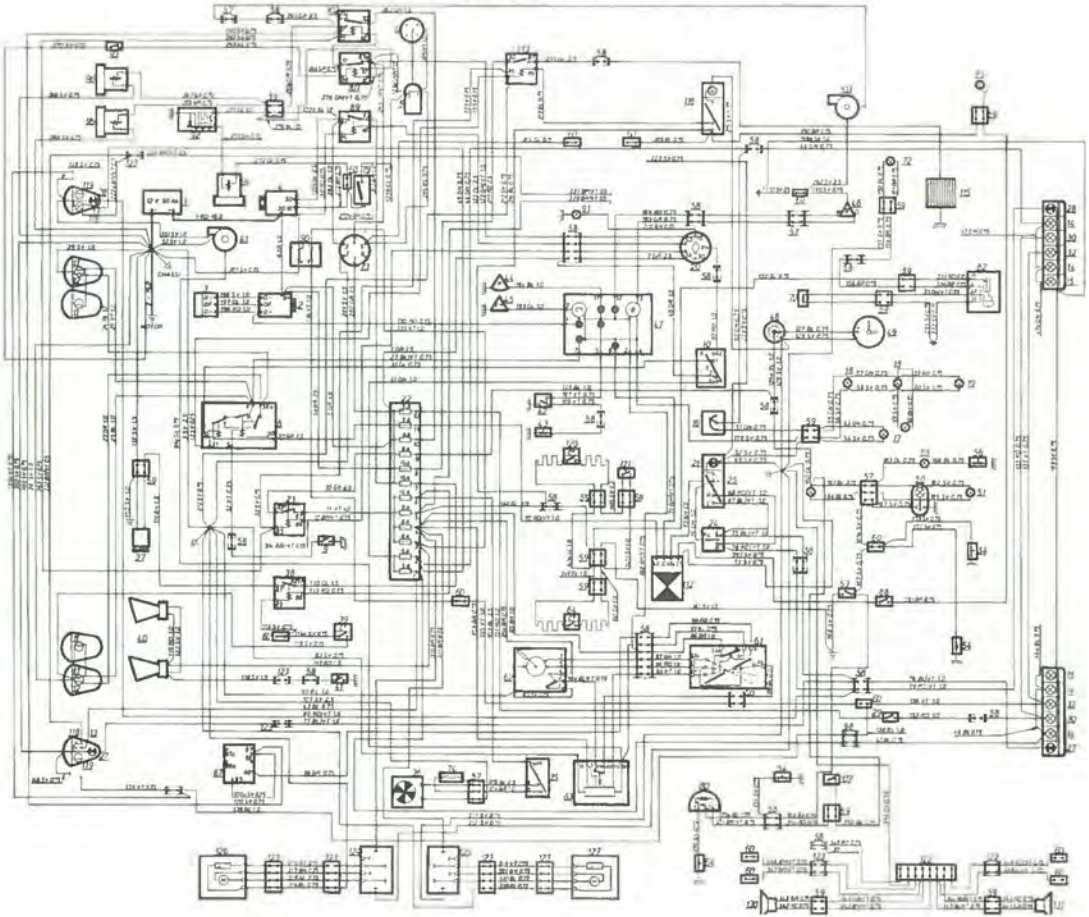
1. Battery
2. Alternator
3. Voltage regulator
4. Starter motor
5. Ignition coil
6. Distributor
8. Light relay
9. Switch light
10. Light switch
11. High beam
12. Low beam
13. Parking light, front
14. Tail light
15. License plate light
16. Instrument light rheostat
17. Light switch
18. Light, instrument
19. Light, heater control and glove box
20. Ignition lock
21. Ignition lock relay
22. Fuse box
24. Direction indicator switch
25. Warning flasher switch
26. Control lamp, warning flasher
27. Direction indicator lamps, LH
28. Direction indicator lamps, RH
29. Brake light contact
30. Brake light lamps
31. Back-up light contact
32. Back-up light lamps
35. Fan switch
36. Fan motor

37. Cooling fan motor
38. Cooling fan relay
39. Thermo contact, cooling fan
40. Signal horn
41. Signal contact
42. Brake warning contact
43. Hand brake contact
44. Oil warning contact
45. Temperature transmitter
46. Fuel transmitter
47. Combination instrument
48. Cigarette lighter
49. Clock
50. Dome light, interior center
51. Dome light, interior front
52. Ignition lock light
53. Switch interior light
54. Door contact
55. Trunk light
56. Trunk light contact
57. 3-pole connector
58. 12-pole connector
59. 2-pole connector
60. 1-pole connector
61. Switch, wiper system
62. 2-speed windshield wiper
63. Washer motor
64. Electric pad with thermostat
70. Belt contact, driver
72. Lamp, seat belt reminder
73. Service outlet, ignition
74. Resistance, fan low speed
79. Vacuum contact
80. Buzzer
82. Seat belt relay
85. EXH lamp
86. EXH contact
89. Start lock relay
90. Start lock and back-up light contact
91. Gearshift light
92. Thermo contact
93. Air volume contact
94. Starter valve
95. Air transmitter
96. Hot air transmitter
101. Fuel injection relay
102. Pump relay
103. Fuel pump
107. Key contact
110. Tachometer
112. Electronic flasher unit
113. Relay electrically heated window
115. Electrically heated rear window
116. Switch for heated rear window
119. Side guidance light
120. Electric pad passenger seat
121. Seat contact electric pad
122. 8-pole connector
123. 4-pole connector
124. Switch elec. rear view mirror, left
125. Switch elec. rear view mirror, right
126. Elec. rear view mirror, left
127. Elec. rear view mirror, right
128. 6-pole connector
130. Speaker, left side
131. Speaker, right side

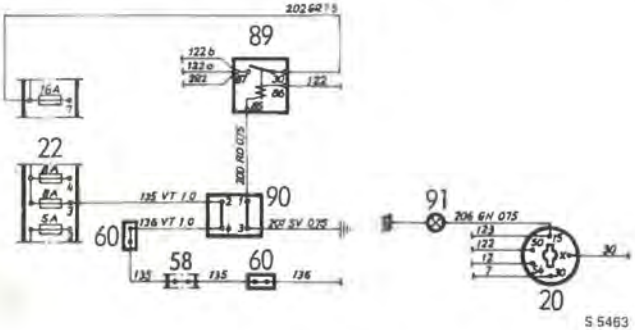
WIRING DIAGRAM, SAAB 99 (EXCEPT GLE)



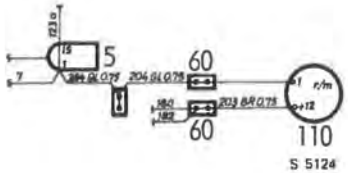
WIRING DIAGRAM, SAAB 99 GLE



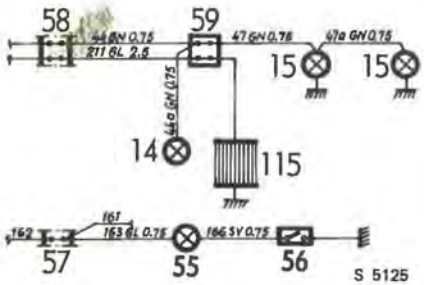
SUPPLEMENTARY WIRING DIAGRAMS



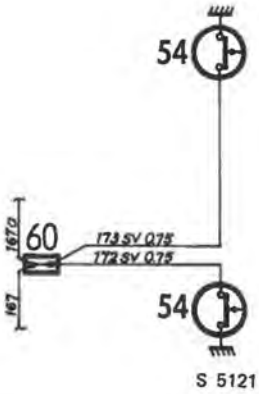
Automatic Transmission



Tachometer, EMS



Rear Window Defogger, 3 and 5 door hatchbacks



Rear Door contacts, 4 and 5-door models

HEADLIGHTS, BULBS, FUSES

Headlights

The headlights are mounted in cradles and are provided with two adjustment screws which are accessible after 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

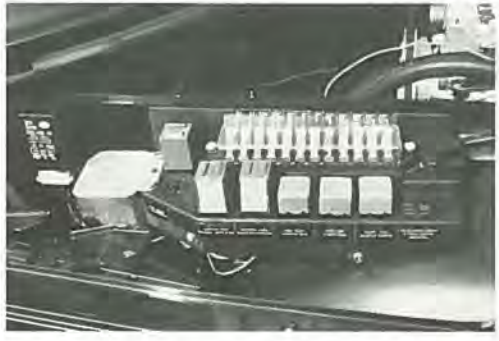
All the bulbs in the instrument assembly are mounted in bayonet fittings and are accessible from the back of the panel. The bulb for switch illumination is located at the rear of the panel below the speedometer. The heater control and glove compartment bulb is accessible when the cover in the left-hand wall of the glove compartment is removed.

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 grouped in a box mounted on the right wheel housing under the hood. The fuse holder is labelled to show the parts of the system protected by each fuse.



If a circuit goes dead but the fuse is intact, the cause may be a loose or corroded contact in the fuse holder or a cable connection. Check these points to make sure they are not oxidized and that terminals are tightly secured. When installing a new fuse, see that it makes proper contact with the holder.

If the same fuse blows repeatedly, take the car to a Saab dealer as soon as possible for insulation testing of wiring and equipment.

BRAKES

The car is delivered with a set of brake linings designed for minimum fade; i.e., they can tolerate high temperatures without serious loss of effect. Always make sure, when changing brake pads, that original Saab spare parts are fitted.

To avoid subjecting the brakes to excessively high temperatures, e.g. when driving downhill in mountainous country, you should utilize the braking power of the engine by shifting to a lower gear. For cars with automatic transmission, use position "1" or "2".

IMPORTANT

It is good policy to check the brakes occasionally when driving to make sure that they are working properly, especially if they have been subjected to heavy splashing with water or if you are driving through snow or salty slush, as braking power may be temporarily reduced in conditions of this kind. The brake system is equipped with power assist, but the added power from this is only available when the engine is running. It takes much greater pressure on the pedal to brake the car when the engine is not running.

HANDBRAKE

The handbrake lever is located between the front seats. The handbrake operates on the front wheels. A red warning light glows when the handbrake is on and the ignition key is in the K position.

WHEELS AND TIRES

Cars are factory equipped with tubeless, size 165SR15, steel-belted radials. (EMS Model—175/70 HR15)

Repair of tubeless steel belted tires should be performed by a repair shop equipped to handle such work.

The tires incorporate a profile depth indicator; when the tread pattern is worn down to 1/16" (1.6mm), unpatterned cross bars appear. This is a signal that it is time to install new tires.

Tire Pressure
Check the tire pressure regularly. See Specifications Section for recommended pressure.

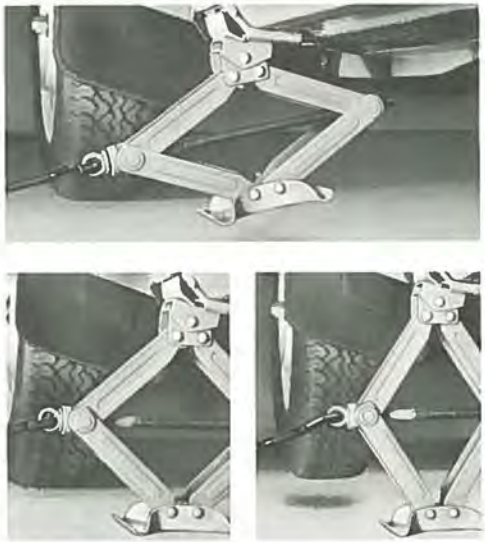
Overinflated tires give a bumpy ride and wear excessively at the center of the tread. Underinflated tires suffer heavy wear on the shoulders and may cause sway when cornering.

A correctly inflated tire wears evenly and grips the road over the full width of the tread and thus assists good road holding.

Tire Rotation
Tires at the front and rear of the car are subjected to a different rate of wear. Rotating or changing the tire positions on the car, i.e. front to rear, will tend to equalize the wear and life of the tires. Always change tires so as to maintain the same direction of rotation—left front to left rear, right front to right rear.

Wheel Changing
The tool bag and jack are stored under the floor of the trunk. The spare wheel is carried upright in the trunk.

If you must jack up the car, e.g. to change a wheel or inspect the brakes, locate the jack in one of the attachment points (front or rear) underneath the side members (see illustration).



Positioning of jack

1. Apply the handbrake. Slide the jack into the attachment point and crank it down until it touches the ground.
2. Before lifting, make sure that the upturned edge of the head of the jack is engaged inside the flange of the side member (see illustration) and that the whole foot is in contact with the ground. Loosen the wheel nuts slightly before lifting.
3. Raise the jack until the wheel clears the ground. Then remove the wheel nuts and take the wheel off.

To remove the hub cap, use the wheel nut socket wrench; insert the chisel-shaped end under the rim of the wheel cover, press the wrench against the tire, and strike the free end with your hand.

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

Never get underneath the car when it is jacked up.

Order of tightening wheel nuts

IV. SPECIFICATIONS

GENERAL

Overall length incl. bumpers, Sedan	(4450mm)	175"
Overall length incl bumpers, Hatchback Sedan	(4550mm)	179"
Overall width	(1690mm)	66.5"
Overall height (empty)	(1440mm)	56.5"
Read clearance (curb weight)	(175mm)	6.75"
Track, front wheels,	(1400mm)	55.25"
Track, back wheels	(1420mm)	56.00"
Wheelbase	(2473mm)	97.50"
Turning radius	(5.3m)	209"

WEIGHT

Sedan models:

Curb weight	(1150-1220kg)	2530-2690 lb*
Gross vehicle weight rating	1680kg)	3710 lb
Weight distribution, at curb weight		60-62% front
at gross vehicle weight rating		51-53.5% front
Trunk volume (SAE)	(0.338m³)	11.9 cu. ft.
Vehicle capacity weight, five persons, 150 lb — 180 lb luggage	(420kg)	930 lb
Max. roof rack load	(100kg)	220 lb
Max. trailer weight with trailer brakes	(900kg)	2000 lb
without trailer brakes	(450kg)	1000 lb
Max. trailer tongue weight	(90kg)	198 lb

Hatchback sedan models:

Curb weight	(1180-1250kg)	2600-2750 lb*
Gross vehicle weight rating	(1720kg)	3800 lb
Weight distribution, at curb weight		59-61% front
at gross vehicle weight rating		49-51.5% front
Trunk volume (SAE)	(0.381m³)	13.5 cu. ft.
Vehicle capacity weight, five persons, 150 — 180 lb luggage	(420kg)	930 lb
Max. roof rack load	(100kg)	220 lb
Max. trailer weight, with trailer brakes	(900kg)	2000 lb
without trailer brakes	(450kg)	1000 lb
Max. trailer tongue weight	(90kg)	198 lb

*Weight variation depends on model, configuration, and options.

ENGINE

Type	4 cyl. 4-stroke in-line OHC engine with continuous fuel injection
Power rating, SAE net at 5500 rev/min	110 hp (BI 20CA)
	115 hp (BI 20PR)
Max torque at 3500 rev/min	119 ft. lbs. (BI 20CA)
	123 ft. lbs. (BI 20PR)
Compression ratio	8.7:1 (BI 20CA)
	9.25:1 (BI 20PR)
Number of cylinders	4
Cylinder bore	3.543"
Stroke	3.071"
Cylinder volume	121.1 cu. in.

Valve clearance, cold engine:

Intake .....(015.-0.30mm) ....0.006"-0.012"
Exhaust .....(0.35-0.50mm) ....0.014"-0.020"

Order of firing (cyl. 1 nearest to firewall): 1-3-4-2

Distributor contact gap .....minimum .016"
Dwell .....50°±3°
Ignition advance:
Basic setting 20° BTDC @ 2000 RPM (vacuum hose plugged)

Engine idling speed:

Cars with manual transmission .....875±50 RPM
Cars with automatic transmission (N) .....875±50 RPM
Idle CO (cannister purge line off):
BI 20CA, oxygen sensor lead unplugged .....0.75 +.25% −.50%

BI 20PR, air inlet to pulse valves plugged .....1.0±0.5%

Decel time, 3000 RPM to idle:

BI 20CA, BI 20 PR .....5±1 sec.
BI 20CA, when set above 4000 ft. altitude .....3±1 sec.

Oil volume incl. oil filter .....4 U.S. qts., 3.37 Imperial Qts. (3.5 liters)

Oil viscosity:

Hot weather .....SAE 10W40

Normal .....(Alternate: SAE 10W30) ...SAE 10W40

Cold weather below 0°F .....SAE 5W20

FUEL SYSTEM

Fuel tank capacity ...14.5 U.S. Gallons, 12.2 Imperial Gals. (55 liters)

Fuel injection type .....Continuous, Mechanical

Manufacturer and model .....Bosch K-Jetronic CIS

FUEL RECOMMENDATION

Engine BI 20PR ....Leaded or unleaded gasoline (minimum 97 Research Octane Number or 93 Average Octane Number)

Engine BI 20CA .....Unleaded gasoline only (minimum 91 Research Octane Number or 87 Average Octane Number)

COOLING SYSTEM

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

Coolant volume incl. heating system .....(8.0 liters) 8.5 U.S. qts., 7.2 Imperial qts.

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

Anti-freeze .....Ethylene glycol, permanent type, MIL-E5559 or equivalent

MANUAL TRANSMISSION

Type .....4-speed, all synchromesh with final drive and differential

Oil capacity ...(3.2 liters) ....3 U.S. qts., 2.52 Imperial qts.

Oil specification .....EP oil SAE 75 in accordance with API-GL-5

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

Gear ratios, total:

1st gear 13.4:1
2nd gear 8.1:1
3rd gear 5.4:1
4th gear 3.9:1
Reverse gear 14.7:1
Final drive ratio 3.89:1

Road speed at 1000 rev/min engine speed:

1st gear ..... (8.7 km/h) ..... 5.4 mph
2nd gear ..... (14.5 km/h) ..... 9.0 mph
3rd gear ..... (21.6 km/h) ..... 13.5 mph
4th gear ..... (30.0 km/h) ..... 18.7 mph
Reverse gear ..... (7.9 km/h) ..... 5.0 mph

Recommended Shift Points

Gear Change	Economical Driving Speed	High Altitude Driving Speed
1st to 2nd	12 mph	18 mph
2nd to 3rd	22 mph	28 mph
3rd to 4th	30 mph	43 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" (M2C,33F.)

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 75 in accordance with API-GL-5, or GL-4

Primary gear ratio 0.97:1

Gear ratios:
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 ..... Brake fluid in accordance with DOT 3 or DOT 4

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

Swept areas:
Front wheels ..... ($1432cm^2$) ..... $222\ in.^2$

Rear wheels ..... ($1016cm^2$) ..... $157\ in.^2$

Total ..... ($2448cm^2$) ..... $379\ in.^2$

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

SUSPENSION

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

Total spring compression/elongation:

Front ..... (160mm) ..... 6.33"

Rear ..... (185mm) ..... 7.28"

Shock absorbers:
Type ..... Hydraulic, telescopic
(EMS—Gas pressure)

Maximum working stroke, fitted to car:

Front ..... (91mm) ..... 3.6"

Rear ..... (165mm) ..... 6.5"

Steering mechanism:

Steering gear ..... Rack and pinion

Wheel turns, lock to lock:

Standard steering 4.1
Power steering 3.6
EMS model 3.4

WHEELS AND TIRES

Type ..... Steel Disc wheels
(GLE, EMS—Cast Alloy)

Rim dimensions ..... 5J FHA × 15"

Tires ..... 165 SR 15 Steel Belted Radials
(EMS—175/70 HR 15)

Front Wheel Alignment:

Toe-in, measured at rims:

Non-power steering ..... (1±1mm) ..... 0.4"±o.04"
Power steering ..... (0±1mm) ..... 0"±0.04"

Camber: ..... ½°±½°
Caster: ..... 1°±½°
King pin inclination: ..... 11.5°±1°

POWER STEERING

Grade of oil ...Automatic Transmission Fluid Ford Type "F"
(M2C,33F.)

TIRE PRESSURES

Light load, front and rear ..... 27 psi*
Maximum load, front and rear ..... 30 psi

*Add 1.5 lbs. for vehicles with A/C
(Check tire pressure with tire cold)

ELECTRICAL SYSTEM

Voltage 12V
Battery capacity 60AH
Starter ..... 1.1 HP
Alternator, max. charging
Current/voltage 55 Amps/14V

Spark Plugs:

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

Thread M14

Thread Length ..... (18mm) ..... 0.7"

Electrode gap ..... (0.6mm-0.7mm) .. 0.024"-0.028"

LIGHT BULBS	POWER	SAE TRADE NO.	QUANTITY
Headlight, sealed beam high beam	37.5W or 50W	4001 or 5001	2
Headlight, high and low beam	37.5/50.0W or 37.5/60.0W	4002 or 4000	2
Front direction indicator	21W	1157NA	2
Front parking & side marker	21W	1157NA	2
Front side guidance light	21W	1156	2
Rear direction indicator, stop and back up lights	21W	1073	6
Tail light, license light and side marker	5W	67	6
Tail lights (Hatchbacks only)	5W	67	2
License plate light (Hatchback only)	5W	Cartridge Bulb	1
Dome light	10W	Cartridge Bulb	1
Trunk light	5W	Cartridge Bulb	1
Ignition switch illumination	2W	Miniature Bulb	1
Rear view mirror	5W	Miniature Bulb	1
Instrument & indicator lights	1.2W	Glass Fitting	9
Switch illumination	1.2W	Glass Fitting	4

TOOL KIT

Jack in bag with crank handle

Tool kit in bag, 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

V. SERVICE AND MAINTENANCE

Regular maintenance is necessary for safe, economical, and continued trouble-free service from your Saab automobile. This maintenance is best performed by an authorized Saab dealer. He has factory trained mechanics, specialized tools, and is continually made aware of the latest maintenance techniques. The Maintenance Program is divided into two main parts: **Regular Maintenance, and Emission Systems Maintenance.**

REGULAR MAINTENANCE

Regular maintenance is concerned with maintaining the safe operating condition of the vehicle through a program of periodic inspections and service. Adherence to the maintenance schedule will promote economical operation of the vehicle and long, dependable service life for vehicle components.

Under normal service, engine oil will maintain the properties needed for proper protection and lubrication of the engine for 6 months or 5000 miles. Under severe driving conditions, the service life of the engine oil is reduced. Therefore, it is recommended that the oil and filter be changed every three months or 2500 miles when the vehicle is used in severe service as listed below:

a. Extended periods of idling or low speed driving (stop and go, or city driving especially in cold weather).
b. Driving in dusty areas.
c. Towing recreational or other vehicles for long periods of time.

EMISSION SYSTEMS MAINTENANCE

Your new vehicle is equipped with an emission control system which has been certified as complying with all applicable regulations in effect as of the date of manufacture. The emission system maintenance schedule is designed to assure the proper functioning of the emission control system and the continued conformity of the vehicle to these regulations throughout its useful life. Adherence to the schedule will also help promote good performance and driveability as well as economical operation of the vehicle.

SERVICE RECORD RETENTION

It should be kept in mind that the Saab Emission Control System Warranty does not cover failures, other than those resulting from defects in materials or workmanship, which arise solely as a result of owner abuse and/or a lack of proper maintenance. Accordingly, if you make a claim for replacement, adjustment or repair under this Warranty, other than a claim which arises as a result of a defect in material or workmanship, and it appears that the failure complained of was the result of abuse and/or a lack of proper maintenance, you will be required to furnish all relevant maintenance records to demonstrate that all relevant required maintenance was performed at the times or mileage recommended in the instructions in the Owner's Manual.

The Service Record Section provided in this Owner's Manual is for your convenience in meeting this requirement. All services which are performed should be recorded, and you should retain receipts for such services and for parts purchased. It is also very important to keep records of any nonscheduled emission system maintenance services.

Your authorized Saab Dealer has the equipment and trained technicians needed to perform the required maintenance services.

EMISSION SYSTEMS MAINTENANCE PROGRAM

E-Emission Systems Required Maintenance	MILEAGE IN THOUSANDS										
	1	5	10	15	20	25	30	35	40	45	50
V-belts — Check, if necessary replace or adjust tension	E			E			E			E	
Valve Clearance — Check, if necessary, adjust (cold engine). Wash & blow clean oil separator in camshaft cover	E			E			E			E	
Crankcase Ventilation — Check connections & hoses. Tighten or replace as necessary				E			E			E	
Cooling System — Check hose and connections for leaks. Replace hoses if necessary. Check coolant level and anti-freeze content	E	E	E	E	E	E	E	E	E	E	E
Engine Coolant — Replace	*EVERY TWO YEARS*										
Engine Head Bolts and Manifolds — Torque to Specifications	E										
Spark Plugs — Replace, adjust gap to specifications				E			E			E	
Spark Control System — Check mechanical and vacuum actuated systems				E			E			E	

	MILEAGE IN THOUSANDS										
	1	5	10	15	20	25	30	35	40	45	50
Breaker Points and Condenser — Replace. Set ignition timing and dwell angle				E			E			E	
Distributor — Lubricate				E			E			E	
Distributor Cap & Rotor — Check				E						E	
Distributor Cap & Rotor — Replace							E				
Secondary Ignition Wires — Clean & inspect. Check resistance of ignition wires and replace, if necessary.				E			E			E	
Air Cleaner Insert — Replace				E			E			E	
Fuel Filter — Replace				E			E			E	
Evaporative Emission Controlled Fuel System — Check cap, tank lines and connections for leakage				E			E			E	
Charcoal Canister — Check				E						E	
Charcoal Canister — Replace							E				
Fuel Injection System — Inspect				E			E			E	

	MILEAGE IN THOUSANDS										
	1	5	10	15	20	25	30	35	40	45	50
Idle Speed, Exhaust Analysis — Check idle speed and CO level and adjust air/fuel mixture to specification if necessary	E			E			E			E	
Deceleration Valve — Check operation, adjust if necessary	E			E			E			E	
EGR System (Engine BI 20PR) — Clean and inspect EGR outlet in exhaust manifold, EGR cross pipe and EGR-valve. Check operation of EGR-system				E			E			E	
Pulse-Air System (Engine BI 20PR) — Check air injection hoses, check valves and air injection manifold connections				E			E			E	
Oxygen Sensor (Engine BI 20CA) — Replace sensor				E			E			E	
Oil and Oil Filter Change — Under Normal driving conditions every 6 months or 5,000 miles, whichever comes first	E	E	E	E	E	E	E	E	E	E	E
Extra Oil Change — Under severe driving conditions every 3 months or 2500 miles, whichever comes first											

REGULAR MAINTENANCE PROGRAM

R = Maintenance Required for Function and Durability (*See Special Note)	MILEAGE IN THOUSANDS										
	1*	5	10	15	20	25	30	35	40	45	50
ENGINE											
Exhaust System — Check for leakage	R	R	R	R	R	R	R	R	R	R	R
Vacuum Servo Assistance — Check vacuum hoses and connections	R	R	R	R	R	R	R	R	R	R	R
MANUAL TRANSMISSION											
Gearbox Oil Level — Check	R	R	R		R	R		R	R		R
Gearbox Oil — Change, clean magnetic drain plug. (Be careful not to confuse drain plugs for engine and gearbox)				R			R			R	
AUTOMATIC TRANSMISSION											
Gearbox Oil Level — Check, add as necessary	R	R	R	R		R	R	R		R	R
Gearbox Oil—Change, inspect and adjust trans.					R				R		
Differential Oil Level — Check, add as necessary	R	R	R		R	R		R	R		R
Differential Oil — Change.....				R			R			R	
ELECTRICAL SYSTEM											
Battery — Check electrolyte level. Tighten cable terminals and coat with petroleum jelly	R	R	R	R	R	R	R	R	R	R	R

	MILEAGE IN THOUSANDS										
	1*	5	10	15	20	25	30	35	40	45	50
Functional Check — Headlights, stoplights, directional lights, warning flashers, back-up lights, indicator lights, buzzers, windshield wipers, heater fan and horn.	R	R	R	R	R	R	R	R	R	R	R
Headlights — Check for proper aiming; if necessary adjust		R	R	R	R	R	R	R	R	R	R
CHASSIS											
Toe-In — Check; if necessary adjust		R	R		R	R		R	R		R
Wheel Alignment — Measure, if necessary adjust camber, caster and toe-in	R			R			R			R	
Check upper and lower ball joints and tie-rod ends on both sides of vehicle for wear				R			R			R	
Hand Brake — Check	R	R	R	R	R	R	R	R	R	R	R
Brake System — Check condition of brake lines and hoses, tightness of master cylinder, calipers, and screw caps. Change brake fluid after 30,000 miles or two years	R	R	R	R	R	R	R	R	R	R	R
Remove wheels and check brake pad thickness. Replace pads when lining thickness is less than 1/8 inch. Check tire tread depth and replace when wear bars in tread appear		R	R	R	R	R	R	R	R	R	R
Brake Fluid — Check level, if necessary replenish fluid in master cylinders for brake and clutch	R	R	R	R	R	R	R	R	R	R	R

	MILEAGE IN THOUSANDS										
	1*	5	10	15	20	25	30	35	40	45	50
Shock Absorbers — Check rubber bushings, replace when dampening action is no longer effective				R			R			R	
Steering Gear — Check oil level				R			R			R	
Power Steering Fluid — Check, add as necessary	R	R	R	R	R	R	R	R	R	R	R
Check rubber bellows for inner and outer drive shaft joints, and rubber boots for ball joints and tie-rod ends	R	R	R	R	R	R	R	R	R	R	R
MISCELLANEOUS											
Lubricate sparingly the door stops and hinges, throttle control and engine hood lock mechanism				R			R			R	
Test drive vehicle and check overall condition, noting especially the function of brakes and clutch	R	R	R	R	R	R	R	R	R	R	R
SPECIAL NOTE											
*Additional Maintenance at 1000 mile (free) inspection											
(1) Tighten bolts of rear axle crossbar	R										
(2) Tighten bolts which hold control arms to body (front) and spring links to body (rear)	R										
(3) Adjust automatic transmission gear selector control cable	R										
(4) Retighten automatic transmission cover bolts under gearbox	R										

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.
     - c. Breaker point oxidized or sticking open.
   - D. Engine flooded—spark plugs fouled with gasoline.

2. **Engine starts—runs rough, misfires, no power.**
   (Note: Misfiring should be corrected immediately on BI20CA engines to prevent catalyst overheating.)
   - 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. BI 20PR engines only—unscheduled servicing of the EGR system may be necessary. If so, this should be performed by a Saab dealer.
   - B. BI 20CA engines only—unscheduled servicing of the Lambda Control system may be necessary. If so, this should be performed by a Saab dealer.

4. **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.

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

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

7. **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.

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 housings. 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, or voltage regulator.

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.

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 soap and lukewarm water.

HELPFUL HINTS

1. Make sure that the ignition switch is in the "G" or "L" position when the engine is not running. Otherwise the ignition coil and breaker contacts may be damaged.

2. Keep the battery well charged at all times. You may have trouble starting if the charge is low. With regard to the battery connections, see "Battery" under Vehicle Systems Section.

3. Keep the brakes in good condition at all times. Check regularly to make sure that:

a. the brake pedal does not continue to go down under constant pressure.
b. braking effect is satisfactory.
c. the car does not pull to one side when braking.
d. the brake warning light works.
e. the handbrake is working properly.
f. proper brake fluid level is maintained in master cylinder reservoir. If you suspect any malfunction in the braking system, see an authorized Saab dealer immediately.

4. Due to potential damage to the vehicle's transmission, we recommend that this vehicle not be towed from the rear with the front wheels on the ground. Proceed as follows to tow the vehicle from the front with a wrecker. Attach J-hooks to the lower control arms, 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. On EMS Models remove front spoiler before attaching hooks and lifting car.

5. Vehicles equipped with automatic transmissions cannot be push started in case of a weak or discharged battery. An auxiliary "jumper" battery may be used to start these vehicles.

6. Air conditioner belt condition and tension should be checked periodically. Belt tension should be maintained at 90 lbs.

7. The electric rear window defroster of your vehicle should only be operated when there is moisture or ice on the window. Damage to the unit may result if it is operated for a long period of time on a dry rear window. Do not use abrasive cleaners on the rear window which may damage the electrical continuity of the unit.

8. Avoid driving with the trunk lid or rear hatch door open, as exhaust gases may be drawn into the car. If for any reason you have to drive with the trunk lid open, you should take the following precautions:

a. Keep all windows closed.
b. Open the fresh air vents, set the defroster controls to open, and run the ventilator fan at full speed.

9. Service and Parts Manuals for Saab vehicles can be ordered through your dealer. Extra keys, and other spare parts may also be obtained at any Saab dealer.

10. 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.

IDENTIFICATION NUMBERS

Please quote the vehicle identification number (V.I.N.) in all correspondance concerning your vehicle.

Transmission number, automatic transmission

Transmission number, manual transmission

Engine number

Color Code

Vehicle Identification Number (V.I.N.)

V.I.N. punched in car body, EMS, GL 2 and 3 door (under back seat cushion)

V.I.N. punched in car body, GLE, GL 5 door (under back seat cushion)

VI. SERVICE RECORD

1,000 miles free inspection

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date 10-25-77
Mileage 1170

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date 10-25-77
Mileage 1170

EXTRA OIL CHANGE (Stamp)
Mileage

5,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date
Mileage

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date
Mileage

EXTRA OIL CHANGE (Stamp)
Mileage

10,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date
Mileage

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date
Mileage

EXTRA OIL CHANGE (Stamp)
Mileage

15,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

EXTRA OIL CHANGE (Stamp)
Mileage.....

20,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

EXTRA OIL CHANGE (Stamp)
Mileage.....

25,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage.....

EXTRA OIL CHANGE (Stamp)
Mileage.....

30,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

35,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

40,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

45,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

50,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

55,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

60,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....

65,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

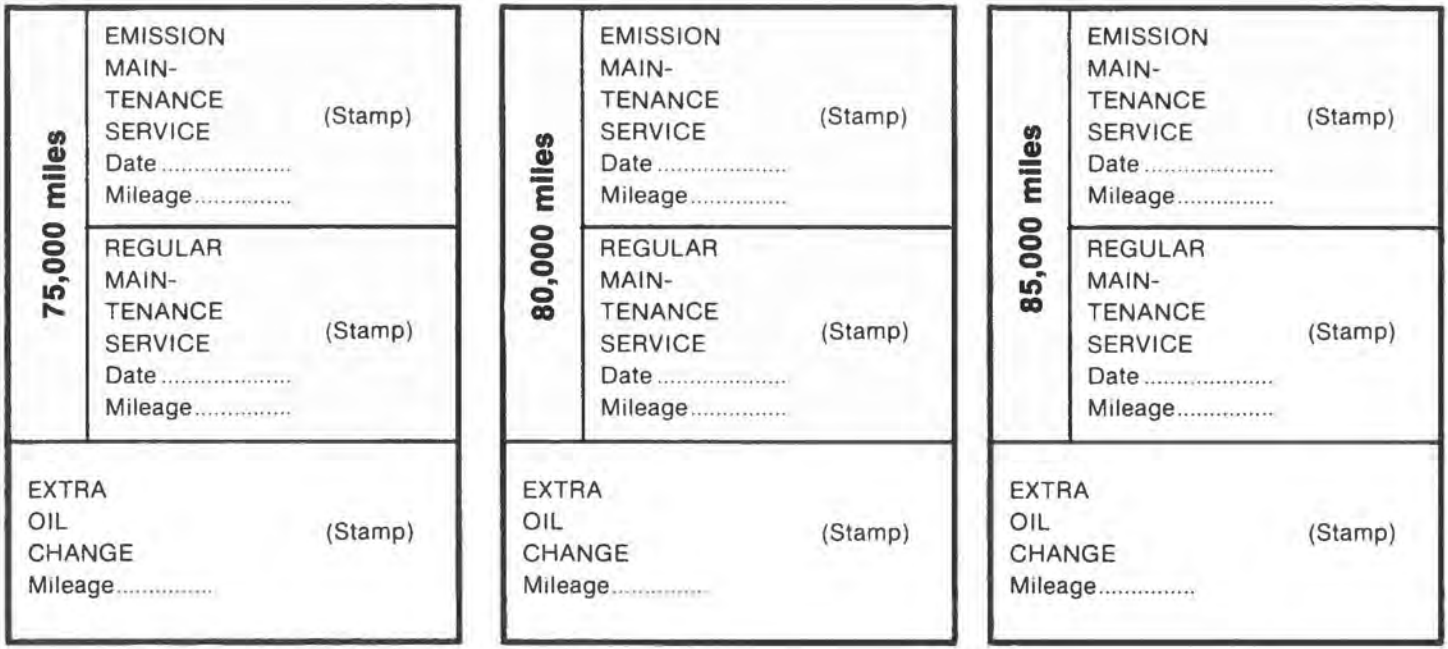
EXTRA OIL CHANGE (Stamp)
Mileage .....

70,000 miles

EMISSION MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

REGULAR MAIN-TENANCE SERVICE (Stamp)
Date .....
Mileage .....

EXTRA OIL CHANGE (Stamp)
Mileage .....


75,000 miles
EMISSION MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
REGULAR MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
EXTRA OIL CHANGE
Mileage .....
(Stamp)
80,000 miles
EMISSION MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
REGULAR MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
EXTRA OIL CHANGE
Mileage .....
(Stamp)
85,000 miles
EMISSION MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
REGULAR MAIN-TENANCE SERVICE
Date .....
Mileage .....
(Stamp)
EXTRA OIL CHANGE
Mileage .....
(Stamp)

90,000 miles		
	EMISSION MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
	REGULAR MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
EXTRA OIL CHANGE Mileage		(Stamp)

95,000 miles		
	EMISSION MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
	REGULAR MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
EXTRA OIL CHANGE Mileage		(Stamp)

100,000 miles		
	EMISSION MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
	REGULAR MAIN-TENANCE SERVICE Date ..... Mileage	(Stamp)
EXTRA OIL CHANGE Mileage		(Stamp)

115,000 Mile Service

DATE 11-12-87

MILEG 15,687

GRANADE'S SWEDISH AUTO ... LTD. INSPECTED BY

VII. INDEX

NOTES

NOTES


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 four other operating divisions produce diesel trucks and buses, specialized aircraft and aerospace products, data processing systems, and industrial fluid controls. Serving all of these divisions is Scandinavia's largest research and development organization for advanced technology.

Saab-Scania's automative 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 99.

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 and unique engineering. The main production plant for the current Saab 99 line is in Trollhattan, Sweden (near Gothenburg) where design, development and testing facilities are also located. For certain markets, Saabs are also assembled in Arlöv, Sweden; Mechelen, Belgium; and Uusikaupunki, Finland.

Importation and distribution of Saab automobiles and spare parts to North America are handled exclusively by Saab-Scania of America, headquartered in Orange, Connecticut (USA); and ScanCar, Ltd. of Scarborough, Ontario (Canada).

SAAB-SCANIA
OF AMERICA, INC.
SAAB DRIVE
ORANGE, CONNECTICUT 06477
M-77 FIRST EDITION

Printed in USA

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