

# SAAB 900

1980  
owner's manual



Important operating, safety and maintenance instructions

# SERVICE STATION INFORMATION

<b>To open hood:</b>	Pull hood release lever (located under left side of instrument panel). Press the front edge of hood down slightly and release safety catch. Allow front of hood to rise and move forward, then tilt entire hood forward. To close hood tilt rearward and reverse the above procedure. (CLOSE SLOWLY UNTIL SAFETY CATCH ENGAGES.)
<b>To remove ignition key:</b>	Engage Reverse (manual) or Park (automatic) and turn key to "L" (lock). Key is located on center console.
<b>Recommended fuel:</b>	Catalyst-Equipped Engines—Unleaded, minimum octane rating = 87.
<b>Lubricants:</b>	Engine Oil: Hot weather — SAE 10W40 Normal — SAE 10W30, 10W40 Below 0°F — SAE 5W20           } API Service SE Transmission: Manual — SAE 10W30, API Service SE Automatic — Type "F", (M2C, 33F, M2C33G) Final Drive (Automatic): EP SAE 80, API-GL-4 or GL-5
<b>Coolant:</b>	Ethylene Glycol, with aluminum corrosion protection properties (minimum 50% glycol in mix year round).
<b>Power Steering:</b>	Use only "GM Power Steering Fluid" (GM1050017)
<b>Tire pressure:</b>	See Specifications Section page 55.
<b>Tune-up information:</b>	See Vehicle Emission Control Information label, left front inner fender.
<b>Towing disabled vehicle:</b>	See recommendations on page 69.
<b>CAUTION:</b> 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. Tampering with the Continuous Injection System or Turbocharger (if equipped) may void warranty coverage of affected components.	

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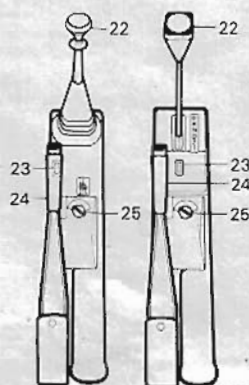
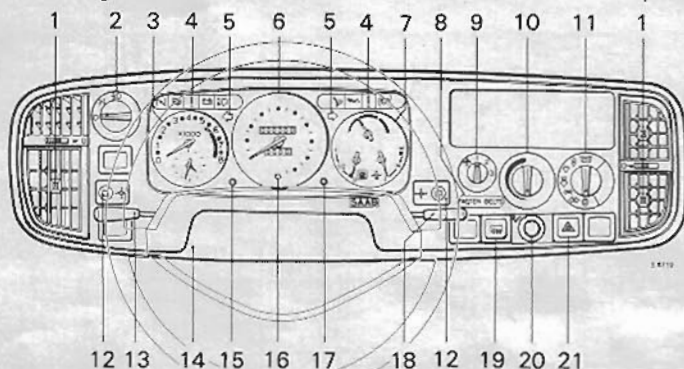
# I. OPERATING INFORMATION

## A. Controls and Instruments

1. Fresh air vent
2. Switch, parking lights and headlights
3. Clock and tachometer (900 EMS and 900 Turbo only)
4. Warning lights
5. Direction indicator lamp
6. Speedometer, odometer and trip meter
7. Combination instrument: fuel gauge, temperature gauge and pressure gauge (900 Turbo)
8. Seat belt reminder light
9. Switch, ventilation fan
10. Temperature control
11. Air supply control
12. Switch for adjusting external rear-view mirrors (900 GLE with touring package and 900 Turbo)
13. Control for high/low beam and direction indicators

14. Horn control
15. Clock adjustment knob
16. Reset button for trip meter
17. Rheostat, instrument panel lighting
18. Control for wipers and washers
19. Switch, electric rear window defroster
20. Cigarette lighter
21. Switch, hazard warning flashers
22. Gear (selector) lever
23. Switch, interior-lighting
24. Handbrake
25. Ignition switch and gear lever lock

Provision for extra switches has been made on the instrument panel.



### WARNING AND INDICATOR LIGHTS

Some of the warning lights will come on when the ignition is switched on before starting. These should go out once the engine is running.



**Indicator Light, Electric Rear Window Defroster**  
This lamp will glow when the rear window defroster is switched on.



**Oil Pressure Warning Light (engine oil)**  
This light will come on if the engine oil pressure drops too low. If the light blinks or comes on while you are driving, stop the car immediately, switch off the engine and check the oil level.



**Charge Warning Light**  
This light will come on when the battery is not being charged. If the light comes on while you are driving, stop at the earliest convenience, switch off the engine and check the tension of the alternator drive belt.

### BRAKE FLUID

**Brake Warning Light (footbrake)**  
This light will come on if the level in the brake fluid reservoir drops too low. If the light comes on while you are driving, stop the car immediately and check the brake fluid level.



**High Beam Indicator Light**  
This light will glow when the headlights are switched to high beam.

### EXH

**Exhaust Emission System Maintenance Light**  
This light comes on every 30,000 miles as a reminder that components in the emission control system need maintenance. (This light does not indicate a failure).

### PARK BRAKE

**Handbrake Indicator Light**  
This light will glow when the handbrake is on.



## COMBINATION INSTRUMENT

### Fuel Gauge

#### Low Fuel Warning Light

This lamp will glow continuously when the quantity of gasoline in the fuel tank is less than approximately 2.5 U.S. gallons

### Temperature Gauge

This indicates the temperature of the engine coolant. If the needle enters the red zone repeatedly, stop as soon as possible and check the level of the coolant.



### Pressure Gauge, 900 Turbo

The pressure gauge indicates the charging pressure in the inlet manifold. At low engine loads and during engine deceleration, a vacuum will be present in the manifold. In such cases, movement of the needle will be within the white zone. At increased loads or engine speeds, the turbo compressor will increase the charging pressure in the inlet manifold. In this case, the needle will move into the orange zone. The charging pressure will not normally be high enough to cause the needle to enter the red zone, since the engine is equipped with a regulator (wastegate) which controls the charging pressure. (There also is an overpressure safety switch.)



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## SPEEDOMETER, ODOMETER AND TRIP METER

The odometer records the distance in miles, and the trip meter in miles and tenths.

The reset button for the trip meter is located in the lower section of the meter. Push to reset.



### CLOCK

The reset knob for the quartz clock is to the right of the clock face.



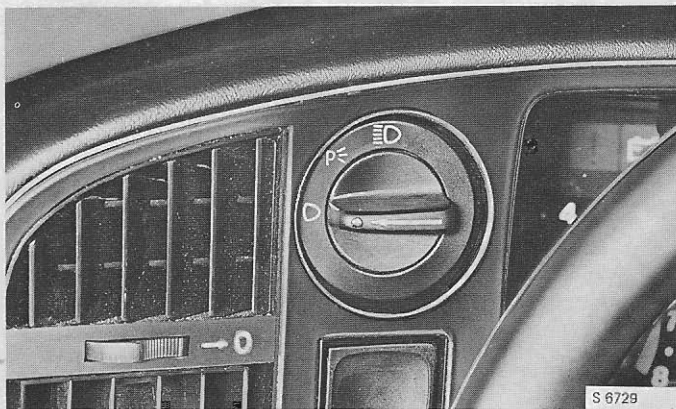
## TACHOMETER, 900 EMS AND 900 TURBO

The tachometer indicates the speed of the engine in thousands of revolutions per minute. The needle should only be allowed to enter the broken red zone for brief periods. It must never enter the red zone. A safety device, which interrupts current to the fuel pump at 6000 r/min, is installed on the 900 Turbo.

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## LIGHTING SWITCHES



The headlight switch has three positions:

**D** The lighting is off.

**P** Parking lights

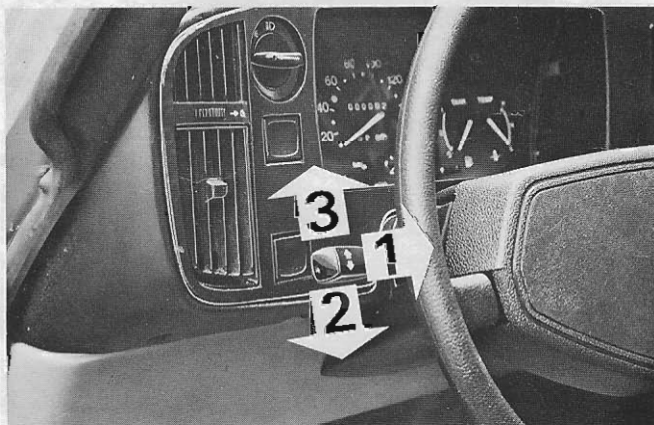
**Headlights and parking lights**

**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 alone, even if the key is removed from the ignition, if the switch is moved to the intermediate position.

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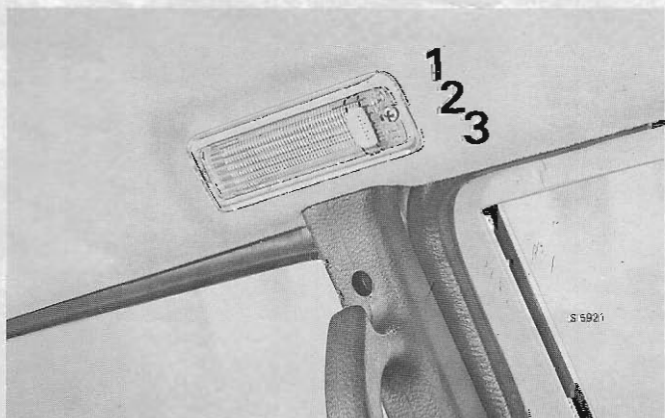
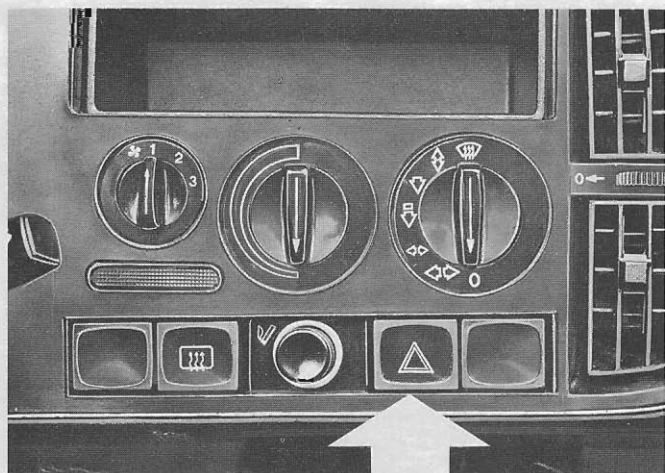
## Headlight Dimmer, High Beam Flasher, and Direction Indicator Control

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. A blue indicator light glows whenever the high beams are on. The direction indicator and cornering lights are operated by moving lever in the direction in which the steering wheel is turned, "Lane change" detents are provided.



## Instrument Panel Lighting

The intensity of the illumination can be adjusted by means of the rheostat knob. Clockwise rotation increases brightness.



## Hazard Warning

When the switch is pushed on 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).

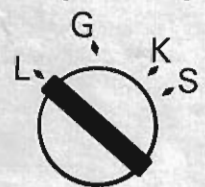
**NOTE!** Be certain that the interior lights are switched off when parking the car.

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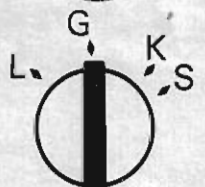
## IGNITION AND GEAR SELECTOR LOCK

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



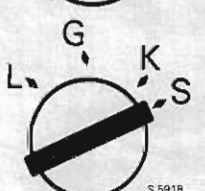
**Lock Position.** The gear selector lever must be placed in reverse position (manual transmission) or park (P) position (automatic transmission) before the key can be turned into the L position. In this way both the ignition and gear selector are locked simultaneously. Parking and hazard warning lamps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



**Garage Position.** All lights and radio can be operated. Make sure that the ignition switch is in the "G" or "L" position when the engine is not running. Otherwise the ignition coil may be damaged.



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



**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.

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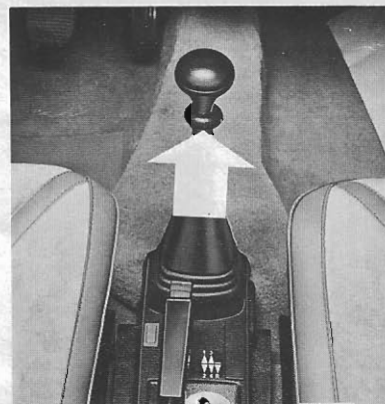
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**NOTE!** To ensure that the car is not left unlocked, a buzzer is activated if the left front door is opened with the key in the ignition lock.

## GEAR (SELECTOR) LEVER

### Manual Transmission

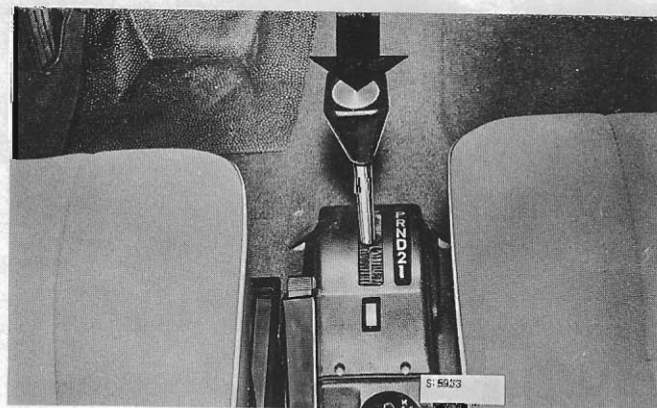
The gear positions are shown on the console beside the gear lever. To engage reverse (R), first raise the collar on the gear lever.



Gear positions, four speed manual transmission



Gear positions, five speed manual transmission



### Automatic Transmission

The gear positions are shown on the console beside the gear selector lever.

Park  
Reverse  
Neutral  
Positions for forward drive

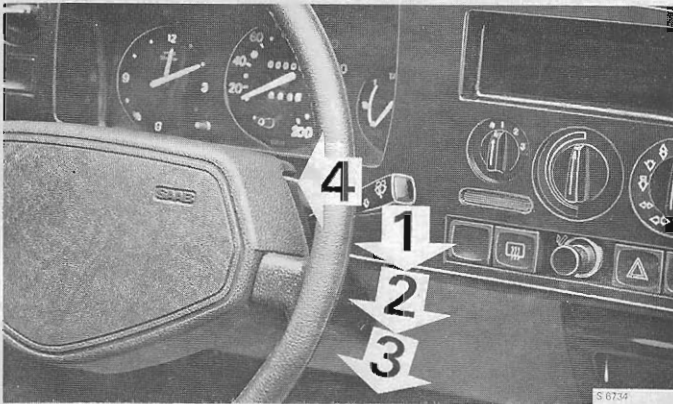
Certain lever positions can only be selected after the button in the center of the selector knob has been depressed, to release the catch. The lever can be shifted freely to position D or N from position R, 2 or 1.



## WIPER AND WASHER CONTROLS

The control lever for the windshield wipers and washer has the following positions:

0. OFF Position
1. Windshield wiper, intermittent operation. The wipers will make a double sweep at intervals of a few seconds. This function is particularly useful in light drizzle, etc.
2. Windshield Wipers, Low Speed
3. Windshield Wipers, High Speed
4. Windshield Washer: The windshield washer will operate as long as the lever is held toward the steering wheel. If the lever is pulled when in the "wipers-off" position, the wipers will automatically make a few sweeps.



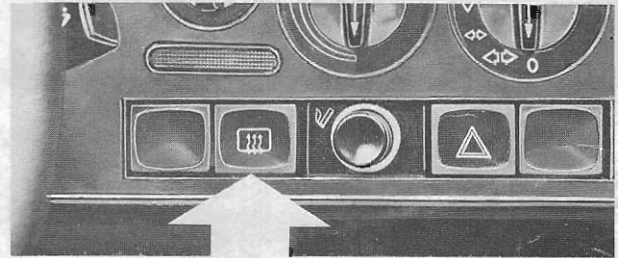
### Windshield Wiper and Washer Care

Inspect and clean the rubber blades of the windshield wipers at regular intervals. If they show signs of wear, they should be replaced.

Use clean fluid for the washer and make sure that the container is free from dirt. 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. NOTE: The driver's side jet is equipped with two ball nozzles while the passenger side has one ball nozzle.

## ELECTRICALLY HEATED REAR WINDOW



The rear window defroster grid is controlled by means of a push switch near the center of the instrument panel. A green indicator light 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.

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 cleansers on the inside of the rear window which may damage the electrical continuity of the unit.

## SPEED CONTROL (OPTIONAL)

A speed control (cruise control) may be installed by your Saab dealer. (Operating instructions are provided with the unit and should be studied carefully before attempting to use the control.) This feature reduces fatigue noticeably on long highway trips. The control switch is integrated with the direction indicator lever.

**WARNING!** Do not engage the speed control in dense traffic or when driving on slippery surfaces or on steep grades.

## HEATING AND VENTILATION CONTROLS

Fresh air is drawn in through an opening at the right rear of the hood. The air passes through an air cleaner, which filters it effectively, before it is led through the heating and ventilation system into the passenger compartment. The air is evacuated through outlets in the rear quarter panels.

### Ventilation Fan (1)

The flow of air entering the passenger compartment is controlled by means of the fan switch. The fan will operate continuously except when the air supply control is at position 0.

Clockwise rotation — increased air flow

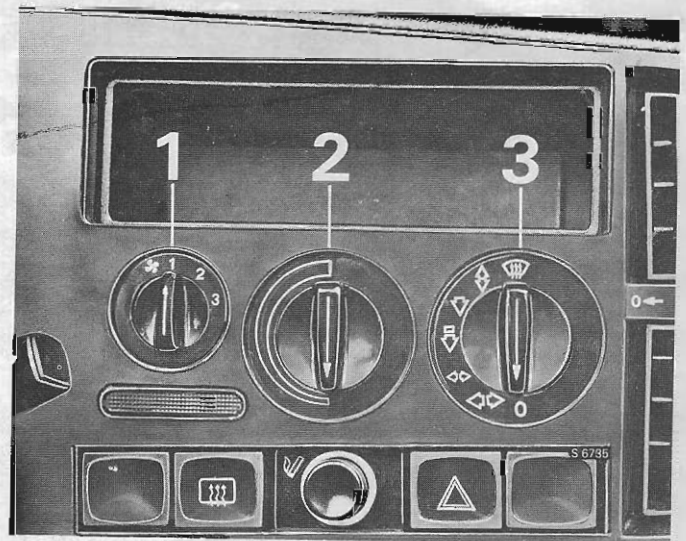
Counter-clockwise rotation — lower air flow

### Temperature Control (2)

The temperature of the air entering through the heating system can be adjusted steplessly by rotating the temperature control.

Clockwise rotation — higher temperature

Counter-clockwise rotation — lower temperature



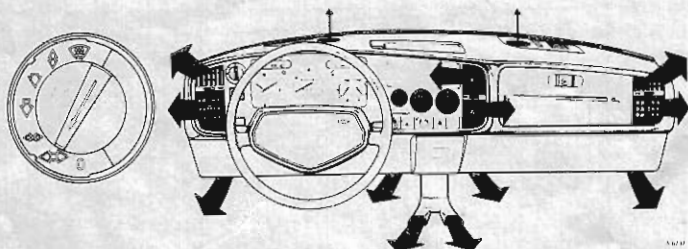
### Air Supply Control (Cars Without Saab Air Conditioning) (3)

The air supply control is used to guide the flow of incoming air to the defroster, panel and floor vents. In the six o'clock or (0) position the vents and the fan motor are shut off.

The direction and flow of air through the adjustable panel vents can be individually varied by louver position and thumb wheel position, respectively.

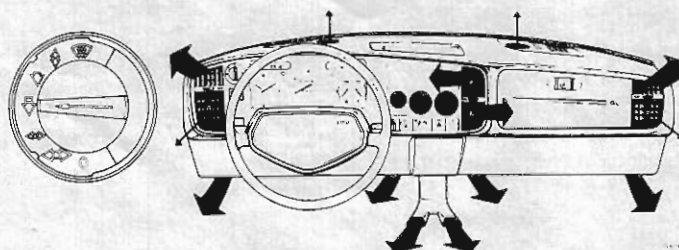
The top half of the outer panel vents have fixed louvers and are always open. These serve as side window defoggers.





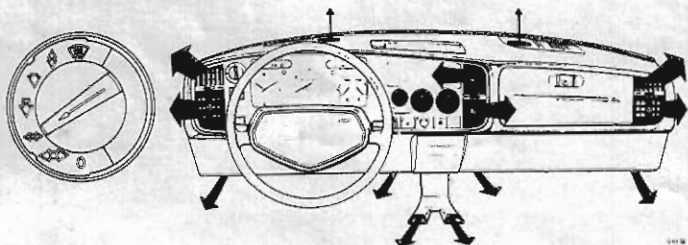
#### Fresh Air, Maximum (7 o'clock position)

The floor and panel vents are open. The fan will automatically run at top speed. This gives the maximum air change rate.



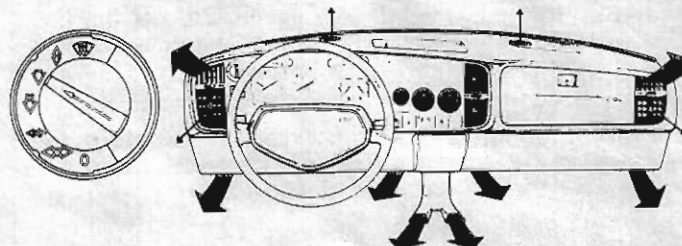
#### Ventilation (9 o'clock position)

The floor vents and central panel vents are wide open.



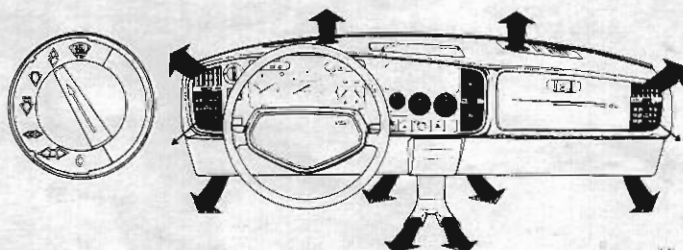
#### Fresh Air, Reduced (8 o'clock position)

The floor vents are partially closed and the panel vents wide open.



#### Floor (10 o'clock position)

The floor vents are open.



#### Floor and Defroster (11 o'clock position)

The floor and defroster vents are open.

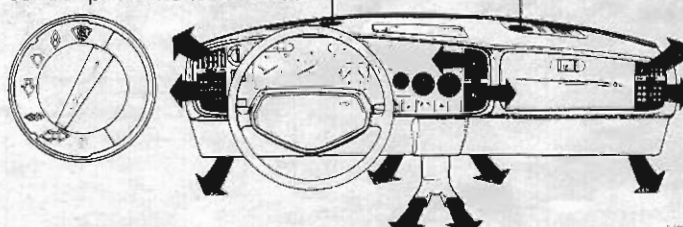
**NOTE!** The double vent at the center of the panel admits only unheated fresh air. Air admitted through all other outlets passes through the heater core and is affected by the setting of the temperature control.

#### AIR CONDITIONING

Some Saab 900 models have air conditioning as standard equipment. On the remaining models air conditioning is optional.

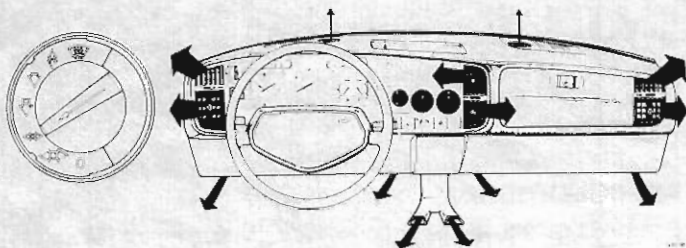
**NOTE!** The ventilation filter is not used on cars equipped with air conditioning. Operation of the air conditioner is integrated into the heater and ventilation controls. All incoming air passes through the air conditioner evaporator.

The air conditioner is operative when one of three air supply control positions is selected.



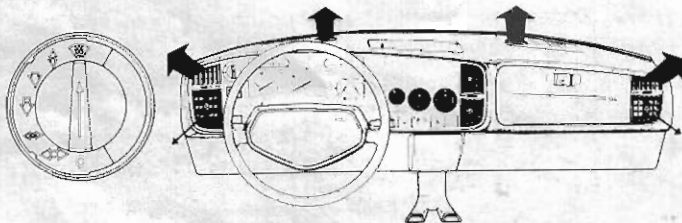
#### Rapid Cool Down (7 o'clock position)

(In this mode the interior air in the vehicle is recirculated through the air conditioner.) Set the air supply control to the large, double, horizontal arrows. The fan will automatically operate at maximum speed only when this position is selected. For maximum effect the temperature control knob should be in the fully counter clockwise position.



#### Normal Cooling (8 o'clock position)

Set the air supply control to the position marked with horizontal, small, double arrows. Set fan switch to the desired fan speed. Adjust temperature control to obtain the temperature desired. The addition of heat results in tempering the degree of cold as well as dehumidifying the incoming air.



#### Defrosting (12 o'clock position)

Adjust the air supply control to the top position (3 vertical arrows). Select desired fan speed. Adjust temperature control as required. Adding heat will aid defogging of the windshield. Note: Below 38°F the A.C. compressor is automatically cut out.

## B. Accommodations and Safety

### SEATS

The backrest and cushion of the driver's seat of 900 EMS, GLE and Turbo models 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 and the 5-door Turbo 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.

#### Headrest Cushions

Some 900 models have removable rear headrest cushions as standard equipment. Rear cushions have mounting pegs which fit into holes along the backrest support. The rear cushions must be pulled out when the seat is to be folded down.

Front seat cushions have a vertical adjustment range of approximately 3½ inches. To raise, grasp both sides of the cushion and pull upwards. To lower, press down on the top center of the cushion. A system of detents will secure the cushion at the desired height.

#### Legroom Adjustment

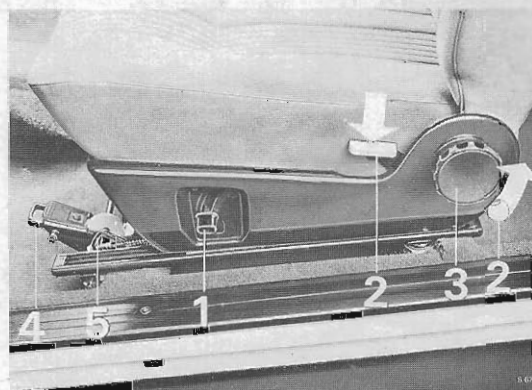
Release lever 1 (see illustration) and slide the seat to the desired position.

#### Backrest Angle Adjustment

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

#### Moving the Backrest Forward (3-Door Models)

Move lever 2 and drop the backrest forward.



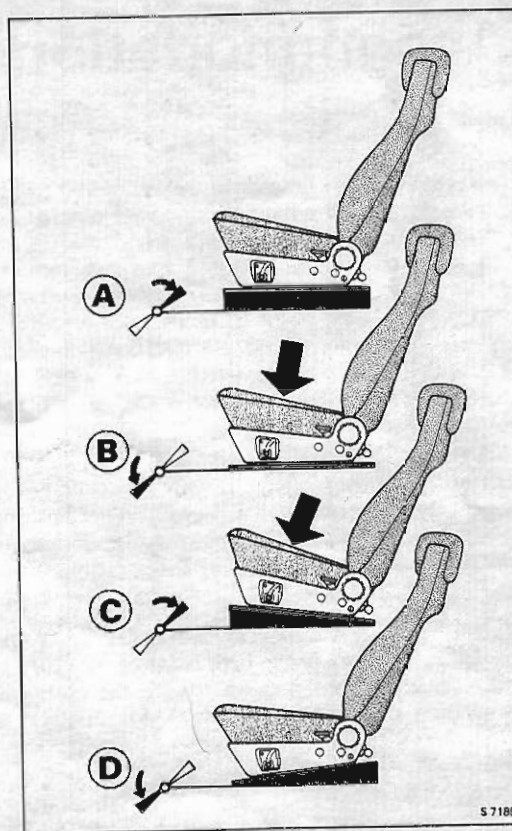


### Vertical Adjustment

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 handle 4 (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.
- 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.



### SEAT BELT RESTRAINT SYSTEM

**IMPORTANT!** Seat belts, properly worn, reduce the risk of serious occupant injury in an accident or emergency maneuver. Belt type restraints are provided at all seating positions. Use them for your comfort and protection.

#### 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 low over the hips and the other over the shoulder nearest the guide loop. Loop the belt around the latch bar (1) 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 (2). The retractor will return the belt to its stored position.

**NOTE!** Pregnant women should use the belt as described above paying special attention to applying the lap portion of the belt as low and snug over the hips as possible.

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 belts will lock during hard braking or when the vehicle is climbing or descending steep grades.



**NOTE!** On 5-door cars the belt guide loop comes fastened to the "B" pillar of the car body at the upper one of two possible positions. If the driver is short in stature and the belt lies too close to the neck, comfort may be improved by moving the guide loop downward 4 inches to the alternate mounting position on the "B" pillar. Ask your dealer to do this. Do not change the guide loop mounting point if by so doing the shoulder portion of the belt tends to slip off the driver's shoulder.

#### 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. Children under 4 years old and weighing less than 40 lbs. should be restrained in a suitable safety seat/restraint designed for that purpose. Follow seat manufacturer's instructions which are based on the size and weight of the child.
4. Each belt is meant for one person only. The front belts must be used as a lap/shoulder restraint only.
5. If in doubt on any matter concerning restraints or their use, please consult your dealer.

#### 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.

#### 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 (with touring package) and Turbo are electrically adjustable by means of four way toggle controls located on each side of the steering wheel. These mirrors are antiglare coated. To prevent scratching of this coating do not clean mirrors with sharp objects or abrasives.

#### INTERIOR FITTINGS

##### Ashtrays

Three ashtrays are installed in the car. One is located centrally below the instrument panel and the other two in the armrests for the rear seat.

The ashtrays can be removed from the holders for emptying. To remove the front tray, grasp it at the two orange squares and pull upward. Press the ashtray down in the holder as you replace it, to ensure that it clicks into position.

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#### Cigarette Lighter

To use the cigarette lighter, push it into the holder. It will spring back as soon as it is hot.

#### Glove Compartment

To open the glove compartment door, squeeze the catches on the lock. To lock, turn the key clockwise and withdraw it. To unlock the compartment, turn the key counter-clockwise. The key is the same as that for the other locks on the car.

#### Radio

Radio speakers are installed in the top of the instrument panel, along with wiring and antenna lead on all models. The radio, when installed, replaces the storage compartment in the center of the instrument panel.

Operational instructions are supplied with the radio selected.

A full line of audio equipment is available from your Saab Dealer.

#### Sunroof

The sunroof is opened and closed by sliding the handle at the front of the panel either backwards or forwards. The roof can be opened either partially or completely. Once the handle is released, it will spring back to its central position (locking position). To close the roof, push the handle forward until the panel locks in the closed position.

# C. Entry and Security

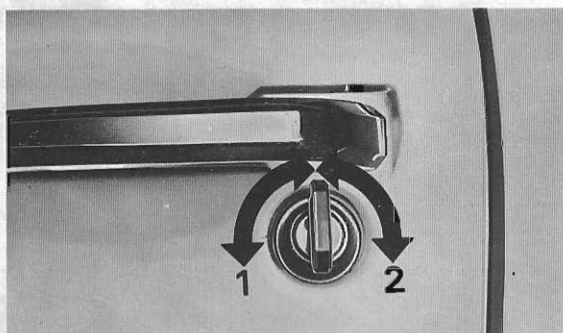
## DOORS

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:

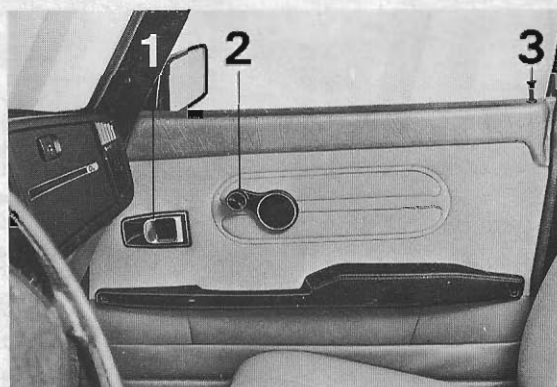
**To Lock:** Give the key a quarter turn rearward and let it spring back to the vertical position.

**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

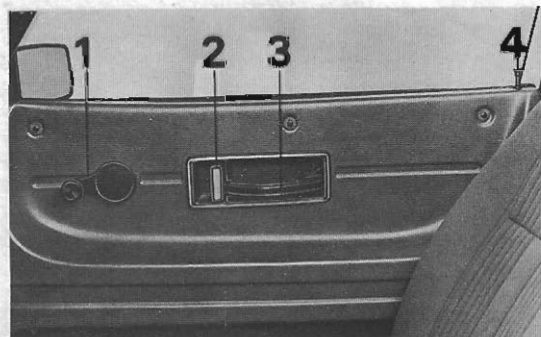
All side doors are fitted with safety lock buttons with which they can be locked from the inside when closed. Lock buttons on front doors cannot be pushed down when the door is open.



Inside of door, (5-Door)

- 1. Inside door handle
- 2. Window crank

- 3. Door lock button



Inside of door, (EMS, GL 3-Door)

- 1. Window crank
- 2. Inside door handle

- 3. Door assist handle
- 4. Door lock button

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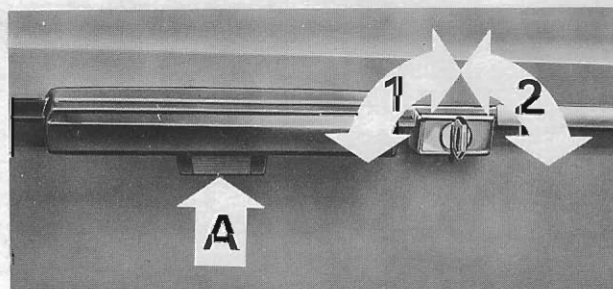
The rear doors of the 5-door models are provided with safety locks to prevent the doors from being unintentionally opened from the inside by children. When the lever is in the lower position (A), the doors can be opened from both inside and out, but when the lever is in the upper position (B), the door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



## REAR LID

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.

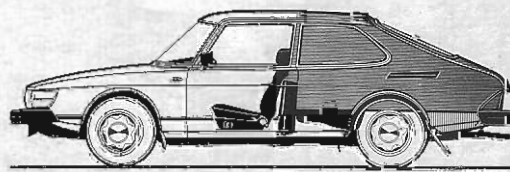
The tool kit and jack are stowed under the luggage compartment floor.



- 1. Unlock
- 2. Lock

## LUGGAGE AND CARGO SPACE

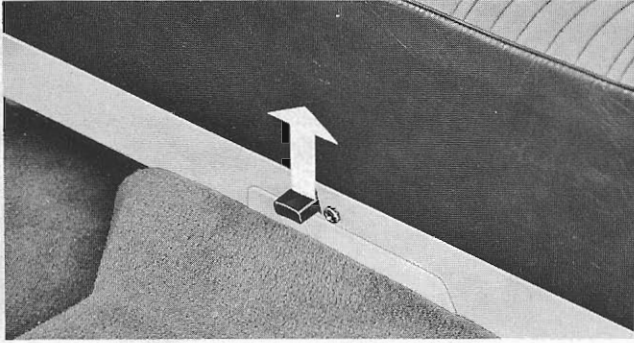
When desired, the rear seat can be converted to extend the luggage/cargo compartment.



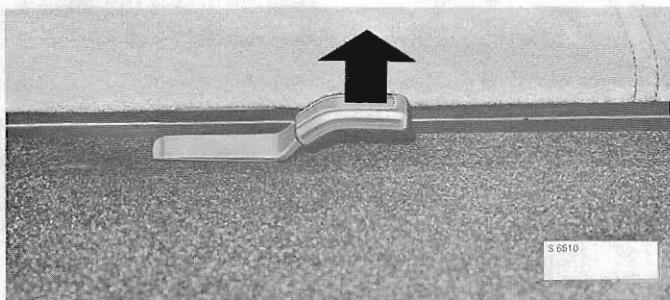
21



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

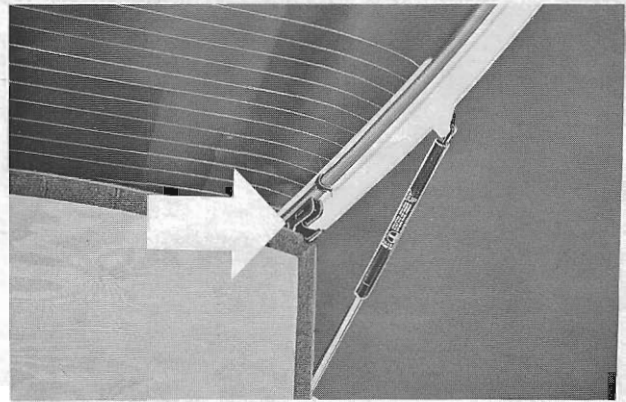


Next, release the backrest latch and drop the backrest forward.



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The parcel shelf can be removed and placed on the floor in the luggage compartment. The luggage compartment door is equipped with a catch to hold the parcel shelf in the raised position to facilitate loading. The shelf automatically returns to its horizontal position when the door is closed.



The tool well cover can also be removed via the rubber hinge straps which snap over buttons on the underside of the cover.

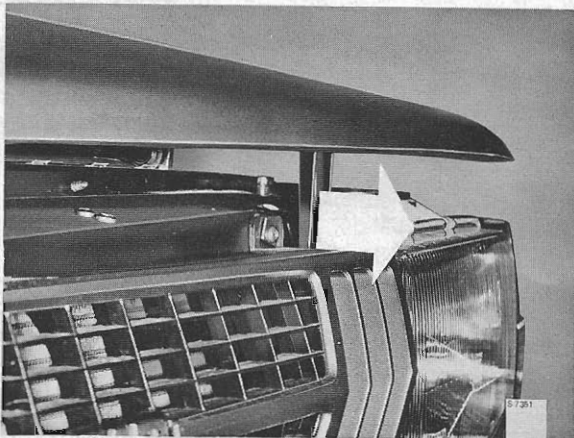
## HOOD

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 (to the right of center when facing the car).

2. Press the leading edge of the hood down slightly and pull the safety catch. The hood will then spring up and can be tilted forward without effort.



### To close the hood:

1. Tilt hood rearward and down until the runners make contact with the rear hood guides.
2. Slowly push hood rearward (with a slight upward motion) until the safety catch engages. Note: push at the center of the forward edge of the hood in order to engage the runners at the rear corners in their locking guides in the fenders.
3. Press down firmly until the main lock engages securely.

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# D. Starting and Driving

## STARTING THE ENGINE

### General

Do not operate the starter for more than 10-15 seconds at a stretch; wait 20-30 seconds to let the battery recover before attempting to start the engine again. **Make sure that the lights and electrically heated rear window are switched off before starting in wintertime.** Avoid warming the engine by idling at a standstill. Start driving as soon as the oil pressure light has gone out to heat the engine up to its proper working temperature as quickly as possible.

**WARNING!** Do not start or let the engine run in a closed area. Exhaust gases contain carbon monoxide which may be fatal if inhaled.

### Starting injection engines

The engine has an automatic cold starting enrichment system. Start as follows:

1. Apply the handbrake and put the gear lever in neutral (manual transmission) or select P or N (automatic transmission).

**NOTE!** Cars with automatic transmission can only be started when the selector lever is at P or N.

2. Fully depress the clutch pedal (manual transmission).
3. Turn the key to the start position and let it spring back as soon as the engine has started. **Allow the engine to idle for about 10 seconds before touching the accelerator. Do not depress the accelerator for full throttle until the engine has run for at least 2—3 minutes.**

For restarting a warm engine use the same procedure. If the outside temperature is high, depressing the accelerator during cranking may assist start up.

**NOTE! Saab 900 Turbo: STARTING-**Don't rev the engine immediately after starting or permanent damage to the turbocharger will result. **STOPPING-**Let the engine idle 15-20 seconds before switching it off after driving to allow time of the turbocharger to coast down from high rpm before oil pressure at the bearing is depleted. For the same reason, **DON'T** rev the engine immediately before switching it off. Permanent turbocharger damage will result.

**After hard driving** let the engine idle about a minute to let the oil cool the turbocharger bearing somewhat. This will also help prevent breakdown of the oil. If the engine is very hot, the radiator fan may cut in and continue to run for a while after the engine has been switched off.

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## 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.

Before shifting to reverse, make sure that the car is at a standstill, the accelerator pedal is fully released, and the catch on the gear lever is pulled upward.

### Cars with Automatic Transmission

The engine should be at idling speed when the gear selector lever is moved from one position to another and the car is at a standstill. If you depress the accelerator at the same time as you move the lever, this will cause abnormally high wear on the transmission. Always keep your foot on the brake to prevent the car from rolling when you select a drive position.

### Selecting gears

**D.** The D (Drive) position is for normal forward driving. Whichever of the three forward gears best matches the speed and load on the engine is automatically engaged.

2. Position 2 gives automatic changing between first and second gears but top gear will not be engaged. If the lever is moved from D to 2, this gives an immediate change-down for more engine braking power. Position 2 must be selected at road speeds below 55 miles per hour (90 km/h).

1. Position 1 is used to obtain maximum engine braking power on steep downgrades. Road speed must be reduced to below about 12 mph (20 km/h) before 1st gear is selected. This position should also be used for uphill driving on very steep hills to avoid overheating the transmission oil. Second and top gears will not be engaged when the lever is at 1.

**N.** In position N (Neutral) no gear is engaged. The starter contact is operative in this position. The handbrake should be applied when the selector lever is in position N to prevent the car from moving if it is standing on a slope.

**R.** Position R (Reverse) must not be selected unless the car is stationary.

**P.** Position P (Park) is selected when the car is parked, and the lever must be in this position before the ignition key can be turned to L (Locked) and withdrawn. The selector lever is then locked and the transmission is immobilized. Do not select position P when the car is in motion.

### Moving Off

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

### Kick-down

To obtain maximum acceleration, e.g. for overtaking, it is possible to effect an instant change-down at speeds below 50-55 mph (80-85 km/h) by pushing the accelerator pedal hard down to the kick-down position. Changing up to the next higher gear is automatic as soon as the engine reaches maximum revs for the gear engaged, or the pedal is eased up.

## STEERING CHARACTERISTICS

The car has a built-in tendency to understeer, i.e. at a given position of the steering wheel the turning radius tends to increase with rising speed. The car is deliberately designed this way to improve its stability and reduce the risk of backwheel skids ("fishtailing"). One of the ways in which understeering has been achieved is through the weight distribution. With only a driver, about 60% of the vehicle weight is on the front wheels: the corresponding figure for a fully loaded car is about 50%.

## BRAKING

To avoid subjecting the brakes to excessively high temperatures, e.g. when driving downhill in mountainous country with descents of thousands of feet, you should utilize the braking power of the engine by selecting 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 when driving through snow or salty slush, as the braking effect may be temporarily reduced in conditions of this kind. The brake system is power assisted, but the added power from this is only available when the engine is running. It requires a considerably greater force on the pedal to brake the car when the engine is switched off.

The brake linings have been thoroughly tested and are designed to deliver the best results with respect to braking effort, useful life and minimum noise under normal driving conditions. We therefore recommend that Saab original brake linings be fitted when old linings are being replaced.

## OPTIONAL CRUISE CONTROL

Operating instructions are supplied when this option is installed. Do not use the cruise control where a constant speed may be inadvisable such as heavy traffic, winding roads and slippery roads. With the cruise control engaged the vehicle will not decelerate until the brakes are applied or the unit turned off.

## RUNNING IN

Every new car has a recommended running in period during which the owner is advised to drive with restraint. Pistons, cylinder walls and bearings need to be in operation for some time to produce smooth and hard-wearing contact surfaces. Placing too much strain on a new engine interferes with this gradual process, shortening the life of the car and especially the engine.

For the first 1,000 miles you should not drive at full throttle except for very brief periods.

## CAUTIONS, CATALYST EQUIPPED CARS

**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. Condensation in the fuel system is minimized by keeping the tank full. It is advisable to occasionally use a gasoline antifreeze additive (dry gas) to remove accumulated moisture. Follow manufacturer's usage instructions.
2. Lock lubricants and antifreeze are available to prevent door and trunk locks from freezing in damp, cold weather. A frozen lock may be thawed by heating the key. Don't force it.
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 right rear corner of the hood.
4. If regular or studded (check state law) winter tires are used they should be mounted on all four wheels. Ordinary snow chains (avoid clamp-on types) can be used on both front and rear wheels. Drive carefully since chains may scrape against the body on large bumps or sharp turns.

**NOTE!** Models with wide profile tires:  
If wide profile winter tires are not available, 165SR15 winter tires (4) may be installed. Models with TRX tires have special 15.3" wheels which will not accept 15" tires. 165SR15 winter tires may be used when mounted on standard 5JFHAX15 inch rims.

## DRIVING WITH A TRAILER

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

We recommend you drive your new Saab 500 miles before Trailer towing. After this 500 mile break in period and for the second 500 miles avoid speeds over 50 MPH and/or full throttle while trailer towing.

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. Tongue weight is to be considered as vehicle load and should be deducted from the permissible trunk load or weight.
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.
7. If heavy trailers are to be towed, we recommend that a pneumatic spring-boosting accessory be used to assist the rear springs.
8. When towing trailers, inflate tow vehicle tires to the "Cold Tire Pressure" for "Max Load" as recommended in the specifications section of this booklet.

**NOTE!** Trailer brakes requiring a tap from the vehicle's hydraulic system are not recommended.

## ECONOMICAL DRIVING

For maximum economy, the Saab 900, 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. Excessive idling and "warming up" the engine also wastes gas. Use the air conditioner, if so equipped, only when necessary.

Recommended shift points for economical driving of cars with manual transmission are listed in the Specifications Section. Maintaining your car according to the recommended maintenance schedule will also help you get maximum fuel economy. Be sure the engine is tuned to specification, the battery is fully

28 charged and wheel alignment and tire pressures are correct.

## DRIVING WITH THE LUGGAGE COMPARTMENT DOOR OPEN

Whenever possible, you should avoid driving with the luggage compartment door open, since the exhaust gases can be drawn into the car. If, nonetheless, you are forced to drive with the door open, make sure that all the windows are closed. Set the ventilation controls to the positions for maximum fan speed and defrosting.

If you drive with the door open, always tie it securely to the bumper.

**WARNING!** Exhaust gases are dangerous if inhaled. The engine exhaust contains carbon monoxide, a colorless, odorless gas which may be fatal if inhaled.

## FUEL AND FLUIDS

### Fuel

The fuel tank holds 14.5 U.S. gallons (55 litres). The fuel warning light will come on when the amount of fuel left in the tank is below approximately 2.5 U.S. gallons (10 litres).

### Recommended Fuel:

Catalyst equipped engines—unleaded, minimum octane rating = 87 (equivalent to 91 research octane).

Minimum octane rating is arrived at with the formula  $\frac{MON + RON}{2}$  = pump octane. MON is the industry Motor

Octane Number. RON is Research Octane Number. The average of these two is the number that appears on the gas pump under the current laws. This number is sometimes referred to as the "anti-knock index".

**NOTE!** If "pinging" or knocking is heard, switch to a higher octane brand. If knocking persists, take your car to an authorized Saab dealer for inspection.

### Engine Oil

The oil level should be between the MAX and MIN marks on the oil dipstick. The distance between the marks corresponds to a volume of approx. 1 quart (1 litre). Top up with engine oil conforming to Service SE, API system. Oil with a viscosity of 10 W 30 can be used year round in moderate climates (also see inside front cover).

### Coolant

Never let the level drop below the MIN mark on the expansion tank. Top up with equal parts of clean water and an ethylene glycol antifreeze suitable for engines with light alloy cylinder heads.

**WARNING!** Always release the cap on the expansion tank carefully, allowing any vapor to escape before removing the cap completely.

### Brake Fluid and Clutch Fluid

Never let the level drop below the MIN mark on the container. Employ the utmost cleanliness when topping up. Use a brake fluid to specification DOT 3, DOT 4.

### Washer Fluid

Use clean water or a mixture of clean water and Saab washer fluid.

Container capacity is 6.5 U.S. quarts (6 litres).



## II. TECHNICAL INFORMATION

### A. Power Unit

#### ENGINE

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

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

#### Engine Oil

Check the oil level at regular intervals. Always switch the engine off first and allow it to cool for at least one minute. Do not let the level fall below the lower mark on the dipstick, nor fill beyond the upper mark; this will cause excessive oil consumption. The distance between the upper and lower marks corresponds to a volume of approx. 1 quart (1 litre). 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.

The engine oil should be changed in accordance with the maintenance schedule. The oil should be changed at more frequent intervals, particularly in the case of Saab 900 Turbo, when the car is driven under unusually demanding conditions. The latter includes driving in extremely hot weather, driving at high speeds for a considerable distance, and driving over short distances in extremely cold weather.

**NOTE!** Do not confuse the engine and transmission drain plugs. Never use oil additives which have a higher viscosity than the recommended oil (thickeners), especially in turbocharged engines.

#### Oil Filter

The oil filter should be changed at the same time as the engine oil, in accordance with the maintenance schedule.

Apply a little oil to the rubber gasket on the new filter, and tighten the filter by hand.

#### Air Cleaner

The air cleaner is located on the left-hand side in the front part of the engine compartment. The cleaner cartridge is replaceable and should be changed as specified in the maintenance schedule. If the car is driven over dusty roads, the cleaner should be changed more frequently. The cartridge is made of a special grade of paper which may not be washed or moistened, but it may be cleaned carefully with compressed air. The air cleaner housing and cover should be wiped off from time to time.

#### Fuel Filter

In cars with injection engines, the fuel pump is electric and located in the fuel tank. The fuel filter is located on the left-hand side in the engine compartment and should be changed as specified in the maintenance schedule.

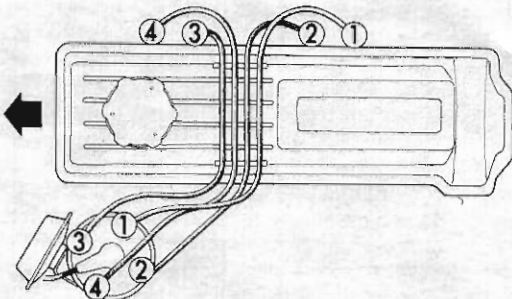
#### Ignition System

A breakerless ignition system is used.

**WARNING!** High energy ignition system develops dangerous primary and secondary voltages.

If the spark plugs are removed, take care that no dirt enters the cylinders. Use only the recommended spark plug heat range and gap to specification. Resistive-type plugs should not be used as resistive wire leads are used for radio interference suppression.

The firing order is 1-3-4-2 (cylinder number 1 is closest to the firewall).



#### COOLING SYSTEM

The cooling system is pressurized with a crossflow 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.

In the case of the Saab 900 Turbo, the radiator fan may continue to run, or may cut in, for a short while after the engine has been switched off.

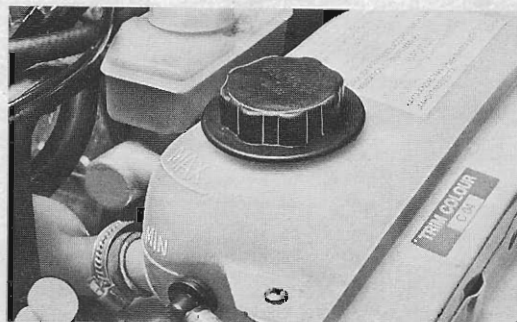
**WARNING!** The cooling system operates under pressure. Always open the cap on the expansion tank slowly and allow any steam to escape before you remove the cap.

Boiling coolant can cause serious burns. Let the engine cool before removing pressure cap.

The radiator must not be screened or blocked off!

#### Checking the Coolant Level

The expansion tank is transparent to facilitate checking of the coolant level. The level should be between the MAX and MIN marks on the tank.



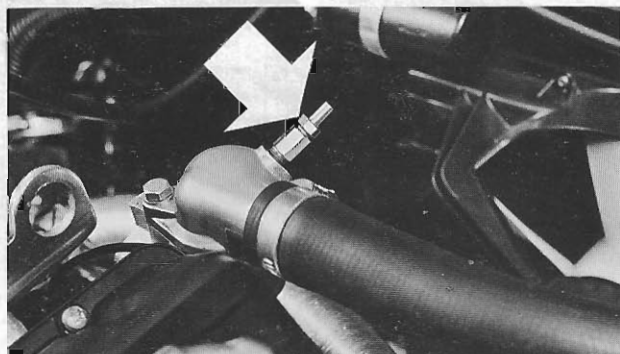
When necessary, top up with equal parts of clean water and coolant. After an empty expansion tank has been filled up, the engine should be run until warm and the tank topped up again.

### Changing Coolant Draining

1. Set the heater control to maximum heat.
2. Loosen the pressure cap on the expansion tank.
3. Open radiator drain cock which is located towards the bottom of the radiator on the right hand side.
4. Open engine drain plug located to the right of the engine, under the exhaust manifold.

### 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.
3. Open the bleeder nipple, allow the coolant to flow out of the nipple until free from air bubbles.
4. Close the bleeder nipple, top up the expansion tank, if necessary and replace cap.



### Anti-freeze Coolant Mixtures

The cooling system is filled with a mixture of Ethylene Glycol and water (50-50 mix).

During the cold season the coolant must be mixed with anti-freeze, as pure water is liable to freeze and burst the radiator and the cylinder block. For maximum security against freezing and corrosion the glycol dosage should be 50-70%. Use anti-freeze suitable for engines with aluminum alloy cylinder heads.

**NOTE!** When anti-freeze is added, it must first be mixed with a suitable quantity of water, as full circulation cannot take place until the thermostat opens. If pure anti-freeze is added, there is still a risk of the engine being damaged by ice if the anti-freeze does not mix with the engine coolant quickly enough.

The factory fill coolant must be changed and the system flushed according to the maintenance schedule as the inhibitors and other coolant additives lose their effectiveness with time and use. Avoid using coolant booster additives. The cooling system should be kept full to avoid air pockets and foaming.

## EMISSION CONTROL SYSTEMS

The Saab 900 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

Saab 900's imported to the United States 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.

BI 20CA and BSI 20CA—U.S.A. Federal Standards and California State Standards (catalyst equipped).

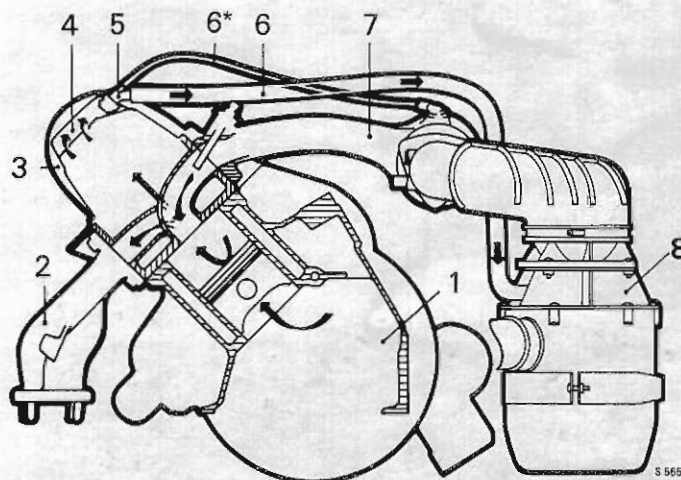
The engine families differ with respect to exhaust emission controls as follows:

System	Application
A. Continuous Injection System	BI 20CA + BSI 20CA
B. Lambda Control System	BI 20CA + BSI 20CA
C. Three-way Catalyst	BI 20CA + BSI 20CA
D. Decel Dashpot	BI 20CA + BSI 20CA
E. Turbocharging System	BSI 20CA

## 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

\*except BSI 20CA

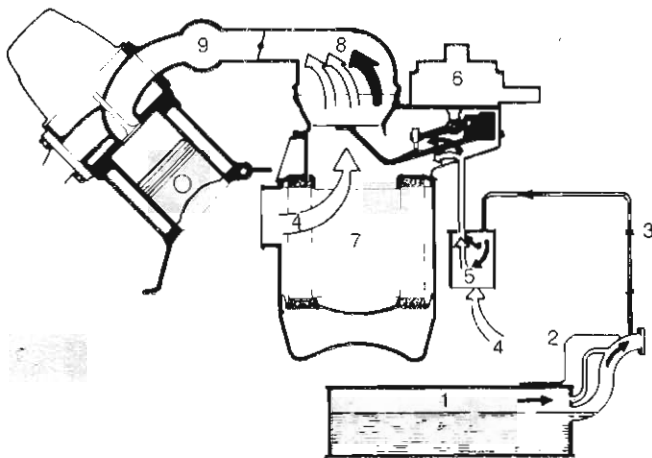
5. Nipple with orifice
6. Hose
7. Inlet Manifold
8. Air cleaner adapter



## 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. The fuel tank is pressurized by a valve in the ventilation line.

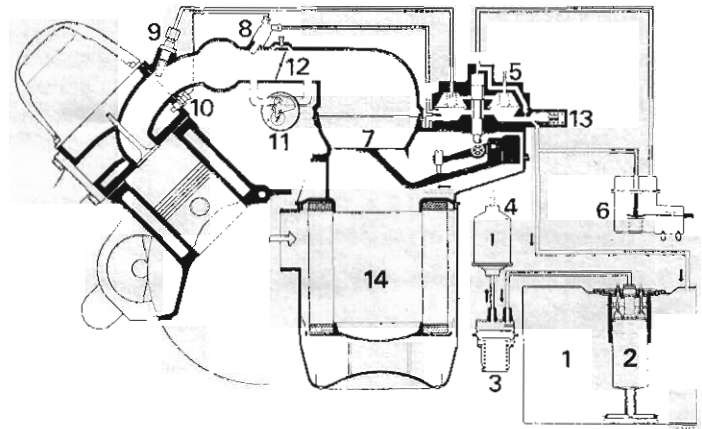


- |  |                             |
|--|-----------------------------|
| 1. Fuel Tank                             | 5. Charcoal Canister        |
| 2. Fuel Tank Vent Lines                  | 6. Fuel Distributor         |
| 3. Ventilation Line to Charcoal Canister | 7. Air Cleaner              |
| 4.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

## III. EXHAUST EMISSION CONTROL SYSTEMS

### A. CONTINUOUS INJECTION SYSTEM (AII)

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.

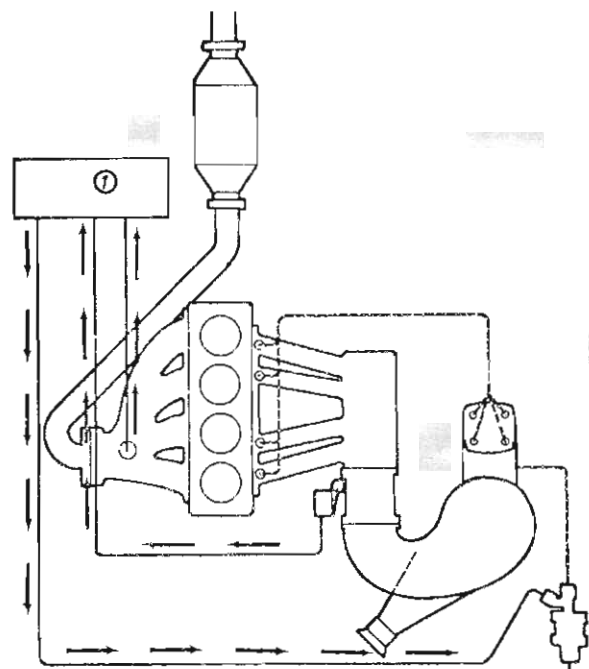


- |                          |                           |
|--------------------------|---------------------------|
| 1. Fuel Tank             | 8. Cold Start Valve       |
| 2. Fuel Pump             | 9. Injection Valve        |
| 3. Fuel Accumulator      | 10. Thermo-Time Switch    |
| 4. Fuel Filter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

### B. LAMBDA CONTROL SYSTEM (BI 20CA & BSI 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 ( $\text{Lambda} = 1$  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 (under the right front seat.) This signal is compared to a predetermined value and an output signal is sent to a fuel pressure modulating valve to make the necessary fine adjustment of the air/fuel ratio. During engine warm-up and wide open throttle operation the modulating valve assumes a pre-determined fixed position.

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



- |                              |
|------------------------------|
| 1. Electronic Control Unit   |
| 2. Wide Open Throttle Switch |
| 3. Oxygen Sensor             |
| 4. Catalytic Converter       |
| 5. Modulating Valve          |

### C. THREE-WAY CATALYST (BI 20CA & BSI 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.

### D. DECEL DASHPOT

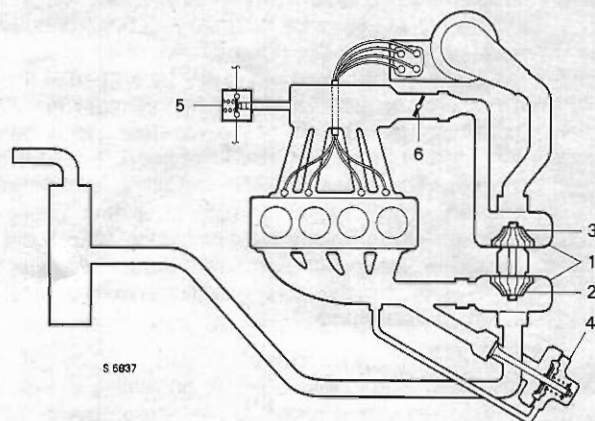
The decel acts upon the throttle linkage to minimize incomplete combustion during engine deceleration.

### E. TURBOCHARGING SYSTEM (BSI 20CA)

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

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

Turbocharged engines are equipped with an engine oil cooler that is located at the lower left of the radiator. The impeller shaft bearing actually floats on a thin film of engine oil circulated through the turbocharger housing by the engine oil pump.



1. Turbocharger
2. Exhaust Impeller
3. Compressor
4. Charge Pressure Regulator (wastegate)
5. Overpressure Safety Switch
6. Throttle Plate

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## TRANSMISSION

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

### Manual Transmission

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

### Automatic Transmission

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

Check the oil level as follows:

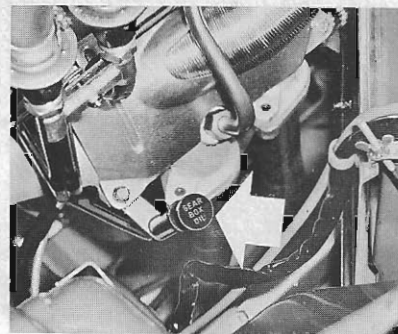
1. Have the engine idle for a few minutes with the selector at P.
2. Check that the oil level is between the maximum and minimum marks on the dipstick. The distance between the marks is equivalent to 1 quart (1 litre) of oil.
3. Oil is refilled through the pipe in which the dipstick is located.
4. After topping up, allow the engine to idle again for a few minutes and then recheck the level.

Use a nylon rag, lint-free paper or chamois leather to wipe off the dipstick—do not use rags that may leave fluff on the dipstick.

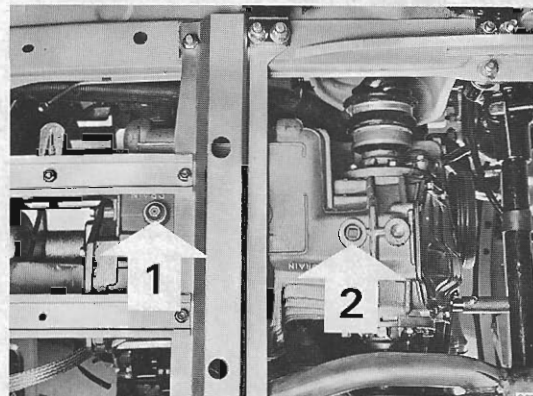
**The most scrupulous cleanliness must be observed during filling.**

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

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



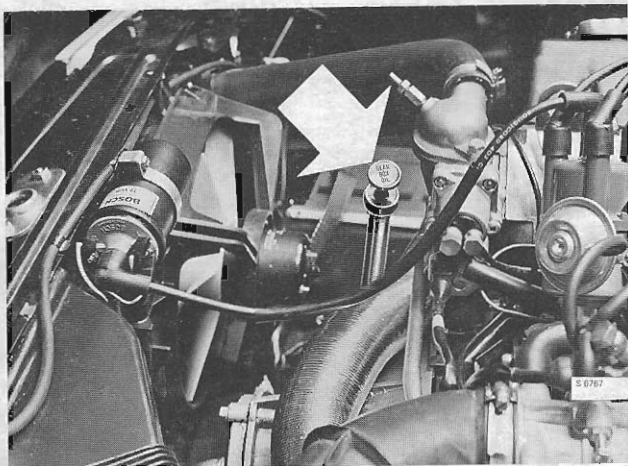
Oil filling and level plug, manual transmission



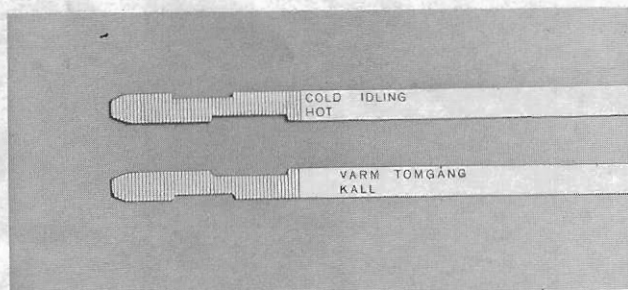
Drain plugs, manual transmission  
1. Engine 2. Transmission

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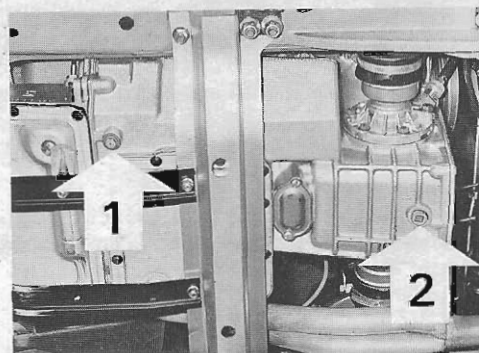




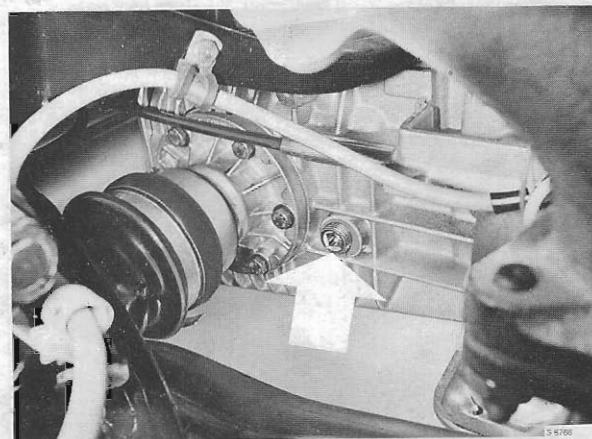
Location of dipstick, automatic transmission



Dipstick, automatic transmission



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



Oil level plug, final drive, automatic transmission

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## B. Electrical System.

### BATTERY

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

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

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

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

### BOOSTER CABLE CONNECTION INSTRUCTIONS

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

A. Connect one booster cable from the positive (+) terminal of one battery to the positive (+) terminal of the other battery.

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

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

### ALTERNATOR

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

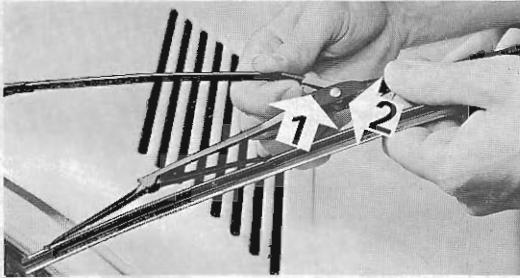
The belt should be tightened such that the center of the belt can be moved about one half inch (10-15 mm.)

## WINDSHIELD WIPERS

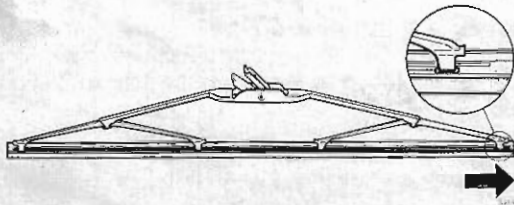
Inspect and clean the rubber blades of the windshield at regular intervals. Methyl Alcohol is recommended for cleaning. If the blades show signs of wear, they should be replaced. 400 mm. (15.8 in.) blades are specified.

### Changing the Windshield Wiper Blades

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

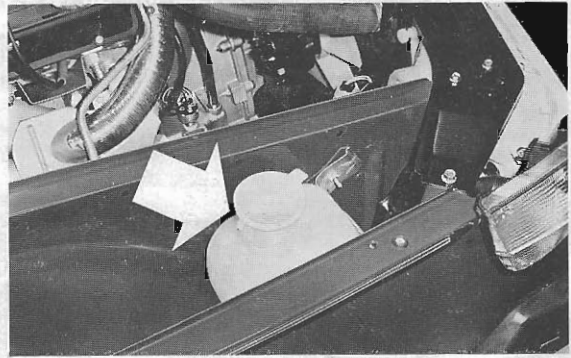


Free the rubber from the retainer (see illustration) by pressing together the two shiny metal pieces and twisting the rubber. The rubber can now be withdrawn through the other retainers. To fit the rubber, slide it through the four retainers and then tighten it so that the retainer at one end engages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



## Washers

The reservoir holds 5 U.S. quarts. Fill up with washer fluid and water. The spray nozzles consist of rotatable balls; to adjust the direction of the jet, insert a needle in the hole of the nozzle.



## HEADLIGHTS, BULBS, FUSES

### Headlights

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

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

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



### Instrument Illumination, Control Illumination and Indicator Warning Lights

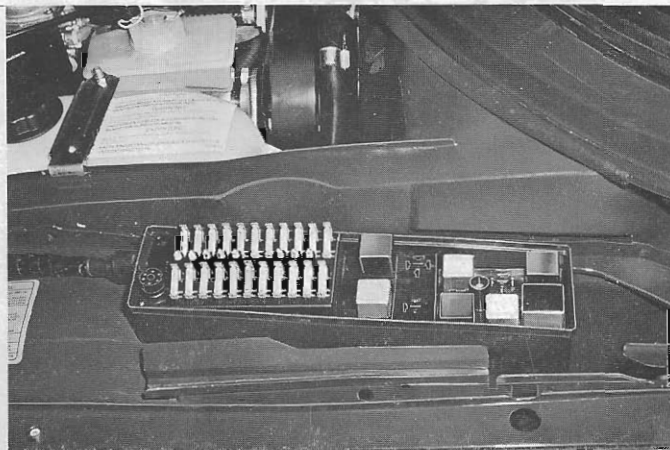
All the bulbs in the instrument assembly are mounted in bayonet fittings and are accessible from the back of the panel. The bulb for headlight switch illumination is located within the switch.

### Changing Other Light Bulbs

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

### Fuses

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

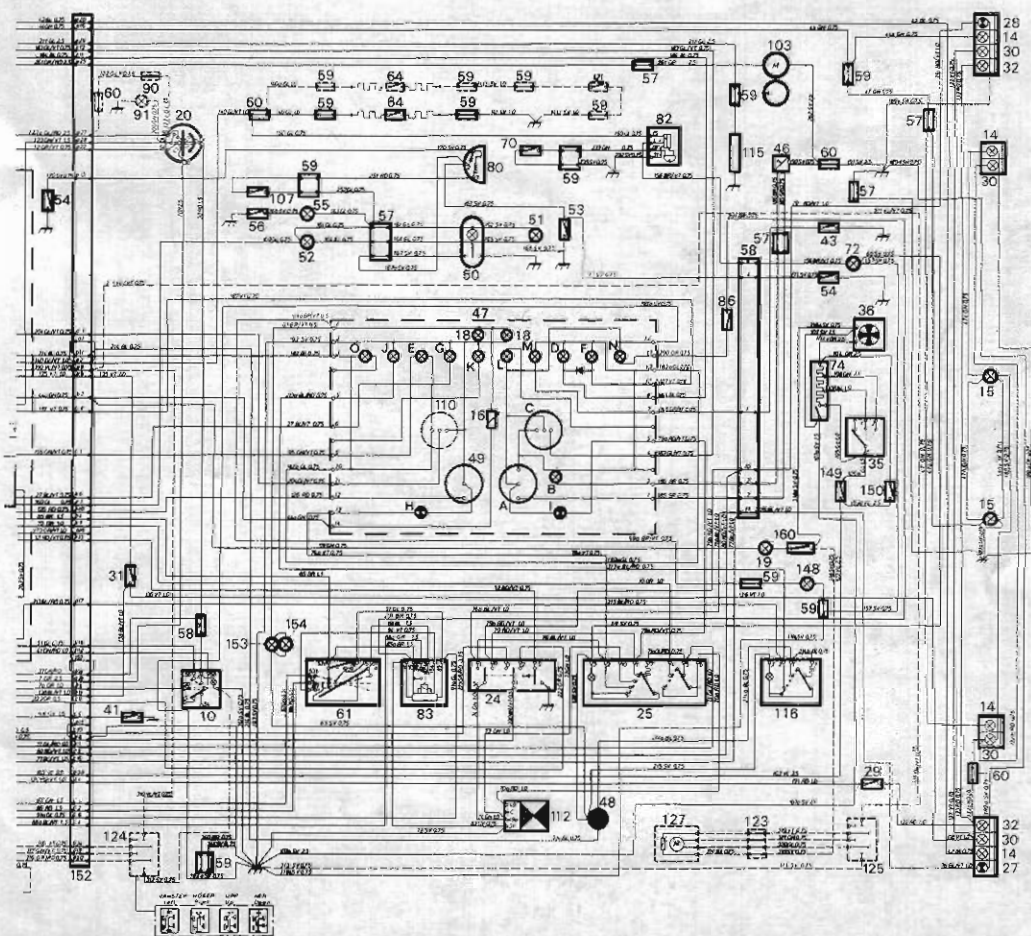
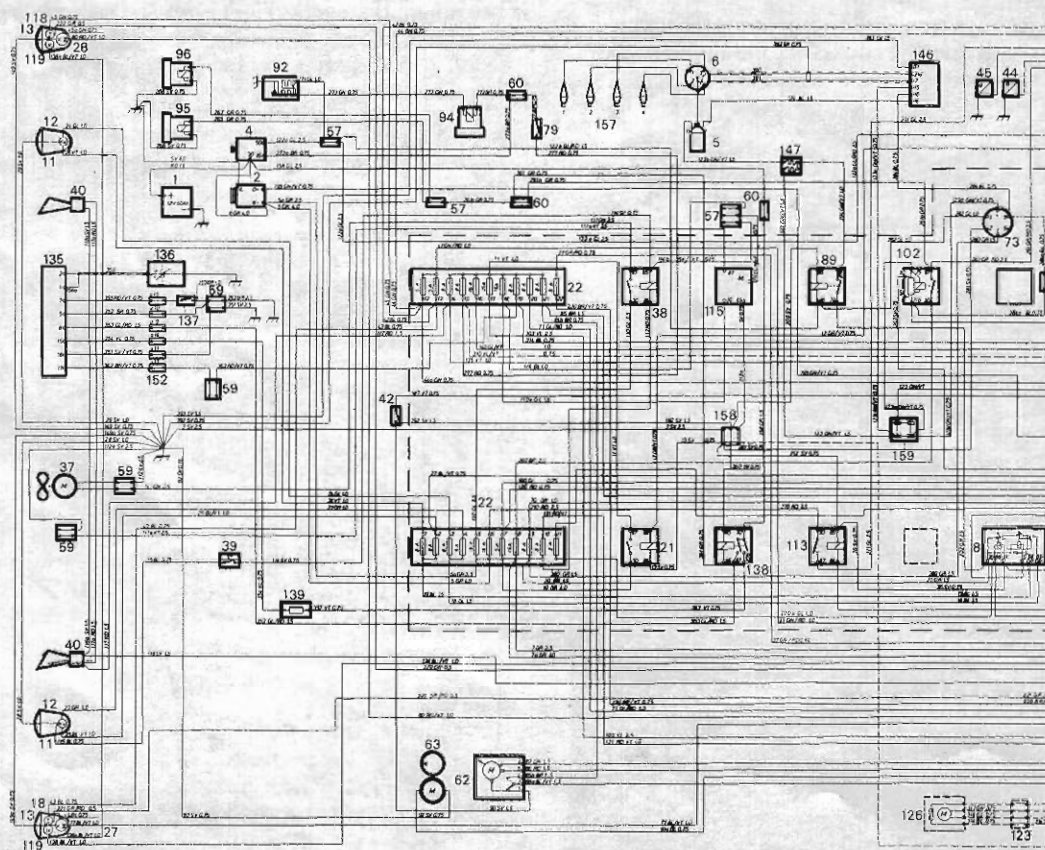


When a fuse has blown, the strip of metal running along the length of the fuse will have been burned through. When changing fuses, make sure that the new fuse has the same rating as the old one (see table). Fuses of the same rating have a common color. The rating is also marked on the fuse. Insert the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

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

No.	Function	Rating, Amperes
1	High beam, RH	8
2	High beam, LH	8
3	Low beam, RH	8
4	Low beam, LH	8
5	Radiator fan	16
6	Electric rear window defroster	16
7	Interior lighting	5
8	Fuel pump, injection engines	16
9	Hazard warning flashers	8
10	Brake lights	5
11	Fan, air conditioning	16
12	Parking and tail light, RH	5
13	Parking and tail light, LH	5
14	Horn	8
15	Not used in U.S.	n.a.
16	Electric heating, seat	16
17	Fan, heating and ventilation	25
18	Spare	8
19	Warning lights	8
20	Direction indicators	8
21	Windshield wipers	8
22	Cornering lights	8

## WIRING DIAGRAMS







## WIRE COLOR CODES

BL	Blue
BR	Brown
GL	Yellow
GN	Green
GR	Grey
OR	Orange
RD	Red
SV	Black
VL	Violet
VT	White
BL/RD	Blue/Red
GL/RD	Yellow/Red
GN/RD	Green/Red
SV/RD	Black/Red
GR/RD	Gray/Red
BL/VT	Blue/White
BR/VT	Brown/White
GL/VT	Yellow/White
GN/VT	Green/White
GR/VT	Gray/White
RD/VT	Red/White
SV/VT	Black/White
VL/VT	Violet/White

1. Battery
2. Alternator
4. Starter
5. Ignition coil
6. Distributor
8. Light relay
10. Light switch
11. High Beam
12. Low Beam
13. Parking Light, front
14. Tail light
15. Licence plate light
16. Instrument light rheostat
18. Light, instrument
19. Light, glove box
- 46 20. Ignition lock

21. Ignition lock relay
22. Fuse box
24. Direction indicator switch
25. Warning flasher switch
27. Direction indicator lamps, L.H.
28. Direction indicator lamps, R.H.
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. Seat belt contact "F"
72. Lamp, seat belt warning
73. Socket for ignition control
74. Resistance, fan, low speed
79. Vacuum switch
80. Buzzer key and seat belt warning
82. Logic relay
83. Wiper washer interval relay
86. EXH contact
89. Relay ignition
90. Start lock contact (only automatic trans)
91. Gear shift light (only automatic trans)
92. Temperature time switch
94. Starter valve
95. Make up air valve
96. Pilot pressure valve
102. Pump relay
103. Fuel pump
107. Key contact
110. Tachometer (Turbo and EMS)
112. Electronic washer unit
113. Electrical rear window relay
116. Switch electrical rear window
118. Cornering light
119. Side back-up light
121. Seat contact electrical pad
122. 8-Pole connector
123. 4-Pole connector
124. Switch electrical rear view mirror L.H.
125. Switch electrical rear view mirror R.H.
126. Electrical rear view mirror L.H.
127. Electrical rear view mirror R.H.
135. Trigger unit, Lambda system
136. Oxygen sensor
137. Venturi contact
138. Relay Lambda
139. Timing valve
142. Solenoid valve (only Turbo)
144. Pressure switch (only Turbo)
146. Electronic unit
147. Resistance
148. Ash tray lamp
149. Main switch fan
150. Switch AC
151. Trigger unit (only Turbo)
152. 29-Pole connector
153. Light, cigarette lighter
154. Light, heater control
155. Socket for extra cooling fan relay
157. Spark plug
158. Block connector
159. Block connector
160. Glove compartment

## C. Steering and Brakes

### BRAKES

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

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

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

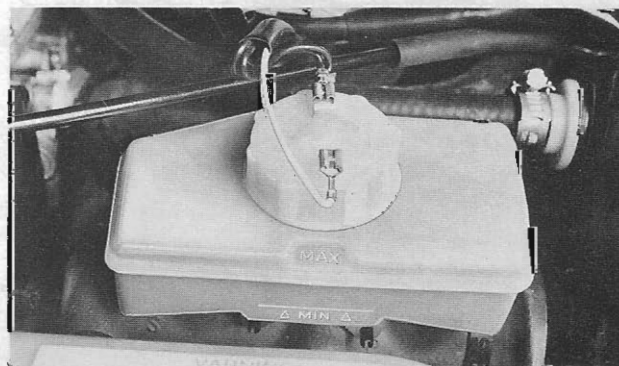
Both the footbrake and the handbrake are self-adjusting. It is therefore impossible to tell when the brake linings are worn out and need to be replaced by noting an abnormally long pedal stroke. Consequently, it is very important to check the thickness

of the brake linings regularly as specified in the maintenance schedule.

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

### Checking the Brake Fluid

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





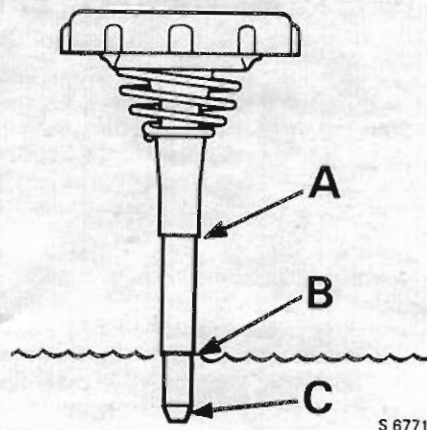
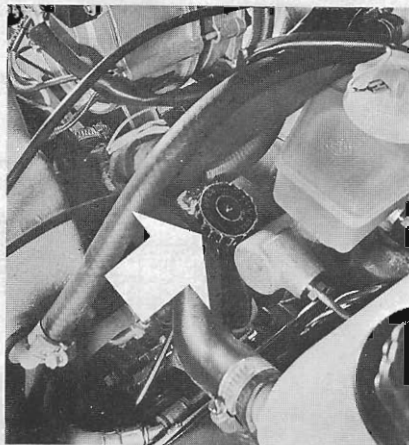
After a longer period of time in use, the brake fluid will deteriorate, since it gradually absorbs water and oxidizes. It is therefore important that the fluid be changed as specified in the maintenance schedule. This work should be carried out by an authorized Saab dealer.

## STEERING

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

### Power-assisted Steering

In some models, the steering gear is power-assisted to facilitate maneuvering at low speed.



S 6771

Check the fluid level in the servo reservoir regularly, as specified in the maintenance schedule. The dipstick in the reservoir cap is graduated separately for cold and warm fluid. If the car has reached its normal running temperature, the fluid level should be between the marks for warm (A) and cold (B). If the fluid level is checked when the car is cold, the level should be between the cold fluid (B) mark and the tip of the dipstick (C). Top up with General Motors "GM Power steering fluid".

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## D. Wheels and Tires.

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

### Tire Pressures

Check tire pressures regularly.

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

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

### Wear Indicators

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

### Winter tires

The Saab 900 GL and GLE models are equipped with standard radial ply tires which, if they have at least half their original tread depth, are also suitable for winter use in moderate climates where snow and ice are not too severe. The 900 EMS and Turbo models as well as GLE model with touring package are equipped with wide profile tires which have been developed to give the greatest possible roadholding and stability under both wet and dry driving conditions with the result that the tread compounds and designs are not suitable for use on ice and snow. We therefore recommend winter tires or "all weather" tires for these models when driving on snow or ice. (See Winter Driving, Starting and Driving Section.)

### Tire Rotation

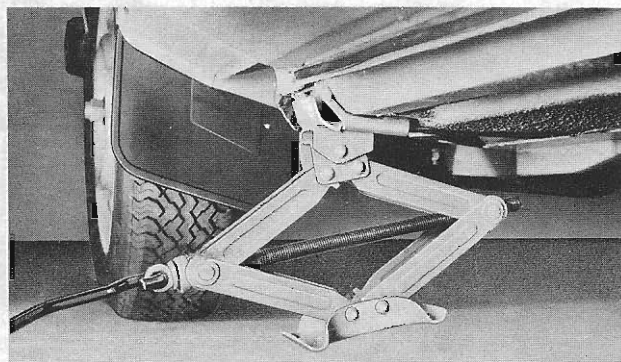
The front-wheel drive causes the front tires to wear more than the rear tires. If it is desired to have the tires wear evenly, they should be changed round after a certain period of driving so that the least worn tires are at the front. By switching the tires in this manner, the service life of all four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

### WHEEL CHANGING

The tool kit and jack are stored under the floor in the luggage compartment. A mini-space type spare wheel is stored upright in the luggage compartment.

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

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

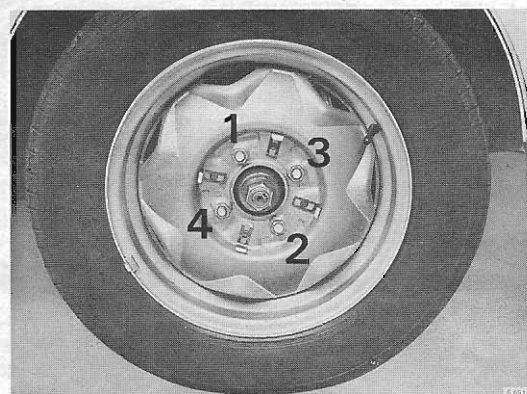


**WARNING! Never crawl under the car when it is jacked up.**

1. Apply the handbrake. Slide the jack into the attachment points and crank it down until it touches the ground.
2. To remove the hub cap, insert a screw-driver behind the cap and lever it off.
3. Back off the wheel nuts half a turn. Check that the jack has located properly against the flange on the sill beam and that the whole of the base is firmly in contact with the ground.
4. Jack up the car until the wheel is clear of the ground, then remove the wheel nuts and the wheel.
5. Mount the wheel and tighten the wheel nuts loosely. Check that the wheel and nuts are correctly positioned.

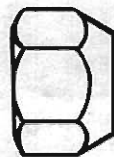
**NOTE! The spare wheel is a mini-space type (steel). Since different wheel nuts are required for steel wheels and aluminum wheels, the appropriate nuts for the steel wheel are supplied in the tool kit on cars fitted with aluminum alloy wheels. Never use the standard wheel nuts to secure the spare (steel) wheel. See illustrations.**

50

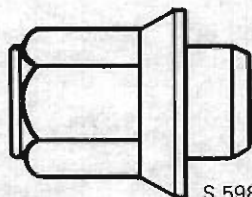


6. Lower the car. Tighten the wheel nuts in the order shown in the illustration below. Tighten to 65-80 ft. lbs. Never use an impact wrench when tightening wheel nuts or the wheel may be damaged.

**WARNING! The mini-space spare tire should be kept inflated to 60 PSI at all times. When the spare is mounted the car's handling characteristics will be affected slightly, and extreme driving maneuvers should be avoided. With the spare mounted do not exceed 50 MPH. If the mini-space tire must be replaced it should be replaced with the same type designed for the narrow rim. Under no circumstances should mounting of a conventional type tire be attempted.**



Mounting nut,  
steel wheel and mini-space spare.



S 5983

Mounting nut,  
aluminum wheel



# E. Specifications

## GENERAL

Overall length incl bumpers	(4764mm)	187.6"
Overall width	(1690mm)	66.5"
Overall height (empty)	(1420mm)	55.9"
Road clearance (curb weight)	(150mm)	6"
Track, front wheels	(1420mm)	55.9"
Track, front wheels, Turbo	(1430mm)	56.3"
Track, back wheels	(1430mm)	56.3"
Track, back wheels, Turbo	(1440mm)	56.7"
Wheelbase	(2525mm)	99.4"
Turning radius	(5.3m)	208.7"

## WEIGHT

Curb weight	(1203-1330 kg)	2,650-2,930 lb*
Gross vehicle weight rating	(1625-1752 kg)	3580-3,860 lb*
Weight distribution,		
at curb weight	58-60% front	
at gross vehicle weight rating	49-51% front	
Trunk volume (SAE) without		
parcel shelf	(0.457 m <sup>3</sup> )	16.1 cu. ft.
Vehicle capacity weight, five		
persons and 180 lb luggage	(422 kg)	930 lb
Max roof rack load	(100 kg)	220 lb
Max trailer weight		
with trailer brakes	(900 kg)	2,000 lb
without trailer brakes	(450 kg)	1,000 lb
Max trailer tongue weight	(90 kg)	198 lb

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

## ENGINE

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

### Valve Clearance, Cold Engine:

Intake, all	(0.15-0.30mm)	.0006"-0.012"
Exhaust, Standard	(0.35-0.50mm)	.0014"-0.020"
Exhaust Turbo	(0.40-0.50mm)	.0016"-0.020"

### Ignition Advance:

Basic Setting 20° BTDC @ 2000 RPM (vacuum hose plugged)

Engine Idling Speed in Neutral (A.C. off) .... 875 ± 50 RPM

## OIL VISCOSITY

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

## FUEL SYSTEM

Type	Bosch K-Jetronic (CIS)
Fuel Pump	Electric, in fuel tank
Fuel Tank: Capacity	14.5 U.S. gallons
Material	HDPE (High density polyethylene)

	BSI20CA (Turbo)	BI20CA (Catalyst)
Power Rating, SAE Net HP @ RPM	135 @ 4800	110 @ 5250
Max. Torque at 3500 RPM	160 ft. lbs.	119 ft. lbs.
Compression Ratio	7.2:1	9.25:1
Idle CO*	0.75 - 1.25%	0.75 - 1.25%
Dashpot Adjustment	**	**
Oil Capacity Including Filter	4.5 U.S. qts.	4 U.S. qts.
Recommended Fuel (14.5 U.S. gal. capacity)	Unleaded 87 (91 RON min.)	Unleaded 87 (91 RON min.)

\* BSI20CA, BI20CA: Unplug oxygen sensor when setting CO. Exhaust sample is taken ahead of the catalyst thru a special pickup in the exhaust pipe approximately 4" below the exhaust manifold.

\*\*Disconnect vacuum advance and plug. Adjust plunger to contact throttle lever with engine operating at 2500 RPM. (2200 RPM with vacuum line disconnected on BI20CA automatics.)

## COOLING SYSTEM

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

Coolant volume incl. heating system	(10 liters) 10.5 U.S. qts., 8.8 Imperial qts.
Thermostat opens at	(88°C) 190°F
Anti-freeze	Ethylene glycol, permanent type, with aluminum corrosion protection properties.

## MANUAL TRANSMISSION

Type	4-speed or 5 speed, all synchromesh with final drive and differential
Oil capacity	(2.5 liters) 3 U.S. qts.
Oil Specifications	SAE 10W30 (Service SE acc. to API)
Hydraulic clutch	Single dry plate with spring-loaded hub

Gear ratios total (includes primary and final ratios):

	BI 20CA 4-Speed	BI 20CA + BSI 20CA 5-Speed
1st gear	12.94:1	12.89:1
2nd gear	7.80:1	7.77:1
3rd gear	5.23:1	5.22:1
4th gear	3.76:1	3.76:1
5th gear	—	3.03:1
Reverse	14.23:1	14.01:1
Final drive ratio	3.89:1	3.89:1

#### Recommended Shift Points

Gear Change	Economical Driving 4 & 5 Speed		High Altitude Driving (All)
	BI 20CA Speed	BSI 20CA Speed	Speed
1st to 2nd	12 mph	15 mph	18 mph
2nd to 3rd	22 mph	25 mph	28 mph
3rd to 4th	30 mph	40 mph	43 mph
4th to 5th	40 mph	45 mph	48 mph

#### AUTOMATIC TRANSMISSION

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

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

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

Grade of oil for automatic transmission fluid  
..... Type "F" (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 80 in accordance with  
API-GL-5, or GL-4

Primary gear ratio ..... 0.97:1

Turbo ..... 0.878:1

Gear ratios (transmission):

1st gear ..... 2.39:1

2nd gear ..... 1.45:1

3rd gear ..... 1:1

Reverse gear ..... 2.09:1

Final drive ratio ..... 3.89:1

#### BRAKE SYSTEM

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

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

Brake and clutch fluid ..... 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<sup>2</sup>) ..... 222 in.<sup>2</sup>

Rear wheels ..... (1095cm<sup>2</sup>) ..... 170 in.<sup>2</sup>

Total ..... (2527cm<sup>2</sup>) ..... 392 in.<sup>2</sup>

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

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#### 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  
(GLE, EMS, Turbo—Gas pressure)

Maximum working stroke, fitted to car:

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

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

Steering:

Steering gear ..... Rack and pinion

Wheel turns, lock to lock:

Standard setting (manual) ..... 4.2

Power steering ..... 3.65

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

#### WHEELS AND TIRES

Wheel sizes:

Saab 900 GL and 900 GLE: 5 J x 15 FHA (steel)  
Saab 900 EMS: 5 J x 15 FHA (aluminum)  
Three-door Saab 900 Turbo: 5½ x 15 H2 (aluminum)  
Five-door Saab 900 Turbo: 135TR x 390FH (aluminum)\*  
Spare wheel (all): 4 J H1 x 15"

\* This wheel is to be used for TRX tires only.  
(Also used on 900 GLE with touring package.)

#### Tire dimensions:

Saab 900 GL and 900 GLE: 165 SR 15  
Saab 900 EMS: 175/70 HR 15  
Three-door Saab 900 Turbo: 195/60 HR 15  
Five-door Saab 900 Turbo: 180/65 HR 390 (TRX)\*  
Mini-Space Spare T115/70 D15

\* Also used on 900 GLE with touring package. Requires special  
metric size wheels.

#### TIRE PRESSURE (cold tires)

Tire Size	Recommended Pressure	
	Light Load* Ft./Rear	Max. Load Ft./Rear
165 SR 15	27/27	32/35
175/70 HR 15	30/30	32/35
195/60 HR 15 (P6)	29/29	30/32
180/65 HR 390 (TRX)	26/29	30/32
	60 PSI	

\* Add 1.5 psi if car has air conditioning.

Check tire pressure with cold tires.

#### Front Wheel Alignment:

Toe-in (measured at rims) 2 ± 1mm 0.08 ± 0.04 in.

Camber ..... ½° ± ½°

Caster non-power steering ..... 1° ± ½°

power steering ..... 2° ± ½°

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## ELECTRICAL SYSTEM

Voltage	12V
Battery capacity	60AH
Starter	1.1 HP
Alternator, max. charging	
Current/voltage	70 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
Headlights high/low beam	65/55W	6052	2
Front direction indicators/sidemarkers	21/5W	1157	2
Rear direction indicators	21/5W	1157	2
Cornering lamps/parking lights	21/5W	1157	2
Rear lights	5W	67	2
Brake lights	21W	1156	4
Back-up lights	21W	1156	2
Side back-up lights	21W	1156	2
License plate light	5W	*	2
Interior lighting:			
Dome	10W	*	1
Rear-view mirror	5W		1
Glove compartment	5W		1
Luggage compartment	10W	*	1

Switch lighting:			
Light switch	1,2W	**	1
Hazard warning flashers	1,2W	**	1
Electrically heated rear window	1,2W	**	1
Control lights:			
Charging	2W	**	1
Oil pressure	1,2W	**	1
Brakes	1,2W	**	1
Direction indicators	1,2W	**	2
Choke	1,2W	**	1
Electrically heated rear window	1,2W	**	1
High beam	1,2W	**	1
Handbrake	1,2W	**	1
Seat belts	1,2W	**	1
Fuel tank	1,2W	**	1
Other lighting:			
Instruments	3W	161	2
Ignition switch	2W	53	1
Heating and ventilation control	1,2W	**	1
Cigarette lighter	1,2W	**	1
Ashtray	1,2W	**	1

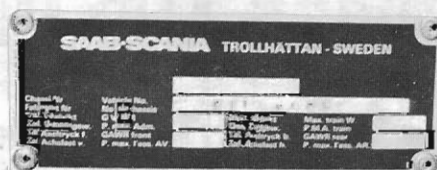
\* Cartridge bulb  
\*\* Glass fitting

## TOOL KIT

Jack 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

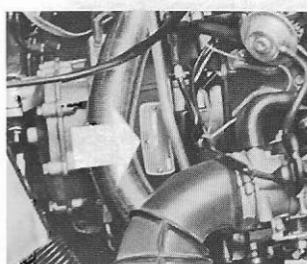
## F. Identification Numbers

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

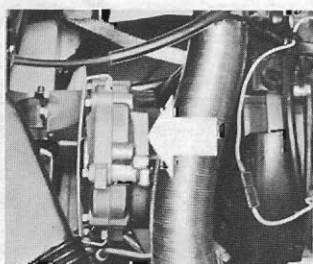


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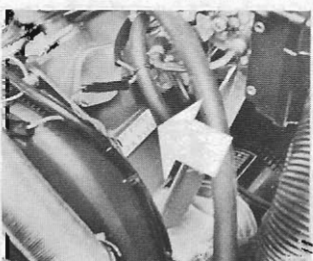
VEHICLE IDENTIFICATION NUMBER (V.I.N.)



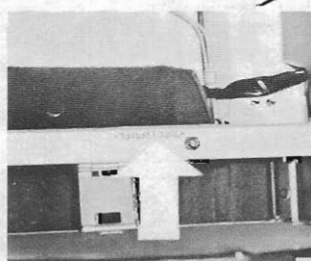
TRANSMISSION NUMBER, AUTOMATIC TRANSMISSION



TRANSMISSION NUMBER, MANUAL TRANSMISSION



ENGINE NUMBER



V.I.N. PUNCHED IN CAR BODY, 3 DOOR (UNDER BACK SEAT CUSHION)



V.I.N. PUNCHED IN CAR BODY, 5 DOOR (UNDER BACK SEAT CUSHION)

# III. SERVICE AND MAINTENANCE

## A. Schedule Maintenance

### MAINTENANCE SCHEDULE

The Maintenance Schedule prescribes a program of instructions to the purchaser/operator of a 1980 Saab for maintenance which is reasonable and necessary to ensure the proper function, durability, and safety of the Saab automobile in normal use. The Schedule is divided into two parts: Emission System Maintenance and Vehicle Maintenance. The **Emission System Maintenance** instructions specify operations to ensure proper and safe function of Saab emission control systems throughout the useful life of the automobile. Additional maintenance is specified for certain components when operated under certain severe conditions. **Maintenance, replacement, or repair of the emission control devices and systems may be performed by any automotive repair establishment or individual using any automotive part which has been certified according to U. S. EPA regulations (to be issued in 1979) governing voluntary after-market part self-certification.** The **Vehicle Maintenance instructions** are specified to ensure proper and safe functioning of the Saab automobile and its subsystems.

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

### SERVICE RECORD RETENTION

The Service Record Section of this Owner's Manual should be stamped by your dealer whenever scheduled maintenance is performed. Authorized Saab dealers regularly receive up-to-date Service Manuals and bulletins from Saab-Scania of America, Inc. and are able, through their franchise agreement with Saab-Scania of America, Inc., to attend Saab service schools and purchase special tools and original equipment spare parts.

**IMPORTANT!** In order to satisfactorily document that necessary maintenance has been performed, retain receipts and, if possible, copies of shop work orders for all service and repair work, wherever performed.

Note to California Residents Only: The Emission System Maintenance Schedule is further divided into two parts: Required Maintenance and Recommended Maintenance. This is done in compliance with provisions set forth by the California Emission Control System Warranty Regulations and applies to California purchasers/operators only. "Required Maintenance" is that which must be performed to be eligible for coverage under the California Emission Control System Warranty. Maintenance operations identified as "recommended", although recommended by the manufacturer, do not invalidate the purchaser/operator of his/her California Emission Control System Warranty rights if not performed. Refer to the written warranty for further information pertaining to specific purchaser/operator rights and obligations.

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### EMISSION SYSTEMS MAINTENANCE PROGRAM

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

1. Under the following severe driving conditions, replace every 15,000 miles:

- Spark Plugs — Extensive idling, stop-and-go driving, towing, high speed driving, driving in cold climates over repeated short trips without sufficient engine warm-up.
- Air Cleaner — Dusty conditions.
- Fuel Filter — Dusty conditions or if clogged (accompanied by an increase in fuel pump operating noise level).

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

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

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

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

Required	Recommended	Where "miles" or "months" are shown, perform at whichever limit is reached first.				
		A. Emission System Maintenance (continued)	1,000 MI. Break In Service	Every 7,500 MI. (5,000-Turbo) or 6 Mos.	Every 15,000 MI. or 12 Mos.	Other
*		Idle Speed — Check idle speed and adjust to specification, if necessary. ....	X ✓			X — At 60,000 miles (and whenever the vehicle is relocated for a prolonged period of operation at a different altitude).
*		Deceleration System — Check operation; adjust to specification, if necessary. ....	X ✓			X — At 60,000 miles.
*		Idle Air Fuel Mixture — Check idle CO and adjust to specification, if necessary. ....	X ✓			X — At 60,000 miles or after repair or replacement of the fuel distributor or air flow sensor.
*		Charging Pressure — Check; adjust to specification, if necessary. (Reseal with anti-tampering wire) [Turbo only] ....	X			X — Every 15,000 miles.
*		Overpressure Safety Switch — Check operation. [Turbo only] ....				X — Every 15,000 miles.

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

# VEHICLE MAINTENANCE PROGRAM

Where "miles" or "months" are shown, perform at whichever limit is reached first.

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

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Where "miles" or "months" are shown, perform at whichever limit is reached first.

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Every 7,500 Mi. (5,000- Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
<b>MANUAL TRANSMISSION</b>				
<b>Gearbox Oil Level</b> — Check; add as necessary. ...		X		
<b>GEARBOX Oil</b> — Change, clean magnetic drain plug. (Be careful not to confuse drain plugs for engine and gearbox.) ....	X ✓			
<b>AUTOMATIC TRANSMISSION</b>				
<b>Gearbox Oil Level</b> — Check; add as necessary. ...		X ✓		
Adjust automatic transmission gear selector control cable and retighten cover bolts under gearbox .....	X ✓			
<b>Inspection/Service</b> — Drain oil, drop pan, and clean filter and magnet; adjust selector cable, rear lining and kick-down cable; replace pan and refill with fresh ATF.				X — One time at 15,000 miles.
<b>Differential Oil Level</b> — Check; add as necessary. .		X ✓		
<b>Differential Oil</b> — Change .....	X ✓			

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

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

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Where "miles" or "months" are shown, perform at whichever limit is reached first.

B. VEHICLE MAINTENANCE (continued)	1,000 Mi. Break In Service	Every 7,500 Mi. (5,000- Turbo) or 6 Mos.	Every 15,000 Mi. or 12 Mos.	Other
Remove wheels and check brake pad thickness. Replace pads when lining thickness is less than 1/8 inch.		X		
Grease sliding surfaces of front brake caliper yokes (special grease required).			X	X — Repeat, if necessary, whenever brake pads are changed.
Check brake fluid level; if necessary replenish fluid in master cylinders for brake and clutch (manual trans.).	X	X		
Replace brake fluid and bleed system.				X — Every 30,000 miles or 24 months.
<b>MISCELLANEOUS</b>				
Change ventilation air filter (except 900 with A/C and 99).			X	
Lubricate sparingly the door stops and hinges, throttle control, and engine hood lock mechanism.			X	
Test drive vehicle and check overall condition, noting especially the function of brakes and clutch.	X	X		

## B. General Information

### ENGINE TROUBLE SHOOTING

#### 1. Engine will not start—starter cranks engine in normal manner

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

#### 2. Engine starts—runs rough, misfires, low power.

(Note: Misfiring should be corrected immediately to prevent overheating of the catalytic converter.)

- A. Spark plugs fouled, worn or in need of adjustment.
- B. Spark plug cables not properly plugged into distributor cap or onto spark plugs.
- C. Loose or corroded connections—low voltage leads to coil.
- D. Engine oil filler cap or dipstick not seated admitting excess air through crankcase vent system.
- E. Fuel injection system in need of adjustment.

#### 3. Stalling at idle, rough operation during engine warm-up and hesitation or lack of power on acceleration.

- A. Unscheduled servicing of the Lambda Control system may be necessary. If so, this should be performed by a Saab dealer.

#### 4. Improper idle speed—too fast or too slow.

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

#### 5. Charge indicator lamp fails to light when ignition is switched on.

- A. Bulb burned out.
- B. Discharged battery or loose battery cable.
- C. Improper wiring to voltage regulator causing an open circuit.

#### 6. Charge indicator lamp lights up with engine running.

- A. Broken or slack alternator drive belt.
- B. Malfunction in voltage regulator.
- C. Malfunction in alternator.

#### 7. Discharged battery

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



#### 8. Oil pressure indicator lamp lights up with engine running.

- A. Malfunction in engine lubrication system causing low oil pressure.
- B. Oil level in sump extremely low.

#### 9. EXH indicator lamp illuminates

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

### APPEARANCE CARE

#### Care of paintwork

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

#### Washing

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

### OWNER ASSISTANCE

#### Flat towing

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

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

If a car with automatic transmission has to be towed, the following rules must be observed:

1. The selector must be at N.
2. The transmission case must be filled with oil to the correct level.
3. The maximum safe towing speed for cars with automatic transmission is 25 mph (40 km/h).

4. The maximum recommended towing distance is 30 miles (50 km). If the car has to be towed any greater distance, the front wheels must be lifted off the ground.
5. An engine with automatic transmission cannot be started by towing or pushing.

#### Towing by Commercial Tow Truck.

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

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

#### Service Information

Service and Parts Manuals for Saab vehicles can be ordered through the dealer.

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

#### Service problem assistance

The booklet entitled "Warranties—Your Responsibilities and Ours" which accompanies this manual contains the new car and emission control system warranties and owner assistance information.

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