

SAAB

900

**SERVICE
MANUAL**

1:1 Pre-delivery inspection,
break-in service

M 1987-



SERVICE MANUAL

1:1 Pre-delivery inspection and Break-in service M 1985, 1986, 1987-

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Units

The basic units as well as the derived units used throughout the Service Manual are in accordance with the SI system.

As a supplement to these, a number of other units are specified within brackets.

The following symbols for the various units have been used in this issue:

SI unit

mm
kg
N
Nm
bar
l
°C

Supplementary unit unit

in
lb
lbf
lbf ft
psi
qt (US)
°F

Conversion factors

1 in = 25,4 mm
1 lbf = 4,45 N
1 lbf ft = 1,36 Nm
1 psi = 0,07 bar
1 qt = 0,95 l

1 mm = 0.039 in
1 N = 0,23 lbf
1 Nm = 0,74 lbf ft
1 bar = 14,5 psi
1 l = 1,05 qt

Technical data

Engine

Valve Mechanism

Valve clearance in engine
having stood for 30 min after
running at normal temperature

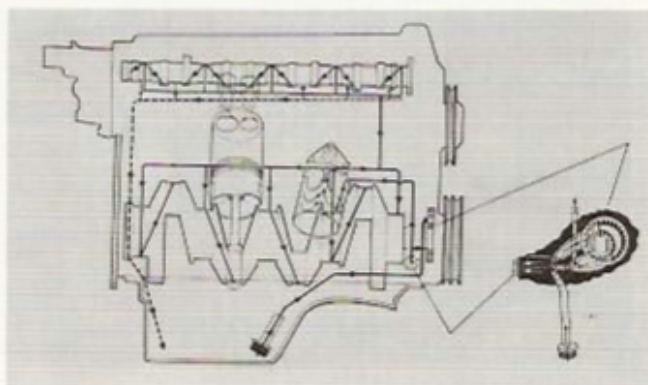
Note

Engine B201 only

Engine B 201		Turbo		Normally aspirated	
		in	mm	in	mm
On checking:	inlet	0.006-0.012	0.15-0.30	0.006-0.012	0.15-0.30
	exhaust	0.016-0.020	0.40-0.50	0.014-0.020	0.35-0.50
On adjusting:	inlet	0.008-0.010	0.20-0.25	0.008-0.010	0.20-0.25
	exhaust	0.018-0.020	0.45-0.50	0.016-0.018	0.40-0.45

Shims	in (mm)	Available in intervals of 0.002 (0.05) between 0.0697-0.1138 (1.77 and 2.89)
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Lubricating System



Oil capacity, including oil cleaner, 8-valve 16-valve Turbo:	qts (l)	4.0 (3.8)
	qts (l)	4.2 (4.0)
	qts (l)	The oil cooler holds an additional 0.5 (0.5)
Volume between MAX and MIN marks on dipstick	qts (l)	1.0 (1.0)
Recommended oil, Turbo Normally aspirated		API-Service SF/CD or SF/CC API-Service SF/CC
Viscosity: Above 0°F (-17°C) Below 0°F (-17°C)		SAE 10W-30 or 15W-40 SAE 5W-30

2 Technical data

Fuel System

Idling speed:		
8-valve	rpm	875 + 75
16-valve	rpm	850 + 75
	rpm	With grounded GN/R wire 750 + 25

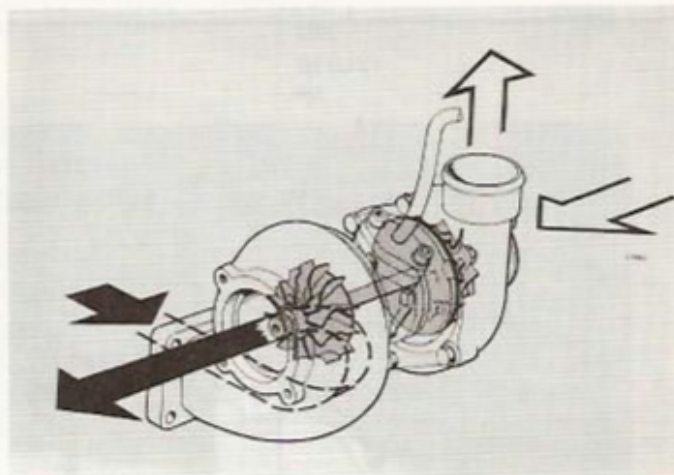
Pulse Relation

warm engine

Measured with a pulse relation meter

8 valve		
On checking	%	35-65
On adjusting	%	45-55
16 valve	%	0-100 % with the same amplitude and frequency in both directions

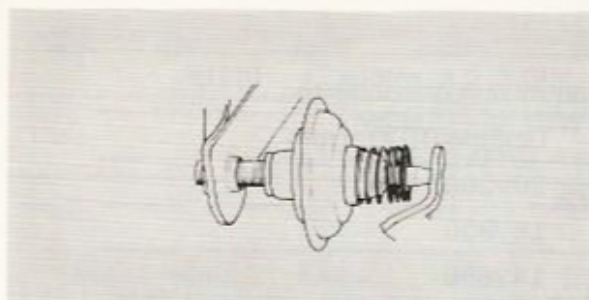
Induction and Exhaust System



Turbo compressor

Charging pressure, 16-valve	psi (bar)	10.9 + 0.7 (0.75 + 0.05)
Pressure switch actuating pressure, 16-valve	psi (bar)	10 ± 0.7 (1.10 ± 0.05)

Mechanical Throttle Damper (dash pot)



16 valve

Engine not running: Time taken for lever to move from contact position (lever-damper) to idling position	sec	4 ± 1
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8-valve 1985

Delay time from 3000 rpm to idling speed	sec	3-6
Setting speed:	rpm	2500 ± 100

Cooling System

Coolant

Type		Saab Original Coolant
Capacity	qts (l)	10.5 (10)

Thermostat

Opening temperature		
1979-82	°F (°C)	192 ± 3.6 (89 ± 2)
1983-	°F (°C)	180 ± 3.6 (82 ± 2)

Expansion tank

Pressure valve opens at	psi (bar)	13.1-17.4 (0.9-1.2)
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Thermostatic Switch

Makes circuit at	°F (°C)	194-203 (90-95)
Breaks circuit at	°F (°C)	185-194 (85-90)

4 Technical data

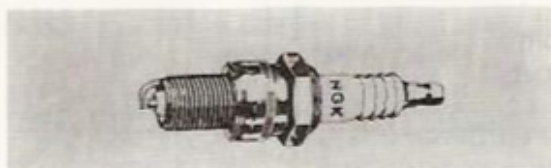
Electrical System

Ignition System

Ignition setting with vacuum control unit disconnected

Engine	Model year	Degress BTDC at rpm
8-valve	1985-	20°/2000
Turbo 16	1985-	16°/850
16-valve	1986-	14°/850

Spark Plugs



Plug type Engine	Normal driving	Hard driving
Turbo 16	Champion C9GY NGK BCP 6EV NGK BCP 6 ES Champion C9YC Bosch F7DC	Champion C7GY NGK BCP 7EV
Normally aspirated 8-valve	NGK BP 6 ES Champion N9YC Bosch W7DC	
Normally aspirated 16-valve	NGK BCP 6 ES Champion C9YC Bosch F7DC	

Electrode gap	in (mm)	0.023 (0.6)
Tightening torque (non-lubricated plugs)	ft. lb (Nm)	18.5-21.5 (25- 29)

Transmission

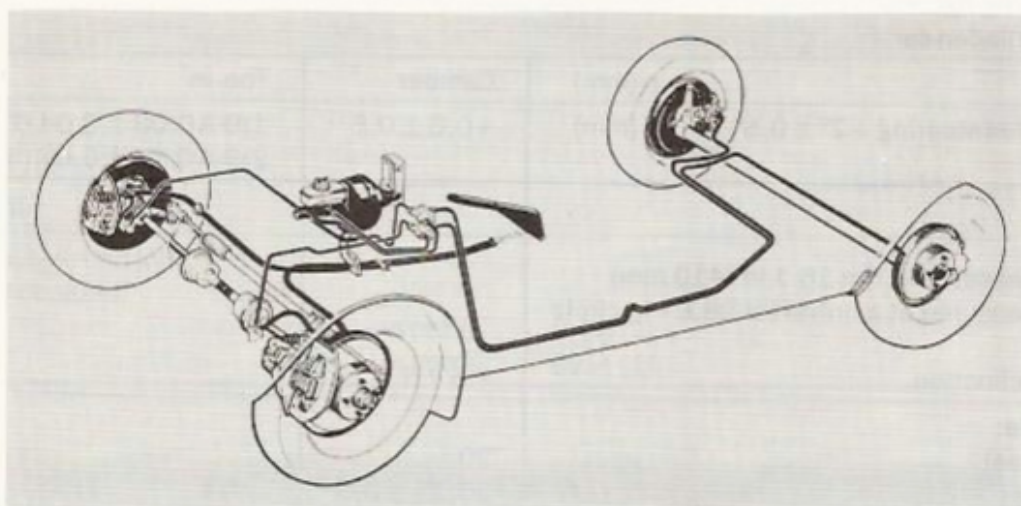
Manual

Oil capacity: 5-speed	qts (l)	approx. 3.2 (3.0)
Oil specification:		Engine oil SAE 10 W 30 or 10 W 40, or SAE EP 75 API GL 4 or API GL 5

Automatic

Type		Borg Warner type 37
Oil volume	qts (l)	8.4 (8.0) automatic transmission fluid according to Ford specification M2C. 33F
Final drive:		
Oil volume	qts (l)	1.5 (1.4)
Oil specification		EP-oil SAE 80 or 75, API GL-4 or API GL-5

Brakes



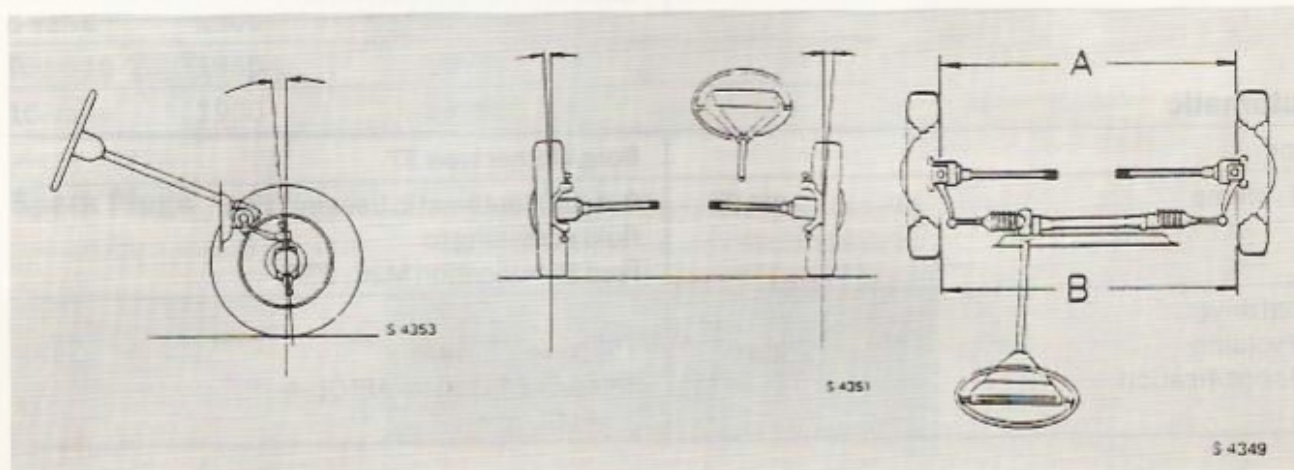
		Front	Rear
Outer diameter of disc	in (mm)	10.9 (276)	10.5 (276.5)
Thickness of new disc	in (mm)	0.5 (12.7)	0.5 (10.5)
Minimum thickness of disc after grinding	in (mm)	0.46 (11.7)	0.37 (9.5)
Maximum permissible grinding depth per side	in (mm)	0.02 (0.5)	0.02 (0.5)
Maximum lateral throw of fitted disc	in (mm)	0.004 (0.10)	0.004 (0.10)
Maximum permissible variation in thickness	in (mm)	0.006 (0.015)	-
Lining thickness, new brake pad	in (mm)	0.35 (8.8)	0.33 (8.5)
Minimum lining thickness	in (mm)	0.04 (1)	0.04 (1)
Pad friction area	in ² (cm ²)	4.5 (29)	3.1 (20)

6 Technical data

Brake Fluid

Specification		DOT4
Brake system capacity	fl.oz (l)	19.6 (0.58) (approx.)

Front Assembly, Steering Device



Wheel alignment

All the following figures apply to an unladen car

Caster:	in (mm)	Camber	Toe-in
Power-assisted steering $+2^{\circ} \pm 0.5^{\circ}$	in (mm)	$+0.5 \pm 0.5$	1)B-A 0.08 ± 0.04 (2 ± 1) 2)B-A 0.14 ± 0.07 (3.5 ± 1.7)
1) Toe-in, measured at rim 16.1 in (410 mm) 2) Toe-in, measured at a universal 28.64 in circle			
"King pin" inclination	$^{\circ}$	1.5 ± 1	
Turning angle:			
outside wheel	$^{\circ}$	20	
inside wheel	$^{\circ}$	20.75 ± 0.5	
Slip radius with 195/60 HR 15 tires and 5.5 in wheel:	in (mm)	0.83 (21)	
185/65 SR 15 tires and 5.5 in wheel:	in (mm)	0.75 (19)	

Modified wheel geometry - sports chassis

Saab Turbo 16S cars equipped with sports chassis, i.e. cars lowered by around 20 mm at the factory.

A 900 Turbo 16S with sports chassis can be identified by measuring the distance from the edge of the wheel to the "waistline".

900 Turbo 16S with sports chassis:

A = 230 mm

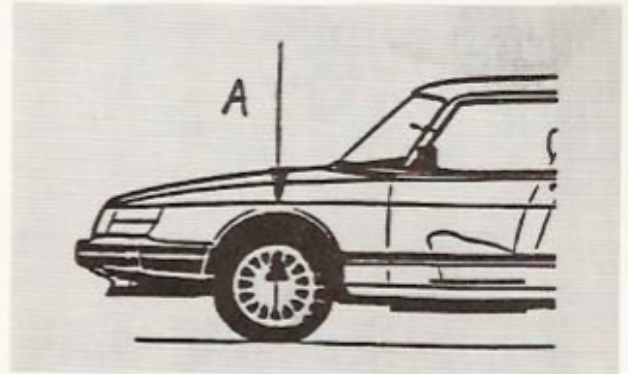
900 Turbo 16S without sports chassis:

A = 250 mm

In addition, the sports chassis springs are marked with bronze/silver.

Check front wheel toe-in and adjust as necessary.

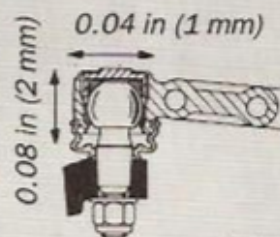
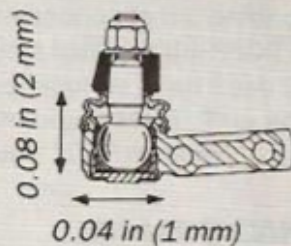
Toe-in	$1,5 \pm 0,5$ mm
Camber	$0,25^\circ \pm 0,25^\circ$
Caster	$2^\circ \pm 0,25^\circ$



Ball Joints

Maximum play in ball joint when not under load:

Axial,	in (mm)	0.08 (2)
Radial,	in (mm)	0.04 (1)



S 1/037

Pre-Delivery Inspection

Introduction

PDI: Your Important Contribution to Quality Assurance

Saab automobiles are quality products, designed and manufactured by highly skilled people using the best available technology and equipment. An extensive quality control program involving every step from raw material selection through final customer delivery has been established in order that Saab automobiles meet all expectations.

As the final step a thorough pre-delivery inspection of each new Saab is required of the selling dealer. This must be attested to by following and checking off the steps of PDI Checklist provided in the Warranties/Service Records Booklet. This list is your record that the PDI was properly performed.

The pre-delivery inspection is also important to your dealership from the standpoints of profitability and liability. Satisfied customers will continue doing business with you and are likely to recommend your dealership to others. Additionally, the PDI helps ensure that the new Saabs you deliver are (1) in safe working order and (2) in compliance with applicable Federal and State exhaust emission standards.

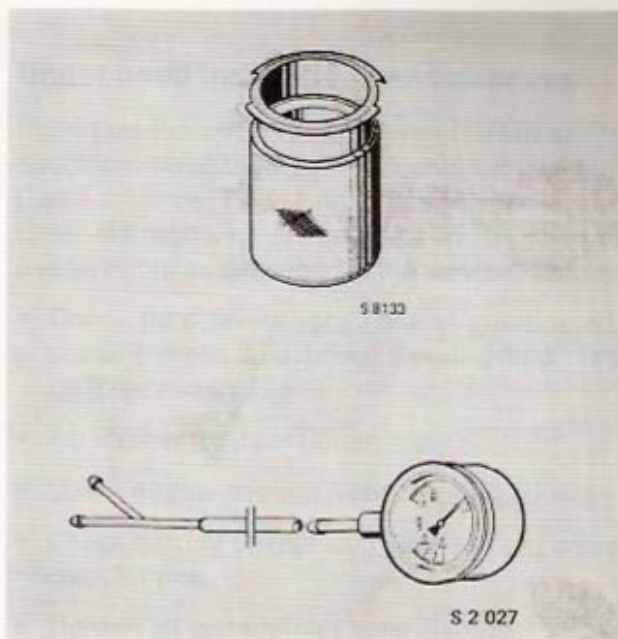
The PDI portion of this Manual has been prepared as a reference for Saab service technicians. Its format corresponds to the order of the pre-delivery procedures listed on the SSDR form. Note that this manual applies to all Saab 900's delivered as from October, 1983. This edition was updated to include 1987 models.

SAAB-SCANIA
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PDI tools

Saab Special Tools

Cooling System Pressure Tester Adapter
83 93 217



Turbo Boost Gauge 83 93 514

Other Shop Tools

Vehicle Lifting Hoist
Torque Wrench
Coolant Hydrometer
Cooling System Pressure Tester
Alternator-Battery Tester
Timing Light
Tachometer
Headlight Alignment Instrument
Wheel Alignment Machine

PDI Procedures

Effective Model Year 1987

Under car inspections & services (use hoist)

- Inspect exhaust system, brake system, suspension and underbody for shipping damage. Correct as necessary.
- Check that undercoat masking has been removed from oil cooler(s) and front exhaust pipe.
- Check final drive oil level (900 Automatic only).
- Check tightness of all oil drain plugs.
- Check tightness of exhaust manifold and catalytic converter flange bolts. Correct any loose exhaust system connections.
- Torque steering and front and rear suspension component mounting bolts to specification.
- Check door drains, body drains and body plugs.
- Check handbrake/initial brake adjustment.
- Tighten road wheel fasteners and install wheel trim.
- Measure front wheel toe-in and adjust if necessary.
- Install front spoiler parts shipped in trunk (except 900, 900S).
- Install fog lights below front bumper (models so equipped).

Under hood inspections and services

Important Emission Control Systems are set to specification at the Factory. Do not tamper with these systems. Adjust only as specified in the Saab maintenance schedule or in the case of malfunction, as described in the service manual.

- Check fluid levels (engine and gearbox oil, coolant, brake fluid, power steering fluid). Top up if necessary.
- Fill washer fluid container.
- Check engine coolant freezing point.
- Check battery charge and all electrical cable connections.
- Tighten all system/inlet hose clamps.
- Check V-belt tension (900 only).
- Check for free throttle movement.
- Check ignition system. Correct any misfiring or fouled spark plug condition.
- Check idle speed (engine warm) and adjust to specification if necessary.
- Connect power plug to APC solenoid valve. Check function of Turbo boost gauge and over-pressure safety switch (Turbos only).
- Adjust downshift cable, gear selector cable and neutral safety switch (Automatics only).
- Fit the fuse for the clock. Set the correct time. Fit the electric antenna fuse.

Exterior and trunk inspections & services

- Check hood, doors and trunk. Adjust fit/lock mechanisms as necessary.
- Check tire pressures (including spare) and if necessary, adjust to light load specification in owner's manual.
- Check for car jack, touch up paint and complete tool kit.
- Check function of all lights.
- Adjust headlights (and fog lights, if so equipped) per state regulation.

Interior inspections and services

- Install loose equipment (shipped in trunk, if any).
- Check operation of inside locks and latches.
- Check operation of interior lighting.
- Check operation of windows and sunroof (if so equipped).
- Check operation of seats and seat belts, front and rear.
- Pressure test brakes by pushing hard on pedal for 10 seconds. (Do not pump pedal.) Check for full pedal return.
- Account for spare key and all new car documents which are to be provided to purchaser.

Road test - correct all deficiencies

- Check general road behavior and function of clutch, gearbox, and brakes (including hand-brake).
- Check general engine performance (note APC system function, Turbos).
Check wheel balance.
- Check that steering wheel is centered in straight-ahead driving.
- Check function of all instruments and hand controls including horn, wiper and washers.
- Check operation of heating, ventilation and air conditioning controls.
- Check function of all accessories (radio, cruise control, etc.).
- Check for squeaks, rattles or unusual noises.

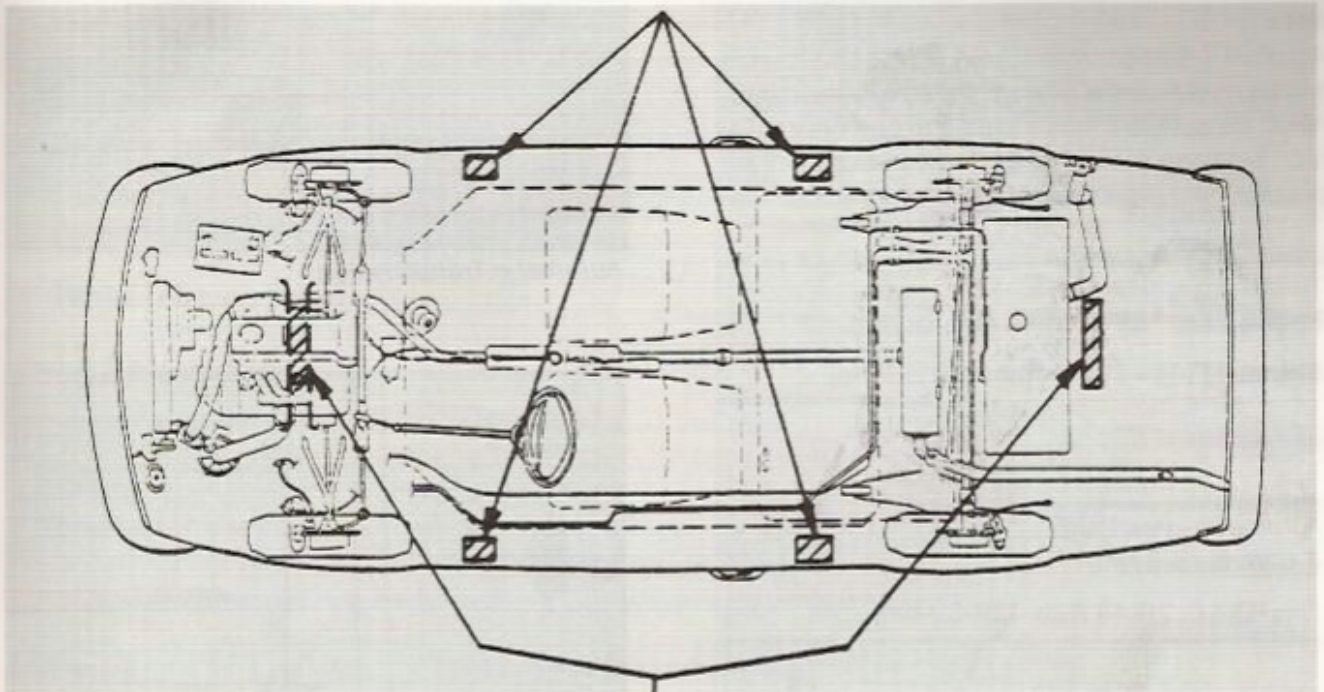
Final inspection and clean-up

- Check for and correct all fluid leaks (fuel, coolant, lubricants, brake fluid).
- Remove all protective coverings, exterior and interior.
- Wash exterior in cool water, check for and correct any water leaks.
- Inspect exterior finish. Touch-up as necessary.
- Clean interior.
- Perform additional P.D.I. steps and all applicable Recall or Service Campaign work prescribed prior to delivery via Saab Service Information bulletins.

If accessories are installed prior to delivery, verify function during road test. Save usage instructions and store in glovebox for reference by purchaser.

Under car inspections and services (use hoist)

*Lift Points for Car Hoist and Jack Stands
(wheel change jack head reinforcements)*



*Floor Jack Lift Points
(floorpan reinforcement crossmembers)*

Check for Shipping Damage

Thoroughly inspect exhaust system, brake system, suspension, and under body for shipping damage, i.e., dents, bends or kinks that may have been caused while driving on or off the transport truck or by improper application of tie down chains. If such damage is found, refer to your Transportation Damage Claims Manual.

Remove temporary tie-down hooks.

Check that undercoat masking has been removed.

Check Final Drive Oil Level (automatics)

When equipped with automatic transmission the final drive (differential) is lubricated by its own independent oil supply. Correct quantity is level with the bottom of the filler plug hole.

Final Drive Capacity:
1.5 U.S. qts (1.4 l)

Final Drive Oil:
SAE EP 80 API GL-4 or -5



Check Tightness of Drain Plugs

Check all oil drain plugs for tightness.

Note

Automatic Transmission drain plug is shielded. It will be necessary to remove shield to check tightness. Be sure to replace shield to prevent confusion between the transmission and engine drain plugs. Check tightness of cover plate bolts.

Torque Specifications:

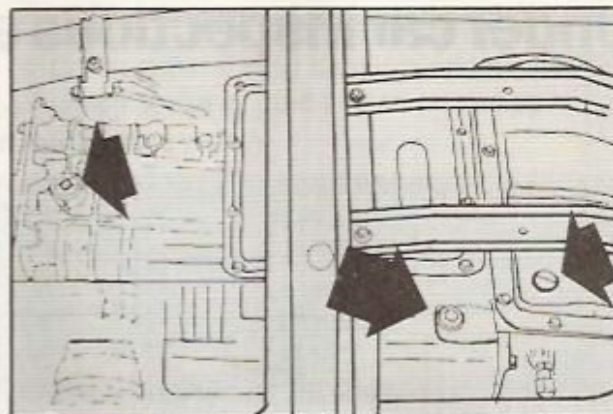
Engine Plug - 21-29 ft.lb. (29-39 Nm)

5-Speed Plug - 29-44 ft.lb. (39-59 Nm)

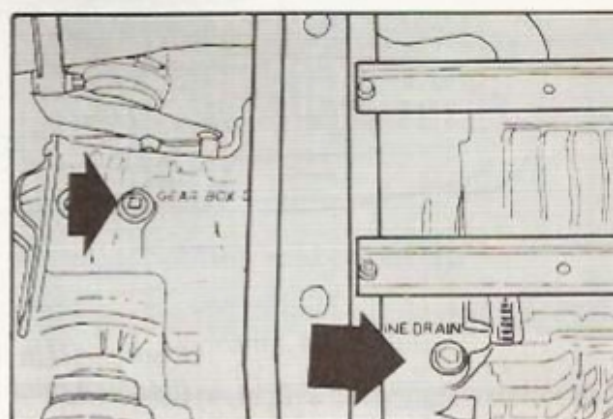
Automatic - Pan Plug:

4-6 in.lb. (5-8 Nm)

Final Drive: 29-44 ft.lb. (39-59 Nm)



Automatic Transmission

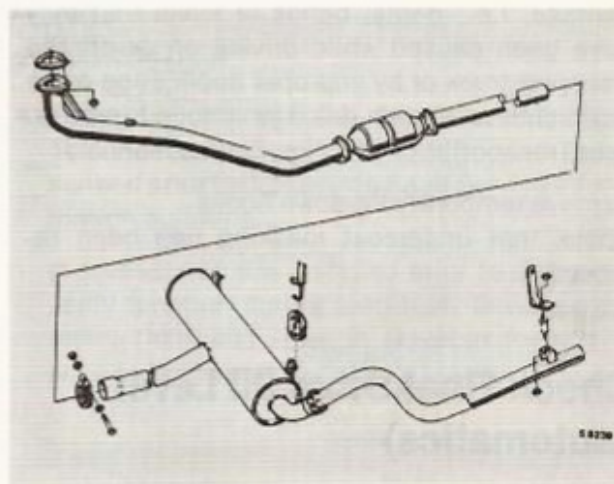


Manual Transmission

Check Exhaust System

Check all exhaust system bolts including front pipe to manifold and catalytic converter.

The exhaust system must not touch the under-carriage



Tighten Steering and Suspension Fasteners

Steering

Inspect the steering gear's rubber bellows for proper clamp placement and tightness. Check tightness of all steering gear bolts:

- Universal joint bolt, steering column
- Steering rack mount bolts
- Tie rod adjustment lock nuts
- Tie rod end nuts

Front Suspension

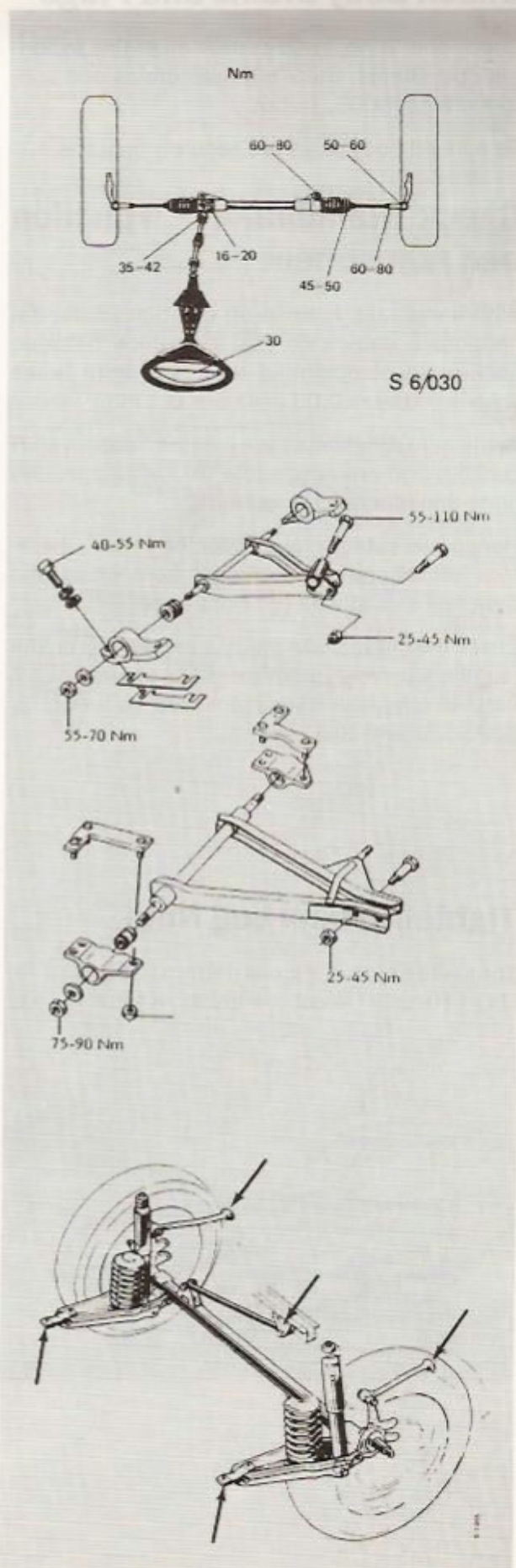
Check all bolts for tightness. Check for proper routing of brake lines. Inspect the bellow on the inner and outer drivers for proper placement and installation of clamps.

Rear Suspension

Check tightness of all rear suspension bolts including the front and rear link bolts, cross bar bolts, and the shock absorber bolts.

Note

Any looseness here will cause considerable rear suspension noise.



Check Body Drains and Plugs

Check and, if necessary, clear all drains including door drains, trunk tool well drains and sunroof drains (900S, Turbo).

Be sure all body plugs are securely in place.

Check Handbrake - Function and Adjustment

With handbrake lever in off position adjust the handbrake cables so that clearance between back edge of operating lever and front brake yoke is 0.019 ± 0.03 in (0.5 ± 0.1 mm)

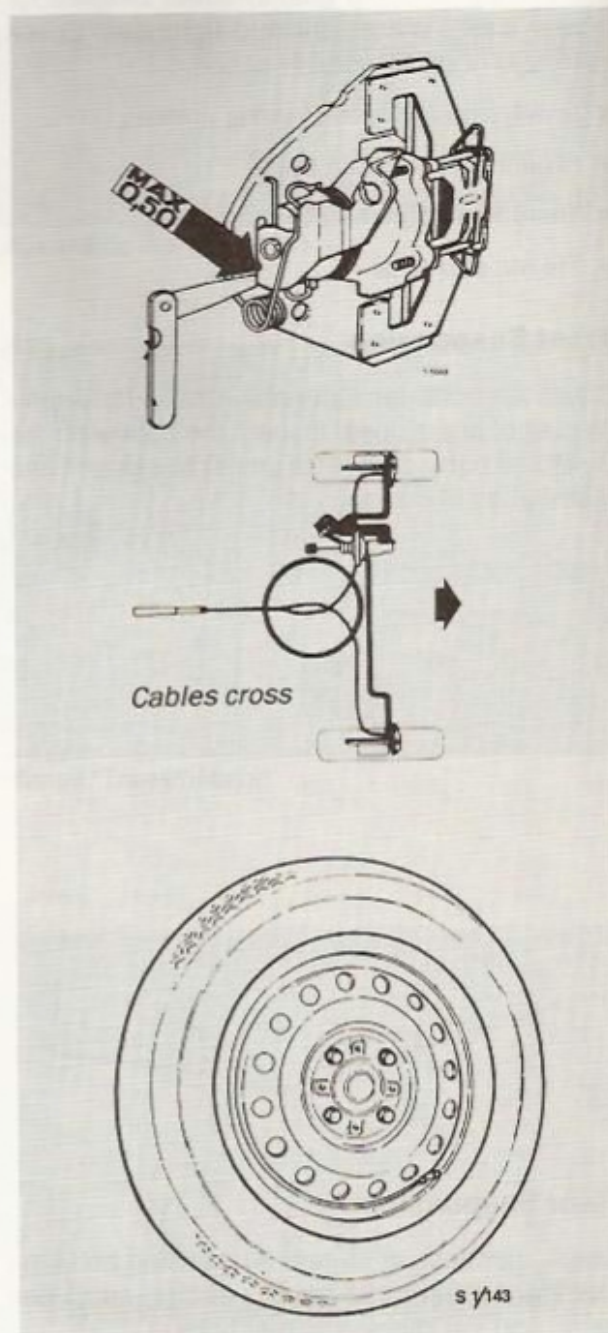
Cable adjustment nuts are located beneath shift console and are accessible through inspection plate and rear ash tray opening.

Handbrake cables cross under the carpet, therefore left adjuster affects right front wheel and right adjuster affects left front wheel.

Check the initial brake adjustment. Pull up on the handbrake. You must be able to achieve 7 notches otherwise the pistons must be turned in. See S.I. 06/86-848.

Tighten Wheel Lug Nuts

Torque lug nuts in a cross pattern to 65-80 ft.lb. (90-110 Nm). Do not use an impact wrench.



Measure/Adjust Front Wheel Toe-in

Check front wheel toe-in and adjust as necessary.

Toe-in is measured at the rims and at points level with the front axle. Both tie rods should be adjusted equally.

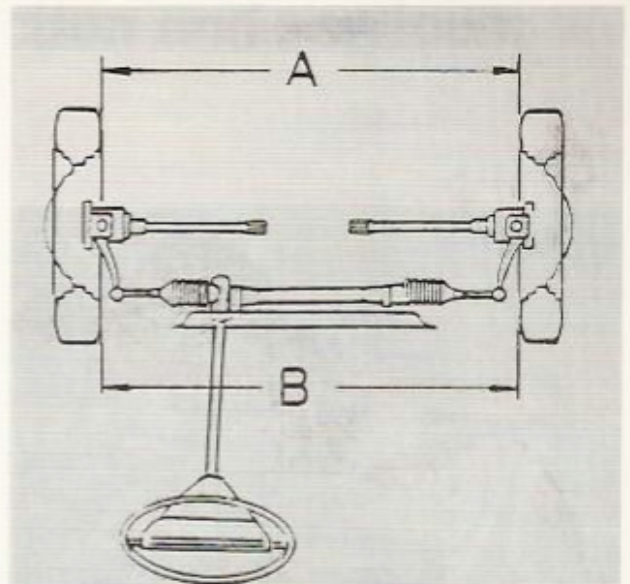
Specification:

- 1) B-A 0.08 ± 0.04 in (2 ± 1 mm)
- 2) B-A 0.14 ± 0.07 in (3.5 ± 1.7 mm)

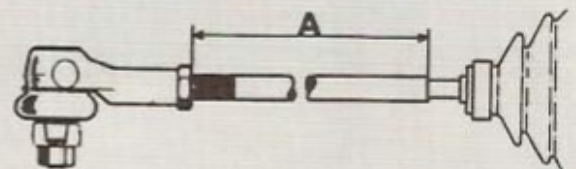
- 1) Toe-in, measured at rim (410 mm or 16.1 in)
- 2) Toe-in, measured at a universal 28.64 in circle

After adjusting the toe-in, distance A, between the lock nut and the outer edge of the groove on the track rod, must not exceed 100 mm (3.94 in) (man) or 125 mm (4.92 in) (PS) under any circumstances.

The difference in distance A between the track rods must not exceed 2 mm (0.079 in).



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Modified wheel geometry - sports chassis

Saab Turbo 16S cars equipped with sports chassis, i.e. cars lowered by around 20 mm at the factory.

A 900 Turbo 16S with sports chassis can be identified by measuring the distance from the edge of the wheel to the "waistline".

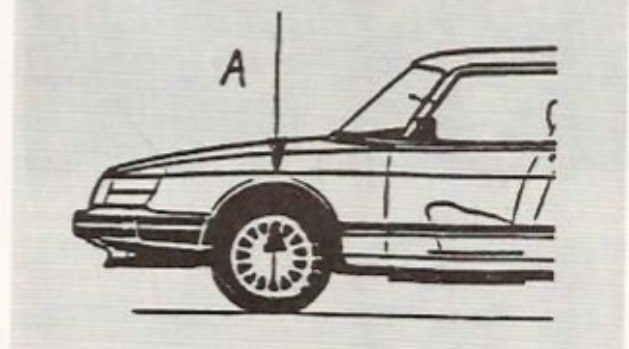
900 Turbo 16S with sports chassis:
A = 230 mm

900 Turbo 16S without sports chassis:
A = 250 mm

In addition, the sports chassis springs are marked with bronze/silver.

Check front wheel toe-in and adjust as necessary.

Toe-in	1.5 ± 0.5 mm
Camber	$0.25^\circ \pm 0.25^\circ$
Caster	$2^\circ \pm 0.25^\circ$



Install Spoiler (when applicable)

Install lower front spoiler from the parts stored in the trunk for shipment.

Under hood inspection and services

Check Fluid Levels

Engine oil

8-valve

Check engine oil after engine has been stopped for at least one minute.

16-valve

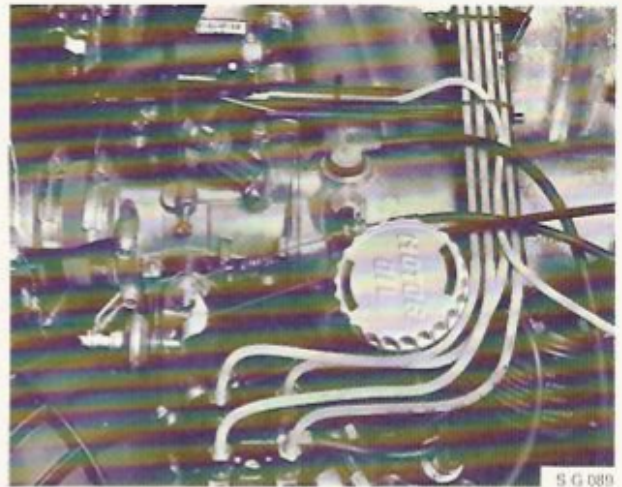
Check engine oil after engine has been stopped for at least 2-5 minutes.

Do not fill above the upper mark on dipstick.

Use only oil which meets API-Service SF/CD or SF/CC (Turbos) or SF/CC (normally aspirated) and SAE viscosity ratings listed below.

Above 0°F SAE 10W-30 or 10W-40

Below 0°F SAE 5W-30



S G 089

Automatic Transmission

Set the handbrake and idle engine for at least 15 seconds in drive, reverse and park positions.

Check fluid level with engine idling in the park position.

The dipstick is marked for cold fluid 104°F (40°C) and hot fluid 194°F (90°C).

Difference between MAX and MIN on dipstick is 1 U.S. pint.

Fluid: ATF type "F", M2C33F



S 7710



S 7702

Manual Transmission

Oil level should be between MAX and MIN marks on dipstick.

Manual transmission oil:

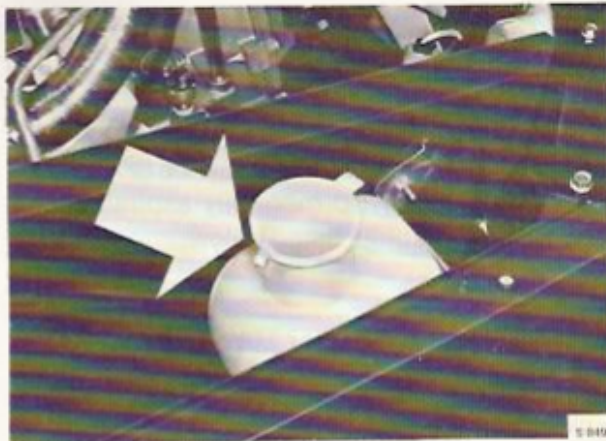
SAE 10 W-30 API SE or

SAE EP 75, API GL-4 or GL-5.



Windshield Washer Fluid

Fill with suitable windshield washer anti-freeze.



Engine Coolant

Check that the coolant level is between the MAX and MIN marks on the expansion tank. Check that the ethylene glycol mix is of sufficient glycol content to provide optimum protection for the lowest temperatures experienced in your area.

When preparing a new coolant solution, mix ethylene glycol with water low in corrosive ions such as chlorides and sulfates. Avoid hard water which can cause clogging in the radiator. Do not use coolant booster additives. The cooling system should be free of air pockets and foaming.

Pressure Test: Tighten all hose clamps, perform pressure test at 14 PSI (0.97 bar). Correct any leaks found.

While system is pressurized open bleeder valve on thermostat housing to remove any air trapped in system. After air is removed close bleeder valve, remove pressure tester and top up system.

Never fill the system with plain water!



Coolant type:	Low phosphateethylene glycol with aluminum protection properties
Solution strength:	50 - 70% ethylene glycol in water
Coolant capacity:	10.8 U.S. qts (10.0 l)

Brake (and Clutch) Fluid

Check level and top up as necessary.

Press button on filler cap to check level light in the dash.

Brake fluid: DOT4, SAE J 1703
Hydraulic brake fluid

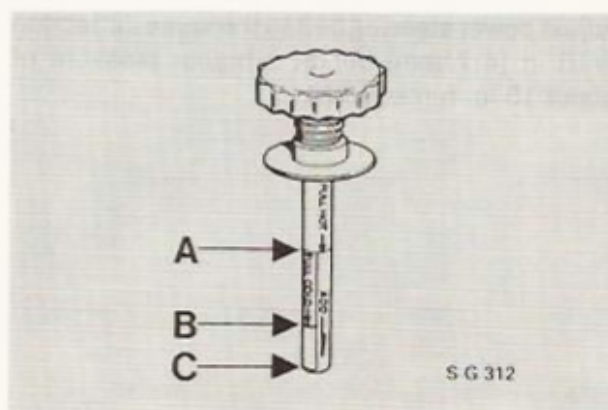
Do not use DOT5.



Power Steering Fluid

8-valve

At normal operating temperature the fluid level should be between marks labeled A and B. If checked when cold level should be between cold mark B and tip of dipstick C.



16-valve

At normal temperature fluid levels should be between HOT and COLD marks. If checked when cold level should be between marks for COLD level and mark for ADD.



Check Coolant Freezing Point

Check coolant mixture to ensure that the freezing point is at least -15°F (-25°C)

Check Battery Charge/Cable Connections

Check tightness of terminals and routing of wires.

Do not "quick-charge" a low battery. Use only a "slow-charge" method.

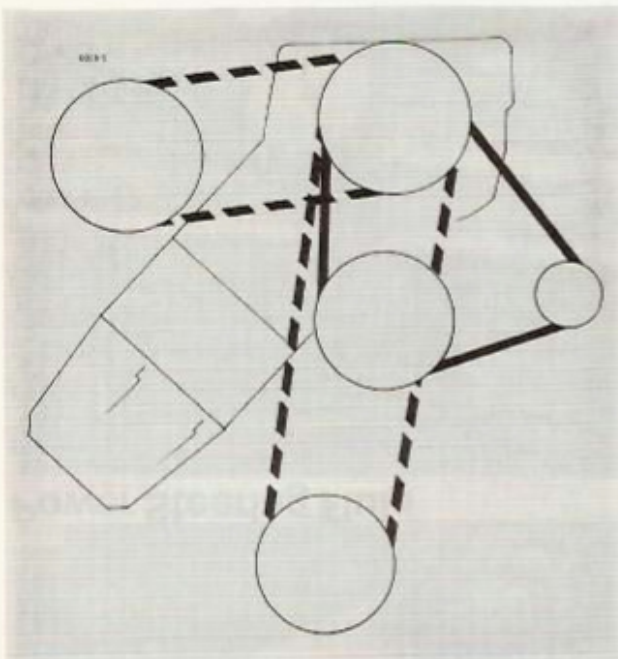
Check Drive Belt Tension

Adjust alternator/water pump and AC-belt tension to obtain a deflection of approximately 3/16 in (4.7 mm) at midpoint between pulleys when pressing with approx. a 10 lb force (46 N).

Adjust power steering belt to the same deflection 3/16 in (4.7 mm) but at a higher pressure of about 15 lb. force (68 N).

Check for Free Throttle Movement

Press the accelerator to the floor and release. The throttle should move smoothly and reach the "wide open" position at the same time the accelerator pedal contacts the floor rug. Upon release of the accelerator the throttle should return smoothly and positively to the closed position.



8-valve models-1985

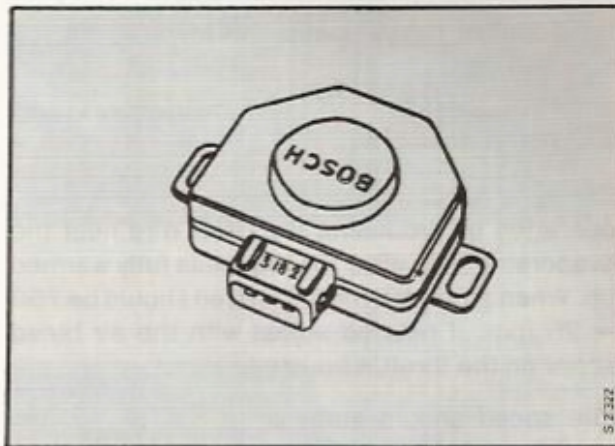
- Check for smooth throttle movements as above. Note the location of the AC cutout switch. It is now located on the left side of the throttle housing. Check that this microswitch contact may be further depressed 0.008-0.012 in (0.2-0.3 mm) when activated by the throttle. This will insure proper adjustment of the switch and prevent in-use damage.

8 valve models 1986 - and 16-valve models 1985-

- Check for smooth throttle operation as above.

Check the function of the throttle switch. Work the throttle by hand and note the following:

- 1 As the throttle is closed, an audible "click" should be heard as the throttle returns to its resting position.
- 2 Adjust the switch only if necessary.

**Check Emission Control System - Function****Ignition System**

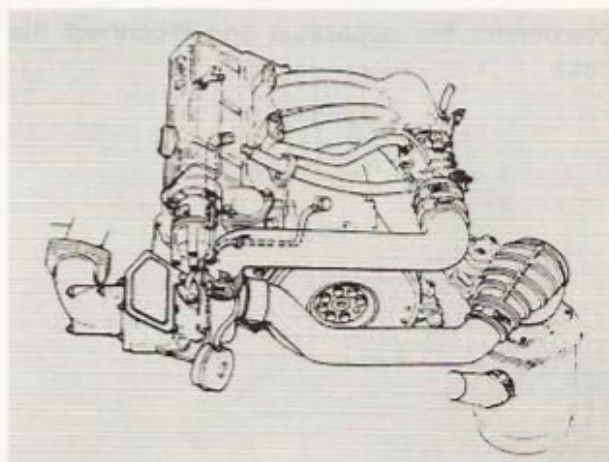
Correct any misfiring immediately. Ensure that ignition wires are properly routed and securely connected. Make sure that coil wire boot and spark plug wire boots are in place.

Warning!

Misfiring may damage the catalytic converter!

Check Intake Bolts

Check clamps on intake hoses, intake bolts and throttle housing mounting bolts.

**Lambda Control System**

It is not necessary to make any checks of the Lambda control system. This adjustment is made at the Factory and no further checks are necessary.

Check/Adjust Idle Speed (Engine warm)

8-valve models

Adjust idle speed to specification (in neutral with AC off) using the air bleed screw located at the upper center of the throttle body. If correct idle speed cannot be obtained this way, examine intake system for air leaks and recheck throttle stop setting.

16-valve models

Check for A.I.C. (Automatic Idle Control) operation by grounding the GN/R wire near the evaporator case after the engine is fully warmed up. When grounded the idle speed should be 750 + 25 rpm. If needed adjust with the air bleed screw on the throttle housing.

Idle speed should stabilize at 850 + 75 rpm when the ground lead is disconnected.

Do not use throttle stop screw for idle speed adjustment.

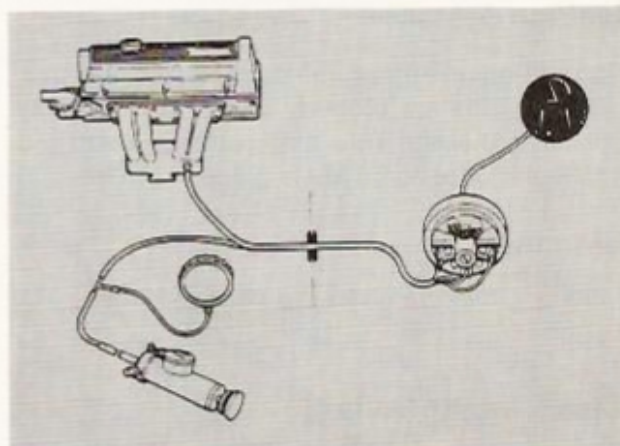
Check Turbo Boost Gauge and Overpressure Switch

Connect the APC solenoid plug.

Start the engine and let it idle. Disconnect the hose to the pressure switch from the inlet manifold. Connect measuring apparatus P/N 83 93 514 with a suitable air pump (e.g. that used for pressure testing the cooling system) to the hose. Raise the pressure and check that the engine stalls at the specified pressure:

Turbo 16 16 ± 0.7 psi (1.10 ± 0.05 bar)

Disconnect the apparatus and reconnect the hose.



Check/Adjust Automatic Transmission Controls

Adjust downshift cable.

Connect pressure gauge 87 91 053 to the outlet on the transmission casing. Check that the idling speed is 875 rpm. Apply the handbrake. Move the gear selector lever to 'D'. Disconnect the downshift cable at the throttle housing. Read off the system pressure. Pull and then release the cable. Check that the reading returns to the basic value after the cable has been released. Reconnect the cable. Check that the system pressure rises by 1.5 psi (0.1 bar).

Adjust the cable as necessary.

System pressure: 61-71 psi (4.2-4.9 bar)



Adjust Gear Selector Cable

Move the lever to 'N'. Fully depress the lockout button and rock the lever back and forth. Listen and note when the selector valve in the transmission locks into the 'N' position.

Release the button and check that the lever is positioned exactly at 'N'. If not, the lever must be adjusted, see Section 444, 900 Service Manual).

Next move the lever to 'D'. Check that there is some backward play in the lever.



Check Neutral Safety Switch

Car must start in "P" and "N" positions, back-up lights should operate only in "R" position. If adjustment is necessary, see Section 4, 900 Service Manual.

Fuses

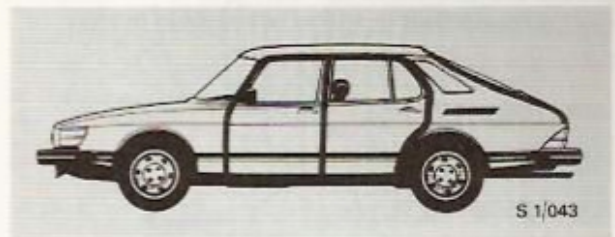
Fit the fuses for the clock and interior light. Set the clock for the correct time.

Check that the alarm system is activated (Convertible) and install the red light emitting diodes in the left front speaker grille, if necessary.

Exterior and trunk inspections and services

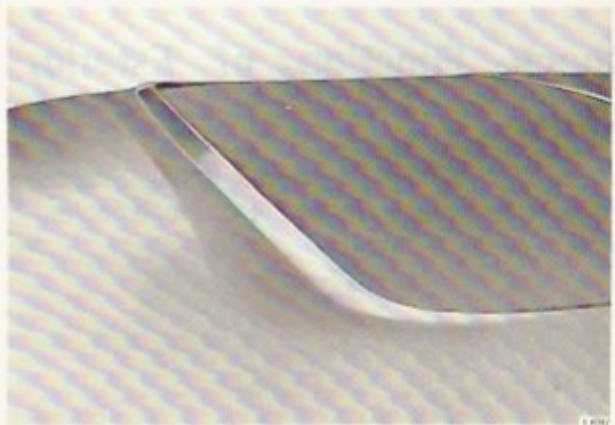
Check/Adjust Door Fit and Locks

Check that all doors are good fit and check the force to close them.



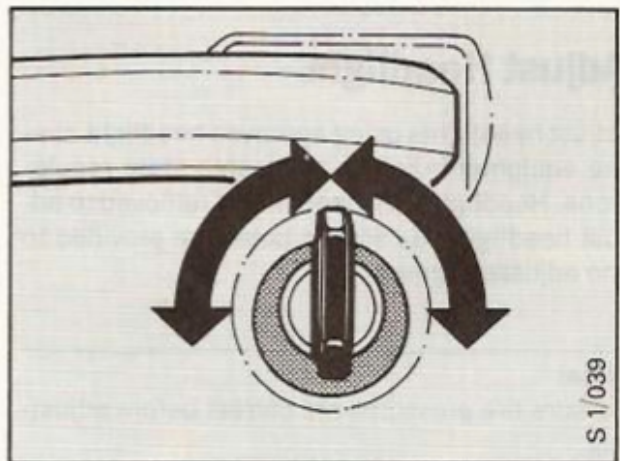
Sunroof

Check the fit of sunroof when opened and closed. Correct any rattles found at the test drive.



Locks

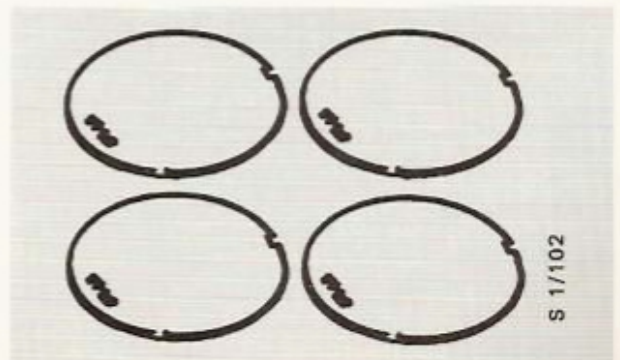
Check the locks and the function of central locking if so equipped.



Install Wheel Trim and/or Fog Light

Wheel Trim

Hub caps for the 900 base models with steel wheels are held in place by clips attached to the wheel. The clips (2 per wheel) are packed in the glove compartment and the hub caps are packed in the trunk.



Fog Lights

(EAG, SPG, TURBO)

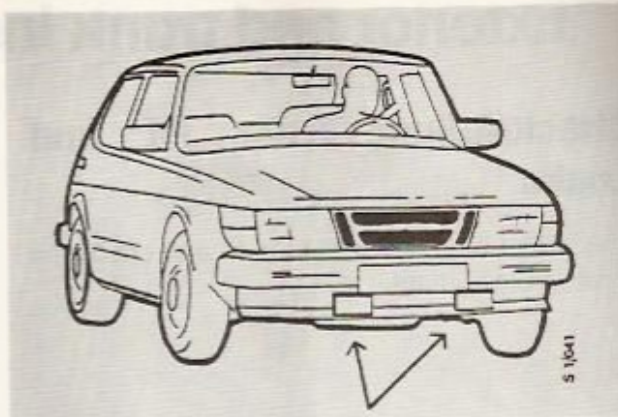
Remove the bumper and attach fog lights and bracket.

All cars are pre-wired for fog light. Connections may be found tied to the wire harness in front of and below engine compartment.

Install relay into position F of main fuse box.

Install 15 amps fuse into pos 21 of fuse panel.

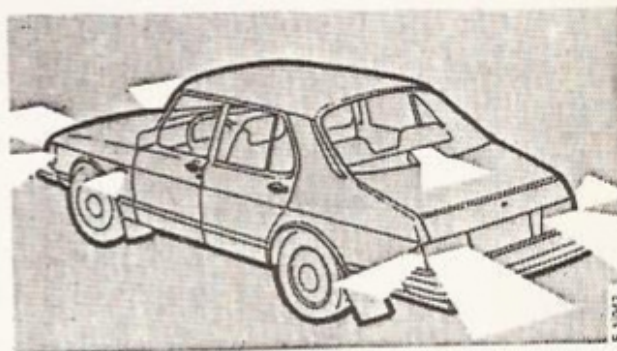
Check aim of fog lights.



Lamps mounted below bumper

Check Function of Exterior Lights

Check operation of all exterior lights. Replace any defective bulbs and check for loose connections in event of a fault.

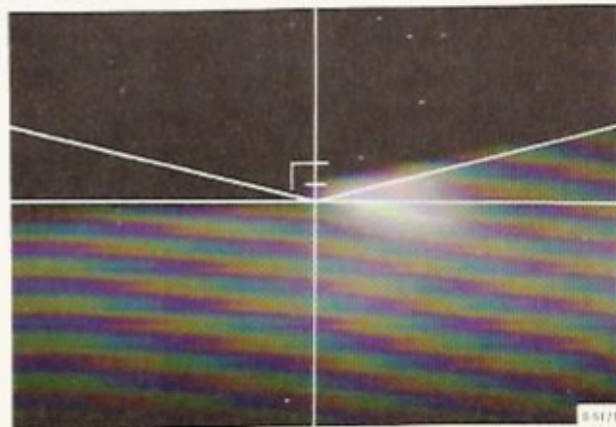


Adjust Headlight

Adjust headlights using approved headlight aiming equipment. Follow applicable state regulations. Headlight trim need not be removed to adjust headlights as access holes are provided to the adjuster screws.

Note:

Be sure tire pressures are correct before adjusting.



Check Tire Pressures

Check tire pressures cold and adjust to light load specification if necessary. All models except S and Turbo are equipped with 185/65 HR15 tires. The Turbo and S have 195/60 HR15 tires. All models have a compact type spare in the under floor compartment in the trunk.

Cold tire pressures: Front (light load)
27 psi (1.9 bar)

Rear (light load)
29 psi (2.0 bar)

Compact spare
60 psi (4.2 bar)



Check for Car Jack and Tool Kit

Check that the jack, and tool kit are in the under floor compartment in the trunk and that the spare is fastened snugly in place on top of the jack and its handle.

The tool kit includes:

Combination Pliers

Philips Screwdriver - 1985 models

Torx screwdriver - model 1986-

Screwdriver

Socket Wrench for Wheel Nuts

Socket Wrench for Spark Plugs

Socket Screw Key for Removing and Installing Front Passenger Seat

Plastic cover for storing flat tire in trunk.

Philips bits as from 1986 models from chassis Nos.

AG2001775

AG3001687

AG7004101

Also check that the correct touch up paint pencil package is in the car.

Interior inspections and services

Install Loose Equipment

Unpack and install loose equipment stored in the trunk, e.g., front license plate bracket (screws in glove box), rear headrest cushions on 900S and Turbo models and front spoiler extensions on Turbo 3-door. Install optional equipment as called for by sales order.

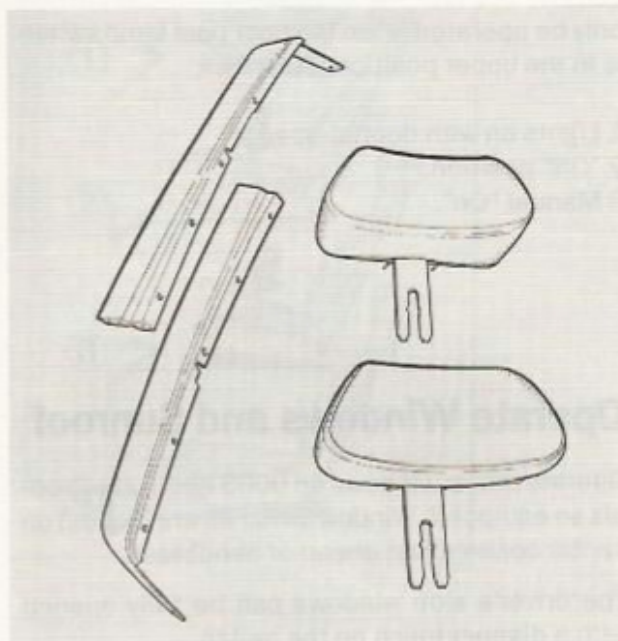
Accessory wheels (including Shelby, Inca, Mini-Lite) normally use flanged mounting nuts. Place 4 of the conical nuts from the original wheels in the tool kit to be used with compact spare if such accessory wheels are installed.

16-valve models

Due to the relocated oil cooler(s), all Turbos now have front spoiler extensions which must be attached at the PDI.

To install:

- Remove the two lower screws from each oil cooler vent screen. Do not lose the backing nuts for the screws.
- Slide the two spoiler halves up into place. Some difficulty may be encountered but do not cut or trim the spoiler in any way.
- Position the backing nuts in their original positions and reinstall the screws for the cooler screens. Install the loose brackets and screws from the hardware bag.



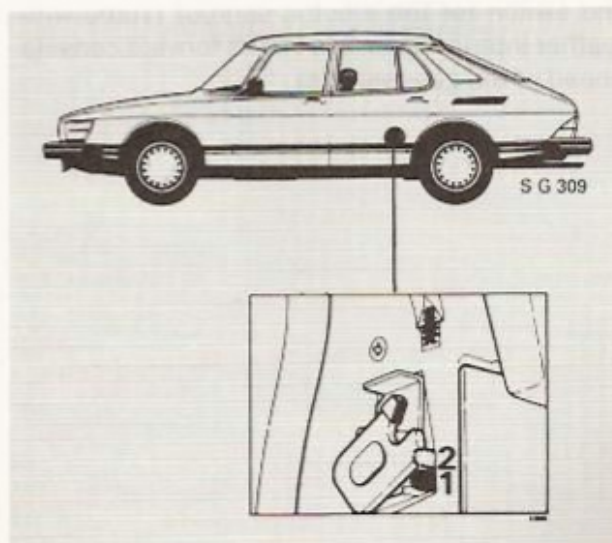
Check Operation of Interior Locks, Latches

Check operation of all interior door latches. The rear doors of 4-door models are equipped with child safety locks to prevent children from opening them from the inside. When the lever is in the lower position "1" the door can be opened from the inside and outside. When in the upper position "2" the door can only be opened from the outside.

Note:

Set child locks in "1" position (disengaged).

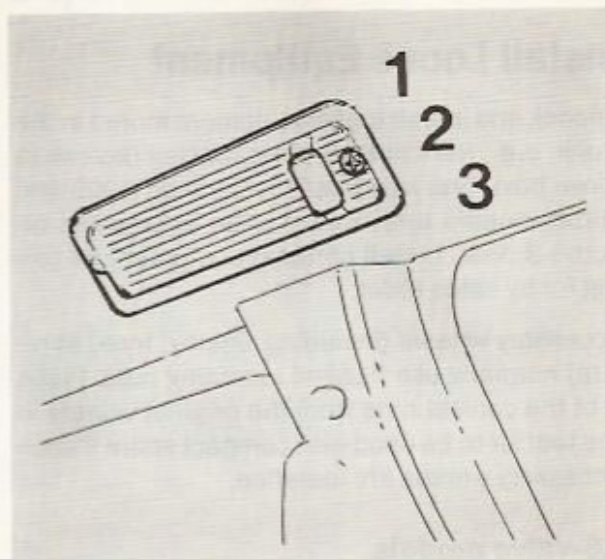
If vehicle is equipped with the central locking system check that all doors lock and unlock when the interior lock button on the driver's door is operated.



Check Interior Lights

The interior illumination comprises three lights located: above the left door post, close to the rearview mirror, and beside the ignition switch. The door post lamp 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. This switch can only be operated when the door post lamp switch is in the upper position (1).

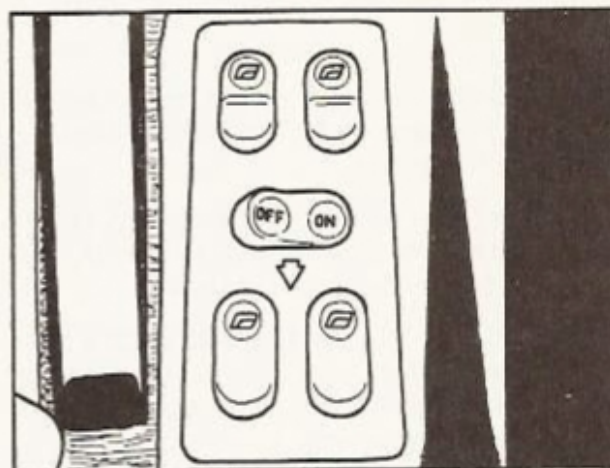
- 1 Lights on with door(s) open.
- 2 "Off" position.
- 3 Manual "On".



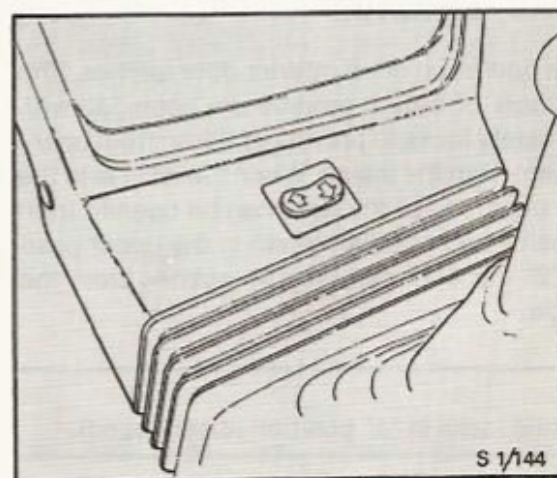
Operate Windows and Sunroof

Operate power windows on 900S and Turbo models so equipped. Window switches are located on center console just ahead of handbrake.

The driver's side windows can be fully opened with a distinct touch on the switch.



The switch for the electric sunroof (Turbo with leather interior option) is on the forward console ahead of the gear selector.



S 1/144

Check Seats and Seat Belts

Seats

Check the seat adjustment controls for both the driver's and passenger's seats.

Seat Belts

Check the operation of all seat belts. Check the operation of all latches and proper retracting.

The retractors for the front seat belts and the two outboard rear seat belts have two locking mechanisms. One mechanism is actuated by sudden acceleration of the reel (i.e., when the strap is pulled out at high speed). The other is actuated by a pendulum which senses the movements of the car.



Account for Spare Key and All New Car Documents

Spare key is inside glovebox door.

Documents for owner include:

- Owner's Manual
- Warranties/Service Record Booklet
- Tire Warranty
- Saab Dealer Directory
- Radio Owners Manual
- Instruction Books for Optional Accessories

Road test

Correct all deficiencies

Check General Road Behavior

Road test car paying attention to handling characteristics. Note operation of clutch, gear-box (shift quality, noise) and brakes. Be sure hand brake operates properly.

Check General Engine Performance

Determine that engine operates properly and smoothly in all driving conditions.

On Turbos, during test drive observe that the boost gauge needle enters the orange zone when accelerating above 2,000 rpm and the APC System controls maximum boost when knocking is detected. (If boost indication is unsatisfactory, connect a test gauge and check basic setting and maximum pressure).

Check Wheel Balance

Operate the vehicle on a smooth road and note any indication of wheel imbalance.

Observe Centering of Steering Wheel

During road test note the position of the steering wheel. Center the wheel, if necessary, with the wheels in the straight ahead position.

Note

Only the approved wheel puller should be used to remove the steering wheel. Do not use a hammer on the steering shaft to break the wheel loose as this may damage the collapsible column.

Check Function of Instruments and Controls

Check Operation of Instruments

Observe warning lamps during cranking. Observe instruments during road test to determine that function is correct. Note any faults and remedy prior to delivery of vehicle. Also set quartz clock to correct time and zero trip meter.

38 Road test

Check Lever Controls, Horn

Test function of windshield wiper control and headlight dimmer and direction signals. Test horn.

Check Heating, Ventilation and A/C Controls

Check all heating and A/C controls.

- Fan Switch (1) - Check that the fan motor runs on all 3 speeds.
- Temperature Control (2) - Check that clockwise rotation increases the temperature of incoming air. The heater is off at about "6 o'clock".
- Air distribution control (3) - Check for proper air flow direction in each mode. Check that recirculation door closes in 7 o'clock position.

AC-compressor is operative in all positions, provided that the outside temperature is above about 38°F (+4°C). Check the cooling is adequate in A/C modes. If not, refrigerant charge. Check that the compressor clutch engages and disengages when A/C switch is pushed on and off. Check that cooling is adequate.

Check function of recirculation switch. When this switch is depressed, the recirculation door should close in any position of the air distribution switch.

Check Function of Accessories

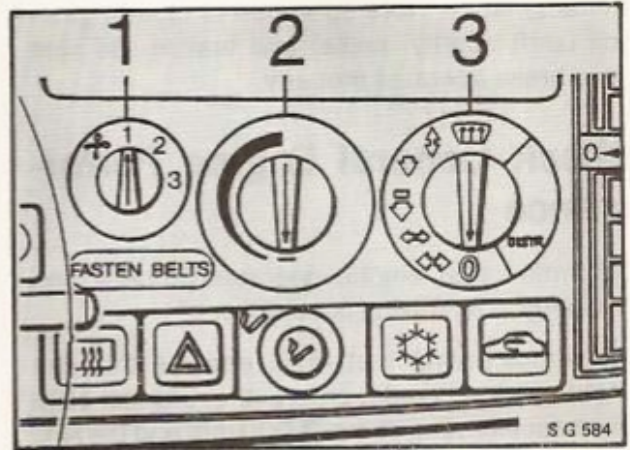
Check on road operation of all accessories including radio, speed control, etc.

Check for Any Squeaks and Rattles

Remedy any squeaks or rattles heard on road test.

Check Glass

Check for unacceptable distortions in the driver's line of sight.



Final inspection and clean up

Check For and Correct All Fluid Leaks

Fuel
Coolant
Lubricants
Brake Fluid

Remove All Protective Coverings

Note

The vehicle should be inspected immediately upon receipt from the transporter and all damages should be documented at that time with the trucker. See the Transportation Damage Claims Manual. Pay particular attention to bumper and interior components with protective coverings if the covers have been cut or opened.

When the coverings are removed at P.D.I., a warranty claim will only be accepted if there is a defect. If a defect is found, retain the cover together with the affected part for inspection by the Saab District Service and Parts Manager.

Warning

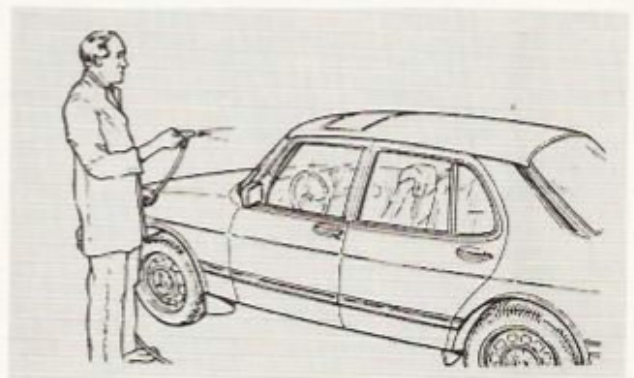
Plastic protective films used in the interior do not conform to Federal Motor Vehicle Safety Standard 301, Interior Flammability, and must be removed prior to sale.

Wash Exterior

Wash in cool water. Check for and correct any water leaks. Dry body with clean soft cloth or chamois. Do not wipe painted surfaces with paper toweling or dirty cloths to avoid scratching the finish. Do not run the Convertible through an automatic car wash.

Inspect Exterior Finish

Touch-up as necessary. Remove undercoat overspray from wheels and paint. Use a paint prep and a soft cloth. Do not use paper towels or lacquer thinner to remove undercoat from any painted or plastic surface.



Clean Interior

Clean any soil marks on upholstery and carpeting and vacuum as necessary. Clean edges of lower door seals thoroughly with a grease remove to remove any under-coating build up.

Perform All Applicable Recall or Service Campaign Work

If such work is known to apply to a vehicle at the time the SSDR form is printed, special instructions will be printed in the message area beneath the PDI checklist on the form. Also check for any recall notices which may be sent with the new car invoice and check recent Saab Service Informations for applicability.

The standard PDI time allowance does not include recall or service campaign work for which time (and parts, as applicable) may be claimed separately according to the Warranty Policies and Procedures Manual and the applicable Service Informations.

Break-In Service Tools

Saab Special Tools

Measuring Tool - Valve Clearance 83 91 450

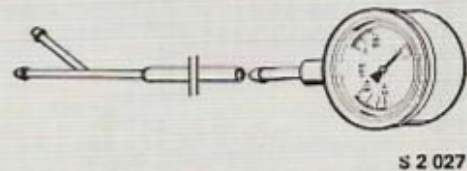
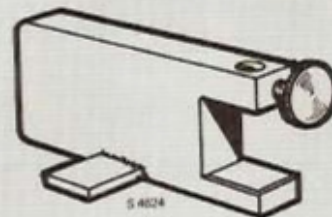
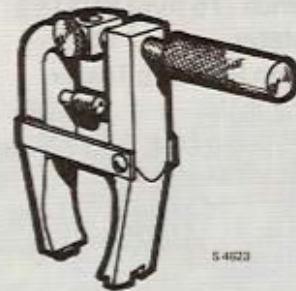
Dial Indicator 78 40 622

Measuring Point (for Dial Indicator) 83 92 250

Measuring Plate (for Checking Pallets)
83 91 633

Turbo Boost Gauge 89 93 514

Cooling System Pressure Tester Adapter
83 93 217



Other Shop Tools

Torque Wrench
Oil Filter Wrench (75 mm) KD2159
Tach Dwell Meter
Cooling System Pressure Tester
Vehicle Lifting Hoist
Transmission Drain Plug Tool 3/8" square drive
Wheel Alignment Machine

Emission System Maintenance

Valve Clearance - Check/adjust

8-Valve engines only

Remove distributor cap. Turn engine to TDC. Remove the cam cover. Use a feeler gauge or special tool P/N 85 91 450 and 78 40 622 to check the maximum and the minimum for valve clearance.

Valve clearance, when checking valves

Intake: 0.6-1.2 in (15-30 mm)

Exhaust norm.asp: 1.4-2.0 in (35-50 mm)

Exhaust Turbo: 1.6-2.0 in (40-50 mm)

Adjust as necessary. See section 2, Part 214, 900 Service Manual.



Torque Engine Head and Manifold Bolts

Cylinder head bolts

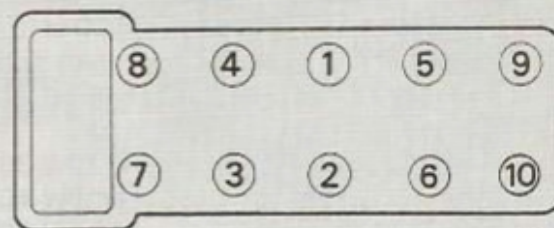
The cylinder head bolts should be tightened down after the engine has been run to normal temperature and then allowed to cool for thirty minutes.

Remove the valve cover.

Slacken and then tighten the bolts to a torque of 60 ft.lb (80 Nm) (tighten the bolts in the sequence shown).

Thereafter, tighten the bolts by turning them through 90° (a quarter-turn) in the same sequence.

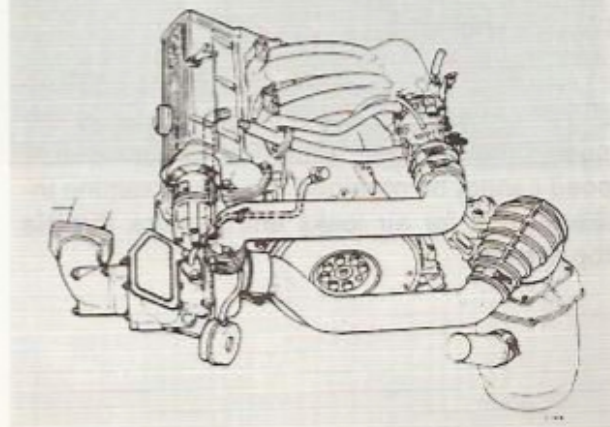
Special tool P/N 83 93 910.



Manifold and Turbocharger attachment bolts

Torque to specification.

- 1 Torque exhaust manifold and Turbo bolts to specification.
- 2 Check tightness of intake manifold bolts and throttle housing bolts.



46 Emission system maintenance

Specifications:

Exh. Man. to cylinder

Head:

Turbo	18 ft.lb. (25 Nm)
Norm. Asp.	15 ft.lb. (20 Nm)

Exhaust Manifold to
front pipe

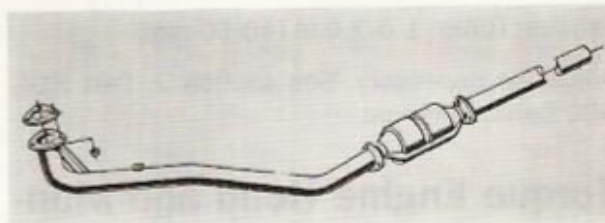
18 ft.lb. (25 Nm)

Turbo attachment bolts:

13 mm hex	18 ft.lb. (25 Nm)
17 mm hex	30 ft.lb. (42 Nm)

Tighten Catalyst Mounting Flange Bolts

Check tightness of catalytic converter mounting flange bolts to prevent leaks caused by the new gaskets taking a set due to expansion and contraction of the exhaust system.



Engine Oil and Filter - Change

Oil capacity	8-Valve 4.0 qts (3.8 liters)
	16-Valve 4.2 qts (4.0 liters)

Use only oil which meets API Service SF/CD or SF/CC (Turbos) or SF/CC (normally aspirated) and the SAE viscosity ratings listed below.

Above 0°F (-17°C)	SAE 10W-30 or 10W-40
Below 0°F (-17°C)	SAE 5W-30



Check/adjust Idle Speed (Engine warm)

8-Valve models

Adjust idle speed to specification (in neutral with AC off) using the air bleed screw located at the upper center of the throttle body. If correct idle speed cannot be obtained this way, examine intake system for air leaks and recheck throttle stop setting.



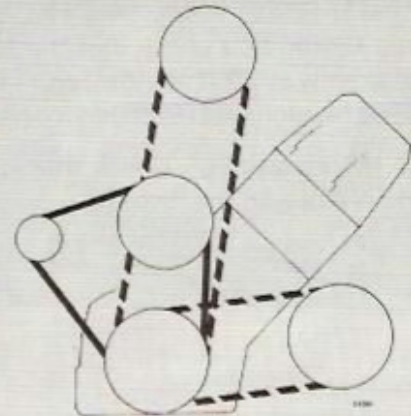
Vehicle maintenance

Engine

Drive Belt Tension - Check/adjust

Adjust alternator/water pump and AC-belt tension to obtain a deflection of approximately 3/16 in (4.7 mm) at midpoint between pulleys when pressing with approximately a 10 lb. force (46 Nm).

Adjust power steering belt to the same deflection 3/16 in (4.7 mm) but at a higher pressure of about 15 lb. force (68 Nm).



Cooling System - Check

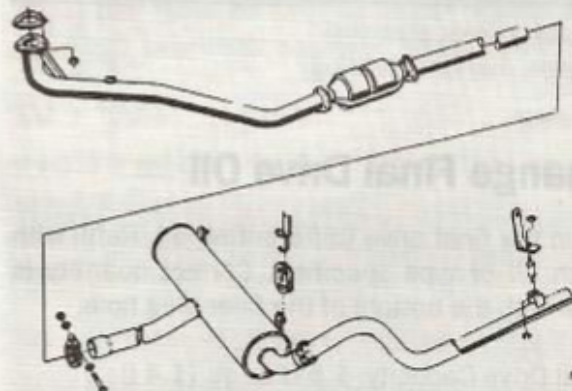
Check hoses and connections for leaks. Tighten clamps or replace clamps or hoses if necessary. Check coolant level and anti-freeze protection.

Check Exhaust System

Check for leakage and ensure that all fasteners and hangers are secure. Correct as necessary.

Note

Physical damage to exhaust parts such as dents due to bottoming of the car should be noted and the owner advised as this type of damage is not covered under warranty!



Automatic Transmission

Adjust A/T Gear Selector Cable

Move the lever to 'N'. Fully depress the lockout button and rock the lever back and forth. Listen and note when the selector valve in the transmission locks into the 'N' position.

Release the button and check that the lever is positioned exactly at 'N'. If not, the lever must be adjusted, see Section 444, 900 Service Manual.

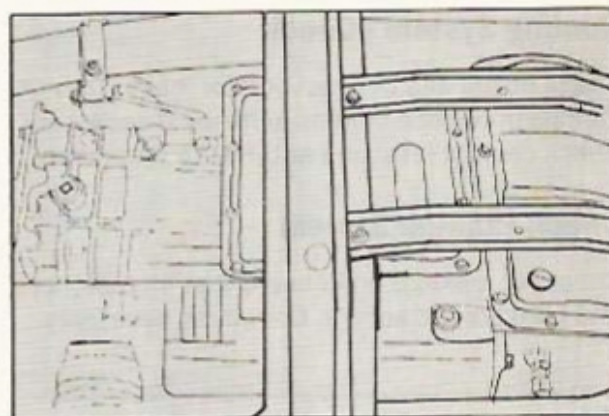
Next move the lever to 'D'. Check that there is some backward play in the lever.



Retighten Bottom Cover Bolts

Tighten the bottom cover bolts to specification.

Torque Specification: 6-9 in.lb. (8-12 Nm)



Change Final Drive Oil

Drain the final drive (differential) oil. Refill with fresh oil of type specified. Correct quantity is level with the bottom of the filler plug hole.

Final Drive Capacity: 1.5 U.S. qt. (1.4 l)

Final Drive Oil: SAE EP80,
API GL-4 or -5



Electrical System

Check Battery Terminal Connections

Clean and tighten the battery terminals and ground strap connections.



Check Functions of Lamps, Electrical Equipment and Accessories

Lamps

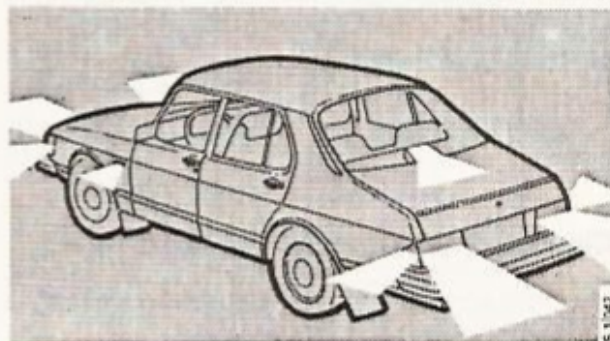
Check operation of headlights, turn signals, emergency flashers, stop lights, tail lights, marker lights, cornering lights and back-up lights including forward mounted side guidance reversing lights.

Electrical Equipment

Check operation of warning lamps, instruments, horn, wiper and washer controls and ventilation controls. Check function of AC controls, power windows, power sunroof and central locking system, if so equipped.

Accessories

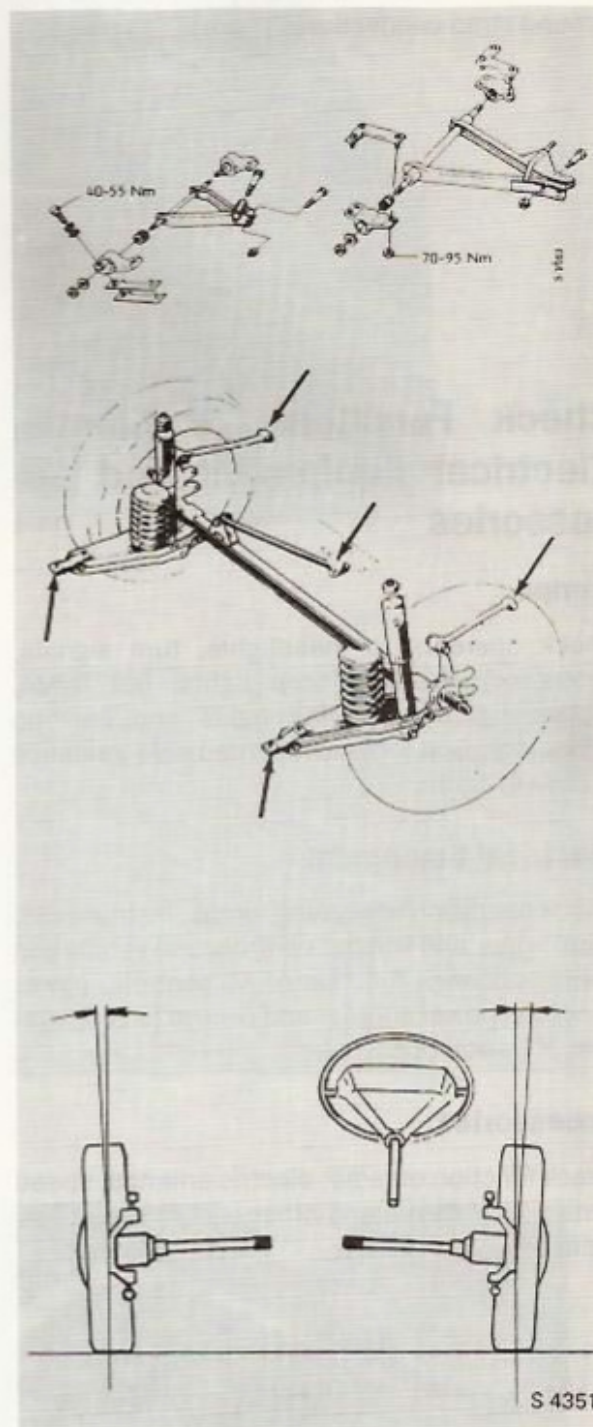
Check function of radio, electric antenna, speed control, fog lamps and other accessories, if so equipped.



Chassis

Retighten Suspension Link Bolts

Tighten rear axle crossbar, rear spring link and front control arm attachment bolts.



Check/adjust Front Wheel Alignment

Check all wheel angles and adjust as necessary.

Caster, power steering:	$+2^{\circ} \pm 1/2^{\circ}$
Caster, manual steering:	$+1^{\circ} \pm 1/2^{\circ}$
Camber:	$+1/2^{\circ} \pm 1/2^{\circ}$
Toe-in	$1) 0.08 \pm 0.04$ in (2 ± 1 mm)
	$2) 0.14 \pm 0.07$ in (3.5 ± 1.7 mm)

- 1) Toe in, measured at rim (410 mm or 16.1 in)
- 2) Toe in, measured at a universal 28.64 in circle

Check the position of the steering wheel after making any adjustments.

After adjusting the toe-in, distance A, between the lock nut and the outer edge of the groove on the track rod, must not exceed 100 mm (3.94 in) (man) or 125 mm (4.92 in) (PS) under any circumstances.

The difference in distance A between the track rods must not exceed 2 mm (0,079 in).

Modified wheel geometry - sports chassis

Saab Turbo 16S cars equipped with sports chassis, i.e. cars lowered by around 20 mm at the factory.

A 900 Turbo 16S with sports chassis can be identified by measuring the distance from the edge of the wheel to the "waistline".

900 Turbo 16S with sports chassis:

A = 230 mm

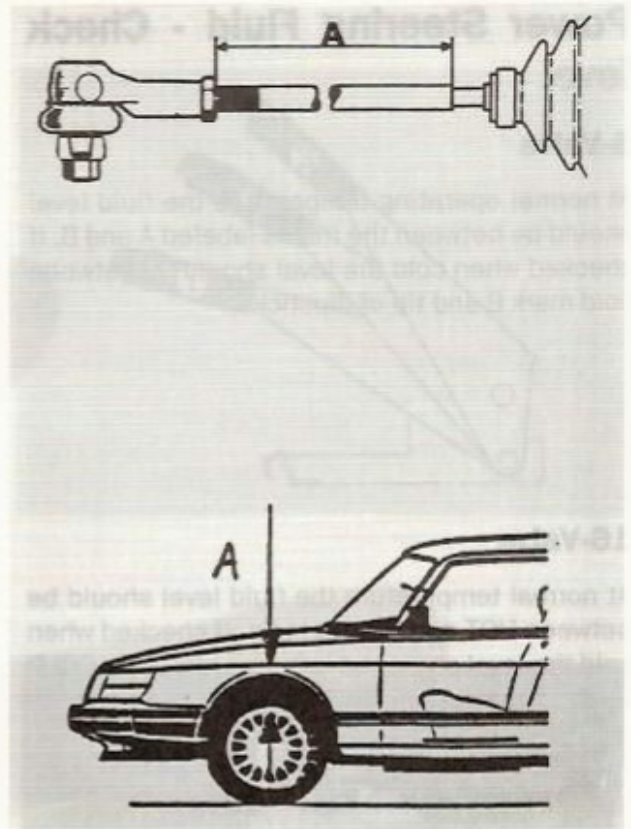
900 Turbo 16S without sports chassis:

A = 250 mm

In addition, the sports chassis springs are marked with bronze/silver.

Check front wheel toe-in and adjust as necessary.

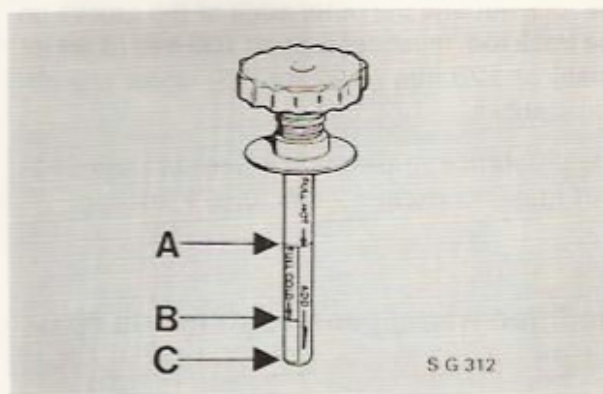
Toe-in	$1,5 \pm 0,5$ mm
Camber	$0,25^\circ \pm 0,25^\circ$
Caster	$2^\circ \pm 0,25^\circ$



Power Steering Fluid - Check level

8-Valve

At normal operating temperature the fluid level should be between the marks labeled A and B. If checked when cold the level should be between cold mark B and tip of dipstick C.



16-Valve

At normal temperature the fluid level should be between HOT and COLD marks. If checked when cold the level should be between marks for COLD level and mark for ADD.

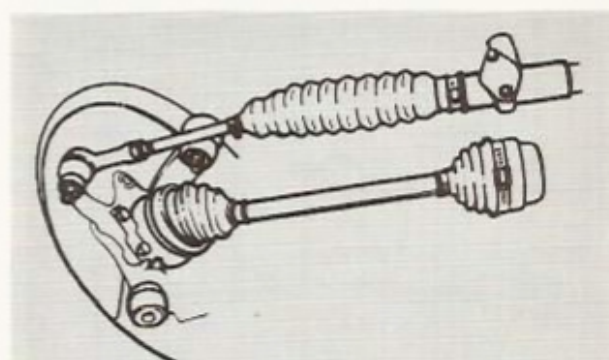


Check Rubber Boots

Check rubber boots on ball joints and tie rod ends. Check rubber bellows on inner and outer drive shaft joints. Replace damaged boots or bellow.

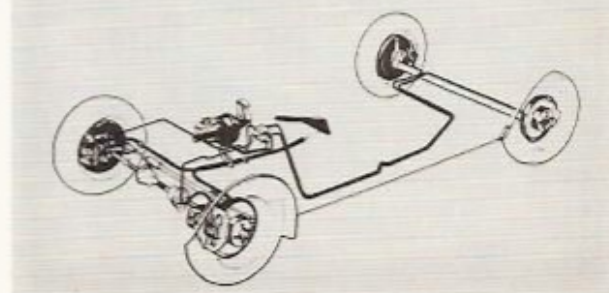
Note

Damage due to road hazards is not covered under warranty. Advise owner!



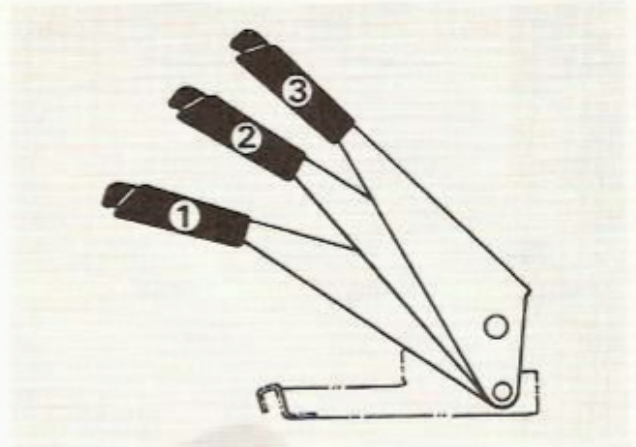
Check Brake System

Check condition of brake lines and hoses, and tightness of master cylinder, calipers and screw caps. Correct as necessary.



Check Handbrake Function

Test handbrake. Handbrake must be fully applied after seven notches.



Check Brake Fluid Level

Check the fluid level visible in the transparent reservoir. The level should be maintained between the MAX and MIN marks.

Warning

Use only fresh brake fluid from a sealed container to avoid water contamination.

Do not use DOT5 brake fluid.

Brake fluid: DOT4, SAE J 1703
Hydraulic brake fluid



Miscellaneous

Road Test

Test drive vehicle and check overall condition. Note especially the function of brakes and clutch (manual transmission).

Check general engine performance.

On Turbos, during test drive observe that the boost gauge needle enters the orange zone when accelerating above 2,000 rpm and the APC System controls maximum boost when knocking is detected. (If boost indication is unsatisfactory, connect a test gauge and check basic setting and maximum pressure).



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