

**SAAB**

**900**

**SERVICE  
MANUAL**

**1:2 Service**

**M 1985-87-**



# SERVICE MANUAL

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**1:2 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

## General

A clean and orderly workshop is an essential condition for good, professional work. Certain components of the car must also be handled carefully and protected from dirt and grit. For mechanics who are new to the job (and as a reminder to experienced mechanics) the following guidelines should be followed.

- 1 Cover the wings and other parts of the paintwork where you are working to avoid chipping and scratching.
- 2 Protect the upholstery with a suitable plastic covering to keep it clean.
- 3 Before starting to dismantle hubs, shafts, etc., remove all loose dirt from the insides of the surrounding body panels and from around the rear axle. This will help to prevent dirt and grit from entering bearings and other sensitive components, as well as to make the work that much easier.
- 4 Thoroughly clean the recess in the cylinder head before removing a spark plug.
- 5 The workshop should have special areas set aside for different jobs. For instance, a workbench on which an engine or gearbox is to be disassembled should never be used for filing or the like.

### Lifting and jacking up the car

To avoid damaging the car, jacks and car lifts should only be applied at suitable points. Two jacking points are provided on either side of the car to enable one side of the car to be jacked up, for instance, for changing a wheel. The engine compartment floor is reinforced immediately under the cross-member supporting the engine for the application of a trolley jack. A similar reinforced jacking point is provided under the floor panel behind the fuel tank at the rear of the car. On most trolley jacks, the pad or head is of channel-section design; to prevent damage to the floor of the car, therefore, a block of wood should be placed between the jack and the car. For jobs requiring either the front or the rear of the car to be raised, the jacking points under the sills should be used.



*Jacking up the front of the car*



*Jacking up the rear of the car*



*Front of the car supported on axle stands*



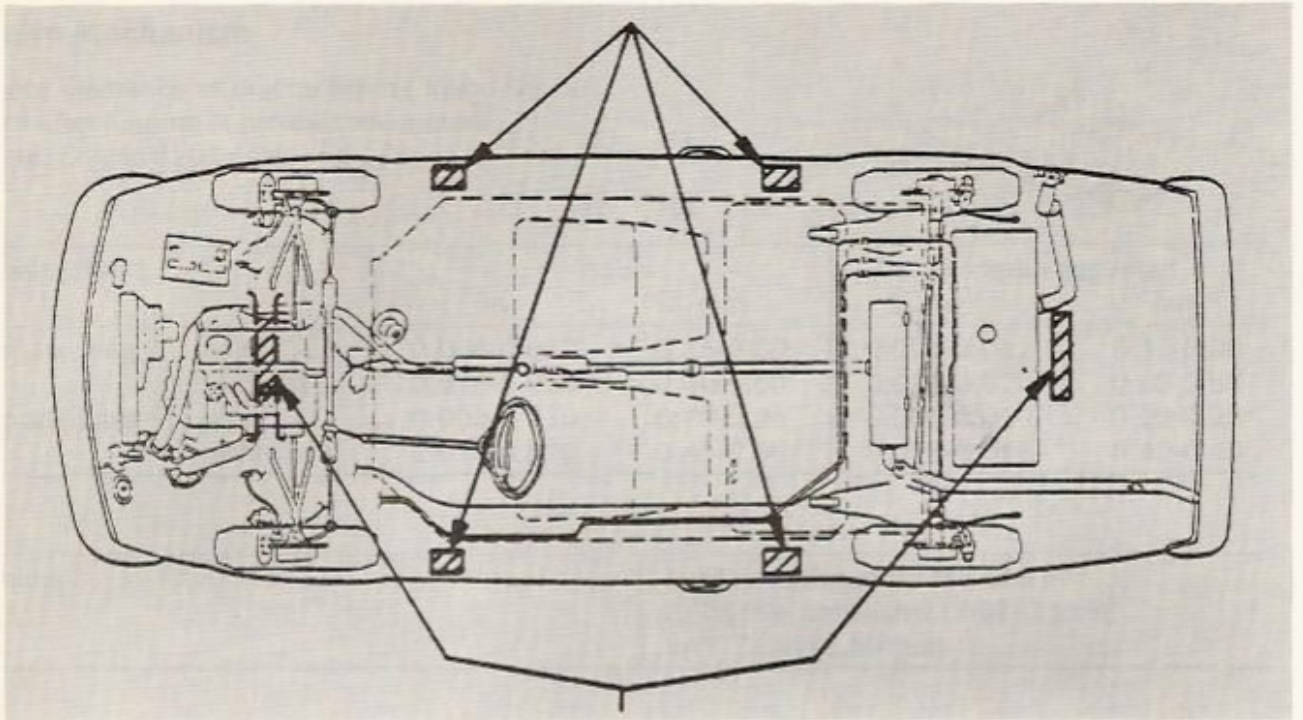
*Rear of the car supported on axle stands*



*Raising one side of the car using the jack supplied.*

**Lift Points for Car Hoist and Jack Stands**

(wheel change jack head reinforcements)



*Floor Jack Lift Points*

(floorpan reinforcement crossmembers)

# Engine

# Technical data

## Valve Mechanism

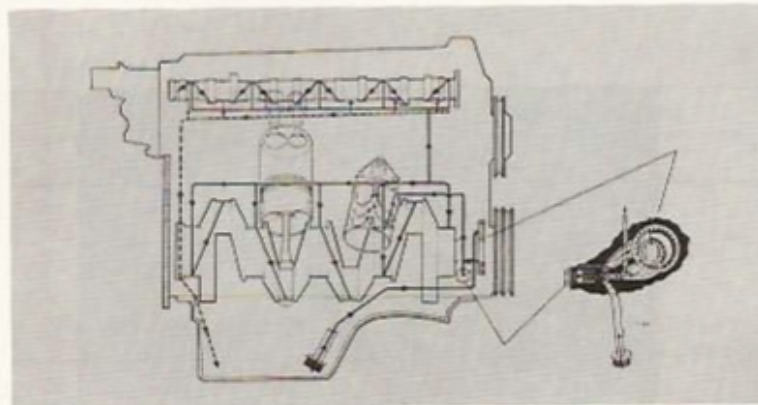
Valve clearance in engine having stood for 30 min after running at normal temperature

**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	Available in intervals of 0.002 in (0.05 mm) between 0.0697-0.1138 in (1.77 and 2.89 mm)
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## Lubricating system



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

## Fuel System

Idling speed		
8-valve	rpm	$875 \pm 75$
16-valve	rpm	$850 \pm 75$
With grounded GN/R wire	rpm	$750 \pm 25$

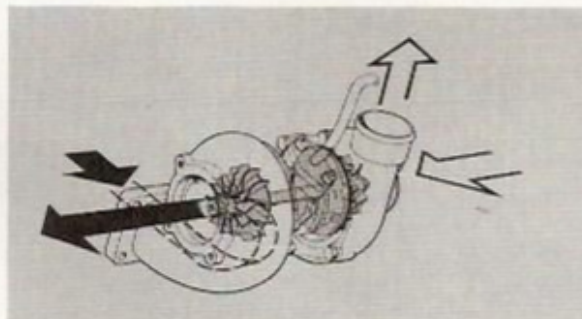
## Pulse Relation,

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

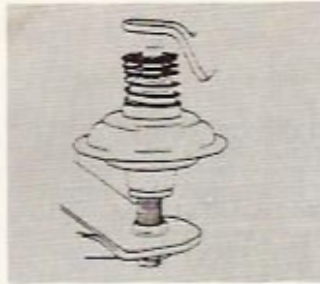


## Turbo compressor

Charging pressure, 16-valve	psi (bar)	$10.9 \pm 0.7$ ( $0.75 \pm 0.05$ )
Pressure switch actuating pressure, 16-valve	psi (bar)	$10 \pm 0.7$ ( $1.10 \pm 0.05$ )



**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
8-valve 1985		
Delay time from 3000 rpm to idling speed	sek	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°C)

**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)

## Electrical system

### Ignition system

Ignition setting with vacuum control unit disconnected

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

### Spark plugs



Engine	Plug type	
	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)	lbf ft (Nm)	18.5-21.5 (25 - 29 Nm)

## Transmission

### Manual

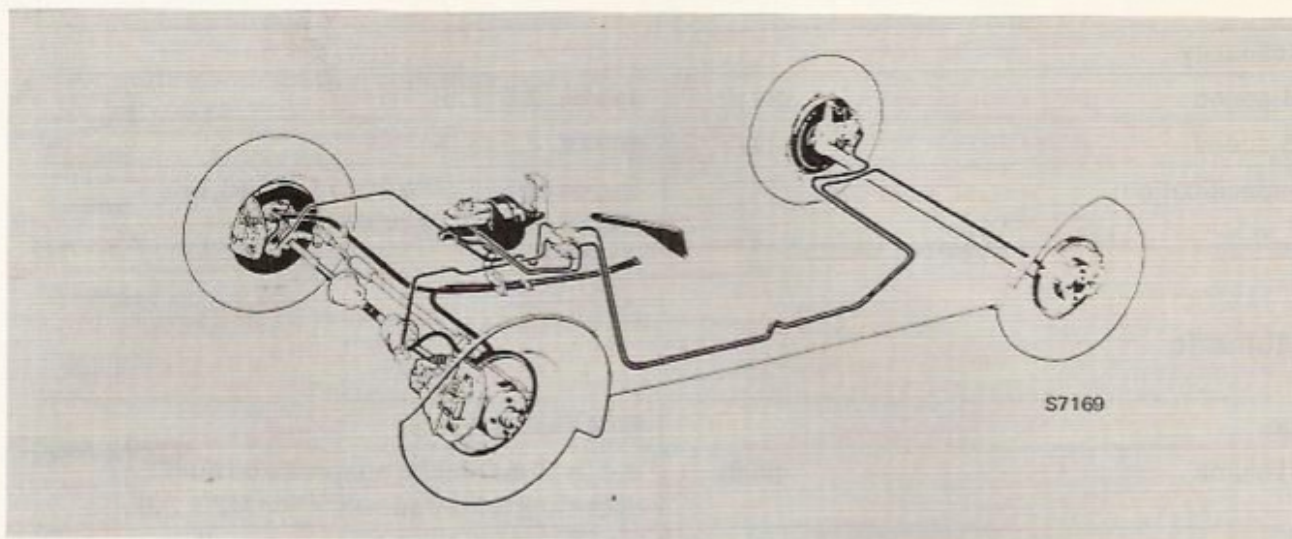
Oil capacity:

4-speed	qts (l)	approx. 2.6 (2.5)
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



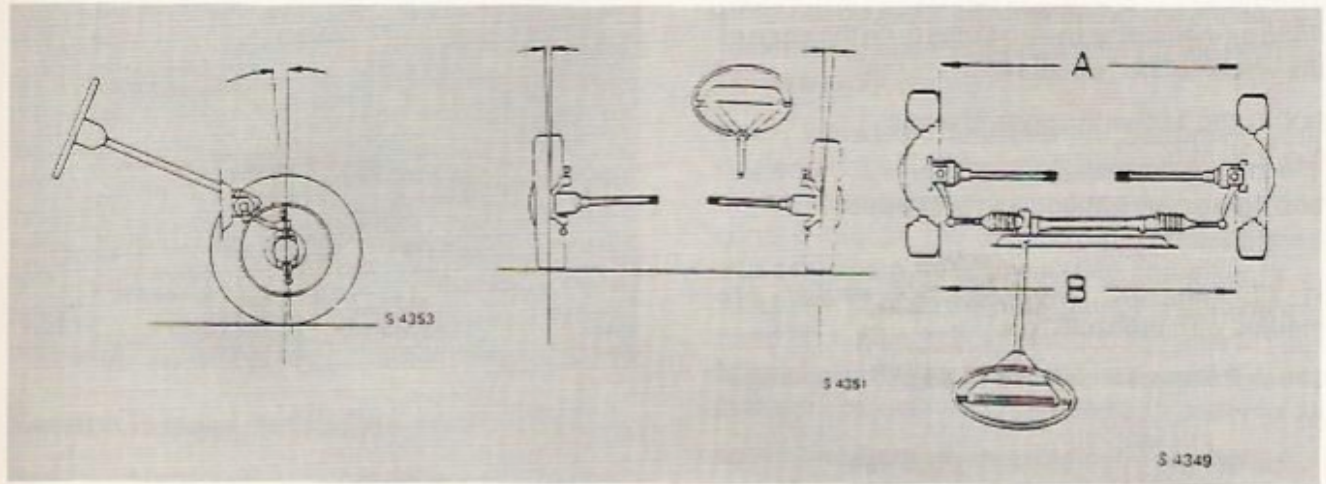
		Front	Rear
Outer diameter of disc	in (mm)	10.9 (276)	10.5 (276.5)
Thickness of new disc	in (mm)	0.5 (12.7)	0.5 (10.5)
Minimum thickness of disc after grinding	in (mm)	0.46 (11.7)	0.37 (9.5)
Maximum permissible grinding depth per side	in (mm)	0.02 (0.5)	0.02 (0.5)
Maximum lateral throw of fitted disc	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 <sup>2</sup> (cm <sup>2</sup> )	4.5 (29)	3.1 (20)

## 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	Camber	Toe-in
Power-assisted steering $+2^\circ \pm 0.5^\circ$	$+0.5^\circ \pm 0.5^\circ$	1) B-A $0.08 \pm 0.04$ in ( $2 \pm 1$ mm) 2) B-A $0.14 \pm 0.07$ in ( $3.5 \pm 1.7$ mm)

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

"King pin" inclination	°(degrees)	$1.5 \pm 1$
Turning angle:		
outside wheel	°(degrees)	20
inside wheel	°(degrees)	$20.75 \pm 0.5$
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

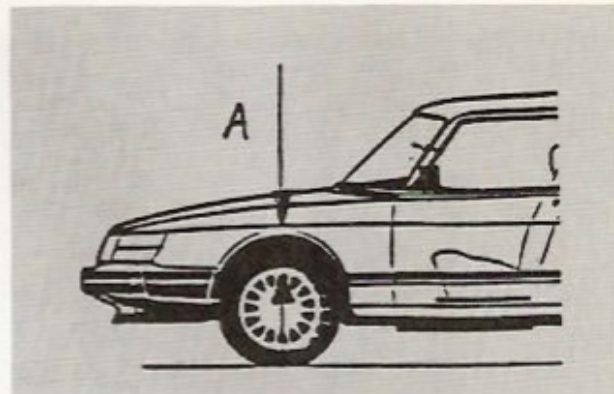
900 Turbo 16S without sports chassis:

A = 250 mm

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

Check front wheel toe-in and adjust as necessary.

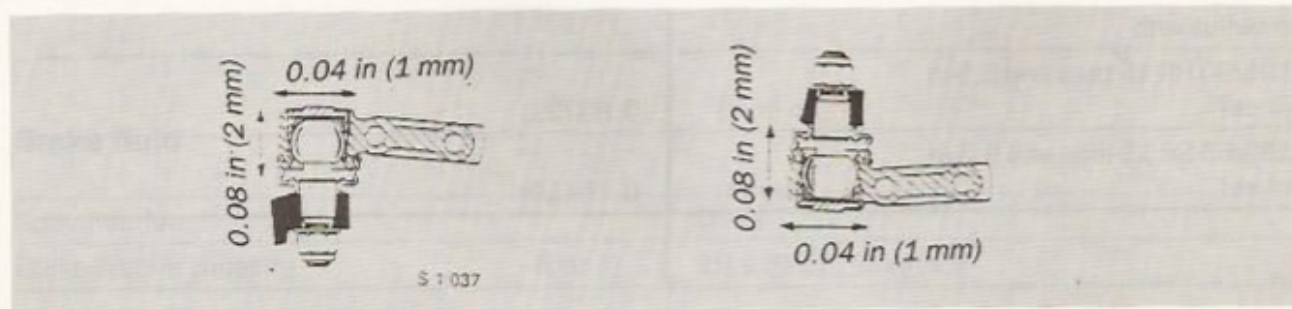
Toe-in	$1,5 \pm 0,5$ mm
Camber	$0,25^\circ \pm 0,25^\circ$
Caster	$2^\circ \pm 0,25^\circ$



**Ball joints**

Maximum play in ball joint when not under load

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



# Maintenance programme

## Maintenance schedule Saab 900 1985, 1986, 1987

The **Emission System Maintenance** instructions specify operations to ensure proper and safe function of Saab emission control systems throughout the useful life of the automobile. Additional maintenance is specified for certain components when operated under certain severe conditions. Maintenance, replacement, or repair of the emission control devices and systems may be performed by any automotive repair establishment or individual using any automotive part which has been certified according to U.S. EPA regulations governing voluntary aftermarket part self-certification.

### Service Record Retention

Service coupons and record stubs are provided in the Saab 900 Warranties/Service Record booklet.

The coupons are arranged in the order that service should be performed. The edge of each coupon is shaded to correspond to the type of service point: Striped - Break in Service; Lt. Gray

- Intermediate Oil and Filter Change; Dk. Gray - Oil Change/Safety Inspection; Black - Major Service. Two coupons are provided at the end for two free inspections required to validate the Perforation Warranty.

When scheduled services are performed your dealer will tear out the applicable coupon, check off the operations performed and enter it into the service file at the dealership. The servicing dealer's stamp, along with date and mileage at which the service was performed, should be entered on the coupon stub which remains in your booklet. This is your permanent record that recommended maintenance has been performed.

Authorized Saab dealers regularly receive up-to-date Service Manuals and bulletins from Saab-Scania of America, Inc. and are able, through their franchise agreement with Saab-Scania of America Inc., to attend Saab service schools and purchase special tools and original equipment spare parts. Authorized Saab dealers are equipped and trained to meet your Saab service needs.

## Oil change/safety inspection

### OIL CHANGE/SAFETY INSPECTION CHECKLIST

#### A. EMISSION SYSTEM MAINTENANCE

- Engine Oil and Oil Filter—Change.

#### B. VEHICLE MAINTENANCE

##### ENGINE

- Cooling System—Check condition.

Additional inspection at 45,000 mile

- Engine Coolant—Flush system and replace coolant mixture.

- Fuel Injection System Safety Check—Visually check condition.

- Exhaust System—Check condition.

Additional inspection for vehicles operated under severe service conditions including extensive idling, stop and go driving, towing, high speed driving and/or driving in cold climates over repeated short trips without sufficient engine warm up:

Interval: Every 15,000 mile if operated according to above conditions

- Spark plugs — Check and regap or replace as necessary.

##### MANUAL TRANSMISSION

- Gearbox Oil Level—Check/add.

##### AUTOMATIC TRANSMISSION

- Gearbox Oil Level—Check/add.  
 Differential Oil Level—Check/add.

##### ELECTRICAL SYSTEM

- Battery—Check terminal connections.  
 Functional Check—Lamps, electrical equipment and accessories.

##### CHASSIS

- Toe-In—Check/adjust.

- Tires—Check condition and rotate tires front to rear, same side.

- Power Steering Fluid—Check/add.

- General Inspection—Check underside for damage. Check rubber boots for drive shaft joints, ball joints and tie-rod ends.

- Brake System—Check component condition.

- Power Brake Vacuum Servo—Check hose for leaks.

- Hand Brake—Check function.

- Brake Pads—Check lining thickness (while tires are off).

- Brake Fluid—Check level.

##### MISCELLANEOUS

- Test Drive Vehicle—Check overall condition, noting especially the function of brakes and clutch. Check general engine performance.

## 110-2 Maintenance programme

To be carried out every 7,500 mile (12,000 km) or 12 months.

### A Emission system maintenance

#### 1 Engine Oil and Oil 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 SAE viscosity ratings listed below.

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

**Note:** On Turbos an intermediate oil and filter change is required at 3,750 miles.



### B Vehicle maintenance

#### Engine

##### 1 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.



##### 2 Engine Coolant - Replace

Additional inspection at every 45,000 miles.

Flush system and replace coolant mixture. Refill with a mixture of 50% pure water and 50% engine coolant.

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Specification:  
Contents: 10.5 qts (10 liters)

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### 3 Fuel Injection System - Check

Visually check condition on fuel lines and connections.

### 4 Exhaust System - Check

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

Additional inspection for vehicles operated under severe conditions including extensive idling, stop and go driving, towing, high speed driving and/or driving in cold climates over repeated short trips without sufficient engine warm up.

### 5 Spark Plugs - Check

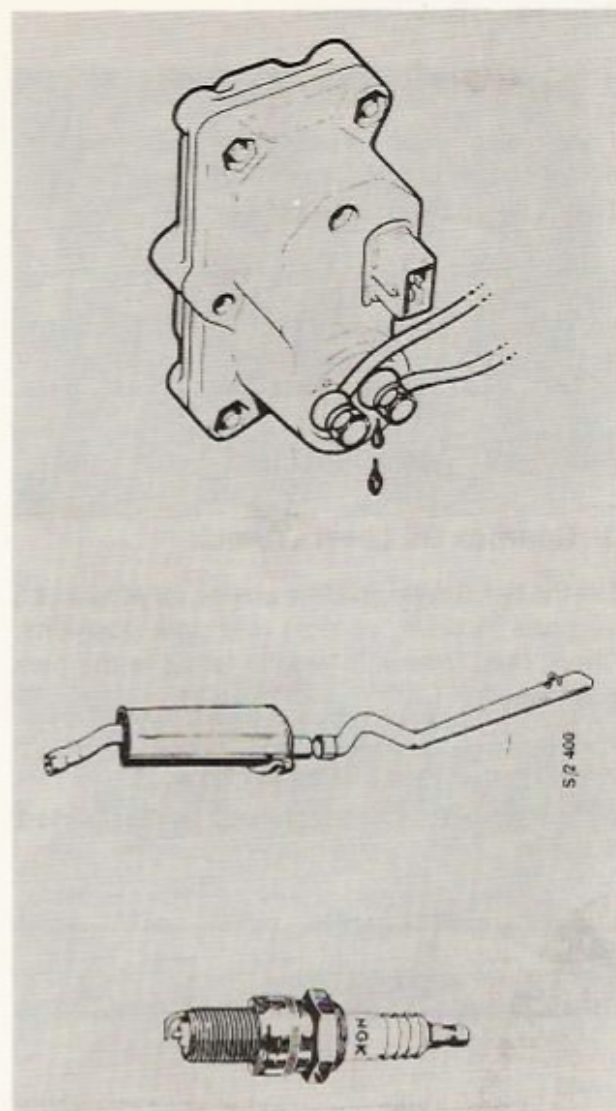
Check and regap or replace as necessary.

Interval: Every 15,000 miles if operated according to above conditions.

#### Spark plugs

Engine	Plug type	
	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)	lbf ft (Nm)	18.5-21.5 (25 - 29 Nm)



## Manual Transmission

### 1 Gearbox Oil Level - Check

The oil level should be between the MAX and MIN marks on the dipstick.  
To add oil pour into dipstick tube.

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Manual Transmission oil:  
SAE 10W-30, API SE or SAE EP 75, API GL-4 or GL-5

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## Automatic Transmission

### 1 Gearbox Oil Level - Check

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.

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Fluid:  
ATF type "F", M2C33F

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### 2 Differential Oil Level - Check

Correct quantity is level with the bottom of the filler plug hole.

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Final drive oil:  
SAE EP 80, API GL-4 or -5

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## Electrical System

### 1 Battery - Check terminal connections

Clean and tighten the battery terminals and ground strap connections.



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### 2 Functional check

#### Lamps

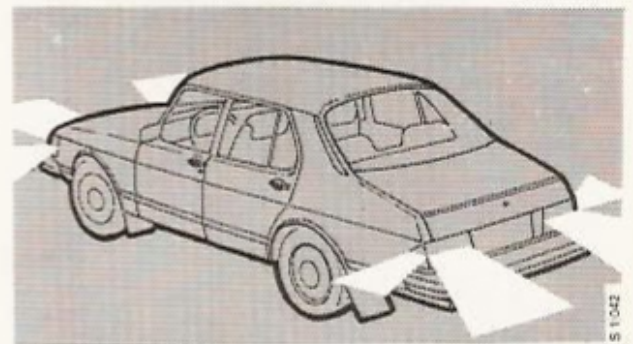
Check operation of headlights, turn signals, emergency flashers, stop lights, tail lights, marker lights, cornering lights and back-up lights including forward mounted side guidance reversing lights.

#### 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.



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## Chassis

### 1 Toe-in - Check/adjust

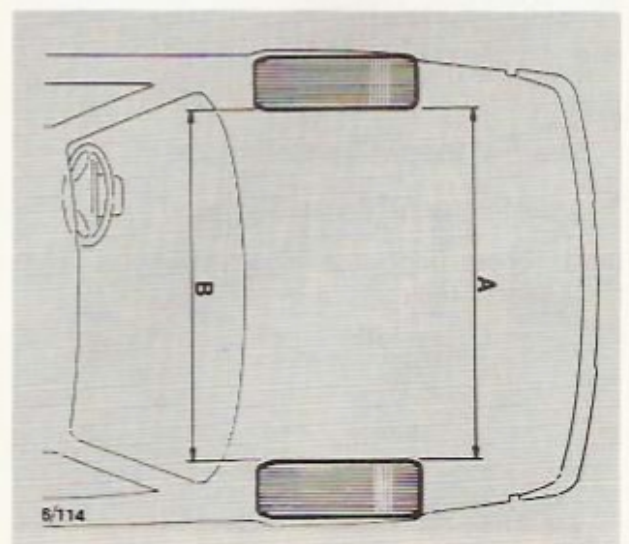
Toe-in is measured at the rims and at points level with the front axle.

**Note:** After toe-in adjustment, the length of exposed thread on tie-rod must measure within 0.08 in (2 mm) of each other.

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Front toe-in:  
 $0.08 \pm 0.04$  in ( $2 \pm 1$  mm)

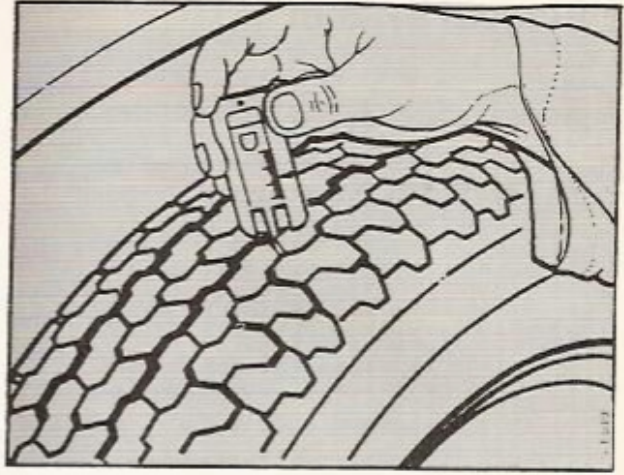
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## 2 Tires - Check

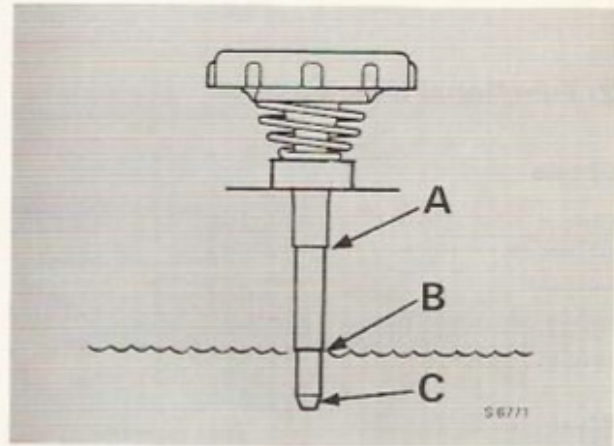
Check the thread depth and for excessive wear.  
Rotate tires front to rear same side.



## 3 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

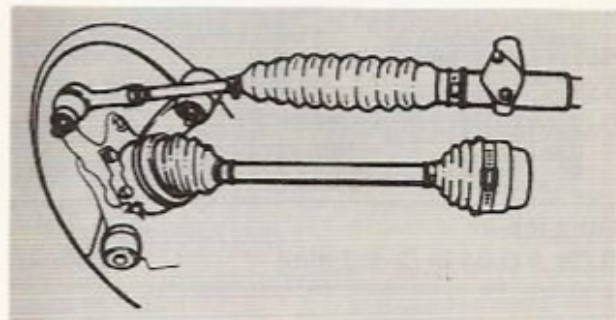
At normal temperature the fluid level should be between HOT and COLD marks. If checked when cold the level should be between marks for COLD level and mark for ADD.



## 4 General inspection - Underside

Check underside for damages.

Check rubber boots for drive shaft joint, ball joints and tie-rod ends.



### 5 Brake System - Check

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

### 6 Power Brake Servo - Check

Check hose between inlet manifold and vacuum servo unit for leaks.

### 7 Hand Brake - Check function

Check clearance between yoke and lever.  
Check that hand brake lever releases fully.

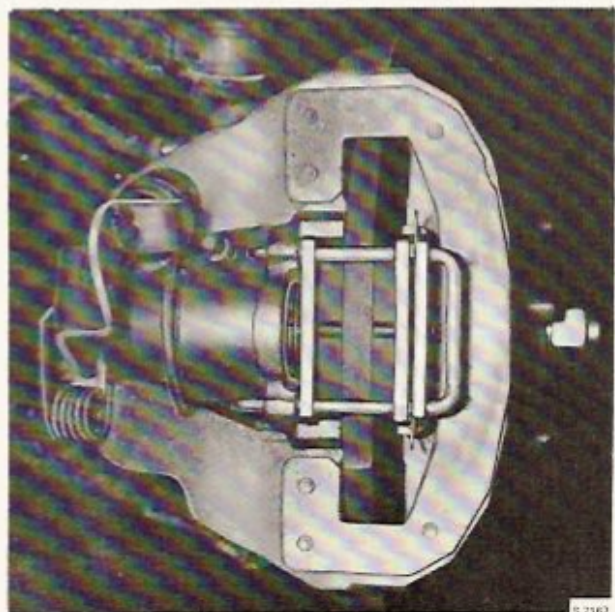
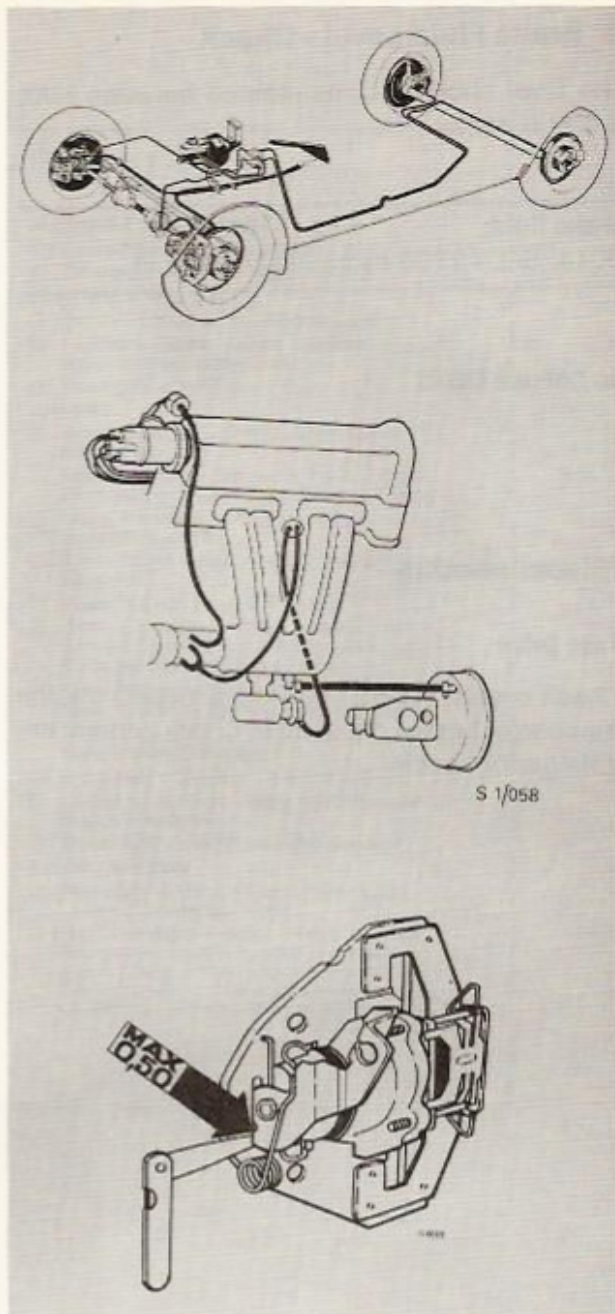
### 8 Brake Pads - Check

Minimum lining thickness: 0.04 in (1 mm)

Thickness of new lining:

front 0.35 in (8.8 mm)

rear 0.33 in (8.5 mm)



## 9 Brake Fluid Level - Check

The level should be maintained between MAX and MIN marks.

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Brake fluid:

DOT4, SAE J 1703 hydraulic brake fluid

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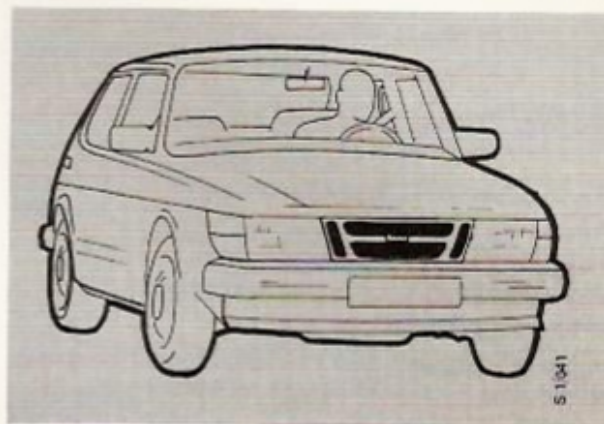
Do not use DOT5



## Miscellaneous

### Test Drive

Check overall conditions noting especially the function of brakes and clutch. Check general engine performance.



## Major service

### MAJOR SERVICE CHECKLIST

#### A. EMISSION SYSTEM MAINTENANCE

- Valve Clearance—Check/adjust (cold engine) and clean oil separator in camshaft cover [8 Valve engines only].
- Spark Plugs—Replace.
- Air Cleaner Insert—Replace.
- Fuel Filter—Replace.
- Evaporative Emission Controlled Fuel System—Check condition. \*
- Charcoal canister—Replace. \*
- Crankcase Ventilation—Check condition. \*
- Secondary Ignition Wires—Clean and inspect. Check resistance. \*
- Distributor Cap and Rotor—Replace. Check/adjust ignition timing. \*
- Ignition System—Check spark control system. \*
- Oxygen Sensor—Replace sensor [all engines]. (Reset service reminder lamp, 8 Valve engines only.)
- Engine Oil and Oil Filter—Change.
- Idle Speed—Check/adjust. \*
- Deceleration System—Check/adjust. \*
- Overpressure Safety Switch—Check operation [Turbo only].

#### B. VEHICLE MAINTENANCE

##### ENGINE

- V-Belts—Check/adjust tension.
- Cooling System—Check condition.
- Engine Coolant—Flush system and replace coolant mixture.
- Fuel Injection System Safety Check—Check condition.
- Exhaust System—Check condition.

##### MANUAL TRANSMISSION

- Gearbox Oil Level—Check/add.

\* At 60,000 miles or 48 months and every 12 months thereafter.

#### AUTOMATIC TRANSMISSION

- Gearbox Oil Level—Check/add.
- Differential Oil Level—Check/add.

#### ELECTRICAL SYSTEM

- Battery—Check terminal connections.
- Functional Check—Lamps, electrical equipment and accessories.
- Headlights—Check aim.

#### CHASSIS

- Wheel Alignment—Check/adjust camber, caster, toe-in.
- Upper and Lower Ball Joints, Tie-Rod Ends and Steering Column Joint—Check for wear.
- Shock Absorbers—Check bushings and dampening action.
- Tires—Check condition and rotate front to rear, same side.
- Power Steering Fluid—Check/add.
- General Inspection—Check underside for damage. Check rubber boots for drive shaft joints, ball joints and tie-rod ends.
- Brake System—Check component condition.
- Power Brake Vacuum Servo—Check hose for leaks.
- Hand Brake—Check function.
- Brake Pads—Check lining thickness.
- Caliper Yokes, Front—Apply special grease to sliding surfaces.
- Brake Fluid—Bleed system and replace.

#### MISCELLANEOUS

- Door Hinges, Throttle Control and Hood Latch—Lubricate sparingly.
- Test Drive Vehicle—Check overall condition, noting especially the function of brakes and clutch. Check general engine performance. On Turbos observe boost gauge under acceleration and note APC System function.

## A Emission system maintenance

### 1 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 83 91 450 and 78 40 622 to check the maximum and the minimum for valve clearance.

Valve clearance, when checking valves

Intake:	006"-012" (15-30 mm)
Exhaust norm.asp.:	014"-020" (35-50 mm)
Exhaust Turbo:	016"-020" (40-50 mm)

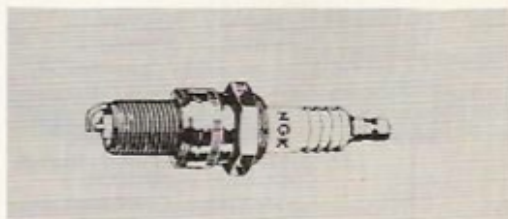
Adjust as necessary. See section 2, Part 214, 900 Service Manual.



## 2 Spark Plugs - Replace

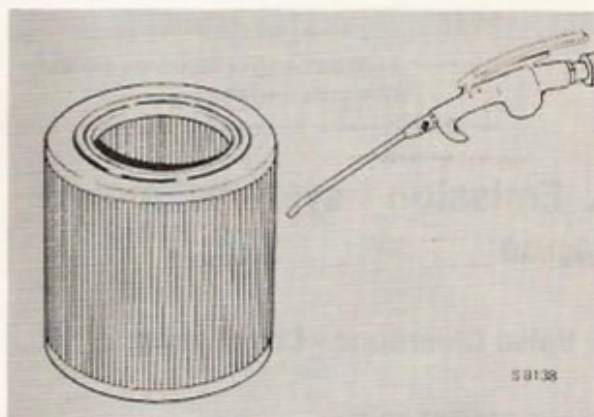
Check/adjust electrode gap on new plugs.

Engine	Plug type	
	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)	lbf ft (Nm)	18.5-21.5 (25 - 29 Nm)

## 3 Air Cleaner Insert - Replace



## 4 Fuel Filter - Replace

Note: Flow direction indicated with an arrow on the filter.





## 5 Evaporative Emission Controlled

### Fuel System - Check

Note: Interval every 60,000 miles (100 000 km)

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.

### 6 Charcoal Canister - Replace

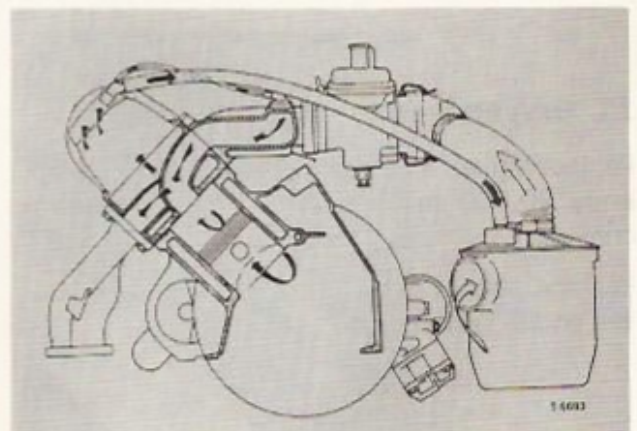
Note: Interval every 60,000 miles (100 000 km)



### 7 Crankcase Ventilation - Check

Note: Interval every 60,000 miles (100 000 km)

Check condition on hoses and connections for crankcase ventilation.



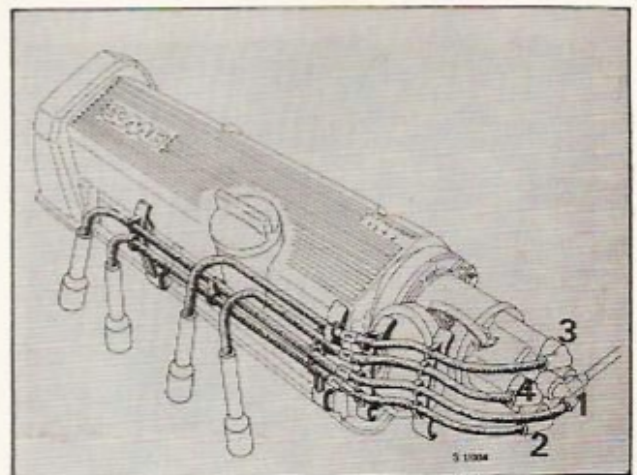
### 8 Secondary Ignition Wires - Check

Clean and inspect wires. Check resistance.

Wire specification: Wire between

Distributor - Plug 2-4 kOhm

Coil - Distributor 0.5-1.5 kOhm



## 9 Distributor Cap and Rotor - Replace

Note: Interval every 60,000 miles (100 000 km)

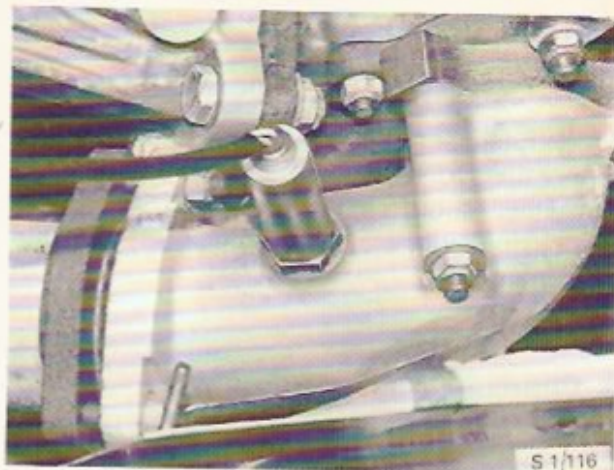
Replace distributor cap and rotor. Check/ adjust ignition timing.

Turbo 16: check ignition timing at 850 r/min

Normally aspirated: check ignition timing at 2000 r/min

Specification:

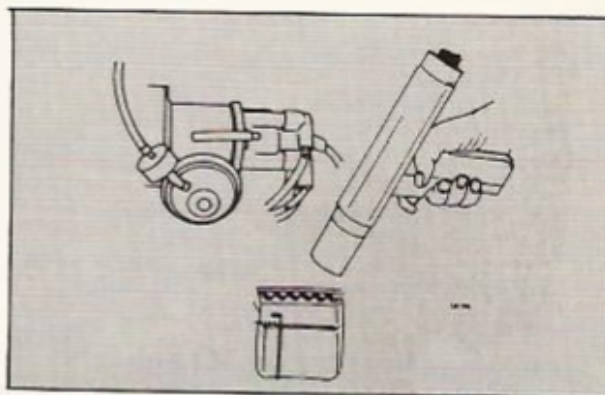
Turbo 16	16° BTDC
Norm. asp.	20° BTDC



## 10 Ignition System - Check

Note: Interval every 60,000 miles (100 000 km)

Check spark control system.



## 11 Oxygen Sensor - Replace

Replace sensor and reset service reminder lamp every 30,000 miles (50 000 km) on 8-Valve engines.

Replace sensor every 60,000 miles (100 000 km) on 16- Valve engines.



## 12 Engine Oil and Oil 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



### 13 Idle Speed - Check/adjust

#### 8-Valve

Interval: every 60,000 miles (100 000 km)

Check with a warmed-up engine using a tachometer.

If necessary, adjust to specification using the air bleed screw on throttle housing.

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Idle speed specification:	875 ± 75 rpm
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#### 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.

### 14 Deceleration System - Check/adjust

Interval: every 60,000 miles (100 000 km)

Deceleration fuel shut off systems 8-Valve with manual transmission.

There are no adjustments for this system. Fuel flow is shut-off when a solenoid opens an air bypass valve that reduces air flow through the air flow sensor. The decel relay activates this solenoid whenever the throttle is closed above 1575 rpm and deactivates it when the engine speed drops below 1375 rpm or the throttle opens.

#### Dashpot System

16-Valve and 8-Valve with automatic transmission.

The dashpot plunger must be adjusted to touch the throttle lever at specified engine speed.

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Dashpot setting:	
Norm. asp.	2500 ± 100 rpm
Turbo 16-Valve	2600 ± 100 rpm

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## 15 Overpressure Switch - Check

Turbo only

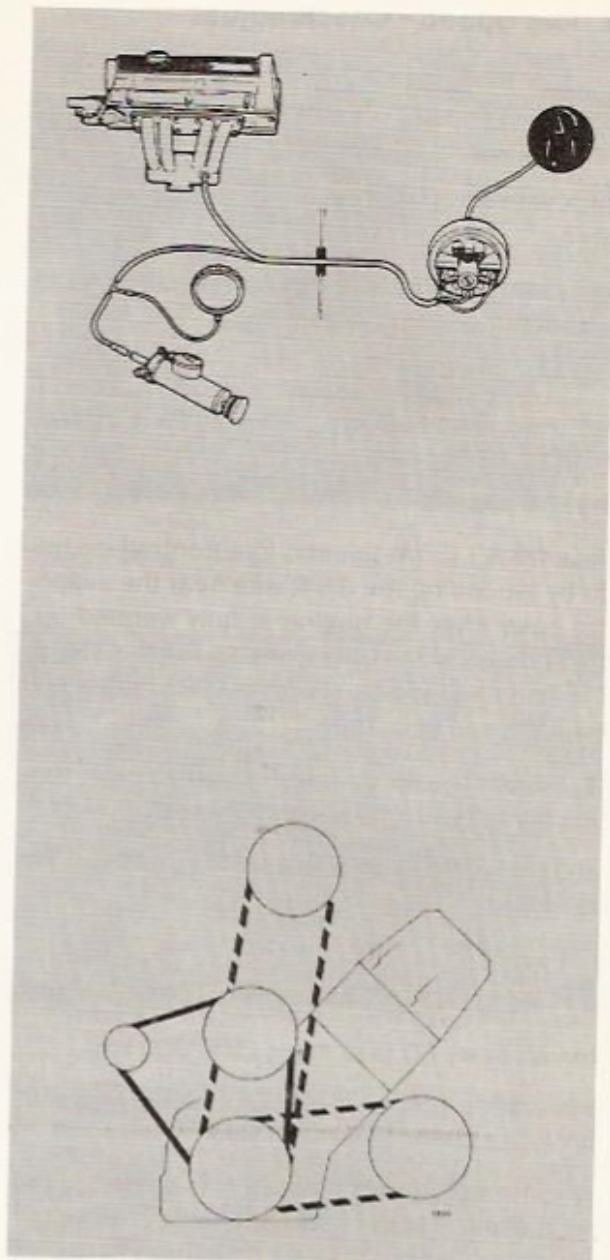
Disconnect the hose to overpressure switch at inlet manifold. Connect to gauge P/N 8393514 along with a suitable pump. Start the engine and let it idle. Increase pressure and check the cut-out pressure.

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Cutout pressure, 16-valve:

$1.10 \pm 0.05$  bar ( $16 \pm 0.7$  psi)

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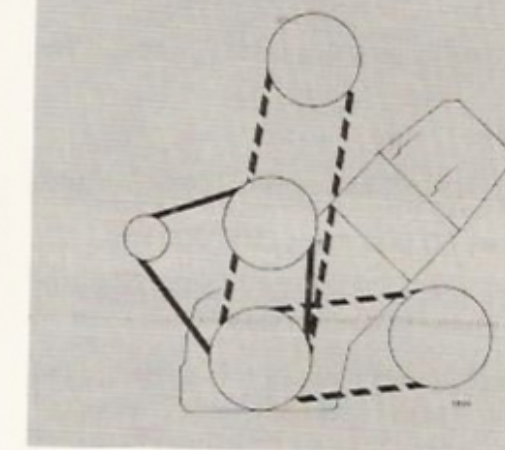
## Vehicle maintenance

### Engine

#### 1 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.

Adjust power steering belt to the same deflection  $3/16$  in (4,7 mm) but at a higher pressure of about 15 lb. force.



#### 2 Cooling System - Check

Check hoses and connections for leaks. Pressure test the system at a maximum pressure of 17.4 psi (1.2 bar).

Tighten clamps or replace hoses and clamps if necessary.

Tool P/N 8393217.



### 3 Engine Coolant - Replace

Flush system and replace engine coolant. Refill with a mixture of 50 % pure water and 50 % engine coolant

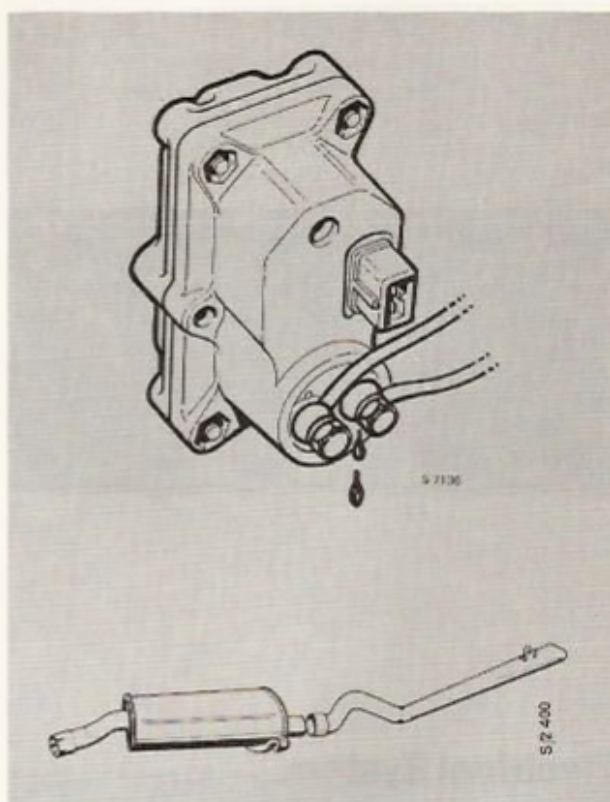
Specification:

Contents: 10.5 qts (10 liters)



### 4 Fuel Injection System - Check

Inspect components, electrical cables, fuel hoses, and all connections for wear, damage, and/or deterioration. Tighten any loose connections and/or replace any damaged components.



### 5 Exhaust System - Check

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

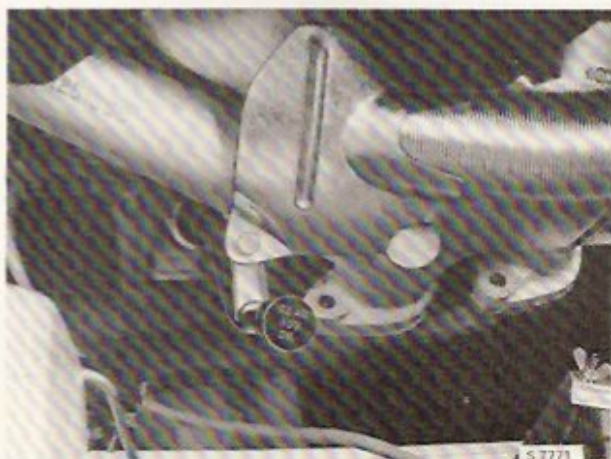
## Manual Transmission

### 1 Gearbox Oil Level - Check

The oil level should be between the MAX and MIN marks on the dipstick. To add oil pour into dipstick tube.

Manual Transmission oil:

SAE 10W-30 API SE or SAE EP75 GL-4, -5



## Automatic Transmission

### 1 Gearbox Oil Level - Check

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.

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Fluid: ATF type "F", M2C33F

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### 2 Differential oil level - check

Correct quantity is level with the bottom of the filler plug hole.

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Final drive oil:  
SAE EP80 API GL-4 or -5

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## Electrical System

### 1 Battery - Check terminal connections

Clean and tighten the battery terminals and ground strap connections.

Batteries are maintenance free and normally requires no electrolyte level check.



## 2 Electrical system - Functional check

### Lamps

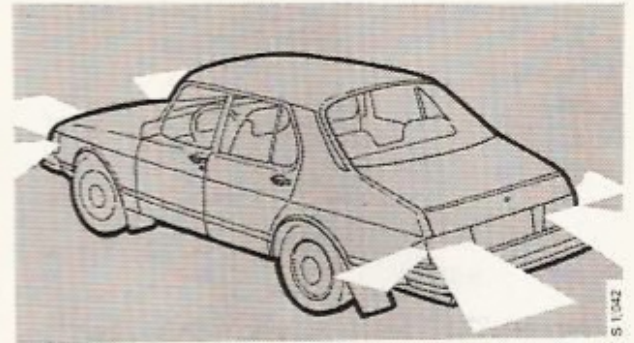
Check operation of headlights, turn signals, emergency flashers, stop lights, tail lights, marker lights, cornering lights and back-up lights including forward mounted side guidance reversing lights.

### 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.



## 3 Head lights - Check aim

Check/adjust headlights using approved headlight aiming equipment. Follow applicable state regulations.



## Chassis

### 1 Wheel Alignment - Check/adjust

Check camber, caster and toe-in  
Adjust as necessary.

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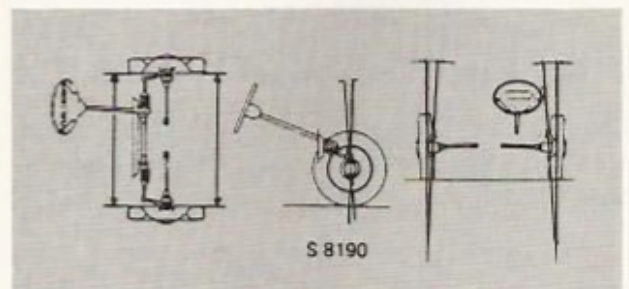
Wheel alignment:

Caster  $+2^\circ \pm 1/2^\circ$

Camber  $+1/2^\circ \pm 1/2^\circ$

Toe-in  $0.08 \pm 0.04$  in ( $2 \pm 1$  mm)

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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 (3.95 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).

## 2 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

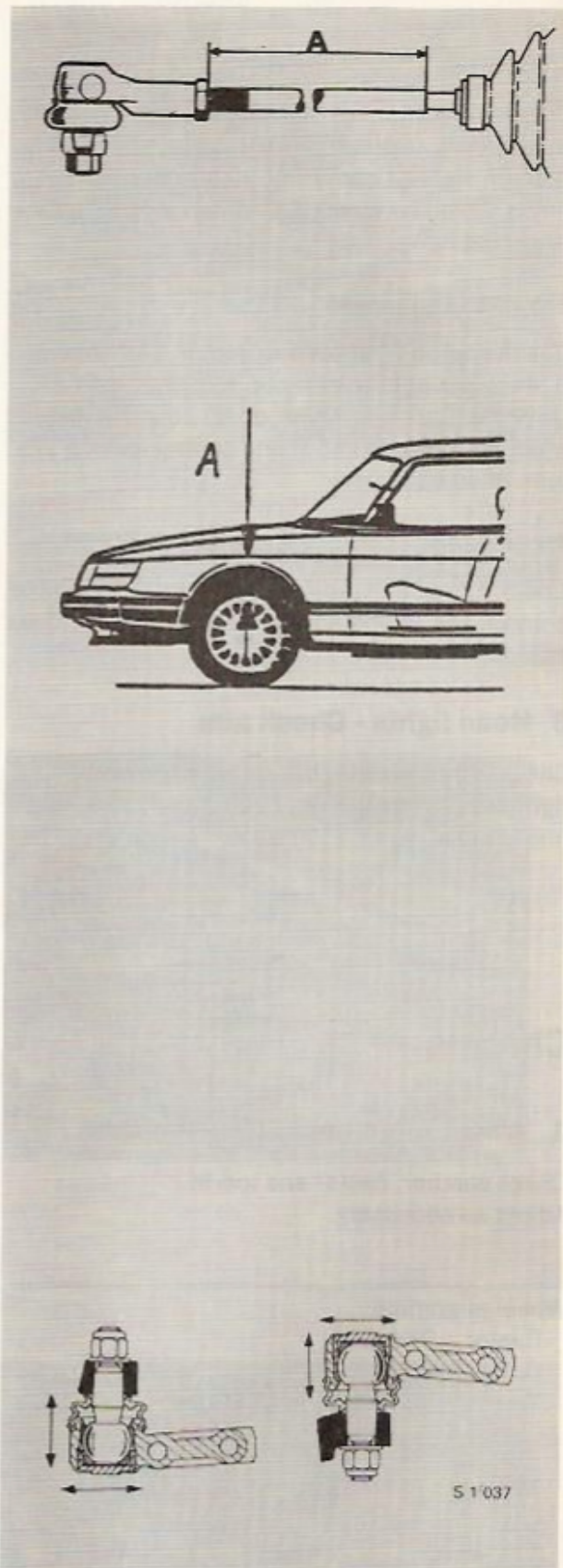
In addition, the sports chassis springs are marked with bronze/silver.

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	$2^\circ \pm 0,25^\circ$

## 3 Ball Joints, Tie-Rod Ends - Check

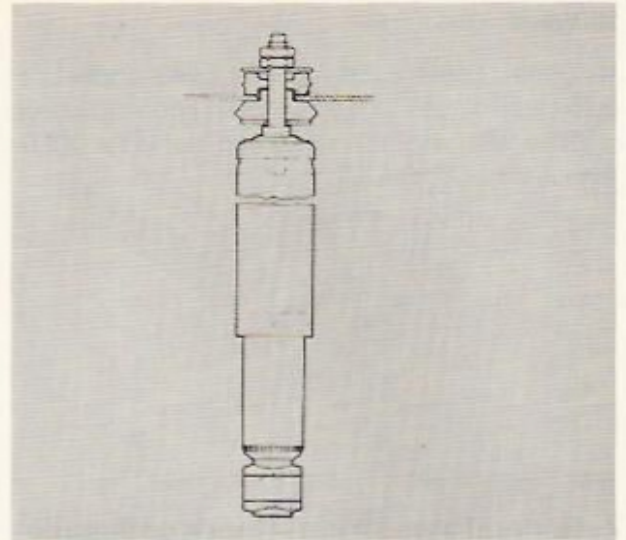
Check both sides of vehicle for wear. Also check steering gear universal joints. Correct any unsafe condition.





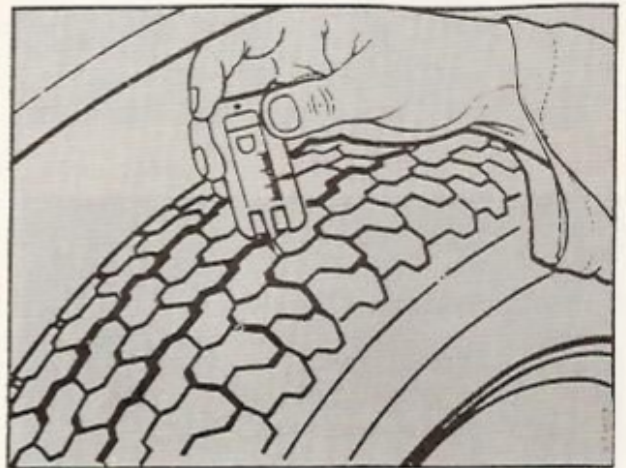
#### 4 Shock Absorbers - Check

Check rubber bushings and dampening action.



#### 5 Tires - Check

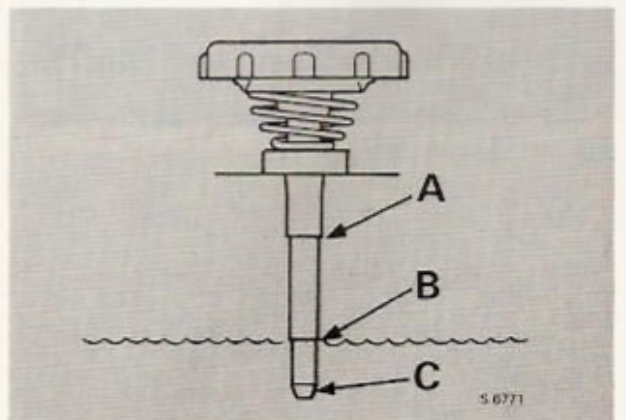
Check condition and rotate front to rear same side. Check tire tread depth and replace when wear bars in tread appear.



#### 6 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 levels should be between HOT and COLD marks. If checked when cold the level should be between marks for COLD level and mark for ADD.



## 7 General Inspection - Check underside

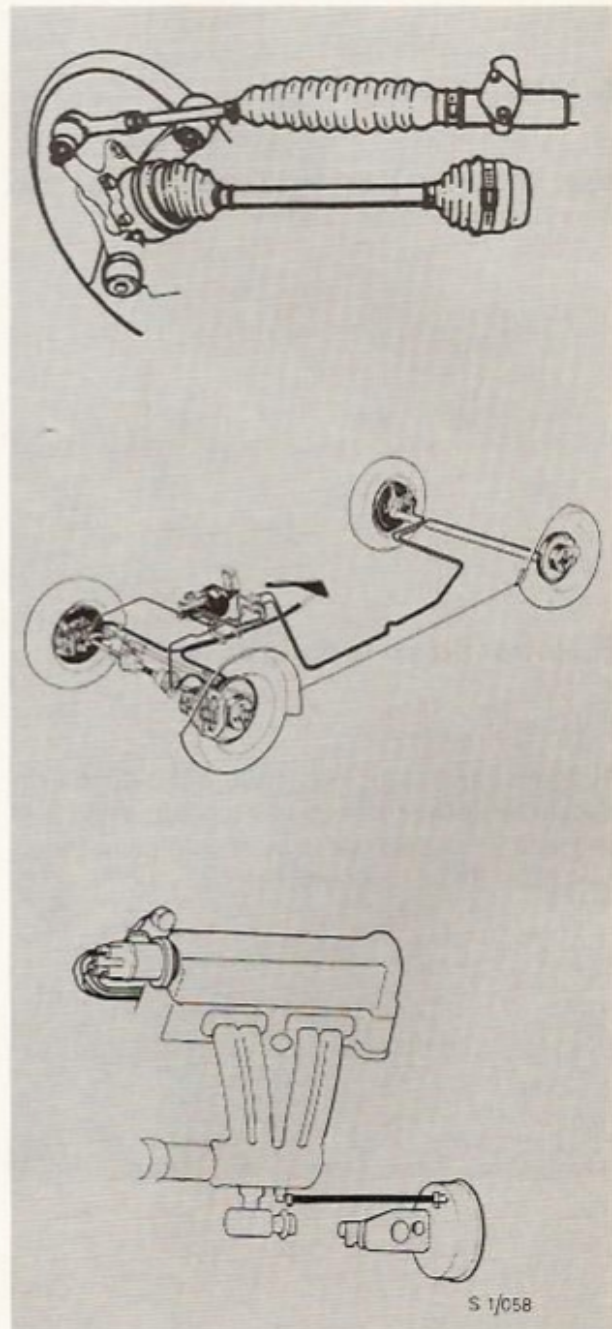
Check underside for damages. Check rubber boots for drive shaft joint, ball joints and tie-rod ends.

## 8 Brake System - Check

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

## 9 Power Brake Vacuum Servo - Check

Check vacuum servo hose and connections. Correct any vacuum leaks.

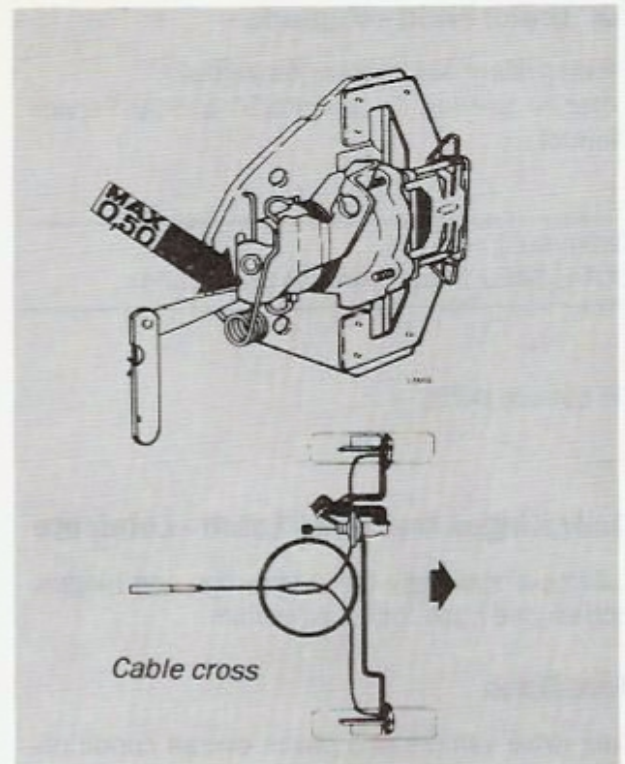


## 10 Check Hand Brake - Function and adjustment

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

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

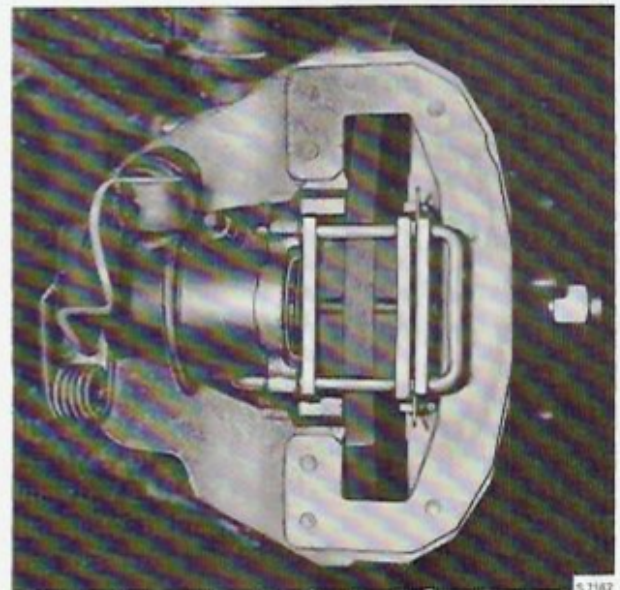
Handbrake cables cross under the carpet, therefore left adjuster affects right front wheel and right adjuster affects left front wheel.



## 11 Brake Pads - Check

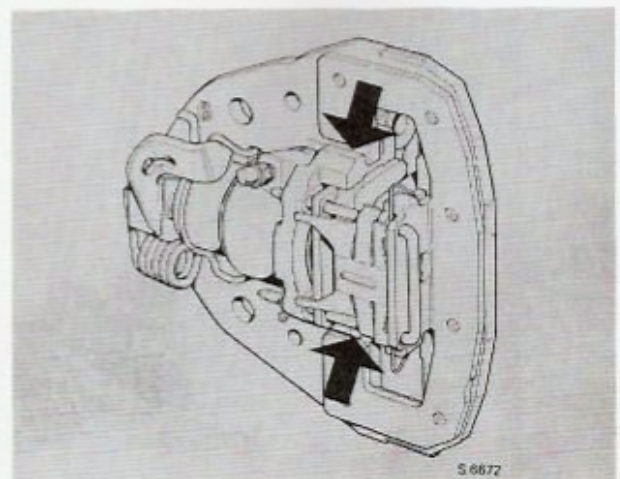
Check lining thickness with wheels removed.

Replace pads when lining thickness is less than  $1/8$  in (3,2 mm).



## 12 Front Calipers - Grease

Grease sliding surfacers of front brake caliper yokes (special grease required). P/N 30 08 612.



Saab-Scania AB  
Saab Car Division  
Nyköping, Sweden

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(US) American Edition. Ordering No. **335588**. Printed in Sweden by Graphic Systems AB. Göteborg 1986.

