



M 1985—

## SERVICE MANUAL

This Service Manual describes repair and maintenance work on the Saab 90. The intention is to provide Saab workshops with comprehensive information so that servicing and repair work can be carried out in a satisfactory way.

The Manual consists of two loose leaf files. File 1 includes groups 0–3, file 2, groups 4–9. Under each tab there is a separate list of contents showing the headings and numbers of the various sections.

The different group booklets are to be inserted under the corresponding tabs 0–9. New issues of the booklets are made when necessary, for example in connection with annual model engineering changes.

At the beginning of each booklet there are the specifications and the special tools needed for the group. This is followed, for each section, by a technical description and repair instructions.

Modified repair methods and specifications are published through Service Information (SI). These are numbered, for example 211—5sE. The first three figures refer to the corresponding section and heading in the book (211= Cylinder head). The corresponding numbering is also used in the repair time lists, etc. The figure 5 is a serial number and sE is the language and distribution code for English. SI must be sorted in according to the contents designations under each tab. A list of all current SI is issued once a year.

When looking for special information in the book, first refer to the group list of contents. On the basis of the three-figure section number, it is then easy to find the corresponding pages in the booklet and among the SI.

**SAAB-SCANIA**

Saab Car Division  
Nyköping, Sweden

Ordering No. 327825

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**SAAB**

**90**

**SERVICE  
MANUAL**

**0 Specifications**

**M 1985-**

[www.saab-90.nl](http://www.saab-90.nl)

# 0 Specifications

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## M 1985-

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S 0007

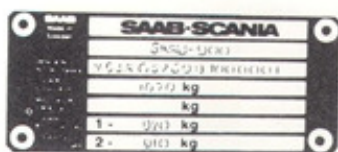
Saab 90



Body colour code



Trim colour code



Chassis number plate,



Modification code plate



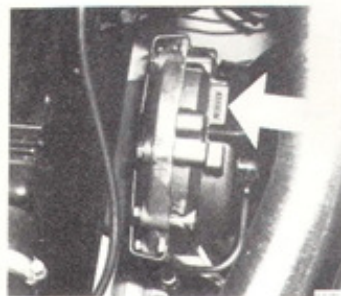
Exhaust emission control data



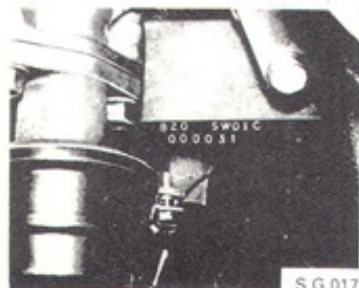
Body colour code



Trim colour code



Transmission number, manual transmission



Engine number, type H engine



S 0007



Chassis number (punched in car body under rear seat cushion).

# General

## Chassis and engine numbers

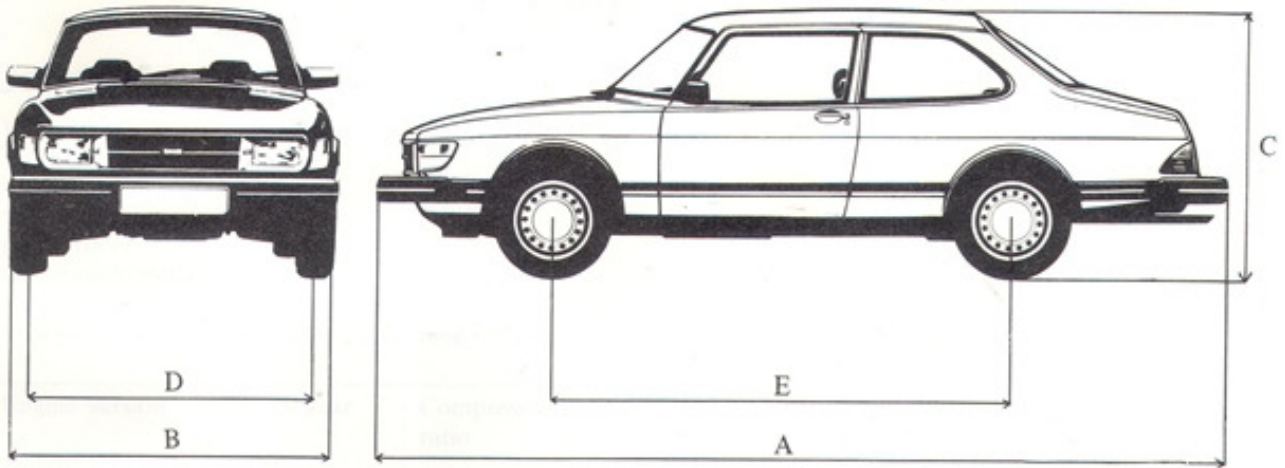
The locations of the chassis and engine numbers are shown on the facing page. For positive identification of a car or engine, these numbers, together with the odometer reading, should be quoted in all correspondence, e.g. when claims are being submitted. When a replacement engine is fitted, the number of the old engine must always be stamped in the place provided for that purpose. This is essential to obviate subsequent problems should the car be taken out of the country.

## Chassis number

	YS3	A	M	3	5	I	X	E	1	000001
Positions 1-3 <i>Manufacturer</i>	YS3 = Saab-Scania AB									
Positions 4 <i>Model</i>	A = 900 B = 90									
Position 5 <i>Series</i>	L = GL M = GLs, GLi, i H = GLE, EMS T = Turbo									
Position 6 <i>Body type</i>	2 = 2-door Sedan 3 = 3-door Combi Coupé 4 = 4-door Sedan 5 = 5-door Combi Coupé 6 = 4-door Sedan, extended wheelbase									
Position 7 <i>Transmission type</i>	4 = 4-speed manual 5 = 5-speed manual 6 = 3-speed automatic									
Position 8 <i>Engine type</i>	C = Single carburetor T = Twin-carburetor I = Fuel injection S = Turbo L = Turbo with intercooler									
Position 9 <i>Check digit</i>										
Position 10 <i>Model year</i>	F = 1985									
Position 11 <i>Assembly plant</i>	1 and 2 = Trollhättan 3 = Arlöv 6 and 7 = Nystad (Finland)									
Positions 12-17 <i>Serial number</i>										

**Engine number**

Example	B	20	1	2	T	0	1	M	E	000001
Position 1 <i>Engine type</i>	B = Petrol engine F = Petrol engine modified to run on paraffin									
Position 2-3 <i>Swept volume</i>	20 = 2 dm <sup>3</sup> (2,0 l)									
Position 4 <i>Cylinder head</i>	1 = Overhead camshaft 2 = Twin overhead camshafts									
Position 5 <i>Model</i>	1 = Saab 90 2 = Saab 900									
Position 6 <i>Version</i>	C = Single-carburetor T = Twin-carburetor I = Fuel injection S = Turbo L = Turbo with intercoder									
Position 7 <i>APC code</i>	0 = Without APC 1 = With APC									
Position 8 <i>Exhaust emission control specification</i>	0 = No market specification 1 = Europe specification 2 = Sweden specification 3 = USA specification									
Position 9 <i>Transmission type</i>	A = Automatic M = Manual									
Position 10 <i>Model year</i>	F = 1985									
Pos 11-16 <i>Serial number</i>										



### General data

A.	Overall length	4579 mm
B.	Overall width	1690 mm
C.	Overall height	1425 mm
	with Ground clearance	140 mm
D.	Track, front with 5" wheels	1400 mm
	with 5.5" wheels	1410 mm
	Track, rear with 5" wheels	1430 mm
	with 5.5" wheels	1440 mm
E.	Wheelbase	2465 mm
	Turning circle diameter	10.6 m
	Kerb weight	1200-1220 kg
	Maximum weight	1580 kg
	Maximum roof load	100 kg
	Maximum trailer weight	1500 kg
	Weight distribution, front:	
	at kerb weight	59-62 %
	at maximum weight	51-53 %



# Engine

## General data

Type	4-cylinder, 4-stroke engine with overhead camshaft
Cylinder bore	90 mm
Stroke	78 mm
Swept volume	1985 cm <sup>3</sup>
Firing order	1-3-4-2
Approximate weight	140 kg

*Performance, compression ratio, fuel octane rating*

Engine version	Model year	Compression ratio	Octane rating	Rating, (DIN) kW at r/min	Torque (DIN) (kgf m) at RON r/min
Single carburetor (CM)	1985-	9.5	97*	73(100)/5200	162(16.5)/3500

\* Sweden: 93 octane

## Engine

### Cylinder head

Height of new cylinder head:  $92.75 \pm 0.05$  mm  
 Minimum after regrinding:  $92.35 \pm 0.05$  mm

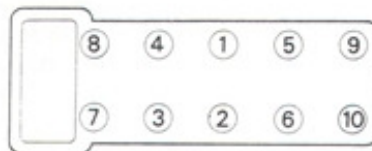
For cylinder head that have been reground, a head gasket, 0.3 mm thicker, is available.



### Tightening torques

The specified torques apply to the following bolts after fitting a new cylinder head gasket, and assuming that the bolts and washers are well oiled.

Stage I	60 Nm (6,0 kgf m)
II	90 Nm (9.5 kgf m)
III	Run the engine to normal temperature and then allow it cool for 30 minutes
IV	Slacken and then retighten each bolt to 90 Nm (9.0 kgf m)
V	Tighten through a further 90°



**Cylinder block**

Cylinder bore:	Standard (A)	90.000–90.010 mm
	Standard (B)	90.010–90.020 mm
	First oversize	90.500 mm
	Second oversize	91.000 mm

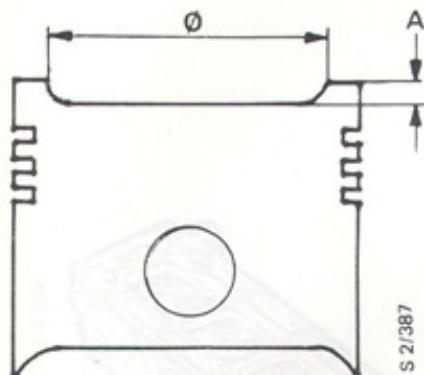
**Pistons**

Make MAHLE or KARL SCHMIDT  
Pistons of different makes must not be fitted in the same engine.

Piston speed (average) 13 m/s at 5 000 r/min

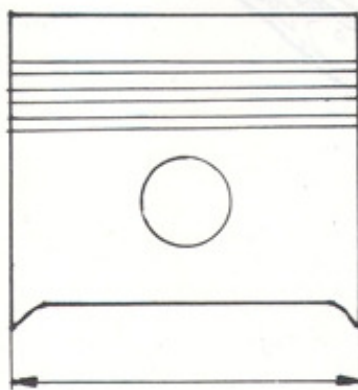
**Piston type**

The type of piston used varies with the compression ratio of the engine.



Engine	Model year	Piston dia, mm	A, mm	Piston weight, g
Carburetted (CM)	1985–	58	0.4	480–492

Piston diameter

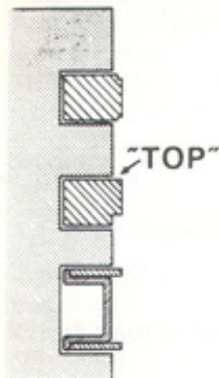


Measure at right angles to the gudgeon pin hole and:

- Mahle: 16 mm above lower edge
- Schmidt: 26 mm above lower edge

Standard A (not spare part)	89.978–89.988
Standard AB	89.988–89.996
Standard B	89.996–90.004
Standard C	90.004–90.020
First oversize (0.5 mm)	90.482–90.497
Second oversize (1.0 mm)	90.982–90.997
<b>Piston clearance</b>	0.014–0.032

**Piston rings**



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	Top com- pression ring	Second com- pression ring	Scraper ring
Width (thickness), mm	1.73-1.75	1.98-1.99	2.63-2.73*
Side clearance in groove, mm	0.050-0.082	0.040-0.072	
Working gap in new cylinder, mm	0.35-0.55	0.30-0.45	0.38-1.40**

\* Segment width (thickness): 0.58-0.64 mm  
 \*\* Applies to segment

**Gudgeon pins**

Diameter	23.996-24.000 mm
Clearance	0.005-0.014 mm (sliding fit under gentle thumb pressure)

**Connecting rods**

Diameter of big-end	56.000-56.019 mm
Diameter of small-end bush (fitted)	24.005-24.010 mm
Maximum permissible weight variation per set	6 g

**Crankshaft**



S 21389

Maximum variation in straightness	0.10 mm
End float	0.08-0.28 mm
Maximum ovality of journals	0.05 mm
Maximum conicity of journals	0.05 mm
Radius of main journal fillet	2.2-2.5 mm

Colour markings of main bearing and big-end bearing shells:

	Thin	Thick
Standard	Red	Blue
First undersize	Yellow	Green
Second undersize	White	Brown

**Crank pin diameter:**

Standard	51.981–52.000 mm
First undersize	51.731–51.750 mm
Second undersize	51.481–51.500 mm
Third undersize	51.237–51.250 mm
Fourth undersize	50.987–51.000 mm

**Main journal diameter:**

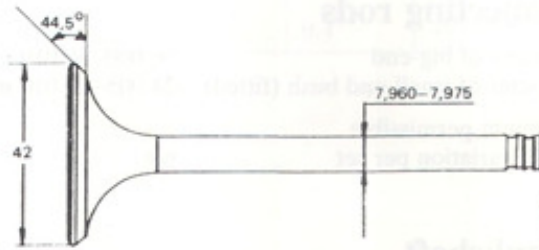
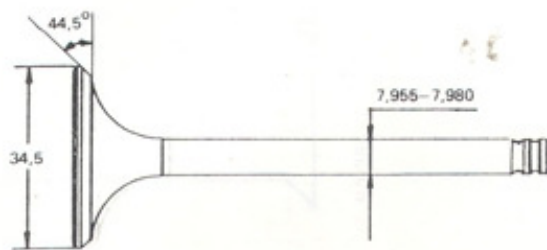
Standard	57.981–58.000 mm
First undersize	57.731–57.750 mm
Second undersize	57.481–57.500 mm
Third undersize	57.237–57.250 mm
Fourth undersize	56.987–57.000 mm

**Valve mechanism**

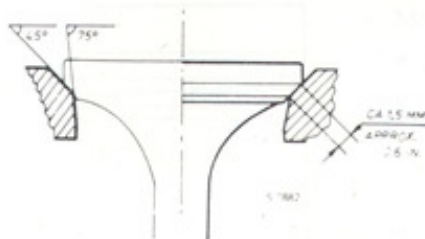
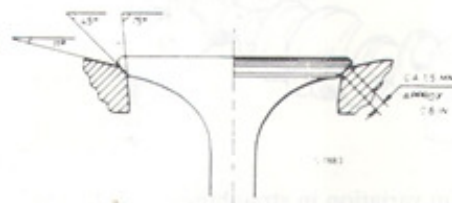
Valve clearance, mm, in engine having stood for 30 min after running at normal temperature

On checking:	inlet	0.15–0.30
	exhaust	0.35–0.50
On adjusting:	inlet	0.20–0.25
	exhaust	0.40–0.45

Shims available in intervals of 0.05 mm between 1.77 and 2.89 mm



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*Exhaust valve**Inlet valve***N.B.**

The exhaust valves have a stellite coating and should therefore not be machined. Grinding using valve grinding paste only is recommended.

**Valve guides**

Length	46.65 mm
Outer diameter	13.040–13.051 mm
Bore for valve guides in cylinder head diameter	13.000–13.018 mm
Maximum clearance between valve stem and valve guide	0.5 mm, measured on valve head when it is raised 3 mm above the seat

**Valve springs**

Length when fitted	39.5 mm
Free length	43.1 mm
Length when under load of 755–815 N (77–83 kgf)	29.5 mm



**Cam followers**

Diameter	37.87–37.98 mm
Height	33 mm
Bore for cam followers in cylinder head (camshaft bearing assembly)	38.000–38.016 mm

**Shims for valve adjustment**

Diameter	15.5 mm
Thickness	1.77–2.89 mm
	23 shims available within the range, at intervals of 0.050 mm

**Camshaft**

Bearing diameter	28.94 mm	
End float	0.08–0.25 mm	
Cam lift at 0 valve clearance	<b>Inlet valves</b>	<b>Exhaust valves</b>
	10.8 mm	11.0 mm



**Valve timing (at design clearance = 0.35 mm inlet, 0.55 mm outlet)**

Inlet valves		Exhaust valves	
Open	Close	Open	Close
10° BTDC	54° ABDC	46° BBDC	18° ATDC

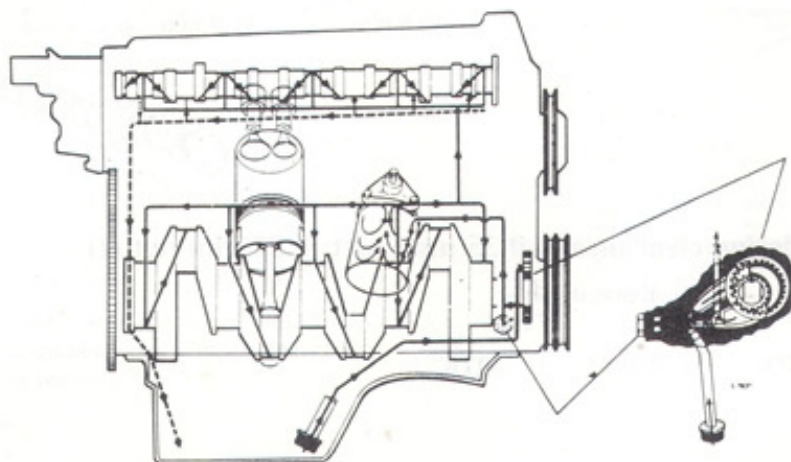
## Tightening torques

	Size	Torque
Main bearings	M 12	110 Nm (11 kgf m)
Big-end bearings	M 10	55 Nm (5.5 kgf m)
Camshaft bearing caps	M 8	18 Nm (1.8 kgf m)
Valve cover	M 6	5 Nm (0.5 kgf m)
Crankshaft pulley	M 16	190 Nm (19 kgf m)
Rear engine plate (flywheel end)	M 8	20 Nm (2.0 kgf m)
Flywheel	M 10	60 Nm (6.0 kgf m)
Oil pump	M 6	8 Nm (0.8 kgf m)
Spark plugs	M 14 x 1.25	28 Nm (2.8 kgf m)
Chain tensioner	M 6	12 Nm (1.2 kgf m)
Chain guide	M 6	12 Nm (1.2 kgf m)
Camshaft sprocket	M 8	20 Nm (2.0 kgf m)
Inlet manifold	M 8	18 Nm (1.8 kgf m)
Thermostat housing	M 8	18 Nm (1.8 kgf m)
Throttle housing	M 8	18 Nm (1.8 kgf m)
Exhaust manifold	M 8	20 Nm (2.0 kgf m)
Timing cover	M 8	20 Nm (2.0 kgf m)
Distributor	M 6	5 Nm (0.5 kgf m)
Oil filter	3/4" - 16 UNF	10 Nm (1.0 kgf m)
Oil pressure switch	1/4" - 19 NPTF	10 Nm (1.0 kgf m)
Thermostatic valve (EGR)	M 14 x 1.5	15 Nm (1.5 kgf m)
Engine block heater plug	3/8" BSP	55 Nm (5.5 kgf m)
Drain plug, coolant	M 14 x 1.5	30 Nm (3.0 kgf m)

All other bolts should be tightened as follows:

Size	Tightening torque	
	Nm	kgf m
M 5	5	0.5
M 6	10	1.0
M 8	20	2.0
M 10	40	4.0

## Lubricating system



Oil capacity, including oil cleaner 3.8 l  
 Volume between marks on dipstick 1.0 l  
 Recommended oil Oil to API Service SF/CC  
 Viscosity: 10 W/30, 10 W 40. At constant temperature below 68 °F (-20 °C) 5 W 30 should be used.  
 On markets where these viscosities are not available, 15 W 40 or 15 W 50 oil may be used.

**Oil pressures**

Oil pump pressure-reducing valve opens at 4.5–5.0 bar (kgf/cm<sup>2</sup>)  
 Warning light lights up at 0.3–0.5 bar (kgf/cm<sup>2</sup>)  
 Oil pressure at 2000 r/min, engine temperature of 80 °C and 10 W 40 oil Minimum of 3.0 bar (kgf/cm<sup>2</sup>)

**Oil pump**

End float between rotor and housing 0.03–0.08 mm

**Fuel system**

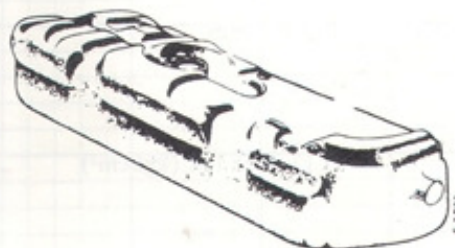
CO on idling (engine warm).  
 On cars with carburetted engines for Sweden and Switzerland, the CO check should be carried out at an engine speed of 2000 r/min with the hoses to the vacuum control unit, the crankcase ventilation and the EGR system (where applicable) disconnected.  
 On cars with extra CO idling screw, this should be screwed down to the bottom before the setting work.

Engine	Model year	Specification	CO%	Engine speed	Idling speed, r/min, ±50
Single carburetor (CM)	1985–	Sweden	1.5–2.0*	2000	850
		Europe	0.5–2.5	850	850
		Switzerland	1.4–2.0**	2000	850

\* Maximum value of 4.5 % at idling

\*\* Maximum value of 0.8 <sup>+0.8</sup>/<sub>-0.4</sub> % at idling speed. Adjust as necessary by means of the extra CO screw.

**Fuel tank**

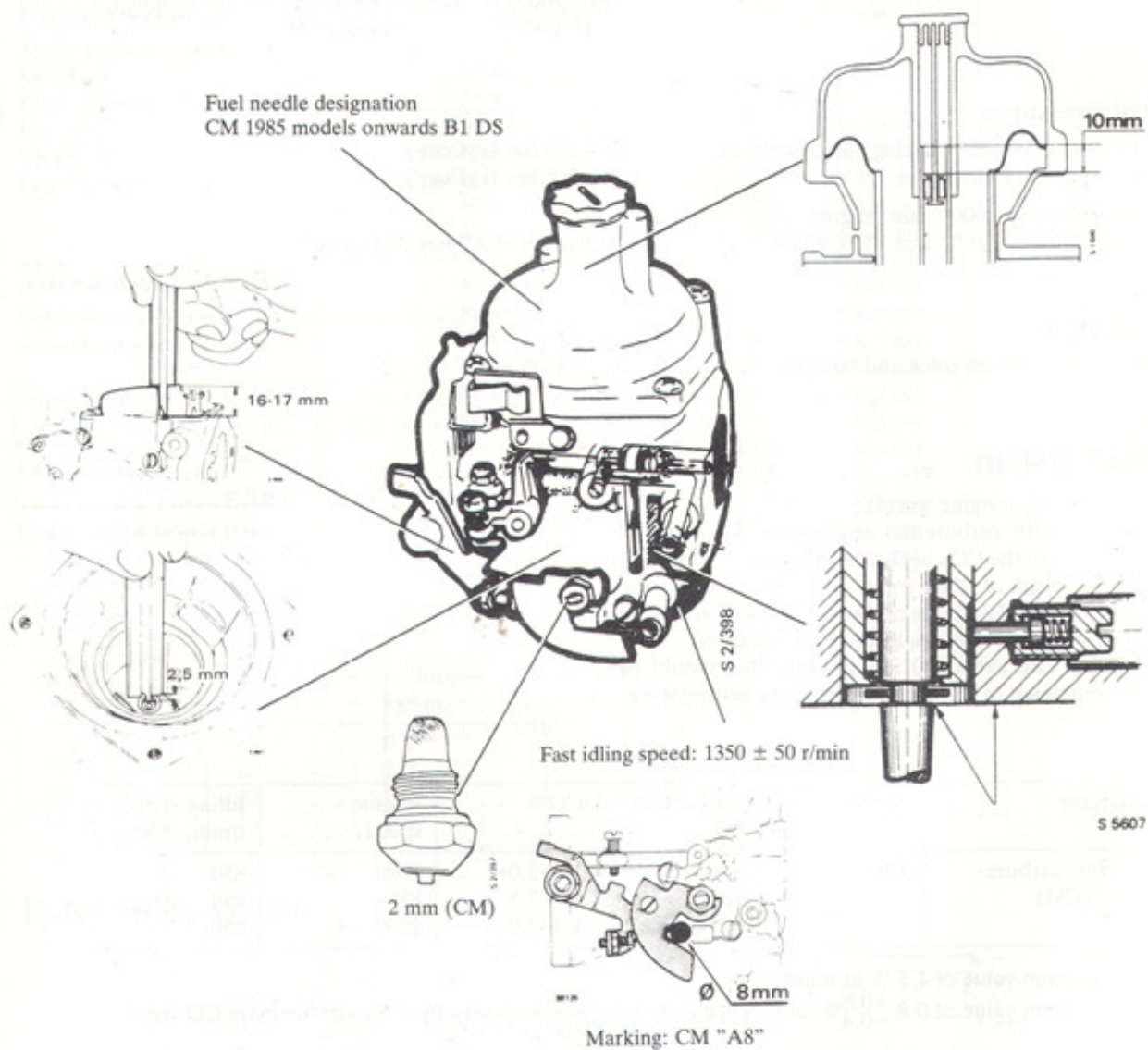


Capacity, total 63 l

Quantity of fuel remaining when fuel warning light comes on 7 l (approx.)

**Fuel system, carburetted engine**

Carburetor type (CM) 175 CDSEVX

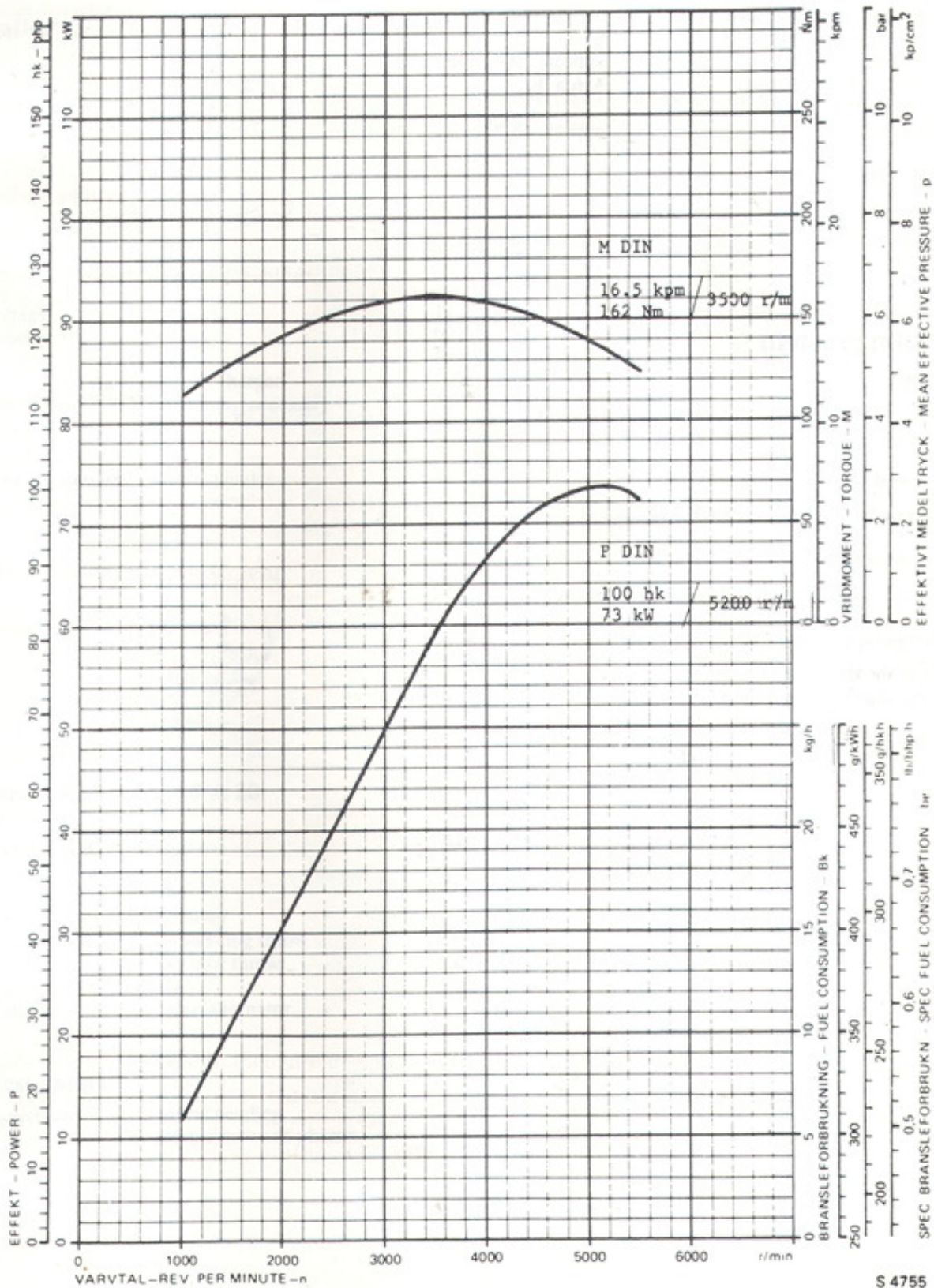
**Temperature compensator**

Opening at room temperature (+20 °C) 0.1–0.3 mm

**Fuel pump**Fuel pressure at starter motor speed 0.17–0.25 bar (kgf/cm<sup>2</sup>)



Fuel system, fuel injection engines



**Exhaust emission control system**

	<b>On-off</b>
EGR valve, maximum flow	6 kg/h.
Colour code on EGR valve	green
EGR valve opens at	approx. 1900 r/min
Restriction in EGR pipe	4 mm dia.
Opening temperature of thermostatic valve	approx. 43 °C

**Delay valve**

Delay time

Brown

 $2 \pm 1$  s**Cooling system****Coolant**

Type	Saab Original Coolant
Capacity	8 l

**Thermostat**

Opening temperature	$89 \pm 2$ °C
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**Expansion tank**

Pressure valve opens at	0.9–1.2 bar (kgf/cm <sup>2</sup> )
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**Thermostatic switch**

Closes the circuit at	90–95 °C
Opens the circuit at	85–90 °C

## Electrical system

### Battery



Voltage	12 V
Capacity	60 Ah
Earthing	Negative (-) earth
Specific gravity, when fully charged	1.28
Specific gravity when charging necessary	1.21

### Alternator



S 3/079

#### Bosch K1 – 14 V 70 A 20

Rated voltage	14 V
Rated speed	2000 r/min
Stator connection	Delta connection $\Delta$
Slip ring diameter, new	27.8 mm
Minimum slip ring diameter	26.8 mm
Maximum permissible slip-ring throw	0.03 mm
Maximum permissible rotor throw	0.05 mm
Minimum brush length	5 mm (measured from edge of holder)
Ratio at pulley of engine/alternator	1:2.05

#### Test values:

Resistance,	rotor winding	2.8 ohm $\pm$ 10 %
	stator between phases	0.09 ohm $\pm$ 10 %

Output:	
at 1500 r/min	27 A
at 2000 r/min	46 A
at 6000 r/min	70 A

**Starter motor**

Type	Bosch DW 12 V 0 001 108 012
Number of teeth on pinion	9
Number of teeth on ring gear	142
Gear ratio	15.8:1
Output	1.4 kW (1.9 hp)

**Test values**

<b>Mechanical:</b>	
Backlash	0.35–0.60 mm
Clearance between pinion and ring gear	2.5–3.0 mm
Rotor end float	0.05–0.40 mm
Torque of freely rotating pinion	0.12–0.18 Nm (1.3 – 1.8 kgf cm)
<b>Electrical:</b>	
Idling speed, 11.5 V and 70 A	above 3000 r/min
On-load speed, 9 V and 315 A	above 1700 r/min
Locked stator	4 V 650–750 A
Lowest engagement voltage for stator solenoid at +20 °C	7 V

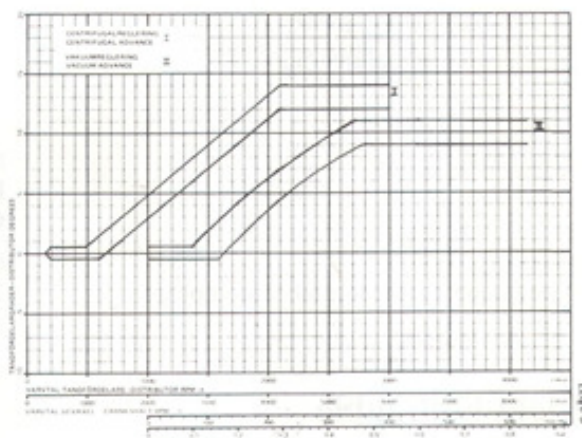
**Ignition system**

Type	Breakerless
Engine firing order	1–3–4–2

Ignition setting with vacuum control unit disconnected

Engine	Specifica- tion	Model year	Degrees BTDC 2000 r/min
Carburetted (CM)	Europe Sweden	1985–	18° 20°

## Distributor



Bosch 0 237 021 024

## Breakerless ignition system with Hall transmitter

Order number, carburetted engines,

Bosch 0 237 021 024

1985 models onwards

Direction of rotation

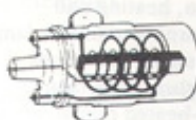
Anti-clockwise

Rotor resistance

1 kOhm

Ignition timing graph

## Ignition coil



1985 onwards

Resistance of primary coil, measured  
between terminals 1 and 15

0.52–0.76 Ohm

Resistance of secondary coil measured between  
terminal 1 and HT output terminal

2.4–3.5 kOhm

Compensating resistor

## HT leads

Resistance of lead between distributor  
and plug

2–4 kOhm

Resistance of lead between coil and distributor

0.5–1.5 kOhm

## Spark plugs



Carburetted engine

NGK BP 6 ES

Bosch W 7D

Champion N9YC

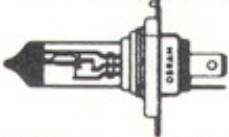















Electrode gap

0.6 mm

Tightening torque, non-lubricated plugs

25–29 Nm (2.5–3.0 kgf m)

## Light bulb table

 Headlight 60/55 W	 H4 holder P43 t-38	 5 W  SV 8.5-8 Rear view mirror, luggage compartment
 21 W Rear direction indicators, brake light, reversing light, rear fog light	 BA 15s	 10 W  SV 8.5-8 Interior lighting
 21/5 W Front direction indicators/side position light/parking light	 BAY 15d	 1.2 W  W2 x 4,6d Instrument illumination, heating and ventilation controls, warning/indicator lamps for brake system oil pressure, seat belts, choke, direction indicators, main beam headlights, electrically-heated rear window, fuel reserve, charging.
 5 W Rear light, registration plate illumination	 BA 15s	 2 W  BA 9s Ignition lock illumination

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**Other electrical equipment****Windscreen wiper motor**

Type	Lucas 54 104 297	
Speed (double-sweeps per minute) and power consumption: double-sweep/min	r/min	A
Motor warm, loaded with 1 Nm (10 kgf/cm) and voltage of 13.5 V		
half-speed	43	1.8
full speed	64	2.6
Motor locked (e.g. wiper blades frozen to glass)		approx. 15

**Headlight wiper motor**

Type	SWF 4E 3876/1	
	r/min	A
Speed (double-sweeps per min.) and current consumption at 0.25 Nm (2.5 kgf cm) and voltage of 13 V	46 ± 5	1.5-2
Current consumption, motor locked (e.g. blades frozen to glass)		5-6

**Electrically heated driver's seat**

Thermostat cut-in temperature	12 °C ± 2.8 °C
Thermostat cut-out temperature	28 °C ± 2.8 °C
Output of heating elements	approx. 86 W

**Electrically heated rear window**

Output at 13 V	160 W
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# Transmission

## Transmission type number

GM = Manual transmission  
GA = Automatic transmission

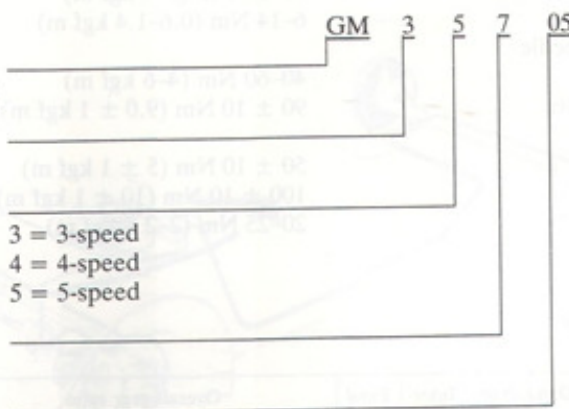
Transmission version

Number of forward gears

3 = 3-speed  
4 = 4-speed  
5 = 5-speed

Primary gear ratio (see table)

Variant



## Gear ratio code

Primary gear	Manual			
	4	5	6	7
Number of teeth, input/output gear	31/30	30/27	31/26	32/25
Gear ratio	0.97	0.90	0.84	0.78

## Clutch

Make

4-speed: Borg & Beck;  
5-speed: Fichtel & Sachs

Type

Single, dry plate with spring-loaded hub  
(5-speed transmission includes predamper)

Operation

Hydraulically operated

Diameter

8 in (204 mm)

## Manual transmission

Oil capacity:

4-speed approx. 2.5 l  
5-speed approx. 3.0 l

Oil specification

Engine oil SAE 10 W 30 or SAE 10 W 40, or  
SAE EP 75 API GL 4 or API GL 5

## Bearing preload

### Differential bearings:

New, lightly oil bearings  
Bearings having run more than 1200 miles (2000 km)

1.8–2.8 Nm (18–28 kgf cm)

0.8–1.3 Nm (8–13 kgf cm)

### Pinion bearing:

Measured using spring balance and cord wound round bearing housing:  
New, lightly oiled bearings  
Bearings having run more than 1200 miles (2000 km)

48–71 N (4.7–7.0 kgf) (25 ± 5 kgf cm)

19–43 N (1.9–4.3 kgf) (13 ± 5 kgf cm)



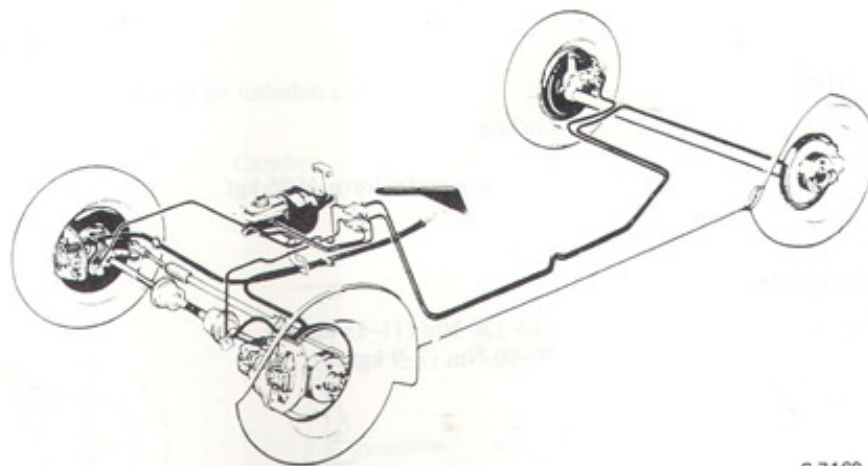
## Tightening torques

All 8 mm bolts	20–25 Nm (2–2.5 kgf m)
Transmission drain plugs	39–59 Nm (4–6 kgf m)
Engine	29–39 Nm (3–4 kgf m)
Slave cylinder retaining bolts	6–14 Nm (0.6–1.4 kgf m)
Pinion shaft nut closest to needle bearing (4-speed)	40–60 Nm (4–6 kgf m)
M 10 x 1.25 crown wheel bolts	90 ± 10 Nm (9.0 ± 1 kgf m)
Pinion shaft nut in clutch hub (5-speed)	50 ± 10 Nm (5 ± 1 kgf m)
Nut on input shaft (5-speed)	100 ± 10 Nm (10 ± 1 kgf m)
Pinion bearing housing	20–25 Nm (2–2.5 kgf m)

## Gearbox, summary

Model	Gearbox designation	Wheels	Dyn. rolling radius	Primary gear	Intermediate gear	Final drive	Overall gear ratio						Road speed, km/h, per 1.000 rpm				
							1	2	3	4	5	Rear	1	2	3	4	5
1985	GM 45505	165 SR 15	312	30:27 0.90	17:33 1.94	9:33 3.67	12.81	7.24	4.86	3.30	–	14.09	9.2	16.2	24.2	35.6	–
	GM 45605	175/70 R 15	305	31:26 0.84	15:34 2.27	9:33 3.67	13.94	7.88	5.29	3.80	3.08	15.34	8.2	14.6	21.7	30.2	37.4

## Brakes



S 7169

### Front brakes

Make	Girling
Type	Disc with floating yoke
Outside diameter of disc	276 mm
Thickness of new disc	12.7 mm
Minimum thickness of disc after grinding	11.7 mm
Maximum permissible grinding depth per side	0.5 mm
Maximum lateral throw of fitted disc	0.10 mm
Maximum permissible variation in thickness	0.015 mm
Lining thickness, new brake pad	8.8 mm
Minimum lining thickness	1 mm
Pad friction area	29 cm <sup>2</sup>

### Rear brakes

Make	ATE
Type	Disc with fixed yoke
Outside diameter of disc	267.5 mm
Thickness of new disc	10.5 mm
Minimum thickness of disc after grinding	9.5 mm
Maximum permissible grinding depth per side	0.5 mm
Maximum lateral throw of fitted disc	0.10 mm
Lining thickness, new brake pad	8.5 mm
Minimum lining thickness	1 mm
Pad friction area	20 cm <sup>2</sup>

### Brake fluid

Specification	DOT4
Brake system capacity	0.58 l (approx.)

**Master cylinder**

Type	Tandem cylinder
Make	Girling
Diameter	7/8 in. (22.23 mm)

**Brake servo unit**

Make	Girling
Diameter	9 in
Power multiplication	3.5:1 at a pedal force of 25 kgf

**Tightening torques**

Front brake yoke bolts	110-130 Nm (11-13 kgf m)
Rear brake yoke bolts	70-90 Nm (7-9 kgf m)

# Front assembly Steering device

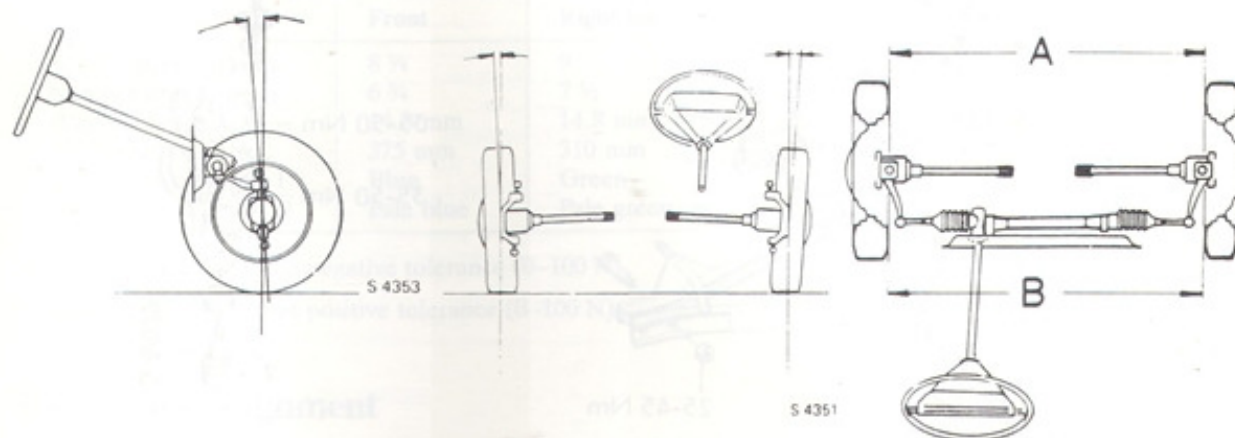
## Wheel alignment

All the following figures apply to an unladen car

Caster  
 $+1^\circ \pm 0.5^\circ$

Camber  
 $+0.5^\circ \pm 0.5^\circ$

Toe-in  
 $B-A = 2 \pm 1 \text{ mm}$



"King pin" inclination

$11.5^\circ \pm 1^\circ$

Turning angle:  
outside wheel  
inside wheel

$20^\circ$   
 $20.5^\circ \pm 1^\circ$

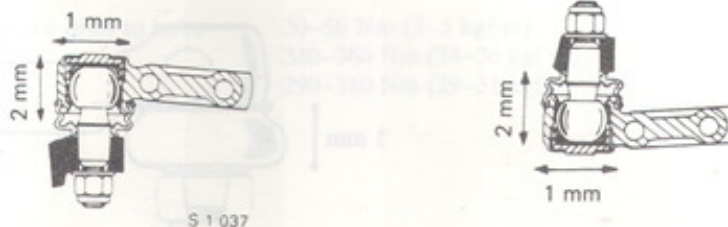
Slip radius with 175/70 R 15 tyres

and 5.5 in wheel: 20.5 mm

## Ball joints

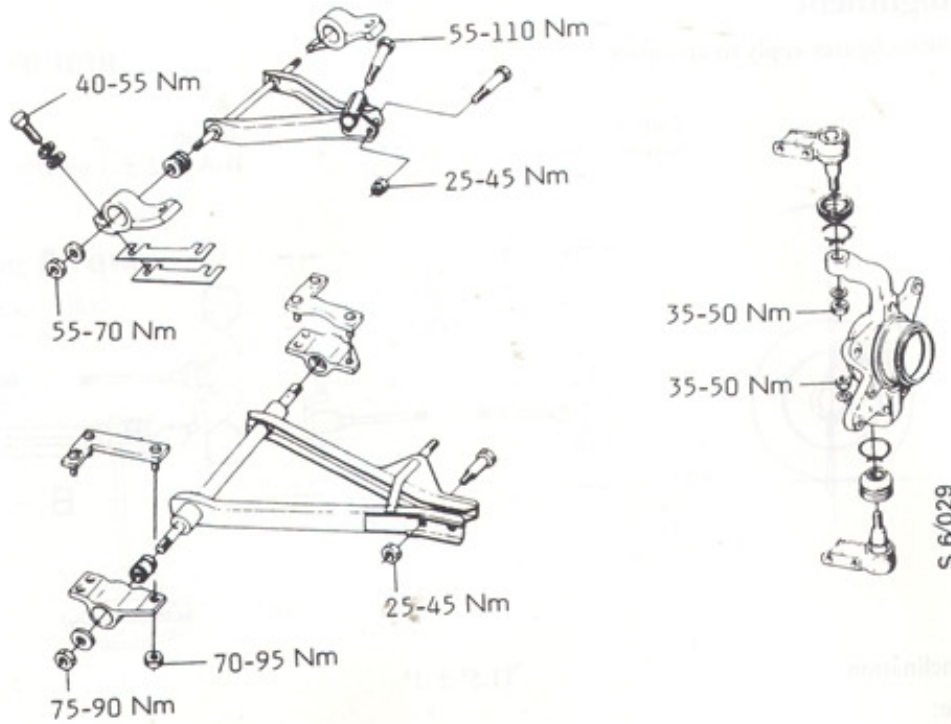
Maximum play in ball joint when not under load:

Axial 2 mm  
Radial 1 mm



**Tightening torques**

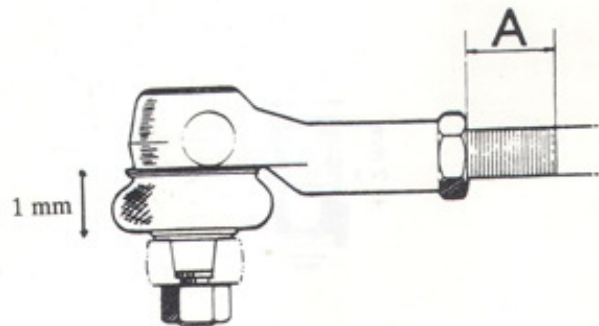
10 Nm = 1 kgf m



**Manual steering gear**

Steering wheel turns, lock to lock:	4.2
Clearance between cover and pre-load piston	0.05-0.15 mm
Thickness of internal shims	0.13, 0.19 and 0.25 mm
Pinion pre-load	1.1-2 Nm (0.11-0.2 kgf m)
Steering gear lubricant	Liquid grease (BP Energrease FGL)
quantity	0.15 dm <sup>3</sup> (0.15 l)

**Tie rod ends**



Dimension A on tie rod end, manual steering	25 mm max.
Maximum variation between left-hand and right-hand sides	2 mm max.

## Suspension system

### Suspension

Front	Independent, with transverse wishbones
Rear	Solid axle with longitudinal links and Panhard rod.
Front and rear springs	Coil springs

### Coil springs

	Front	Right-hand rear	Left-hand rear
Total number of turns	8 ¼	9	9
Number of free turns	6 ¾	7 ½	7 ½
Wire diameter	14.0 mm	14.8 mm	15.0 mm
Free length, approx.	375 mm	310 mm	310 mm
Colour code, * class I	Blue	Green	Black
class II	Pale blue	Pale green	White

\* Class I = Spring within negative tolerance (0–100 N)

Class II = Spring within positive tolerance (0–100 N)

### Rear wheel alignment

Camber	$-\frac{1}{2}^{\circ} \pm \frac{1}{4}^{\circ}$
Toe-in	$4 \pm 1$ mm (1–3 mm per side)

### Wheels

	Steel wheels	Aluminium wheels
Maximum permissible radial throw	1.0 mm	0.5 mm
Maximum permissible lateral throw	1.0 mm	0.5 mm
Wheel nut tightening torques:	90–110 Nm (9–11 kgf m)	

### Hubs

Maximum play of wheel bearings	2 mm measured at edge of rim
Tightening torques:	
Bolts securing front brake discs to hubs	30–50 Nm (3–5 kgf m)
Front hub nuts	340–360 Nm (34–36 kgf m)
Rear hub nuts	290–310 Nm (29–31 kgf m)

## Wheels

4-speed: 5J x 15 CH steel

5-speed: 5.5J x 15 H2 steel

## Tyres

4-speed: 165 R15 86S

5-speed: 175/70 R15 86T

*Recommended tyre pressures in lb/in<sup>2</sup> (psi) for cold tyres  
(Figures in parentheses show the equivalent in bar (kg/cm<sup>2</sup>)).*

Size	1-3 persons car cruising at under 100 mph (160 km/h)		1-3 persons car cruising at over 100 mph (160 km/h)		More than 3 persons car cruising at under 100 mph (160 km/h)		More than 3 persons car cruising at over 100 mph (160 km/h)	
	front	rear	front	rear	front	rear	front	rear
	165 SR 15	1.9	1.9	2.2	2.4	2.2	2.4	2.2
175/70 R 15	1.9	1.9	2.2	2.4	2.2	2.4	2.2	2.4

## Spare wheel

Type

Compact spare

Great Britain, Australia

Size

T 115/70 D15

T95/110 R 15

Tyre pressure

60 lb/in<sup>2</sup> (4.2 bar)

80 lb/in<sup>2</sup> (5.5 bar)

# BODY

## Body colours

Colour code	Colour	Solid	Metallic
112	Slate Blue		Basic colour
116	Azure Blue	x	
117	Platinum Blue		Basic colour
120	Cochineal		Basic colour
127	Cherry Red	x	
129	Rose Quartz		Basic colour
131	Navy Blue	x	
140	Pine Green		Basic colour
153	Cirrus White	x	
155	Ivory	x	
168	Chestnut Brown	x	
170	Black	x	
172	Silver		Basic colour

## Tightening torque

Seat belt anchor bolts  
45 ± 10 Nm (4.5 ± 1 kgf m)



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