QUICK REFERENCE INDEX: To use, bend manual back to expose black spots on pages of the various groups. Then, by means of the index marks on this page, locate the corresponding black spots on the pages of the group you desire to find.

CHRYSLER SIGMA GE SERIES SERVICE MANUAL

Part No. 4061760

SERVICE DIVISION
CHRYSLER PARK,
SOUTH AUSTRALIA

CHRYSLER AUSTRALIA LTD.

GROUP INDEX

Printed in Australia by C A L,

This manual has been prepared to provide service personnel with service information for vehicle models shown on the following pages. It covers many conditions that may be encountered with a listing of possible causes and remedies. Each section contains practical removal, repair and installation procedures. All information and product descriptions contained in this manual are correct at publication time.

Chrysler Australia Limited reserves the right to make changes in design or to make additions to, or improvements in, its product without imposing any obligation upon itself to install them on its products previously manufactured.

In an effort to keep all Chrysler Dealers fully informed of changes and improvements in the models listed, updated pages for this manual will be supplied as they become necessary.

GROUP 0 — INTRODUCTION AND GENERAL SPECIFICATIONS

SECTION 0 — INDEX

SERVICE BULLETIN REFERENCE

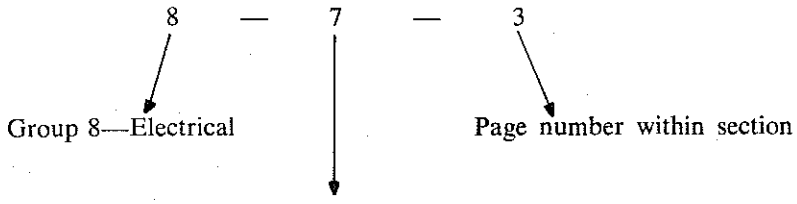
DATE	NUMBER	SUBJECT	CHANGES

SECTION 1 — INTRODUCTION

The pages of this service manual are numbered using a three segment numbering system, these number groups located in the centre of each page, are divided by a dash, and serve the following functions.

- The first figure indicates the service manual **group;**
- The second figure indicates the **section number** within a **group;**
- The last figure is the **page sequence number** within the **section.** Each section commences with page 1.

EXAMPLE



- Illustrations are numbered in sequence within each section.
- When reference is made to a side of the vehicle, or a handed component, the side is defined as viewed from the driver's seat unless otherwise specified.
- Where possible the component parts described in this manual have been identified by a part number or Serial number. Where this is the case, the component part or serial number should be established and then reconciled with the service specifications/descriptions in this manual.

METRIC FASTENERS

It should be noted that vehicles are fitted with both metric and imperial fastenings. This is inevitable during the industry's conversion to the metric system.

Care should be taken, therefore, to ascertain whether a fastening is metric or imperial before using a spanner or socket or getting a replacement. Never mix metric and imperial fixings. Never put a metric fastener in an imperial threaded hole or vice versa.

Fasteners can be identified as follows:

Metric fasteners are normally coloured gold, imperial are normally coloured silver.

Metric bolt heads are marked with a grade, number and 'M' or 'ISOM'. Imperial bolt heads are marked with a grade letter.

Metric nuts are marked with an indent on the face, or a grade number, or M on the side or a grade number on the face. Imperial nuts are unmarked except for bar turned parts which have a side stamp.

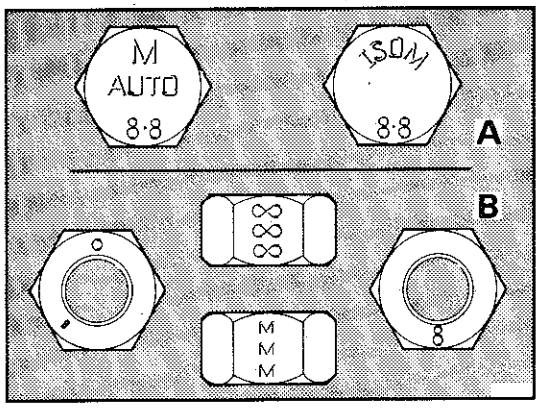


Fig. 1—Metric fasteners. A—Bolt heads. B—Nuts

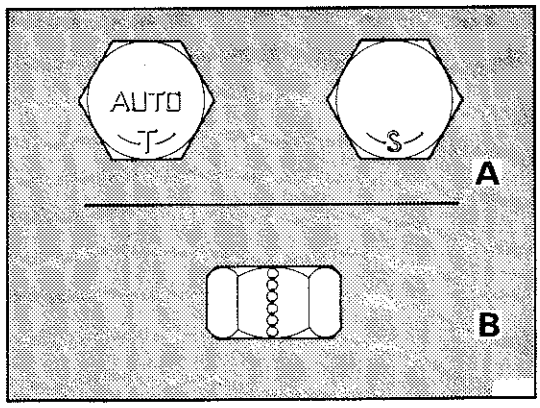


Fig. 2—Imperial fasteners. A—Bolt heads. B—Nuts

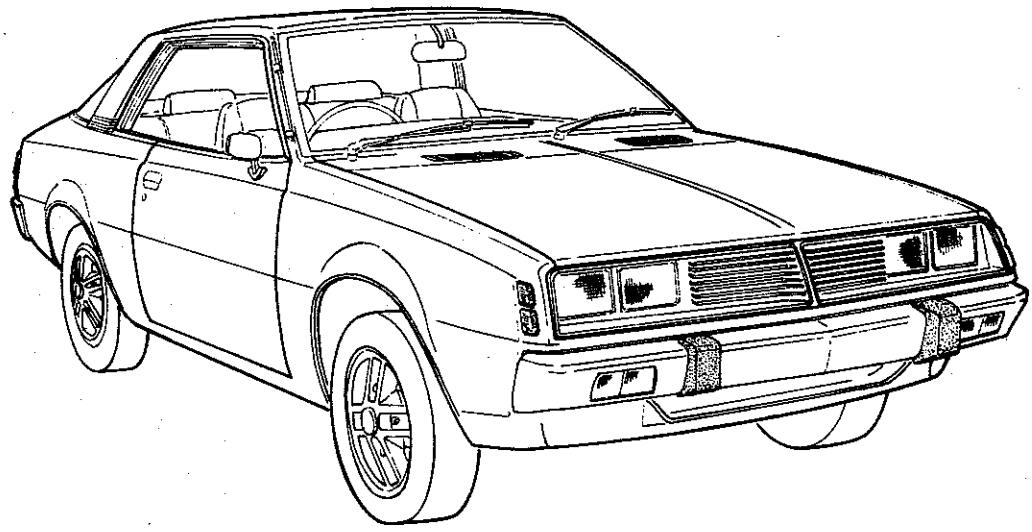
Metric Conversion

All dimensions and capacities are quoted in Metric units followed by the equivalent Imperial measure in parenthesis. It should be noted that some figures, e.g. vehicle service frequencies, have been rounded off to the nearest most practical figure and may not be exact conversions.

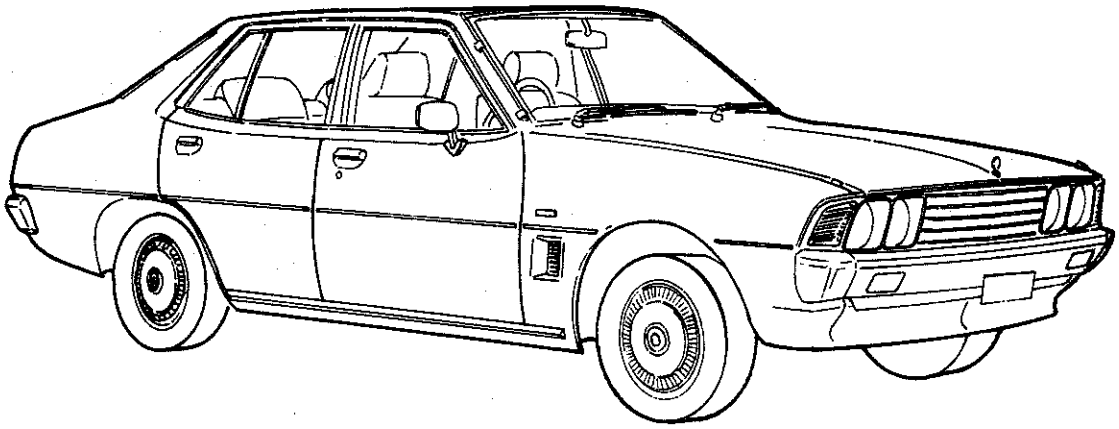
CONVERSION CHART — METRIC AND IMPERIAL MEASURES

Quantity	Metric Units		Conversion Values	
	Name	Symbol	metric to imperial	imperial to metric
LENGTH	millimetre	mm	1 mm = 0.03937 inches	1 inch = 25.4 mm
	metre	m	1 m = 1.09 yard	1 yard = 0.914 m
	kilometre	km	1 km = 0.621 miles	1 mile = 1.61 km
MASS	gram	g	1 g = 0.0353 ozs.	1 oz. = 28.3 g
	kilogram	kg	1 kg = 2.2 lbs.	1 lb. = 0.454 kg
	tonne	t	1 t = 0.984 ton	1 ton = 1.02 t
AREA	square millimetre	mm^2	1 mm^2 = 0.00155 in^2	1 in^2 = 645.16 mm^2
	square centimetre	cm^2	1 cm^2 = 0.155 in^2	1 in^2 = 6.45 cm^2
	square metre	m^2	1 m^2 = 1.20 yd^2	1 yd^2 = 0.836 m^2
VOLUME	cubic centimetre	cm^3	1 cm^3 = 0.0610 in^3	1 in^3 = 16.4 cm^3
	cubic metre	m^3	1 m^3 = 35.3 ft^3	1 ft^3 = 0.0283 m^3
VOLUME-FLUIDS	litre	*l*	1 litre = 1.76 pts. 1 litre = 0.2199 gallon	1 pt. = 0.568 litre 1 gallon = 4.546 litre
FORCE	newton	N	1 N = 0.225 lb. force	1 lb. force = 4.45 N
TORQUE	newton metre	Nm	1 Nm = 0.74 lb. ft. 1 Nm = 8.94 lb. ins.	1 lb. ft. = 1.36 Nm 1 lb. in. = 0.113 Nm
PRESSURE	kilopascal	kPa	1 kPa = 0.145 p.s.i.	1 p.s.i. = 6.89 kPa
VACUUM	kilopascal	kPa	1 kPa = 0.295 in. Hg.	1 in. Hg. = 3.386 kPa
VELOCITY	kilometre per hour	km/h	1 km/h = 0.621 m.p.h.	1 m.p.h. = 1.61 km/h
TEMPERATURE	degree Celsius	°C	$°F = \frac{9 \times °C}{5} + 32$	$°C = \frac{5}{9}$ (°F-32)
POWER	kilowatt	kW	1 kW = 1.34 h.p.	1 h.p. = 0.746 kW
FUEL CONSUMPTION	litre per 100 km	*l*/100 km	$\frac{282.481}{l/100\ km}$ = m.p.g.	$\frac{282.481}{m.p.g.}$ = *l*/100 km
OIL CONSUMPTION	litre per 1000 km	*l*/1000 km	$\frac{2824.81}{l/1000\ km}$ = m.p.g.	$\frac{2824.81}{m.p.g.}$ = *l*/1000 km

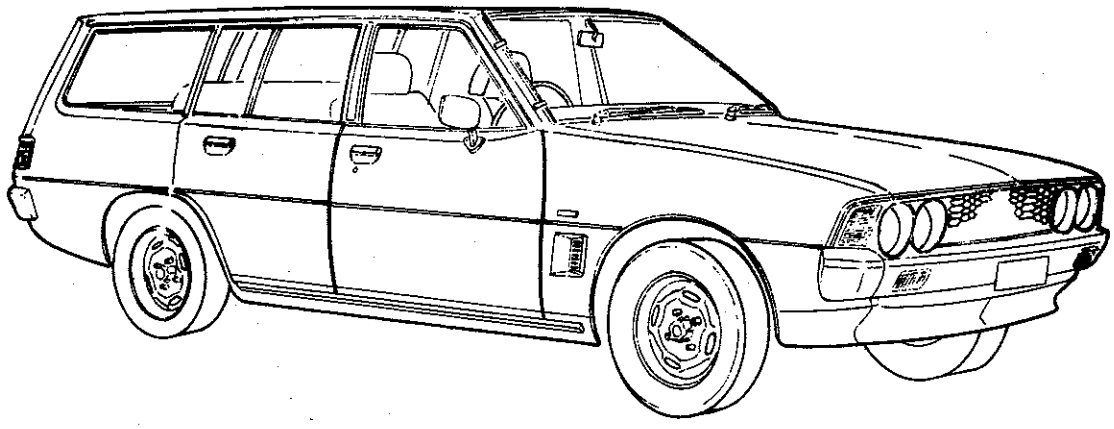
SECTION 2 — GENERAL SPECIFICATIONS



Chrysler Sigma Scorpion—Two Door



Chrysler Sigma SE—Sedan



Chrysler Sigma GL—Station Wagon

MODEL IDENTIFICATION

TWO DOOR MODELS

Model Code	Engine Capacity (Litres)	No. of Cylinders	Transmission	Price Line
GE 7-P-29	2,00	4	5 spd. manual	premium
GE 8-P-29	2,00	4	automatic	premium

SEDAN MODELS

GE 3-M-41	1,60	4	4 spd. manual	medium
GE 7-M-41	2,00	4	4 spd. manual	medium
GE 8-M-41	2,00	4	automatic	medium
GE 2-H-41	2,60	4	automatic	high
GE 5-H-41	1,85	4	4 spd. manual	high
GE 7-H-41	2,00	4	5 spd. manual	high
GE 8-H-41	2,00	4	automatic	high
GE 2-P-41	2,60	4	automatic	premium
GE 7-P-41	2,00	4	5 spd. manual	premium
GE 8-P-41	2,00	4	automatic	premium

STATION WAGON MODELS

GE 5-M-45	1,85	4	4 spd. manual	medium
GE 7-M-45	2,00	4	4 spd. manual	medium
GE 8-M-45	2,00	4	automatic	medium
GE 2-H-45	2,60	4	automatic	high
GE 5-H-45	1,85	4	4 spd. manual	high
GE 7-H-45	2,00	4	5 spd. manual	high
GE 8-H-45	2,00	4	automatic	high
GE 2-P-45	2,60	4	automatic	premium
GE 7-P-45	2,00	4	5 spd. manual	premium
GE 8-P-45	2,00	4	automatic	premium

OPTIONAL EQUIPMENT CODES

Code Description

A57 Sports Pack
A71 Body Side Protection Moulding
C63 Reclining Bucket Seats — All Vinyl
C67 Cloth Trim
C70 Leather Trim (SE Only)
D25 4 Speed Manual Transmission
D26 5 Speed Manual Transmission
D31 Automatic Transmission
E10 1,85 Litre Astron Engine
E12 1,6 Litre Saturn Engine
E15 2,0 Litre Astron Engine
E16 2,6 Litre Astron Engine
G15 Laminated Graduated Windscreen
H31 Heated Rear Window
H51 Air Conditioning
R57 Stereo Tape Player
R81 Push Button Radio
T11 165SR x 13 Radial Tyres
T40 AR78S x 13 Steel Belt Radial Tyres
V10 Vinyl Roof
V20 Metallic Paint
W12 Cast Alloy Wheels
Y19 Sun Visor, External — Painted
Y26 Sun Visor, External — Mesh
Y27 Weather Shield, Driver's Door
Y29 Radiator Grille Insect Screen
Y31 Fire Extinguisher — 2 lb. Graviner
Y62 Mud Flaps, Front and Rear

Government and Fleet Sales Only

AUSTRALIAN DESIGN RULES

Australian Design Rules require the manufacturer of components and/or a complete vehicle to conform to specific safety, environmental or consumer protective requirements as defined by that particular rule.

A compliance plate is fitted listing the Rule numbers applicable and the date of manufacture of each particular vehicle. The Design Rule numbers on the plate may correspond to those quoted below.

Aust. Design Rule No.	Design Rule
1	Reversing Signal Lamps
2	Door Latches and Hinges
3A & 22A	Seating Assemblies
4C & 5B	Seat Belts and Anchorages
6	Direction Turn Signals
7	Brake Systems
8	Safety Glass
10B & 25A	Steering System and Lock
11	Internal Sunvisors
12	Glare Reduction — Field of View
14	Rear Vision Mirrors
15	Demisting System
16	Windscreen Wipers and Washers
18	Location and Visibility of Instruments
20, 23 & 24	Rims and Tyres
21	Instrument Panel
27A	Engine Emission Controls
28	Noise Emission
29	Side Door Strength
31	Hydraulic Brake System
34	Anchorages for Child Retraints

There is legislation that requires, amongst other things, that no modification be made to a vehicle that would cause that vehicle not to comply with the Design Rules on the compliance plate of that vehicle.

The previous compilation of Design Rules details some features which must NOT be modified or changed, to ensure compliance is maintained (parts replacement using approved Chrysler components is permissable) on a particular vehicle as related to the date of manufacture. Before interchanging or adding optional equipment it is recommended that advice be sort from an Authorised Chrysler Dealer or from a Chrysler Regional Office, because it is possible to inadvertently cause a vehicle not to comply with a Design Rule.

e.g. 1. Replacing an exhaust system with a non standard system may cause non compliance with Rule 28.

2. Replacing rims and tyres with sizes other than those specified by the tyre placard could cause non compliance with Rules 20, 23 and 24.

SPECIFICATIONS

Engine

	1,60 Litre Saturn	1,85 Litre Astron	2,00 Litre Astron	2,60 Litre Astron
Engine Type	OHC inline 4 cyl.	OHC inline 4 cyl. with counter-balance shafts.	<———	<———
Displacement	1597 cc (97.4 in.³)	1855 cc (113.2 in.³)	1995 cc (121.7 in.³)	2555 cc (155.8 in.³)
Bore	76,90 mm (3.028")	81,00 mm (3.189")	84,00 mm (3.310")	91,10 mm (3.587")
Stroke	86,00 mm (3.386")	90,00 mm (3.543")	<———	98,00 mm (3.858")
Comp. Ratio	8.5:1	<———	9.5:1	8.2:1
RAC Power Rating	14,7	16,2	17,4	20,5

TRANSMISSIONS Manual transmissions have synchromesh on all forward gears. Automatic transmissions are epicyclic gear types controlled by clutches and bands.

Gear Ratio	Manual			Automatic	
	KM110 4 Speed	Borg Warner 0505 4 Speed	KM 132 5 Speed	Borg Warner 35 3 Speed	MA904 Torque Flite 3 Speed
1st	3.53:1	3.65:1	3.37:1	2.39:1	2.45:1
2nd	2.19:1	1.97:1	2.04:1	1.45:1	1.45:1
3rd	1.44:1	1.37:1	1.36:1	1.00:1	1.00:1
4th	1.00:1	1.00:1	1.00:1	—	—
5th	—	—	0.86:1	—	—
Rev.	3.87:1	3.66:1	3.64:1	2.01:1	2.21:1

REAR AXLE: Consists of a hypoid gear set, two pinion differential and semi-floating axles.

Model Application	Two Door	Sedan		Wagon
		*Early	*Late	
Manual Transmission	3.909:1	<———	3.89:1	<———
Automatic Transmission	3.545:1	<———	3.42:1	<———

*Early Model Sedans used a rear axle manufactured by Mitsubishi Motors Corporation (Japan), later models used an Australian made Borg Warner rear axle.

VEHICLE DIMENSIONS

	Two Door	Sedan	Wagon
Wheel Base	2515 mm (99.0")	<———	<———
Overall Length — M and H Line	—	4300 mm (169.4")	4340 mm (171.0")
Overall Length — P Line	4510 mm (177.6")	4330 mm (170.6")	4370 mm (172.0")
Overall Width (Exc. rear view mirror) M Line	—	1655 mm (65.2")	<———
H and P Line	1675 mm (65.9")	1670 mm (65.7")	<———
Overall Height — 2 Passengers	1315 mm (51.8")	—	1384 mm (54.5")
— Fully Laden	—	1313 mm (51.7")	—
Front Track	1370 mm (53.9")	1350 mm (53.2")*	<———
Rear Track	1355 mm (53.3")	1340 mm (52.8")*	<———
Ground Clearance — Unladen	160 mm (6.3")	154,9 mm (6.1")	165 mm (6.5")
— Fully Laden	—	112,7 mm (4.44")	—
Turning Circle — Wall to Wall	—	10,4 m (34.2')	—
— Kerb to Kerb	—	—	—
Vehicle Kerb Mass			
M - Line 1,6 litre Manual	—	1015 kg (2238 lb)	—
M - Line 1,85 litre Manual	—	—	1147 kg (2593 lb)
M - Line 2,0 litre Manual	—	1083 kg (2387 lb)	1176 kg (2593 lb)
M - Line 2,0 litre Automatic	—	1094 kg (2412 lb)	1187 kg (2617 lb)
H - Line 2,6 litre Automatic	—	1113 kg (2454 lb)	1210 kg (2667 lb)
H - Line 1,85 litre Manual	—	1084 kg (2390 lb)	1157 kg (2551 lb)
H - Line 2,0 litre Manual	—	1087 kg (2396 lb)	1184 kg (2610 lb)
H - Line 2,0 litre Automatic	—	1098 kg (2421 lb)	1197 kg (2639 lb)
P - Line 2,6 litre Automatic	—	1141 kg (2515 lb)	1220 kg (2690 lb)
P - Line 2,0 litre Manual	1132 kg (2496 lb)	1107 kg (2240 lb)	1199 kg (2643 lb)
P - Line 2,0 litre Automatic	1142 kg (2518 lb)	1125 kg (2480 lb)	1205 kg (2656 lb)

*Add 5 mm (0.196") to front and rear track of models with W12 option.

NOTE: Mass of vehicle specified is with no load, full fuel tank, oil and water etc. Nominal Tolerance ± 2%.

Optional Equipment Mass

A57	Sports Pack	+ 1,5 kg (3.3 lbs)
C67	Cloth Trim	— 1,5 kg (3.3 lbs)
C70	Leather Trim	+ 1,0 kg (2.2 lbs)
G15	Laminated Windscreen	+ 1,5 kg (3.3 lbs)
H51	Air Conditioning	+ 28 kg (61.6 lbs)
R57	Tape Player	+ 5,1 kg (11.2 lbs)
R81	Radio	+ 1,8 kg (4.0 lbs)
V10	Vinyl Roof	+ 2,0 kg (4.4 lbs)
W12	Cast Alloy Road Wheels	
	"M" Line	— 11,0 kg (24.2 lbs)
	"H" Line	— 12,0 kg (26.4 lbs)
	"P" Line	— 15,0 kg (33.0 lbs)

NOTE: The mass quoted for options is not the actual mass of the option, but the difference in mass between the standard vehicle and the vehicle fitted with the option.

MAKE MODEL SEATING CAP
SERIAL NO GVW kg
WAS MANUFACTURED BY CHRYSLER AUSTRALIA LTD. ADELAIDE S.A.
TO COMPLY WITH AUSTRALIAN DESIGN RULE NOS
1 2 3A 4C 5B 6 7 8 10B 11 12 14 15 16
18 20 21 22A 23 24 25A 27A 28 29 31 34
THIS PLATE IS AFFIXED WITH THE APPROVAL OF THE
AUSTRALIAN MOTOR VEHICLE CERTIFICATION BOARD

All vehicles are manufactured to conform to specific safety, environmental or consumer protective requirements as defined by the Australian Design Rules (ADR). The compliance plate fitted to the vehicle is stamped with the Design Rules applicable to the vehicle.

NOTE: The Compliance Plate is attached to the centre of the plenum chamber in the engine compartment and must never be removed from the vehicle.

CHRYSLER AUSTRALIA LTD.
MANUFACTURED UNDER LICENCE FROM MITSUBISHI MOTOR CORPORATION TO
SOA NO. TRIM CODE.
PAINT CODES:– BODY :
ROOF: INSERT:
OPTION CODE NOS.
ALL CORRESPONDENCE MUST QUOTE SERIAL NO. SHOWN ON COMPLIANCE PLATE AS WELL AS INFORMATION SHOWN ABOVE

ALWAYS USE GENUINE FACTORY ENGINEERED
CHRYSLER PARTS
AVAILABLE FROM AUTHORISED DISTRIBUTORS AND DEALERS

The Data Plate is attached to the right hand side of the plenum chamber in the engine compartment and is stamped with vehicle option codes, trim codes, etc., these details must be quoted to ensure the correct replacement parts are supplied for the vehicle.

VEHICLE SERIAL NUMBER IDENTIFICATION

GE 7 - H - 41 HJ15 0121

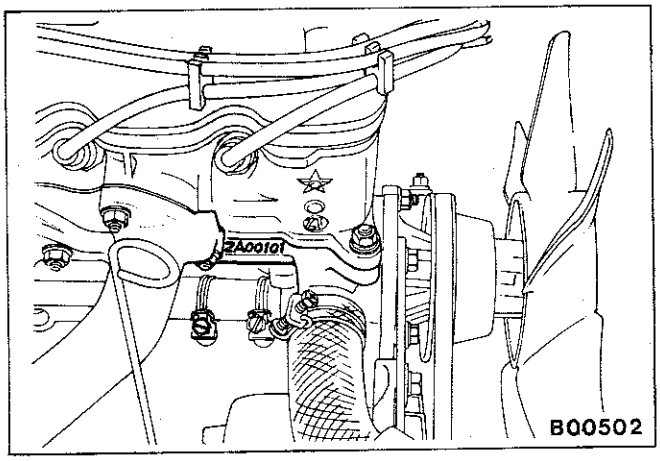
CAR LINE	SERIES	ENGINE/TRANS. COMBINATION	PRICE CLASS	BODY TYPE	VEHICLE IDENTIFICATION CODE	BODY No.
G-Sigma	E	2 — 2,60 litre auto. 3 — 1,60 litre manual 5 — 1,85 litre manual 7 — 2,00 litre manual 8 — 2,00 litre auto.	M — Medium H — High P — Premium	29 — Two Door 41 — Sedan 45 — Station Wagon	*	Commencing from No. 1 in each price class and body type

* Shown throughout this manual as V.I.C.

ENGINE NUMBER AND PREFIX IDENTIFICATION

Location

The engine number is stamped on the right hand front, top edge of the cylinder block. Always quote the engine number when ordering engine replacement parts.



Engine number location

Identification

Imported Engines

52A00101

Capacity	Serial Number
G2 — 1,60 ℓ Saturn 51 — 1,85 ℓ Astron 52 — 2,00 ℓ Astron	A00101 to Y99999

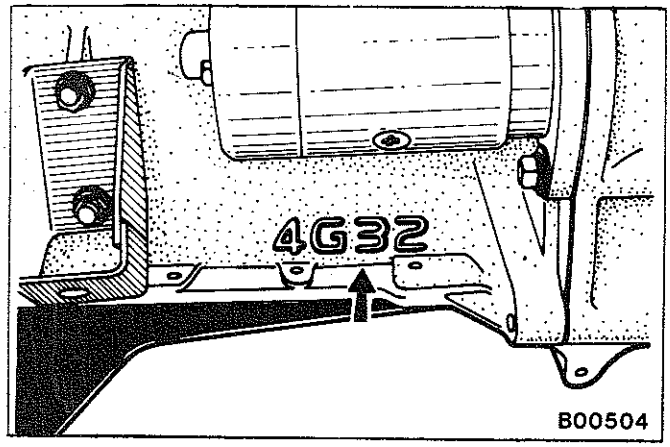
Local Engines

M 425 K 00304

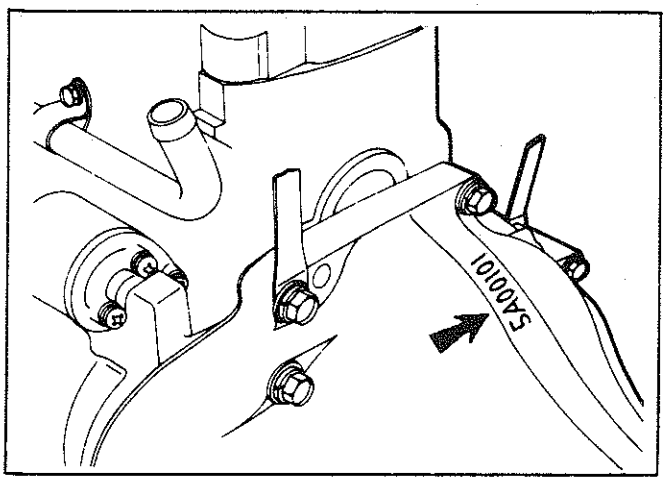
ENGINE TYPE	CAPACITY	PERFORMANCE	TRANSMISSION	YEAR BUILT	SERIAL No.
M — Astron	3 — 1,85 ℓ 4 — 2,00 ℓ 5 — 2,60 ℓ	2 — Std. Perf. *3 — Std. Perf.	1 — Automatic 4 — Manual 4 speed 5 — Manual 5 speed	J — 1977 K — 1978 L — 1979 M — 1980	Commencing from No. 1 in each engine and transmission type.

* Used on later build engines to denote use of Wax Element Choke, revised heated inlet air system etc.

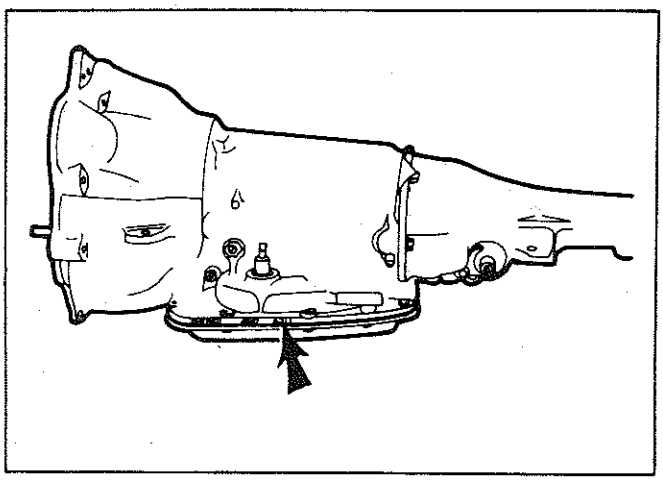
SERIAL/MODEL NUMBER LOCATION



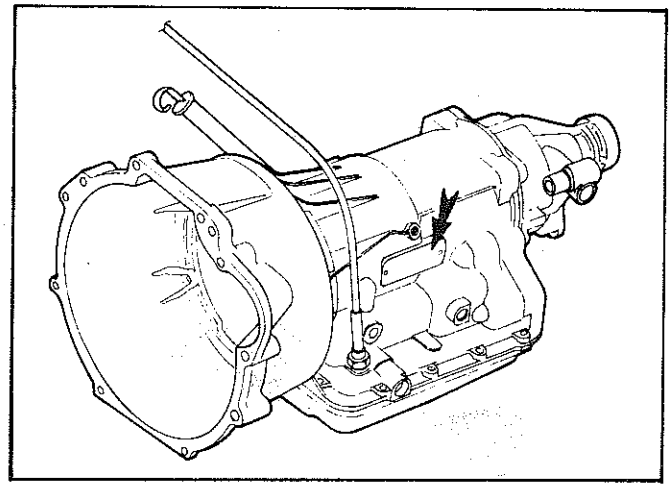
Engine model number location (early models)
Adjacent engine serial number on later models



Manual transmission serial number location

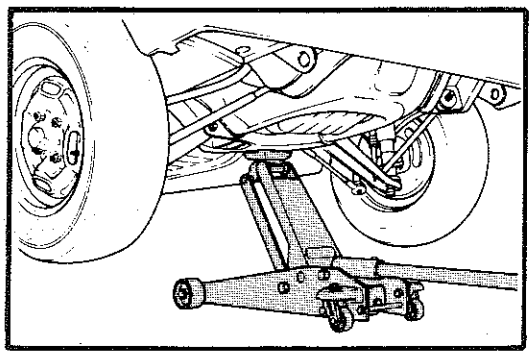


Torque Flite MA904A serial number location

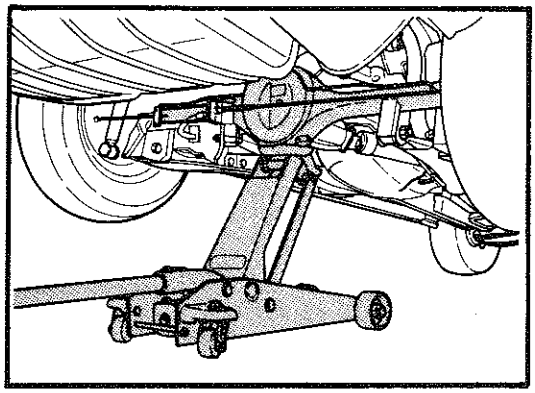


Borg Warner automatic transmission serial number location

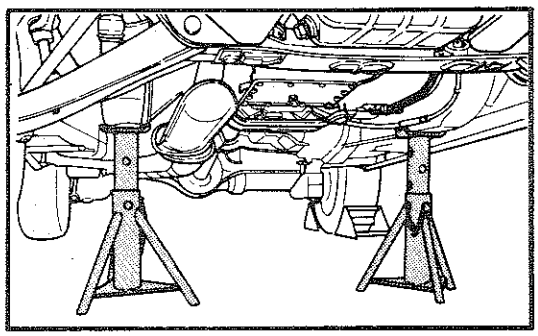
JACKING AND TOWING



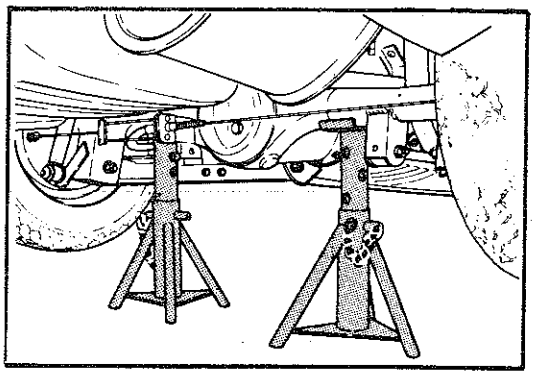
Jacking point front



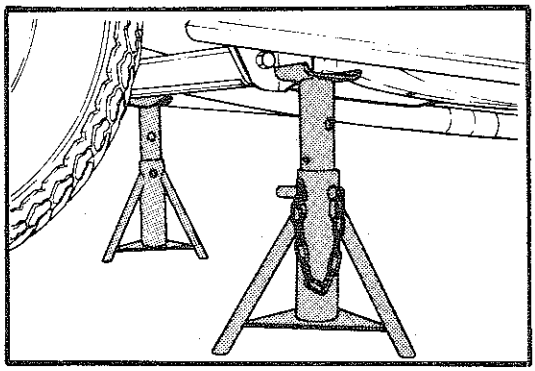
Jacking point rear



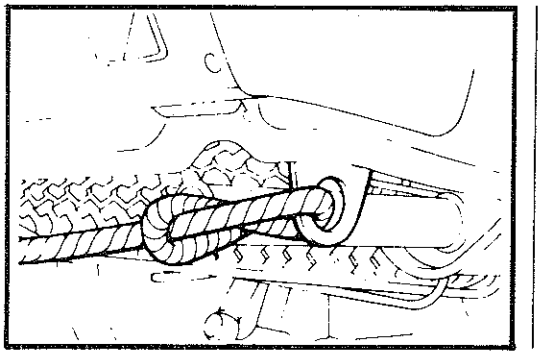
Stand position front



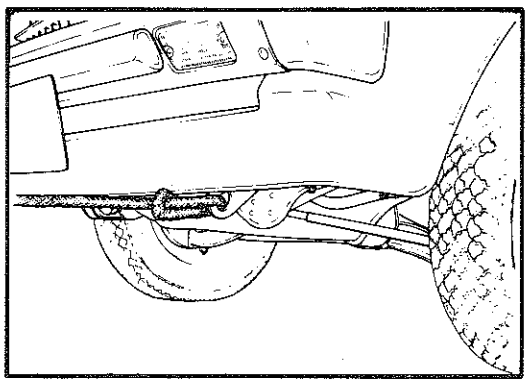
Stand position rear, under axle



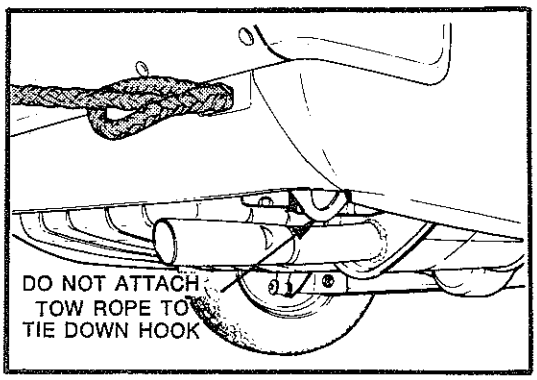
Stand position rear, under body



When towing — Wagon



When towed



When towing — Sedan and Two Door

NOTE: When using four point hoist to raise the vehicle, position the pads under the outer ends of the sill panel.

GROUP 1 — LUBRICATION AND MAINTENANCE

SECTION 0 — INDEX

SERVICE BULLETIN REFERENCE

DATE	NUMBER	SUBJECT	CHANGES

SECTION 1 — LUBRICANTS, LUBRICATION AND MAINTENANCE SCHEDULE

GENERAL INFORMATION

The recommended lubrication and maintenance services have been determined to provide maximum performance and protection of the vehicle under various types of operating conditions. The information in this group is intended to aid service personnel in selecting and using the correct lubricants and maintenance procedure.

No particular brand of lubricant is recommended, however lubricants manufactured by a reputable oil company should always be used. It is important that the specifications of the material used, meets the standards stated in this manual.

NOTE: Recommended lubricants are formulated with the optimum quantities of a carefully balanced combination of selected additives, for use in vehicles marketed by Chrysler. Considerable development work is involved to finally establish the most suitable lubricant to satisfy all requirements of a specific application. Thus any arbitrary addition of proprietary materials will disrupt the balance of additives already present in optimum quantities and may destroy the essential properties built into the approved lubricants, resulting in failure of the mechanical assembly. Furthermore, addition of proprietary materials is an unnecessary and expensive penalty to the vehicle operation maintenance costs.

Classification of Lubricants

Oils and lubricants are classified and graded according to standards recommended by the following organisations:

(1) SAE (Society of Automotive Engineers)
(2) API (American Petroleum Institute)
(3) NLGI (National Lubricating Grease Institute)
(4) MIL (U.S. Army Ordnance Specification)
(5) ASTM (American Society for Testing Materials)

Engine Oil

Three designations MIL, SAE and API are used to match engine oils to service requirements. Generally designations will be found on the oil container.

The SAE grade number indicates engine oil viscosity or fluidity. For example SAE 30 is a single viscosity oil. Most engine oils have multiple viscosity grades such as SAE 10W 30, with a low viscosity when cold. These multigrade oils have a more constant viscosity than single grade oils for the same temperature rise.

The API and/or MIL classification designates engine oils suitable for use under certain specified conditions.

Gear Lubricants

Performance of gear oils are classified by MIL and/or API. The API classifications range from GL-1 to GL-6, depending on the type of application. It is therefore important to identify the component being serviced and then follow the recommendations set out in this group.

Grease

Semi-solid lubricants, such as those specified for universal joint, chassis, and similar applications should meet NLGI Multi-Purpose Grade 2 E.P. specifications except where otherwise stated.

Automatic Transmission Fluid

Dexron ® Automatic Transmission Fluid carrying a "B" classification number is recommended for use in automatic transmissions used in vehicles covered by this manual.

Use of Correct Lubricants

It is essential for correct lubricants to be used. The Lubricant Chart in this section has been prepared to enable selection of approved lubricants.

Points Not Requiring Lubrication

The bearings listed are permanently lubricated and will only require attention when complete overhaul of the component is necessary.

- Starter motor bearings
- Rear wheel bearings
- Clutch release bearing (manual trans.)
- Water pump bearing
- Alternator bearings

The rubber bushings used at the points listed are designed to grip the contacting metal parts firmly, and to act as a flexible medium between parts.

NOTE: The use of any lubricant will destroy the necessary friction and cause premature failure of the rubber components.

- Rear suspension arm bushings
- Front suspension rubber bushings
- Engine drive belts

The application of lubricant will destroy the effectiveness of the filter in the Carburettor Air Cleaner.

Engine Oil Change Frequency

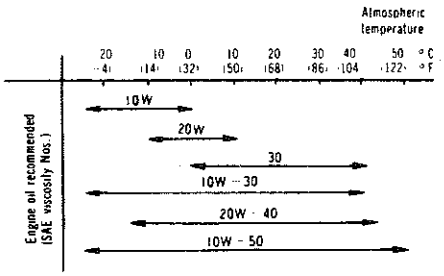
Intervals of 8000 km or every four months, whichever occurs first, are recommended for normal operating conditions. When a vehicle is operating primarily in city traffic type driving, with some highway use, most trips are less than 15 km long at slow speeds when the engine often does not warm up enough to resist the formation of condensation and sludge. The recommendations to change the oil every four months, even when the vehicle has not completed 8000 km since the last oil change, will ensure that the effects of these harmful materials will be minimised.

Unusual or severe operating conditions frequently encountered can greatly reduce the protective life of oil and necessitate more frequent changes. The frequent towing of trailers, continuous operation at higher than normal loadings, operation in extremely dusty or sandy terrain, prolonged idling, extremely short run operation and similar types of operation can be considered as severe operating conditions and constitute conditions under which the engine oil should be changed every 4000 km.

Capacities

Engine Oil Pan	
— (without filter) — Saturn	3.5 litres (6.2 pints)
— Astron	3.8 litres (6.5 pints)
— (with filter) — Saturn	4.0 litres (7.1 pints)
— Astron	4.3 litres (7.4 pints)
Transmission	
— 4 spd. Manual (Mitsubishi)	1.7 litres (3.0 pints)
— 4 spd. Manual (Borg Warner)	1.9 litres (3.3 pints)
— 5 spd. Manual (Mitsubishi)	2.3 litres (4.0 pints)
— Borg Warner Automatic	5.5 litres (9.6 pints)
— Torque Flite Automatic	6.4 litres (11.2 pints)
Rear Axle	1.1 litres (1.9 pints)
Steering Unit	260 ml (0.46 pints)
Cooling System (with heater)	
— Saturn	6.5 litres (11.5 pints)
— Astron (2.0ℓ)	7.7 litres (12.4 pints)
— Astron (2.6ℓ)	9.2 litres (16.2 pints)
Fuel Tank	
— Sedan, Two Door	60 litres (13.2 galls)
— Wagon	53 litres (11.7 galls)

LUBRICANT CHART

Component		Chrysler Spec. No.	Lubricant/Fluid
Engine (All models)			Conforming to the requirements of the API classification "For Service SE" having the correct SAE viscosity grade number for the expected temperature range 
Automatic Transmission (All models)		41/MS 5033	Dexron ® Automatic Transmission Fluid that carries a "B" classification
Manual Transmission	Mitsubishi		SAE 75W/85W API-GL5/MIL-L-2105B SAE 75W/90W API-GL5/MIL-L-2105B SAE 10W/30 SE Quality or higher SAE 10W/40 SE Quality or higher
	Borg Warner	41/10	SAE 30
Rear Axle		MS 41/18	Gear Oil, SAE 90 API GL-5/Mil-L-2105B

LUBRICATION CHART (Cont'd)

Component	Chrysler Spec. No.	Lubricant/Fluid
Brake Master Cylinder	MS 41/28	"Chrysler Heavy Duty" Brake Fluid (or any fluid conforming to DOT 3)
Steering Gear	MS 41/18	SAE 90 API GL-5/Mil-L-2105B
Speedometer Cable	42 MS 4599	Speedometer Cable Lubricant Shell Alvania RVI
Battery Terminals	42/MS 272	Petroleum Jelly
Chassis Universal Joints Transmission Control Linkages Front Wheel Bearings	42/MS 3701	Lithium Base "Multi-Purpose" NLGI EP No. 2 Grease
Body Door—hinges —torsion bar rollers —locks and lock cylinders Hood—hinges Handbrake—lever assembly Front Seat—recliner Deck lid—lock —lock cylinder —hinges —torsion bar rollers		Engine Oil
Door—striker Deck lid—striker		Chrysler "Easi-Lube" stick lubricant
Hood—lock —striker Front Seat—slides	42/MS 3701	Lithium Base "Multi-Purpose" NLGI EP No. 2 Grease
Radiator—Corrosion Inhibitor	MS 41/15	Corrosion Inhibitor — Part No. AP 100094
Water	70/1	Deionized Water

LUBRICATION & MAINTENANCE SCHEDULE GE SERIES

		Kilometres in Thousands											
		8	16	24	32	40	48	56	64	72	80	88	96
UNDER HOOD OPERATIONS													
	Check fluid level — brake master cylinder	x	x	x	x	x	x	x	x	x	x	x	x
	— automatic transmission	x	x	x	x	x	x	x	x	x	x	x	x
	— steering gear		x		x		x		x		x		x
*	Clean battery terminals, check specific gravity		x		x		x		x		x		x
*	Retorque cylinder head and exhaust manifold bolts			x			x			x			x
*	Adjust valve clearances			x			x			x			x
*	Check ignition cables, distributor cap and rotor			x			x			x			x
*	Lubricate distributor operating parts			x			x			x			x
*	Replace distributor breaker points and condenser (if applicable)			x			x			x			x
*	Adjust ignition dwell (if applicable) and timing, check operation of advance mechanisms			x			x			x			x
*	Clean, adjust and test spark plugs. Replace failed plugs		x		x		x		x		x		x
*	Check and adjust curb idle and idle mixture			x			x			x			x
*	Check and adjust carburettor dash pot — manual transmission Astron engine			x			x			x			x
*	Check entire choke system for freedom of operation and adjustment			x			x			x			x
*	Replace fuel filter			x			x			x			x
*	Check condition and fastening of fuel pipes						x						x
*	Clean and check air cleaner element	x	x	x	x	x		x	x	x	x	x	
*	Replace air cleaner element						x						x
*	Check and adjust drive belt tension — replace belt if necessary	x	x	x	x	x	x	x	x	x	x	x	x
*	Check and replace (if necessary) engine compartment rubber and plastic components			x			x			x			x
*	Check and clean (if necessary) evaporative emission control system			x			x			x			x
*	Replace fuel vapour storage canister						x						x
*	Check crankcase ventilator hoses, clean if necessary			x			x			x			x
*	Check operation of Thermo valve			x			x			x			x
*	Check operation of Exhaust Gas Recirculation System and clean as required			x			x			x			x
*	Reverse flush cooling system, remove insects, dust, etc. from core. Check hoses and clamps. Refill with soft water and Chrysler Parts corrosion inhibitor (or anti-freeze if required)		x		x		x		x		x		x
	Check power brake hose condition and fastening of hose clamps		x		x		x		x		x		x
	Check clutch free play and adjust if necessary	x	x	x	x	x	x	x	x	x	x	x	x
	Lubricate clutch cable		x		x		x		x		x		x
	Check receiver drier sight glass refrigerant level (air conditioned vehicles)	x	x	x	x	x	x	x	x	x	x	x	x
UNDER VEHICLE OPERATIONS													
*	Change engine oil (maximum time period 4 months)	x	x	x	x	x	x	x	x	x	x	x	x
*	Change engine oil filter	x		x		x		x		x		x	
	Check oil level — manual transmission	x	x	x	x	x	x	x	x	x	x	x	x
	— rear axle	x	x	x	x	x	x	x	x	x	x	x	x
*	Check for fuel, oil or exhaust leaks	x	x	x	x	x	x	x	x	x	x	x	x
	Lubricate — Park brake cable and supports		x		x		x		x		x		x
	— Automatic transmission control linkage		x		x		x		x		x		x
	Check universal joints for excessive free play		x				x			x			x
	Automatic transmission — Refer text												
SUSPENSION, STEERING AND BRAKES													
	Check seal and ball joint condition — steering and suspension ball joints		x		x		x		x		x		x
	Check rear suspension, linkages and bushings for damage, wear and security		x		x		x		x		x		x
	Remove front wheel bearing dust cap, check bearing free play (re-adjust if necessary) check for presence of grease			x						x			
	Clean and repack front wheel bearings (or at disc re-surface/major brake overhaul — whichever comes first)						x						x
	Check tyres for abnormal wear patterns and/or damage (report to owner)	x	x	x	x	x	x	x	x	x	x	x	x
	Check and adjust (if necessary) front wheel alignment			x			x			x			x
	Check and adjust steering box free play			x			x			x			x
	Check front suspension condition — check for leaks			x			x			x			x
	Inspect hydraulic brake hoses for wear, cracking or other deterioration		x		x		x		x		x		x
	Remove dust from brake drums/discs, inspect lining and pads for wear (more frequent where driving conditions warrant)		x		x		x		x		x		x
	Check disc brake pads for wear	x		x		x		x		x		x	
	Adjust handbrake		x		x		x		x		x		x
	Drain and flush brake fluid. Refil with "Chrysler" Heavy Duty brake fluid — max. time period 18 months				x				x				x
BODY OPERATIONS													
	Lubricate — door hinges, torsion bar rollers, lock cylinders, rotor and striker		x		x		x		x		x		x
	— hood hinges, lock, striker and catch		x		x		x		x		x		x
	— deck lid lock cylinder, striker and hinges		x		x		x		x		x		x
	— tailgate lock cylinder, striker and hinges		x		x		x		x		x		x
	— seat adjuster slides		x		x		x		x		x		x
	Check operation — instrument panel gauges	x		x		x		x		x		x	
	— all vehicle lighting	x		x		x		x		x		x	
ROAD TEST													
	Include check of gearshift operation and brake performance	x	x	x	x	x	x	x	x	x	x	x	x

* Denotes mandatory service.

SECTION 2 — LUBRICATION & MAINTENANCE PROCEDURE

SPECIFICATIONS

Valve Clearance	
Inlet (hot)	0,15 mm (0.006")
Exhaust (hot)	0,25 mm (0.010")
Ignition Timing	5° ± 1° BTC @ 850 r.p.m.

NOTE: Refer engine tune up decal attached to underside of engine hood.

Distributor (breaker point type)	
Nominal point gap	0,45 to 0,55 mm (0.018" to 0.021")
Dwell angle (vacuum disconnected)	49° to 55°

NOTE: Electronic ignition distributors do not require any adjustment, refer to Group 8 Electrical for servicing procedures.

Spark Plugs	
Type — 1,6 litre, 1,85 litre and 2,6 litre	N12Y
— 2,0 litre	N9Y
Gap	0,70 to 0,80 mm (0.028" to 0.031")
Engine Curb Idle Speed	850 ± 50 r.p.m.
Idle C.O.	0,5 to 2,0%
Belt Deflection	
Alternator — Saturn	7,0 to 10,0 mm (0.28" to 0.40")
— Astron	7,0 to 9,0 mm (0.28" to 0.35")
Clutch Free Play	
Cable Adjustment — Saturn	5,0 to 6,0 mm (0.20" to 0.24")
— Astron	3,5 to 4,5 mm (0.14" to 0.18")
Torqueflite A904 Transmission	
Kickdown band (front) turns	3 (trans. part no. 4028427), 3,5 (trans. part no. 4028851, 4130174 and 4130795) backed off from 8 Nm (72 lbs. in.) or 5 Nm (48 lbs. in.) with adaptor E1295
Low-reverse band (rear) turns	7,5 backed off from 4,5 Nm (41 lbs. in.)
Borg Warner 35 Model Transmission	
Kickdown band (front) turns	4 backed off from 1,0 Nm (10 lbs. in.) or O back off from 1,0 Nm (10 lbs. in.) using E1282 6,35 mm (0.250") spacer
Low-reverse band (rear) turns	¾ backed off from 7 Nm (60 lbs. in.) using E1294-1
Front Wheel Alignment	
Camber (non-adjustable)	1.5° ± 0.5°
Caster	2.7° ± 0.5°
Toe-In — measured at centre of tyre tread	4-6 mm (0.157-0.236")
— measured at wheel rim	2-3 mm (0.078-0.118")
Toe-Out on Turns	Set inner wheel 34° to 37° Outside wheel 29° to 32°
Steering Effort	
Measured at steering wheel circumference with front wheels off ground	4,9 Nm (3.6 ft. lbs.) or less

Disc Brake Pads	
Minimum material thickness (above pad backing plate) — Imported Type	2 mm (0.080")
— PBR Type	0,8 mm (0.031")
— Girlock Collet Type	0,8 mm (0.031")
Rear Brake Linings	
Minimum lining thickness (above rivets — rivitted linings) (above shoes — bonded linings)	1 mm (0.040")
Hand Brake Adjustment	
Cable Adjustment	5 to 7 ratchet clicks with normal operating force applied to lever assembly
Extension lever-to-stopper clearance — Imported Type	2,5 mm (0.1") or less
Extension lever-to-stopper clearance — Girlock Type	Zero

SPECIAL TOOLS

E1295	Adaptor — band adjuster (MA904 A)
E1282	Gauge — front band 6,35 mm (Model 35)
E1294-1	Adjuster — rear band (Model 35)
E21C65A	Gauge — high pressure
E9M20	Cylinder head bolt tool

Set of feeler gauges
Spark plug feeler gauges
Tachometer
Dwellmeter

Power timing light
Torque wrench
CO Meter

TORQUE SPECIFICATIONS

	Nm	(lbs. ft.)	(lbs. in.)
Alternator adjusting screw	15-22	11-16	
Battery clamps	2,5		20
Cylinder head bolts — Saturn (cold)	69-73	51-54	
(hot)	79-83	58-61	
— Astron (cold)	88-98	65-72	
(hot)	98-107	73-79	
Exhaust manifold to cylinder head bolts	15-19	11-14	
Spark Plugs	20-28	15-21	
Torqueflite MA904 A automatic transmission			
Filter retaining screws	5		40
Fluid pan retaining screws	18		150
Kickdown band adjusting screw locknut	47	35	
Low-reverse band adjusting screw locknut	40	30	
Manual lever swivel clamp screw	10		90
Borg Warner model 35 automatic transmission			
Filter screen retaining screws	3		25
Fluid pan retaining screws	15		130
Kickdown band adjusting screw locknut	25		220
Low-reverse band adjusting screw locknut	35	26	
Selector rod adjustment locknut	8		70
Pressure test plug	7		60
Road wheels (in sequence) — Except 2 Door Models	69-79	51-58	
— 2 Door Models	78-98	57-72	
Brake caliper to stub axle — Imported type	64-88	51-65	
— PBR type	88-102	65-75	
Front wheel bearing nut	8		71

GENERAL INFORMATION

Service procedures contained in this section have, wherever possible, been combined into a logical sequence of operations. If this sequence is adopted, with perhaps some modifications to suit the particular workshop policy and layout, operations can be performed with maximum efficiency.

Lubrication and Maintenance scheduled intervals, stating time as well as distance, should be conducted at the time the first event occurs. (Refer section 1 for schedule.)

Items marked with an asterisk on the Lubrication and Maintenance Chart are "Mandatory Maintenance" items which must be serviced at shown times/kilometres to assure the continued proper functioning of the emission control system.

NOTE: Failure to service the systems as specified may result in exhaust emissions higher than the legal State Limits.

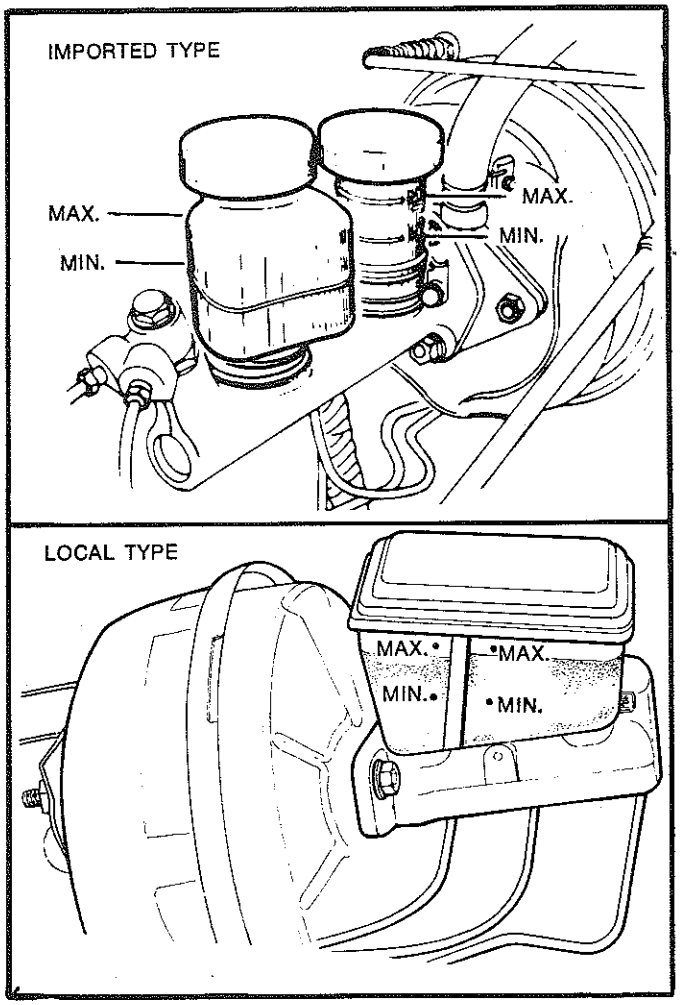


Fig. 1—Hydraulic fluid level

UNDER HOOD OPERATIONS

Brake Hydraulic Reservoir

Never allow the level of the reservoir to drop below the "minimum" mark shown on the reservoir. Some lowering of the level will occur normally, however, rapid lowering of level should be investigated immediately. When topping up, it is imperative that replacement fluid is taken from a sealed container, ensuring minimum exposure to atmosphere. Absolute cleanliness must be observed during the topping up operation.

Automatic Transmission Fluid Level

The dipstick is located in the right rear section of the engine compartment. To check the level use the following procedure:

- Apply the parking brake and with the engine idling and transmission at normal operating temperature, engage each gear briefly, ending with the selector in "N" neutral.

NOTE: The transmission must be at normal operating temperature to obtain an accurate dipstick reading.

- Withdraw the dipstick and wipe with a clean rag. Install the dipstick into the filler tube, withdraw and check level. The level must be within the marks on the dipstick (Refer Fig. 2).

CAUTION: Avoid entry of dirt into the transmission by ensuring that the dipstick is properly seated. Maintaining the transmission to the correct level with the recommended fluid is essential for correct operation of the unit.

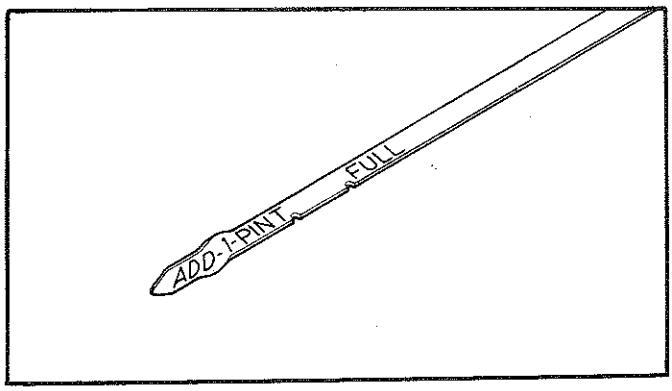


Fig. 2—Automatic transmission dipstick markings

Steering Gear Fluid Level

Check at the recommended intervals maintaining the level of fluid approximately 18 mm (0.7") below the top of the upper cover. To check the level, remove the bolt from the right lower corner of the housing cover and with a dipstick or screwdriver blade, measure the fluid level—see Fig. 3.

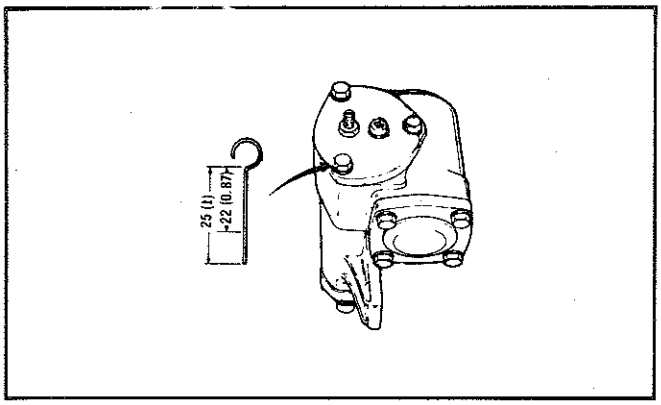


Fig. 3—Checking steering gear fluid level

Battery Terminals

Inspect battery terminals for corrosion. If corroded, remove terminal clamps and clean clamps and posts. Refit and tighten.

NOTE: Overtightening of the insulated terminal clamps will cause breakage.

After cleaning, lightly smear the terminals with petroleum jelly to protect against further corrosion.

Battery Specific Gravity

Using a reliable hydrometer check the battery operation at the scheduled intervals, or more often if there is excessive use of water.

Cylinder Head Bolts

Remove air cleaner assembly and rocker shaft cover and retorque the cylinder head bolts by first backing off the bolts quarter of a turn and then tightening the bolts to the specified torque in the sequence shown in Fig. 4.

NOTE: Tightening torques vary between hot and cold engines — see specifications.

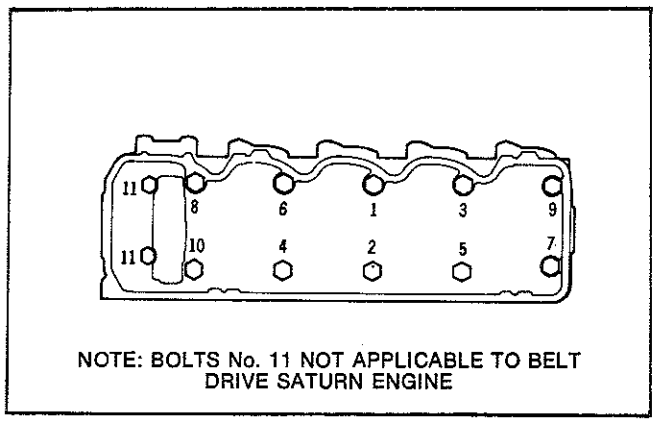


Fig. 4—Cylinder head bolt tightening sequence

Tighten the exhaust manifold bolts to the specified torque.

Valve Clearance Adjustment

Valve clearance adjustment must be performed with the engine HOT. Set No. 1 piston to TDC on compression stroke and check the clearance at No. 1 inlet and exhaust, No. 2 inlet and No. 3 exhaust to the specified dimension. Set No. 4 piston to TDC on compression stroke and check the clearance on No. 4 inlet and exhaust, No. 3 inlet and No. 2 exhaust to the specified dimension.

NOTE: Valve clearance is measured between the rocker arm and valve with the engine stationary.

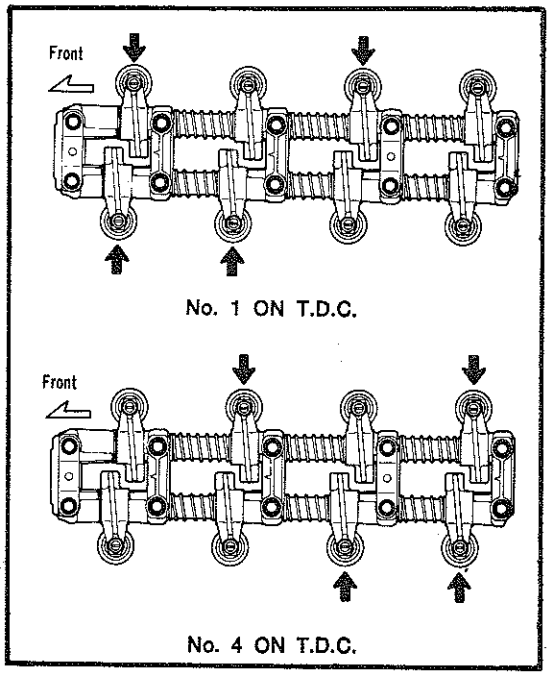


Fig. 5—Valve clearance adjustment sequence

Ignition System

Ignition cables should be kept clean and connected properly. Terminals should be fully seated and the nipples and spark plug covers should be in good condition. To maintain proper sealing between the towers and nipples, cable and nipple assemblies should not be removed from the distributor or coil towers unless damaged or cable testing (refer Group 8) indicates high resistance or broken insulation. Cracked, damaged, or faulty cables must be replaced.

Check the distributor rotor and cap for cracks, arcing, damage and wear.

Distributor

All electronic ignition models require 2 or 3 drops of engine oil to be applied to the felt wick under the rotor.

Breaker point ignition distributors require lubrication of the cam, arm spindle and vacuum link with a small amount of engine oil.

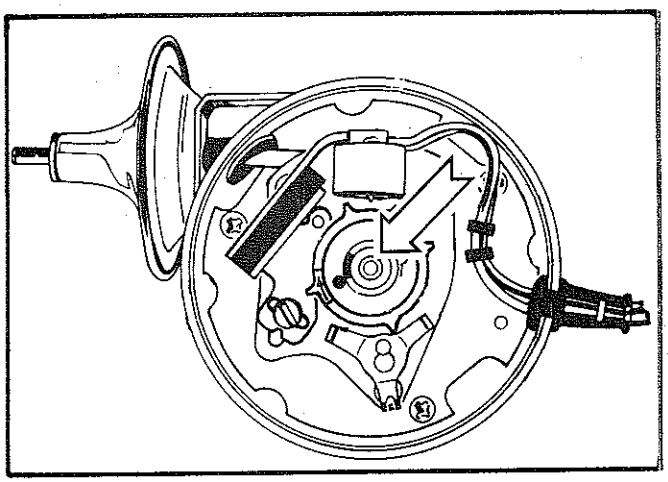


Fig. 6—Felt wick location (electronic ignition)

Breaker Points (if applicable)

Replace the breaker points and condenser at the specified intervals.

Initially set the point gap, using feeler gauges, to the specified clearance. This is done by adjusting the fixed contact when the breaker point rubbing block is on the top of the distributor cam lobe. Using a dwell meter, check the dwell angle at cranking or idling speed with the vacuum line disconnected. The angle should be within specification. It is permissible to adjust the fixed contact within small limits to achieve this. However, any large variation indicates a mechanical fault in the distributor.

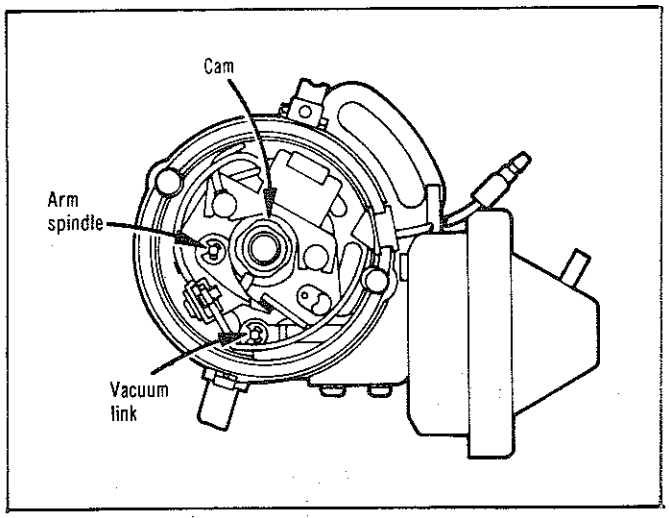


Fig. 7—Breaker point ignition distributor lubrication points

With vacuum still disconnected increase the engine revs to 1500 to 2000 r.p.m. and check for any dwell variation which would indicate a mechanical fault in the distributor. Reconnect the vacuum line and accelerate the engine quickly to about 1500 r.p.m. and release the throttle.

Ignition Timing

To obtain correct exhaust emission levels and engine performance, the distributor must be correctly positioned on the engine to give proper ignition timing.

The ignition timing test will indicate the timing of the spark at No. 1 cylinder at idle (only).

Test procedures are as follows:

(1) Disconnect vacuum hose at distributor.

(2) Connect secondary lead of Power Timing Light to No. 1 spark plug, red primary lead to positive terminal of battery and black primary lead to negative battery terminal. Do not puncture cables, boots or nipples with test probes. Always use proper adapters. Puncturing the spark plug cables with a probe will damage the cables. The probe can separate the conductor and cause high resistance. In addition breaking the rubber insulation may permit secondary current to arc to ground.

(3) Start engine and set idle to "Specification" (Transmission in Neutral).

NOTE: DO NOT connect timing light red primary lead to the alternator output terminal as alternator damage may occur.

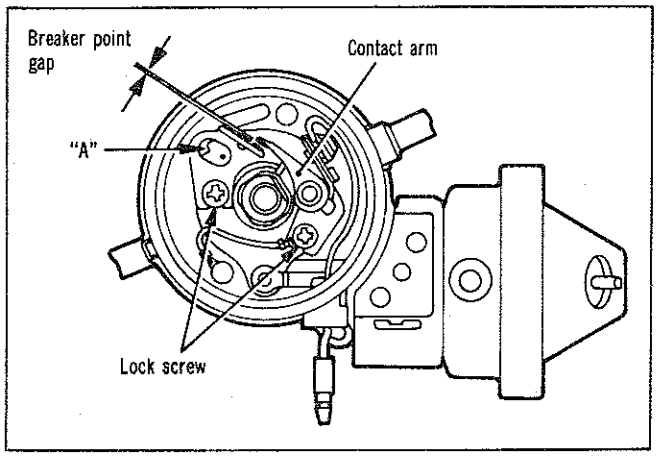


Fig. 8—Point gap adjustment

(4) Aim power timing light at timing plate. If light flash occurs when timing mark on crank shaft pulley is located ahead of specified degree mark in the direction of engine rotation, timing is advanced. If flash occurs when the pulley timing mark is past the specified degree mark in the direction of engine rotation, timing is retarded. See "Specifications".

(5) If timing has to be adjusted, loosen distributor hold-down arm screw just enough so distributor housing can be rotated in its mounting. (Moving the distributor housing against shaft rotation advances timing, and moving with shaft rotation retards timing.)

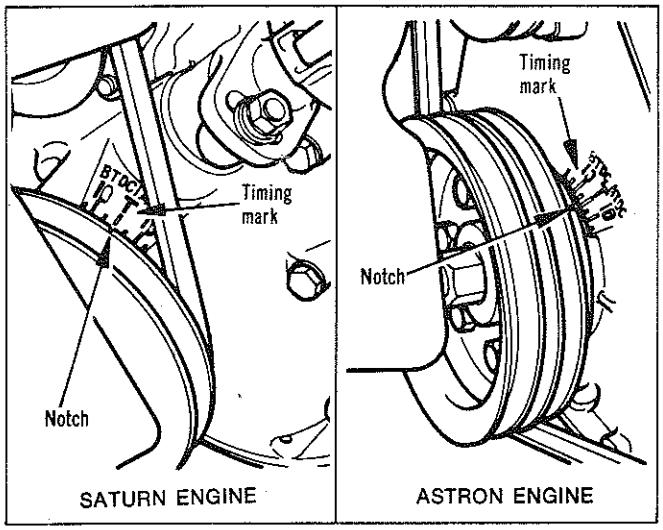


Fig. 9—Ignition timing marks

NOTE: Chain drive Saturn engine timing can be adjusted with a screw driver in the slot provided next to the distributor vacuum diaphragm.

(6) Tighten distributor hold-down arm screw after timing has been set and recheck timing adjustment with a Power Timing Light.

(7) Reconnect vacuum hose at distributor.

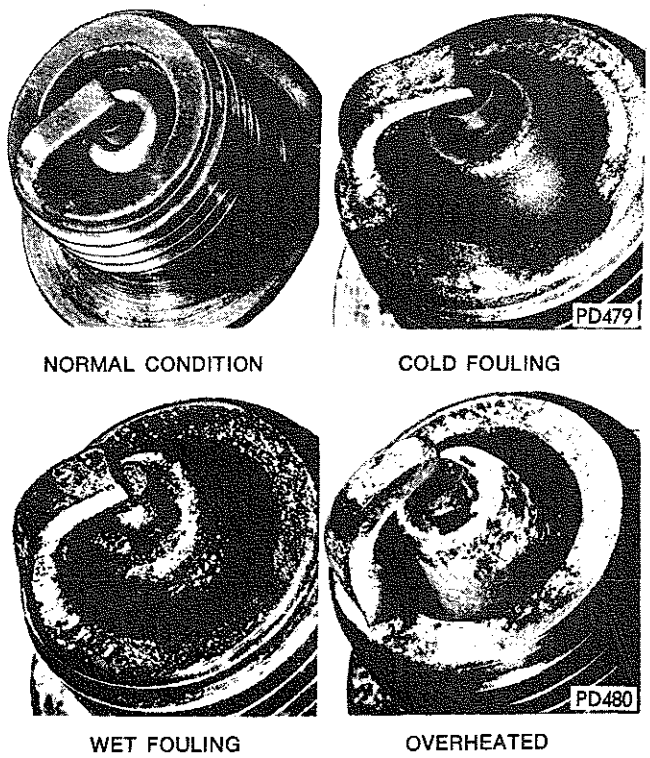


Fig. 10—Spark plug condition

Spark Plugs

Replace the spark plugs at the specified intervals.

To remove the plug leads, grasp the nipple at the end of the wire and rotate slightly to break the adhesion between it and the spark plug insulator, then use a straight steady pull to remove.

CAUTION: Removing secondary leads by grasping any areas other than the nipple can cause lead stretch and subsequent excessive secondary circuit resistance.

After removing the secondary leads, remove the spark plugs and inspect for signs of abnormal conditions.

Abnormal conditions are usually described as follows:

Wet fouling which is identified by wet, sludgy deposits, is caused by excessive oil consumption.

Cold fouling is identified by dry, black, fluffy deposits, caused by incomplete combustion.

Burned or overheated spark plugs are identified by a white, burned or blistered insulator nose and badly burned electrodes. Improper fuel, inefficient cooling, or incorrect ignition timing are normally the cause.

Normal conditions are usually identified by white, powdery deposits, or rusty-brown to greyish-tan powdery conditions.

Cleaning and Testing Spark Plugs

Carefully bend the ground (side) electrode away from the centre electrode before cleaning in an abrasive type cleaner.

Before adjusting the spark plug gap file both the centre and side electrodes to ensure flat and parallel faces. Use a pin type gauge to ensure accuracy when setting gap to specifications.

Check the performance of the spark plugs on a spark plug tester before replacing in the engine.

NOTE: When installing spark plugs tighten to specified torque.

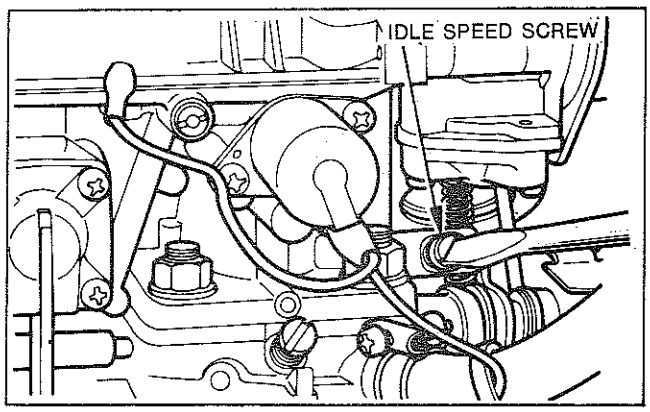


Fig. 11—Setting idle speed

Carburettor Idle Speed and Mixture

It is strongly recommended that a reliable exhaust gas analyzer and an accurate ignition tachometer are used when making these adjustments.

Procedure Using Tachometer and CO Meter

(1) Warm up the engine by idling with engine hood up for 15 to 20 minutes, or if vehicle has been on road ensure engine has attained normal operating temperature. Ensure that choke is fully open.

NOTE: Vehicles fitted with Heated Inlet Air Systems (HIAS) must have an engine compartment temperature of at least 42°C (108°F) before any adjustments are made (i.e. snorkel flap valve fully open).

(2) Set the ignition timing to specification.
(3) Check that the air cleaner is fitted correctly.
(4) Place transmission in neutral.
(5) Turn off all vehicle lights and air conditioner.
(6) Connect tachometer.
(7) Switch on the meter, allow it to warm up then calibrate according to manfacturers' instructions.
(8) Insert the probe of the CO meter in the tail pipe as far as possible.

NOTE: It is essential that the probe and connecting tubing of the meter are in good condition, as any leaks would lead to erroneous reading. If a garage exhaust system is used to conduct the exhaust gases away during the operation, it will be necessary to fit a plenum chamber (or other means) to reduce the vacuum of the system to a reading of 12 mm (½ inch) or less on a water gauge.

(9) Set the idle speed to specification.
(10) Adjust the mixture screw to obtain the specified carbon monoxide reading using the folowing procedure:

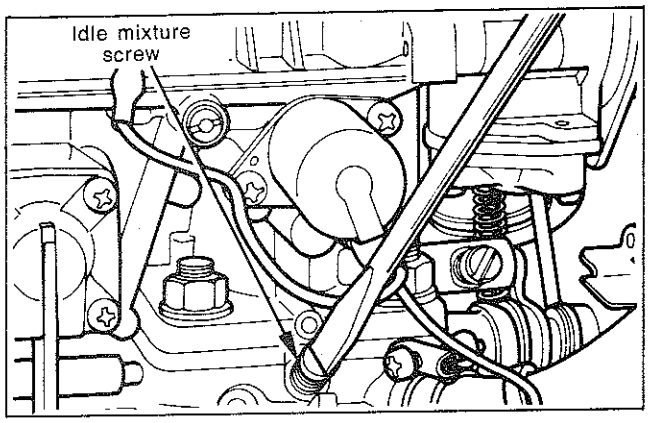


Fig. 12—Adjusting mixture screw

IMPORTANT: When setting the idle mixture do not turn the adjusting screw more than 1/16 turn at a time. The CO meter is so sensitive that the ratio must be changed by very small amounts if accurate readings are to be obtained.

(a) Adjust the mixture screw 1/16 turn richer (anti-clockwise) and wait 30 seconds before reading the meter.

(b) If necessary repeat step (a) until meter indicates a definite increase in richness. This step is very important since some meters (thermal conductivity type) reverse readings and indicate a richer mixture as the carburettor is set too lean.

(c) When it has been established that the meter is indicating a richer reading when the idle mixture screw is turned in the rich direction, proceed to adjust the carburettor to achieve the specified CO reading.

(d) If the idle speed changes as the mixture screw is turned, adjust the speed back to the specified r.p.m. then readjust the idle mixture to obtain the specified reading.

(e) Race engine at 2000 r.p.m. for 5 seconds, then re-check idle speed and meter reading. Re adjust if necessary.

(f) Increase idle speed to specified value if this differs from the mixture setting speed.

NOTE: As mixture screw is turned clockwise (leaner) % CO decreases. As mixture screw is turned anti-clockwise (richer) % CO increases.

Dash Pot Adjustment (Man. Trans. Astron Engine)

NOTE: Normal idling adjustments must be carried out before the following adjustments are made.

(1) With the engine running, push up on the lower end of the dash pot rod until it bottoms. The engine speed should be nominated in the chart below. If not, reset the speed using the dash pot adjusting screw (Fig. 13).

(2) Release the rod, the engine speed should drop, as nominated in the chart below. Replace a dash pot that fails to meet this sepcifiication.

	Early models with variable vacuum dash pot.	Later models with constant vacuum dash pot.
Engine speed dash pot bottomed	2000 ± 100 rpm	2200 ± 100 rpm
Engine speed rod released	1000 rpm in 2 to 5 seconds	900 rpm in 3 to 6 seconds

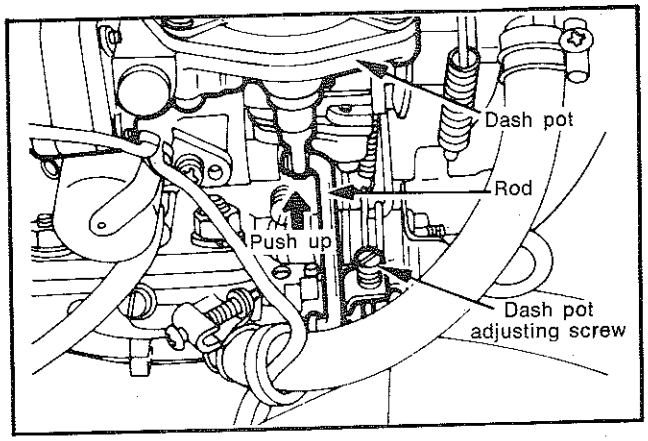


Fig. 13—Constant vacuum dash pot adjustment

Automatic Choke System (Early Bi-metal Type)

To function correctly the automatic choke system components must be clean, move freely and the unit must be correctly adjusted.

The choke housing mating marks should be aligned as shown in Fig. 14. If adjustment is necessary loosen the choke housing screws and rotate the case to align the punch mark on the case with the centre projection on the housing.

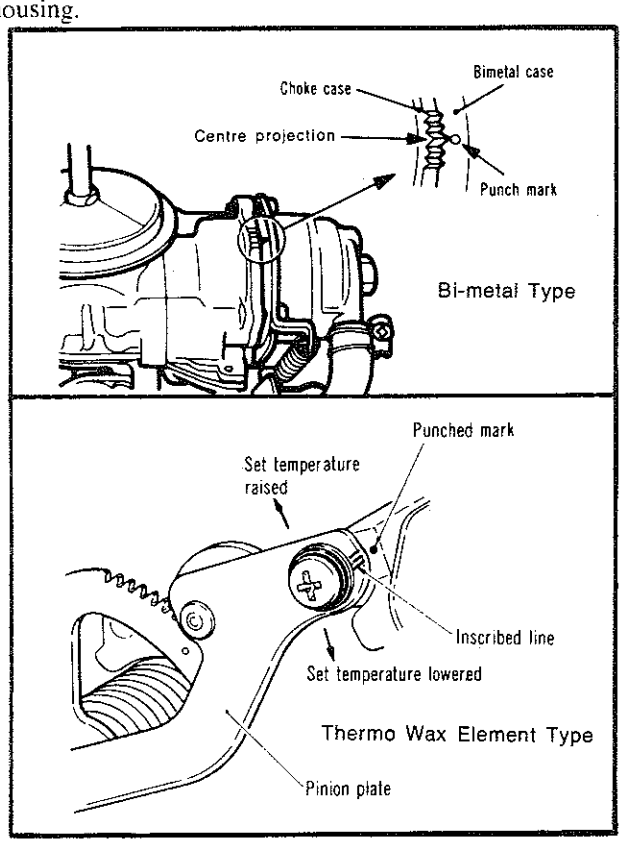


Fig. 14—Automatic choke mating marks

AUTOMATIC CHOKE (Late Thermo Wax Element Type)

Choke Valve Setting

The choke pinion plate mating marks should be aligned as shown in Fig. 14. If adjustment is necessary loosen the pinion plate adjustment screw and set the centre scribed mark on the pinion plate to the punch mark on the carburettor housing.

NOTE: Prior to making this adjustment the carburettor should be normalised at 23°C (73°F) for one hour.

Fuel Filter

An inline filter is used between the fuel tank and the fuel pump. The paper element filter is a disposable type which must be replaced at the recommended intervals.

Fuel Pipes

Check conditioning and fastening of all fuel supply, fuel return and vapour line connections. Ensure lines are retained firmly under all locating tags.

Carburettor Air Cleaner

The paper element air cleaner should be cleaned or replaced as often as conditions warrant but not exceeding the scheduled intervals.

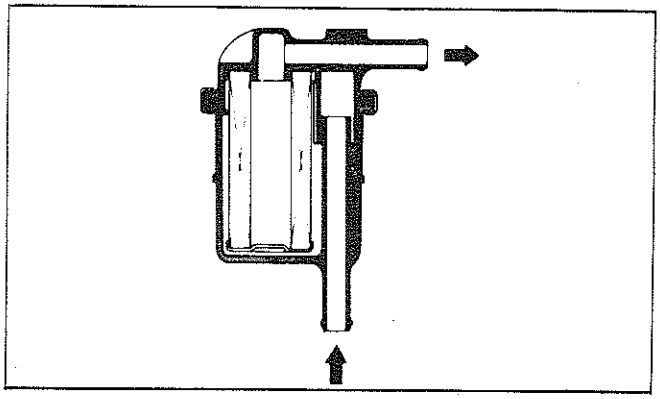


Fig. 15—Fuel Filter

(1) Remove the retaining wing nut and remove the top cover.
(2) Remove the element from the base plate.
(3) Clean or replace the element as required.
(4) To clean, direct light air pressure up and down the inside of the element, keeping the nozzle at least 50 mm (2") away from the element.
(5) Examine the element for punctures, discard any element that has even a pin point puncture.
(6) Check element for oil contamination and the condition of the rubber seal rings on both sides of the element (early models only).
(7) Reassemble air cleaner.

Drive Belts

To correctly adjust the accessory drive belts the following procedure should be adhered to:
(1) Loosen the alternator or idler pulley adjusting strap and mounting bolts.
(2) With the aid of a suitable lever tension the drive belt, being careful not to damage components.
(3) Tighten the adjusting strap bolt.
(4) Apply a 98 N (22 lb) force to the centre of the longest run of the belt using a spring scale. The belt deflection at the point of load should be as specified.
(5) When the correct belt deflection is achieved tighten the adjusting strap and mounting bolts securely.

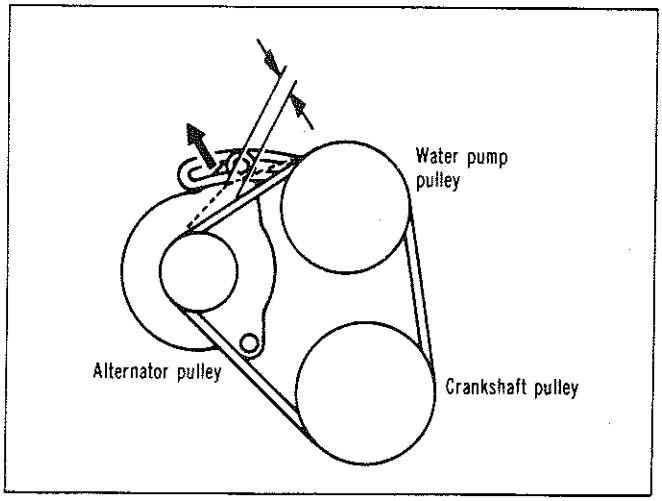


Fig. 16—Drive belt deflection (Saturn engine)

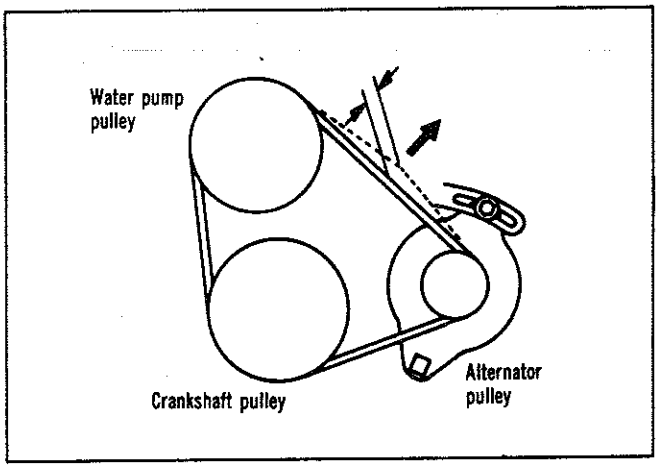


Fig. 17—Drive belt deflection (Astron engine)

Hoses — Emission Control Systems

Inspect surface of hoses for evidence of heat and mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber. Particular attention should be made to examining those hoses nearest to high heat sources, such as the exhaust manifold.

Inspect hose routing to ensure hoses do not come in contact with any heat source or moving component which will cause heat damage or mechanical wear.

Inspect all hose connections such as clamps and couplings to make sure they are secure and no leaks are present.

NOTE: Hoses should be replaced immediately if there is any evidence that a failure could result.

Evaporative Emission System

Inspect all evaporative emission hoses and connections for mechanical damage, cracking, tears, cuts, abrasions, hard and brittle rubber. Any faulty components should be replaced.

The fuel vapour storage canister should be replaced at the recommended intervals.

NOTE: If the fuel vapour storage canister becomes flooded with raw fuel due to a fuel system malfunction, the canister assembly MUST be replaced, after rectification of the fault, to restore effective operation of the Evaporative Control System.

Crankcase Ventilation System

For proper operation of the crankcase ventilation system, check all hoses for evidence of heat and mechanical damage. Hard and brittle rubber, cracking, tears, cuts, abrasions and excessive swelling indicate rubber deterioration.

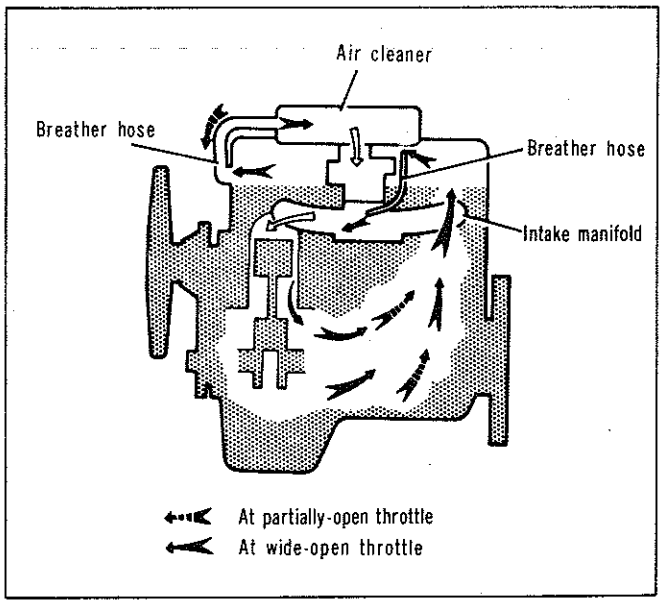


Fig. 18—Crankcase ventilation system

Inspect hose routing to ensure hoses do not come in contact with moving components which will cause mechanical wear.

Check the nipples in the intake manifold and the rocker cover, clear any blockage that may occur.

Thermo Valve Test

Cold valve inspection

(1) Remove the thermo valve and allow it to cool to room temperature.

(2) Install a tube to the nipple of the valve and blow through the tube. The valve is satisfactory if it allows air to pass through it unrestricted.

Warm valve inspection

(1) Immerse the heat sensing area of the thermo valve in water heated at or above 60°C (140°F) for at least 60 seconds.

(2) Blow air through the nipple as described in the cold valve inspection, the valve should be closed and should not allow air to pass through.

(3) When installing the thermo valve apply sealant to the threads.

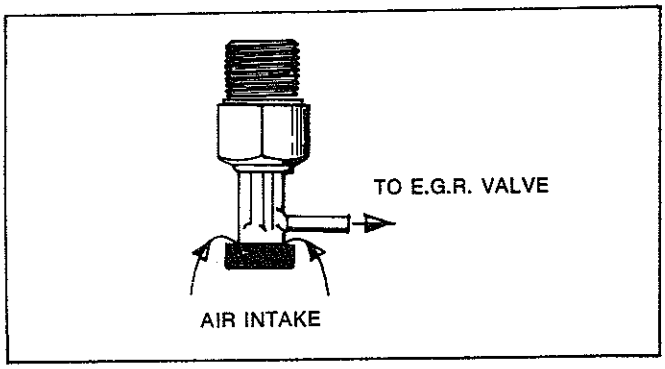


Fig. 19—Thermo valve

Exhaust Gas Recirculation (EGR) Valve Test

(1) Warm up engine to normal operating temperature and set the engine speed to 3000 to 3200 r.p.m.

(2) Disconnect the EGR valve vacuum supply hose, the diaphragm should lower.

(3) Reconnect the hose and the diaphragm should rise.

(4) The valve is satisfactory if it operates in the above manner.

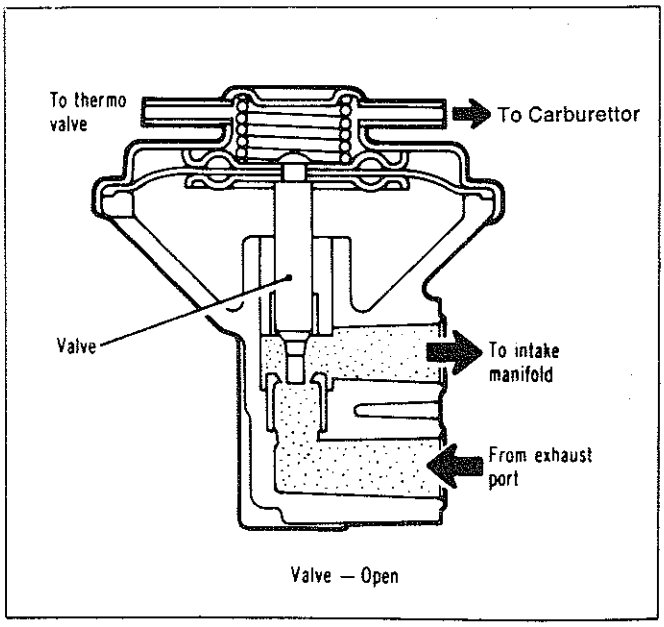


Fig. 20—EGR valve

Reverse Flush Cooling System

The use of a flushing tool is recommended for this operation.

(1) Remove drain plugs or open drain taps in the radiator and cylinder block.

(2) Disconnect the hoses from the radiator, engine and the water pump, then remove the thermostat and re-install the housing.

(3) Connect the flushing gun as described in the manufacturer's instructions and proceed to flush both the cylinder block, radiator and heater.

(4) Ensure that the water is clear at the drain outlets at the conclusion of the flushing procedures. Then re-install the thermostat (test if necessary), the radiator hoses and then refill the cooling system.

(5) Use demineralized or rainwater when refilling the cooling system, adding the correct amount of corrosion inhibitor (or antifreeze).

(6) Ensure all leaves, dust, insects, etc. are cleaned from the radiator core.

Power Brake Booster Hose

Inspect hose for evidence of heat and mechanical damage, hard and brittle rubber, tears, cuts, abrasion and excessive swelling.

Inspect hose clamps to make sure they are secure and no leaks are present.

Clutch Cable Adjustment

Adjust clutch cable by withdrawing the outer cable from the tube, where it enters the dash panel. Ensure the clutch pedal is against its stop and that all inner cable slack is removed. The gap between the cable adjusting nut/circlip and dash panel tube should be as specified.

Cable Lubrication

Lubricate the inner cable, at both ends, where it enters the outer cable and where it connects to the clutch pedal and release bearing shaft lever.

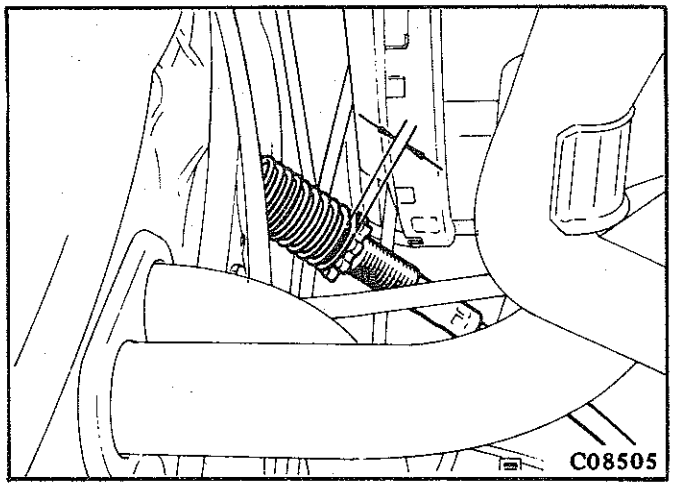


Fig. 21—Adjusting clutch cable

Refrigerant Level (Air-conditioned Models)

The refrigerant level is checked at the receiver/drier.

NOTE: While the engine hood is up, hot air from the engine compartment should be deflected away from the cowl air inlet. If not the refrigerant could foam, even when the system is fully charged.

The check consists of viewing the sight glass in the receiver/drier with the air conditioning controls set on maximum A/c.

Freedom of foam bubbles in the sight glass indicates that the refrigerant level is within specifications.

Should bubbles be present, the refrigerant level is low and a complete test for leaks should be carried out before refrigerant is added to the system.

UNDER VEHICLE OPERATIONS:

Engine Oil and Filter Changes

Regular oil changing is essential if engine life is not to be considerably curtailed.

Under normal operating conditions (i.e. good roads in temperate climates), the engine oil and filter should be renewed in accordance with the Lubrication and Maintenance Schedule. However, there are certain instances where this should be done more frequently, some of these are as follows:

(1) Consistent stop/start driving or running at continual low engine speeds.

(2) Operating in cold weather, especially when appreciable idling is involved.

(3) Short trips of less than 15 km.

(4) Operating in extremely dusty areas.

(5) When 4 months has expired before the specified kilometres have been reached.

Drain and Refill

Draining the oil is best done when the engine is warm as the oil will flow more easily.

IMPORTANT: Always use fresh lubricant of the recommended grade for refilling purposes.

Renew Oil Filter

(1) Unscrew filter and discard.

(2) Wipe clean the filter base on the engine block and inspect the gasket contact surface and attaching threads.

(3) Lubricate the gasket and threads of the new filter with clean engine oil.

(4) Install the filter by hand until finger tight.

IMPORTANT: Do not use tools for fitting the filter.

(5) Tighten the filter, by hand, the number of turns indicated on the replacement filter so that an effective oil tight seal is obtained.

(6) Run the engine for a short time and check for leaks.

(7) The filter holds a quantity of oil and the level in the oil pan should be checked and topped up if necessary.

Manual Transmission

With the vehicle standing on a level surface; clean the area around the filler plug. Remove plug, the lubricant level should be up to the bottom of the filler plug hole. Top up with the specified lubricant if necessary and replace plug.

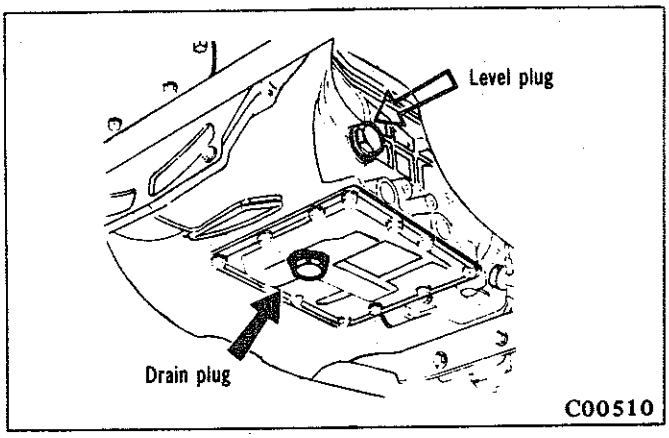


Fig. 22—Mitsubishi manual transmission drain and level plug

NOTE: If top-up is necessary, inspect all seals for leakage.

Rear Axle

The rear axle lubricant level should be at the bottom of the filler plug hole.

NOTE: If top-up is necessary, inspect all seals for leakage.

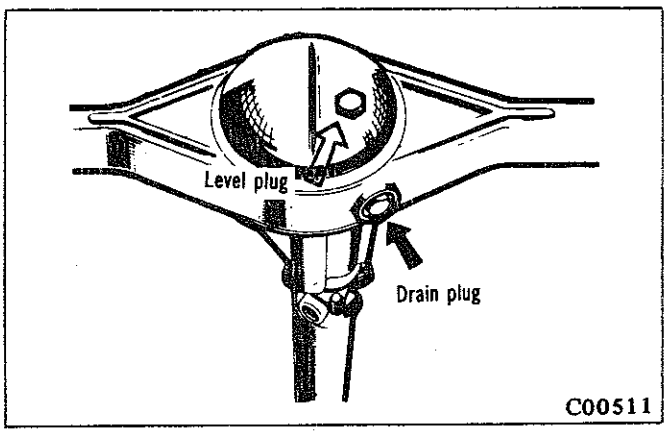


Fig. 23—Mitsubishi rear axle drain and level plug

Fluid Leaks

The importance of locating fuel, water or oil leaks regardless of whether they are small or large plays a vital part in the safety of the vehicle and more importantly the vehicle's occupants.

Do not assume that a slight weep is of little or no consequence.

Park Brake Lubrication

From under the vehicle lubricate parking brake cable and all swivel and anchorage points with the specified grease.

Gear Shift Lubrication

The gear shift linkage should be checked for smoothness of operation, and if necessary lubricated to achieve this condition.

Universal Joints

Check universal joint seals for leakage or damage and joint for excessive free play. Replace universal joint if defective.

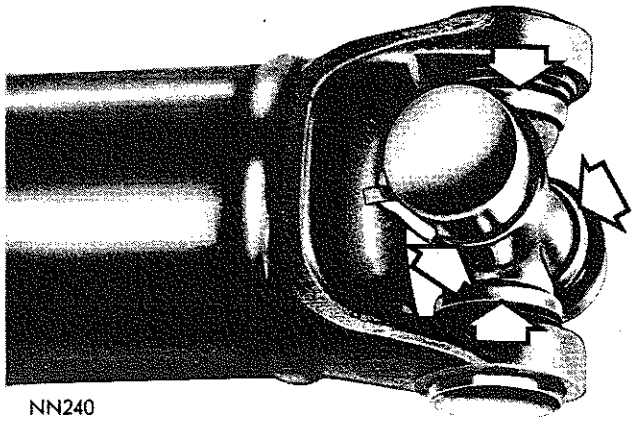


Fig. 24—Universal joint seal locations

Automatic Transmission

Fluid and filter changes or band adjustment are not required for normal usage. Severe usage as defined below requires the fluid and filter be changed and bands adjusted every 48,000 kilometres.

- More than 50% operation in heavy city traffic during hot weather.
- Commercial type operation, i.e. short trips or prolonged idling.
- Trailer towing.
- Operation in extremely dusty or sandy terrain.

Torqueflite MA904A

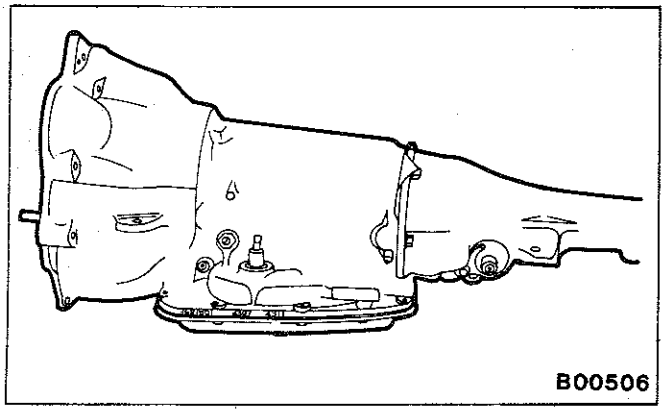


Fig. 25—Torqueflite MA904 A automatic transmission

NOTE: Chrysler recommend Dexron ® Automatic Transmission Fluid, having a "B" classification number, for use in vehicles equipped with an automatic transmission.

(1) Drain fluid from transmission by loosening the transmission oil pan bolts and tap with a soft mallet to break it loose, permitting the fluid to drain.

(2) Remove oil pan. Remove dacron filter and discard. Clean oil pan.

(3) Adjust **kickdown band** adjusting screw on the left side of the transmission as follows:

(3.1) Loosen lock nut and back off approximately five turns. Test adjusting screw free turning in the transmission case.

(3.2) Using a torque wrench with adaptor E1295, tighten band adjusting screw to 5 Nm (48 lbs. in.). If adaptor is not used, tighten adjusting screw to 8 Nm (72 lbs. in.) which is the true torque.

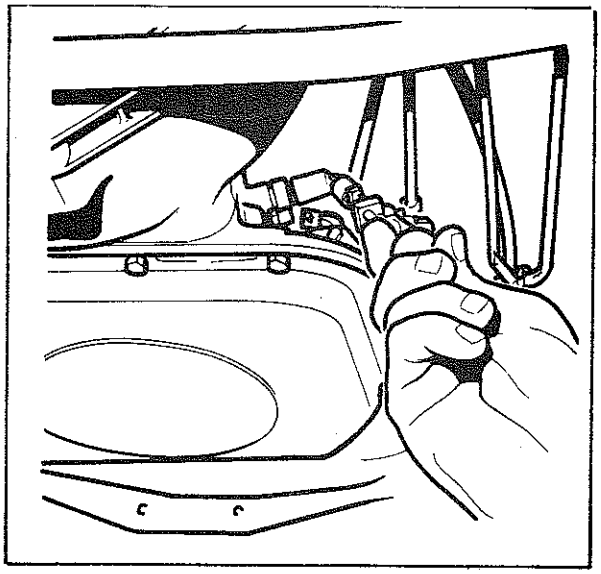


Fig. 26—Adjusting kickdown band

(3.3) Back off adjusting screw 3 turns (trans. part no. 4028427) and 3,5 turns (trans. part nos. 4028851, 4130174 and 4130795) from 8 Nm (72 lbs. in.). Hold adjusting screw in this position and tighten lock nut to 47 Nm (35 lbs. ft.).

(4) Adjust **low/reverse band** adjusting screw located inside the transmission.

(4.1) Loosen adjusting screw locknut and back off nut approximately five turns. Test adjusting screw for free turning in the lever.

(4.2) Using a torque wrench with an allen key adaptor, tighten band adjusting screw to 4,5 Nm (41 lbs. in.). Back off adjusting screw seven and a half (7,5) turns and tighten lock nut to 41 Nm (30 lbs. ft.).

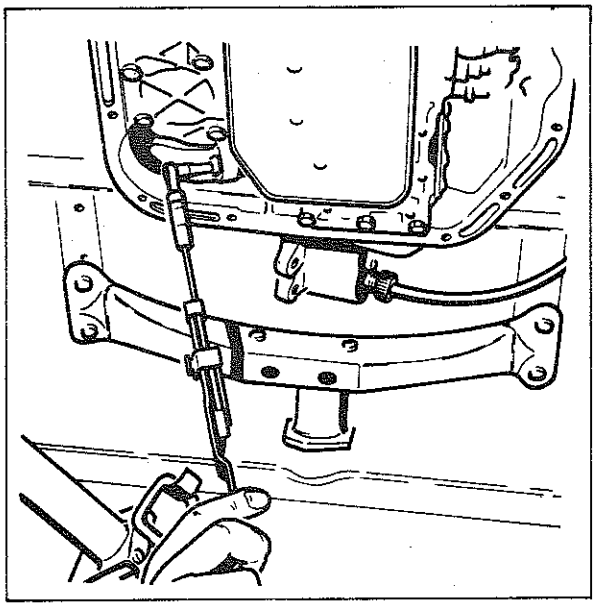


Fig. 27—Adjusting low/reverse band

(5) Install new dacron filter and refit oil pan, using a new gasket, tighten screws evenly and refill to the correct level with the specified transmission fluid.

(6) Check that starting motor operates only in positions "P" and "N".

(7) Check that reverse lights operate in position "R".

(8) Adjust the **throttle control rod** as follows:

NOTE: Before carrying out the throttle control rod adjustment ensure that the accelerator cable and engine idle speed adjustments are set to specification.

(8.1) Loosen the bolt connecting rods B and C (Fig. 28).

(8.2) Position rod A, or the transmission throttle lever fully forward (the stop is within the transmission).

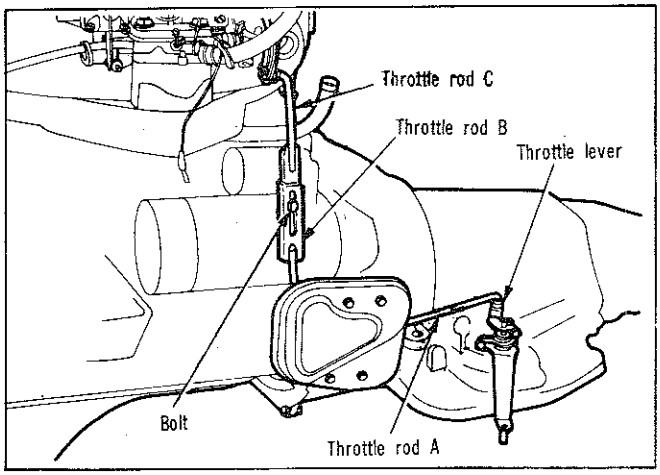


Fig. 28—Transmission throttle linkage adjustment (MA904 A)

(8.3) Position rod C against the carburettor idle stop, ensuring that the automatic choke is fully released. Tighten the bolt connecting rods B and C.

Borg Warner Model 35

At the scheduled intervals, change the fluid, clean the fluid filter screen and adjust as outlined.

NOTE: Chrysler recommend Dexron ® Automatic Transmission Fluid, having a "B" classification number, for use in vehicles equipped with an automatic transmission.

(1) Drain fluid from transmission by removing the oil pan drain plug. If the transmission is not fitted with a drain plug, loosen all oil pan bolts and tap pan flange with a soft mallet to break it loose, permitting the fluid to drain.

(2) Remove oil pan. Remove oil pump pick-up screen, clean and replace. Clean oil pan.

(3) Adjust **kickdown (front) band** adjusting screw from within the transmission as follows:

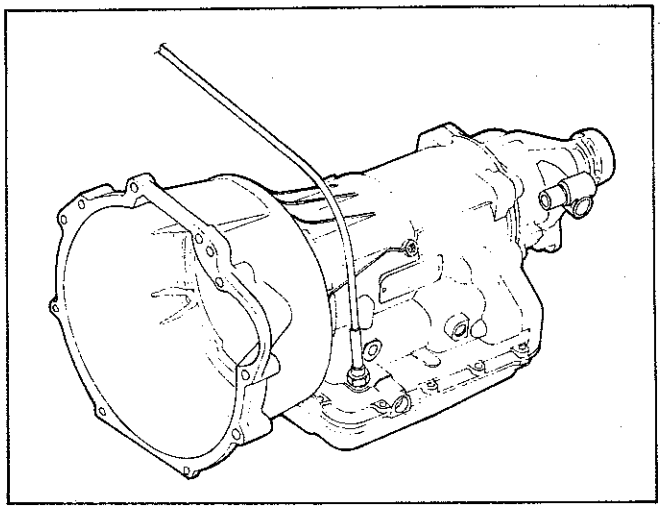


Fig. 29—Borg Warner model 35 automatic transmission

(3.1) Loosen adjusting screw lock nut and back off the nut five (5) turns (check screw for free rotation in lever).

(3.2) Lift the servo lever away from the servo piston and insert Tool E1282 front band spacer gauge 6,35 mm (0.250") between the adjusting screw and the servo piston pin.

(3.3) Tighten adjusting screw to 1,1 Nm (10 lbs. in.) torque.

(3.4) Tighten lock nut to 20-27 Nm (15-20 lbs. ft.) torque while maintaining screw position.

(3.5) Withdraw the gauge tool.

NOTE: Special Tool E1282 6,35 mm (0.250") represents four (4) back off turns, exactly, if tool is not available.

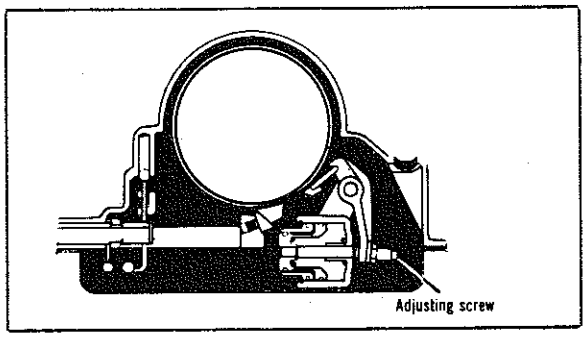


Fig. 30—Adjusting kickdown (front) band

(4) Adjust **low/reverse band** adjusting screw, located centrally in the right side of the transmission case, as follows:

(4.1) Loosen the adjusting screw lock nut and back off nut several turns (check screw for free rotation in case).

(4.2) Tighten the adjustment to 6,8 Nm (60 lbs. in.) using Tool No. E1294-1 and the torque wrench.

(4.3) Back off the adjusting screw three quarters (¾) of a turn and tighten the lock nut to 34 to 40 Nm (25 to 30 lbs. ft.) torque.

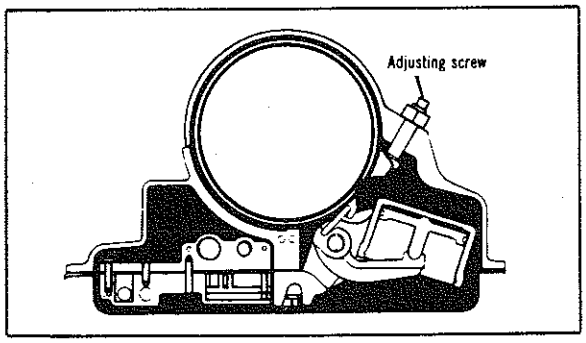


Fig. 31—Adjusting low/reverse band

(5) Install oil pan using a new gasket, tighten screws evenly and refill to the correct level with the specified transmission fluid.

(6) Check that starting motor operates only in positions "P" and "N".

(7) Check that reverse lights operate in position "R".

(8) Adjust the **transmission throttle control** cable as follows:

NOTE: Before carrying out the throttle control cable adjustment ensure that the accelerator cable and engine idle speed adjustments are set to specification.

(8.1) Apply parking brakes fully and position wheel chocks.

(8.2) Start engine and recheck idle speed when normal operating temperature is reached.

(8.3) Stop engine (for safety reasons). Adjust outer cable so that the cable crimped sleeve (on original cable only) just contacts the abutment.

(8.4) Connect tachometer to read engine r.p.m.

(8.5) Install a hydraulic gauge, Tool No. E21C65A to read line pressure. The gauge tapping point is located at the rear of the transmission housing above the oil pan mounting flange.

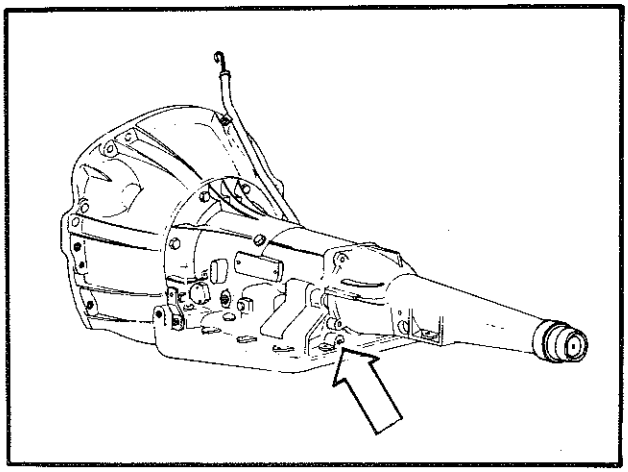


Fig. 32—Line pressure tapping (typical)

(8.6) Start the engine and select "D" drive range (brakes fully applied).

(8.7) Note the engine r.p.m. and the line pressure with the transmission at operating temperature. The line pressure should be 420 to 520 kPa (60 to 75 p.s.i.).

(8.8) Use the accelerator pedal to increase the engine speed 500 r.p.m. and note the increase in transmission pressure. The increase in pressure must be a minimum of 70 kPa (10 p.s.i.). It may be necessary to lightly shake the transmission throttle cable outer casing during the operation to overcome drag.

(8.9) To increase the pressure rise, turn the cable adjusting nuts to widen the gap between the end of the outer cable casing and the crimp sleeve on the inner cable. To decrease the pressure rise, close the gap between the end of the outer cable casing and the crimp sleeve. **Remove the cable crimp sleeve if correct adjustment cannot be achieved.** After setting, fit a new crimp sleeve.

NOTE: Duration of test must be limited to a few seconds to prevent transmission overheating. Select "N" Neutral and return engine to idle speed whilst making necessary cable adjustments.

SUSPENSION, STEERING AND BRAKES

Steering and Suspension Ball Joints

The ball joints of the steering linkage use resin-made bearings and require no lubrication. However, periodic inspections should be carried out to check the ball joints and seals.

The suspension ball joints have been pre-packed with a special grease before leaving the factory and are 'filled for life'. Check the suspension ball joint seals at the specified intervals for good condition.

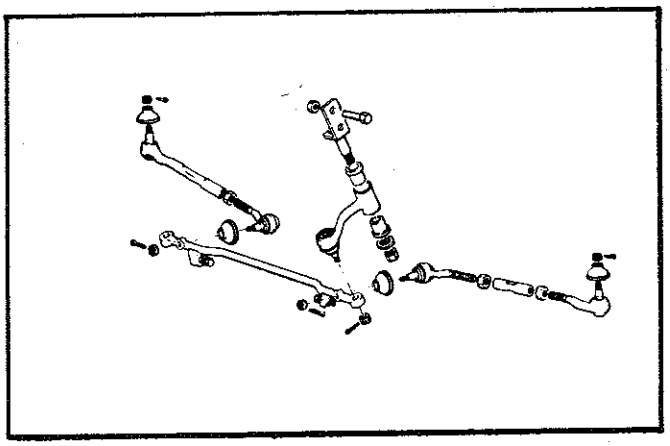


Fig. 33—Steering ball joints

Rear Suspension

Inspect linkages and bushings for wear and damage. Check all fasteners for security and shock absorbers for leaks.

Front Wheel Bearing Adjustment

At the specified intervals inspect the front wheel bearings for adjustment and presence of lubricant.

(1) Raise the front wheels clear of the floor and support the vehicle on safety stands.

(2) Remove the dust cap, split pin and lock cap.

(3) Inspect for presence and condition of lubricant (clean and repack if necessary).

(4) Tighten wheel bearing adjustment nut to 8 Nm (71 lbs. in.) using a tension wrench and rotating the wheel while tightening the nut.

(5) Position the nut lock on the adjusting nut so that one pair of split pin holes align with the pin hole in the spindle.

(6) Back off adjusting nut and nut lock assembly one hole and install split pin.

(7) Check end float by moving the wheel in and out axially on the spindle.

(8) Refit the dust cap and hub cap. Lower the vehicle to the ground.

Front Wheel Bearing Lubrication

(1) Loosen the front wheel retaining nuts, raise the front wheels clear of the ground and support the vehicle on safety stands.

(2) Mark the position of the front wheel to hub and remove front wheels.

(3) Remove the two bolts retaining the brake caliper to the adapter plate and suspension strut. **Do not loosen the bolts that retain the two caliper halves (except PBR type).** On PBR type remove the joining bolts and remove the pad support assembly.

NOTE: It is not necessary to disconnect the brake hose at the caliper. Support caliper, do not allow it to be suspended by the brake hose.

(5) Remove split pin, lock cap, nut, washer and remove bearing and disc assembly.

(6) Remove inner bearing oil seal and bearings. Clean bearings and hub with X55 or similar solvent.

(7) Inspect bearings for wear and damage.

(8) Repack bearings and hub with the specified grease, install bearings in hub and fit new inner bearing oil seal.

Apply a light smear of grease to the seal lip.

(9) Refit the hub assembly to the strut spindle being careful to avoid damaging the oil seal.

(10) Fit the outer bearing, washer and nut, adjust the bearings as previously described in front wheel bearing adjustment.

(11) Refit caliper, tighten mounting bolts to specification.

(12) If necessary reset the disc pads sufficiently apart to clear the disc. Slide the brake caliper over the disc, ensuring the brake hose is not twisted, install the caliper bolts and tighten to specification.

(13) Apply the foot brake and check that the hub rotates by hand when the brake is released.

(14) Refit the wheel in the previously marked position to retain wheel balance.

(15) Lower vehicle and tighten wheel nuts to specified torque in two stages using a diagonal sequence.

CAUTION: Always apply brake pedal before moving the vehicle to ensure that brake pads are correctly seated.

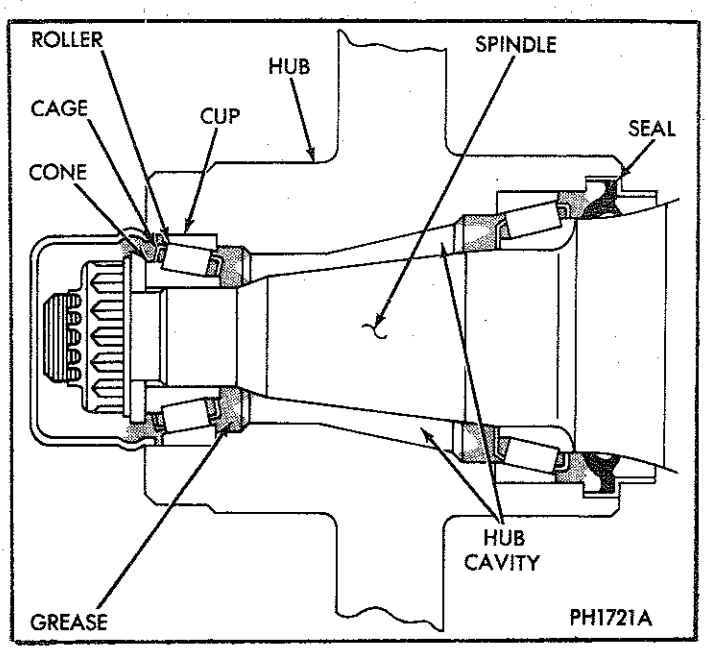


Fig. 34—Front wheel bearing section

Tyre Inspection

An inspection of tyres, together with information as to locality of vehicle operation will usually indicate abnormal wear due to operating conditions such as mechanical faults, which should be corrected. Various types of abnormal tyre wear with their causes and corrective actions are shown in Fig. 35.

Under inflation — For the maximum results in stability and handling, ride quality and tyre life, tyre inflation pressures should not be allowed to go below the recommended inflation pressures (indicated on tyre placard on right hand door pillar).

Under inflation results in much faster wear of the shoulders than the centre of the tread.

Over inflation — By maintaining specified tyre inflation pressure (indicated on tyre placard on right hand door pillar), even wear will take place over entire tread surface. Over inflation causes faster wear at the centre of the tread and the possibility of cuts, punctures and fractures.

Cracked Tread — This is the result of alternate under and over inflation, exceeding the recommended full rated load, high temperature or high speed driving.

Excessive Camber Wear — Excessive wheel camber, either positive or negative causes the tyre to run at an angle to the road. One side of the tread wears more than the other. Camber is not adjustable, thus incorrect camber indicates faulty or damaged suspension components which will require replacement.

Toe-in or Toe-out Tread wear — Excessive toe-in or toe-out causes wear on the edges of the front tyres. An excessive amount of either toe-in or toe-out actually drags the tyre instead of letting the tyre roll true. This wear condition will usually produce a tapered or feathered edge on the outside ribs. Adjust the toe-in to specifications.

Bald Spot or Scalloped Tread Wear — Scalloping and bald spotting of tyres is associated with unbalanced conditions, weak or inoperative shock absorbers, worn suspension and or continuous high speed operation.

Regardless of the cause of bald spotting or scalloped tread wear on either front tyre, no alignment, replacement shock absorber or balance job can prevent future excessive wear of the spots if the tyre is not rotated to a different location. Once a front tyre acquires flat or scalloped spots additional wear will continue at a rapid rate if left uncorrected.

To correct this condition, tyre rotation as well as rectification of the suspension fault and wheel balance are necessary. An unevenly worn tyre may partially true itself upon a rear wheel.

Tread Wear Indicators — Driving potential, cornering and braking traction decreases as tyres wear. As tread depth decreases the tyres have less resistance to road hazards and are more likely to hydroplane on wet road surfaces.

Tread wear indicators are provided to assist in determining when tyres should be replaced. These indicators are moulded in to the bottom of the tread grooves and will appear as approximately 19 mm ($\frac{3}{4}$") wide bands when the tread depth has been reduced to replacement level. Tyre replacement due to tread wear is necessary when these indicators appear in two or more adjacent grooves or a localised worn spot eliminates all the tread.

Toe-in Adjustment

Toe-in must be checked with the steering centralised. Ensure that the toe-in dimension is as specified.

NOTE: The right hand tie-rod is not adjustable. To adjust the toe-in set the right hand wheel to the specified toe-in then adjust the left hand wheel to specification.

(1) To adjust the toe-in, loosen the tie-rod lock nuts.

(2) By rotating the tie-rods adjust the toe-in to specification.

(3) Tighten the tie-rod lock nuts.

Steering Box Free Play

(1) Place the steering wheel in the straight ahead position. If the steering wheel play exceeds 25 mm (1"), adjust the steering gear cross shaft to mainshaft backlash.

(2) Steering effort, measured at the steering wheel circumference with the front wheels off the ground, should be as detailed in specifications.

Front Suspension

Inspect all bushings, strut assembly, steering unit and suspension seals for damage or leaks. Check all fasteners for security and move steering from lock to lock checking for smoothness of operation.

Brake Lines

Inspection of brake tubing and flexible hoses should be included in all brake service operations and at the scheduled Lubrication and Maintenance interval. The flexible hoses should be checked for correct length, severe surface cracking, pulling, scuffing or worn spots.

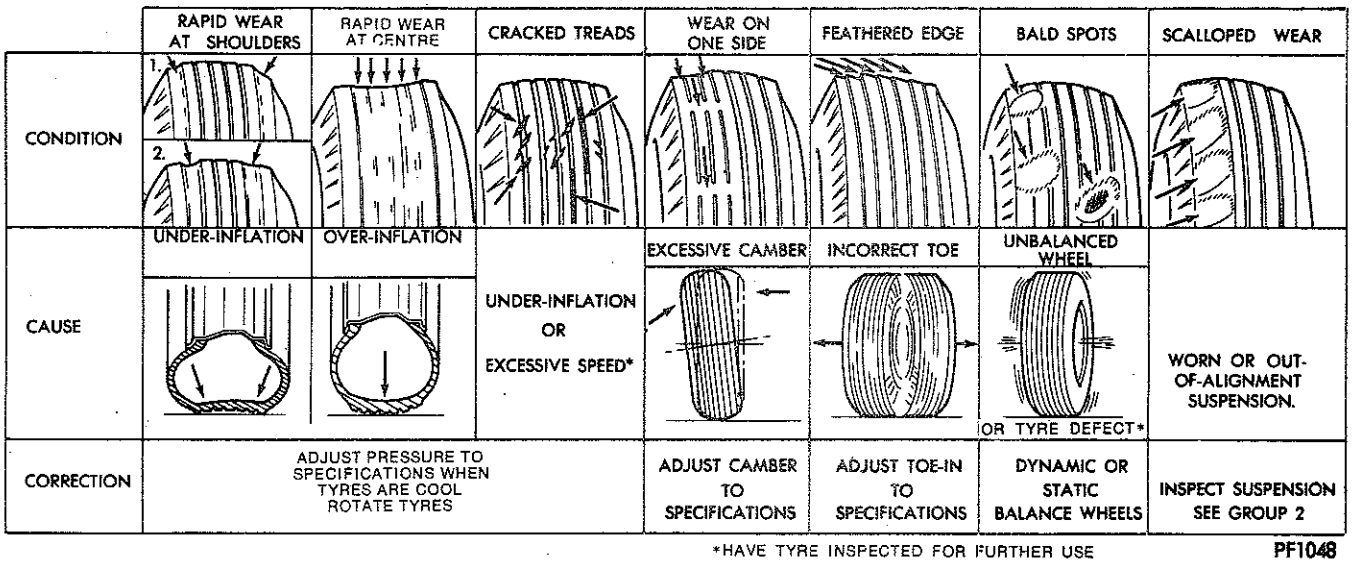


Fig. 35—Tyre wear patterns

NOTE: Should the fabric casing of the hose be exposed by cracks or abrasions in the rubber hose cover, the cause should be corrected and the hose should be replaced. Eventual deterioration of the hose can take place with possible burst failure.

Faulty installation can cause twisting, wheel, tyre, suspension or body interferences.

Brake Pads and Linings

CAUTION: The dangers to health caused by inhalation of brake lining dust must always be borne in mind. Never blow dust away by using compressed air — the dust cloud thus created could cause permanent damage to your lungs. Using a brush is little better.
The safest method is to remove the dust with a vacuum brush.

Front Disc Pad Inspection (and rear disc where equipped)

Remove wheels and inspect pads as follows:

(1) Loosen wheel retaining nuts, raise the vehicle and place on safety jacks.

(2) Mark the position of the wheel to hub and then remove the wheel.

(3) Inspect pad lining thickness and replace the pads if any part of the lining is below the minimum specification, Refer Fig. 36. To replace pads, refer to Group 5 Brakes for the correct procedure.

(4) Replace wheel in the previously marked position and tighten nuts, raise vehicle, remove safety jacks and lower to floor.

(5) Torque wheel nuts to specifications in two stages using a diagonal sequence.

Rear Brake Lining Inspection

Remove the rear wheels and brake drums as follows:

(1) Loosen rear wheel retaining nuts, raise the rear of the vehicle and place safety jacks under axle.

(2) Mark the position of the rear wheel to axle shaft and remove the wheel.

(3) Remove brake drum.

(4) Clean linings and support plate assembly. Check the shoe web, park brake strut, adjusting lever contact and pivot points for wear or damage. Inspect lining thickness and condition, replace if necessary as outlined in Group 5 Brakes. Linings that are loose, damaged or badly contaminated with oil or brake fluid must be replaced after rectification of the cause.

(5) Install brake drum.

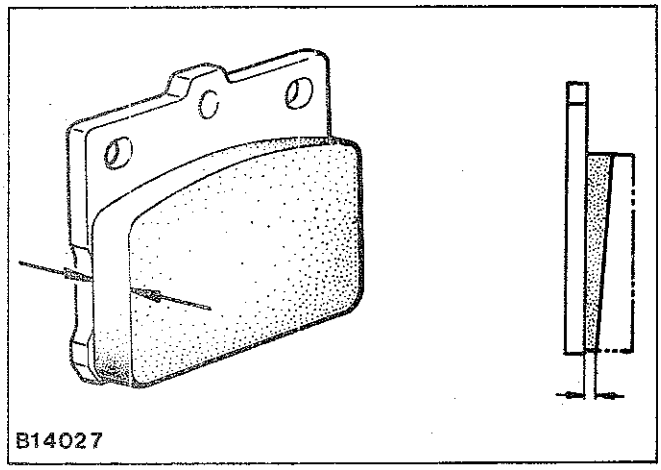


Fig. 36—Checking disc pads for wear (imported type)

(6) Refit wheel in previously marked position, lower vehicle to floor and tighten nuts to specified torque in two stages using a diagonal sequence.

(7) Adjust brakes by applying brake pedal several times or until normal brake pedal is achieved.

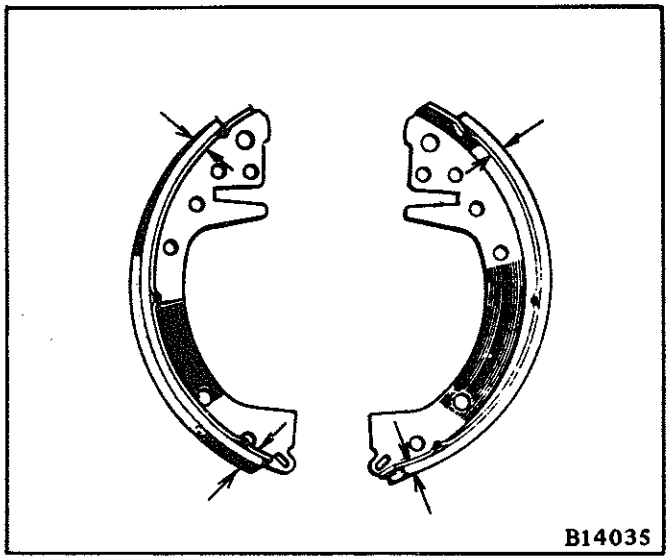


Fig. 37—Checking drum brake shoes for wear (imported type)

Parking Brake Adjustment (Imported Drum Type)

Check if the parking brake lever has the standard amount of stroke (5 to 7 notches). Adjust the stroke if necessary as follows:

(1) Release the parking brake lever fully.

(2) Adjust the extension lever-to-stopper clearance to the specified dimension by loosening the cable adjusting nut and then positioning left hand cable to set the specified clearance.

(3) Adjust the right hand cable clearance by means of the adjusting nut and then tighten the lock nut.

NOTE: After the adjustment has been made, the parking brake lever must have the specified stroke. If the stroke is larger than specified the rear brake automatic adjustors are faulty and must be repaired.

Park Brake Adjustment (Imported Disc Type)

(1) Release the parking brake lever fully and depress the brake pedal several times.

(2) Loosen the cable adjusting nut located at the centre of the rear axle housing.

(3) Move the rubber hanger to the right to remove any "slack" in the left hand cable.

(4) Adjust the right hand cable by means of the adjusting nut and then tighten the lock nut.

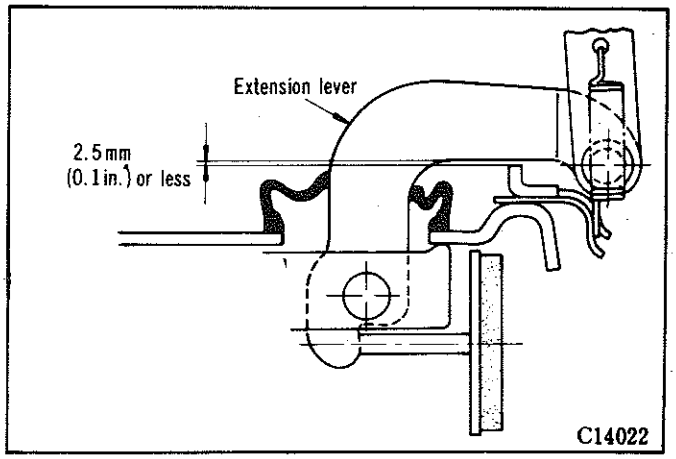


Fig. 38—Parking brake adjustment (drum type) (imported type)

GIRLOCK

Parking Brake Adjustment (Drum Type)

Check if the parking brake lever has the standard amount of stroke (5 to 7 notches). Adjust the stroke if necessary as follows:

(1) Release the parking brake lever fully.

(2) Loosen the cable adjusting nuts located at the centre of the rear axle housing.

(3) Move the rubber hanger to the right to remove any "slack" in the left hand cable.

(4) Adjust the right hand cable by means of the adjusting nut and then tighten the lock nut **ensuring that the lever stops are against the backing plates.**

(5) Check that the parking brake lever stroke is within 5 to 7 notches, if not, readjust the cable.

Brake Fluid Replacement

During the life of the vehicle, brake fluid will progressively degenerate as it absorbs contamination from the atmosphere, e.g. moisture. If this condition continues indefinitely brake system failure can occur.

To ensure that the brake fluid in the hydraulic system is maintained in a good, safe operating condition, the system must be drained and flushed using the specified brake fluid. The intervals recommended in the Lubrication and Maintenance Schedule should be strictly followed.

It cannot be emphasised too strongly that the replacement brake fluid should be taken from a normally sealed container. Brake fluid containers must have an effective seal to avoid atmospheric contamination. When changing fluid, bleeding the brake system or simply just topping up, absolute cleanliness must be observed.

Bleeding the Brake System — Brake Fluid Replacement

Pressure bleeding is the preferred method, however, the brakes can be bled manually with the aid of an assistant.

Clean all dirt and foreign material from the master cylinder to prevent any dirt from falling into the reservoir when the cap is removed.

Pressure Bleeding System

(1) Attach the pressure bleeder to the master cylinder reservoir and open pressurised fluid tap.

(2) Clean the brake bleed valve of the right rear wheel cylinder (rear drum models) left rear cylinder (rear disc models) and attach a transparent brake bleed hose to the bleeder valve, insert the other end of the bleeder hose into a clean glass jar partly filled with brake fluid.

NOTE: Rear drum brake models are not fitted with a brake bleeder on the left rear wheel.

(3) With 275 kPa (40 p.s.i.) (maximum) air pressure in bleeder tank (or master cylinder pressure pumped up by pedal application), open the bleeder valve with a spanner and permit fluid to enter the jar until all air has been expelled at the wheel cylinder. Tighten the bleed valve securely.

(4) Repeat procedure at right rear wheel (rear disc models) following with left front, then right front wheel in that order.

(5) When the system is completely flushed and bled, close the bleeder fluid pressure tap and remove the bleeder from the master cylinder reservoir.

(6) Fill the master cylinder reservoir to the correct level and replace the cover, ensuring the diaphragm gasket is correctly positioned and clean off any traces of spilt fluid with methylated spirits or suitable solvent.

Manual Bleeding System

(1) Clean the brake bleed valve of the right rear wheel cylinder (rear drum models), left rear cylinder (rear disc models) and attach a transparent brake bleed hose to the bleeder valve, insert the other end of the bleeder hose into a clean glass jar partly filled with brake fluid.

(2) With an assistant depressing the brake pedal and replenishing the brake fluid in the master cylinder, open the brake bleeder valve with a spanner approximately half a turn until the brake pedal bottoms to the floor. Close the bleeder valve and allow the brake pedal to return to the "up" position. Repeat this operation until the replacement fluid (free of air bubbles) is evident in the transparent bleed hose. Tighten the bleed valve securely.

NOTE: Ensure that the master cylinder reservoir is replenished with brake fluid throughout the bleeding operation.

(3) Repeat the bleeding procedure on the right rear wheel (rear disc models), left and right front wheels in that order.

(4) When the system is completely flushed, bled and the reservoir topped up to the correct level, replace the cover, ensuring the diaphragm gasket is correctly positioned and clean off any traces of spilt fluid with methylated spirits or suitable solvent.

NOTE: Always discard old brake fluid that has been bled from the system. Fluid drained during the bleeding operation may contain moisture or other contamination and MUST NOT be reused.

It is highly important to make sure the brake system is clean and tightly sealed when a brake fluid replacement job is completed.

BODY OPERATIONS

Doors

Lubricate hinges, torsion bar rollers and locks mechanism with engine oil, wiping off the excess with a cloth.

Lubricate the striker with stainless stick lubricant.

Engine Hood

Lubricate hinges and safety catch pivots with engine oil wiping off excess with a cloth.

Lubricate lock and striker with a smear of grease.

Deck Lid

Lubricate lock mechanism, hinges and torsion bar rollers with engine oil, wiping off excess with a cloth.

Lubricate the striker with stainless stick lubricant.

Front Seats

Apply a light smear of grease to the seat slide bearing surfaces and fore and aft adjusted mechanism. Apply a few drops of oil to the adjustment lever pivots.

NOTE: Ensure lubricant does not come in contact with the seat trim and floor coverings.

Instrument Panel Gauges

Check all instrumentation to ensure correct operation.

Lighting

Check all vehicle lighting including headlamps, headlamp dipping, turn signals, tail lights, park lights, reverse lights, stop lights, licence plate light, courtesy lights and instrument panel lights.

ROAD TEST

The road test is an important part of every scheduled service.

The test driver should be a competent person and should be able to adequately assess and report on the performance of the vehicle.

The road test should include acceleration and braking, gear selection (manual transmission), shift patterns (automatic transmission), operation of all vehicle lights, instruments and warning devices.

Above all else, if the owner has complained about a particular problem, the tester must be sure that the cause of the problem has been resolved to ensure the owner satisfaction.

Finally, the vehicle must be in a throughly clean condition for pick-up by the owner.

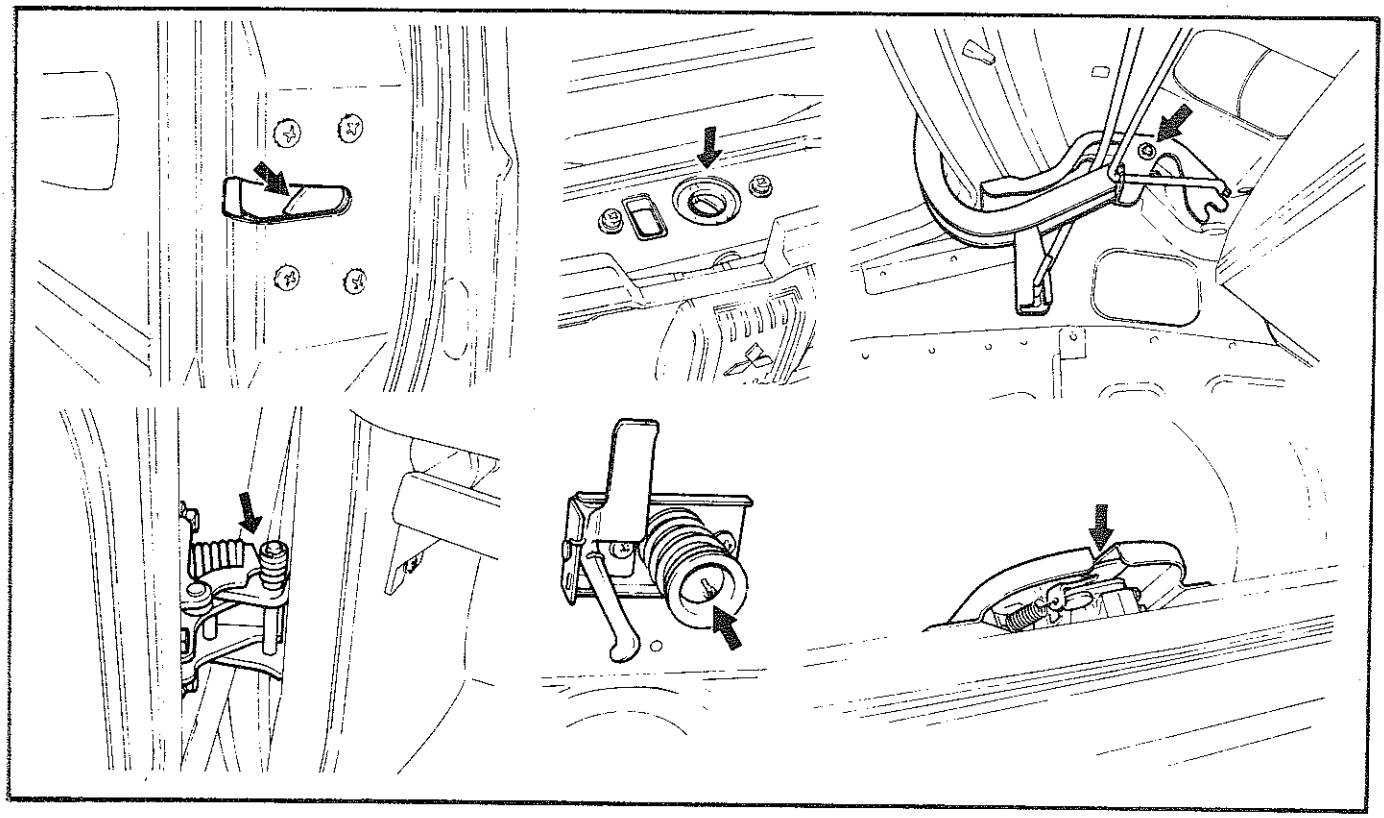


Fig. 39—Body lubrication points