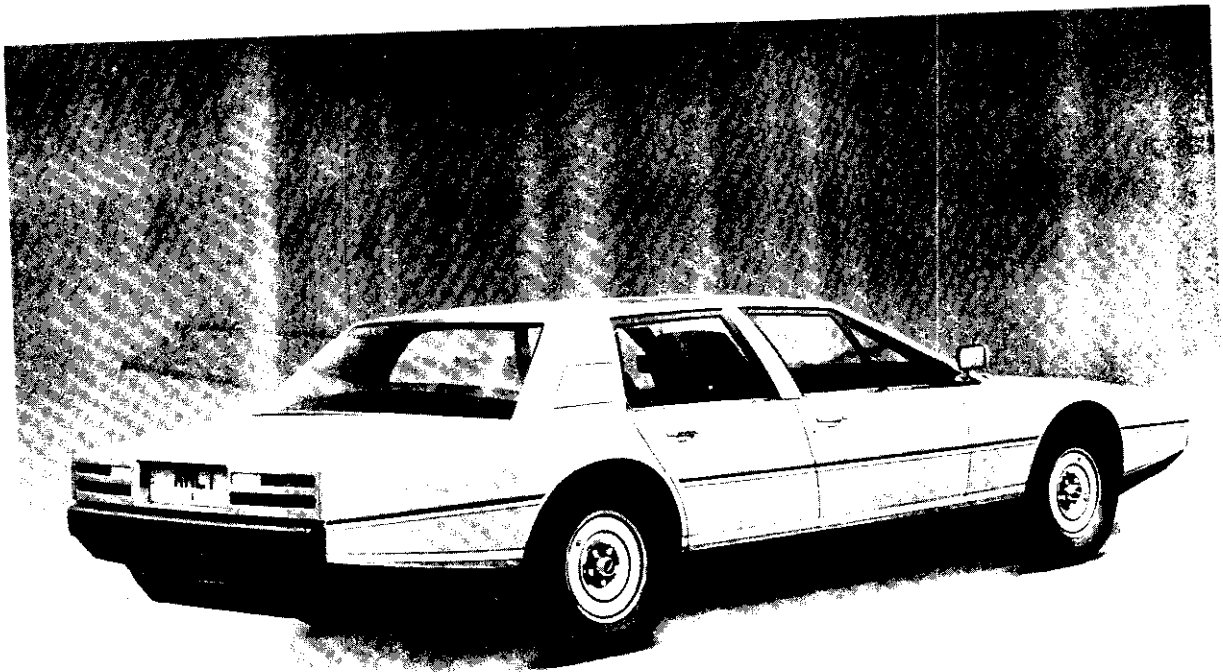
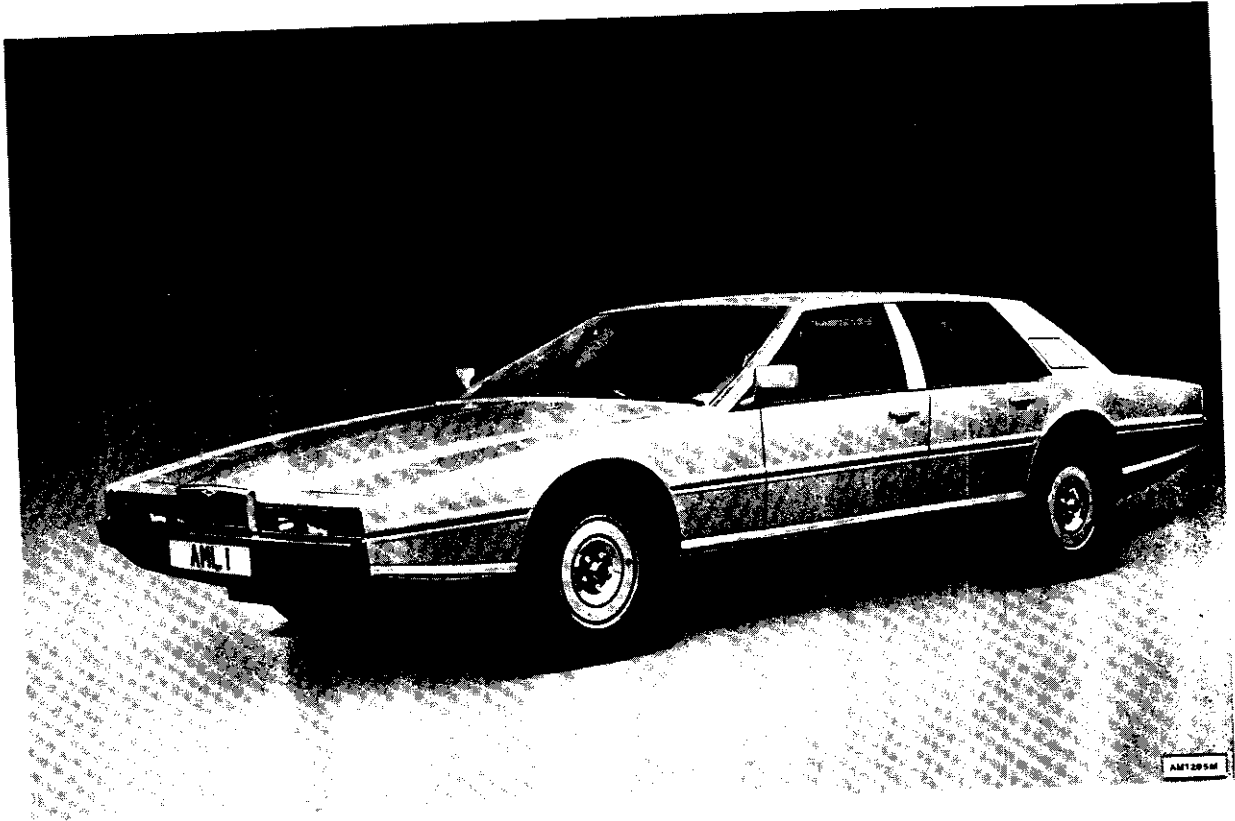






# LAGONDA









## FOREWORD

The purpose of this manual is to enable Aston Martin Lagonda distributors and dealers to carry out all necessary adjustments, overhauls and repairs to Lagonda cars.

The manual has been compiled on the assumption that repairers are in possession of normal garage equipment as well as any special tools which may be recommended for certain operations. In some instances, alternative methods may be detailed but it must be emphasised that these are to be used in emergency conditions only.

Since the policy of Aston Martin Lagonda Ltd., is one of continuous development, the Company reserves the right to alter specifications at any time without notice. For this reason it is impossible to guarantee the complete accuracy of the information contained in this manual for one specific car. It should be taken as being generally applicable to all cars manufactured under the common heading of 'Lagonda'.

The name 'Lagonda' is the registered trade mark of this product of the Company.

### **COPYRIGHT**

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## GENERAL INFORMATION

The Aston Martin Service Department is always pleased to help owners with any problems concerning their cars. The normal working hours of the Service Department are:-

Monday to Thursday: 8 to 12.30 — 1.30 to 4.15 p.m.  
Friday: 8 to 12.30 — 1.30 to 4.00 p.m.

However, Security Staff are always in attendance so that Customer's cars can be accepted at any time by prior arrangement.

Collection and delivery of cars can be undertaken from any point against a fixed, quoted charge. It is recommended that the Service Department is advised before delivering cars to the works, particularly when overhauls or extensive repairs are required.

### **SPECIAL SERVICE – OVERSEAS**

Owners who intend to take their cars abroad are advised to obtain from Aston Martin Lagonda Ltd., the up-to-date names and addresses of distributors and dealers in those countries which it is proposed to visit.

### **CONTINENTAL AND OWNER'S KITS**

These may be obtained from any distributor or dealer or from the Parts Department at Newport Pagnell. If possible, it is advisable to place the order for either of these kits a week or ten days before the proposed journey.

#### **The Continental Kit**

This consists of various replacement parts, such as a fuel pump, ignition components, water hoses, etc. and will be invoiced at the normal price for the composite parts. If the kit is returned complete at the end of the trip, 15% only will be charged to cover handling costs. Whatever parts have been used will be charged for at the normal price and a 15% handling charge will be made for the remainder. A credit note will be given for the balance of the parts which have been returned.

#### **The Owner's Kit**

This is sold as an outright purchase so that the owner may carry a small range of parts with him at all times.

### **QUICK SERVICE FOR REPLACEMENT PARTS ON THE CONTINENT**

If any owner experiences difficulty whilst travelling on the Continent, he should contact the main Aston Martin Distributor of the country he is visiting and if replacement parts are required, but not available from the distributor's stock, they will be obtained promptly.

Alternatively, the owner should contact either the distributor or dealer from whom he originally purchased the car or the Parts Department at Aston Martin Lagonda Ltd. Replacement parts can be sent by air mail immediately the order is received and they will be sent C.O.D. Time can be saved by having the part sent to the nearest airport for collection by the owner.



# PARTS

## REPLACEMENT

When parts are replaced on a car, it is essential that only genuine Aston Martin Lagonda items are used. Failure to observe this procedure may reduce or even destroy the safety and reliability of the car.

The vehicle warranty may also cease to be valid if parts are fitted which are not of Aston Martin Lagonda manufacture or recommendation. This is particularly applicable to items which are purchased when travelling abroad.

All instructions given in this manual regarding the fitting and adjustment of parts, including torque settings, must be strictly adhered to.

## ORDERING

When ordering parts, it is essential to provide the following information:-

1. The chassis and engine number.
2. The part number, where possible, or a complete description of the part.
3. Where there is a possibility of the part being similar, but not necessarily the same on either side of the car, please state right or left hand facing forward.  
(See note under 'Introduction' on page ix).
4. If a part number cannot be quoted or the part fully described, the original component should be sent to the Parts Department as a pattern. Damaged or broken parts which are sent as patterns will not be returned unless special instructions are received to this effect.



## TERMS OF BUSINESS

Work which has been specifically requested, either in correspondence or by personal contact at the Service Department Reception Office, will be carried out along the lines specified.

During this process, a thorough examination of that part of the car which is relative to the work which has been requested, or of the whole of the car if thought necessary, will be carried out. If, during this examination, it is found that further work is required, in addition to that which has been specified, a list of faults will be compiled and the contents conveyed by telephone to the owner for his approval before proceeding.

Should an owner decide against the completion of any work which is already in progress, a charge will be made for the time and labour already used and for any additional work which may be necessary to make the car roadworthy.

Instructions for adjustments, repairs or overhauls are accepted on the clear understanding that accounts are settled before or against the collection of a car.

### ACCOUNTS

Settlement of an account is strictly cash on collection unless a purchaser has arranged a deposit account.

Deposits will be held against the replacement parts demand of owners and will be repaid on request when the need for such provision is terminated.

### PRICES

Prices of replacement parts are subject to alteration without notice: all goods will be invoiced at the prices ruling at the time of despatch.

### SELLING CONDITIONS

Aston Martin Lagonda replacement parts are sold on the strict understanding that they are not displayed at any exhibition without the previous written consent of the Company.





# INTRODUCTION

The various components and systems of the car are dealt with section by section in the manual. The title of each of these sections is listed in the main contents page.

Sections are generally similar in layout of the information but may vary slightly in composition so that the system or components can be dealt with in the most easily-understood manner.

## **LEFT HAND AND RIGHT HAND**

References in the manual to left hand and right hand are made when viewed from the driver's seat. The sole exception is when crankshaft rotation is referred to as clockwise or anti-clockwise. This is viewed from the timing cover end of the engine, i.e. the front.





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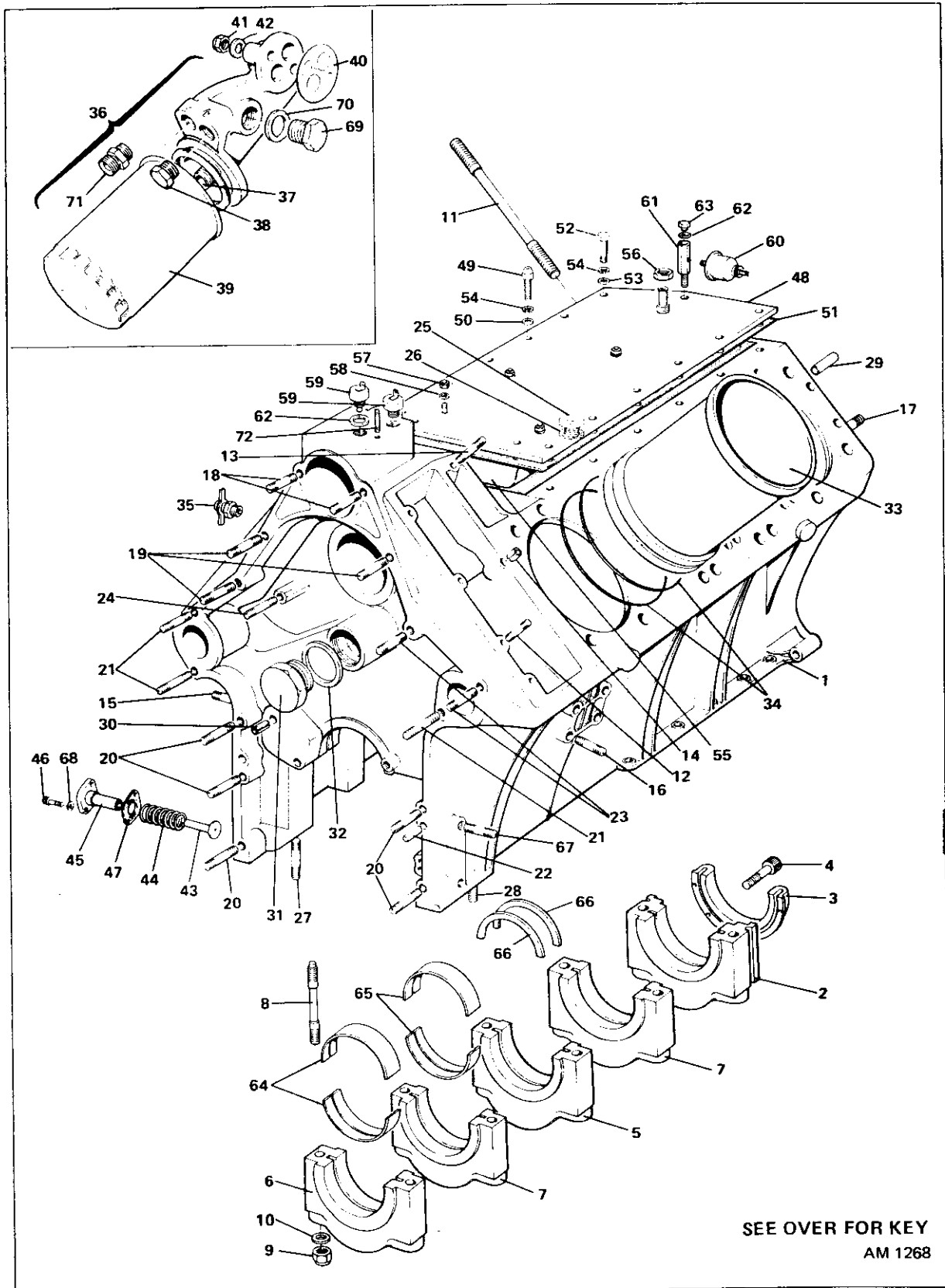


# Engine

1.1

## CYLINDER BLOCK

Fig. 1.1.1 Cylinder Block





# 1.1

# Engine

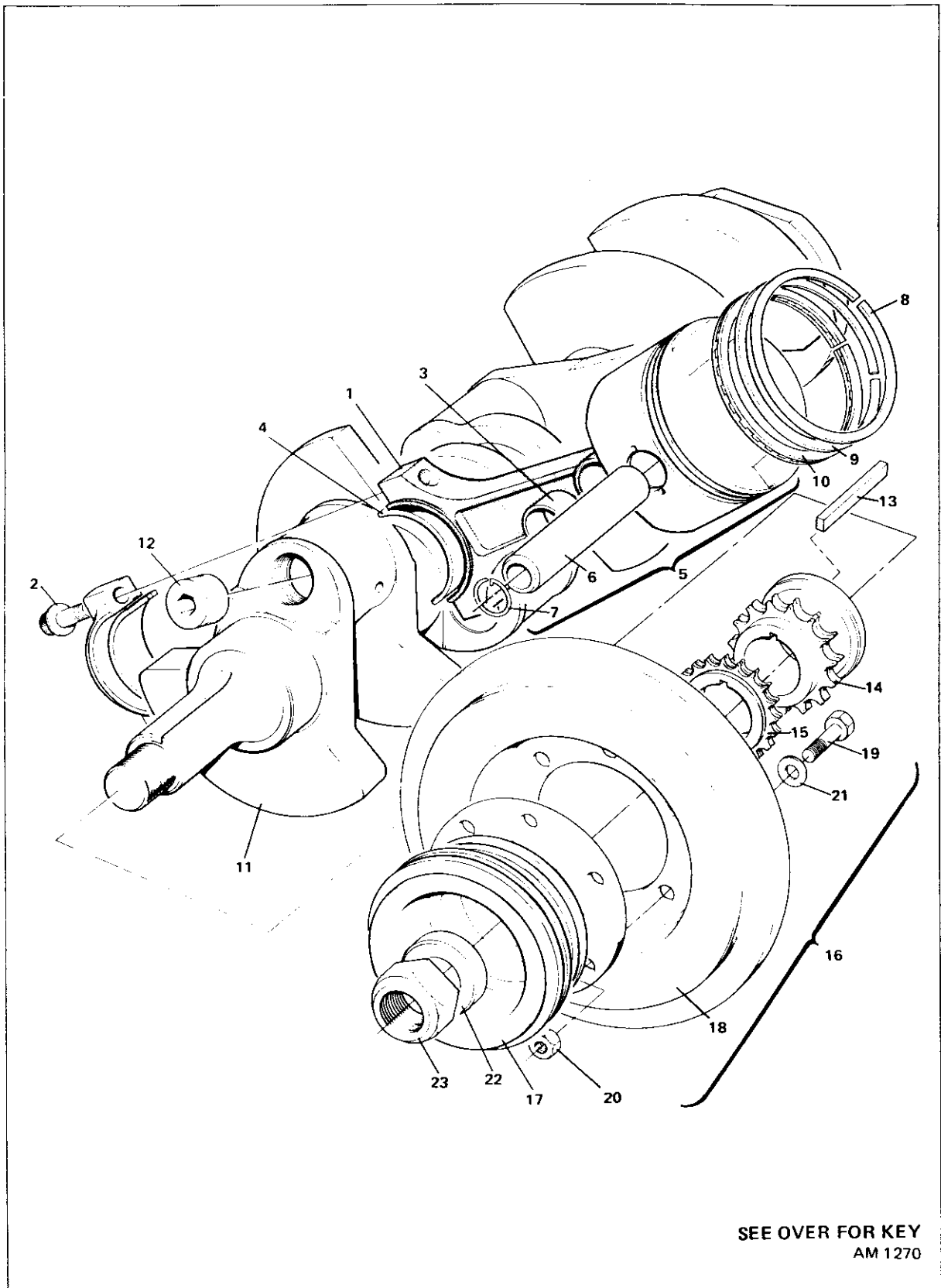
## CYLINDER BLOCK

### KEY TO FIG. 1.1.1

1	Cylinder block assembly, studded	59a	Water temp. sender
2	Main bearing cap, rear	60	Oil pressure sender unit
3	Rear bearing seal	61	Adaptor, oil pressure
4	Screw, socket button head	62	Seal
5	Main bearing cap, centre	63	Plug
6	Main bearing cap, front	64	Bearing shell front/centre/rear
7	Main bearing cap, intermediate	65	Bearing shell intermediate
8	Stud, main bearing	66	Thrust washer, top
9	Nut, Nyloc	67	Stud, steering pump
10	Washer, plain	68	Washer, spring
11	Stud, cylinder head	69	Plug, oil filter adaptor
12	Stud, cylinder head	70	Washer
13	Stud, cylinder head	71	Union restrictor
14	Ring dowel	72	Stud
15	Stud, oil filter adaptor		
16	Stud, engine mounting		
17	Stud, bell housing		
18	Stud, front cover		
19	Stud, front cover		
20	Stud, front cover		
21	Stud, front cover		
22	Dowel, front cover		
23	Stud, air-conditioning bracket/front cover		
24	Stud, timing chain rubbing strip		
25	Plug		
26	Washer		
27	Stud, oil pump, long		
28	Stud, oil pump, short		
29	Dowel		
30	Ring dowel		
31	Plug		
32	Washer, soft copper		
33	Cylinder linder		
34	Rubber "O" ring		
35	Water tap		
36	Assembly oil filter adaptor		
37	Adaptor, double ended		
38	Plug		
39	Filter assembly, lub. oil		
40	Gasket		
41	Nut		
42	Washer		
43	Relief valve		
44	Spring, relief valve		
45	Bush, relief valve		
46	Screw		
47	Joint, bush, oil relief valve		
48	Cradle plate, vacuum tank		
49	Stud, cradle plate		
50	Washer		
51	Gasket, cradle plate		
52	Bolt		
53	Washer		
54	Washer, spring		
55	Vacuum reservoir tank assembly		
56	Locknut		
57	Nut		
58	Washer		
59	Thermo switch		

# CRANKSHAFT, PISTONS & RODS

Fig. 1.2.1 Crankshaft Pistons and Rods



SEE OVER FOR KEY  
AM 1270



1.2

Engine

## CRANKSHAFT, PISTONS & RODS

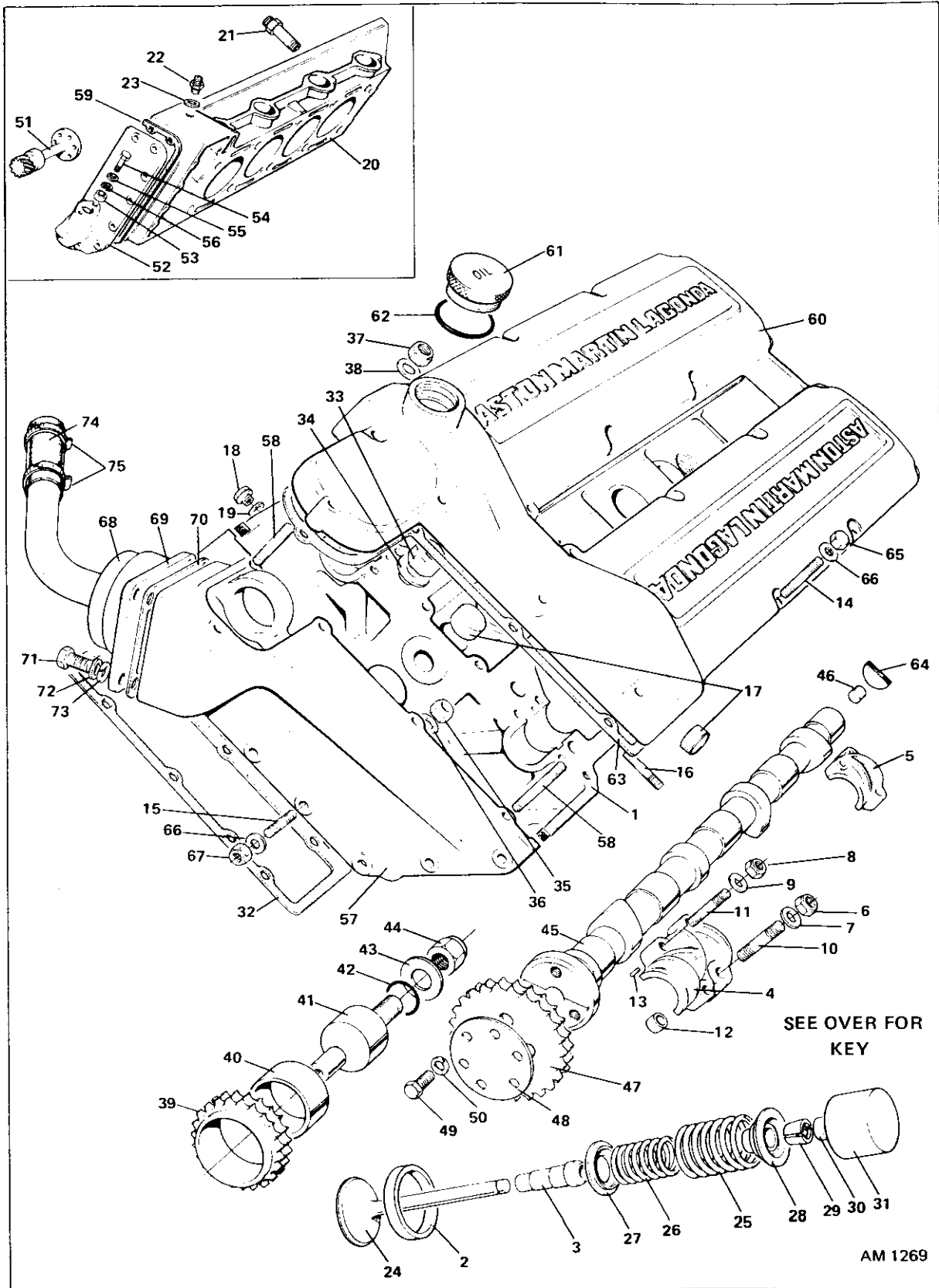
### KEY TO FIG. 1.2.1

- 1 Connecting rod assembly
- 2 Connecting rod bolt
- 3 Small end bush
- 4 Big end bearing shell, half standard
- 5 Piston assembly
- 6 Gudgeon pin
- 7 Circlip
- 8 Compression ring top
- 9 Compression ring lower
- 10 Oil control ring
- 11 Crankshaft standard
- 12 Crankshaft plug
- 13 Crankshaft key
- 14 Sprocket timing
- 15 Sprocket oil pump
- 16 Crankshaft pulley and torsional vibration damper assembly
- 17 Crankshaft pulley
- 18 Torsional vibration damper
- 19 Bolt, special
- 20 Nut, Nyloc
- 21 Washer, plain
- 22 Special washer, crankshaft
- 23 Special nut, crankshaft



CYLINDER HEAD

Fig. 1.3.1 Cylinder Head and Valve Gear





# 1.3

# Engine

## CYLINDER HEAD

### KEY TO FIG. 1.3.1

1	Cylinder head studded assembly, B Bank	60	Camshaft cover LH
2	Valve insert, exhaust	61	Filler cap, oil
3	Valve guide, inlet and exhaust	62	Filler cap, sealing ring
4	Camshaft bearing cap, front, exhaust	63	Gasket, camshaft cover
5	Camshaft bearing cap, inlet and exhaust	64	Seal plug
6	Nut, Nyloc	65	Nut, special, camshaft cover
7	Washer, plain	66	Washer, plain
8	Nut, Nyloc	67	Nut, Nyloc
9	Washer, plain	68	Breather assembly, front cover
10	Stud, camshaft	69	Breather retaining plate
11	Stud, camshaft cap	70	Gasket, breather
12	Ring dowel	71	Screw
13	Dowel	72	Washer
14	Stud	73	Washer, spring
15	Stud, short, front cover	74	Hose
16	Stud, exhaust system	75	Clip, wormdrive
17	Core plug		
18	Flanged plug		
19	Washer, copper		
20	Cylinder head studded assembly, A Bank		
21	Adaptor, long, heater valve		
22	Union, double-ended		
23	Washer		
24	Exhaust valve		
25	Valve spring, outer		
26	Valve spring, inner		
27	Washer, valve spring		
28	Valve spring cap		
29	Valve cotter, pair		
30	Valve adjustment cap		
31	Tappet		
32	Cylinder head gasket		
33	Nut		
34	Washer		
35	Nut, Nyloc		
36	Washer, plain		
37	Nut, Nyloc		
38	Washer, plain		
39	Sprocket, tensioner		
40	Bush, tensioner		
41	Spindle assembly, top tensioner		
42	'O' ring		
43	Washer, special		
44	Nut, special		
45	Inlet camshaft		
46	Plug, rear		
47	Sprocket, camshaft		
48	Sprocket, washer		
49	Setscrew		
50	Washer, spring		
51	Auxiliary drive gear		
52	Front cover, RH		
53	Bush		
54	Setscrew		
55	Washer, plain		
56	Washer, spring		
57	Front cover, LH		
58	Stud, top cover		
59	Gasket, front cover/head		

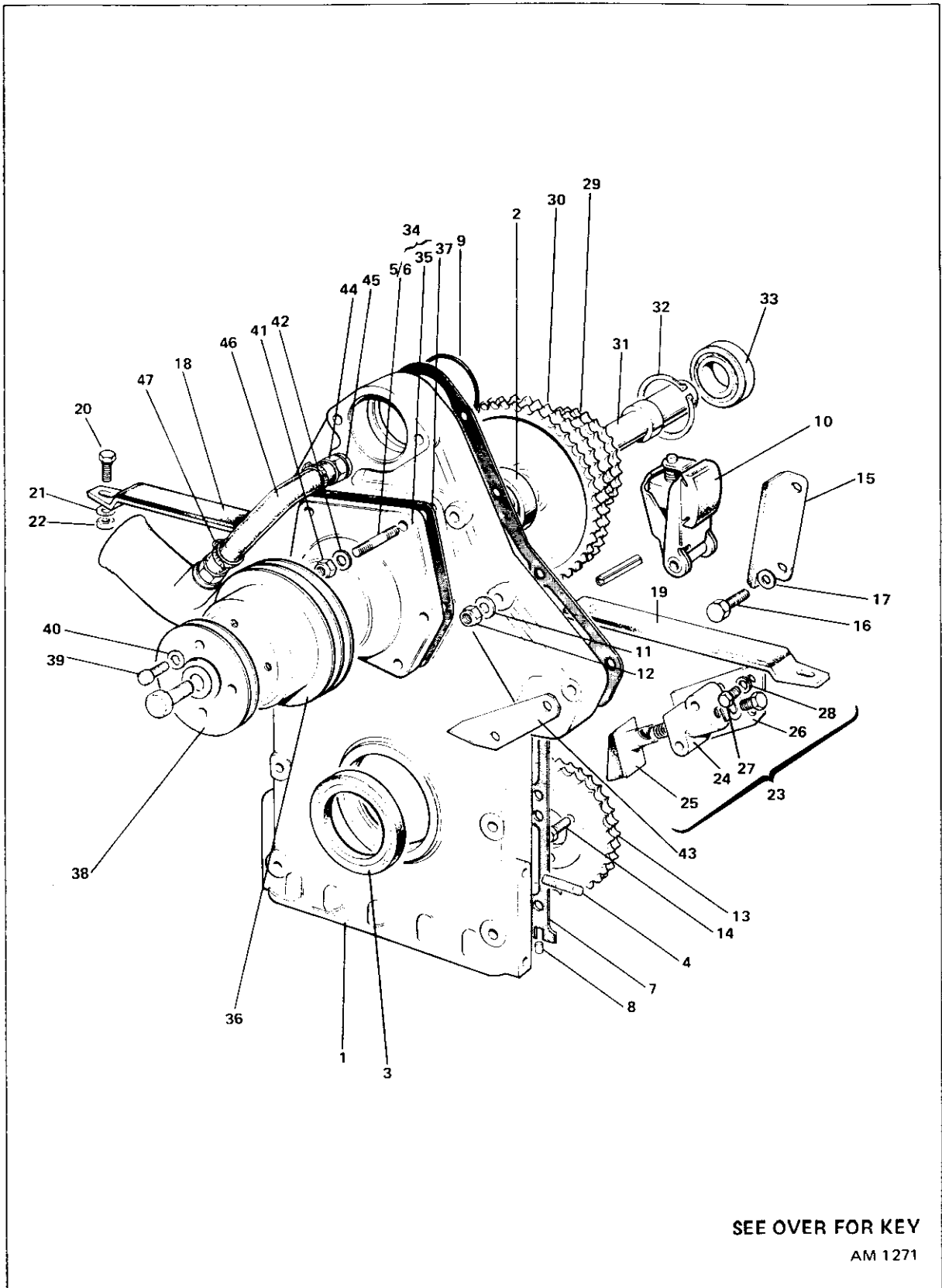


# Engine

1.4

# TIMING CASE

Fig. 1.4.1 Water Pump, Timing Case and Sprockets



SEE OVER FOR KEY

AM 1271



1.4

Engine

## TIMING CASE

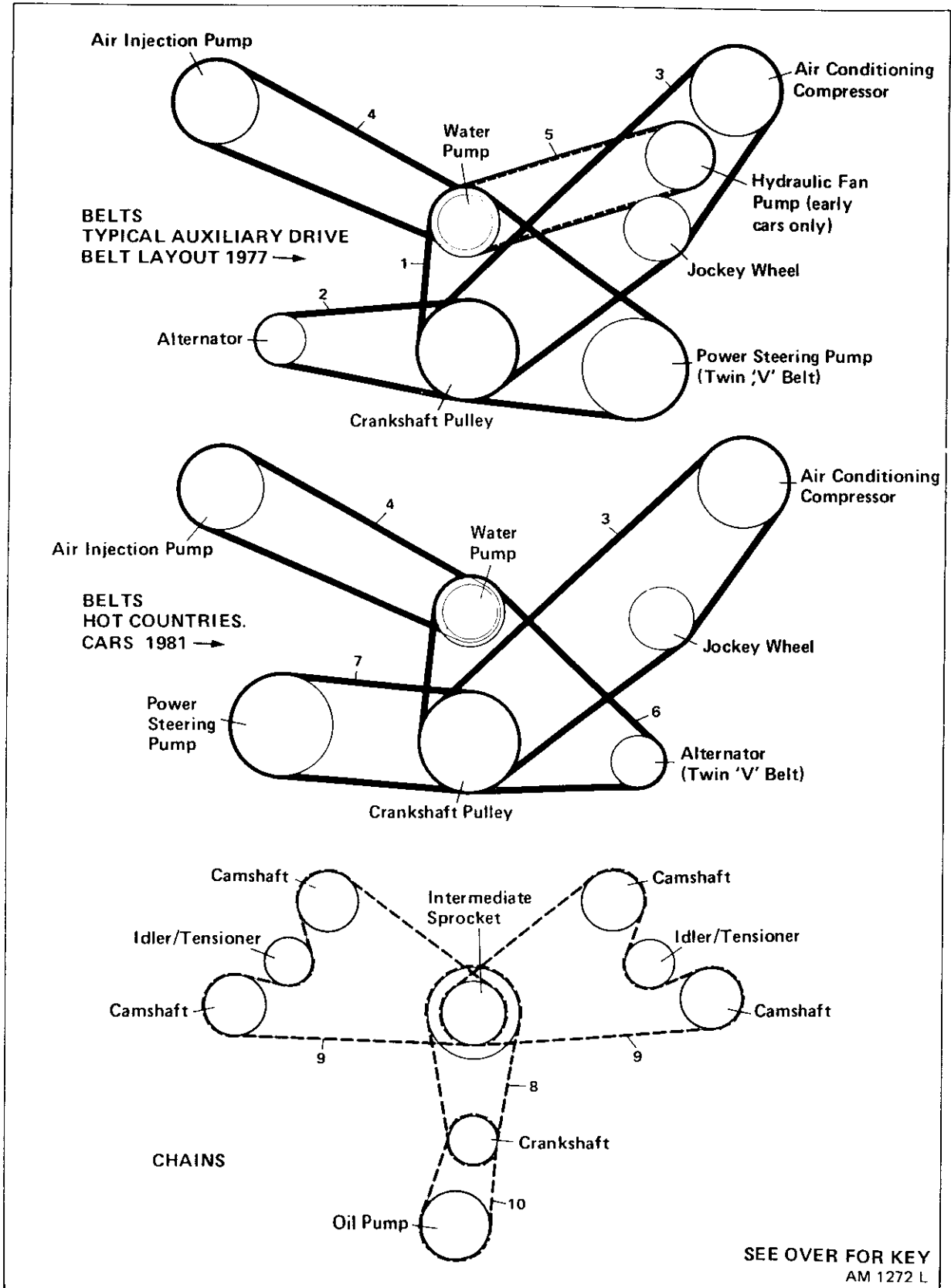
### KEY TO FIG. 1.4.1

- 1 Front timing case
- 2 Bearing, intermediate spindle
- 3 Oil seal
- 4 Stud, power steering bracket
- 5 Stud, water pump, short
- 6 Stud, water pump, long
- 7 Joint, timing case to cylinder block
- 8 Cork seal
- 9 'O' ring
- 10 Tensioner, primary chain
- 11 Washer, plain
- 12 Nut, Nyloc
- 13 Sprocket, oil pump
- 14 Setscrew
- 15 Rubbing strip, primary chain
- 16 Screw
- 17 Washer, plain
- 18 Rubbing strip, timing chain, RH
- 19 Rubbing strip, timing chain, LH
- 20 Setscrew
- 21 Washer, plain
- 22 Nut, Nyloc
- 23 Tensioner, oil pump chain
- 24 Case, chain adjuster
- 25 Rubbing block, chain adjuster
- 26 Mounting bracket, chain adjuster
- 27 Screw
- 28 Washer, spring
- 29 Sprocket assembly, intermediate
- 30 Sprocket, intermediate
- 31 Spindle, intermediate
- 32 Circlip
- 33 Self-aligning bearing
- 34 Water pump assembly
- 35 Housing
- 36 Fan pulley
- 37 Joint, water pump/timing case
- 38 Spacer pulley
- 39 Capscrew
- 40 Washer, spring
- 41 Nut
- 42 Washer
- 43 Timing pointer
- 44 Hose adaptor
- 45 Washer
- 46 By-pass hose
- 47 Hose clip



TIMING CASE

Fig. 1.4.2 Auxiliary Drive Belts and Chains





1.4

Engine

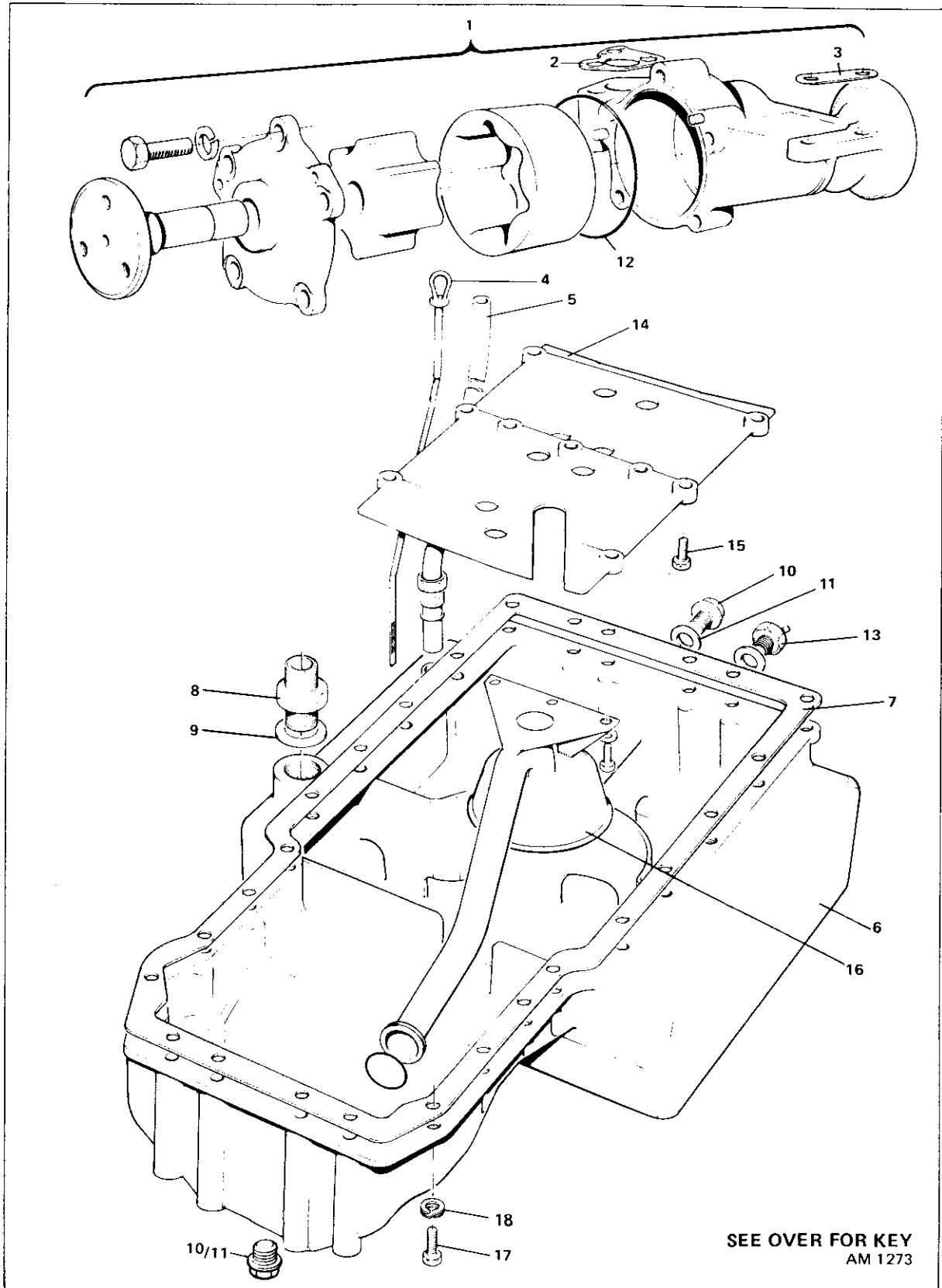
## TIMING CASE

### KEY TO FIG. 1.4.2

- 1 Crankshaft/water pump/power steering pump European
- 2 Crankshaft/alternator
- 3 Crankshaft/air conditioning compressor
- 4 Water pump/air injection pump
- 5 Water pump/hydraulic fan pump
- 6 Crankshaft/alternator/water pump
- 7 Crankshaft/power steering pump
- 8 Chain, primary (70 pitches)
- 9 Chain, secondary (118 pitches)
- 10 Chain, oil pump drive (60 pitches)

OIL PUMP & SUMP

Fig. 1.5.1 Oil Pump and Sump



SEE OVER FOR KEY  
AM 1273



1.5

Engine

## OIL PUMP & SUMP

### KEY TO FIG. 1.5.1

- 1 Oil pump assembly
- 2 Joint, oil pump delivery/cylinder block
- 3 Joint, oil pump mounting/cylinder block
- 4 Dipstick
- 5 Tube, dipstick
- 6 Sump
- 7 Joint, sump to cylinder block
- 8 Union
- 9 Washer, sealing
- 10 Oil drain plug
- 11 Washer, drain plug
- 12 'O' Ring
- 13 Oil temperature sender
- 14 Sump baffle plate
- 15 Bolt
- 16 Oil strainer assembly
- 17 Screw
- 18 Washer, Thackeray
- 19 'O' Ring



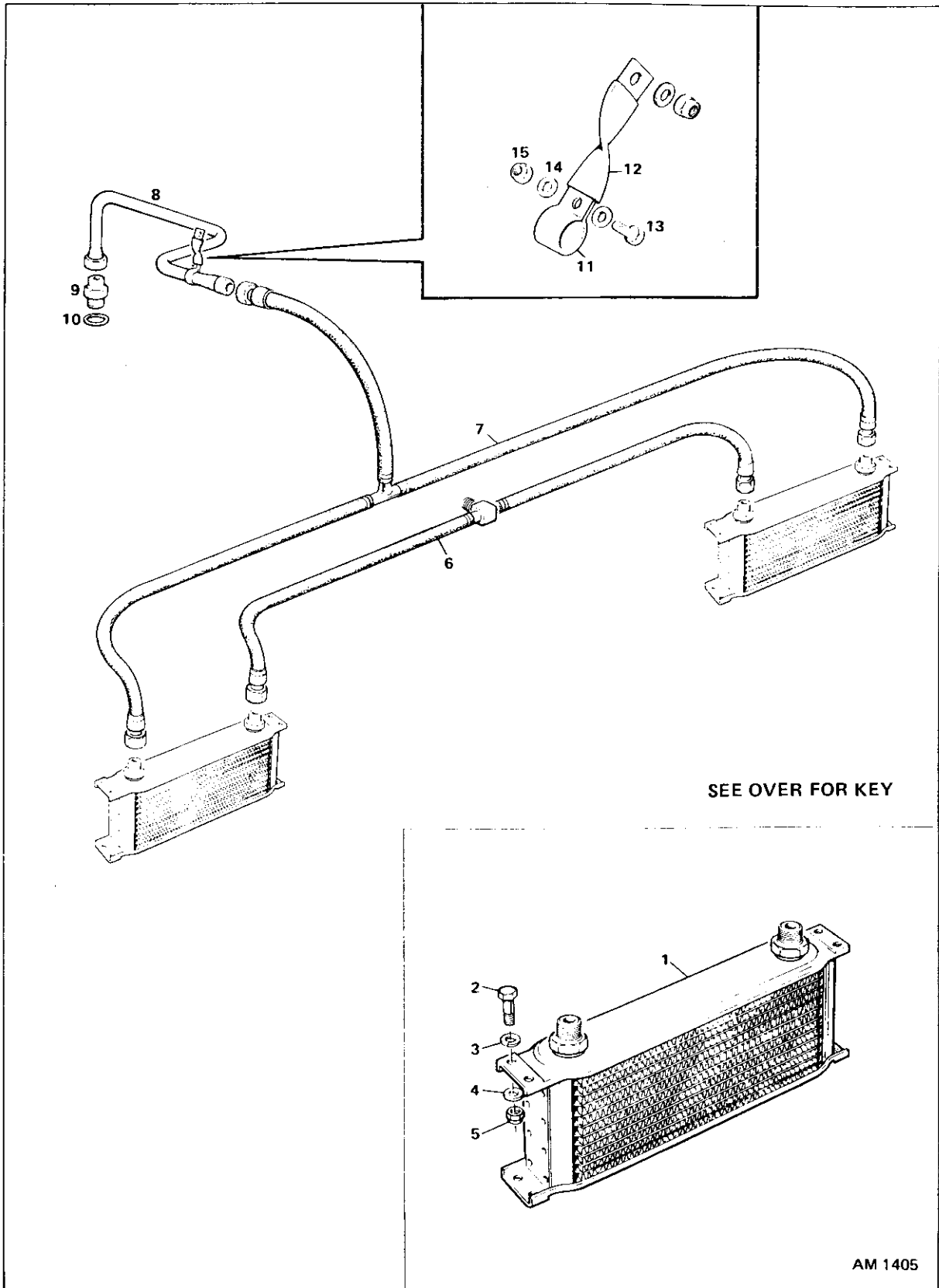


Engine

1.6

# OIL COOLING SYSTEM

Fig. 1.6.1 Twin Oil Coolers – 12 Row





1.6

Engine

## OIL COOLING SYSTEM

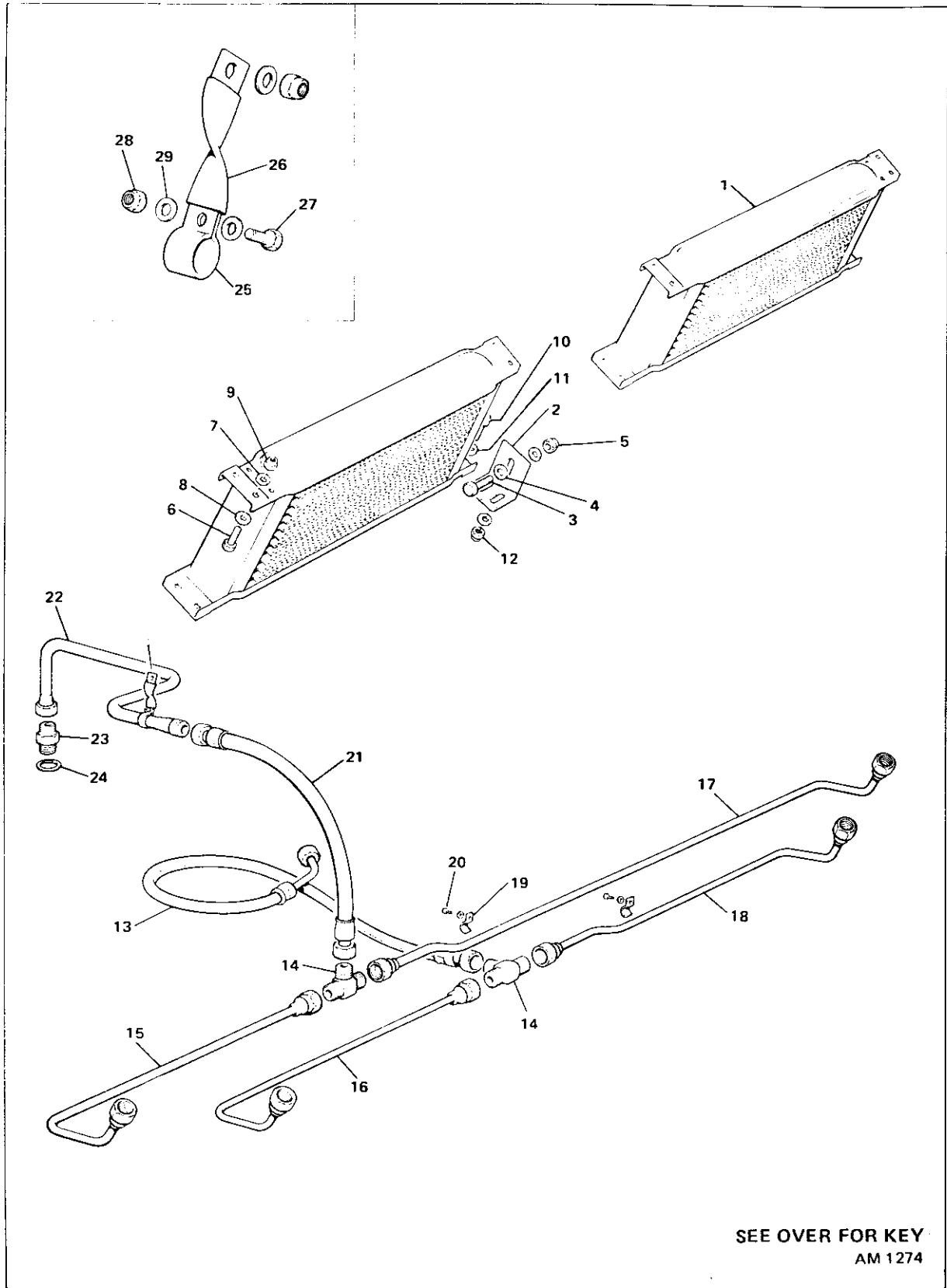
### KEY TO FIG. 1.6.1

- 1 Oil cooler, engine
- 2 Setscrew
- 3 Washer, spring
- 4 Washer, plain
- 5 Nut
- 6 Hose assembly
- 7 Hose assembly
- 8 Return pipe
- 9 Union
- 10 Washer
- 11 Bracket — return pipe
- 12 Sleeve
- 13 Bolt
- 14 Washer
- 15 Nut



# OIL COOLING SYSTEM

Fig. 1.6.2 Twin Oil Coolers – 18 Row





1.6

Engine

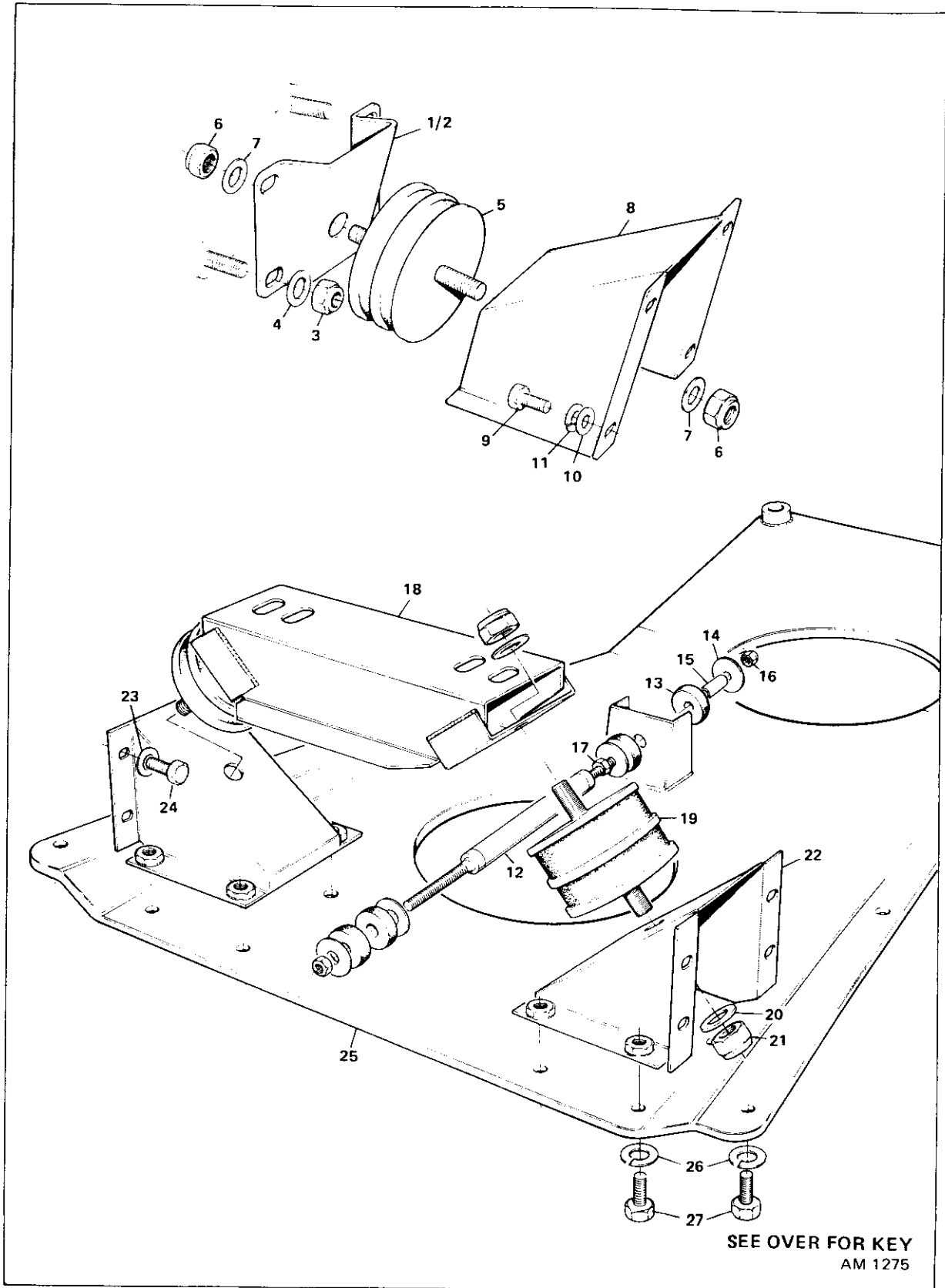
## OIL COOLING SYSTEM

### KEY TO FIG. 1.6.2

1	Oil cooler
2	Mounting bracket
3	Set screw
4	Washer
5	Nut, Nyloc
6	Set screw
7	Washer
8	Washer, spring
9	Nut, Nyloc
10	Set screw
11	Washer
12	Nut, Nyloc
13	Hose assembly
14	Tee piece
15	Pipe assembly, R H outer
16	Pipe assembly, R H inner
17	Pipe assembly, L H outer
18	Pipe assembly, L H inner
19	Pipe clip, oil pipes
20	Screw
21	Hose assembly, return
22	Return pipe
23	Union
24	Washer
25	Bracket
26	Sleeve
27	Bolt
28	Nut, Nyloc
29	Washer, plain

ENGINE MOUNTINGS

Fig. 1.7.1 Engine Mountings





1.7

Engine

## ENGINE MOUNTINGS

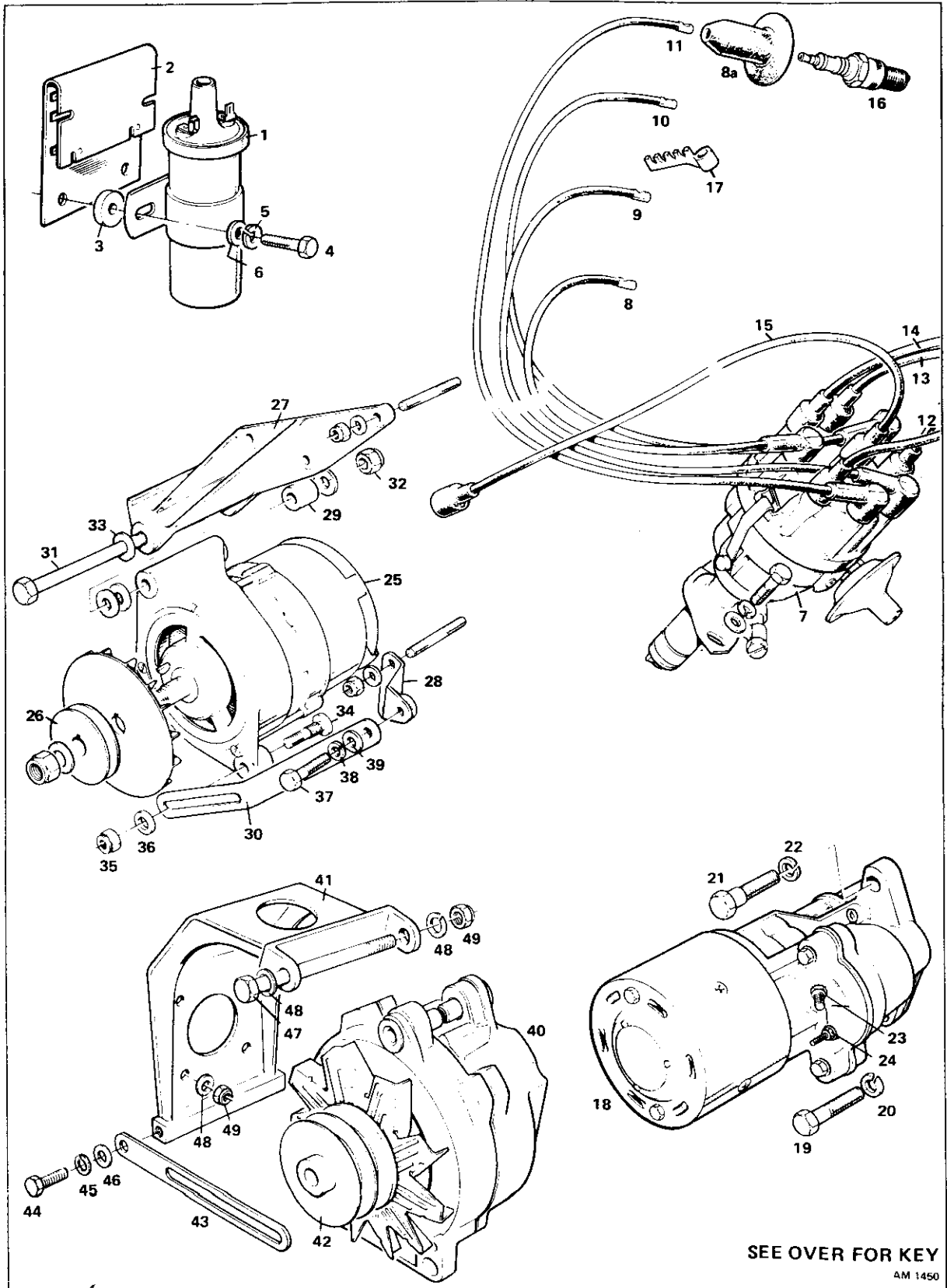
### KEY TO FIG. 1.7.1

- 1 Bracket, engine mounting front LH
- 2 Bracket, engine mounting front RH
- 3 Nut, Nyloc
- 4 Washer
- 5 Rubber mounting
- 6 Nut, Nyloc
- 7 Washer, plain
- 8 Bracket assembly, engine mounting
- 9 Screw
- 10 Washer
- 11 Washer, spring
- 12 Strut assembly, engine stay
- 13 Rubber bush
- 14 Special washer
- 15 Distance tube
- 16 Nut, Nyloc
- 17 Locknut
- 18 Bracket assembly, gearbox
- 19 Rubber mounting
- 20 Washer
- 21 Nut, Nyloc
- 22 Bracket assembly, gearbox
- 23 Washer, spring
- 24 Bolt
- 25 Panel
- 26 Washer, spring
- 27 Bolt



# ENGINE ELECTRICAL

Fig. 1.8.1 Engine Electrical Units



SEE OVER FOR KEY

AM 1450



1.8

Engine

## ENGINE ELECTRICAL

### KEY TO FIG. 1.8.1

- 1 HT Coil
- 2 Resistor
- 3 Spacer, coil/resistor
- 4 Screw
- 5 Washer, spring
- 6 Washer, plain
- 7 Distributor
- 8 Ignition lead assembly, No. 1
- 8a Shroud
- 9 Ignition lead assembly, No. 2
- 10 Ignition lead assembly, No. 3
- 11 Ignition lead assembly, No. 4
- 12 Ignition lead assembly, No. 5 & 6
- 13 Ignition lead assembly, No. 7
- 14 Ignition lead assembly, No. 8
- 15 Ignition lead assembly coil to distributor
- 16 Spark plug
- 17 Clip, HT ignition lead
- 18 Starter motor
- 19 Bolt
- 20 Washer, spring
- 21 Bolt, stepped
- 22 Washer, spring
- 23 Locknut
- 24 Locknut
- 25 Alternator — 75 amp Early cars
- 26 Alternator pulley
- 27 Mounting bracket
- 28 Bracket
- 29 Spring bush
- 30 Adjusting link
- 31 Bolt
- 32 Nut, Nyloc
- 33 Washer, plain
- 34 Adjusting stud
- 35 Nut, Nyloc
- 36 Washer, plain
- 37 Set screw
- 38 Washer, spring
- 39 Washer, plain
- 40 Alternator — 100 amp Later cars
- 41 Mounting bracket
- 42 Alternator pulley
- 43 Adjusting link
- 44 Set screw
- 45 Washer, spring
- 46 Washer, plain
- 47 Bolt
- 48 Washer, plain
- 49 Nut, Nyloc



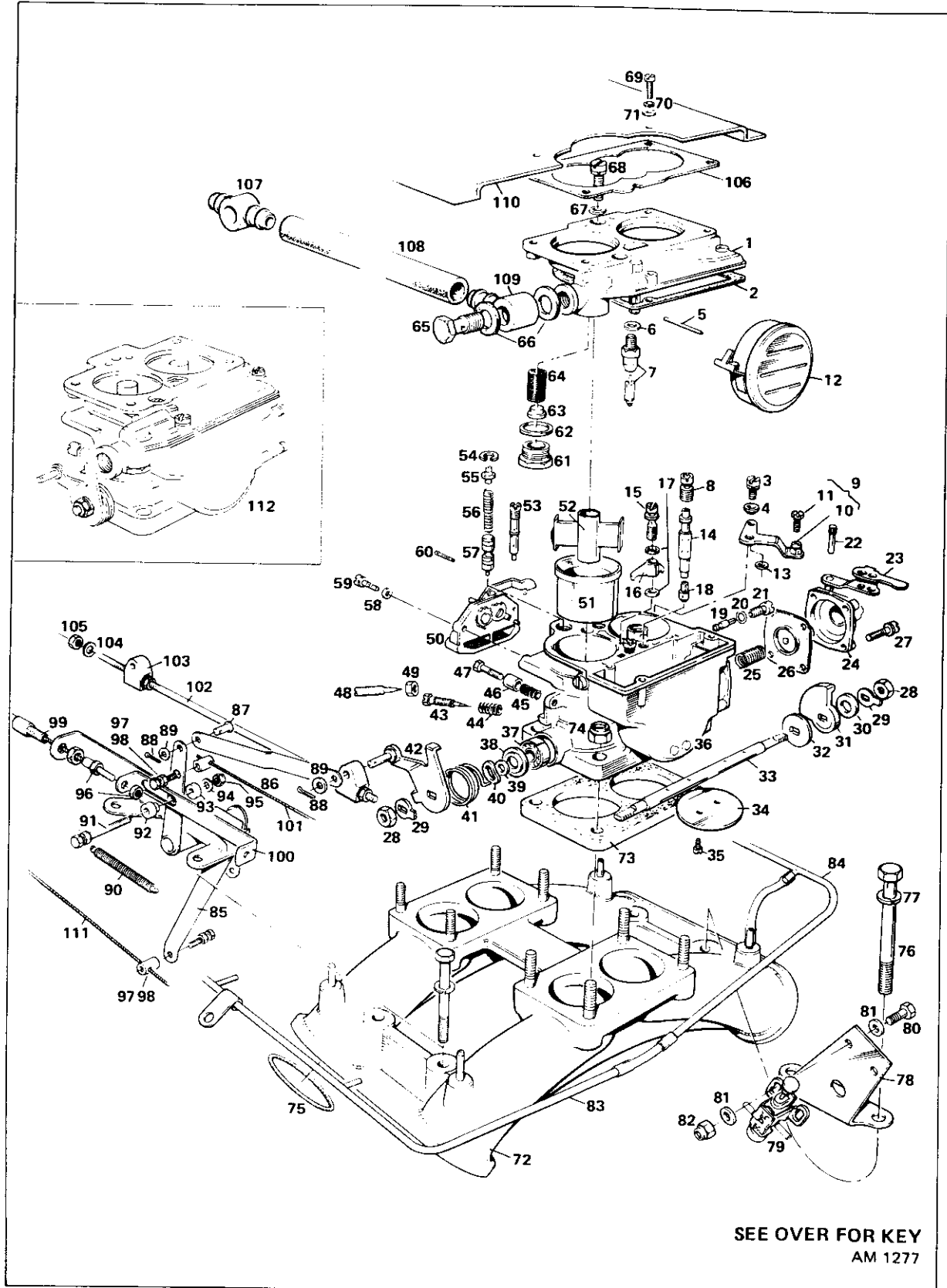


# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

Fig. 2.1.1 Carburettors and Manifolds

2.1

## CARBURETTORS & MANIFOLDS





## 2.1 CARBURETTORS & MANIFOLDS

## Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

### KEY TO FIG. 2.1.1

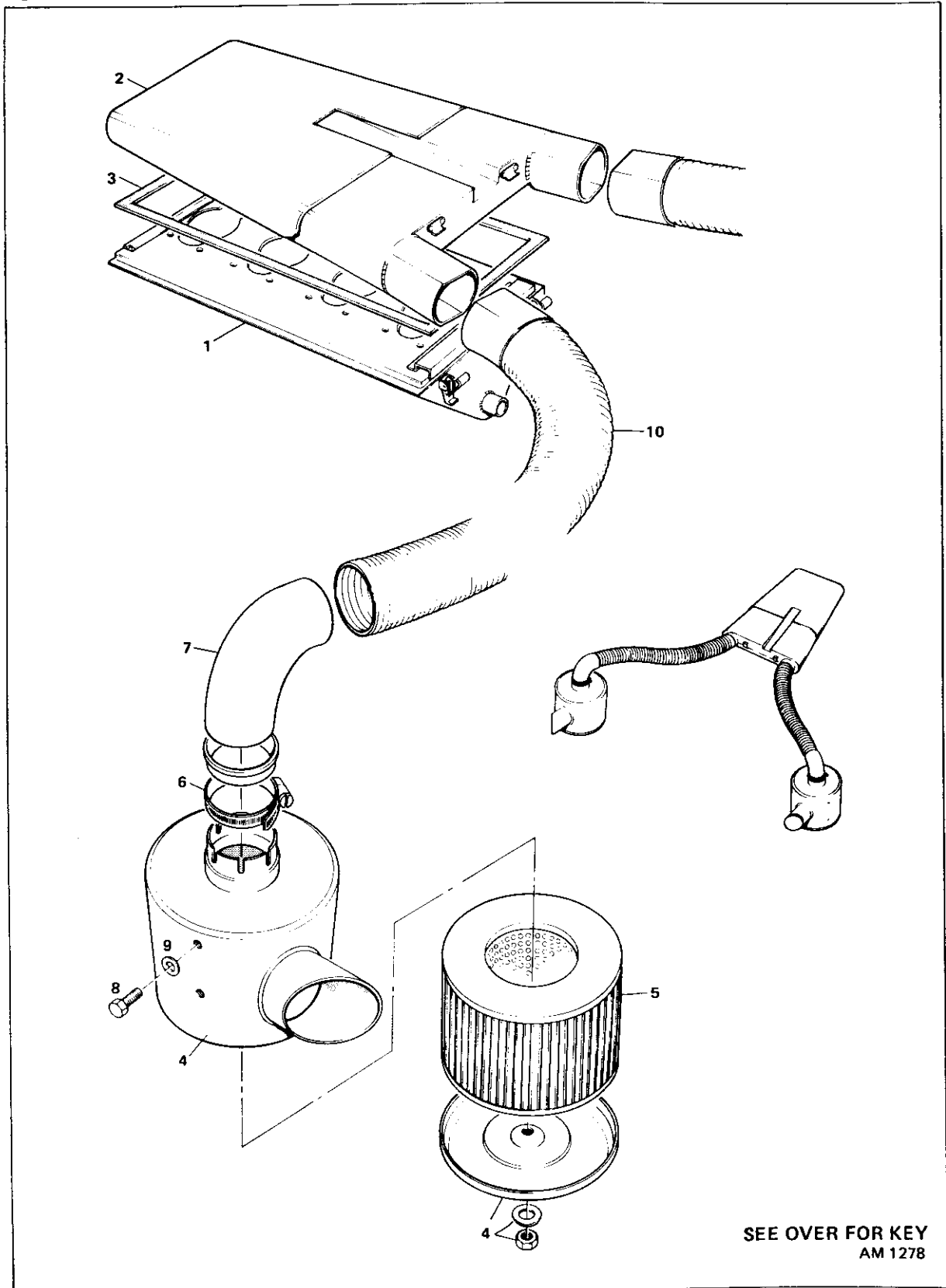
1	Carburettor cover	60	Pin, spring
2	Carburettor gasket	61	Plug, filter inspection
3	Screw, mounting, starting control	62	Seal, plug
4	Bush, starter control	63	Bush, filter protection
5	Pivot pin, float	64	Filter element
6	Seal, needle valve	65	Banjo bolt
7	Needle valve	66	Washer, fibre
8	Air corrector, jet	67	Washer, plain
9	Lever, start control	68	Screw, carburettor cover to body
10	Lever	69	Screw
11	Screw, wire-securing	70	Washer, spring
12	Float	71	Washer, plain
13	Washer	72	Inlet manifold
14	Emulsion tube	73	Gasket
15	Valve, delivery accelerator pump	74	Locknut
16	Jet, accelerator pump	75	'O' ring
17	Seal, accelerator pump jet	76	Bolt, manifold
18	Jet, main	77	Washer, spring
19	Jet, idle	78	Bracket
20	Seal, idle jet	79	Vacuum valve
21	Holder, idle jet	80	Screw
22	Pivot	81	Washer, plain
23	Lever	82	Nut, Nyloc
24	Housing	83	Vacuum rail, RH
25	Spring, return	84	Vacuum rail, LH
26	Diaphragm, accelerator pump	85	Pivot
27	Screw, cover to body	86	Throttle link
28	Nut	87	Pin
29	Washer, lock	88	Split pin
30	Washer, spacing	89	Washer, plain
31	Cam	90	Spring, kick down
32	Washer	91	Bolt, kick down
33	Spindle, throttle plate	92	Ferrule, kick down
34	Throttle plate	93	Spacer, kick down
35	Screw, throttle plate	94	Washer
36	Carburettor body	95	Half nut, Nyloc
37	Bearing, throttle plate spindle	96	Nut
38	Washer	97	Trunnion
39	Spacer	98	Screw
40	Washer, friction	99	Kick down cable
41	Spring, throttle plate return	100	Kick down slide
42	Lever, throttle plate	101	Throttle cable, RHD
43	Screw, mixture control	102	Throttle rod
44	Spring, mixture control screw	103	Throttle clamp
45	Spring, throttle plate stop control	104	Washer
46	Sleeve, spring	105	Nut
47	Screw, throttle plate stop control	106	Gasket
48	Screw, bypass air control	107	Banjo, straight
49	Nut, by-pass air control	108	Feed tube, nylon
50	Cover assembly	109	Banjo end
51	Choke	110	Airbox base assembly
52	Venturi	111	Cruise control cable
53	Jet, starter	112	Carburettor assembly
54	Ring, retaining		
55	Spring valve and retainer		
56	Spring, starter valve		
57	Starter valve		
58	Washer		
59	Screw, cover to body		

# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

2.2

## AIR BOX & FILTERS

Fig. 2.2.1 Air Box and Filters





## 2.2 AIR BOX & FILTERS

## Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

### KEY TO FIG. 2.2.1

- 1 Air box base assembly
- 2 Air box top assembly
- 3 Sealing strip
- 4 Air filter assembly, RH
- 5 Air filter element
- 6 Hose clip
- 7 Tube
- 8 Screw, hexagonal head
- 9 Washer, spring
- 10 Trunking, black

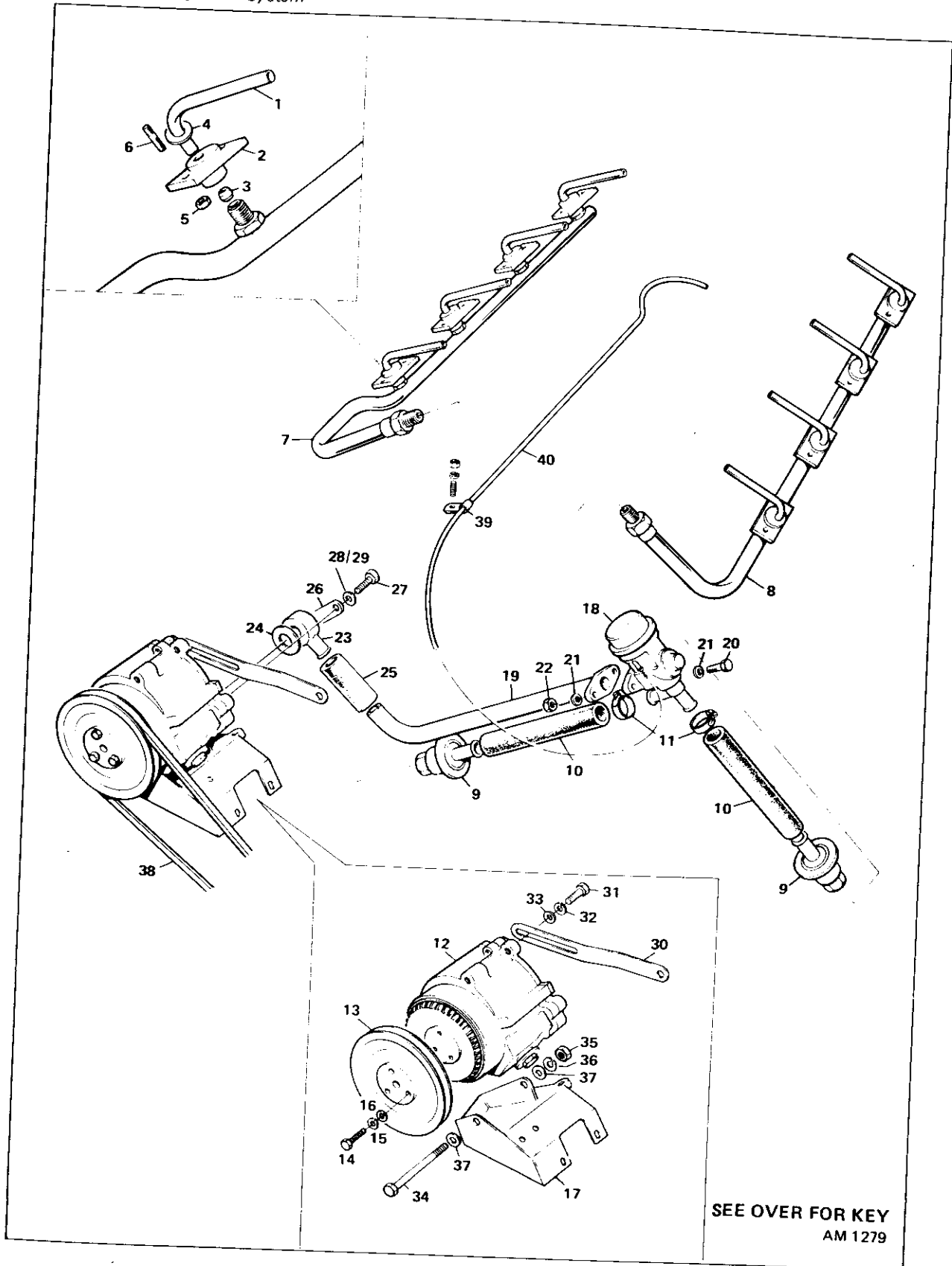


# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

2.3

## AIR INJECTION SYSTEM

Fig. 2.3.1 Air Injection System



SEE OVER FOR KEY  
AM 1279



## 2.3 AIR INJECTION SYSTEM

## Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

### KEY TO FIG. 2.3.1

- 1 Tube, air injection
- 2 Flange, air injection
- 3 Tubing sleeve
- 4 Washer, copper
- 5 Nut, brass
- 6 Stud, long
- 7 Manifold assembly, RH
- 8 Manifold assembly, LH
- 9 Check valve
- 10 Hose
- 11 Clip, worm drive
- 12 Air pump
- 13 Pulley, air pump
- 14 Bolt
- 15 Washer, spring
- 16 Washer, plain
- 17 Bracket
- 18 Diverter valve
- 19 Pipe
- 20 Bolt
- 21 Washer, plain
- 22 Nut, Nyloc
- 23 Pipe, air supply
- 24 Washer
- 25 Hose, short
- 26 Retaining plate
- 27 Bolt
- 28 Washer, spring
- 29 Washer, plain
- 30 Adjusting link
- 31 Bolt
- 32 Washer, spring
- 33 Washer, plain
- 34 Bolt
- 35 Nut
- 36 Washer, spring
- 37 Washer, plain
- 38 Drive belt
- 39 'P' clip
- 40 Tubing

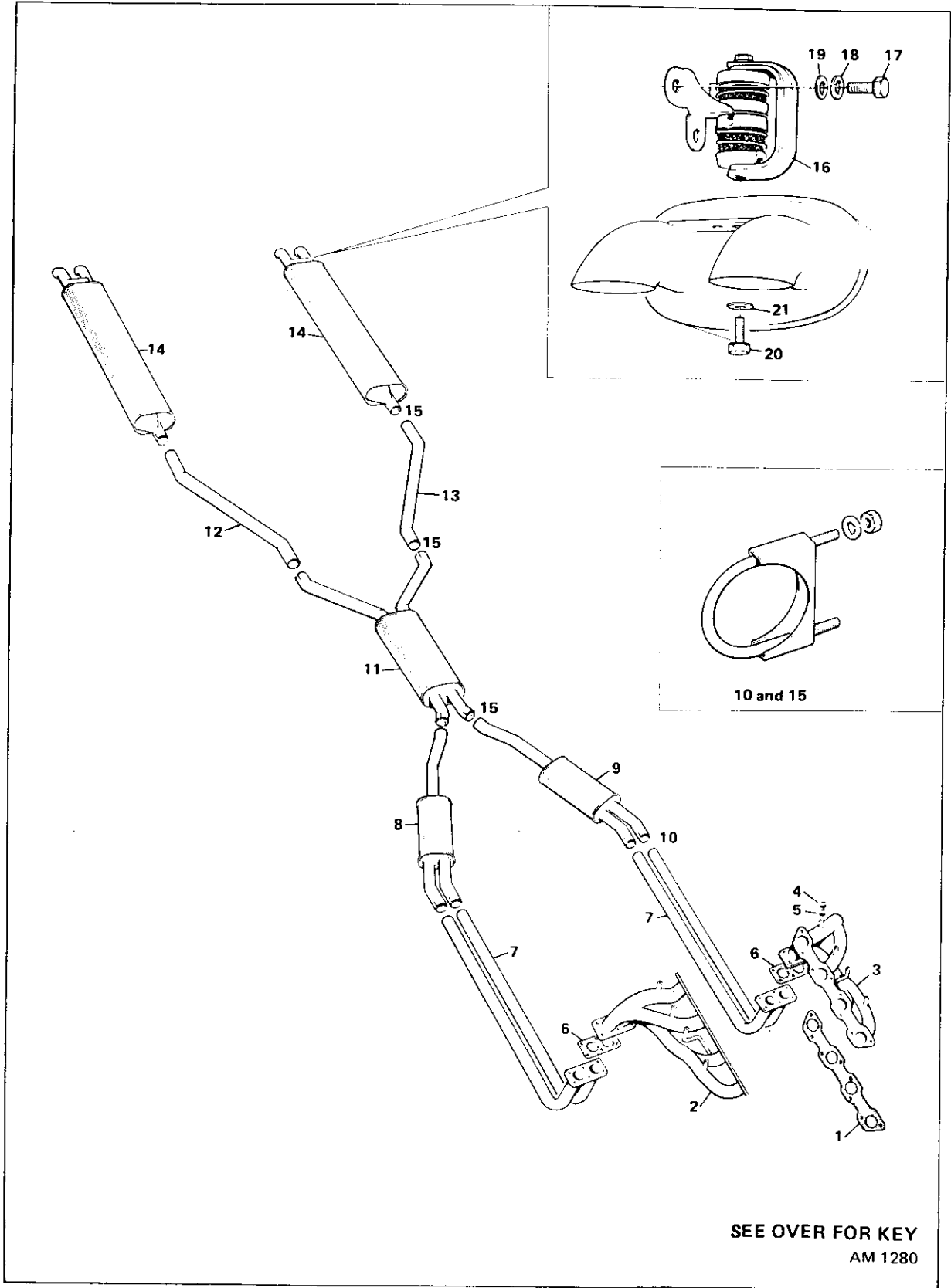


# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

2.5

## EXHAUST SYSTEM

Fig. 2.5.1 Exhaust System





# 2.5 EXHAUST SYSTEM

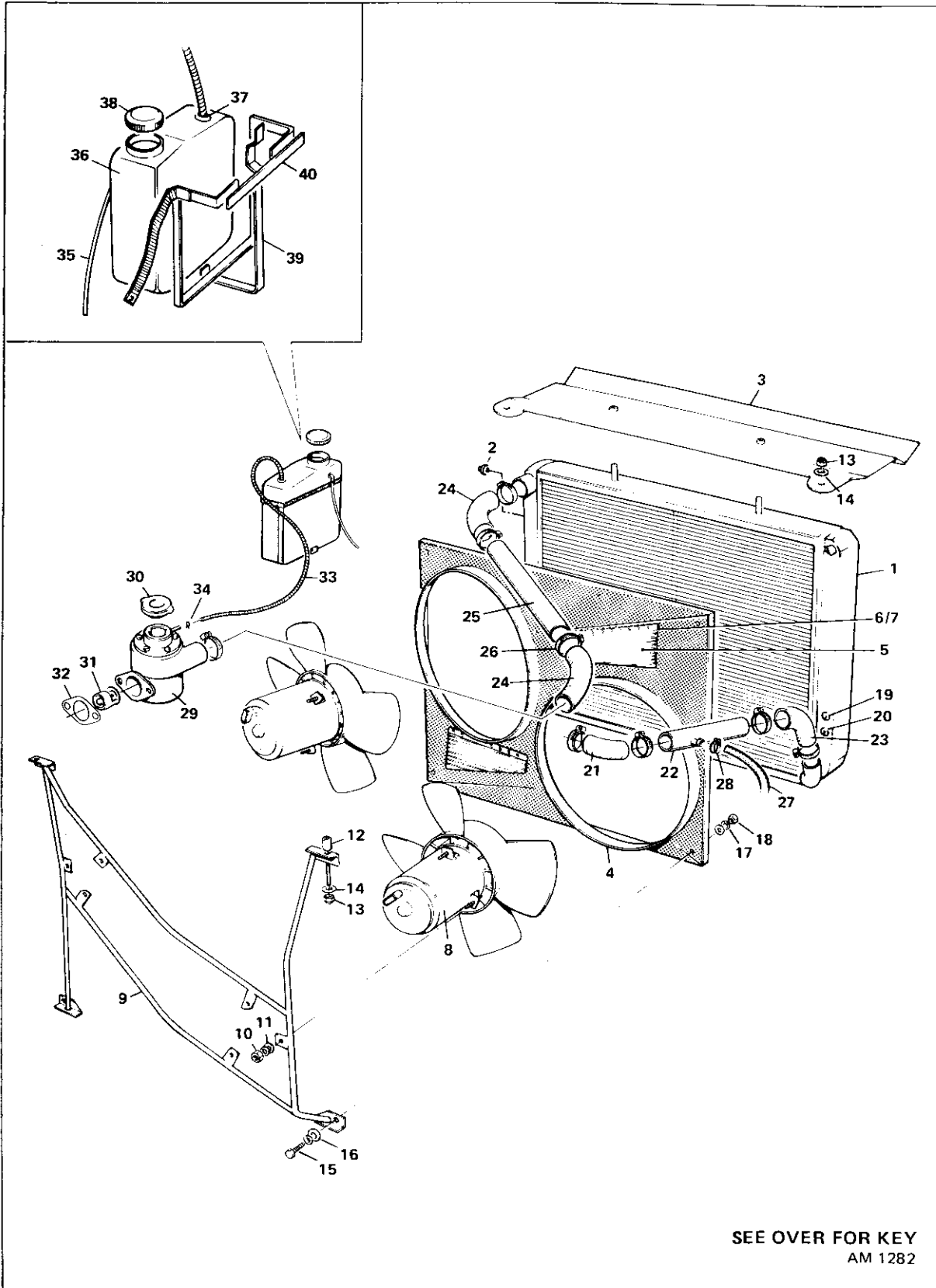
## Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

### KEY TO FIG. 2.5.1

- 1 Gasket, exhaust
- 2 Exhaust manifold, RH
- 3 Exhaust manifold, LH
- 4 Exhaust manifold plug, metric
- 5 Washer
- 6 Gasket
- 7 Intermediate pipes assembly
- 8 Silencer, front, RH
- 9 Silencer, front, LH
- 10 'U' Bolt and clip
- 11 Centre silencer box assembly
- 12 Exhaust pipe, intermediate, RH
- 13 Exhaust pipe, intermediate, LH
- 14 Rear silencer assembly
- 15 'U' Bolt and clip
- 16 Flexible exhaust mounting
- 17 Setscrew
- 18 Washer, spring
- 19 Washer, plain
- 20 Setscrew
- 21 Washer, plain



Fig. 2.7.1 Cooling System



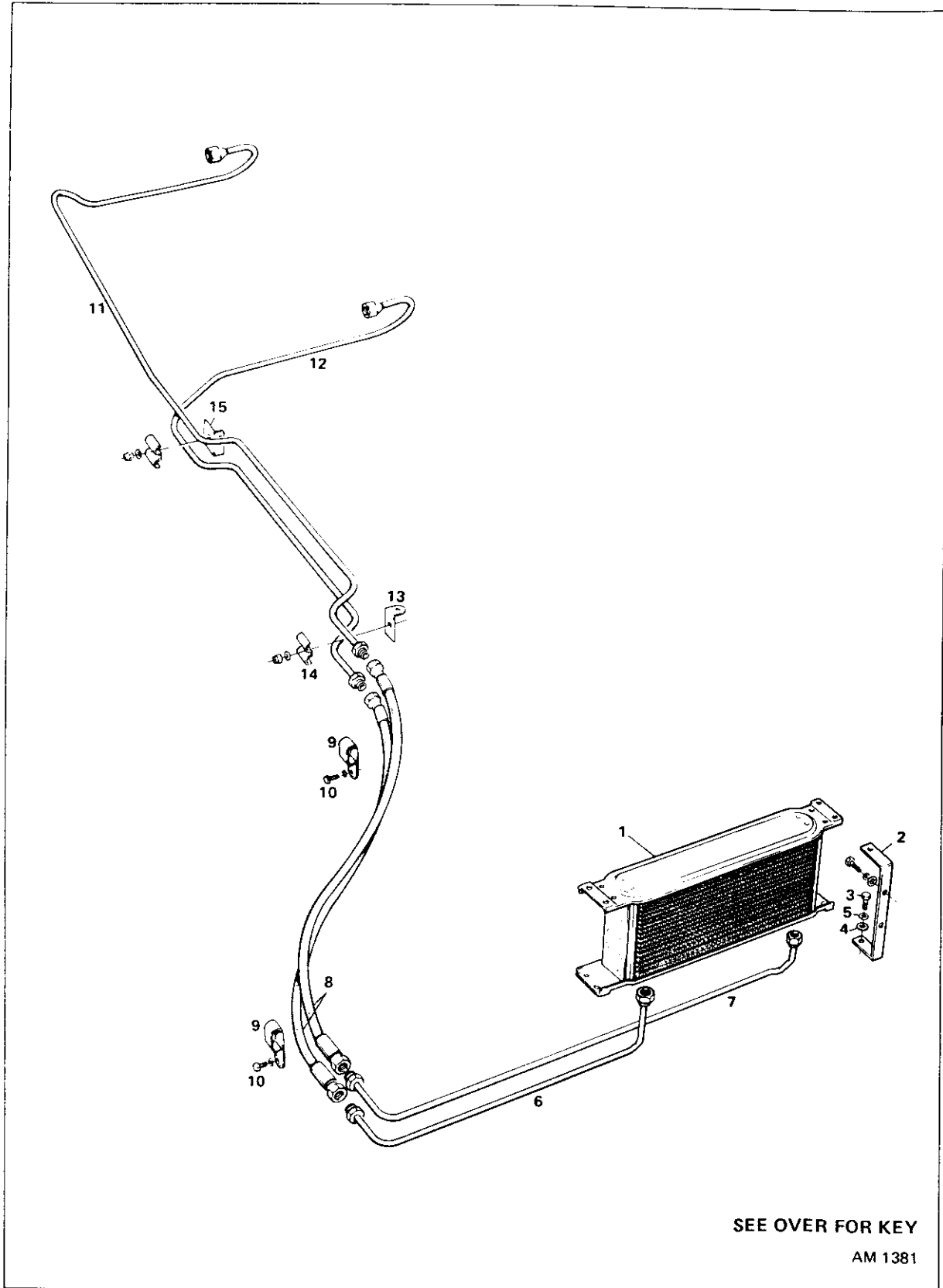
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# AUTOMATIC TRANSMISSION

Fig. 3.1.2 Gearbox Oil Cooling System



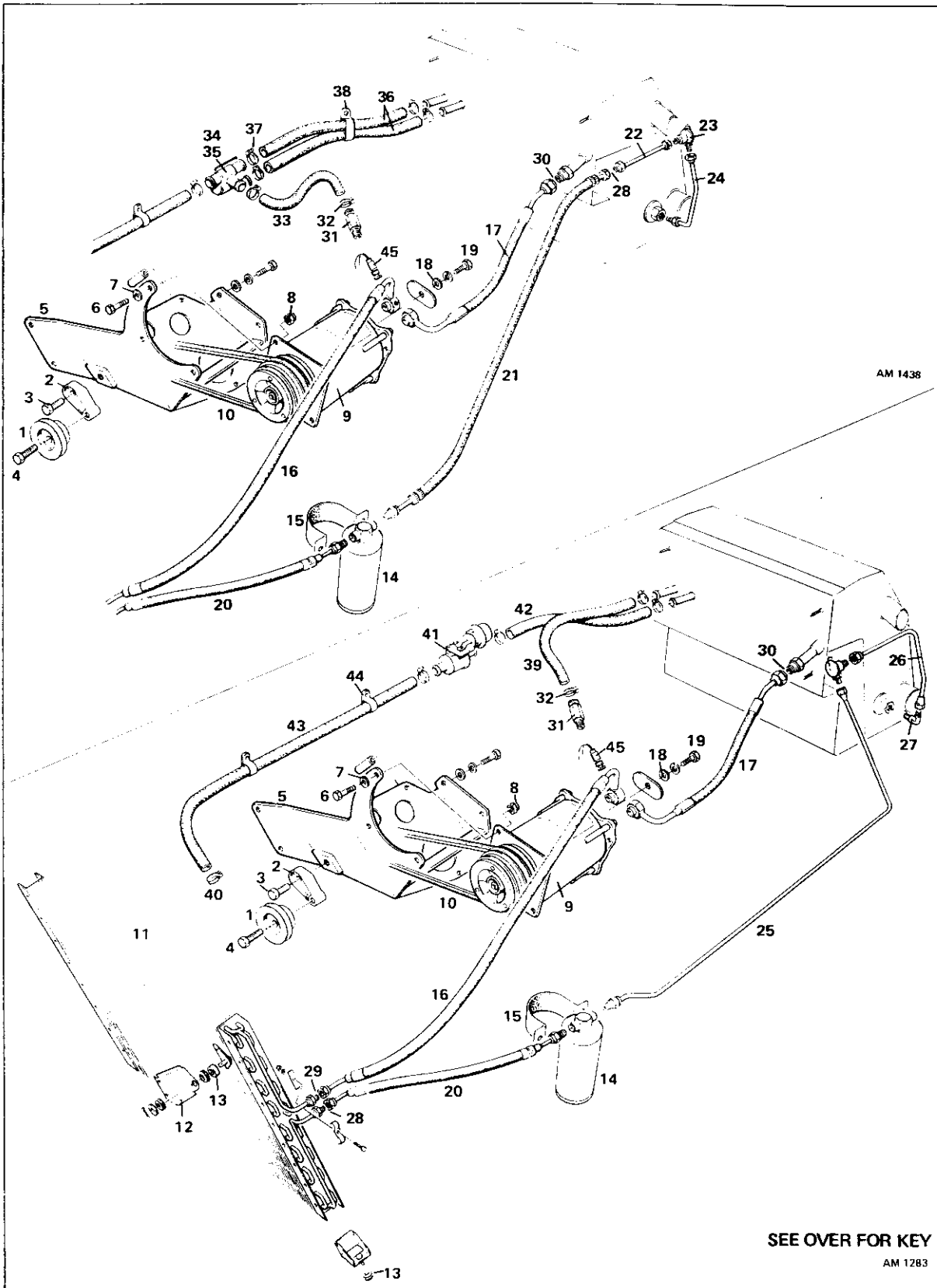
SEE OVER FOR KEY

AM 1381

# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

## AIR CONDITIONING

Fig. 2.8.1 Air Conditioning Systems as Fitted to Earlier Vehicles



# AUTOMATIC TRANSMISSION

Fig. 3.1.1 Torque Converter

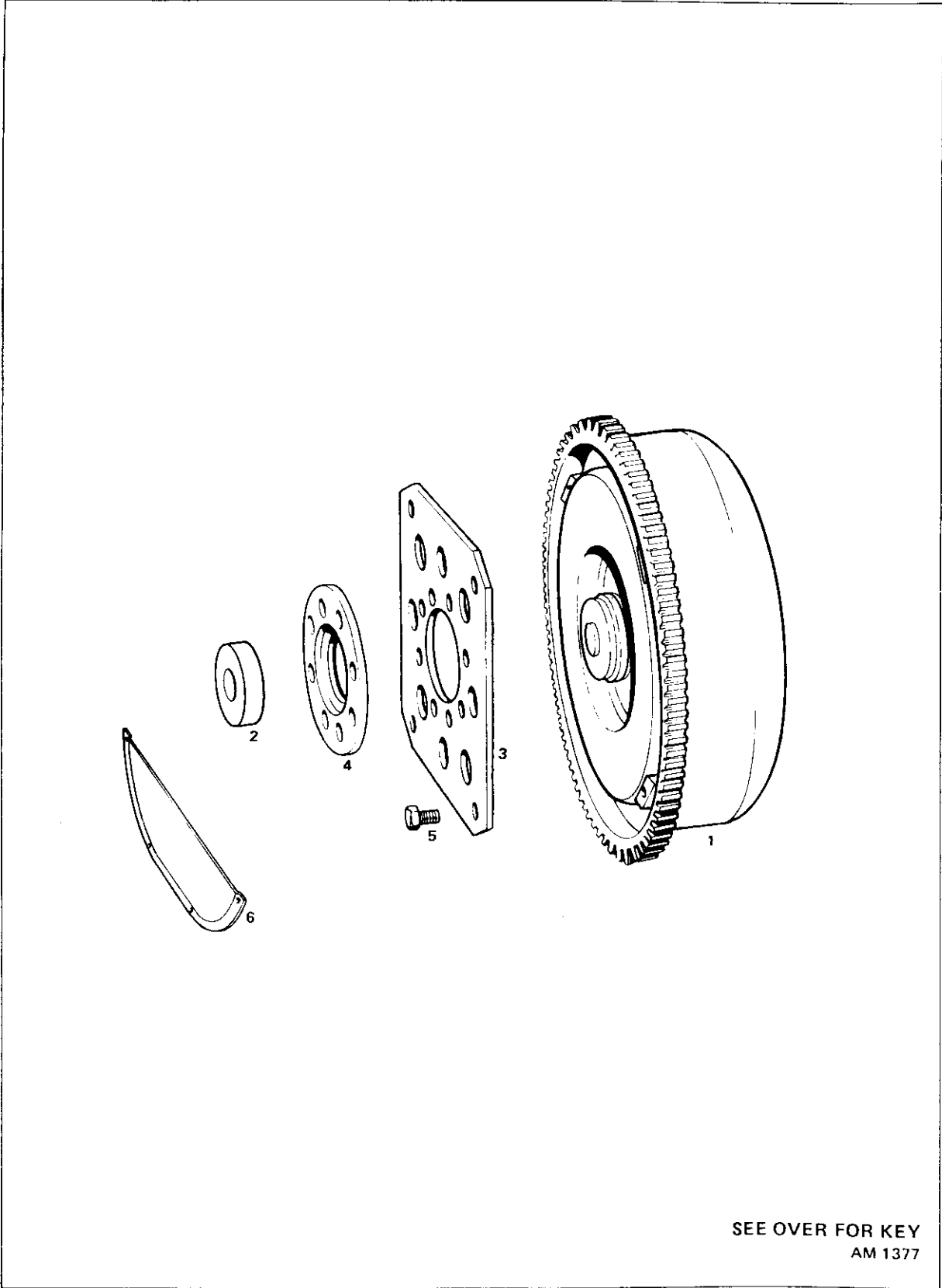


Fig. 2.8.2 Air Conditioning Systems as at Feb. 1982

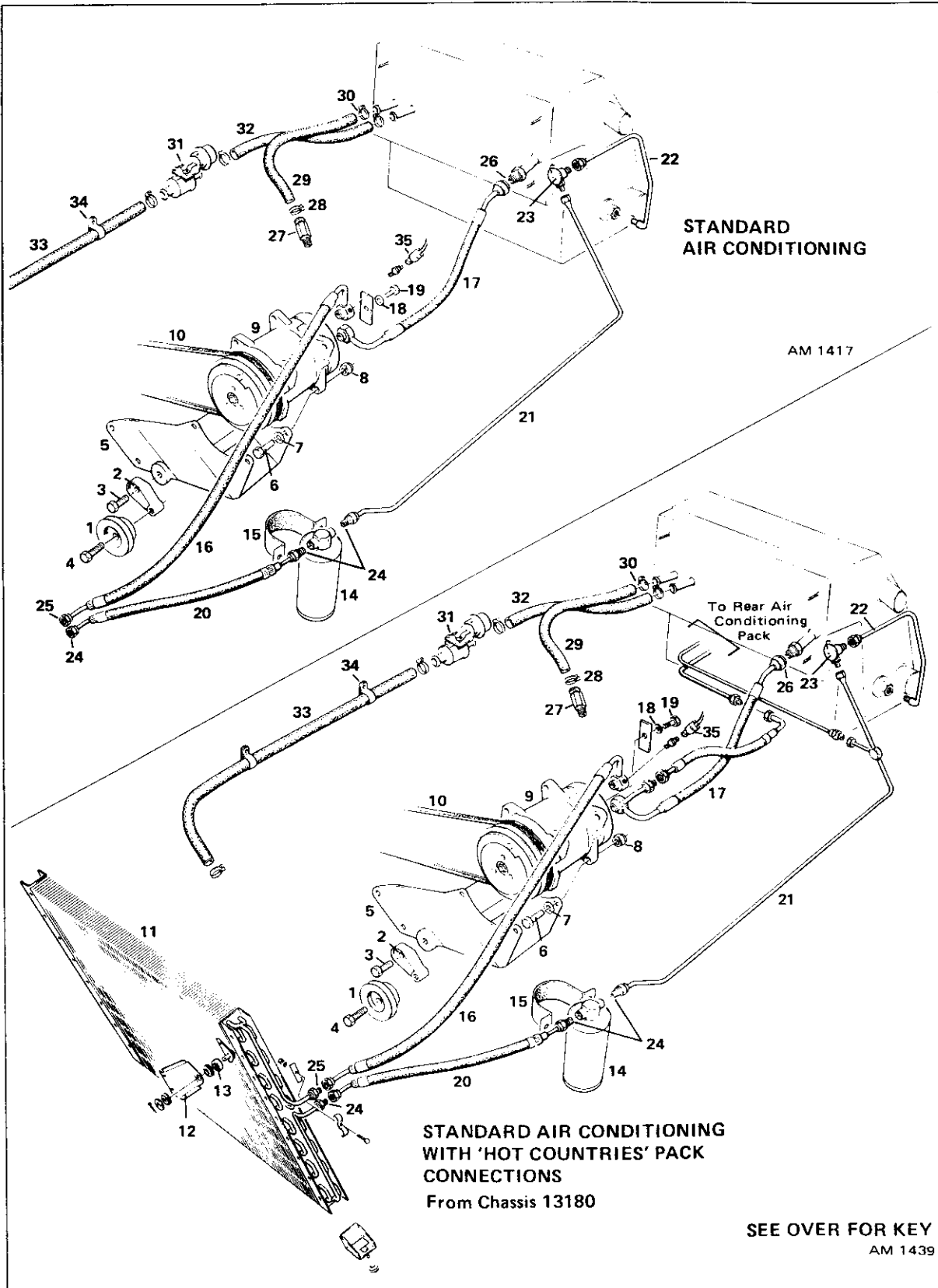
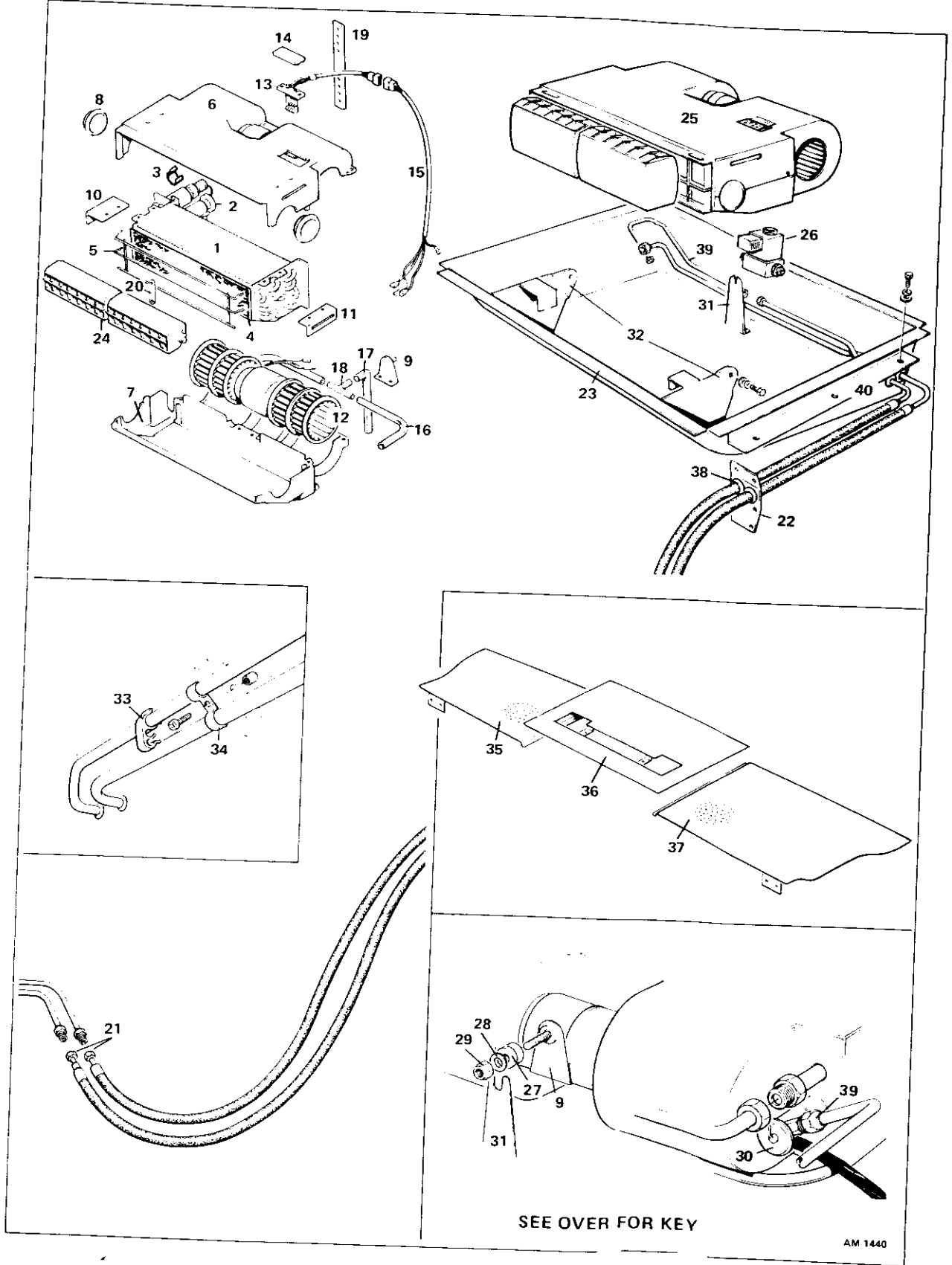


Fig. 2.8.5 Air Conditioning Pack - Rear



SEE OVER FOR KEY

AM 1440



# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

# 2.8 AIR CONDITIONING

Fig. 2.8.4 Blower Unit - LHD Cars

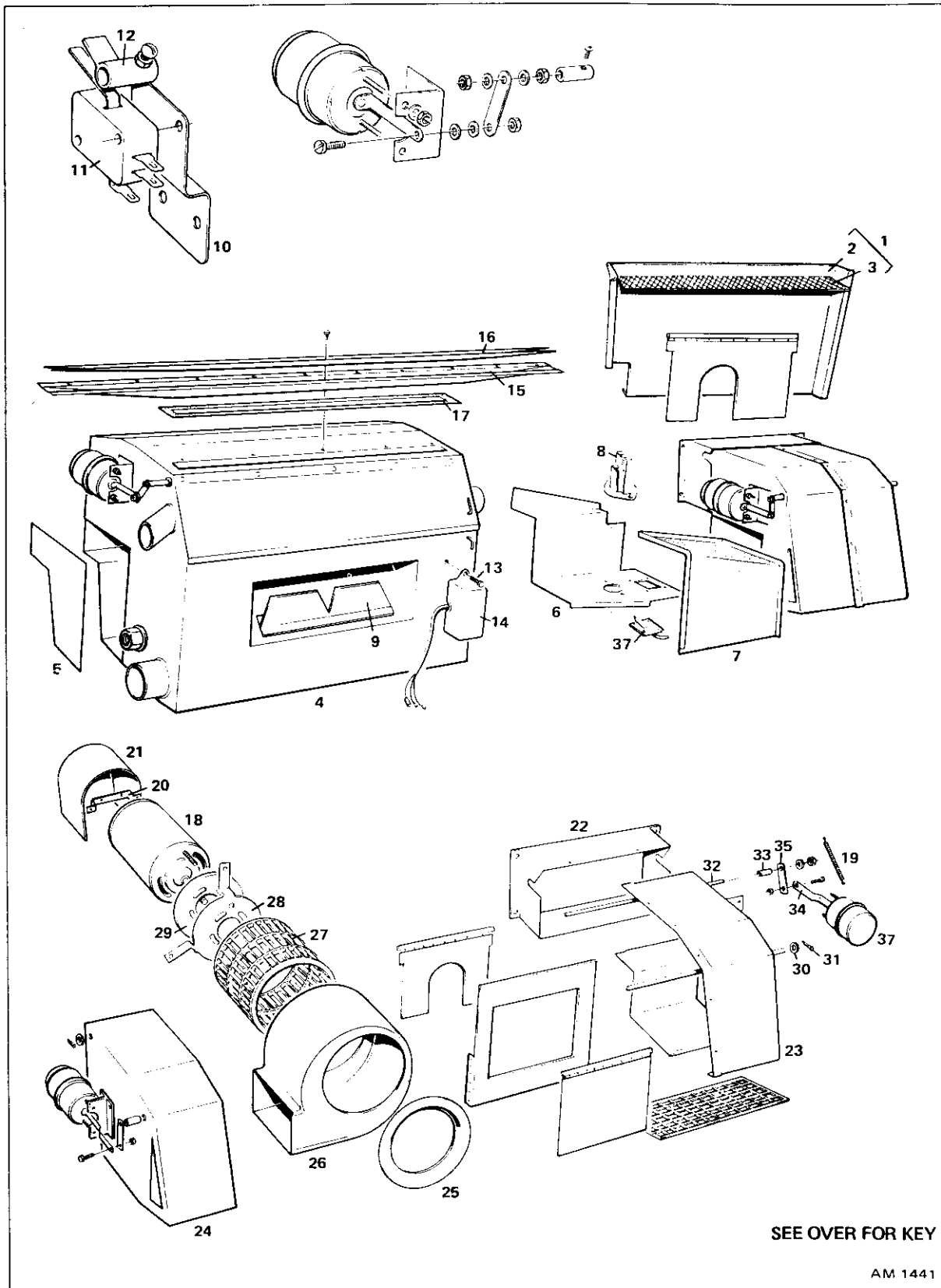


Fig. 2.8.4 Blower Unit - LHD Cars

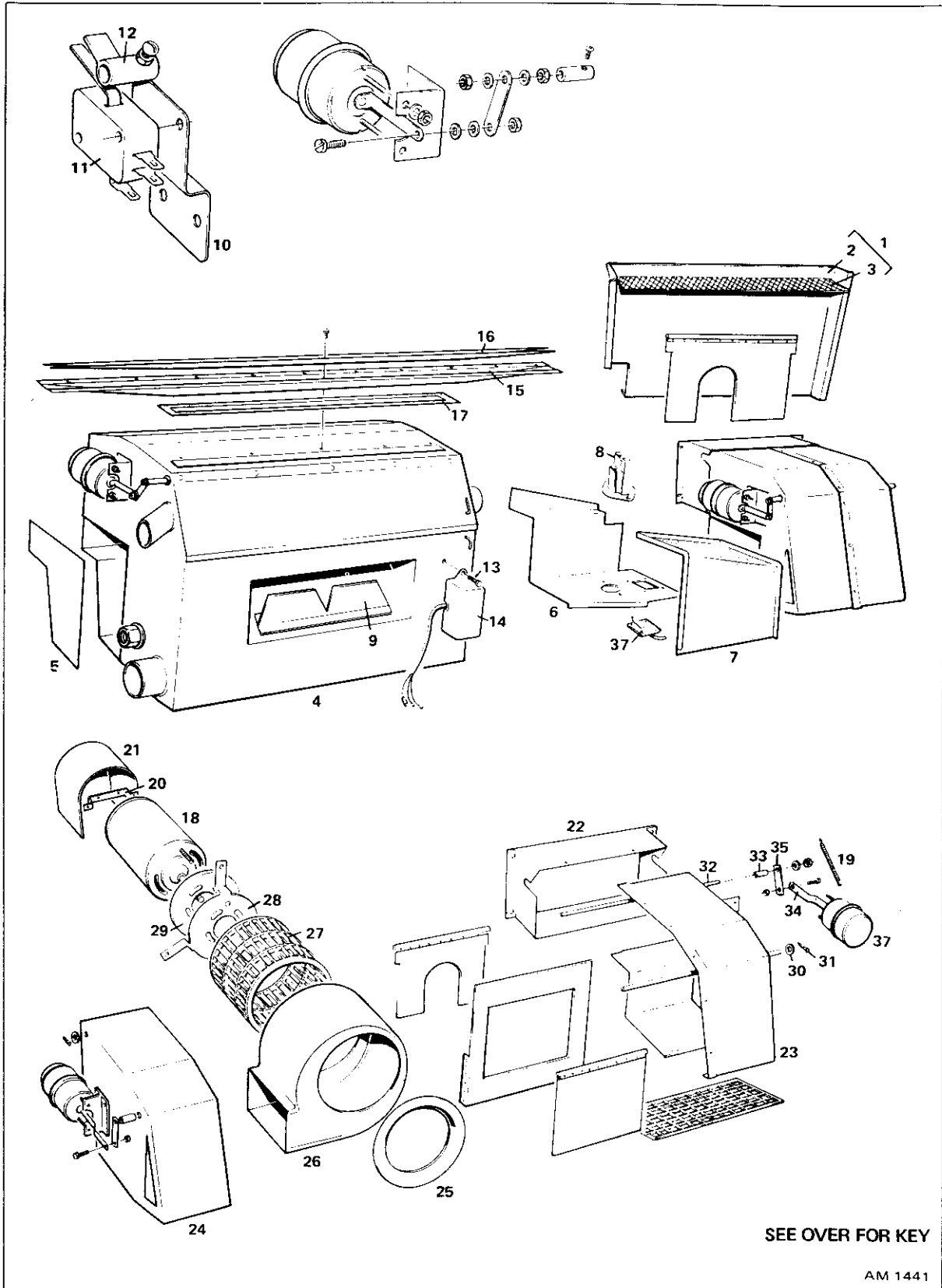
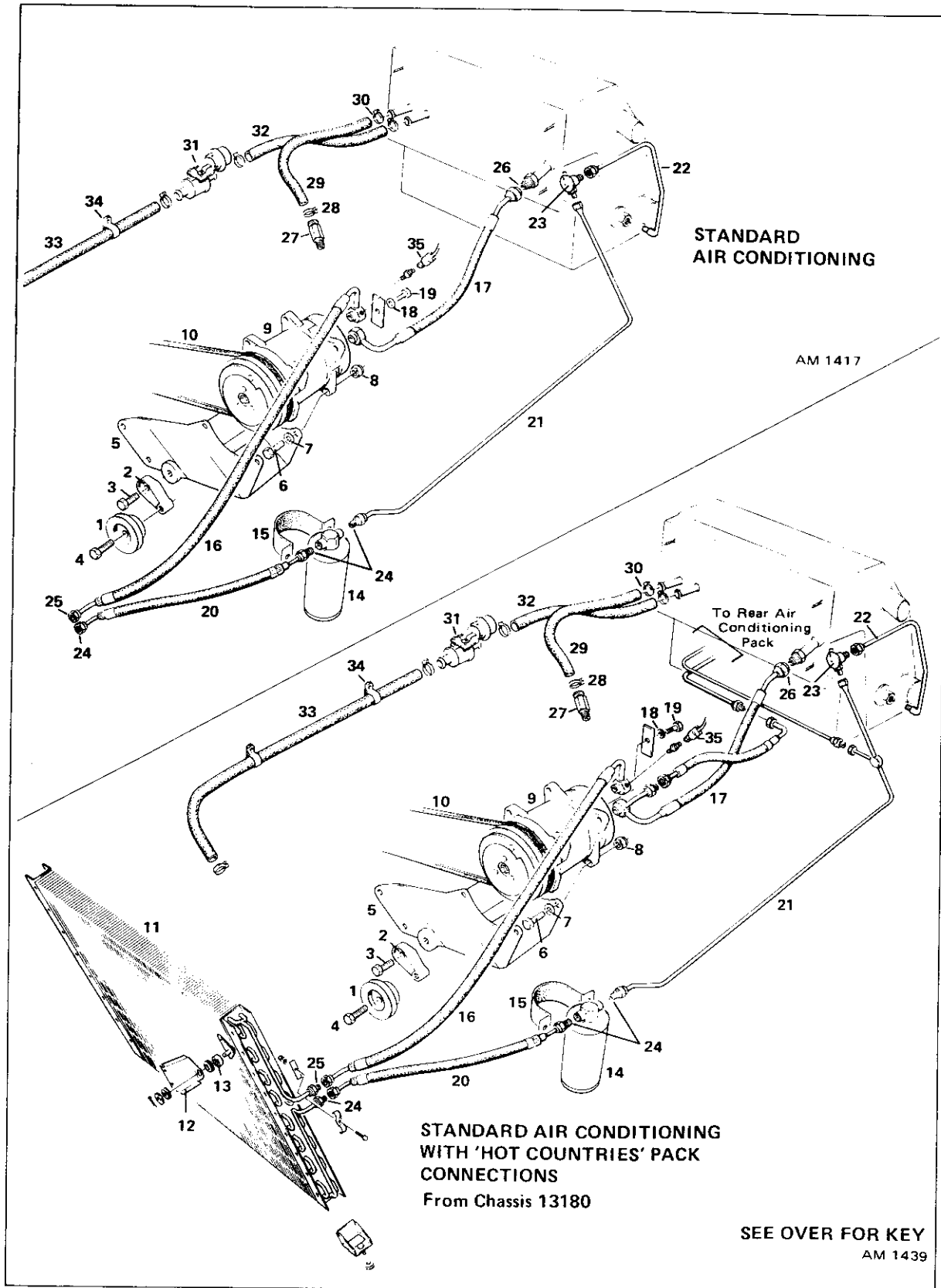




Fig. 2.8.2 Air Conditioning Systems as at Feb. 1982



AM 1417

STANDARD  
AIR CONDITIONING

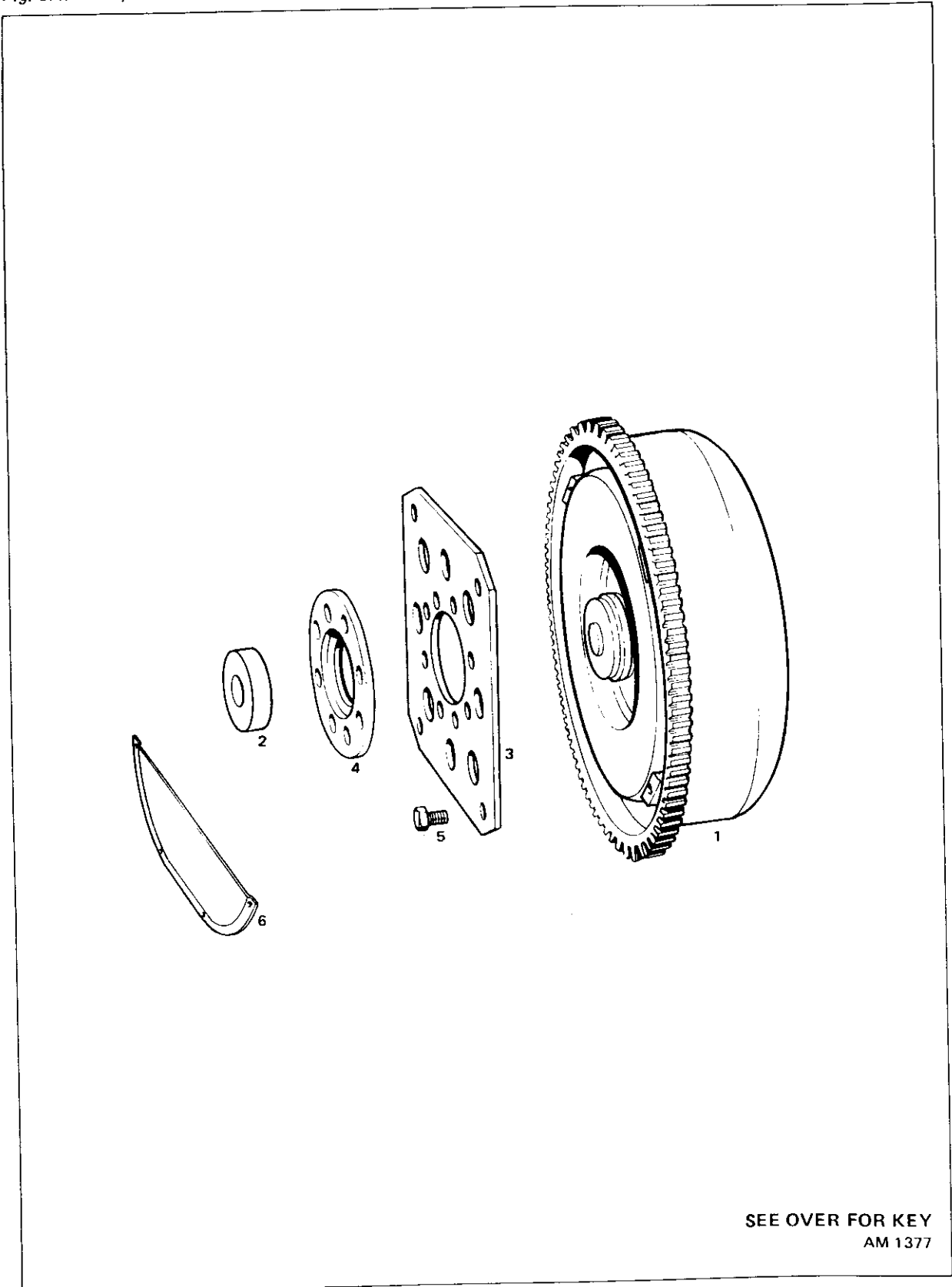
To Rear Air  
Conditioning  
Pack

STANDARD AIR CONDITIONING  
WITH 'HOT COUNTRIES' PACK  
CONNECTIONS  
From Chassis 13180

SEE OVER FOR KEY  
AM 1439

# AUTOMATIC TRANSMISSION

Fig. 3.1.1 Torque Converter

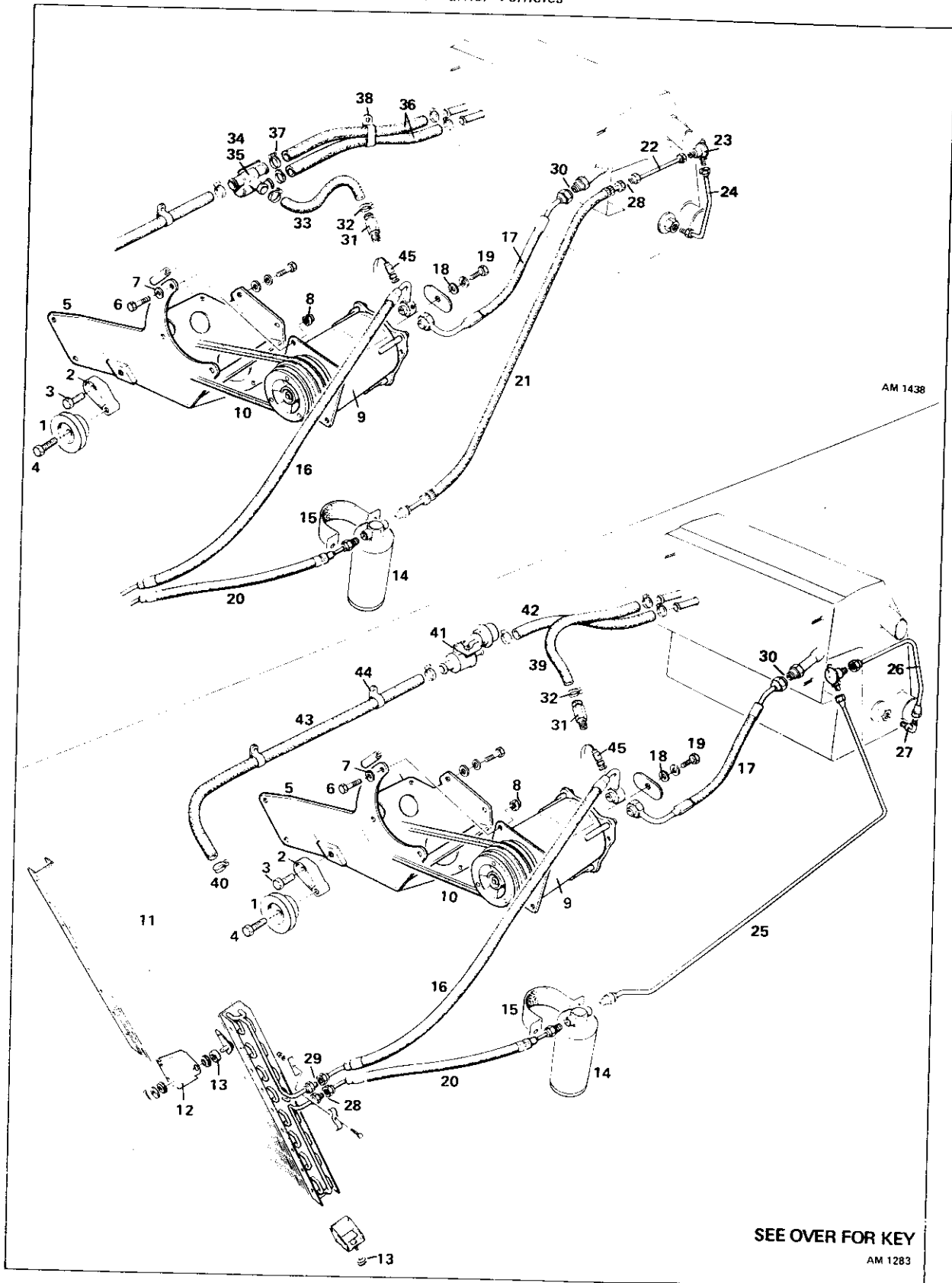


# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

2.8

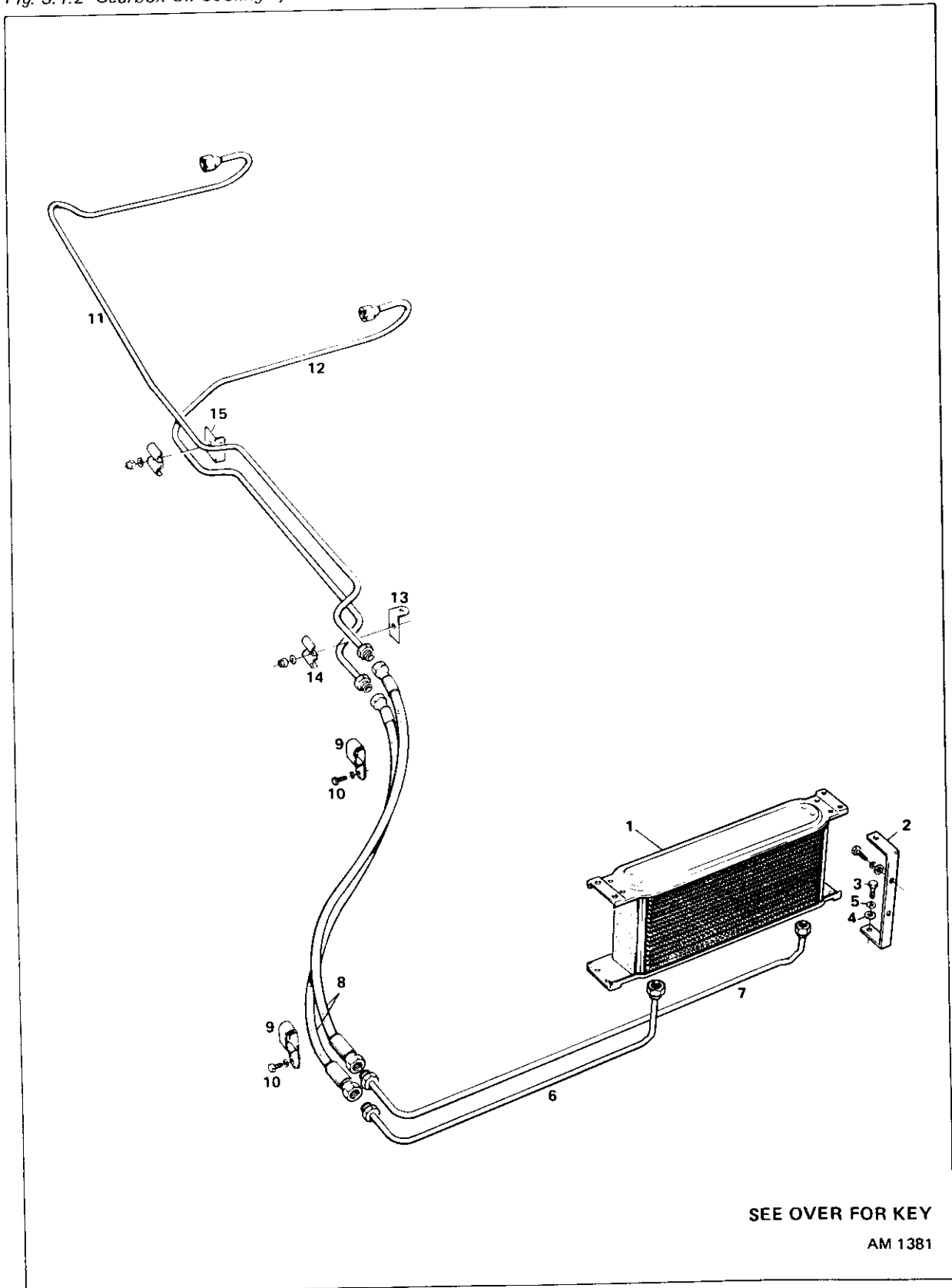
## AIR CONDITIONING

Fig. 2.8.1 Air Conditioning Systems as Fitted to Earlier Vehicles



# AUTOMATIC TRANSMISSION

Fig. 3.1.2 Gearbox Oil Cooling System

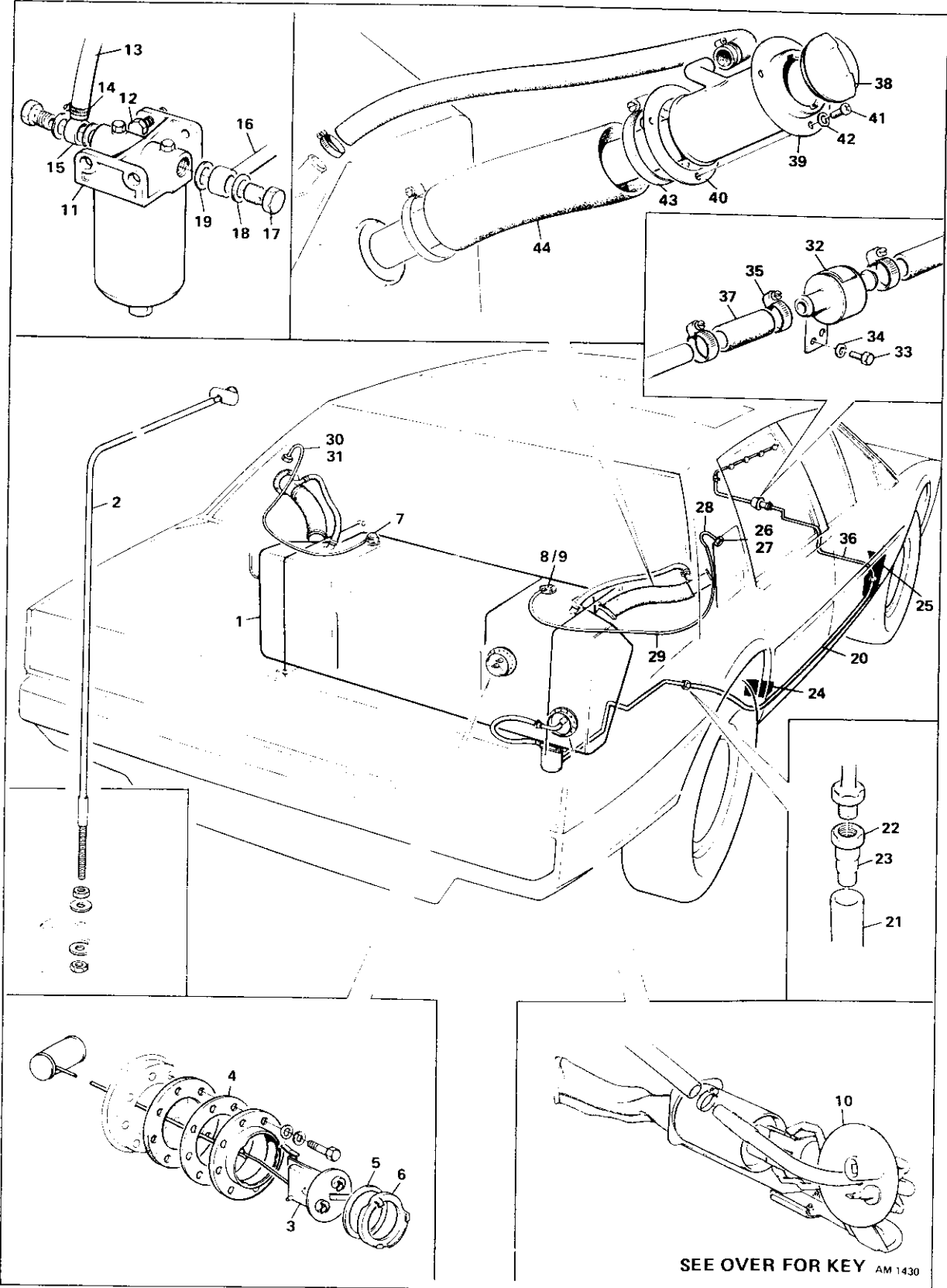


SEE OVER FOR KEY

AM 1381

FUEL SYSTEM

Fig. 2.6.1 Fuel System



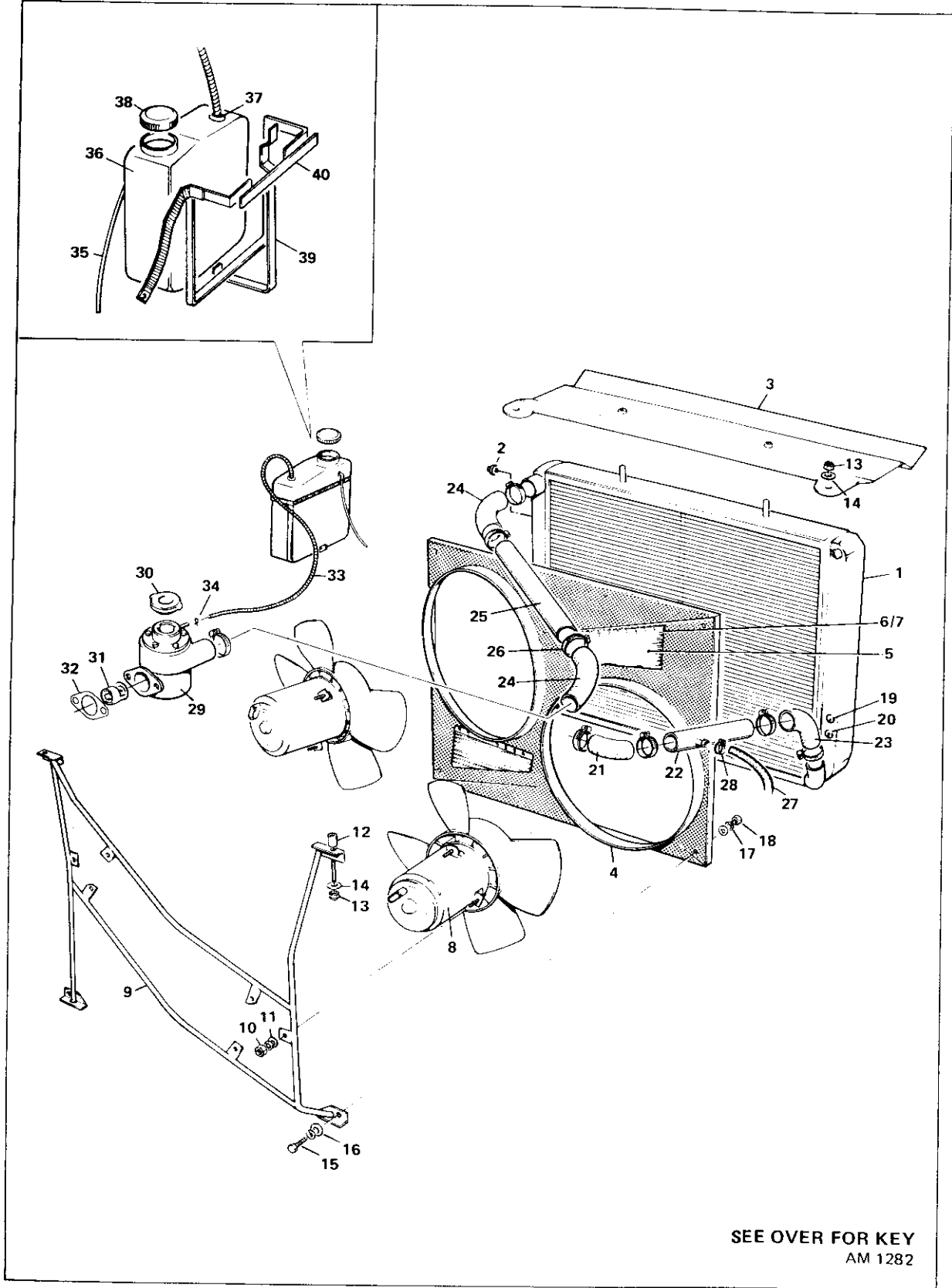




# Fuel, Emission Control, Exhaust, Cooling and Air Conditioning

## COOLING SYSTEM

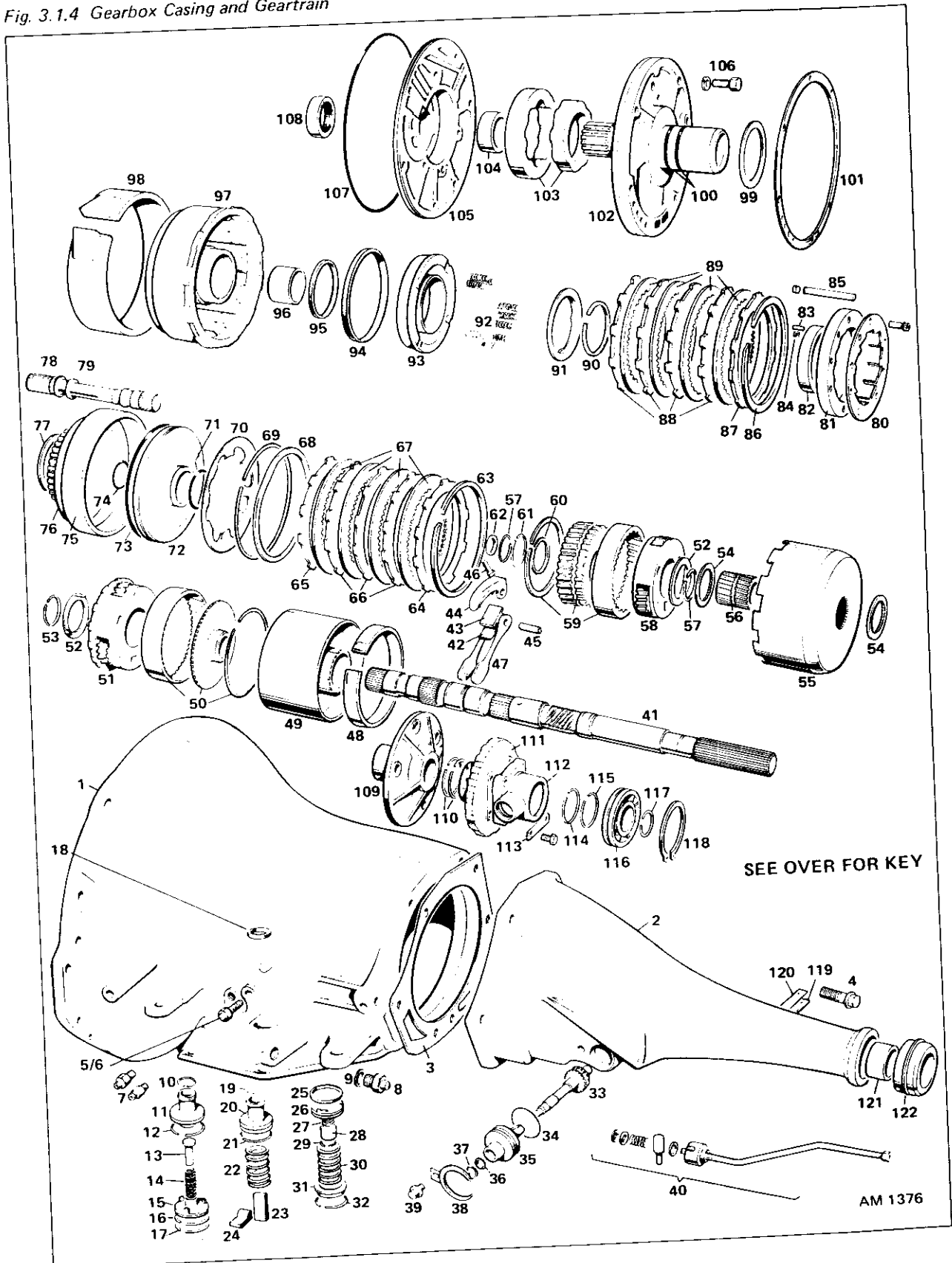
Fig. 2.7.1 Cooling System



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AM 1282

# AUTOMATIC TRANSMISSION

Fig. 3.1.4 Gearbox Casing and Geartrain



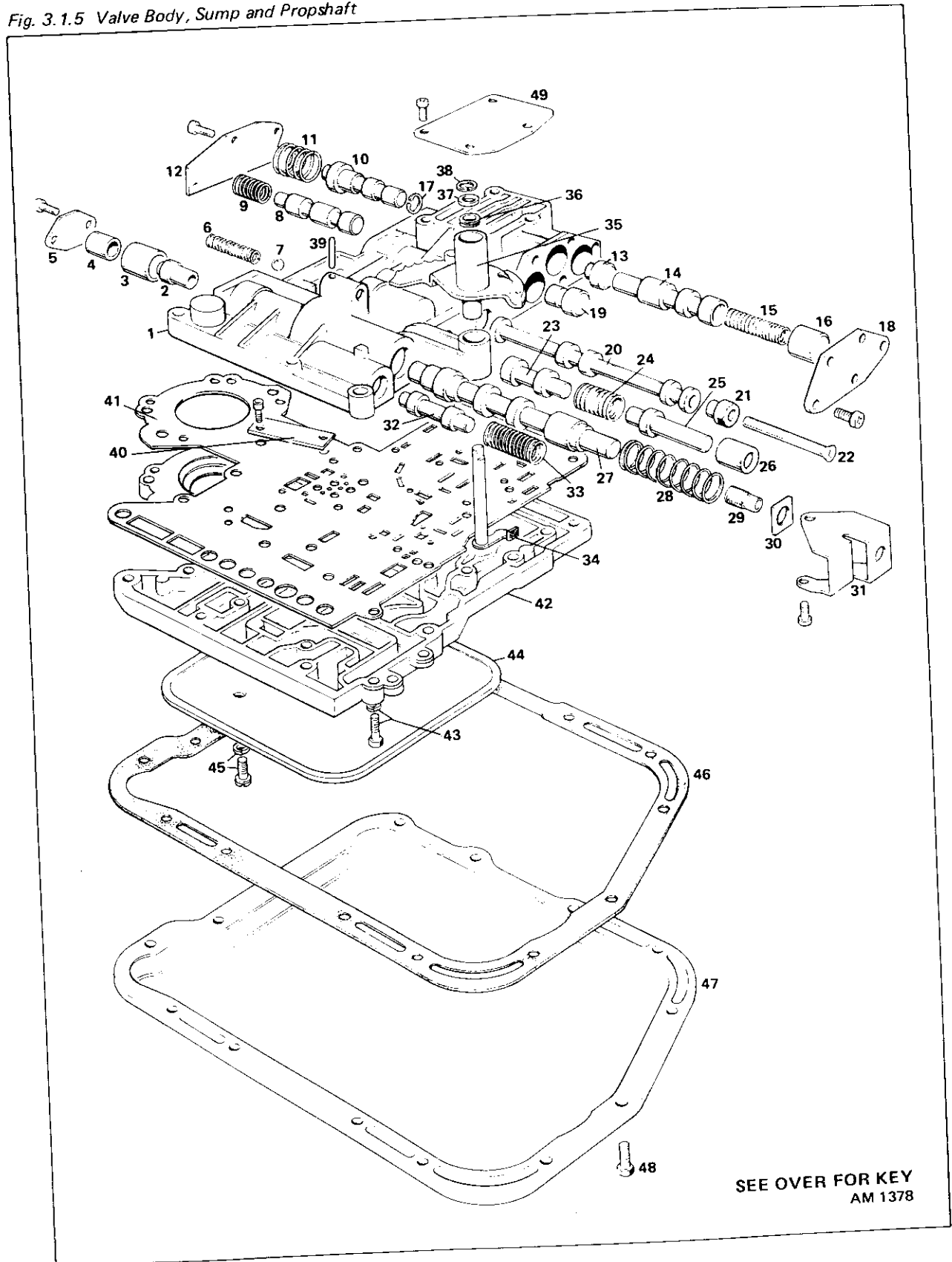
## AUTOMATIC TRANSMISSION

## KEY TO FIG. 3.1.4

1	Transmission case	60	Washer
2	Extension, transmission case	61	Snap ring
3	Gasket	62	Washer
4	Screw and lockwasher	63	Snap ring
5	Screw, kickdown band adjustment	64	Pressure plate, rear clutch, front
6	Nut, kickdown band adjustment screw	65	Pressure plate, rear clutch, rear
7	Union, oil cooler, return/feed	66	Pressure plate, rear clutch
8	Switch, neutral starter/reverse lamp	67	Disc, rear clutch
9	Washer, switch	68	Retainer, rear clutch piston
10	Ring, kickdown servo piston, small	69	Snap ring
11	Piston, kickdown servo	70	Spring plate
12	Ring, piston seal, large	71	Seal, rear clutch piston, outer
13	Rod, kickdown servo piston	72	Piston rear clutch
14	Spring, kickdown servo piston	73	Seal, rear clutch piston, inner
15	Guide, kickdown servo	74	Sealing ring
16	Ring, kickdown servo guide, large	75	Retainer, rear clutch
17	Snap ring, kickdown servo guide	76	Retainer, rear clutch, piston
18	Seal, manual valve shaft	77	Thrust washer, green
19	Ring, piston seal, small	78	Input shaft
20	Piston, accumulator	79	Ring, input shaft
21	Ring, piston seal, large	80	Retainer
22	Spring accumulator	81	Cam
23	Strut, kickdown band	82	Race
24	Lever, kickdown band	83	Roller
25	Seal, reverse servo piston	84	Spring
26	Piston, reverse servo	85	Shaft, kickdown band lever
27	Spring, reverse servo	86	Snap ring
28	Plug, reverse servo	87	Pressure plate, front clutch
29	Snap ring, reverse servo	88	Pressure plate, front clutch
30	Spring, reverse servo	89	Disc, front clutch
31	Retainer, reverse servo	90	Snap ring
32	Snap ring, piston spring	91	Retainer
33	Drive pinion, speedometer, 29 teeth	92	Spring
34	'O' ring	93	Piston, front clutch
35	Adaptor	94	Seal front clutch piston, outer
36	Seal adaptor	95	Seal, front clutch piston, inner
37	Ring	96	Bush retainer
38	Clamp	97	Retainer, front clutch
39	Screw and washer	98	Kickdown band
40	Rod assembly, park/lock	99	Thrust washer
41	Output shaft	100	Sealing ring
42	Strut, reverse band	101	Gasket
43	Shaft, reverse band	102	Reaction shaft
44	Lever, with stem, reverse band	103	Rotor assembly, front oil pump
45	Shaft, reverse band/lever	104	Bush
46	Screw, reverse band adjustment	105	Housing
47	Link assembly, reverse band	106	Screw and lock washer
48	Reverse band	107	Seal, front pump housing
49	Drum, reverse	108	Oil seal
50	Gear assembly, rear annulus	109	Support, output shaft
51	Carrier assembly, rear	110	Ring
52	Washer, thrust	111	Support governor
53	Snap ring	112	Governor, assembly
54	Plate	113	Lock plate
55	Shell, sun gear	114	Snap ring
56	Sun gear	115	Ring
57	Snap ring	116	Bearing output shaft
58	Carrier assembly, front	117	Snap ring
59	Gear annulus, front annulus	118	Snap ring outer
		119	Inspection cover, output, shaft bearing
		120	Gasket
		121	Bush
		122	End seal

# AUTOMATIC TRANSMISSION

Fig. 3.1.5 Valve Body, Sump and Propshaft



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AM 1378

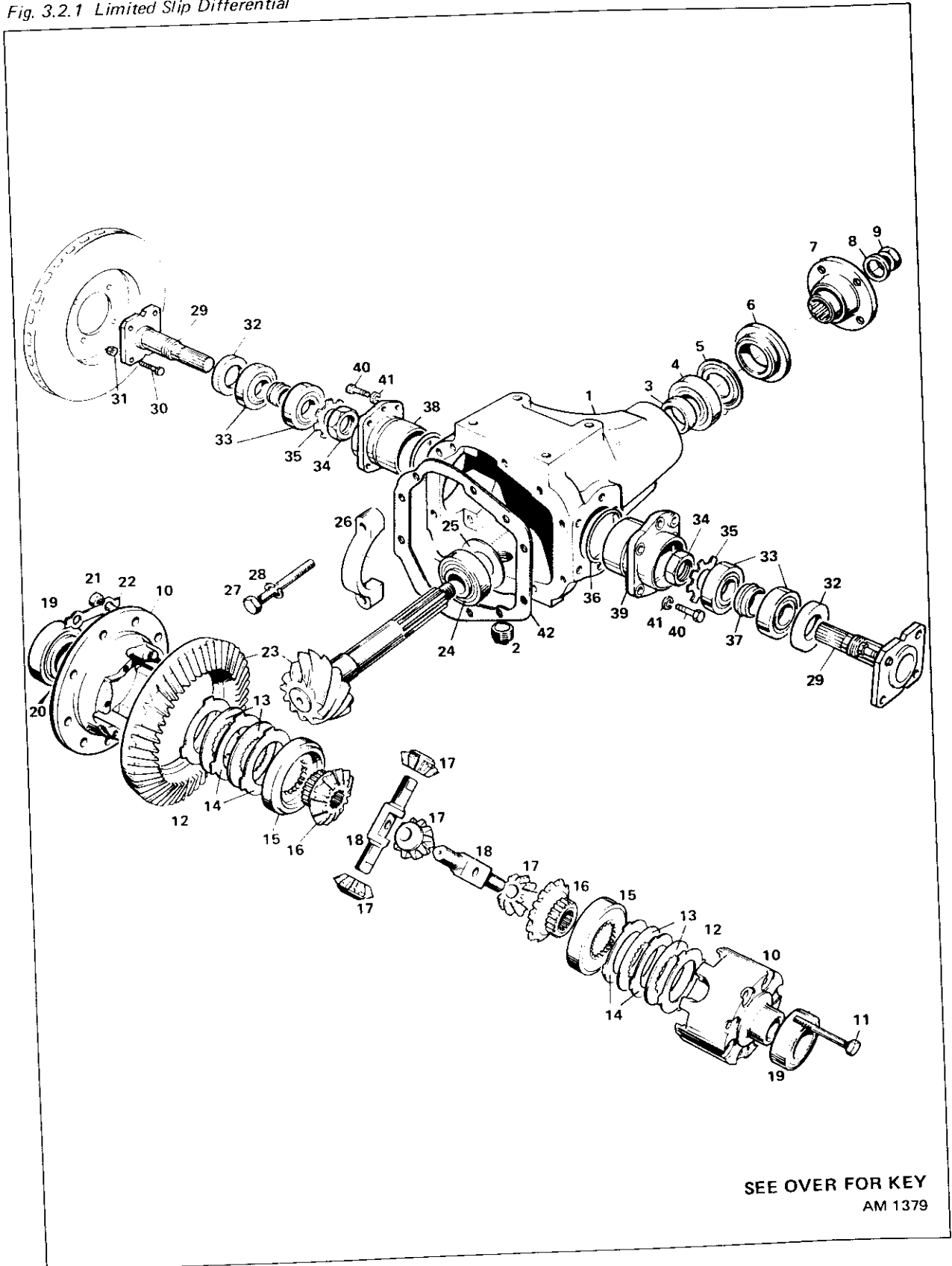
## AUTOMATIC TRANSMISSION

## KEY TO FIG. 3.1.5

- 1 Valve body
- 2 Plug, throttle pressure valve
- 3 Sleeve
- 4 Valve, line pressure
- 5 Cover
- 6 Spring, manual valve lever
- 7 Ball
- 8 Valve
- 9 Spring
- 10 Valve, 2-3 shift
- 11 Spring, 2-3 shift
- 12 Cover
- 13 Governor plug, 2-3 shift valve
- 14 Shuttle valve
- 15 Spring, shuttle valve, primary
- 16 Plug, shuttle valve
- 17 Snap ring, shuttle valve
- 18 Cover
- 19 Governor plug, 1-2 shift
- 20 Manual valve
- 21 Nut, throttle pressure adjusting screw
- 22 Screw, throttle pressure adjusting
- 23 Throttle valve
- 24 Spring, throttle valve
- 25 Kickdown valve
- 26 Plug, kickdown
- 27 Regulator valve
- 28 Spring, regulator valve
- 29 Screw, line pressure adjusting
- 30 Nut, line pressure adjusting screw
- 31 Retainer, regulator spring
- 32 Valve, torque converter control
- 33 Spring, torque converter control
- 34 Lever, throttle valve
- 35 Lever, manual valve
- 36 Seal, 11/16 in. od., throttle lever shaft
- 37 Washer, throttle lever shaft
- 38 Snap ring, throttle lever shaft
- 39 Pin, manual valve lever spring
- 40 Support, transfer plate
- 41 Plate, valve body
- 42 Plate, transfer
- 43 Screw and lockwasher
- 44 Oil strainer
- 45 Screw and lockwasher
- 46 Gasket
- 47 Sump assembly
- 48 Screw
- 49 Cover

HYPOID UNIT

Fig. 3.2.1 Limited Slip Differential



SEE OVER FOR KEY  
AM 1379

## HYPOID UNIT

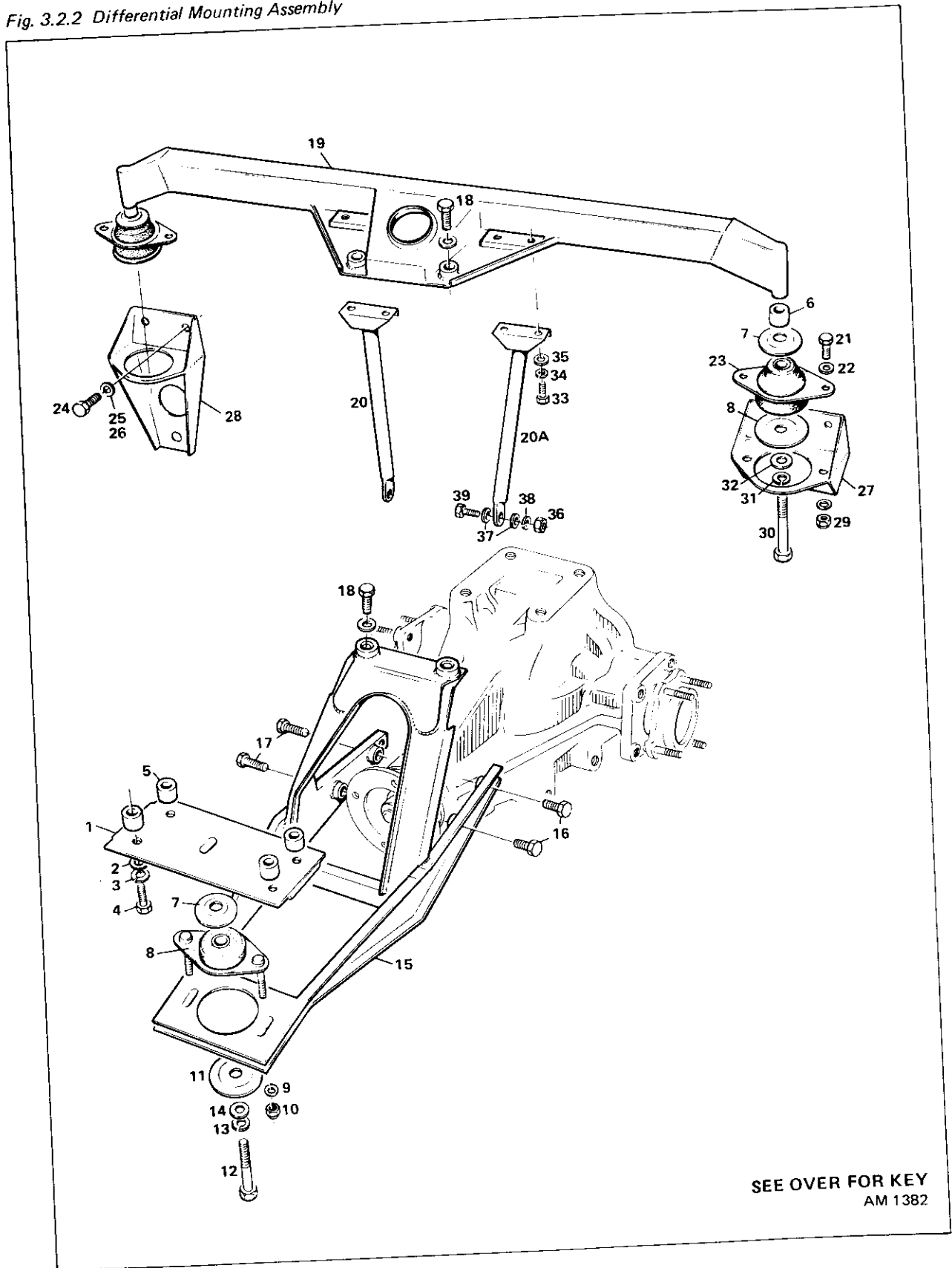
## KEY TO FIG. 3.2.1

1	Differential housing
2	Drain plug
3	Collapsible spacer
4	Pinion taper roller bearing, outer
5	Pinion oil slinger
6	Pinion oil seal
7	Drive flange
8	Washer, pinion nut
9	Nut
10	Differential case assembly (2 halves)
11	Bolt, differential case
12	Belleville clutch plate
13	Clutch friction disc
14	Tagged clutch plate
15	Side gear ring
16	Side gear
17	Mating pinion
18	Pinion shaft
19	Differential taper roller bearing
20	Shim, differential bearing
21	Bolt, crownwheel to differential case
22	Tab washer
23	Crownwheel and pinion
24	Pinion taper roller bearing, inner
25	Shim, pinion bearing, inner
26	Cap, differential bearing
27	Bolt
28	Lockwasher
29	Output shaft
30	Bolt
31	Nut
32	Oil seal
33	Taper roller bearing
34	Locknut
35	Lockwasher
36	'O' ring
37	Collapsible spacer
38	Bearing housing, LH
39	Bearing housing, RH
40	Bolt
41	Washer, spring
42	Gasket, rear cover



# HYPOID UNIT

Fig. 3.2.2 Differential Mounting Assembly



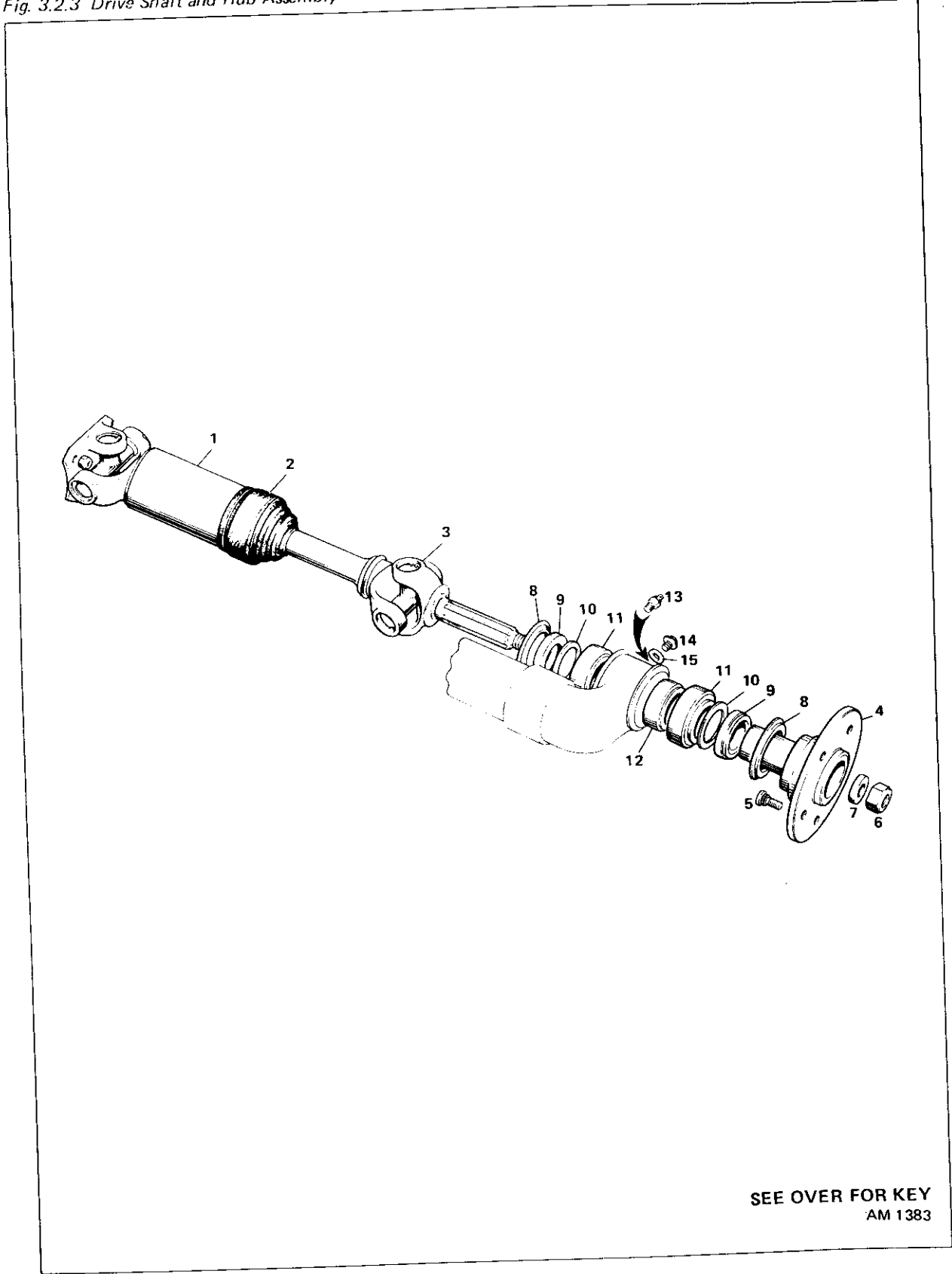
## HYPOID UNIT

## KEY TO FIG. 3.2.2

1	Front hypoid-mounting bracket
2	Washer, plain
3	Washer, spring
4	Bolt
5	Spacer
6	Spacer
7	Washer
8	Metalastik mounting front
9	Washer
10	Nut
11	Washer
12	Bolt
13	Washer, spring
14	Washer, plain
15	Cantilever assembly, hypoid mounting
16	Set screw
17	Set screw
18	Set screw
19	Cross beam
20	Support tube assembly, RH
20A	Support tube assembly, LH
21	Set screw
22	Washer, plain
23	Metalastik mounting
24	Set screw
25	Washer, spring
26	Washer, plain
27	Watts link bracket, LH
28	Watts link bracket, RH
29	Nut
30	Bolt
31	Washer, spring
32	Washer, plain
33	Set screw
34	Washer, spring
35	Washer, plain
36	Nut
37	Washer, plain
38	Washer, spring
39	Set screw

# HYPOID UNIT

Fig. 3.2.3 Drive Shaft and Hub Assembly



SEE OVER FOR KEY  
AM 1383

## HYPOID UNIT

## KEY TO FIG. 3.2.3

- 1 Drive shaft assembly
- 2 Drive shaft gaiter
- 3 Universal joint
- 4 Hub
- 5 Stud
- 6 Nut, Nyloc
- 7 Washer
- 8 Grit shield assembly
- 9 Oil seal
- 10 Flinger
- 11 Bearing
- 12 Spacer
- 13 Nipple, grease
- 14 Plug
- 15 Washer, fibre





## 4.1

### REAR SUSPENSION

#### KEY TO FIG. 4.1.1

- 1 Self-levelling damper unit
- 2 Nut
- 3 Washer
- 4 Bush, thin
- 5 Locating ring
- 6 Bush, thick
- 7 Bump stop
- 8 Plastic washer
- 9 Lower bush
- 10 Locknut
- 11 Lockwasher
- 12 Gas cylinder
- 13 Road spring, rear
- 14 Collar
- 15 Spring cover plate
- 16 Anchor bracket, upper
- 17 Anchor bracket, lower
- 18 Stud
- 19 Nut
- 20 Axle beam and anchor brackets assembly
- 21 Nut, Nyloc
- 22a Nut, Nyloc
- 23 Washer, special
- 24 Bolt, radius arm, frame
- 25 Washer, plain
- 26 Radius arm assembly
- 27 Bolt, radius arm, axle
- 28 Plug, flanged
- 29 Washer, fibre
- 30 Washer, plain
- 31 Watts link assembly
- 32 Bush, Watts link
- 33 Bolt, Watts link/frame
- 34 Washer
- 35 Swinging link
- 36 Pin, swinging link
- 37 Bush, swinging link, centre
- 38 Washer
- 39 Locknut, Philidas
- 40 Washer, bevelled
- 41 Bush, Watts link, swinging link
- 42 Bolt, Watts link, swinging link
- 43 Washer, plain
- 44 Nut, Nyloc
- 45 Special bolt, shock absorber, lower
- 46 Washer, plain
- 47 Nut
- 48 Gas cylinder bracket
- 49 Screw
- 50 Washer, spring
- 51 Washer, plain
- 52 Bracket, Watts link, RH
- 53 Bracket, Watts link, LH
- 54 Radius arm bracket
- 55 Screw
- 56 Washer, spring



## FRONT SUSPENSION

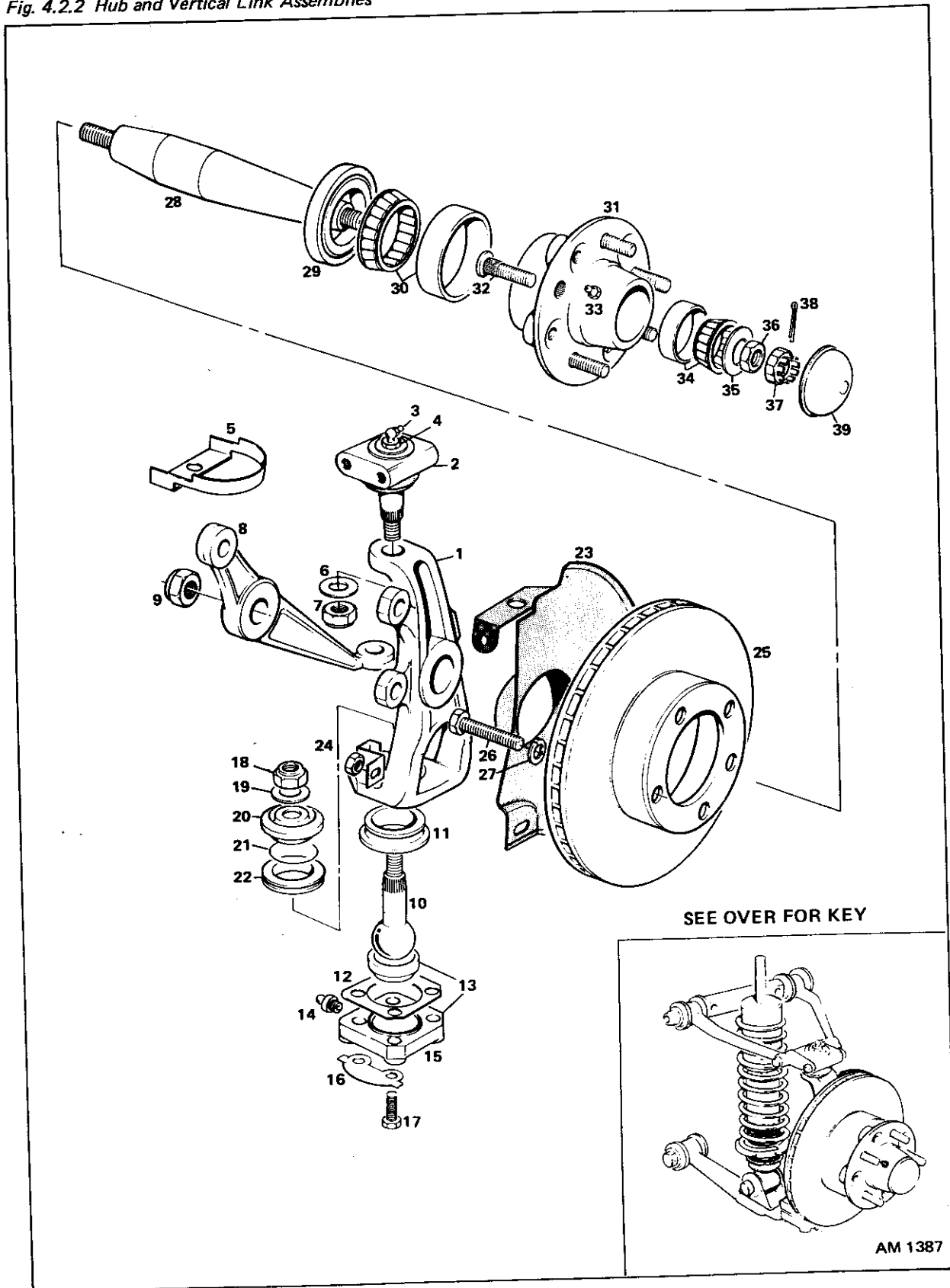
## KEY TO FIG. 4.2.1

1	Spindle, upper wishbone	60	Washer, inner
2	Shim	61	Bush
3	Bolt	62	Washer, outer
4	Washer, spring	63	Nut, Nyloc
5	Nut, Philidas		
6	Arm, upper wishbone		
7	Washer		
8	Bush, upper wishbone		
9	Washer, special		
10	Nut, Nyloc		
11	Bolt		
12	Bolt		
13	Shim, castor		
14	Nut, Nyloc		
15	Shock absorber		
16	Nut, top		
17	Washer, spring		
18	Washer, flat		
19	Bush, top		
20	Bush, eye		
21	Road spring		
22	Plate, spring		
23	Rubber insulation ring		
24	Bolt, shock absorber		
25	Washer, plain		
26	Nut, Nyloc		
27	Arm, lower wishbone, RH		
28	Bolt, arm to chassis		
29	Washer		
30	Washer special		
31	Bush, wishbone arm		
32	Washer, plain		
33	Nut, Nyloc		
34	Bracket, shock absorber		
35	Bolt		
36	Plate, mounting, RH		
37	Washer, plain		
38	Nut		
39	Strut, brake reaction		
40	Bolt		
41	Washer, plain		
42	Nut, Nyloc		
43	Nut		
44	Washer, flat		
45	Bush		
46	Tube, spacer, metal		
47	Washer, plastic		
48	Tube, plastic		
49	Washer, shaped		
50	Nut, Nyloc		
51	Bar, anti-roll		
52	Plate, adaptor		
53	Screw		
54	Mounting, rubber		
55	Clamp		
56	Washer, plain		
57	Washer, spring		
58	Screw		
59	Link, anti-roll bar		



# FRONT SUSPENSION

Fig. 4.2.2 Hub and Vertical Link Assemblies



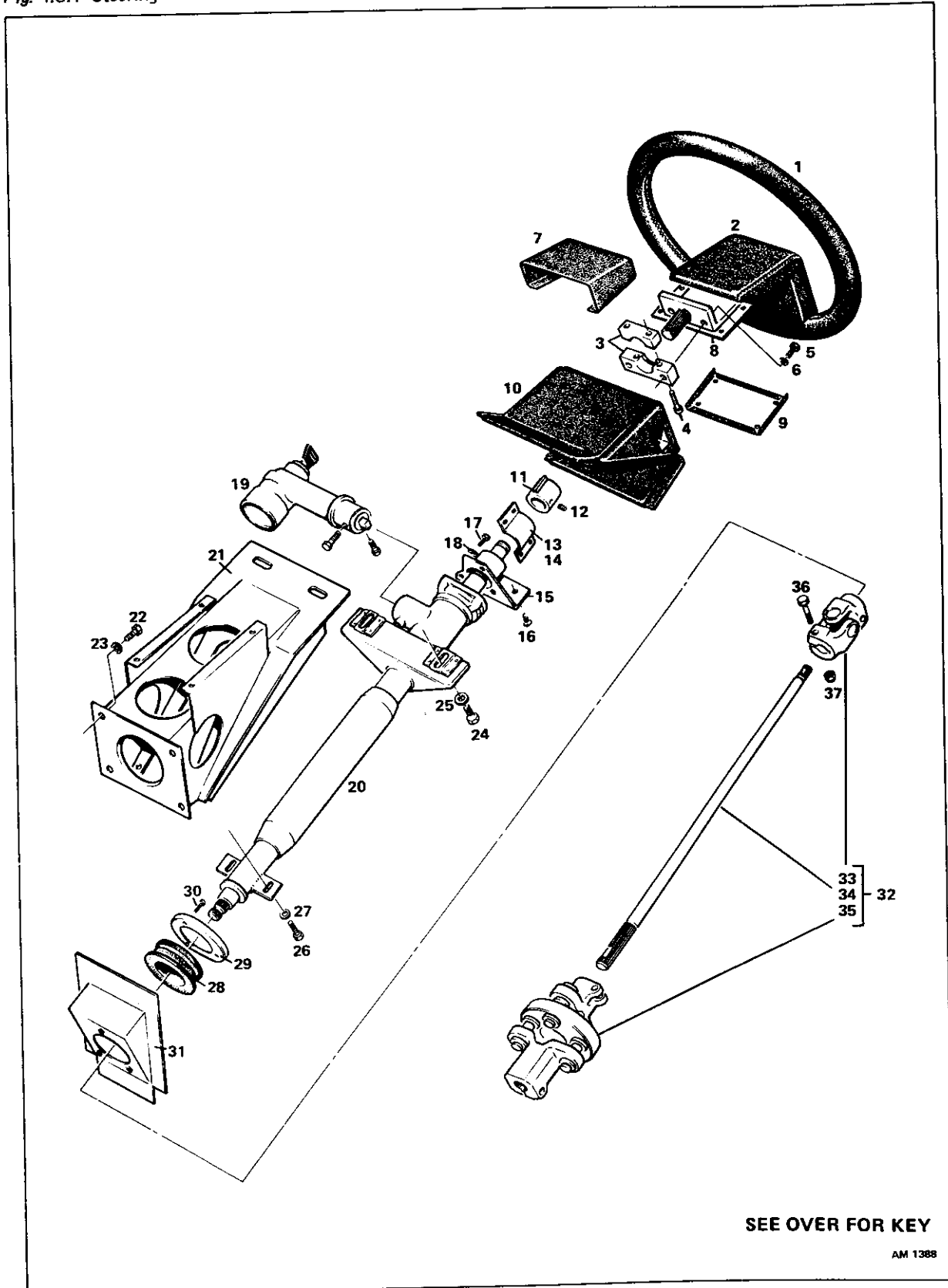
## FRONT SUSPENSION

## KEY TO FIG. 4.2.2

1	Vertical link, RH
2	Upper ball joint assembly
3	Grease nipple
4	Washer, grease nipple
5	Heatshield, upper ball joint
6	Washer, plain
7	Nut
8	Steering arm, RH
9	Nut, stub axle, inner
10	Ball pin, lower
11	Socket, upper
12	Shim
13	Socket, lower
14	Grease nipple
15	Washer, grease nipple
16	Tab washer
17	Bolt
18	Nut, Nyloc
19	Washer, plain
20	Gaiter, ball joint
21	Ring, gaiter
22	Clip, gaiter
23	Disc shield, front
24	Nut, Nyloc
25	Brake disc, front
26	Bolt
27	Washer, spring
28	Stub axle
29	Oil seal
30	Wheel bearing, inner
31	Front hub, studded
32	Stud, wheel
33	Grease nipple
34	Wheel bearing, outer
35	Washer
36	Nut, stub axle, outer
37	Nut, retaining
38	Pin, split
39	Endcap

# STEERING COLUMN

Fig. 4.3.1 Steering Column



SEE OVER FOR KEY

AM 1388

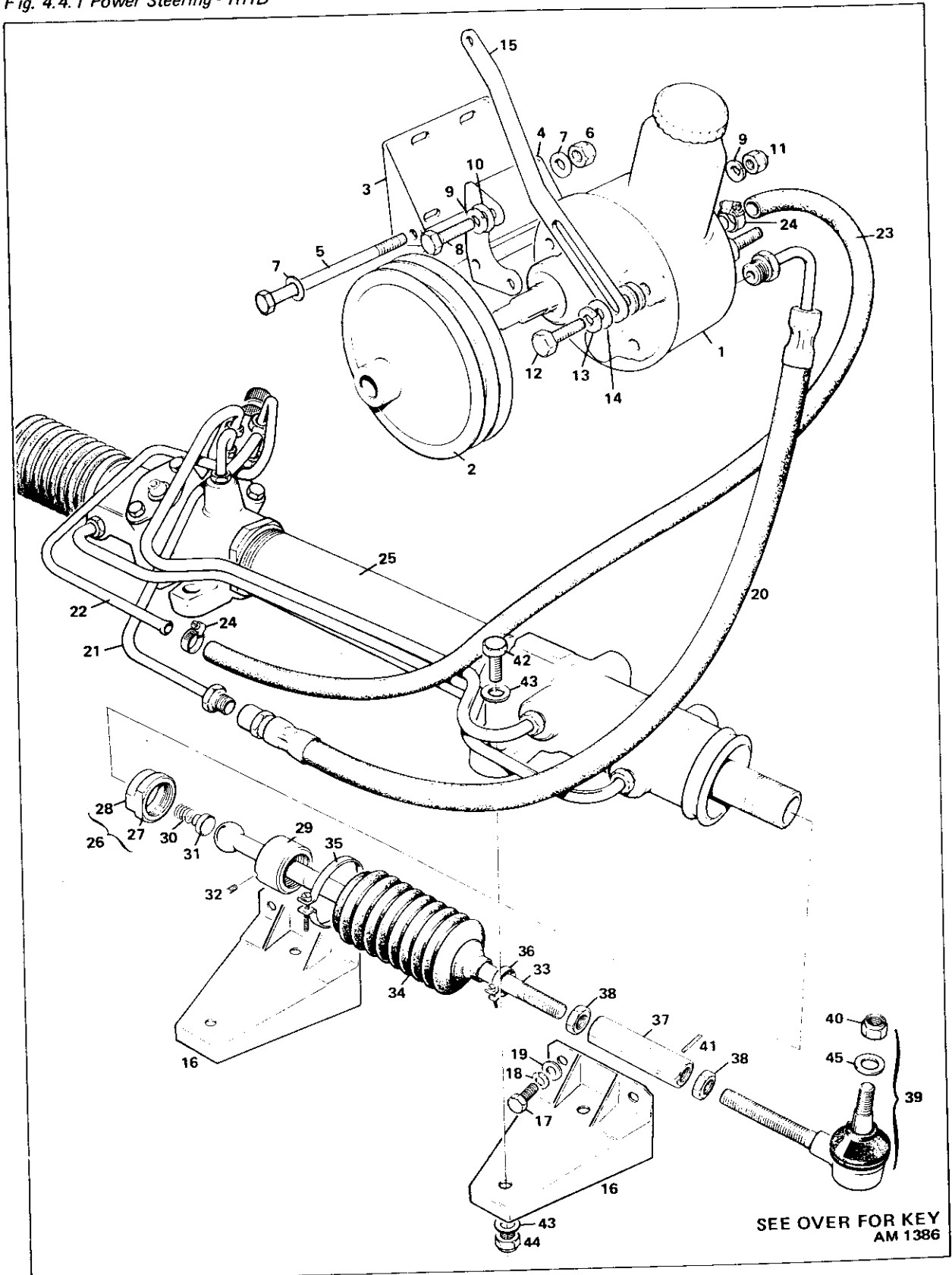
## STEERING COLUMN

## KEY TO FIG. 4.3.1

1	Steering wheel
2	Trim pad
3	Clamp assembly
4	Screw
5	Screw
6	Washer, spring
7	Trim pad, upper
8	Trim pad, mounting plate
9	Trim pad, lower
10	Cowl
11	Indicator cancelling block
12	Grubscrew
13	Cowl support assembly
14	Clamp
15	Cowl mounting bracket
16	Screw
17	Screw, Pan head
18	Washer, spring
19	Steering lock and ignition switch
20	Steering column, upper
21	Mounting bracket
22	Screw
23	Washer, spring
24	Screw
25	Washer, spring
26	Screw
27	Washer, plain
28	Seal, bulkhead
29	Seal, bracket
30	Screw
31	Panel
32	Lower steering column
33	Universal joint
34	Shaft
35	Rubber coupling
36	Bolt
37	Nut

## POWER STEERING

Fig. 4.4.1 Power Steering - RHD



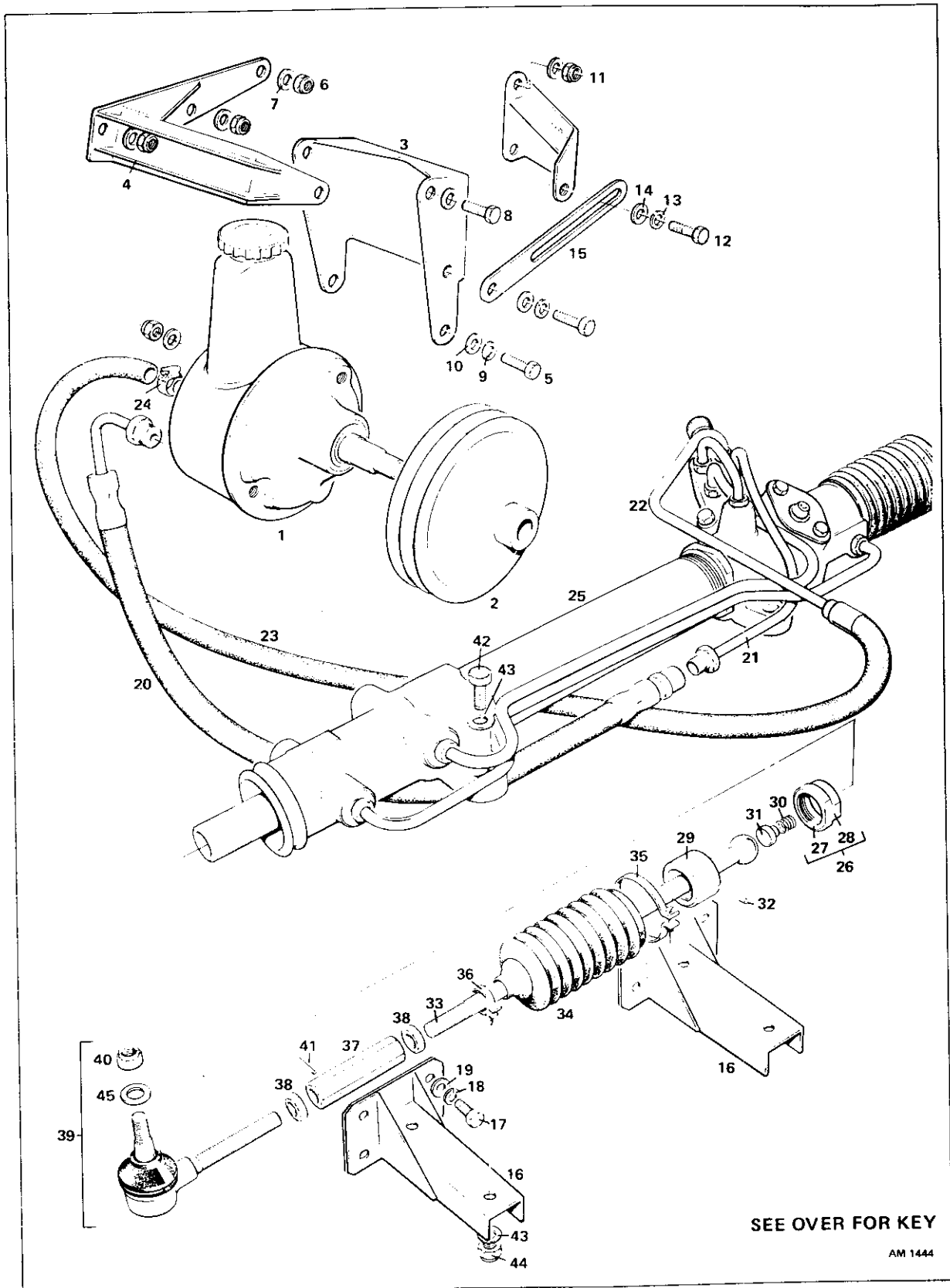
## POWER STEERING

## KEY TO FIG. 4.4.1

1	Hydraulic pump assembly
2	Pulley
3	Pump bracket
4	Pump bracket
5	Bolt
6	Nut, Nyloc
7	Washer, plain
8	Screw
9	Washer, spring
10	Washer, plain
11	Nut
12	Screw
13	Washer, spring
14	Washer, plain
15	Adjusting link
16	Rack, mounting assembly
17	Setscrew
18	Washer, spring
19	Washer, plain
20	Feed hose
21	Feed pipe
22	Return pipe
23	Return hose
24	Clip, worm drive, hose
25	Power steering unit
26	Lock stop assembly
27	Nut
28	Tube
29	Ball housing
30	Spring
31	Pad
32	Locking pin
33	Tie rod
34	Bellows
35	Clip, spring, large
36	Clip, spring, small
37	Adjusting nut
38	Locknut
39	Track rod end
40	Nut, Nyloc
41	Tension pin
42	Bolt
43	Washer, plain
44	Nut, Nyloc
45	Washer, plain

POWER STEERING

Fig. 4.4.2 Power Steering - LHD



## POWER STEERING

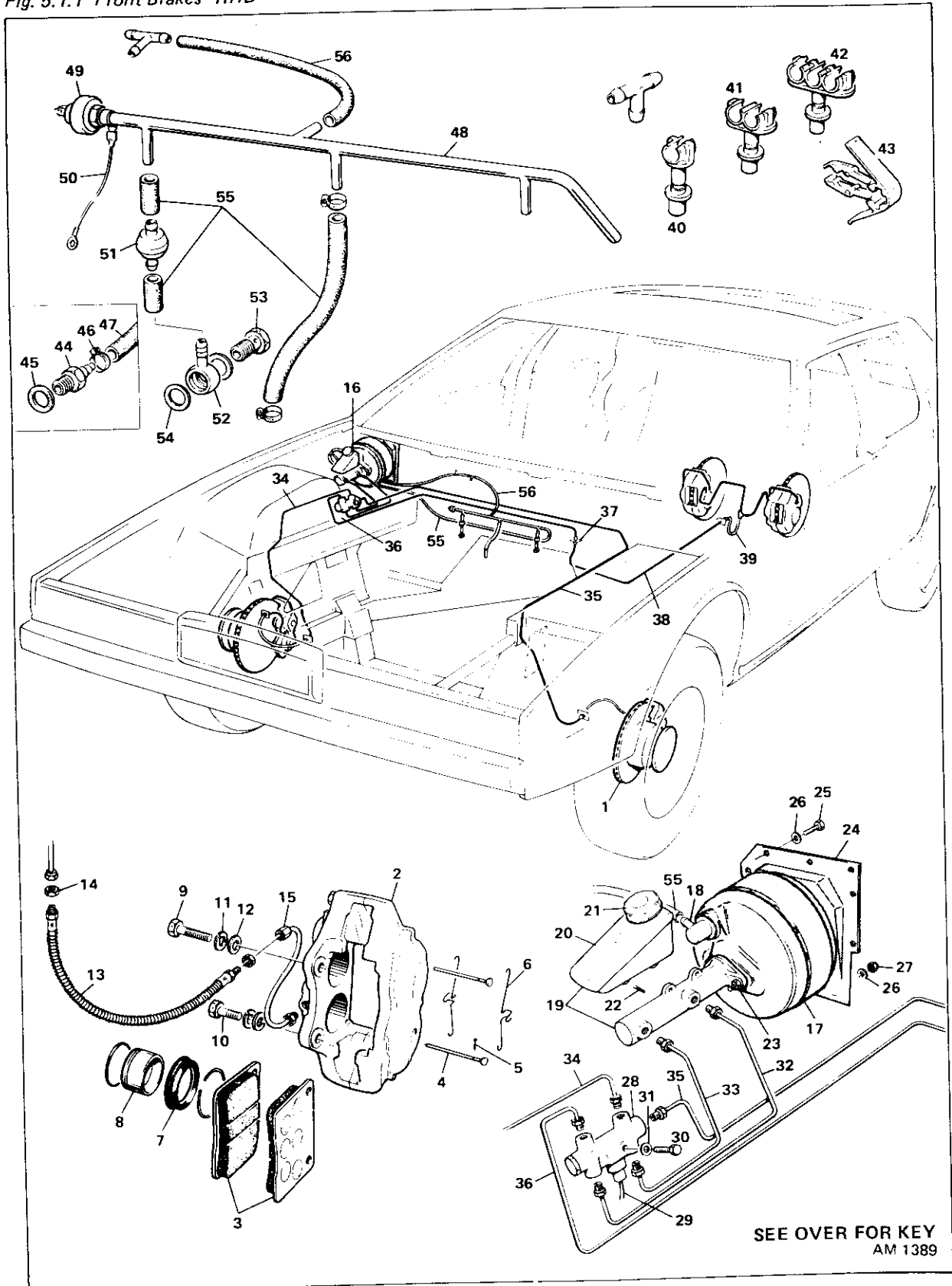
## KEY TO FIG. 4.4.2

1	Hydraulic pump assembly
2	Pulley
3	Pump bracket
4	Pump bracket
5	Bolt
6	Nut, Nyloc
7	Washer, plain
8	Screw
9	Washer, spring
10	Washer, plain
11	Nut
12	Screw
13	Washer, spring
14	Washer, plain
15	Adjusting link
16	Rack, mounting assembly
17	Setscrew
18	Washer, spring
19	Washer, plain
20	Feed hose
21	Feed pipe
22	Return pipe
23	Return hose
24	Clip, worm drive, hose
25	Power steering unit
26	Lock stop assembly
27	Nut
28	Tube
29	Ball housing
30	Spring
31	Pad
32	Locking pin
33	Tie rod
34	Bellows
35	Clip, spring, large
36	Clip, spring, small
37	Adjusting nut
38	Locknut
39	Track rod end
40	Nut, Nyloc
41	Tension pin
42	Bolt
43	Washer, plain
44	Nut, Nyloc
45	Washer, plain



FRONT BRAKES

Fig. 5.1.1 Front Brakes - RHD



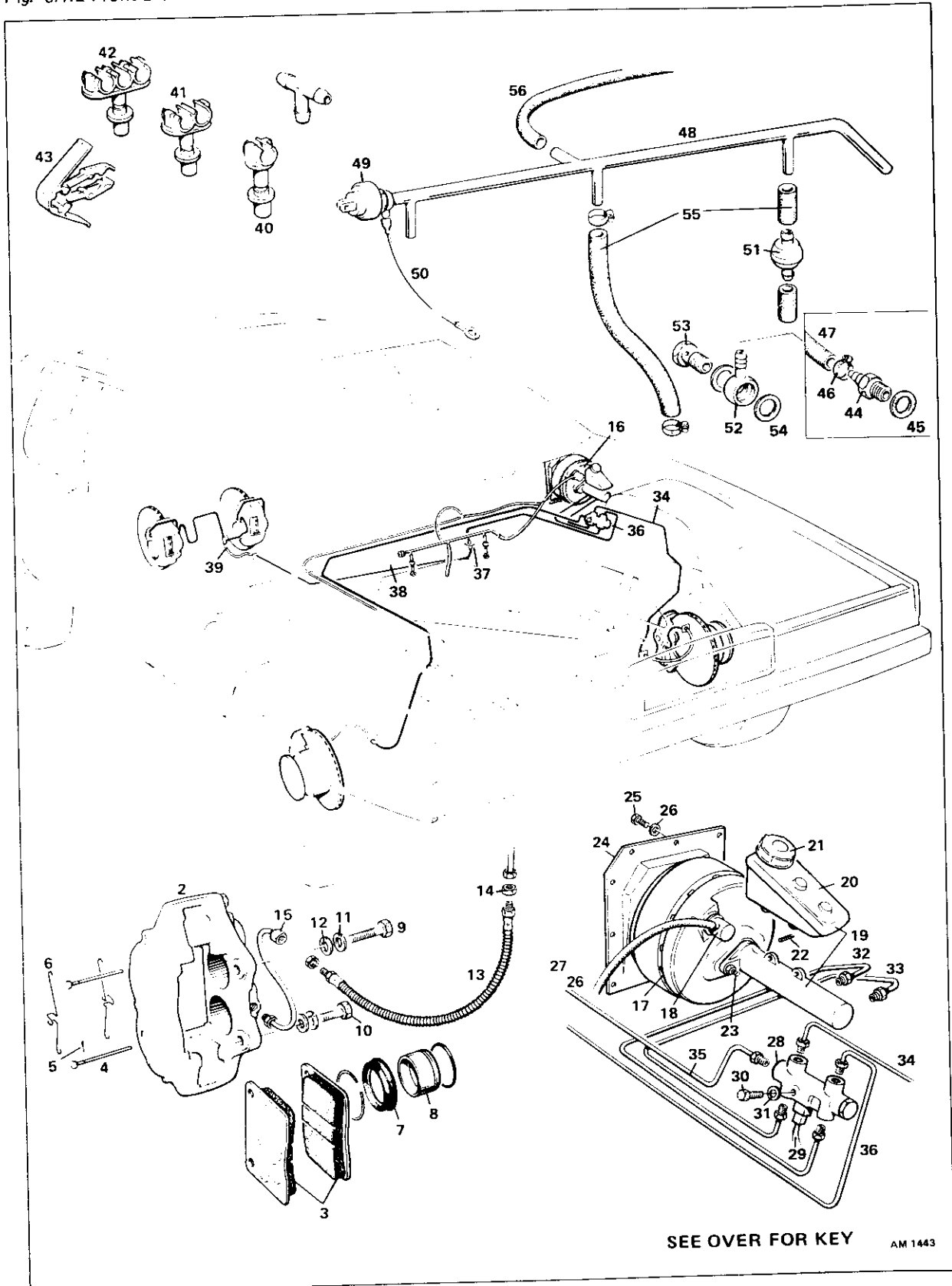
## FRONT BRAKES

## KEY TO FIG. 5.1.1

1	Brake disc
2	Brake caliper
3	Brake pads
4	Pin
5	Clip
6	Spring
7	Caliper seal kit
8	Caliper piston
9	Caliper bolt, special long
10	Caliper bolt, special short
11	Washer, spring
12	Washer, plain
13	Brake hose
14	Nut
15	Brake pipe, caliper
16	Servo and brake master cylinder assembly
17	Brake servo
18	Servo non-return valve
19	Master cylinder and reservoir
20	Reservoir and cap assembly
21	Filler cap
22	Pin, reservoir to master cylinder
23	Nut, master cylinder to servo
24	Servo mounting bracket
25	Screw
26	Washer, plain
27	Nut, Nyloc
28	Pressure differential warning actuator (PDWA)
29	PDWA lead
30	Bolt
31	Washer, plain
32	Brake pipe
33	Brake pipe
34	Brake pipe
35	Brake pipe
36	Brake pipe
37	Union, brake pipe
38	Brake pipe
39	Rear brake hose
40	Brake pipe clip
41	Brake pipe clip
42	Brake pipe clip
43	Brake pipe clip
44	Vacuum non-return valve
45	Washer
46	Hose clip
47	Vacuum hose
48	Vacuum rail
49	Vacuum warning switch
50	Earth lead, switch
51	Vacuum non-return valve
52	Banjo
53	Bolt, banjo
54	Washer, copper
55	Vacuum hose
56	Vacuum hose

FRONT BRAKES

Fig. 5.1.2 Front Brakes - LHD



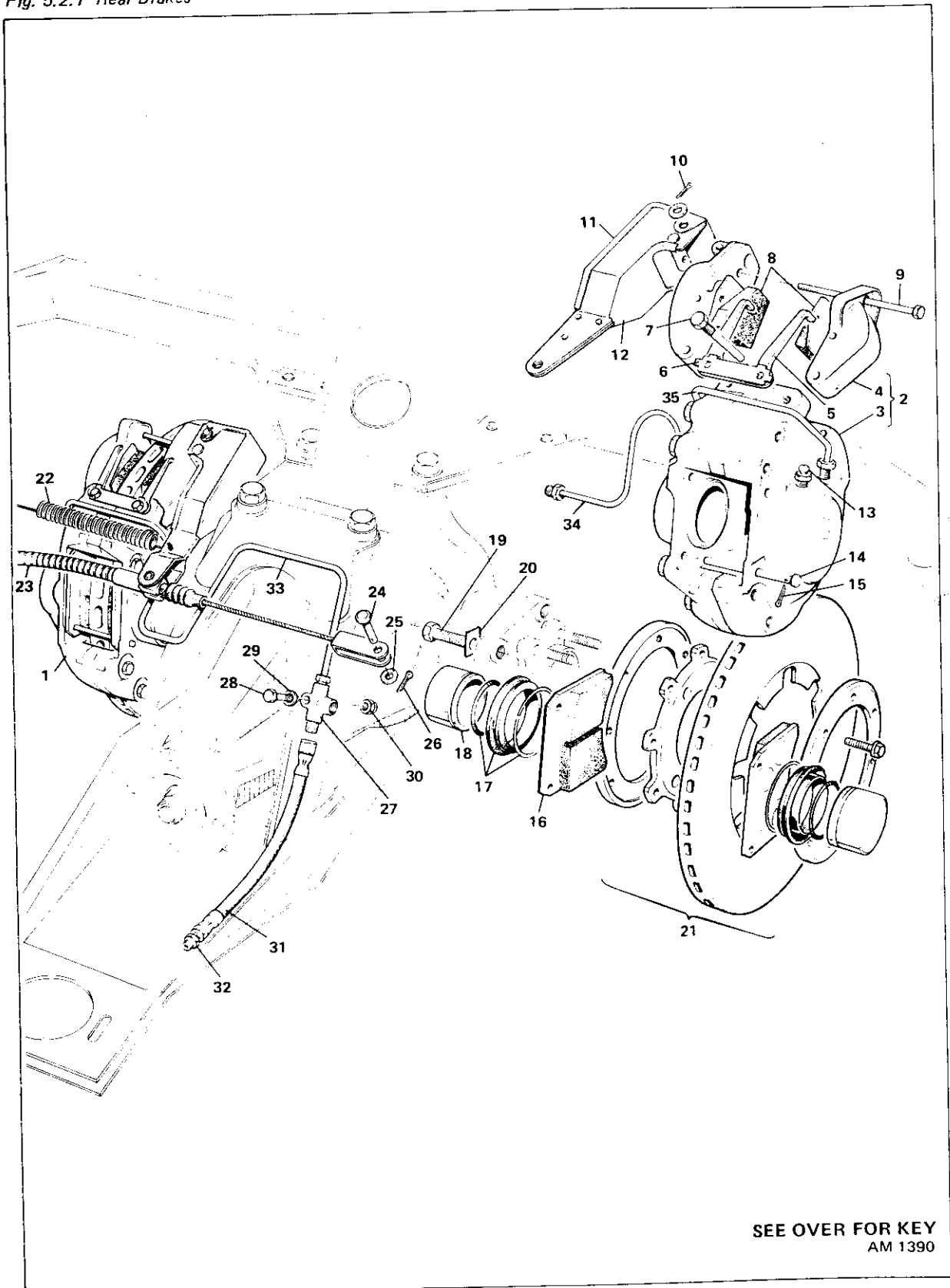
## FRONT BRAKES

## KEY TO FIG. 5.1.2

1	Brake disc
2	Brake caliper
3	Brake pads
4	Pin
5	Clip
6	Spring
7	Caliper seal kit
8	Caliper piston
9	Caliper bolt, special long
10	Caliper bolt, special short
11	Washer, spring
12	Washer, plain
13	Brake hose
14	Nut
15	Brake pipe, caliper
16	Servo and brake master cylinder assembly
17	Brake servo
18	Servo non-return valve
19	Master cylinder and reservoir
20	Reservoir and cap assembly
21	Filler cap
22	Pin, reservoir to master cylinder
23	Nut, master cylinder to servo
24	Servo mounting bracket
25	Screw
26	Washer, plain
27	Nut, Nyloc
28	Pressure differential warning actuator (PDWA)
29	PDWA lead
30	Bolt
31	Washer, plain
32	Brake pipe
33	Brake pipe
34	Brake pipe
35	Brake pipe
36	Brake pipe
37	Union, brake pipe
38	Brake pipe
39	Rear brake hose
40	Brake pipe clip
41	Brake pipe clip
42	Brake pipe clip
43	Brake pipe clip
44	Vacuum non-return valve
45	Washer
46	Hose clip
47	Vacuum hose
48	Vacuum rail
49	Vacuum warning switch
50	Earth lead, switch
51	Vacuum non-return valve
52	Banjo
53	Bolt, banjo
54	Washer, copper
55	Vacuum hose
56	Vacuum hose

REAR BRAKES

Fig. 5.2.1 Rear Brakes



SEE OVER FOR KEY  
AM 1390

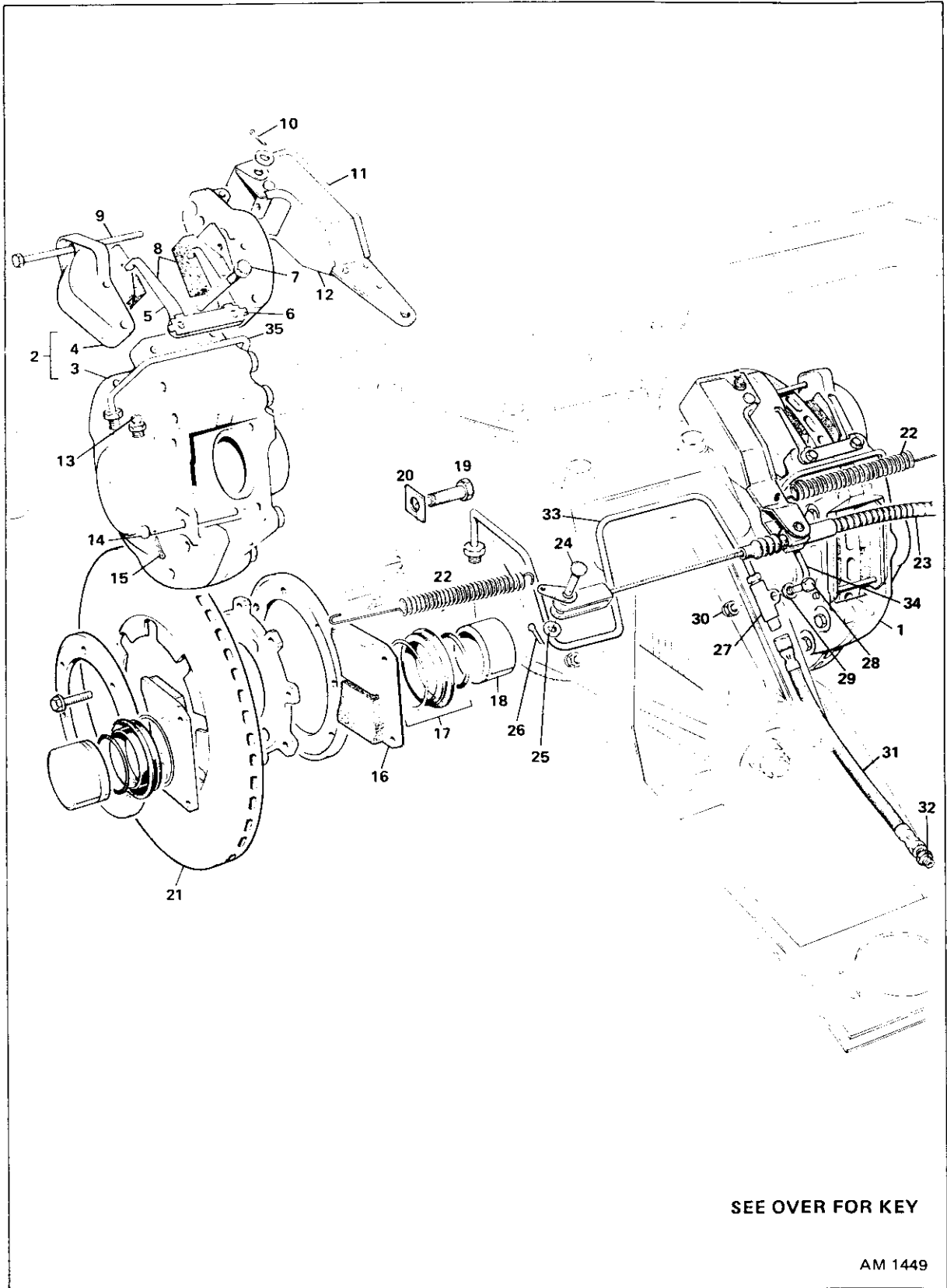
## REAR BRAKES

## KEY TO FIG. 5.2.1

- 1 Brake caliper assembly, RH
- 2 Brake caliper assembly, LH
- 3 Brake caliper body, LH
- 4 Handbrake caliper, LH
- 5 Handbrake retraction spring
- 6 Handbrake tabwasher
- 7 Handbrake bolt
- 8 Handbrake pads
- 9 Adjuster bolt
- 10 Split pin
- 11 Cover plate, outer
- 12 Cover plate, inner
- 13 Bleed screw
- 14 Brake pad pin
- 15 Clip
- 16 Brake pads
- 17 Caliper seal kit
- 18 Caliper piston
- 19 Caliper bolt
- 20 Lock plate
- 21 Brake disc
- 22 Return spring
- 23 Handbrake cable
- 24 Headed pin
- 25 Washer, plain
- 26 Split pin
- 27 Tee-piece
- 28 Bolt
- 29 Washer, plain
- 30 Nut, Nyloc
- 31 Brake hose
- 32 Nut
- 33 Brake pipe
- 34 Brake pipe
- 35 Caliper bridge pipe

REAR BRAKES

Fig. 5.2.2 Rear Brakes - LHD



SEE OVER FOR KEY

AM 1449

## REAR BRAKES

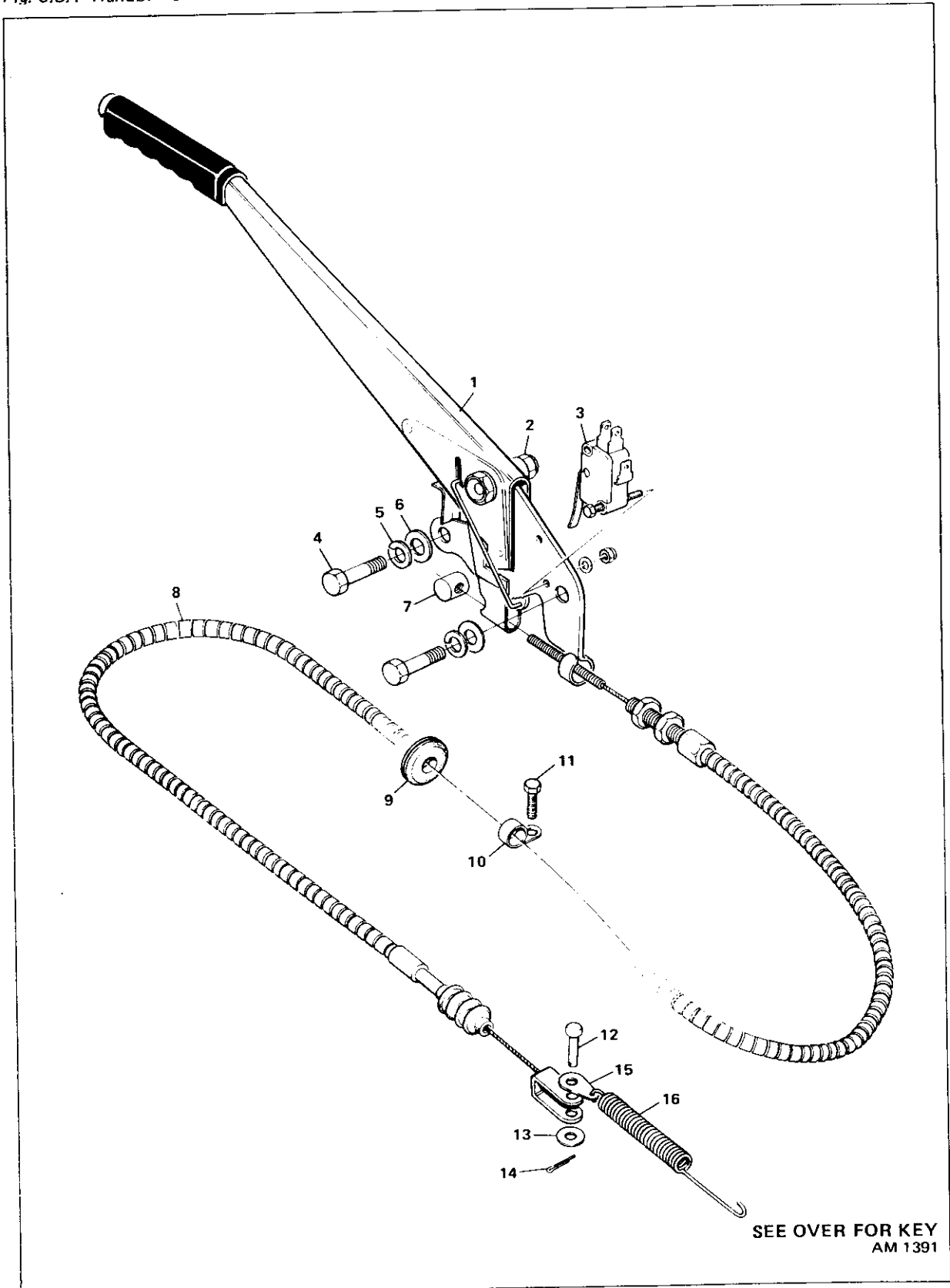
## KEY TO FIG. 5.2.2

- 1 Brake caliper assembly, RH
- 2 Brake caliper assembly, LH
- 3 Brake caliper body, LH
- 4 Handbrake caliper, LH
- 5 Handbrake retraction spring
- 6 Handbrake tabwasher
- 7 Handbrake bolt
- 8 Handbrake pads
- 9 Adjuster bolt
- 10 Split pin
- 11 Cover plate, outer
- 12 Cover plate, inner
- 13 Bleed screw
- 14 Brake pad pin
- 15 Clip
- 16 Brake pads
- 17 Caliper seal kit
- 18 Caliper piston
- 19 Caliper bolt
- 20 Lock plate
- 21 Brake disc
- 22 Return spring
- 23 Handbrake cable
- 24 Headed pin
- 25 Washer, plain
- 26 Split pin
- 27 Tee-piece
- 28 Bolt
- 29 Washer, plain
- 30 Nut, Nyloc
- 31 Brake hose
- 32 Nut
- 33 Brake pipe
- 34 Brake pipe
- 35 Caliper bridge pipe



HANDBRAKE

Fig. 5.3.1 Handbrake



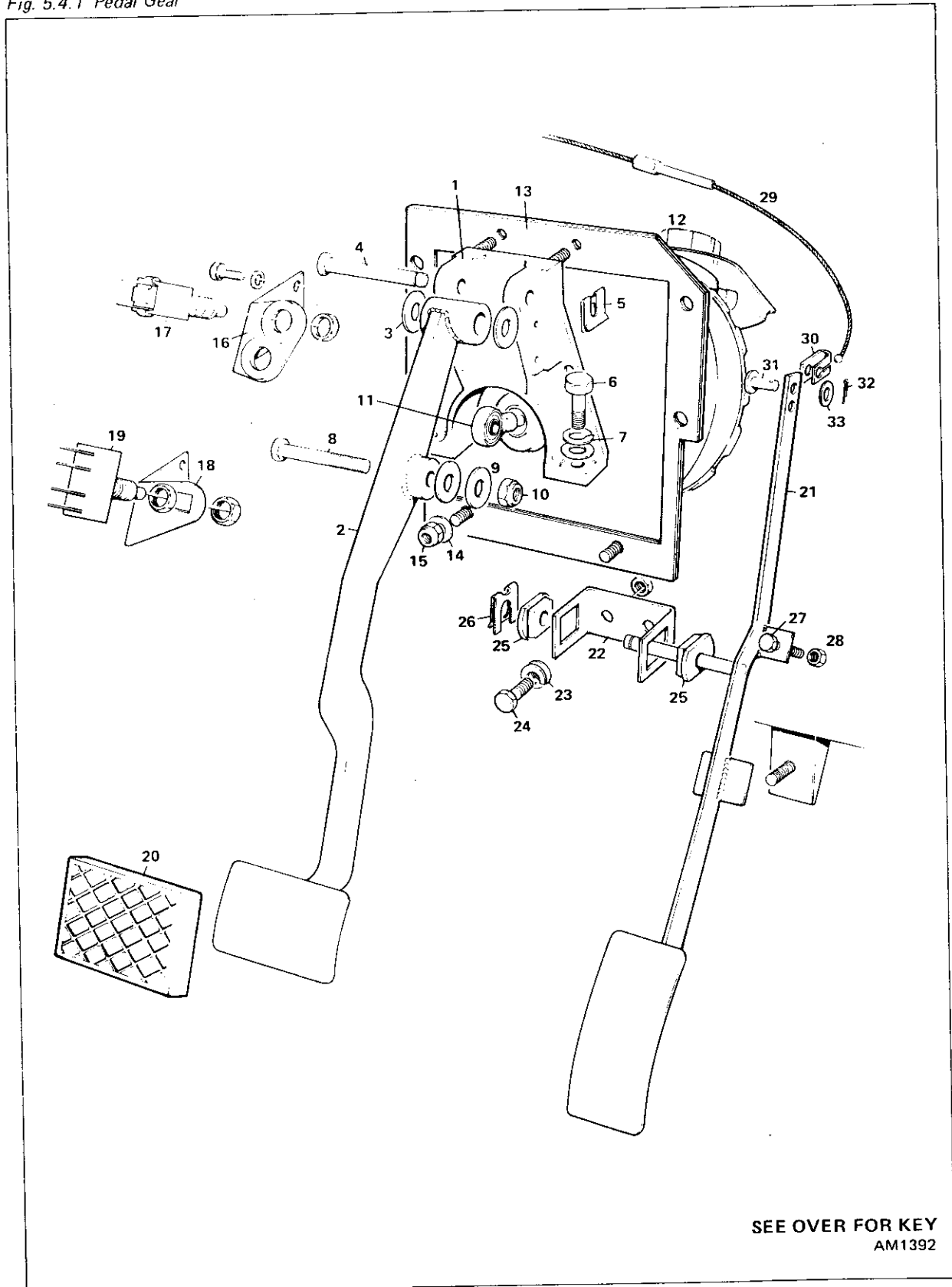
## HANDBRAKE

## KEY TO FIG. 5.3.1

- 1 Handbrake lever
- 2 Nut, Nyloc
- 3 Microswitch
- 4 Screw
- 5 Washer, spring
- 6 Washer, plain
- 7 Handbrake cable barrel
- 8 Handbrake cable
- 9 Grommet
- 10 'P' clip
- 11 Screw
- 12 Headed pin
- 13 Washer, plain
- 14 Split pin
- 15 Tab
- 16 Return spring

PEDAL GEAR

Fig. 5.4.1 Pedal Gear



SEE OVER FOR KEY  
AM1392

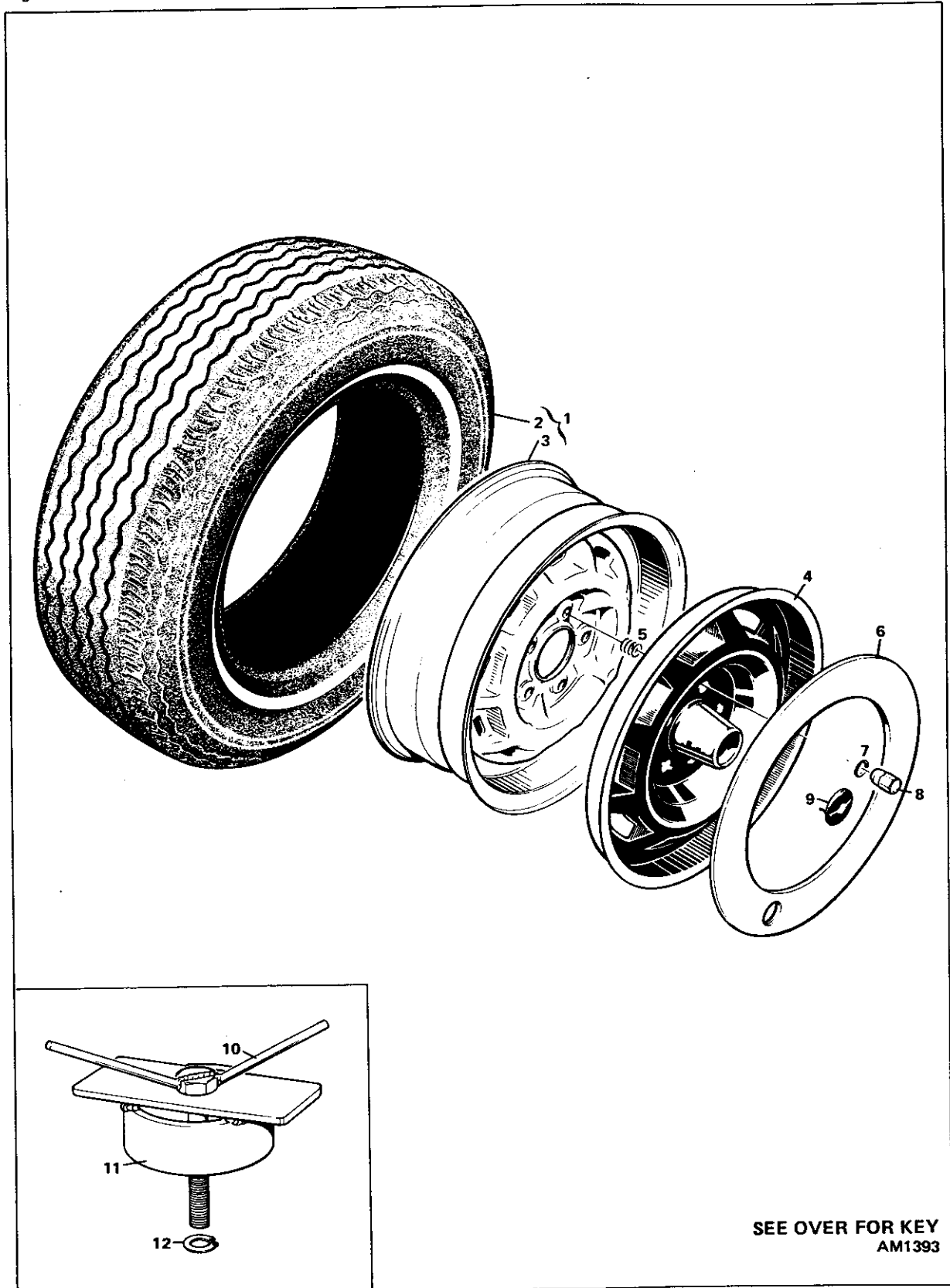
## PEDAL GEAR

## KEY TO FIG. 5.4.1

1	Mounting bracket
2	Brake pedal lever assembly
3	Bush, brake pedal, nylon
4	Pivot pin, brake pedal
5	Spring clip
6	Screw
7	Washer, Thackeray
8	Bolt, hexagonal head
9	Washer, plain
10	Nut, Nyloc
11	Servo bearing
12	Servo and master cylinder assembly
13	Servo mounting bracket
14	Washer, plain
15	Nut, Nyloc
16	Bracket, stop-switch
17	Stop-switch
18	Bracket, stop-switch
19	Stop-light switch
20	Rubber pad
21	Pedal assembly, accelerator
22	Mounting bracket
23	Washer, spring
24	Screw
25	Bearing
26	Spring clip
27	Screw
28	Nut, plain
29	Cable, accelerator
30	Bracket, anchorage
31	Clevis pin
32	Split-pin
33	Washer, plain

WHEELS & TYRES

Fig. 5.5.1 Wheels and Tyres



SEE OVER FOR KEY  
AM1393

## WHEELS &amp; TYRES

## KEY TO FIG. 5.5.1

- 1 Wheel and tyre assembly
- 2 Tyre
- 3 Road wheel
- 4 Wheel trim
- 5 Spring
- 6 Wheel trim finisher
- 7 Wheel nut ring
- 8 Wheel nut
- 9 Wheel trim badge, round, silver
- 10 Spare wheel retaining bolt
- 11 Retaining plate assembly
- 12 Circlip

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<b>ELECTRICAL SYSTEMS</b>	<b>6.0</b>
Wiring Diagrams	
Components	
Locations	

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<b>INSTRUMENTS AND CONTROLS</b>	<b>6.1</b>
---------------------------------	------------

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<b>LAMPS AND BULBS</b>	<b>6.2</b>
Headlamps	
Tail Lamps	
Parking and Flasher Lamps	
Interior Lamps and Bulbs	

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<b>ELECTRICAL UNITS AND WIRING</b>	<b>6.3</b>
Battery	
Horns	
Control Units	
Aerial	
Fuses	
Wiring	

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<b>WINDSCREEN WIPERS AND SCREENWASH</b>	<b>6.4</b>
Motor	
Drive Linkage	
Blades	
Arms	
Screenwash	

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## ELECTRICAL SYSTEMS

### GENERAL INFORMATION

A negative earth electrical system is used, power being supplied by an alternator and a 12 volt battery.

Many of the components are protected by fuses which are mounted in either of two fuse boxes. One box is located under the bonnet in the engine compartment and the other is located in the centre console.

The total electrical system is broken down into various sub-sections which are listed on the contents page.

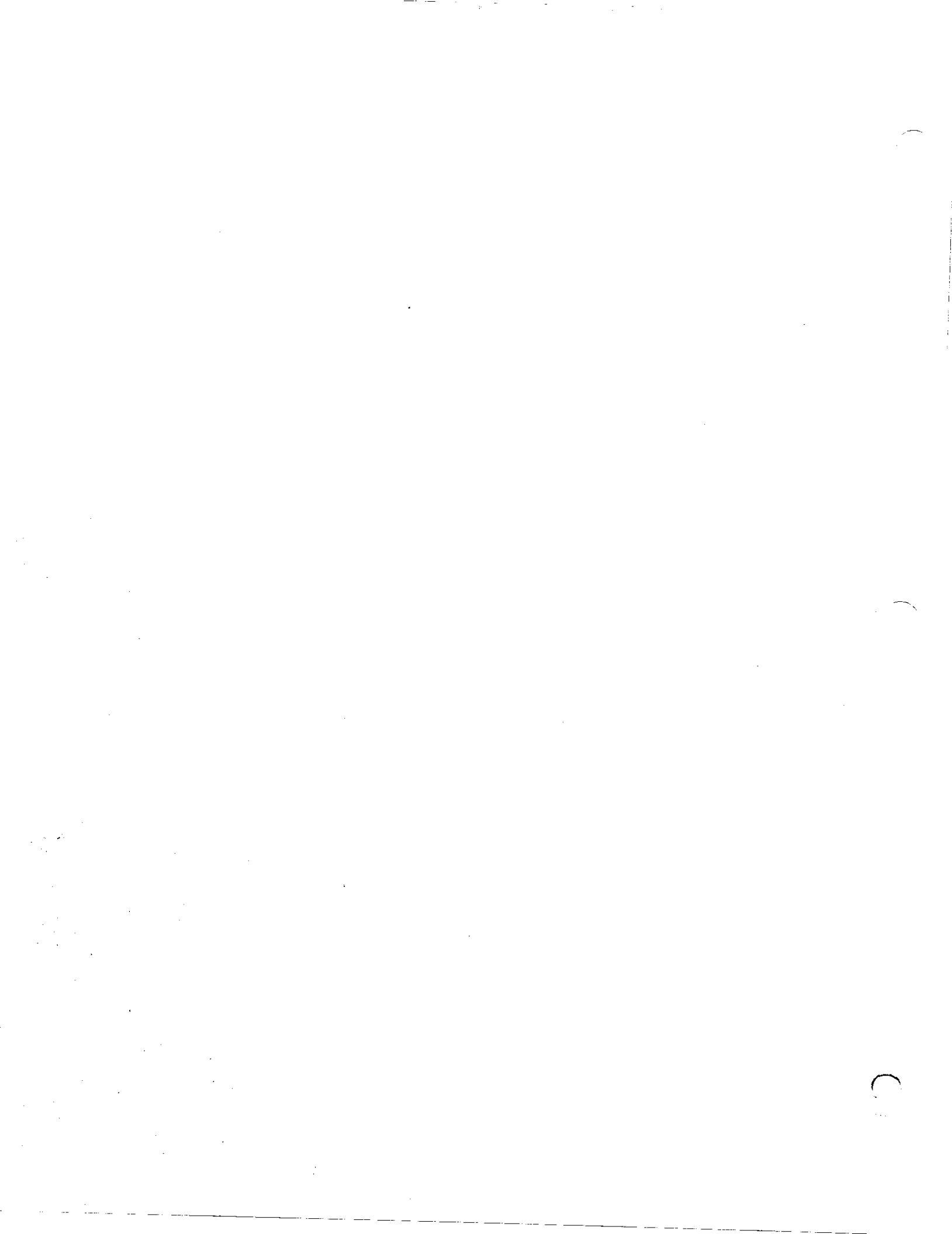
The main source of identification of any component is the wiring diagram which is on page 6-0-3. Each component has been given an item number which is marked on the diagram

and also listed, in numerical order, on page 6-0-5 to 9.

Against each item number in this list is a brief description of the component, the number of the relevant sub-section and the photograph reference (Fig No.).

In each sub-section the components are dealt with either individually or in groups. Some technical information may be given together with such maintenance or replacement information as is appropriate.

The photograph gives a visual identification of the component and indicates its position on the vehicle.



# ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COMPONENT LOCATIONS

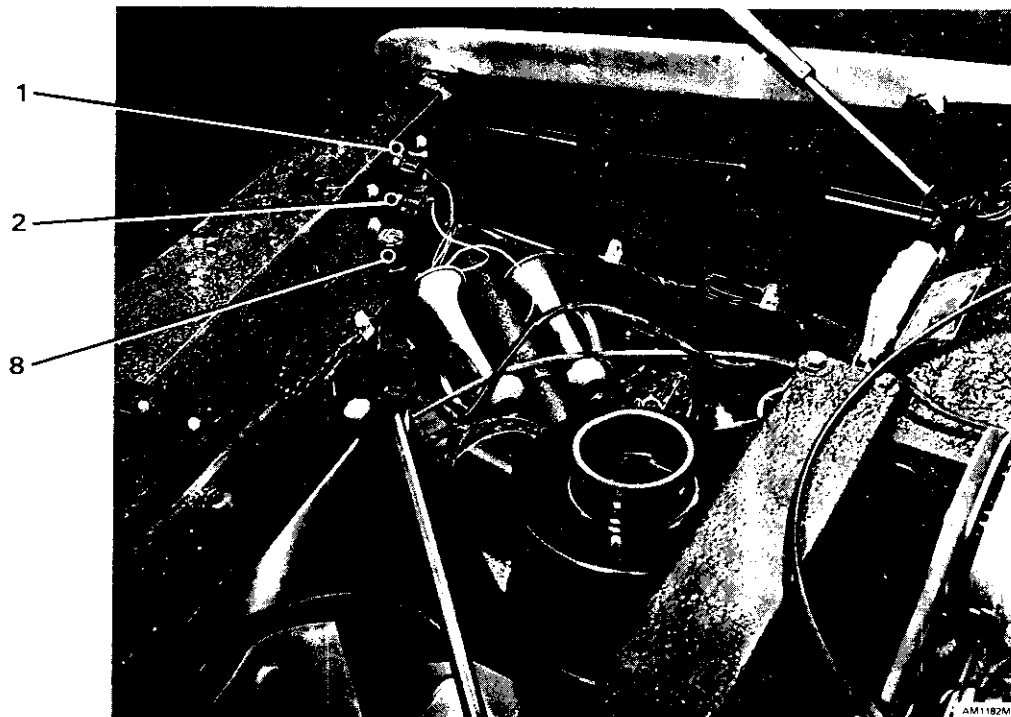


Fig. 6.0.1 Engine Compartment – R.H. Front Corner (Pre Chassis No. 30)

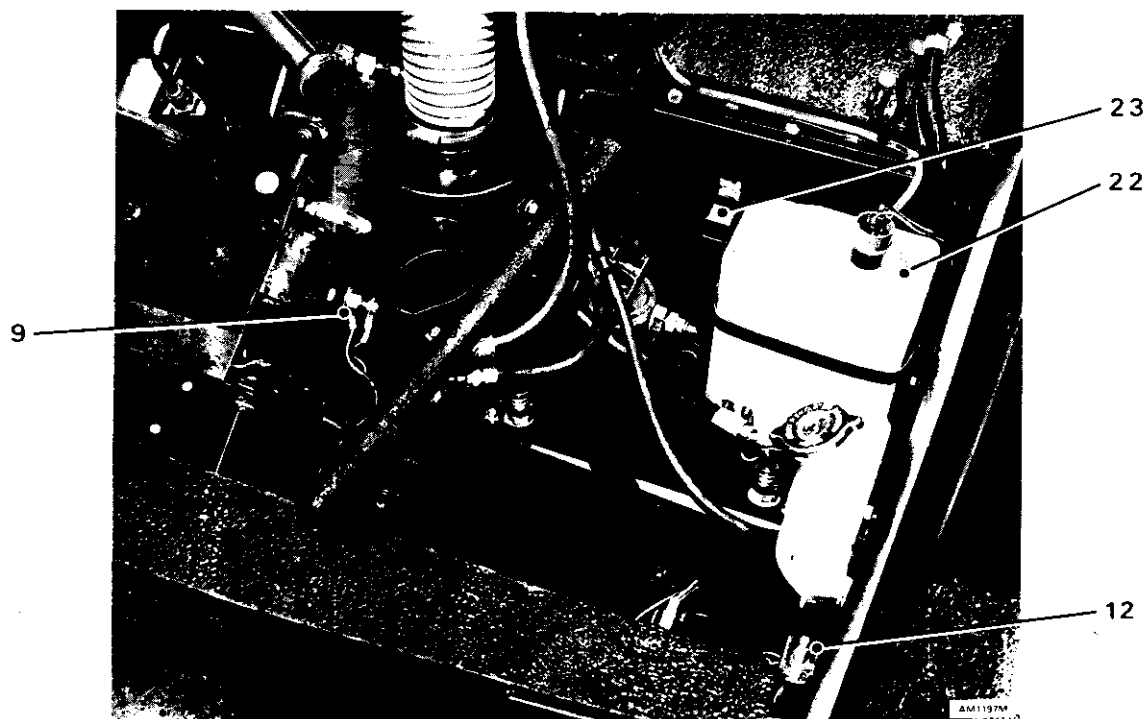


Fig. 6.0.2 Engine Compartment – L.H. Front Corner

# 6.0 ELECTRICAL SYSTEMS

### WIRING DIAGRAM – COMPONENT LOCATIONS

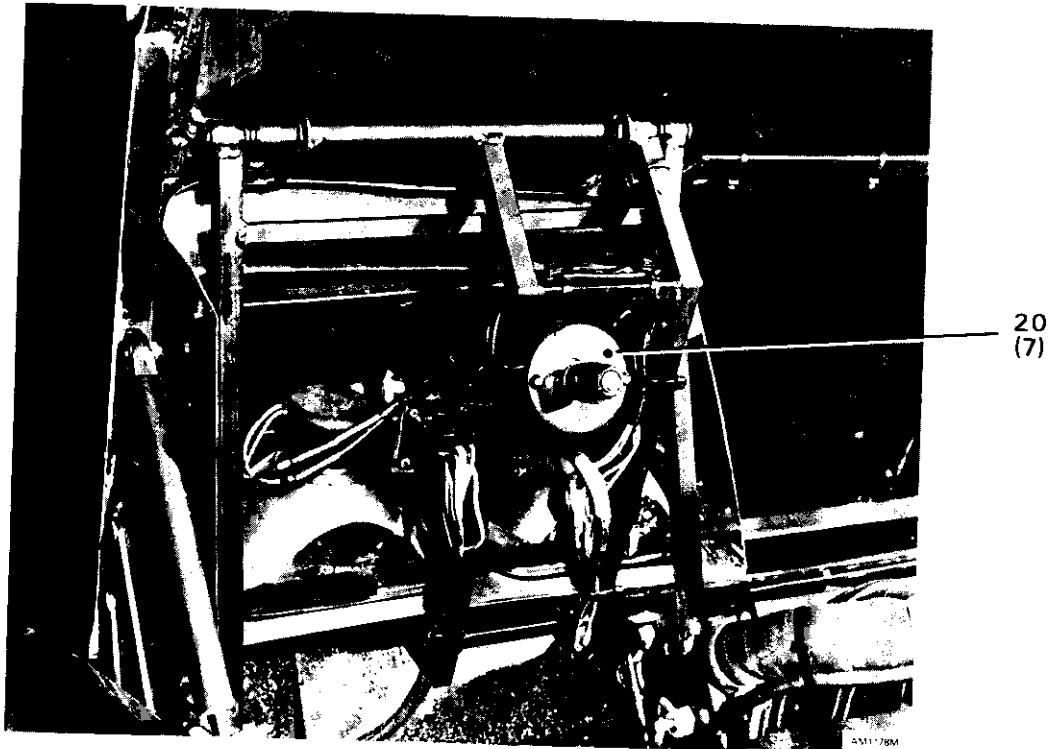


Fig. 6.0.3 Underside of Raised Bonnet (Pre Chassis No. 30)

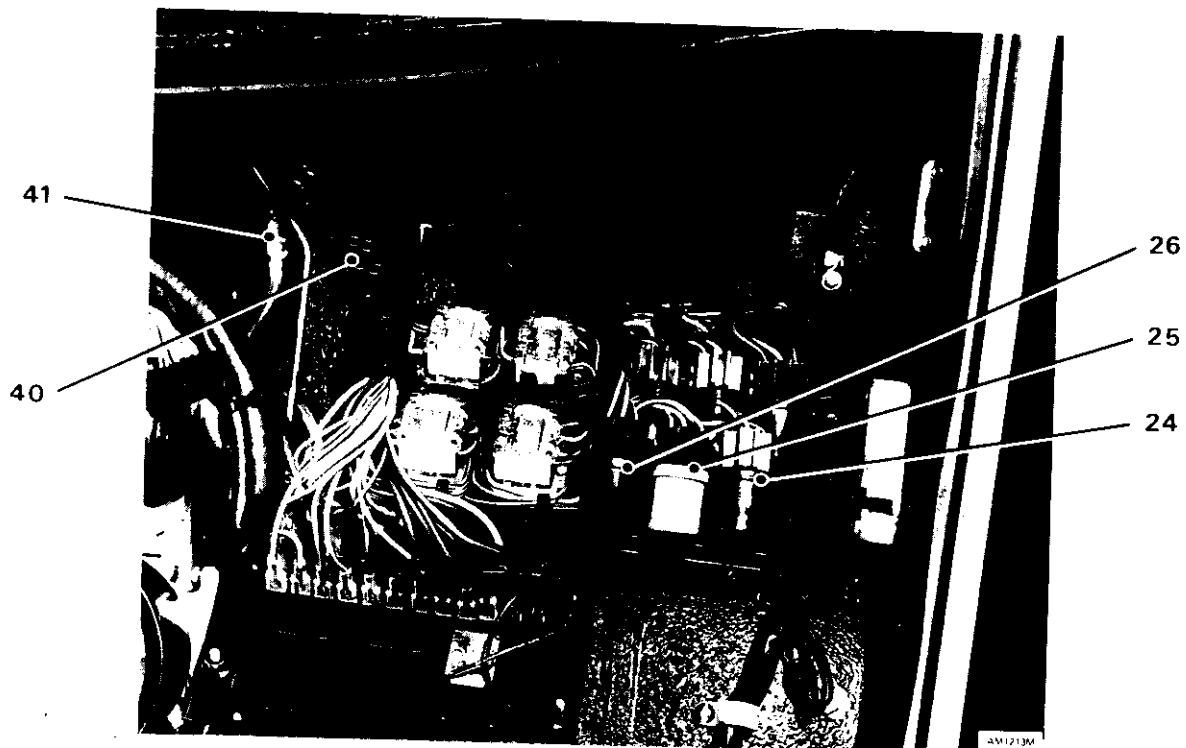


Fig. 6.0.4 Engine Compartment – L.H. Side Scuttle (Post Chassis No. 30)

# ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COMPONENT LOCATIONS

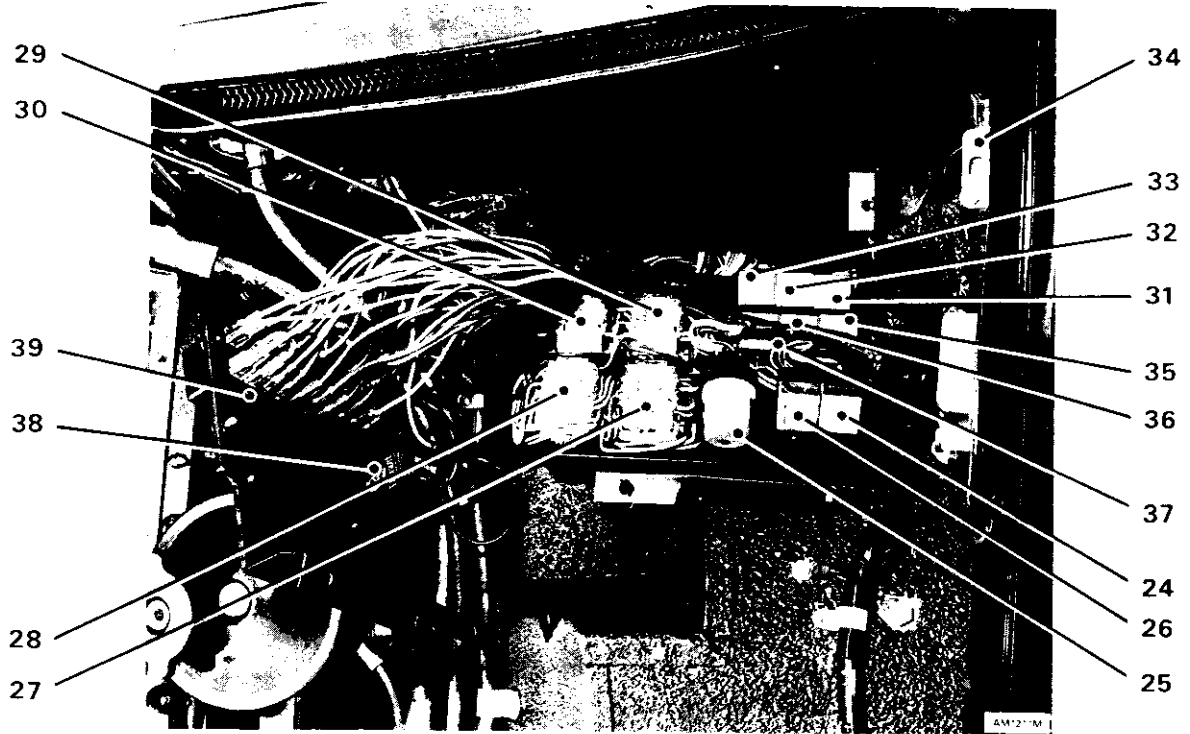


Fig. 6.0.5 Engine Compartment – L.H. Side Scuttle (Pre Chassis No. 30)

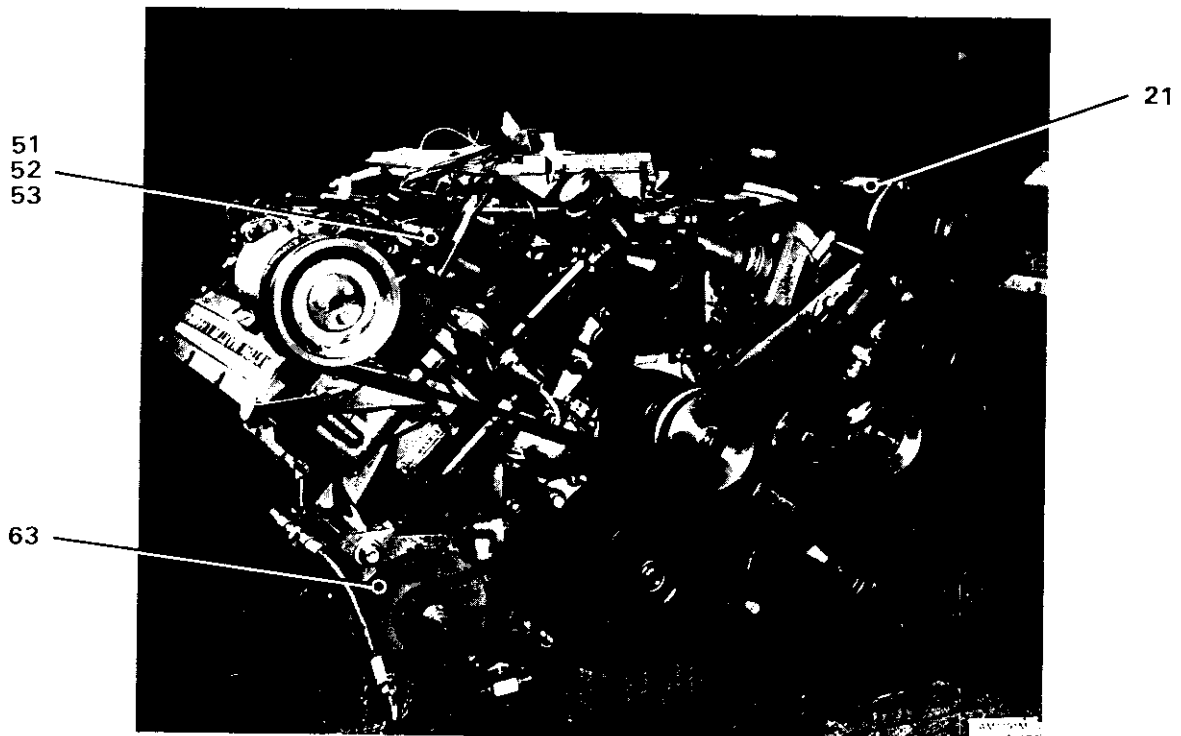


Fig. 6.0.6 Engine – Front View (Before Installation into Car)

WIRING DIAGRAM – COMPONENT LOCATIONS

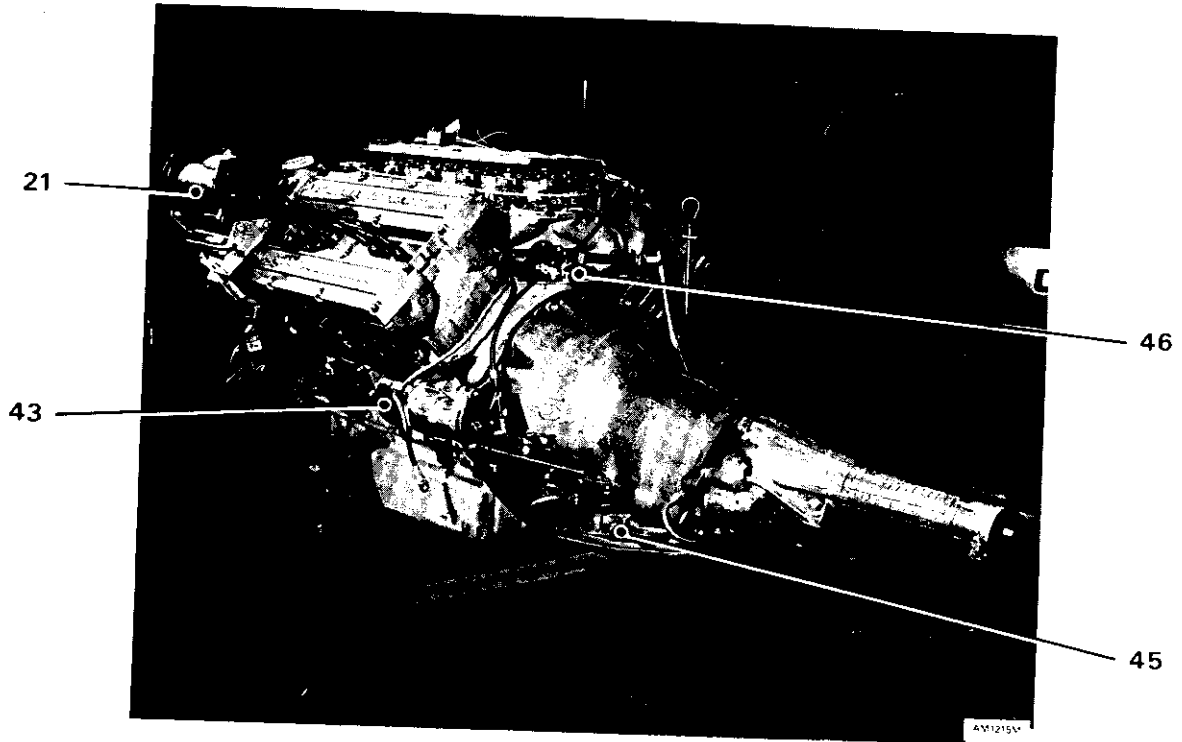


Fig. 6.0.7 Engine and Gearbox – L.H. Rear View (Before Installation into Car)

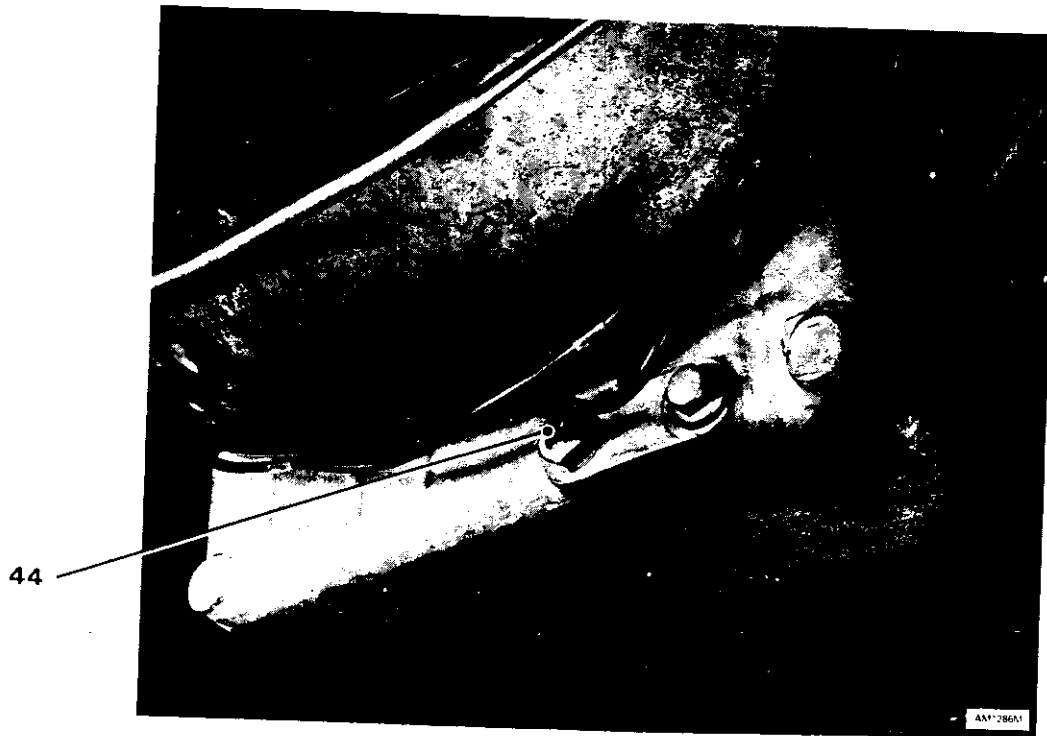


Fig. 6.0.8 Rear View of Sump

ELECTRICAL SYSTEMS

WIRING DIAGRAM – COMPONENT LOCATIONS

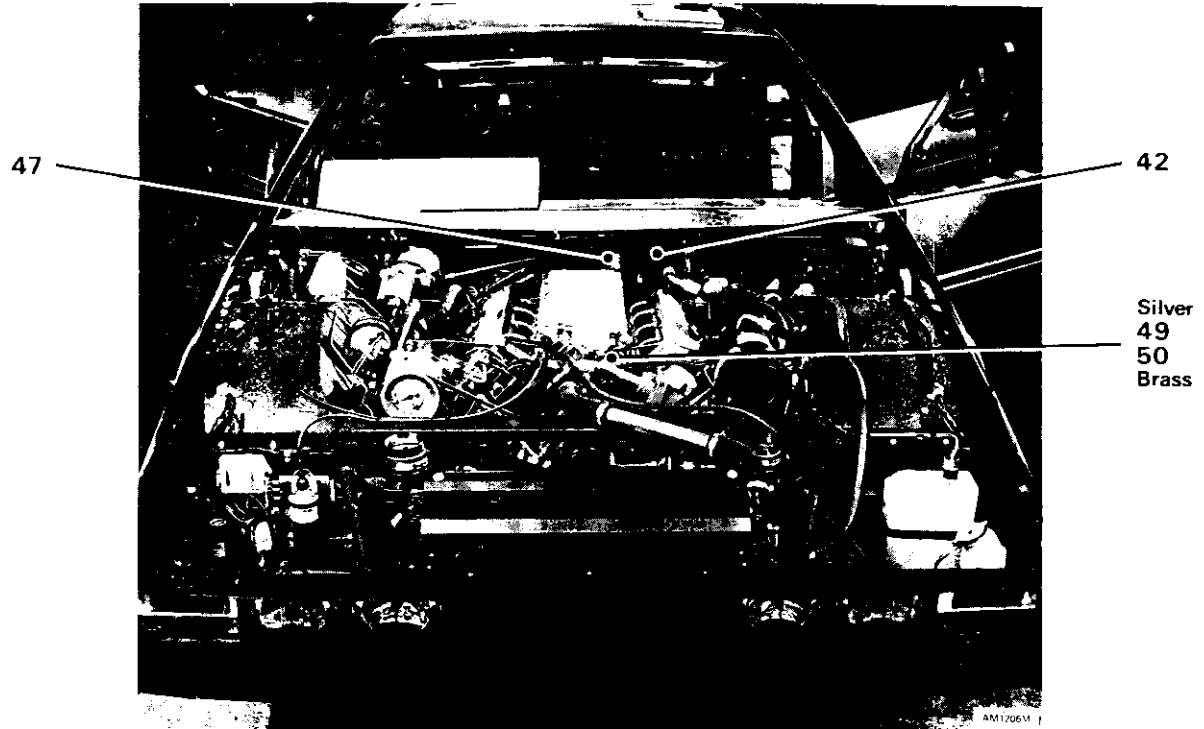


Fig. 6.0.9 Front View of Engine Compartment

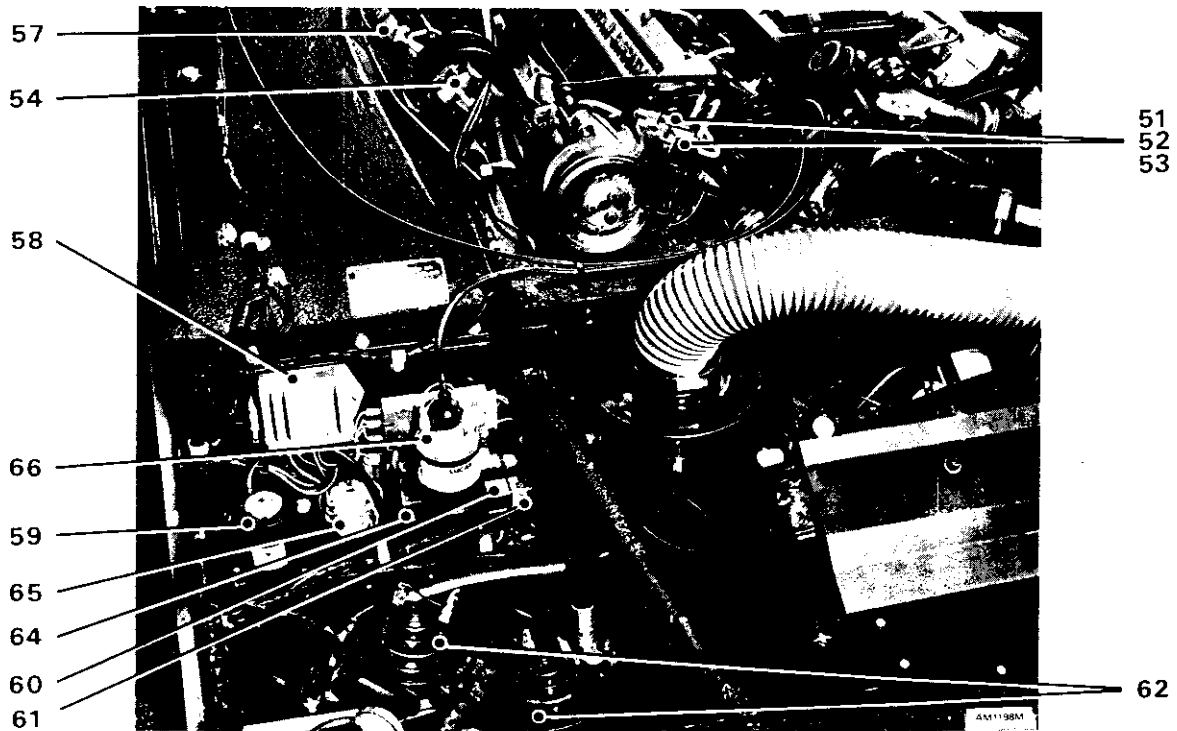


Fig. 6.0.10 Engine Compartment – R.H. Front Side

6.0  
ELECTRICAL SYSTEMS

Electrical and Instruments

WIRING DIAGRAM – COMPONENT LOCATIONS



Fig. 6.0.11 Engine Compartment – L.H. Front Side. Showing Access to Bonnet Lock

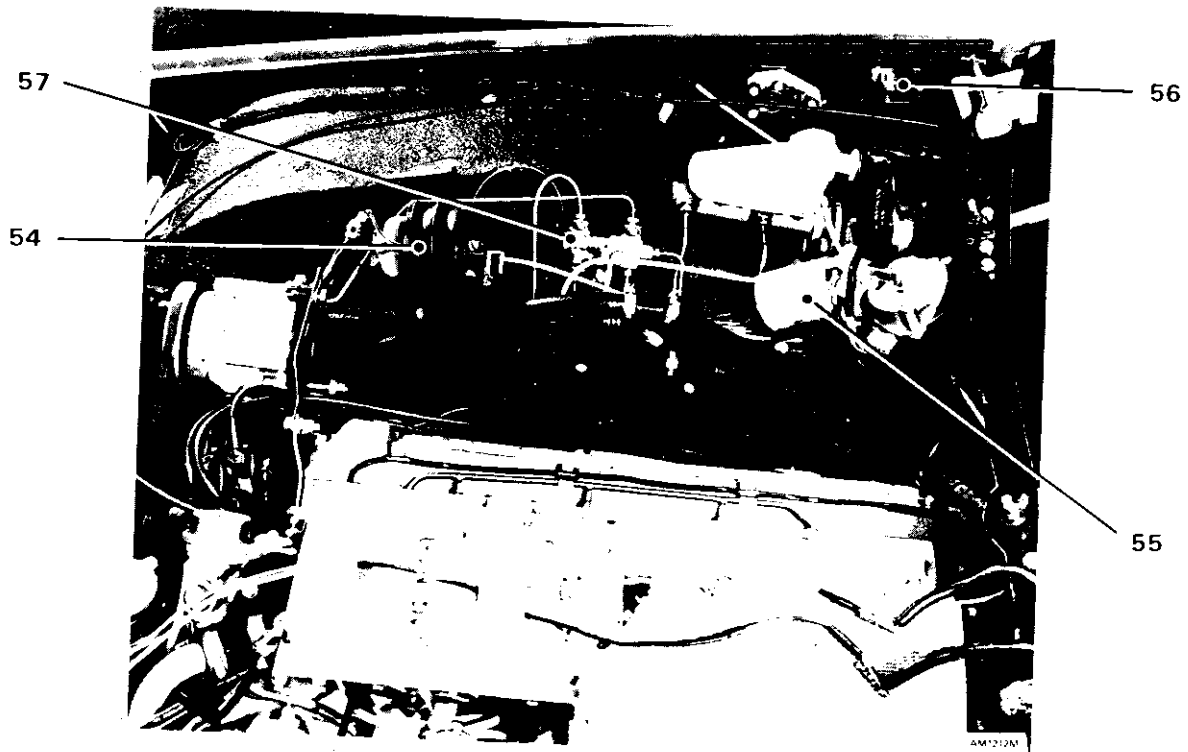


Fig. 6.0.12 Engine Compartment – R.H. Front Side



ELECTRICAL SYSTEMS

WIRING DIAGRAM – COMPONENT LOCATIONS

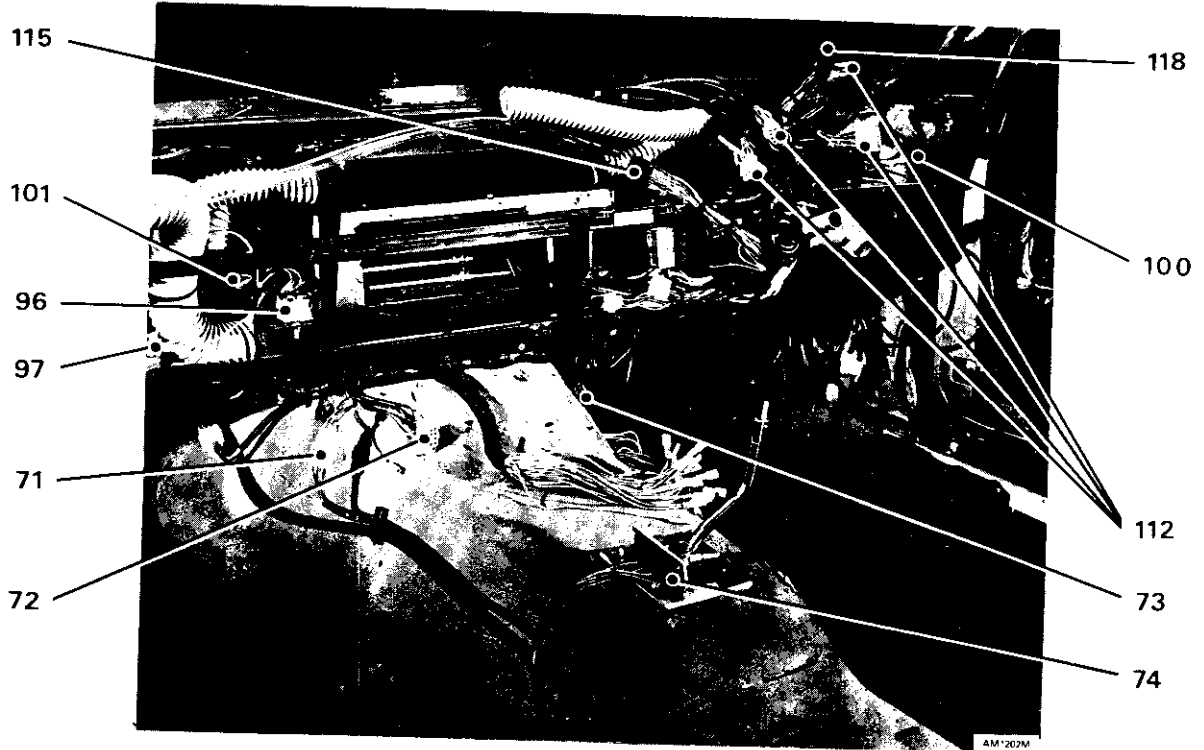


Fig. 6.0.13 Dashboard Wiring

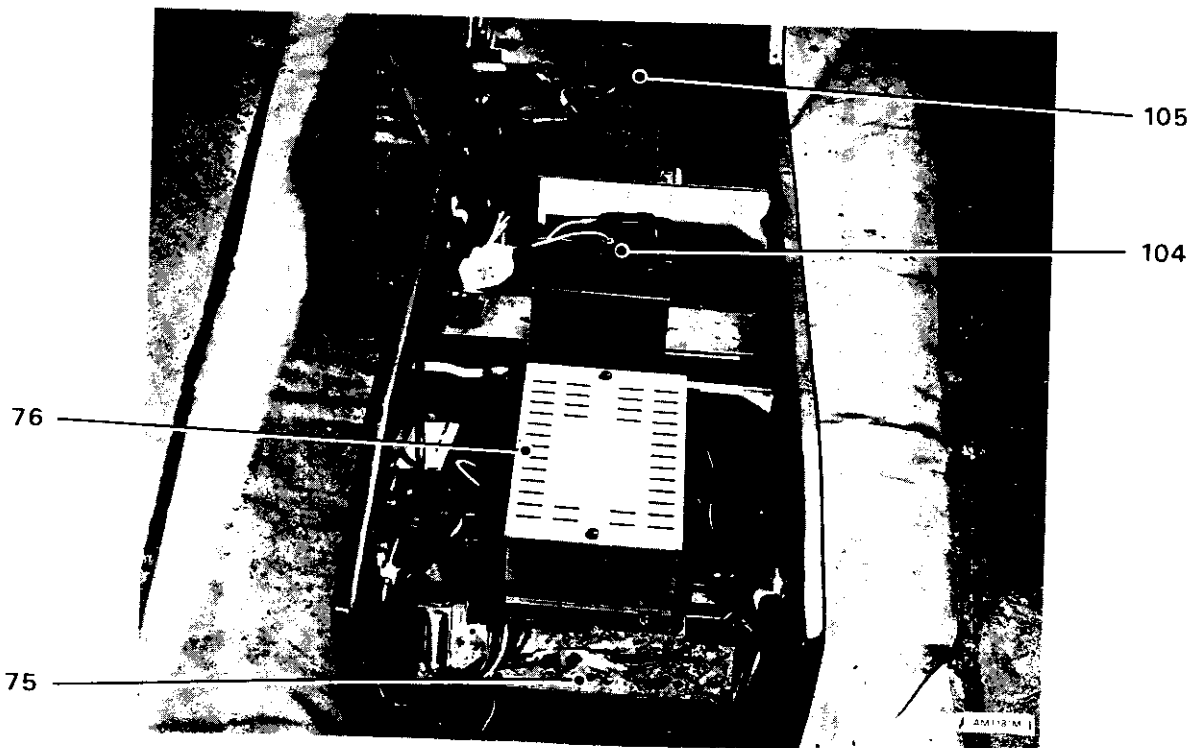


Fig. 6.0.14 Console Unit – Interior Details

# 6.0 ELECTRICAL SYSTEMS

## Electrical and Instruments

### WIRING DIAGRAM - COMPONENT LOCATIONS

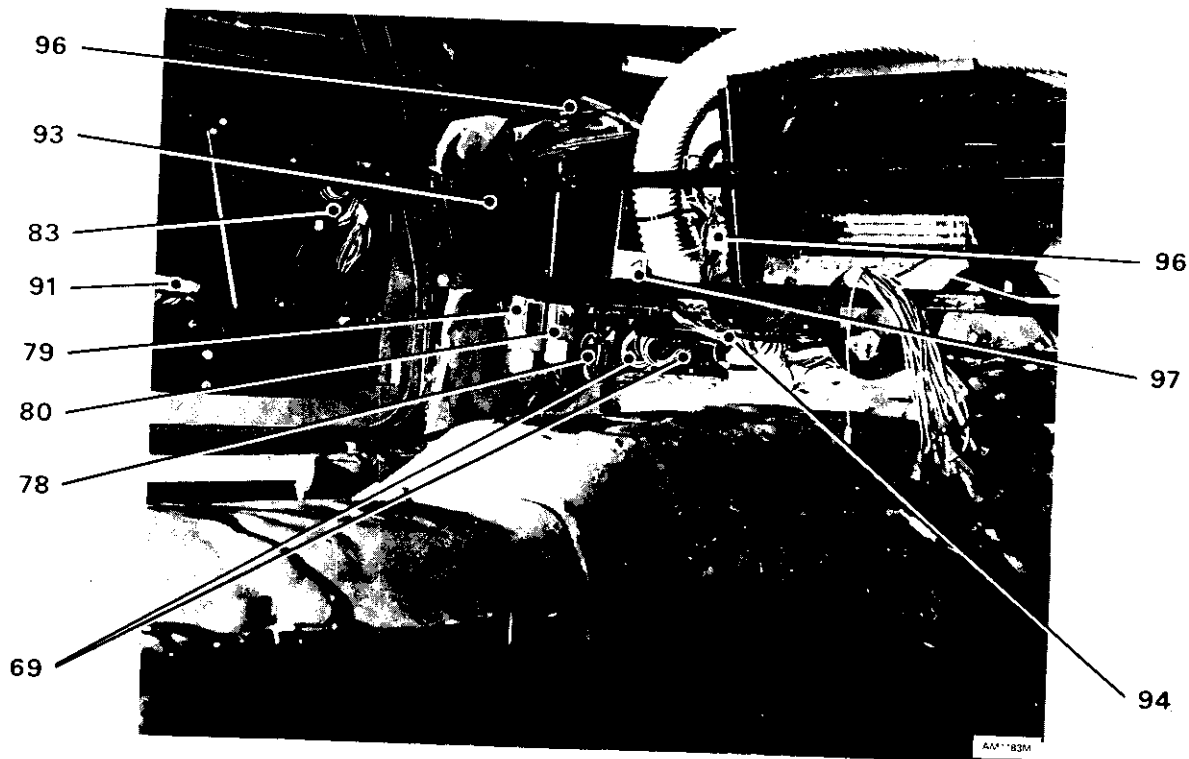


Fig. 6.0.15 Under L.H. Fascia

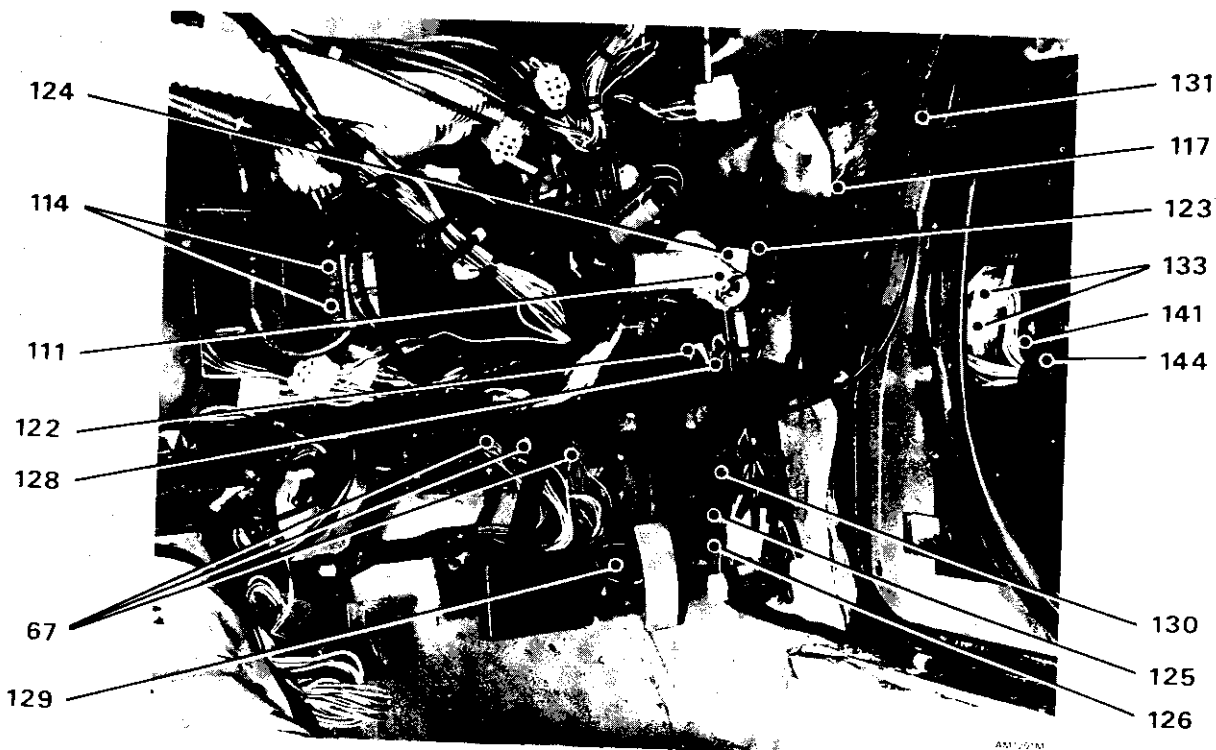


Fig. 6.0.16 R.H. Side - Under Scuttle

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – DESCRIPTION OF ITEMS

Diag. Item No.	Description	Sub-Sect. Ref.	Fig. No.
1	Right hand front side lamp	6.2	6.0.1
2	Right hand front flasher lamp	6.2	6.0.1
3	Right hand headlamp – dip beam	6.2	–
4	Right hand headlamp – main beam	6.2	–
5	Right hand fog lamp	6.2	–
6	Right hand driving lamp	6.2	–
7	Right hand headlamp lift motor	6.3	–
8	Right hand headlamp lift motor relay	6.3	6.0.1
9	Low radiator water sensor	6.3	6.0.2
10	External temperature transducer	6.3	–
11	Low temperature transducer	6.3	–
12	Bonnet light switch	6.3	6.0.2
13	Heated front lamp glass	6.3	–
14	Left hand driving lamp	6.2	–
15	Left hand fog lamp	6.2	–
16	Left hand headlamp – main beam	6.2	–
17	Left hand headlamp – dip beam	6.2	–
18	Left hand front flasher lamp	6.2	–
19	Left hand front side lamp	6.2	–
20	Left hand headlamp lift motor	6.3	6.0.3
21	Air conditioning compressor	6.3	{6.0.6
22	Windscreen washer bottle	6.4	{6.0.7
23	Left hand headlamp lift motor relay	6.3	6.0.2
24	Headlamps' ignition control relay	6.3	{6.0.4
25	Starter relay	6.3	{6.0.5
26	Headlamps', main beam relay	6.3	{6.0.4
27	Side lamps' relay	6.3	{6.0.5
28	Headlamps', dip beam relay	6.3	6.0.5
29	Driving lamps' relay	6.3	6.0.5
30	Fog lamps' relay	6.3	6.0.5
31	Air-conditioning fan relay	6.3	6.0.5
32	Bonnet open relay	6.3	6.0.5
33	Ignition control of heated rear screen relay	6.3	6.0.5
34	Left hand bonnet open motor	6.3	6.0.5
35	Driving lamp flash relay	6.3	6.0.5
36	Changeover relay for lamp flash	6.3	6.0.5
37	Front glass heater relay	6.3	6.0.5
38	Master odometer	6.3	6.0.5
39	Fuse box (in engine compartment)	6.3	6.0.5
40	Harness plug	6.3	6.0.5
41	Windscreen washer line pressure switch	6.3	6.0.4
42	Speedometer transducer	6.3	6.0.4
43	Starter motor	6.3	6.0.9
44	Oil temperature transducer	1.8	6.0.7
45	Starter inhibit and reversing lamp switch	6.3	6.0.8
46	Oil pressure transducer	6.3	6.0.7
47	Fuel pump inertia switch	6.3	6.0.7
48	Throttle switch	6.3	6.0.9
49	'Engine low temperature' air conditioning switch	6.3	–
		6.3	6.0.9

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – DESCRIPTION OF ITEMS

Diag. Item No.	Description	Sub-Sect. Ref.	Fig. No.
50	Water temperature transducer		
51	Distributor advance control solenoid	6.3	6.0.9
52	Distributor advance control solenoid	6.3	6.0.10
53	Distributor advance control solenoid	6.3	6.0.10
54	'Econocruise' throttle control	6.3	6.0.10
55	Windscreen wiper motor plug	6.3	6.0.10
56	Right hand bonnet open motor	6.4	6.0.12
		6.3	6.0.11
57	Brake differential pressure warning actuator	6.3	6.0.12
58	Alternator regulator	1.8	6.0.10
59	Air horn compressor	6.3	6.0.10
60	Distributor solenoid control relay	6.3	6.0.10
61	Distributor switch control relay	6.3	6.0.10
62	Town horns	6.3	6.0.10
63	Alternator	6.3	6.0.10
64	Horn relay	1.8	6.0.6
65	Horn changeover relay	6.3	6.0.10
66	Ignition coil plug	6.3	6.0.10
67	Right hand bulkhead plugs	1.8	6.0.10
68	Battery stud	6.3	6.0.16
69	Left hand bulkhead plugs	6.3	—
70	Air-conditioning harness plugs	6.3	6.0.15
71	Gearlever warning lights harness plug	6.3	—
72	Radio harness plug	6.3	6.0.13
73	Chassis harness plugs	6.3	6.0.13
74	Gearlever warning light switches	6.3	6.0.13
75	Radio	6.3	6.0.13
76	Radio amplifier	6.3	6.0.14
77	Front-to-rear speaker balance control	6.3	6.0.14
78	Left hand snap connectors	6.1	—
79	Low radiator water level warning control unit	6.3	6.0.15
80	Low washer bottle level warning control unit	6.3	6.0.15
81	Left hand front door switch	6.3	6.0.15
82	Left hand front door harness plugs	6.3	—
83	Left hand front speaker	6.3	—
84	Left hand window lift 'down' relay	6.3	6.0.15
85	Left hand window lift 'up' relay	6.3	—
86	Left hand door switch panel illumination	6.3	—
87	Left hand front door puddle lamp	6.2	—
88	Left hand front door window lift motor	6.2	—
89	Left hand front door lock/unlock motor	6.3	—
90	Left hand front door edge lamp	6.3	—
91	Left hand front door switch panel	6.2	—
92	Air-conditioning programme plug	6.1	6.0.15
93	Blower motor	6.3	—
94	Blower resistor plug	6.3	6.0.15
95	Snap connector	6.3	6.0.15
96	Temperature control switch for air-conditioning clutch	6.3	—
		6.1	6.0.13
97	Internal temperature thermistor	6.3	6.0.15
			6.0.13
			6.0.15

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – DESCRIPTION OF ITEMS

Diag. Item No.	Description	Sub-Sect. Ref.	Fig. No.
98	Air-conditioning temperature thermistor	6.3	—
99	De-ice switch	6.1	—
100	Air-conditioning control panel plug	6.1	6.0.13
101	A post ventilation control switch	6.1	6.0.13
102	Air-conditioning programmer plug	6.3	—
103	Air-conditioning flap control solenoids	6.3	—
104	Front cigar lighter	6.1&6.2	6.0.14
105	Boot open switch	6.1	6.0.14
106	Rear cigar lighter	6.1&6.2	—
107	Intermittent wiper control plug	6.1	—
108	Flasher unit	6.3	—
109	Dip/indicator/horn switch/plug	6.1	—
110	Wiper switch plug	6.1	—
111	Ignition switch	6.1	6.0.16
112	Instrument panel warning light connectors	6.3	6.0.13
113	Hazard unit	6.3	—
114	Rear fog lamp relays	6.3	6.0.16
115	Binnacle interface connector	6.3	6.0.13
116	Earth connector	6.3	—
117	Stabilised power supply	6.3	6.0.16
118	Instrument panel electronic connector	6.3	6.0.13
119	Instrument panel dimmer switch	6.1	—
120	Touch switch warning buzzers	6.3	—
121	Fuse box	6.3	—
122	Automatic door lock timer	6.3	6.0.16
123	Automatic door lock relay	6.3	6.0.16
124	Hazard relay	6.3	6.0.16
125	'Econocruise resume' relay	6.3	6.0.16
126	'Econocruise engage' relay	6.3	6.0.16
127	Interior lights and switches	6.2	—
128	Interior lights timer	6.3	6.0.16
129	Right hand snap connectors	6.3	6.0.16
130	Econocruise control box plug	6.3	6.0.12 6.0.16
131	Right hand front door switch	6.3	6.0.16 6.0.17
132	Right hand rear view door mirror	6.3	—
133	Right hand driver's door harness plugs	6.3	6.0.16 6.0.17
134	Harness plug – instrument lights	6.3	—
135	Hazard switch	6.1&6.2	—
136	Rear fog lamp switch	6.1&6.2	—
137	Instrument panel flood lights	6.2	—
138	Handbrake switch	6.3	—
139	Right hand front door speaker	6.3	—
140	Right hand window lift 'down' relay	6.3	6.0.17
141	Right hand window lift 'up' relay	6.3	6.0.16 6.0.17
142	Door unlock relay	6.3	—
143	Door lock relay	6.3	6.0.17
144	Right hand door switch panel illumination	6.2	6.0.17 6.0.16

## ELECTRICAL SYSTEMS

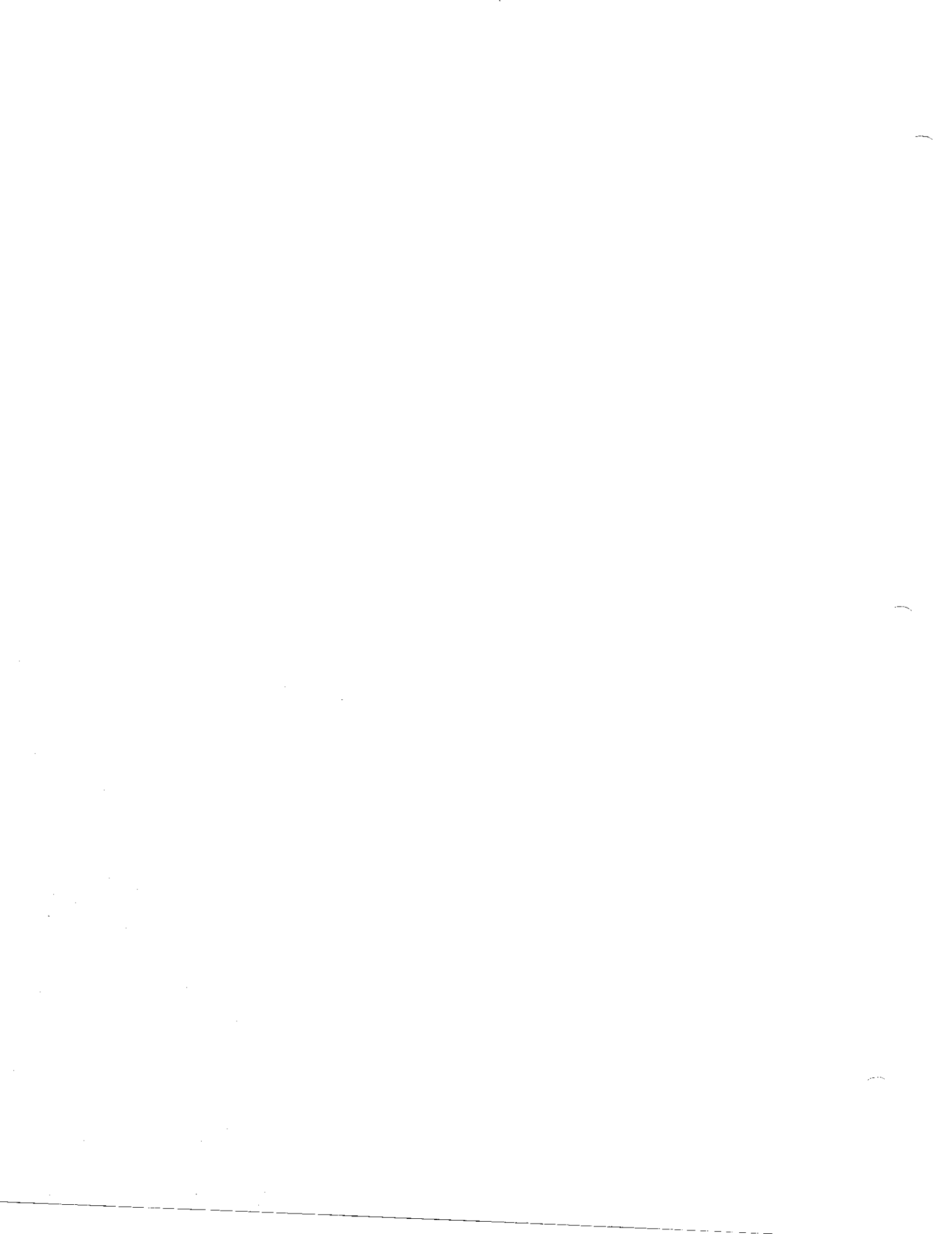
## WIRING DIAGRAM – DESCRIPTION OF ITEMS

Diag. Item No.	Description	Sub-Sect. Ref.	Fig. No.
145	Right hand front door puddle lamp		
146	Right hand front door window lift motor	6.2	6.0.17
147	Right hand front door lock/unlock motor	6.3	6.0.17
148	Right hand front door edge lamp	6.3	6.0.17
149	Door unlock key switch	6.2	6.0.17
150	Right hand front door switch panel	6.1	6.0.17
151	Right hand front door mirror switch	6.1	—
152	Driver's seat relay and motor assembly	6.1	—
153	Passenger's seat relay and motor assembly	6.3	—
154	Passenger's seat sensor switch	6.3	—
155	Left hand rear door switch	6.3	—
156	Left hand rear door puddle lamp	6.3	—
157	Left hand rear door lock/unlock motor	6.2	—
158	Left hand rear door edge lamp	6.3	—
159	Left hand fuel flap warning light switch	6.2	—
160	Left hand fuel flap open solenoid	6.3	6.0.19
161	Left hand rear speaker	6.3	6.0.19
162	Left hand fuel flap solenoid relay	6.3	6.0.19
163	Right hand fuel flap solenoid relay	6.3	6.0.18 6.0.19
164	Boot open solenoid relay	6.3	6.0.18 6.0.19
165	Boot harness plugs	6.3	6.0.18 6.0.19
166	Right hand rear flasher changeover relay	6.3	6.0.19
167	Tail lamp changeover relay	6.3	6.0.18 6.0.19
168	Aerial relay	6.3	6.0.18 6.0.19
169	Left hand rear flasher changeover relay	6.3	6.0.18 6.0.19
170	Heated rear screen relay	6.3	6.0.18 6.0.19
171	Right hand rear speaker	6.3	6.0.19
172	Right hand fuel flap warning light switch	6.3	6.0.19
173	Right hand fuel flap open solenoid	6.3	6.0.20
174	Right hand rear door switch	6.3	6.0.20
175	Right hand rear door puddle lamp	6.3	—
176	Right hand rear door lock/unlock motor	6.2	—
177	Right hand rear door edge lamp	6.3	—
178	Boot lamp switch	6.2	—
179	Aerial	6.3	6.0.21
180	Fuel pump	6.3	6.0.21
181	Tank unit	6.3	6.0.21
182	Battery master switch	6.3	6.0.21
183	Battery	6.1	6.0.21
184	Boot lid harness plugs	6.3	6.0.21
185	Right hand rear flasher lamp – supplementary	6.3	6.0.21
186	Right hand tail lamp – supplementary	6.2	—
187	Boot interior lamp	6.2	—
188	Left hand tail lamp – supplementary	6.2	6.0.21
189	Left hand rear flasher lamp – supplementary	6.2	—

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – DESCRIPTION OF ITEMS

Diag. Item No.	Description	Sub-Sect. Ref.	Fig. No.
190	Right hand stop/tail lamp	6.2	—
191	Right hand rear flasher lamp	6.2	—
192	Right hand reversing lamp	6.2	—
193	Right hand rear fog lamp	6.2	—
194	Right hand number plate lamp	6.2	—
195	Boot open switch warning lamp	6.2	6.0.21
196	Boot open solenoid	6.3	6.0.21
197	Left hand number plate lamp	6.2	—
198	Left hand rear fog lamp	6.2	—
199	Left hand reversing lamp	6.2	—
200	Left hand rear flasher lamp	6.2	—
201	Stop/tail lamp	6.2	—
202	Driver's seat belt switch	6.3	—
203	Passenger's seat belt switch	6.3	—
204	Air-conditioning pressure switch	6.3	—
205	Slow speed relay	6.3	—
206	Fast fan speed relay	6.3	—
207	Resistor	6.3	—
208	Lower electric fan	6.3	—
209	Upper electric fan	6.3	—
210	Lower radiator switch	6.3	—
211	Upper radiator switch	6.3	—
212	Rear screen heater	6.3	—
213	Bonnet lamp	6.3	—
214	Stop lamp switch	6.3	—
	Rear screen heater timer	6.3	—





## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COLOUR CODING OF CABLES

Cable No.	Colour	Cable No.	Colour	Cable No.	Colour
1	Black-green	52	Brown	103	Orange
2	Red-green	53	White-red	104	Orange
3	Green	54	Blue-green	105	Red-yellow
4	Brown-green	55	Blue-brown	106	Blue-white
5	Green-blue	56	Brown	107	Purple
6	Black	57	Blue	108	Yellow
7	Green-blue	58	Red-green	109	Black
8	Brown-green	59	Red	110	White
9	Red	60	Green-blue	111	Brown-green
10	Green-white	61	Green-blue	112	Brown-blue
11	Blue-red	62	Brown	113	Purple-yellow
12	Blue-white	63	Brown	114	Purple-black
13	Red-blue	64	Brown	115	Purple
14	Red-yellow	65	Red-green	116	Green
15	Black	66	Red	117	Green
16	Purple	67	Blue-green	118	Green
17	Brown-red	68	Blue-green	119	Yellow-green
18	Brown-blue	69	Orange	120	Green
19	Yellow-pink	70	Orange	121	Yellow-white
20	Yellow-brown	71	Red-blue	122	Yellow-red
21	Red	72	Red	123	Yellow-red
22	Red-yellow	73	Red-blue	124	Yellow-green
23	Red-blue	74	Red-yellow	125	Purple-black
24	Blue-white	75	Red-yellow	126	Purple-black
25	Blue-red	76	Red-yellow	127	Purple-red
26	Brown-green	77	Green	128	Purple-red
27	Green-red	78	Brown-green	129	Yellow-blue
28	Red	79	Brown-green	130	White
29	Black	80	Brown-blue	131	Black
30	Red-green	81	Purple-blue	132	Brown-black
31	Green	82	Purple-blue	133	Brown
32	Black-green	83	Purple	134	Yellow-white
33	Brown-green	84	Red-black	135	Yellow-black
34	Green-blue	85	Yellow	136	Brown
35	Orange	86	Yellow	137	Black-white
36	Orange	87	White	138	Brown-blue
37	Green-blue	88	White	139	Black-red
38	Purple	89	Brown-white	140	Blue-light green
39	Blue-slate	90	Red-yellow	141	Red-light green
40	Blue-pink	91	Blue	142	Green
41	Light green-black	92	Brown-purple	143	Green
42	Green	93	Blue-green	144	Brown-light green
43	Brown-black	94	Brown	145	White
44	Green	95	Brown	146	White
45	Green-blue	96	Brown	147	White-black
46	Blue	97	Brown	148	White-green
47	Blue	98	Brown	149	White-green
48	White-black	99	Brown	150	Black
49	White-black	100	Brown	151	White
50	White-blue	101	Red-blue	152	Blue
51	White-red	102	Pink	153	White-brown

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COLOUR CODING OF CABLES

Cable No.	Colour	Cable No.	Colour	Cable No.	Colour
154	Green-brown	205	Black	256	Black-yellow
155	White-black	206	Green-red	257	Yellow-blue
156	Black-red	207	Green-slate	258	Yellow-white
157	Green	208	Blue-black	259	Yellow-red
158	White-green	209	Red-white	260	Brown-red
159	Black	210	Red-white	261	Black
160	Yellow	211	Purple-white	262	Black
161	Yellow	212	Purple-white	263	Black
162	Brown-black	213	Purple-white	264	Black-green
163	Light green-black	214	Green-red	265	Black-yellow
164	Purple	215	Green-white	266	Brown-green
165	Brown	216	Purple-green	267	Brown-black
166	Blue	217	Brown-green	268	Green
167	Yellow	218	Brown-green	269	Blue
168	Brown	219	Purple	270	Brown-black
169	Yellow	220	Green	271	Purple
170	Yellow	221	Red	272	Purple
171	Black	222	Purple-blue	273	Brown-black
172	Orange	223	White-purple	274	Brown-black
173	Green	224	Green-purple	275	Brown-black
174	Green	225	Green-black	276	Purple-black
175	Green	226	Red-brown	277	Purple-white
176	Yellow	227	Red-blue	278	Black
177	Green	228	Brown	279	Blue
178	Brown-blue	229	Brown	280	White
179	Green-red	230	Brown	281	Blue-yellow
180	Black	231	Brown	282	Brown-blue
181	Black	232	Green	283	Yellow
182	Black	233	Green	284	Purple-yellow
183	Brown-blue	234	Green	285	Yellow-blue
184	Light green-black	235	Purple-white	286	Yellow-black
185	Light green-pink	236	Purple-white	287	Yellow-white
186	Light green-purple	237	Purple-white	288	Yellow-green
187	Green-light green	238	Purple-black	289	Red-white
188	Light green-blue	239	Purple-black	290	Purple
189	Light green-yellow	240	Purple-black	291	Green
190	Blue	241	Brown-black	292	Yellow-purple
191	Black-white	242	Brown-black	293	Yellow-red
192	Black	243	Brown-black	294	Black-green
193	Black-white	244	Brown-black	295	Brown-black
194	Black	245	Purple	296	Black-yellow
195	Black-white	246	Purple	297	Brown-green
196	Black	247	Purple	298	Blue
197	Black-white	248	Brown-red	299	Green
198	Black	249	Blue-slate	300	White-yellow
199	Brown	250	Purple-yellow	301	Purple-white
200	Green	251	White-yellow	302	Purple-yellow
201	Slate	252	Yellow-green	303	Purple-black
202	Red	253	Yellow-black	304	Purple
203	Green	254	Yellow-purple	305	Purple
204	Slate	255	Black-green	306	Purple

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COLOUR CODING OF CABLES

Cable No.	Colour	Cable No.	Colour	Cable No.	Colour
307	Brown-black	358	Light green-brown	409	Brown-yellow
308	White-yellow	359	Green	410	Purple-blue
309	Black	360	Red-light green	411	Purple
310	Black	361	Brown-light green	412	Purple
311	Black	362	Green	413	Purple-green
312	Brown-black	363	Green	414	Purple
313	Brown-black	364	Green-red	415	Brown-black
314	Brown-black	365	Green-white	416	Brown-black
315	Purple	366	Green-white	417	Red
316	Purple	367	Yellow	418	Red
317	Purple-white	368	White	419	Purple
318	Purple-black	369	White	420	Brown-black
319	Brown-black	370	Green	421	Green-white
320	Brown-black	371	Red-white	422	Green-white
321	Brown-black	372	Black	423	Purple
322	Green	373	Red-blue	424	Blue-white
323	Green	374	Black	425	Blue-pink
324	Green	375	Red-blue	426	Purple
325	Green	376	Red-blue	427	Green-red
326	Purple	377	Blue-white	428	Green-red
327	Purple	378	Red-blue	429	Brown-green
328	Purple	379	Blue-red	430	Red-brown
329	Red	380	Red-blue	431	Brown-black
330	Green	381	Black	432	Red
331	Brown-white	382	Black	433	Green-purple
332	Brown-white	383	Purple	434	Red
333	Orange	384	Purple	435	Red
334	Orange	385	Brown	436	Red
335	Green-purple	386	Black	437	Green-brown
336	White	387	Black	438	Red-blue
337	Green	388	Green	439	Black-white
338	Purple	389	Red	440	Blue-black
339	Green-yellow	390	Brown	441	Blue
340	Light green-purple	391	Blue	442	Blue
341	Green-white	392	White	443	Purple-black
342	Green-red	393	Green	444	White-purple
343	Red	394	Purple	445	White-yellow
344	Black-blue	395	Red	446	Brown-red
345	Green	396	Black	447	Brown
346	Black	397	Orange	448	Yellow-brown
347	Black	398	Slate	449	Green
348	Green	399	Orange		
349	Green	400	Black		
350	Black	401	Green		
351	Green	402	Black		
352	Black	403	Red		
353	Black	404	Red-white		
354	Green	405	Purple		
355	Green	406	Brown-yellow		
356	Black	407	Purple		
357	Purple	408	Purple		



# ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COMPONENT LOCATIONS

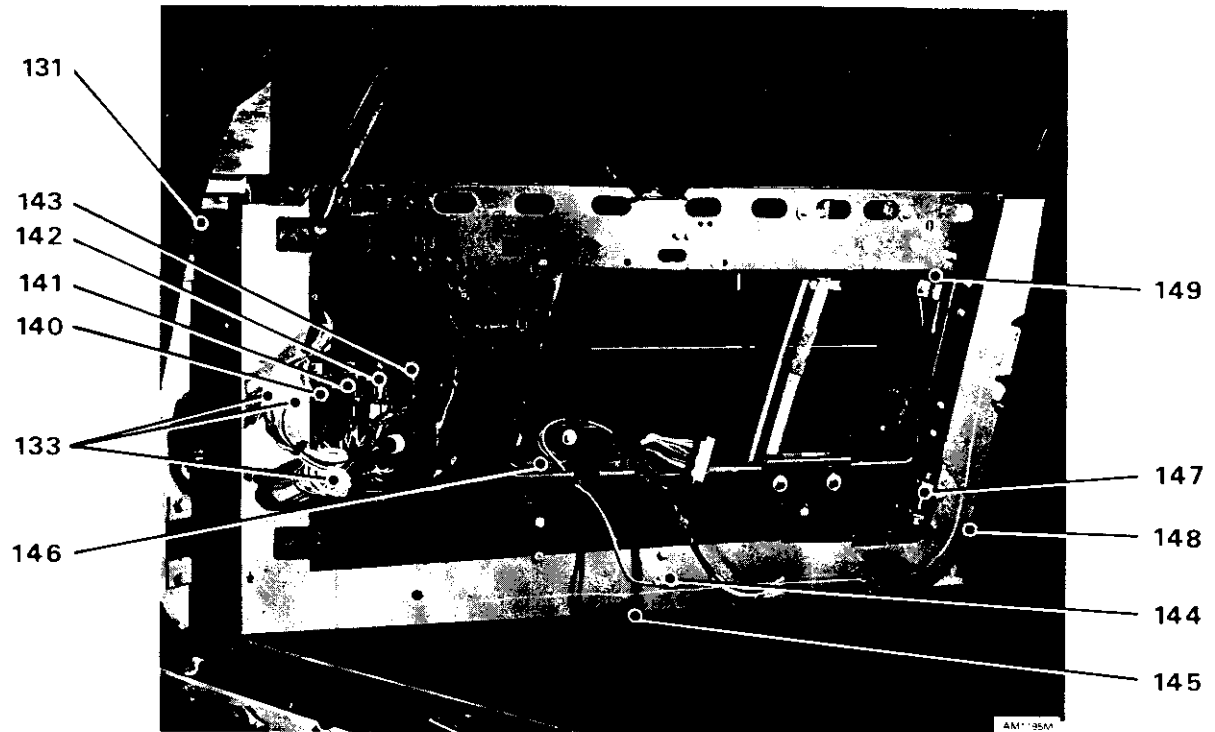


Fig. 6.0.17 Offside Front Door Electrics

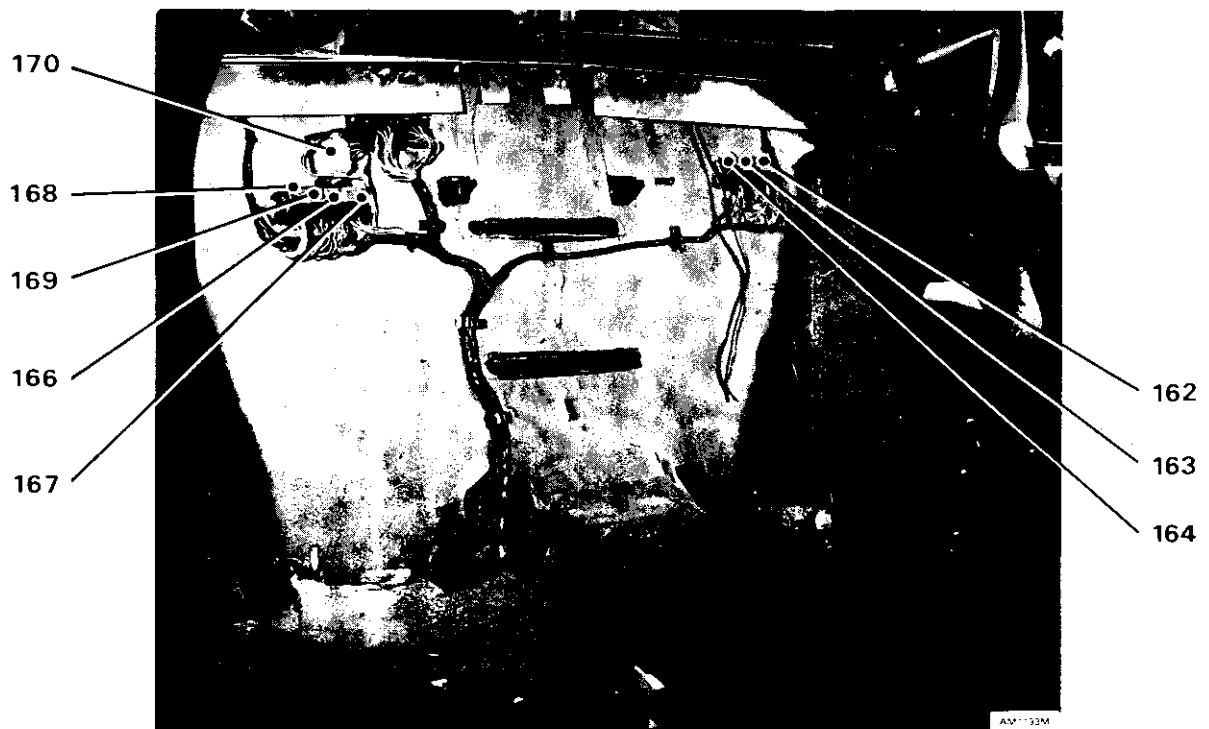


Fig. 6.0.18 Rear Seat Panel Electrics (Chassis 32 onwards)

## ELECTRICAL SYSTEMS

## WIRING DIAGRAM – COMPONENT LOCATIONS

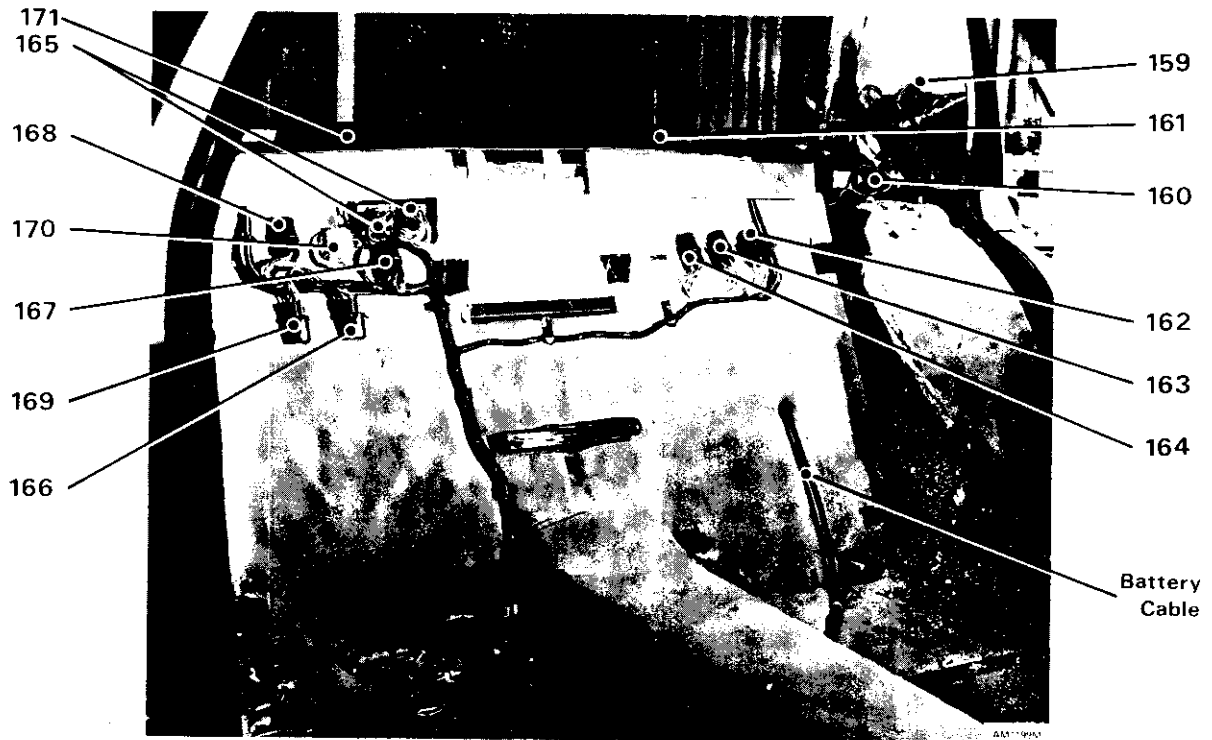


Fig. 6.0.19 Rear Seat Panel Electrics (Pre Chassis 32)

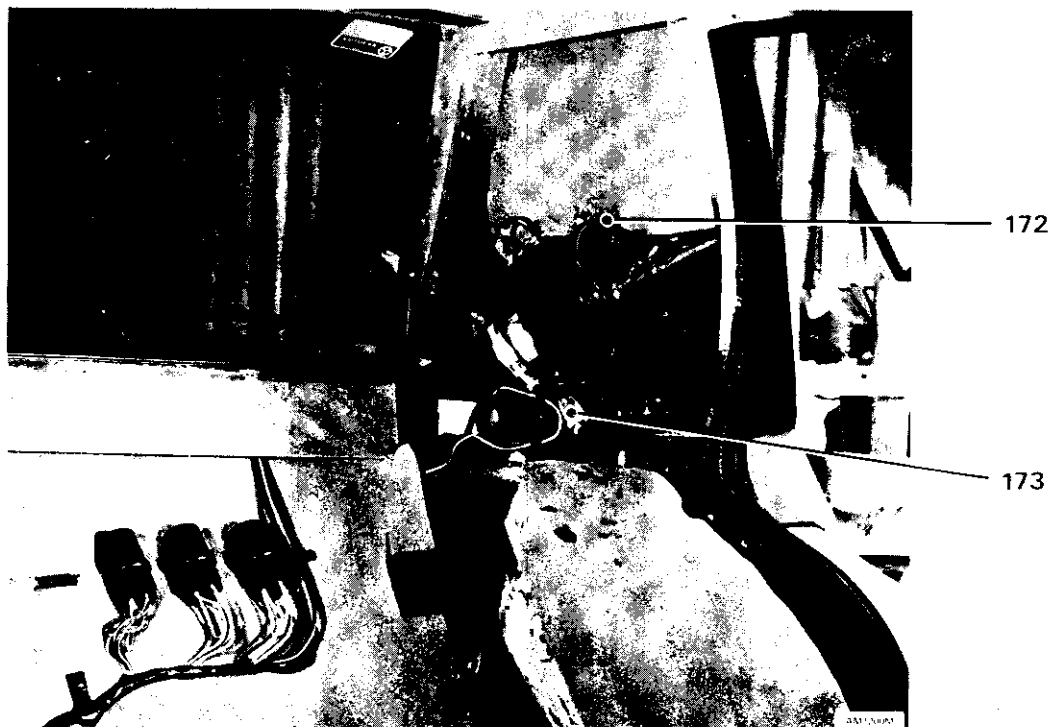


Fig. 6.0.20 Fuel Flap Mechanism – Rear L.H. Side

ELECTRICAL SYSTEMS

WIRING DIAGRAM – COMPONENT LOCATIONS

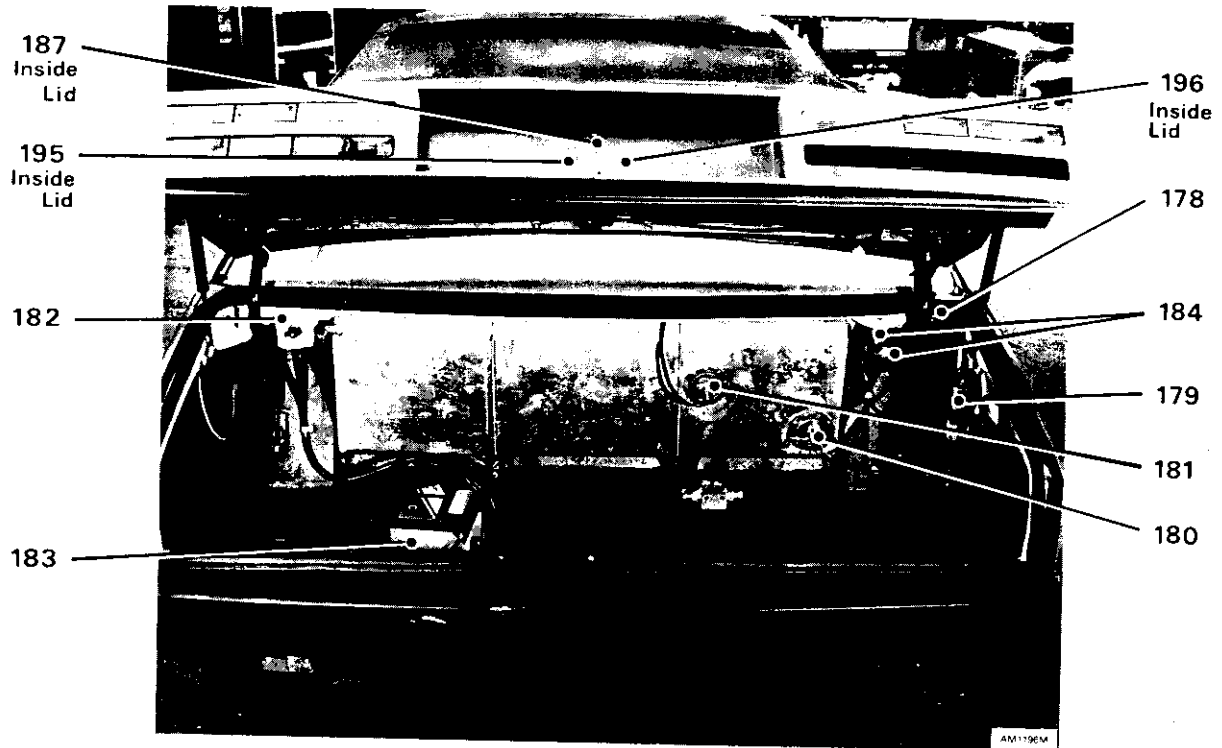
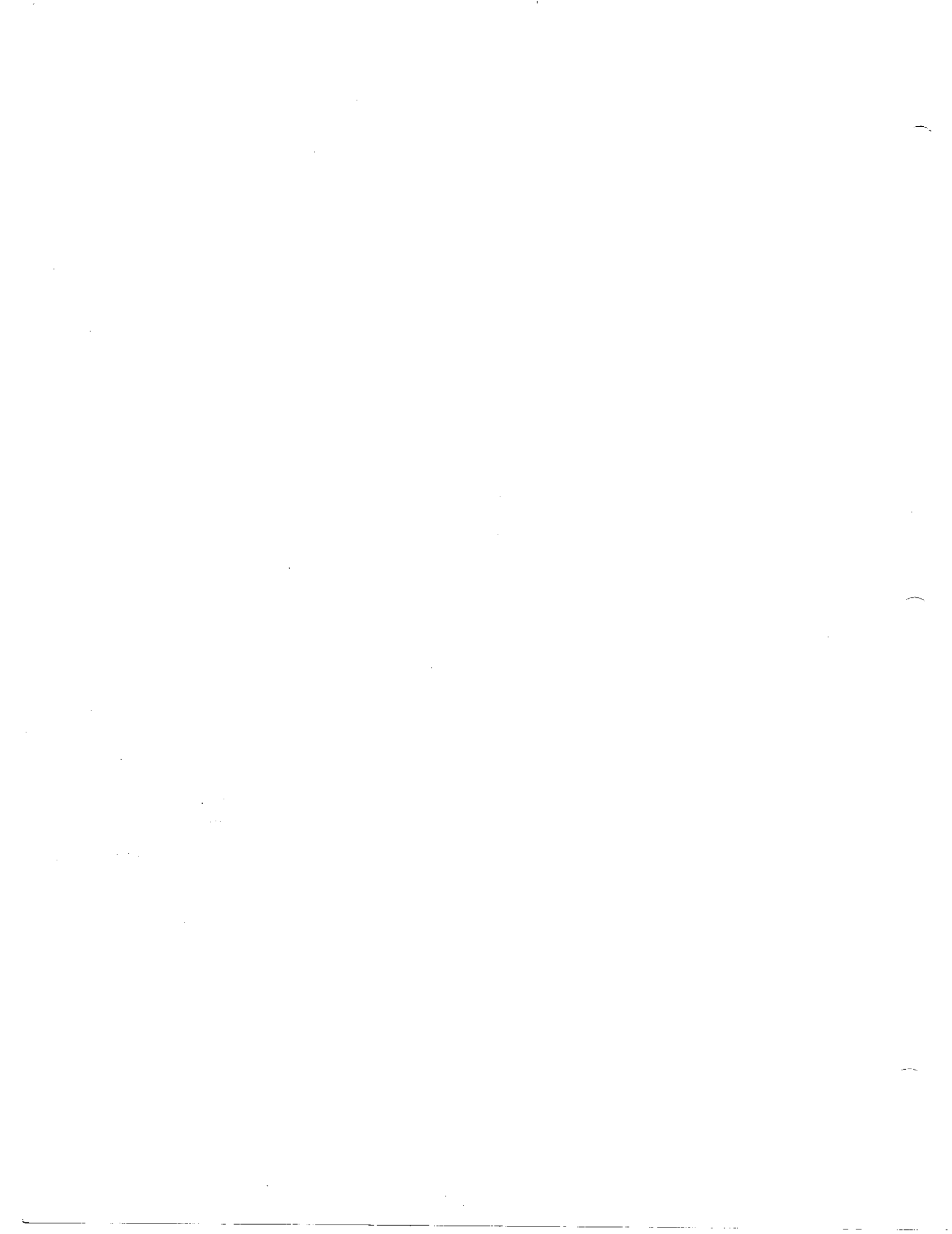


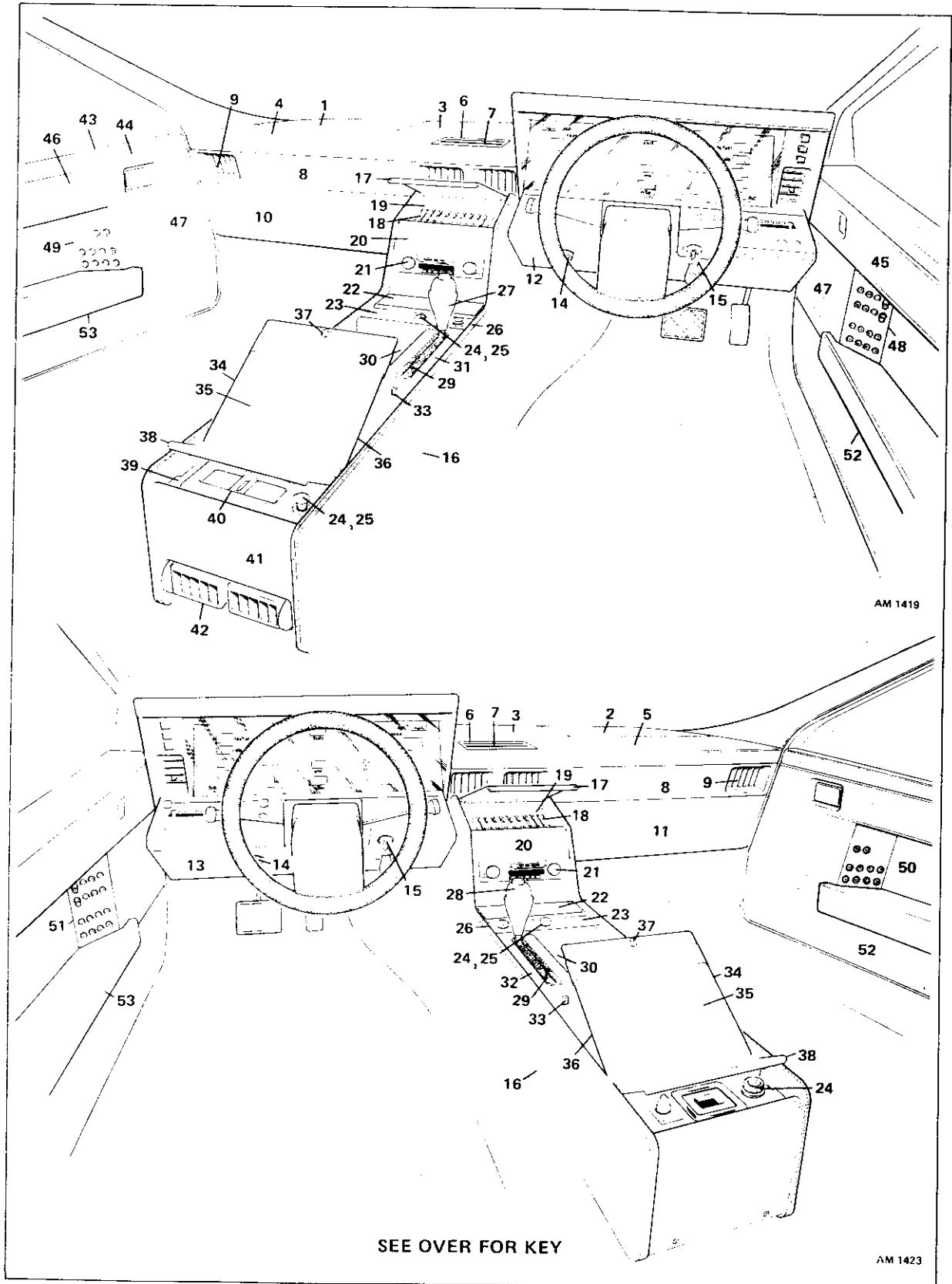
Fig. 6.0.21 Boot Interior – Without Trim Panels





# INSTRUMENTS & CONTROLS

Fig. 6.1.1 Fascia and Centre Console



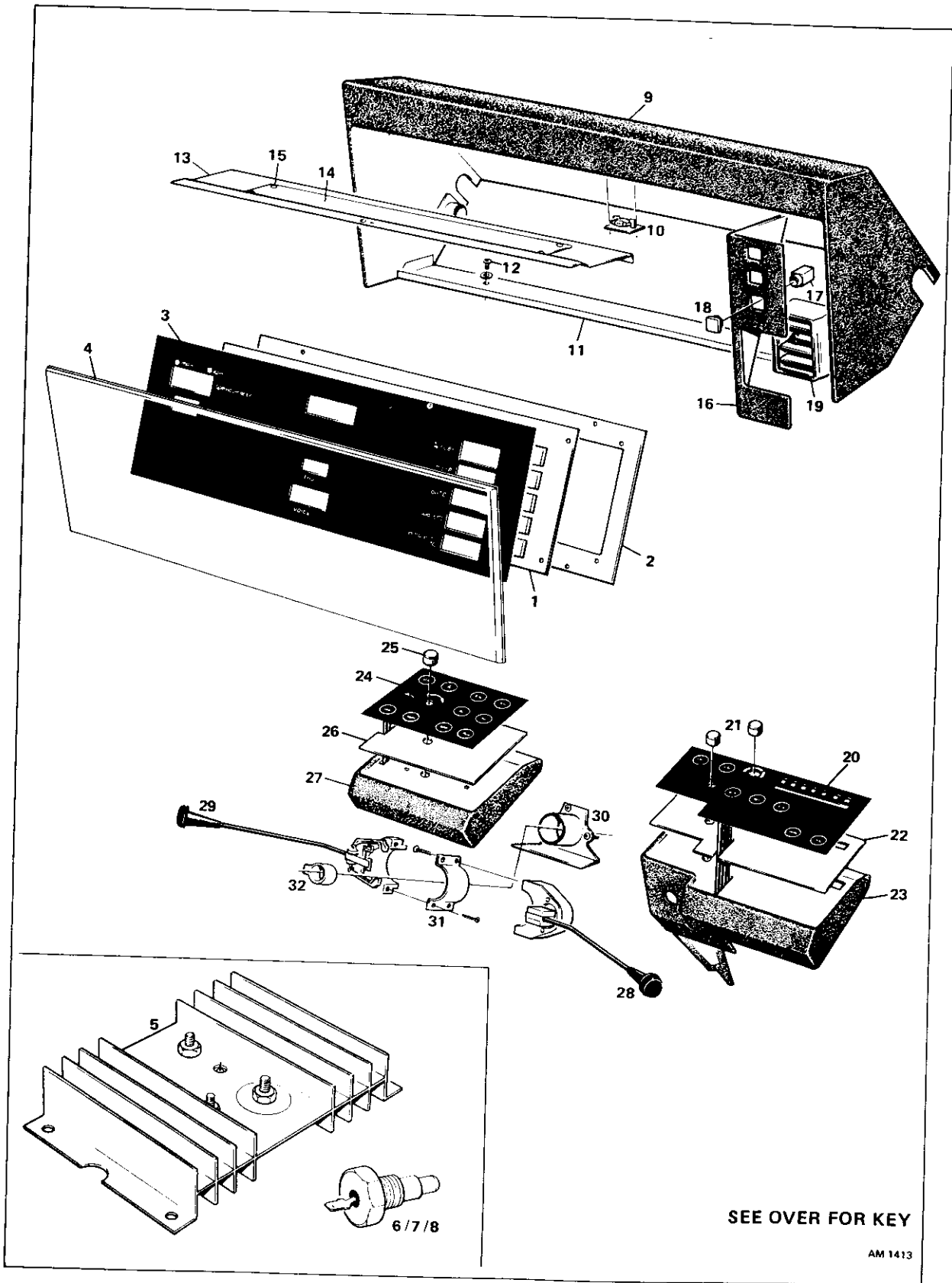
## INSTRUMENTS &amp; CONTROLS

## KEY TO FIG. 6.1.1

- 1 Dash trim pad, front, LH
- 2 Dash trim pad, front, RH
- 3 Dash trim pad, centre
- 4 Dash top crash roll pad
- 5 Dash top crash roll pad
- 6 Dash top vent
- 7 Vent grid
- 8 Wood trim, facia
- 9 Air outlet
- 10 Facia trim pad lower
- 11 Facia trim pad lower
- 12 Binnacles finisher plate
- 13 Binnacles finisher plate
- 14 Panel lamp dimmer switch
- 15 Steering lock and ignition switch
- 16 Centre console wood frame
- 17 Fuse box lid
- 18 Fuse box
- 19 Cover plate, fuse box
- 20 Wood trim, stereo surround
- 21 Radio/cassette player
- 22 Ash tray, front
- 23 Mounting plate
- 24 Cigar lighter
- 25 Wooden knob
- 26 Speaker balance control
- 27 Gear lever assembly
- 28 Gear lever assembly
- 29 Sealing brushes
- 30 Tray panel
- 31 Cover, gear lever, RHD
- 32 Cover, gear lever, LHD
- 33 Touch switch
- 34 Glove box lid assembly
- 35 Lid, metal, upper
- 36 Lid stay
- 37 Lid lock and keys
- 38 Lid, rear ashtray
- 39 Platform, rear ashtray
- 40 Ashtray, rear
- 41 Finisher plate
- 42 Air outlet
- 43 Trim capping, upper
- 44 Trim capping, side
- 45 Wood trim, RH
- 46 Wood trim, LH
- 47 Speaker, front
- 48 Touch switch, metal cover, RH
- 49 Touch switch metal cover, LH
- 50 Touch switch metal cover, RH
- 51 Touch switch metal cover, LH
- 52 Arm rest, RH
- 53 Arm rest, LH

# INSTRUMENTS & CONTROLS

Fig. 6.1.2 Instrument Panel - RHD



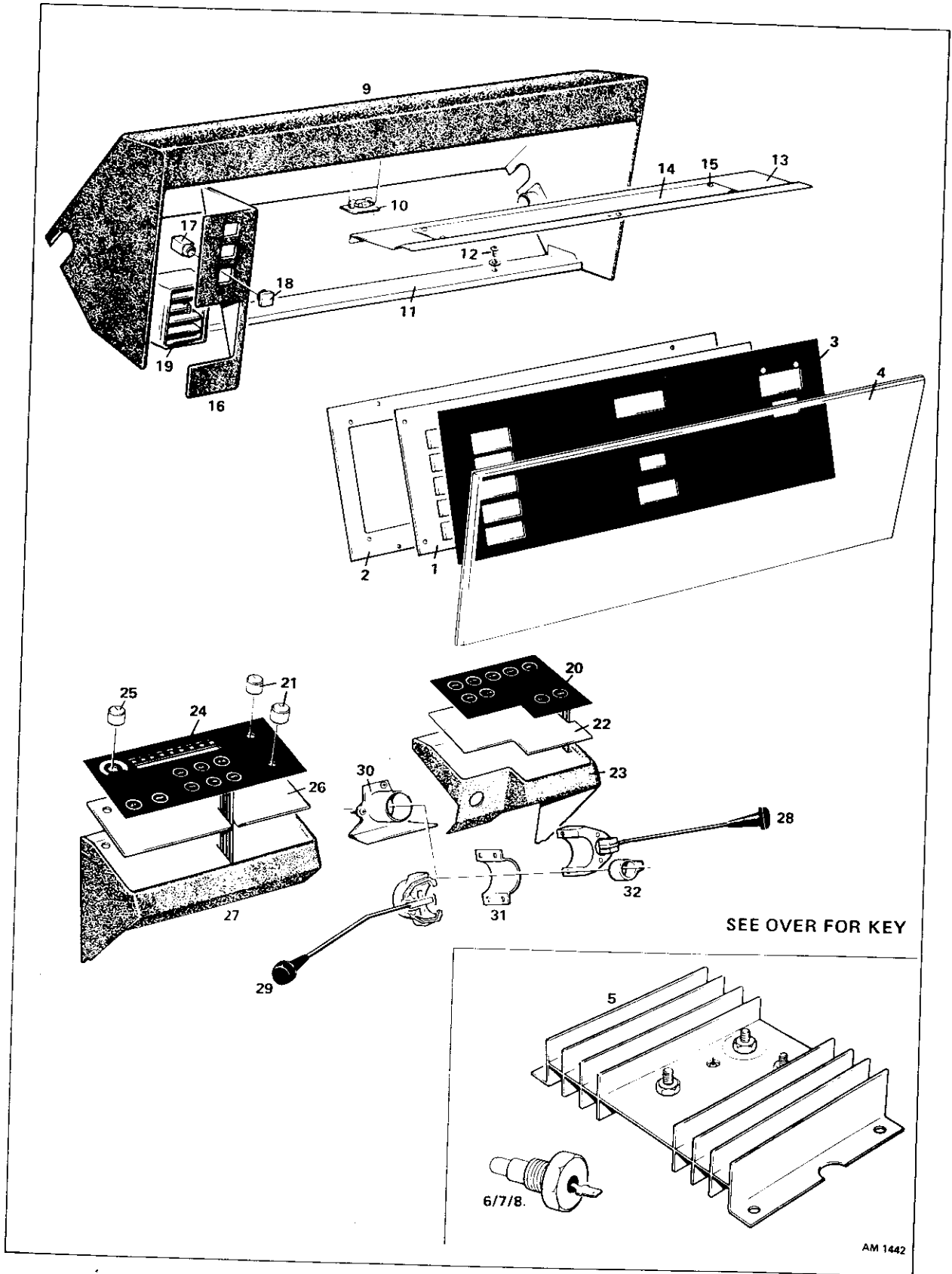
## INSTRUMENTS &amp; CONTROLS

## KEY TO FIG. 6.1.2

- |    |  |   |
|----|--|---|
| 1  | Main instrument board                    |   |
| 2  | Instrument mounting panel                |   |
| 3  | Instrument display board                 |   |
| 4  | Instrument acrylic face                  |   |
| 5  | Instrument power regulator               |   |
| 6  | Oil and water temperature sender         |   |
| 7  | Internal and external temperature sender |   |
| 8  | External low temperature sender          |   |
| 9  | Cover, display area                      |   |
| 10 | Facia illumination lamp                  |   |
| 11 | Display cover bracket                    |   |
| 12 | Bolt                                     |   |
| 13 | Finisher, upper display area             |   |
| 14 | Defuser film                             |   |
| 15 | Stud, self clinching, M4                 |   |
| 16 | Finisher, facia air vent                 |   |
| 17 | Switch                                   |   |
| 18 | Lens, orange                             |   |
| 19 | Air outlet                               |   |
| 20 | Touch switch panel, RH                   |   |
| 21 | Knob, round, 8mm spindle                 |   |
| 22 | Plate, binnacle, RH                      |   |
| 23 | Binnacle assembly, RH                    |   |
| 24 | Touch switch panel, LH                   |   |
| 25 | Knob, round, 4mm spindle                 |   |
| 26 | Plate, binnacle, LH                      |   |
| 27 | Binnacle assembly, LH                    |   |
| 28 | Switch, screen wash/wipe                 | } Early cars — reversed on later vehicles |
| 29 | Switch, dip/flash/horn                   |   |
| 30 | Cowl mounting bracket                    |   |
| 31 | Switch clamp                             |   |
| 32 | Indicator cancelling block               |   |

# INSTRUMENTS & CONTROLS

Fig. 6.1.3 Instrument Panel - LHD



## INSTRUMENTS &amp; CONTROLS

## KEY TO FIG. 6.1.3

- 1 Main instrument board
- 2 Instrument mounting panel
- 3 Instrument display board
- 4 Instrument acrylic face
- 5 Instrument power regulator
- 6 Oil and water temperature sender
- 7 Internal and external temperature sender
- 8 External low temperature sender
- 9 Cover, display area
- 10 Facia illumination lamp
- 11 Display cover bracket
- 12 Bolt
- 13 Finisher, upper display area
- 14 Defuser film
- 15 Stud, self clinching, M4
- 16 Finisher, facia air vent
- 17 Switch
- 18 Lens, orange
- 19 Air outlet
- 20 Touch switch panel, RH
- 21 Knob, round, 8mm spindle
- 22 Plate, binnacle, RH
- 23 Binnacle assembly, RH
- 24 Touch switch panel, LH
- 25 Knob, round, 4mm spindle
- 26 Plate, binnacle, LH
- 27 Binnacle assembly, LH
- 28 Switch, screen wash/wipe
- 29 Switch, dip/flash/horn
- 30 Cowl mounting bracket
- 31 Switch clamp
- 32 Indicator cancelling block

## INSTRUMENTS AND CONTROLS

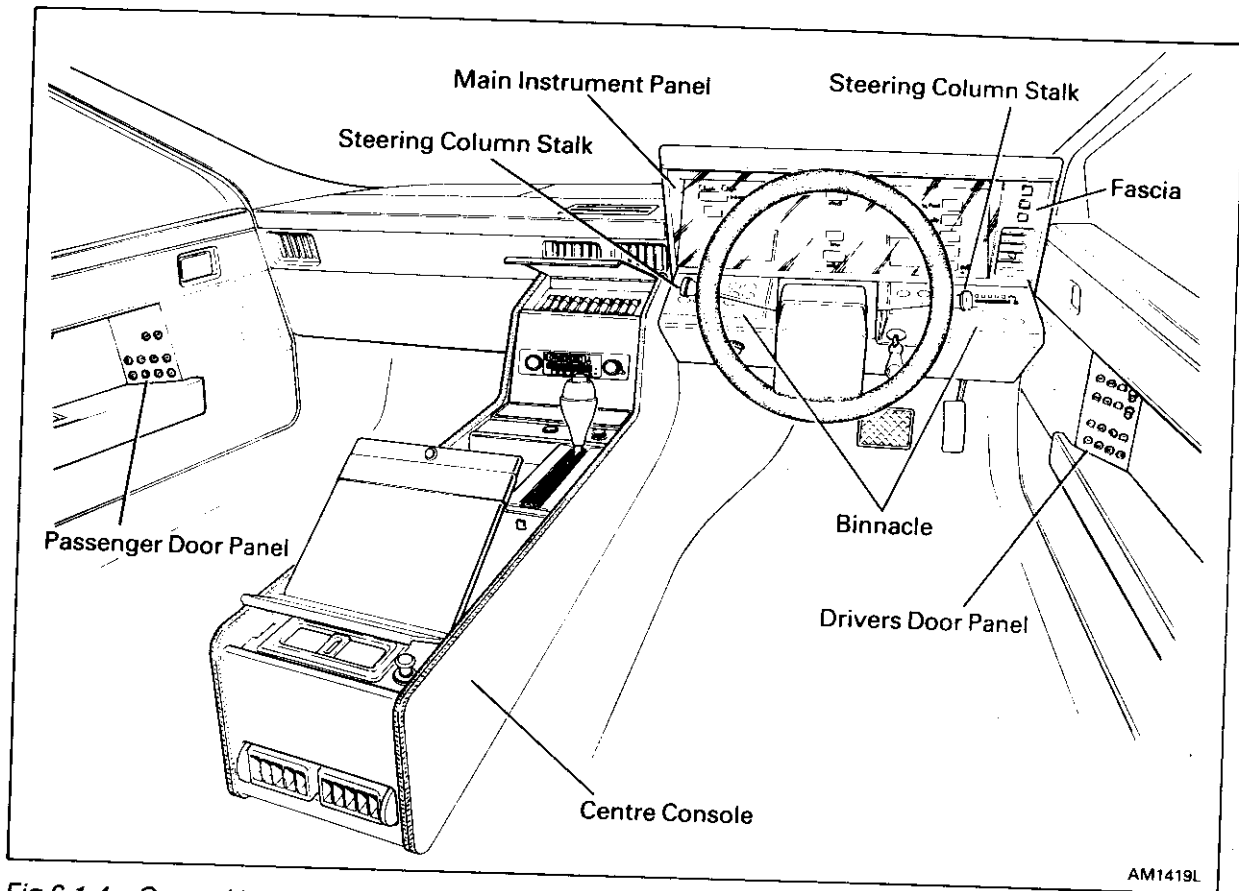


Fig 6.1.4 General Layout of Instruments and Controls

AM1419L

## INTRODUCTION

Careful attention has been given to the positioning of the controls and instruments. The important warning lamps and LED displays are grouped on the main instrument panel and provide information which is easily and safely interpreted whilst driving the car. Touch switches and controls are mounted on the fascia, on the steering column mounted stalks, the binnacle immediately below the instrument panel, on each front door panel and on the centre console.

NOTE: The word 'controls' refers to those controls which are manually operated by the driver or passenger. It does not cover those controls which are automatically operated by conditions on the car, eg: temperature-operated switches.

## MAIN SYSTEM SWITCHES

### Battery Master Switch

This isolates all electrical circuits on the car. The switch is fitted in the top LH corner of the luggage compartment.



Fig 6.1.5 Battery Master Switch

AM1347

## INSTRUMENTS AND CONTROLS

To engage the switch it should be pushed inwards, against spring pressure, and turned clockwise.

To isolate all electrical circuits, turn the switch anti-clockwise until the spring pressure is released. This will automatically establish the OFF position.

In normal circumstances the switch will remain in the ON position but it must be turned OFF before any work is undertaken on the electrical systems.

**NOTE 1:** Do NOT turn OFF the Battery Master Switch when the engine is running otherwise damage to electrical components may occur.

**NOTE 2:** It will always be necessary to reset the clock display on the main instrument panel after the master switch has been turned OFF.

**NOTE 3:** When an external 12v supply is connected to the vehicle battery and the negative lead of the supply is connected to a point on the vehicle other than the negative battery terminal then the master switch will have been by-passed and the vehicle systems will be LIVE whether the switch is ON or OFF.

### Ignition Switch

This is a key-operated, rotary-movement switch with four operational positions combining ignition starter and steering-lock functions.

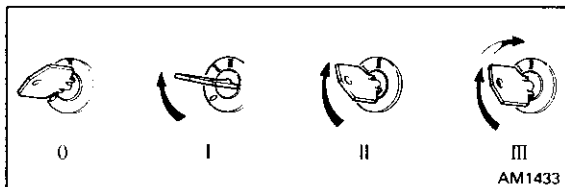


Fig 6.1.6 Ignition Switch Positions

The switch is fitted to the binnacle to one side of the steering column.

The diagram component number is 111.

The functions of the switch in the four positions are:

**0** All circuits are isolated except for the parking lamp – if selected in position II, the courtesy lamps, the hazard warning lamps and the radio. The steering lock operates in this position if the key is removed. It may be necessary to turn the steering wheel slightly to engage the lock.

**I** Auxiliary circuits only are available, ie: window lifts, rear window heater, windscreen wipers and those circuits which are available in Position 0.

**II** All circuits are switched ON. This is the normal running position.

**III** Engine 'start' position. This has a spring-return to Position II feature and the headlamps are temporarily extinguished in this position.

**NOTE 1:** When the ignition switch is returned to Positions 0 or I, the speedometer display will revert to the preset, dominant mode, ie: mph or kph.

**NOTE 2:** When the switch is in Position II or III, the ignition warning lamp should glow. If the warning lamp does not glow, then the alternator will not charge. If it continues to glow when the engine is running at approximately 1500 rpm or more, then an investigation should be carried out to establish the reason for the malfunction.

### THE STEERING COLUMN STALKS

#### Combined Headlamp, Turn Signal, Flasher and Horn Switch

This is a multi-position stalk, fitted to the steering column. Its various functions are:

##### Headlamp Control

The ON/OFF selection of the headlamps is effective only after the side lights have been lit by operating the 'side' touch switches on the binnacle. The headlamps can then be raised, and the dipped beam automatically lit, by use of the touch switch marked 'head' on the binnacle. The circuit will have already been prepared through an ignition controlled relay, component number 24 and will be completed through the dipped beam relay, component number 28. At the same time, the dipped beams are illuminated, the circuit being completed through a relay, component number 28.

The main beam condition can be selected by using the stalk on the steering column. The lever is pushed into the 'forward' position, ie: away from the driver and this illuminates the main beam through a relay, component number 26. The existing dipped beam condition is maintained and a warning light on the instrument panel is illuminated.

To revert to the dipped beam only condition the lever should be pulled back, ie: towards the driver, only as far as the central position.

##### Flasher

A 'flash' facility is available by pulling the stalk backwards, against spring pressure, towards the driver from the central position.



## INSTRUMENTS AND CONTROLS

If the headlamps are in the retracted position, the flash facility is provided by the spot lamps, the circuit being made through a relay, component number 36.

If the headlamps are in the raised position, the flash facility is provided by using the headlamp main beam, the circuit being made through the main beam relay, component number 26. The changeover of the flash facility from the spot lamps to the main beam and vice-versa is made automatically through a changeover relay component number 36.

**Turn Signal**

The operation of the external turn signal indicators is effected by moving the stalk in an up and down (clockwise and anti-clockwise) direction. The movement is self-cancelling from each direction and can be operated irrespective of whether the stalk is in the main or dipped beam position.

The circuit is made through the flasher unit, component number 108. Interior warning lights which flash in unison with their respective exterior turn indicators are fitted in the instrument panel.

**Horn**

This is operated by pressing the end of the stalk inwards. The circuit is made through the horn relay, component number 64. The type of horn required is selected by a touch switch on the binnacle and an indication is given on the instrument panel.

**Windscreen Wiper/Screenwash Switch**

This is a multi-position stalk, fitted to the steering column.

Its various functions are:

**Windscreen Wipers**

The wipers are controlled by an up and down (clockwise and anti-clockwise) movement. In the fully up position the wipers are switched off. One 'click' of the stalk in downward direction gives a slow-speed wipe and two 'clicks' gives a fast-speed wipe.

A single wipe may be obtained by pulling the stalk backwards, ie: towards the driver.

The duration of the wiper delay is regulated by a control knob on the binnacle, the circuit being made through a wiper unit, component number 107.

**Screenwash**

The electric screen washer is operated by pressing the end of the stalk inwards. Releasing it will activate the wipers and they will continue

to sweep automatically three or four times.

The water container for the screen washer is fitted at the front of the engine compartment. It should be kept full of clean water.

*WARNING: On no account should antifreeze intended for use in the engine cooling system be added to the screenwash as it could cause serious damage to the paintwork.*



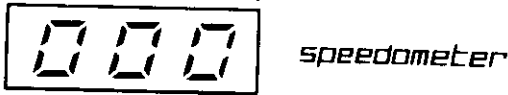
# INSTRUMENTS AND CONTROLS

## THE MAIN INSTRUMENT PANEL

This comprises a printed circuit board unit with monitoring information being displayed in a digital form by means of LED units. Warning information is given by using conventional lamps which are activated by sensing devices throughout the car. Illumination is provided by a flood light at the top of the panel. The intensity of light is controlled by a rotary-operated switch on the lower face of the binnacle.

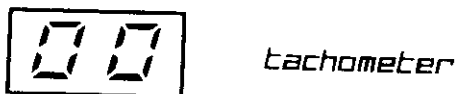
### Digital Displays

● *mph*      ● *kph*



This indicates the road speed of the car and can be selected to indicate either mph or kph by means of a touch button on the binnacle. A small light will show above the speedometer to indicate the selected mode.

Before the car leaves the factory its speedometer is preset to a dominant mode of display. If the alternative display is required it must be re-selected whenever necessary as the speedometer will revert to its preset mode whenever the ignition switch is returned to positions 0 or I.



This indicates the engine revolutions but it displays the information in a form as rpm x 100. For example, when 30 is displayed, the engine revolutions are 3000 ie: 30 x 100.



The clock shows the time in hours and minutes and may be reset or corrected for accuracy by the operation of two buttons labelled 'clock' and 'set' on the binnacle. It will always be necessary to reset the clock display when the battery master switch is returned from the OFF to the ON position.

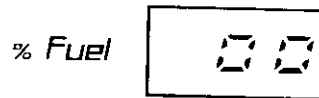


The trip and odometer record journey

distances in either kilometres or miles, the mode being pre-set at the factory, depending on the specification of the appropriate country, eg: UK and USA in miles, Continental countries in kilometres. It can be reset by means of a touch button on the binnacle. An odometer, displaying the total vehicle mileage, is fitted in the engine compartment.



The voltmeter indicates the voltage at the battery terminals.



This indicates the amount of fuel in the car. It is given as a percentage of the total tank capacity, for example, a display of 75 indicates three quarters full and a display of 50 indicates half full. When the fuel remaining in the tank is less than 10% the display will flash. The circuit to the lamp is via a sensor in the fuel tank, component number 181.



This indicates the engine oil pressure in lb/sq.in.

Should the oil pressure fall below approximately 10lb/sq.in. the display will flash.

The circuit to the display is via a sensor, component number 46.



This indicates the engine oil temperature in degrees centigrade.

If the oil temperature exceeds approximately 120°C, the display will flash.

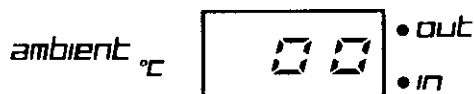
The circuit to the display is via a sensor, component number 44.



This indicates the temperature of the coolant (water and anti-freeze) in degrees centigrade.

## INSTRUMENTS AND CONTROLS

If the temperature exceeds approximately 120°C, the display will flash.  
The circuit to the display is via a sensor, component number 50.



This indicates the ambient air temperature either inside or outside the car, according to selection.

The selection is by touch button marked 'temp' on the binnacle. When the external ambient air temperature is being displayed, a small light will show at the upper right hand edge of the display. When the internal display has been selected, the light will show at the lower right hand edge.

The circuit to the external temperature display is via the external temperature transducer, component number 10.

The circuit to the internal temperature display is via the internal temperature transducer, component number 97.

### Information and Warning Lights



The LH or RH turn indicator is operating.

The circuit is made through contacts on a steering column stalk and through a flasher unit. Both indicators will flash simultaneously when the hazard switch is operated.

### Fuel Flap

One or both fuel filler flaps have not been securely closed.

Actuating switches are located in the top of the fuel filler flap recess.

The LH switch is component number 159.

The RH switch is component number 172.

### beam

The headlamps main beam has been selected.

The circuit is made through the contacts on the steering column stalk and a relay, component number 26.

### seat belts

The seat belt(s) have not been fastened.

When both a driver and a passenger are in the car, both seat belts must be fastened to

extinguish the lamp. When the passenger's seat is unoccupied it is necessary for only the driver's seat belt to be fastened in order to extinguish the lamp.

The circuit is completed through two seat belt switches, component numbers 202 and 203 and a passenger's seat sensor, component number 154.

### side lights

The side lights are ON.

NOTE: The warning lamp/side lights will remain ON after the ignition is switched OFF and may be extinguished only when the ignition is switched ON.

The actuating circuit is made through the touch button on the binnacle and the relay, component number 27.

### rad level

The level of the coolant in the radiator is LOW.

A sensor, component number 9, is located in the radiator and this identifies the fault condition. The signal is transmitted to the warning lamp via a control unit, component number 79.

### ignition

The ignition is switched ON.

The engine is not running or there is no charge from the alternator.

### Fog

The front fog lamps are ON.

The actuating circuit is made through a touch button on the binnacle and a relay, component number 30.

### boot

The boot is OPEN.

A switch, component number 105, is operated by the boot lid and this completes the circuit to the warning lamp via a relay, component number 164.

### brake

When the handbrake lever is in the ON position – steady glow.

Hydraulic failure of either the front or rear of the brake system on application of the

## INSTRUMENTS AND CONTROLS

footbrake – steady glow.

Loss of vacuum assistance to the brake servos – continuous flash.

**NOTE:** When the vacuum reservoir has been exhausted such as after a short period when the car is parked, the warning light will flash when the ignition is turned ON and will be extinguished when the engine is started and the vacuum level is restored. This function will usually be masked by the overriding effect of the hand brake warning system. However either condition will provide a regular serviceability check on the warning system.

**WARNING:** If the lamp lights while driving, the car should be brought to a halt immediately and the problem diagnosed – ensure that the handbrake hasn't inadvertently been left ON. In the event of either of the safety brake circuits failing or a loss of vacuum then a considerable increase in pedal pressure will be required.

**spot**

The spotlamps are ON.

The actuating circuit is made through a touch button on the LH binnacle and a relay, component number 29.

Because the spotlamps are used as passing lamps when the headlamps are retracted, the indicating lamp will light when the spotlamps are 'flashed'.

**rear window**

The rear window heater is switched ON.

When the ignition is switched ON, the circuit is prepared to the rear window demister through a relay, component number 33. The circuit is completed by a single operation of the touch button on the binnacle and a relay, component number 170.

A further single operation of the button will switch the heater OFF. However, if the heater is not switched off manually, it will continue to demist for a given length of time, pre-determined by a timer, component number 215.

To reactivate the heater after a timer-controlled operation, it will be necessary to operate the button twice.

**wash level**

The windscreen washer fluid level is LOW.

The lamp circuit is actuated through a sensor

in the washer bottle and control unit, component number 80.

**lowtemp**

The external ambient temperature is LOW.

The circuit is actuated by a sensor, component number 11, located under the front bumper.

<i>park</i>	<i>reverse</i>
<i>neutral</i>	<i>drive</i>
<i>2</i>	<i>1</i>

These lamps indicate the position of the gear selector. They are activated by control points on the gear selector lever itself.

<i>L horn</i>	<i>C horn</i>
---------------	---------------

These two lamps indicate the type of horn that has been selected, using the touch button on the binnacle.

## FACIA SWITCHES

**Hazard Warning Switch**

This actuates the simultaneous operation of all four exterior turn-signal lights.

The switch is located on the facia, near the top right-hand corner of the instrument panel, immediately above the fog lamp switch.

It is a push/push type switch, incorporating a red warning light which will flash in unison with the exterior lights.

The diagram component reference is 135 and the circuit is made through a relay, component number 124 and a hazard unit, component number 113.

As it is a warning device, it is connected directly to the battery circuit and will always operate unless the battery master switch has been turned off.

**Rear Fog Lamp Switch**

This switches on the two rear fog lamps.

The switch is fitted on the facia, near the top right hand corner of the instrument panel, immediately below the hazard warning switch.

It is a push/push type switch, incorporating an amber light which will become illuminated

## INSTRUMENTS AND CONTROLS

when the lamps are switched on.

The diagram component reference is 136 and the circuit is made through two relays, component number 114.

The lamps will operate only when the front fog lamps or the dipped beam of the headlamps are switched on. If the fog lamps are switched off or the headlamps are switched to main beam, the rear fog lamps will be extinguished.



### Air-Conditioning Switch

This actuates a full-cold, high-blow condition from the air-conditioning system.

The sliding lever must be in the auto position and the control knob must be in the control section.

It is a push/push type switch incorporating a blue lamp which will become illuminated when the switch is in the ON position.

## BINNACLE CONTROLS

### Control Knobs



This control knob regulates the brightness of the instrument panel floodlights. It is mounted on the lower face of the binnacle.



*dimmer*

The plain knob controls the progressive brightness of the instrument readout.



*delay*

This control knob initiates and regulates the windscreen wiper delay function.

The initial rotation of the knob selects the windscreen wiper delay function. Increased rotation regulates the period of delay up to a maximum of 30 seconds.

NOTE: The operation of the wiper stalk on the steering column will give normal or fast wiper operation and will override the delay function of the control knob.



The control knob with blue/green/red surround selects the temperature to be maintained by the air conditioning sliding lever.



The sliding lever selects the various air-conditioning modes.

### Touch Switches

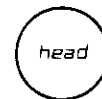


This selects the ON or OFF condition of the sidelamps.

The circuit is completed through a relay, component number 27 and a visual indication is given through a lamp on the instrument panel.

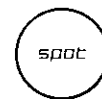
It also permits the subsequent selection of the Head, Spot and Fog lamps.

NOTE: The warning lamp/side lights will remain ON after the ignition is switched OFF and may be extinguished only when the ignition is switched ON.



This selects the condition of the headlamps, ie: ON (extended) or OFF (retracted).

The condition of the headlamps is effected by the actuation of the LH and RH lift motors, component numbers 7 and 20. The circuits, which can be made only when the sidelamps have been selected, are made through LH and RH relays, component numbers 8 and 23. The motors are automatically disconnected from the supply at the end of the lifting or lowering movement by the operation of limiting devices which are built into the mechanism. The option of a main or dipped beam is determined by the stalk on the steering column.



This selects the ON or OFF condition of the

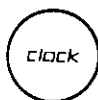
## INSTRUMENTS AND CONTROLS

spotlamps.

The ON condition of the lamps is indicated by the illumination of a lamp on the instrument panel. The switch is operative only when the sidelamps have been selected.



This selects the ON or OFF condition of the front fog lamps. The ON condition of the lamps is indicated by the illumination of a lamp on the instrument panel. The switch is operative only when the sidelamps have been selected.



This selects the resetting function on the clock display.



This operates the fast resetting function on the clock display.



This operates the RH fuel flap release mechanism. The circuit is made through the relay, component number 163, and the solenoid, component number 173. The flap must be closed manually after use and if this operation has not been properly completed, a warning light on the instrument panel will remain illuminated. The warning lamp circuit is made through the contacts on the RH fuel flap switch, component number 172.



This operates the LH fuel flap release mechanism. The circuit is made through the relay, component number 162 and the solenoid, component number 160. The flap must be closed manually after use and if this operation has not been properly completed, a warning light on the instrument panel will remain

illuminated. The warning lamp circuit is made through the contacts on the LH fuel flap switch, component number 159.



This engages the cruise control. It becomes effective at any speed above 30mph (50kph) with the gear lever in 'drive'. The car should be brought up to the required speed using the throttle pedal. Touching the switch will then set this speed as the 'engaged' speed. This is the preferred method. Alternatively, continual light touch pressure on the 'engage' switch will bring the car up to the required speed when the touch pressure is released the speed of the car will be the 'engaged' speed. Great care must be exercised if this method is adopted. The car will accelerate at approximately two thirds throttle and this could prove dangerous under certain conditions eg: icy road surfaces. The circuit is made through the 'engage' relay, component number 126, and the master control unit component number 130.



This cancels and re-engages the set speed of the cruise control. When the speed has been engaged, touching the 'resume' switch will cancel it and the speed of the car will be controlled by the throttle pedal. Re-touching the switch will return the car to the previously-selected speed. Great care must be exercised when this 'resume' operation is effected. The car will accelerate at approximately two thirds throttle and this could prove dangerous under certain conditions eg: icy road surfaces. The circuit is made through the 'resume' relay, component number 125, and the master control, component number 130.



This selects the internal or external mode of ambient air temperature display. The selection is confirmed on the main instrument display – IN, OUT. The circuit for the external ambient temperature is routed from the transducer, component number 10, under the front bumper.

## INSTRUMENTS AND CONTROLS

The circuit for the internal ambient temperature is routed from the transducer, component number 97.



This selects the speedometer display mode.



This will zero the trip switch which is mounted in the instrument panel.



This selects a changeover to an 'essential instruments only' display.

These instruments are the speedometer, clock and fuel gauge. The selection is overridden in the event of the water or oil temperature reaching an abnormally high level (120°C), if the fuel level falls below 10% or if the oil pressure falls to below 10lb/sq.in.



This operates the bonnet latches.

The circuit is made to the LH and RH bonnet open motors, component numbers 34 and 56 respectively, through the bonnet open relay, component number 32. Each motor releases its respective latch.

NOTE: The bonnet must then be opened manually.



This selects the country (air) horns or the town (electric) horns, selection is confirmed on the main instrument display – c horn, t horn. The circuit is made through the horn changeover relay, component number 65.



This operates the rear window demister, selection is confirmed on the main instrument display warning lights.

The circuit is completed through the relay, component number 170 and the timer, component number 215.

## THE DOOR CONTROL PANELS

Two control panels are provided, one in the driver's door and the other in the passenger's door. The panels control those functions which allow the driver and the passenger the facility of making personal adjustments to his or her seating position.

Window positions, door locking and, on the driver's side only, adjustments to the door mirror(s) can also be undertaken from these panels.

The relays and motors which control all movements are covered by a composite diagram reference, component number 152 and those for the passenger seat movements by component number 153.

- 1 Touch switches. These control the operations of the passenger's window.
- 2 Touch switches. These control the operations of the driver's window.

No. 1 closes the window, the circuit being made through the 'up' relay, component number 85, to the motor, component number 88.

No. 2 opens the window, the circuit being made through the 'down' relay, component number 84 to the motor, component number 88.

- 3 Touch switches. These control the operations of the driver's window.
- 4 Touch switches. These control the operations of the driver's window.

No. 3 closes the window, the circuit being made through the 'up' relay, component number 141 to the motor, component number 146.

No. 4 opens the window, the circuit being made through the 'down' relay, component number 140, to the motor component number 146.

- 5 Touch switches. Not in use.
- 6 Touch switches. Not in use.

- 8 Joystick controller. This controls the angular setting of the door mirrors.
- 7 Joystick controller. This controls the angular setting of the door mirrors.



NOTE: If a joystick controller is fitted to control a door mirror on the passenger's side, it will be located in position number 7.

It is a four-position, spring-return-to-centre controller with two positions in the vertical plane and two positions in the horizontal plane.



# INSTRUMENTS AND CONTROLS

These control the corresponding angular deflections of the mirror, ie: the tilting of the mirror to vary the height of the rear vision or a left and right swivelling motion to alter the horizontal angle of the rear vision. The actual operating mechanisms are located inside the mirror itself.







- 9  Touch switches. These control the locking and unlocking of all doors.
- 10  Touch switches.

No. 9 unlocks the doors, the circuit being made through a relay, component number 142.  
No. 10 locks the doors, the circuit being made through a relay, component number 143.  
Each door has an individual lock/unlock motor:

- RH front, component number 147
- RH rear, component number 176
- LH front, component number 89
- LH rear, component number 157

NOTE: A manual override is provided on each door and is discretely located at the top of the door recess. When the keys are withdrawn from the steering lock and the doors are closed, the doors will automatically lock after a short delay – see also DOOR LOCK KEY SWITCHES.

Touch switches. These control the seat positioning movements as indicated in the illustration.

- 11  Raise seat.
- 12  Lower seat.
- 13  Back rest forward.
- 14  Back rest rearward.
- 15  Seat forward.
- 16  Seat backward.

The seat movements are powered by three electric motors. The two motors which control the backrest forward and rearward movements are mounted on the subframe, together with the six controlling relays. The remaining motor, which powers the backrest movements is mounted inside the backrest.

All the relays, and motors are covered by two composite diagram references 152(B) for the driver's seat and 153(B) for the passenger's seat. (The letter B signifies the type of relay – see diagram) a diagrammatic suffix has been added to identify the individual components.

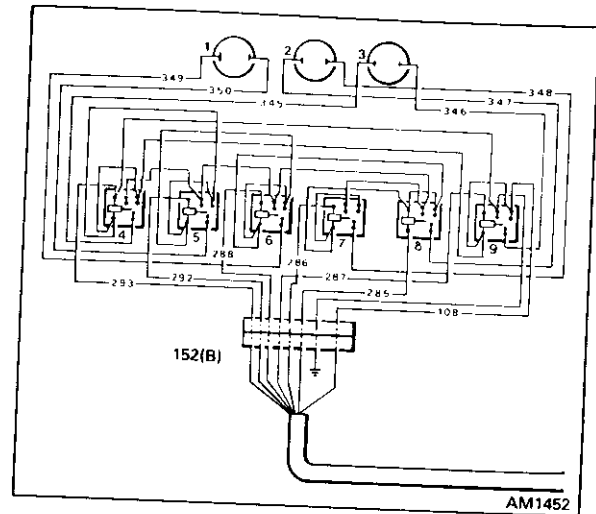


Fig 6.1.9 Drivers Seat Relay and Motor Assembly

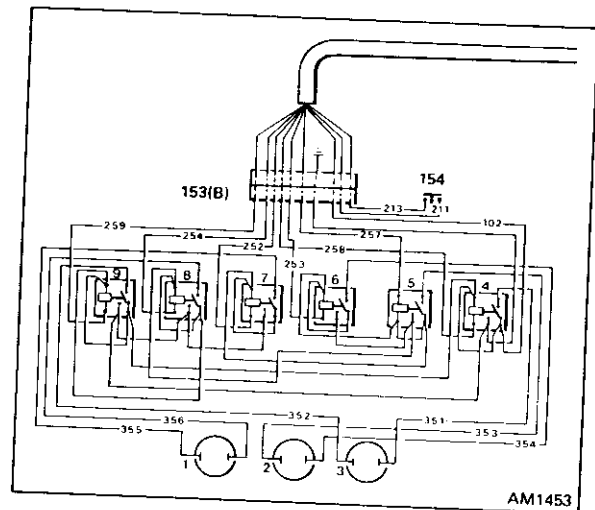


Fig 6.1.10 Passengers Seat Relay and Motor Assembly

- 1. Seat forward and backward motor.
- 2. Seat raise and lower motor.
- 3. Backrest forward and rearward motor.
- 4. Backrest forward relay.
- 5. Seat backward relay.
- 6. Seat forward relay.
- 7. Seat raise relay.
- 8. Seat lower relay.
- 9. Backrest rearward relay.

## INSTRUMENTS AND CONTROLS

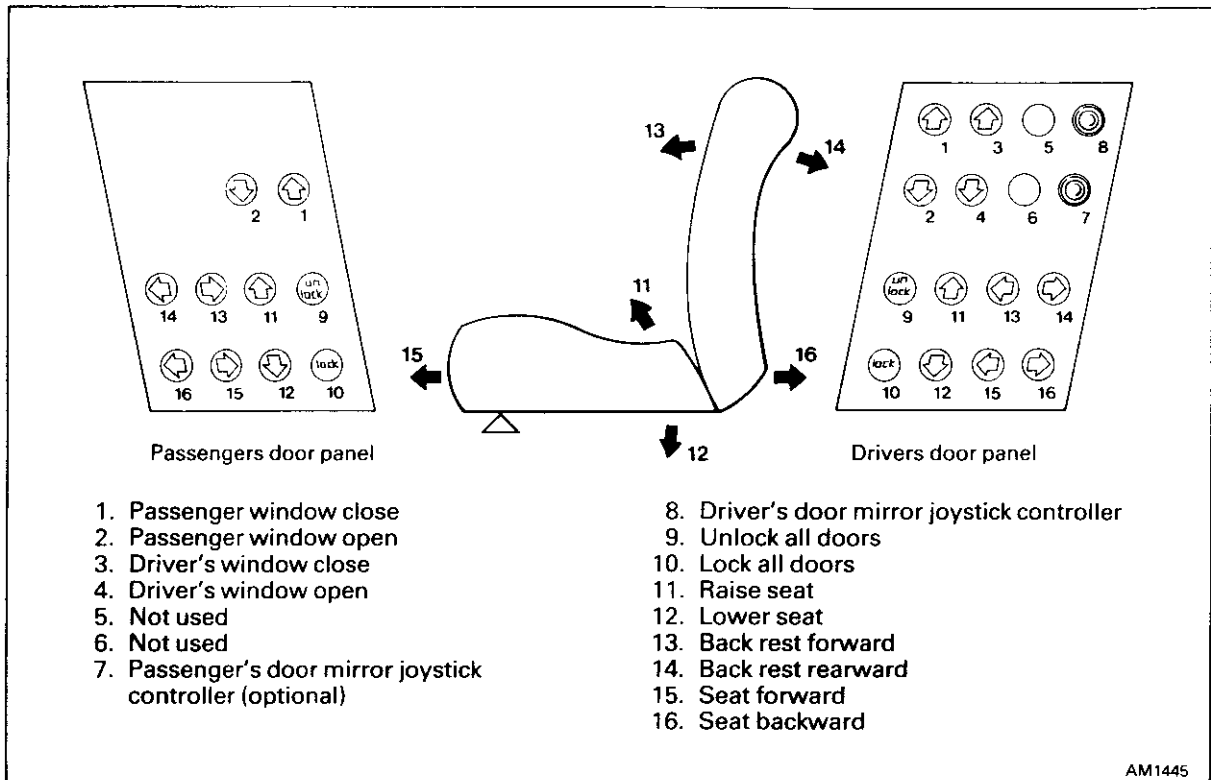


Fig 6.1.11 Door Panels and Seat RHD

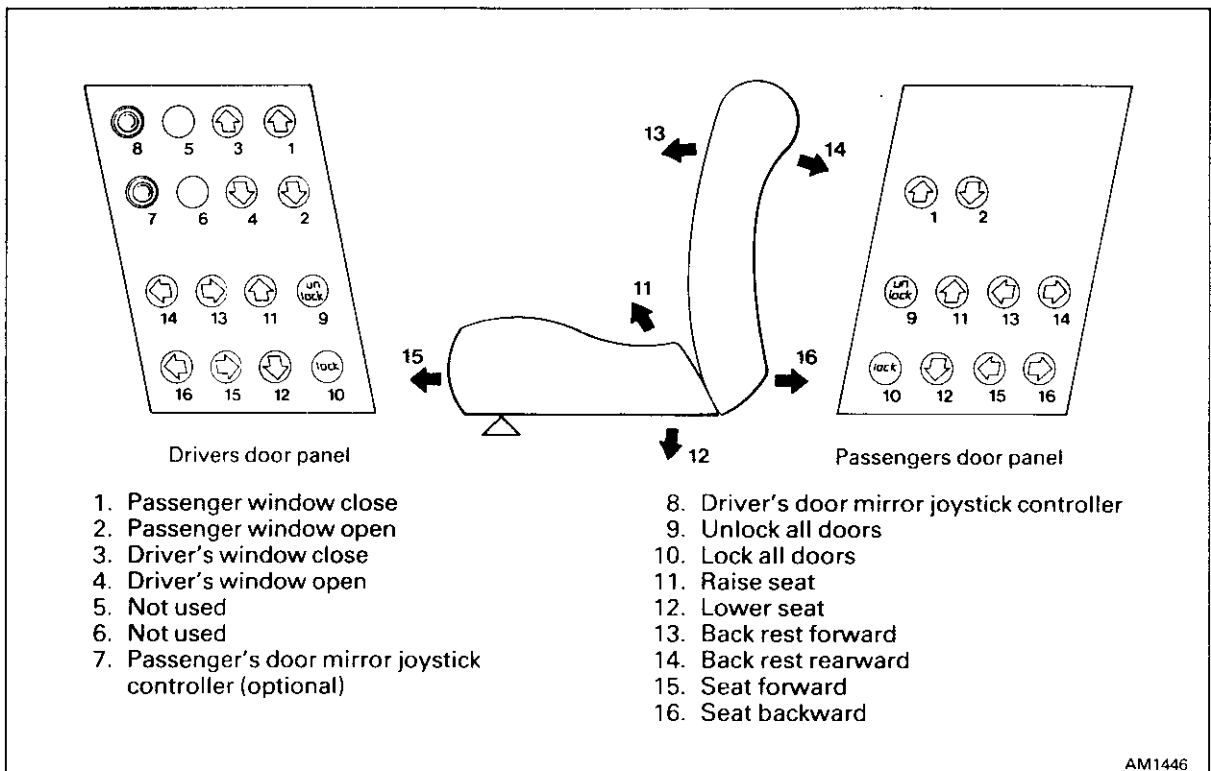


Fig 6.1.12 Door Panels and Seat LHD

## INSTRUMENTS AND CONTROLS

**DOOR LOCK KEY SWITCHES**

The doors may be locked or unlocked from inside the car, using touch switches in the door panels (see switches, numbers 9 and 10 in the paragraphs headed DOOR CONTROL PANELS) and also from the outside by use of a key.

**Driver's Door**

Operation of the key in the driver's door lock will lock, and unlock not only the driver's door, but all other doors automatically.

**Passenger's Door**

Operation of the key in the passenger's door will confine the unlock/lock operation to the passenger door only.

**Boot Lid**

The boot lid will lock automatically when the lid is closed and can be unlocked by use of the key or the button in the centre console glove box.

The lock is electrically actuated by Solenoid 196.

**CONSOLE SWITCHES AND CONTROLS****Cigar Lighters**

Two lighters are provided.

The front lighter is mounted at the front end of the control console and the component number is 104.

The rear lighter is mounted at the rear end of the centre console but, when not in use, is hidden by a cover which should be lifted and slid forward to gain access. The component number is 106.

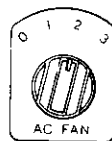
**Radio**

The operating instructions for the radio and amplifier, component numbers 75 and 76, will be found in the glove box. The balance control for the front/rear speakers, component number 77, is provided in the centre of the radio panel.

**Boot Switch**

Touch switch. This is component number 105 and is located in the lockable glove box. The circuit is made through a solenoid relay, component number 164 and a solenoid, component number 196.

NOTE: The boot may also be unlocked and opened by use of the door key in the boot lock.

**Rear Air Conditioning Control**

When fitted, this system is designed to deliver cold air to the rear of the car but it will operate only when the ignition switch is in position II and the front air-conditioning system has been switched ON. It is controlled by a rotary switch which is located under a lift-up flap in the extreme rear section of the centre console.

The switch has four positions labelled:-

0 1 2 3

When the switch is in the 0 position, the rear system is inoperative.

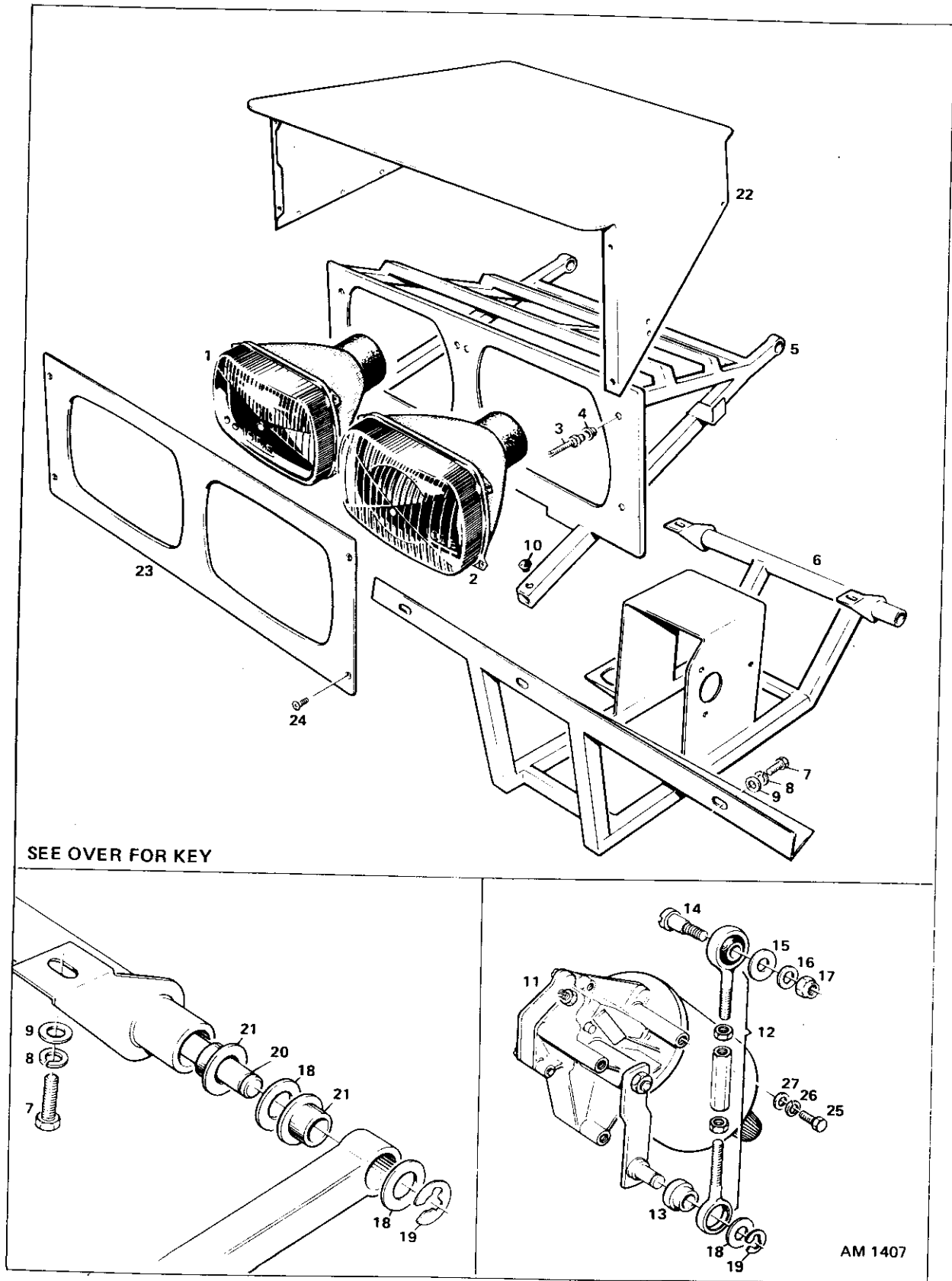
Position 1 gives a low blower speed and positions 2 and 3 give correspondingly higher blower speeds.

Switching to any of the blower positions automatically switches the unit ON, subject to the front air-conditioning unit being in operation.



LAMPS & BULBS

Fig. 6.2.1 Retractable Headlamps





## 6.2

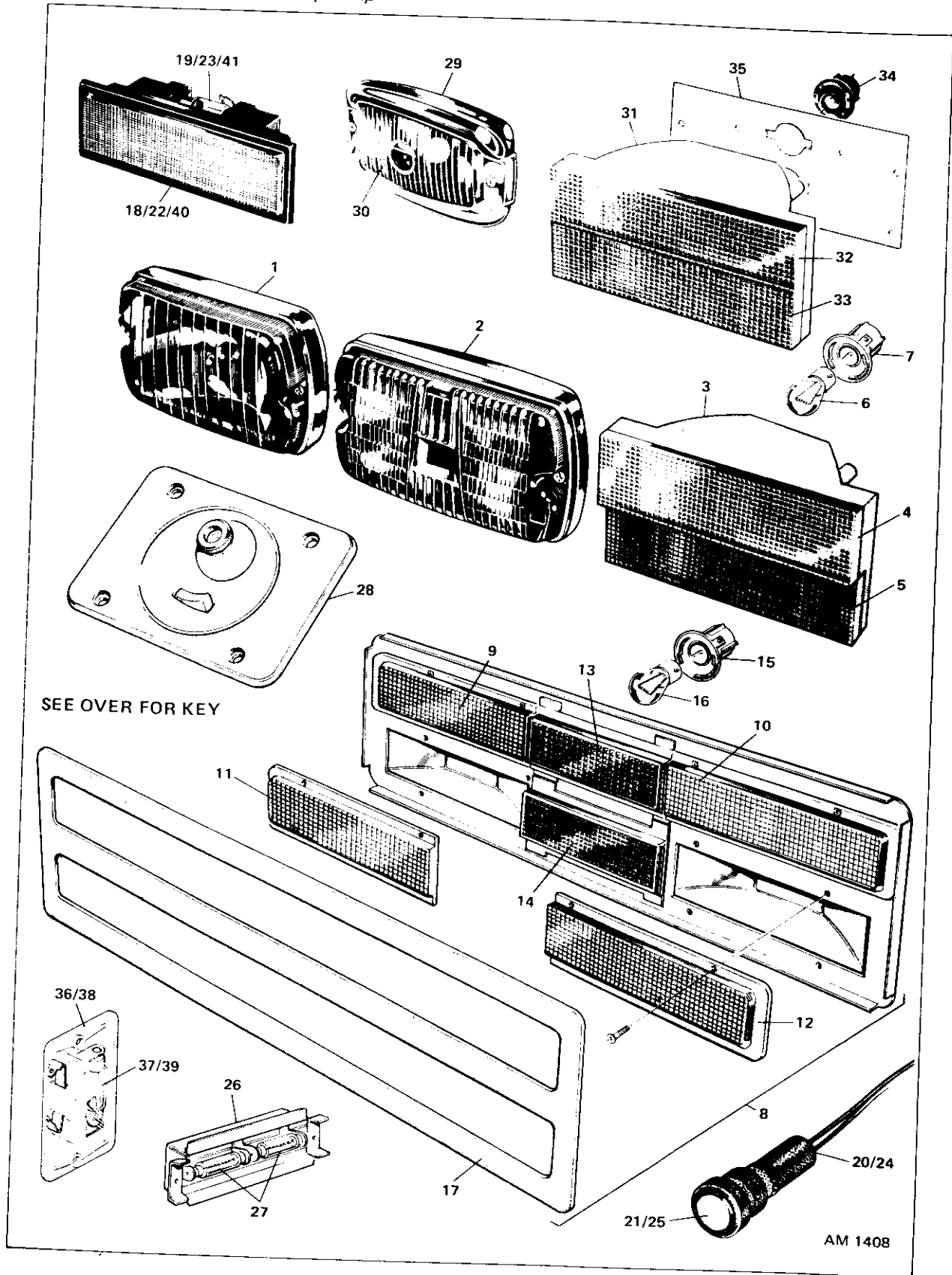
## LAMPS & BULBS

### KEY TO FIG. 6.2.1

- 1 Headlamp, dip beam
- 2 Headlamp, main beam
- 3 Headlamp adjusting screw
- 4 Grommet, plastic
- 5 Frame, upper, RH
- 6 Frame, lower, RH
- 7 Screw
- 8 Washer, spring
- 9 Washer, plain
- 10 Buffer
- 11 Headlamp lift motor
- 12 Link
- 13 Bush
- 14 Shoulder bolt
- 15 Washer, plain
- 16 Washer, spring
- 17 Nut, Nyloc
- 18 Washer, plain
- 19 Circlip
- 20 Pivot rod
- 21 Pivot bush
- 22 Headlamp lid, RH
- 23 Headlamp front cover, RH
- 24 Screw
- 25 Screw
- 26 Washer, spring
- 27 Washer, plain

LAMPS & BULBS

Fig. 6.2.2 Indicator and Auxiliary Lamp:





## LAMPS &amp; BULBS

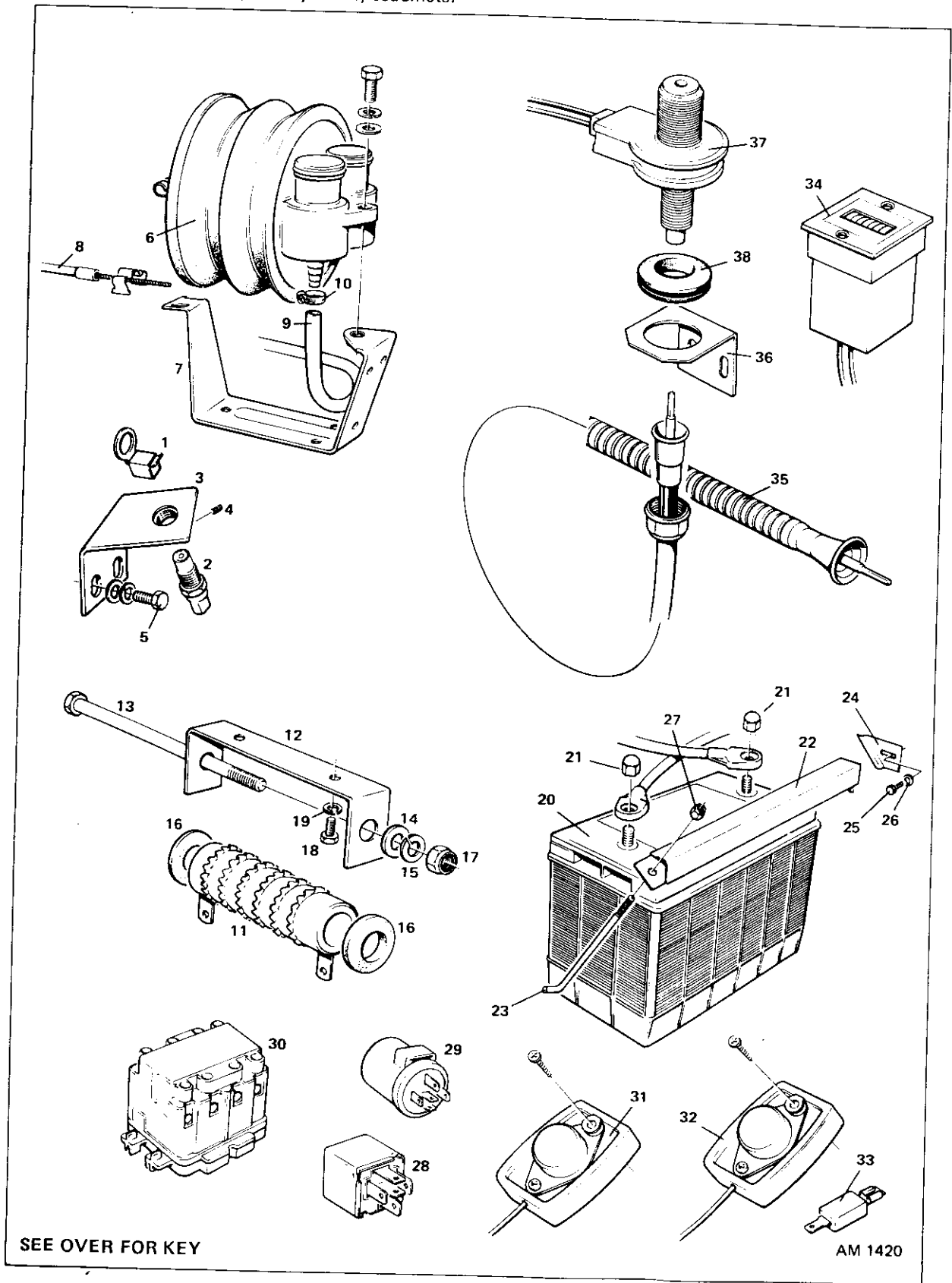
## KEY TO FIG. 6.2.2

- 1 Driving/spot lamp
- 2 Fog lamp
- 3 Side and indicator lamp, LH
- 4 Lens, white
- 5 Lens, amber
- 6 Bulb, side
- 7 Bulb holder, side
- 8 Rear lamp assembly, RH
- 9 Lens, white
- 10 Lens, amber
- 11 Lens, red
- 12 Lens, red
- 13 Lens, reflector, upper
- 14 Lens, reflector, lower
- 15 Bulb holder
- 16 Bulb
- 17 Seal
- 18 Puddle lamp, door
- 19 Bulb
- 20 Puddle lamp, door
- 21 Lens, clear
- 22 Lamp, door-switch panel
- 23 Bulb
- 24 Lamp, door edge
- 25 Lens, red
- 26 Lamp, roof
- 27 Bulb
- 28 Lamp, roof swivel
- 29 Lamp, bonnet
- 30 Lens
- 31 Lamp, rear, boot interior RH
- 32 Lens, amber
- 33 Lens, red
- 34 Bulb holder
- 35 Lamp mounting plate
- 36 Lamp, number plate
- 37 Bulb
- 38 Lamp, instrument
- 39 Bulb
- 40 Lamp, boot
- 41 Bulb



# ELECTRICAL UNITS & WIRING

Fig. 6.3.1 Cruise Control, Battery and Speedometer



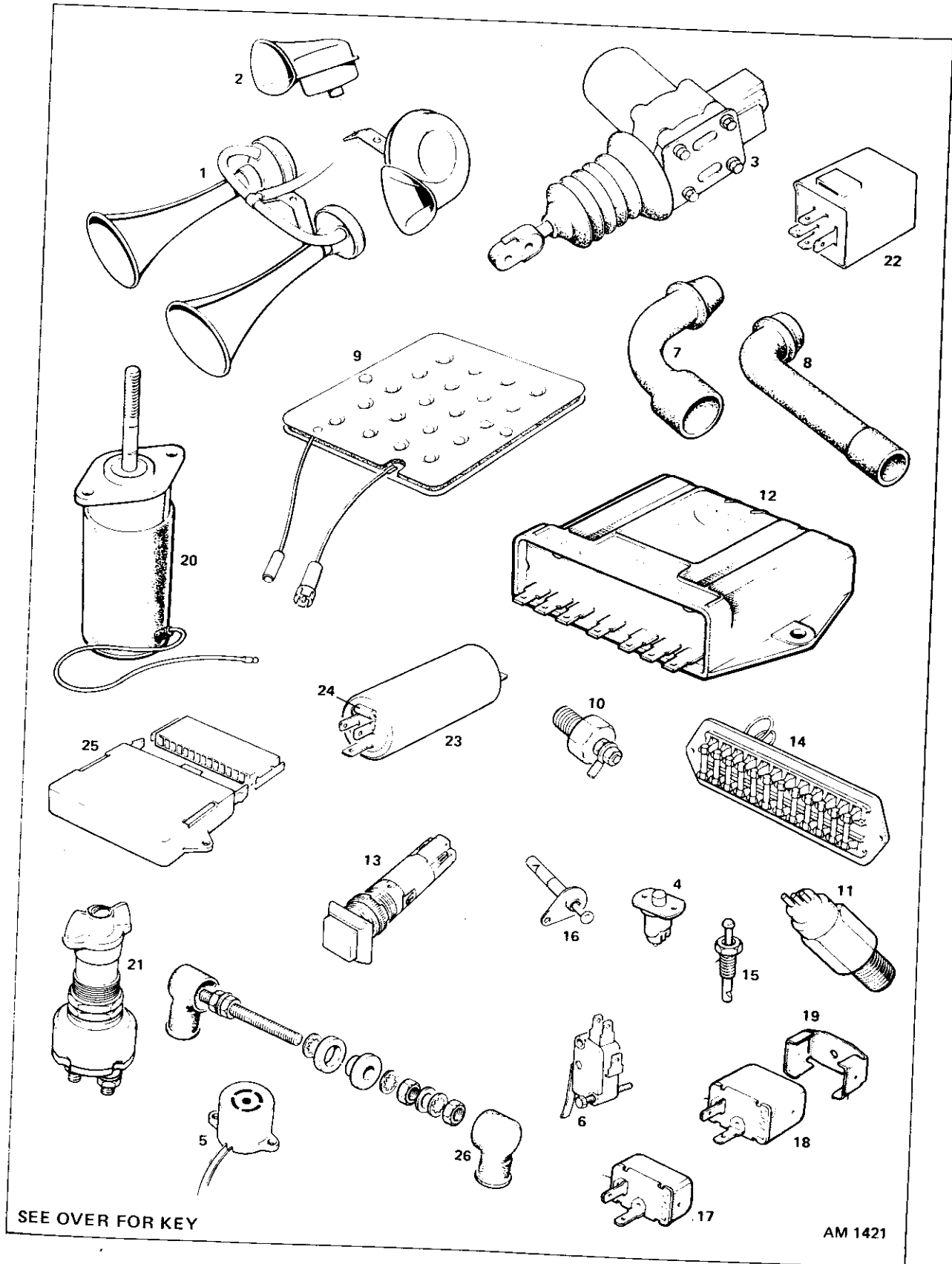
## ELECTRICAL UNITS &amp; WIRING

## KEY TO FIG. 6.3.1

1	Propshaft magnet
2	Sensor and cable assembly
3	Sensor bracket
4	Screw, sensor locking
5	Screw
6	Bellows
7	Bellows bracket
8	Throttle cable
9	Vacuum hose, bellows
10	Hose clip, bellows
11	Ballast resistor
12	Mounting bracket
13	Bolt
14	Washer, plain
15	Washer, spring
16	Grommet
17	Nut
18	Screw
19	Washer, spring
20	Battery
21	Battery nut
22	Battery clamp
23	'J' clamp
24	Clamp clip
25	Screw
26	Washer, plain
27	Nut
28	Relay, silver
29	Relay, blue
30	Relay, latching, see-through
31	Door lock delay unit
32	Interior lamp delay unit
33	Diode
34	Master mileage counter
35	Speedometer cable
36	Speedometer sender bracket
37	Speedometer sender unit
38	Grommet

ELECTRICAL UNITS & WIRING

Fig. 6.3.2 Electrical Units



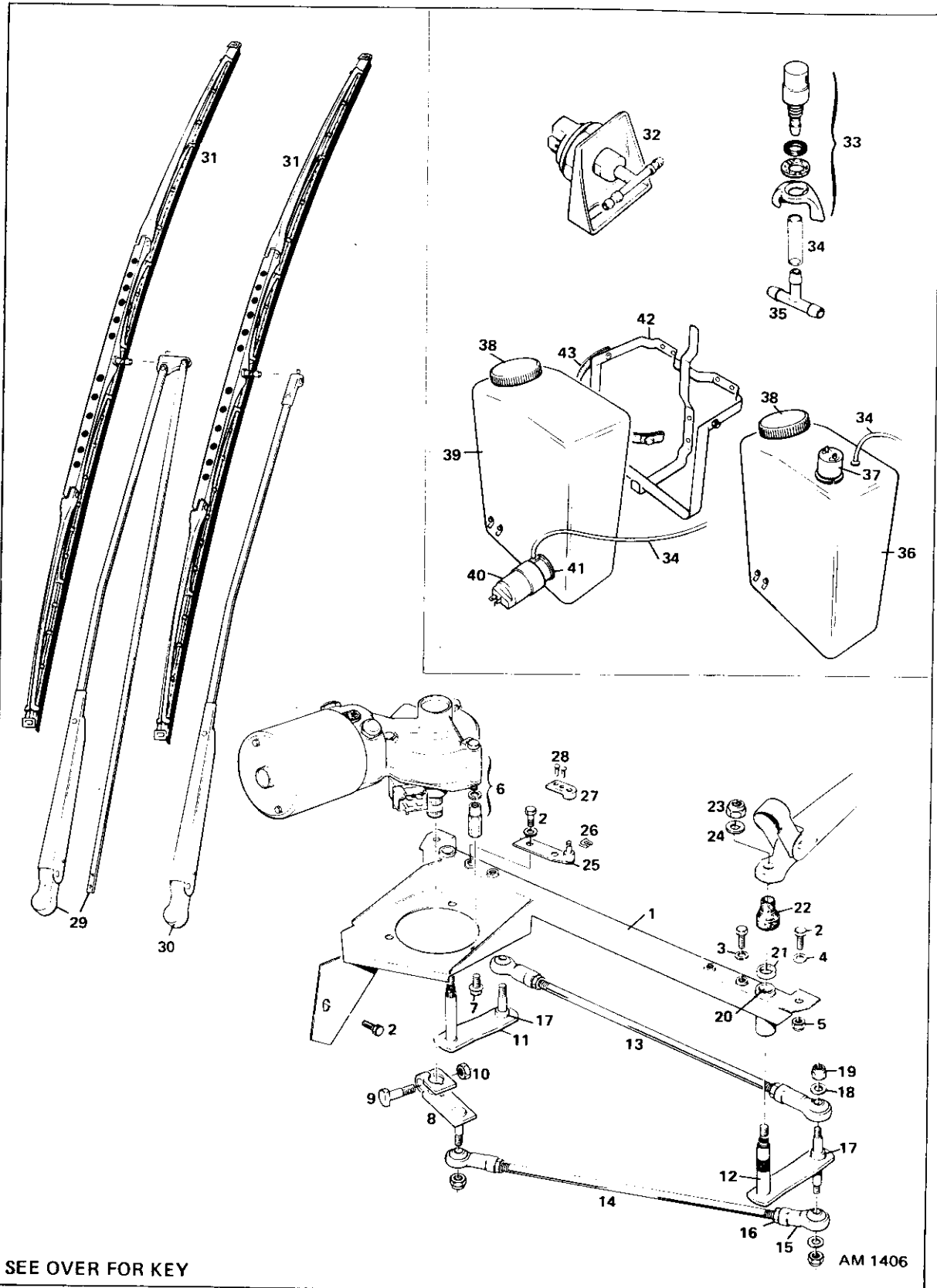
## ELECTRICAL UNITS &amp; WIRING

## KEY TO FIG. 6.3.2

- 1 Air horn kit
- 2 Town horns
- 3 Lock actuator
- 4 Switch
- 5 Buzzer
- 6 Microswitch
- 7 Door wiring protector
- 8 Door wiring protector
- 9 Seat belt sensor switch
- 10 Radiator low level sender
- 11 Automatic gearbox switch
- 12 Alternator regulator
- 13 Facia switch
- 14 Fuse box
- 15 Switch
- 16 Switch
- 17 Flasher unit
- 18 Hazard unit
- 19 Unit clips
- 20 Fuel flap solenoid
- 21 Master switch
- 22 Timer
- 23 Blower delay unit
- 24 Resistor
- 25 Low vacuum warning unit
- 26 {
  - Harness terminal post
  - Insulator block, male
  - Insulator block, female
  - Washer, shakeproof
  - Washer, plain
  - Nut
  - Terminal boot

# WINDSCREEN WIPERS & SCREEN WASH

Fig. 6.4.1 Windscreen Wipers and Screen Wash - RHD early cars



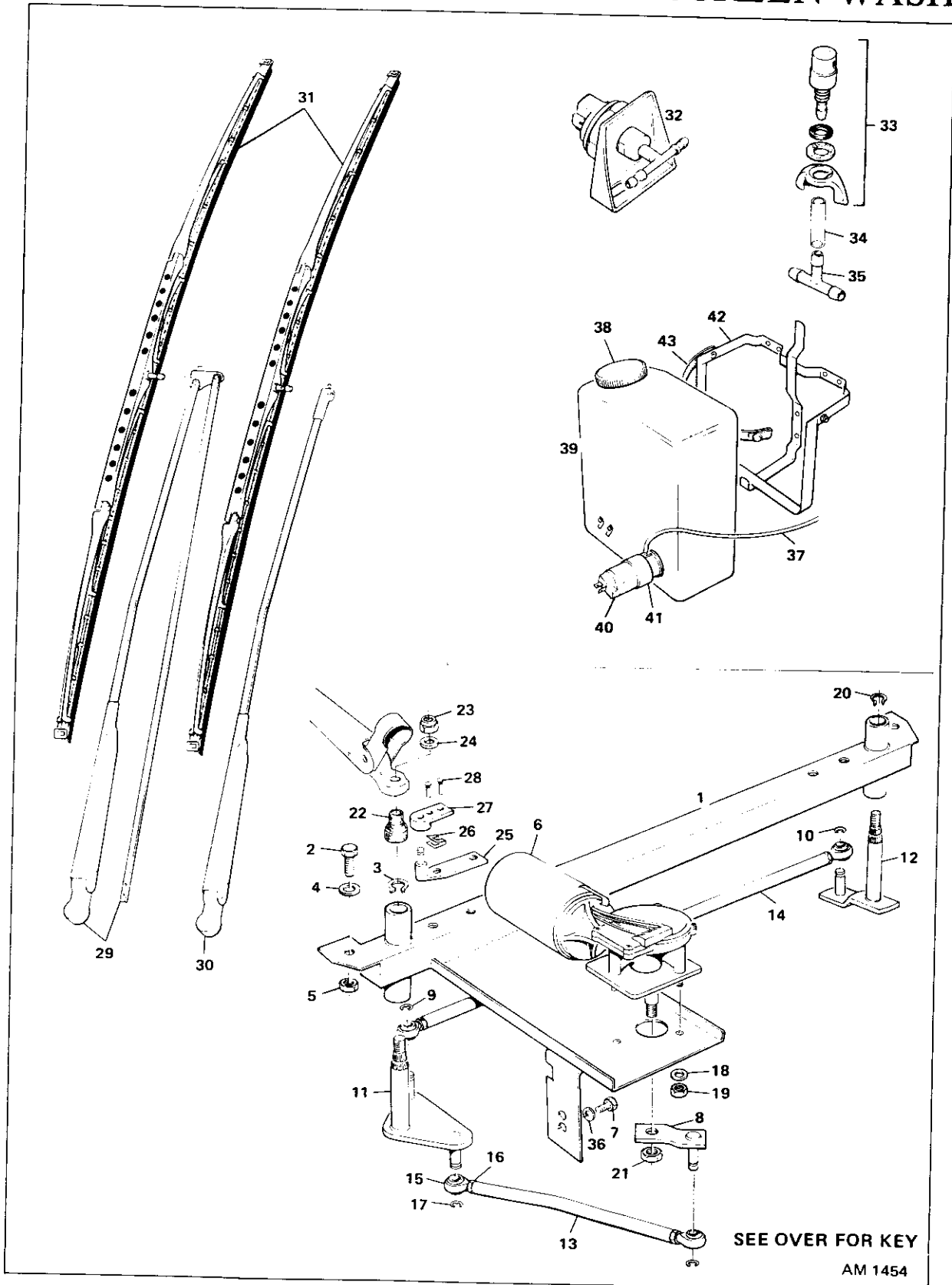
# WINDSCREEN WIPERS & SCREEN WASH

## KEY TO FIG. 6.4.1

- 1 Mounting bracket, wiper
- 2 Screw
- 3 Washer, spring
- 4 Washer, plain
- 5 Nut, Nyloc
- 6 Motor, wiper
- 7 Screw
- 8 Actuating arm, wiper motor
- 9 Pinch-bolt
- 10 Nut
- 11 Actuator, wiper arm
- 12 Actuator, wiper arm
- 13 Connecting-rod
- 14 Connecting-rod
- 15 Bearing, rod end
- 16 Lock-nut
- 17 Spacer
- 18 Washer, plain
- 19 Nut, Nyloc
- 20 Bush, spindle
- 21 Retaining-ring, spindle
- 22 Seal, spindle
- 23 Retaining-nut, wiper arm
- 24 Washer, plain
- 25 Bracket, pantograph arm mounting
- 26 Fixer spring
- 27 Bearing block, pantograph arm
- 28 Screw
- 29 Wiper arm, pantograph
- 30 Arm, wiper
- 31 Blade, wiper
- 32 Switch, wash-delay
- 33 Jet, screenwash
- 34 Tubing, screenwash
- 35 Tee, screenwash
- 36 Pump and bracket assembly, screenwash bottle (Early cars)
- 37 Pump
- 38 Cap
- 39 Pump and bracket assembly, screenwash bottle (Later cars)
- 40 Pump
- 41 Grommet, fixing
- 42 Frame, support
- 43 Strap, retaining

# WINDSCREEN WIPERS & SCREEN WASH

Fig. 6.4.2 Windscreen Wipers and Screen Wash - RHD from chassis 13138



# WINDSCREEN WIPERS & SCREEN WASH

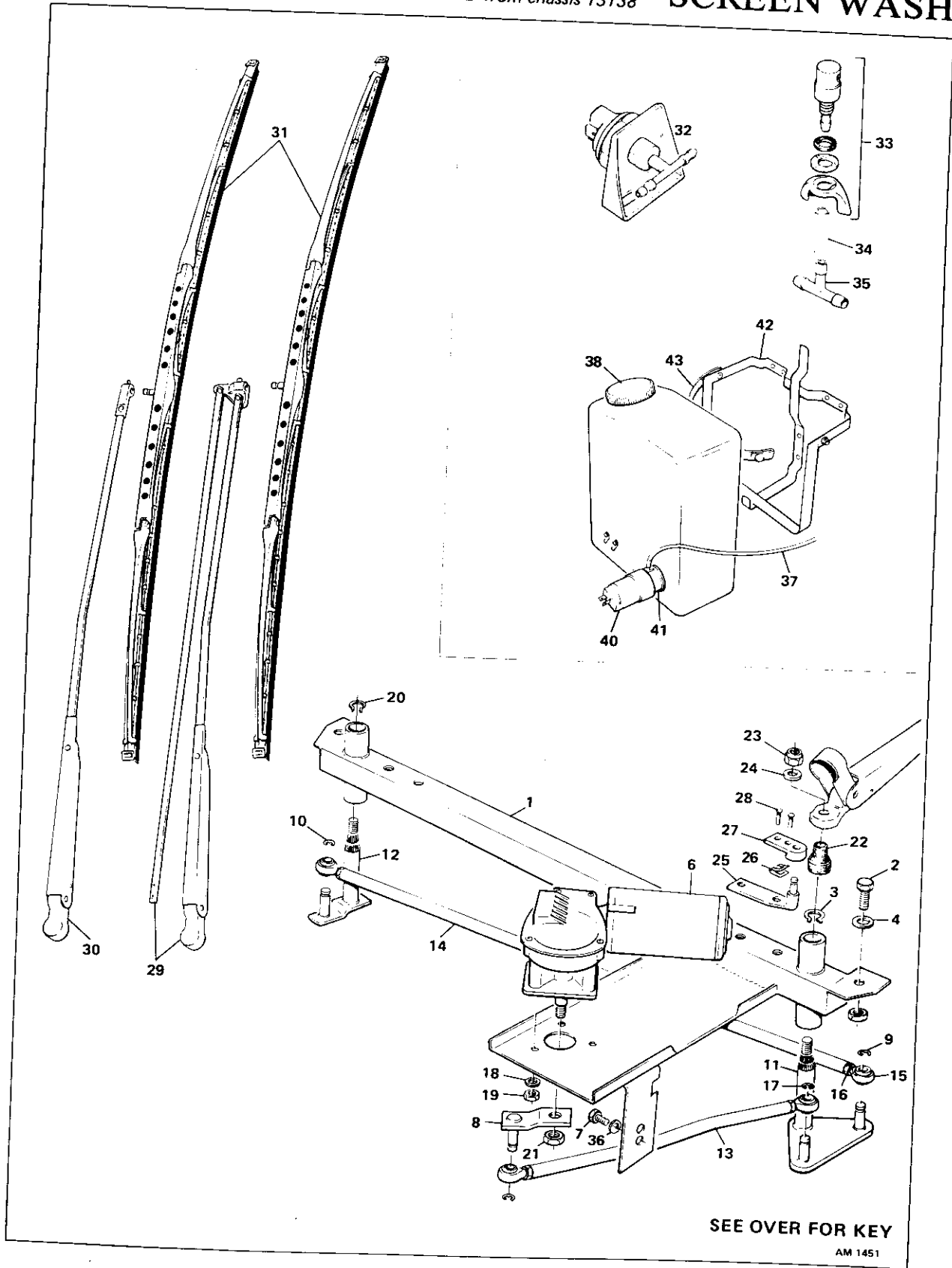
## KEY TO FIG. 6.4.2

1	Mounting bracket, wiper
2	Screw
3	Circlip
4	Washer, plain
5	Nut, Nyloc
6	Motor, wiper
7	Screw
8	Actuating arm, wiper motor
9	Circlip
10	Circlip
11	Actuator, wiper arm
12	Actuator, wiper arm
13	Connecting-rod
14	Connecting-rod
15	Bearing, rod end
16	Lock-nut
17	Circlip
18	Washer, plain
19	Nut, Nyloc
20	Circlip
21	Nut
22	Seal, spindle
23	Retaining-nut, wiper arm
24	Washer, plain
25	Bracket, pantograph arm mounting
26	Fixer spring
27	Bearing block, pantograph arm
28	Screw
29	Wiper arm, pantograph
30	Arm, wiper
31	Blade, wiper
32	Switch, wash-delay
33	Jet, screenwash
34	Tubing, screenwash
35	Tee, screenwash
36	Washer, plain
37	Tubing screenwash
38	Cap
39	Pump and bracket assembly, screenwash bottle (Later cars)
40	Pump
41	Grommet, fixing
42	Frame, support
43	Strap, retaining



# WINDSCREEN WIPERS & SCREEN WASH

Fig. 6.4.3 Windscreen Wipers and Screen Wash - LHD from chassis 13138



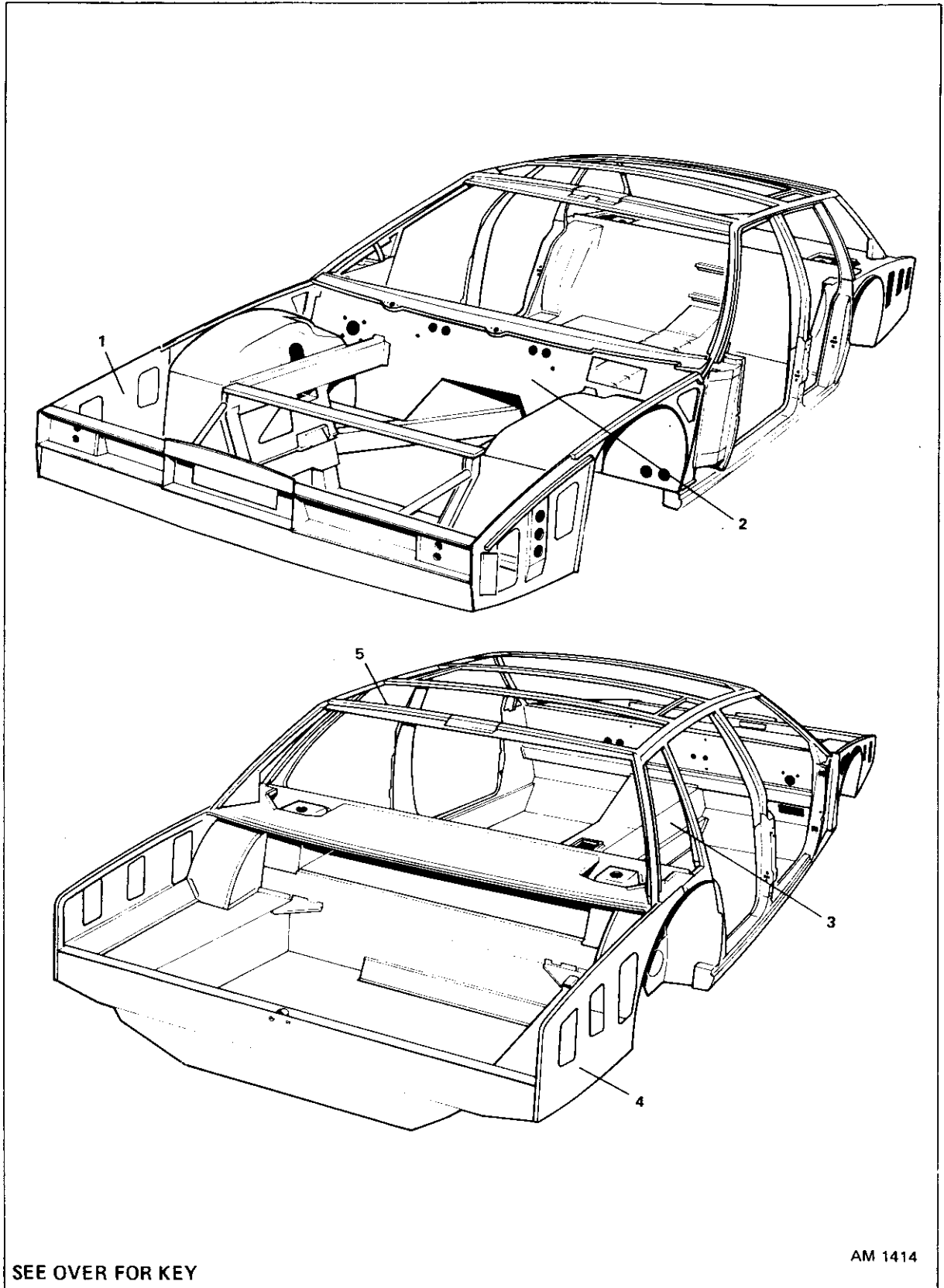
# WINDSCREEN WIPERS & SCREEN WASH

## KEY TO FIG. 6.4.3

- 1 Mounting bracket, wiper
- 2 Screw
- 3 Circlip
- 4 Washer, plain
- 5 Nut, Nyloc
- 6 Motor, wiper
- 7 Screw
- 8 Actuating arm, wiper motor
- 9 Circlip
- 10 Circlip
- 11 Actuator, wiper arm
- 12 Actuator, wiper arm
- 13 Connecting-rod
- 14 Connecting-rod
- 15 Bearing, rod end
- 16 Lock-nut
- 17 Circlip
- 18 Washer, plain
- 19 Nut, Nyloc
- 20 Circlip
- 21 Nut
- 22 Seal, spindle
- 23 Retaining-nut, wiper arm
- 24 Washer, plain
- 25 Bracket, pantograph arm mounting
- 26 Fixer spring
- 27 Bearing block, pantograph arm
- 28 Screw
- 29 Wiper arm, pantograph
- 30 Arm, wiper
- 31 Blade, wiper
- 32 Switch, wash-delay
- 33 Jet, screenwash
- 34 Tubing, screenwash
- 35 Tee, screenwash
- 36 Washer, plain
- 37 Tubing screenwash
- 38 Cap
- 39 Pump and bracket assembly, screenwash bottle (Later cars)
- 40 Pump
- 41 Grommet, fixing
- 42 Frame, support
- 43 Strap, retaining

CHASSIS FRAME

Fig. 7.1.1 Chassis Frame



SEE OVER FOR KEY

AM 1414



## 7.1

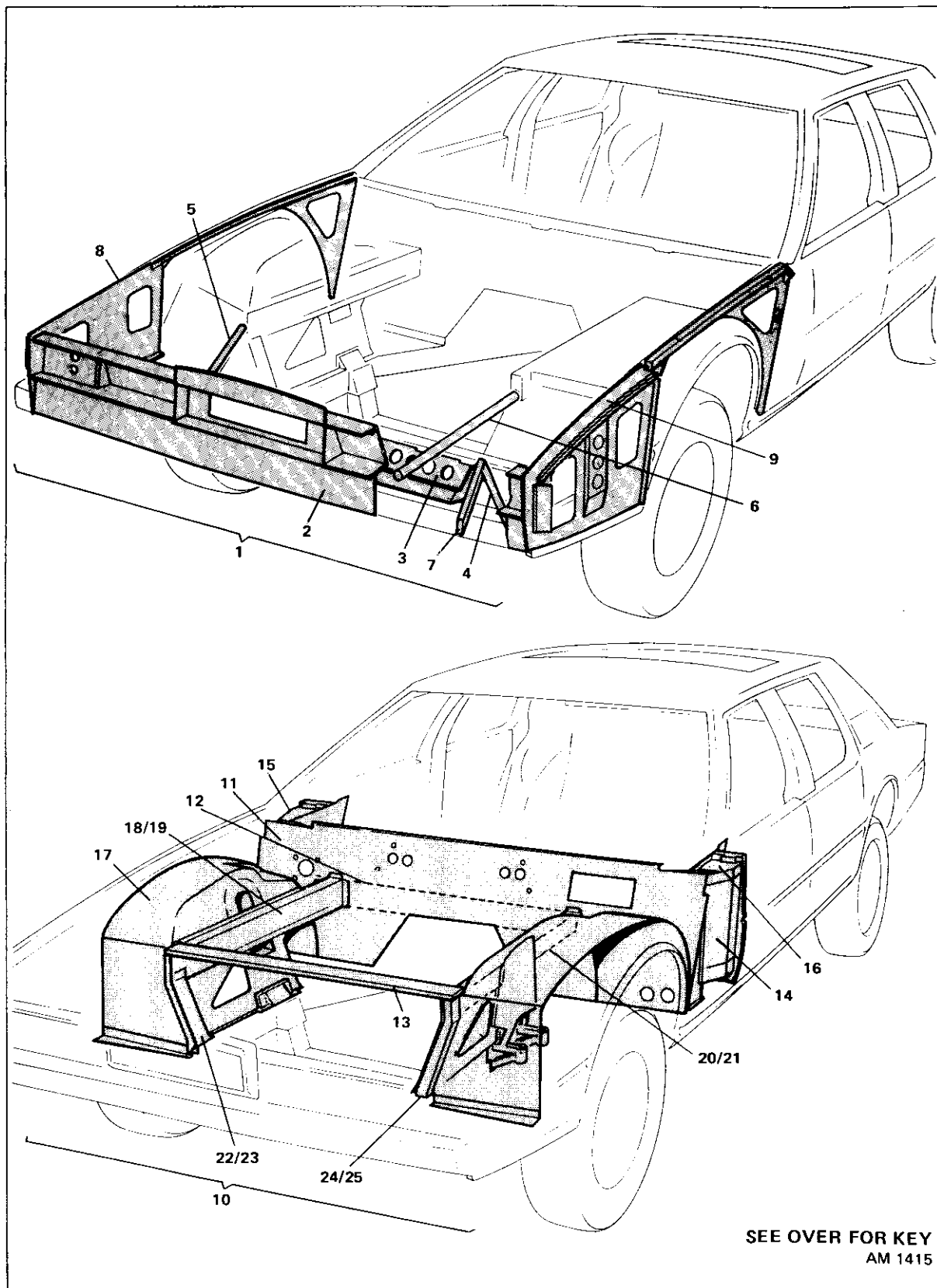
### CHASSIS FRAME

#### KEY TO FIG. 7.1.1

- 1 Front wing support frame assembly
- 2 Front end frame assembly
- 3 Centre frame assembly
- 4 Rear end assembly, complete
- 5 Tubular structure assembly, complete

## CHASSIS FITTINGS

Fig. 7.2.1 Front Wing Support Frame and Front End Frame Assemblies



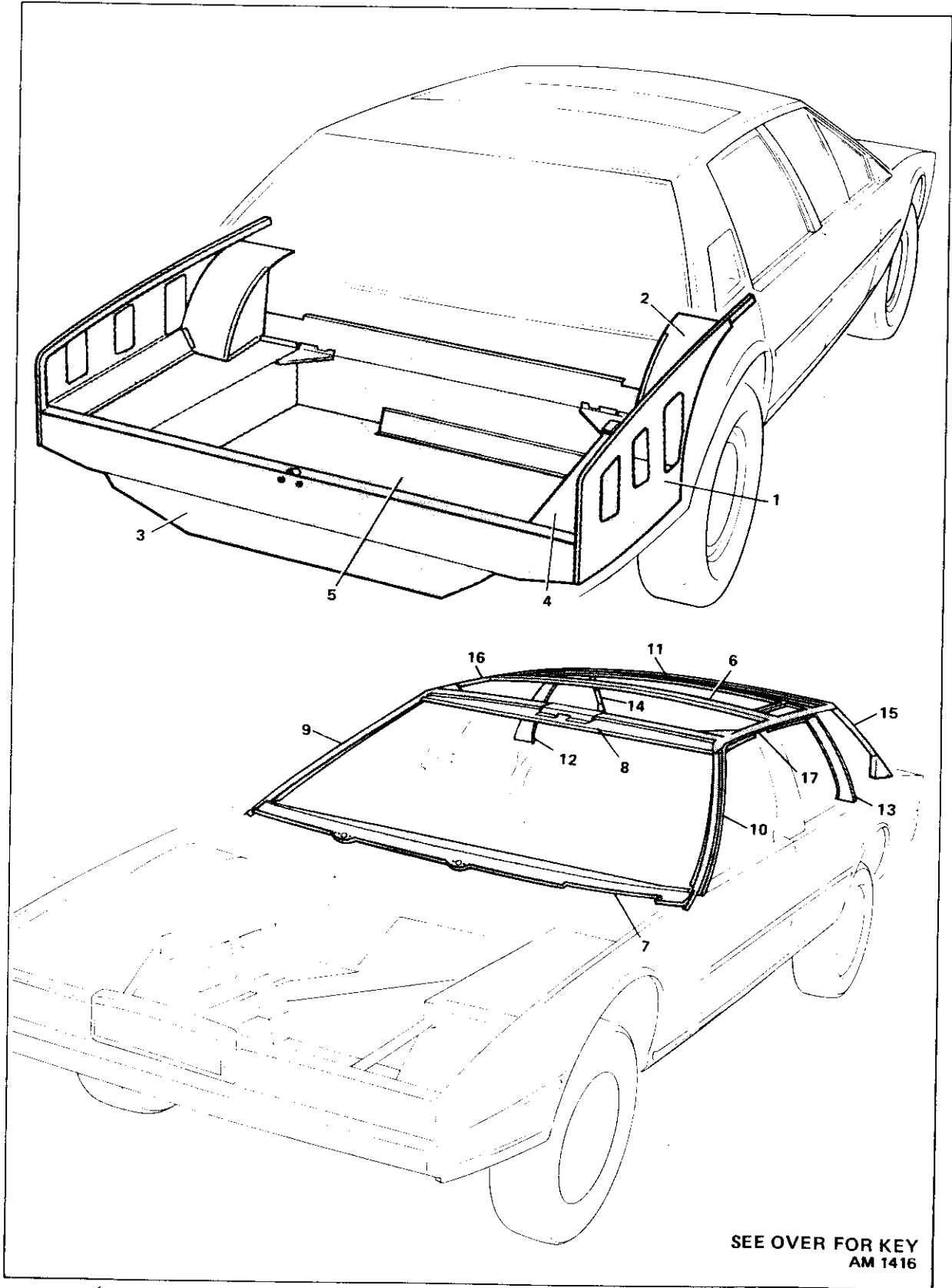
## CHASSIS FITTINGS

## KEY TO FIG. 7.2.1

- 1 Frame assembly, front wing support
- 2 Mounting, bumper and auxilliary lamp
- 3 Panel, radiator mounting
- 4 Support tube, bumper, lower outer, LH
- 5 Support tube, bumper, upper, RH
- 6 Support tube, bumper, upper, LH
- 7 Support tube, bumper, lower inner
- 8 Valance, front wing, RH
- 9 Valance, front wing, LH
- 10 Front end frame assembly
- 11 Front bulkhead assembly
- 12 Front bulkhead crossmember
- 13 Front upper crossmember
- 14 'A' post assembly, LH
- 15 Closing panel, RH
- 16 Closing panel, LH
- 17 Wheelarch assembly, RH
- 18 Top member, inner section, RH
- 19 Top member, outer section, RH
- 20 Top member, inner section, LH
- 21 Top member, outer section, LH
- 22 Vertical member, inner section, RH
- 23 Vertical member, outer section, RH
- 24 Vertical member, inner section, LH
- 25 Vertical member, outer section, LH

CHASSIS FITTINGS

Fig. 7.2.2 Tubular Structure and Rear End Assembly



SEE OVER FOR KEY  
AM 1416

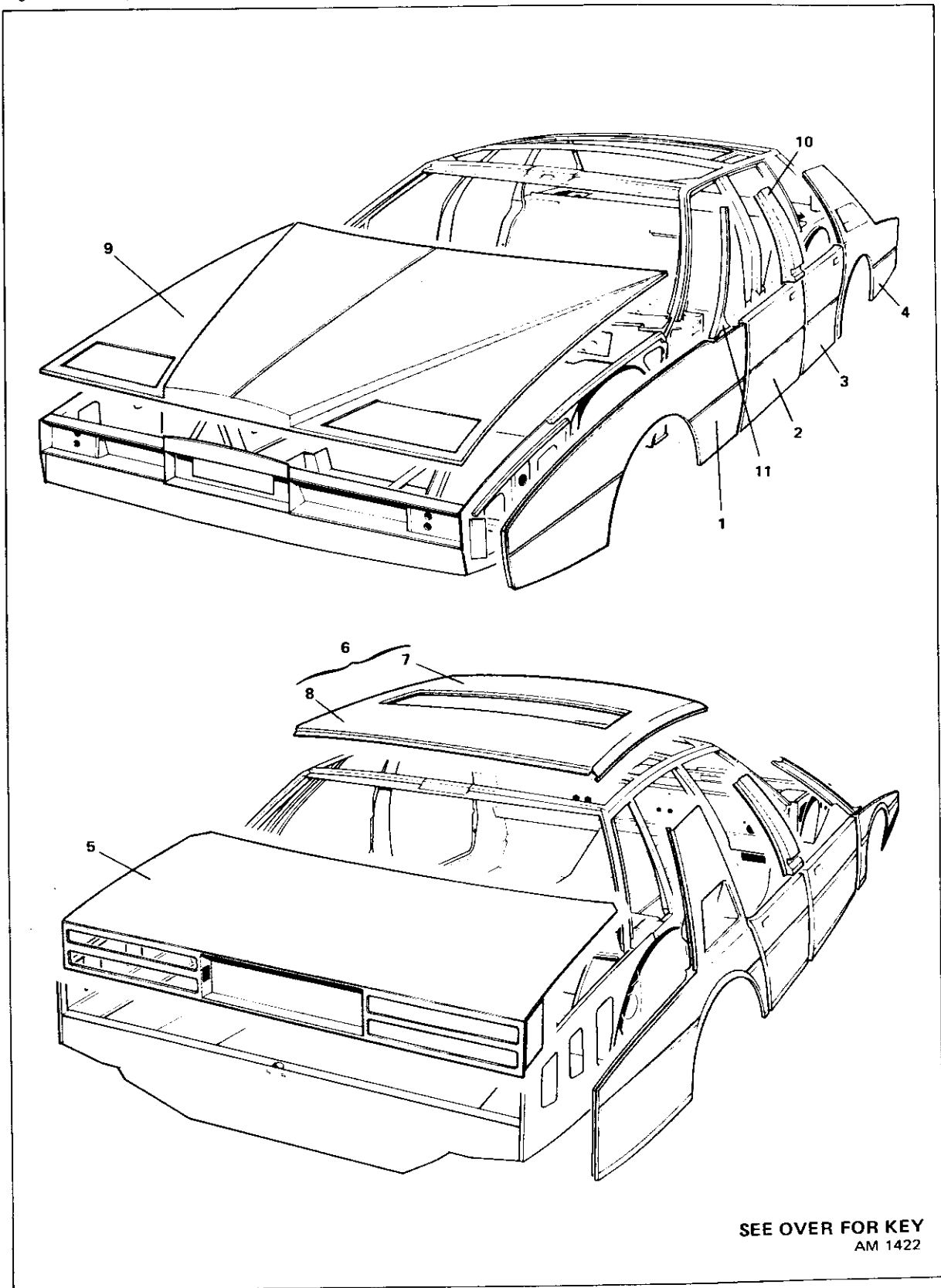
## CHASSIS FITTINGS

## KEY TO FIG. 7.2.2

- 1 Valance, rear, RH
- 2 Panel, rear, RH
- 3 Bumper mounting, rear
- 4 Side assembly, boot floor, RH
- 5 Panel assembly, spare wheel well
- 6 Support assembly, roof-light
- 7 Channel, drain
- 8 Header, front screen
- 9 Pillar, front screen, RH
- 10 Pillar, front screen, LH
- 11 Header, rear screen
- 12 Pillar, rear, RH square
- 13 Pillar, rear, LH square
- 14 Pillar, rear, RH round
- 15 Pillar, rear, LH round
- 16 Cantrail assembly, RH
- 17 Cantrail assembly, LH



Fig. 7.3.1 Body



SEE OVER FOR KEY  
AM 1422



## 7.3

# Chassis Frame & Body Fittings

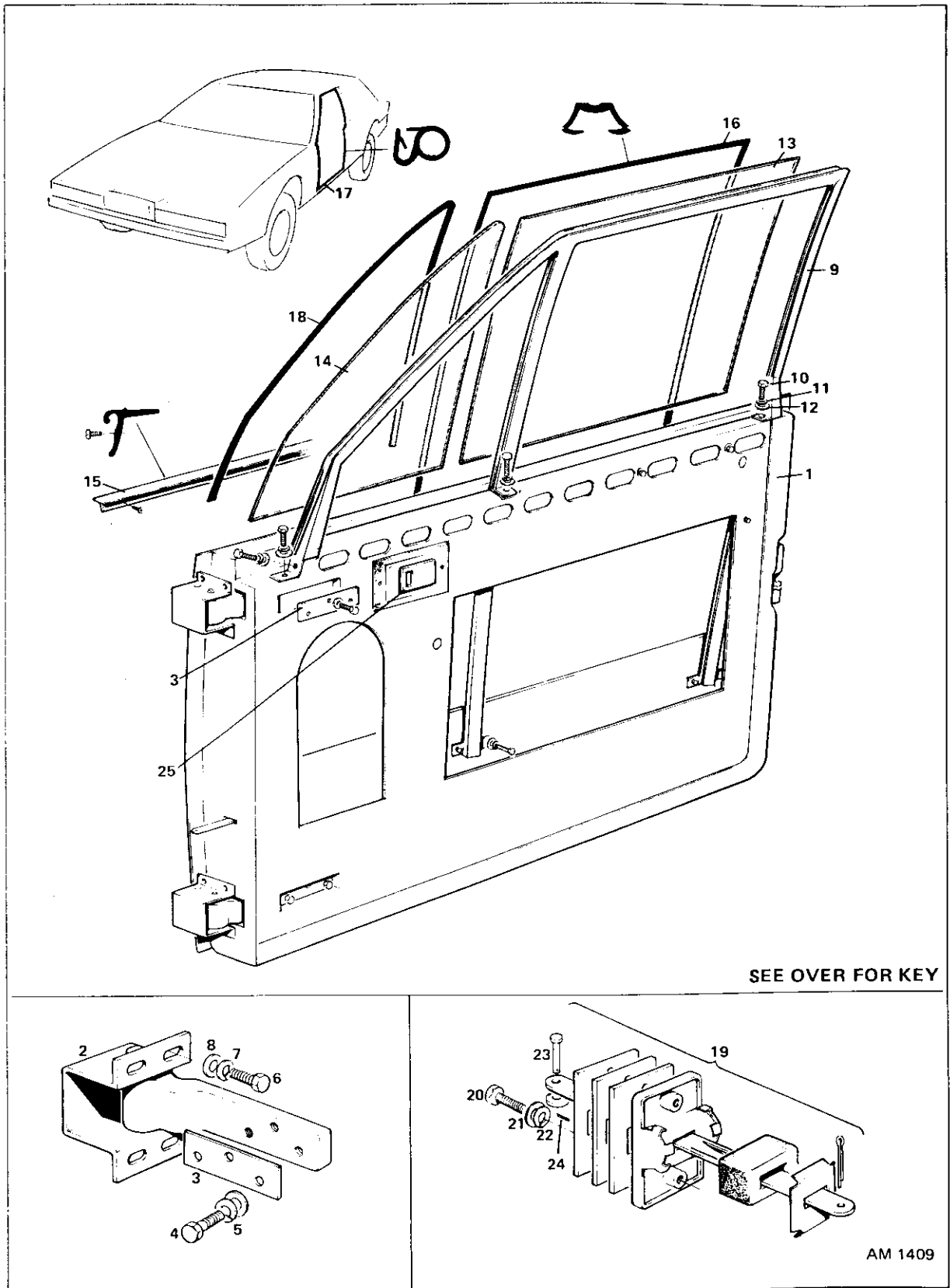
## BODY

### KEY TO FIG. 7.3.1

- 1 Front wing panel
- 2 Door panel, front
- 3 Door panel, rear
- 4 Rear wing panel
- 5 Boot lid assembly
- 6 Roof panel assembly
- 7 Roof panel, front
- 8 Roof panel, rear
- 9 Bonnet
- 10 Centre pillar finisher
- 11 'A' post panel

BODY FITTINGS

Fig. 7.4.1 Front Doors



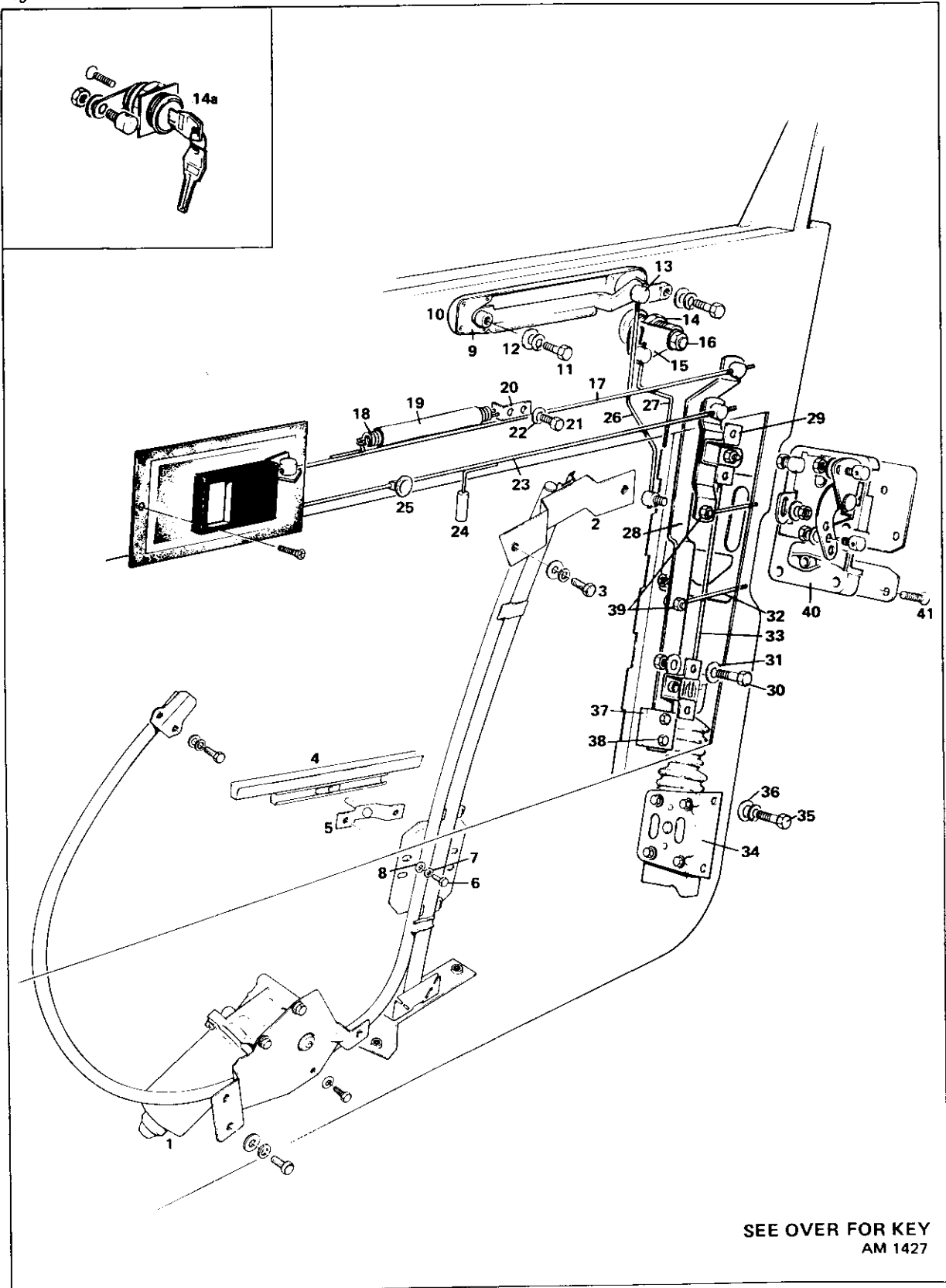
## BODY FITTINGS

## KEY TO FIG. 7.4.1

1	Door frame, RH
2	Door hinge, RH
3	Reinforcement plate
4	Screw
5	Washer, spring
6	Screw
7	Washer, spring
8	Washer, plain
9	Door glass frame, RH
10	Screw
11	Washer, shakeproof
12	Washer, plain
13	Door glass, RH
14	Quarterlight glass, RH
15	Weatherseal, door waist, outer
16	Glass run channel
17	Door aperture seal
18	Quarterlight rubber
19	Door check link
20	Screw
21	Washer, shakeproof
22	Washer, plain
23	Shear pin
24	Fixer
25	Interior handle, RH

BODY FITTINGS

Fig. 7.4.2 Front Door Lock and Window Lift Mechanisms



SEE OVER FOR KEY  
AM 1427

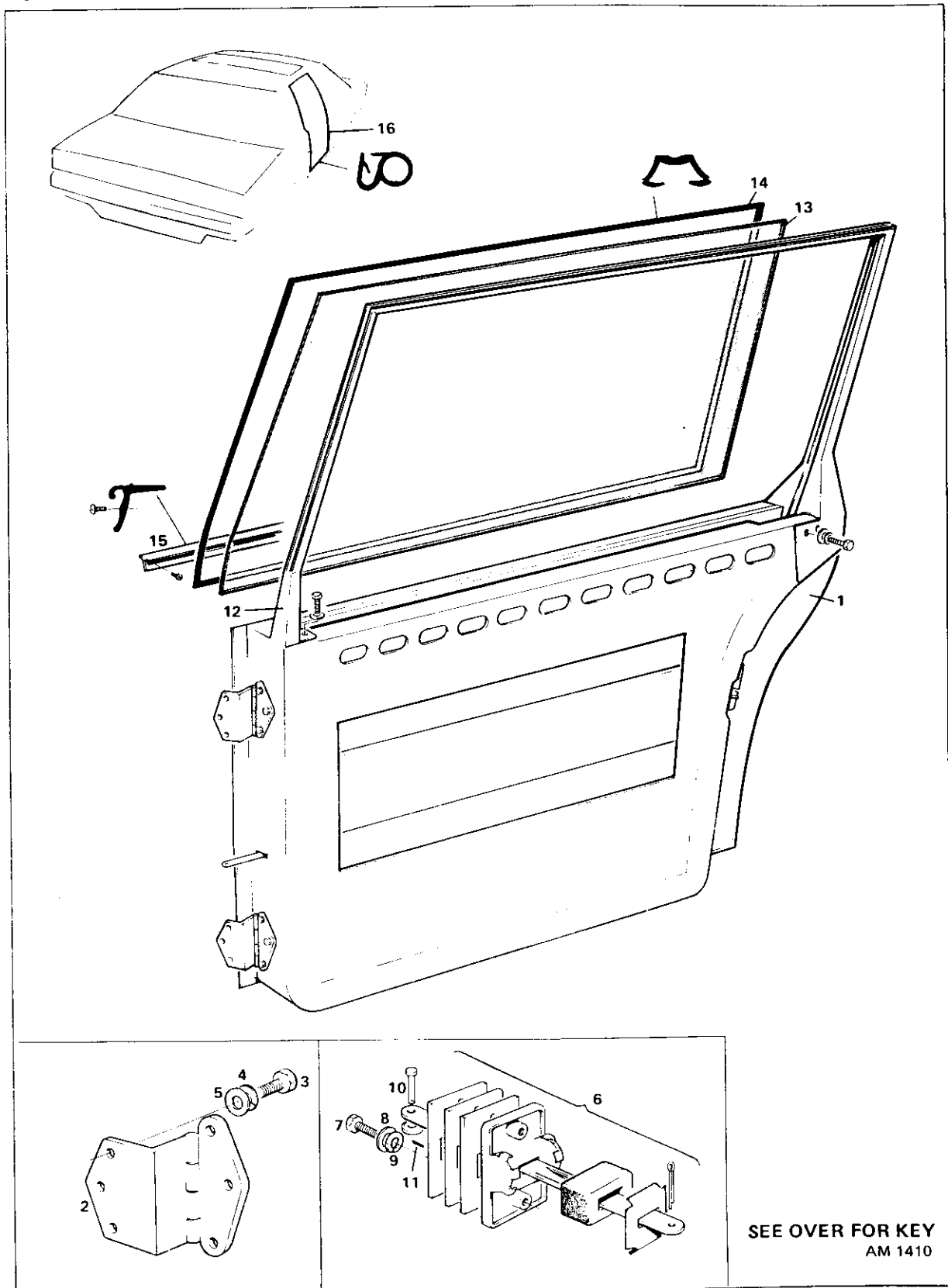
## BODY FITTINGS

## KEY TO FIG. 7.4.2

1	Window lift motor assembly
2	Support bracket, RH
3	Screw
4	Door glass channel
5	Bracket, window lift
6	Screw
7	Washer, shakeproof
8	Washer, plain
9	Exterior handle, RH
10	Gasket, exterior handle, RH
11	Screw
12	Washer, plain
13	Trunnion bush
14	Door lock, driver's
14a	Door lock, passenger
15	Quadrant, door lock
16	Locknut
17	Link, interior operating
18	Return spring
19	Sleeve
20	Spring retainer
21	Screw
22	Washer, plain
23	Link, interior locking, RH
24	Link knob
25	Link clip
26	Link
27	Link
28	Long lever assembly
29	Short lever assembly, RH
30	Screw
31	Washer, plain
32	Link, door lock
33	Link
34	Actuator, RH
35	Screw
36	Washer, plain
37	Counter balance weight
38	Screw
39	Trunnion
40	Door lock, RH
41	Screw

BODY FITTINGS

Fig. 7.4.3 Rear Doors



SEE OVER FOR KEY  
AM 1410



## 7.4

# Chassis Frame & Body Fittings

## BODY FITTINGS

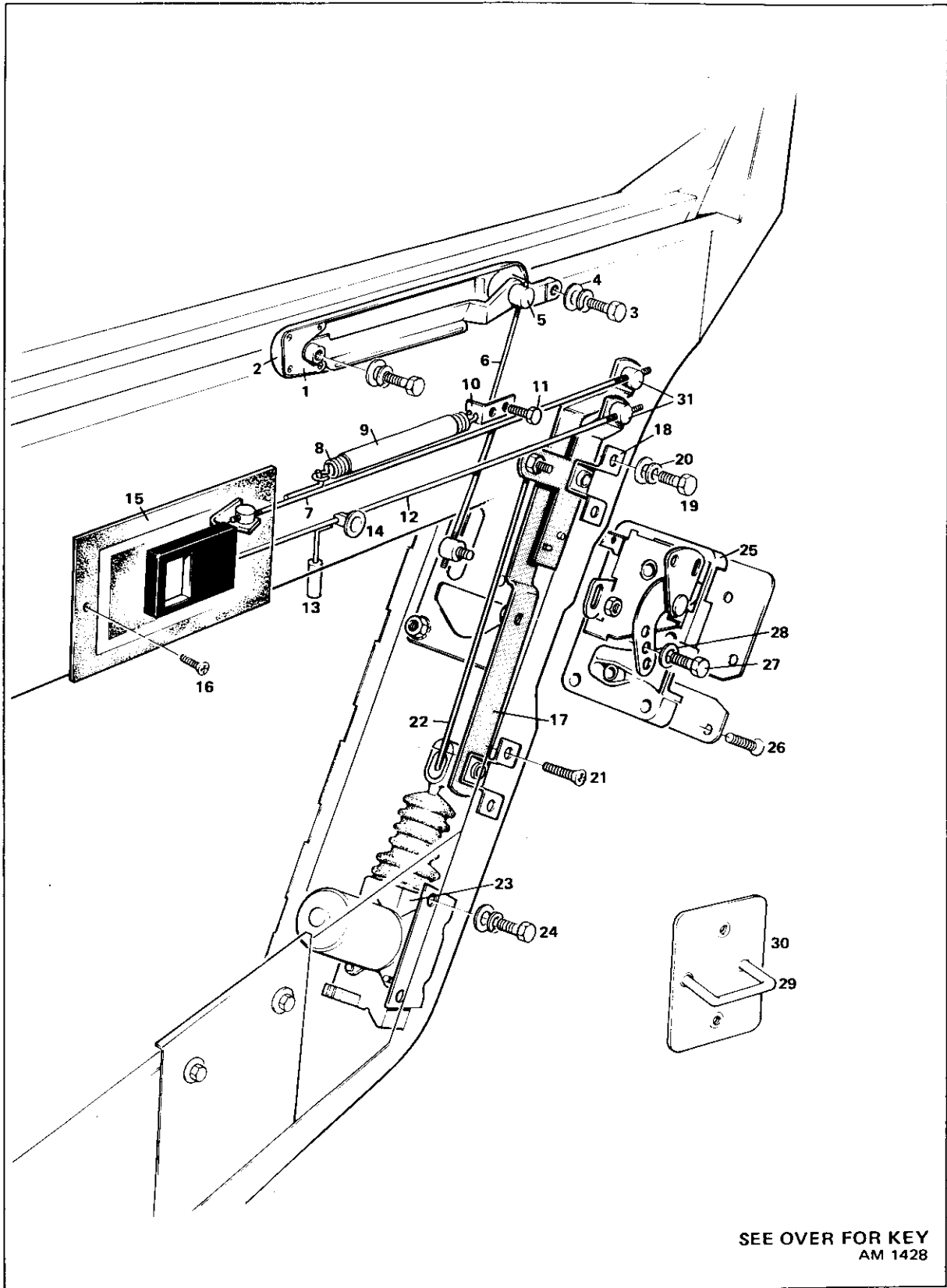
### KEY TO FIG. 7.4.3

- 1 Door frame, RH
- 2 Door hinge, RH
- 3 Screw
- 4 Washer, spring
- 5 Washer, plain
- 6 Door check link
- 7 Screw
- 8 Washer, shake proof
- 9 Washer, plain
- 10 Shear pin
- 11 Fixer
- 12 Glass frame, RH
- 13 Door glass, RH
- 14 Glass channel
- 15 Seal, outer, door waist
- 16 Door aperture seal, RH



BODY FITTINGS

Fig. 7.4.4 Rear Door Lock Mechanism



SEE OVER FOR KEY  
AM 1428

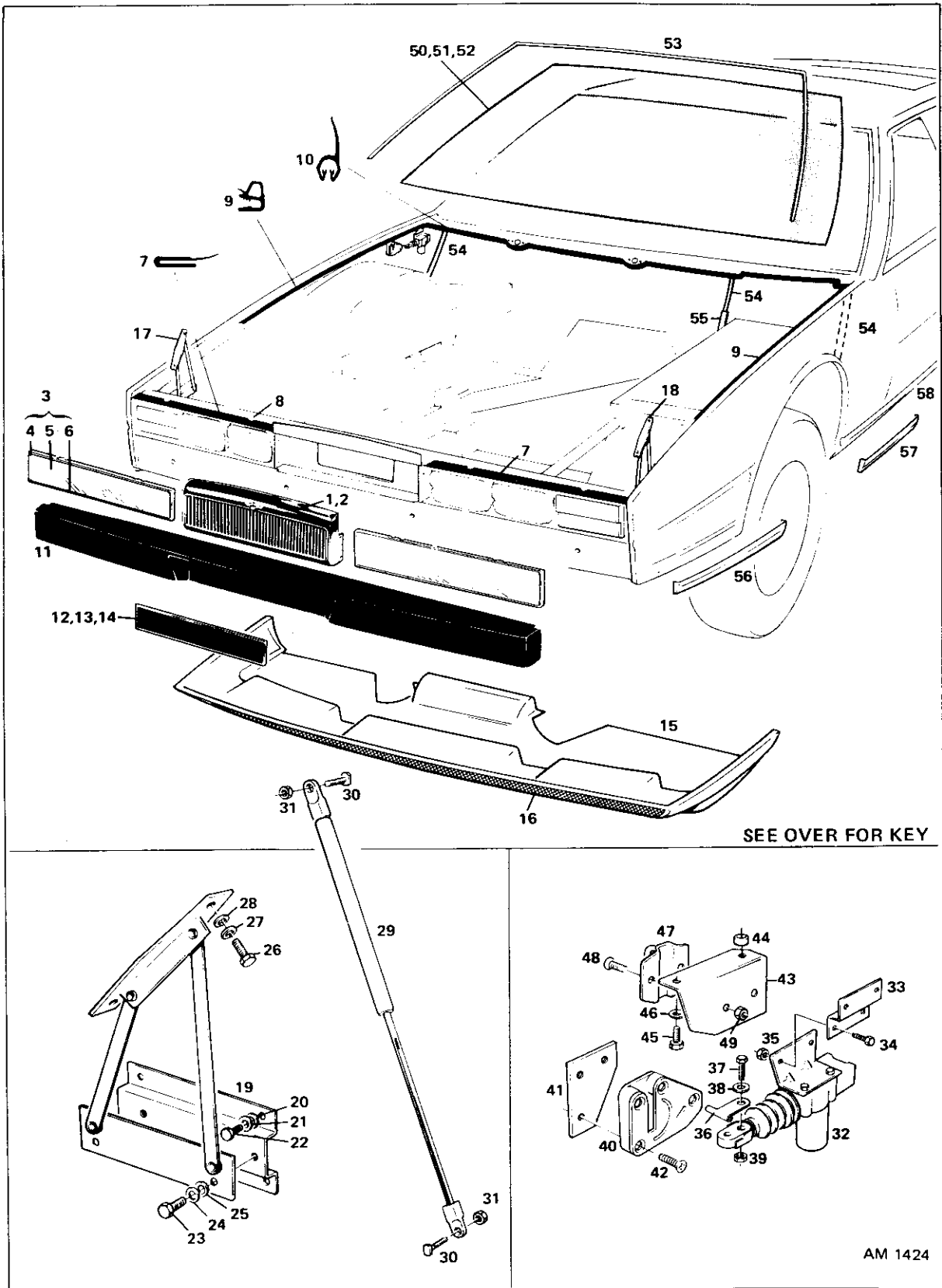
## BODY FITTINGS

### KEY TO FIG. 7.4.4

- 1 Exterior handle
- 2 Gasket
- 3 Screw
- 4 Washer, plain
- 5 Trunnion bush
- 6 Link
- 7 Link, interior operating
- 8 Return spring
- 9 Sleeving
- 10 Spring retainer
- 11 Screw
- 12 Link, interior locking
- 13 Link knob
- 14 Linkage clip
- 15 Interior handle
- 16 Screw
- 17 Long lever assembly
- 18 Short lever assembly
- 19 Screw
- 20 Washer, plain
- 21 Screw, countersunk
- 22 Link, actuator
- 23 Actuator
- 24 Screw
- 25 Door lock
- 26 Screw
- 27 Screw
- 28 Washer, plain
- 29 Lockstriker
- 30 Finisher plate
- 31 Trunnion

BODY FITTINGS

Fig. 7.4.5 Forward Body Fittings



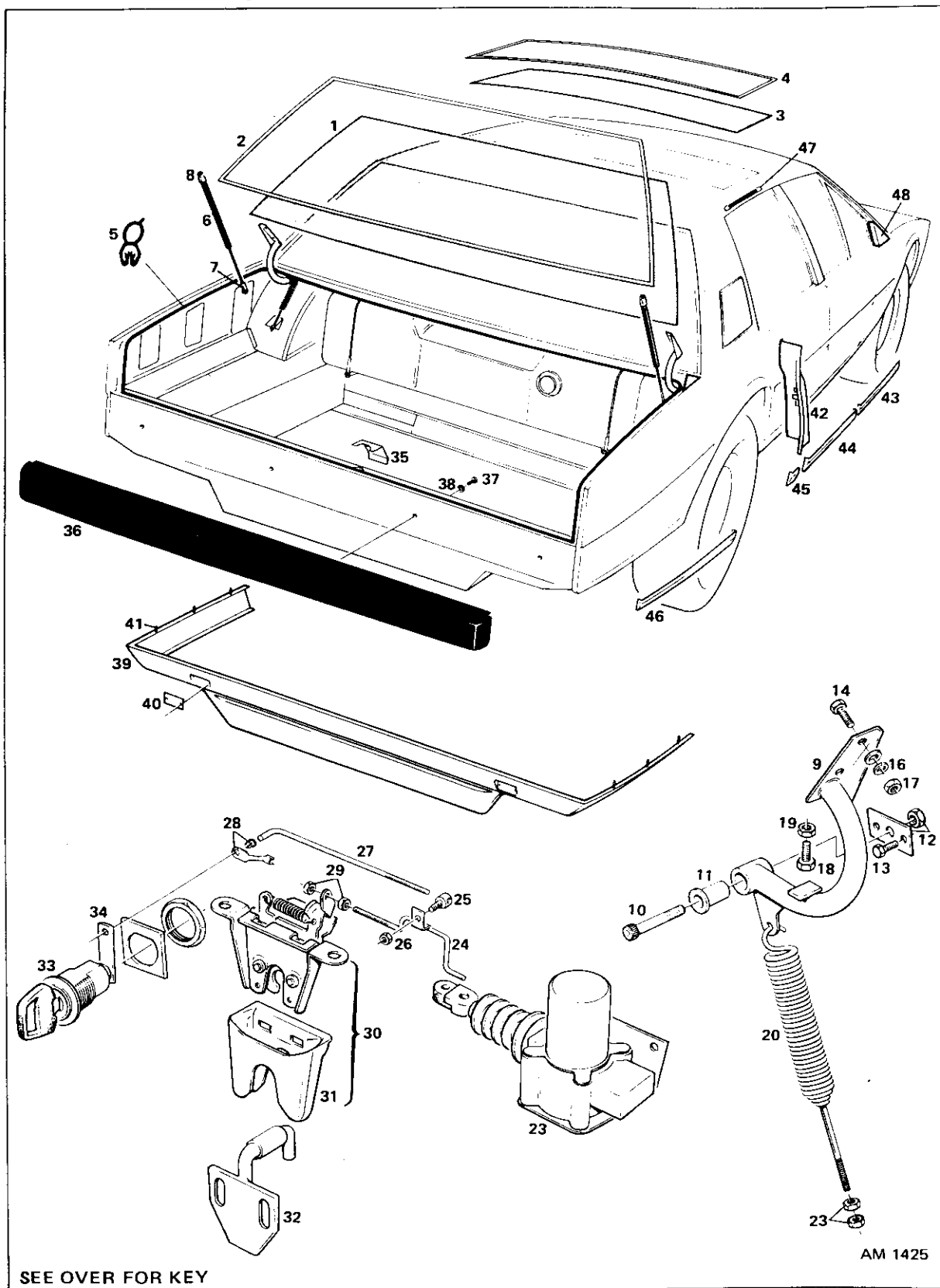
## BODY FITTINGS

## KEY TO FIG. 7.4.5

1	Radiator grille
2	Grille badge
3	Frame and glass assembly
4	Frame
5	Heated glass
6	Solbit electric seal
7	Seal
8	Grommet
9	Seal — bonnet side
10	Seal — bonnet rear
11	Front bumper
12	Number plate surround, upper
13	Number plate surround, lower
14	Number plate backing plate
15	Front under valance
16	Grille
17	Bonnet hinge, RH
18	Bonnet hinge, LH
19	Hinge mounting bracket
20	Screw
21	Washer, spring
22	Washer, plain
23	Screw
24	Washer, spring
25	Washer, plain
26	Screw
27	Washer, shakeproof
28	Washer, plain
29	Gas strut, bonnet
30	Pivot bolt
31	Nut
32	Actuator, bonnet lock, RH
33	Bracket, actuator
34	Screw
35	Hank bush
36	Link
37	Screw
38	Washer, plain
39	Nut, Nyloc
40	Bonnet lock, RH
41	Lock fixing plate
42	Screw
43	Bracket, lockstriker, RH
44	Spacer
45	Screw
46	Washer, spring
47	Striker
48	Screw
49	Nut
50	Windscreen
51	Solbit electric seal
52	Solbit electric seal
53	Windscreen, finisher
54	Windscreen drain tube
55	Drain tube, metal
56	Finisher, front wing, front LH
57	Finisher, front wing, rear LH
58	Finisher, front door, LH

BODY FITTINGS

Fig. 7.4.6 Rear Body Fittings



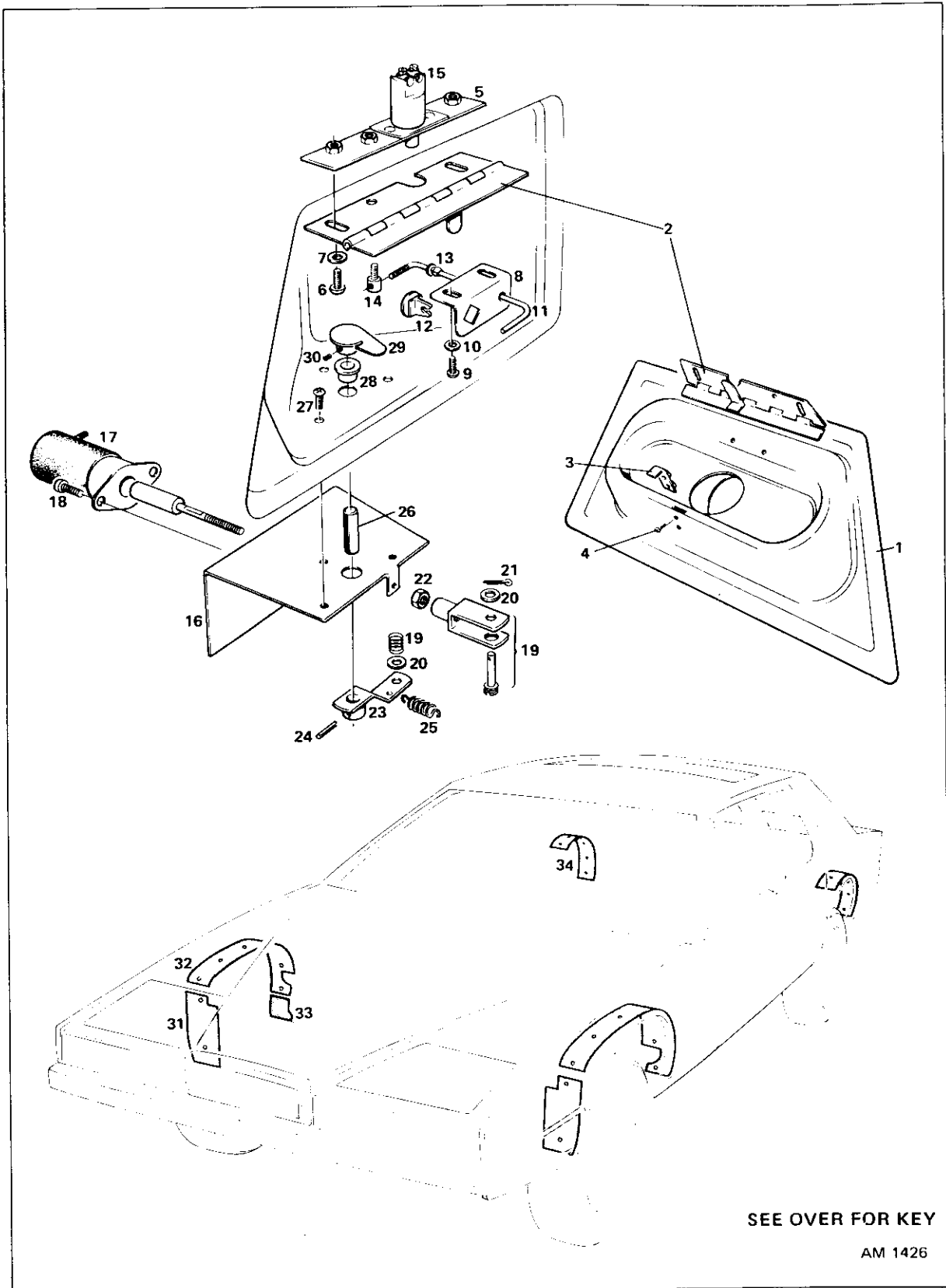
## BODY FITTINGS

## KEY TO FIG. 7.4.6

1	Rear screen
2	Rear screen, finisher
3	Roof glass
4	Roof glass, finisher
5	Boot aperture seal
6	Gas strut
7	Ball end
8	Pivot bolt
9	Boot hinge
10	Pivot bolt
11	Pivot bush
12	Hinge bracket
13	Screw
14	Screw
15	Washer, plain
16	Washer, spring
17	Nut
18	Screw
19	Nut
20	Hinge spring
21	Nut
22	Finisher, boot lid corner, RH
23	Boot lock actuator
24	Link
25	Trunnion
26	Nut, Nyloc
27	Link
28	Bush and clip
29	Locknut
30	Boot lock
31	Rubber cover
32	Striker
33	Lock and key
34	Lock packing plate
35	Striker cover plate
36	Rear bumper
37	Screw
38	Washer, spring
39	Rear under valance
40	Reflector
41	'Bighead' fixing
42	Finisher, rear wheelarch, RH
43	Finisher, front door, RH
44	Finisher, rear door, RH
45	Finisher, rear wing, front, RH
46	Finisher, rear wing, rear, RH
47	Interior handle
48	'A' post finisher, RH

BODY FITTINGS

Fig. 7.4.7 Fuel Fillers and Stoneguards



## BODY FITTINGS

## KEY TO FIG. 7.4.7

- 1 Fuel filler flap, RH
- 2 Flap hinge, RH
- 3 Striker
- 4 Screw
- 5 Hinge retaining plate, RH
- 6 Screw
- 7 Washer, plain
- 8 Stay bracket, RH
- 9 Screw
- 10 Washer, shakeproof
- 11 Link
- 12 Link clip
- 13 Link bush
- 14 Trunnion
- 15 Limit switch
- 16 Mounting bracket, RH
- 17 Solenoid
- 18 Screw
- 19 Fork end and spring
- 20 Washer, plain
- 21 Split pin
- 22 Locknut
- 23 Lever
- 24 Tension pin
- 25 Return spring
- 26 Operating shaft
- 27 Screw
- 28 Oilite bearing
- 29 Pawl, RH
- 30 Grubscrew
- 31 Stoneguard, front, lower
- 32 Stoneguard, front, upper
- 33 Stoneguard, front, rear
- 34 Stoneguard, rear



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OPTIONAL EQUIPMENT	8.1
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TOOLS AND EQUIPMENT	8.2
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SPECIAL KITS	8.3
Decarbonising	
Conversion	
Overhaul	
Touring and Service	

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SPECIFICATIONS	8.4
Engine	
Fuel System	
Emission Control	
Exhaust	
Cooling	
Air Conditioning	
Transmission	
Suspension	
Steering	
Brakes	
Electrical	
Chassis and Body Fittings	
Dimensions and Weights	
Summary of Capacities	
Recommended Lubricants and Additives	
Torque Settings	

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SERVICING REQUIREMENTS	8.5
Engine	
Fuel	
Emission Control	
Exhaust	
Cooling	
Air Conditioning	
Transmission	
Suspension	
Steering	
Brakes	
Electrical	
Miscellaneous	

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SPECIFICATION

**VEHICLE IDENTIFICATION**

Vehicle Identification Number arch  
(Chassis Number)

Stamped on a brass plate riveted to a wheel  
in the engine compartment.

Engine Serial Number

Stamped on top of the engine water outlet.

**ENGINE**

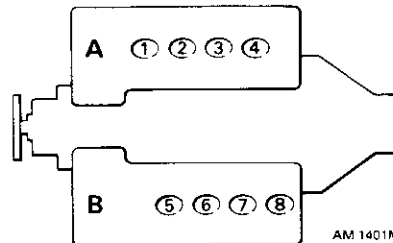


Fig. 8.4.1 Cylinder layout

Configuration

90° V8  
'A' Bank – right hand  
'B' Bank – left hand  
(from drivers position)

Firing Order

1, 5, 4, 2, 6, 3, 7, 8

Bore

100mm (3.94 in)

Stroke

85mm (3.35 in)

Capacity

5340cc (326 in<sup>3</sup>)

Compression Ratio

9.5:1 – '540' Series Engine  
9.25:1 – '580' Series Engine

Valves

Description

Large diameter, inclined at 64° included angle, exhaust  
valve guides in direct contact with coolant.

Operation

Four overhead camshafts operate on hardened steel  
tappets with shim pad adjustment. Driven by twin two  
stage duplex chains with automatic and manual  
adjustment.

Tappet Clearance (Cold)

'540' Series Engines

Inlet

0.37 - 0.42mm (0.014 - 0.016 in)

Exhaust

0.42 - 0.46mm (0.016 - 0.018 in)

'580' Series Engines

Inlet

0.42 - 0.46mm (0.016 - 0.018 in)

Exhaust

0.44 - 0.48mm (0.017 - 0.019 in)

Maximum r.p.m.

(permitted intermittently)

6250 r.p.m.

**AUXILIARY DRIVE BELTS (see attached)**

Oil Pump

Six lobe rotor

Oil Coolers

Twin coolers mounted one each side of main  
radiator

Oil Filter

Throw-away, cartridge, screw-on type, mounted on  
the right hand side of the engine.

Sump Capacity

see Capacities

SPECIFICATION

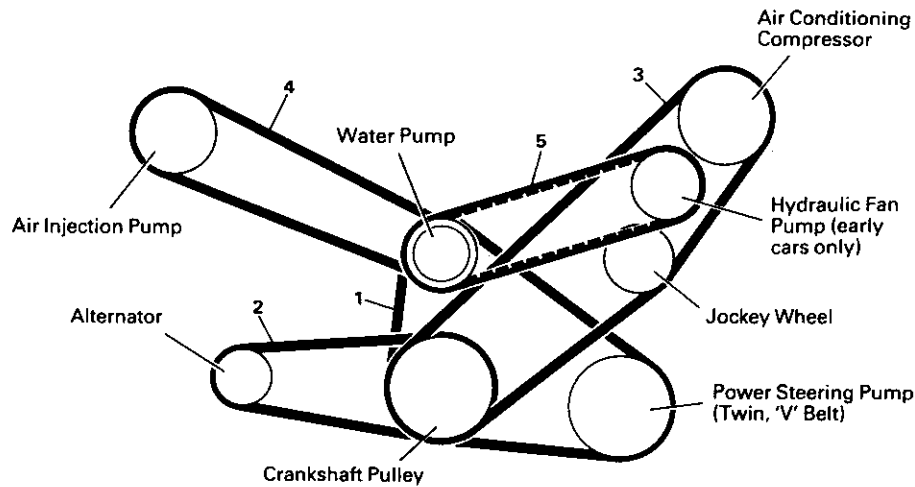
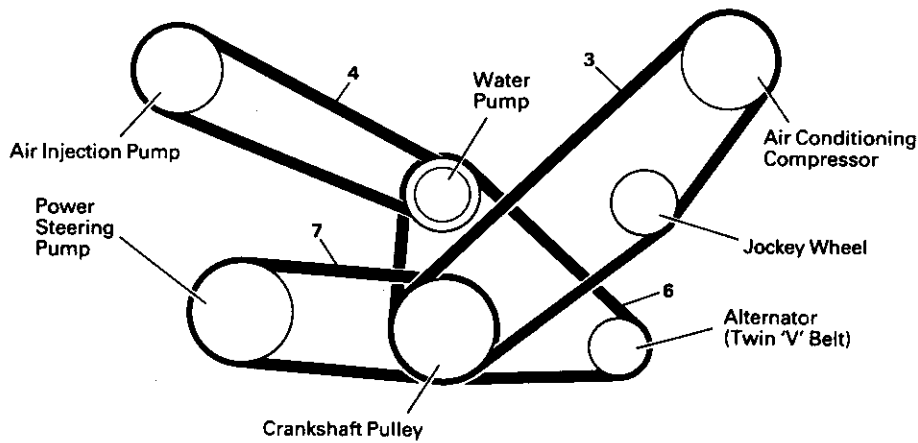


Fig. 8.4.2 Auxiliary drive belts



AM 1272M

Fig. 8.4.3 Auxiliary drive belts hot countries

Illus. No.	Part No.	Description	Qty. per Car	Remarks	Force kg	Deflect'n mm
1	80.05.108	Crankshaft/water pump/power steering pump European	2	To Chassis No. 13037	20	4.5
	05.14647	Crankshaft/water pump/power steering pump Cars 1977-81	2	From Chassis No. 13038	20	4.5
2	80.09.121	Crankshaft/alternator	1	1/2 in. T.W. early cars	1.5	4.0
	09.14653	Crankshaft/alternator	1	3/8 in T.W. to Chassis No. 13020	1.5	4.0
	09.14684	Crankshaft/alternator	1	3/8 in T.W. from Chassis No. 13021 (alternatives)	1.5	4.0
	09.15644	Crankshaft/alternator	1	No. 13021 (alternatives)	1.5	4.0
3	089.10922	Crankshaft/air conditioning compressor	1	AC Delco compressor 1977-81. European cars	4.0	7.5
	089.16806	Crankshaft/air conditioning compressor	1	Sankyo compressor 1981 on European and hot countries cars	4.0	7.5
4	005.17002	Water pump/air injection pump	1		1.5	6.0
5	12.12164	Water pump/hydraulic fan pump	1	European cars 1977-81	-	-
6	005.17002	Crankshaft/alternator/water pump	2	Hot countries 1981 on	1.5	4.5
7	024.17176	Crankshaft/power steering pump	1	Hot countries 1981 on	2.5	4.0

## SPECIFICATION

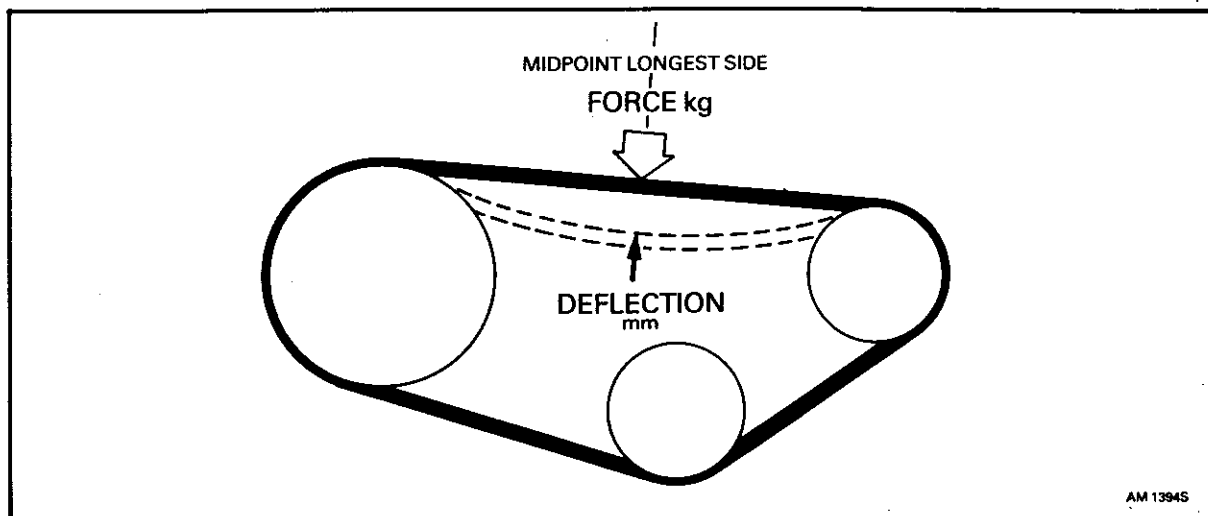


Fig. 8.4.4 Belt tension diagram

**ENGINE ELECTRICS**

Make and Type	Lucas 'Opus' Mk2 Electronic
Distributor	Lucas with inbuilt amplifier
Rotor Gap (between pick up modules and timing rotor outer edge)	0.50 - 0.55mm (0.020 - 0.022in)
Ignition Coil	Lucas - High Load
Ballast Resistor	Lucas 9BR
Sparking Plugs	NGK BPR6EV (early cars BP6EV)
Gap	0.76mm (0.030in)
Ignition Timing	0° at 900 r.p.m. (10° BTDC at 900 r.p.m. with vacuum control disconnected).
Alternator	
Standard	75 amp
Hot Country	100 amp

**FUEL SYSTEM**

Fuel	97 octane (4 star) leaded
Fuel Pump	Electric in tank
Fuel Filter Element	95 - 34 - 000
Carburetors	Weber 42 DCNF (4 twin choke)
Choke	36.00mm
Main Jet	1.40mm
Idle Jet	0.55mm
Air Correction Jet	2.00mm
Float Needle	2.00mm
Float Chamber Level	49.00mm (from joint face to bottom of float)
Float Weight	11.8 ± 0.25g
Air Filter	Full flow paper filter - 96-14665
Fuel Tank Capacity	see Capacities

## SPECIFICATION

### COOLING SYSTEM

#### Description

The engine employs a conventional pressurised thermo-syphon cooling system, incorporating an engine mounted water pump driven by twin 'V' belts from the crankshaft pulley, an engine mounted header tank with pressure cap, a thermostat to promote rapid warming up and stable working temperature, a crossflow radiator with low coolant level and temperature monitoring devices – the latter controlling twin electric cooling fans to supplement the ram air cooling, and an expansion tank.

Hot water is also provided to the air conditioning system via the heater valve.

#### Pressure Cap

0.91 kg/cm<sup>2</sup> (13 lb in<sup>2</sup>)

#### Thermostat

74°C Waxstat

### AIR CONDITIONING SYSTEM

#### Description

An air conditioning system is fitted to the Lagonda and incorporates a conventional system of operation.

A refrigerant gas is compressed by a pump driven by a V belt from the crankshaft pulley.

The gas is dried and circulated through an evaporator matrix which cools and

de-humidifies the air to the passenger compartment.

Heating of the passenger compartment is obtained from engine coolant diverted through the heater matrix.

Control of temperature and mode may be made via the controls on the RH binnacle and is related to ambient temperature.

#### Refrigerant

R12

#### Coolant Mixture

A minimum of 50% 'Antifreeze' is required to ensure the most efficient operation of the A/C system.

#### Minimum coolant temperature required before heating is available

51°C (125°F)

#### Controllable in-car temperature range

18°C (65°F) 29°C (85°F)

#### Minimum in-car temperature level before refrigeration is available from a coldstart 27°C (80°F)

### TRANSMISSION

#### Gearbox

Automatic: Torque convertor and three speed epicyclic gear train.

Transmission oil cooled by oil cooler in front of radiator.

#### Ratios

##### Top

1:1 (3.07:1 overall)

##### Second

1.45:1 (4.45:1 overall)

##### First

2.45:1 (7.52:1 overall)

##### Reverse

2.2:1 (6.76:1 overall)

##### Torque Converter

2:1

## SPECIFICATION

Gearbox Capacity	see Capacities
Final Drive	Fixed length propeller shaft driving through two universal joints to the hypoid differential unit with limited slip device. Unit supported in rubber mounted cradle, driving through roller spline drive shafts.
Hypoid Capacity	see Capacities
Ratio	3.07:1
Top Gear Speed at 1000 r.p.m	42.6kph (26.4mph)

**SUSPENSION AND STEERING**

Rear	De-Dion axle located fore and aft by parallel trailing links and sideways by a 'Watts linkage'. Coil springs and self levelling telescopic pressurised suspension units.
Front	Independent by unequal length wishbones and ball jointed king pins. Co-axial coil springs and telescopic shock absorbers.
Shock Absorbers	Telescopic
Front	Koni type 82
Rear	Koni type 7110 (self levelling)
Steering	Rack and pinion unit with hydraulic power assistance from engine mounted pump. Collapsible safety steering column. Single spoke, padded, leather covered steering wheel.
Power Steering Pump Capacity	see Capacities
Steering Geometry	
Front Ride Height	165 ± 6mm (6½ ± ¼ in) measured from ground to bottom of front cross member.
Rear Ride Height	190 ± 6mm (7½ ± ¼ in) measured from ground to kick-up member.
Toe-in	4 + 0 - 1.0mm (¾/16 + 0 - 1/16 in)
Caster Angle	3° ± 15'
Camber Angle	0° + 30' - 0°

**BRAKES, WHEELS, TYRES**

Footbrake	Independent front/rear hydraulic system with single vacuum servo assisted system - manual override in the event of vacuum failure. Twin hydraulic fluid reservoir with low level warning device. Four ventilated discs mounted inboard at rear and outboard at front.
Handbrake	Cable operated from 'lay flat' lever on doorside of drivers seat operating separate calipers on rear discs.
Front Disc	10.75in diameter
Rear Disc	10.38in diameter

## SPECIFICATION

Wheels	Steel 6 JK x 15, 5 stud fixing
Tyres	Avon Turbo Steel radial tubeless 235/70 VR15
Pressures	
Normal load/speed	2.0kgf/cm <sup>2</sup> (28lb/in <sup>2</sup> ) (2.0 bar)
Max. load/high speed	2.4kgf/cm <sup>2</sup> (35lb/in <sup>2</sup> ) (2.4 bar)
Rolling road operation	2.75kgf/cm <sup>2</sup> (40lb/in <sup>2</sup> ) (2.7 bar)

## ELECTRICS AND INSTRUMENTS

Battery	Maintenance free
Fuses	
Fuse Box	35 amp 4 amp quick blow
	On no account should these values be exceeded otherwise irreparable damage to components may occur.
In Line	Radio/Amplifier – see radio handbook.

## BULBS

Front Exterior Road Lamps	
Side Lamps	MCC 12V 5W
Flasher Lamps	SCC 12V 21W
Headlamps (dip and beam)	12V 55W
Fog and Spot Lamps	12V 55W
Rear Exterior Road Lamps (including supplementary lamps in the boot)	
Stop/Tail Lamps	Index 12V 21/5W
Flasher Lamps	12V 21W
Reversing Lamps	12V 21W
Fog Lamps	12V 21W
Number Plate Lamps	12V 5W
Supplementary Lamps in Boot	
Tail Lamps	12V 5W
Flasher Lamps	12V 21W
Door Mounted Exterior Road Lamps	
Edge Lamps (red lens)	} 12V 2.2W
Puddle Lamps (white lens)	
later cars – round lamp	
early cars – square lamp – Festoon	12V 10W
Interior Lamps	
Roof Mounted Lamps (eyeball type)	12V 5W
Roof Mounted Lamps (flood type)	12V 10W
Hazard Switch Indicator Lamp	} 12V 100mA
Rear Fog Switch Indicator Lamp	
Cigar Lighter Lamp	
up to chassis 13073	12V 2.2W
from chassis 13074	12V 2W
Instrument Panel Flood Lamps	12V 150mA
Instrument Panel Warning Lamp	12V 2W
Door Panel Illumination Lamp	12V 2W
Bonnet Illumination Lamp	12V 21W
Boot Illumination Lamp	12V 10W



## SPECIFICATION

## Light Units

Four pop-up halogen headlamps raised and lowered by electric motors.  
 Fog and spot lamps, Indicator and parking lamps enclosed behind electrically heated glass panels.  
 Front and rear sidemarker lamps – optional.  
 Rear main lamps (these are duplicated under boot lid for certain countries), reversing, fog, indicators and a hazard warning.  
 Under bonnet and boot lamps.  
 Red safety lamps on opening edges of all doors with puddle lamps on the bottom edges of doors.  
 Four swivelling reading lamps and central flood lamp operated through door mounted courtesy switches.  
 Illuminated door switch panels.

## Electrical Units/Courtesies

Cruise control.  
 Two speed wipers with flick facility and intermittent control.  
 High and low intensity horns.  
 Interior controls for boot, fuel fillers, central automatic locking system.  
 Stereo cassette radio with automatic power aerial and speaker fader controls front and rear.  
 Cigar lighter front and rear.  
 Heated rear window.  
 Seat controls.  
 Powered window lifts on front doors.

## Instruments

Digital by LED display.  
 Speedometer – mph/kph with selector.  
 Rev. counter, oil pressure and temperature gauges, water temperature and fuel level gauges, voltmeter, interior and exterior temperature gauges and clock.

## Warning Lamps etc.

Indicators, fuel flap, headlamp mode, seat belts, side lights, radiator coolant level, ignition ON, fog lamps ON, spot lamps ON, boot OPEN, rear window demist ON, external low temperature, gear selector position, windscreen washer fluid level, handbrake ON/fluid LOW, horn selector, hazard warning, rear fog ON.

**CHASSIS AND BODY FITTINGS**

## Chassis/Body Unit

Steel platform and superstructure clad in unstressed aluminium body panels.  
 Laminated screens front and rear plus roof light, all bonded. Four doors fitted with toughened glass.  
 Forward opening bonnet and boot lid.

## Fittings

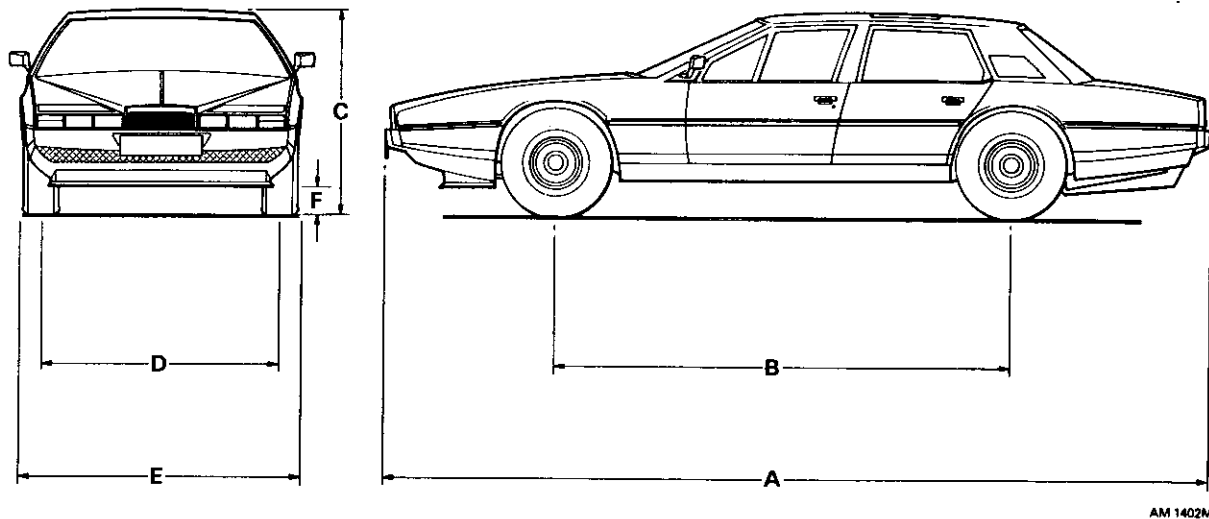
Power adjustable front seats, hide throughout with walnut cappings. Wool pile carpets. Fully insulated and sound proofed.  
 Fitted tool case in boot.

## Seat Belts

Inertia reel front and rear

## SPECIFICATION

## DIMENSIONS AND WEIGHTS



AM 1402M

Fig. 8.4.5 Overall dimensions

A Overall Length	5.28m (17ft 4in)
B Wheelbase	2.91m (9ft 7in)
C Overall Height	1.30m (4ft 3¼ in)
D Front Track	1.50m (4ft 11in)
E Overall Width	1.79m (5ft 8½ in)
F Ground Clearance	0.14m (0ft 5½ in)
Turning Circle	11.58m (38ft 0in)
Kerb Weight (with full tank of fuel)	18426kg (4622lb)

## SUMMARY OF CAPACITIES

Engine Sump	11.3 litres (20.0 Imp pints)
Cooling System	18.1 litres (32.0 Imp pints)
Antifreeze (minimum requirement for all conditions)	9.1 litres (16.0 Imp pints)
Fuel Tank	126 litres (28.0 Imp galls)
Automatic Gearbox and Cooler	8.5 litres (15.0 Imp pints)
Final Drive – Hypoid	2.0 litres (3.5 Imp pints)
Power Steering Pump	2.0 litres (3.5 Imp pints)
Washer Bottle	4.5 litres (8.0 Imp pints)

**SPECIFICATION**

**RECOMMENDED LUBRICANTS AND ADDITIVES**

Apart from the mandatory lubricants stated, all others are specifically recommended by the Aston Martin Servicing Department. If other manufacturers' lubricants are used in the Lagonda it is essential that they meet the same specification.

**WARNING:** Failure to use the correct lubricant may result in damage to the car.

Application	Type/Grade	International Specification
<b>ENGINE</b>		
Over 0°C (32°F)	Castrol GTX (UK)	AP1SE
	Castrol GTX 2 (Europe)	
Below 0°C (32°F)	Castrolite (N. Europe)	
	Castrol GTZ (Norway, Sweden)	
	Castrol GTX 5W/30 (Canada)	
Flushing Oil	Castrol Flushing Oil	
Upper Cylinder Lubricant	Castrollo	
<b>TRANSMISSION</b>		
Automatic Gearbox	Castrol Dexron II	GM Dexron II AP1 GL5
Hypoid Unit	Castrol Hypoy LS	
<b>GREASE POINTS</b>		
King Pin Bearings	Castrol MS3 Grease	
Parking Brake Cable	Castrol MS3 Grease	
Hub Bearings	Castrol MS3 Grease	
Propeller Shaft and Drive Shaft Universal Joints	Castrol MS3 Grease	
<b>OIL CAN POINTS</b>		
	Castrol GTX (see above)	AP1 SE
<b>HYDRAULIC FLUID RESERVOIRS</b>		
Brakes	It is essential that only Castrol Girling Universal Brake and Clutch Fluid is used	FMVSS DOT 3 or 4 GM Dexron II
Power Steering	Castrol TQ Dexron II	
<b>COOLING SYSTEM</b>		
	Smiths Bluecol U Antifreeze or to 'AA' specification for aluminium engines	

## SPECIFICATION

## TORQUE SETTINGS

ENGINE				
Description	Size	Comments	Nm	lb.f.ft
Main Bearing Studs	1/2in UNC		27	20
Cylinder Head Studs	1/2in UNC		27	20
All studs should be securely fixed in castings prior to assembly.				
Main Bearing Nuts			81	60
Big End Nuts			61	45
Flywheel-Crank Bolts		Hex' and Wired Durloc	47	35
			102	75
Camshaft Bearing Nuts	1/4in UNF		8	6
Camshaft Bearing Nuts	5/16in UNF		11	15

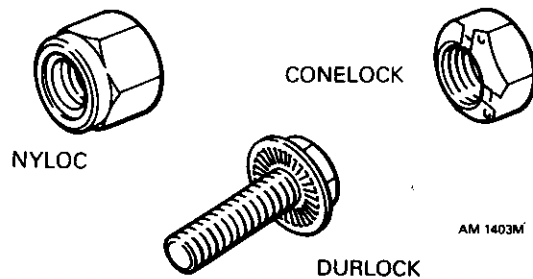


Fig. 8.4.6 Types of locknut fitted to car

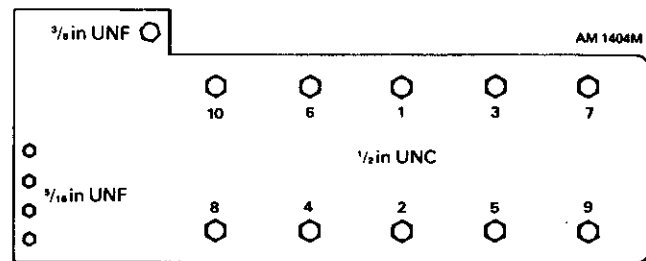


Fig. 8.4.7 Tightening sequence of cylinder head nuts

Description	Size	Comments	Nm	lb.f.ft
Cylinder Head Nuts – 10	1/2in UNC	In sequence 1st Setting 2nd Setting Final Setting	20/27 47/54 95	15/20 35/40 70
Cylinder Head Nuts – 4	5/16in UNF		15	11
Cylinder Head Nut – 1	3/8in UNF	Ensure good gasket seal	–	–
Spark Plugs			16 - 21	12 - 16
Alternator Pulley Nut	5/8in UNF		57	42

## SUSPENSION AND STEERING

Description	Size	Comments	Nm	lb.f.ft.
REAR SUSPENSION				
Hypoid Mountings	7/16in UNF		68	50
Rear Hypoid Tubes				
Lower	M10		56	41
Upper	M8	Lockwired	28	20
Cantilever to Hypoid	7/16in UNF	Lockwired	68	50
Driveshaft Nuts	3/8in UNF		55	40
Hub Nut	3/4in UNF		244	180
Radius Arm Nuts	1/2in UNF		98	72
Watts Linkage – Chassis Nuts	1/2in UNF	Locktite Nutlock	98	72
Watts Linkage – De Dion	1/2in UNF		98	72
Damper Mounting – Lower	7/16in UNF		138	102

SPECIFICATION

FRONT SUSPENSION

King Pin -				
Ball Joint, Upper	1/2 in UNF	Nyloc	98	72
Ball Joint, Lower	9/16 in UNF	Nyloc	138	102
Stub Axle	5/8 in UNF	Nyloc	194	143
Upper Wishbone -				
Ball Joint	3/8 in UNF	Nyloc	41	30
Spindle	1/2 in UNF	Nyloc	61	45
Spindle - Chassis				
Early Cars	M12	Loctite 'Nutlock'	79	58
Late Cars	M12	'Conelock' Nut	55	40
Lower Wishbone -				
Inner Pivot	5/8 in UNF		102	75
Damper Bracket	M10	Nyloc	56	41
Damper Bracket - Damper	9/16 in UNF	Nyloc	138	102
Reaction Arm	5/8 in UNF	Nyloc	194	143
Reaction Arm - Chassis	3/4 in UNF	Loctite 'Nutlock'	136	100

BRAKES AND WHEELS

Description	Size	Comments	Nm	lb. f. ft.
Front Caliper Mounting	M12	Lockwired	81	60
Rear Caliper Mounting	7/16 in UNF	Tabwasher	62	46
Rear Disc to Bell	5mm	'Durloc'	5	3.7
Wheel Nut	1/2 in UNF		68	50
Caliper Bleed Nipple			9.5	7

MISCELLANEOUS

Torque settings for general use based on 85% proof load.

Description	Size	Comments	Nm	lb. f. ft.
Grade 8.8. Bolts (standard bolts in use)	M5		6.9	5
	M6		11.7	8.6
	M8		28	20
	M10		56	41
	M12		98	88
	M16		216	244
	M20		351	476
Grade 10.9	M5		9.4	7
	M6		15.9	12
	M8		38	28
	M10		77	57
	M12		134	99
	M16		332	245
	M20		646	476
Grade 12.9	M5		11.2	8
	M6		19.1	14
	M8		46.4	34
	M10		92	68
	M12		160	118
	M16		395	291
	M20		775	571



## SERVICING REQUIREMENTS

### SERVICING REQUIREMENTS

The Servicing Requirements discussed here are presented in the form of a schedule. The continual smooth running and high performance of which the car is capable are ultimately dependent upon the instructions being carefully followed at the prescribed maximum intervals. Failure to do so may nullify the warranty given with each new car and could put in jeopardy driver and passenger safety.

### SERVICING SCHEDULE

The Schedule lists each task that must be undertaken and includes with it a reference to a Procedure in which more detail may be available. The Procedures will be found on the following pages and will contain further references to particular sections of the Manual in which 'in depth' information may be accessed. It is worth noting that both the Procedures and the Specification are broken down using the same eight part system as the main Manual breakdown.

Each task is also given a maximum elapsed period between servicing, these can be measured in time or mileage whichever is the shorter, e.g., Daily, Weekly, Monthly, the first 1600km (1000 miles), every 8000km (5000 miles) or 4 months.

Also included is a 'Recommended Order of Working', this may assist in a more efficient approach to the Service.

### FREE SERVICE

The first service is normally free of labour charge to the owner. This service should be carried out by the Distributor or Dealer from

whom the vehicle was purchased. The Distributor or Dealer will advise the owner of the conditions relating to this service and will make alternative arrangements for it to be carried out elsewhere in the event of the owner moving away from the area of sale.

### PARTS AND LUBRICANTS

When undertaking a servicing task, it is stressed that only parts, materials, lubricants etc. are used that are specifically recommended by Aston Martin Lagonda Ltd. Failure to do so may result in damage to the vehicle. Recommended lubricants, capacities, tolerances, sizes etc. may be found in Section 8.4 - Specifications.

*WARNING: Under no circumstances should the engine be started and a gear engaged whilst a rear wheel is jacked clear of the ground, the opposite wheel may 'drive' the car off the jack. This is due to the effect of the limited slip differential.*

*It is unsafe to work under the car using only a jack to support it. Always use stands or other suitable supports under the jacking points as a safety precaution.*

*Four jacking points are positioned one adjacent to each wheel of the car below the door sills. Only these points must be used when jacking up the car, if the jack is used in any other position serious damage may result. Before jacking commences, ensure that the vehicle is on firm level ground, that the parking brake is firmly applied and 'PARK' selected. Chock the opposite wheel before attempting to carry out any work under the car.*

# SERVICING REQUIREMENTS



Fig. 8.5.1a Engine compartment - LHD

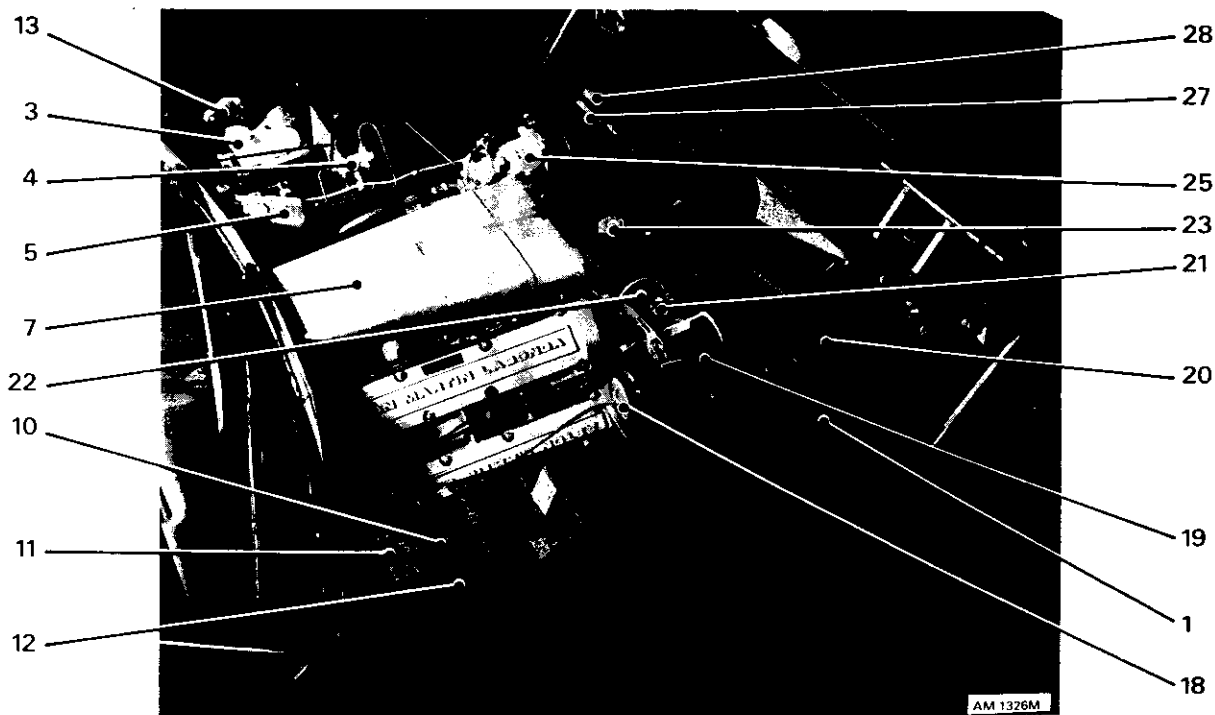


Fig. 8.5.1b Engine compartment - LHD



# SERVICING REQUIREMENTS

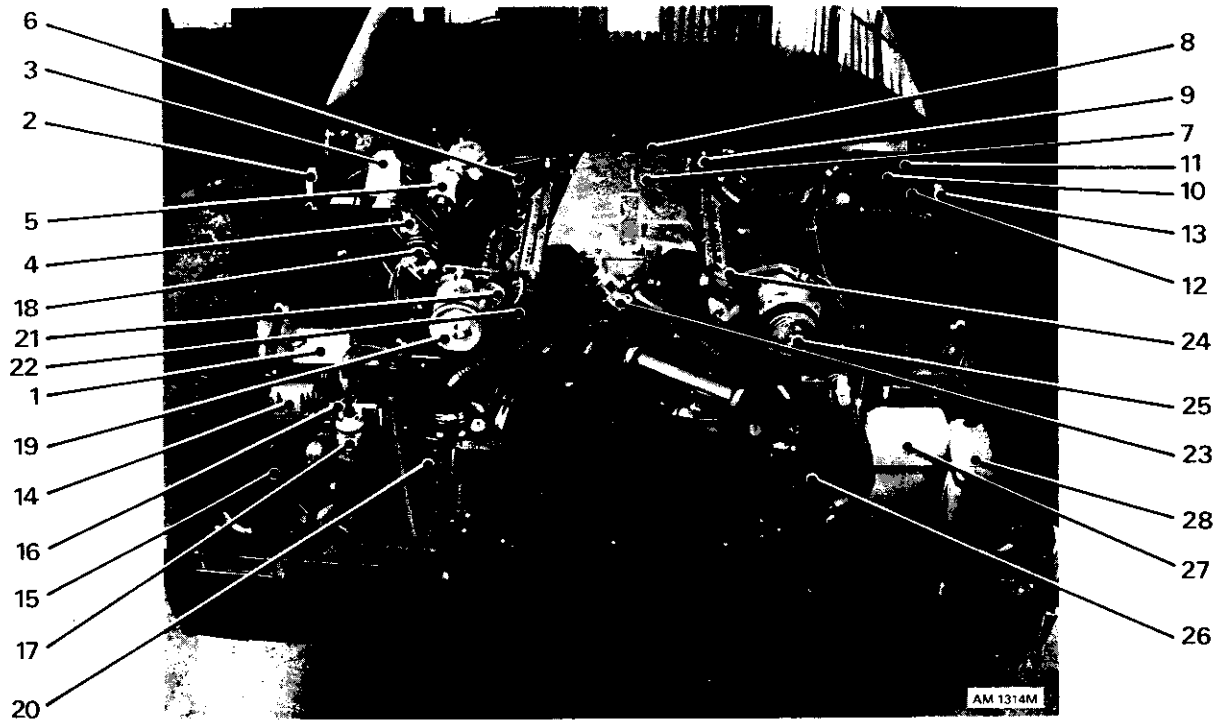


Fig. 8.5.1c Engine compartment – RHD

**KEY**

- |                                       |                                   |                                     |
|---------------------------------------|-----------------------------------|-------------------------------------|
| 1 Vehicle Identification Plate        | 10 Odometer                       | 19 Air Injection Pump               |
| 2 Bonnet Catch – Right Hand           | 11 Fuses                          | 20 Air Filter – Right Hand          |
| 3 Hydraulic Brake Fluid Reservoir     | 12 Relay Box                      | 21 Ignition Control Vacuum Switches |
| 4 Brake Differential Warning Actuator | 13 Bonnet Catch – Left Hand       | 22 Distributor                      |
| 5 Windscreen Wiper Motor              | 14 Alternator Regulator           | 23 Coolant Header Tank Cap          |
| 6 Engine Oil Dipstick                 | 15 Compressor – Air Horns         | 24 Engine Oil Filler Cap            |
| 7 Carburettors and Air Box            | 16 Ballast Resistor               | 25 Air Conditioning Compressor      |
| 8 Fuel ‘Cut-Out’ Inertia Switch       | 17 Ignition Coil                  | 26 Air Filter – Left Hand           |
| 9 Speedometer Transducer              | 18 ‘Econocruise’ Throttle Control | 27 Screenwash Reservoir             |
|                                       |                                   | 28 Coolant Expansion Tank           |



**SERVICING  
REQUIREMENTS**

**SERVICING SCHEDULE**













## SERVICING REQUIREMENTS

**1. ENGINE****1.1. OIL FILTER**

Access to the oil filter may be gained from beneath the car and by removing the oil filter stone guard which is attached to the chassis by four screws.

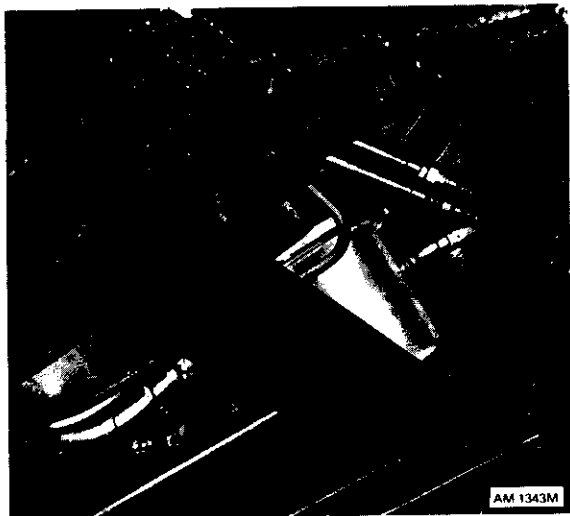


Fig. 8.5.2 Oil filter and stone guard

A throwaway cartridge oil filter is fitted – Fig. 8.5.2. Unscrew the cartridge and replace with a new filter. This will usually be required when the engine oil has been replaced. Ensure the sump is topped up to the required level, run the engine until the oil pressure is normal, switch off and wait five minutes to allow the oil to drain into the sump. Check the filter for leaks and top up the sump.

Further reference should be made to Section 1.1 and 8.4.

**1.2 VALVE CLEARANCE CHECK**

Detailed instructions on the setting up of Valve Clearances are referred to in the main section – Engine – Cylinder Head.

Further reference should be made to Section 1.3 and 8.4.

**1.3 DRIVE BELT ADJUSTMENT**

In order to maintain the drive to the ancillary equipment mounted on the engine – Water Pump, Power Steering Pump, Alternator, Air Conditioning, Compressor, Air Injection Pump – the drive belts must be correctly tensioned. If the belts are too slack the drive will slip, reducing the efficiency of the units and leading to premature failure of the drive belts. A drive

belt which has been adjusted too tightly will result in limited belt life and overloading of the bearings.

Due to varying requirements the arrangement of ancillaries and belts will vary from car to car so detailed reference should be made to the Specification or the relevant Section.

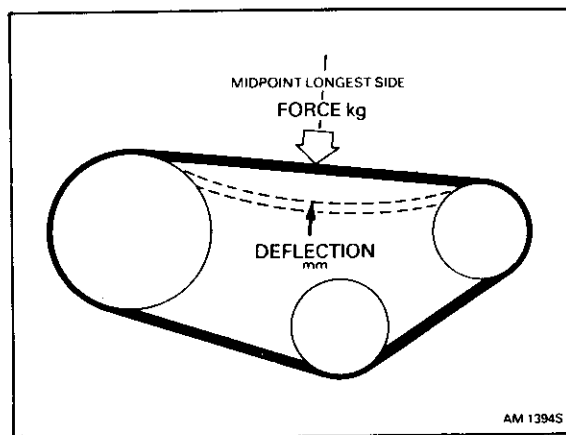


Fig. 8.5.3 Belt tension diagram

Check that the pulley grooves are smooth and free from rough edges, rust, dirt etc. Excessively worn or damaged pulleys should be replaced otherwise they will have a detrimental effect on belt life.

Fit the belt to approximately the correct tension and run the engine for ten minutes to allow the belt to settle into the pulley grooves. Stop the engine and readjust the tension to the correct figures. Tension will be correct when the belt can be deflected the specified distance by a predetermined load at a point midway between the pulleys.

Measurement of the belt tension can be achieved by a spring push scale calibrated for Force and Deflection e.g., the Trelleborg belt tensionmeter. When the correct tension has been achieved, tighten all bolts and confirm the tension by a final check – Fig. 8.5.3.

**Air Conditioning Compressor Drive Belt**

Adjustment is effected by altering the position of the jockey wheel mounted on the lower side of the belt – Fig. 8.5.5. Access may be gained via the engine compartment.

Further reference should be made to Section 2.8.

**Power Steering Pump Drive Belt(s)**

Slacken the mounting pivot bolt and the adjusting link nuts on the timing case as well as

# SERVICING REQUIREMENTS

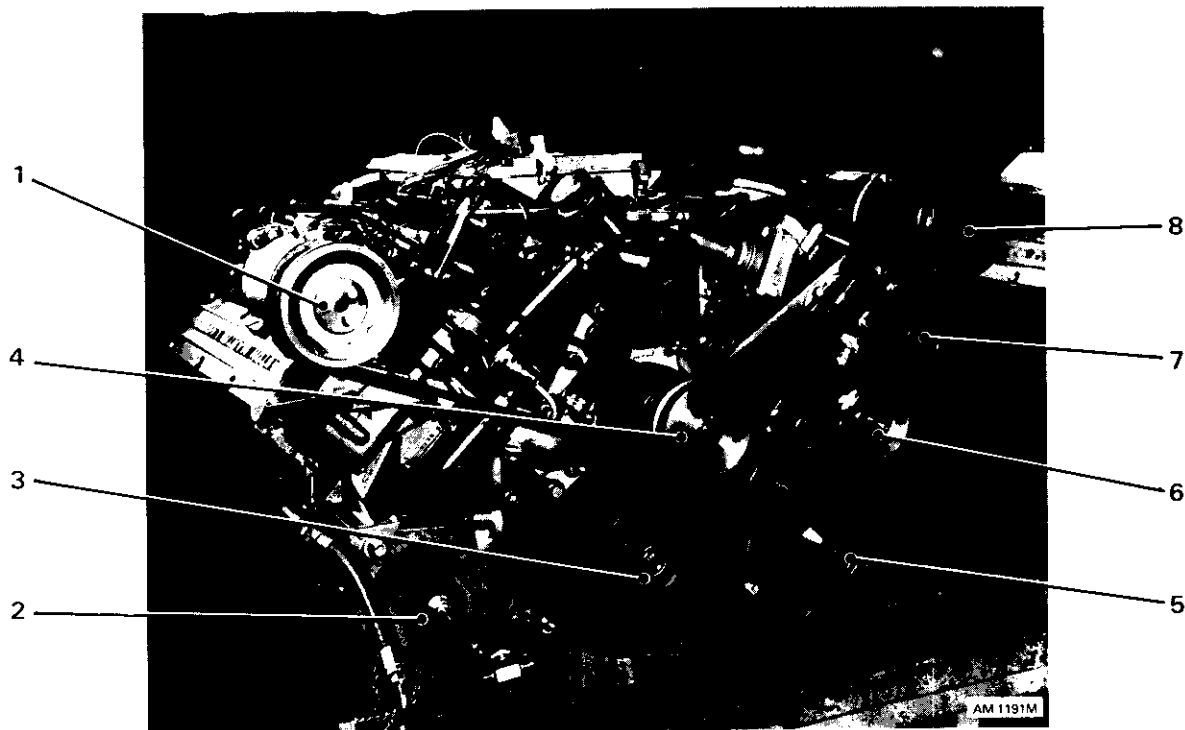


Fig. 8.5.4 Typical arrangement of auxiliary drive belts

**KEY**

- |                      |  |                               |
|----------------------|--|-------------------------------|
| 1 Air Injection Pump | 3 Crankshaft Pulley                      | 6 Jockey Wheel Tensioner      |
| 2 Alternator         | 4 Water Pump/Hydraulic Fan Pulley        | 7 Hydraulic Fan Pump          |
|                      | 5 Power Steering Pump – Twin Drive Belts | 8 Air Conditioning Compressor |



Fig. 8.5.5 Air conditioning compressor and jockey wheel tensioner

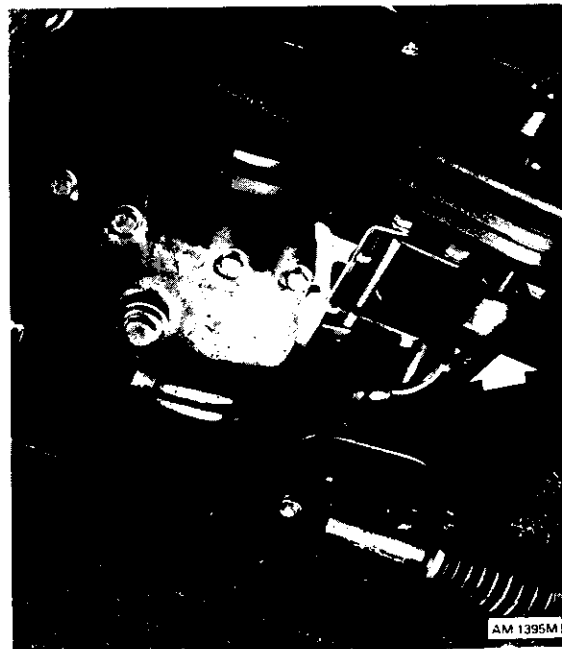


Fig. 8.5.6 Power steering pump

## SERVICING REQUIREMENTS

the pump body – Fig. 8.5.6. The body of the pump is swung away from the engine to tension the belt(s). When the correct tension has been achieved retighten the nuts. Access may be gained from beneath the car.

Further reference should be made to Section 4.4.

**Alternator Drive Belt(s)**

Slacken the mounting pivot bolts and the adjusting link nuts on the timing case as well as the alternator – Fig. 8.5.7. The alternator is then swung away from the engine to tension the belt(s). When the correct tension has been achieved retighten the nuts. Access may be gained from beneath the car.

Further reference should be made to Section 1.8.

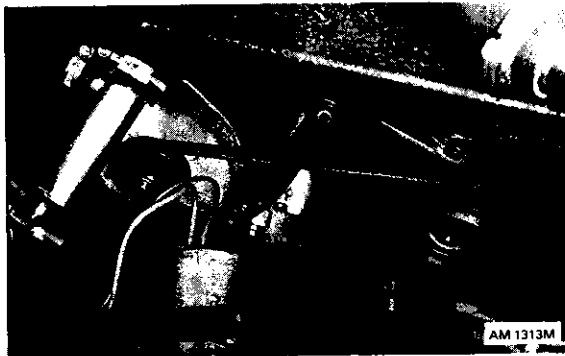


Fig. 8.5.7 Alternator as fitted to 'Hot Countries' cars

**Air Injection Pump Drive Belts**

Slacken the mounting pivot bolt and the adjusting link nuts at either end – Fig. 8.5.8. The pump is then swung away from the engine to tension the belt.

Further reference should be made to Section 2.3 and 8.4.

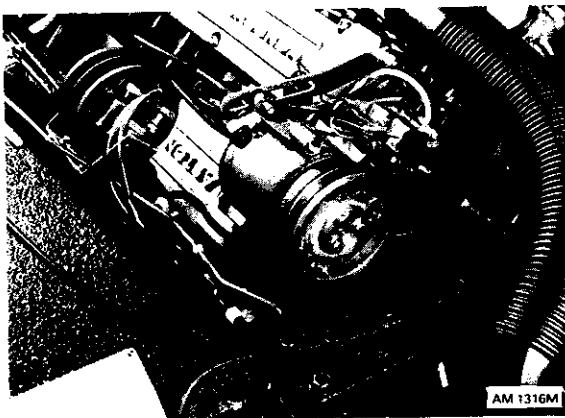


Fig. 8.5.8 Air injection pump

**1.4 TIMING CHAIN ADJUSTMENT**

There are two adjustable upper chain tensioners one for each engine bank, located between the inlet and exhaust cam covers – Fig. 8.5.9. The lower timing chain tension is automatically controlled and cannot be adjusted manually. Correct tensioning of the upper timing chains is very important.

Further reference should be made to Section 1.4.

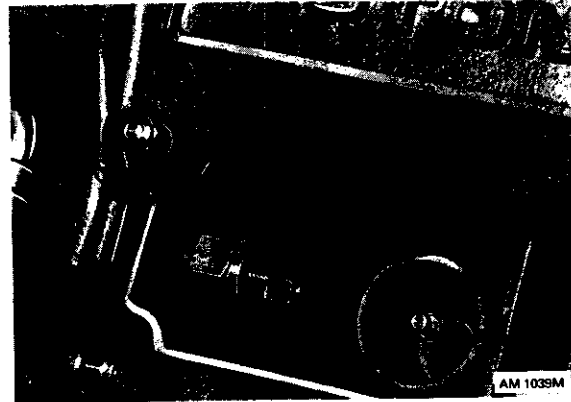


Fig. 8.5.9 Upper timing chain tensioner

**1.5 ENGINE OIL LEVEL CHECK**

When checking the engine oil level, the car should be standing on level ground. If the engine has been running immediately prior to the check, allow five minutes for the oil to drain back into the sump. The dipstick is located to the left hand side of the cylinder block – Fig. 8.5.10 and is marked in two places. The oil level should be maintained at the higher mark.

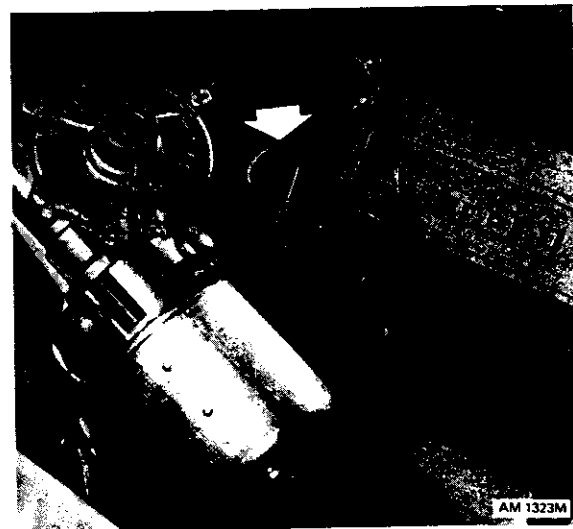


Fig. 8.5.10 Engine oil dipstick

## SERVICING REQUIREMENTS

Approximately two litres (4 Imp pints) are required to bring the level from low to high. Oil should be added via the oil filler mounted on the left hand cylinder bank cam box – Fig. 8.5.11.

**WARNING:** It is dangerous to run the engine with the oil level below the low or above the high mark.

Further reference should be made to Section 1.5 and Section 8.4.

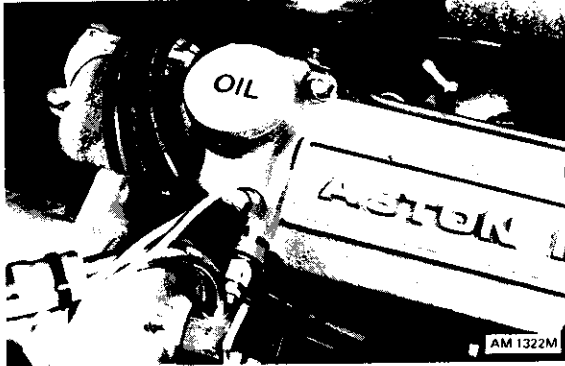


Fig. 8.5.11 Engine oil filler cap

### 1.6 DRAINING AND REFILLING SUMP

Ensure that the car is standing on level ground and that the engine is warm. Two sump drain plugs are fitted one to the right hand side rear lower face of the sump – Fig. 8.5.12a and the



Fig. 8.5.12a Rear engine sump drain plug

other at the forward end of the sump – Fig. 8.5.12b. They incorporate a magnet which attracts ferrous particles and should be inspected and cleaned prior to replacement.

After draining the oil completely, replace the plugs and refill the sump with new oil of the correct grade see Section 8.4 – Recommended Lubricants. Run the engine for a few minutes to circulate the clean oil, switch off and wait five minutes to allow the oil to drain back into the sump, then recheck the level.

Owners may prefer to change the oil more frequently than the maximum period recommended especially when road or climatic conditions make this desirable.

Further reference should be made to Section 1.5 and 8.4.

### 1.7 IGNITION TIMING

Reference should be made to the relevant Section if any changes are to be made in the timing of the ignition. The Lagonda is very sensitive to variations in the specified timing and consequently great care and attention must be paid to the procedures and settings.

Further reference should be made to Sections 1.8 and 8.4.

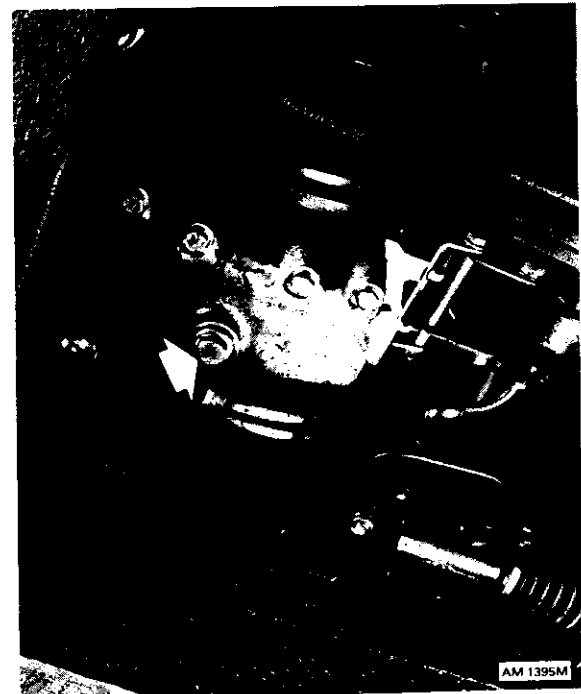


Fig. 8.5.12b Front engine sump drain plug

## SERVICING REQUIREMENTS

**1.8 OPUS IGNITION SYSTEM**

The ignition system requires little maintenance while in service.

At normal service intervals – Section 1 Servicing Schedule – the moulded distributor cap should be cleaned inside and out with a soft dry cloth. Particular attention should be paid to the spaces between the metal electrodes, ensure that the carbon brush at the centre of the cap moves freely in its holder and is not unduly worn.

With the distributor rotor arm removed, apply a few drops of thin machine oil to the felt pad situated in the recess in the drive shaft. This will ensure that the rotor shaft bearing is lubricated, the screw beneath the felt pad has a clearance which permits the passage of the oil.

Wipe away any dirt, oil or grease which may have collected on the amplifier heat sink. This will maintain its cooling efficiency.

No other maintenance should be necessary between major overhauls.

**WARNING:** It is possible to inadvertently connect the wires to the throttle rod micro-switch wrongly, causing the retarding of the ignition system.

If in doubt refer to the ignition wiring diagram in Section 1.8.

**1.9 SPARKING PLUGS**

Prior to the removal of the sparking plugs for checking and cleaning, the recesses in the cylinder head should be cleaned to ensure that no foreign matter enters the combustion chambers.

After removal the insulation should be wiped with a soft dry cloth and the electrodes cleaned in a proprietary plug cleaning machine, the gaps should then be reset and the plug tested on a diagnostic machine.

When refitting the plugs the threads should be lightly lubricated with clean engine oil or a proprietary anti-sieze compound and then tightened to the specified torque figure – Section 8.4.

Since the condition of the sparking plug provides some indication of the tune of each cylinder, it is suggested that the inspection be carried out by competent personnel.

When replacing sparking plugs it is important that only the type specified should be fitted or its equivalent.

For further reference see Sections 1.8 and 8.4.

**2 FUEL, EMISSION CONTROL, EXHAUST, COOLING AND AIR CONDITIONING****2.1 CARBURETTORS**

Routine maintenance of the carburettors is confined to lubricating the throttle linkage and to cleaning the fuel strainers. These are housed on the underside of the carburettor cover plate. Access can be gained by unscrewing the large brass plug adjacent to the fuel feed connection.

Due to the necessity of meeting emission regulations the mixture controls have been provided with tamper-proof seals.

**NOTE:** When it is necessary to remove the air box base plate it will necessitate the disconnection of the throttle rod micro-switch. Great care must be taken to reconnect it correctly or the ignition timing will be adversely affected.

For further reference see Sections 2.1 and 8.4.

**2.2 AIR FILTERS**

The two air filters are fitted adjacent to the radiator. The filter elements should be replaced as the schedule requires or if conditions are particularly dusty or sandy the filters may need replacing more frequently.

To gain access to the filter elements, detach the large bore flexible hoses which connect the air box and filter housings. Unclip the top of each housing and remove the element. The housings should be cleaned out before new elements are fitted.

For further reference see Sections 2.2 and 8.4.

**2.3 FUEL FILTER**

The fuel filter is located in the spare wheel compartment in the boot of the car – Fig. 8.5.13. It is fed by a fully immersed electric fuel pump mounted within the fuel tank and feeds directly to the carburettors.

Before attempting to work on the fuel filter, switch 'OFF' the electrical master switch located to the upper left of the fuel tank and remove the spare wheel.

Clamp the rubber pipe connecting the filter to the tank mounted pump. Place a suitable receptacle under the filter bowl and remove the drain plug, this will allow the filter and fuel line to carburettors, to drain.

## SERVICING REQUIREMENTS

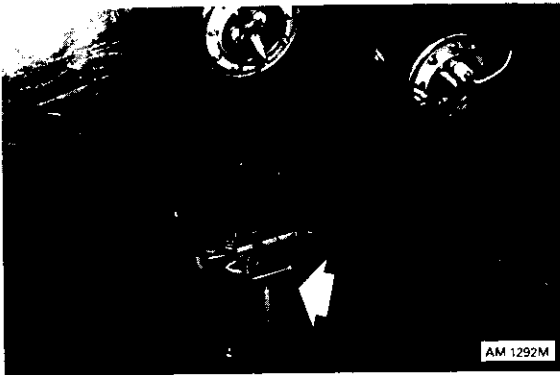


Fig. 8.5.13 Fuel filter

The filter bowl may be released by unscrewing the central bolt from the bottom of the bowl. The element can then be removed and the bowl cleaned before fitting a replacement element. A new sealing ring should be fitted to the groove in the filter mounting. The bowl should then be replaced and the drain plug refitted.

Turn 'ON' the electrical master switch and then the ignition switch, to activate the fuel pump. When the filter has filled with fuel check it for leaks.

Further reference should be made to Sections 1.1 and 8.4.

#### 2.4 COOLANT LEVEL

The cooling system is pressurised and sealed. Providing there are no external leaks in the system, frequent topping up should not be required.

The header tank is mounted to the front of the engine – Fig. 8.5.14, and is sealed by a pressure cap – on no account should this be removed while the engine is hot.

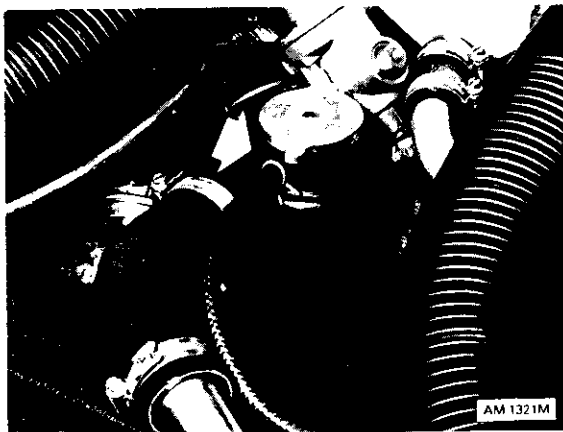


Fig. 8.5.14 Coolant header tank

In the event of a replacement cap being required it is essential that one of an identical specification is fitted – Section 8.4.

The header tank and expansion tank are interconnected. When normal expansion of the coolant occurs it is displaced from the header tank and flows into the expansion tank. As the engine cools the displaced coolant is drawn back into the main cooling system.

The expansion tank is fitted to the left hand front corner of the engine bay – Fig. 8.5.15. This tank should be approximately half full when the engine is cold. Top up the header tank with a 50% water/antifreeze mixture to the base of the filler neck if necessary.



Fig. 8.5.15 Coolant expansion tank

It is essential that the correct specification and mixture of antifreeze is used in the cooling system – Section 8.4. There is no need to use a proprietary corrosion inhibitor with the correct antifreeze as the type specified will protect the engine aluminium alloy castings from corrosion and promote the efficiency of the air conditioning system.

#### Drain and Flush Cooling System

The coolant solution should be renewed at least once annually, according to prevailing climatic conditions. The cooling system should be completely drained, flushed with clean water and refilled with the correct mixture of water and antifreeze – Section 8.4.

The engine drain taps are fitted one either side of the cylinder block to the rear of the engine mountings.

## SERVICING REQUIREMENTS

The radiator drain plug is fitted to the bottom of the radiator on the left hand side – Fig. 8.5.16.



Fig. 8.5.16 Radiator drain plug

## 2.5 AIR CONDITIONING

The air conditioning system should give long and trouble free service provided that a few simple tasks are regularly undertaken.

The fins of the condenser – mounted immediately in front of the radiator – should be kept clean and free from obstruction along with the air intakes and air passages by blowing compressed air through the system.

The compressor drive belt should be maintained at the correct tension – Section 8.5.3 and the system recharged with refrigerant gas as detailed in the schedule.

Further reference should be made to Sections 2.8 and 8.4.

## 3 TRANSMISSION

### 3.1 AUTOMATIC TRANSMISSION OIL CHECK

Before checking the oil level, ensure that the transmission has reached the normal operating temperature. Run the engine for approximately five minutes with the transmission set in neutral and with the car standing on a level surface. Immediately before the check is made, place the gear lever in each position for approximately 10 seconds to allow all circuits to fill. Remove the dipstick from the filler tube – Fig. 8.5.17 and check the oil level. The level should be between the FULL and ADD 1 PINT mark. If necessary, top up, using several small quantities of clean oil as recommended. DO NOT OVERFILL.

For further reference see Sections 3.1 and 8.4.

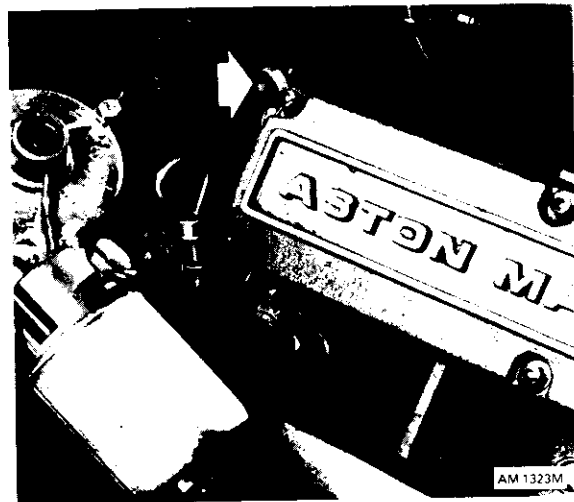


Fig. 8.5.17 Automatic gearbox dipstick and filler tube

### 3.2 AUTOMATIC TRANSMISSION OIL CHANGE AND BRAKE BAND ADJUSTMENT

#### Oil Change

Drain and refill the gearbox in the following manner:-

1. Raise the vehicle on a hoist, place a drain container, with a large opening, under the gearbox oil pan – Fig. 8.5.18.



Fig. 8.5.18 Automatic gearbox oil pan

2. Loosen the pan bolts, especially to one corner, tap the pan to break its seal and allow oil to drain. Remove fixing bolts and pan.
3. If necessary adjust Low and Reverse brake bands – Fig. 8.5.19 using the following procedure:-
  - (a) Loosen the lock nut approximately five turns. Test the adjusting screw for free turning in the lever.

## SERVICING REQUIREMENTS

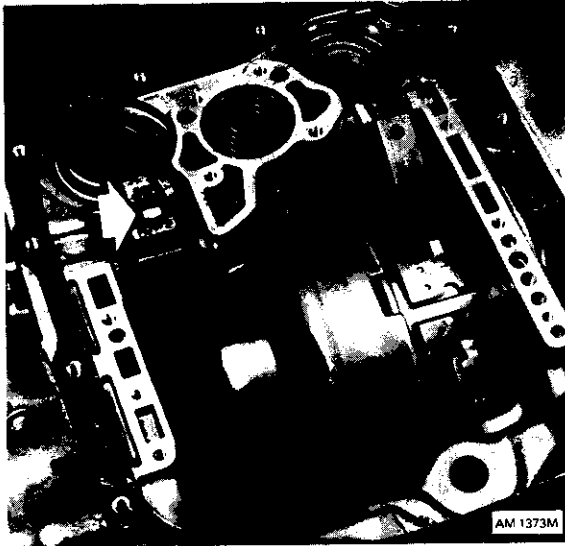


Fig. 8.5.19 Automatic gearbox – oil pan removed

- (b) Tighten the adjusting screw to 8Nm (6 lbft).
  - (c) Back off the adjusting screw two turns. Hold the adjusting screw in this position and tighten the lock nut to 41 Nm (30 lbft).
4. Replace the filter on the bottom of the valve body and tighten the retaining screws to 3.9Nm (2.9 lbft).
  5. Clean the oil pan and replace using a new gasket. Tighten oil pan bolts to 17Nm (12.5 lbft).
  6. Refill the gearbox with the recommended type and quantity of lubricant – Section 8.4.
  7. Start the engine and allow it to idle for approximately 5 minutes. Then with parking brake ON, move the selector lever momentarily to each position in turn finishing in the N position.
  8. Check fluid level and add sufficient fluid to bring the level to the 'Add One Pint' mark. Recheck the fluid level after the gearbox is at normal operating temperature. The level should be between the 'Full' and 'Add One Pint' marks. DO NOT OVERFILL.

NOTE: To prevent the ingress of dirt into the transmission, ensure that the dipstick cap is fully seated onto the filler tube.

9. The kickdown band adjustment screw is located on the left side of the gearbox case – Fig. 8.5.20. To adjust, use the following procedure:-

- (a) Loosen the locknut approximately five turns, test the adjusting screw for free turning and tighten to 8Nm (6 lbft).
- (b) Back off the adjusting screw two and a half turns, hold in this position and tighten the locknut to 47Nm (35 lbft).

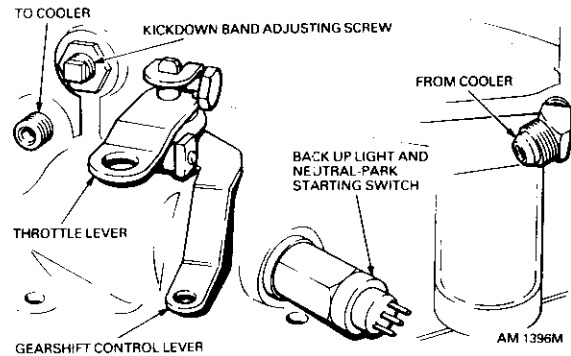


Fig. 8.5.20 Kickdown band external adjuster

### 3.3 HYPOID UNIT OIL LEVEL CHECK

The oil level should be checked and topped up if necessary at the recommended intervals – Fig. 8.5.21.

For further reference see Sections 3.2 and 8.4.

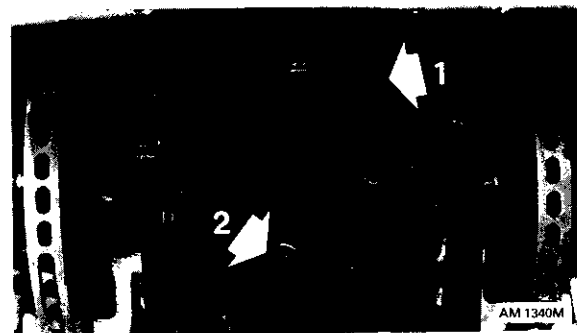


Fig. 8.5.21 Hypoid unit – oil filler/level plug and drain plug

#### KEY

- 1 Oil Filler Plug
- 2 Oil Drain Plug

### 3.4 DRIVE SHAFT UNIVERSAL JOINT LUBRICATION

The roller spline half shafts are packed with lubricant on assembly but lubrication should be carried out at regular intervals as specified in the schedule. There are two grease points on each half shaft one on each universal joint – Fig. 8.5.22/23.



## SERVICING REQUIREMENTS



Fig. 8.5.22 Inboard drive shaft lubrication

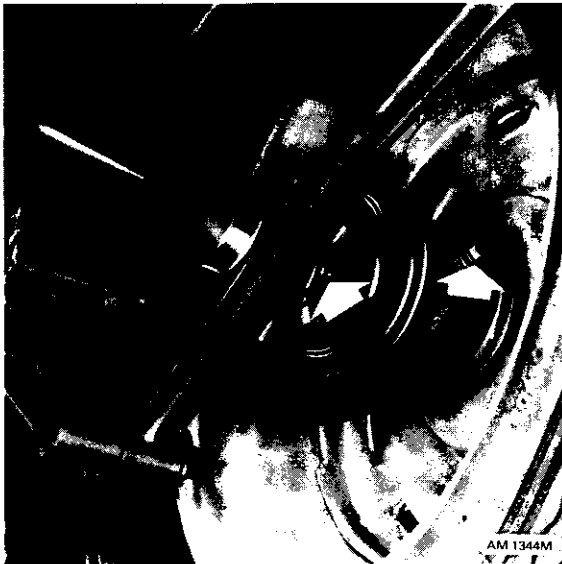


Fig. 8.5.23 Outboard drive shaft and hub lubrication

The rubber gaiters fitted over the sliding joints should be inspected periodically for security and signs of deterioration.

For further reference see Sections 3.2 and 8.4.

### 3.5 REAR HUB LUBRICATION

Plugs are fitted to each hub at each end of the De-Dion tube – Fig. 8.5.23. To lubricate, remove the plug and washer and fit the grease nipple supplied in the tool kit. Pump grease into the hub until it exudes from the grease

nipple, wipe off the excess grease, remove the nipple, clean and replace the plug and washer.

**CAUTION.** Do not drive the car unless the plugs and washers are fitted to the hubs. Irreparable damage may occur.

For further reference see Section 3.2.

## 4 STEERING AND SUSPENSION

### 4.1 KING PIN LUBRICATION

A grease nipple is fitted to each upper and lower king pin bearing – Fig. 8.5.24. The suspension should be relieved of the weight of the car while lubrication is being carried out. Only grease of the correct specification should be used.

For further reference see Sections 4.2 and 8.4.

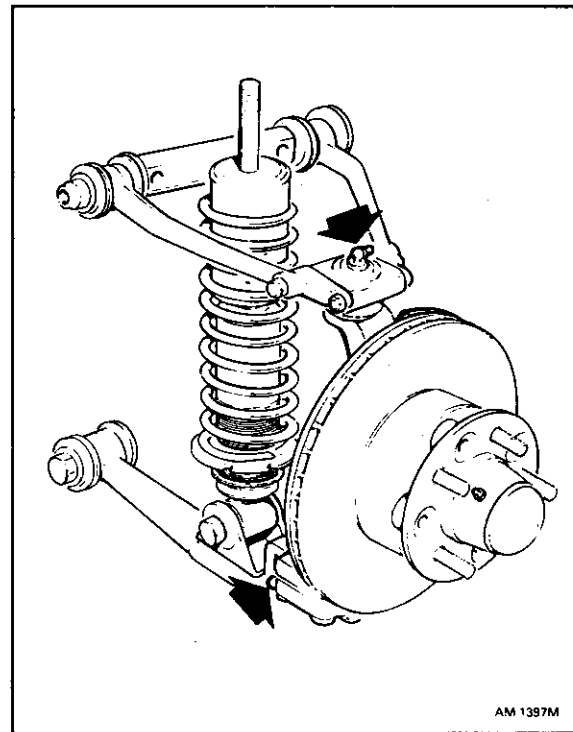


Fig. 8.5.24 King pin lubrication points

### 4.2 ADJUSTMENT OF LOWER KING PIN BEARING

The car should be jacked up, placed on stands and the front wheel/s removed.

Relieve lower suspension arm of spring pressure by jacking under spring mounting point.

Remove the self-locking nut and washer that

## SERVICING REQUIREMENTS

secure the steering track rod ball joint. Separate the track rod from the steering arm. Lift the king pin and hub assembly to reveal any free play in lower ball joint. Bend back tab washers and remove the four screws securing the king pin lower bearing cap to the lower suspension arm, then detach cap shim and socket. Clean and examine parts for wear.

If necessary remove shims one by one until the ball is tight in its socket with the screws fully tightened.

**CAUTION.** Excessive wear on ball pin and socket must not be adjusted by shims. Excessively worn parts must be renewed.

Remove screws, cap, shims and socket. Add shims to the value of 0.1mm - 0.15mm (0.004ins - 0.006ins). Lightly grease ball pin and socket. Refit and tighten screws – torque 20-27Nm (15-20lbf).

When correctly adjusted, the king pin assembly can be pivoted with a very slight drag. Using new tab washers, turn up tab and, using the grease nipple, lubricate with the correct grease.

Reconnect the steering track rod and secure with the washer and nut. Remove jack from under the lower suspension arm, replace wheel/s, remove stands and lower car to the ground.

**NOTE:** The upper wishbone ball joint cannot be dismantled; if worn, the complete assembly must be replaced – Section 4.2.

For further reference see Sections 4.2 and 8.4.

### 4.3 ADJUSTMENT AND LUBRICATION OF FRONT HUBS

With the car jacked and supported securely, check the adjustment of the front wheel hub bearings by rocking the wheel top to bottom. The adjustment is correct when there is just detectable play at the wheel rim. End float may be measured by fitting a dial test indicator with the button on the hub and should be within 0.05 - 0.15mm (0.002 - 0.006ins).

If adjustment is not necessary lubricate the hub through grease nipple with specified grease – Section 8.4. No more than three or four strokes of the grease gun should be necessary.

If adjustment to the bearings is required, remove hub grease cap, extract split pin and remove nut retainer. Tighten hub nut to give the specified end float, replace the nut retainer, fit a new split pin and replace grease cap.

When it is required that the hubs are to be repacked with grease, remove the five bolts and washers holding the hub assembly to the brake disc (access can be gained through an aperture in the disc shield – Fig. 8.5.25a).

Remove hub grease cap, split pin, nut retainer, nut and washer from stub axle. Withdraw hub by hand – Fig. 8.5.25b.



Fig. 8.5.25a Access to front hub/disc securing bolts

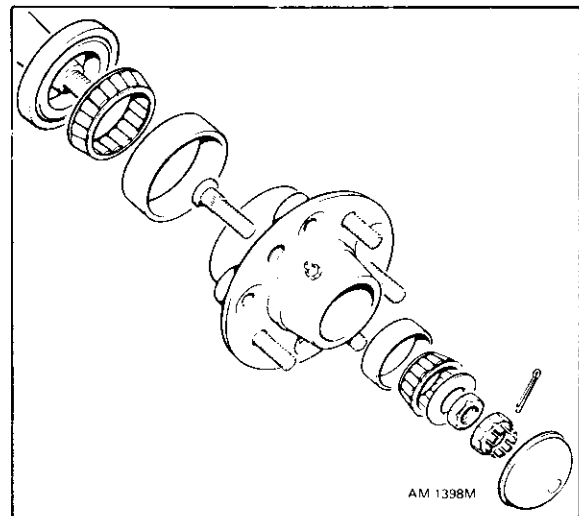


Fig. 8.5.25b Front hub adjustment and lubrication

Thoroughly clean and check inside of the hub and bearings and refill with grease as specified in Section 8.4. Refit on stub axle and replace washer and hub nut ensuring re-alignment with brake disc. Refit the five bolts and washers that secure the disc to the hub and

## SERVICING REQUIREMENTS

replace the road wheel, nominally tightening the road wheel nuts.

Adjust the hub nut tightness until only just detectable play is felt at the wheel rim when rocked top to bottom. Replace hub nut retainer, a new split pin and the grease cap. Lower the road wheel to the ground and torque wheel nuts to the correct figure – Section 8.4.

Further reference should be made to Sections 4.2 and 8.4.

#### 4.4 TRACK ALIGNMENT

##### Steering Geometry

The front wheels are set up and positioned correctly during manufacture. Under normal circumstances it will not be necessary to make further adjustments. The camber and castor angles can be altered by relocating the relevant shims. The king pin inclination is fixed and cannot be altered.

##### Toe-in Adjustment

An optical gauge is essential for checking and adjusting the amount of toe-in. **DO NOT ATTEMPT THIS OPERATION UNLESS A SUITABLE GAUGE IS AVAILABLE.**

The toe-in should be checked after the wheels have been repositioned or the tyres changed. It is important that all checking is carried out with the car at its normal load ride height measured from the front cross member to the ground. Do not attempt to check the toe-in immediately after the car has had its weight removed from the road wheels, as it will give an incorrect reading.

To adjust toe-in, slacken the track rod locknuts and turn each track rod in the appropriate direction an equal amount until a correct reading is obtained. Retighten the locknuts.

Further reference should be made to Sections 4.3 and 8.4.

#### 4.5 STEERING LINKAGE AND MOUNTINGS SECURITY

The tightness of the mounting bolts and the reaction strut nuts should be checked during the routine lubrication operations. At the same time the condition of the rubber gaiters, the ball joints, the steering column universal joints and the rubber coupling should be inspected. If deterioration or excess wear of these components is noted remedial action should be taken immediately.

Further reference should be made to Sections 4 and 8.4.

#### 4.6 POWER STEERING HYDRAULIC PUMP

The position of the pump may vary from the front lower left hand side of the engine to the right hand side depending on the particular specification of the vehicle involved. However, the oil level in the pump should be checked when the engine is cold. The dipstick is mounted integral with the filler cap – Fig. 8.5.26. Top up the reservoir with the correct grade of oil – Section 8.4 – until the level reaches the 'FULL-COLD' mark on the dipstick. **DO NOT OVERFILL.**

Further reference should be made to Sections 4.4. and 8.4.

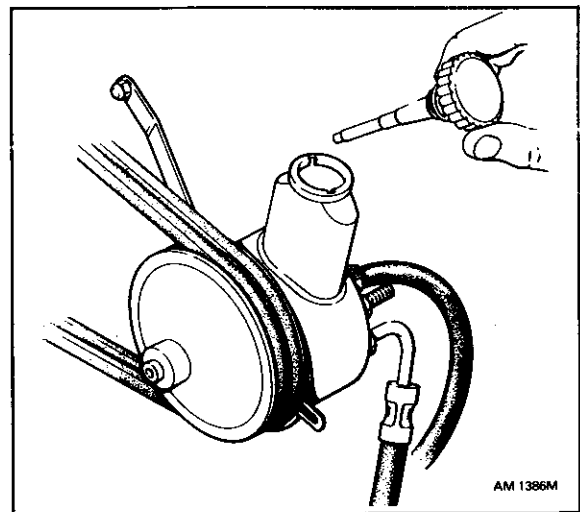


Fig. 8.5.26 Power steering pump dipstick and reservoir

## 5 BRAKES, WHEELS AND TYRES

### 5.1 BRAKE FLUID

Throughout its working life brake fluid absorbs water. This absorption process progressively reduces the efficiency of the braking system. Towards the end of the fluid's useful life this deterioration may not make itself apparent, but, under hazardous driving conditions or in an emergency, a partial loss of braking power may result. In addition, the water absorbed by the brake fluid may, in time, have a corrosive effect on the braking system components.

It is essential, therefore, that the system is bled and the brake fluid renewed at least once in every 12 months. During the bleed operation the system should be topped up with fresh fluid. Do not re-use fluid originally bled from the system. Discard any fluid that has been stored in an open container.

## SERVICING REQUIREMENTS

### Brake Fluid Reservoir

The brake fluid reservoir is mounted on the right hand side of the engine compartment – Fig. 8.5.27. The reservoir supplies the front and rear braking systems.



Fig. 8.5.27 Brake fluid reservoir

Before removing the reservoir cap thoroughly clean the outside of it and the surrounding area. (It is essential to prevent contaminants from entering the braking system). Top up to the indicated level on the reservoir with the recommended brake fluid.

Extreme care should be taken to prevent hydraulic fluid contacting the paintwork (spillage will cause serious damage). Flush away any spilled hydraulic fluid with fresh clean water and then wipe away with a clean cloth.

### Bleed Procedure

It is essential that when scavenging the brake system of fluid on an annual basis or when it is known that the fluid has become contaminated, a pressurised proprietary system should be used when bleeding the brakes and that the manufacturers instructions are followed implicitly.

For general bleeding requirements the following procedure should be used.

It is important that the level of the fluid in the reservoir is correctly maintained, using fresh fluid, to prevent air being drawn into the system. Both front and rear brakes must be bled simultaneously in order that a full piston stroke is accomplished. (It is advisable to run the engine during this operation).

Check that all hydraulic connections are tight

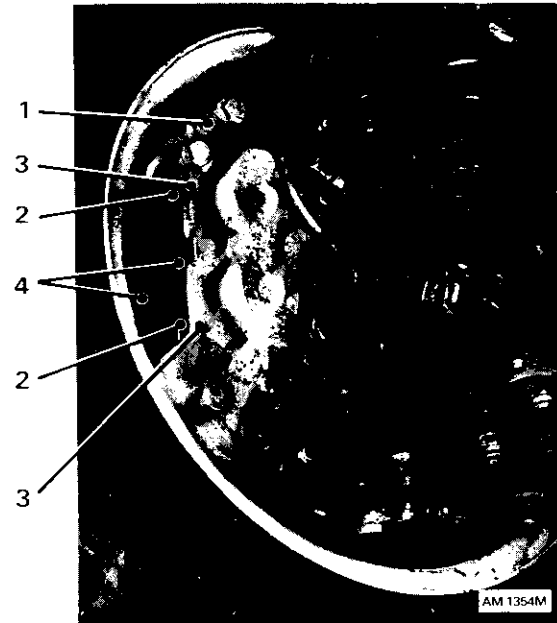


Fig. 8.5.28 Front brake caliper

### KEY

- 1 Bleed Nipple
- 2 Spring Clips
- 3 Retaining Pins
- 4 Tensioning Springs

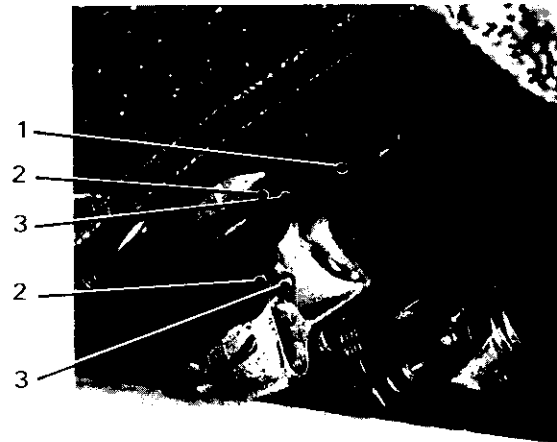


Fig. 8.5.29 Rear brake caliper

### KEY

- 1 Bleed Nipple
- 2 Spring Clips
- 3 Retaining Pins

## SERVICING REQUIREMENTS

and the bleed screws closed. If necessary, top up the fluid reservoir to the base of the filler neck.

Fit bleeder tubes over one of the front and one of the rear caliper bleed screws – Fig. 8.5.28/29 and immerse the free ends of the tubes in clear glass jars containing a quantity of brake fluid. Slacken the two bleed screws. Slowly operate the brake pedal fully backwards and forwards until the fluid pumped into the jars is free from air bubbles. Then, with the brake pedal fully depressed, close the bleed screws.

Repeat the procedure for the remaining front and rear brake. Tighten all bleed screws. Fully operate the brake pedal for a few minutes and examine the entire system for leaks.

Finally top up the level of the fluid in the reservoir to the base of the filler neck.

Further reference should be made to Sections 5 and 8.4.

### 5.2 BRAKE DISC PADS

The brake disc pads should be examined regularly – see schedule.

To withdraw the pads from the rear calipers, remove the spring clips and slide out the retaining pins – Fig. 8.5.29.

The pads on the front calipers should be treated in the same way except be careful to note the positioning of the long springs holding the pads in tension to the pins, they will be released when the pins are removed, the pads may then be withdrawn.

Each pad should be examined carefully for cracks or excessive scoring. Renew the pads when the lining material is reduced to 3.5mm (0.15ins). To replace the pads, push in the pistons one at a time with even pressure to the bottom of the cylinder bores and insert new pads. On the rear calipers the pad retaining pins should then be inserted and secured in place by the spring clips while the front calipers – Fig. 8.5.28 should also include the careful replacement of the pair of tensioning springs behind the lower pins and with the upper pins passing through the loop at the top of the springs. Ensure that the centre part of the spring engages with the pad backing plate. Then replace the spring clips.

It is not necessary to bleed the system after this operation but the brake foot pedal should be pumped until a solid resistance is felt. This repositions the pistons and puts the pads into light frictional contact with the disc. Always fit

new pads of the correct specification – Section 8.4 and in pairs to each caliper nut.

### Parking Brake

The parking brake operates separate calipers on the rear brake discs. The lever is fitted to the driver's side of the car and is so designed as to lay flat alongside the seat after operation.

The parking brake calipers are set during manufacture and are self adjusting. Under normal circumstances they should require little attention.

The friction pads should be replaced when the lining material is reduced to 5mm (0.2in).

Lubrication is required occasionally on the parking brake linkage pivot pins, these should first be cleaned and then greased with a water resistant grease as specified – Section 8.4.

The parking brake cable should be lubricated at the grease point provided, midpoint of the outer sheath. The cable should be checked for stretch.

Further reference should be made to Sections 5 and 8.4.

### 5.3 SERVO SYSTEM VACUUM VALVES

The servo system vacuum valves are located in the vacuum line immediately adjacent to the inlet manifold connections, one to the rear of each manifold – Fig. 8.5.30.

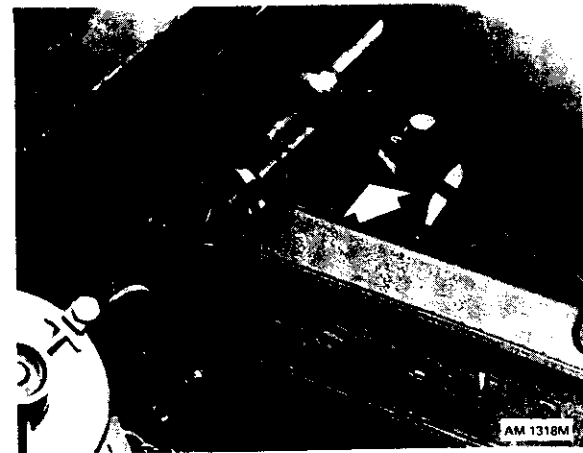


Fig. 8.5.30 Servo system vacuum valves

They should regularly be replaced as outlined in the servicing schedule.

They are a simple push fit into the line although care should be taken to ensure that the arrow marked on the valve body is pointing towards the manifold when in position.

## SERVICING REQUIREMENTS

### 5.4 WHEELS AND TYRES

To maintain the high performance capability of the car, the tyres specified in Section 8.4 should be fitted when replacement becomes necessary.

The wheels are positioned and balanced to ensure correct steering and minimum tyre wear. It is important therefore that the tyres are checked regularly for excessive or uneven wear which might indicate faulty alignment or that the steering is out of adjustment. If a fault of this type is suspected the car should be examined at the earliest opportunity.

#### Wheels

It is essential to correct handling that the wheels are balanced whenever a wheel and tyre assembly has been removed or changed. To maintain performance the wheels should be rebalanced as a matter of routine.

#### Spare Wheel

The spare wheel is housed in a well under the floor of the luggage compartment. To gain access to the spare wheel, lift the carpet, undo the toggle catches, one either side of the floor, and remove the cover. Unscrew the wheel retaining bolt and disconnect the valve extension from the wheel valve.

#### Wheel Changing

Both the wheels and the wheel trims are secured by the wheel nuts. When undoing the wheel nuts (all the wheel nuts have right hand threads) take care as the trim is spring loaded by a series of 5 coil springs mounted co-axial with the wheel studs. The wheel trim finish may be damaged if it is allowed to fall to the ground. Each wheel nut is fitted with a plastic washer which locates against the wheel trim, check each nut before refitting to ensure its security.

When replacing the wheel trim it is essential that the air valve is fitted through the hole provided and that the springs on the inside of the trim are in place and fit smoothly over the studs. Press the centre of the trim firmly inwards and replace wheel nuts torquing them to the specified figure – Section 8.4.

#### Tyre Maintenance

The tyres should be examined at regular intervals as outlined in the servicing schedule. Particular attention should be paid to the inside walls. Any stones or flints lodged in the tyre tread should be carefully removed.

To equalise wear on the tyres and prolong their life the wheels may be repositioned periodically

– Fig. 8.5.31. Always fit new tyres as a pair on the same axle.

When tyre replacement is necessary, the spare wheel should be incorporated as a running wheel, as prolonged storage in the boot can lead to a reduction in performance.

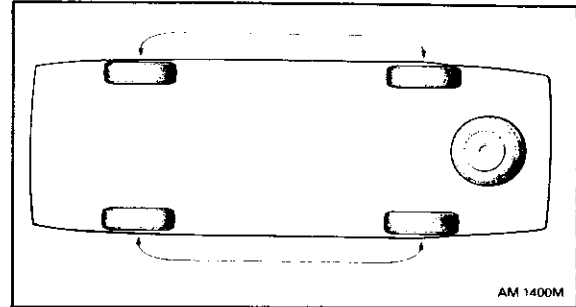


Fig. 8.5.31 Wheel repositioning

#### Tyre Pressures

It is important that correct tyre pressures are carefully maintained to ensure maximum service – Section 8.4.

Road holding, steering and braking are especially vulnerable to incorrect pressure, poor fitting or worn tyres.

Pressure increase slightly when the tyres are hot and for an accurate reading the pressures should be checked when the tyres are cold. Do not check the pressures after a long drive or when the car has been standing in strong sunlight.

After checking the pressures ensure that the valve caps are securely replaced to provide an additional air seal and to prevent an ingress of dirt.

#### Spare Wheel Tyre



Fig. 8.5.32 Spare wheel valve extension

## SERVICING REQUIREMENTS

The tyre on the spare wheel should be maintained at maximum load pressure – Section 8.4 and readjusted to the correct pressure when it is required. The spare wheel tyre pressure may be checked and changed with the wheel in situ via an extension hose which exits through the floor of the luggage compartment – Fig. 8.5.32.

Further reference should be made to Sections 5.5 and 8.4.

## 6 ELECTRICS

### 6.1 BATTERY

The battery fitted to the Aston Martin Lagonda is a 'maintenance free' unit. Consequently it needs no attention from the point of view of topping up etc., however it is worth noting that this type of battery requires some attention to the way it is fitted and checked.

The battery, being symmetrical in shape calls for the careful connection of the terminals to the correct cable i.e. red cable to positive (+) terminal and black cable to negative (-) terminal. Ensure the correct cap nuts are replaced when connecting the cables and that no more torque than 13-20Nm (10-15 lb ft) is used to tighten them.

It is essential that the battery is fitted securely into its holder in such a way that the small breather on one side is connected to a vent tube that exits through a chassis member to atmosphere. Early cars did not have this feature.

A condition indicator is built into the top surface of the battery and should show 'Green' when the battery is fully charged, if the colour changes to black the battery is discharged. After a trickle charge the battery indicator should show green.

During servicing or fault finding when the battery master switch is required to be 'ON' it is recommended that a trickle charger be connected to avoid excessive discharge.

Further reference should be made to Sections 6 and 8.4.

#### Battery Charging Procedure

When charging any Freedom battery incorporated in a Lagonda, a charge rate of between 3 and 50 amps is generally satisfactory, provided the unit is observed to prevent any escape of electrolyte from the breather, and provided the temperature of the battery does not exceed 52°C. (If either should occur the charge rate must be reduced or temporarily halted).

**NOTE:** Battery temperature can be estimated by feeling the battery case.

The battery is sufficiently charged when the green dot in the built-in hydrometer is visible.

When charging a battery from a dead flat condition it may appear that the battery will not accept a charge. Various makes of battery charger have internal safety circuitry that is activated by the battery for charging to commence. On a dead flat battery this is not achieved, therefore it is necessary to by-pass this internal circuitry as recommend in the manufacturers instructions.

Once this is achieved the battery should be left on a slow charge for 3 to 4 hours. If, after this time, current is accepted by the battery then the rate can be increased to fully charge the battery.

If, however, after 3-4 hours the battery will not accept a charge, then it is necessary to replace the unit.

When boost starting a Lagonda, the positive lead from a power source should connect to the battery positive terminal, the negative lead from the power source should connect to a chassis point at least 12 inches from the negative battery terminal.

**DO NOT** connect directly to the negative post of the dead battery.

**CAUTION:** *Ensure that the battery master switch is "ON" when boost starting otherwise damage to electrical components may occur.*

## 7 CHASSIS BODY AND FITTINGS

### 7.1 CHECKS AND MAINTENANCE

The various moving parts of the bodywork, including the door locks, and the hinges are lubricated during assembly but they should receive periodic attention during routine servicing of the car.

The operation of these items should be checked and if stiffness is noted, the affected item should be cleaned and relubricated as far as is possible without resorting to dismantling.

Any stiffness in the key operated door lock may be eased by placing a small quantity of oil on the key, and then turning the key in the lock several times. Lubricate the rotary door lock with an oil can.

After routine lubrication make sure that any excess oil or grease is wiped away otherwise

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the lubricant might soil the upholstery, the trim or clothing.

There are three drain tubes located one either side and one centrally on the gutter at the base of the windscreen. These should be kept clean and free from obstruction, an occasional blast from a compressed air line should ensure it. The drain holes on the underside of the doors should also be kept clean. Each door has three drain holes – forward, centre and rear. A short length of stiff wire may be used to clean them.

### 7.2 PAINTWORK

Lagonda cars are finished in acrylic lacquer. Cars should be washed frequently and the dirt eased away gently by hosing or sponging with plenty of water. Dry with a clean damp leather, ensuring that all dirt is removed beforehand. Do not hose moveable windows. A weak liquid soap solution (a few drops in a bucket of water) or a car shampoo may be used to assist the washing processes. Under no circumstances should the lacquer be cleaned dry.

**CAUTION:** *Automatic car washes and power operation mops are not recommended. Also included are certain types of windscreen de-icer/cleaner fluid as damage to the paint finish may result.*

A good quality proprietary wax polish is recommended if wax polishing is desired although it is unnecessary with an acrylic lacquer finish.

During the winter months it is advisable to wash the car frequently. Particular attention should be paid to the underside to combat the possible detrimental effects of salt etc., used on the roads during this period.

### 7.3 UPHOLSTERY, CARPETS, SEATS AND SEAT BELTS

In general, the leather upholstery requires little attention. The seats should be brushed with a soft brush from time to time and may be cleaned occasionally with a cloth damped in soap and water. Detergents, quick cleaners and furniture polishes should not be used. Several times a year a leather conditioner or preservative (equivalent to Connolly Hide Food) should be used on the leather upholstery.

The carpets should be removed at intervals and thoroughly cleaned with a vacuum cleaner. Any stains or grease marks should be removed with a good quality solvent suitable for use on wool carpets.

**CAUTION:** *Fumes from cleaning agents may be dangerous in a confined space. Make sure that the vehicle is well ventilated and follow the manufacturers' advice when using these products.*

Seat belts should be wiped occasionally with a warm soapy sponge. Do not use bleach or dyes as these may affect the efficiency of the webbing.

## 8 MISCELLANEOUS

### 8.1. STORAGE AND RECOMMISSIONING OF MOTOR CAR

The following instructions are relevant to storage periods exceeding three months. Success depends upon correct initial preparation and regular subsequent inspection and maintenance. The storage building should preferably be heated but must be dry and well ventilated.

Drive the car for a sufficient distance to warm the oil in the engine, the torque converter, transmission and the final drive unit; this will ensure complete lubrication of the internal components.

Check the coolant level in the radiator and if necessary top up with the correct anti-freeze/water solution. Never leave the cooling system dry.

In order to take the weight off the tyres raise the car with a jack and place supports under the rear De Dion axle and the outside of the front lower wishbone.

Do not deflate the tyres, but cover them to exclude light. Remove the sparking plugs and inject two tablespoonsful of anti-oxidant oil into each cylinder. Suitable oils are Energol Protective Oil 20 and Castrol Storage Oil. Using the starter motor, turn the engine to distribute the oil over the cylinder walls, then fit the sparking plugs.

Top-up the torque converter transmission with the approved fluid.

If the car is to be stored for a period exceeding 4 weeks the battery should be removed and cleaned. Fully charge the battery on a trickle charger and recharge once a month.

For storage periods exceeding six months, the following measures are recommended.

To prevent the formation of deposits of gum in the fuel system, drain the fuel tank and run engine until the fuel system is empty. Remove



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the covers and floats from the carburettor float chambers then clean the chambers, refit the floats and covers.

Remove the fuel pump unit, allow the pumps to drain, then refit the unit.

Pour two Imperial gallons (9 litres) of paraffin into the fuel tank then switch on the ignition to energise the fuel pumps and fill the system with paraffin: do not operate the starter motor.

Drain the final drive unit and the engine sump then fill them to the normal levels with an anti-oxidant oil.

Inspect the rubber connections of the cooling system and renew any that appear to be unsound.

Thoroughly wash the bodywork of the car and repair any paint blisters or patches of rust in order to prevent further deterioration. Apply a suitable polish: under no circumstances use a polishing compound which contains ammonia.

Clean all chromium plating and stainless steel and lightly smear with petroleum jelly.

Thoroughly clean the carpets, upholstery and cushions. Dust them with anti-moth powder and store them in a dry place. Treat all leather upholstery with an application of Connollys Hide Food.

If the storage building is dry leave the car windows slightly open. If there is any tendency towards dampness close the car doors and windows and place an anti-moisture compound such as calcium chloride in an open metal container inside the car.

Cover the car with a dust sheet.

#### Recommissioning After Storage

Provided that the car has been stored in accordance with the recommended procedure, the following points only should require attention before using the car on the road.

Check the tyre pressures, inflate if necessary, and lower the car to the ground.

Fully charge and fit the battery.

Drain the engine sump and final drive unit then refill them with the approved oils. Fit a new engine oil filter element.

Check the coolant level in the radiator and if necessary top-up with the correct anti-freeze/water solution.

Drain all the paraffin from the fuel tank and disconnect the inlet pipes from the carburettors. Switch the ignition to generate the fuel pumps and pump all the paraffin out of the system.

Remove the covers and floats from the carburettor float chambers, then clean the chambers, refit the floats, covers and inlet pipes.

Remove the fuel pump unit, drain the pumps and refit the unit.

Remove the sparking plug and prime the cylinders with engine oil. Disconnect the coil to avoid sparks and reduce fire hazard. Turn the engine by means of the starter motor to distribute the oil and to prevent a hydraulic lock. Clean the sparking plugs and if necessary set the gaps then fit the plugs.

Check and if necessary adjust the ignition timing.

Apply two or three drops of oil to the felt pad in the top of the distributor cam.

Lubricate all the grease points.

Check the fluid level in the steering pump and the hydraulic reservoirs for the braking system.

Fill the fuel tank and start the engine. Check that the oil pressure and ignition warning lamps are not illuminated and check for leaks of fuel, oil or coolant.

Finally, check the operation of all instruments, lamps and accessories.

