



## *Repair Operation Times*

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*Reparatietijden*

*Temps de réparation*

*Reparaturzeiten*

*Tempi delle operazioni  
di riparazione*

*Tiempos para los trabajos  
de reparación*

*Tempos de operações  
de reparação*





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**MINI**

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**REPAIR OPERATION TIMES**

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**AND**

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**WARRANTY CODES**

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*includes*

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***AIR CONDITIONING SUPPLEMENT***

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## INTRODUCTION

The time allowances given in this manual are the result of careful analysis of the repair operations covered. They reflect the time that a skilled technician, working in an efficiently run Rover Dealership, should take to perform the operation. The times are calculated to the procedures laid down in the relevant Repair Manual, using standard and special tools or equipment as applicable. Although specialist skills are not required to complete an operation within the published time, Rover product knowledge and training is a requirement. Where applicable the times have been rationalised to reflect the longest time taken to perform an operation on any derivative in a particular model range.

In addition, the times include generous allowances to cover the following;

- \* Time taken in performing preparatory tasks, e.g. opening and closing bonnet, fitting and removing wing covers, the use of jacks and lifts, draining and refilling fluids and cleaning where necessary.
- \* Time taken to drive the vehicle into and out of the workshop and any repositioning during repair.
- \* Time taken to receive work instructions, evaluate the operation, obtain and return special tools, collect parts, perform final quality checks and carry out associated clerical work.
- \* Time taken to change over and adjust ancillary equipment displaced during the operation.

Times allowance **DO NOT** include

- \* Time taken freeing seized parts.
- \* Time taken removing rusted or broken fixings.

### DIAGNOSTIC ROUTINES

All repair times contain an element for diagnosis, but where it is essential to use specialist diagnostic equipment, specific diagnostic allowances are given at the end of each section. The defined routines to which these allowances apply are included in the relevant instructions or Repair Manual.

Diagnostic allowances should be used once only, irrespective of the number of faulty components involved. The allowance for renewing the faulty component can be claimed alongside the diagnostic allowance.

### DEFINITIONS

- \* The operation "Renew" refers to the removal and replacement of components in the condition they are supplied
- \* Times given for "Overhaul" operations include removal, renewal and adjustment of parts and subsequent refitting.
- \* The term "Remove for Access and Refit" refers to an assembly in the state which it can be most efficiently removed to give access to components located beneath the assembly. e.g. The removal of a door trim pad during diagnosis and rectification of a rattle.
- \* The term "Set" applies to the complete car set of components unless otherwise defined.

### TIMES

The time allowances are given in decimal hours and, unless otherwise stated, apply to all fitment conditions, i.e. front/rear, upper/lower and left/right.

## WARRANTY CLAIMS PROCEDURE

### SCHEDULED REPAIR OPERATIONS

Published SRO's must be quoted.

Each operation in this manual is identified by a six digit Scheduled Repair Operation (SRO) number. The operation number comprises six digits arranged in three pairs. The first pair indicates the major assemblies, the second pair identifies the component and the third pair can either relate to the operation concerned or provide a more accurate definition of the part involved.

### EXAMPLE

**12.29.11** Cylinder Head Renew

**12.** First digit pair (major assembly) - engine

**29.** Second digit pair (component) - cylinder head

**11.** Third digit pair (operation) - renew

In certain instances, operation numbers with an additional pair of digits are used. These can refer to jobs that can be performed in conjunction with other related repairs or where the fitment of optional equipment affects repair procedures.

## **ILLUSTRATIONS**

Where components are illustrated, they are identified by the applicable SRO number e.g. 12.13.01.

## **TIME ALLOWANCES**

For warranty purposes the times listed include all work elements, including diagnosis. Specific repair operations can be claimed once only in any given submission on a particular vehicle.

## **WARRANTY COMPLAINT CODES**

For your convenience, warranty complaint codes are shown against the relevant time allowance.

## **WARRANTY CLAIMS**

When making warranty claims, select the warranty code for the part which caused the malfunction (causal part) and the SRO for the operation to correct it. In some instances, additional consequential work may be required. If so, select the appropriate SRO and add to the claim.

### **EXAMPLE**

Camshaft seizure due to oil filter failure.

Use warranty complaint code 2A6 - oil filter

Use SRO 12.60.01 - oil filter assembly - renew

Additional consequential work SRO 12.13.02 - Camshaft - renew

If the rectification of the causal part naturally forms part of the consequential repair operation, only the SRO for the major operation must be claimed.

### **EXAMPLE**

Crankshaft bearing failure due to oil pump failure.

Use complaint code 2A1 - oil pump

Use SRO 12.21.33 - Crankshaft - renew

**USE ONLY ONE WARRANTY COMPLAINT CODE PER WARRANTY CLAIM AND SELECT THE APPROPRIATE FAULT DESCRIPTION FROM THOSE SHOWN AT THE BOTTOM OF THE TEXT PAGES.**

## **NON SCHEDULED REPAIR OPERATIONS**

Published SRO's must be quoted where possible.

Where the full work described in the workshop manual for the SRO is not carried out, then the actual time taken should be claimed against the SRO number. The claims processing system will limit any payment against an SRO to a maximum of the warranty time.

Where a repair is not covered by an existing SRO, and there are very few of these, then a SRO must be constructed according to the component involved and using '00' for the third digit pair. e.g. 12.53.00 is work on a flywheel

### **NOTE;**

- i. Except in exceptional circumstances '00' must not be used to cover failure to complete a job in the published warranty time.
- ii. All '00' claims are liable to review within the processing system.
- iii. No SRO may be claimed more than once on any complaint line.

<b>10.10</b>	<b>SERVICE INTERVAL SCHEDULES</b>	
10.10.01	Pre Delivery Inspection .....	01.10
10.10.02	1,000 miles or 3 months First Service .....	00.50
	1.3 Sports pack	00.80
10.10.06	6,000 miles or 6 months Service .....	00.40
10.10.12	12,000 miles or 12 months service .....	02.30
	1300 Carb	02.00
	1300 Inj	01.80
10.10.24	24,000 miles or 24 months service .....	02.20
	1300 Carb	02.00
	1300 Inj	01.80
10.10.36	36,000 miles or 36 months service .....	02.20
	1.0	02.50
	1.0 Cat	02.40
	1.3 Carb non-cat	02.30
10.10.48	48,000 miles or 48 months service .....	02.00
	1.0	02.20
10.10.60	60,000 miles or 60 months service .....	02.30
	1.0	02.50
	1.0 Cat	02.40
	1.3 Carb cat	02.20
10.10.72	72,000 miles or 72 months service .....	02.00
	1.0	02.20
10.10.84	84,000 miles or 84 months service .....	02.20
	1.0	02.50
	1.0 Cat	02.40
	1.3 Non-cat	02.30
10.10.96	96,000 miles or 96 months service .....	02.00
	1.0	02.20

<b>10.30</b>	<b>EXHAUST</b>	
10.30.10/01	Exhaust system - renew - with vehicle wheel free .....	00.40
<b>10.57</b>	<b>STEERING</b>	
10.57.10/01	Front wheel alignment - adjust only .....	00.20
10.57.30/01	Gaiter(s) - steering rack - one side - renew - road wheels removed.....	00.30
10.57.40/01	Ball joint - outer - renew - road wheels removed .....	00.20
<b>10.60</b>	<b>FRONT SUSPENSION</b>	
10.60.20/01	Ball joint - top - renew - road wheel removed .....	00.30
10.60.21/01	Ball joint - lower - renew - road wheel removed.....	00.40
<b>10.70</b>	<b>BRAKES</b>	
10.70.10/01	Brake pads - front - renew - road wheels removed .....	00.40
10.70.20/01	Brake shoes - front - renew - brake drums removed .....	00.30
10.70.21/01	Brake shoes - rear - renew - brake drums removed .....	00.30
10.70.30/01	Disc - front - each - renew - road wheel removed (includes check new disc run out) .....	00.60
10.70.31/01	Discs - front set - renew - road wheels removed (includes check new discs run out) .....	01.20
10.70.40/01	Wheel cylinder(s) - rear - one only or set - renew - brake drum(s) removed.....	00.60
10.70.50/01	Cable(s) - handbrake - renew - vehicle wheel free .....	00.70
<b>10.86</b>	<b>ELECTRICAL</b>	
10.86.10/01	Drive belt - alternator - renew .....	00.30

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	





# 12 ENGINE

MINI

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.10</b>	<b>AUXILIARY, DISTRIBUTOR &amp; FUEL PUMP DRIVES</b>			
12.10.22	Shaft - distributor drive - renew - includes ignition timing (if necessary) .....	01.00	01.00	1M3
<b>12.13</b>	<b>CAMSHAFT</b>			
12.13.02	Camshaft - front/LH/each - renew .....	08.65	08.65	*
	MPI		11.60	*
	SPi		08.90	*
	SPi Auto.		09.85	*
	Turbo		09.20	*
12.13.23	Thrust plate/end cover - camshaft - renew .....	02.95	02.95	*
	MPI		03.40	*
	SPi		03.30	*
	SPi Auto.		03.45	*
	Turbo		04.00	*
<b>12.17</b>	<b>CONNECTING RODS &amp; PISTONS (Includes, glaze break &amp; measure cylinder bores where applicable)</b>			
12.17.01/01	Cylinder bores - engine set - glaze break - with pistons removed .	00.40	00.40	1A2
12.17.03	Piston assemblies - engine set - renew .....	12.65	12.65	1E1
	MPI		14.80	1E1
	SPi		13.35	1E1
	SPi Auto.		15.55	1E1
	Turbo		14.25	1E1
12.17.03/02	Piston assemblies - engine set - renew - power unit removed & split .....	05.00	05.00	1E1
	MPI		05.10	1E1
	SPi		05.55	1E1
	Turbo		05.95	1E1
12.17.07	Piston rings - one piston set - renew .....			
	MPI		00.30	1E2
12.17.08	Piston rings - engine set - renew .....	11.85	11.85	1E2
	MPI		14.00	1E2
	SPi		12.40	1E2
	SPi Auto.	13.65	14.55	1E2
	Turbo		13.25	1E2
12.17.16	Bearings - connecting rods - engine set - renew - includes measure journals .....	07.95	07.95	1C4
	MPI		10.50	1C4
	SPi		08.65	1C4
	SPi Auto.	09.65	10.60	1C4
	Turbo		09.10	1C4
12.17.16/02	Bearings - connecting rods - engine set - renew - power unit removed & split .....	00.85	00.85	1C4

A - WRONGLY ADJUSTED

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D - BROKEN

E - CRACKED/SPLIT/CUT

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G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

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L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

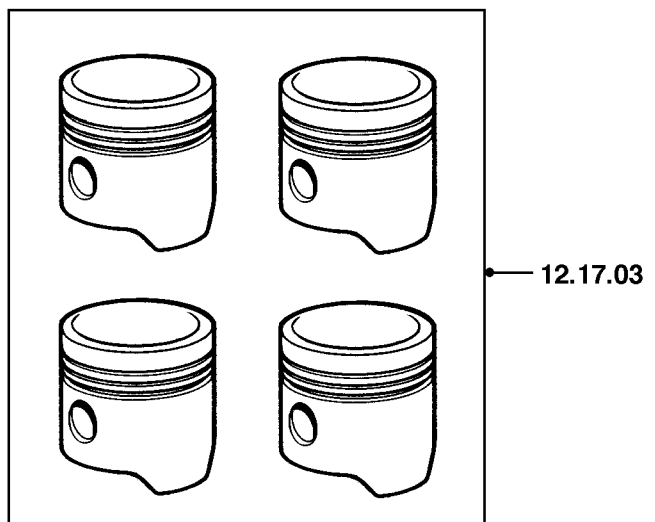
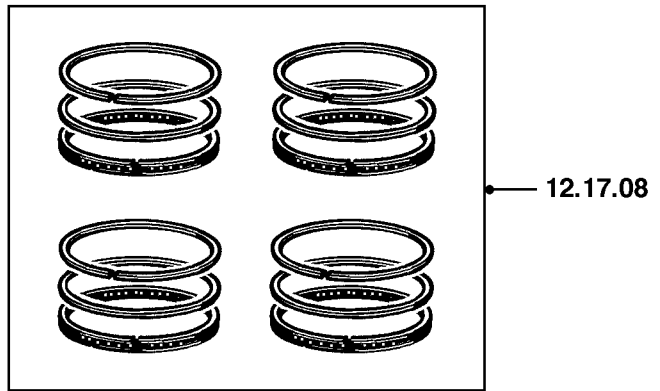
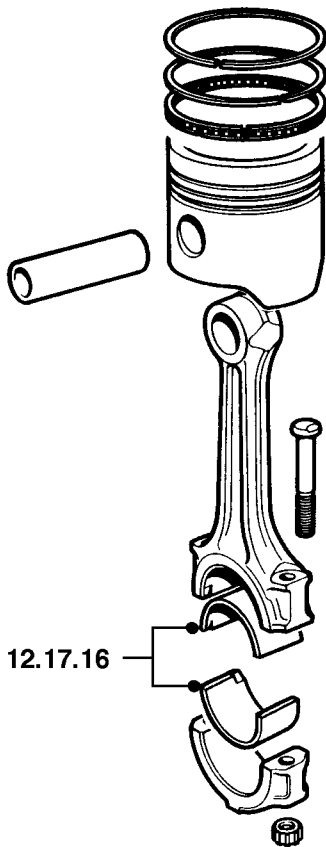
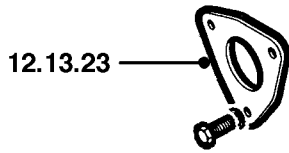
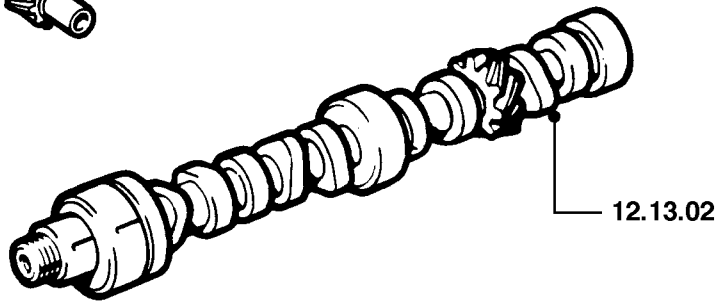
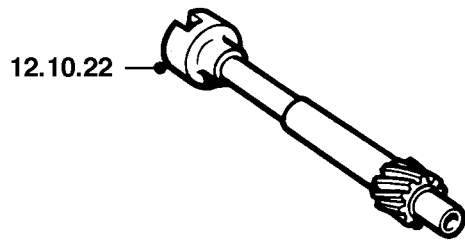
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

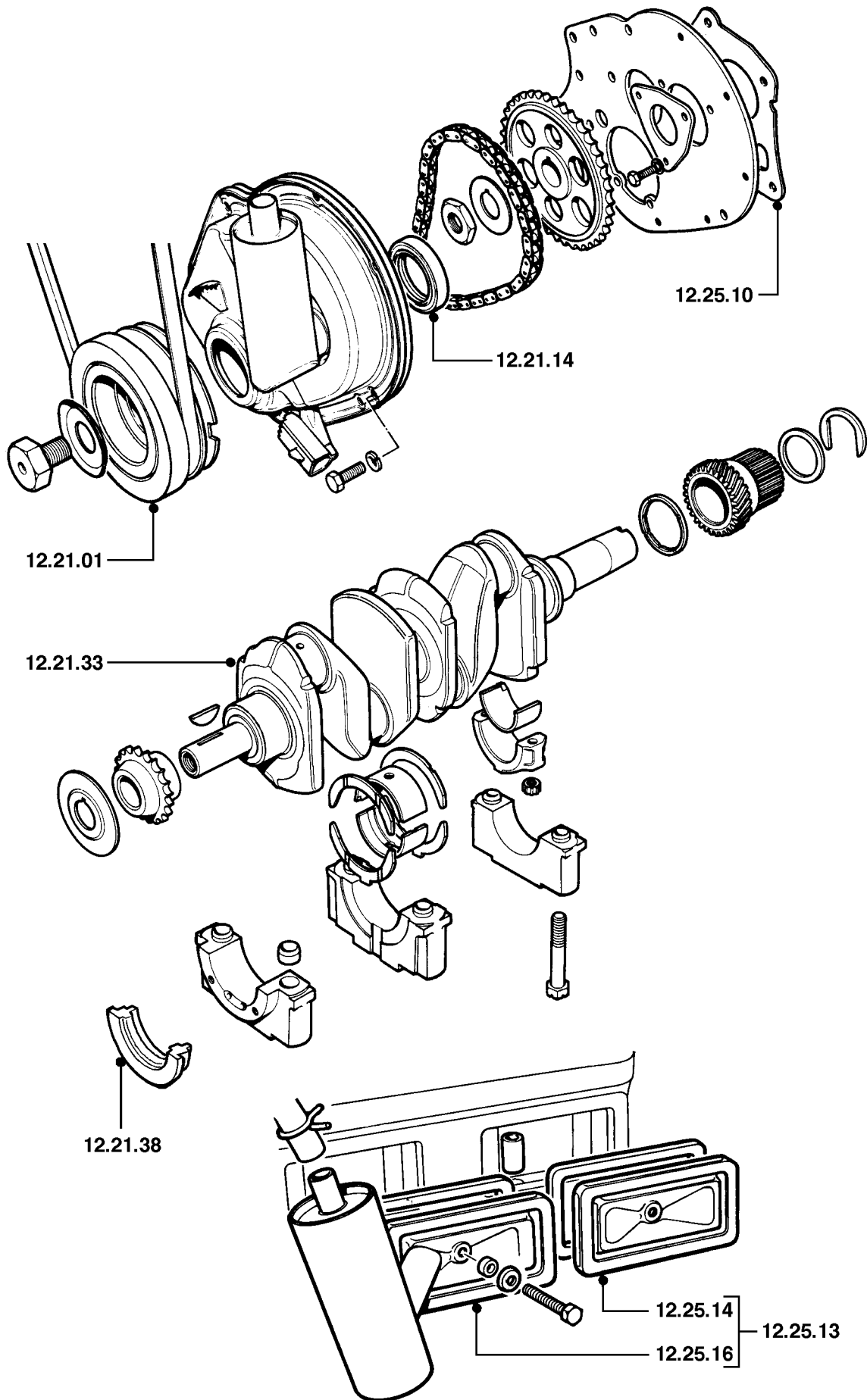
W - VIBRATION/OUT OF BALANCE

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Z - INOPERATIVE







(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.25</b>	<b>CYLINDER BLOCK</b>			
12.25.01	Cylinders pressures - check .....	00.50	00.50	*
12.25.01/01	Cylinders pressures - check - vehicle in workshop .....	00.40	00.40	*
12.25.10	Gasket - cylinder block/engine front mounting plate - renew .....	03.00	03.00	1N8
	MPi		03.50	1N8
	SPi		03.20	1N8
	SPi Auto.		03.45	1N8
	Turbo		03.75	1N8
12.25.10/01	Gasket - cylinder block/engine front mounting plate - renew - with unit removed .....	01.25	01.25	1N8
	MPi		01.00	1N8
12.25.13	Plates - side - engine set - renew .....	00.60		1S3
12.25.13/01	Plates - side - engine set - renew - with unit removed .....	00.30		1S3
12.25.14	Plate - side - LH/front - renew .....	00.40		1S3
12.25.16	Plate - side - RH/rear - renew .....	00.45		1S3

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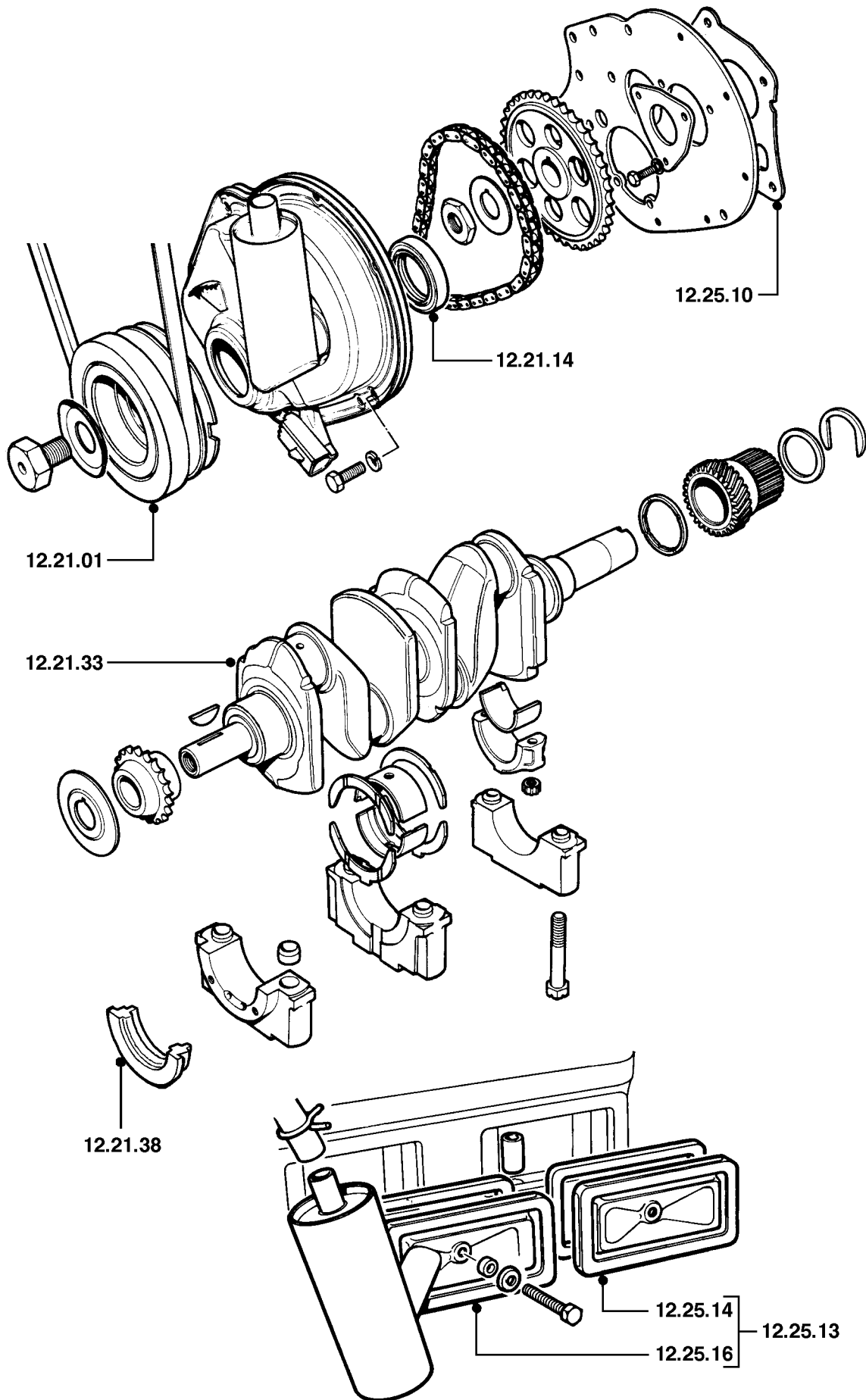
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# 12 ENGINE

MINI

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.29</b>	<b>CYLINDER HEAD</b>			
12.29.02	Gasket - cylinder head - LH/front/each - renew .....	03.05	03.05	1S6
	MPI		04.30	1S6
	SPi		03.95	1S6
	Turbo		06.15	1S6
12.29.02/01	Gasket - cylinder head - LH/front/each - renew - with unit removed.....	01.30	01.30	1S6
	MPI		01.40	1S6
	SPi		01.90	1S6
	Turbo		02.30	1S6
12.29.11	Cylinder head - LH/front/each - renew - includes reface & grind in valves .....	06.60	06.60	1F1
	MPI		07.80	1F1
	SPi		07.55	1F1
	Turbo		09.65	1F1
12.29.14	Gaskets - cylinder head(s) & water pump - renew.....	04.50	04.50	1S6
	MPI		04.90	1S6
	SPi		05.25	1S6
	Turbo		07.20	1S6
12.29.19	Cylinder head - LH/single - overhaul - includes fitting new valve guides (or reaming cylinder head) & fitting new valves .....	06.50	06.50	1F1
	MPI		08.30	1F1
	SPi		07.95	1F1
	Turbo		09.90	1F1
12.29.19/01	Cylinder head - LH/single - overhaul - with head assembly removed.....	03.45	03.45	1F1
	MPI		03.90	1F1
12.29.21	Cylinder head(s) - engine set - decarbonise - reface valves & seats - grind in valves .....	07.35	07.35	1F1
	MPI		08.70	1F1
	SPi		08.35	1F1
	Turbo		10.25	1F1
12.29.21/01	Cylinder head - engine set - decarbonise - head assembly removed.....	04.30	04.30	1F1
12.29.28	Nuts/bolts - cylinder head(s) - tighten & adjust rockers .....	00.70	00.70	1F0
12.29.40	Gasket - cover - camshaft/rocker - LH/front/each - renew .....	00.40	00.40	1S1
12.29.42	Cover(s) - camshaft/rocker or cylinder head(s) - engine set - renew.....	00.40	00.40	1N4

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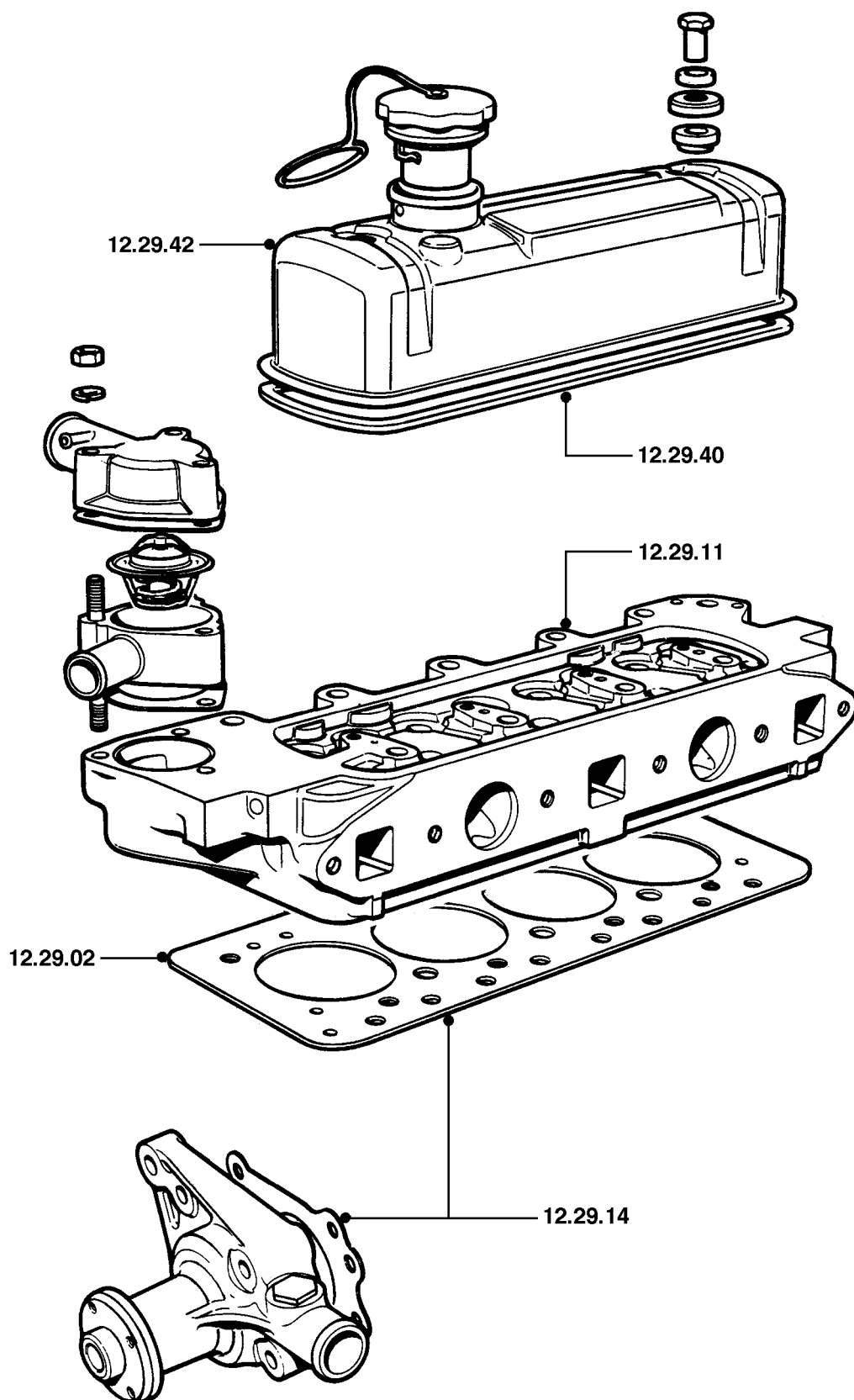
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# 12 ENGINE

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		1000	1300	
<b>12.29</b>	<b>CYLINDER HEAD</b>			
12.29.48	Valve clearances - check & adjust.....	00.60	00.60	1H1
12.29.54	Rocker shaft assembly - engine set - renew .....	01.00	01.00	1H6
	MPi		01.50	1H6
12.29.55	Rocker shaft assembly - engine set - overhaul .....	01.80	01.80	1H6
	MPi		02.10	1H6
12.29.57	Tappets/cam followers - engine set - renew .....	02.40	08.05	1H1
	MPi		13.30	1H1
	SPi		10.80	1H1
	Turbo		11.25	1H1
12.29.58	Valve guide - one only - cylinder head - front/LH - renew - includes reface seat & grind in valve .....	03.85	03.85	1F3
	MPi		05.20	1F3
	SPi		04.85	1F3
	Turbo		06.75	1F3
12.29.58/01	Valve guide - extra each - cylinder head - front/LH - renew - includes reface seat & grind in valve .....	00.40	00.40	1F3
12.29.59	Valve - one only - cylinder head - renew - includes reface seat & grind in valve .....	03.70	03.70	*
	MPi		05.10	*
	SPi		04.70	*
	Turbo		06.65	*
12.29.59/01	Valve - extra each - cylinder head - renew - includes reface seat & grind in valve .....	00.25	00.25	*
12.29.61	Valve guides - engine set - renew - includes reface seats & grind in valves.....	06.55	06.55	1F3
	MPi		08.30	1F3
	SPi		07.95	1F3
	Turbo		09.90	1F3
12.29.62	Valves - engine set - renew - includes reface seats & grind in valves .....	05.55	05.55	*
	MPi		07.30	*
	SPi		06.95	*
	Turbo		08.90	*

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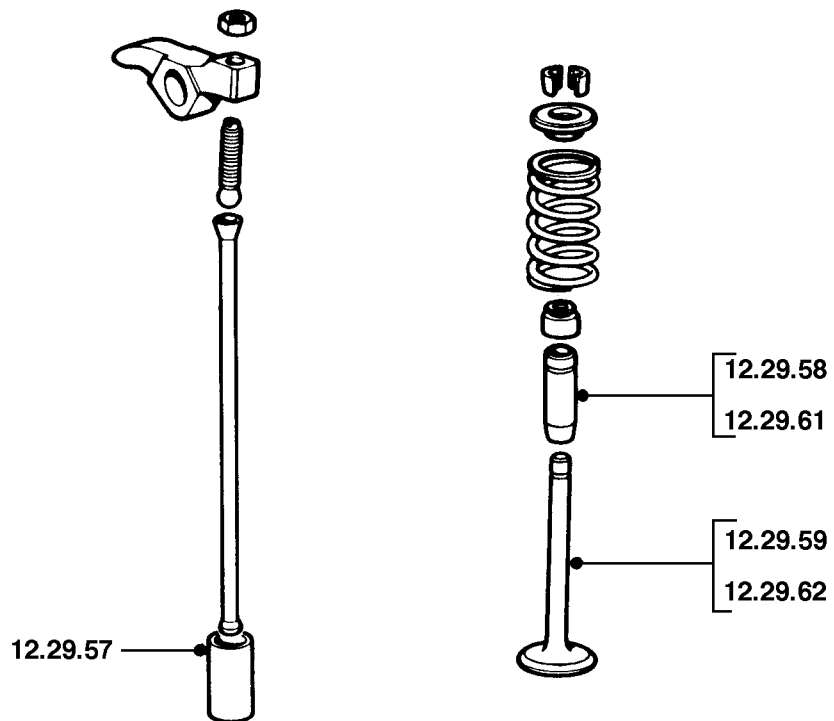
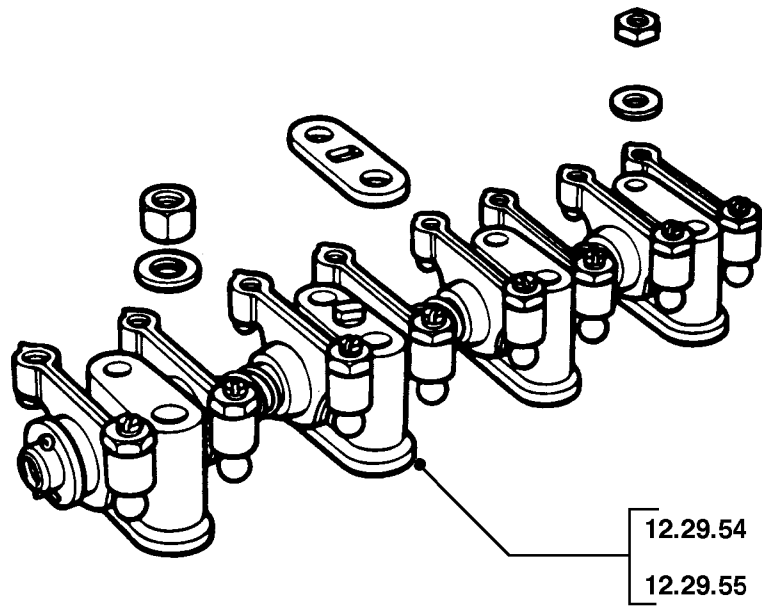
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(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.30</b>	<b>CYLINDER HEAD continued</b>			
12.30.20	Screw - rocker adjusting - each - renew .....	00.60	00.60	1H5
12.30.20/01	Screw - rocker adjusting - each extra - renew .....	00.20	00.20	1H5
12.30.25	Valve spring - one only - renew (includes cylinder head removal) .	03.45	03.45	*
	MPi		05.10	*
	SPi		04.70	*
	Turbo		06.65	*
12.30.25/01	Valve spring - extra each - renew .....	00.25	00.25	*
<b>12.37</b>	<b>ENGINE AND GEARBOX ASSEMBLY</b>			
12.37.01/99	Engine & gearbox assembly - remove for access & refit .....	03.90	03.90	*
	MPi		05.90	*
	SPi		04.50	*
	SPi Auto.	04.25	05.10	*
	Turbo		04.75	*
<b>12.41</b>	<b>ENGINE ASSEMBLY</b>			
12.41.02	Stripped engine - remove engine, change over ancilliary equipment & refit .....	08.90	08.90	*
	Auto.	10.55	11.45	*
	MPi		11.60	*
	SPi		09.30	*
	Turbo		10.25	*
12.41.03	Part engine; remove, rebuild & refit engine, does not include cylinder head(s) overhaul .....	12.10	12.10	*
	Auto.		15.30	*
	MPi		13.30	*
	SPi		13.10	*
	Turbo		13.85	*
<b>12.45</b>	<b>ENGINE MOUNTINGS</b>			
12.45.11	Mounting - LH - renew .....	01.75	01.75	5C1
	Auto.	02.15	01.65	5C1
	MPi		00.80	5C1
	SPi		01.40	5C1
	Turbo		02.40	5C1
12.45.12	Mounting - RH - renew.....	01.65	01.65	5C1
	Auto.	01.40	01.40	5C1
	MPi		03.20	5C1
	SPi		01.00	5C1
	Turbo		02.15	5C1

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

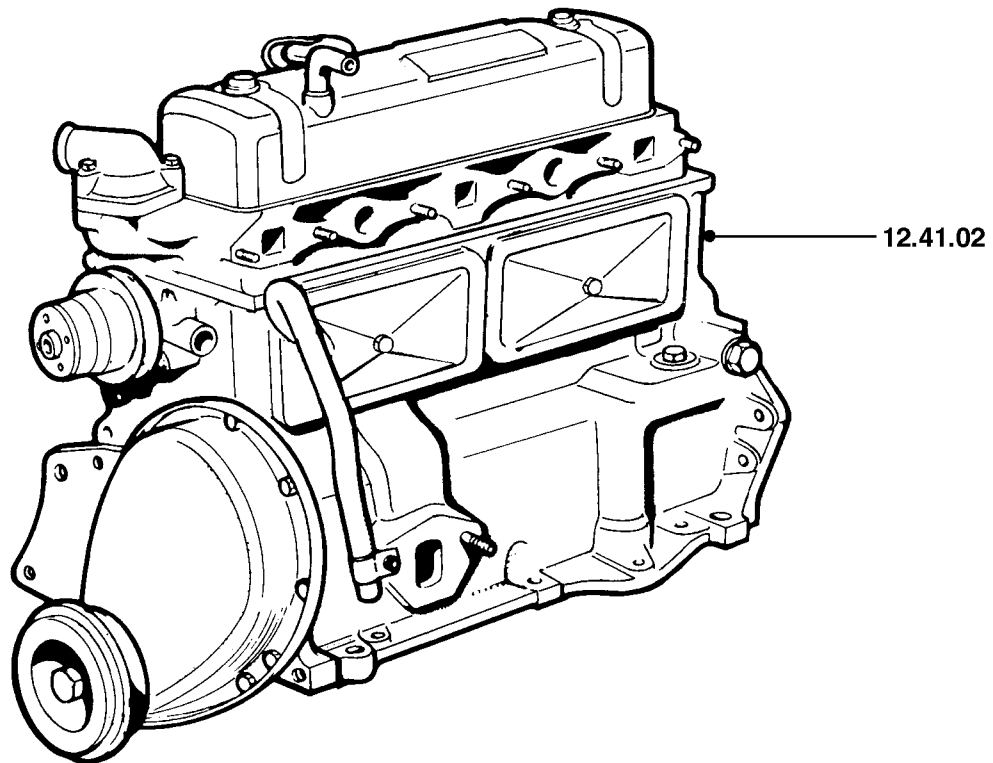
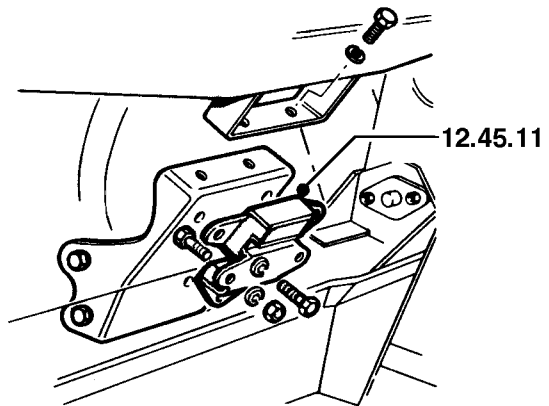
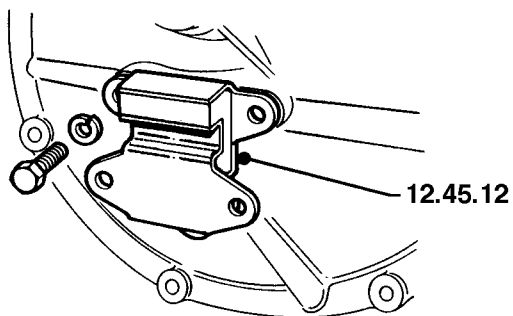
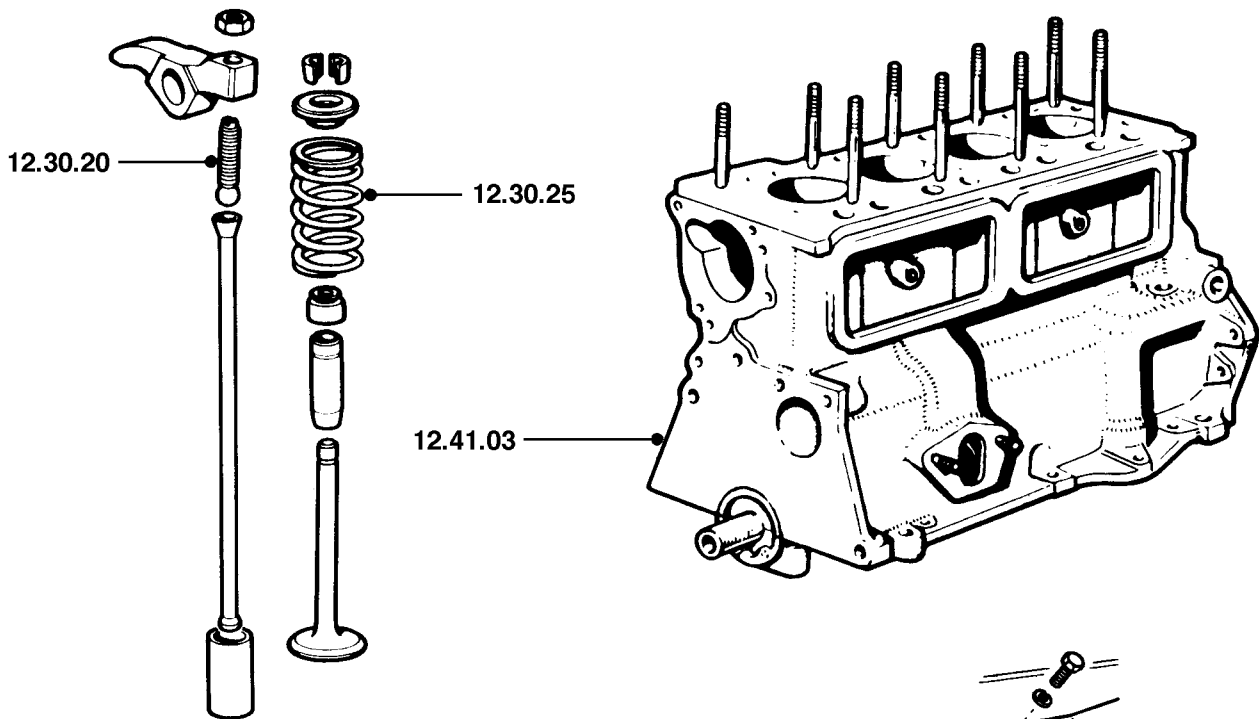
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



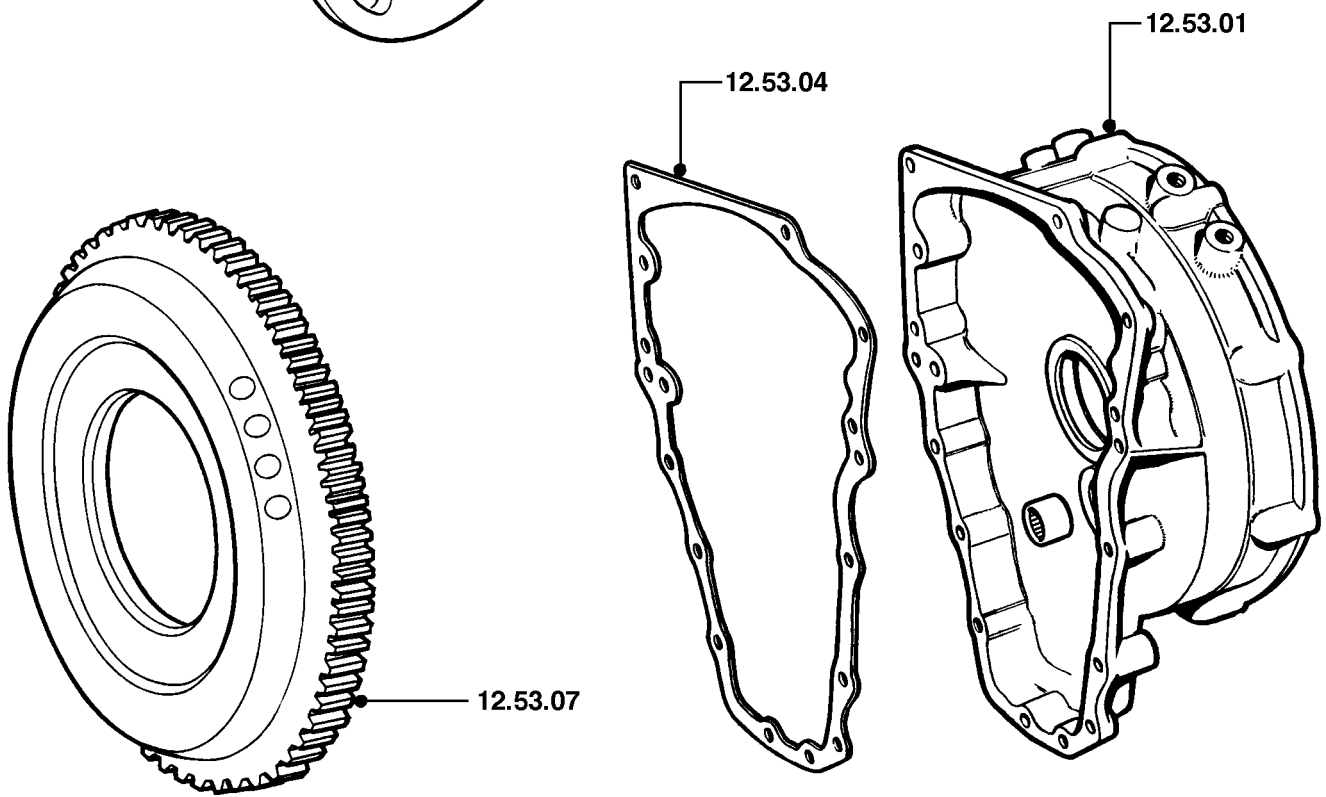
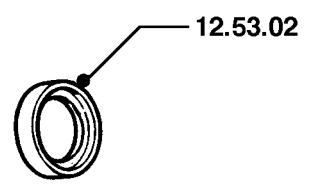
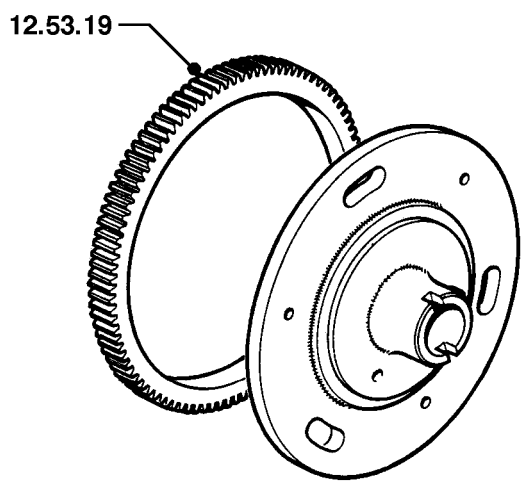
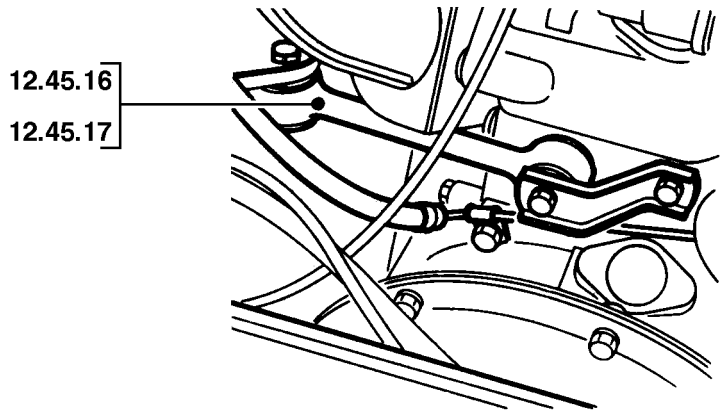
# 12 ENGINE

MINI

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.45</b>	<b>ENGINE MOUNTINGS (continued&gt;</b>			
12.45.16	Steady/stabiliser/tie rod or bushes - renew .....	00.35	00.35	5B2
	MPi		00.50	5B2
	SPi		00.65	5B2
12.45.17	Steady/stabiliser/tie rod or bushes - lower - renew .....	00.45	00.45	5B3
12.45.30	Mounting - LH - centre - renew .....	01.75	01.75	5C1
12.45.40	Power unit - align to mountings .....	00.60	00.60	*
	Turbo		00.60	*
<b>12.49</b>	<b>ENGINE TUNING</b>			
12.49.05	Adjust valve gaps, spark plugs, check compressions, clean suction chamber(s), ignition timing, tune carburetter(s).....	01.55	01.55	*
	Turbo		03.60	*
12.49.06	Check/Adjust ignition, carburetter or fuel injection systems.....	00.70	00.70	*
12.49.06/01	Adjust ignition, carburetter or fuel injection systems - with vehicle in workshop .....	00.55	00.55	*
12.49.11	Engine tune; adjust valves, timing & fuel system (renew points & plugs).....	01.45	01.45	*
	Turbo	01.30		*
12.49.15	Engine tune - adjust valves, plugs & fuel system.....		01.30	
	MPi		01.65	
	SPi			

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.53</b>	<b>FLYWHEEL &amp; DRIVE PLATE</b>			
12.53.01	Housing - flywheel - renew .....	03.75	03.75	3D2
	MPI		05.70	3D2
	SPi		04.05	3D2
	Turbo		05.35	3D2
12.53.02	Oil seal - flywheel housing - renew .....	02.30	02.30	3R1
	MPI		03.70	3R1
	SPi		03.10	3R1
	Turbo		02.60	3R1
12.53.04	Gasket - flywheel housing - renew.....	03.40	03.40	3R3
	MPI		05.30	3R3
	SPi		03.75	3R3
	Turbo		05.05	3R3
12.53.04/01	Gasket - flywheel housing - renew - unit removed.....	01.10	01.10	3R3
12.53.07	Flywheel - renew .....	02.40	02.40	1C6
	MPI		03.90	1C6
	SPi		02.95	1C6
	Turbo		02.55	1C6
12.53.19	Ring gear - starter - renew.....	03.45	03.45	1C7
	MPI		04.90	1C7
	SPi		03.80	1C7
	Turbo		03.60	1C7

A - WRONGLY ADJUSTED

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S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

U - INACCURATE/SLIPPING

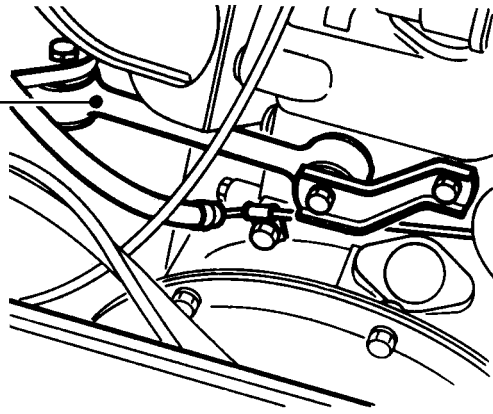
V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

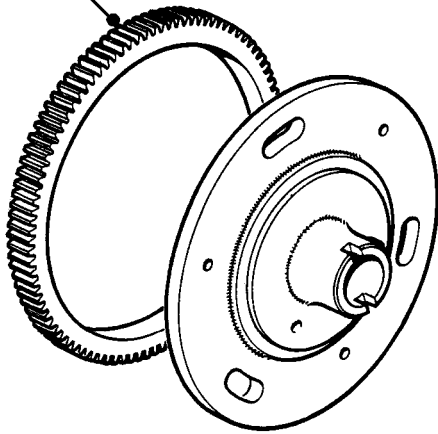
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE

12.45.16  
12.45.17



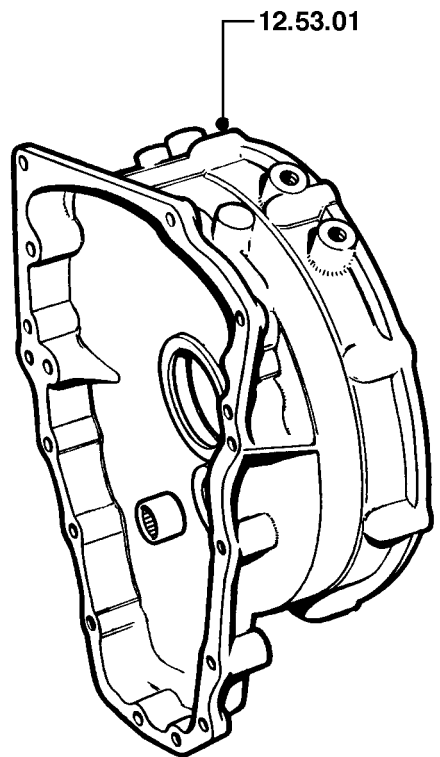
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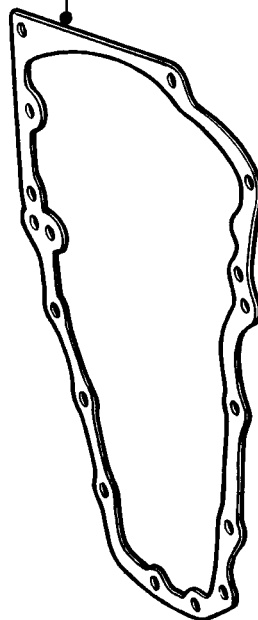
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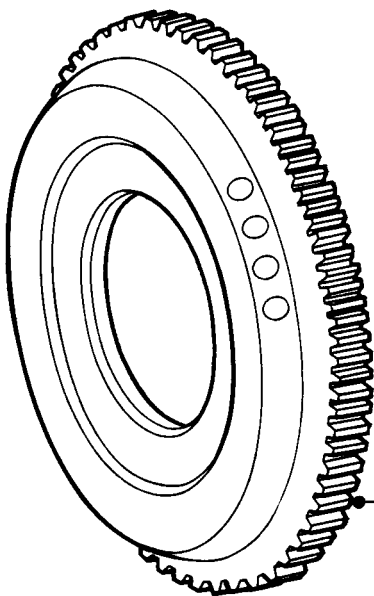
12.53.01



12.53.04



12.53.07





# 12 ENGINE

MINI

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.60</b>	<b>LUBRICATION SYSTEM</b>			
12.60.03	Gasket - oil filter head - renew .....	00.50	00.50	2V1
	Auto.	00.75	00.75	2V1
	SPi & Turbo		00.60	2V1
12.60.04	Filter - oil - renew .....	00.35	00.35	2A6
	Auto.	00.75	00.75	2A6
	MPi		00.30	2A6
	Turbo		00.45	2A6
12.60.04/01	Filter - oil - renew - with unit removed .....	00.05	00.05	2A6
12.60.26	Pump - oil - renew .....	03.50	03.50	2A1
	Auto.	07.90	09.00	2A1
	MPi		05.20	2A1
	SPi		03.85	2A1
	Turbo		05.15	2A1
12.60.26/01	Pump - oil - renew - flywheel housing removed .....	00.25	00.25	2A1
12.60.32	Pump - oil - overhaul .....	03.65	03.65	2A1
	Auto.	08.10	09.10	2A1
	MPi		05.40	2A1
	SPi		04.00	2A1
	Turbo		05.30	2A1
12.60.38	Gasket - oil sump/transmission to engine - renew .....	07.10	07.10	1S5
	Auto.		10.00	1S5
	MPi		09.70	1S5
	SPi		07.85	1S5
	Turbo		08.25	1S5
12.60.38/01	Gasket - oil sump/transmission to engine - renew - with unit removed.....	01.85	01.85	1S5
	Auto.		02.95	1S5
12.60.50	Switch - oil pressure - renew .....	00.30	00.30	7V4
	MPi		00.50	7V4
12.60.56	Valve - oil pressure relief - renew .....	00.30	00.30	2A3
	MPi		01.20	2A3
	Turbo		00.45	2A3
12.60.68	Cooler - oil - renew .....		00.80	2A7
	Turbo		00.65	2A7
12.60.74	Hose(s) - feed - oil cooler - renew .....		00.60	2A9
12.60.76	Hose - return - oil cooler - renew .....		00.55	2A9

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T - SHORT CIRCUIT/THREAD DAMAGE

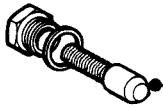
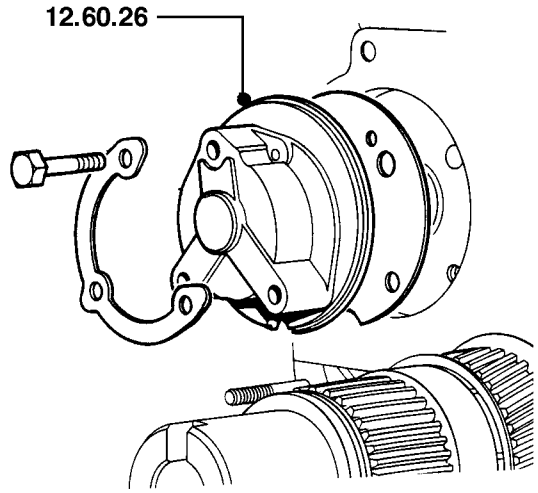
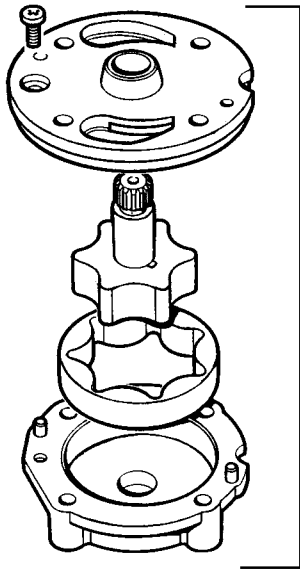
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

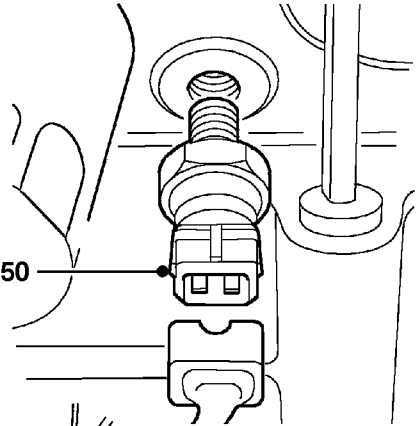
W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



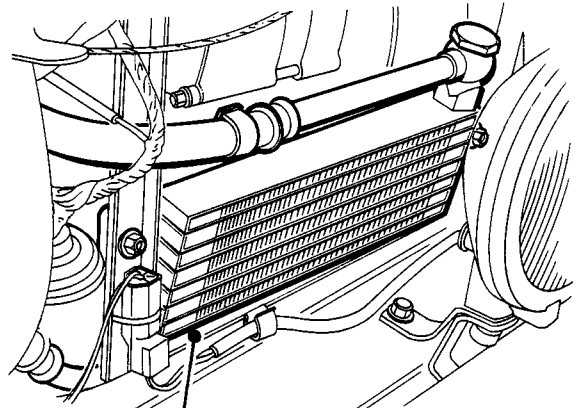
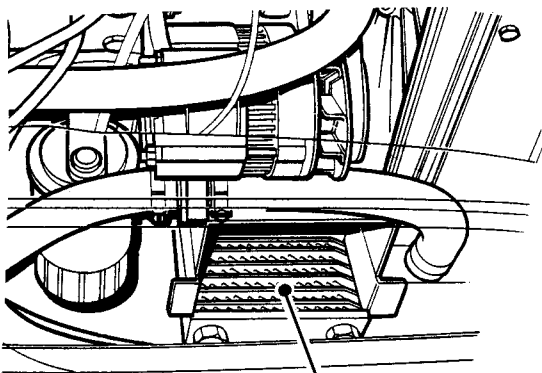
12.60.56



12.60.03

12.60.04

12.60.38



(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.65</b>	<b>TIMING GEARS, CHAINS, TENSIONERS &amp; GUIDES</b>			
12.65.01	Cover - timing gears - renew .....	02.55	02.55	1N6
	Auto.	02.60	03.00	1N6
	MPi		03.00	1N6
	SPi		02.75	1N6
	Turbo		03.45	1N6
12.65.01/01	Cover - timing gears - renew - with unit removed .....	00.70	00.70	1N6
12.65.04	Gasket - timing gear cover - renew .....	02.60	02.60	1S2
	Auto.	02.60	03.00	1S2
	MPi		03.00	1S2
	SPi		02.80	1S2
	Turbo		03.50	1S2
12.65.05	Oil seal - timing gear cover - renew .....	02.60	02.60	1Q1
	Auto.	02.60	03.00	1Q1
	MPi		03.00	1Q1
	SPi		02.80	1Q1
	Turbo		03.50	1Q1
12.65.05/01	Oil seal - timing gear cover - renew - with unit removed .....	00.75	00.75	1Q1
	MPi		00.60	1Q1
12.65.06	Oil seal & gasket - timing gear cover - renew .....	02.60	02.60	1S2
	Auto.	02.60	03.00	1S2
	MPi		03.00	1S2
	SPi		02.80	1S2
	Turbo		03.50	1S2
12.65.12	Timing belt/chain & gears - renew .....	03.00	03.00	*
	Auto.	03.00	03.40	*
	MPi		03.40	*
	SPi		03.20	*
	Turbo		03.90	*
12.65.12/01	Timing belt/chain & gears - renew - with unit removed .....	01.00	01.00	*
	MPi		00.80	*
12.65.13	Timing chain, gears & tensioner - renew .....	03.00	03.00	*
	Auto.	03.00	03.40	*
	MPi		03.40	*
	SPi		03.20	*
	Turbo		03.90	*
12.65.13/01	Timing chain, gears & tensioner - renew - with unit removed .....	01.15	01.15	*

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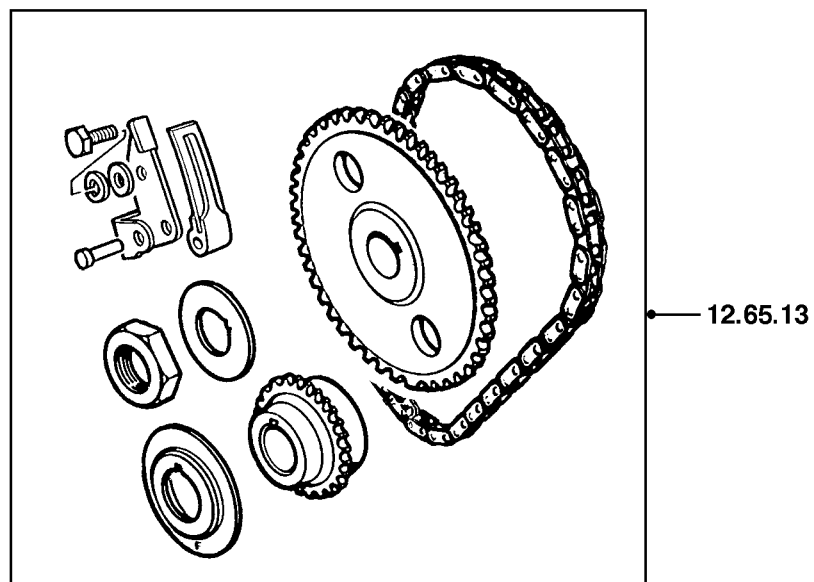
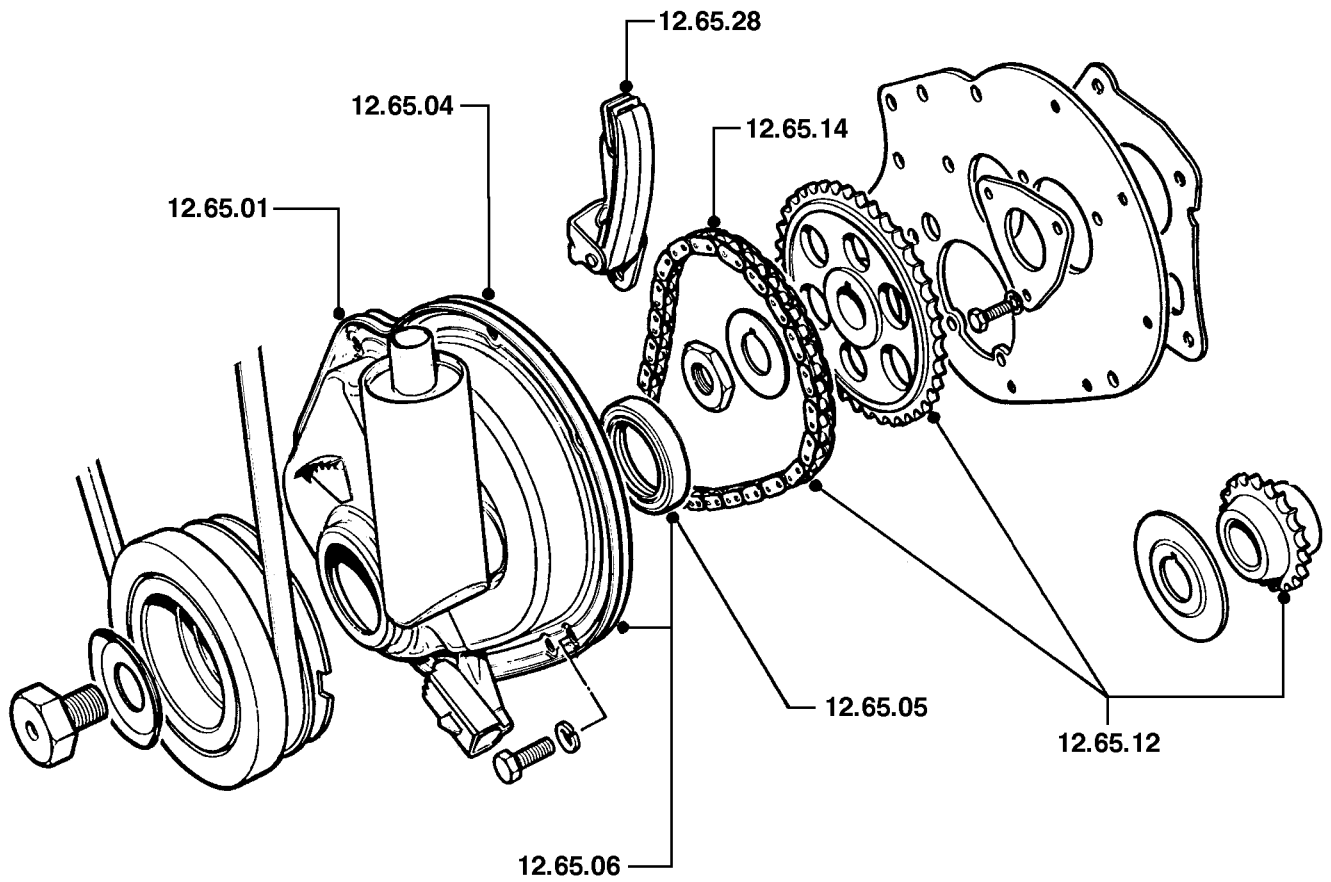
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



(Operations do not include adjust ignition, fuel systems or kickdown cable)

		1000	1300	
<b>12.65</b>	<b>TIMING GEARS, CHAINS, TENSIONERS &amp; GUIDES</b>			
12.65.14	Timing chain(s) - renew - includes align gears .....	03.00	03.00	*
	Auto.	03.00	03.40	*
	MPi		03.40	*
	SPi		03.20	*
	Turbo		03.90	*
12.65.28	Tensioner(s) - timing chain - renew .....	02.65	02.65	1K9
	Auto.		03.05	1K9
	MPi		03.10	1K9
	SPi		02.85	1K9
	Turbo		03.55	1K9
<b>12.90</b>	<b>DIAGNOSIS</b>			
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>			
12.90.09/01	Engine oil pressure check .....	00.50	00.50	-
	MPi		00.60	-
12.90.11/01	Engine - analyser diagnostic check .....	00.50	00.50	-
12.90.12/01	Power unit - oil leak detection (ultra violet tracer dye test) - for cracked or porous casings.....	00.40	00.40	-

A - WRONGLY ADJUSTED

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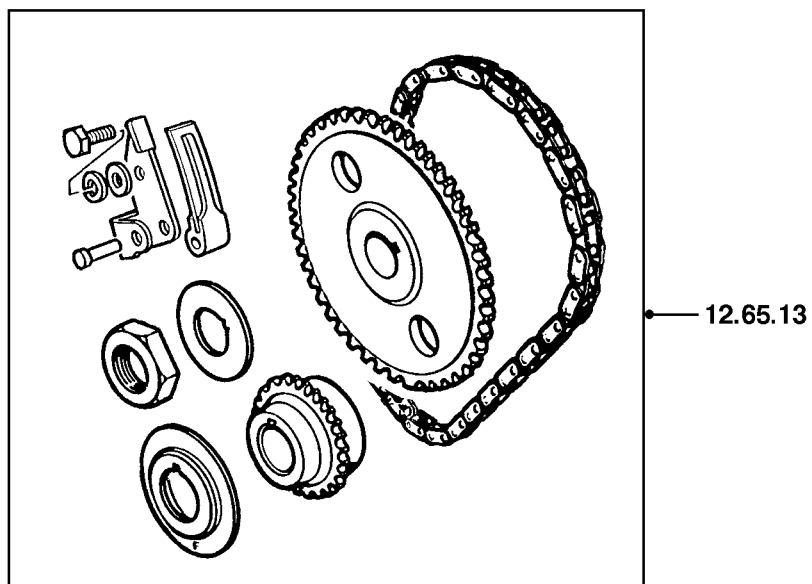
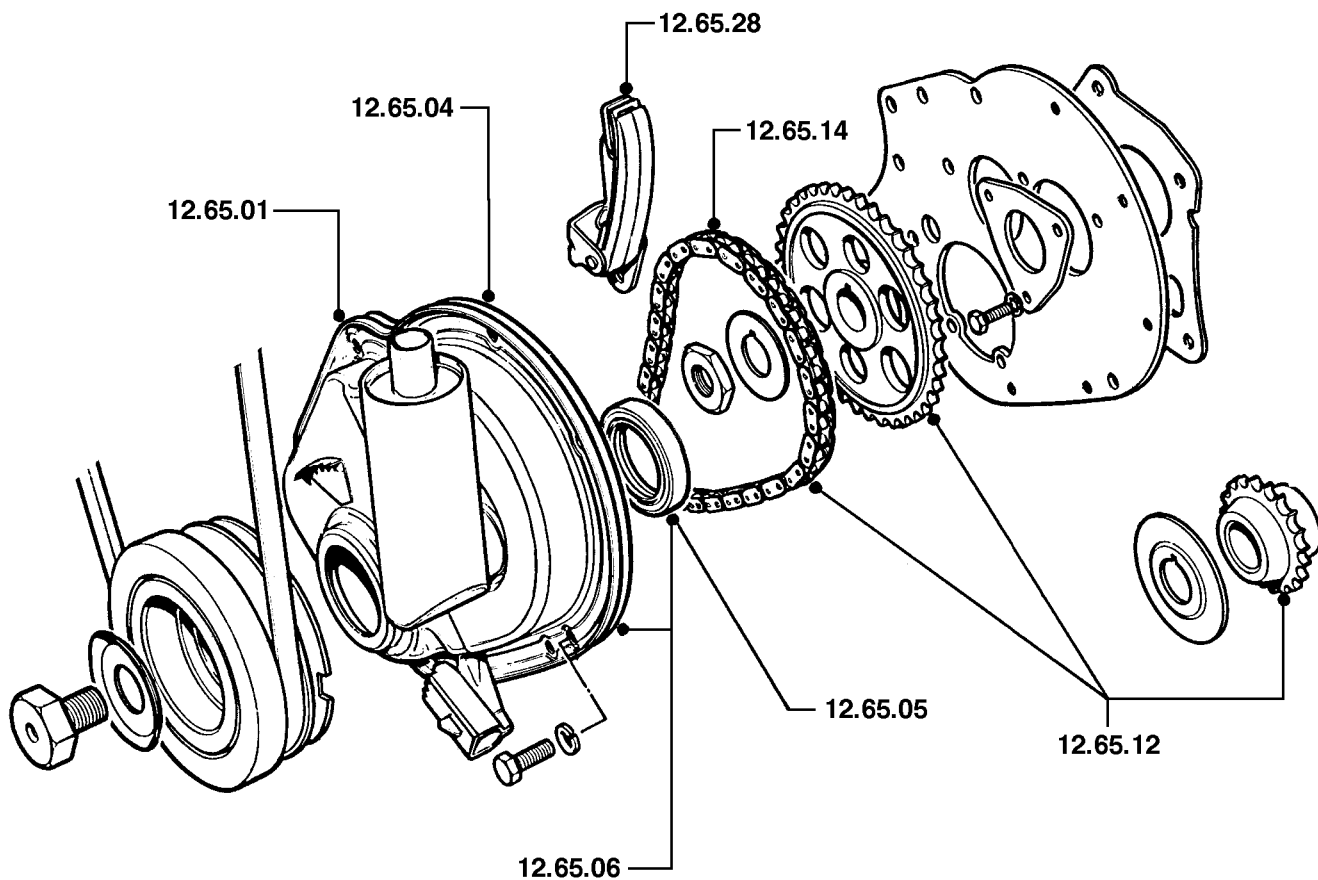
U - INACCURATE/SLIPPING

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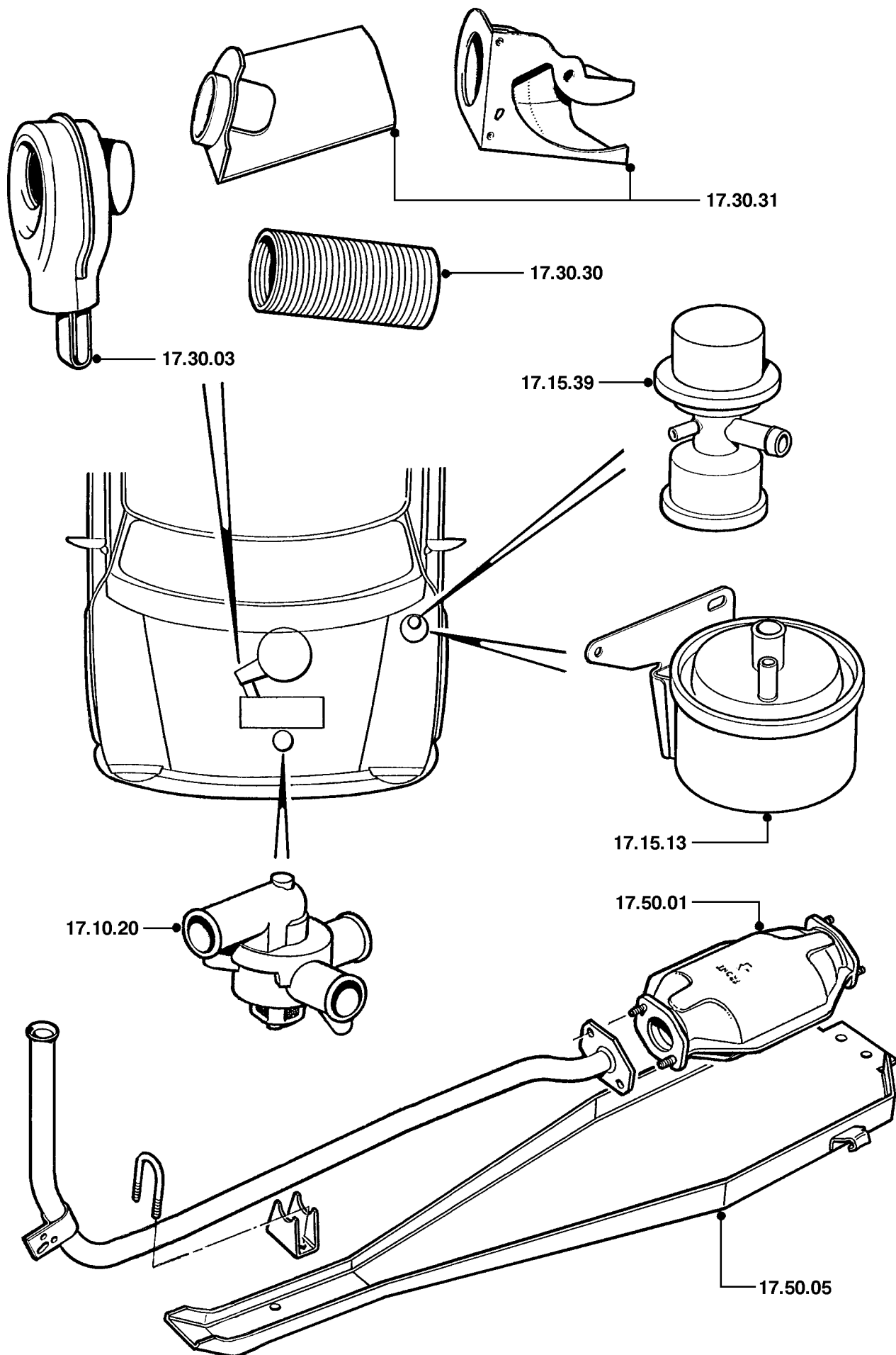
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



<b>17.10</b>	<b>CRANKCASE CONTROL SYSTEMS</b>		
17.10.03	Vapour trap - renew .....	00.40	1T1
17.10.07	Hose - breather - engine compartment - each - renew .....	00.30	1T2
17.10.20	Valve - diverter (breather system) - renew.....	00.30	1T0
<b>17.15</b>	<b>EVAPORATIVE LOSS CONTROL SYSTEMS</b>		
17.15.08	Hose - purge control valve to throttle body - renew .....	00.35	2R2
	MPi	00.20	2R2
17.15.13	Charcoal canister - renew .....	00.40	2R1
17.15.39	Valve - canister purge - renew.....	00.35	-
<b>17.30</b>	<b>AIR INLET TEMPERATURE CONTROL SYSTEM</b>		
17.30.03	Valve - air temperature control - renew .....	00.30	2F6
17.30.10	Sensor unit - temperature - renew .....	00.35	2F0
17.30.30	Duct - hot air - renew .....	00.25	2F2
17.30.31	Hot box - renew .....	00.30	2F5
<b>17.50</b>	<b>CATALYST</b>		
17.50.01	Catalytic converter - renew .....	00.50	2S0
17.50.05	Heat shield - catalytic converter - renew .....	00.50	2T2

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	

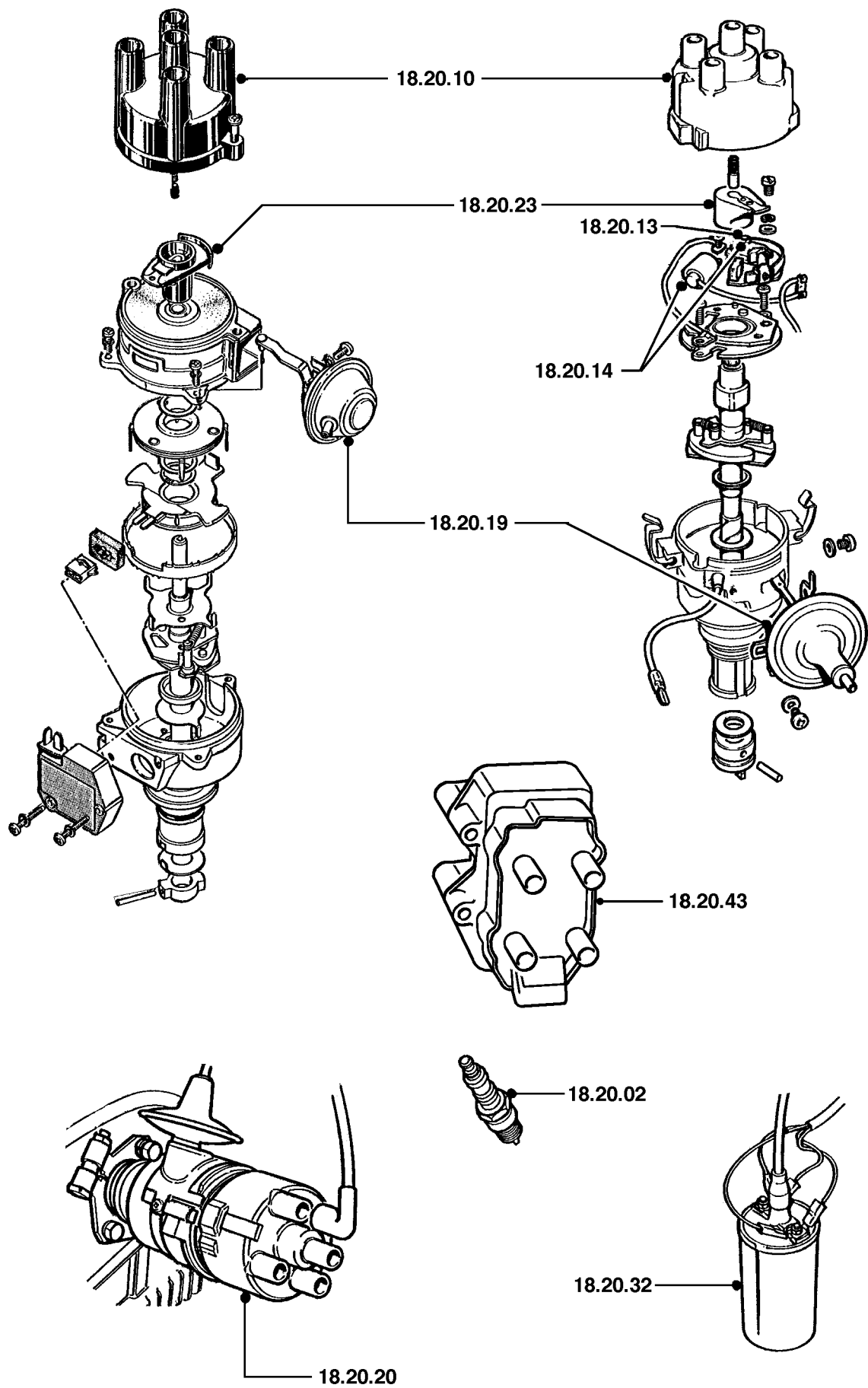


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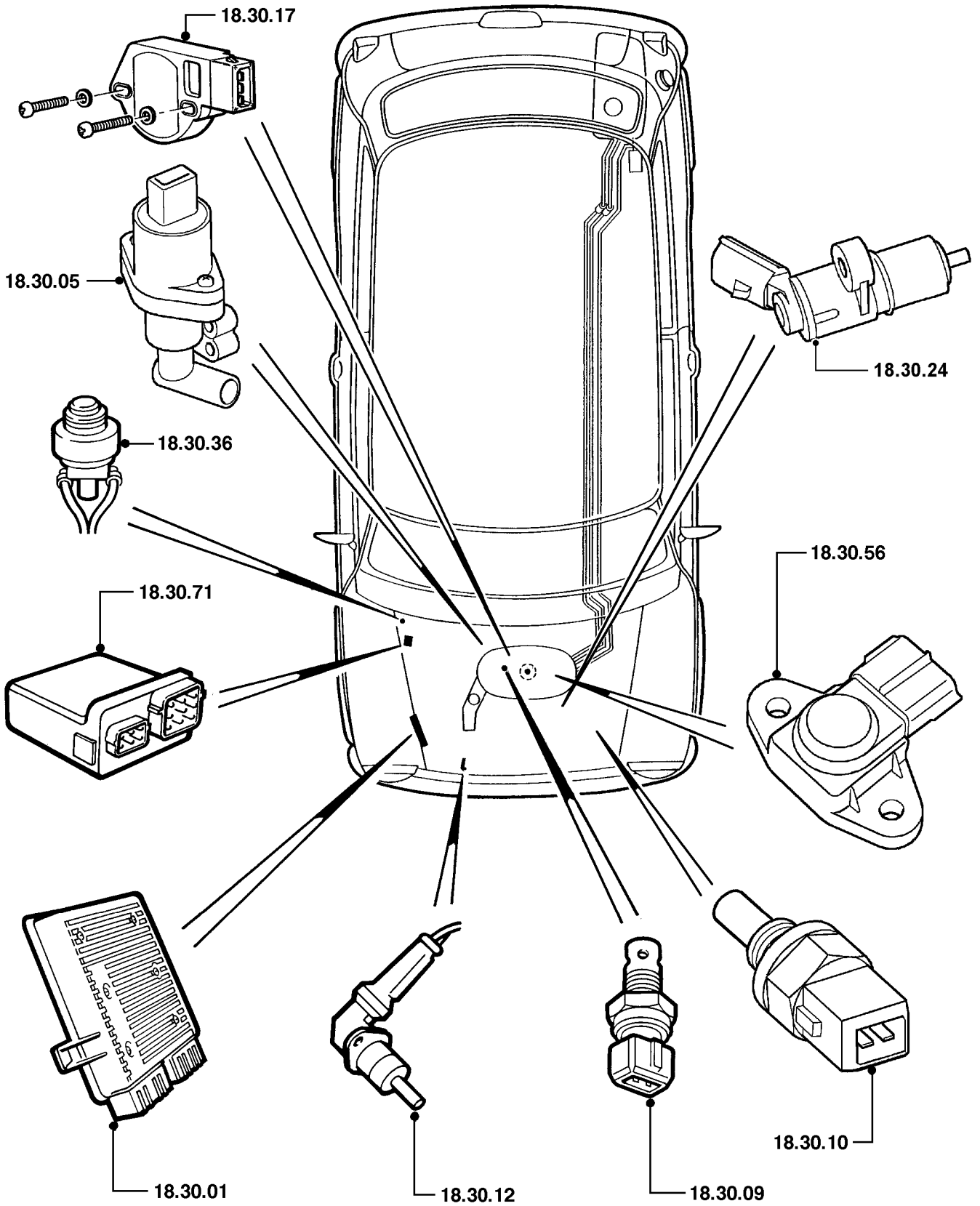
<b>18.20</b>	<b>IGNITION SYSTEM</b>		
18.20.01	Spark plugs - remove, clean and refit .....	00.45	7A9
18.20.01/01	Spark plugs - remove, clean and refit - vehicle in workshop .....	00.30	7A9
18.20.02	Spark plugs - renew.....	00.45	7A9
18.20.02/01	Spark plugs - renew - vehicle in workshop .....	00.35	7A9
18.20.10	Distributor cap - renew.....	00.35	7A3
	Turbo	00.45	7A3
18.20.11	H.T. leads - engine set - renew .....	00.30	7B1
18.20.13	Contact breaker points - renew .....	00.75	7A4
18.20.14	Condensor & contact breaker points - renew .....	00.85	7A4
18.20.15	Ignition timing - adjust .....	00.50	*
18.20.19	Vacuum unit - distributor - renew.....	00.30	7A2
	Turbo	01.25	7A2
18.20.20	Distributor - renew .....	01.00	7A1
	SPi	00.60	7A1
18.20.23	Rotor arm - renew .....	00.30	7A6
18.20.27	Inhibitor switch - spark advance - renew .....	00.35	
18.20.28	Inhibitor switch - spark advance - check & adjust .....	00.40	*
18.20.29	Solenoid valve - spark advance - renew .....	00.25	
18.20.30	Amplifier module - renew.....	00.60	7B8
18.20.32	Ignition coil - renew .....	00.25	7A8
18.20.43	Ignition coil - each - renew.....		
	SPi/MPi	00.40	7A8

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



<b>18.30</b>	<b>SENSORS, SWITCHES, RELAYS &amp; VALVES</b>		
18.30.01	Electronic control unit - combined ignition & fuel - renew .....	00.30	*
18.30.05	Stepper motor/(IACV) - renew .....		
	MPi	00.30	2N5
18.30.09	Sensor - intake air temperature (IAT) - renew .....	00.25	2F0
18.30.10	Sensor - engine coolant temperature (ECTS) - renew.....		
	MPi	00.30	7U3
	SPi	01.80	7U3
18.30.12	Sensor - crankshaft position (CKP) - renew.....	00.70	7B7
	MPi	00.30	7B7
	SPi Auto.	00.35	7B7
18.30.17	Throttle potentiometer - renew (includes adjust) .....	00.40	7G5
18.30.24	Sensor - camshaft position (CMP) - renew .....	00.30	7B7
18.30.36	Switch - throttle - renew .....	00.30	7G5
18.30.56	Sensor - manifold air pressure - renew .....		
	MPi	00.30	7W1
18.30.71	Relay module - renew .....	00.20	*
<b>18.90</b>	<b>DIAGNOSIS</b>		
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>		
18.90.09/01	Set CO and/or idle speed .....		
	SPi	00.60	-
18.90.23/01	MEMS - fuel injection & ignition - test .....		
	SPi	00.40	-
18.90.40/01	Engine management system - diagnosis.....	00.30	
18.90.40/02	Engine management system - diagnosis - additional test .....	00.20	

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



# 19 FUEL SYSTEM

MINI

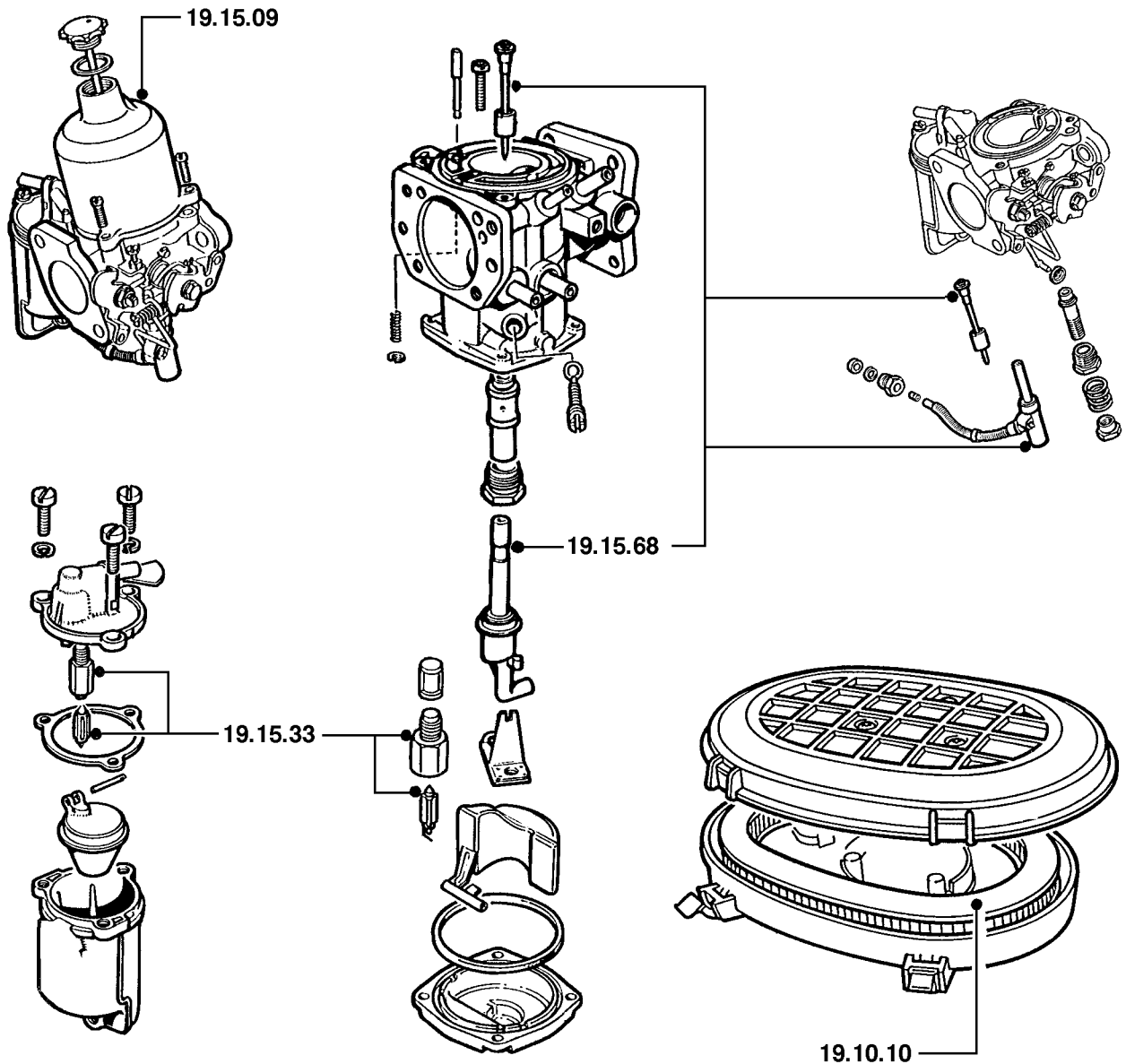
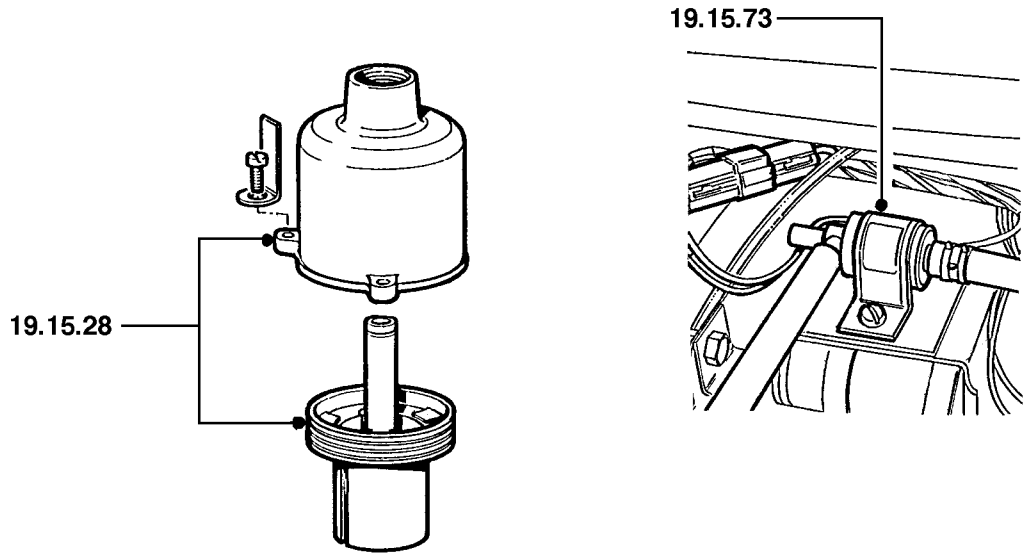
(Operations do not include tuning)

		1000 & 1300 SPI 1300 carb & MPi	
<b>19.10</b>	<b>AIR CLEANERS AND HOSES</b>		
19.10.10	Element - air cleaner - renew..... .	00.30	00.40 2F4
	MPi		00.30 2F4
	Turbo	00.55	2F4
<b>19.15</b>	<b>CARBURETTERS</b>		
19.15.02	Carburetter(s) - set - tune & adjust (includes ignition timing check) .....	00.65	*
19.15.02/01	Carburetter(s) - set - tune & adjust - vehicle in workshop .....	00.55	*
19.15.09	Carburetter - LH/front/single - renew .....	00.65	*
	Auto.	00.85	*
	Turbo	01.80	*
19.15.28	Piston & suction chamber - each - remove, clean & refit..... .	00.45	2J9
	Turbo	02.40	2J9
19.15.33	Float chamber needle & seat - each - renew..... .	00.45	2J6
	Turbo	02.45	2J6
19.15.68	Jet needle & jet - each - renew .....	00.85	2K1
	Auto.	01.05	2K1
	Turbo	02.60	2K1
19.15.73	Valve - anti run on - renew..... .	00.20	2R4
19.15.87	Valve - float chamber vent - renew .....	00.25	2Y9

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# 19 FUEL SYSTEM

MINI

(Operations do not include tuning)

		1000 & 1300 SPI 1300 carb & MPi	
<b>19.20</b>	<b>CONTROLS</b>		
19.20.01	Pedal - throttle - renew .....	00.50 00.50	2K7
19.20.05	Cable - throttle - check and adjust.....	00.30 00.30	*
19.20.06	Cable - throttle - renew .....	00.25 00.50	*
	MPi	00.60	*
19.20.13	Cable assembly - mixture control - renew .....	00.60	2K3
	Turbo	01.15	2K3
<b>19.22</b>	<b>ELECTRONIC FUEL DISTRIBUTION EQUIPMENT</b>		
19.22.09	Switch - inertia - fuel cut off - renew.....	00.20	7W9
19.22.13	Set CO &/or base idle (includes system check, using approved equipment).....	00.90	*
19.22.14	Check idle speed/IACV position, H02S sensor(s) - (includes adjustment using approved equipment).....		
	MPi	00.40	*
19.22.15	Relay - heated oxygen sensor (H02S) - renew .....	00.15	*
19.22.16	Sensor - heated oxygen (H02S) - front/LH/each - renew.....	01.70	7W8
	MPi	01.80	7W8
19.22.45	Throttle housing - renew - (includes tuning).....	02.05	2N7
	MPi	00.70	2N7
19.22.61	Injector & housing - renew .....	00.50	2M3

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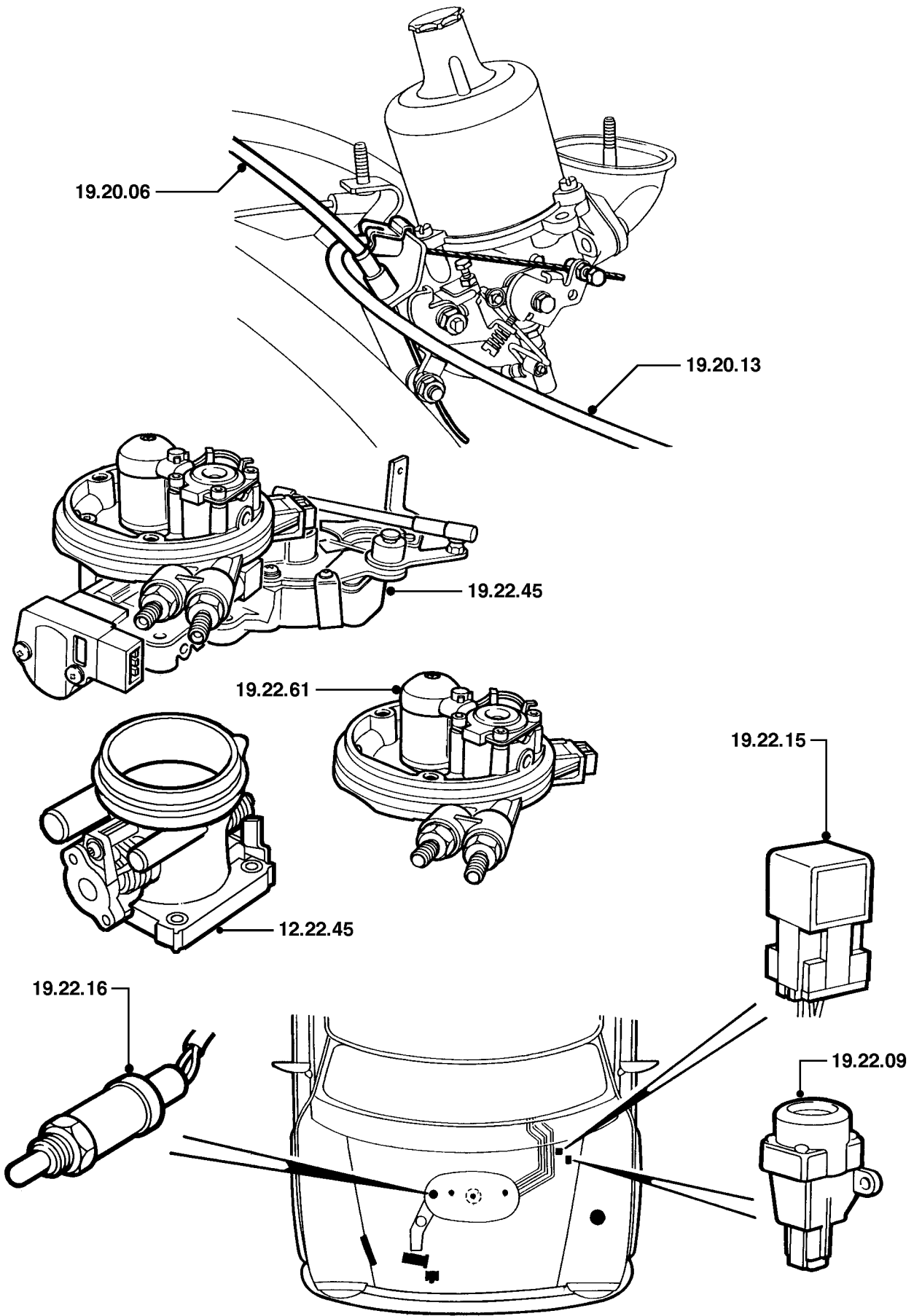
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# 19 FUEL SYSTEM

MINI

(Operations do not include tuning)

		1000 & 1300 carb	1300 SPi & MPi	
<b>19.25</b>	<b>FUEL FILTERS</b>			
19.25.01	Filter/sedimentor - fuel line - renew .....	00.30		*
19.25.02	Filter - main - renew.....		00.50	2M6
19.25.10	Fuel trap - electronic control unit - renew.....		00.35	-
<b>19.40</b>	<b>FUEL PIPES, HOSES &amp; TAPS (PETROL)</b>			
19.40.25	Hose - main line to pump - renew .....	00.45	00.60	2Q5
19.40.33	Hose - pump to carburetter feed pipe - renew .....	00.30		2Q5
19.40.34	Hose - carburetter feed pipe to carburetter - renew.....	00.30		2Q5
19.40.60	Hose - feed pipe to fuel rail - renew.....			
	MPi		00.40	2Q5
19.40.67	Hose - petrol pipe main line - engine end section to filter - renew .			
	Turbo	00.35		2Q5
19.40.74	Hose - tank to pump - renew .....			
	Turbo	00.65		2Q5
19.40.82	Hose - filter to main line - renew .....		00.40	2Q5
19.40.85	Hose - return - main line to tank - renew .....			
	MPi		00.90	2Q5
	Turbo	00.65		2Q5
19.40.90	Hoses - engine compartment - each - renew.....		00.45	2Q5
19.40.91	Hose - pump to main line - renew .....		00.60	2Q5
	MPi		00.90	2Q5
19.40.93	Hose - pressure regulating valve to return pipe - renew .....			
	MPi		00.70	2Q5
	Turbo	00.35		2Q5

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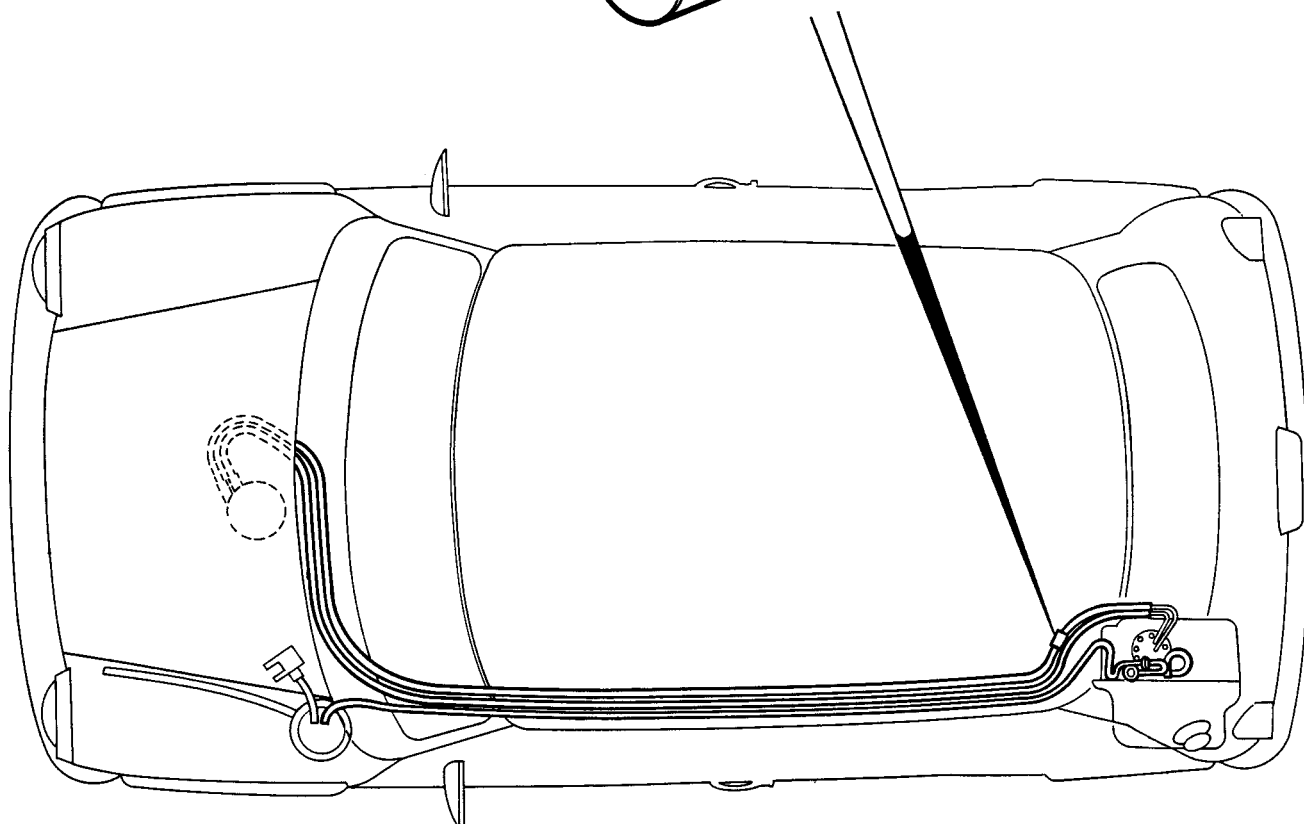
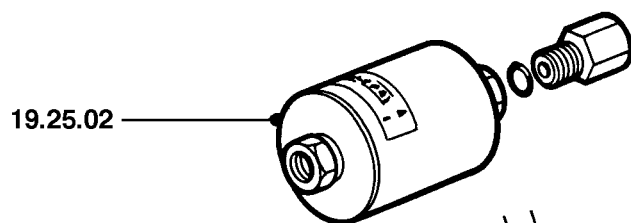
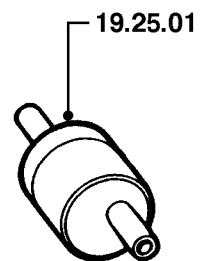
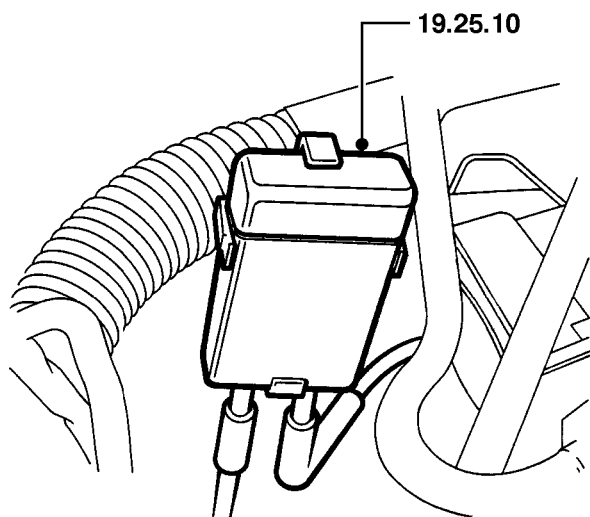
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# 19 FUEL SYSTEM

MINI

(Operations do not include tuning)

		1000 & 1300 SPi 1300 carb & MPi	
<b>19.42</b>	<b>TURBOCHARGERS</b>		
19.42.01	Turbocharger - renew .....	06.35	2Y1
19.42.02	Plenum chamber - renew.....	01.30	2Y1
19.42.03	Piston - dump valve - renew .....	01.30	2Y4
19.42.04	Elbow - turbo charger exhaust - renew .....	02.20	-
19.42.11	Hose - intake - turbocharger - renew .....	01.50	2Y3
19.42.12	Hose - drain - turbo charger - renew .....	01.55	*
19.42.13	Hose - compressor to engine - renew .....	01.25	*
19.42.14	Pipe - oil feed to turbo charger - renew .....	05.80	2A5
19.42.20	Gasket - plenum chamber to carburetter - renew .....	01.15	*
19.42.21	Gasket - elbow to turbo charger - renew .....	02.20	*
19.42.22	Gasket - turbo charger oil drain - renew .....	01.70	*
19.42.23	Gasket - compressor outlet pipe - renew .....	01.25	*
19.42.24	Gasket - diffuser pipe to plenum chamber - renew .....	01.30	*
19.42.25	Gasket - turbo charger to exhaust manifold - renew .....	06.30	*
19.42.30	Solenoid valve - boost control - renew.....	00.40	2Y5
19.42.31	Control unit - renew .....	00.25	2Y7
19.42.42	Hose - 'T' piece to control unit - renew .....	00.30	2Y8
<b>19.45</b>	<b>FUEL PUMP</b>		
19.45.06	Regulator - pressure - renew .....		
		MPi	00.90
		Turbo	00.65
19.45.08	Pump - renew .....	00.70	00.80
		Turbo	00.50
			2M7
			2M7
			7F9
			7F9
<b>19.50</b>	<b>FUEL SYSTEM</b>		
19.50.13	Fuel system - pressure test .....		00.45
			-

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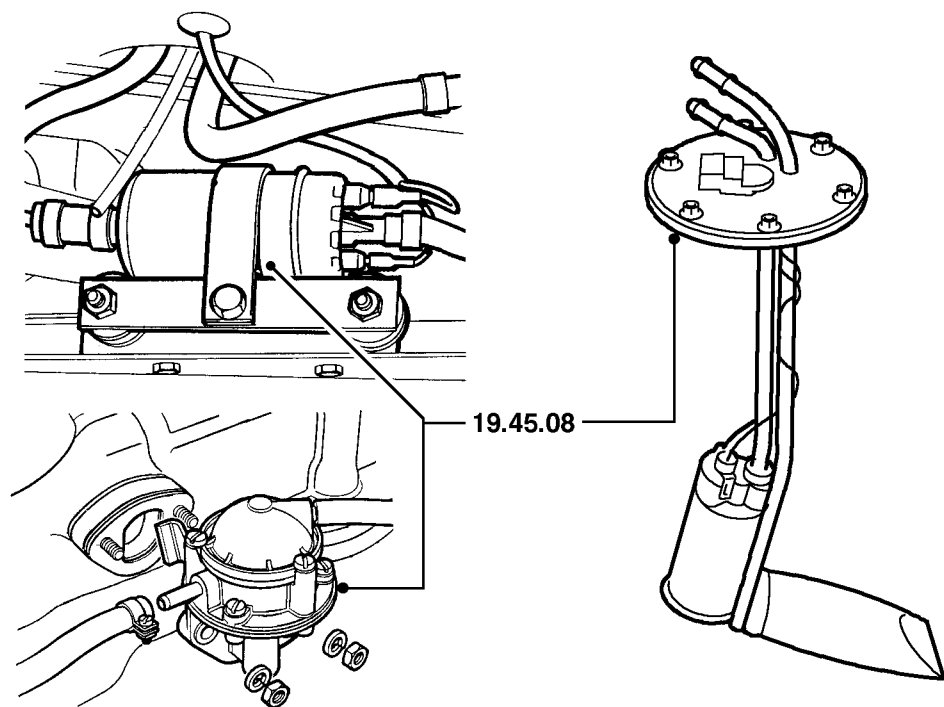
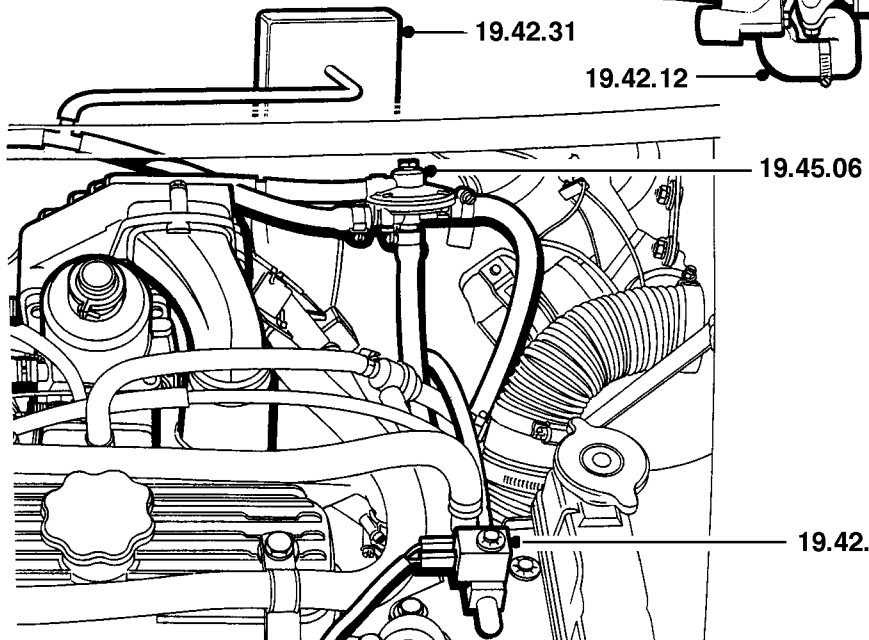
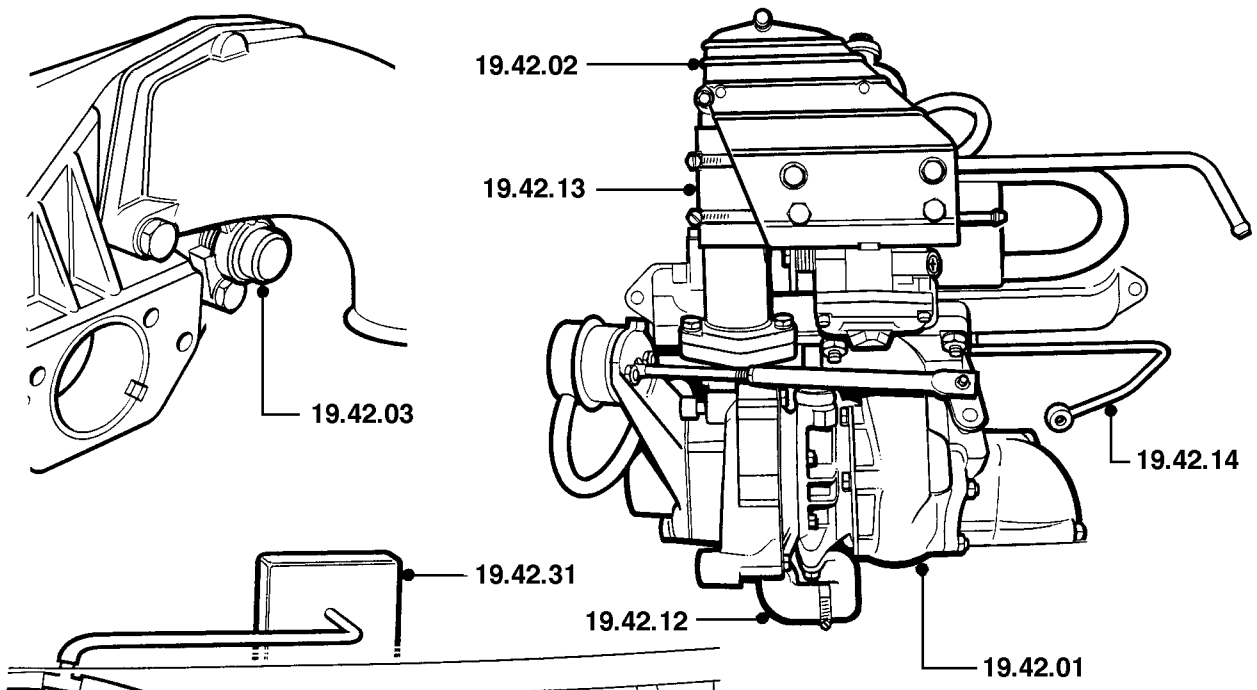
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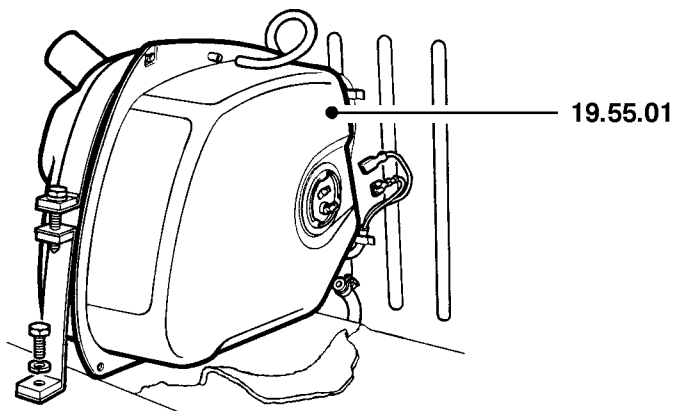
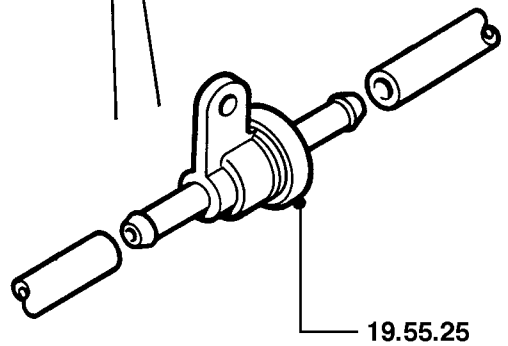
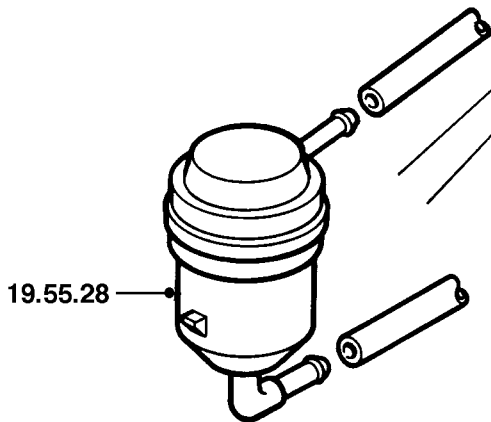
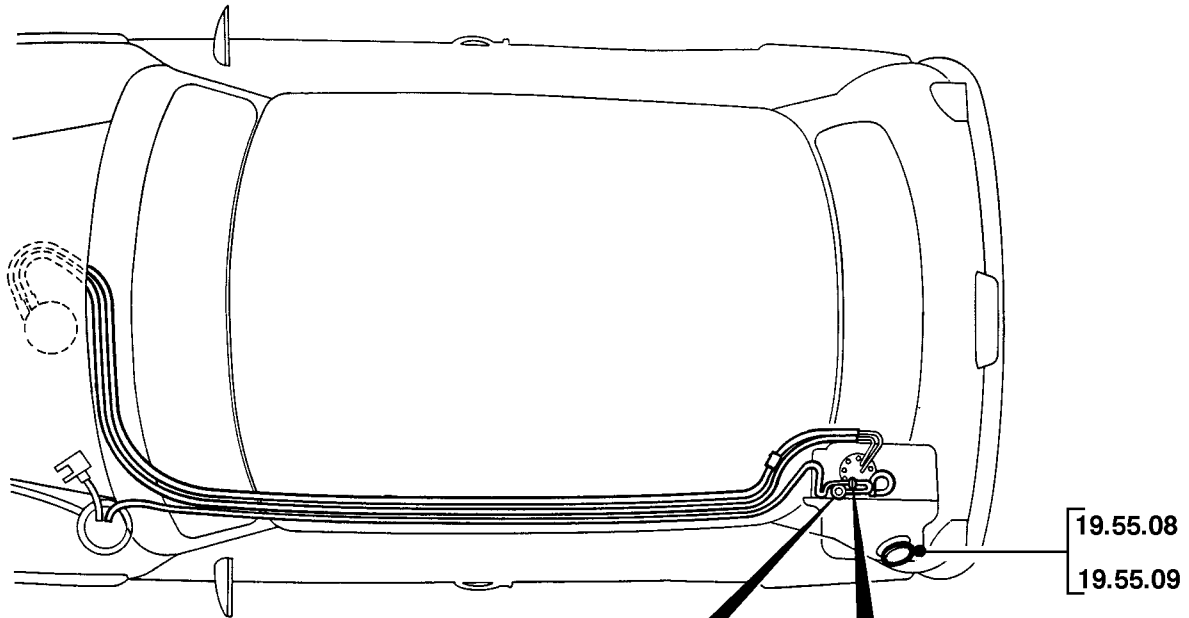
(Operations do not include tuning)

		1000 & 1300 SPI 1300 carb & MPi	
<b>19.55</b>	<b>FUEL TANK</b> <b>(Operations include drain fuel where applicable)</b>		
19.55.01	Tank - renew .....	00.60	01.00
	Turbo	00.70	
19.55.03	Shield - tank - renew .....		00.20
19.55.08	Cap - fuel filler - renew.....	00.15	00.15
19.55.09	Lock - filler cap - renew .....		00.15
19.55.25	Valve - two way breather - tank - renew .....		00.65
	MPi		00.80
19.55.28	Valve - fuel cut off - tank - renew .....		00.65

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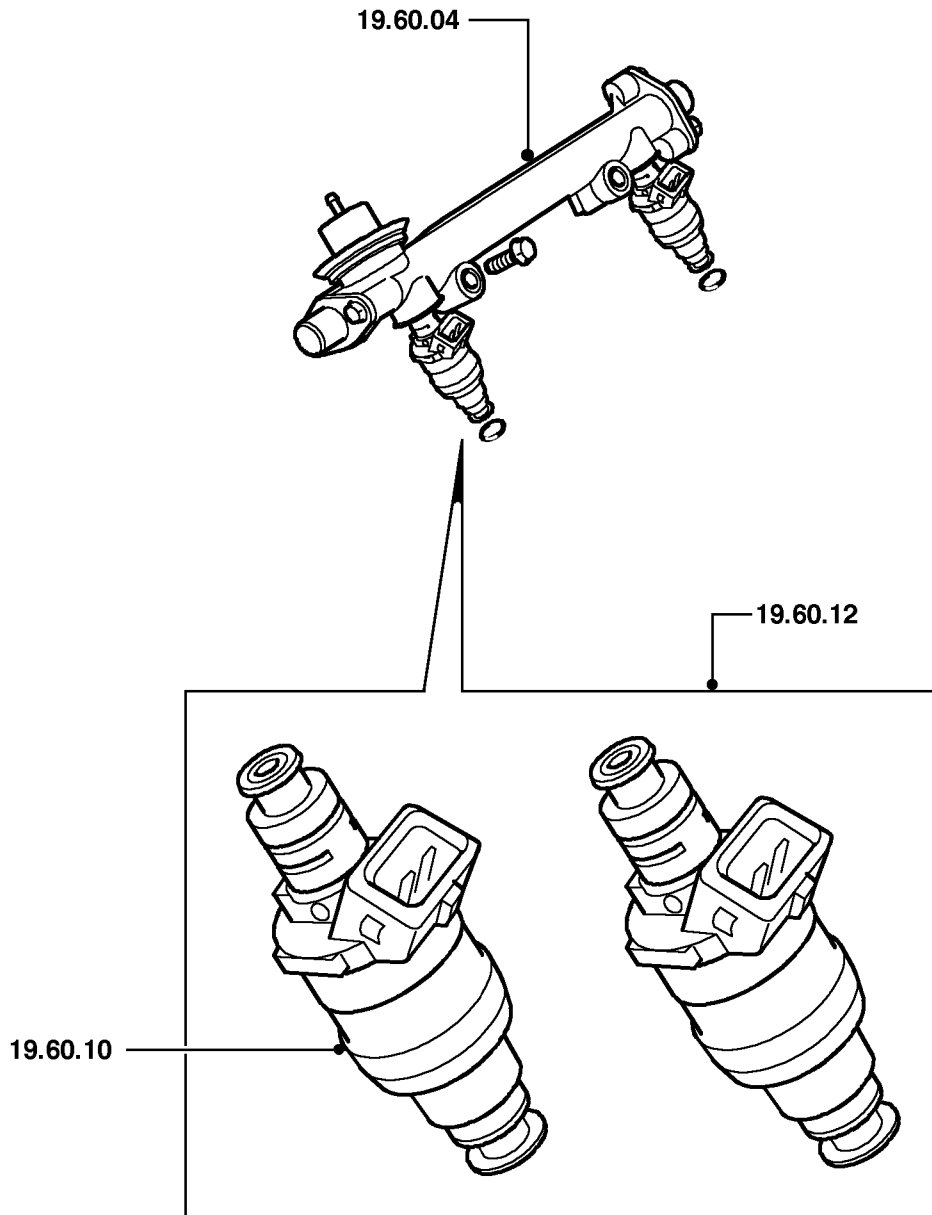
# 19 FUEL SYSTEM

MINI

(Operations do not include tuning)

		1000 & 1300 SPi 1300 carb & MPi	
<b>19.60</b>	<b>INJECTORS &amp; HEATER/GLOW PLUGS</b>		
19.60.04	Fuel rail - renew.....	MPi	00.90 2M4
19.60.10	Injector - each - renew.....	MPi	01.00 2M3
19.60.12	Injectors - set - renew.....	MPi	01.00 2M3
<b>19.90</b>	<b>DIAGNOSIS</b>		
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>		
19.90.15/01	Heated oxygen sensor (H02S) - test.....		00.30

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
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D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
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# 26 COOLING SYSTEM

MINI

(Operations include drain, refill, bleed system and pressure test where necessary)

<b>26.10</b>	<b>COOLANT &amp; SYSTEM</b>		
26.10.01	Coolant - drain, flush & refill.....	00.75	-
	Turbo	02.00	-
26.10.07	System - pressure test.....	00.30	-
26.10.07/01	System - pressure test - with vehicle in workshop .....	00.20	-
<b>26.15</b>	<b>EXPANSION TANKS</b>		
26.15.01	Tank - renew .....	00.25	2C7
	MPi	00.80	2C7
<b>26.20</b>	<b>DRIVE BELTS</b>		
26.20.01	Belt - water pump - check & adjust tension .....	00.50	2G5
26.20.01/01	Belt - water pump - check & adjust tension - vehicle in workshop .....	00.40	2G5
26.20.07	Belt - water pump - renew .....	00.65	2G5
<b>26.25</b>	<b>FAN BLADES &amp; PULLEYS</b>		
26.25.03	Pulley - water pump - renew .....		
	MPi	00.60	2G4
	SPi	01.50	2G4
	Turbo	02.45	2G4
26.25.06	Fan blades - LH/single - renew .....	01.65	7F7
	SPi	01.50	7F7
	Turbo	02.45	7F7
26.25.11	Cowl - fan - renew .....	01.45	7F7
	Turbo	02.30	7F7
26.25.22	Motor - fan - LH/each - renew .....		
	MPi	00.70	7F7
26.25.23	Fan & motor unit - LH/each - renew.....	00.80	7F7
26.25.31	Relay - fan motor - renew .....	00.15	7F4
26.25.35	Switch - thermostatic - renew .....	00.30	7F6
26.25.36	Seals - thermostatic switch - renew .....		
	SPi	00.55	
26.25.41	Relay - cooling fan - engine compartment - renew .....		
	MPi	00.20	

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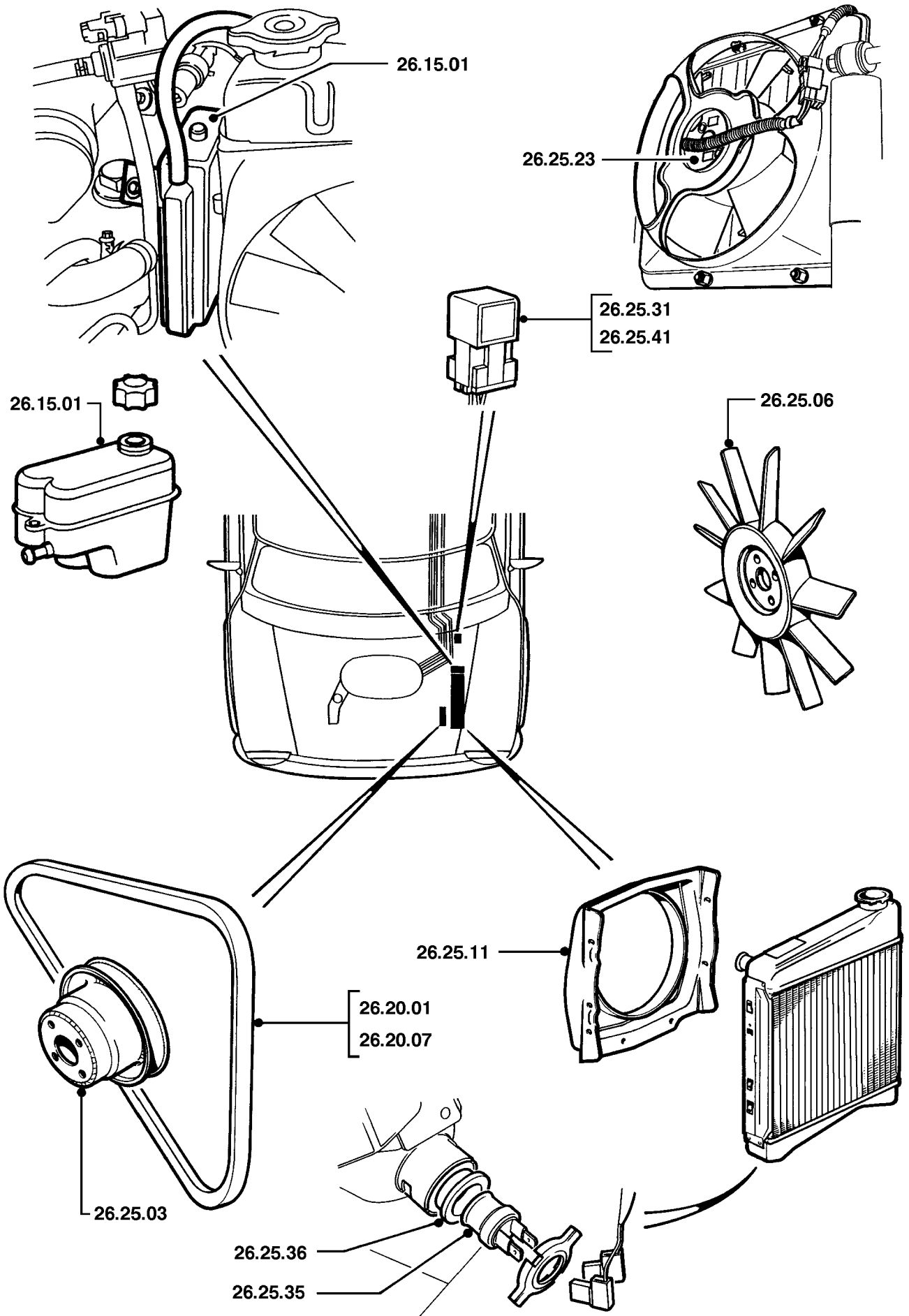
U - INACCURATE/SLIPPING

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MRT15A

# 26 COOLING SYSTEM

MINI

(Operations include drain, refill, bleed system and pressure test where necessary)

<b>26.30</b>	<b>HOSES &amp; PIPES</b>		
26.30.01	Hose - top - radiator - renew .....	00.35	2E1
		MPi 00.80	2E1
26.30.07	Hose - bottom - radiator - renew .....	01.00	2E2
		MPi 01.20	2E2
		Turbo 02.20	2E2
26.30.10	Hose - heater pipe/valve to cylinder head/block - renew .....		
		Turbo 00.35	2E4
26.30.29	Hose - manifold to heater/pipe - renew .....		
		Turbo 00.30	2E4
26.30.41	Hoses, including heater hoses - set - renew .....	02.55	*
		Turbo 03.60	*
26.30.46	Hose - bypass - renew.....	02.00	2E3
26.30.76	Hose - radiator to inlet manifold - renew .....		
		Turbo 00.55	2E9
26.30.77	Hose - top - supplementary radiator - renew .....		
		Turbo 00.50	2E9
26.30.80	Hose - manifold to bottom hose connecting pipe/elbow - renew ..		
		Turbo 00.35	2E5
26.30.96	Clips & fixings - tighten to rectify coolant leaks .....	00.25	2E8

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

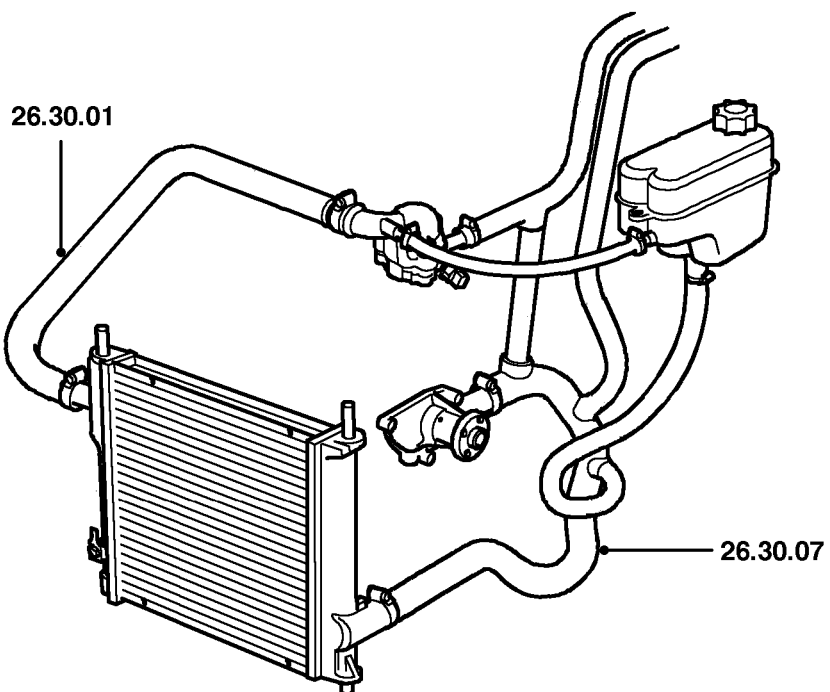
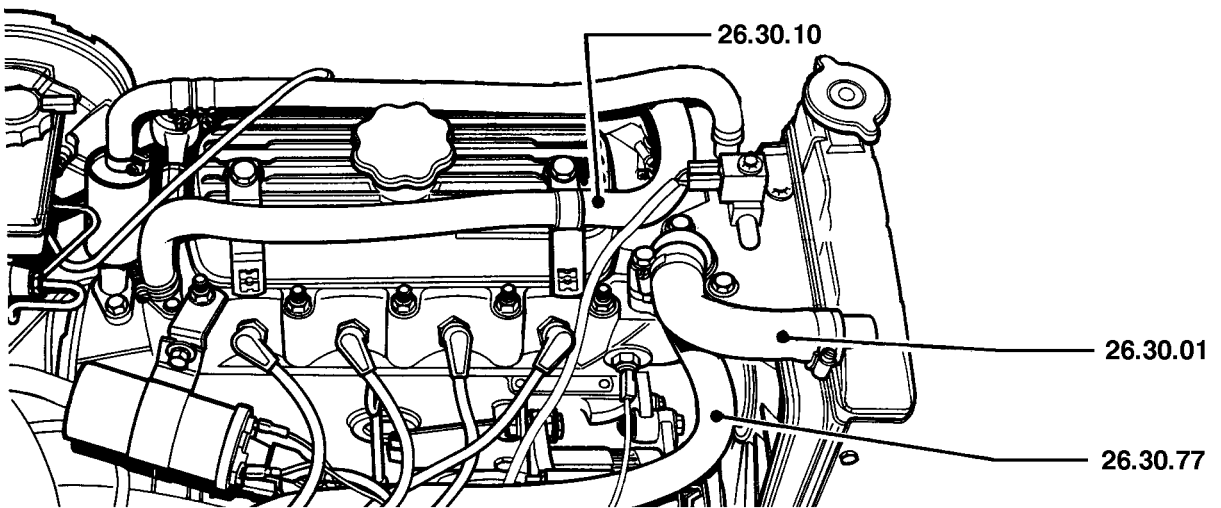
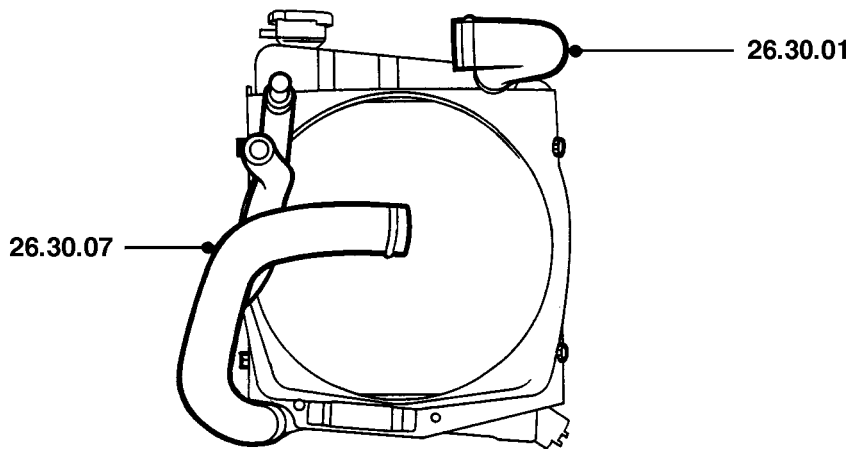
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



# 26 COOLING SYSTEM

MINI

(Operations include drain, refill, bleed system and pressure test where necessary)

<b>26.35</b>	<b>CORE PLUGS</b> <b>(Operations do not include removal of units to gain access to plugs)</b>		
26.35.01	Core plug - one only - renew .....	00.25	1A5
26.35.01/01	Core plug - extra each - renew .....	00.10	1A5
	MPi	00.10	1A5
<b>26.40</b>	<b>RADIATOR</b>		
26.40.01	Radiator assembly - renew .....	01.30	
	MPi	01.90	
	SPi	01.45	
	Turbo	02.30	
26.40.09	Radiator assembly - supplementary - renew .....		
	Turbo	00.55	2C5
<b>26.45</b>	<b>THERMOSTAT</b>		
26.45.01	Thermostat - renew .....	00.55	2C4
26.45.09	Thermostat - test - includes fit new thermostat if necessary .....	00.70	2C4
	MPi	00.70	2C4
26.45.09/01	Thermostat - test - with thermostat removed .....	00.20	2C4
	MPi	00.20	2C4
26.45.10	Housing - thermostat - renew .....	00.55	2D5
	MPi	00.70	2D5
<b>26.50</b>	<b>WATER PUMP</b>		
26.50.01	Pump - water - renew .....	02.00	2C3
	MPi	01.50	2C3
	SPi	01.75	2C3
	Turbo	02.60	2C3
26.50.01/01	Pump - water - renew - with unit removed .....	00.55	2C3
26.50.02	Gasket - water pump - renew .....	02.00	2V7
	MPi	01.50	2V7
	SPi	01.75	2V7
	Turbo	02.60	2V7

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNED

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

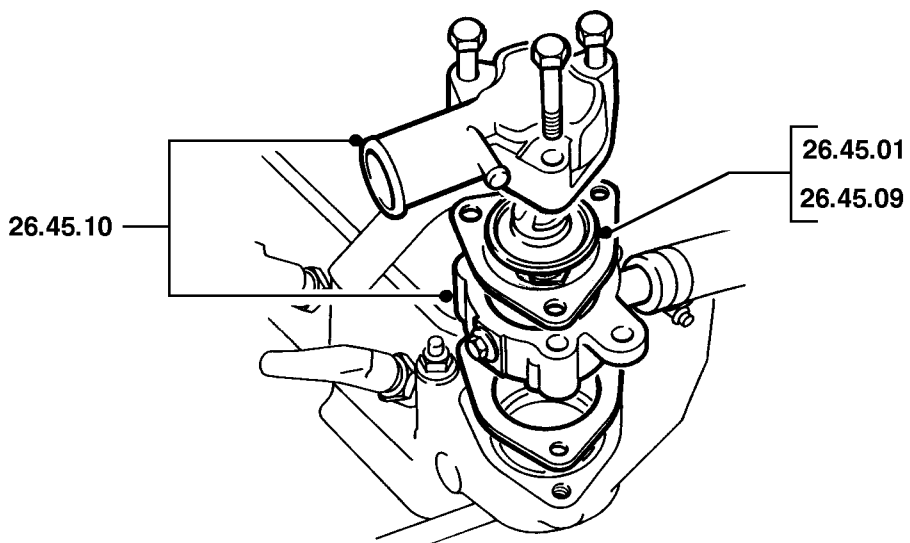
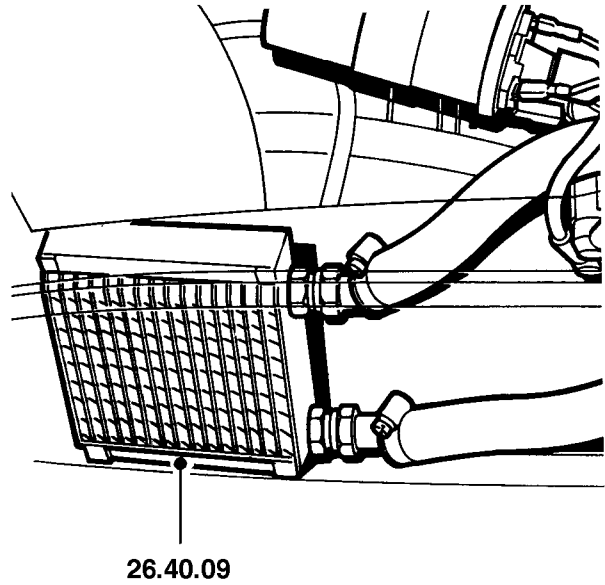
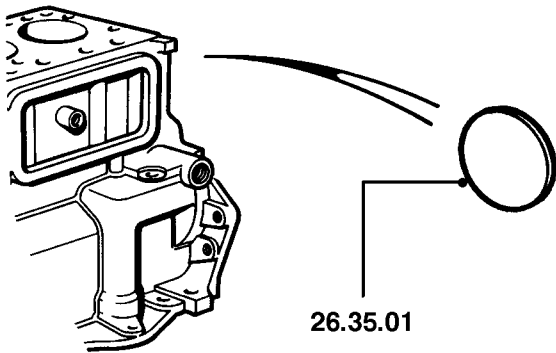
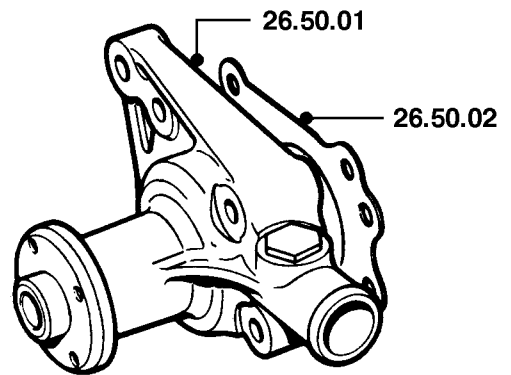
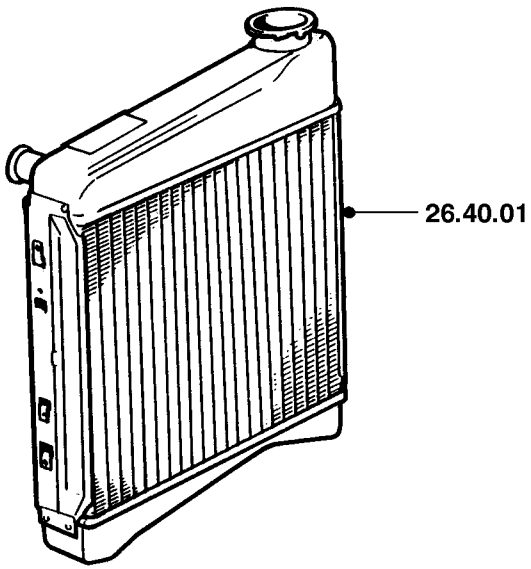
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

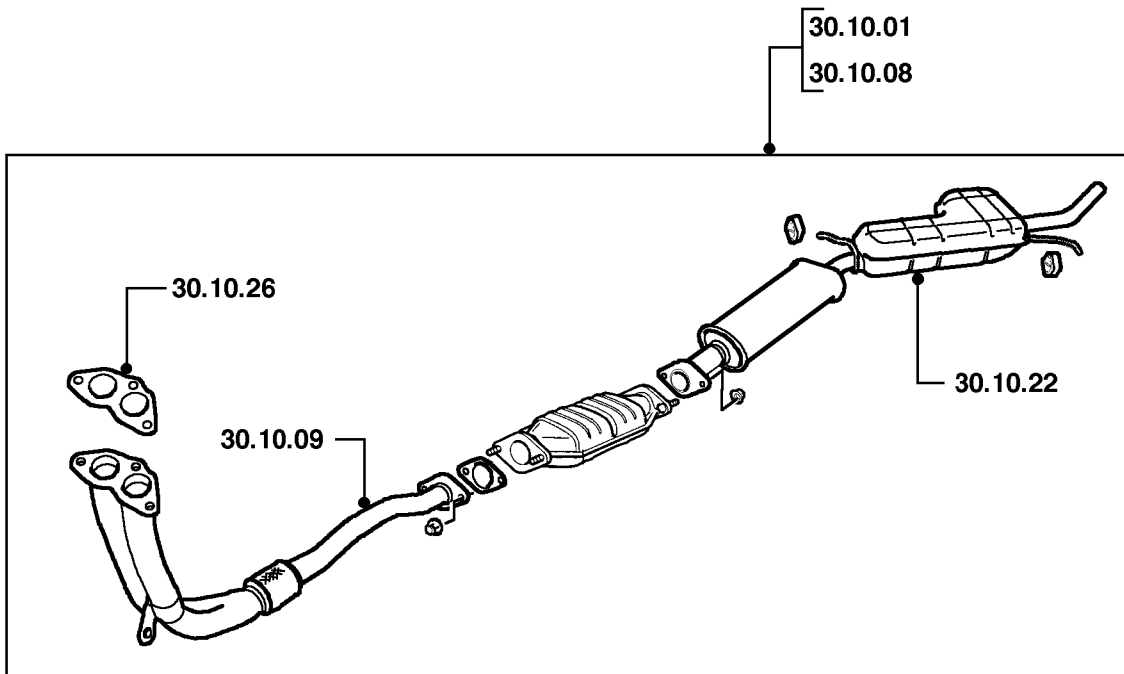
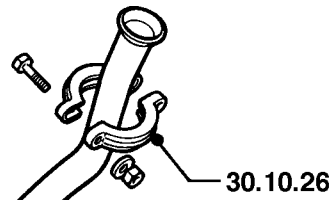
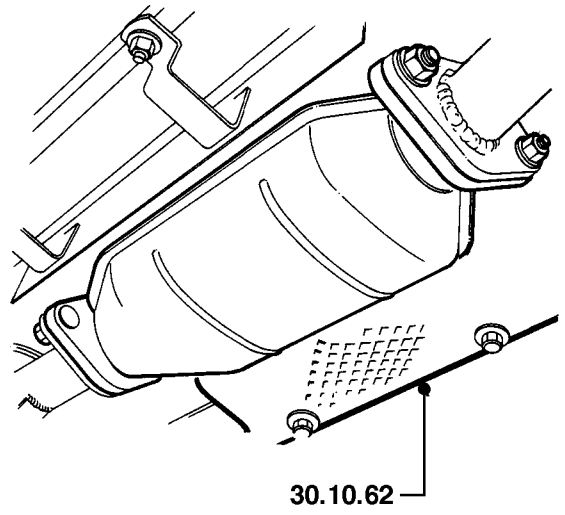
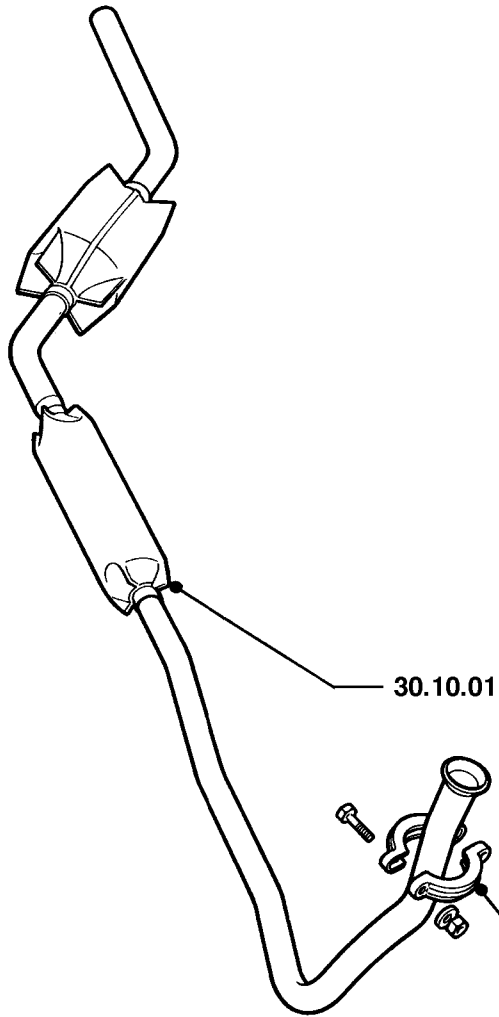
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



<b>30.10</b>	<b>EXHAUST SYSTEM</b>		
30.10.01	Exhaust system - renew .....	00.75	-
	MPi	01.20	-
	Turbo	02.10	-
30.10.05	Front pipe and/or silencer - renew .....		
	Turbo	02.10	2S3
30.10.08	Exhaust system & mountings - renew .....	00.85	-
	MPi	01.20	-
30.10.09	Front pipe - renew .....		
	Cooper	01.25	2S3
	MPi	01.00	2S3
	SPi	00.65	2S3
30.10.22	Tail pipe & silencer - renew .....	00.50	2S9
	MPi	00.40	2S9
	Turbo	00.65	2S9
30.10.26	Clamp/packing - down pipe flange - LH/each - renew .....		
	Cooper	01.00	2U4
	MPi	00.80	2U4
	SPi	00.65	2U4
	Turbo	01.55	2U4
30.10.62	Heat shield - centre - renew.....	00.45	2T2

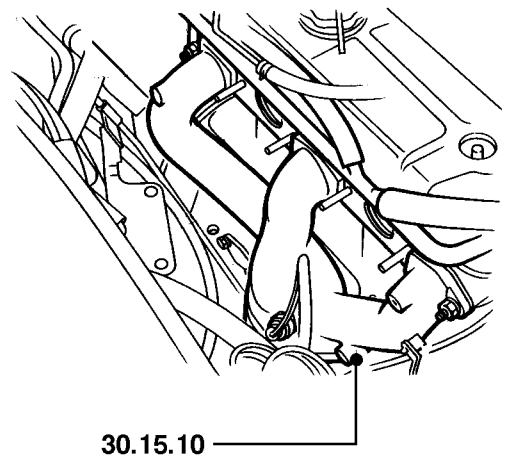
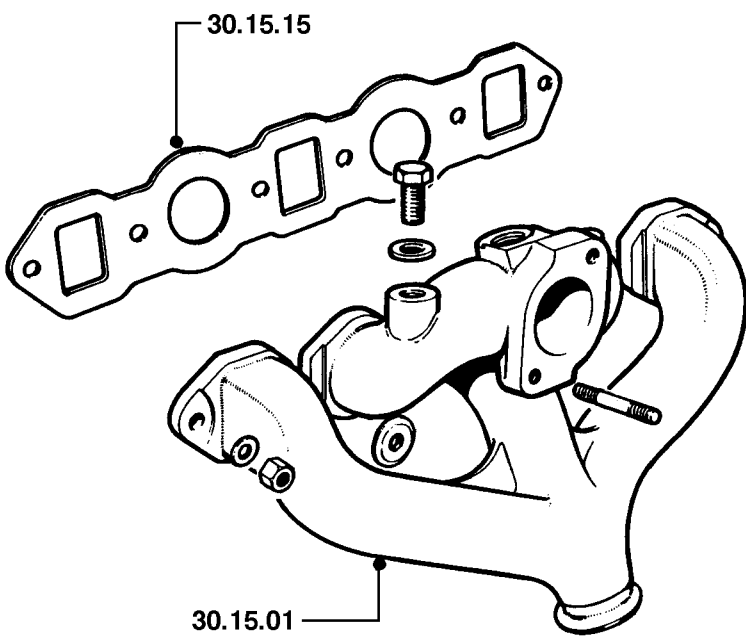
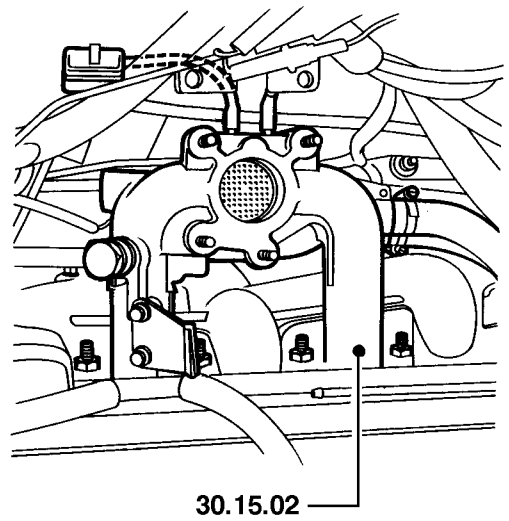
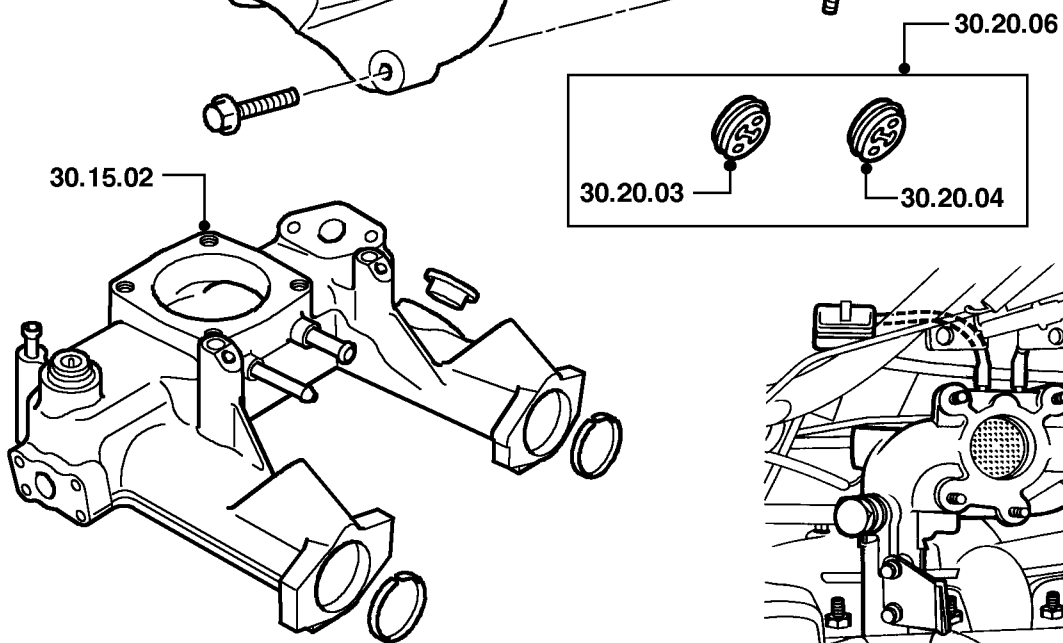
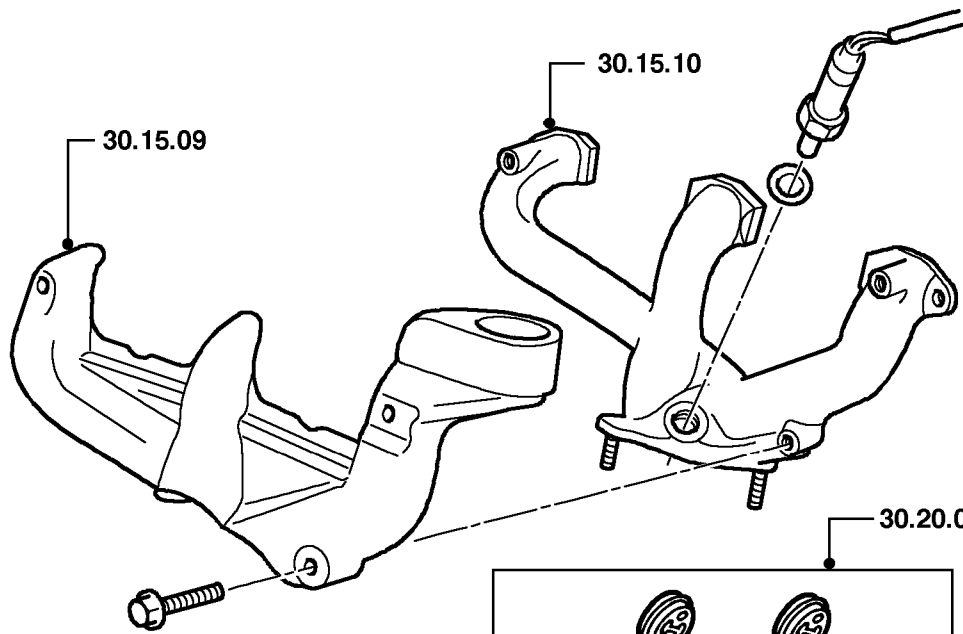
<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	





<b>30.15</b>	<b>MANIFOLDS</b>		
30.15.01	Induction & exhaust manifold assembly - renew .....	01.15	*
	Auto.	01.55	*
30.15.02	Manifold - induction - LH/front/each - renew .....		
	MPI	02.20	2M9
	SPi	01.80	2M9
	Turbo	04.10	2M9
30.15.09	Heat shield - exhaust manifold - renew .....		
	MPI	01.80	2T2
30.15.10	Manifold - exhaust - LH/front/each - renew .....		
	MPI	01.90	2S1
	SPi	01.90	2S1
	Turbo	06.40	2S1
30.15.15	Gasket(s) - induction & exhaust manifolds - renew .....	00.90	*
	Auto.	01.30	*
	MPI	01.80	*
	SPi	01.65	*
	Turbo	04.00	*
30.15.15/01	Gasket(s) - induction & exhaust manifolds - renew - with unit removed.....	00.15	*
	MPI	00.50	*
	SPi	00.35	*
	Turbo	00.55	*
<b>30.20</b>	<b>MOUNTINGS</b>		
30.20.03	Mounting rubber - centre - renew .....	00.35	2T1
30.20.04	Mounting rubber - rear - each - renew .....	00.35	2T7
30.20.06	Mountings - set - renew .....	00.35	2T1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



# 33 CLUTCH

MINI

(Operations include bleeding hydraulic system where necessary)

		1000	1300	
<b>33.10</b>	<b>CLUTCH ASSEMBLY</b> <b>(Operations include check/adjust throw out stop clearance where necessary)</b>			
33.10.02	Drive plate - renew.....	02.40	02.40	3A2
	MPI		03.50	3A2
	SPi		02.95	3A2
	Turbo		02.75	3A2
33.10.02/01	Seal - flywheel housing - renew - clutch removed .....	00.20	00.20	3A2
33.10.07	Clutch assembly/drive plate & release bearing - renew.....	02.55	02.55	*
	MPI		03.90	*
	SPi		03.00	*
	Turbo		02.85	*
33.10.08	Clutch assembly - overhaul - includes renew clutch assembly, release bearing and oil seals as necessary.....	02.75	02.75	*
	MPI		04.10	*
	SPi		03.20	*
	Turbo		03.05	*
33.10.08/01	Clutch assembly - overhaul - includes renew clutch assembly, release bearing and oil seals as necessary - with engine & gearbox assembly or engine removed.....	00.70	00.70	*
33.10.09	Drive plate & release bearing - renew .....	02.55	02.55	*
	MPI		03.90	*
	SPi		03.00	*
	Turbo		02.85	*
<b>33.15</b>	<b>HYDRAULIC SYSTEM</b>			
33.15.01	Hydraulic system - bleed .....	00.30	00.30	-
	MPI		00.40	-
	SPi		00.40	-
33.15.13	Hose(s) - renew .....	00.55	00.55	3B8
	MPI		01.20	3B8
	SPi		00.90	3B8
<b>33.20</b>	<b>MASTER CYLINDER</b>			
33.20.01	Cylinder - master - renew .....	00.80	00.80	3B4
	MPI		01.40	3B4
	SPi		01.35	3B4
33.20.06	Cylinders - master & slave - overhaul .....	01.20	01.20	*
	SPi		01.75	*
33.20.07	Cylinder - master - overhaul .....	00.95	00.95	3B4
	SPi		01.50	3B4

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

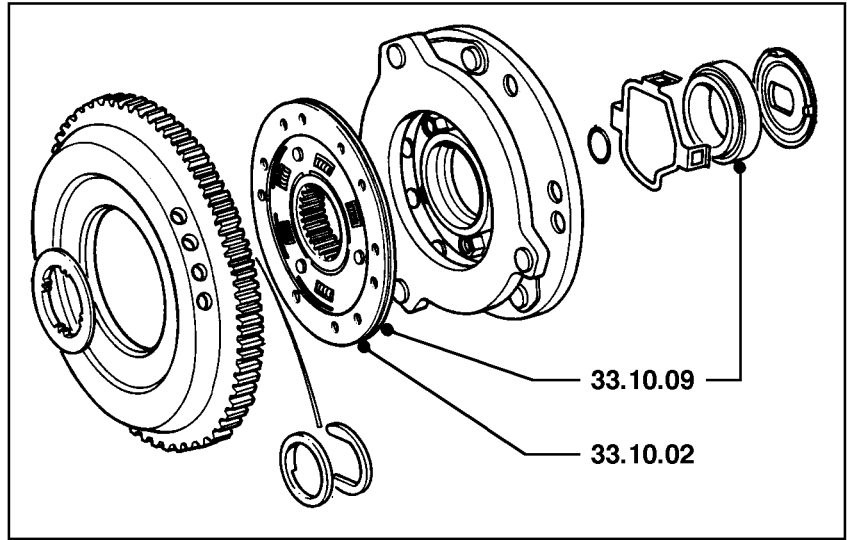
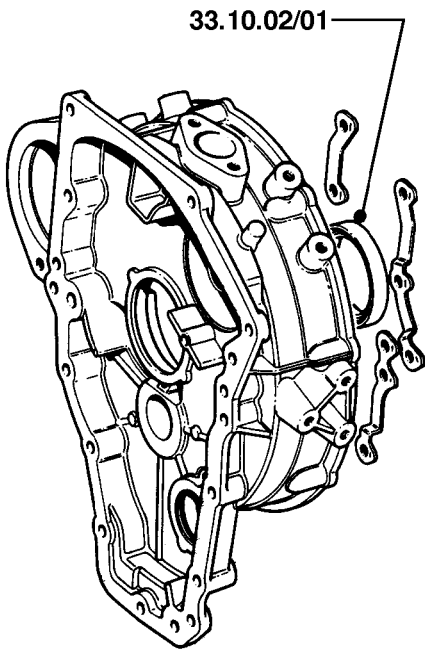
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

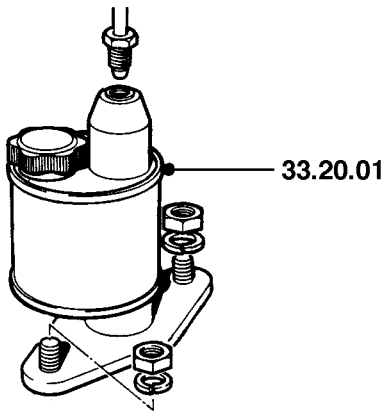
W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

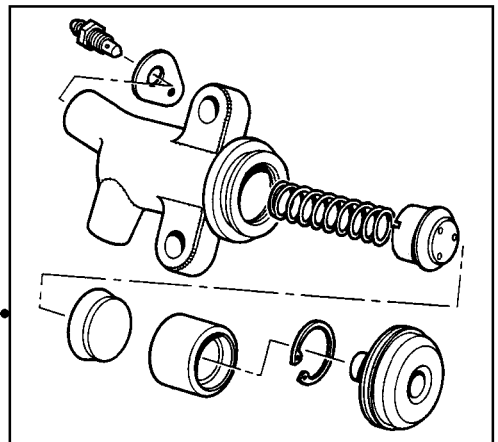
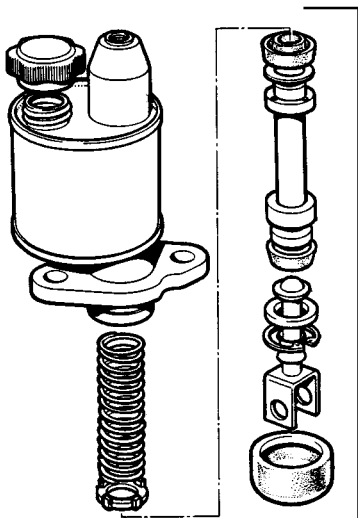
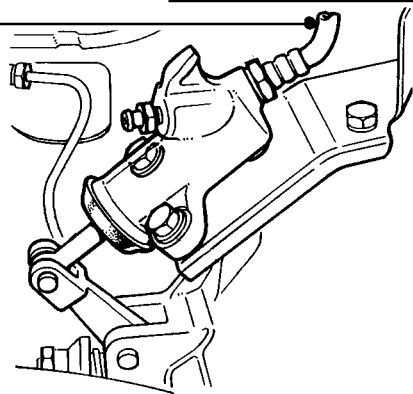
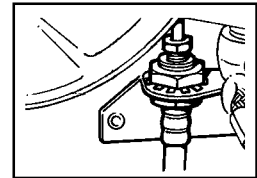
Z - INOPERATIVE



33.10.07  
33.10.08



33.15.13



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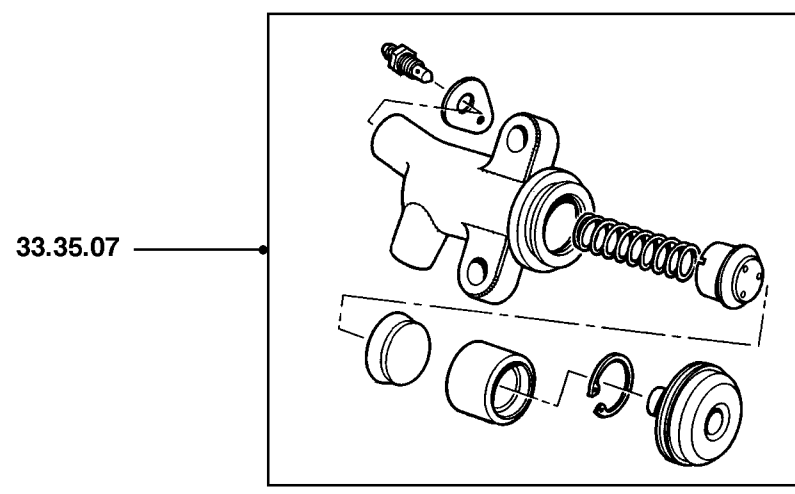
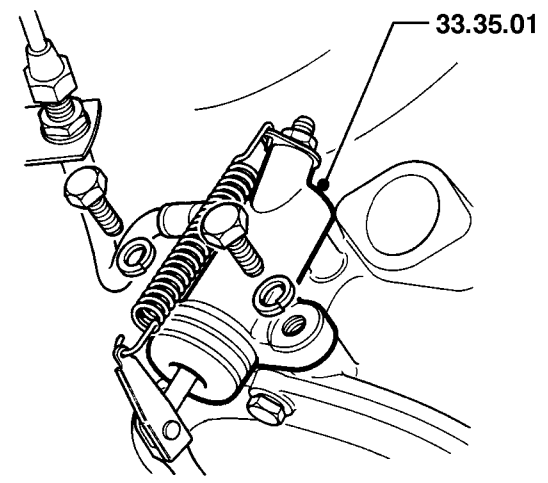
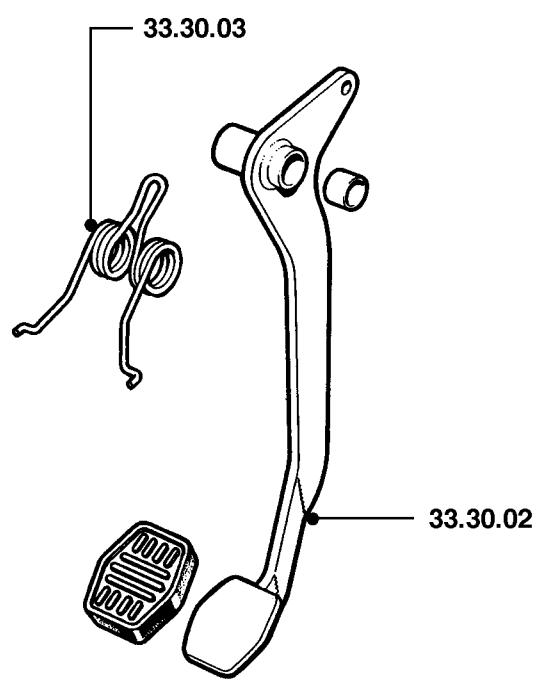
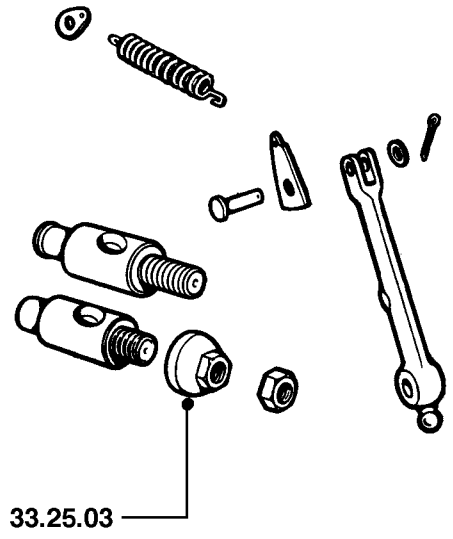
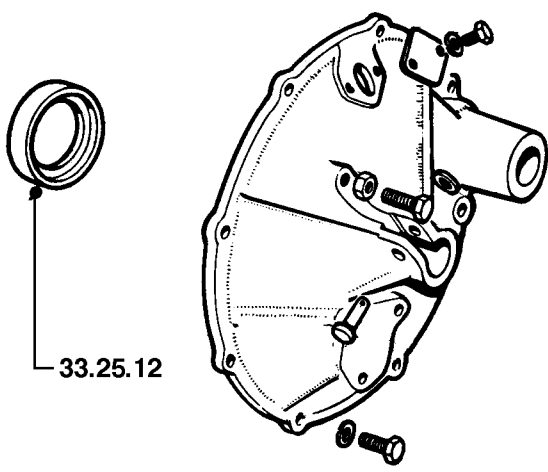
# 33 CLUTCH

MINI

(Operations include bleeding hydraulic system where necessary)

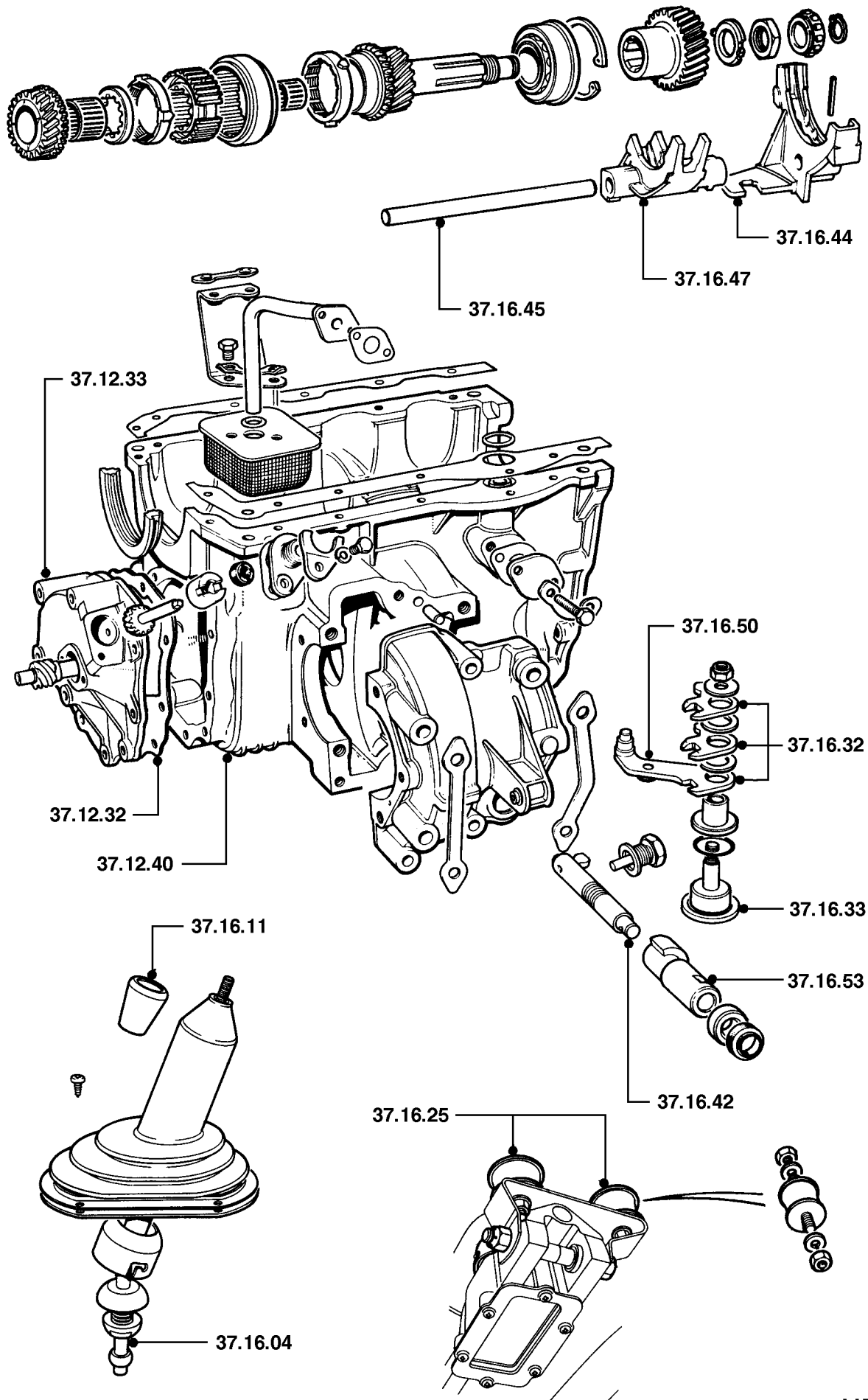
		1000	1300	
<b>33.25</b>	<b>MECHANICAL LINKAGE &amp; RELEASE</b> <b>(Operations include check/adjust throw out stop clearance where necessary)</b>			
33.25.03	Stop - throw out - check & adjust clearance .....	00.50	00.50	-
	MPi		00.40	-
	SPi & Turbo		00.40	-
33.25.12	Bearing - release - renew .....	01.95	01.95	3A3
	MPi		03.30	3A3
	SPi		02.10	3A3
	Turbo		02.35	3A3
33.25.12/01	Bearing - release - renew - clutch housing cover removed .....	00.10	00.10	3A3
<b>33.30</b>	<b>PEDAL ASSEMBLIES</b>			
33.30.02	Pedal - clutch - renew .....	01.00	01.00	3B6
33.30.03	Return spring - clutch pedal - renew .....	00.95	00.95	3B2
<b>33.35</b>	<b>SLAVE CYLINDER</b>			
33.35.01	Cylinder - slave - renew .....	00.55	00.55	3B5
	MPi		01.20	3B5
33.35.07	Cylinder - slave - overhaul .....	00.60	00.60	3B5

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



		1000	1300	
<b>37.12</b>	<b>COVERS, CASE &amp; EXTENSIONS</b>			
37.12.32	Gasket - front cover - renew .....	05.65	05.65	3S7
	MPI		02.50	3S7
	SPi		06.45	3S7
	Turbo		06.80	3S7
37.12.33	Cover - front - renew .....	05.70	05.70	-
	MPI		02.50	-
	SPi		06.55	-
	Turbo		06.90	-
37.12.40	Main case - renew .....	10.60	10.60	3D1
	MPI		13.20	3D1
	SPi		11.30	3D1
	Turbo		11.75	3D1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	





		1000	1300	
<b>37.16</b>	<b>GEARCHANGE CONTROLS &amp; SELECTORS</b>			
37.16.04	Lever - gear change - renew .....	00.40	00.40	3J1
	Turbo		00.65	3J1
37.16.05	Draught excluder - gear lever - renew .....	00.35	00.35	8E4
	Turbo		00.60	8E4
37.16.08	Locating pins - gear lever - renew .....	00.70	00.70	3J2
	Turbo		01.20	3J2
37.16.11	Knob - gear lever - renew .....	00.20	00.20	3J1
37.16.20	Remote control - assembly - overhaul .....	01.20	01.20	*
	Turbo		01.75	*
37.16.25	Mountings - remote control - renew .....	00.45	00.45	3J9
	MPi		00.80	3J9
	Turbo		00.80	3J9
37.16.32	Levers - bell crank - set - renew .....	09.85	09.85	*
	MPi		12.50	*
	SPi		10.60	*
	Turbo		11.05	*
37.16.33	Pin - pivot - bell crank - renew .....	09.90	09.90	*
	MPi		12.50	*
	SPi		10.60	*
	Turbo		11.05	*
37.16.42	Selector shaft - renew .....	09.90	09.90	3M5
	MPi		12.50	3M5
	SPi		10.60	3M5
	Turbo		11.05	3M5
37.16.44	Selector fork - 3rd/4th gears - renew .....	09.80	09.80	3M2
	MPi		12.40	3M2
	SPi		10.55	3M2
	Turbo		10.95	3M2
37.16.45	Forks - selector shaft - renew .....	09.80	09.80	3M5
	MPi		12.40	3M5
	SPi		10.55	3M5
	Turbo		10.95	3M5
37.16.47	Selector fork - 1st/2nd gears - renew.....	09.80	09.80	3M1
	MPi		12.10	3M1
	SPi		10.55	3M1
	Turbo		10.95	3M1
37.16.50	Selector fork/lever - reverse gear - renew .....	09.85	09.85	3M4
	MPi		12.10	3M4
	SPi		10.55	3M4
	Turbo		10.95	3M4
37.16.53	Interlock - renew .....	09.90	09.90	3M8
	MPi		12.20	3M8
	SPi		10.60	3M8
	Turbo		11.05	3M8

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

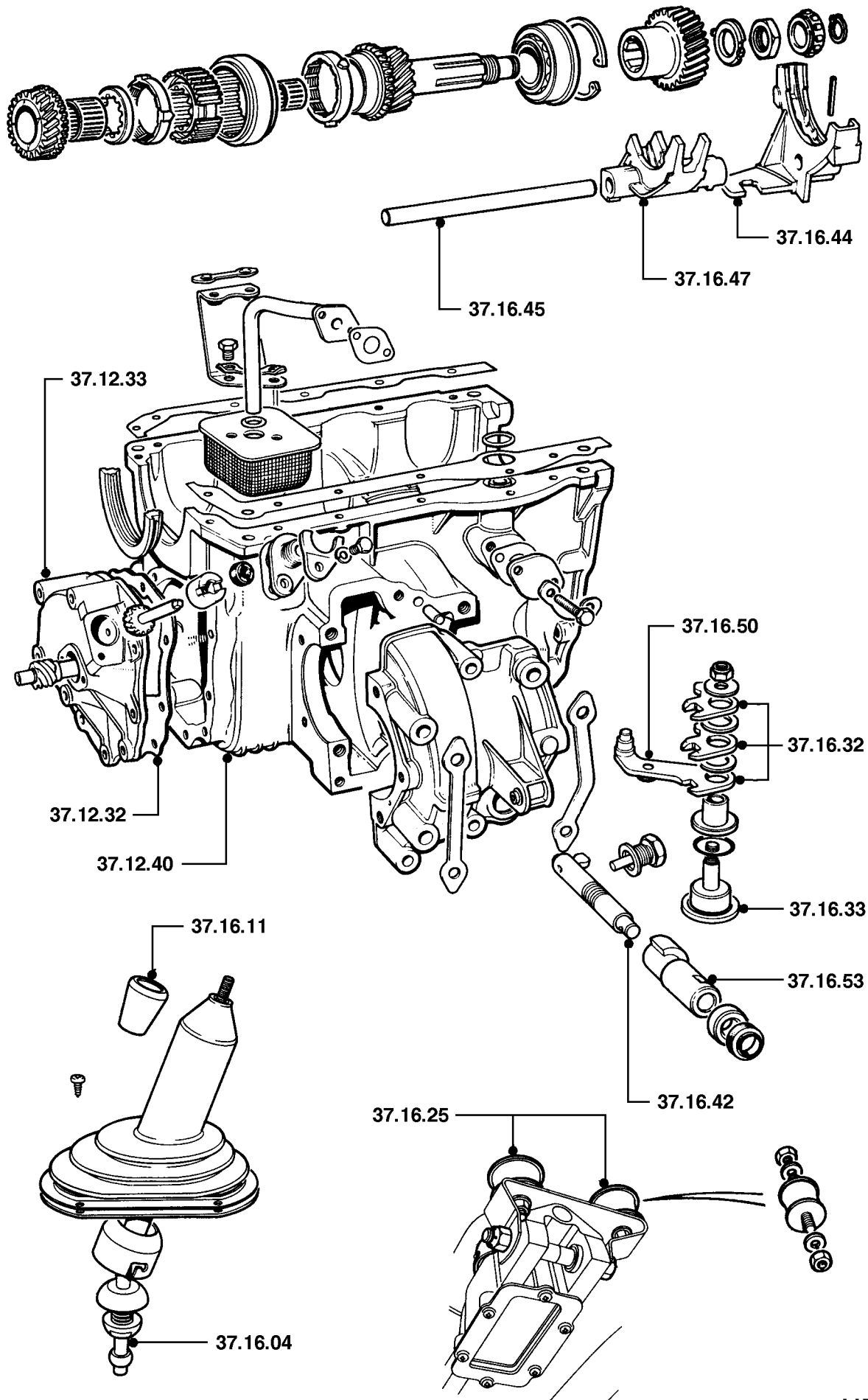
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



		1000	1300	
<b>37.20</b>	<b>GEARBOX ASSEMBLY</b>			
37.20.02	Gearbox - renew .....	08.40	08.40	*
	MPI		11.00	*
	SPi		09.10	*
	Turbo		09.55	*
37.20.02/99	Gearbox - remove for access & refit .....	07.10	07.10	-
	MPI		09.70	-
	SPi		07.85	-
	Turbo		08.25	-
37.20.07	Synchronizer assemblies - renew .....	10.15	10.15	*
	MPI		12.70	*
	SPi		10.90	*
	Turbo		11.30	*
37.20.08	Synchronizer assemblies - overhaul .....	10.40	10.40	*
	MPI		13.00	*
	SPi		11.15	*
	Turbo		11.60	*
37.20.09	Idler gear assembly - renew .....	03.55	03.55	3E7
	MPI		05.30	3E7
	SPi		03.90	3E7
	Turbo		05.20	3E7
37.20.10	Idler gear - check & adjust end float .....	03.55	03.55	3E7
	MPI		05.50	3E7
	SPi		03.90	3E7
	Turbo		05.20	3E7
37.20.10/01	Idler gear - check & adjust end float - with unit split.....	00.15	00.15	3E7
37.20.11	Primary drive gear train - renew .....	06.75	06.75	3F8
	MPI		05.60	3F8
	SPi		07.40	3F8
	Turbo		08.55	3F8
37.20.12	Primary drive gear train & bushes/bearings - renew .....	06.95	06.95	*
	MPI		05.50	*
	SPi		07.55	*
	Turbo		08.75	*
37.20.13	Shaft - reverse idler gear - renew .....	09.75	09.75	3H4
	MPI		12.30	3H4
	SPi		10.45	3H4
	Turbo		10.90	3H4
37.20.15	Gear - reverse idler - renew.....	09.75	09.75	3E7
	MPI		12.30	3E7
	SPi		10.45	3E7
	Turbo		10.90	3E7

A - WRONGLY ADJUSTED

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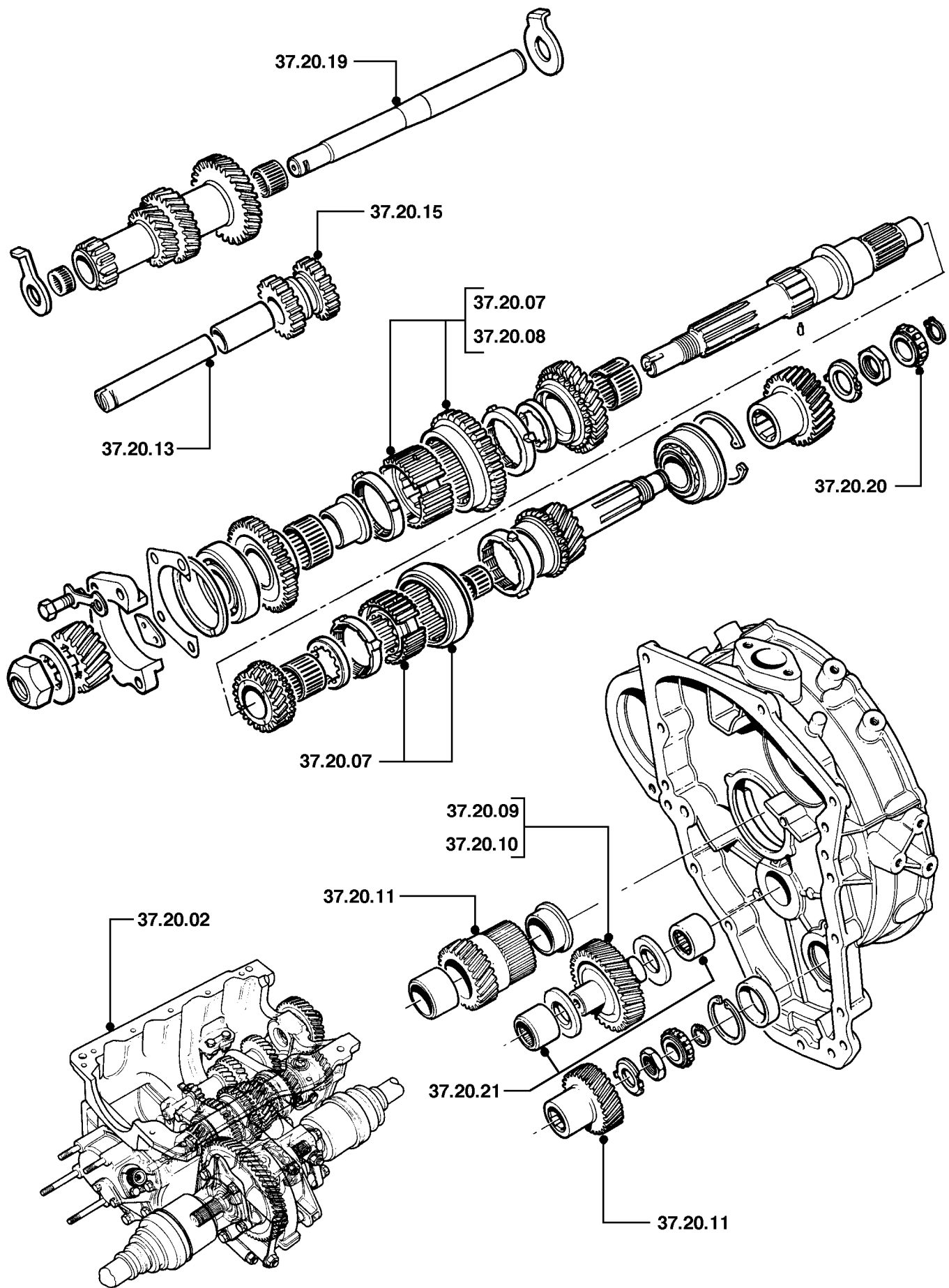
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



		1000	1300	
<b>37.20</b>	<b>GEARBOX ASSEMBLY</b>			
37.20.16	Shaft - input - renew .....	09.35	09.35	3H1
	MPI		11.90	3H1
	SPi		10.10	3H1
	Turbo		10.50	3H1
37.20.17	Bearing(s) - input shaft - renew .....	09.35	09.35	3H5
	MPI		11.90	3H5
	SPi		10.10	3H5
	Turbo		10.60	3H5
37.20.18	Bearing - input shaft spigot end - renew .....	06.55	06.55	3H1
	MPI		05.60	3H1
	SPi		07.35	3H1
	Turbo		07.80	3H1
37.20.18/01	Bearing - input shaft spigot end - renew - flywheel housing removed.....	00.25	00.25	3H1
37.20.19	Countershaft - renew .....	08.80	08.80	3H3
	MPI		11.40	3H3
	SPi		09.55	3H3
	Turbo		10.00	3H3
37.20.21	Bearings/bushes - idler gear - set - renew.....	04.05	04.05	3F5
	MPI		05.40	3F5
	SPi		04.30	3F5
	Turbo		05.80	3F5
37.20.21/01	Bearings/bushes - idler gear - set - renew - flywheel housing removed.....	00.65	00.65	3F5
37.20.23	Synchronizer assembly - 3rd/4th gear - renew .....	09.70	09.70	*
	MPI		12.30	*
	SPi		10.45	*
	Turbo		10.90	*
37.20.24	Synchronizer assembly - 3rd/4th gear - overhaul .....	09.85	09.85	*
	MPI		12.40	*
	SPi		10.60	*
	Turbo		11.00	*
37.20.25	Shaft - output - renew .....	10.15	10.15	3H2
	MPI		12.70	3H2
	SPi		10.90	3H2
	Turbo		11.30	3H2
37.20.26	Bearing(s) - output shaft - renew .....	09.65	09.65	3H6
	MPI		12.30	3H6
	SPi		10.40	3H6
	Turbo		10.85	3H6

A - WRONGLY ADJUSTED

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R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

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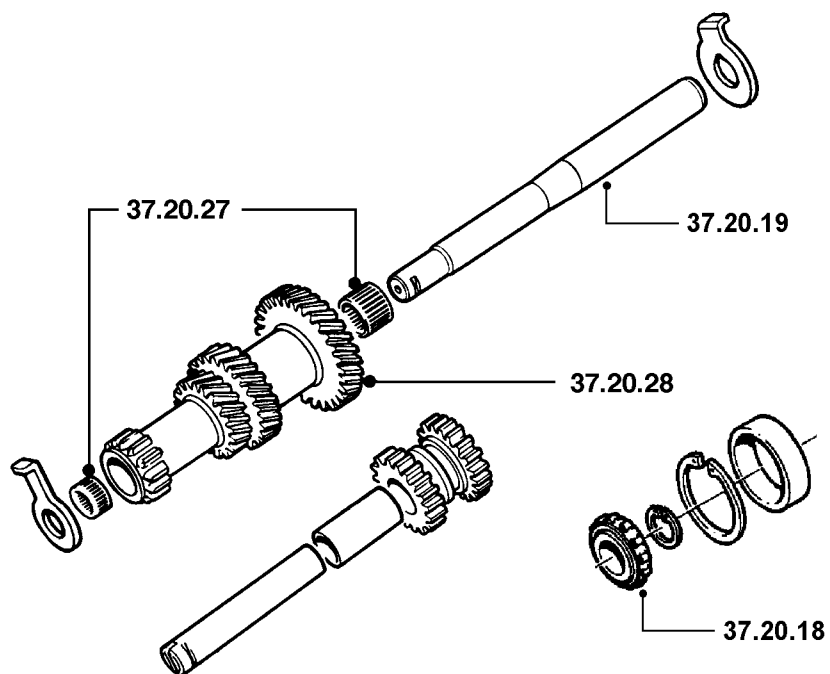
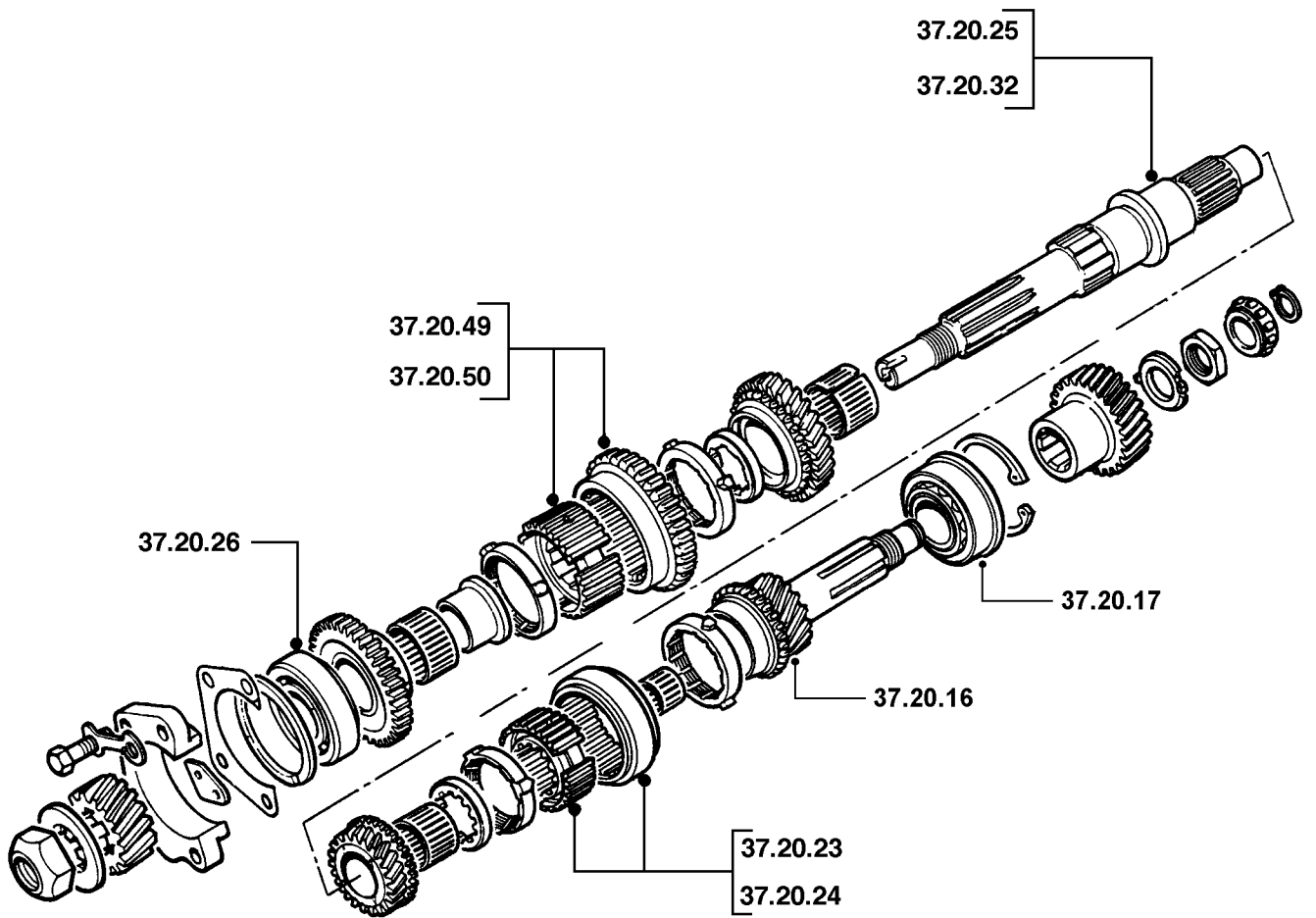
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

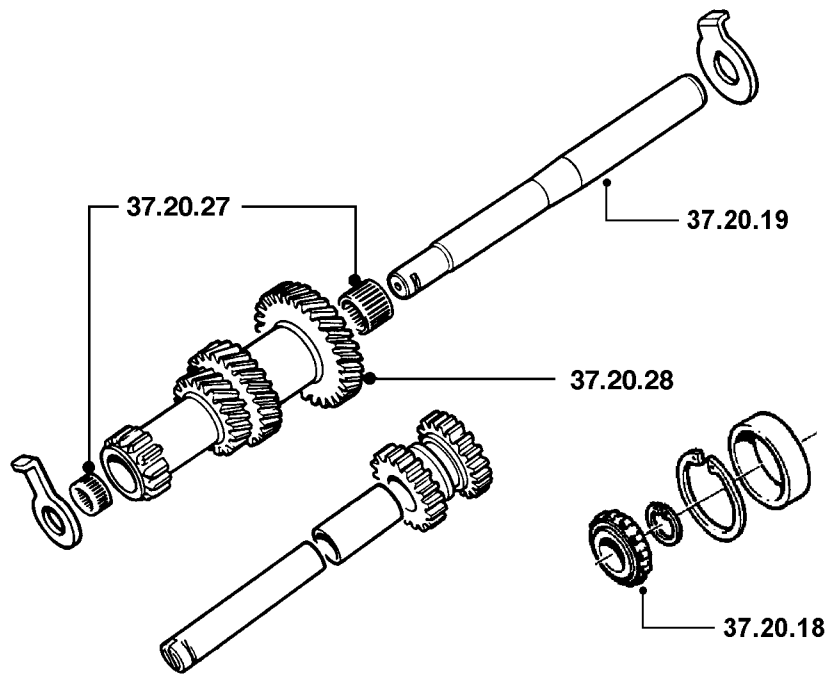
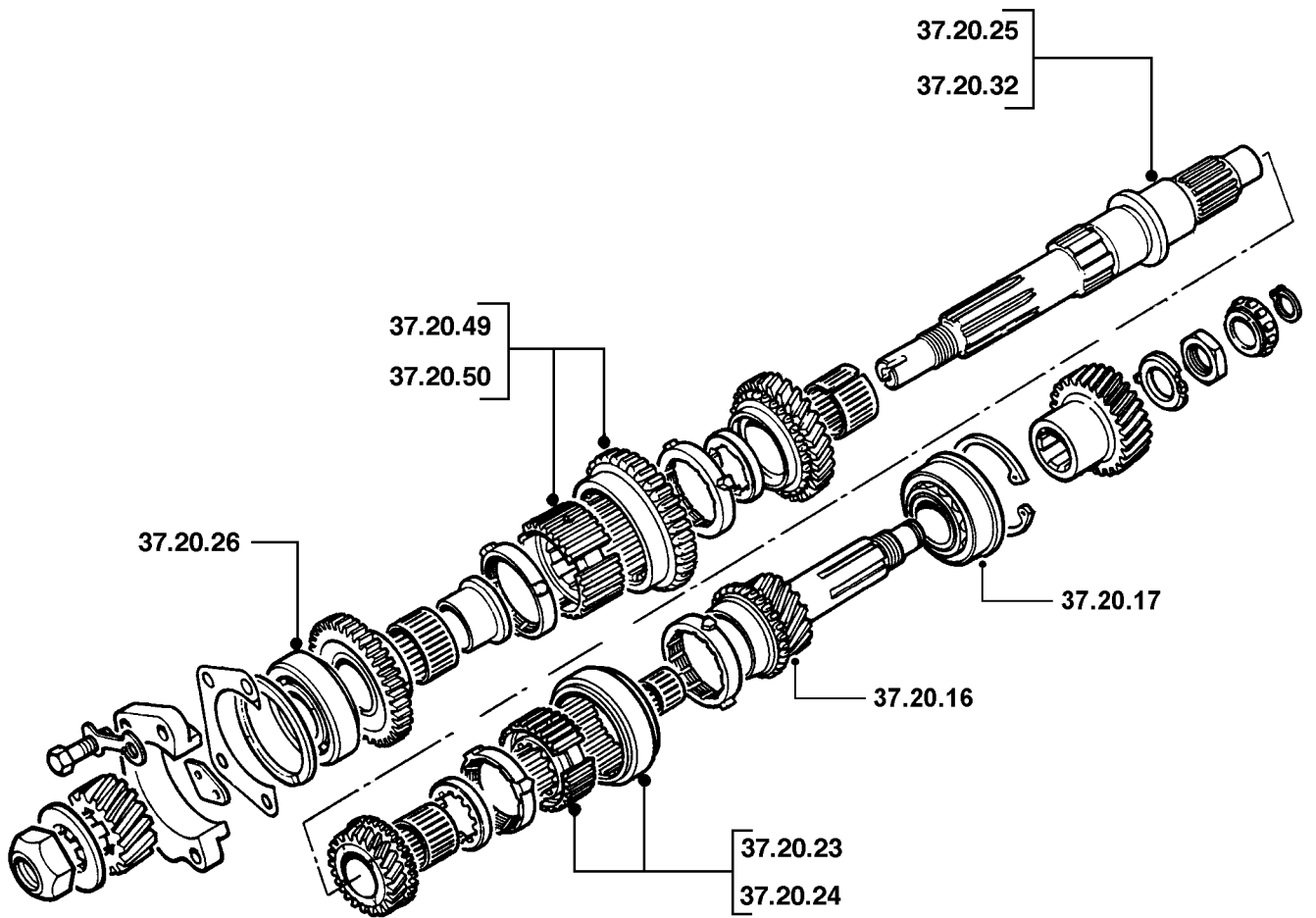
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



		1000	1300	
<b>37.20</b>	<b>GEARBOX ASSEMBLY</b>			
37.20.27	Bearings - countershaft - renew.....	08.80	08.80	3H7
	MPI		11.00	3H7
	SPi		09.55	3H7
	Turbo		10.00	3H7
37.20.28	Gear(s) - countershaft - renew.....	08.80	08.80	3E8
	MPI		11.40	3E8
	SPi		09.55	3E8
	Turbo		10.00	3E8
37.20.32	Output shaft - renew - includes renew bearing(s) & overhaul synchronizers .....	10.40	10.40	3H2
	MPI		13.00	3H2
	SPi		11.15	3H2
	Turbo		11.60	3H2
37.20.49	Synchronizer - 1st/2nd speed - renew .....	10.15	10.15	*
	MPI		12.70	*
	SPi		10.90	*
	Turbo		11.30	*
37.20.50	Synchronizer - 1st/2nd speed - overhaul .....	10.30	10.30	*
	MPI		12.60	*
	SPi		11.00	*
	Turbo		11.45	*

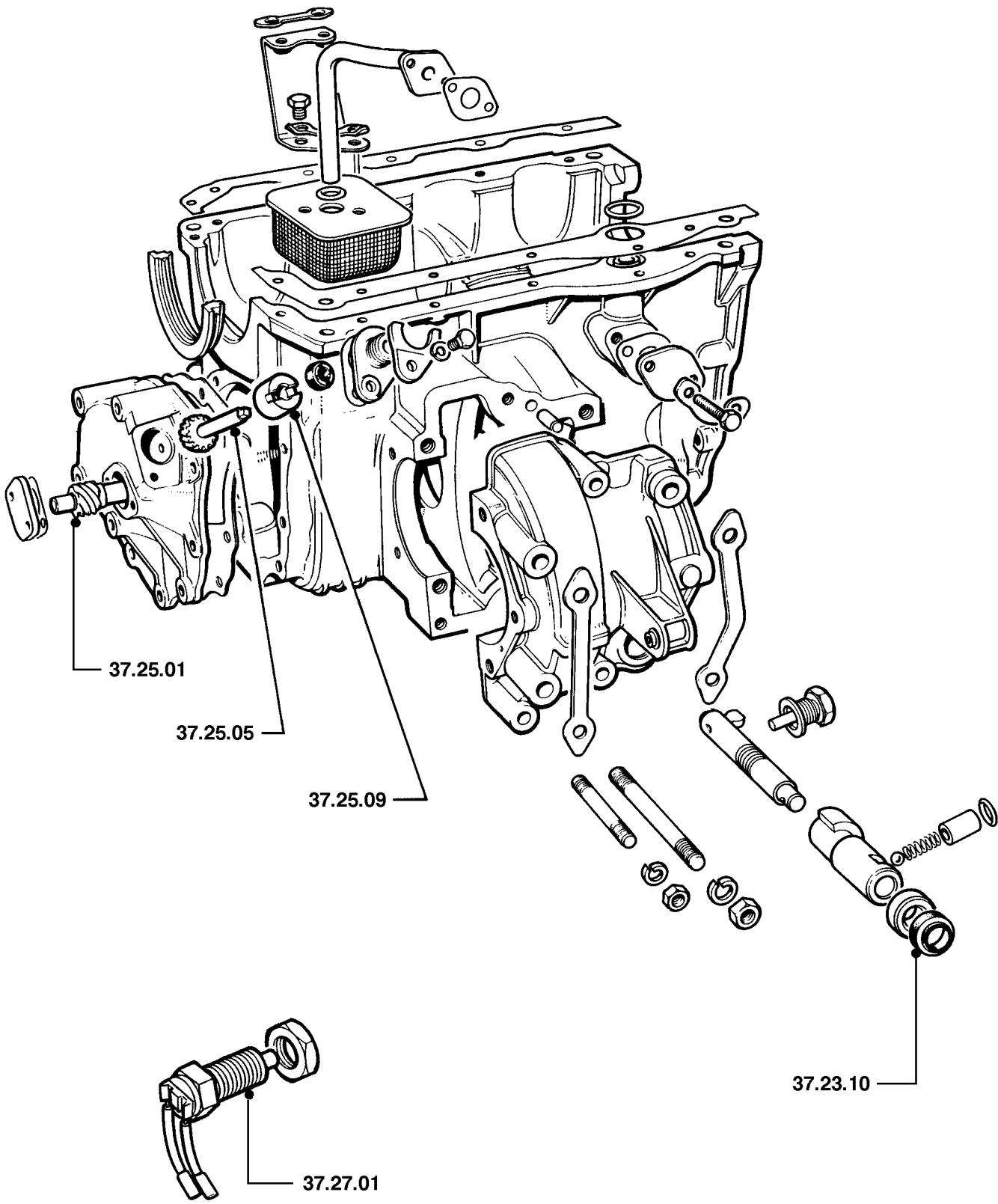
A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	





		1000	1300	
<b>37.23</b>	<b>OIL SEALS</b>			
37.23.10	Oil seal - gear change rod - renew .....	00.55	00.55	3R9
<b>37.25</b>	<b>SPEEDOMETER DRIVE</b>			
37.25.01	Gear - speedometer drive - renew .....	01.80	01.80	3E9
	MPI		01.70	3E9
	SPi		02.15	3E9
	Turbo		03.15	3E9
37.25.05	Pinion - speedometer drive - renew .....	01.35	01.35	3E9
	MPI		00.70	3E9
	SPi		01.40	3E9
	Turbo		02.65	3E9
37.25.09	Housing/bush - speedometer drive - renew .....	01.35	01.35	*
	MPI		00.70	*
	SPi		01.40	*
	Turbo		02.65	*
<b>37.27</b>	<b>SWITCHES</b>			
37.27.01	Switch - reverse light - renew .....	00.40	00.40	7H1
<b>37.90</b>	<b>DIAGNOSIS</b>			
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>			
37.90.01/01	Manual gearbox oil leak detection - for porous or cracked casings. - using ultra violet tracer dye .....	00.85	00.85	-

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
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E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
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		1.0	1.3	
<b>44.10</b>	<b>BRAKE BANDS</b>			
44.10.01	Brake band - front/3rd gear - renew.....	09.15	10.35	4C4
44.10.04	Brake band - 2nd gear - renew .....	09.15	10.35	4C3
44.10.09	Brake band - rear/reverse gear - renew.....	09.15	10.35	4C5
44.10.18	Brake bands - set - renew .....	09.15	10.35	-
<b>44.12</b>	<b>CLUTCHES</b>			
44.12.04	Clutch - front/forward - renew .....	06.45	07.65	4C1
44.12.07	Clutch - rear/top & reverse - renew .....	08.20	09.35	4C2
44.12.09	Clutches - front/forward & rear/top reverse - overhaul.....	09.50	10.70	*
44.12.09/01	Clutches - front/forward & rear/top reverse - overhaul - with clutches removed .....	00.70	00.70	*
44.12.10	Clutch - front/forward - overhaul .....	06.90	08.05	4C1
44.12.10/01	Clutch - front/forward - overhaul - with clutch removed .....	00.45	00.45	4C1
44.12.13	Clutch - rear or top/reverse - overhaul.....	08.45	09.65	4C2
44.12.13/01	Clutch - rear or top/reverse - overhaul - with clutch removed .....	00.30	00.30	4C2
44.12.16	Clutch - one way - renew.....	08.10	09.30	4D4
<b>44.15</b>	<b>CONTROLS &amp; LINKAGE</b>			
44.15.01	Cable/control - kickdown - renew.....	00.65	00.65	4F5
44.15.04	Lever - gearshift selector assembly - renew .....	00.95	00.95	4F1
44.15.07	Knob - selector lever - renew.....	00.15	00.15	4F1
44.15.08	Rod/cable assembly - selector - renew .....	01.60	01.20	4F3
44.15.10	Indicator - selector - renew .....	00.35	00.25	4F8
44.15.18	Switch - starter inhibitor - check & adjust.....	00.45	00.55	7H2
44.15.19	Switch - starter inhibitor - renew .....	00.45	00.55	7H2
44.15.21	Switch - reverse light - check & adjust.....	00.25	00.45	7H1
44.15.22	Switch - reverse light - renew .....	00.30	00.40	7H1
<b>44.17</b>	<b>CONVERTER, HOUSING &amp; PRIMARY DRIVE</b>			
44.17.02	Cover - converter housing - renew .....	02.45	03.15	-
44.17.03	Gasket - converter housing - renew.....	07.65	08.85	4H4
44.17.03/01	Gasket - converter housing - renew - with unit removed .....	01.85	01.85	4H4
44.17.04	Oil seal - converter housing - renew .....	03.30	04.00	4H1
44.17.05	Oil seal - stator housing - renew .....	07.65	08.85	4H3
44.17.07	Converter assembly - renew .....	03.00	03.80	4A4

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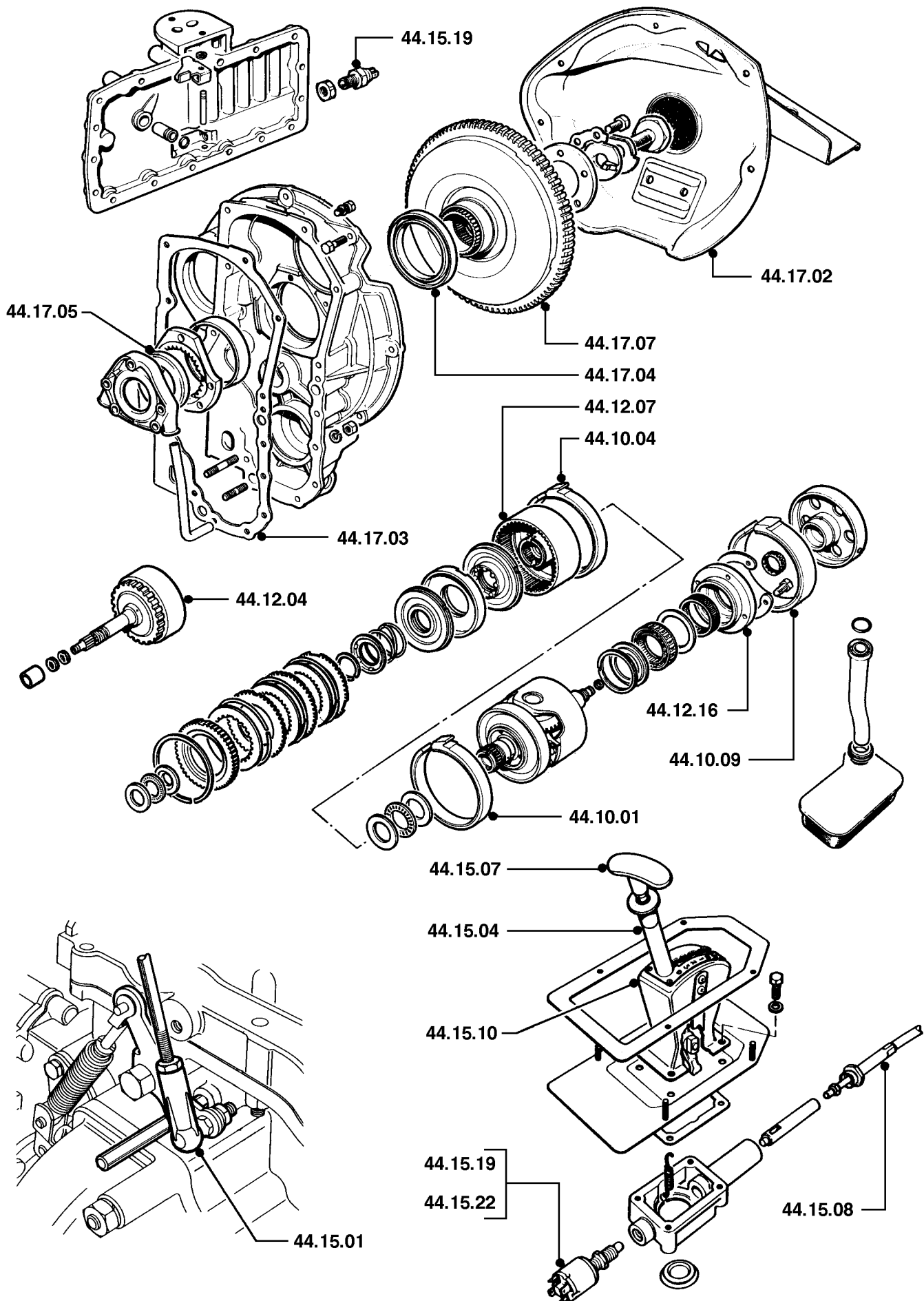
U - INACCURATE/SLIPPING

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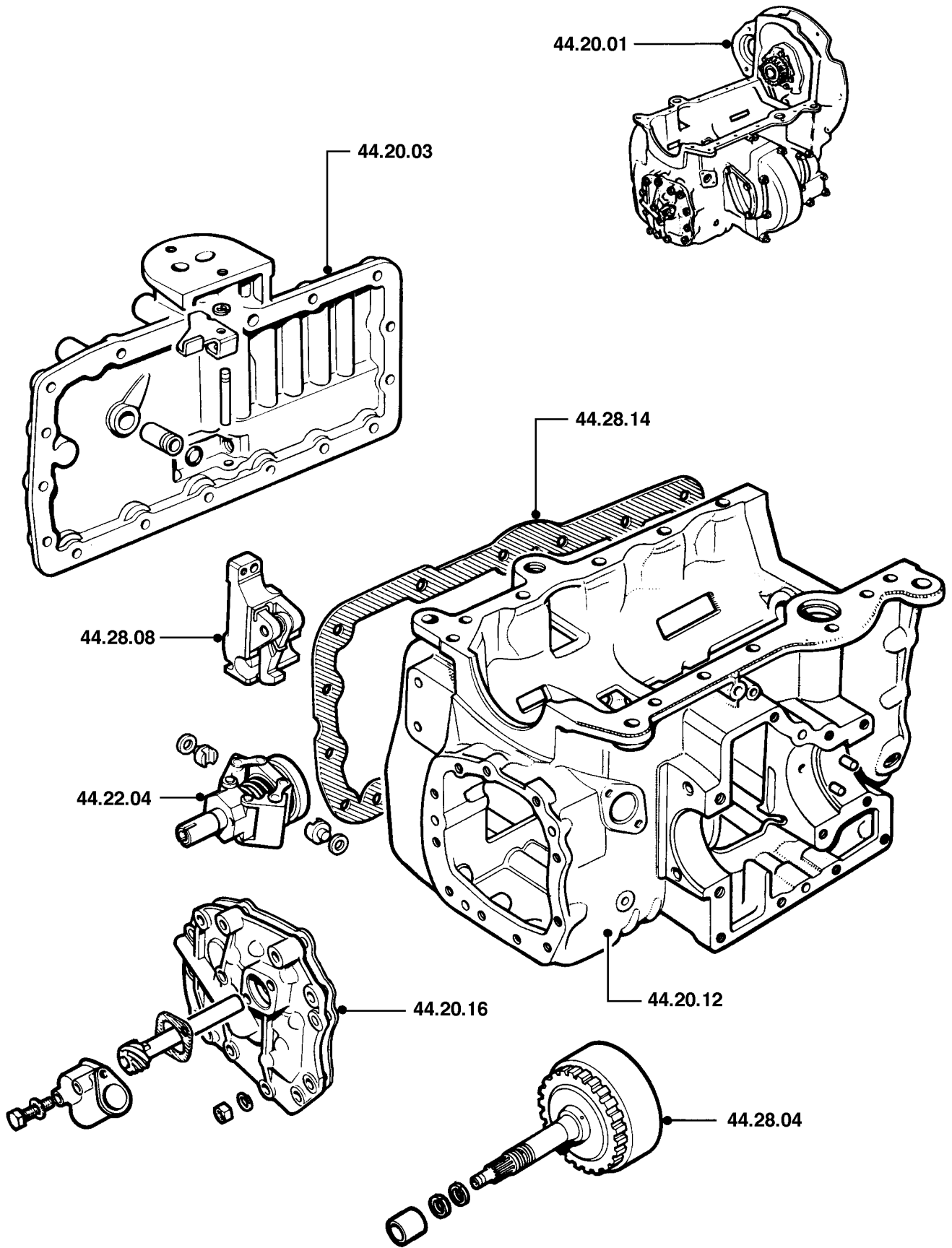
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



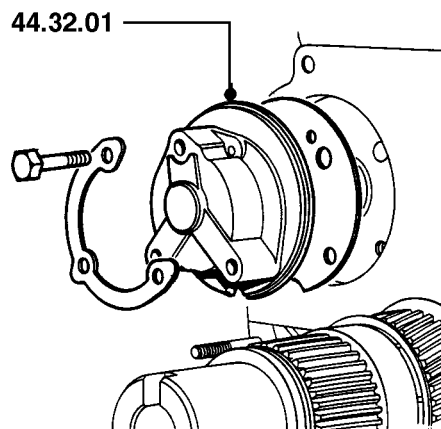
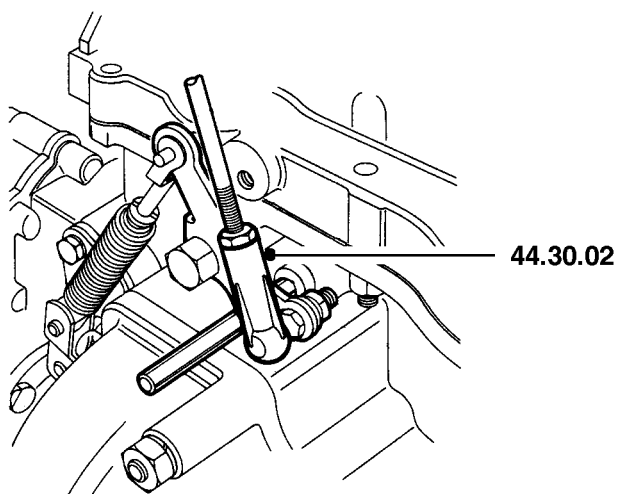
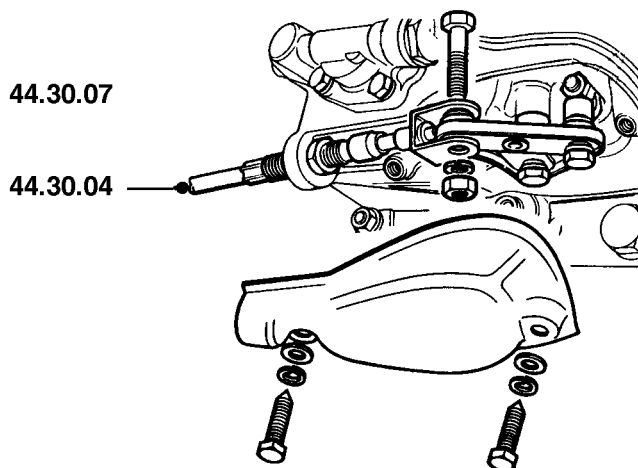
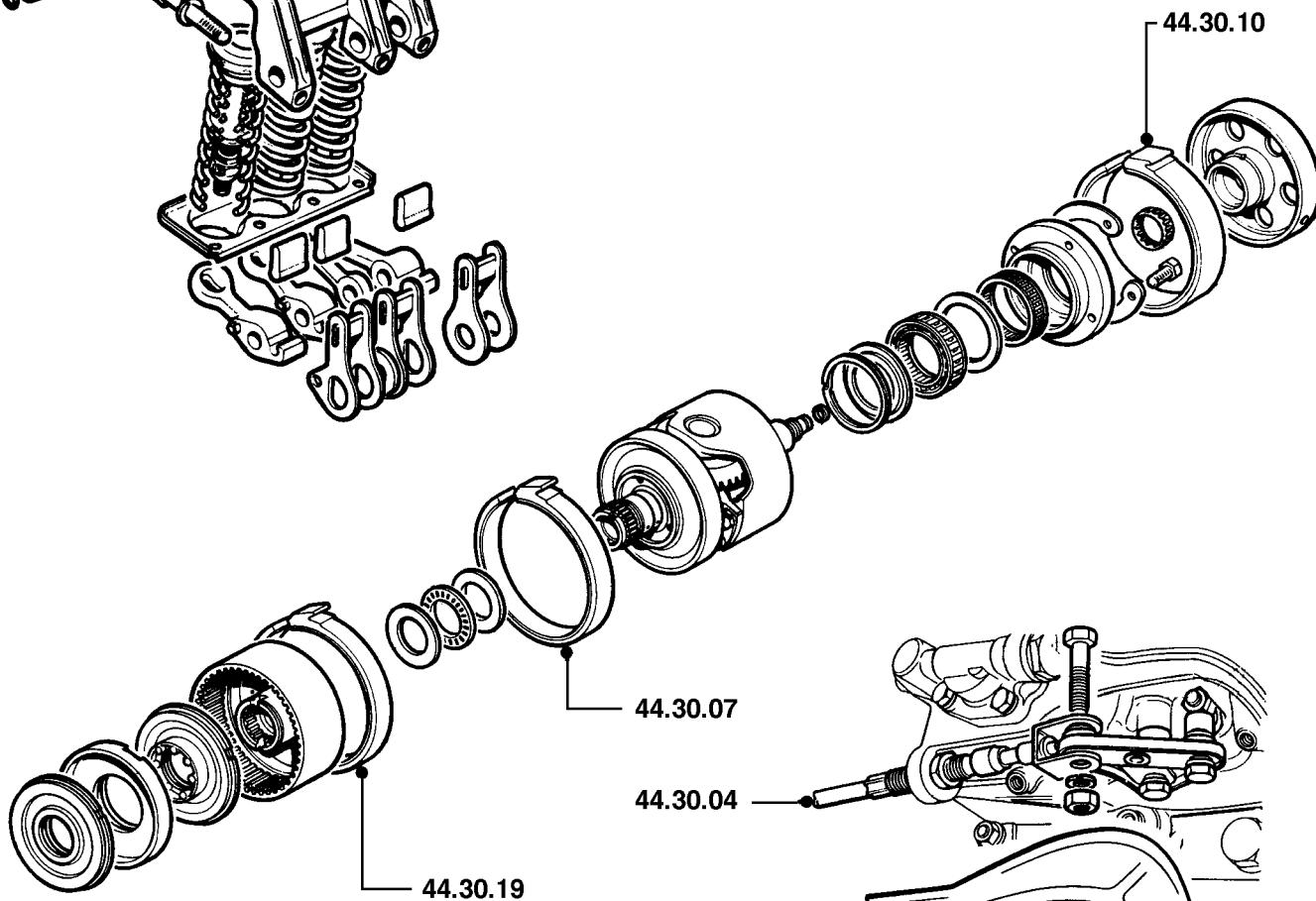
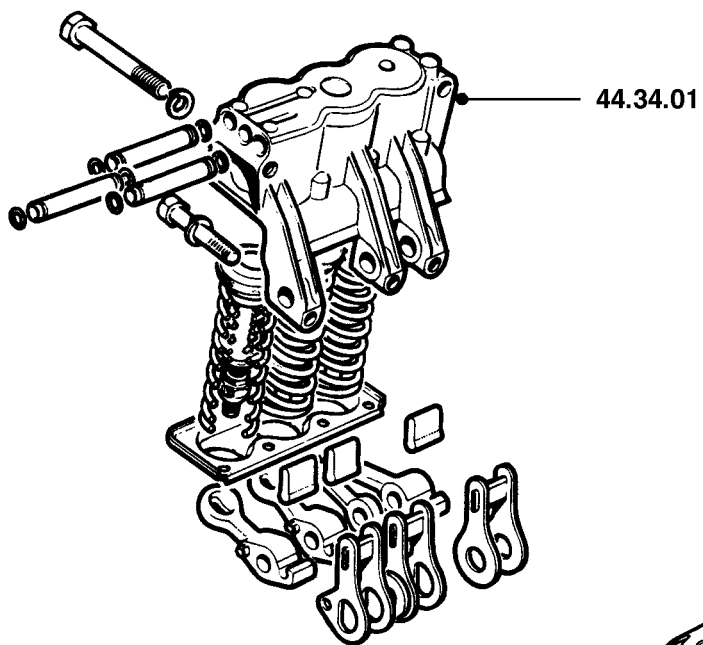
		1.0	1.3	
<b>44.20</b>	<b>GEARBOX ASSEMBLY &amp; CASINGS</b>			
44.20.01	Gearbox - renew .....	09.15	10.30	*
44.20.02/99	Gearbox & converter - remove for access & refit.....	08.70	10.00	*
44.20.03	Cover - front - renew .....	01.95	01.95	4B1
44.20.12	Main case - renew .....	15.55	16.70	4A1
44.20.14	Gasket - gearbox front cover - renew .....	01.95	01.95	4H6
44.20.16	Gasket - governor housing - renew .....	06.30	07.50	4J8
<b>44.22</b>	<b>GOVERNOR</b>			
44.22.04	Governor assembly - overhaul.....	06.70	07.85	4E1
<b>44.24</b>	<b>LUBRICATION SYSTEM</b>			
44.24.02	Lubrication system - drain & refill.....	00.50	00.50	*
<b>44.26</b>	<b>MANUAL VALVE</b>			
44.26.07	Oil seals - manual valve shaft - renew .....	00.80	00.80	4H8
<b>44.28</b>	<b>PARKING BRAKE/PARK LOCK</b>			
44.28.04	Gear - parking brake - renew .....	06.90	08.05	4D7
44.28.08	Parking pawl assembly - overhaul .....	09.25	10.40	4D7

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
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<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



		1.0	1.3	
<b>44.30</b>	<b>PRESSURE &amp; ADJUSTMENT CHECKS</b>			
44.30.02	Cable/linkage - kickdown control - check & adjust.....	00.65	00.65	4F5
44.30.02/01	Cable/linkage - kickdown control - check & adjust - vehicle in workshop .....			
		00.45	00.45	4F5
44.30.04	Cable/rod - selector - check & adjust.....	00.55	00.55	4F3
44.30.04/01	Cable/rod - selector - check & adjust - vehicle in workshop .....	00.40	00.40	4F3
44.30.06	Brake bands - set - check & adjust .....	02.35	02.35	*
44.30.06/01	Brake bands - set - check & adjust - vehicle in workshop .....	02.20	02.20	*
44.30.07	Brake band - front/3rd gear - check & adjust .....	02.10	02.10	4C4
44.30.07/01	Brake band - front/3rd gear - check & adjust - vehicle in workshop.....	01.95	01.95	4C4
44.30.10	Brake band - rear/reverse gear - check & adjust .....	02.10	02.10	4C5
44.30.10/01	Brake band - rear/reverse gear - check & adjust - vehicle in workshop .....			
		01.95	01.95	4C5
44.30.13	Stall test.....	00.45	00.45	*
44.30.13/01	Stall test - with vehicle in workshop .....	00.30	00.30	*
44.30.19	Brake band - 2nd gear - check & adjust .....	02.10	02.10	4C3
44.30.19/01	Brake band - 2nd gear - check & adjust - vehicle in workshop ....	01.95	01.95	4C3
<b>44.32</b>	<b>PUMPS</b>			
44.32.01	Pump - main - renew .....	07.90	09.05	4A7
44.32.04	Pump - main - overhaul .....	08.10	09.25	4A7
44.32.04/01	Pump - main - overhaul - with pump removed.....	00.20	00.20	4A7
<b>44.34</b>	<b>SERVOS AND ACCUMULATORS</b>			
44.34.01	Servo assembly - renew .....	09.20	10.40	4C6
44.34.04	Servo assembly - overhaul .....	09.65	10.85	4C6
44.34.04/01	Servo assembly - overhaul - with servo removed .....	00.45	00.45	4C6

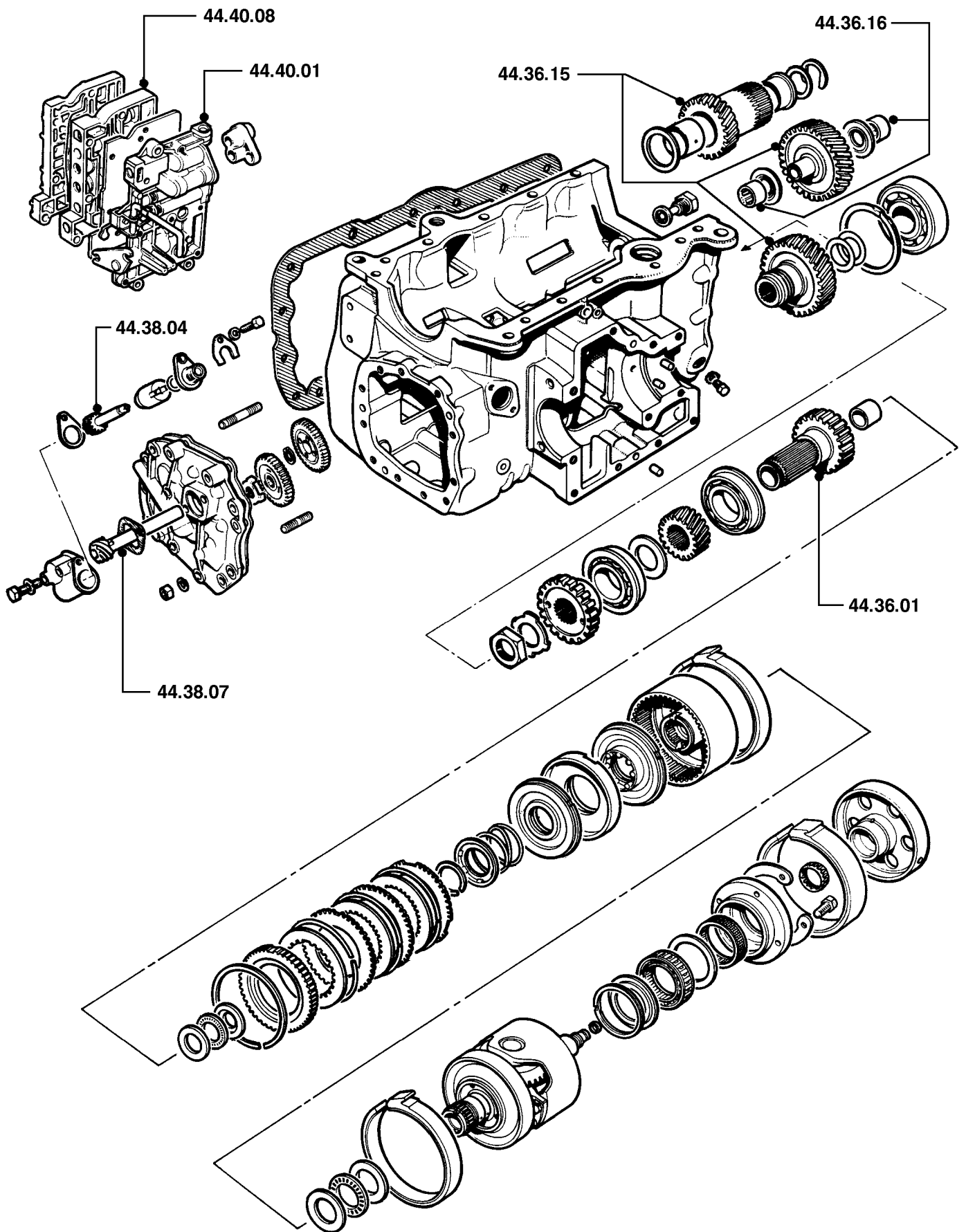
<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
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<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
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<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	





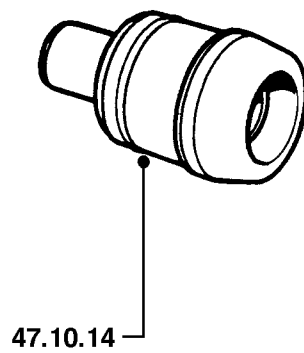
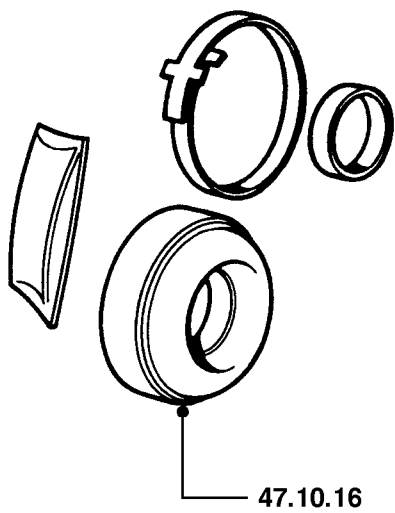
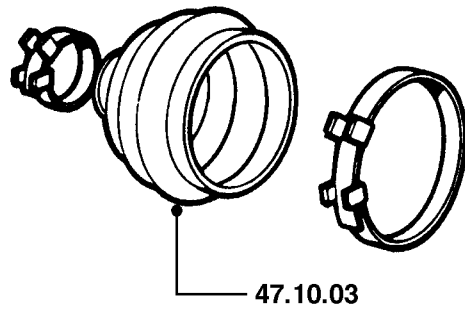
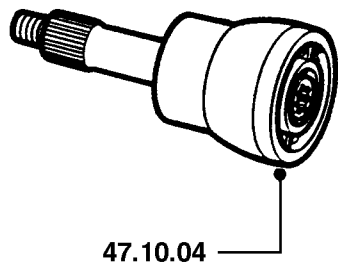
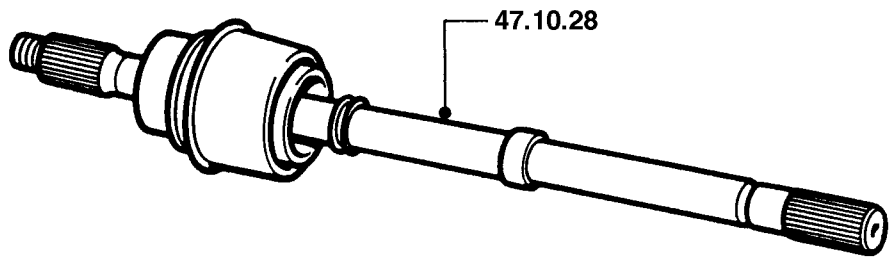
		1.0	1.3	
<b>44.36</b>	<b>SHAFTS &amp; GEARS</b>			
44.36.01	Shaft - output - renew .....	08.40	09.55	*
44.36.15	Primary drive gears - renew.....	08.40	09.55	-
44.36.16	Bearings - idler gear - renew .....	08.35	09.50	4B5
44.36.17	Converter output gear, idler gear & input gear - check & adjust end float .....	08.40	09.55	-
<b>44.38</b>	<b>SPEEDOMETER DRIVE</b>			
44.38.04	Pinion - speedometer drive - renew.....	00.40	01.00	4D8
44.38.07	Gear - speedometer drive - renew.....	06.00	07.20	4D8
<b>44.40</b>	<b>VALVE BODIES</b>			
44.40.01	Valve body assembly - renew .....	08.85	10.00	4C9
44.40.04	Valve body assembly - overhaul .....	09.75	10.90	4C9
44.40.04/01	Valve body assembly - overhaul - with valve body removed .....	00.90	00.90	4C9
44.40.08	Valve chest - renew .....	02.35	02.35	4C9
<b>44.90</b>	<b>DIAGNOSIS</b>			
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>			
44.90.01/01	Automatic gearbox test procedure (includes pressure test).....	01.15	01.15	-
44.90.02/01	Automatic gearbox - oil leak detection for porous or cracked casings .....	00.75	00.75	-

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



<b>47.10</b>	<b>DRIVE SHAFTS</b>		
47.10.01	Shaft with both joints - renew.....	01.30	4L1
47.10.03	Gaiter - bell & joint - outer - renew.....	01.30	4L0
47.10.04	Bell & joint - outer - LH/one side - renew .....	01.30	4L4
47.10.12	Shafts with both joints - both sides - renew .....	01.90	4L1
47.10.14	Inner joint - LH/one side - renew .....	01.20	4L3
47.10.16	Gaiter - inner joint - renew .....	01.40	4L0
47.10.27	Shafts & outer joints - both sides - renew .....	01.80	4L4
47.10.28	Shaft & outer joint - renew .....	01.10	4L4
47.10.30	Gaiters - shaft - set - renew .....	01.60	4L0
47.10.32	Gaiters - both sides - set - renew.....	02.80	4L0

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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		1000	1300	
<b>54.10</b>	<b>DIFFERENTIAL ASSEMBLY</b>			
54.10.07	Differential assembly - overhaul .....	06.80	06.80	4P4
	MPi		09.40	4P4
	SPi		07.55	4P4
54.10.07/01	Differential assembly - overhaul - assembly/gearbox removed ....	00.70	00.70	4P4
54.10.08	Differential cage, final drive gear & pinion - overhaul .....	07.35	07.35	*
	Auto.	11.45	12.65	*
	MPi		10.00	*
	SPi		08.15	*
54.10.09	Final drive gear & pinion - renew .....	07.10	07.10	4P1
	Auto.	11.20	12.35	4P1
	MPi		09.70	4P1
	SPi		07.90	4P1
54.10.10	Gasket - differential housing - renew .....	03.95	03.95	4P5
54.10.11	Bearings - final drive pinion - pair - renew .....			
	Auto.	10.75	11.95	4P3
54.10.12	Bearings - differential cage - renew .....	06.35	06.35	4Q1
	Auto.	06.90	08.10	4Q1
	MPi		09.00	4Q1
	SPi		07.20	4Q1
54.10.13	Gaskets - differential end covers - both sides - renew .....	02.50	02.50	3S5
54.10.13/01	Gaskets - differential end covers - both sides - renew - with unit removed .....	00.40	00.40	3S5
54.10.14	Gasket - differential end cover - LH - renew .....	01.50	01.50	3S5
54.10.14/01	Gasket - differential end cover - LH - renew - with unit removed ..	00.20	00.20	3S5
54.10.15	Gasket - differential end cover - RH - renew .....	01.60	01.60	3S5
54.10.15/01	Gasket - differential end cover - RH - renew - with unit removed ..	00.25	00.25	3S5
54.10.16	Oil seals - differential end covers - both sides - renew .....	01.90	01.90	3R8
54.10.16/01	Oil seals - differential end covers - both sides - renew - with unit removed .....	00.10	00.10	3R8
54.10.17	Oil seal - differential end cover/housing - each - renew .....	01.20	01.20	3R8
54.10.17/01	Oil seal - differential end cover/housing - each - renew - with unit removed .....	00.10	00.10	3R8
54.10.18	Oil seal - differential housing - one side - renew .....			
	Auto.	01.20	01.20	3R8
54.10.18/01	Oil seal - differential housing - one side - renew - with unit removed .....			
	Auto.	00.05	00.05	3R8

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L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

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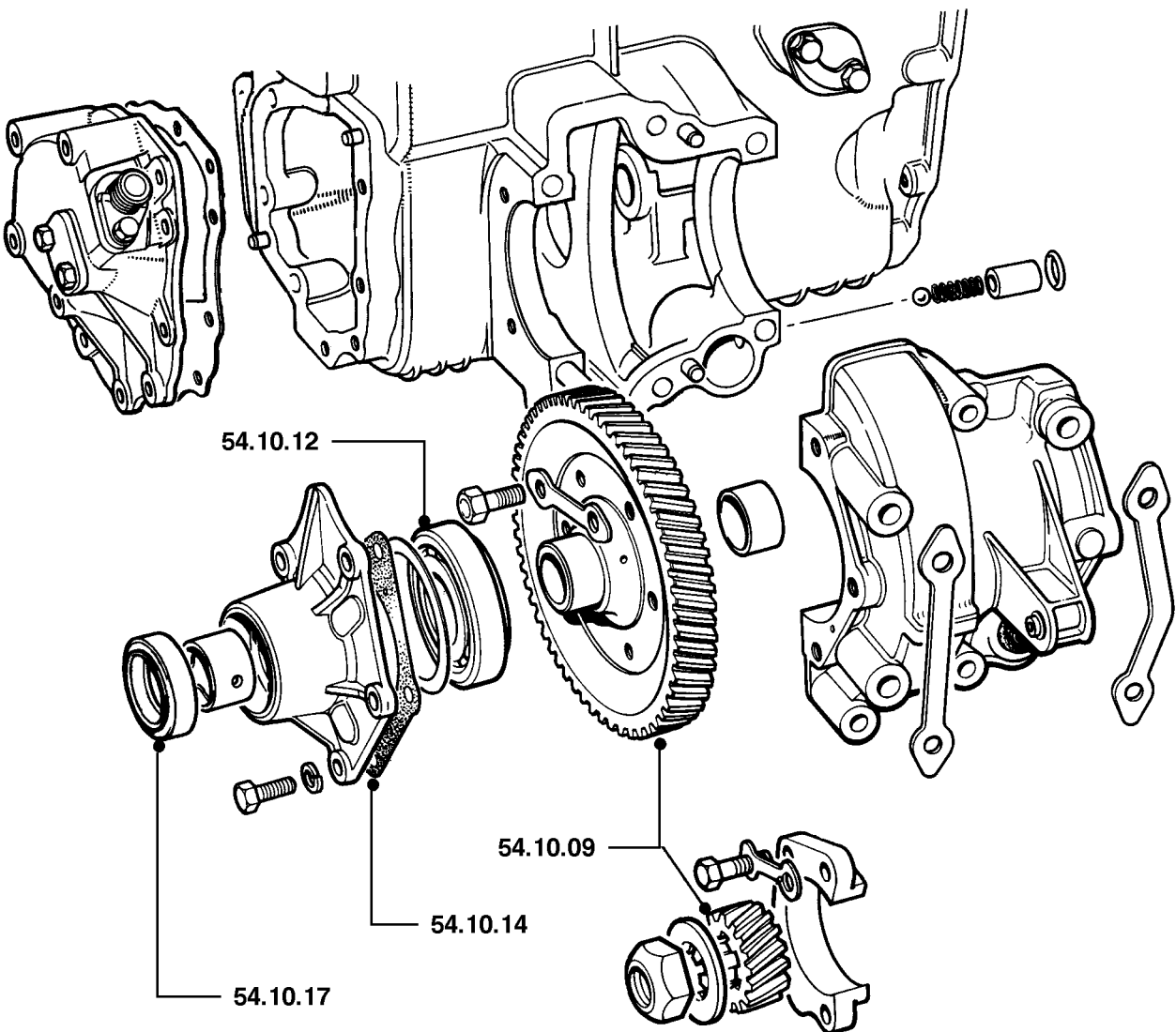
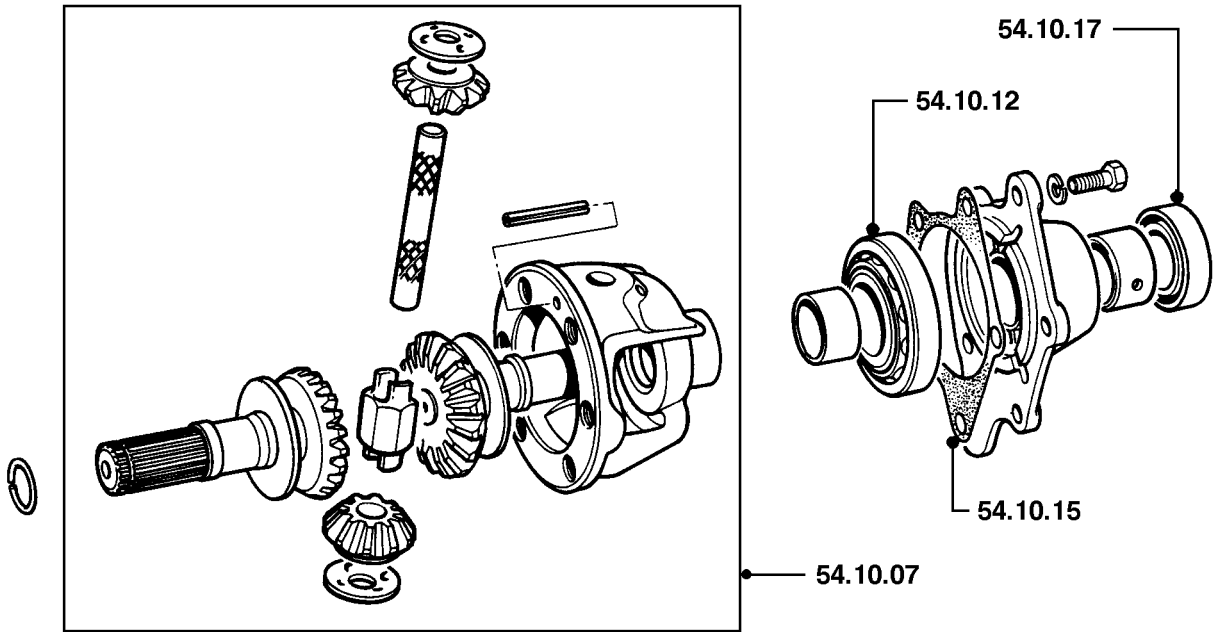
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



# 57 STEERING

MINI

(Operations include bleed system & centralise steering wheel where applicable, does not include wheel alignment)

<b>57.25</b>	<b>STEERING RACK &amp; PINION ASSEMBLY</b>		
57.25.01	Rack & pinion assembly - renew .....	02.20	5F1
		MpI 02.00	5F1
57.25.02	Gaiters - set - renew .....	01.25	5F8
		MpI 01.10	5F8
57.25.03	Gaiter - each - renew .....	00.70	5F8
		MpI 00.60	5F8
57.25.07	Rack & pinion assembly - overhaul .....	04.00	*
		MpI 03.90	*
<b>57.35</b>	<b>STEERING RACK/BOX ADJUSTMENT</b>		
57.35.04	Steering column & pinion - check & adjust alignment .....		
		MpI 00.30	
57.35.09	Damper - steering rack - adjust .....	02.65	*
		MpI 02.50	*
<b>57.40</b>	<b>STEERING COLUMN</b>		
57.40.01	Column assembly - inner & outer - renew .....		
		MpI 01.30	5D4
57.40.06	Column - inner - renew .....	00.80	5D4
57.40.17	Bush - column - bottom - renew.....	00.80	5D2
57.40.18	Bushes - column - set - renew .....	00.80	5D2
57.40.19	Bush - column - top - renew.....	00.60	5D2
57.40.29	Nacelle - column - complete - renew .....	00.25	8E7
57.40.31	Column lock & ignition/starter switch assembly - renew .....	00.70	5D5
57.40.40	Nacelle - align to column, steering wheel & switch gear .....	00.20	8E7
<b>57.55</b>	<b>STEERING RODS</b>		
57.55.01	Ball joints - tie rods - outer - set - renew .....	00.95	5E3
57.55.02	Ball joint - tie rod - outer - each - renew.....	00.55	5E3
57.55.03	Ball joint - tie rod - inner - each - renew .....	01.90	5F7
57.55.29	Steering lever - each - renew.....	00.55	-
<b>57.60</b>	<b>STEERING WHEEL</b>		
57.60.01	Steering wheel - renew .....	00.20	5D1
		SRS 00.60	5D1
57.60.01/01	Steering wheel - renew - vehicle in workshop .....	00.05	5D1
		SRS 00.50	5D1
57.60.03	Pad - steering wheel - renew .....	00.15	8E8

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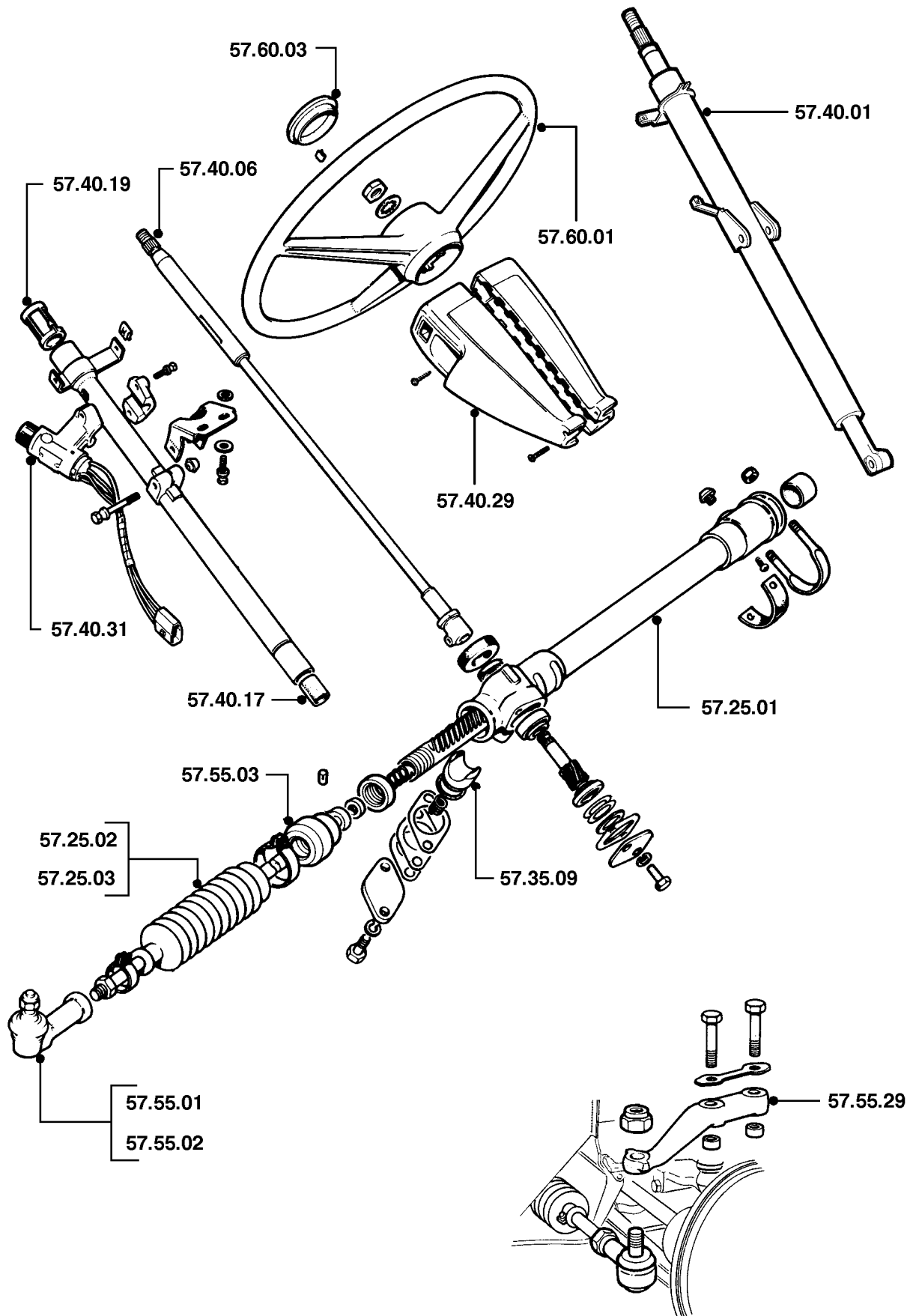
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# 57 STEERING

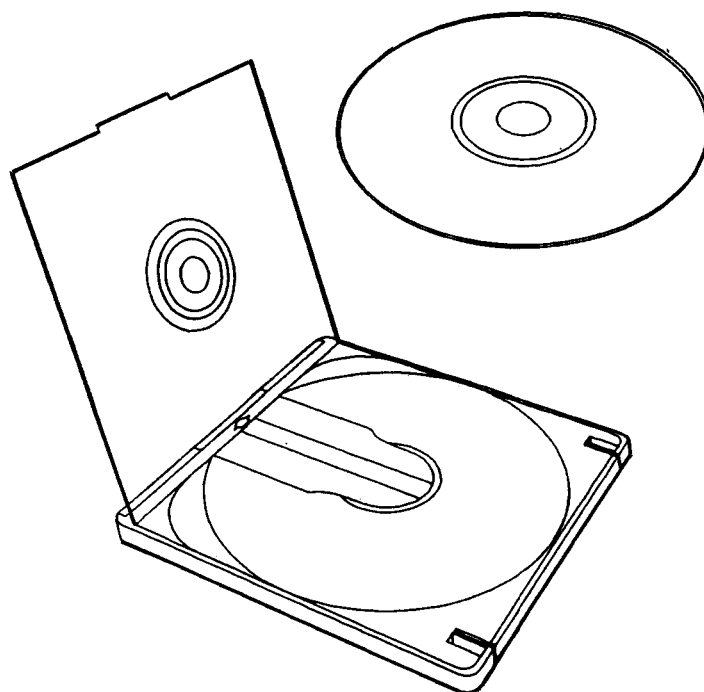
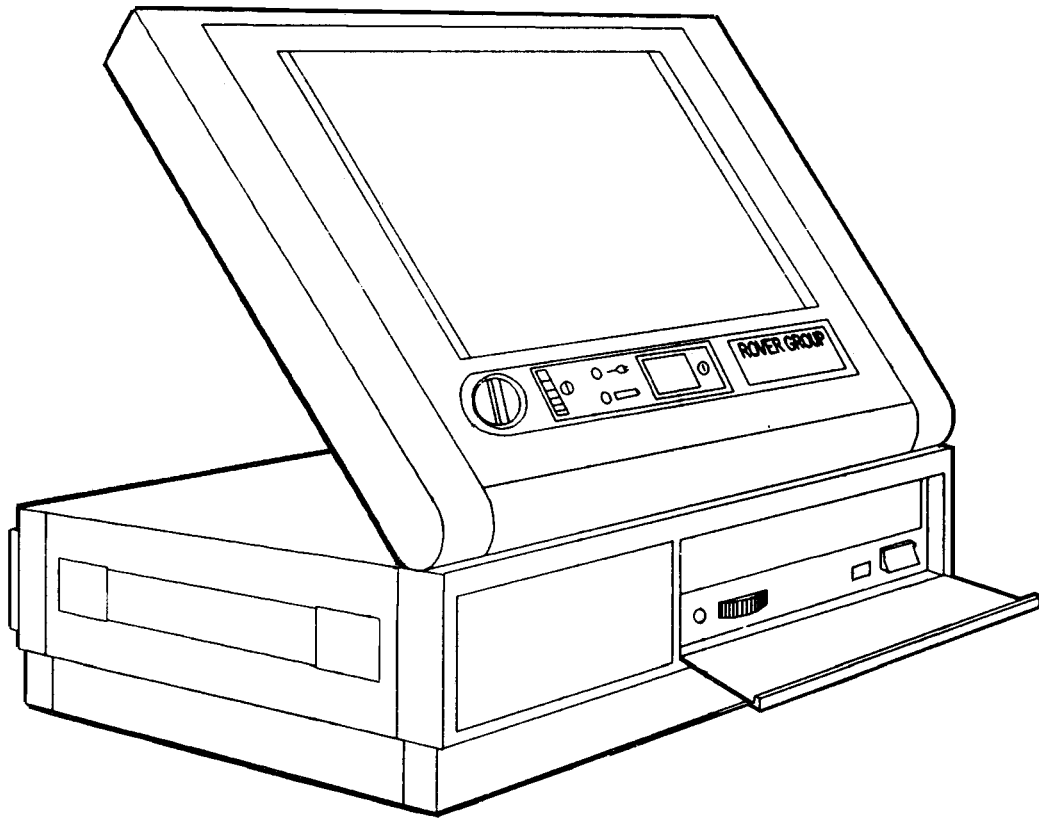
MINI

(Operations include bleed system & centralise steering wheel where applicable, does not include wheel alignment)

<b>57.65</b>	<b>WHEEL ALIGNMENT</b>		
57.65.01	Front wheel alignment - check & adjust.....	00.75	5E6
57.65.01/01	Front wheel alignment - check & adjust - vehicle in workshop ....	00.65	5E6
57.65.02	Steering geometry - check (includes castor, camber, king pin inclination, toe in/toe out on turns & rear wheel alignment) .....	02.50	5E6
57.65.02/01	Steering geometry - check - vehicle in workshop .....	02.35	5E6
57.65.08	Alignment - front wheel - check & adjust .....	00.50	5E6
57.65.08/01	Alignment - front wheel - check & adjust - vehicle in workshop....	00.40	5E6

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	

# TESTBOOK



TESTPAGE

# 68 HYDRAGAS & RUBBER CONE SUSPENSION

MINI

(Operations do not include wheel alignment)

<b>68.15</b>	<b>SUSPENSION DAMPERS &amp; STOP RUBBERS</b>		
68.15.01	Bump rubbers - front - one side - renew .....	00.50	5N7
68.15.08	Rebound rubbers - front - one side - renew .....	00.20	-
68.15.15	Dampers - front - both sides - renew .....	00.50	5R1
68.15.16	Damper - front - LH/one side - renew .....	00.30	5R1
68.15.21	Dampers - rear - both sides - renew .....	01.20	5R5
	SPi/MPi	01.50	5R5
68.15.22	Damper - rear - LH/one side - renew .....	00.85	5R5
	SPi/MPi	01.10	5R5
68.15.23	Damper - rear - RH - renew .....	00.60	5R5
<b>68.20</b>	<b>FRONT SUSPENSION ARMS &amp; SHAFTS</b>		
68.20.02	Upper arm - LH/one side - renew .....	02.50	5H1
68.20.03	Upper arm - RH - renew .....	01.60	
68.20.10	Lower arm - LH/one side - renew .....	00.65	5H3
68.20.14	Bearing/bush - lower arm pivot - one side - renew .....	00.65	5H4
68.20.18	Upper arm - LH/one side - overhaul .....	02.75	5H1
68.20.19	Upper arm - RH - overhaul .....	01.85	
68.20.33	Tie rod assembly - one side - renew .....	00.35	5H5
<b>68.25</b>	<b>HUBS &amp; DRIVE FLANGES</b>		
68.25.03	Ball joints - hubs - front - both sides - renew .....	02.40	5H9
68.25.04	Ball joints - hub - front - one side - set - renew .....	01.25	5H8
68.25.05	Ball joint - hub - front - upper - one side - renew .....	00.75	5H8
68.25.06	Ball joint - hub - front - lower - one side - renew .....	00.85	5H8
68.25.13	Bearings - hub - front - one side - renew .....	01.20	5H8
	Drum Brakes	01.85	5H8
68.25.14	Bearings - hubs - front - both sides - renew.....	02.30	5V4
	Drum Brakes	03.25	5V4
68.25.20	Oil seals - hub - front - one side - renew .....	01.10	5V4
	Drum Brakes	01.75	5V4
68.25.21	Oil seals - hubs - front - both sides - renew .....	02.10	5V3
	Drum Brakes	03.05	5V3
68.25.23	Drive flange - front - one side - renew .....	00.80	5V1
	Drum Brakes	01.05	5V1
68.25.25	Road wheel - one only - balance .....	00.25	5X8
68.25.25/01	Road wheel - extra each - balance .....	00.15	5X8
68.25.38	Bearings - hub - rear - one side - renew .....	00.95	5W4
68.25.43	Oil seals - hubs - rear - both sides - renew .....	01.50	5W3
68.25.44	Oil seals - hub - rear - one side - renew.....	00.85	5W3
68.25.49	Studs - hub/drive flange - front - one side - renew.....	00.95	5W6
	Drum Brakes	01.10	5W6
68.25.50	Studs - hub/drive flange - rear - one side - renew .....	00.80	5W6
68.25.74	Hub assembly & both ball joints - one side - overhaul.....	01.90	*
	Drum Brakes	02.50	*

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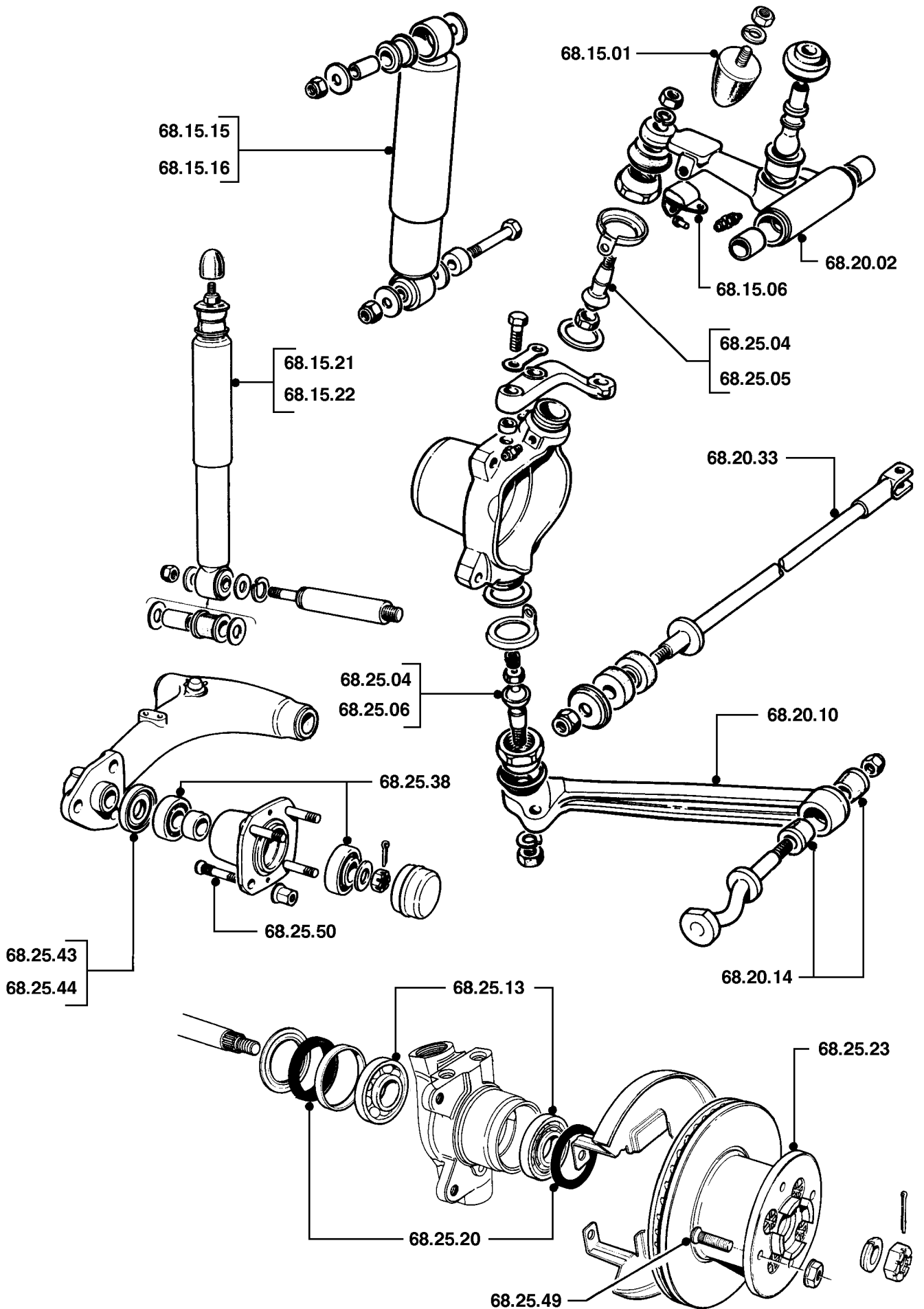
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MRT34A

# 68 HYDRAGAS & RUBBER CONE SUSPENSION

MINI

(Operations do not include wheel alignment)

<b>68.30</b>	<b>HYDRAGAS, RUBBER CONE UNITS &amp; PIPES</b>		
68.30.62	Rubber cone - front - LH - renew .....	02.60	5N1
68.30.63	Rubber cone - front - RH - renew .....	01.65	5N1
68.30.64	Rubber cone - rear - LH - renew .....	01.50	5P1
68.30.65	Rubber cone - rear - RH - renew .....	01.25	5P1
68.30.66	Strut - rubber cone - front - LH - renew .....	01.00	5S3
68.30.67	Strut - rubber cone - front - RH - renew .....	00.90	5S3
68.30.68	Strut - rubber cone - rear - LH - renew.....	01.50	5S4
68.30.69	Strut - rubber cone - rear - RH - renew .....	01.25	5S4
<b>68.35</b>	<b>REAR SUSPENSION ARMS &amp; SHAFTS</b>		
68.35.02	Radius arm - LH/one side - renew .....	02.35	5M1
68.35.09	Bushes/bearings - radius arm/rear suspension assembly - both sides - set - renew .....	03.75	5M2
68.35.10	Bushes/bearings - radius arm/rear suspension assembly - one side - set - renew .....	02.15	5M2
68.35.26	Mounting bracket - outer - LH - renew .....	00.55	-
<b>68.40</b>	<b>SUB FRAMES</b>		
68.40.01	Sub frame - front - renew.....	06.65	5A2
68.40.02	Mounting - front sub frame - LH - front - renew .....	00.30	5C5
68.40.03	Mounting - front sub frame - rear - renew .....	00.45	5C5
68.40.05	Mounting - front sub frame - RH - front - renew.....	00.45	5C5
68.40.06	Mountings - front sub frame - set - renew .....	01.25	5C5
68.40.07	Sub frame - rear - renew .....	04.20	5A3
68.40.08	Mounting - rear sub frame - LH/one side - front - renew .....	01.65	5C6
68.40.09	Mounting - rear sub frame - LH - rear - renew .....	00.55	5C6
68.40.10	Mounting - rear sub frame - RH - front - renew .....	01.50	5C6
68.40.11	Mounting - rear sub frame - RH - rear - renew.....	00.35	5C6

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M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

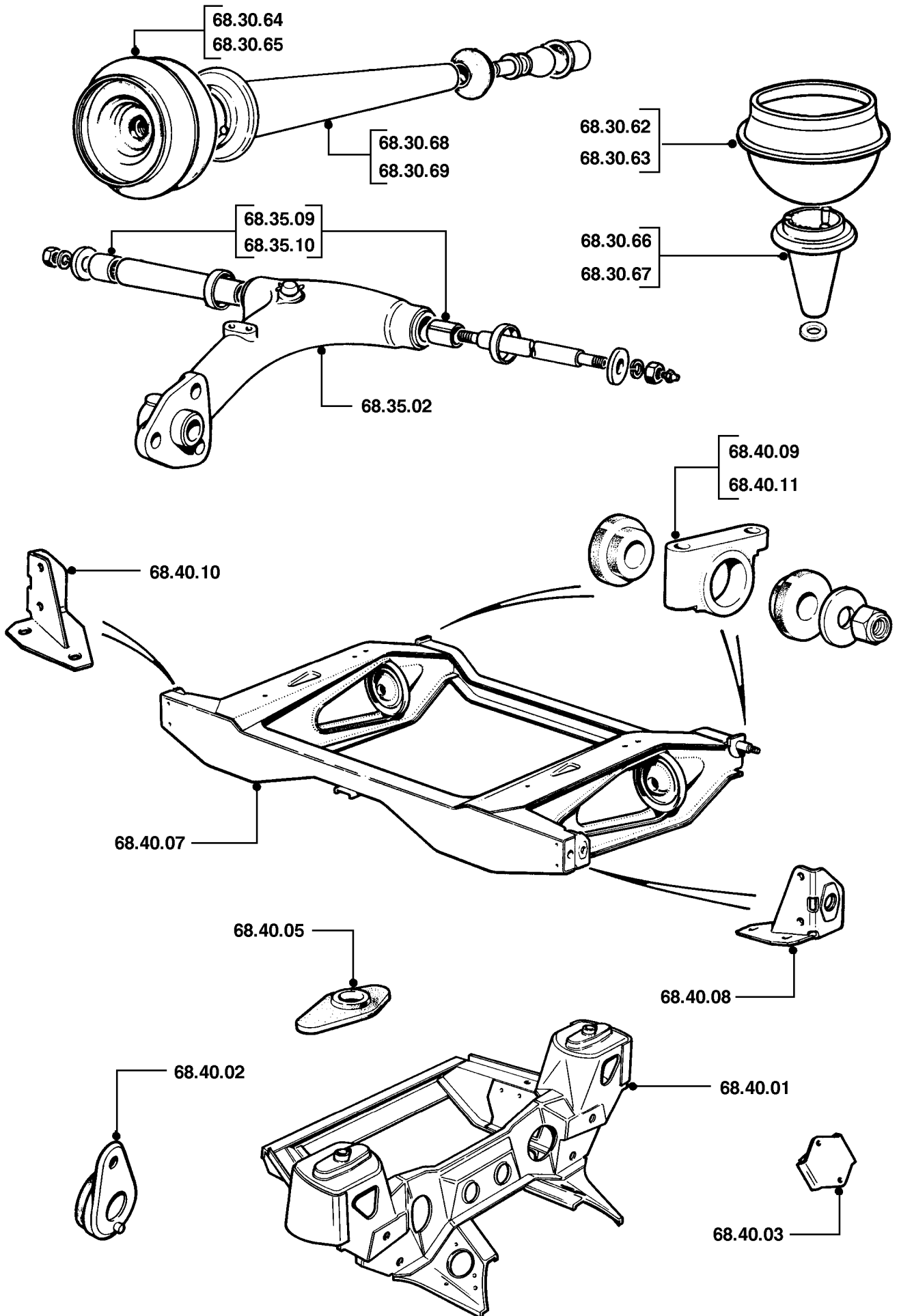
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



# 70 BRAKES

MINI

(Operations include bleeding brakes where necessary)

<b>70.10</b>	<b>DISCS &amp; DRUMS</b> <b>(Includes check new disc(s) for runout)</b>		
70.10.01	Drums - vehicle set - renew .....	01.30	
70.10.02	Drum - front - each - renew .....	00.60	
70.10.03	Drum - rear - each - renew .....	00.45	6F1
70.10.04	Drums - front - set - renew .....	00.80	
70.10.05	Drums - rear - set - renew .....	00.70	6F1
70.10.10	Disc - front - each - renew .....	00.95	6C1
70.10.10/01	Disc - front - each - renew - vehicle in workshop & road wheel removed.....	00.45	6C1
70.10.12	Discs - front - set - renew.....	02.60	6C1
70.10.12/01	Discs - front - set - renew - vehicle in workshop & road wheels removed.....	00.85	6C1
70.10.14	Discs - front - axle set - check run out & thickness .....	00.95	6C1
70.10.15	Disc - front - each - check run out & thickness .....	00.60	6C1
70.10.18	Disc shield(s) - front - each - renew .....	00.50	6C7
70.10.28	Back plate - rear - each - renew .....	01.25	6F3
70.10.31	Discs & pads - front - axle set - renew.....	02.25	6C1
70.10.32	Disc - one only & pads set - front - renew .....	01.55	6C1
<b>70.15</b>	<b>HOSES &amp; CONNECTORS</b>		
70.15.01	Hoses - complete set - renew .....	01.95	6G4
	Turbo	02.25	6G4
70.15.02	Hose - front - primary - LH/each - renew .....	00.70	6G4
	Turbo	00.90	6G4
70.15.10	Hoses - front - set - renew .....	01.05	6G4
	Turbo	01.70	6G4
70.15.16	Hoses - rear - set - renew .....	01.05	6G4
70.15.17	Hose - rear - renew .....	00.75	6G4

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

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S - OPEN CIRCUIT/BLOCKED

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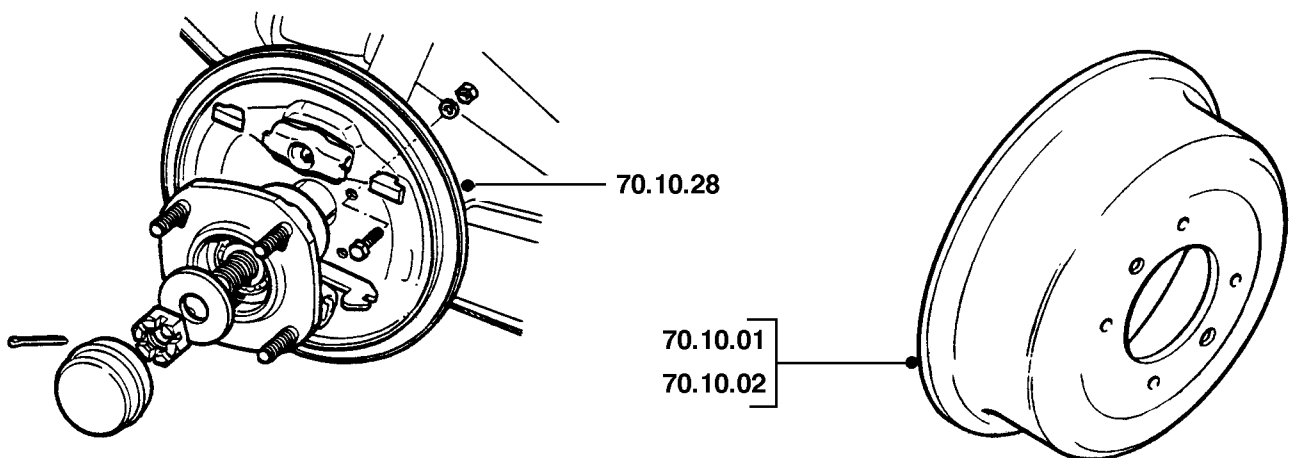
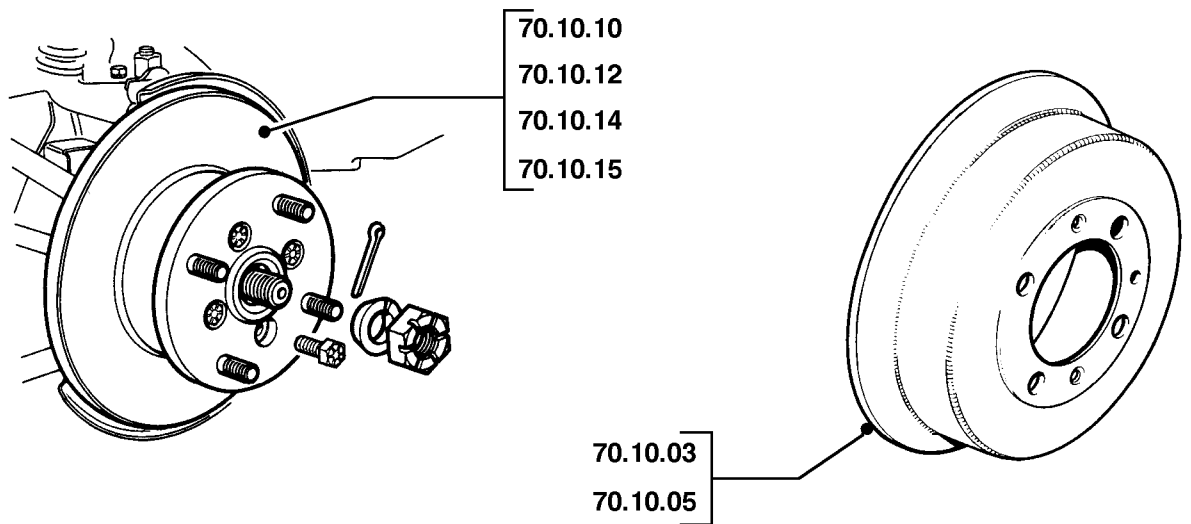
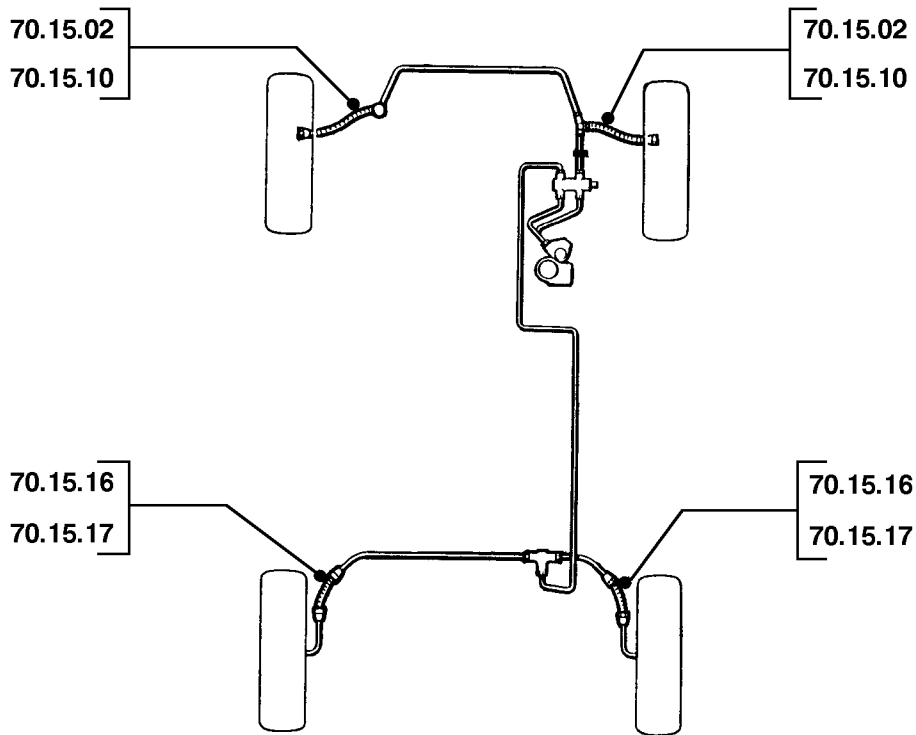
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



MRT36A



# 70 BRAKES

MINI

(Operations include bleeding brakes where necessary)

<b>70.25</b>	<b>HYDRAULIC SYSTEM</b>		
70.25.01	Brakes - bleed & adjust .....	00.75	*
70.25.02	Brakes - complete system - bleed .....	00.35	6C0
	MPi	00.60	6C0
	Turbo	00.95	6C0
70.25.03	Brakes - adjust.....	00.50	*
70.25.04	Brake - system - primary - bleed .....	00.25	6C0
	Turbo	00.85	6C0
70.25.05	Brake - system - secondary - bleed.....	00.25	6C0
70.25.08	Switch - brake fluid low level indicator - renew .....	00.20	7N2
70.25.09	Switch - brake failure warning - renew.....	00.25	7N3
	MPi	00.30	7N3
	Turbo	00.90	7N3
70.25.16	Seals - brake system - set - renew .....	04.05	*
	Turbo	04.90	*
70.25.18	Seals & hoses - brake system - set - renew .....	04.75	*
	Turbo	05.25	*
70.25.21	Valve - pressure reducing - renew.....	00.75	-
	Turbo	01.70	-
<b>70.30</b>	<b>MASTER CYLINDER</b>		
70.30.08	Cylinder - master - tandem - renew .....	00.55	6G1
	MPi	00.80	6G1
	Turbo	01.10	6G1
70.30.09	Cylinder - master - tandem - overhaul .....	01.00	6G1
	Turbo	01.60	6G1

A - WRONGLY ADJUSTED

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C - BAD FIT

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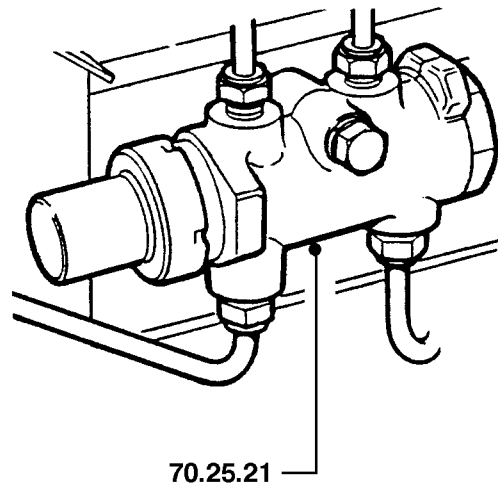
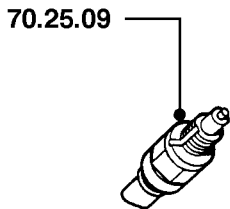
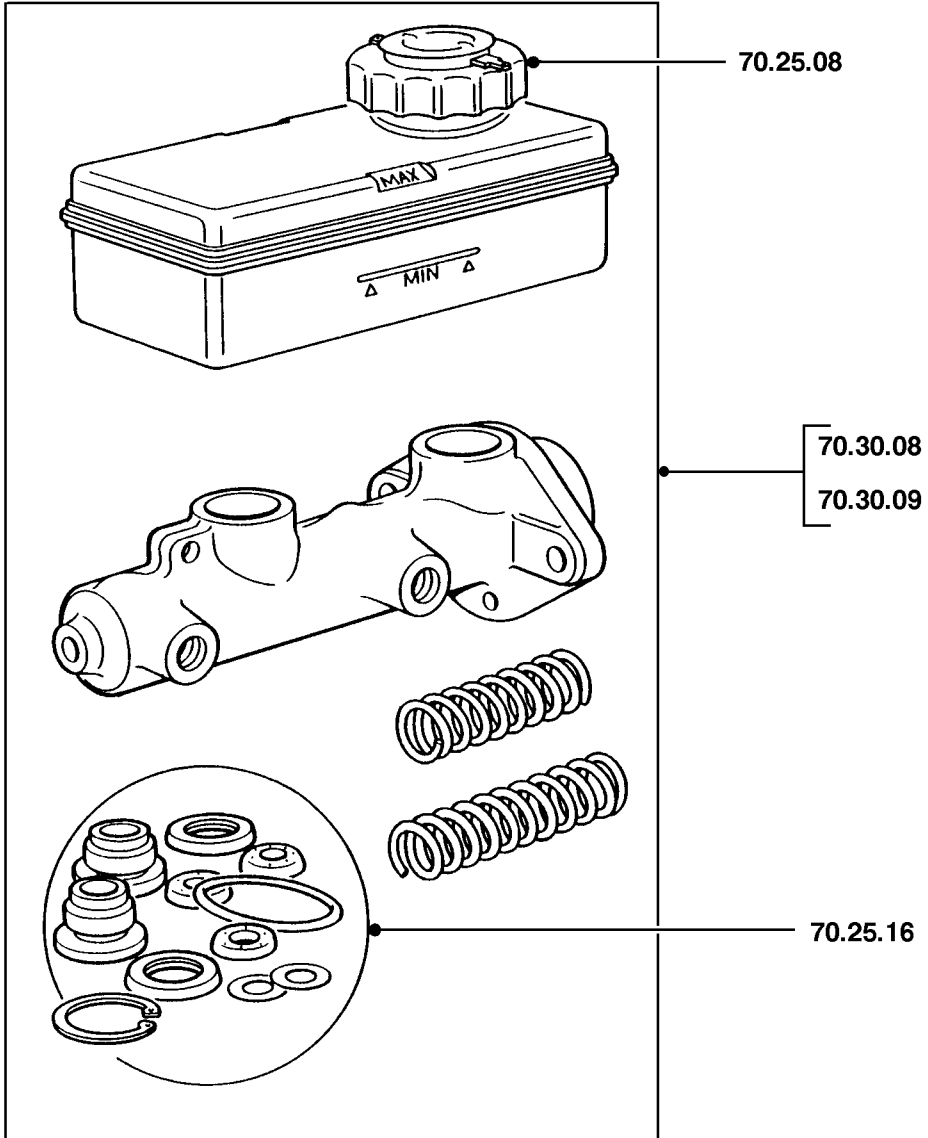
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



# 70 BRAKES

MINI

(Operations include bleeding brakes where necessary)

<b>70.35</b>	<b>MECHANICAL LINKAGE</b>		
70.35.01	Pedal - brake - renew .....	01.00	6J1
70.35.07	Return spring - pedal - renew .....	00.95	6J3
70.35.08	Lever assembly - handbrake - renew .....	00.50	6A1
70.35.10	Cable(s)/rod(s) - handbrake - adjust .....	00.40	6A3
70.35.10/01	Cable(s)/rod(s) - handbrake - adjust - vehicle in workshop .....	00.25	6A3
70.35.11	Compensator - handbrake - renew .....	00.70	6A5
70.35.14	Cable assembly - handbrake - front - renew .....	00.65	6A3
	MPi	01.10	6A3
70.35.15	Cable assembly - handbrake - rear - renew .....	01.20	6A3
70.35.16	Cable assemblies - handbrake - set - renew .....	01.20	6A3
70.35.41	Switch - stop light - check & adjust .....	00.30	7N1
70.35.42	Switch - stop light - renew .....	00.35	7N1
<b>70.40</b>	<b>SHOES &amp; PADS</b>		
70.40.01	Pads/shoes - vehicle set - renew .....	01.95	*
70.40.02	Shoes/pads - front - set - renew .....	01.05	6C2
70.40.03	Shoes/pads - rear - set - renew .....	01.05	6D2
70.40.15	Shoe adjusters - rear - both sides - renew .....	01.20	6F6
70.40.16	Shoe adjuster(s) - rear - one side - renew .....	00.75	6F6
<b>70.50</b>	<b>VACUUM SYSTEM</b>		
70.50.01	Servo assembly - renew .....	00.70	6H1
	MPi	00.90	6H1
	SPi	00.90	6H1
	Turbo	01.50	6H1
70.50.12	Hose - pipe to servo - renew .....	00.25	6H3
70.50.15	Valve - non return - renew .....	00.25	6H4
70.50.25	Filter - servo - renew .....	00.25	6H6

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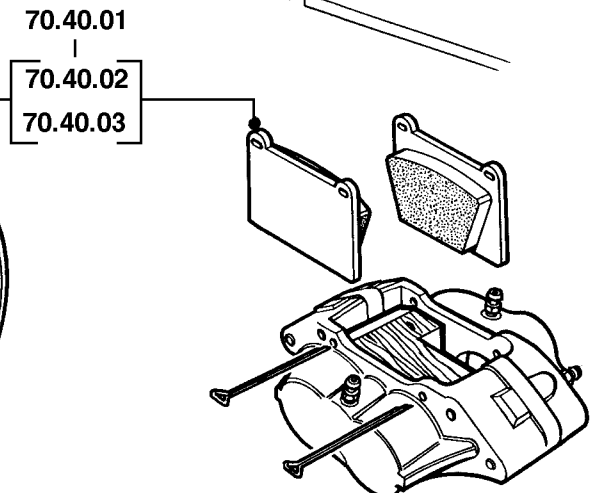
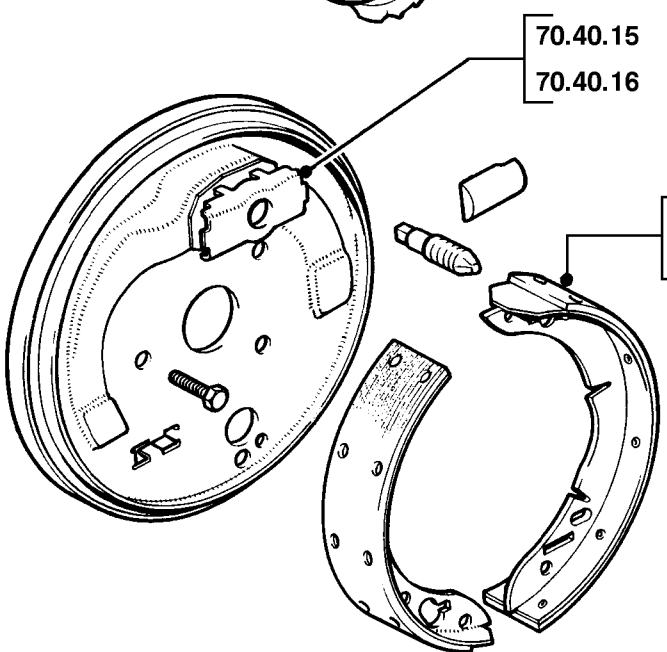
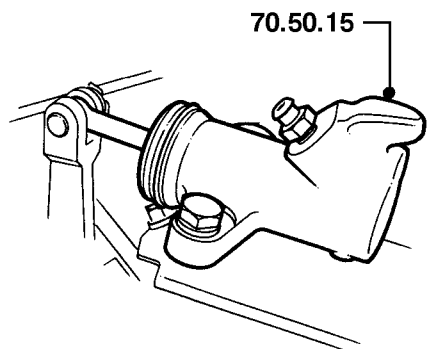
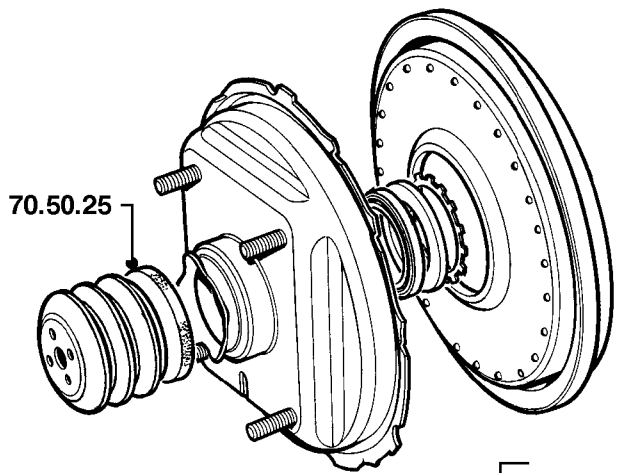
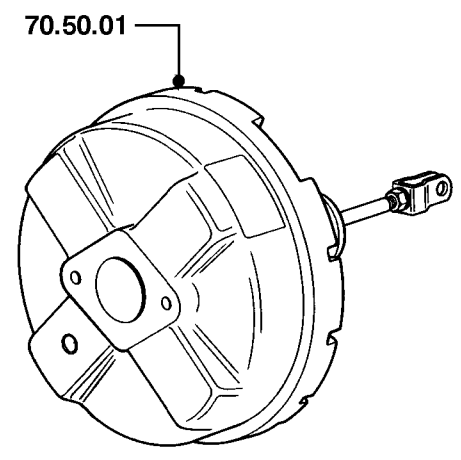
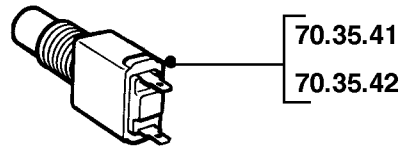
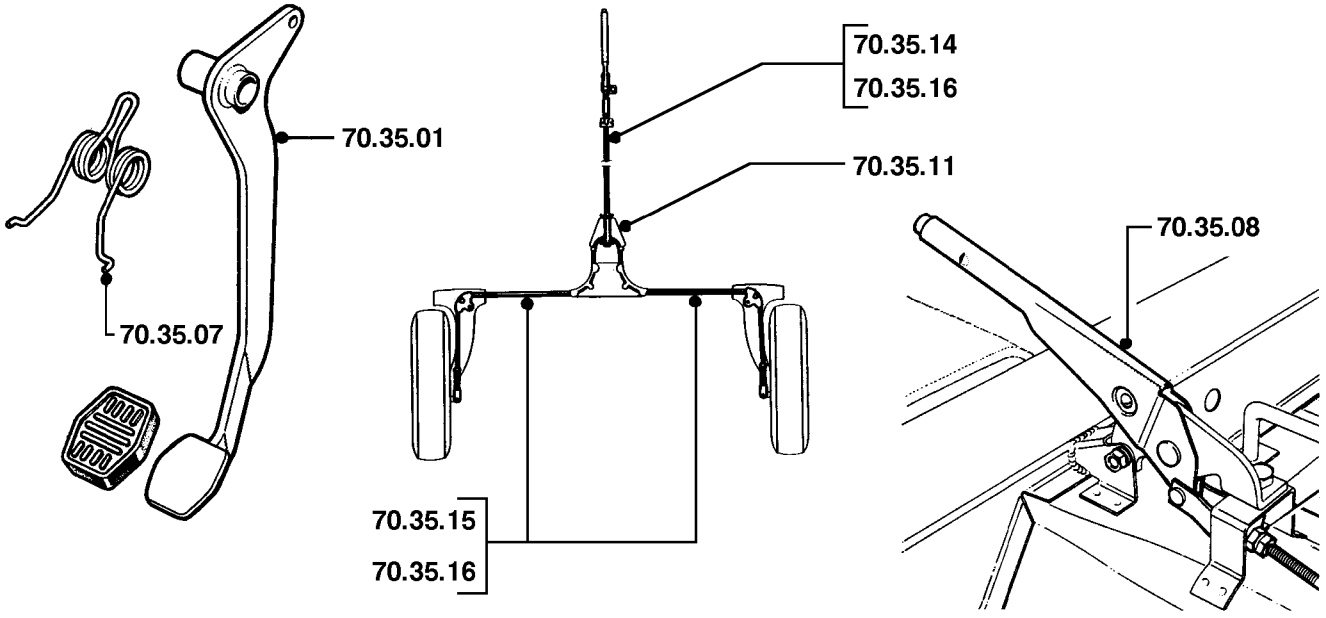
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

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X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



MRT38A

# 70 BRAKES

MINI

(Operations include bleeding brakes where necessary)

<b>70.55</b>	<b>WHEEL/BRAKE CALIPERS</b>		
70.55.02	Caliper - front - each - renew .....	00.90	6C3
		Turbo 01.45	6C3
70.55.05	Calipers - front - set - renew .....	01.40	6C3
		Turbo 01.95	6C3
70.55.13	Caliper - front - each - overhaul .....	01.05	6C3
		Turbo 01.95	6C3
70.55.16	Calipers - front - set - overhaul .....	01.90	6C3
		Turbo 02.95	6C3
<b>70.60</b>	<b>WHEEL CYLINDERS</b>		
70.60.01	Wheel cylinders - front - both sides - renew.....	02.05	
70.60.02	Wheel cylinders - front - one side - pair - renew .....	01.40	
70.60.04	Wheel cylinder - front - one side - upper/front - renew.....	01.10	
70.60.05	Wheel cylinder - front - one side - lower/rear - renew .....	01.25	
70.60.09	Wheel cylinders - front - both sides - overhaul.....	02.35	
70.60.10	Wheel cylinders - front - one side - pair - overhaul .....	01.55	
70.60.12	Wheel cylinder - front - one side - upper/front - overhaul.....	01.15	
70.60.13	Wheel cylinder - front - lower/rear - overhaul.....	01.30	
70.60.17	Wheel cylinders - rear - both sides - renew .....	01.45	6F4
70.60.19	Wheel cylinder - rear - each - renew .....	00.90	6F4
70.60.25	Wheel cylinders - rear - both sides - overhaul .....	01.70	6F4
70.60.26	Wheel cylinder - rear - each - overhaul .....	01.05	6F4
70.60.30	Wheel cylinders/calipers - vehicle set - renew .....	02.70	*
		Turbo 03.20	*
70.60.31	Wheel cylinders/calipers - vehicle set - overhaul .....	03.45	*
		Turbo 04.30	*
<b>70.90</b>	<b>DIAGNOSIS</b>		
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>		
70.90.02/01	Brake test - using Roller brake tester .....	00.30	-

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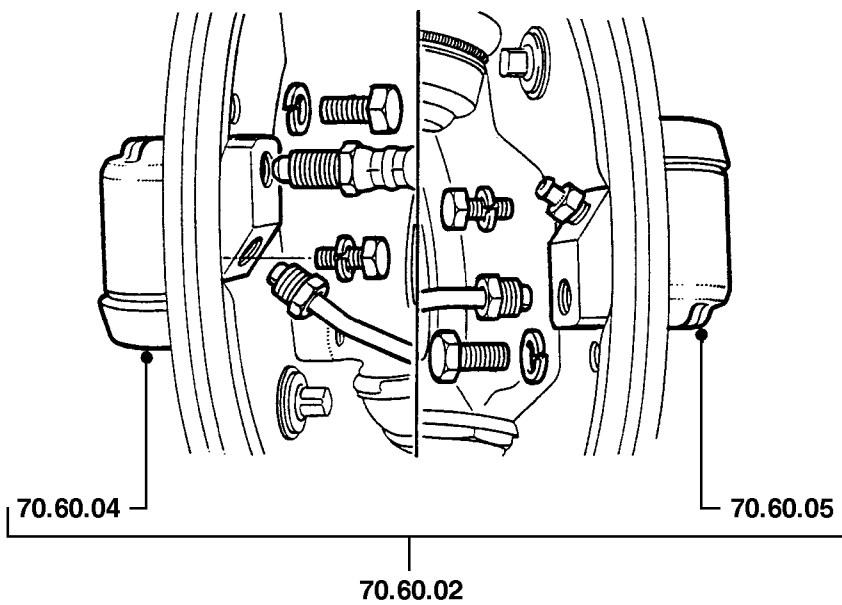
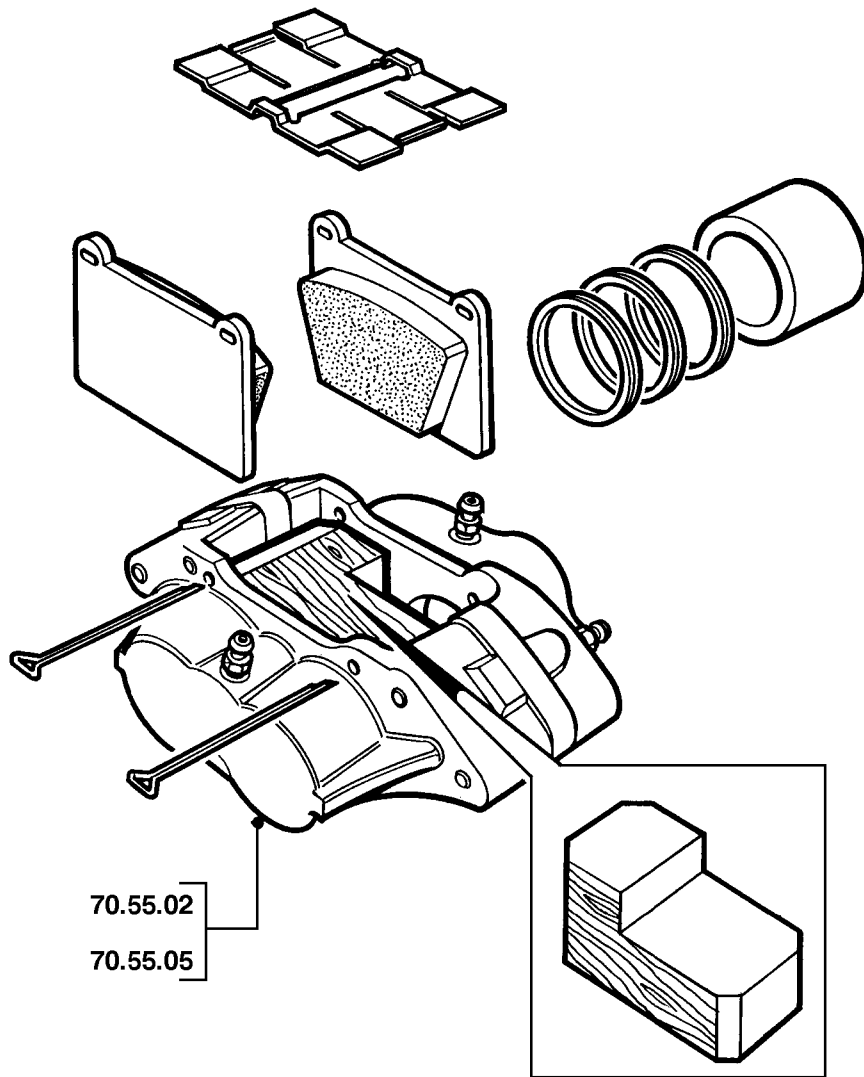
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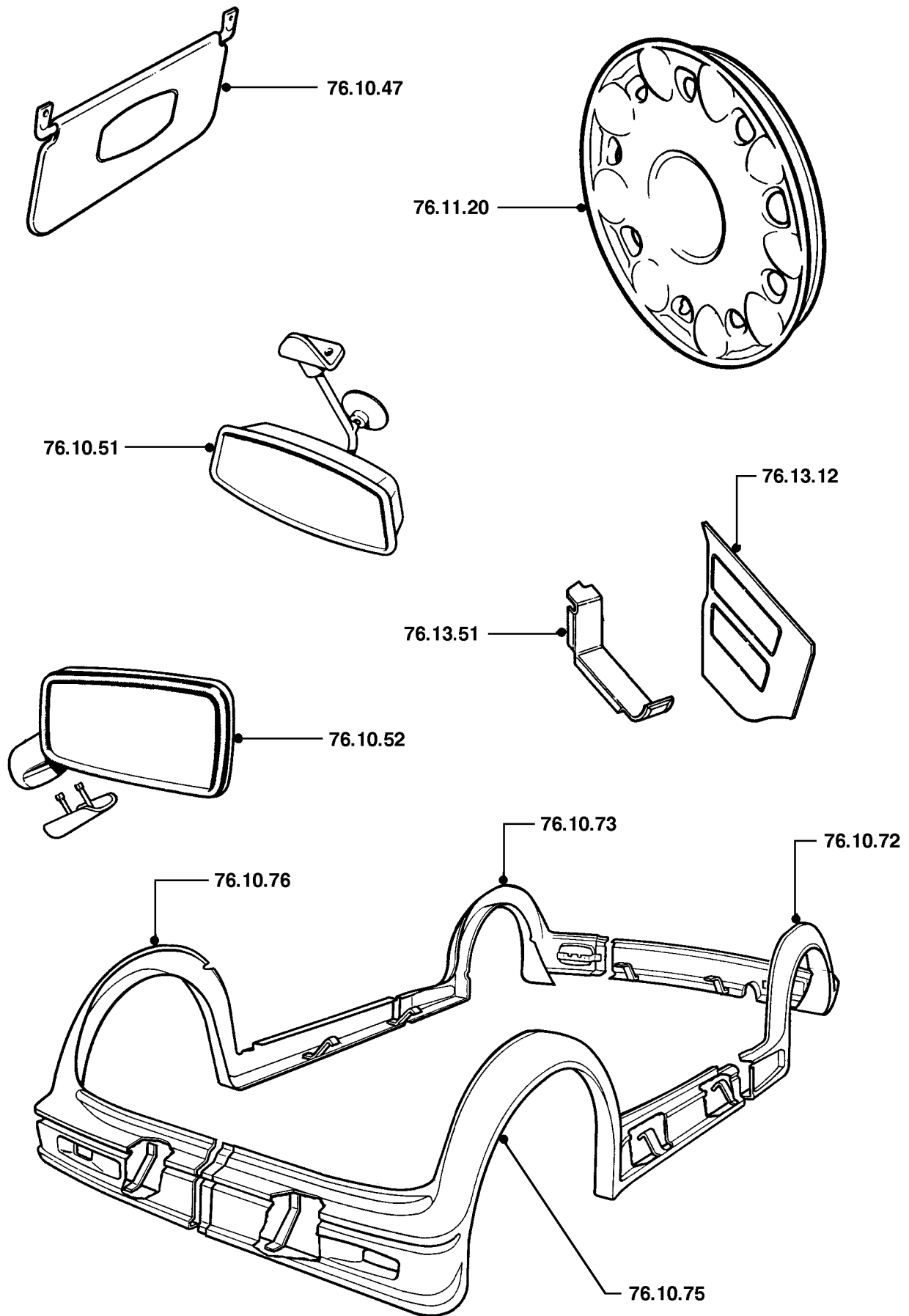
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



<b>76.10</b>	<b>BODY - GENERAL</b>		
76.10.42	Panel - front underbelly - LH - renew ..... Turbo	00.35	9B8
76.10.43	Panel - front underbelly - RH - renew ..... Turbo	00.35	9B8
76.10.47	Sun visor - each - renew .....	00.20	8S4
76.10.51	Mirror - interior - renew .....	00.20	8S3
76.10.52	Mirror - exterior - each - renew .....	00.20	9P2
76.10.72	Spoiler - rear valance - LH - renew ..... Turbo	00.95	9B0
76.10.73	Spoiler - rear valance - RH - renew ..... Turbo	00.90	9B0
76.10.75	Spoiler - front valance - side - renew ..... Turbo	01.05	9B9
76.10.76	Spoiler - front valance - RH - renew ..... Turbo	00.85	9B9
<b>76.11</b>	<b>BODY - GENERAL (cont.)</b>		
76.11.20	Road wheel trim - each or set - renew .....	00.20	5X6
76.11.50/01	Water leak detection & sealing at body seams/joints - vehicle in workshop .....	00.45	*
76.11.60/01	Flange - body aperture - adjust to rectify water leaks/wind noise - vehicle in workshop .....	00.25	*
<b>76.13</b>	<b>BODY TRIM INTERIOR</b>		
76.13.12	Trim casing - rear quarter - lower - renew .....	00.40	8D3
76.13.51	Companion box - rear quarter - lower - renew ..... Turbo	00.30 00.45	8D3 8D3
76.13.71	Capping - rear quarter - renew .....	00.20	

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



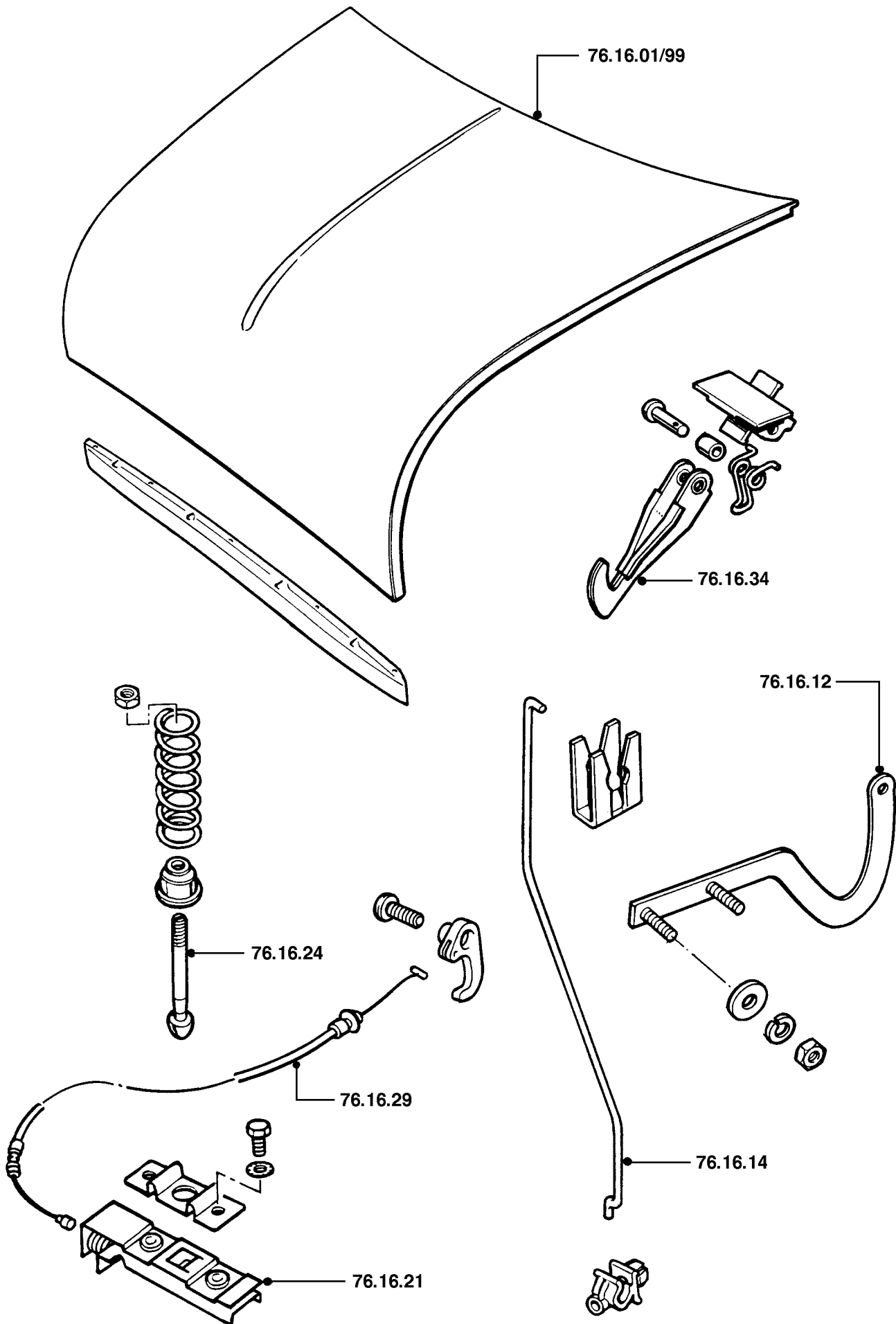


<b>76.16</b>	<b>BONNET &amp; LOCK</b>		
76.16.01/99	Bonnet - remove for access & refit .....	00.25	9C8
76.16.02	Bonnet - alignment - check & adjust .....	00.30	9C8
76.16.12	Hinges - bonnet - set - renew .....	00.50	9F4
76.16.14	Stay/strut - one - renew .....	00.20	9F6
76.16.20	Lock(s) - adjust .....	00.25	*
76.16.21	Lock - renew .....	00.35	8W1
76.16.23	Lock pin(s) - adjust .....	00.25	8W1
76.16.24	Lock pin - LH/each - renew .....	00.25	8W1
76.16.34	Safety catch - bonnet - renew .....	00.20	8W2

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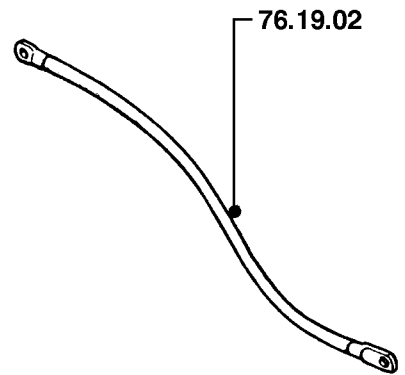
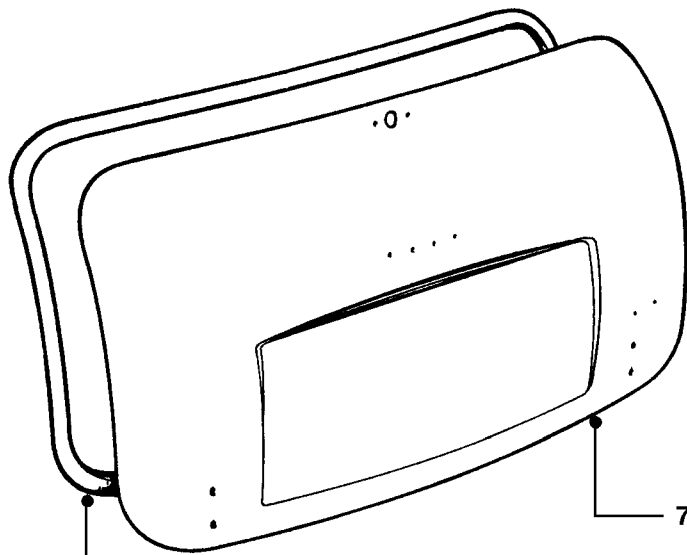
J - WORN/STRETCHED  
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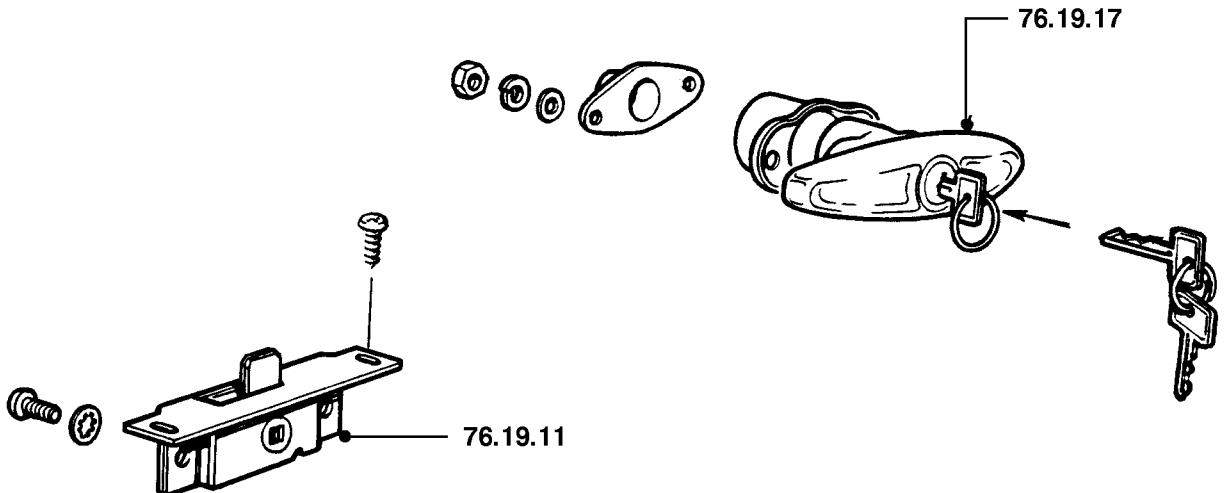
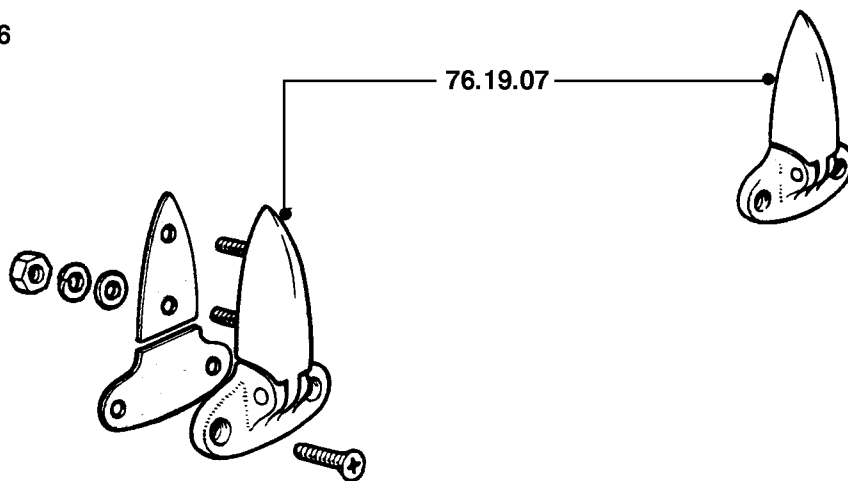


<b>76.19</b>	<b>BOOT COMPARTMENT, LID &amp; LOCK</b>		
76.19.01/99	Lid - remove for access & refit - vehicle in workshop.....	00.25	9C7
76.19.02	Stay/strut - renew.....	00.20	9F9
76.19.03	Lid - align on hinges.....	00.35	9F3
76.19.03/01	Lid - align on hinges - vehicle in workshop .....	00.20	9F3
76.19.06	Seal - lid - renew .....	00.80	9H8
76.19.07	Hinges - lid - set - renew .....	00.60	9F3
76.19.11	Latch - renew.....	00.20	8W4
76.19.17	Handle & lock assembly - renew .....	00.25	*
76.19.20	Turn lock & barrel assembly - renew .....	00.30	*

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
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<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
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<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



76.19.06



<b>76.22</b>	<b>BUMPERS &amp; OVERRIDERS/UNDERRIDERS</b> <b>(for finishing unpainted parts see PAINT REFINISHING TIMES</b> <b>Section 79J- Flat &amp; Repaint)</b>		
76.22.08	Bumper assembly - front - renew.....	00.25	9M1
76.22.15	Bumper assembly - rear - renew .....	00.25	9M1
76.22.72	Bumper valance - front - renew .....		
	Cabriolet	00.45	9M1
76.22.74	Bumper valance - rear - renew .....		
	Cabriolet	00.40	9M1
<b>76.25</b>	<b>CONTROL PANELS &amp; CONSOLES</b>		
76.25.01	Console assembly - front/centre/upper - renew.....		
	Turbo	00.50	8D7
76.25.15	Radio console - renew.....	00.20	8D7
<b>76.28</b>	<b>DOORS</b>		
76.28.01/99	Door assembly - front - remove for access & refit - with vehicle in . workshop .....	00.40	9C1
76.28.05	Door - front or rear - adjust on striker.....	00.25	8U2
76.28.05/01	Door - front or rear - adjust on striker - vehicle in workshop .....	00.15	8U2
76.28.07	Door - front - align on hinges .....	00.60	9F1
76.28.07/01	Door - front - align on hinges - vehicle in workshop.....	00.45	9F1
76.28.46	Hinges - front door - pair - renew.....	01.15	9F1
<b>76.31</b>	<b>DOOR GLASSES, FRAMES &amp; SEALS</b> <b>(for electrically operated window mechanisms - see 86.25)</b>		
76.31.01	Glass - front door - renew .....	01.05	8G9
76.31.13	Rubber/felt - glass channel - front door - renew.....	01.05	8G4
76.31.45	Glass regulator - front door - renew.....	00.80	7X3
76.31.55	Seal - waist inner - front door - renew .....	00.20	9J3

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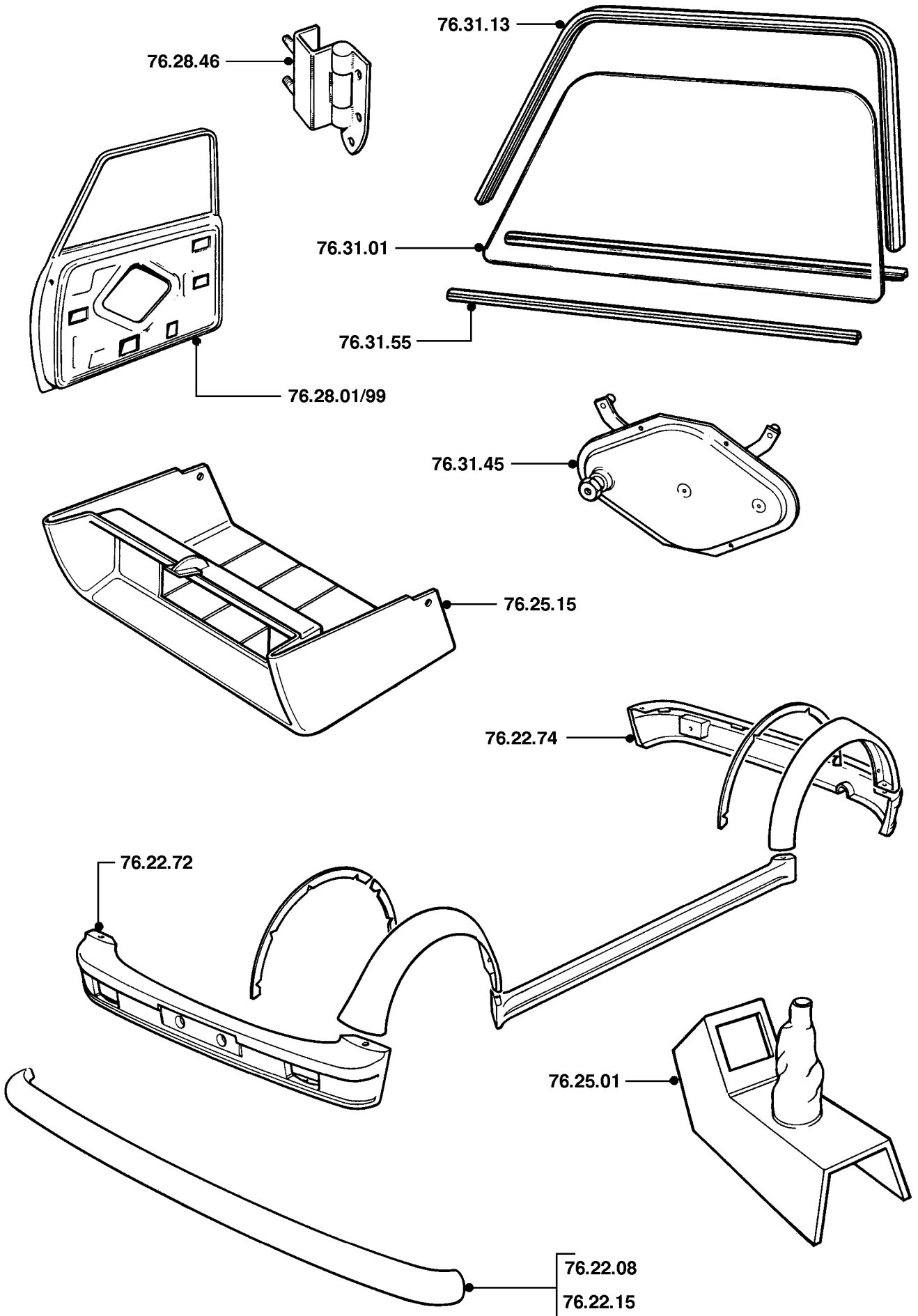
U - INACCURATE/SLIPPING

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Z - INOPERATIVE

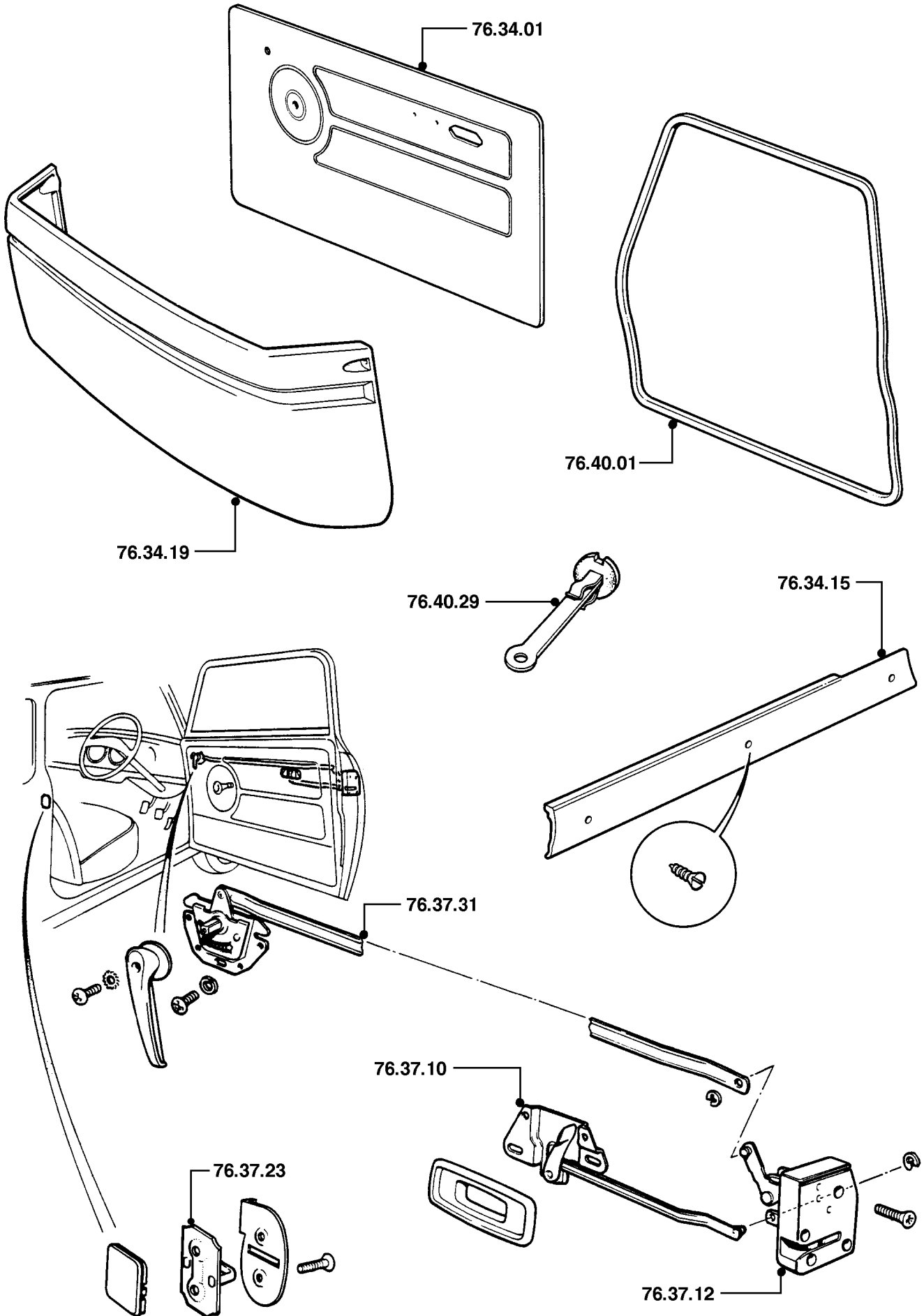


<b>76.34</b>	<b>DOOR INTERIOR TRIM &amp; FINISHERS</b>		
76.34.01	Trim casing - front door - renew.....	00.50	8C6
76.34.01/99	Trim casing - front door - remove for access & refit.....	00.50	8C6
76.34.15	Capping - front door - renew .....	00.20	8D4
76.34.19	Pocket - front door - renew .....	00.25	8X5
<b>76.37</b>	<b>DOOR LOCKS &amp; LATCHES</b> <b>(for electrically operated locks - see 86.26)</b>		
76.37.10	Lock control - each - renew .....	00.95	8U5
76.37.11	Lock control - each - adjust .....	00.60	8U5
76.37.12	Latch - front door - renew .....	00.95	8U1
76.37.23	Striker plate - front door - renew - includes adjustment .....	00.30	8U2
76.37.31	Remote control - front door - renew .....	01.00	8U4
76.37.47	Operating rods - lock remote control - front door - adjust .....	00.65	8U7
<b>76.40</b>	<b>DOOR SEALS, CHECK STRAPS &amp; STAYS</b>		
76.40.01	Seal - front door - renew .....	00.25	9H1
76.40.29	Check strap - front door - renew .....	00.30	9F7

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MRT44A



<b>76.43</b>	<b>EXTERIOR FINISHERS &amp; MOULDINGS</b>		
76.43.15	Finishers - gutters - set - renew .....	00.35	9N2
76.43.23	Finisher - front door - glass weather strip - renew .....	00.20	9N8
76.43.51	Finisher - body flange - lower - one side - renew.....	00.20	-
76.43.54	Wheel arch extension/finisher - front - each - renew .....	00.40	-
76.43.55	Wheel arch extension/finisher - rear - LH/each/arch set - renew..	00.40	-
	MPi	01.10	-
76.43.57	Finisher/extension - rear wheel arch - RH - renew .....	00.50	
76.43.71	Narrow coach line - each - per panel - renew .....	00.30	9T5
76.43.71/01	Narrow coach line - extra each - per panel - renew.....	00.20	9T5
76.43.72	Wide coach line/decals - each - per panel - renew .....	00.40	-
76.43.72/01	Wide coach line/decals - extra each - per panel - renew.....	00.25	-
<b>76.44</b>	<b>BADGES &amp; MOTIFS</b>		
76.44.05	Motif - front grille - renew .....	00.25	9M9

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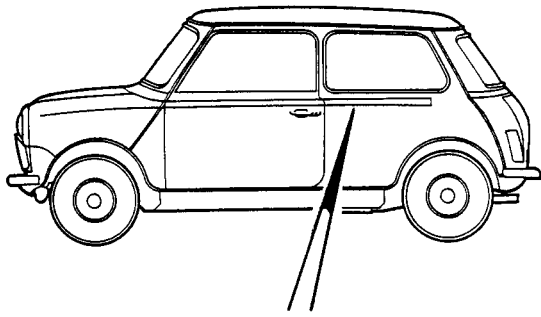
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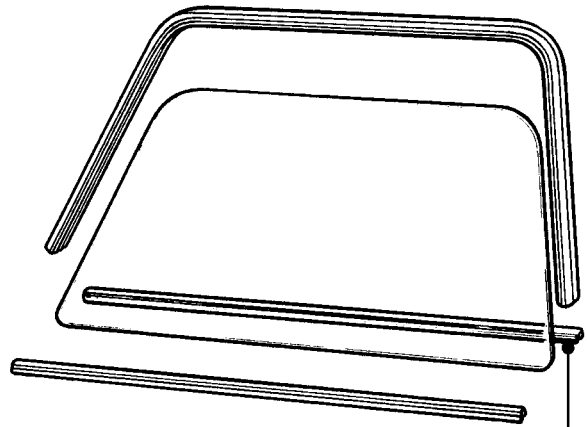
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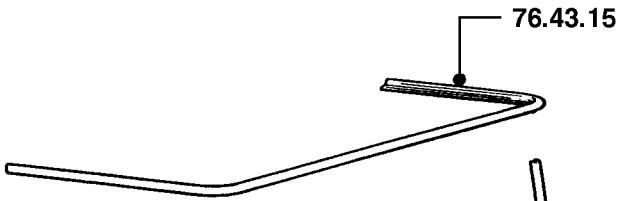


76.43.71

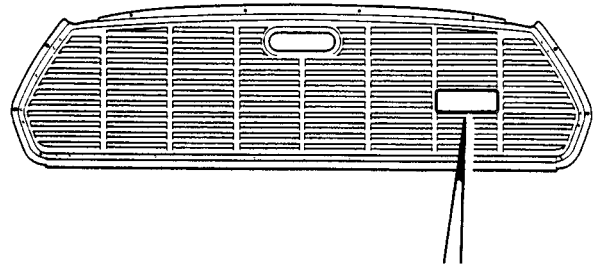
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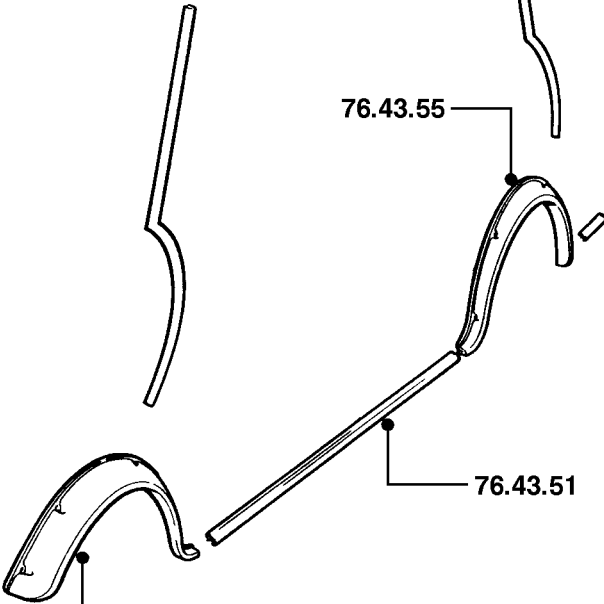
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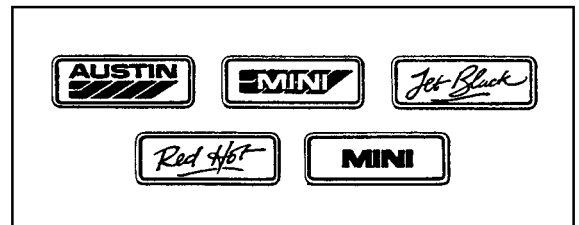
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76.43.55

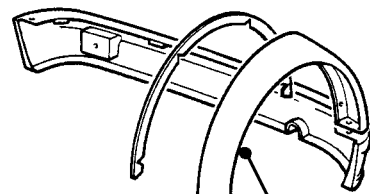


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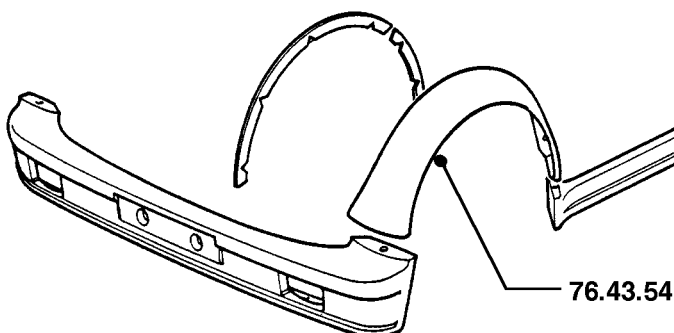


76.44.05

76.43.54



76.43.55



76.43.54

<b>76.46</b>	<b>FASCIA</b>		
76.46.04	Top rail/crash roll - complete - renew .....	01.45	8E2
		MPI	01.80
76.46.23	Fascia - renew .....		8E2
		Cabriolet	00.95
		MPI	01.30
		Turbo	01.80
76.46.23/99	Fascia - remove for access & refit .....		8C3
		Cabriolet	00.60
		MPI	00.80
		Turbo	00.45
<b>76.49</b>	<b>FLOOR COVERINGS</b>		
76.49.02	Carpet/mat - front - renew .....	00.20	8C9
76.49.03	Carpet - rear - renew .....	00.25	8C1
76.49.04	Carpet/mat - luggage compartment - each - renew .....	00.15	8C9
76.49.12	Carpet - complete - renew .....	00.60	8C1
<b>76.52</b>	<b>GLOVE BOX</b>		
76.52.02	Lid - renew .....		
		Turbo	00.25
76.52.03	Glove box - renew - includes adjustment.....		8C4
		MPI	01.00
		Turbo	00.55
<b>76.55</b>	<b>GRILLES</b>		
76.55.03	Grille - front - renew .....	00.55	9M7
		MPI	00.40
		Turbo	00.30

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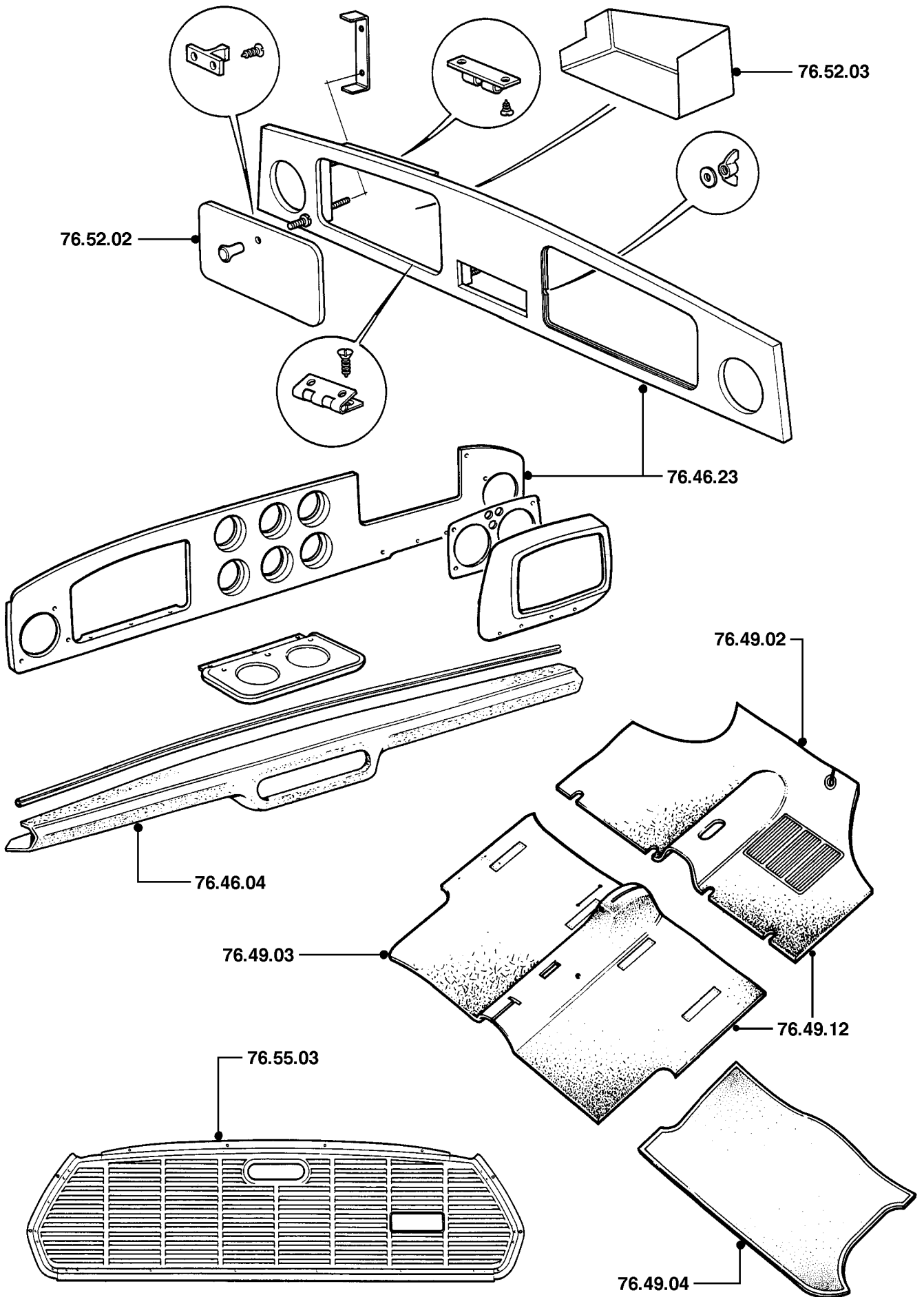
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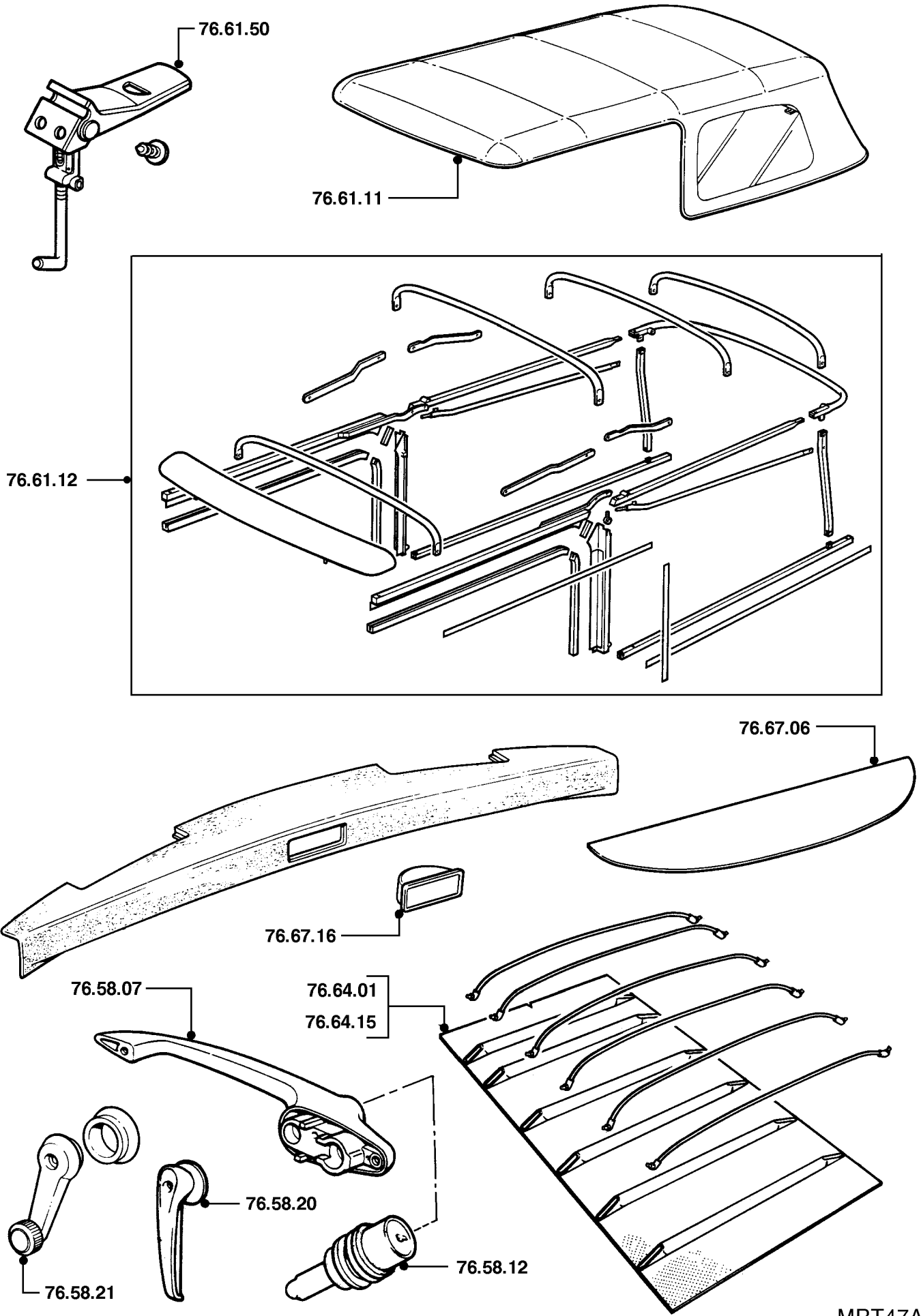
Z - INOPERATIVE



MRT46A

<b>76.58</b>	<b>HANDLES, PULLS &amp; COAT HANGERS</b>		
76.58.07	Handle - outside - front door - renew .....	00.85	8U6
76.58.12	Push button - door - renew .....	00.95	-
76.58.20	Handle - inside - front door - renew .....	00.15	8U4
76.58.21	Handle - glass regulator - renew .....	00.20	8F2
<b>76.61</b>	<b>HARD, SOFT TOPS &amp; TONNEAU COVERS</b>		
76.61.10/99	Frame & hood cover - assembly - remove for access & refit .....		
	Cabriolet	01.15	
76.61.11	Outer cover - hood - renew .....		
	Cabriolet	02.00	
76.61.12	Frame - hood - renew .....		
	Cabriolet	01.75	
76.61.50	Fastener - hood cover to cant rail - renew .....		
	Cabriolet	00.20	
76.61.57	Grab handle - header rail - renew .....		
	Cabriolet	00.20	
<b>76.64</b>	<b>HEADLININGS</b>		
76.64.01	Headlining - renew .....	04.55	8C5
76.64.15	Headlining - sunshine/sliding roof condition - renew .....	05.25	8C5
	Turbo	05.65	8C5
<b>76.67</b>	<b>PARCEL &amp; ASHTRAYS</b>		
76.67.06	Parcel tray - rear - renew .....	01.20	8D2
	Cabriolet	00.80	8D2
	Turbo	00.55	8D2
76.67.14	Ashtray - rear - renew .....	00.15	8S5
76.67.16	Ashtray - fascia support rail - renew .....	00.15	8S5

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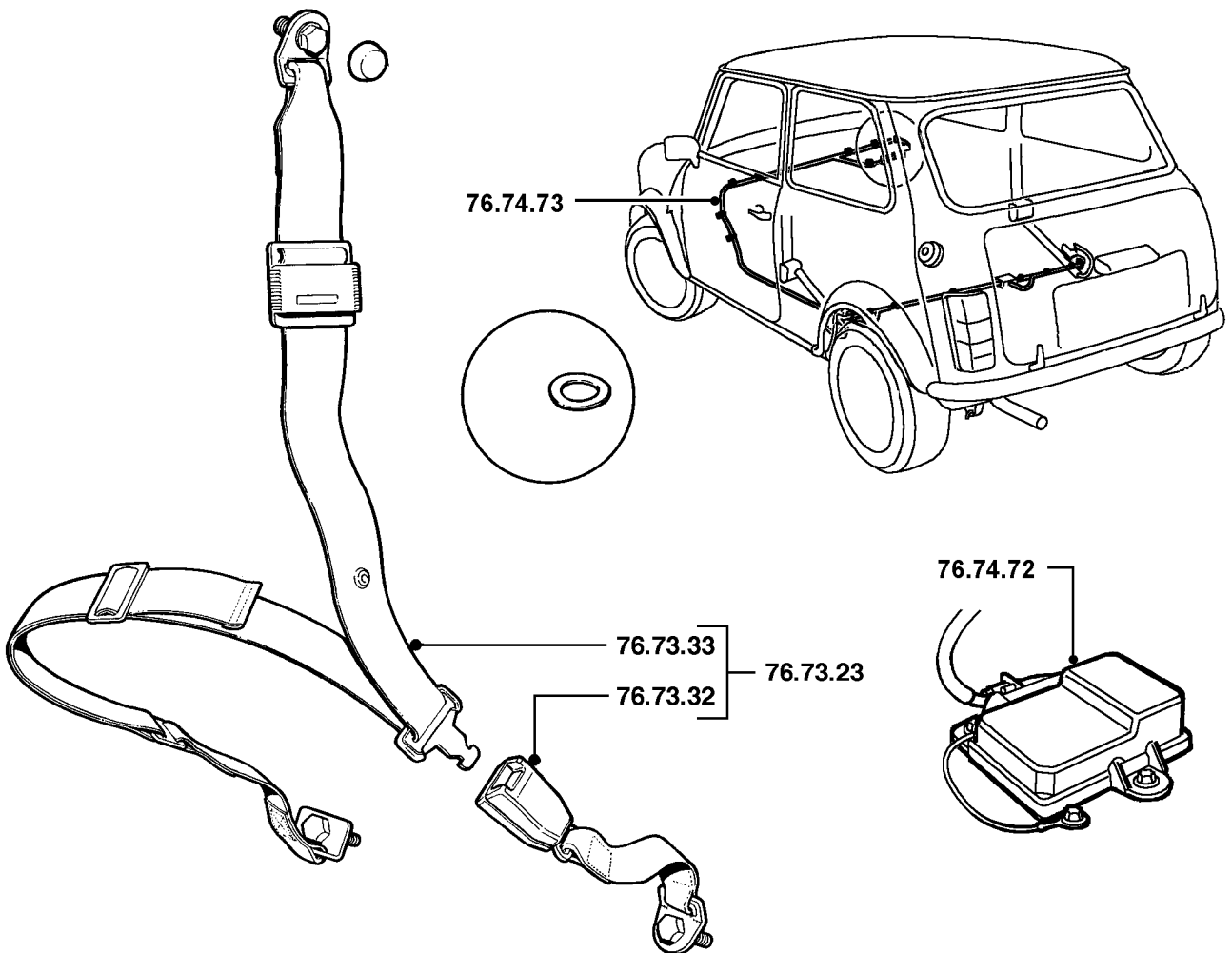
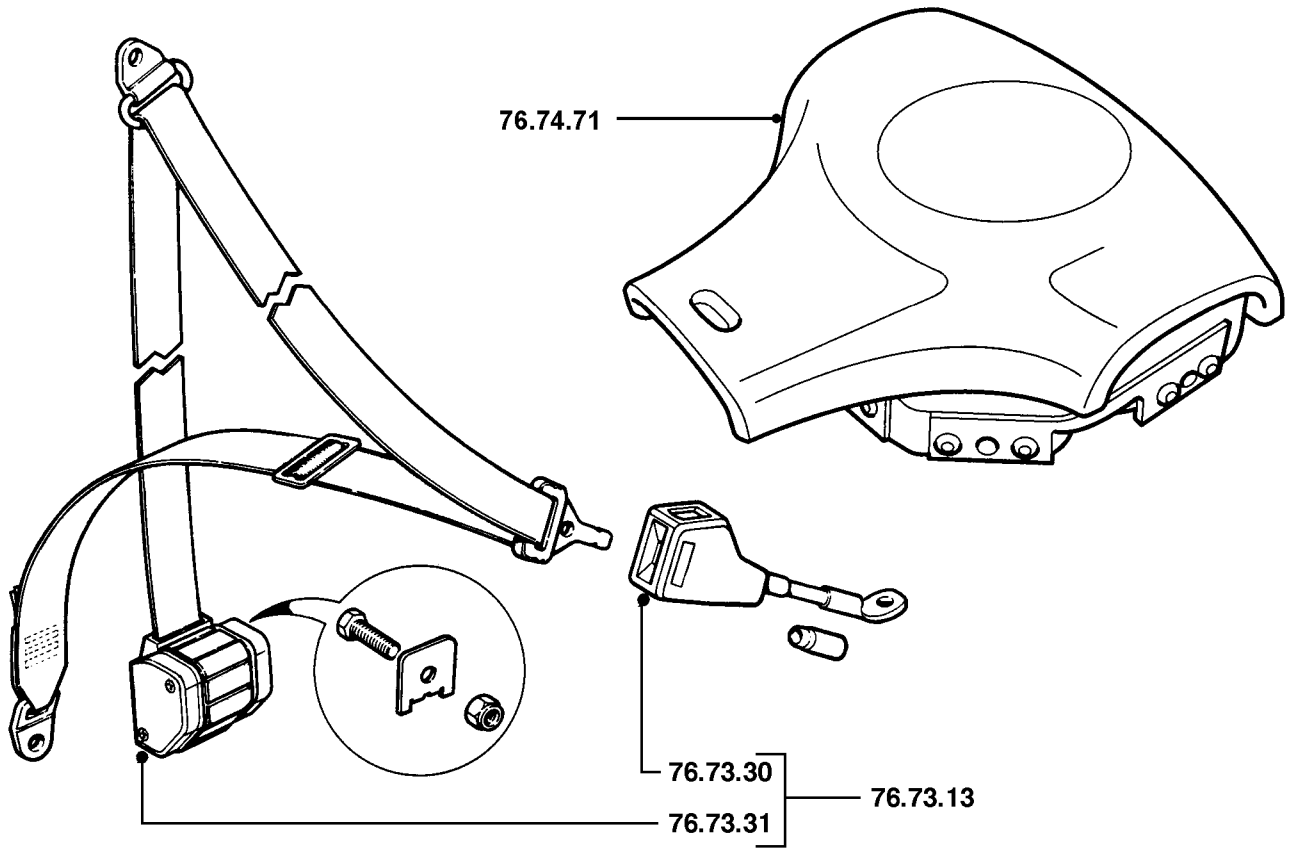
MRT47A

<b>76.73</b>	<b>SEAT BELTS &amp; RESTRAINT SYSTEMS</b>		
76.73.11	Automatic belt assemblies - front - set - renew .....	00.45	8P1
76.73.13	Automatic belt assembly - front - each - renew .....	00.30	8P1
76.73.22	Seat belts - rear - pair - renew .....	00.35	8P7
76.73.23	Seat belt - rear - LH/each - renew .....	00.50	8P6
76.73.30	Stalk - front seat belt - each - renew .....	00.20	8P2
76.73.31	Reel - front seat belt - each - renew .....	00.60	8P1
76.73.32	Stalk - rear seat belt - LH/each - renew .....	00.20	8P6
76.73.33	Reel - rear seat belt - each - renew .....	00.25	8P7
<b>76.74</b>	<b>SUPPLEMENTARY RESTRAINT SYSTEM (AIR BAG)</b>		
76.74.71	Module - air bag - driver side - renew .....	00.40	8Z2
76.74.72	Control unit - air bag - renew .....	00.40	8Z5
76.74.73	Harness - air bag - renew .....	02.60	8Z6

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<b>76.76</b>	<b>SILLS, TREAD PLATES</b>		
76.76.20	Sill panel - body styling kit - renew ..... Cabriolet	00.45	
<b>76.81</b>	<b>WINDSCREEN &amp; BODY GLASSES</b>		
76.81.01	Glass/sealing rubber - windscreen - renew .....	01.00	8G1
76.81.10	Glass/sealing rubber - rear screen - renew .....	00.70	8G2
76.81.13	Seal - body rear - quarter vent - renew .....	00.30	8G0
76.81.19	Glass/sealing rubber - body quarter vent - renew .....	00.30	8G0
76.81.20	Glass/sealing rubber - quarter light - rear - renew .....	00.60	8G0
76.81.32	Body quarter vent assemblies - pair - renew .....	00.45	8G0
76.81.42	Windscreen/rear screen - leak diagnosis (ultrasonic leak test) ....	00.35	*
76.81.42/01	Windscreen/rear screen - leak diagnosis (ultrasonic leak test) - vehicle in workshop .....	00.20	*
<b>76.83</b>	<b>SLIDING &amp; SUN ROOFS (Mechanically operated)</b>		
76.83.01	Sun/sliding roof - complete - front - renew .....	01.10	*
76.83.03	Glass panel - sun/sliding roof - front - renew .....	00.20	9C9
76.83.05	Seal - glass panel - sun/sliding roof - front - renew .....	00.35	9H4
	Turbo	01.60	9H4

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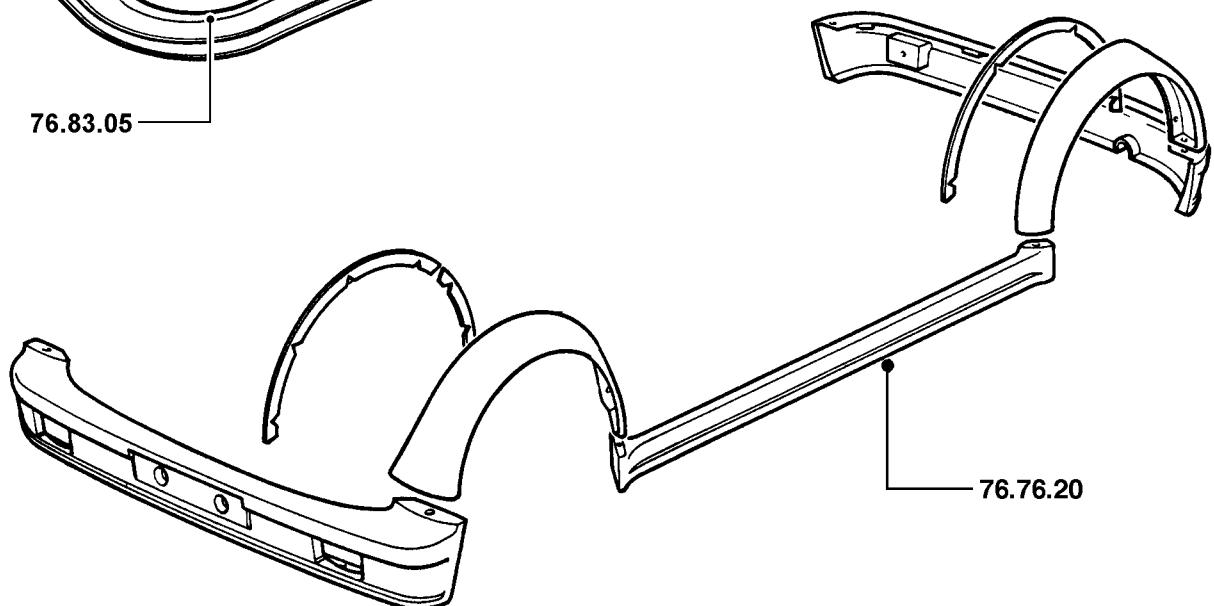
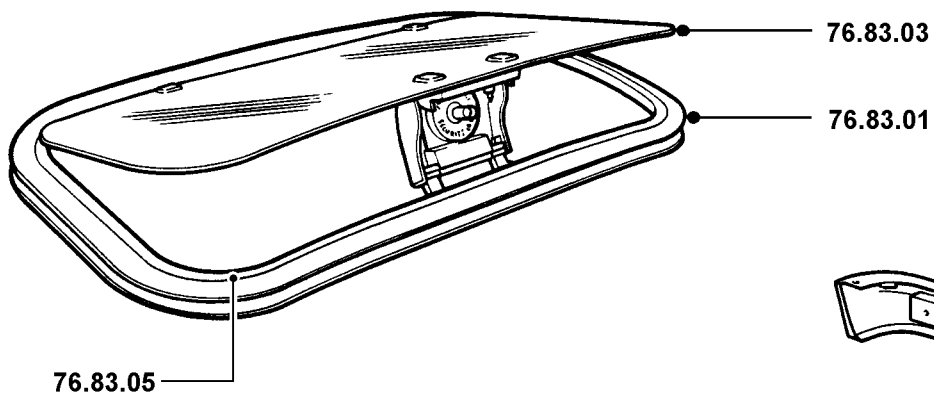
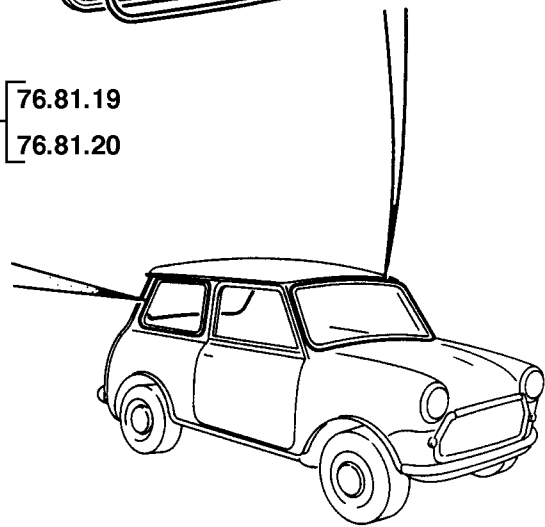
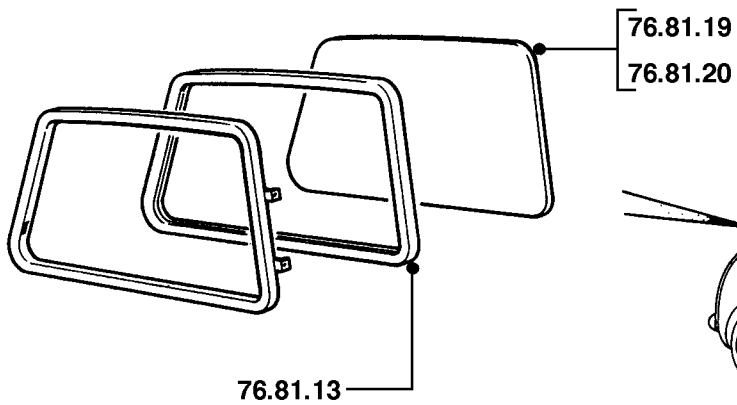
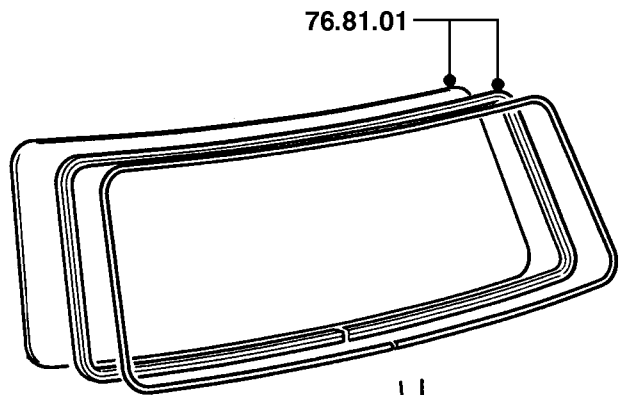
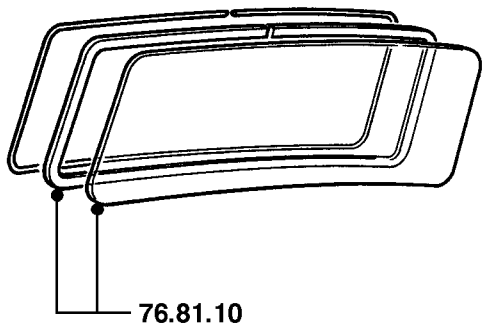
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<b>78.10</b>	<b>ACCESS - (REMOVE &amp; REFIT SEAT ASSEMBLIES)</b>		
78.10.17/99	Cushion - rear seat - bench type - remove for access & refit..... .	00.25	-
78.10.36/99	Head restraint - front seat - remove for access & refit .....	00.15	-
78.10.44/99	Front seat - remove for access & refit .....	00.25	-
78.10.56/99	Squab - rear seat - bench type - remove for access & refit .....	00.45	-
<b>78.30</b>	<b>CUSHIONS - FRONT SEATS</b>		
78.30.01	Cover - one piece - front seat cushion - renew .....	01.15	8B1
78.30.15	Pullmaflex - cushion frame - front seat - renew .....	01.60	-
78.30.18	Frame - complete - seat & squab - front seat - renew .....	02.45	
78.30.30	Pad - one piece - front seat cushion - renew .....	01.35	8A8
<b>78.40</b>	<b>CUSHIONS - REAR &amp; OCCASIONAL SEATS</b>		
78.40.01	Cover - rear seat cushion - bench type - renew..... .	01.55	8B1
78.40.29	Pad - rear seat cushion - bench type - renew .....	00.25	8A8
<b>78.50</b>	<b>HEAD RESTRAINTS - FRONT &amp; REAR SEATS</b>		
78.50.01	Cover - head restraint - front seat - renew .....	00.45	8B2
78.50.13	Pad - head restraint - front seat - renew .....	00.15	8B2
<b>78.90</b>	<b>SQUABS - FRONT &amp; REAR SEATS</b>		
78.90.08	Cover - squab - front seat - renew .....	00.55	8B1
78.90.11	Cover - rear seat squab- bench type - renew .....	01.55	8B1
78.90.21	Pullmaflex - frame - front seat squab - renew .....	00.90	-
78.90.49	Pad - front seat squab - renew .....	00.75	8A8
78.90.52	Pad - rear seat squab - bench type - renew .....	01.55	8A8

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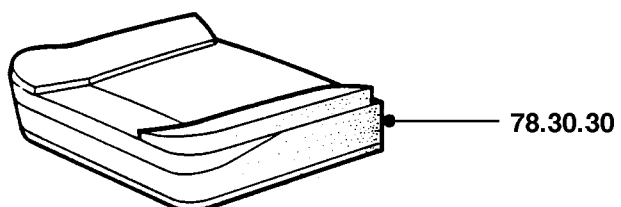
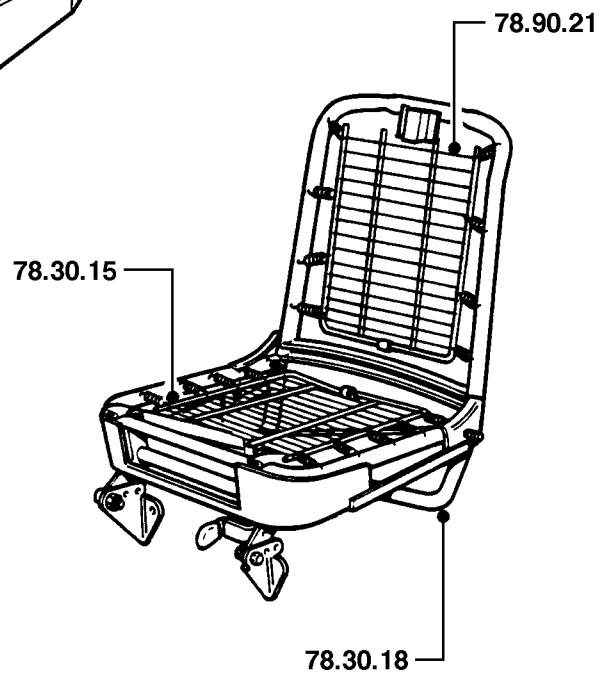
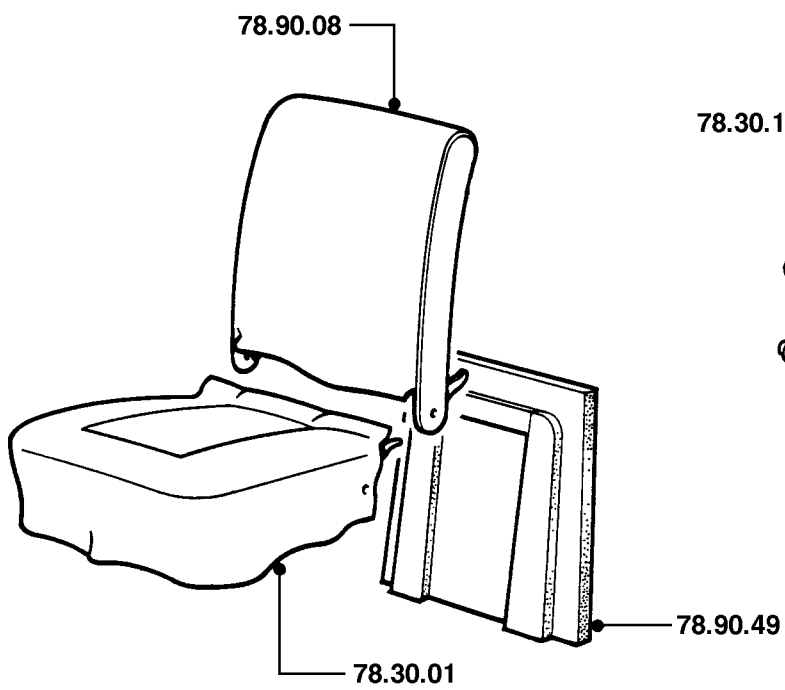
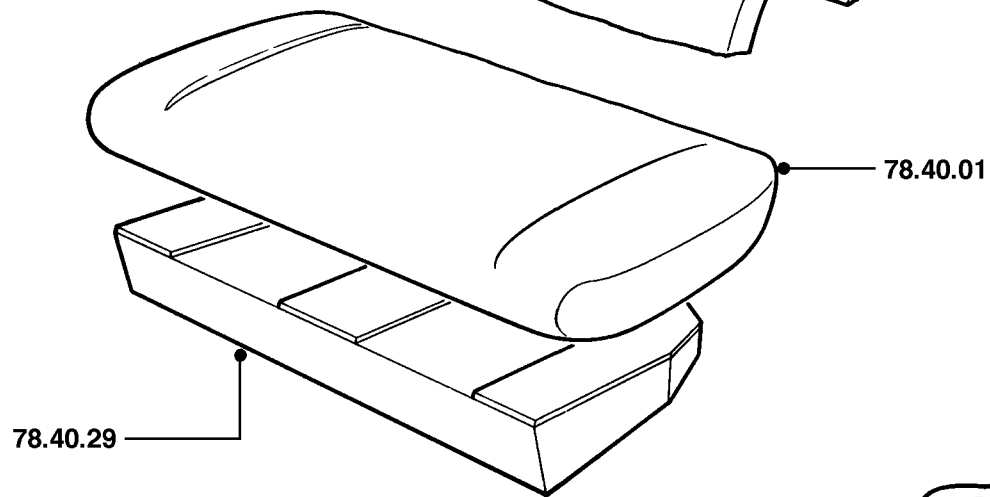
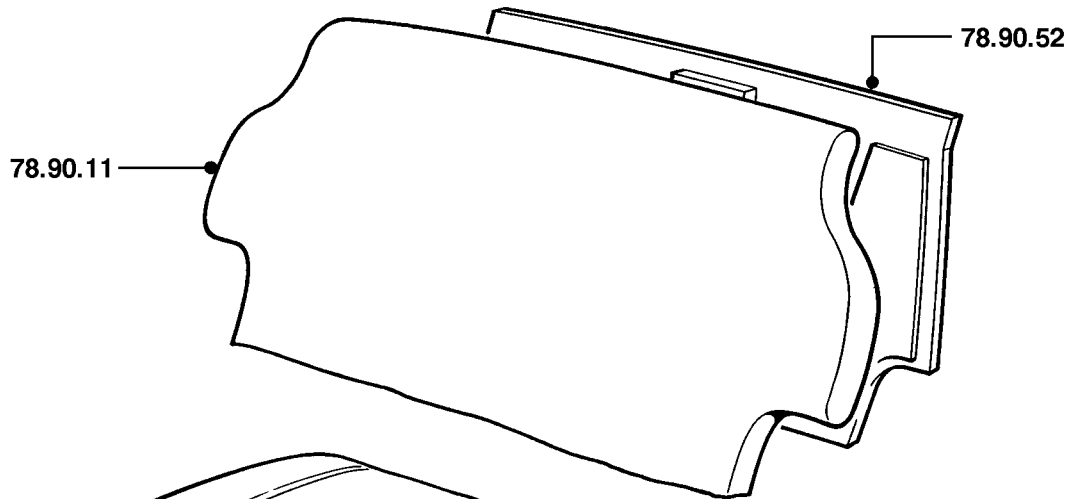
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V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

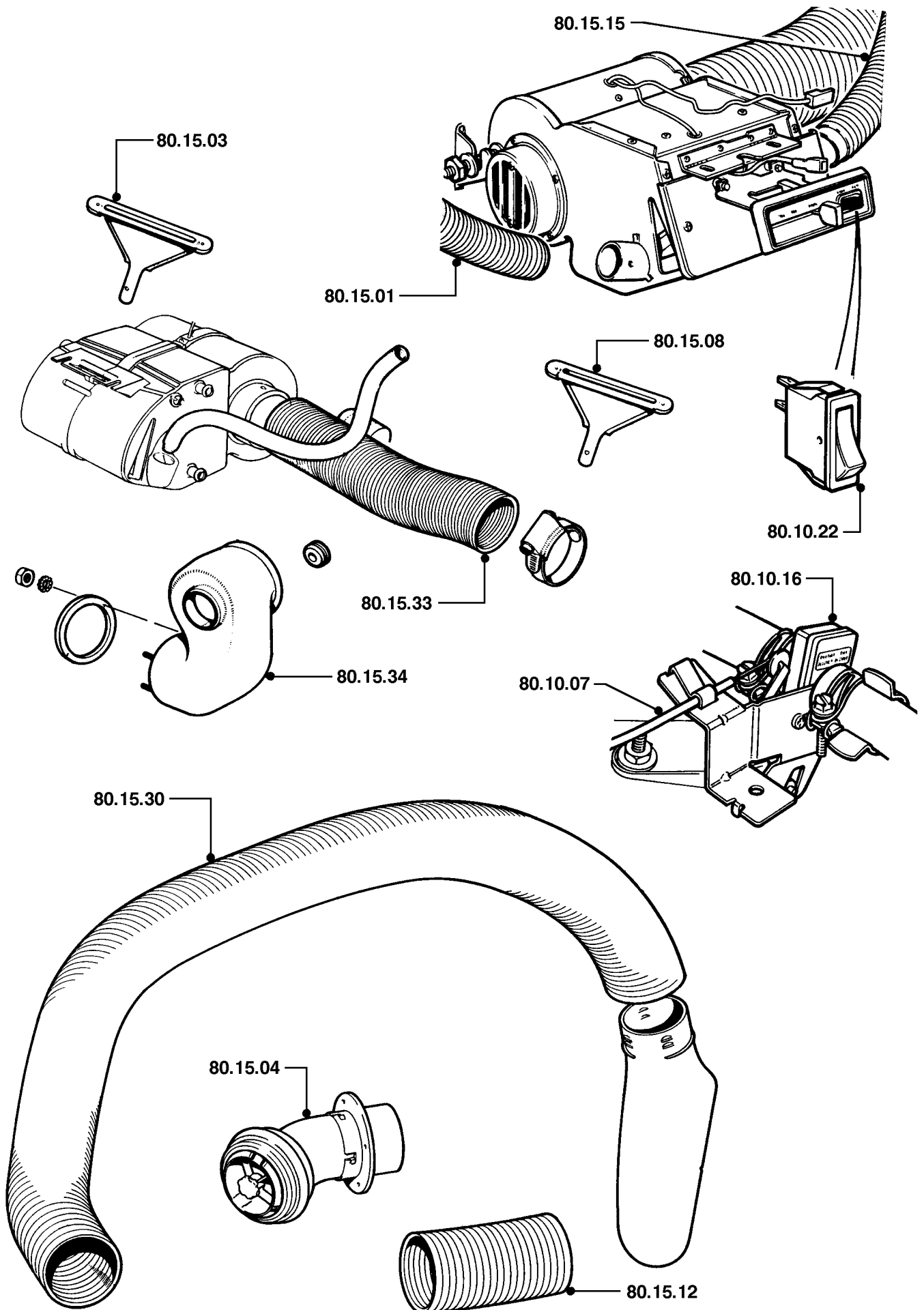
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



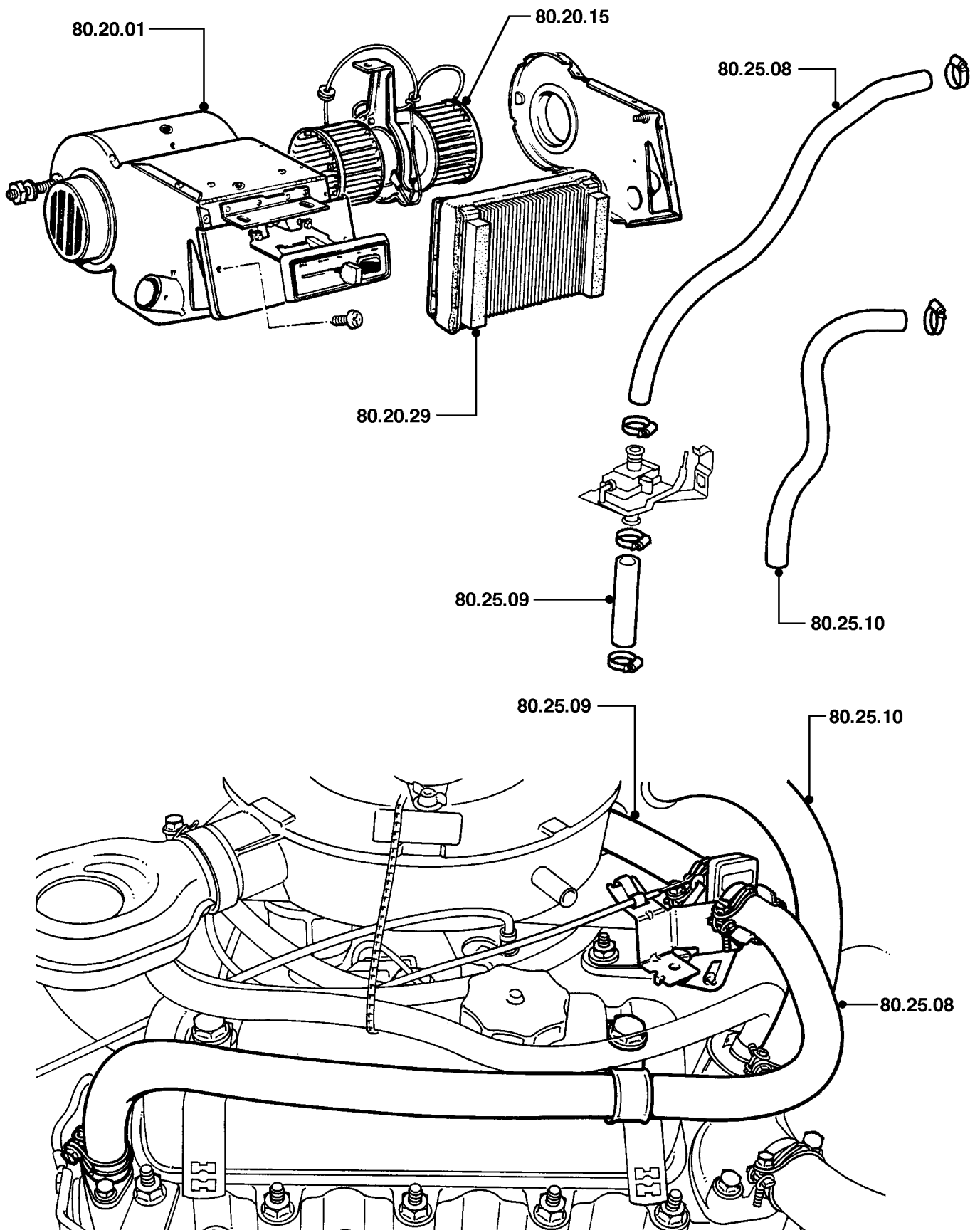
<b>80.10</b>	<b>CONTROLS</b>		
80.10.03	Controls - heater - adjust .....	00.25	8M8
80.10.03/01	Controls - heater - adjust - with vehicle in workshop .....	00.10	8M8
80.10.07	Cable - water valve control - renew .....	00.70	-
	Turbo	01.15	-
80.10.16	Valve - water - heater - renew .....	00.40	8N2
	(B)134455>	00.90	8N2
80.10.22	Switch - fan - front heater - renew .....	00.15	7S2
	Turbo	00.35	7S2
<b>80.15</b>	<b>DEMISTERS &amp; VENTILATORS</b>		
80.15.01	Tube - demister - LH - renew .....	00.30	8N1
	Turbo	00.50	8N1
80.15.03	Duct - demister - each - renew .....	01.45	8N1
	(B)134455>	01.90	8N1
	Turbo	01.60	8N1
80.15.04	Ventilator - face level - RH - renew .....	00.45	8M9
	Cabriolet	01.00	8M9
	Turbo	00.55	8M9
80.15.05	Ventilator - face level - LH - renew .....	00.45	8M9
	Cabriolet	01.00	8M9
	Turbo	00.55	8M9
80.15.08	Duct - demister - driver's side - renew .....	01.45	8N1
	Turbo	01.60	8N1
80.15.12	Hose/tube - face level - RH - renew .....	00.25	8N1
80.15.15	Tube - demister - RH - renew .....	00.25	8N1
80.15.29	Grille - fresh air intake - passenger side - renew .....	00.25	9A5
80.15.30	Hose - fresh air intake - LH - renew .....	00.35	8N1
80.15.32	Hose - fresh air intake - RH - renew .....	00.30	8N1
80.15.33	Hose - fresh air - heater to valance - renew .....	00.20	8N1
80.15.34	Air distribution box - renew .....	00.60	2F7
80.15.35	Grille - fresh air intake - driver's side - renew .....	00.30	8N1

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



<b>80.20</b>	<b>HEATER UNIT</b>		
80.20.01	Heater unit - renew .....	00.50	8M1
	Turbo	01.45	8M1
80.20.15	Motor - fan - renew .....	01.00	7S1
	Turbo	02.00	7S1
80.20.29	Matrix - renew .....	00.80	8M2
	Turbo	01.75	8M2
<b>80.25</b>	<b>PIPES &amp; HOSES</b>		
80.25.07	Hose - feed - engine to heater - renew .....	00.40	2E4
80.25.08	Hose - feed - engine to water valve - renew .....	00.40	2E4
	(B)134455>	01.00	2E4
80.25.09	Hose - feed - water valve to heater - renew.....	00.45	2E4
	(B)134455>	00.80	2E4
	Turbo	01.05	2E4
80.25.10	Hose - return from heater - renew .....	00.50	2E5
	(B)134455>	00.90	2E5
	Turbo	01.10	2E5

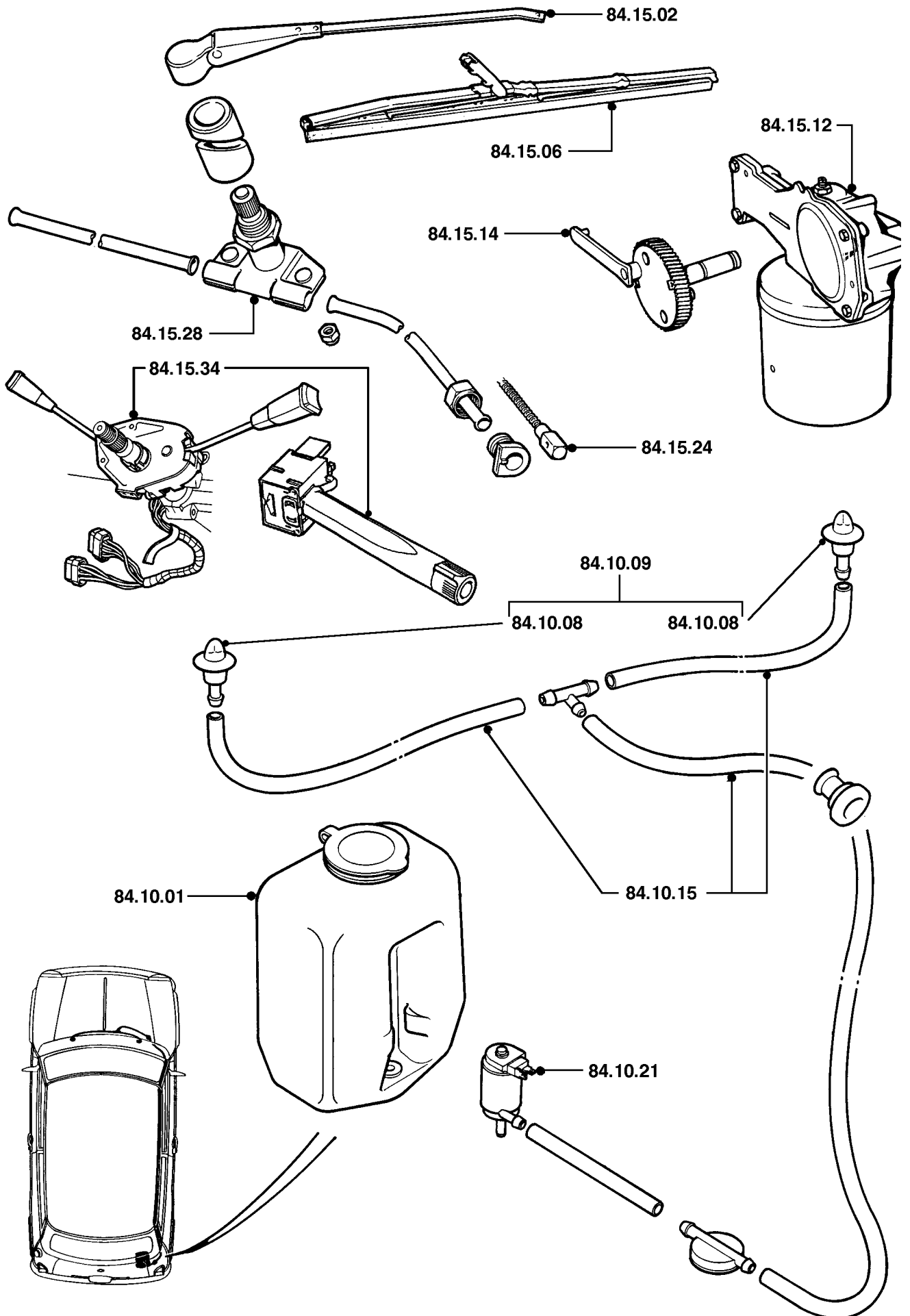
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B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
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<b>84.10</b>	<b>WINDSCREEN WASHERS</b>		
84.10.01	Reservoir - washer - renew .....	00.25	7Q5
84.10.08	Jet - washer - each - renew .....	00.20	7Q8
84.10.09	Jets - washer - set - renew .....	00.20	7Q8
84.10.10	Jets - washers - adjust.....	00.15	7Q8
84.10.10/01	Jets - washers - adjust - with vehicle in workshop .....	00.05	7Q8
84.10.15	Tubes - washer - renew .....	00.30	7Q0
		SPi	7Q0
84.10.21	Pump - washer - renew .....	00.30	7Q1
<b>84.15</b>	<b>WINDSCREEN WIPERS</b>		
84.15.01	Arms - wipers - set - renew .....	00.20	7R9
84.15.02	Arm - wiper - each - renew .....	00.15	7R9
84.15.05	Blades - wiper - set - renew .....	00.15	7R6
84.15.06	Blade - wiper - each - renew .....	00.15	7R6
84.15.12	Motor - wiper - renew.....	00.80	7R1
84.15.14	Gear assembly - wiper - renew .....	00.70	7R4
84.15.24	Wiper rack - renew.....	00.50	7R4
84.15.25	Wheelbox/drive pivot - set - renew .....	01.10	7R4
84.15.27	Wheelbox/drive assembly - renew.....	01.10	7R4
84.15.28	Wheelbox/drive pivot - renew .....	01.10	7R4
84.15.34	Switch - wiper/washer - renew.....	00.45	7R2
		(B)134455>	7R2
84.15.36	Delay unit - renew .....	00.80	7R7

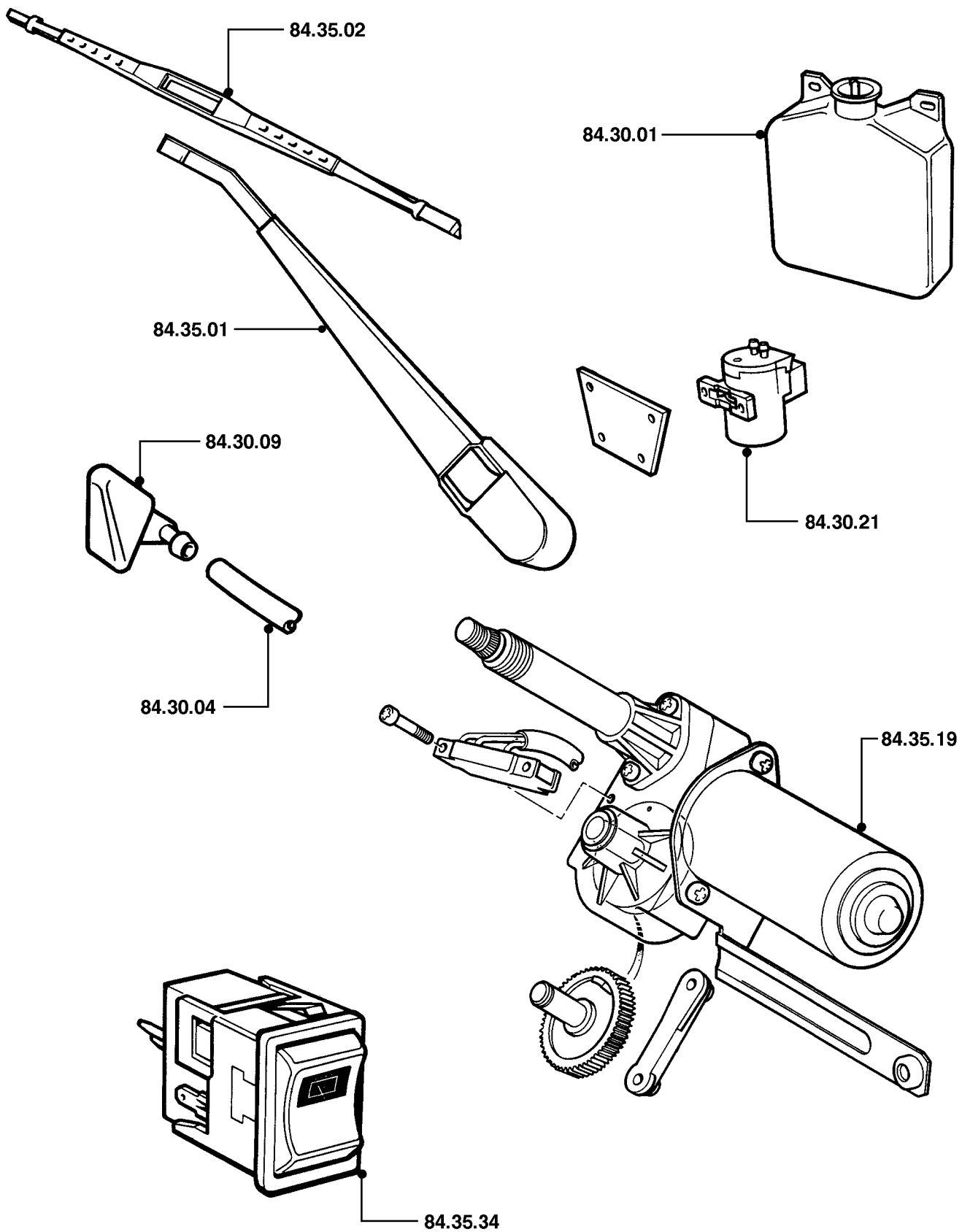
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<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
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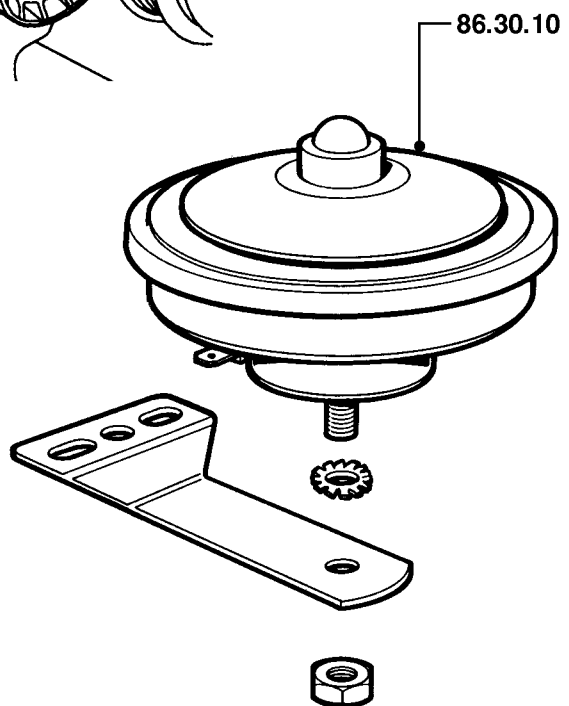
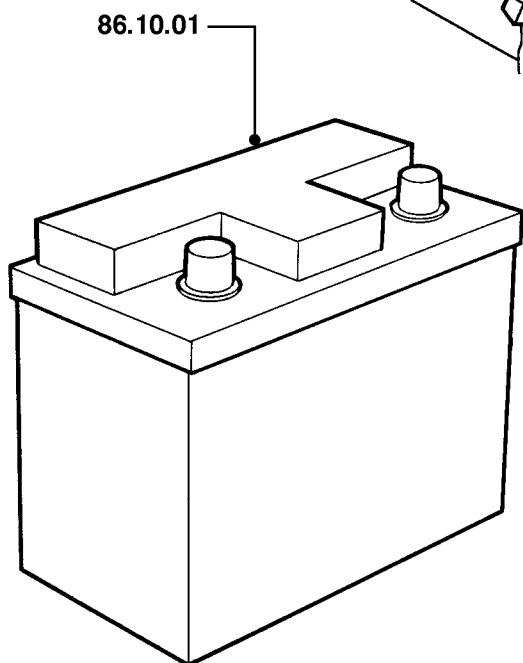
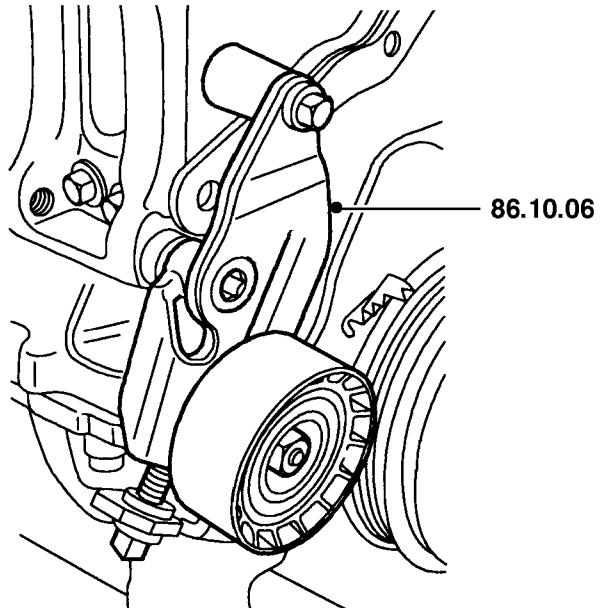
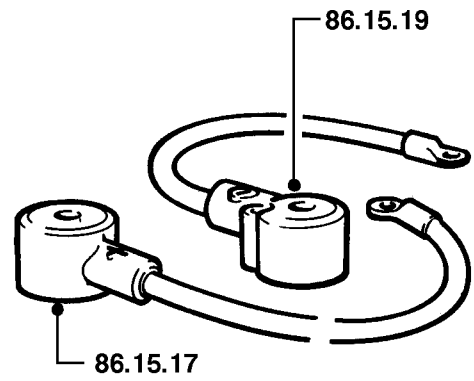
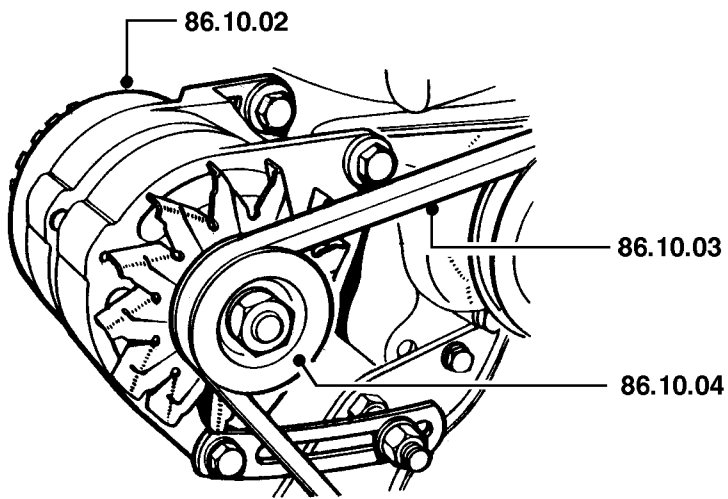
<b>84.30</b>	<b>REAR SCREEN WASHER</b>		
84.30.01	Reservoir - washer - renew ..... Turbo	00.20	7Q5
84.30.03	Washer tube - reservoir to pump - renew ..... Turbo	00.20	7Q0
84.30.04	Washer tube - pump to jet - renew ..... Turbo	00.20	7Q0
84.30.09	Jet(s) - washer - renew ..... Turbo	00.20	7Q9
84.30.10	Jet(s) - washer - adjust ..... Turbo	00.15	7Q9
84.30.21	Pump - washer - renew ..... Turbo	00.35	7Q3
<b>84.35</b>	<b>REAR SCREEN WIPER</b>		
84.35.01	Arm - wiper - renew ..... Turbo	00.20	7R9
84.35.02	Blade - wiper - renew ..... Turbo	00.15	7R6
84.35.19	Wiper motor & wheelbox assembly - rear - renew ..... Turbo	00.85	7R3
84.35.34	Switch - combined wiper/washer - renew ..... Turbo	00.45	*

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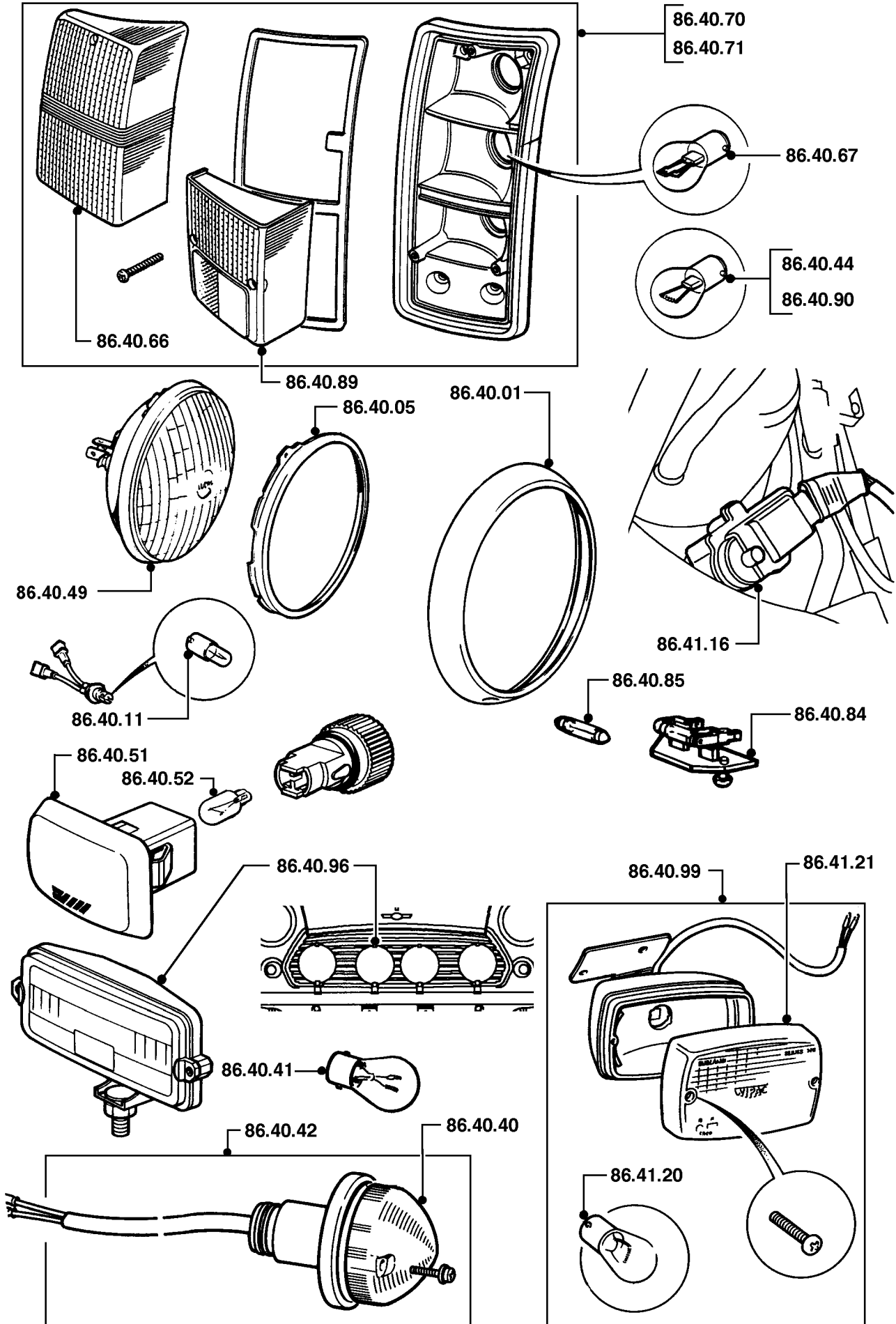
<b>86.10</b>	<b>ALTERNATOR &amp; CONTROL UNIT</b>		
86.10.02	Alternator - renew ..... MPI	00.60 00.90	7D5 7D5
86.10.03	Drive belt - alternator - renew ..... MPI	00.65 00.60	2G3 2G3
86.10.04	Pulley - alternator - renew ..... MPI	00.60 00.70	2G2 2G2
86.10.05	Drive belt - alternator - check & adjust tension ..... MPI	00.50 00.50	2G3 2G3
86.10.06	Tensioner - alternator drive belt - renew ..... MPI	00.60	-
<b>86.15</b>	<b>BATTERY</b>		
86.15.01	Battery(s) - each - renew .....	00.30	7E2
86.15.03	Recharge battery - vehicle delivery operation only .....	00.35	7E0
86.15.17	Battery lead - positive - renew .....	00.90	7E3
86.15.19	Battery lead - negative - renew .....	00.25	7E3
<b>86.30</b>	<b>HORNS</b>		
86.30.10	Horn - each - renew .....	00.20	7Q6

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<b>86.40</b>	<b>LAMPS - EXTERIOR</b> <b>(Operations do not include headlamp alignment)</b>		
86.40.01	Finisher - headlamp - each - renew .....	00.20	9M5
86.40.05	Retainer - headlamp unit - renew .....	00.25	7J1
86.40.11	Pilot bulb - headlamp - renew .....	00.30	7J2
86.40.17	Headlamps - pair - align beam.....	00.35	7J1
86.40.17/01	Headlamps - pair - align beam - with vehicle in workshop.....	00.25	7J1
86.40.40	Lens - flasher lamp - front - renew .....	00.15	7J2
86.40.41	Bulb - flasher lamp - front - renew .....	00.20	7J2
86.40.42	Lamp assembly - front flasher - renew .....	00.35	7J2
86.40.44	Bulb - flasher lamp - rear - renew .....	00.20	7J3
86.40.49	Headlamp assembly - renew .....	00.30	7J2
86.40.51	Lens - flasher repeater lamp - side - front - renew.....	00.20	7J4
86.40.52	Bulb - flasher repeater lamp - side - front - renew .....	00.15	7J4
86.40.53	Lamp assembly - flasher side repeater - front - renew .....	00.20	7J4
86.40.66	Lens - tail lamp - each - renew .....	00.20	7J3
86.40.67	Bulb - tail lamp - each - renew .....	00.20	7J3
86.40.70	Lamp assembly - tail - LH/each - renew .....	00.55	7J3
86.40.71	Lamp assembly - tail - RH - renew .....	00.30	
86.40.84	Lens - number plate lamp - renew .....	00.20	7J5
86.40.85	Bulb - number plate lamp - renew .....	00.20	7J5
86.40.89	Lens - reverse lamp - renew .....	00.20	7J6
86.40.90	Bulb - reverse lamp - renew.....	00.20	7J6
86.40.94	Bulb - fog/driving lamp - renew .....	00.20	7J7
86.40.96	Lamp assembly - fog/driving - renew.....	00.50	7J7
86.40.99	Lamp assembly - rear fog guard - RH - renew.....	00.25	
	Turbo	00.40	
<b>86.41</b>	<b>LAMPS - EXTERIOR continued</b> <b>(Operations do not include headlamp alignment)</b>		
86.41.15	Lamp assembly - rear fog guard - one side - renew .....	00.60	7J8
86.41.16	Adjuster unit - headlamp - renew.....	00.40	7J1
86.41.20	Bulb - rear fog guard lamp - renew .....	00.20	7J8
86.41.21	Lens - rear fog guard lamp - renew .....	00.15	7J8

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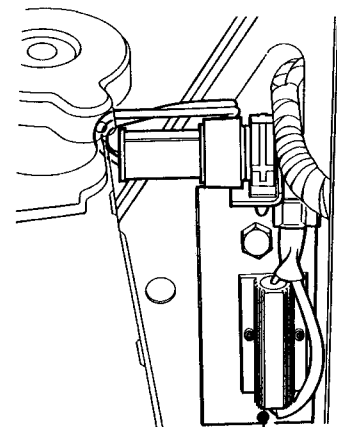
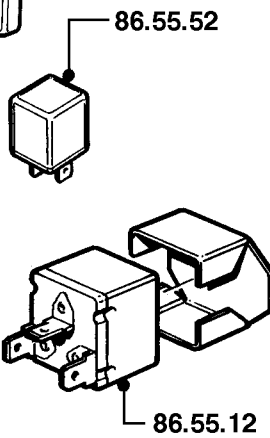
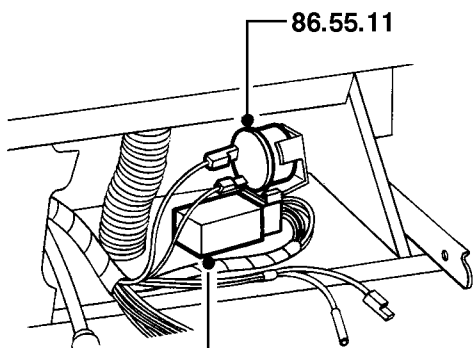
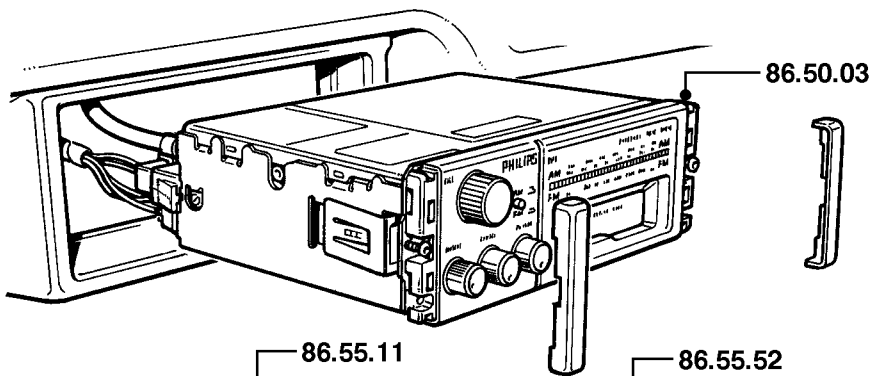
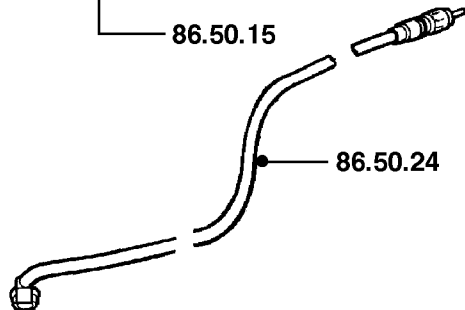
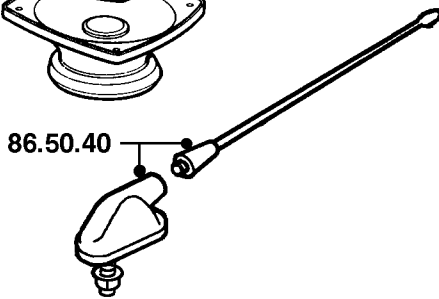
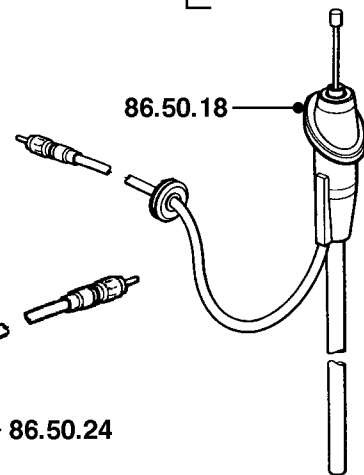
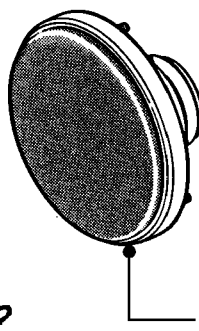
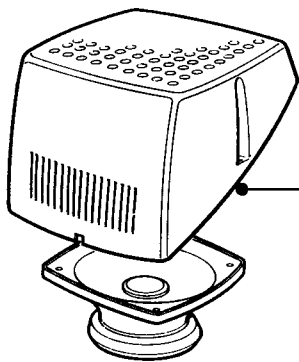
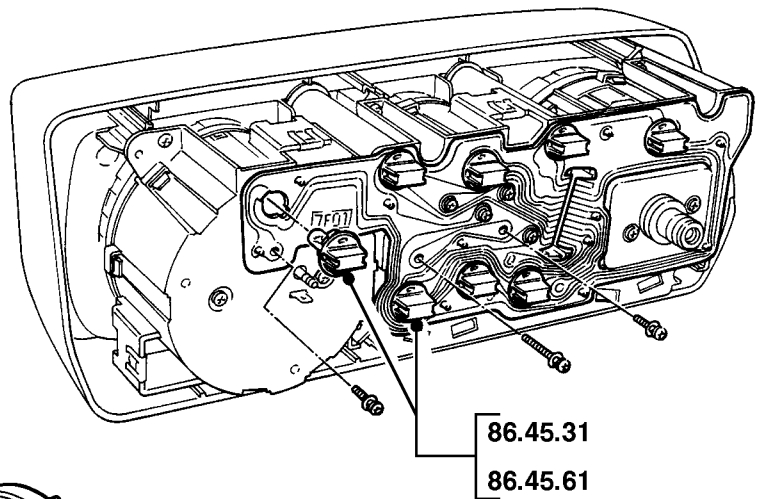
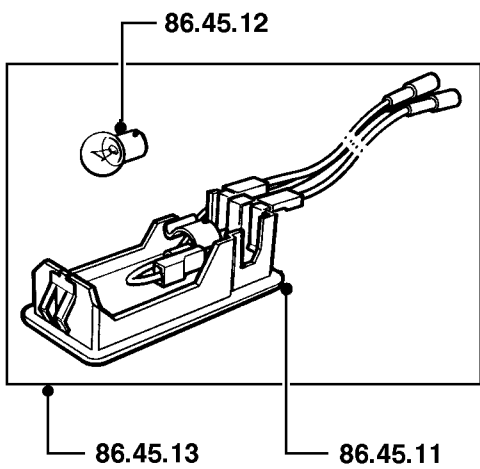


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<b>86.45</b>	<b>LAMPS - INTERIOR</b>		
86.45.11	Lens - interior lamp - renew .....	00.15	7J9
86.45.12	Bulb - interior lamp - renew .....	00.15	7J9
86.45.13	Lamp assembly - interior - side - each - renew .....	00.25	7J9
86.45.31	Bulb - instrument panel - each - renew .....	00.30	7K1
	Turbo	00.50	7K1
86.45.31/01	Bulb - instrument panel - extra - renew .....	00.05	7K1
86.45.61	Bulbs - warning light - each - renew .....	00.30	7K8
	Turbo	00.50	7K8
<b>86.50</b>	<b>AUDIO</b>		
86.50.03	Radio - renew .....	00.25	7Z3
86.50.12	Speaker - rear - renew .....	00.35	7Z5
86.50.15	Speaker - front - renew .....		
	Turbo	00.25	7Z5
86.50.18	Aerial - manual - renew .....	00.65	7Z4
86.50.24	Coaxial lead - front aerial - renew .....		
	MPi	02.10	7Z6
86.50.40	Aerial - roof - renew .....	01.30	
<b>86.55</b>	<b>RELAYS &amp; FLASHERS UNITS</b>		
86.55.09	Relay - horn - renew .....	00.80	7Y7
86.55.11	Flasher unit - direction indicator - renew .....	00.15	7M4
86.55.12	Flasher unit - hazard warning - renew .....	00.15	7M4
86.55.26	Relay - direction indicator - renew .....	00.20	
86.55.48	Relay - fuel pump circuit - renew .....	00.50	7F5
86.55.51	Relay - front fog/driving lamps - renew .....	00.20	7K0
	Turbo	00.45	7K0
86.55.52	Relay - auxiliary circuits - renew .....	00.20	7L7
	(B)134455>	00.80	7L7
86.55.68	Flasher unit - combined direction indicator & hazard - renew .....		
	(B)134455>	00.80	7M4
86.55.92	Resistor - dim dip - renew .....	00.25	7P0

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<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	

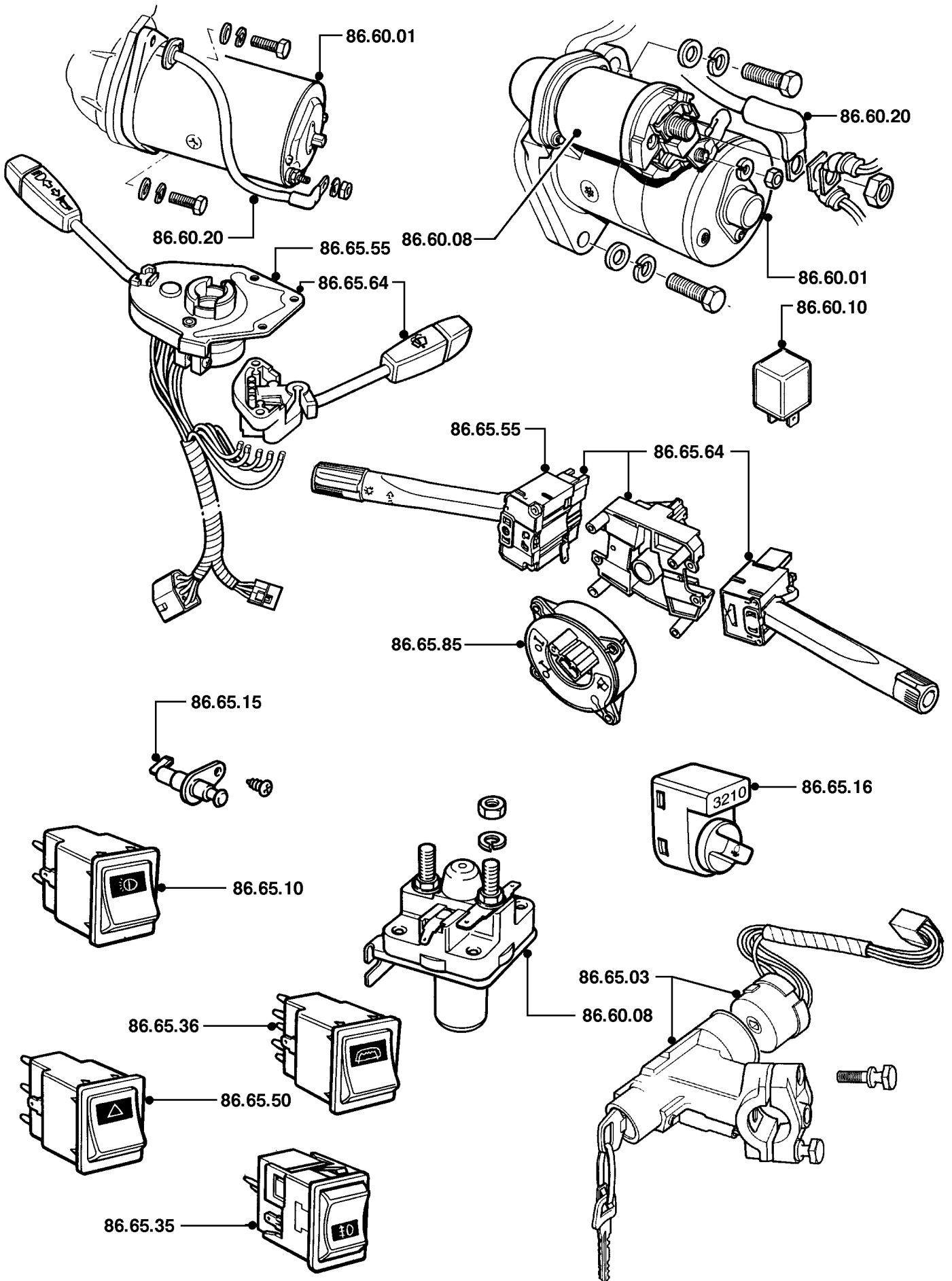


86.55.48

86.55.51

<b>86.60 STARTER MOTOR</b>			
86.60.01	Starter motor - renew.....	00.50	7C1
		MPI 01.10	7C1
		SPi 00.80	7C1
		Turbo 00.60	7C1
86.60.08	Solenoid - starter - renew .....	00.60	7C5
		MPI 01.20	7C5
		SPi 00.75	7C5
		Turbo 00.60	7C5
86.60.10	Relay - starter - renew .....	00.25	7C7
86.60.20	Lead - starter - renew .....	00.35	7C0
<b>86.65 SWITCHES &amp; CIGAR LIGHTERS</b>			
86.65.03	Switch only - steering lock - renew .....	00.30	7B4
86.65.10	Switch - lighting - renew.....	00.25	7L1
86.65.12	Switch - panel light - renew .....	00.25	7M1
		Turbo 00.90	7M1
86.65.15	Switch - door pillar - renew .....	00.15	7L6
86.65.16	Switch - headlamp levelling - renew .....	00.20	7P7
86.65.35	Switch - driving/fog lamp - renew.....	00.35	7L1
86.65.36	Switch - backlight heater - renew.....	00.30	7X9
		Turbo 00.90	7X9
86.65.50	Switch - hazard warning - renew .....	00.30	7L4
		Turbo 00.90	7L4
86.65.55	Switch - combined direction indicator/headlight/horn - renew .....	00.55	7L3
	(B)134455>	00.80	7L3
86.65.64	Switch - column - multi purpose - renew .....	00.45	*
86.65.65	Switch - rear fog lamp - renew.....	00.30	7L1
		Turbo 00.35	7L1
86.65.85	Rotary coupler - horn/cruise control/airbag system - renew .....	00.80	8Z4

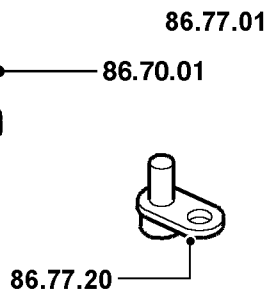
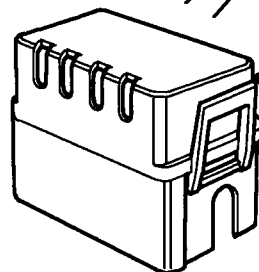
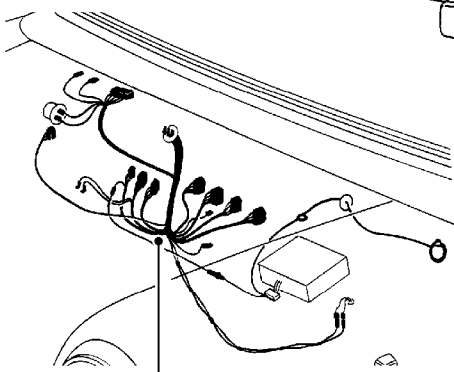
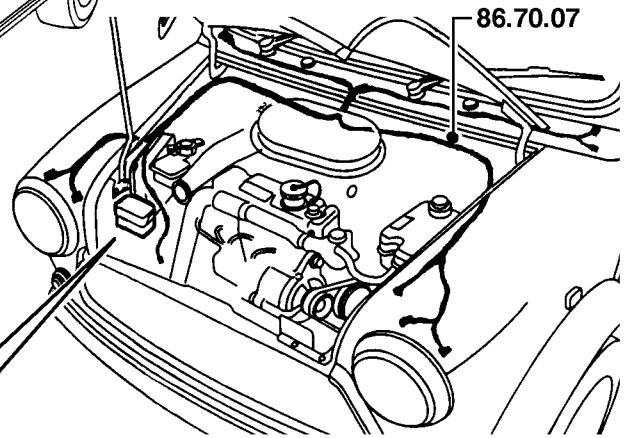
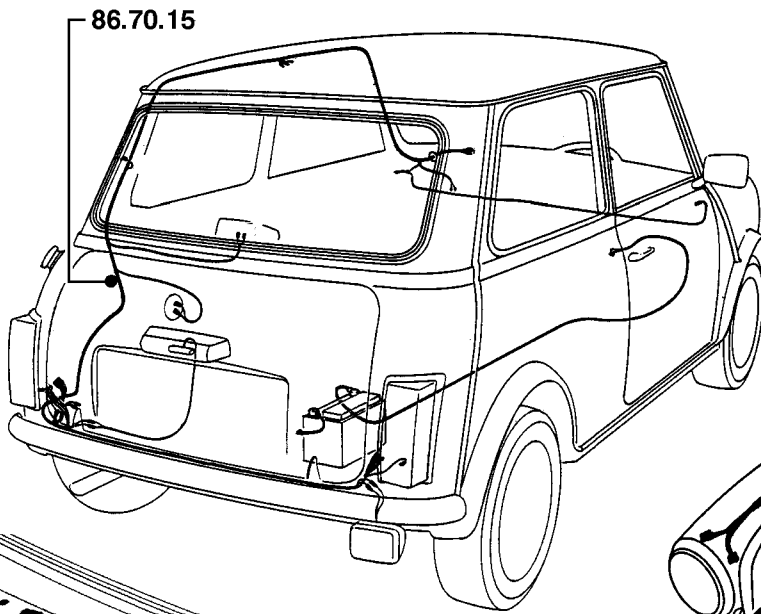
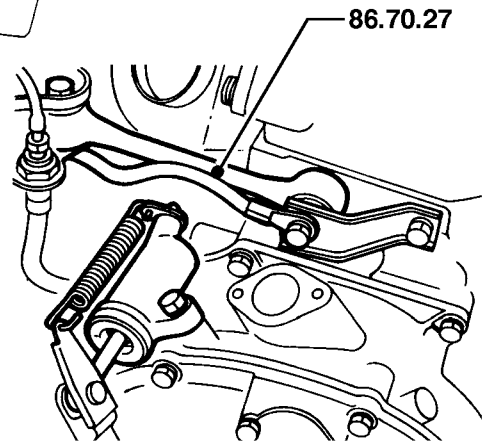
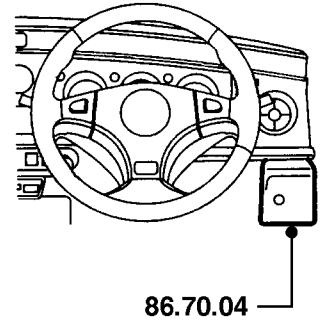
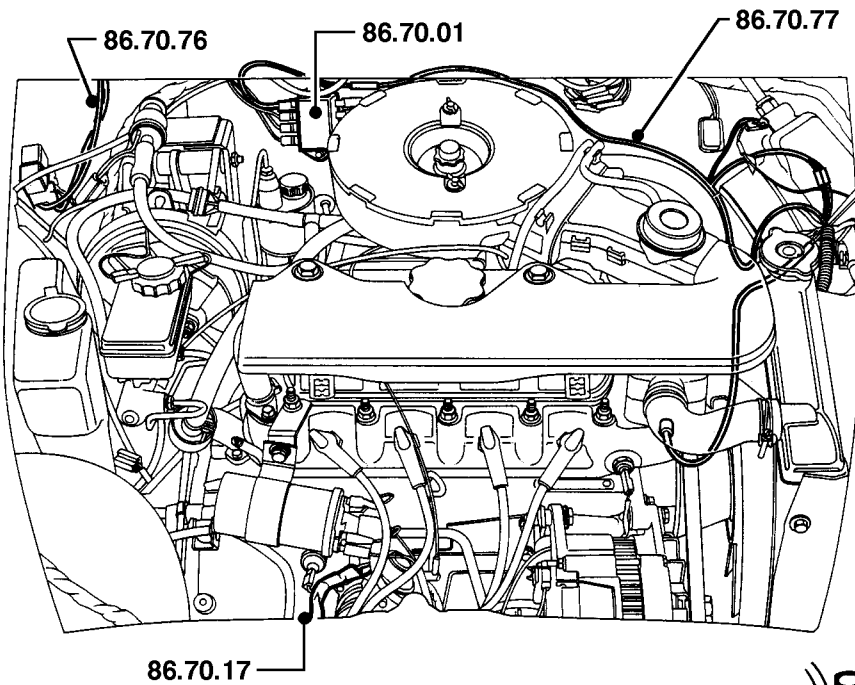
A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
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MRT58A

<b>86.70</b>	<b>WIRING &amp; FUSES</b>		
86.70.01	Fuse box - renew .....	00.65	7Z2
	(B)134455>	00.50	7Z2
86.70.04	Fuse box - main - renew .....		
	(B)134455>	01.20	7Z2
86.70.07	Harness - main - renew .....	02.65	7Y4
	(B)134455>	05.50	7Y4
	SPi & Turbo	04.60	7Y4
86.70.10	Harness - panel/fascia - renew .....	00.65	7V0
	Turbo	00.95	7V0
86.70.15	Harness - rear - renew .....	02.90	7Y1
	(B)134455>	02.70	7Y1
	SPi	02.45	7Y1
86.70.17	Harness - engine - renew .....		
	MPi	01.40	7Y5
	SPi	01.60	7Y5
86.70.27	Earth lead - engine - renew .....	00.25	7Y3
	SPi	00.60	7Y3
86.70.76	Harness - supplementary - driving lamps - renew.....		
	Turbo	01.00	7K0
86.70.77	Harness - supplementary cooling fan - renew .....		
	Turbo	00.65	7F0
<b>86.77</b>	<b>ALARM UNITS &amp; MODULES</b>		
86.77.01	Main module (ECU) - alarm system - renew .....	00.40	
	(B)134455>	00.90	
	RSP Cabriolet	01.00	
86.77.20	Switch - bonnet - alarm system - renew .....	00.20	
86.77.21	Switch - door - front - alarm system - each - renew .....	00.20	

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MRT59A

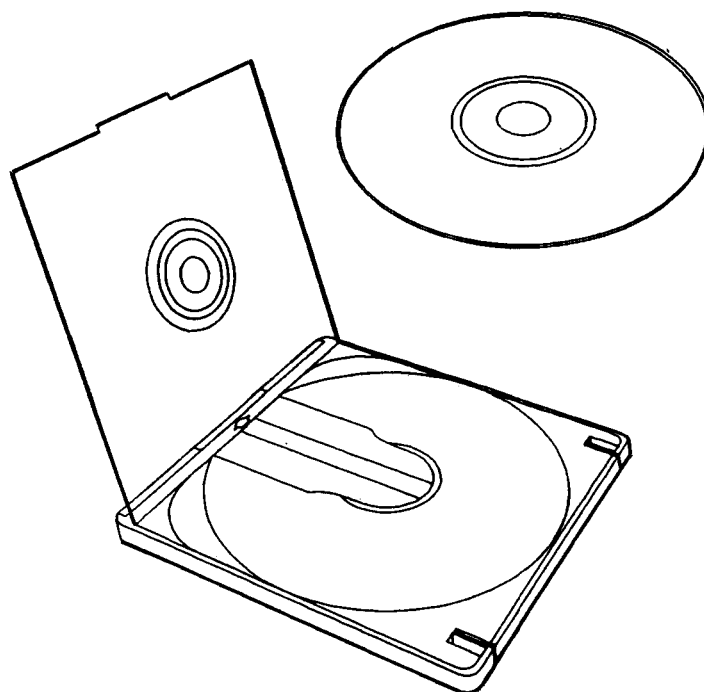
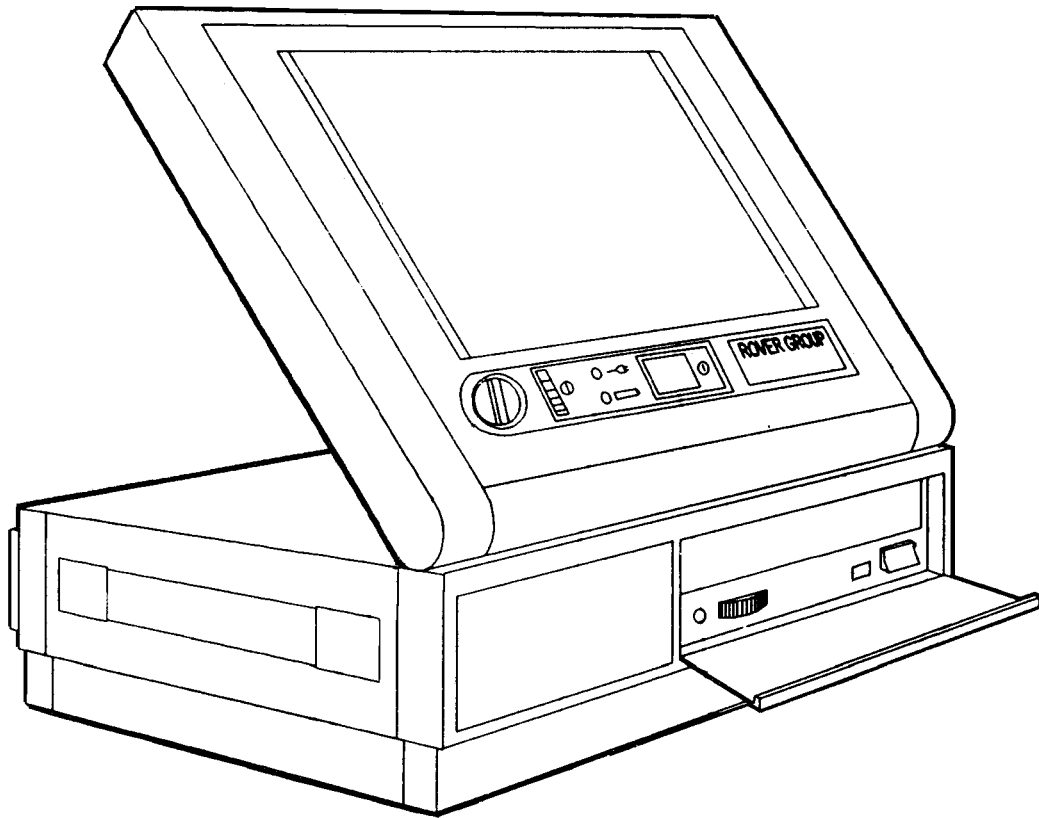
<b>86.90</b>	<b>DIAGNOSIS</b> <b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>		
86.90.01/01	Starter & charging systems - diagnosis .....	00.25	-
86.90.02/01	Relay - 'Fast Check' .....	00.15	-
86.90.16/01	Radio cassette - loss of cassette function .....	00.25	-
86.90.30/01	Mast aerial - test .....	00.40	-
86.90.32/01	Speaker (no power amplifier fitted) - test .....	00.35	-
86.90.34/01	Radio (no power supply, no memory, no illumination &/or check radio search) - test .....	00.40	-
86.90.41/01	Transmitter reprogramme - door locks & anti-theft device .....	00.30	
86.90.43/01	Burglar alarm / central door locking - diagnosis .....	00.40	

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# TESTBOOK

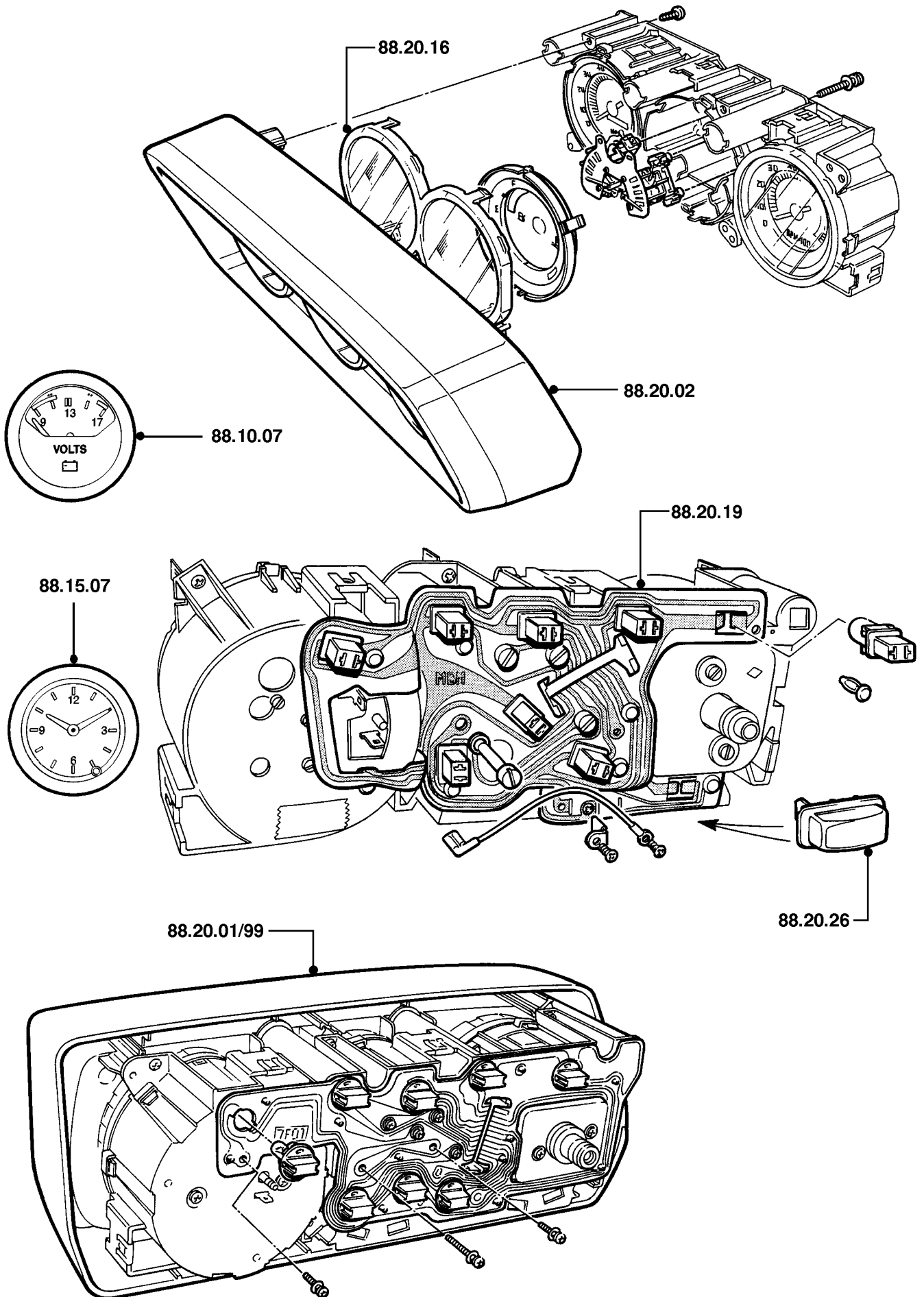


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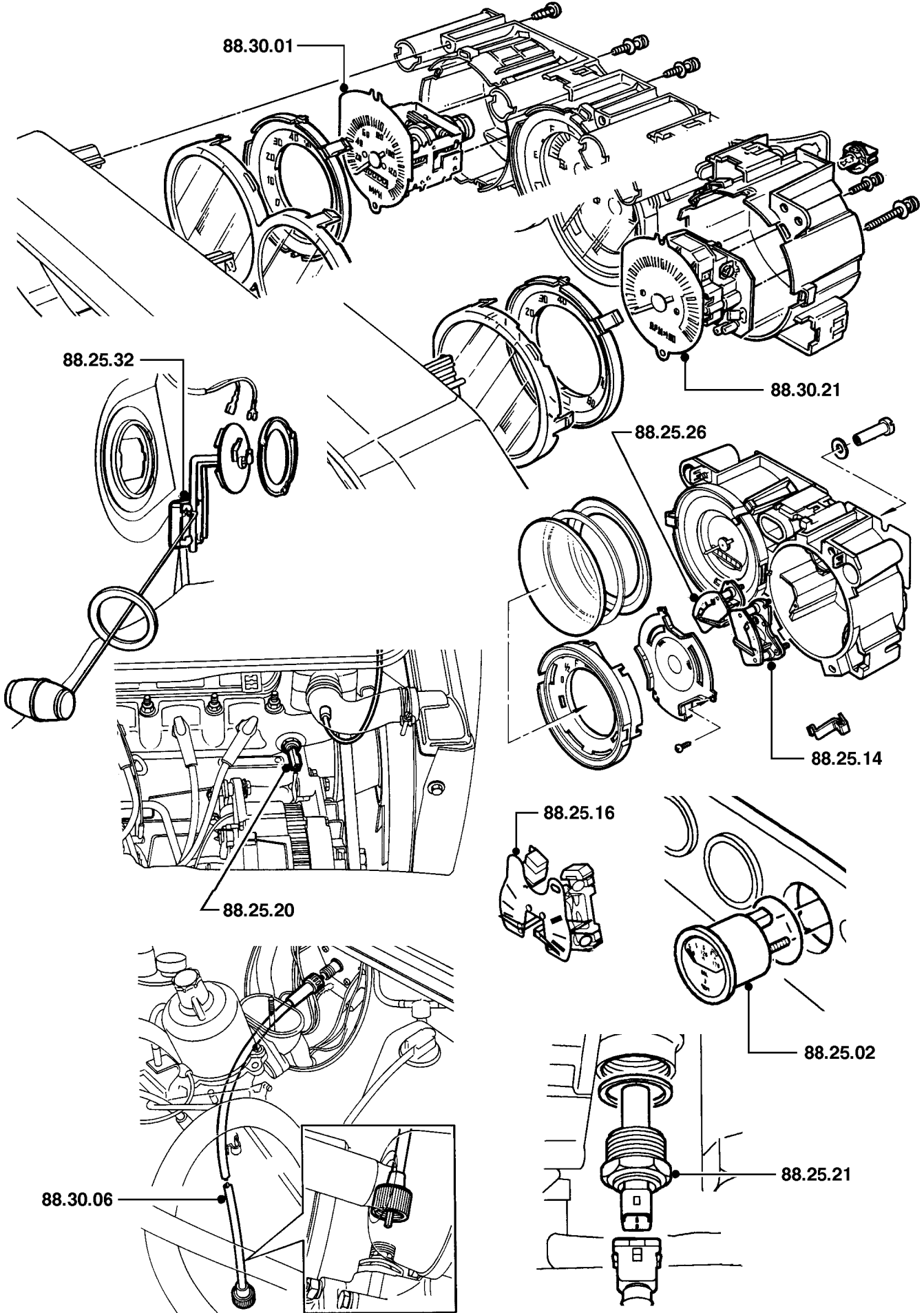
<b>88.10</b>	<b>AMMETER &amp; BATTERY CONDITION INDICATOR</b>		
88.10.07	Indicator - battery condition - renew .....	00.55	7V8
	(B)134455>	00.70	7V8
<b>88.15</b>	<b>CLOCK</b>		
88.15.07	Clock - renew.....	00.35	7V7
	(B)134455>	00.60	7V7
<b>88.20</b>	<b>INSTRUMENT PANEL</b>		
88.20.01/99	Instrument pack - remove for access & refit .....	00.55	*
	(B)134455>	00.90	*
	Cabriolet	00.65	*
88.20.02	Cowl - instrument - renew .....	00.80	8E1
	Cabriolet	00.95	8E1
88.20.16	Lens - instrument panel - LH/single - renew .....	00.75	*
	(B)134455>	00.90	*
	Cabriolet	00.95	*
88.20.19	Printed circuit - instrument panel - renew .....	00.70	7V9
	(B)134455>	01.20	7V9
	Cabriolet	01.10	7V9
	Cooper & SPi	00.90	7V9
88.20.26	Voltage stabilizer/multifunction unit - renew.....	00.40	7V9

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<b>88.25</b>	<b>OIL, COOLANT &amp; FUEL GAUGES</b>		
88.25.01	Gauge - oil pressure - renew .....	Turbo 00.55	7V2
88.25.02	Gauge - oil temperature - renew .....	00.70	-
88.25.14	Gauge - coolant temperature - renew .....	00.90	7U1
		Cabriolet 01.05	7U1
		Turbo 00.55	7U1
88.25.16	Combined gauge - coolant temperature & fuel - renew .....	01.25	*
88.25.20	Transmitter - coolant temperature - renew.....	00.25	7U3
88.25.21	Transmitter - oil temperature - renew.....	00.50	
88.25.26	Gauge - fuel - renew .....	00.90	7U7
		Cabriolet 01.05	7U7
		Turbo 00.55	7U7
88.25.32	Sender unit - fuel tank gauge - renew .....	00.50	7U8
<b>88.30</b>	<b>SPEEDOMETER &amp; TACHOMETER</b>		
88.30.01	Speedometer - renew .....	00.85	7T1
		(B)134455> 01.40	7T1
		Cabriolet 01.00	7T1
		Turbo 00.50	7T1
88.30.06	Cable assembly - speedometer - renew .....	00.55	7T3
		(B)134455> 00.90	7T3
		SPi 00.80	7T3
		Turbo 00.95	7T3
88.30.21	Tachometer - renew.....	00.75	7T5
		(B)134455> 00.90	7T5
		Cabriolet 01.00	7T5
		Turbo 00.60	7T5
<b>88.90</b>	<b>DIAGNOSIS</b>		
	<b>(Operations are based on the procedures in the Repair Operation Manual and/or using approved test equipment)</b>		
88.90.01/01	Analogue instruments - diagnosis .....	00.30	-
88.90.60/01	Voltage stabiliser/multifunction unit - test - includes fit new stabiliser/multifunction unit as necessary .....	00.60	

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**supplement\_\_\_\_\_**



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**MINI**

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**REPAIR OPERATION TIMES**

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**AND**

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**WARRANTY CODES**

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**AIR CONDITIONING**

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**SUPPLEMENT**

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MAINTENANCE .....	10
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ENGINE MANAGEMENT SYSTEM .....	18
CLUTCH .....	33
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GEARBOX - AUTOMATIC .....	44
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<b>10.10</b>	<b>SERVICE INTERVAL SCHEDULES</b>	
10.10.01	Pre Delivery Inspection .....	01.10
10.10.02	1,000 miles or 3 months First Service .....	00.50
	1.3 Sports pack	00.80
10.10.06	6,000 miles or 6 months Service .....	00.40
10.10.12	12,000 miles or 12 months service .....	02.30
	1300 Carb	02.00
	1300 Inj	01.80
10.10.24	24,000 miles or 24 months service .....	02.20
	1300 Carb	02.00
	1300 Inj	01.80
10.10.36	36,000 miles or 36 months service .....	02.20
	1.0	02.50
	1.0 Cat	02.40
	1.3 Carb non-cat	02.30
10.10.48	48,000 miles or 48 months service .....	02.00
	1.0	02.20
10.10.60	60,000 miles or 60 months service .....	02.30
	1.0	02.50
	1.0 Cat	02.40
	1.3 Carb cat	02.20
10.10.72	72,000 miles or 72 months service .....	02.00
	1.0	02.20
10.10.84	84,000 miles or 84 months service .....	02.20
	1.0	02.50
	1.0 Cat	02.40
	1.3 Non-cat	02.30
10.10.96	96,000 miles or 96 months service .....	02.00
	1.0	02.20



<b>10.30</b>	<b>EXHAUST</b>	
10.30.10/01	Exhaust system - renew - with vehicle wheel free .....	00.40
<b>10.57</b>	<b>STEERING</b>	
10.57.10/01	Front wheel alignment - adjust only .....	00.20
10.57.30/01	Gaiter(s) - steering rack - one side - renew - road wheels removed.....	00.30
10.57.40/01	Ball joint - outer - renew - road wheels removed .....	00.20
<b>10.60</b>	<b>FRONT SUSPENSION</b>	
10.60.20/01	Ball joint - top - renew - road wheel removed .....	00.30
10.60.21/01	Ball joint - lower - renew - road wheel removed.....	00.40
<b>10.70</b>	<b>BRAKES</b>	
10.70.10/01	Brake pads - front - renew - road wheels removed .....	00.40
10.70.20/01	Brake shoes - front - renew - brake drums removed .....	00.30
10.70.21/01	Brake shoes - rear - renew - brake drums removed .....	00.30
10.70.30/01	Disc - front - each - renew - road wheel removed (includes check new disc run out) .....	00.60
10.70.31/01	Discs - front set - renew - road wheels removed (includes check new discs run out) .....	01.20
10.70.40/01	Wheel cylinder(s) - rear - one only or set - renew - brake drum(s) removed.....	00.60
10.70.50/01	Cable(s) - handbrake - renew - vehicle wheel free .....	00.70
<b>10.86</b>	<b>ELECTRICAL</b>	
10.86.10/01	Drive belt - alternator - renew .....	00.50

# 12 ENGINE

# MINI AIRCON

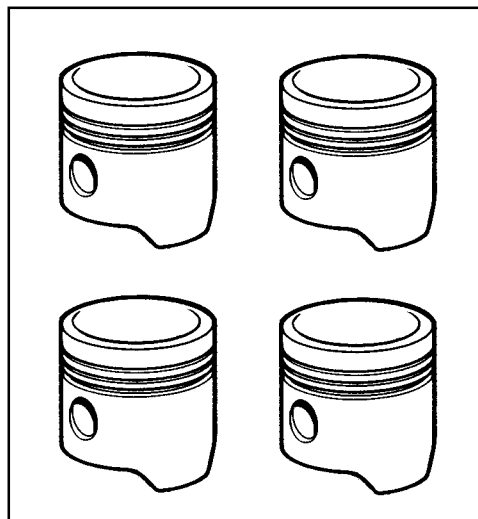
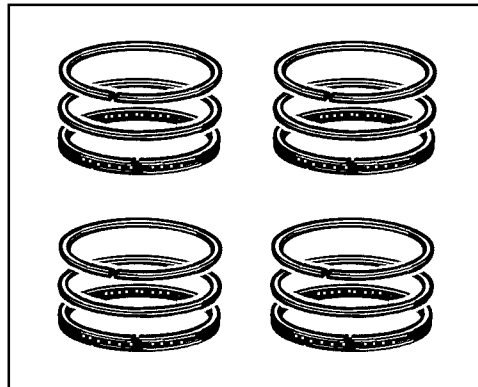
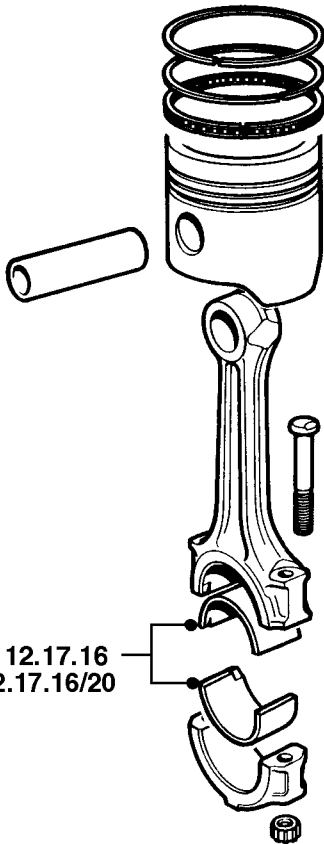
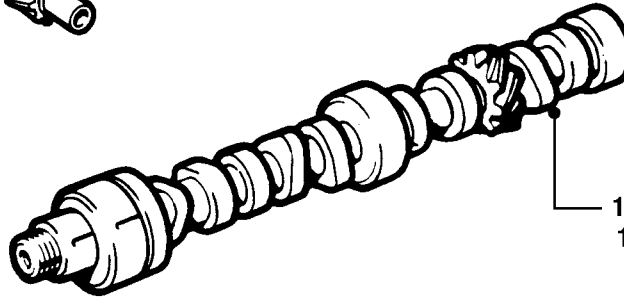
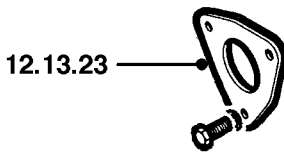
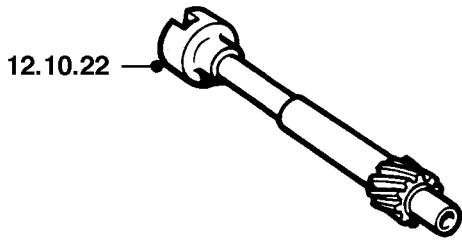
(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.13</b>	<b>CAMSHAFT</b>			
12.13.02/20	Camshaft - front/LH/each - renew - air conditioning fitted .....	12.10	12.80	*
<b>12.17</b>	<b>CONNECTING RODS &amp; PISTONS (Includes, glaze break &amp; measure cylinder bores where applicable)</b>			
12.17.03/20	Piston assemblies - engine set - renew - air conditioning fitted ....	16.60	18.30	1E1
12.17.08/20	Piston rings - engine set - renew - air conditioning fitted .....	15.50	17.70	1E2
12.17.16/20	Bearings - connecting rods - engine set - renew - air conditioning fitted.....	11.90	13.80	1C4

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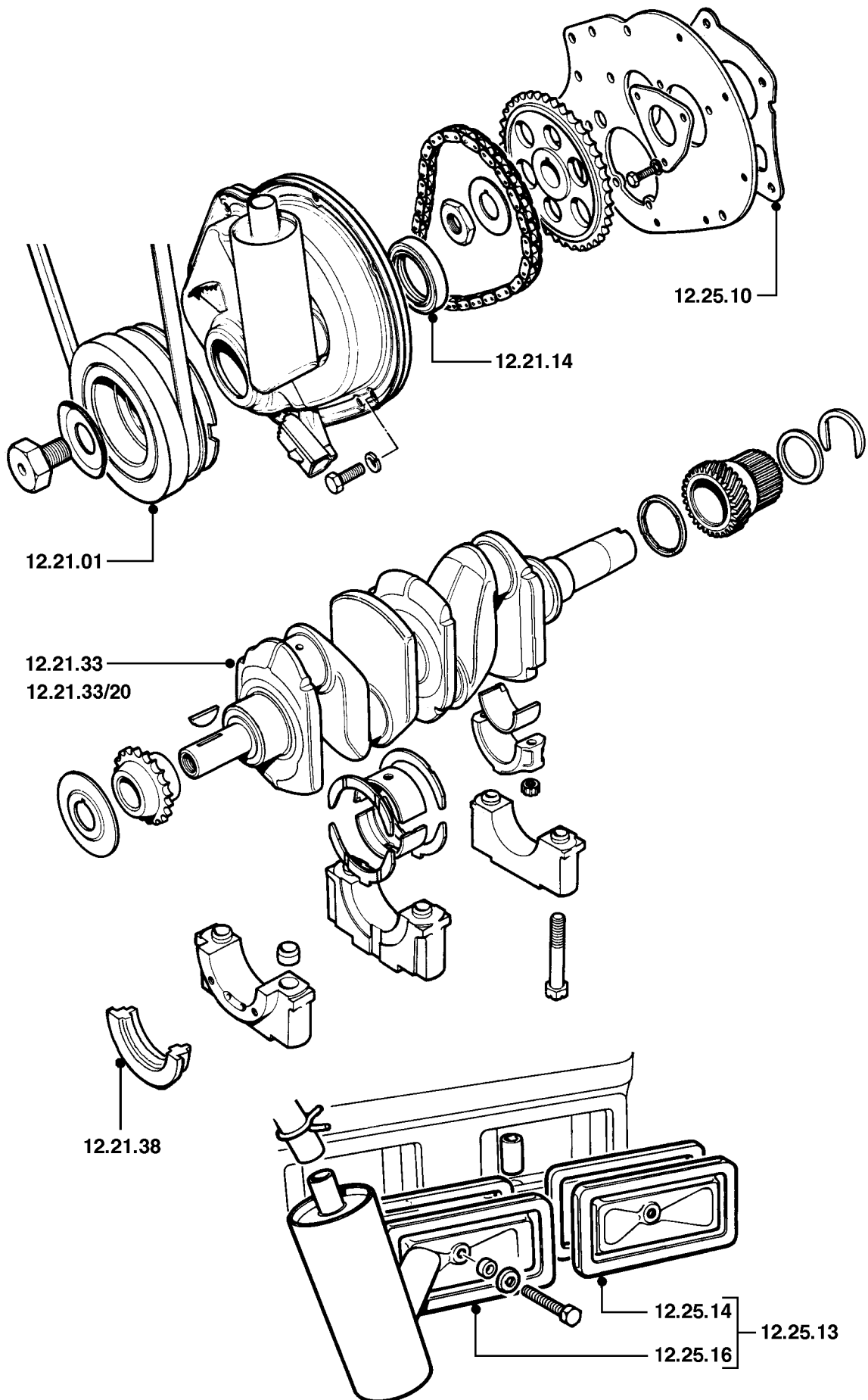
# 12 ENGINE

# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.21</b>	<b>CRANKSHAFT</b>			
12.21.26/20	Crankshaft - check & adjust end float - air conditioning fitted .....	11.30	13.20	1C5
12.21.28/20	Gear - crankshaft primary - check & adjust end float - air conditioning fitted.....	05.80	11.70	1C5
12.21.33/20	Crankshaft - renew - includes mains bearings - air conditioning fitted.....	13.70	15.60	1C1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



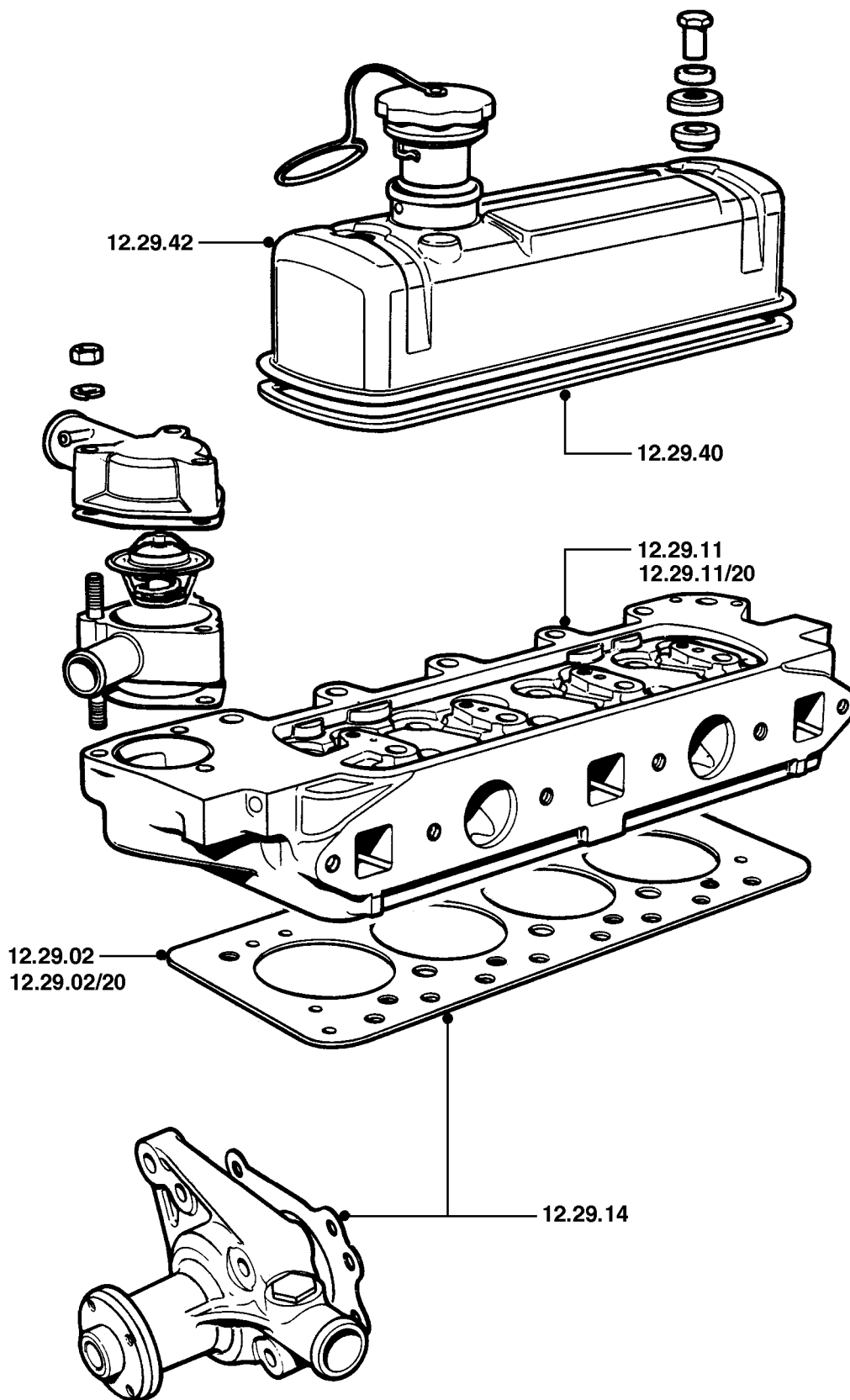
# 12 ENGINE

# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.29</b>	<b>CYLINDER HEAD</b>			
12.29.02/20	Gasket - cylinder head - LH/front/each - renew - air conditioning fitted.....	06.40	06.40	1S6
12.29.11/20	Cylinder head - LH/front/each - renew - air conditioning fitted.....	10.00	10.00	1F1
12.29.19/20	Cylinder head - LH/single - overhaul - air conditioning fitted .....	10.40	10.40	1F1
12.29.21/20	Cylinder head - engine set - decarbonise - air conditioning fitted .....	10.80	10.80	1F1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



# 12 ENGINE

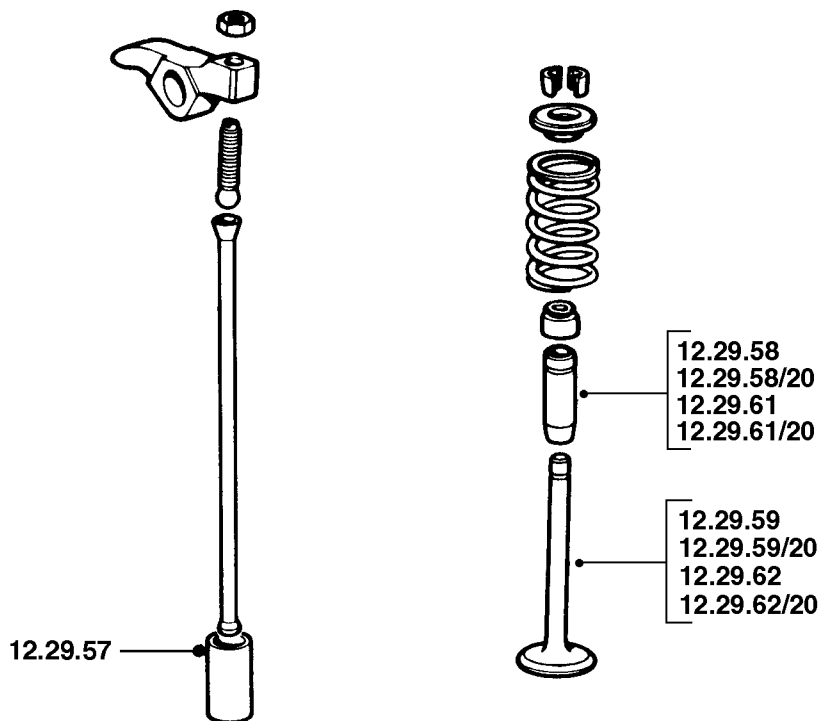
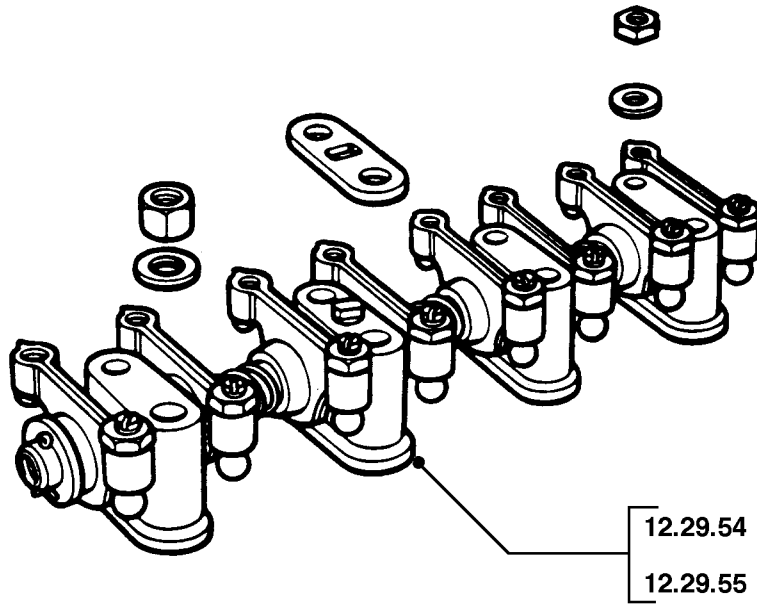
# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.29</b>	<b>CYLINDER HEAD (continued)</b>			
12.29.58/20	Valve guide - one only - cylinder head - front/LH - renew - air conditioning fitted.....	07.30	07.30	1F3 *
12.29.59/20	Valve - one only - cylinder head - renew - air conditioning fitted ..	07.20	07.20	
12.29.61/20	Valve guides - engine set - renew - air conditioning fitted .....	10.40	10.40	1F3
12.29.62/20	Valves - engine set - renew - air conditioning fitted .....	09.50	09.50	*

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	





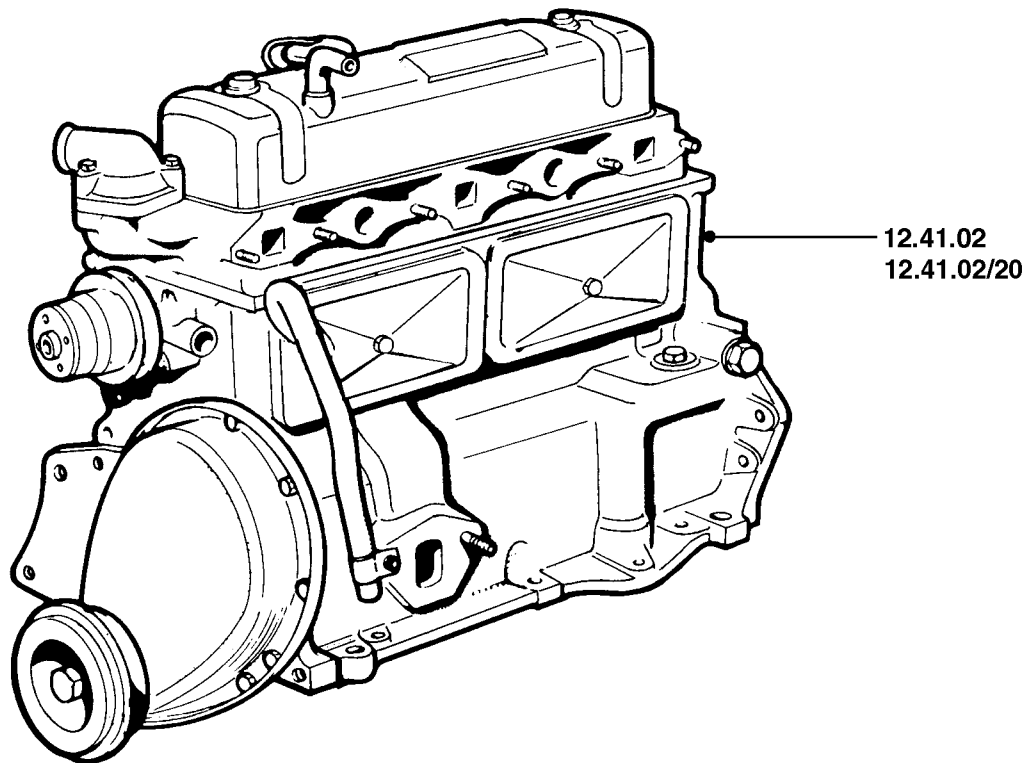
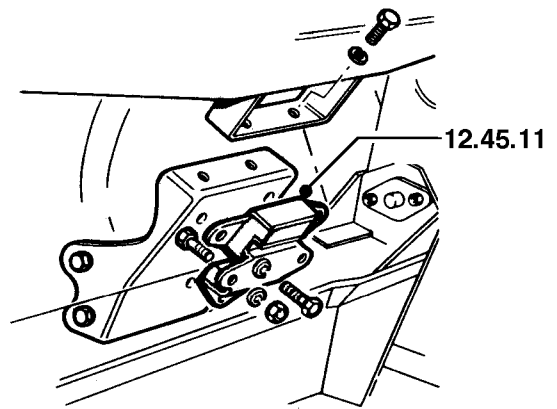
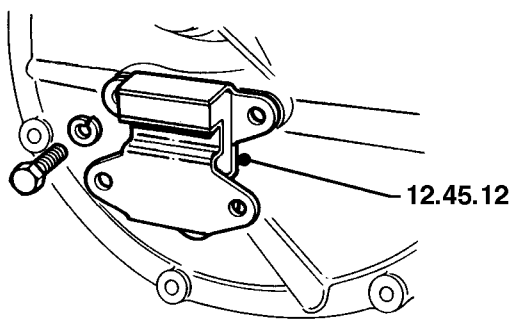
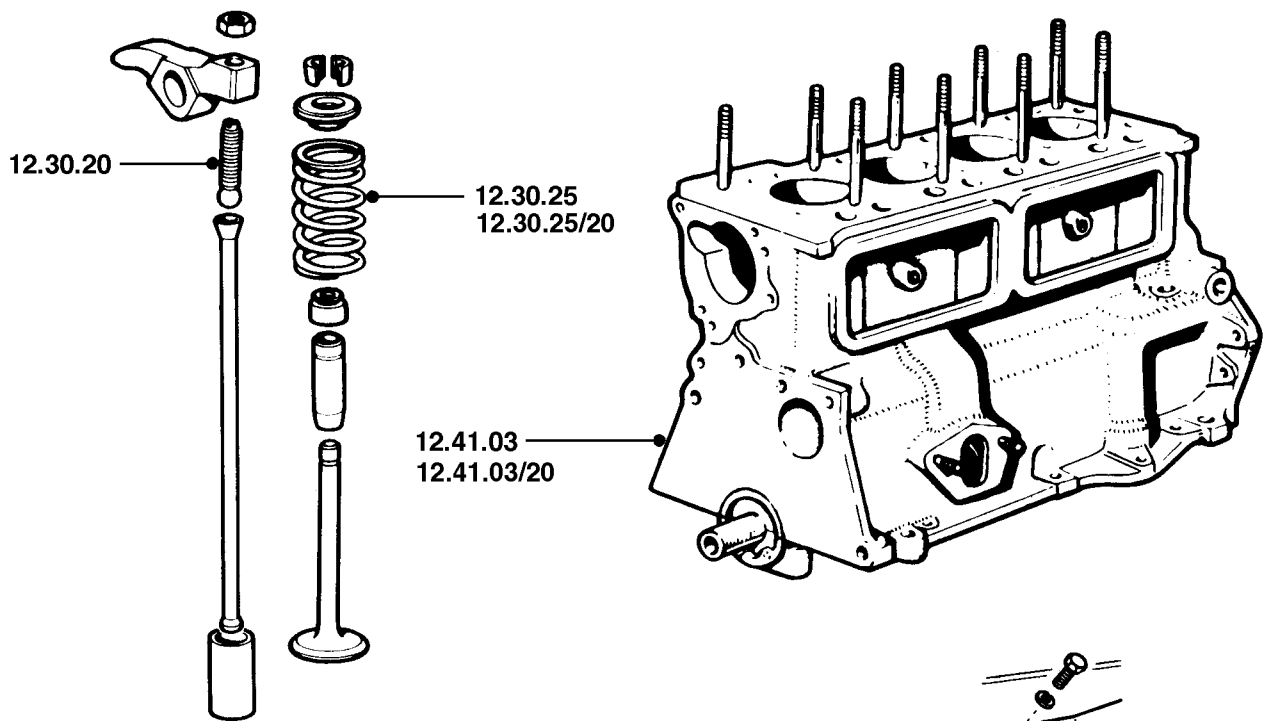
# 12 ENGINE

# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.30</b>	<b>CYLINDER HEAD continued</b>			
12.30.25/20	Valve spring - one only - renew - air conditioning fitted .....	07.20	07.20	*
<b>12.37</b>	<b>ENGINE AND GEARBOX ASSEMBLY</b>			
12.37.01/20	Engine & gearbox assembly - remove for access & refit - air conditioning fitted.....	06.90	07.40	*
<b>12.41</b>	<b>ENGINE ASSEMBLY</b>			
12.41.02/20	Stripped engine - remove engine, change over ancilliary equipment & refit - air conditioning fitted .....	12.50	14.30	*
12.41.03/20	Part engine; remove, rebuild & refit engine, does not include cylinder head(s) overhaul - air conditioning fitted .....	16.30	18.20	*

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



# 12 ENGINE

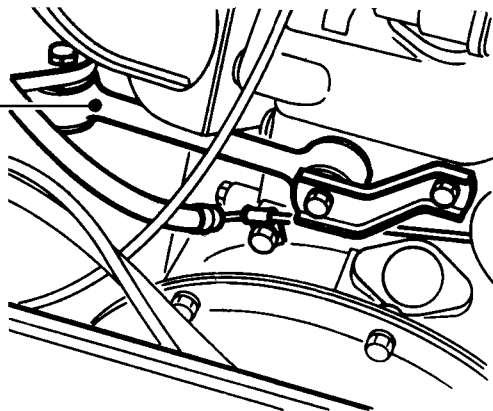
# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

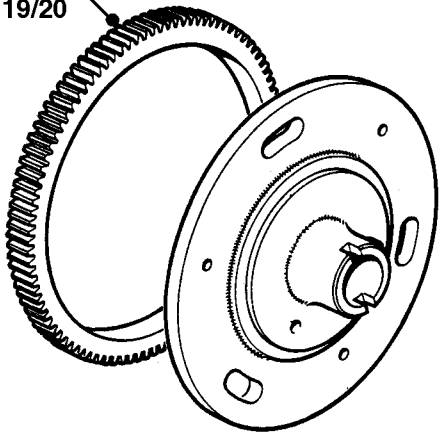
		Auto	Manual	
<b>12.53</b>	<b>FLYWHEEL &amp; DRIVE PLATE</b>			
12.53.01/20	Housing - flywheel - renew - air conditioning fitted .....	06.90		3D2
12.53.02/20	Oil seal - flywheel housing - renew - air conditioning fitted .....	05.80		3R1
12.53.04/20	Gasket - flywheel housing - renew - air conditioning fitted.....	06.60		3R3
12.53.07/20	Flywheel - renew - air conditioning fitted .....	05.60		1C6
12.53.19/20	Ring gear - starter - renew - air conditioning fitted.....	06.60		1C7

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	

12.45.16  
12.45.17



12.53.19  
12.53.19/20

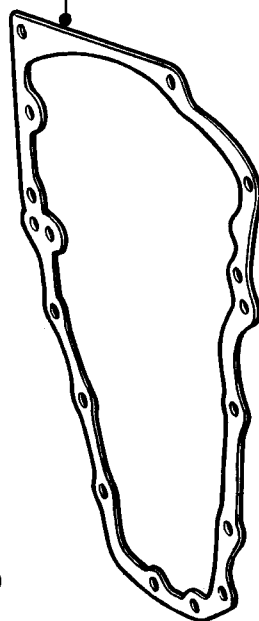


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12.53.02/20

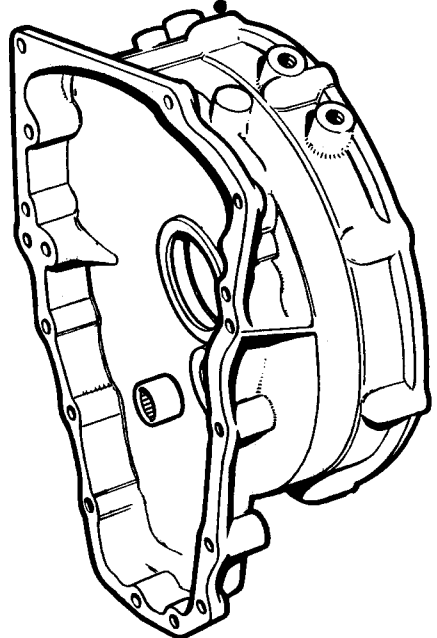
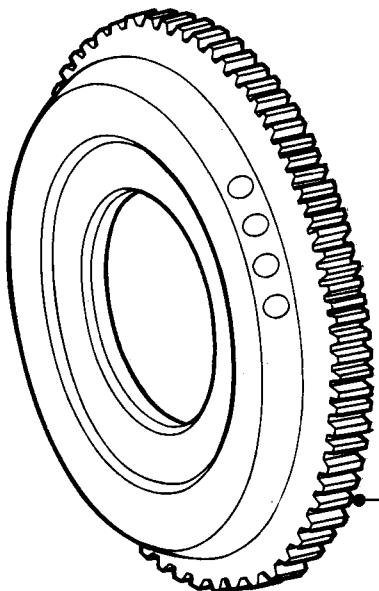


12.53.01  
12.53.01/20

12.53.04  
12.53.04/20



12.53.07  
12.53.07/20



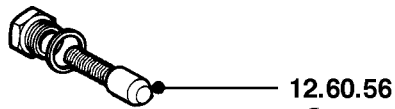
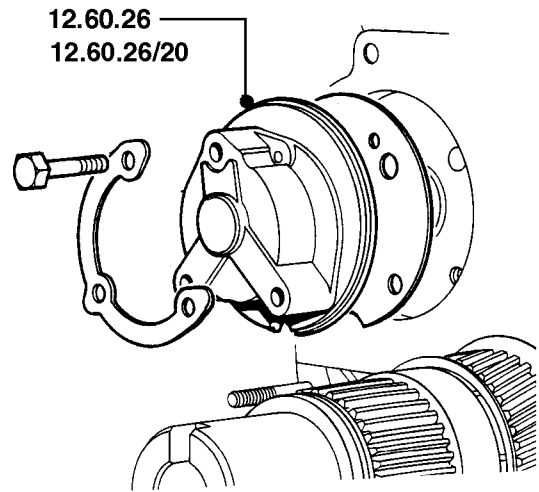
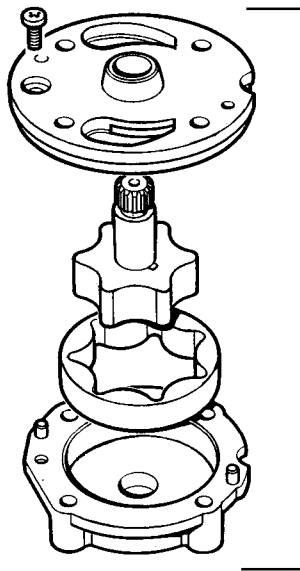
# 12 ENGINE

# MINI AIRCON

(Operations do not include adjust ignition, fuel systems or kickdown cable)

		Auto	Manual	
<b>12.60</b>	<b>LUBRICATION SYSTEM</b>			
12.60.26/20	Pump - oil - renew - air conditioning fitted .....	06.70	11.80	2A1
12.60.32/20	Pump - oil - overhaul - air conditioning fitted .....	06.80		2A1
12.60.38/20	Gasket - oil sump/transmission to engine - renew - air conditioning fitted.....	11.10	12.90	1S5

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	

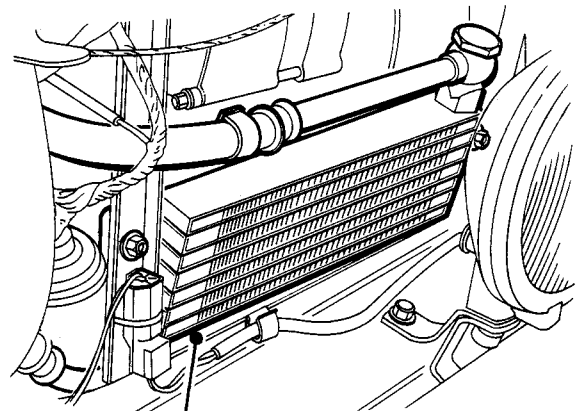
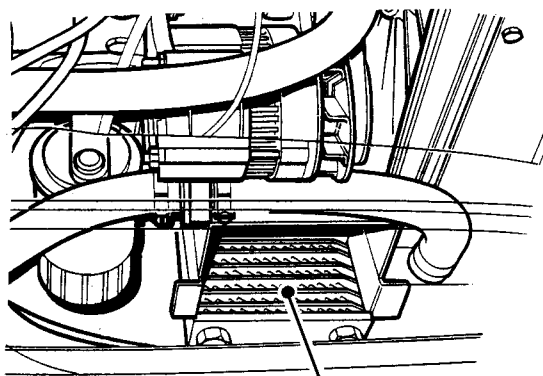


12.60.03

12.60.04

12.60.38  
12.60.38/20

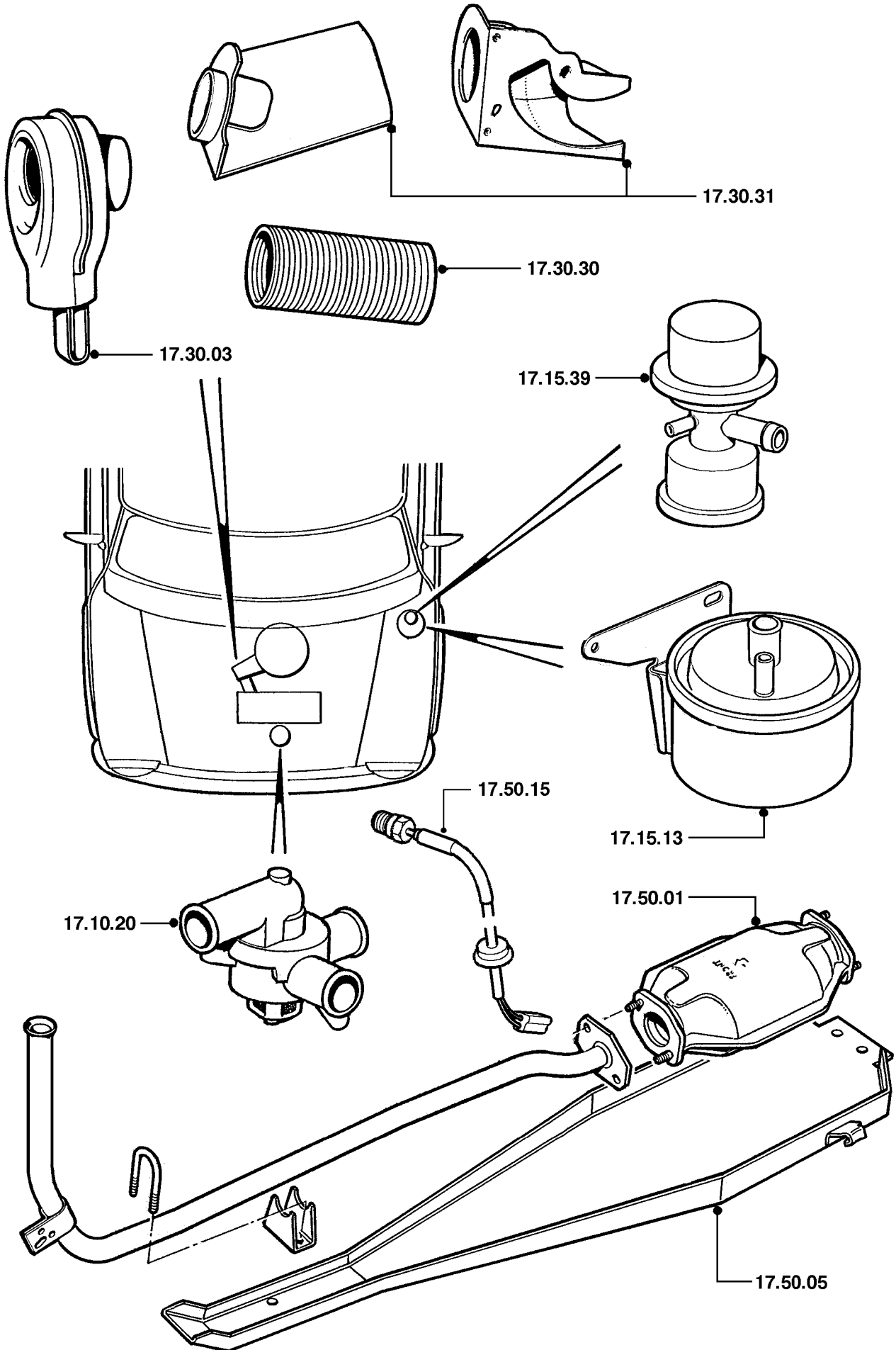
12.60.50



<p><b>17.50</b> 17.50.15</p>	<p><b>CATALYST</b> Sensor - overheat - catalyst - renew .....</p>	<p>All models 00.70</p>	<p>2T6</p>
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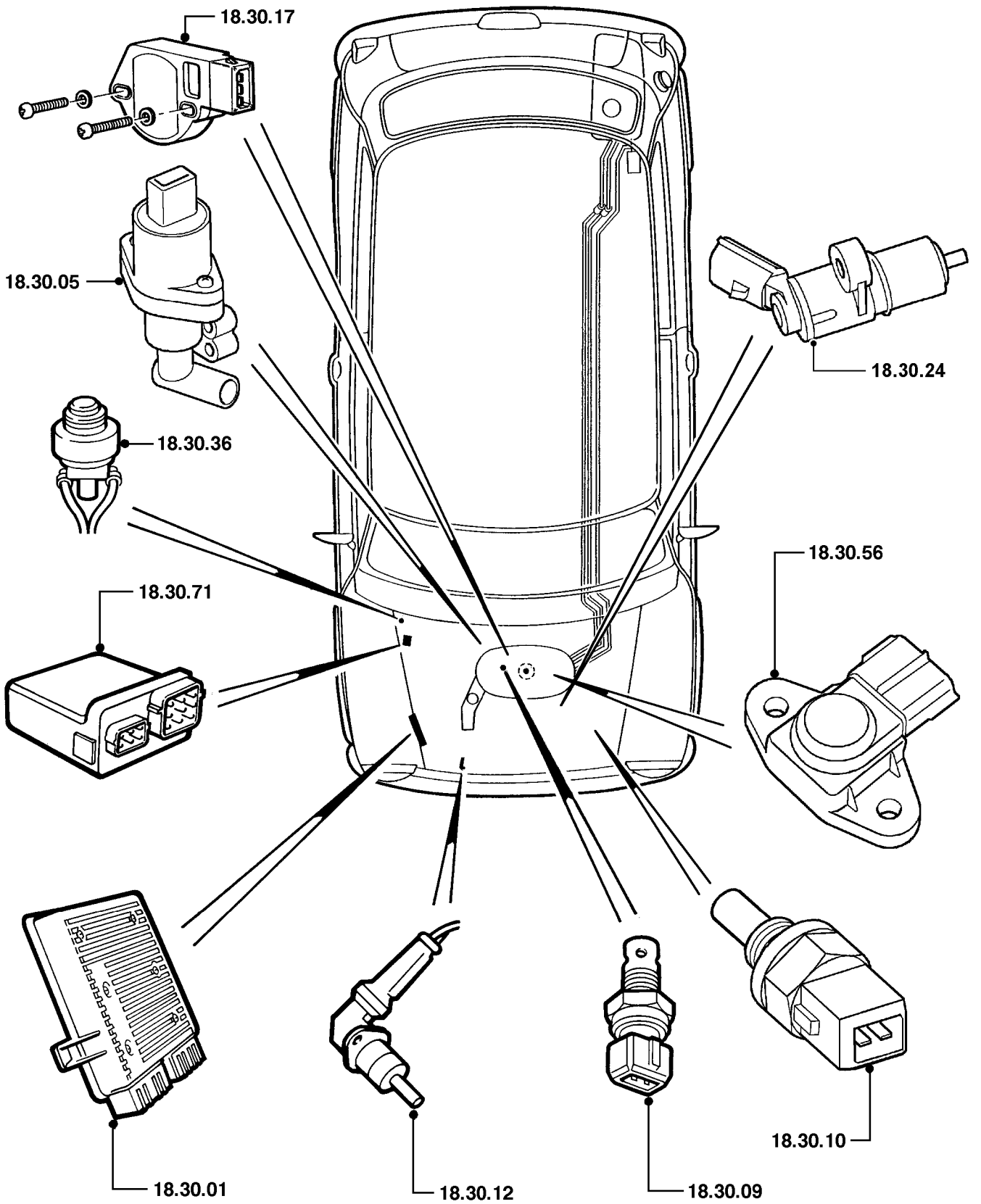
<p>A - WRONGLY ADJUSTED B - POROUS/ADRIFT C - BAD FIT D - BROKEN E - CRACKED/SPLIT/CUT F - SEIZED/STIFF G - LOOSE/WEAK SYNCHROMESH H - CORRODED/PLATING FAILURE</p>	<p>J - WORN/STRETCHED K - NOISY/CHAFED L - JUDDER/POOR CONNECTION M - BODY/COOLANT LEAKS/BURNT N - LEAKS - NOT COOLANT LOSS P - DIFFICULT ENGAGEMENT Q - FADED/STAINED/DISCOLOURED R - FACTORY DAMAGE</p>	<p>S - OPEN CIRCUIT/BLOCKED T - SHORT CIRCUIT/THREAD DAMAGE U - INACCURATE/SLIPPING V - BULB/LIGHT UNIT FAILURE W - VIBRATION/OUT OF BALANCE X - BRAKE PULL/SURFACE DAMAGE Z - INOPERATIVE</p>
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<p><b>18.30</b> 18.30.01</p>	<p><b>SENSORS, SWITCHES, RELAYS &amp; VALVES</b> Electronic control unit - combined ignition &amp; fuel - renew .....</p>	<p>All models  00.50</p>	<p>*</p>
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<p>A - WRONGLY ADJUSTED B - POROUS/ADRIFT C - BAD FIT D - BROKEN E - CRACKED/SPLIT/CUT F - SEIZED/STIFF G - LOOSE/WEAK SYNCHROMESH H - CORRODED/PLATING FAILURE</p>	<p>J - WORN/STRETCHED K - NOISY/CHAFED L - JUDDER/POOR CONNECTION M - BODY/COOLANT LEAKS/BURNT N - LEAKS - NOT COOLANT LOSS P - DIFFICULT ENGAGEMENT Q - FADED/STAINED/DISCOLOURED R - FACTORY DAMAGE</p>	<p>S - OPEN CIRCUIT/BLOCKED T - SHORT CIRCUIT/THREAD DAMAGE U - INACCURATE/SLIPPING V - BULB/LIGHT UNIT FAILURE W - VIBRATION/OUT OF BALANCE X - BRAKE PULL/SURFACE DAMAGE Z - INOPERATIVE</p>
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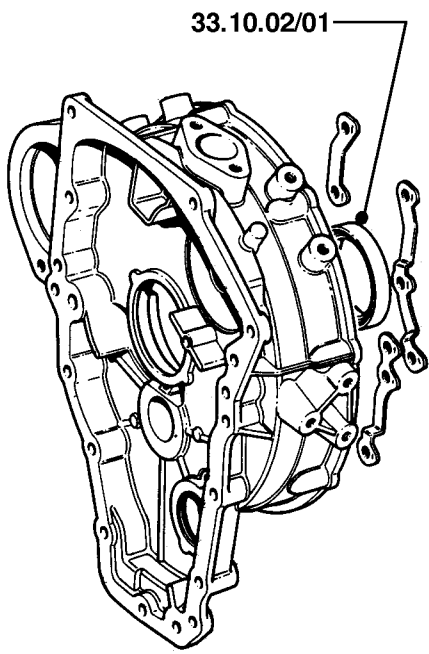
# 33 CLUTCH

# MINI AIRCON

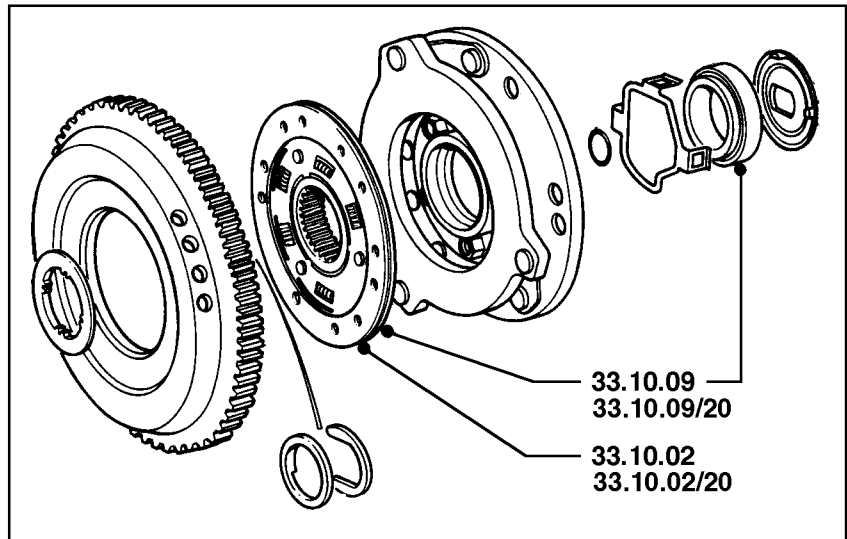
(Operations include bleeding hydraulic system where necessary)

		Manual	
<b>33.10</b>	<b>CLUTCH ASSEMBLY</b> <b>(Operations include check/adjust throw out stop clearance where necessary)</b>		
33.10.02/20	Drive plate - renew - air conditioning fitted.....	05.60	3A2
33.10.07/20	Clutch assembly/drive plate & release bearing - renew - air conditioning fitted.....	05.70	*
33.10.08/20	Clutch assembly - overhaul - air conditioning fitted .....	05.90	*
33.10.09/20	Drive plate & release bearing - renew - air conditioning fitted .....	05.70	*

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	

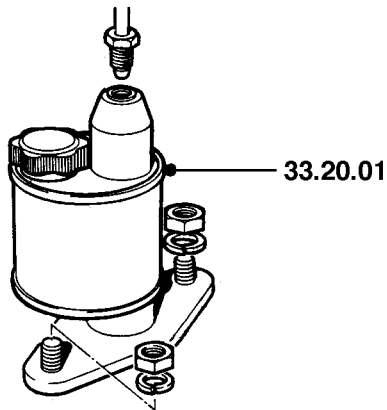


33.10.02/01

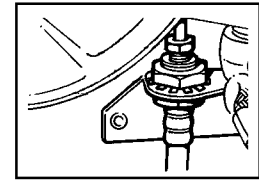


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33.10.09/20  
33.10.02  
33.10.02/20

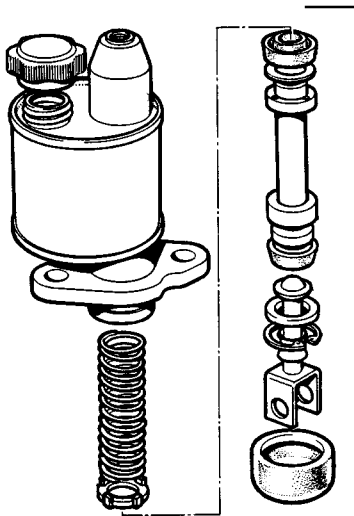
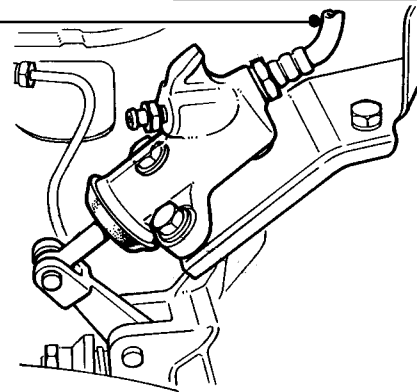
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33.10.07/20  
33.10.08  
33.10.08/20



33.20.01

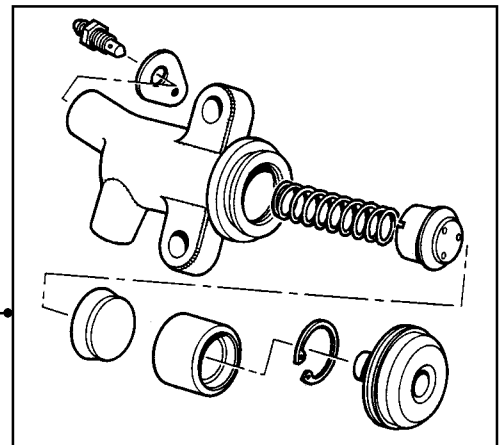


33.15.13



33.20.07

33.20.06



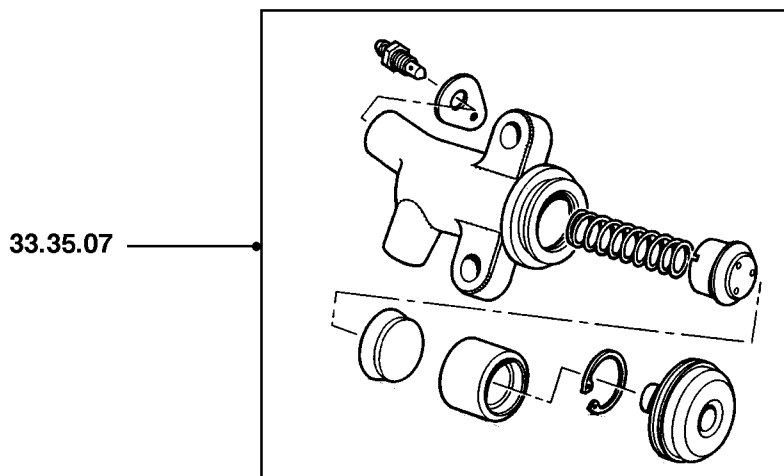
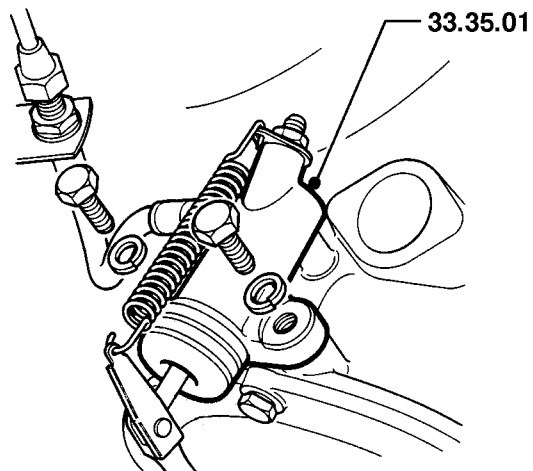
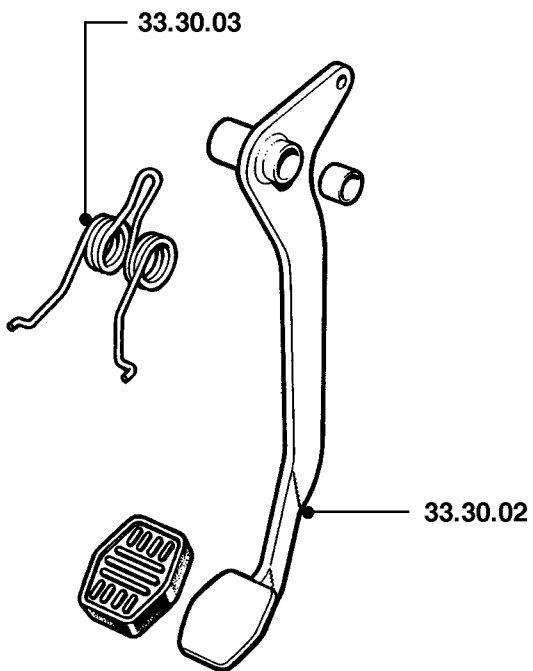
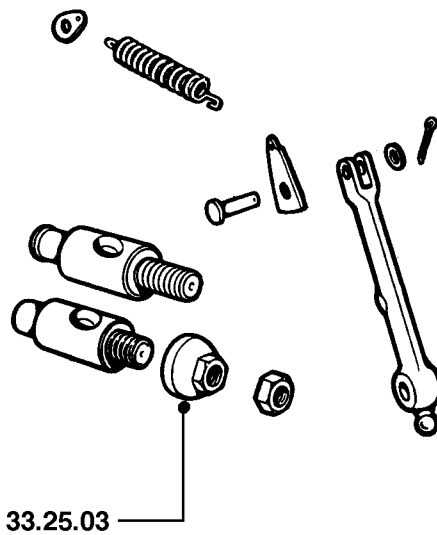
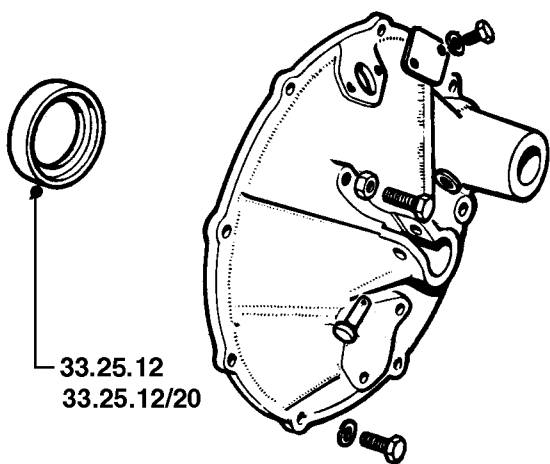
# 33 CLUTCH

# MINI AIRCON

(Operations include bleeding hydraulic system where necessary)

<p><b>33.25</b></p> <p>33.25.12/20</p>	<p><b>MECHANICAL LINKAGE &amp; RELEASE</b>  <b>(Operations include check/adjust throw out stop clearance where necessary)</b></p> <p>Bearing - release - renew - air conditioning fitted .....</p>	<p><b>Manual</b></p> <p>04.70</p>	<p>3A3</p>
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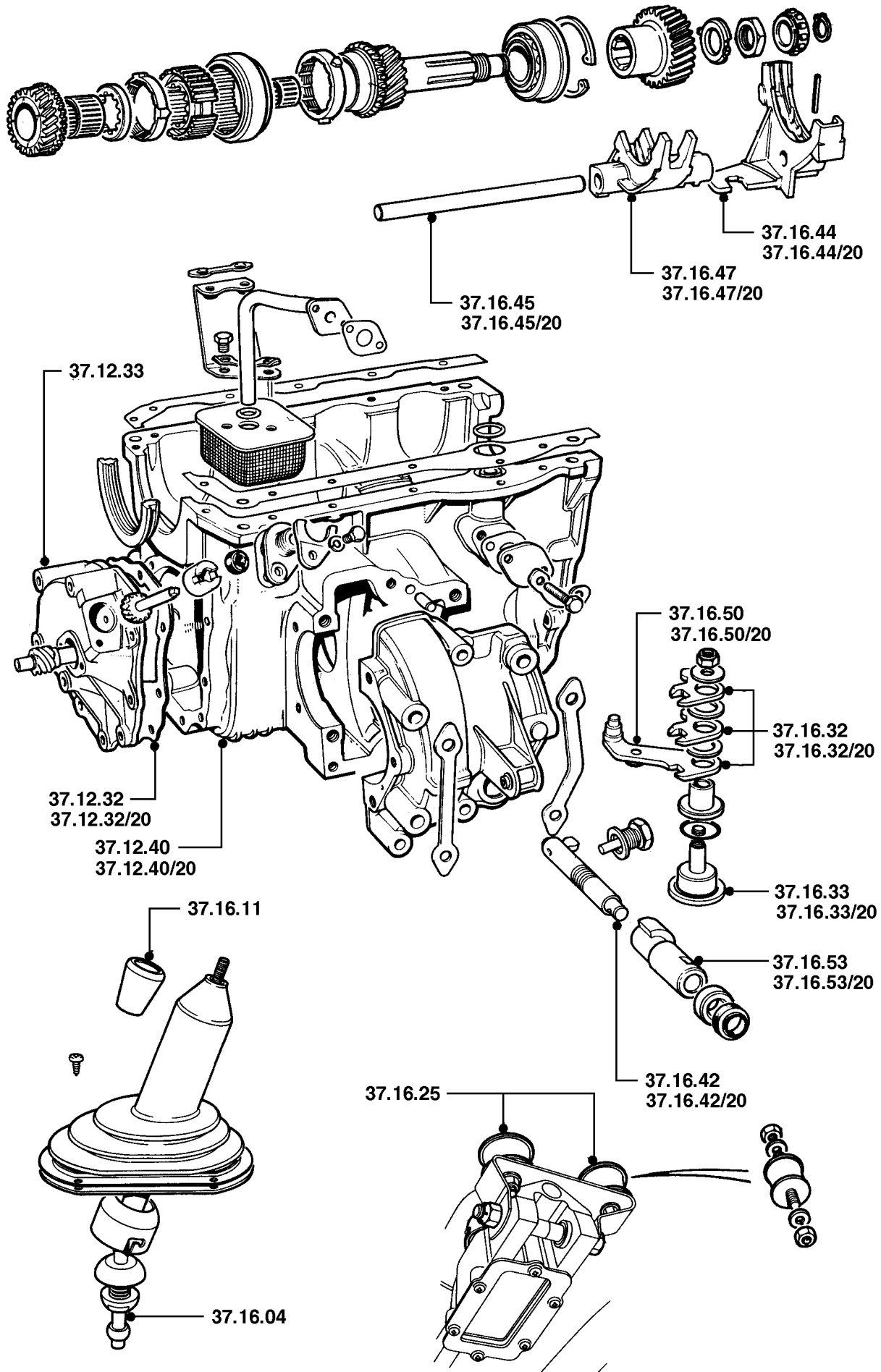
<p>A - WRONGLY ADJUSTED</p> <p>B - POROUS/ADRIFT</p> <p>C - BAD FIT</p> <p>D - BROKEN</p> <p>E - CRACKED/SPLIT/CUT</p> <p>F - SEIZED/STIFF</p> <p>G - LOOSE/WEAK SYNCHROMESH</p> <p>H - CORRODED/PLATING FAILURE</p>	<p>J - WORN/STRETCHED</p> <p>K - NOISY/CHAFED</p> <p>L - JUDDER/POOR CONNECTION</p> <p>M - BODY/COOLANT LEAKS/BURNT</p> <p>N - LEAKS - NOT COOLANT LOSS</p> <p>P - DIFFICULT ENGAGEMENT</p> <p>Q - FADED/STAINED/DISCOLOURED</p> <p>R - FACTORY DAMAGE</p>	<p>S - OPEN CIRCUIT/BLOCKED</p> <p>T - SHORT CIRCUIT/THREAD DAMAGE</p> <p>U - INACCURATE/SLIPPING</p> <p>V - BULB/LIGHT UNIT FAILURE</p> <p>W - VIBRATION/OUT OF BALANCE</p> <p>X - BRAKE PULL/SURFACE DAMAGE</p> <p>Z - INOPERATIVE</p>
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<p><b>37.12</b> 37.12.32/20 37.12.40/20</p>	<p><b>COVERS, CASE &amp; EXTENSIONS</b> Gasket - front cover - renew - air conditioning fitted ..... Main case - renew - air conditioning fitted .....</p>	<p><b>Manual</b> 09.70 14.50</p>	<p>3S7 3D1</p>
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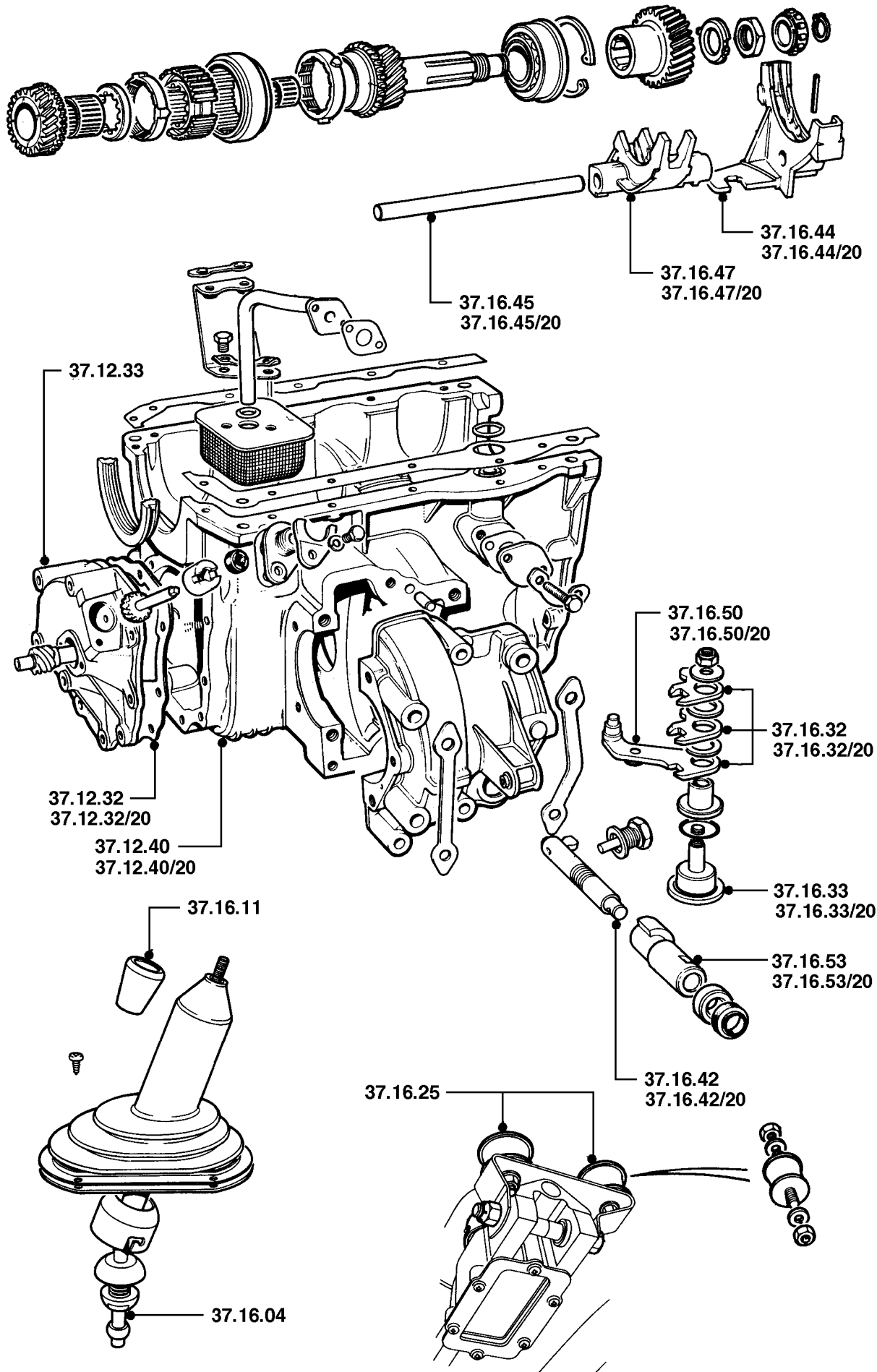
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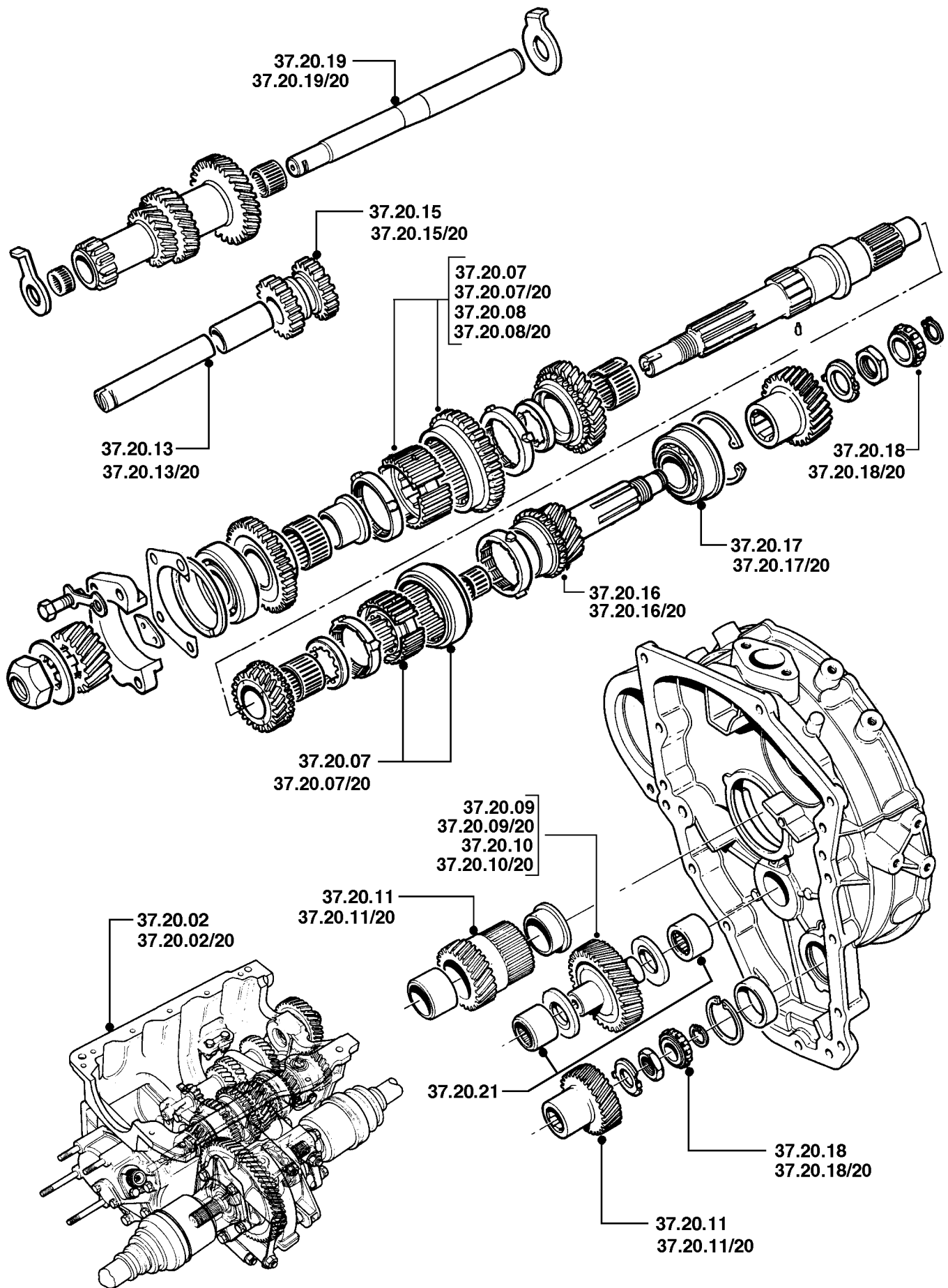
		Manual	
<b>37.16</b>	<b>GEARCHANGE CONTROLS &amp; SELECTORS</b>		
37.16.32/20	Levers - bell crank - set - renew - air conditioning fitted .....	13.80	*
37.16.33/20	Pin - pivot - bell crank - renew - air conditioning fitted .....	13.80	*
37.16.42/20	Selector shaft - renew - air conditioning fitted .....	13.80	3M5
37.16.44/20	Selector fork - 3rd/4th gears - renew - air conditioning fitted .....	13.70	3M2
37.16.45/20	Forks - selector shaft - renew - air conditioning fitted .....	13.70	3M5
37.16.47/20	Selector fork - 1st/2nd gears - renew - air conditioning fitted.....	13.70	3M1
37.16.50/20	Selector fork/lever - reverse gear - renew - air conditioning fitted .	13.80	3M4
37.16.53/20	Interlock - renew - air conditioning fitted .....	13.80	3M8

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



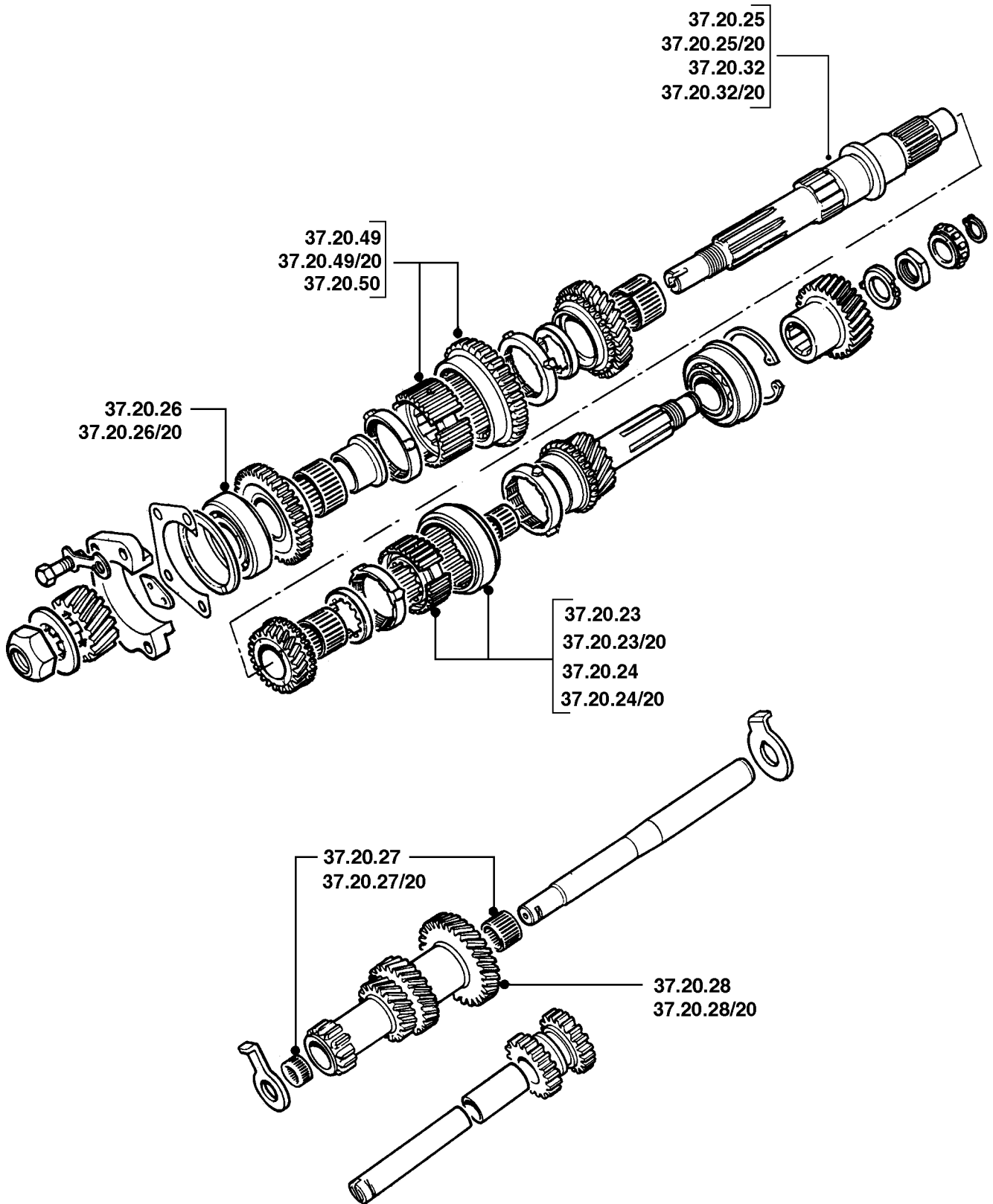
		Manual	
<b>37.20</b>	<b>GEARBOX ASSEMBLY</b>		
37.20.02/20	Gearbox - renew - air conditioning fitted .....	12.30	*
37.20.02/98	Gearbox - remove for access & refit - air conditioning fitted .....	11.10	-
37.20.07/20	Synchronizer assemblies - renew - air conditioning fitted .....	14.20	*
37.20.08/20	Synchronizer assemblies - overhaul - air conditioning fitted .....	14.40	*
37.20.09/20	Idler gear assembly - renew - air conditioning fitted .....	06.70	3E7
37.20.10/20	Idler gear - check & adjust end float - air conditioning fitted .....	06.70	3E7
37.20.11/20	Primary drive gear train - renew - air conditioning fitted .....	10.60	3F8
37.20.13/20	Shaft - reverse idler gear - renew - air conditioning fitted .....	13.70	3H4
37.20.15/20	Gear - reverse idler - renew - air conditioning fitted.....	13.70	3E7
37.20.16/20	Shaft - input - renew - air conditioning fitted .....	13.30	3H1
37.20.17/20	Bearing(s) - input shaft - renew - air conditioning fitted .....	13.30	3H5
37.20.18/20	Bearing - input shaft spigot end - renew - air conditioning fitted ..	10.60	
37.20.19/20	Countershaft - renew - air conditioning fitted .....	12.80	3H3

<b>A - WRONGLY ADJUSTED</b>	<b>J - WORN/STRETCHED</b>	<b>S - OPEN CIRCUIT/BLOCKED</b>
<b>B - POROUS/ADRIFT</b>	<b>K - NOISY/CHAFED</b>	<b>T - SHORT CIRCUIT/THREAD DAMAGE</b>
<b>C - BAD FIT</b>	<b>L - JUDDER/POOR CONNECTION</b>	<b>U - INACCURATE/SLIPPING</b>
<b>D - BROKEN</b>	<b>M - BODY/COOLANT LEAKS/BURNT</b>	<b>V - BULB/LIGHT UNIT FAILURE</b>
<b>E - CRACKED/SPLIT/CUT</b>	<b>N - LEAKS - NOT COOLANT LOSS</b>	<b>W - VIBRATION/OUT OF BALANCE</b>
<b>F - SEIZED/STIFF</b>	<b>P - DIFFICULT ENGAGEMENT</b>	<b>X - BRAKE PULL/SURFACE DAMAGE</b>
<b>G - LOOSE/WEAK SYNCHROMESH</b>	<b>Q - FADED/STAINED/DISCOLOURED</b>	<b>Z - INOPERATIVE</b>
<b>H - CORRODED/PLATING FAILURE</b>	<b>R - FACTORY DAMAGE</b>	



		Manual	
<b>37.20</b>	<b>GEARBOX ASSEMBLY</b>		
37.20.21/20	Bearings/bushes - idler gear - set - renew - air conditioning fitted .	07.20	3F5
37.20.23/20	Synchronizer assembly - 3rd/4th gear - renew - air conditioning fitted.....	13.70	*
37.20.24/20	Synchronizer assembly - 3rd/4th gear - overhaul - air conditioning fitted.....	13.80	*
37.20.25/20	Shaft - output - renew - air conditioning fitted .....	14.10	3H2
37.20.26/20	Bearing(s) - output shaft - renew - air conditioning fitted .....	13.60	3H6
37.20.27/20	Bearings - countershaft - renew - air conditioning fitted.....	12.80	3H7
37.20.28/20	Gear(s) - countershaft - renew - air conditioning fitted.....	12.80	3E8
37.20.32/20	Output shaft - renew - includes renew bearing(s) & overhaul synchronizers - air conditioning fitted .....	14.40	3H2
37.20.49/20	Synchronizer - 1st/2nd speed - renew - air conditioning fitted .....	14.20	*

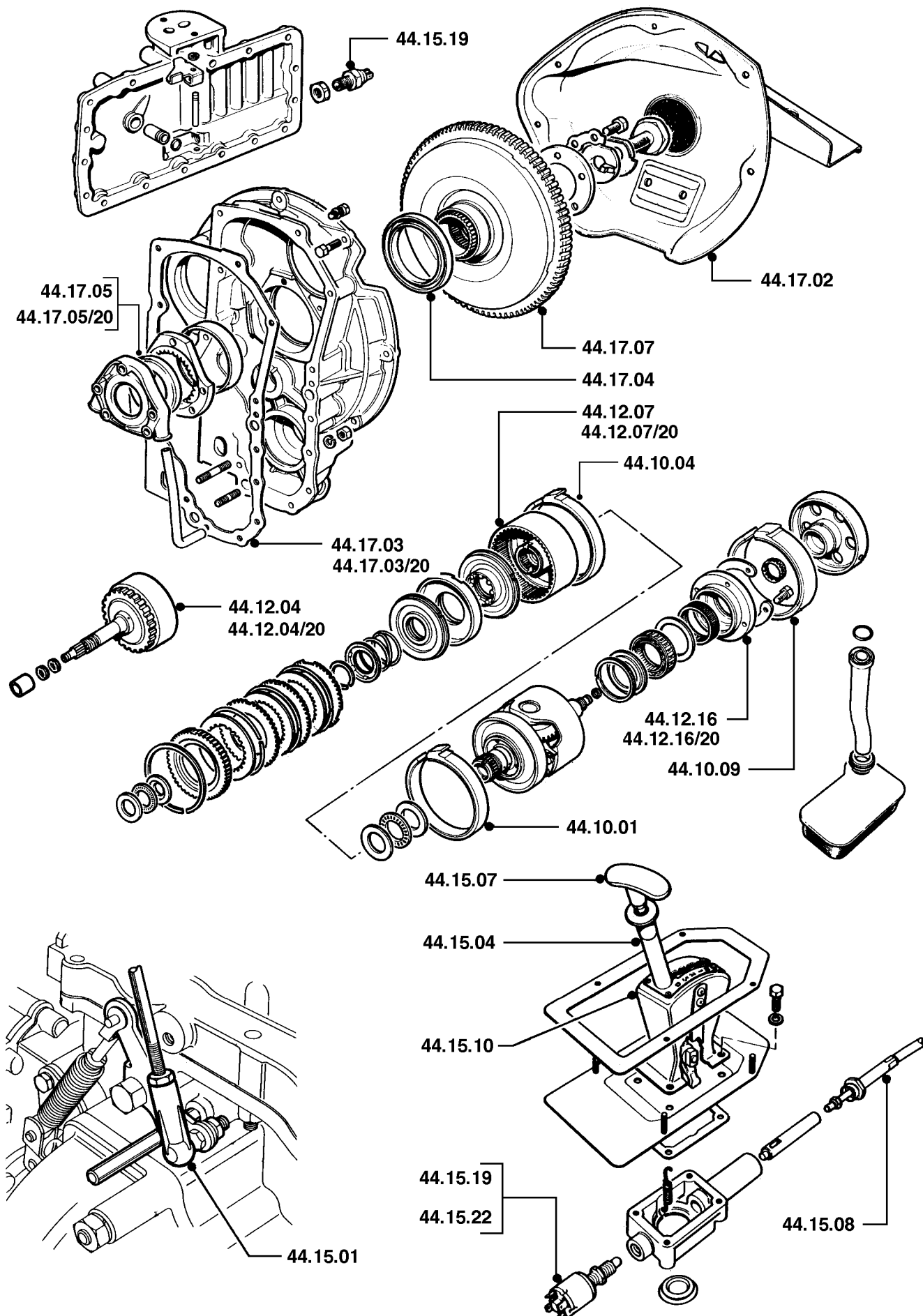
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B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



		Auto	
<b>44.10</b>	<b>BRAKE BANDS</b>		
44.10.18/20	Brake bands - set - renew - air conditioning fitted .....	13.10	-
<b>44.12</b>	<b>CLUTCHES</b>		
44.12.04/20	Clutch - front/forward - renew - air conditioning fitted .....	10.40	4C1
44.12.07/20	Clutch - rear/top & reverse - renew - air conditioning fitted .....	12.30	4C2
44.12.09/20	Clutches - front/forward & rear/top reverse - overhaul - air conditioning fitted.....	13.50	*
44.12.10/20	Clutch - front/forward - overhaul - air conditioning fitted .....	11.00	4C1
44.12.13/20	Clutch - rear or top/reverse - overhaul - air conditioning fitted.....	12.60	4C2
44.12.16/20	Clutch - one way - renew - air conditioning fitted.....	12.20	4D4
<b>44.17</b>	<b>CONVERTER, HOUSING &amp; PRIMARY DRIVE</b>		
44.17.03/20	Gasket - converter housing - renew - air conditioning fitted.....	11.60	4H4
44.17.05/20	Oil seal - stator housing - renew - air conditioning fitted .....	11.60	4H3

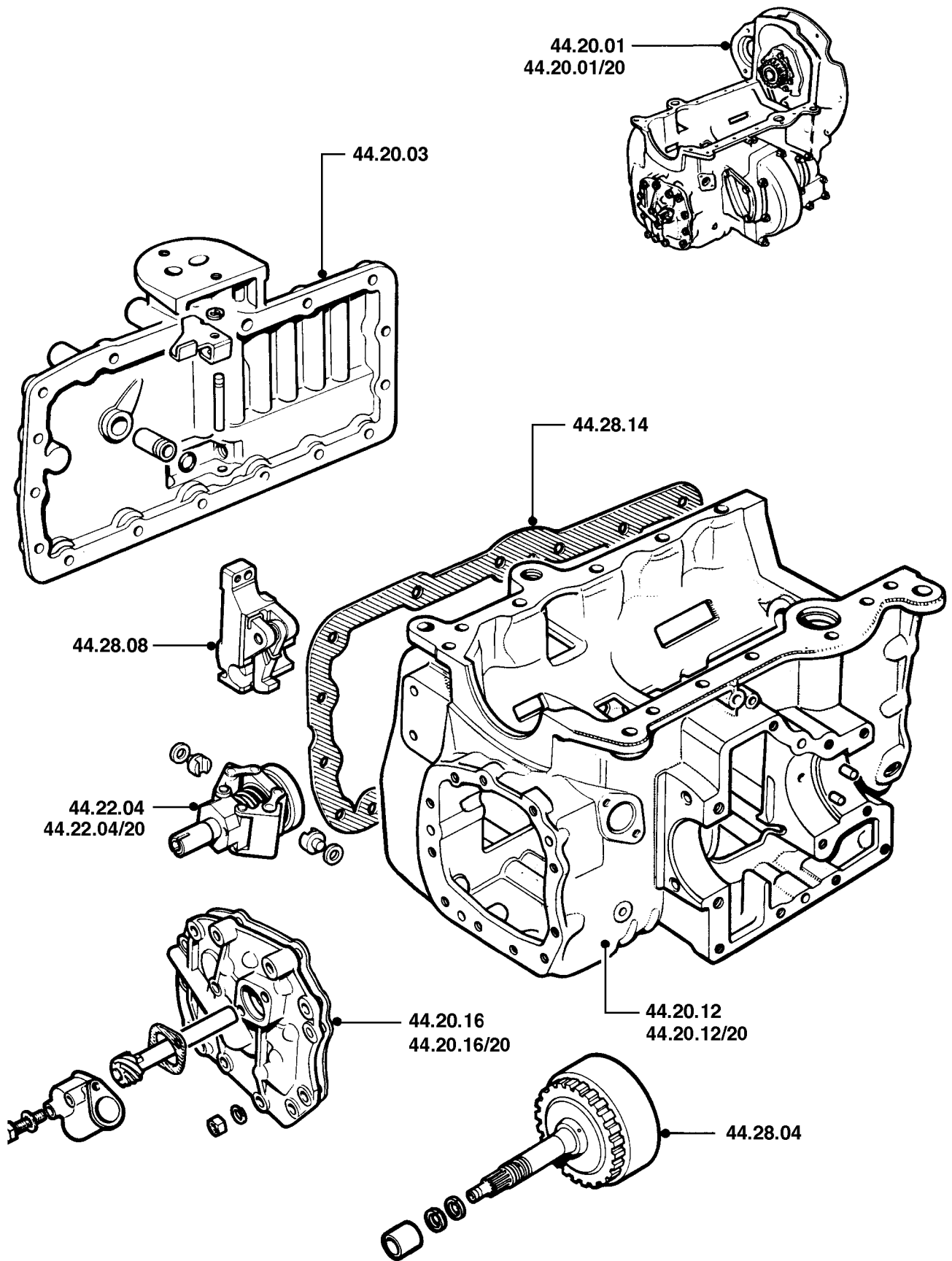
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B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	





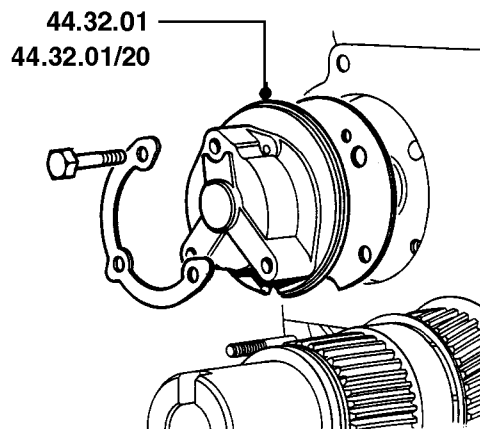
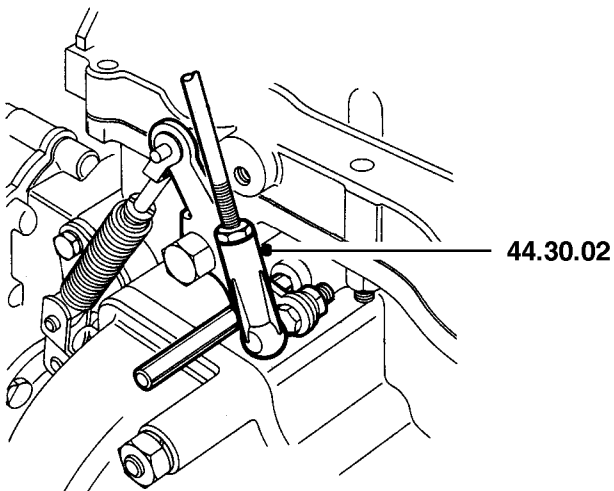
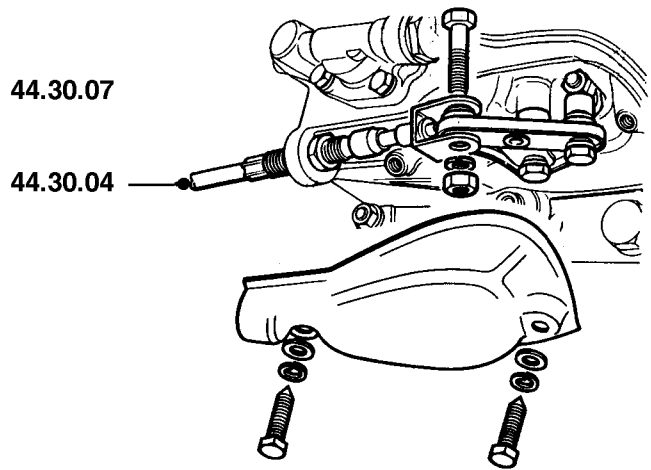
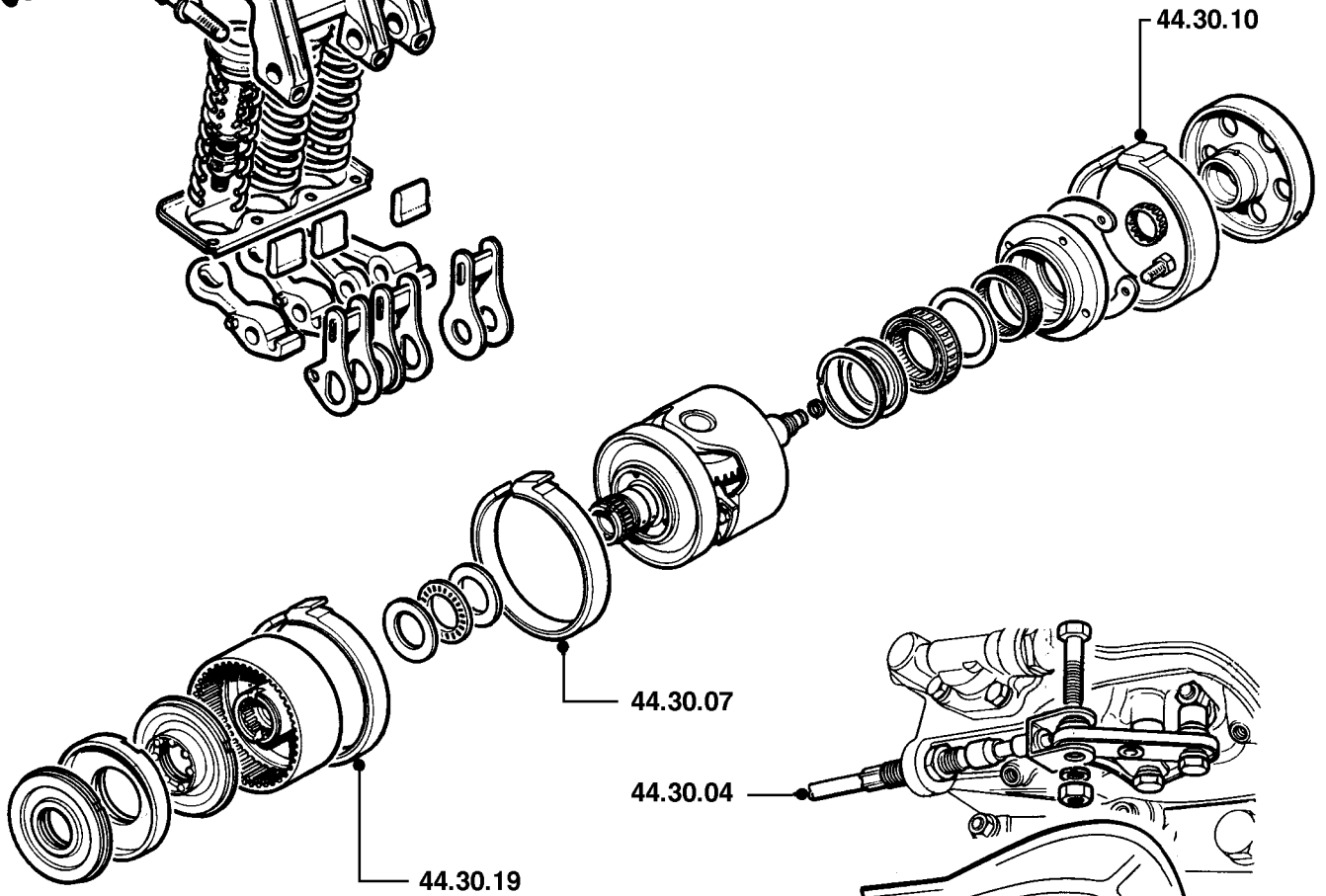
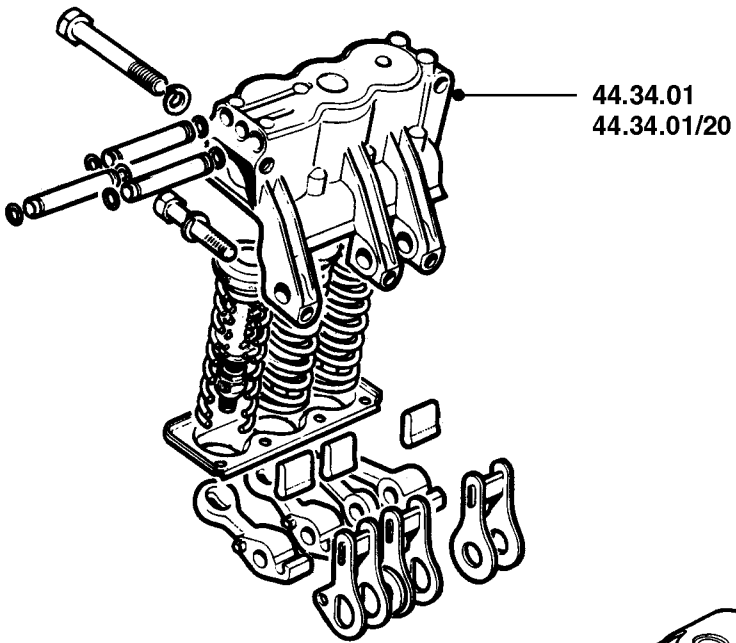
		Auto	
<b>44.20</b>	<b>GEARBOX ASSEMBLY &amp; CASINGS</b>		
44.20.01/20	Gearbox - renew - air conditioning fitted .....	13.30	*
44.20.02/98	Gearbox & convertor - remove for access & refit - air conditioning fitted.....	12.80	*
44.20.12/20	Main case - renew - air conditioning fitted .....	19.70	4A1
44.20.16/20	Gasket - governor housing - renew - air conditioning fitted .....	10.40	4J8
<b>44.22</b>	<b>GOVERNOR</b>		
44.22.04/20	Governor assembly - overhaul - air conditioning fitted.....	10.80	4E1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



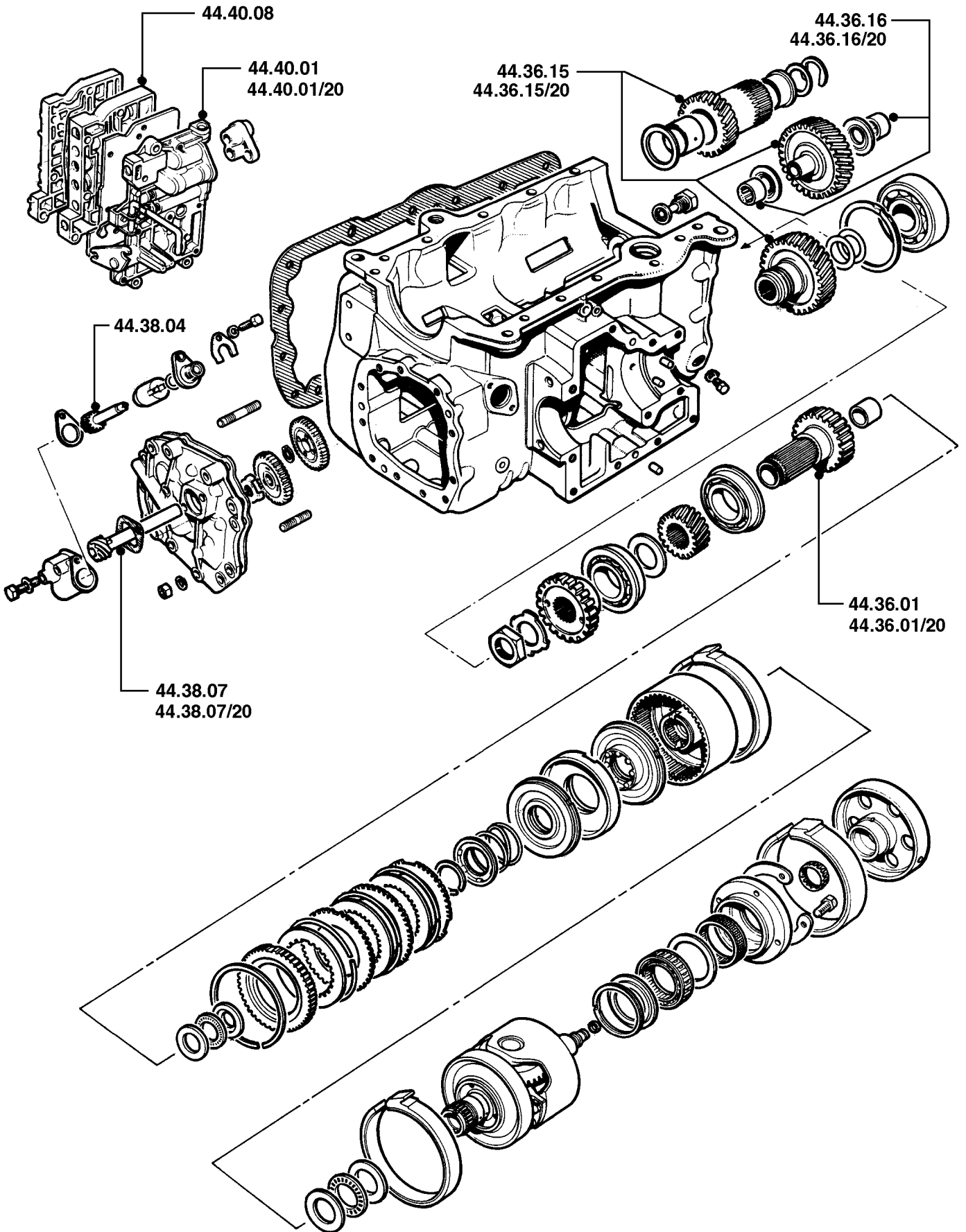
		Auto	
<b>44.32</b>	<b>PUMPS</b>		
44.32.01/20	Pump - main - renew - air conditioning fitted .....	12.00	4A7
44.32.04/20	Pump - main - overhaul - air conditioning fitted .....	12.20	4A7
<b>44.34</b>	<b>SERVOS AND ACCUMULATORS</b>		
44.34.01/20	Servo assembly - renew - air conditioning fitted .....	13.30	4C6
44.34.04/20	Servo assembly - overhaul - air conditioning fitted .....	13.80	4C6

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



		Auto	
<b>44.36</b>	<b>SHAFTS &amp; GEARS</b>		
44.36.01/20	Shaft - output - renew - air conditioning fitted .....	12.50	*
44.36.15/20	Primary drive gears - renew - air conditioning fitted.....	12.50	-
44.36.16/20	Bearings - idler gear - renew - air conditioning fitted .....	12.50	4B5
44.36.17/20	Converter output gear, idler gear & input gear - check & adjust end float - air conditioning fitted .....	12.50	-
<b>44.38</b>	<b>SPEEDOMETER DRIVE</b>		
44.38.07/20	Gear - speedometer drive - renew - air conditioning fitted.....	10.10	4D8
<b>44.40</b>	<b>VALVE BODIES</b>		
44.40.01/20	Valve body assembly - renew - air conditioning fitted .....	13.00	4C9
44.40.04/20	Valve body assembly - overhaul - air conditioning fitted .....	13.90	4C9

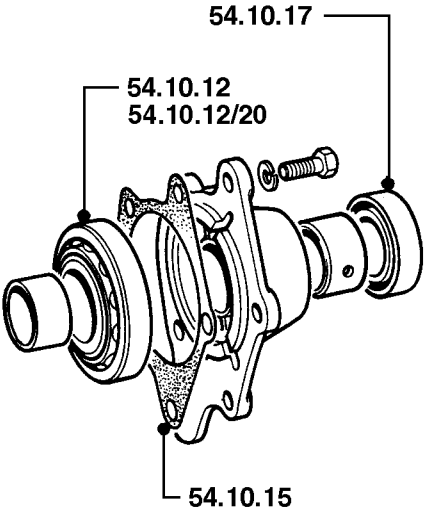
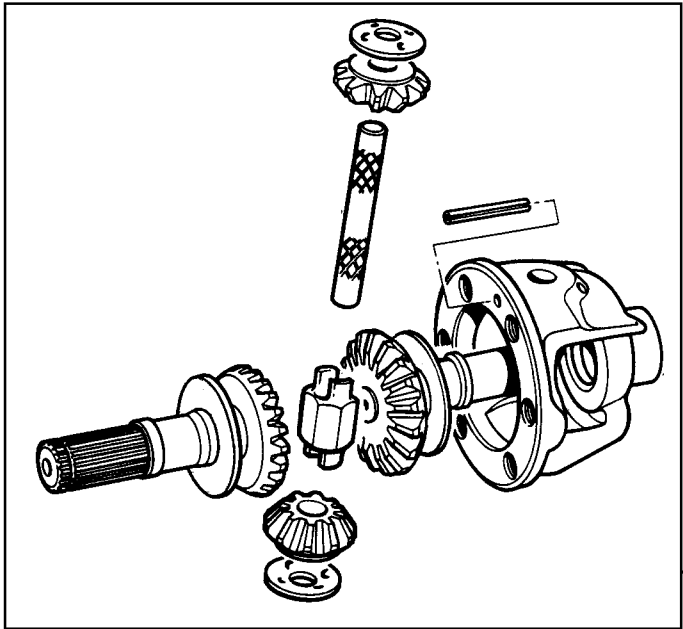
A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	



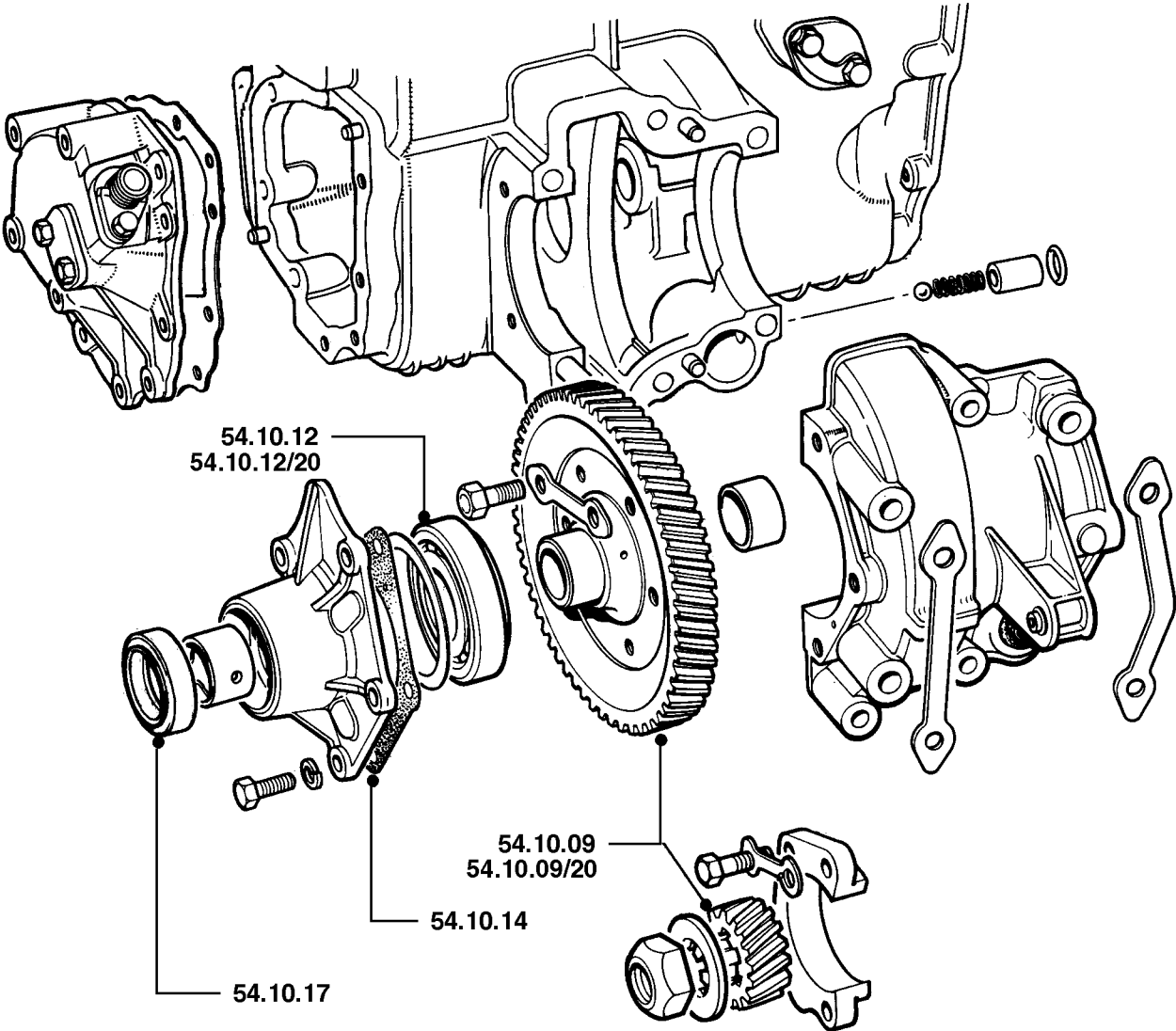
		Auto	Manual	
<b>54.10</b>	<b>DIFFERENTIAL ASSEMBLY</b>			
54.10.07/20	Differential assembly - overhaul - air conditioning fitted .....	10.80	11.50	4P4
54.10.08/20	Differential cage, final drive gear & pinion - overhaul - air conditioning fitted.....	11.40	15.60	*
54.10.09/20	Final drive gear & pinion - renew - air conditioning fitted .....	11.10	15.30	4P1
54.10.11/20	Bearings - final drive pinion - pair - renew - air conditioning fitted .		14.90	4P3
54.10.12/20	Bearings - differential cage - renew - air conditioning fitted .....	10.40	11.10	4Q1

A - WRONGLY ADJUSTED	J - WORN/STRETCHED	S - OPEN CIRCUIT/BLOCKED
B - POROUS/ADRIFT	K - NOISY/CHAFED	T - SHORT CIRCUIT/THREAD DAMAGE
C - BAD FIT	L - JUDDER/POOR CONNECTION	U - INACCURATE/SLIPPING
D - BROKEN	M - BODY/COOLANT LEAKS/BURNT	V - BULB/LIGHT UNIT FAILURE
E - CRACKED/SPLIT/CUT	N - LEAKS - NOT COOLANT LOSS	W - VIBRATION/OUT OF BALANCE
F - SEIZED/STIFF	P - DIFFICULT ENGAGEMENT	X - BRAKE PULL/SURFACE DAMAGE
G - LOOSE/WEAK SYNCHROMESH	Q - FADED/STAINED/DISCOLOURED	Z - INOPERATIVE
H - CORRODED/PLATING FAILURE	R - FACTORY DAMAGE	





54.10.07  
54.10.07/20



# 82 AIR CONDITIONING

# MINI AIRCON

(Operations include depressurise, evacuate, sweep & recharge system)

		All models	
<b>82.10</b>	<b>COMPRESSOR &amp; DRIVE</b>		
82.10.01	Drive belt - compressor - check & adjust tension.....	00.40	2G7
82.10.02	Drive belt - compressor - renew.....	00.70	2G7
82.10.20	Compressor - renew .....	03.00	8Q1
82.10.21	Hose - compressor to condenser - renew .....	02.30	8Q5
<b>82.15</b>	<b>CONDENSER</b>		
82.15.01	Motor - condenser fan - renew.....	02.80	8R9
82.15.03	Fan blades - condenser - one - renew.....	02.60	8R9
82.15.07	Condenser - renew .....	02.50	8Q2
<b>82.17</b>	<b>LIQUID RECEIVER/DRIER (ACCUMULATOR)</b>		
82.17.03	Receiver drier - renew .....	01.80	8Q3
82.17.03/02	Receiver drier - renew - with system depressurised .....	00.30	8Q3
<b>82.20</b>	<b>CONTROLS</b>		
82.20.12	Switch - air conditioning engagement - renew.....	00.30	
82.20.26	Resistance unit - blower motor - renew .....	00.30	-
82.20.83	Switch - dual pressure - renew .....	01.80	8N7
82.20.96	Relay - air conditioning system - each - renew .....	00.20	
82.20.96/01	Relay - air conditioning system - extra - renew .....	00.10	
<b>82.25</b>	<b>COOLING UNIT</b>		
82.25.01	Valve - thermostatic expansion (TXV) - renew .....	03.20	8Q8
82.25.02	Hose - compressor to evaporator - renew .....	02.30	8Q5
82.25.20	Evaporator - renew .....	03.00	8Q6
82.25.33	Blower motor - renew.....	03.00	7S1
<b>82.30</b>	<b>TESTING AND CHARGING</b>		
82.30.02	Air conditioning system - depressurise - evacuate - capture & recharge .....	01.50	-

A - WRONGLY ADJUSTED

B - POROUS/ADRIFT

C - BAD FIT

D - BROKEN

E - CRACKED/SPLIT/CUT

F - SEIZED/STIFF

G - LOOSE/WEAK SYNCHROMESH

H - CORRODED/PLATING FAILURE

J - WORN/STRETCHED

K - NOISY/CHAFED

L - JUDDER/POOR CONNECTION

M - BODY/COOLANT LEAKS/BURNT

N - LEAKS - NOT COOLANT LOSS

P - DIFFICULT ENGAGEMENT

Q - FADED/STAINED/DISCOLOURED

R - FACTORY DAMAGE

S - OPEN CIRCUIT/BLOCKED

T - SHORT CIRCUIT/THREAD DAMAGE

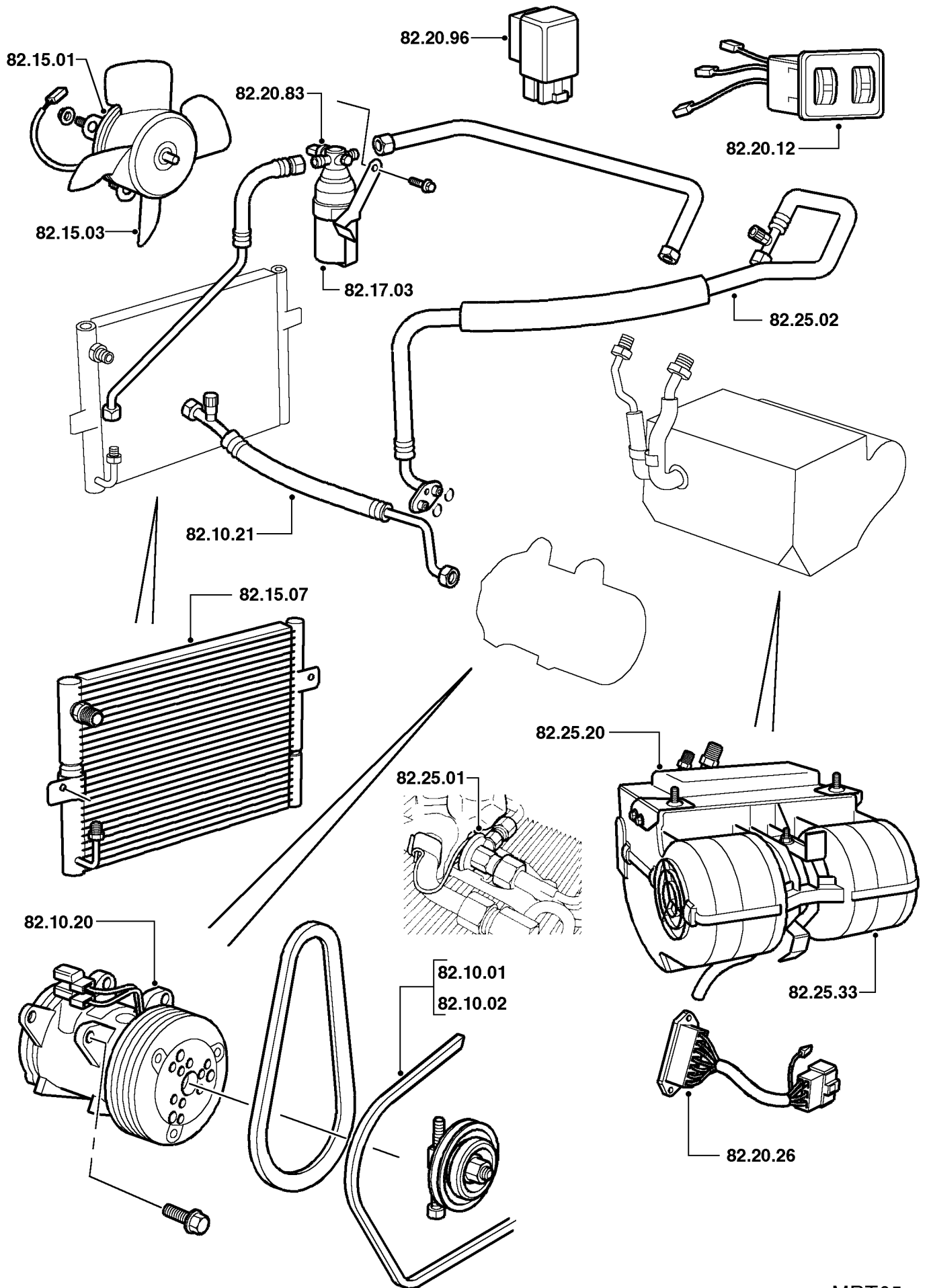
U - INACCURATE/SLIPPING

V - BULB/LIGHT UNIT FAILURE

W - VIBRATION/OUT OF BALANCE

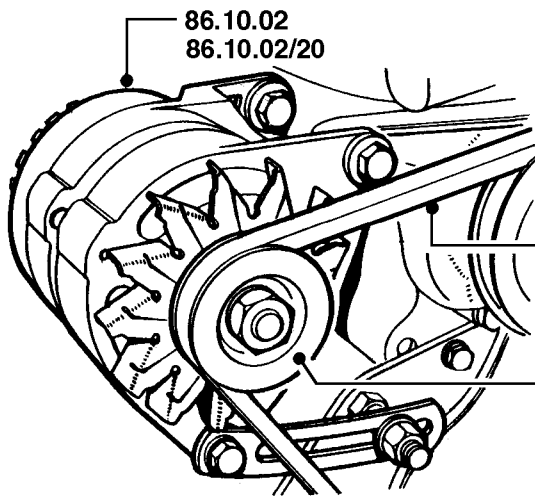
X - BRAKE PULL/SURFACE DAMAGE

Z - INOPERATIVE



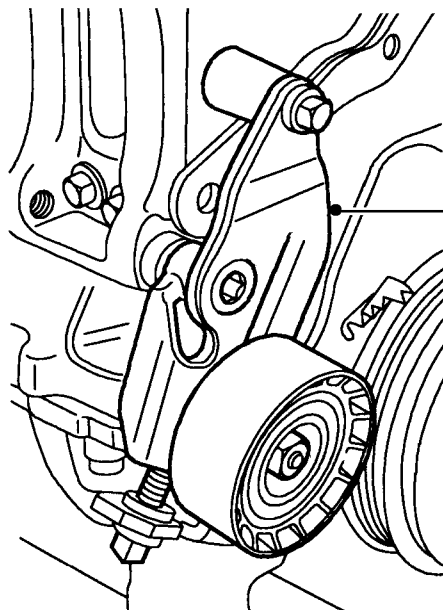
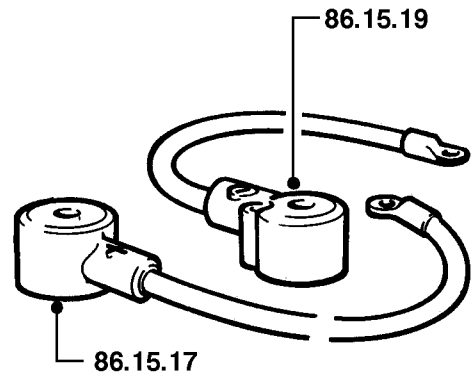
<p><b>86.10</b> 86.10.02/20 86.10.03/20</p>	<p><b>ALTERNATOR &amp; CONTROL UNIT</b> Alternator - renew - air conditioning fitted ..... Drive belt - alternator - renew - air conditioning fitted .....</p>	<p>All models 01.00 00.90</p>	<p>7D5 2G3</p>
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<p>A - WRONGLY ADJUSTED B - POROUS/ADRIFT C - BAD FIT D - BROKEN E - CRACKED/SPLIT/CUT F - SEIZED/STIFF G - LOOSE/WEAK SYNCHROMESH H - CORRODED/PLATING FAILURE</p>	<p>J - WORN/STRETCHED K - NOISY/CHAFED L - JUDDER/POOR CONNECTION M - BODY/COOLANT LEAKS/BURNT N - LEAKS - NOT COOLANT LOSS P - DIFFICULT ENGAGEMENT Q - FADED/STAINED/DISCOLOURED R - FACTORY DAMAGE</p>	<p>S - OPEN CIRCUIT/BLOCKED T - SHORT CIRCUIT/THREAD DAMAGE U - INACCURATE/SLIPPING V - BULB/LIGHT UNIT FAILURE W - VIBRATION/OUT OF BALANCE X - BRAKE PULL/SURFACE DAMAGE Z - INOPERATIVE</p>
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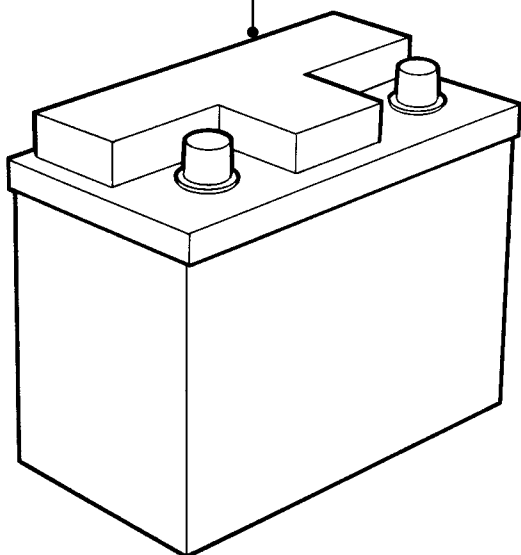


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86.10.03/20

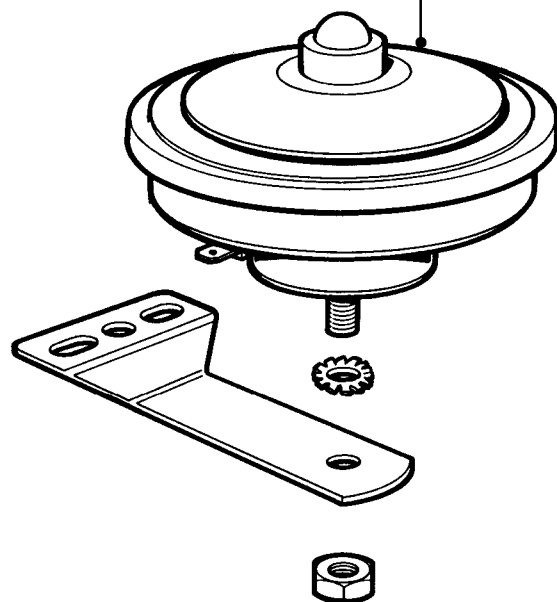
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86.10.01

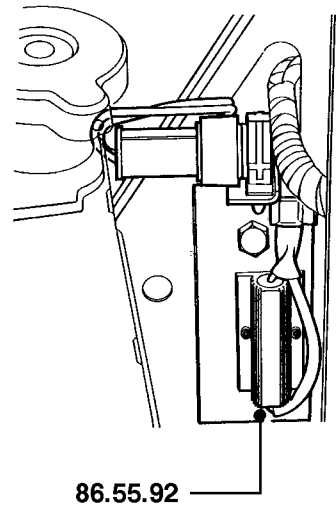
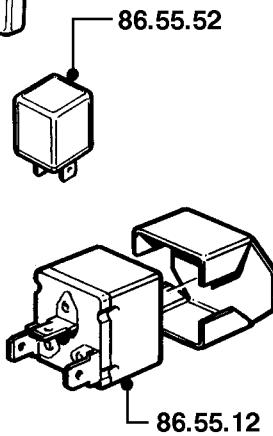
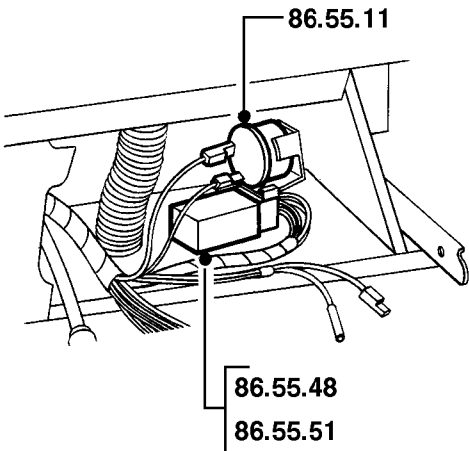
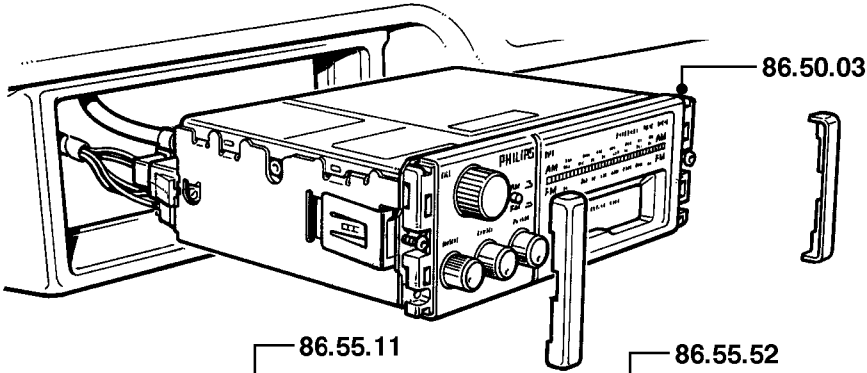
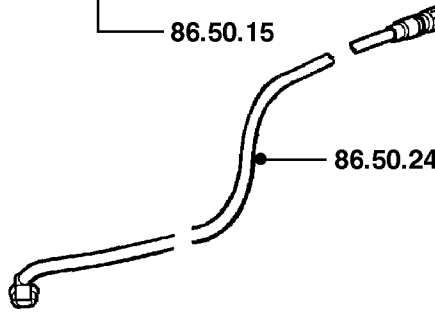
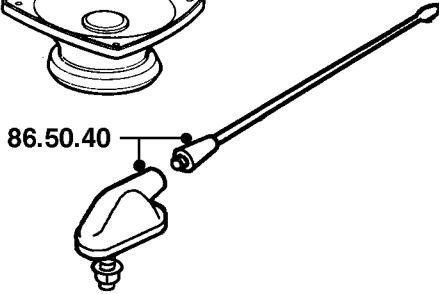
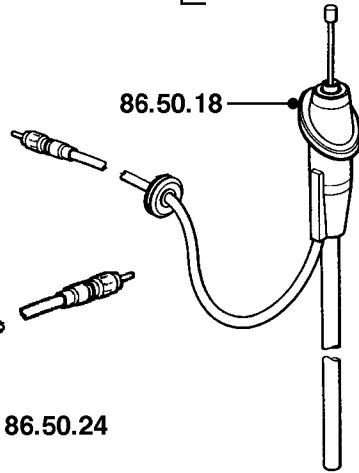
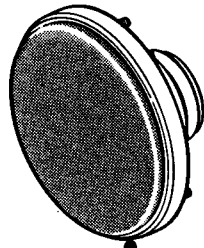
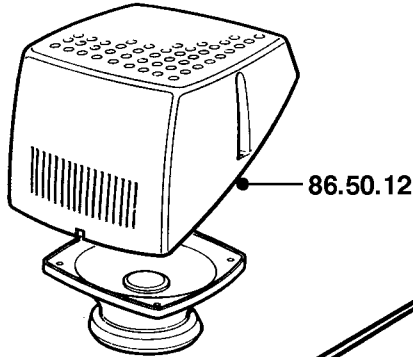
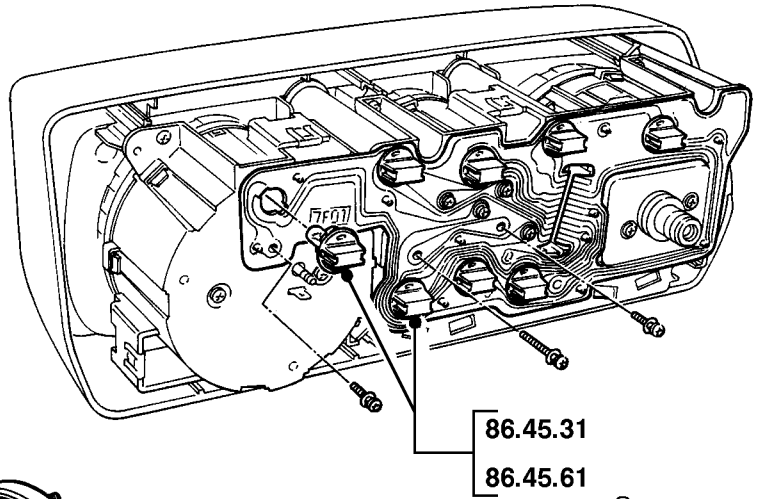
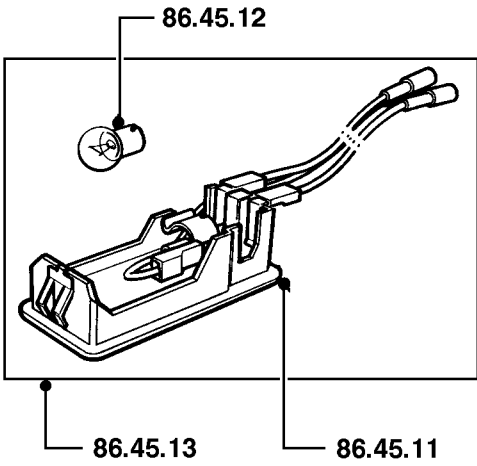


86.30.10



<p><b>86.45</b> 86.45.43</p>	<p><b>LAMPS - INTERIOR</b> Bulb - air conditioning control switch - renew..... .</p>	<p>All models 00.30</p>	<p>*</p>
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<p>A - WRONGLY ADJUSTED B - POROUS/ADRIFT C - BAD FIT D - BROKEN E - CRACKED/SPLIT/CUT F - SEIZED/STIFF G - LOOSE/WEAK SYNCHROMESH H - CORRODED/PLATING FAILURE</p>	<p>J - WORN/STRETCHED K - NOISY/CHAFED L - JUDDER/POOR CONNECTION M - BODY/COOLANT LEAKS/BURNT N - LEAKS - NOT COOLANT LOSS P - DIFFICULT ENGAGEMENT Q - FADED/STAINED/DISCOLOURED R - FACTORY DAMAGE</p>	<p>S - OPEN CIRCUIT/BLOCKED T - SHORT CIRCUIT/THREAD DAMAGE U - INACCURATE/SLIPPING V - BULB/LIGHT UNIT FAILURE W - VIBRATION/OUT OF BALANCE X - BRAKE PULL/SURFACE DAMAGE Z - INOPERATIVE</p>
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 FAX 01865 746695

Dealers Address

**PROCEDURE FOR REVIEW OF MECHANICAL REPAIR OPERATION TIME**

Extensive research is carried out to ensure the accuracy of these times but should you have any queries the review form printed below must be reproduced and completed in full.  
 Time allowances are set using the methods as describes within the repair operations manuals and/or technical bulletins

Operation Number ..... Model .....  
 Scheduled Publication Part No. .... Variant.....  
 Published Time ..... Model Year.....  
 Description .....  
 .....  
 .....

**Details of time Taken**

Please provide this data in as much detail as possible. No action will be taken unless this information is provided.

Diagnosis	Remove	Clean & Inspect	Dismantle & Overhaul	Refit	Adjust	Vehicle movement	Collect Parts	Collect Service tools	Total time taken

Please state specific areas of concern or difficulty .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....

Additional comments.....  
 .....  
 .....  
 .....  
 .....  
 .....

It is confirmed that the above details are a realistic assessment of the times taken when adhering to the procedures detailed in the Repair Operation Manual.

Service Manager ..... Date.....

(DEALER RETAIN COPY FOR REFERENCE)

