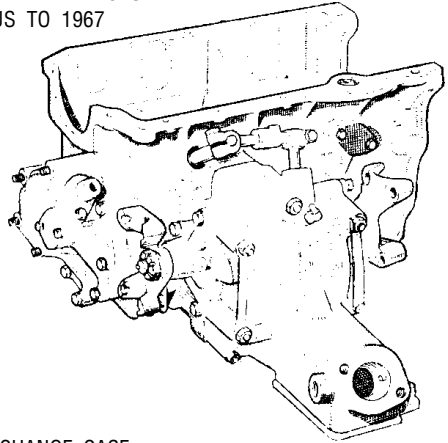


# ***TRANSMISSION & GEARSHIFT***

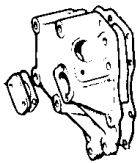
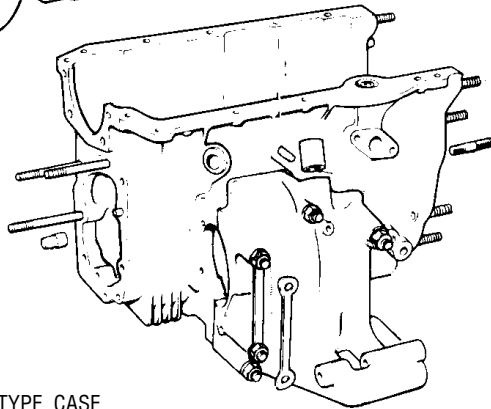
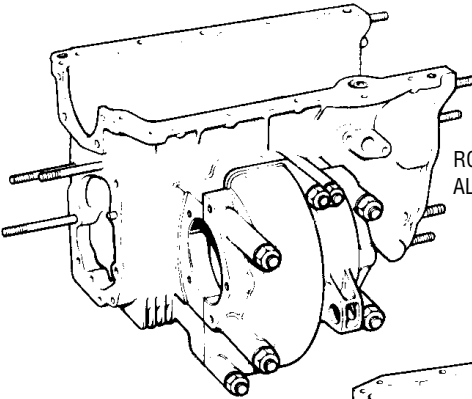
<b>TRANSMISSION CASING AND PART NUMBERS</b>	<b>2</b>
<b>GEARBOX ASSEMBLIES INCLUDING 5-SPEED</b>	<b>4</b>
<b>TRANSMISSION CASE PARTS</b>	<b>6</b>
<b>GEARS, A-TYPE 3-SYNCHRO</b>	<b>8</b>
<b>GEARS, B-TYPE 3-SYNCHRO</b>	<b>10</b>
<b>GEARS, 4-SYNCHRO</b>	<b>12</b>
<b>GEARS, ROD CHANGE, 1979-ON</b>	<b>14</b>
<b>FINAL DRIVE GEARS</b>	<b>16</b>
<b>DIFFERENTIAL ASSEMBLY</b>	<b>18</b>
<b>LINKAGE, MAGIC WAND AND REMOTE</b>	<b>20</b>
<b>LINKAGE, ROD CHANGE, SPEEDO DRIVE-ALL</b>	<b>22</b>
<b>GEARCHANGE</b>	<b>24</b>

# GEARBOX CASING AND PART NUMBERS

MAGIC WAND TYPE CASE  
VARIOUS TO 1967



ROD CHANGE CASE  
ALL MINIS FROM 1973



REMOTE TYPE CASE  
ALL COOPER AND 'S', 998CC MINI  
FROM 1967, 850CC FROM 1968

## GEARBOX CASING AND PART NUMBERS

CASING No	PART No.	DESCRIPTION	
22A104		850cc Cone synchromesh, magic wand	NLA
22A363	22A361	850cc Cone synchromesh, magic wand	NLA
22G68		850/998cc Mini 997/998cc Cooper, 'A' and 'B' type remote or magic wand	NLA
22A1288		850/998cc Mini 'B' type magic wand	CWE
22G382		850/998cc Mini 'B' type magic wand	CWE
22G190	22G188	970/1071cc Cooper 'S' 'A' and 'B' type gears remote type	NLA
22G333	22G331	970/1275cc Cooper 'S' 'B' type	NLA
22A1228	22A1294	Non 'S' 'B' type remote type	NLA
22A1522	22A1529	Last 'B' type for Mini and 'S' 3 synchromesh remote type	CWE
22G1128	22G1338	All 4 synchro with remote	CWE
22G1832	22G2382	Rod change with small idler bearing	NLA
DAM4818	DAM3755	Rod change, A plus with 4 bolt bearing retainer	NLA
DAM2886	BHM5045	Rod change, A plus 4 bolt bearing retainer and stronger idler housing	NLA
DAM5626	BHM5093	A-Plus with 3 bolt bearing retainer	NLA

4

### 3 SYNCHROMESH

The original Mini's gears were known as cone type synchromesh, which had a brass baulk ring fitted to the gear. These were replaced in October 1962 by the conventional type of baulk ring as used today and became known as 'A' type gears. 'A' type gears were used up until September 1964 when 'B' type gears were introduced, which had to be fitted in complete sets if interchanging with exception to the Cooper 'S', which had a 22G204 laygear manufactured to accept 'B' type 1st and reverse gears 22A1021 and 22G202 respectively.

'A' type gears have a much steeper inclined helical cut which is very noticeable when placed side by side. The 'A' type 2nd and 3rd gear both run on bronze bushes whereas 'B' type run on 26 small rollers per gear. The 'A' type 3rd motion shaft (main shaft) has a smaller nose to accept the 1st motion shaft which has a fixed sleeve bearing which is obsolete and not replaceable. The 'B' type 1st motion shaft had a free fitting needle roller bearing, which slides in and out freely. Apart from the 22G204 laygear all 'A' type laygears had a circlip recess 1/10" from the ends to hold the layshaft bearings in. All 'B' type laygears plus 22G204 had the circlip recess 1" in to stop the bearings moving into the gear, but easily sliding in or out when the gear is not fitted.

### 4 SYNCHROMESH

At the end of 1968 the 4 synchromesh gearbox was introduced, which had all different gears and ratios. The bearing housing at the clutch end of the gearbox case, which housed the 1st motion shaft roller bearing was machined THINNER on the inside of the gearbox case to help accommodate the extra 1st gear.

### ROD CHANGE 4 SYNCHROMESH

Beginning of 1973 the remote gear lever housing extensions were replaced by two external rods, hence the name rod change gearbox. Internally the three selector shafts were replaced by one.

About 1982 A-Plus gears started appearing, which were identified by having a groove mark in the middle of the teeth on 2nd/3rd gear, 1st motion and 4th gear on the laygear. These were cut at a different tooth angle making the gears (less noisy) with different ratios again.

About 1984 the center main double roller retainer was changed from 4 holes to 3 holes as the case tended to crack where one of the locating holes for the retainer was drilled.

### 5-SPEED

A 5-Speed overdrive transmission is currently available for the Mini. It is available in the latest Rod change configuration only. This is a completely new unit built from all new parts including special castings.

## GEARBOX ASSEMBLIES INCLUDING 5-SPEED



## REBUILT TRANSMISSIONS

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
	GEARBOX01	4-synchro "remote" gearbox, "S" ratios, flange output .....	1	
	GEARBOX02	4-synchro "remote" gearbox, std. ratios, yoke outputs .....	1	
	GEARBOX03	4-synchro rod change, pot joint, 3.1 final drive .....	1	
	GEARBOX04	4-synchro rod change, pot joint, 3.4 final drive .....	1	

## 5-SPEED

### FACTORS AND SPEED DRIVE

4

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
	MSG4	5-Speed, std. ratio, helical cut, A-Plus rod-change .....		Tran-X
	MSG5	5-Speed, std. ratio, helical cut, cross-pin diff, rod change .....		Tran-X
	MSG6	5-Speed, close-ratio, helical cut, rod change .....		Tran-X
	MSG7	5-Speed, close-ratio, helical cut, cross-pin diff, rod change .....		Tran-X
	MINI5004	Straight-cut close-ratio 5-Speed, rod change .....		Jack Knight
	MIN5001	Close-ratio Dog-Engagement 5-speed, LSD, rod change .....		Jack Knight

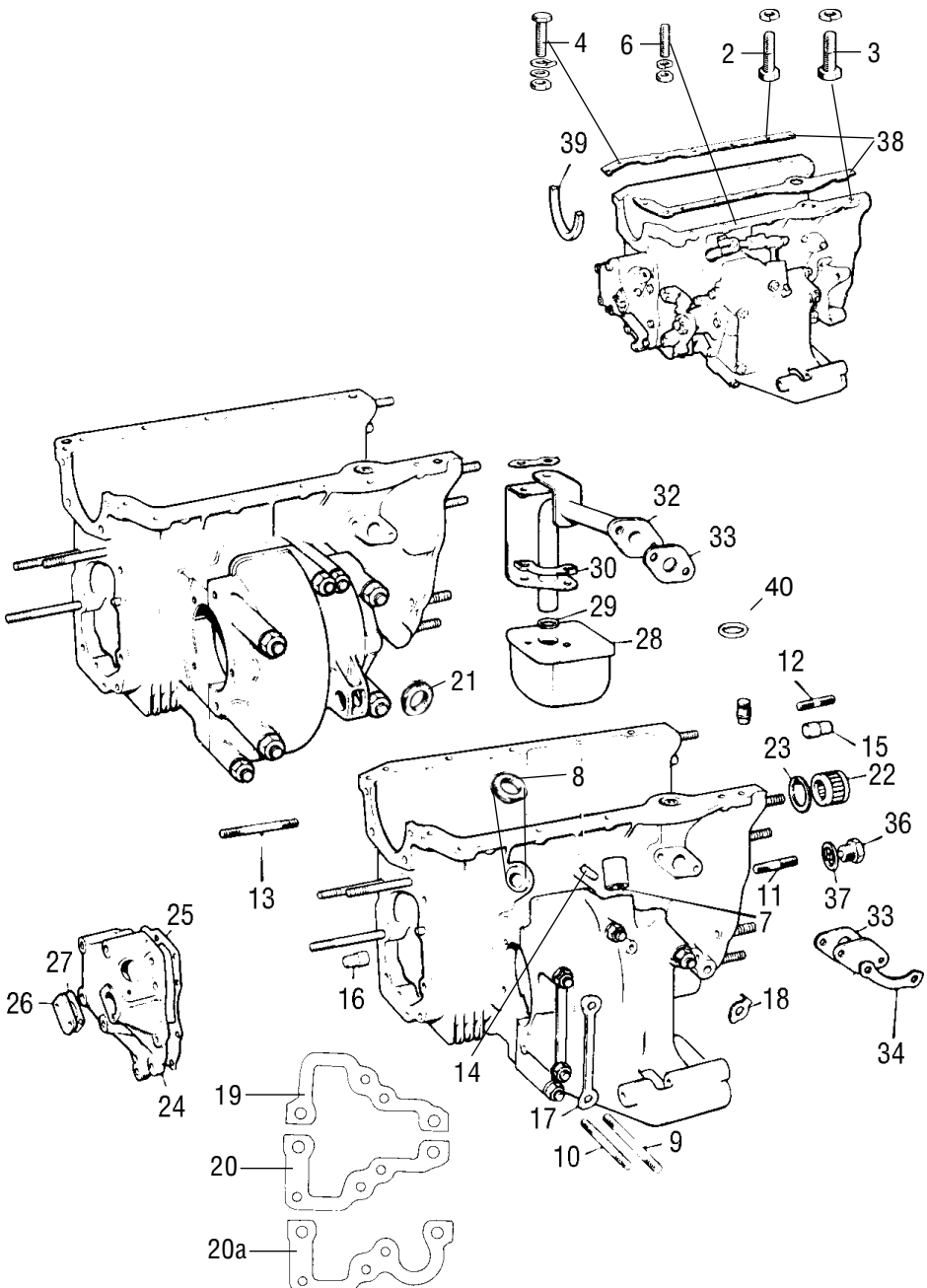
LAYGEAR	Fifth Gear Pair		Fifth Ratio	Final Drive	Overall 5th Ratio
22G927	20 X 38	0.526	0.897	3.44	3.085
CONSTANT	20 X 39	0.513	0.875	3.44	3.01
1.706	19 X 38	0.500	0.853	3.44	2.93
22G1040	21 X 38	0.553	0.891	3.44	3.065
CONSTANT	21 X 39	0.538	0.867	3.44	2.98
1.611	19 X 38	0.500	0.806	3.44	2.77
A PLUS	20 X 39	0.513	0.905	3.44	3.11
CONSTANT	19 X 38	0.500	0.882	3.44	3.03
1.765	19 X 39	0.487	0.859	3.44	2.95
CLUBMAN	26 X 18	0.692	0.865	3.44	2.975
STRAIGHT CUT	27 X 19	0.704	0.880	3.44	3.03
CONSTANT 1.25	26 X 19	0.731	0.914	3.44	3.144
ST 4 SYNCHRO	27 X 18	0.667	0.877	3.44	3.02
STRAIGHT CUT	26 X 18	0.692	0.9111	3.44	3.13
CONSTANT 1.316					

CONSTANT = 4TH GEAR / LAYGEAR RATIO

FINAL DRIVE MULTIPLIED BY FIFTH RATIO = 5TH GEAR FINAL DRIVE

The achievable fifth gear pairs above are in matched pairs and must not be interchanged at random. The fifth pairings opposite are compatible sets, but confirmation with the supplier is required.

# GEARBOX TRANSMISSION CASE PARTS

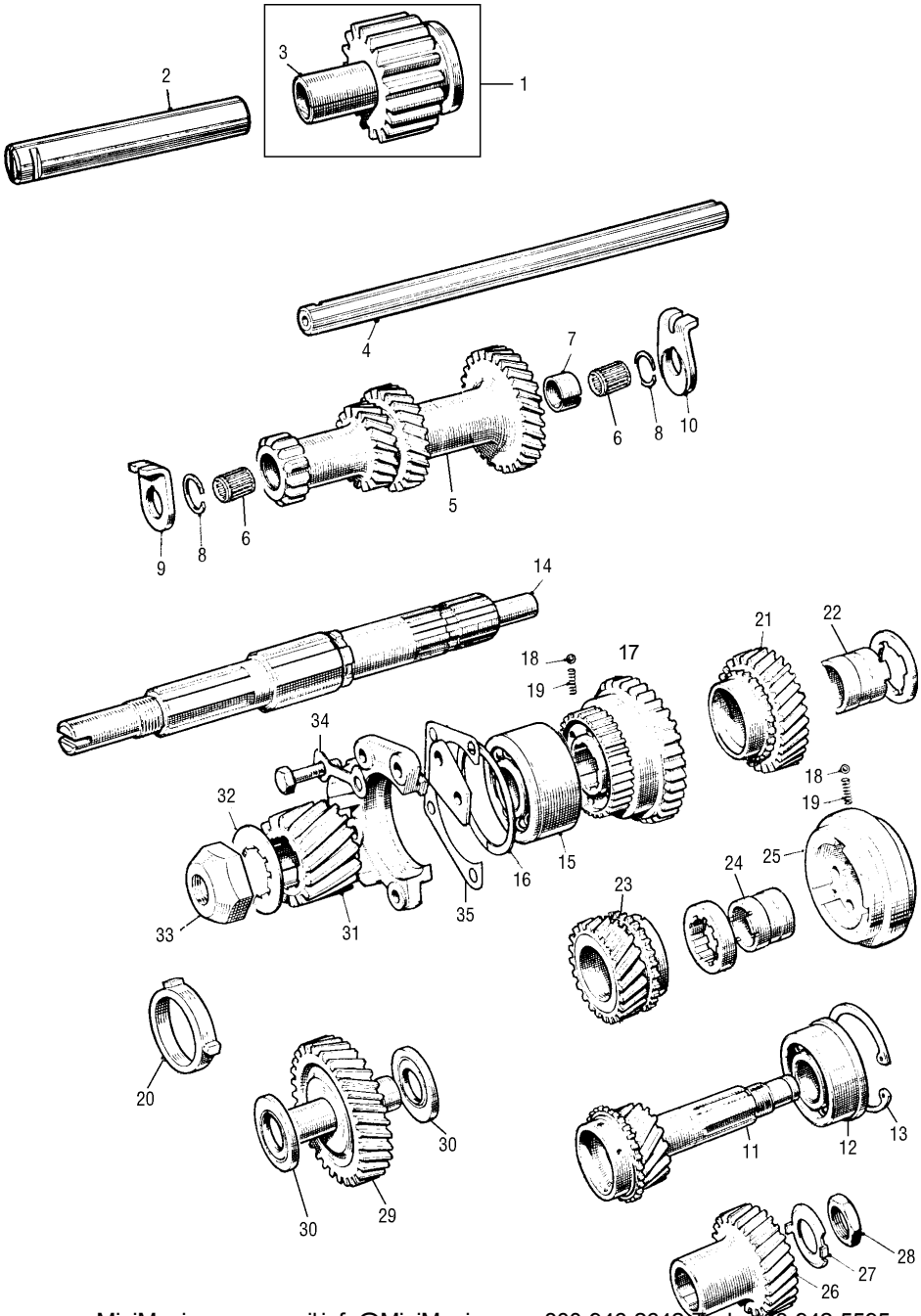


## GEARBOX TRANSMISSION CASE PARTS

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	18G8085	Gearbox lock tab kit .....	1	Not shown
2	GHF102	Gearbox case, front block to gearbox bolt .....	5	1 also on 22H983
3	GHF101	Gearbox case, rear block to gearbox set screw .....	4	1 also on front
4	BH604140	Bolt for dowel on front .....	1	
5	22H983	Case to block rear dowel .....	1	
6	FHS2409	Stud, rear stud for thin flange block .....	2	
6	FHS2410	Stud, rear stud for thick flange block .....	2	
7	2A3502	Gear change linkage bush .....	2	
8	13H577	Gear change oil seal .....	1	
9	53K266	Stud for diff housing long 4.5", 2 only for rod change .....	4	NLA Use TAM1617
10	53K1471	Stud for diff housing, short 3.5" x .250" thread .....	3	NLA Use CHS522
10	22G1834	Stud for diff housing, short 3" x .375" thread .....	2	Rod change only
11	22A152	Long stud for flywheel housing, alternative DAM7759 bolt .....	6	use DAM7759 bolt
12	53K547	Short stud for flywheel housing .....	3	use DAM7756 bolt
13	53K1474	Stud for speedo drive housing cover .....	3	use DAM7761 bolt
14	22A153	Dowel for diff housing .....	2	
15	22A97	Dowel for flywheel housing .....	2	
16	22A13	Dowel for speedo drive housing .....	2	
17	22A74	Diff housing locktab, pre rod (Remote type only) .....	1	Part of 18G8085
17	42H500	Diff housing locktab, rod change .....	1	Part of 18G8085
18	22A251	Diff housing locktab .....	1	Part of 18G8085
19	2A3505	Upper gasket for diff housing .....	1	
20	2A3506	Lower gasket for diff housing .....	1	Pre-rod change
20a	22G1836	Lower gasket for diff housing .....	1	Rod change
21	AHU1672	Gearchange oil seal was 13H6862 .....	1	Rod change
22	88G302	Idler gear bearing with 1.004 25.5mm O/D .....	1	3 synchro
22	13H7848	Idler gear bearing with 1.065 27.05mm O/D .....	1	4 synchro
22	DAM3745	A plus idler gear bearing 1.375 34.92mm O/D .....	1	.750" 19mm I/D
22	AHU1707	A plus idler gear bearing 1.375 27.05mm O/D .....	1	.875" 22.225mm I/D
23	22G1141	Clip for 3 synchro case where 88G302 fitted .....	1	NLA
23	51K3565	Circlip 4 synchro, where 13H7848 fitted .....	1	
24	88G207	Speedo drive housing cover .....	1	New BL# DAM5219
25	22A541	Gasket for housing .....	1	
26	2A3626	Speedo drive case plate .....	1	
27	2A3627	Gasket for speedo drive case plate .....	1	
28	22A335	Oil strainer .....	1	
29	22A341	Suction pipe sealing ring .....	1	
30	22A388	Lock tab .....	1	Part of 18G8085
31	22A1365	Lock tab .....	1	Part of 18G8085
32	22G1150	Oil suction pipe .....	1	
32	C-AHT54	Central oil pick-up .....	1	Competition use
33	22A542	Pipe to case and flange gasket .....	2	
34	2K4874	Lock tab .....	1	NLA
35	TRS1317	Oil suction sealing ring - case to block .....	1	2A3606 alternative
36	DAM7335	Magnetic drain plug .....	1	
37	AED172	Washer for drain plug .....	1	
38	GEG502	Gearbox to engine gasket, was AJM502 .....	1	
39	12G2947	Seal (half moon) .....	1	
40	TRS1317	O-Ring, engine to transmission .....	1	
	GEG804	Gasket set, all transmissions .....	1	Not shown

4

# GEARS - A-TYPE



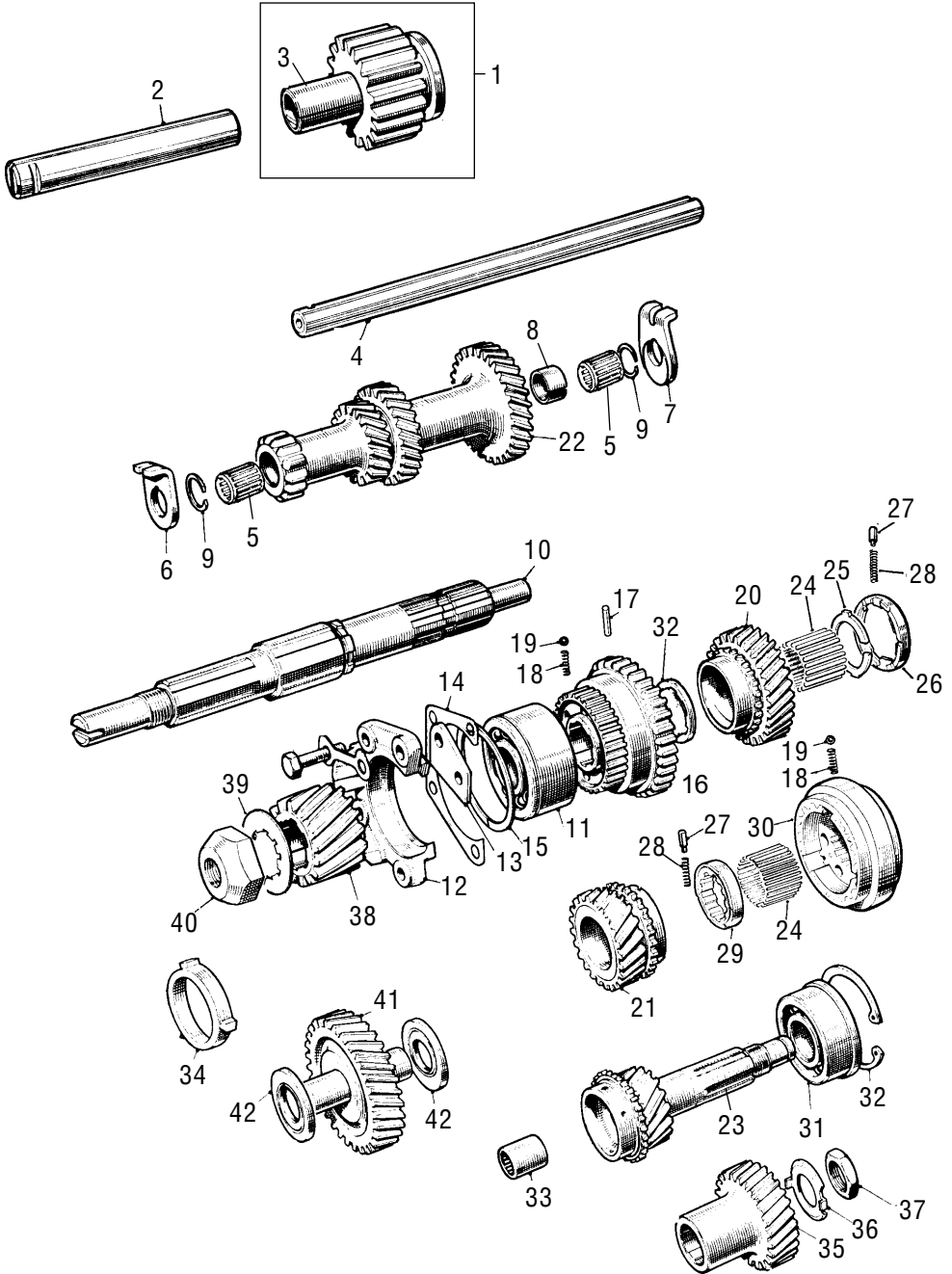


## 'A' TYPE GEARS

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22A377	Reverse gear .....	1	CWE
2	88G209	Reverse gear shaft .....	1	
3	2A3475	Reverse gear bush .....	1	NLA
4	22A1371	Layshaft .....	1	
5	22G76	Laygear for 997cc to 9FSA 28575 .....	1	
5	22G197	Laygear for 997cc to 9FSA 28576 on .....	1	997cc
5	22G204	Laygear but uses B type, 1st & reverse 22A1021/22G202 .....	1	All Cooper and 'S'
5	22A381	Laygear .....	1	850cc
6	88G396	Layshaft bearings .....	2	
7	22G277	Spacer sleeve for bearing .....	1	NLA
8	22G278	Internal circlips for laygear .....	2	
9	88G324	Laygear small thrust washer .....	1	
10	88G325	Laygear large thrust washer 123□-124□ .....	1	CWE
10	88G326	Laygear large thrust washer 125□-126□ .....	1	CWE
10	88G327	Laygear large thrust washer 127□-128□ .....	1	NLA
11	22A416	1st motion shaft to 9F/SA 28575 .....	1	997 only
11	22A588	1st motion shaft (19 teeth) .....	1	850cc
11	22A592	1st motion shaft (20 teeth) for 22G204 laygear .....	1	Cooper 'S'
12	2A3709	1st motion ball bearing .....	1	
13	2A3711	Clip for 1st motion ball bearing .....	1	
14	22G70	3rd motion shaft (mainshaft) .....	1	CWE
15	2A3712	Mainshaft double ball bearing, very early pre 1962 .....	1	62mm diameter
15	AAU1365	Mainshaft double ball bearing .....	1	65mm diameter
16	ADU4992	Spring ring for double ball bearing was 22G721 .....	1	
17	22G440	1st/2nd synchronizer gear hub .....	1	
18	BLS107	Synchronizer ball .....	3	Per hub
19	22A367	Synchronizer spring .....	3	Per hub
20	22G2033	Baulk ring .....	3	
21	22G194	2nd gear (28 teeth) .....	1	Fits 22G204 laygear
21	22A582	2nd gear (28 teeth) .....	1	850cc/997cc
22	2A3298	Bush for 2nd gear .....	1	
23	22A415	3rd gear to 9F/SA 28575 .....	1	997cc
23	22G195	3rd gear (24 teeth) 997/998cc 9F/SA 28576 on .....	1	All 'S' 22G204 laygear
23	22A583	3rd gear (23 teeth) .....	1	850cc
24	2A3290	Bush for 3rd gear .....	1	
25	22G97	3rd/4th synchronizer assembly, was 22G358 .....	1	
26	2A3545	1st motion drive gear, use 22G849 with spacer C-STR239 .....	1	
27	DAM4000	Locktab .....	1	
28	2A3548	Nut for 1st motion shaft .....	1	
29	22G943	Idler gear, shaft size .750" (19mm) .....	1	Was equal shaft length
30	22A1545	Idler gear thrust washer .130-131" (3.30-3.32mm) .....	A/R	Green coding
30	22A1546	Idler gear thrust washer .132-133" (3.35-3.37mm) .....	A/R	Black coding
30	22A1547	Idler gear thrust washer .134-135" (3.40-3.42mm) .....	A/R	White coding
30	22A1548	Idler gear thrust washer .136-137" (3.45-3.47mm) .....	A/R	Blue coding
30	22A1549	Idler gear thrust washer .138-139" (3.50-3.53mm) .....	A/R	Red coding
31	22A399	Final drive pinion .....	1	3.76 ratio
32	DAM6140	Locktab .....	1	
33	22G48	Mainshaft nut .....	1	
34	DAM2377	Locktab .....	2	
35	2A3714	Locating plate shim .003" thou .....	A/R	
35	2A3715	Locating plate shim .010" thou .....	A/R	

Many of the gears are no longer available, part number for reference only.

# GEARS - B-TYPE 3 SYNCHRO MESH



## 'B' TYPE 3 SYNCHRO MESH GEARS

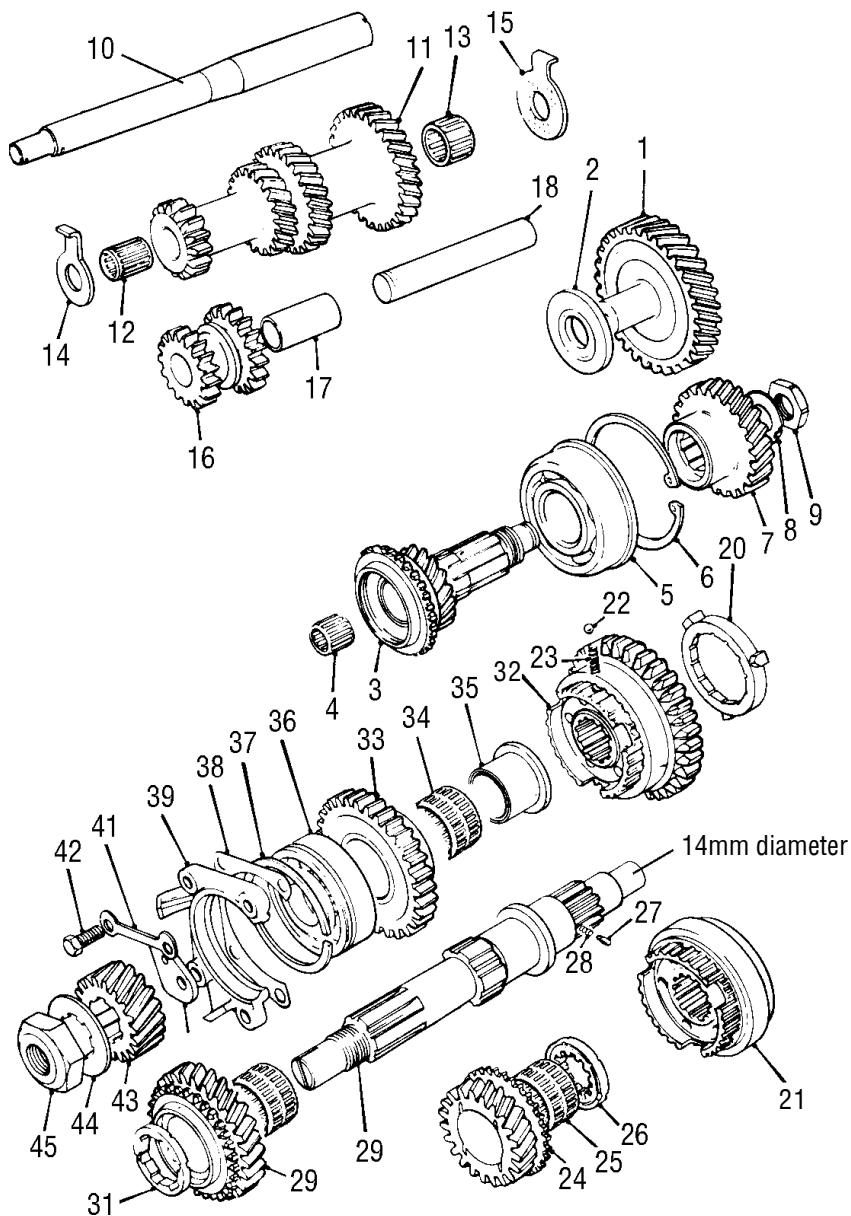
NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22G202	Reverse gear .....	1	
2	88G209	Reverse gear shaft .....	1	
3	2A3475	Reverse gear bush .....	1	NLA
4	22A1371	Layshaft (Hi-spec alternative C-22A1371) .....	1	Use C-22A1371
5	88G396	Layshaft needle roller bearings .....	2	
6	88G324	Laygear thrust washer small .....	1	
7	88G325	Laygear thrust washer large .123"-.124" .....	1	
7	88G326	Laygear thrust washer large .125"-.126" .....	1	
8	22G277	Laygear bearing distance piece .....	1	
9	22G278	Laygear bearing circlips .....	2	
10	22G392	Mainshaft .....	1	
11	AAU1365	Double ball bearing .....	1	
12	22A522	Bearing retainer takes DAM2377 .....	1	
13	2A3581	Locating plate .....	1	
14	2A3714	Locating plate shim .003" thou .....	A/R	
14	2A3715	Locating plate shim .010" thou .....	A/R	
15	22G72	Bearing spring clip .....	1	BL# ADU4992
16	22A1021	1st/2nd gear outer track (32 teeth) .....	1	
17	22G89	Plunger for 1st/2nd synchro hub .....	1	
18	22A367	Synchroniser spring .....	6	3 per hub - NLA
19	BLS107	Synchroniser ball .....	6	3 per hub
20	22A980	2nd gear (28 teeth) ..... A . B .....	1	CWE, fitted all
21	22A981	3rd gear was 22G235 (23 teeth) ..... B .....	1	CWE, 850cc and 998cc
21	22A983	3rd gear was 22A557 (24 teeth) ..... A .....	1	CWE, 'S' only
22	22G231	Laygear 28.24.19.13. teeth ..... B .....	1	CWE, 850cc and 998cc
22	22G1100	Laygear was 22G232 (26/23/19/13 teeth) .... A .....	1	1275 'S'
23	22A979	1st motion shaft was 22G325 (19 teeth) ..... B .....	1	CWE, 850cc and 998cc
23	22A982	1st motion shaft was 22G322 (20 teeth) ..... A .....	NLA	Some Cooper and 'S'
24	22G149	2nd/3rd gear needle rollers .....	26	Per gear
25	22G157	Retaining collar for 2nd/3rd gear .....	4	
26	22G186	Locking washer for 2nd gear .....	1	
27	22A495	Locking peg for 2nd/3rd gear .....	A/R	
28	22G154	Locking peg spring for 2nd/3rd gear .....	A/R	
29	22G196	Locking washer for 3rd gear .....	1	
30	22G410	3rd/4th synchroniser hub .....	1	
31	2A3709	1st motion ball bearing .....	1	
33	CHM172	1st motion needle roller .....	1	
34	22G2033	Baulk ring .....	3	
32	2A3711	Clip for 1st motion ball bearing .....	1	
35	2A3545	1st motion drive gear, use 22G849 and C-STR239 spacer .....	1	
36	DAM4000	Lock tab .....	1	
37	2A3548	1st motion shaft locking nut .....	1	
38	22A399	Final drive pinion 3.7 .....	1	
38	22A413	Final drive pinion 3.4 .....	1	1275cc late 998cc
39	DAM6140	Pinion locktab .....	1	
40	22G48	Mainshaft locking nut .....	1	
41	2A3493	Idler Gear .....	1	
42	22A1545	Thrust Washer, idler gear, 130-131" .....	2	See page 72 for alternate sizes

4

Gears marked A and B are identified as compatible in sets.

Use laygear as identification for gear fitment as some late Coopers had 22G1100 fitted.

# GEARS - 4 SYNCHRO UP TO 1979



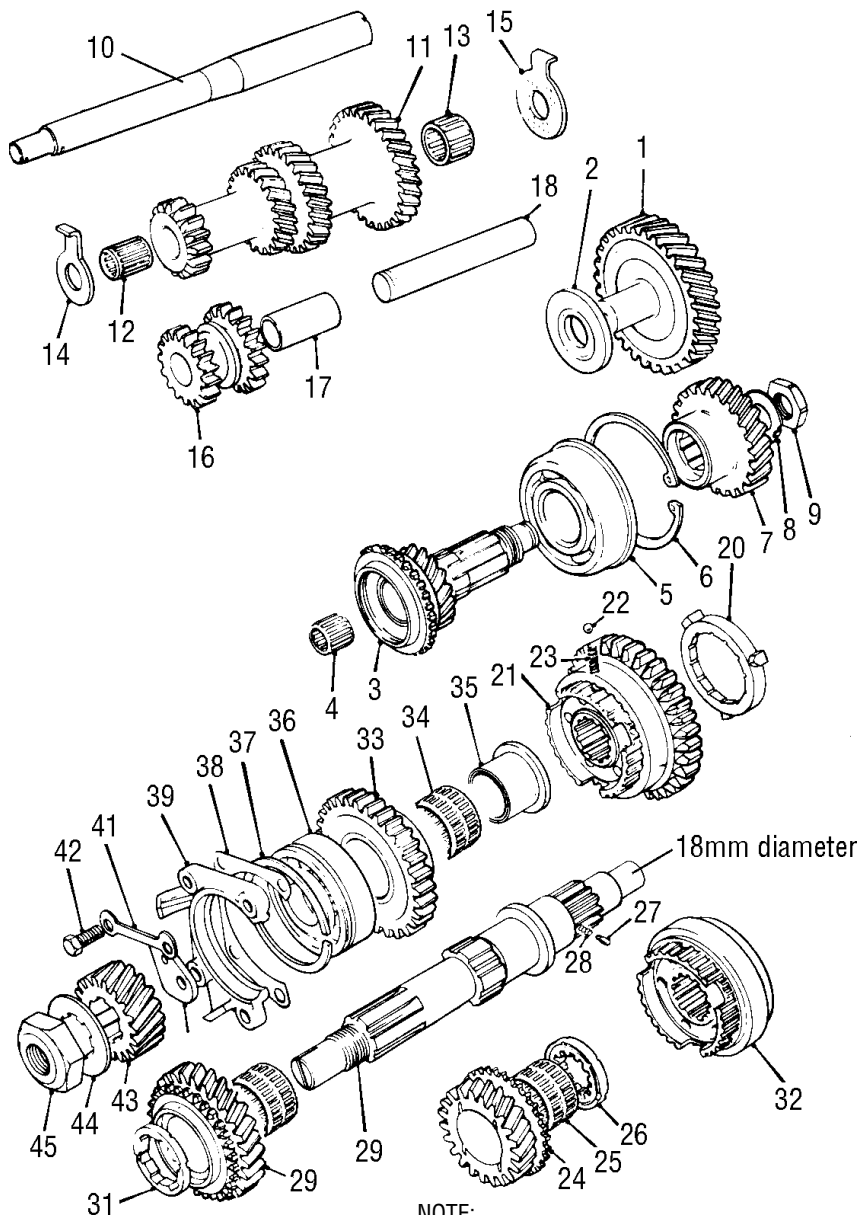
#### 4 SYNCHRO GEARS UP TO 1979 WITH 14MM NOSE MAINSHAFT

850cc, 1000cc, 1275GT AND 'S', CLUBMAN AND ESTATE

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22G943	Gear idler, 31 teeth shaft diameter .750" (19.05mm) .....	1	
2	22A1545	Thrust washer idler gear .130-131" (3.30-3.32mm) .....	2	Green code
2	22A1546	Thrust washer idler gear .132-133" (3.35-3.37mm) .....	2	Black code
2	22A1547	Thrust washer idler gear .134-135" (3.40-3.42mm) .....	2	White code
2	22A1548	Thrust washer idler gear .136-137" (3.45-3.47mm) .....	2	Blue code
2	22A1549	Thrust washer idler gear .138-139" (3.50-3.53mm) .....	2	Red code
3	22G1093	1st motion shaft 17 teeth .....	1	Except 1275GT/'S'
3	22G1371	1st motion shaft 18 teeth .....	1	1275GT/'S'
4	CHM172	Roller needle bearing .....	1	
5	ADU7619	1st motion ball bearing .....	1	
6	22G850	Circlip bearing .....	1	
6	22G851	Circlip bearing .....	1	
7	22G849	1st motion gear shaft drive 24 teeth .....	1	
8	DAM4000	Washer locktab .....	1	
9	2A3548	Nut .....	1	
10	22G931	Layshaft .....	1	
11	22G927	Laygear 15,20, 25,29 teeth .....	1	Except 1275GT/'S'
11	22G1040	Laygear 15,20, 25,29, smaller diameter 29 teeth area .....	1	1275GT/'S'
12	88G396	Needle roller bearing .....	1	
13	CHM141	Needle roller bearing, was 22G855 .....	1 pr	
14	22G856	Thrust washer laygear .123-124" (3.12-3.14mm) .....	1	
14	22G857	Thrust washer laygear .125-126" (3.17-3.20mm) .....	1	
14	22G858	Thrust washer laygear .127-128" (3.22-3.25mm) .....	1	
14	22G859	Thrust washer laygear .130-131" (3.30-3.32mm) .....	1	
15	22G860	Thrust washer laygear, large .....	1	
16	22G1034	Reverse idler gear .....	1	Remote change
16	22G1852	Reverse idler gear .....	1	Rod chang
17	22G825	Bush (single one piece bush) .....	1	
18	DAM8038	Reverse idler gear shaft .....	1	
19	22G833	3rd motion shaft with small end nose .550" (13.97mm) .....	1	
20	22G2033	Baulk ring .....	4	
21	22G2264	3rd and 4th synchronizer hub .....	1	BL# DAM7456
22	BLS107	Ball for synchronizer hub (3 per hub) .....	6	
23	22G2262	Spring for synchronizer hub (3 per hub) .....	6	
24	22G1095	3rd speed gear (21 teeth) .....	1	
25	AAU1816	3rd gear roller needle bearing was 88G496 .....	1	
26	22G947	Thrust washer for 2nd gear .....	1	
27	22G843	Peg .....	3	2 on 2nd gear
28	22G154	Spring .....	2	
29	22G1094	2nd speed gear 26 teeth .....	1	
30	AAU1816	Roller needle bearing was 88G495 .....	1	
31	22G839	Thrust washer .....	1	
32	DAM7455	1st and 2nd synchronizer hub was 22G2263 .....	1	
33	22G1096	1st speed gear 31 teeth .....	1	
34	AAU1815	Roller needle bearing was 88G494 .....	1	
35	22G837	1st speed gear journal .....	1	
36	AAU1365	3rd motion shaft ball bearing .....	1	
37	22G72	Spring ring .....	1	
38	2A3714	Shim, 2 thou .....	A/R	
38	2A3715	Shim, 10 thou .....	1	
39	2A3581	Locating plate .....	1	
40	22A522	3rd motion bearing retainer, remote type .....	1	CWE
40	22G2726	3rd motion bearing retainer, rod change .....	1	NLA
41	DAM2377	Locktab washer .....	2	
42	SH505071	Retainer screw .....	4	
43	22A399	Final drive pinion 17 teeth 3.76:1 ratio .....	1	
43	22A413	Final drive pinion 18 teeth 3.44:1 ratio .....	1	
44	DAM6140	Locktab washer .....	1	
45	22G48	Retaining pinion nut .....	1	

4

# GEARS - 4 SYNCHRO ROD CHANGE 1979 ON



**NOTE:**

"A" plus gears have a different gear pitch and angle. The gears that are specifically "A" plus have a slight central identification groove all the way around the

#### 4 SYNCHRO GEARS 1979 ON ROD CHANGE WITH 18MM NOSE MAINSHAFT

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	DAM2924	Idler gear, 37 teeth, shaft diameter .875" (22.225mm) .....	1	
2	DAM5914	Idler gear shim .130-.131" (3.30-3.32mm) .....	1	
2	DAM4822	Idler gear shim .132-.133" (3.35-3.37mm) .....	1	No marking
2	DAM4823	Idler gear shim .134-.135" (3.40-3.42mm) .....	1	Yellow marking
2	DAM4824	Idler gear shim .136-.137" (3.45-3.47mm) .....	1	Red marking
2	DAM4825	Idler gear shim .138-.139" (3.50-3.53mm) .....	1	Blue marking
3	DAM3092	1st motion shaft, 17 teeth .....	1	
3	DAM3167	1st motion shaft, 18 teeth .....	1	1275GT
3	DAM4930	1st motion shaft, 17 teeth .....	1	'A plus marking
4	13H9513	1st motion needle roller .....	1	
5	ADU7619	1st motion ball bearing .....	1	
6	22G850	Bearing clip .....	1	Alternativesizes
6	22G851	Bearing clip .....	1	
7	DAM2925	1st motion shaft drive gear, 29 teeth .....	1	
8	DAM4000	Locktab .....	1	
9	2A3548	Nut .....	1	
10	DAM3187	Layshaft, 3 step type .....	1	
11	DAM3169	Laygear, 15.20.25.29 teeth .....	1	
11	DAM3168	Laygear, 15.20.25.29 tth (smaller diameter 29 teeth area) .....	1	1275GT
11	DAM4931	Laygear, 15.21.26.30 teeth .....	1	'A plus marking
12	88G396	Needle roller for laygear small end .....	1	
13	CHM141	Needle roller for laygear large end .....	1/2	Quantity reduced
14	DAM3180	Laygear thrust washer small .121-.123" (3.07-3.12mm) .....	1	
14	DAM3181	Laygear thrust washer small .124-.126" (3.1-3.20mm) .....	1	
14	DAM3182	Laygear thrust washer small .127-.129" (3.22-3.27mm) .....	1	
14	DAM3183	Laygear thrust washer small .130-.132" (3.30-3.35mm) .....	1	
15	22G860	Laygear thrust washer large .....	1	
16	TUB10020	Reverse gear, was DAM8046 .....	1	Now single bush
17	22G825	Reverse gear single bush, (replaces 2 small ones) .....	1	Early had 2 bushes
18	DAM8038	Reverse gear shaft .....	1	
19	DAM7484	3rd motion shaft with larger nose end .709" (18mm) .....	1	
20	22G2033	Baulk ring .....	4	
21	DAM7455	1st motion synchronizer hub .....	1	
22	BLS107	Ball for synchronizer (3 per hub) .....	6	
23	22G2262	Spring for synchronizer (3 per hub) .....	6	
24	22G1095	3rd gear, 21 teeth, use with DAM3168/9 laygear .....	1	
24	DAM4933	3rd gear, 21 teeth .....	1	'A plus markings
25	AAU1816	3rd gear bearing was 88G496 .....	1	
26	22G947	Thrust washer .....	1	
27	22G843	2nd/3rd gear peg .....	3	2 for 2nd gear
28	22G154	Spring for 2nd/3rd gear pegs .....	2	1 per gear
29	22G1094	2nd gear, 26 teeth, use with DAM3168/9 laygear .....	1	
29	DAM4932	2nd gear, 26 teeth .....	1	'A plus markings
30	AAU1816	2nd gear needle roller was 88G495 .....	1	
31	22G839	2nd gear washer .....	1	
32	22g2264	3rd/4th synchronizer hub .....	1	BL# DAM7456
33	22G1096	1st gear, 31 teeth .....	1	
34	AAU1815	1st gear bearing, was 88G494 .....	1	
35	22G837	1st speed gear journal .....	1	
36	AAU1365	3rg motion shaft ball bearing .....	1	
37	22G72	Bearing clip .....	1	
38	2A3714	Shim, 2 thou .....	A/R	
38	2A3715	Shim, 10 thou .....	A/R	
39	DAM1756	Bearing retainer .....	1	4 bolt
39	DAM5996	Bearing retainer .....	1	3 bolt
40	2A3581	Locating plate .....	1	
41	DAM2377	Locktab .....	1	
42	SHE505071	Retaining screw .....	1	3 or 4 as required
43	DAM2679	18 teeth final drive pinion .....	1	3.4 ratio
43	DAM2808	19 teeth final drive pinion .....	1	3.1 & 3.2 ratio
43	DAM2927	20 teeth final drive pinion .....	1	2.9 ratio
43	TCC10001	21 teeth final drive pinion .....	1	2.76 ratio
44	DAM6140	Pinion locktab .....	1	

## FINAL DRIVE GEARS





**PRE 'A' PLUS FINAL DRIVE GEARS, CASTING NUMBER AS PER PART NUMBER**

CROWNWHL	TEETH	RATIO	PINION	TEETH
22A411	62	3.444	22A413	18
22G940	62	3.647	22A399	17
22A401	64	3.765	22A399	17
22G340	63	3.938	22G338	16
22G101	62	4.133	22G99	15
22G370	64	4.267	22G99	15
22G443	65	4.33	22G99	15

**FINAL DRIVE GEARS WITH 'A' PLUS TEETH ANGLES**

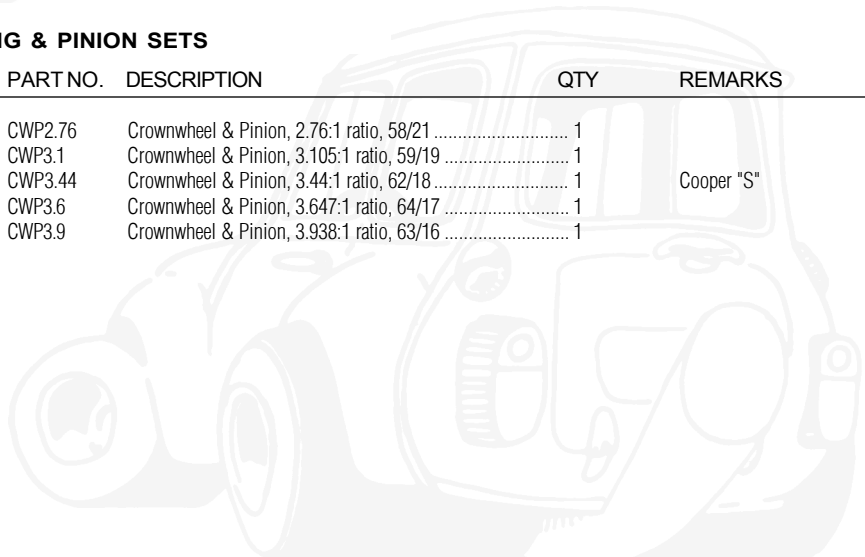
**4**

CROWNWHL	TEETH	CASTING NO.	RATIO	PINION	TEETH	
DAM3645	65	DAM3546	4.333	DAM3647	15	
DAM3216	63	DAM3217	3.938	DAM3218	16	NLA
DAM4162	62	DAM4163	3.647	DAM4137	17	
DAM4779	64	DAM4780	3.765	DAM4131	17	
DAM2677	62	DAM2678	3.444	DAM2679	18	
DAM6327	59	DAM6243	3.105	DAM2808	19	12" WHEEL
DAM2806	61	DAM2807	3.211	DAM2808	19	TURBO
DAM5925	59	DAM5926	2.95	DAM5927	20	988C ECON.
TCB10004	58	TCB10005	2.76	TCC10001	21	

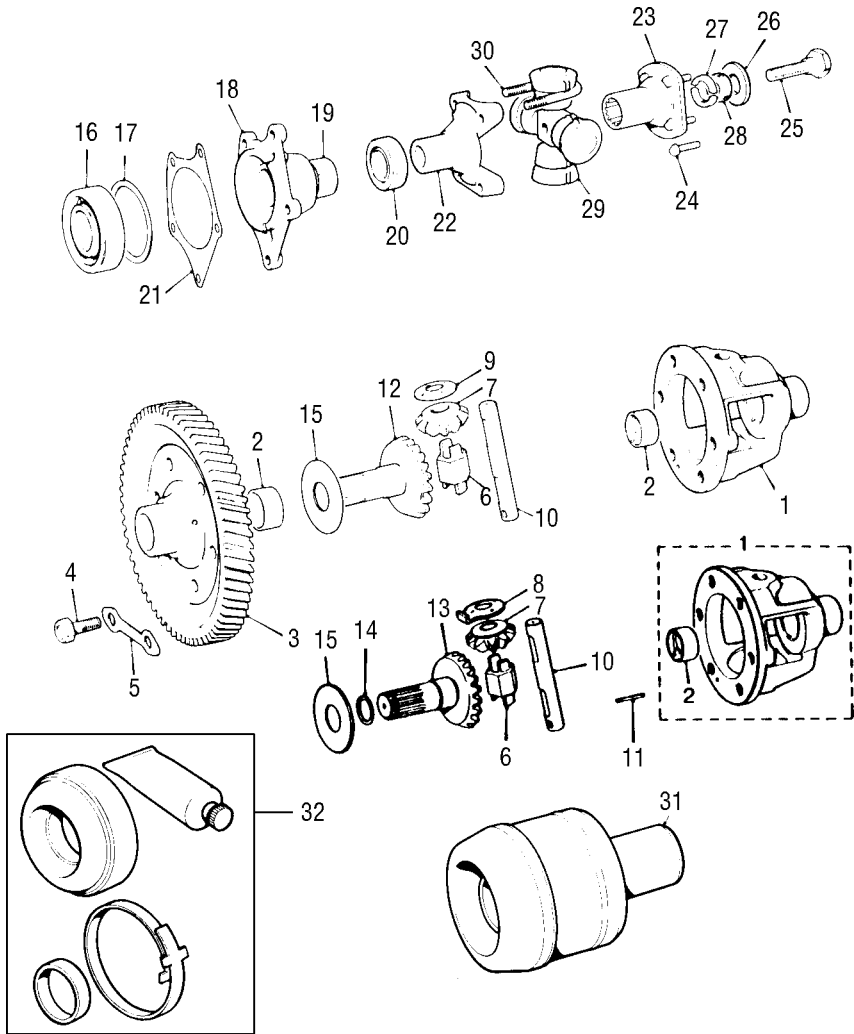
A PLUS TYPE PINIONS HAVE BOTH SIDES MACHINED FLAT.

**RING & PINION SETS**

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
	CWP2.76	Crownwheel & Pinion, 2.76:1 ratio, 58/21 .....	1	
	CWP3.1	Crownwheel & Pinion, 3.105:1 ratio, 59/19 .....	1	
	CWP3.44	Crownwheel & Pinion, 3.44:1 ratio, 62/18 .....	1	Cooper "S"
	CWP3.6	Crownwheel & Pinion, 3.647:1 ratio, 64/17 .....	1	
	CWP3.9	Crownwheel & Pinion, 3.938:1 ratio, 63/16 .....	1	



# DIFFERENTIAL ASSEMBLY

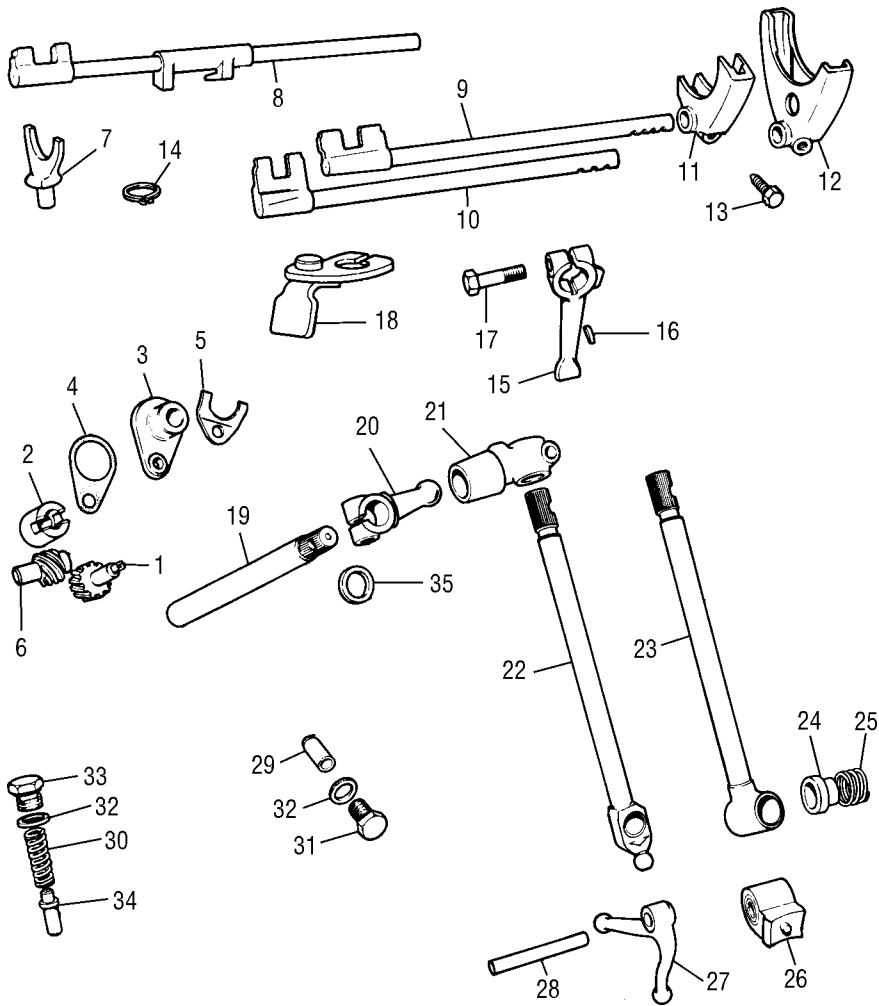


## DIFFERENTIAL ASSEMBLY

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	BTA145	Differential case, using 2A7062 washer .....	1	When BTA154 used
1	DAM6027	Differential case, using DAM5071 washer .....	1	When BTA154 omitted
2	ATA7378	Bush for diff case and crown wheel .....	2	
3	22A411	62 teeth crown wheel 3.4 ratio (DAM2677 A plus) .....	1	Use 18 teeth pinion
3	22A401	64 teeth crown wheel 3.76 ratio (DAM4779 A plus) .....	1	Use 17 teeth pinion
3	DAM6327	59 teeth crown wheel 3.105 ratio .....	1	Use 19 teeth pinion
3	DAM2806	61 teeth crown wheel 3.2 ratio .....	1	Use 19 teeth pinion
3	DAM5925	59 teeth crown wheel 2.95 ratio .....	1	Use 20 teeth pinion
3	TCB10004	58 teeth crown wheel 2.76 ratio .....	1	France
4	ATA7043	Crown wheel bolt .....	6	
5	ATA7385	Crown wheel locktab .....	3	
6	BTA154	Thrust block .....	1	Deleted on DAM6027
7	DAM6624	Pinion was 2A7015 .....	2	
8	DAM5071	Pinion bronze thrust washer with locating lip .....	2	For DAM6027
9	2A7062	Pinion bronze thrust washer .....	2	For BTA145
10	22G2583	Differential cross pin genuine, new shape .....	1	Use C-BTA166
10	BTA166MS	Differential cross pin, original shape .....	1	Alternative C-BTA166
11	RPS1418	Roll pin for diff pin to case .....	1	
12	22A373	Output shaft for 22A374 .....	2	Rubber coupling type
12	22A1151	Output shaft for 22A1152 .....	2	Hardy Spicer type 'S'
13	DAM3114	Output shaft, was DAM6138 .....	2	Pot joint
14	22G2688	Circlip for DAM3114, on shaft .....	2	
15	BTA101	Fibre thrust washer .....	2	
16	AHU1856	Differential ball bearing .....	2	
17	2A3535	Differential bearing shims .002"/.0508mm .....	A/R	
17	2A3534	Differential bearing shims .003"/.0762mm .....	A/R	
17	DAM3108	Differential bearing shims .006"/.1524mm .....	A/R	
17	DAM3109	Differential bearing shims .010"/2.540mm .....	A/R	
18	CHM85	Output flange cover not automatic .....	2	Except Hardy Spicer
18	22G420	Output flange cover (22G419 with lug for rod change) .....	2	Hardy Spicer type
18	22G419	Output flange cover, not Automatic .....	2	'S' Hardy Spicer type
19	2A3538	Output flange cover bush .....	2	For CHM85
19	22G421	Output flange cover bush "Hardy Spicer" .....	2	For 22G419/22G240
20	ADU5738	Output flange cover oil seal .....	2	
20	AHU1082	Output flange cover oil seal "Hardy Spicer" .....	2	
21	TRK10004B	Output flange cover gasket .....	2	
22	22A374	Drive flange for output shaft .....	2	Rubber coupling type
23	22A1152	Drive flange for 22A1151 .....	2	'S' Hardy Spicer type
24	22A1139	Drive flange bolt .....	8	
25	22A1104	Flange to output shaft bolt .....	2	
26	22A1201	Plain washer .....	2	
27	88G493	Drive flange collet .....	4	
28	22A1566	Sealing ring .....	2	
29	GCD101	Driveshaft rubber coupling kit including U bolts and nuts .....	2	
29	QL5000	Driveshaft nylon and needle roller coupling kit .....	1	Sold by the pair
30	22A132	U bolt .....	8	
31	DAM667	In board CV joint (pot joint) .....	2	
32	BHM7012	Boot kit .....	2	

4

# GEARBOX LINKAGE - MAGIC WAND & REMOTE TYPE



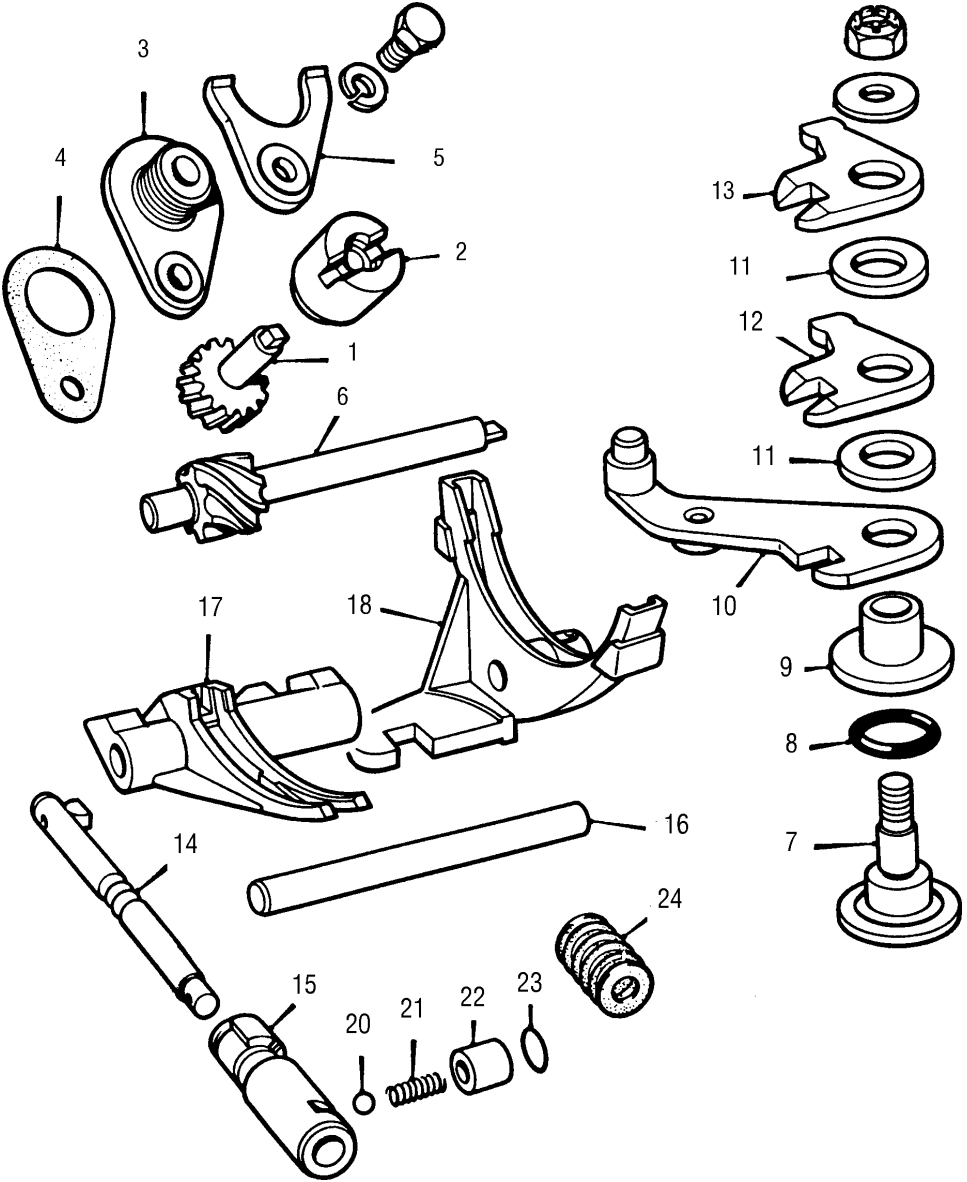
## MAGIC WAND / REMOTE TYPE SELECTORS AND SPEEDO DRIVE

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22A1881	Nylon speedometer pinion gear, 17 teeth .....	1	
2	2A3624	Metal seating bush .....	1	
3	DAM8488	Speedometer cable to pinion housing .....	1	Was 28G251
4	2A3628	Housing gasket .....	1	
5	22A862	Spring U plate .....	1	
6	2A3720	Speedo drive to mainshaft gear, 6 teeth .....	1	
7	22G827	Reverse fork .....	1	
8	22A169	Reverse selector rod .....	1	
9	22G821	1st/2nd selector rod .....	1	CWE 4 synchro
9	22A167	1st/2nd selector rod .....	1	CWE 3 synchro
10	22G822	3rd/4th selector rod .....	1	CWE 4 synchro
10	22A168	3rd/4th selector rod .....	NLA ..... 1	3 synchro
11	22A611	1st/2nd selector fork .....	1	3 synchro
11	22G889	1st/2nd selector fork .....	1	4 synchro
12	22A610	3rd/4th selector fork .....	1	3/4 synchro
13	2A3492	Selector fork bolt .....	3	CWE
14	CCN108	Circlip, lever to pivot pin .....	1	
15	88G222	Change speed lever .....	1	
16	WKN404	Lever keyway .....	1	
17	2A3335	Lever securing bolt .....	3	One each for 15/20/21 levers
18	22A208	Change speed gate .....	1	
19	88G231	Gear change shaft .....	1	
20	88G224	Gear change knuckle, male .....	1	
21	88G223	Gear change knuckle, female .....	1	
22	22A253	Remote change shaft, when remote housing fitted .....	1	CWE
23	88G233	Gearchange for magic wand case .....	1	NLA
23	88G553	Remote gear change shaft (non remote housing) .....	1	85H engine 1970 on
24	2A3467	Gearlever thrust button, NLA. plus magic wand..pre 1967 .....	1	85H engine 1970 on
25	2A3390	Gearlever spring, NLA..... plus magic wand..pre 1967 .....	1	85H engine 1970 on
26	22A1832	Gearlever seat and locating pad, NLA .....	1	85H engine 1970 on
27	22G79	Ball end lever crank .....	1	CWE
28	22G259	Pivot pin for 22A1832 and 22G79 .....	1	
29	22G411	Detent plunger .....	3	
30	2A3647	Detent spring .....	4	
31	22A387	Detent plug .....	2	
32	AED172	Sealing washer .....	3	
33	22A149	Detent plug for reverse .....	1	
34	22A191	Reverse detent plunger .....	1	
35	13H577	Oil seal for remote gear shaft .....	1	

In 1970, 850cc Minis with engine number 85H101 on had a remote type gearbox case, which was fitted with a magic wand type gearlever, held up by a plate underneath using 23/24/25/26. A remote control can be fitted changing part 23 and fitting parts 22/27.

**4**

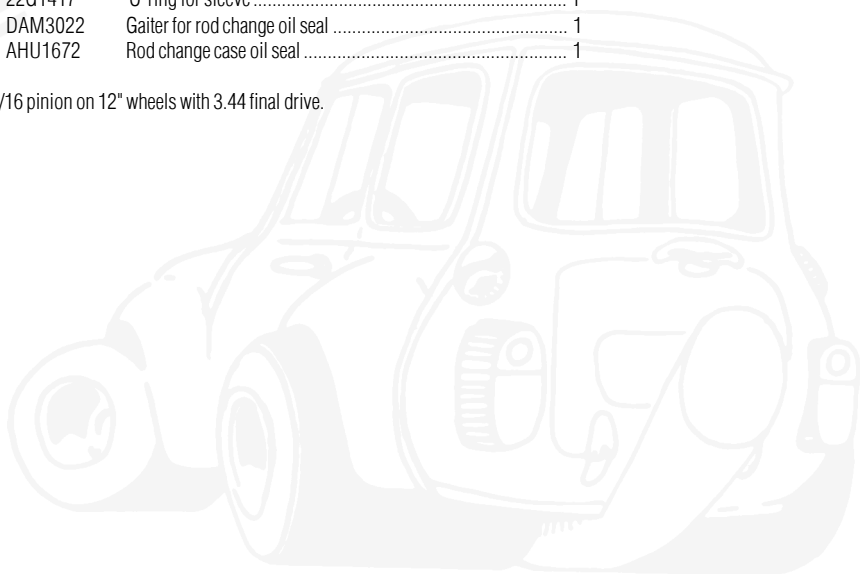
# GEARBOX LINKAGE & SPEEDO DRIVE - ROD CHANGE



## ROD CHANGE GEAR SELECTORS AND SPEED DRIVE

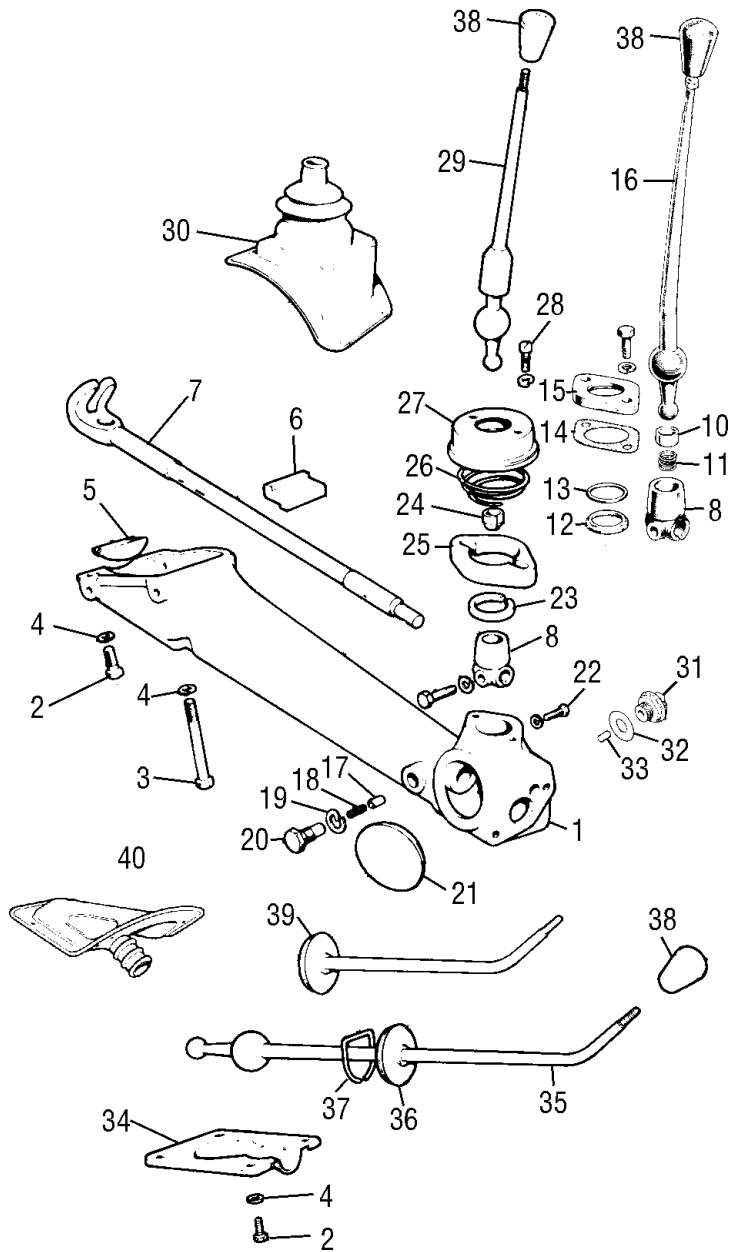
NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22A1881	Speedo pinion 17 teeth .....	1	All pre 1980
1	DAM2905	Speedo pinion 16 teeth, 3.1 final drive (from 1984 on) .....	1	12" wheels
1	TXD10006	Speedo pinion 18 teeth, 3.2 final drive .....	1	12A Engine TBI
1	TXD10004	Speedo pinion 15 teeth, 2.76 final drive .....	1	
2	2A3624	Metal seating bush .....	1	
3	DAM8488	Speedometer cable to pinion housing .....	4	Was 28G251
4	2A3628	Gasket .....	1	
5	22A862	U clip .....	1	
6	2A3720	Speedo drive spindle for 22A1881, 6 teeth .....	1	
6	DAM6028	Speedo drive spindle for DAM2905, 7 teeth, blue code .....	1	12" wheels, 3.1 f/drive
6	TXF10004	Speedo drive spindle for TXD10006, 5 teeth, red code .....	1	3.2 final drive
6	TXF10001	Speedo drive spindle for TXD10004 .....	1	
7	22G1845	Bell crank pivot pin .....	1	
8	31B447	Pivot pin seal .....	1	
9	42H1077	Pivot bush .....	1	
10	22G1849	Release lever (reverse) .....	1	
11	42H1081	Lever spacer .....	2	
12	22G1847	Bell lever crank, lower .....	1	
13	22G1848	Bell lever crank, upper .....	1	
14	22G1858	Selector shaft .....	1	
15	22G1844	Interlock spool .....	1	
16	22G1854	Selector shaft for speed fork .....	1	
17	DAM7425	1st/2nd selector fork, genuine .....	1	
18	DAM7426	3rd/4th selector fork, genuine .....	1	
19	22G2595	Roll pin to hold 3rd/4th fork to rod .....	1	
20	BLS110	Detent ball .....	1	These parts sit behind the offset drive flange cover
21	22G2083	Detent spring .....	1	
22	22G1873	Detent sleeve .....	1	
23	22G1417	'O' ring for sleeve .....	1	
24	DAM3022	Gaiter for rod change oil seal .....	1	
25	AHU1672	Rod change case oil seal .....	1	

Use 6/16 pinion on 12" wheels with 3.44 final drive.



**4**

# GEARCHANGE UP TO 1972 - NOT ROD CHANGE

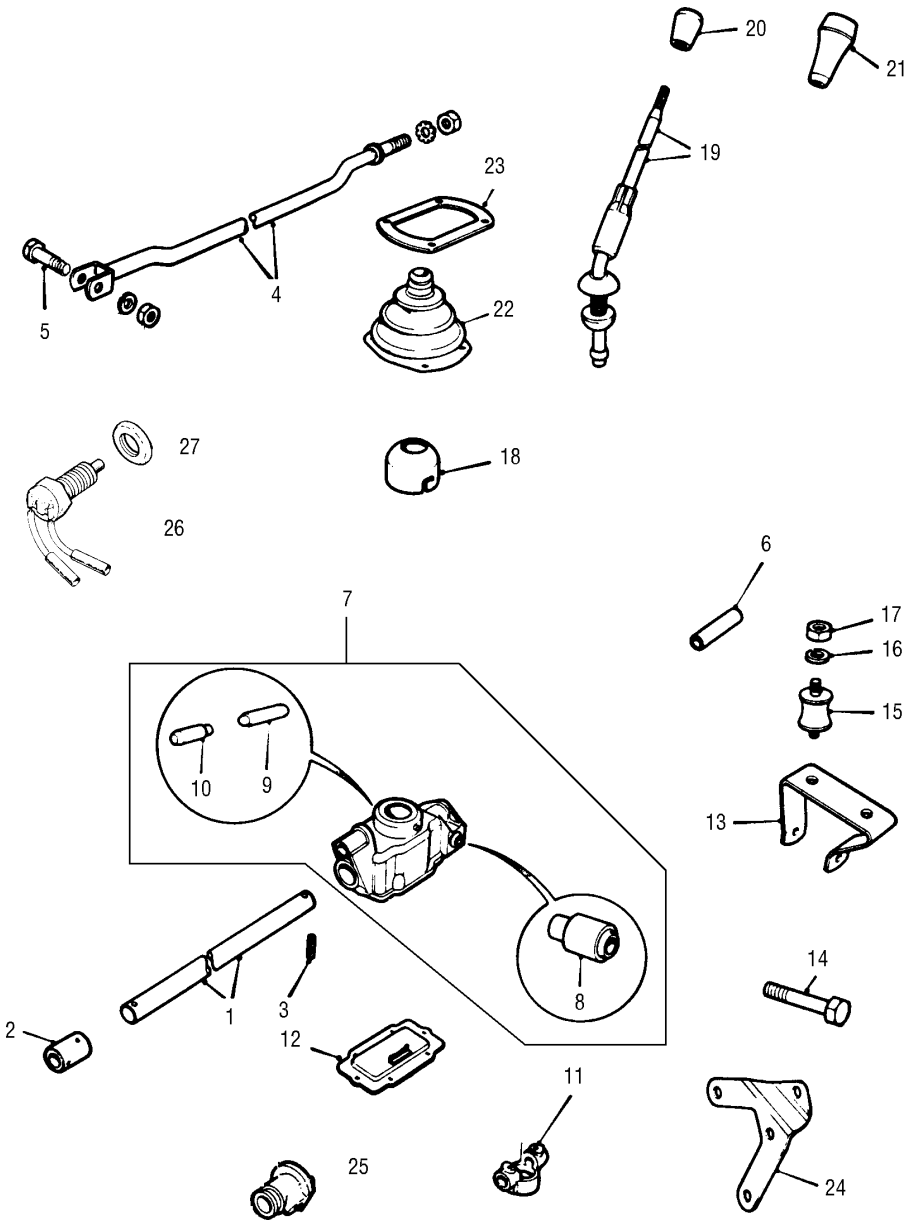




**GEARCHANGE UPTO 1972 NOT ROD CHANGE**

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22A250	Remote control housing .....	1	
2	GHF165	Short remote to case bolt .....	2	
3	ZCS628	Long remote to case bolt .....	2	
4	LWZ306	Spring washer .....	4	
5	22A285	Rubber plug .....	1	
6	22A1373	Rubber pad for case to remote housing .....	1	
7	8G713	Gear change shaft .....	1	
8	22A267	Knuckle for gear change shaft .....	1	
9	2A3335	Screw for knuckle to shaft .....	1	
10	22G158	Gear seat for gearlever, early type .....	1	NLA
11	22G159	Spring for 22G158, early type .....	1	NLA
12	22A392	Nylon flange retainer .....	1	CWE
13	22A393	Oil seal .....	1	NLA
14	22A394	Retainer gasket .....	1	CWE
15	22A391	Gearlever retainer .....	1	NLA
16	22A269	Gearlever, early type .....	1	NLA
17	22A84	Anti rattle plunger .....	1	NLA
18	AEG3123	Anti rattle spring .....	1	NLA
19	AEG3122	Washer .....	1	NLA
20	22A85	Spring retaining cap .....	1	NLA
21	22A271	Dust cover large plug .....	1	
22	2A3602	Locating pin for gearlever .....	1	CWE
23	22G292	Nylon flange .....	1	NLA
24	22G389	Gearlever seat .....	1	Late type
25	88G228	Distance piece .....	1	NLA
26	22G286	Tension spring .....	1	NLA
27	22G290	Gearlever retainer .....	1	NLA
28	22G291	Retainer bolt .....	2	
29	22G1190	Gearlever late type, chrome .....	1	NLA
30	22A608	Gearlever gaiter, original .....	1	
30	22A608MS	Budget gearlever gaiter .....	1	
	14A9942	Retainer, "S" shift boot. Mini Mania OEM .....	1	Not Shown
31	GAE131	Reverse light switch .....	1	CWE
32	2K7914	Insulation fibre washer .....	1	CWE
33	22G351	Reverse light plunger .....	1	CWE
34	22A1717	Cover to hold up gearlever when remote case .....	1	85H Engine
35	22A1382	Gearlever, when remote case only .....	1	NLA
36	22A1380	Gaiter when remote case only .....	1	NLA
37	22A1381	Gaiter retainer ring, when remote case only .....	1	NLA
38	22G110	Original gear knob .....	1	NLA
39	22A419	Dust excluder, magic wand, non remote case .....	1	NLA
40	14A6860	Gearlever gaiter, magic wand .....	1	

# ROD CHANGE GEAR SHIFT MECHANISM



## ROD CHANGE GEAR SHIFT MECHANISM

NO.	PART NO.	DESCRIPTION	QTY	REMARKS
1	22G1930	Extension rod to gear lever .....	1	
1	UKN10023	Extension rod to gear lever .....	1	1300cc 1991 on
2	42H1116	Coupling for extension rod .....	1	
3	RPS1418	Roll pin (coupling to rod) and eye extension rod .....	2	
4	22A1936	Gearbox to gearlever steady rod .....	1	
4	DAM5067	Gearbox to gearlever steady rod .....	1	1000cc 1985 on
4	UKN10032	Gearbox to gearlever steady rod .....	1	1300cc 1985 on
5	BT605161	Steady rod to gearbox bolt .....	1	
6	42H1199	Rod eye support .....	1	
7	DAM3671	Gearlever housing complete .....	1	
8	42H1214	Housing steady bush .....	1	
9	DAM2670	Long gearlever retainer pin was 22G2276 .....	1	(Gearlever locating pin)
10	22G2277	Short gearlever retainer pin .....	1	
11	22G2792	Extension rod eye .....	1	
12	DAM8621	Gearlever housing base plate was 22G2355 .....	1	
12	MSG11	Mini Spares 5 speed gearbox base plate .....	1	
13	22G2026	Floor to housing bracket .....	1	
14	BT606281	Bracket to housing bolt .....	1	
15	22G2205	Bracket to housing mountings .....	2	
16	GHF332	Washer .....	1	
17	GHF201	Nut .....	1	
18	22G1434	Gearlever retainer .....	1	
19	22A1932	Gearlever assembly .....	1	
19	22A1932/C	Gearlever assembly, chrome .....	1	
20	22G2316	Gearlever knob (bakerlite type) .....	NLA	Use DAM4440
20	DAM4440	Gearlever knob .....	1	
21	DAM6001	Gearlever knob 1986 on .....	1	
22	CZH4278	Gearlever gaiter .....	1	
23	FJN10003	Retainer for gaiter, was CZH3002 .....	1	
24	GEX7088	Exhaust bracket .....	1	
25	MSG12	Mini Spares 5th gear gate bias .....	1	Fits extension rod
26	GAE191	Reverse light switch .....	1	
27	22A1613	Locknut for switch .....	1	
	DAM3661	Rod change linkage assembly .....	1	Not shown
	U119	Rod change linkage assembly with lever .....	1	Used only

4

