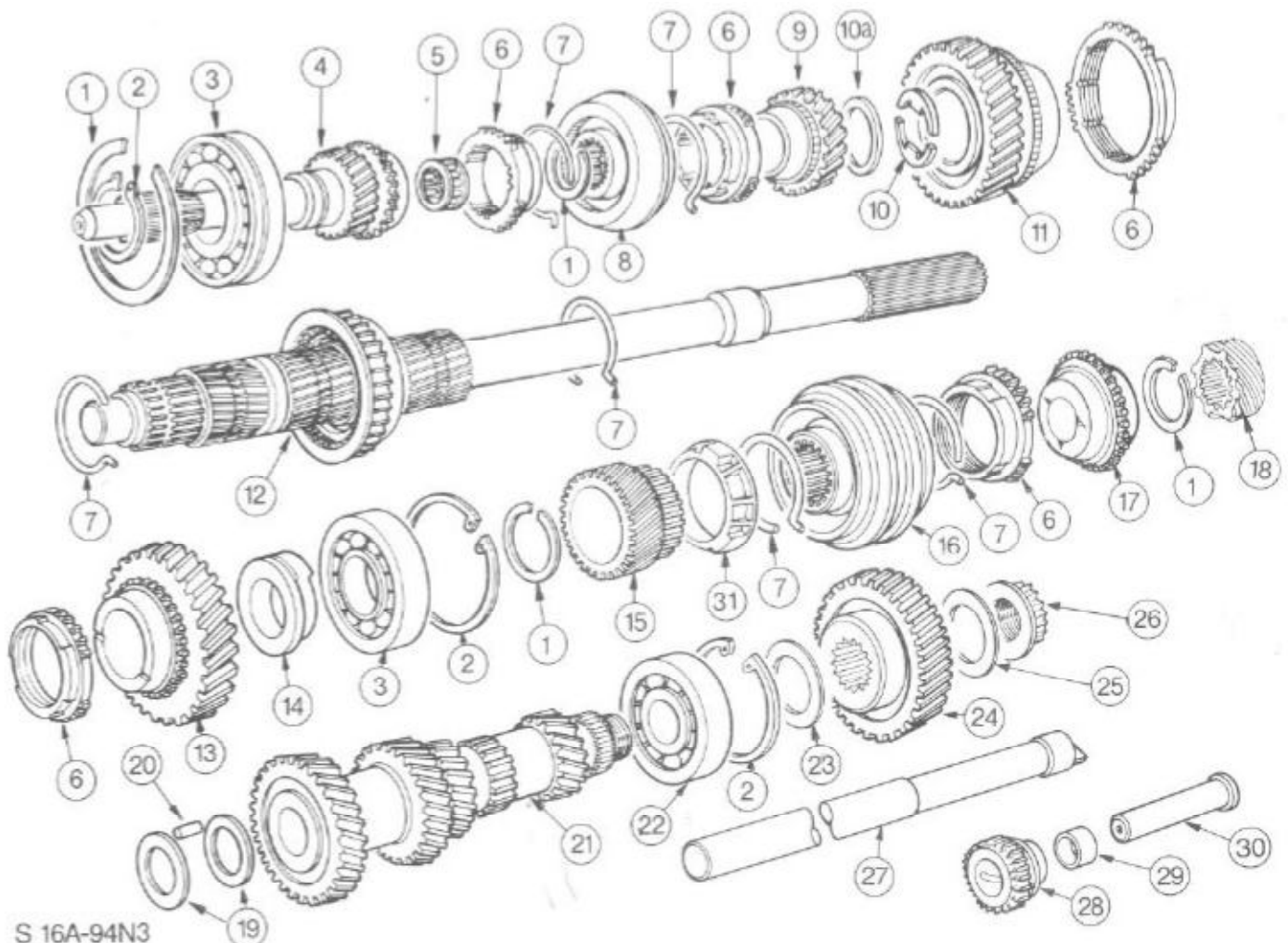


S16A-93

Fig. 111. 'N' Transmission.



S 16A-94N3

Fig. 112. 'N' Transmission - gearbox shafts.

- |                               |                                  |                                |
|-------------------------------|----------------------------------|--------------------------------|
| 1 - Snap ring                 | 12 - Mainshaft with synchroniser | 22 - Roller bearing            |
| 2 - Circlip                   | 13 - 1st gear cog                | 23 - Bearing spacer            |
| 3 - Ball bearing              | 14 - Oil scopp ring              | 24 - 5th gear countershaft cog |
| 4 - Input shaft               | 15 - 5th gear cog                | 25 - Washer                    |
| 5 - Needle roller bearing     | 16 - 5th gear synchroniser       | 26 - 12-sided nut              |
| 6 - Synchroniser ring         | 17 - 5th gear synchroniser hub   | 27 - Countershaft              |
| 7 - Retaining spring          | 18 - Speedometer worm            | 28 - Reverse idler gear        |
| 8 - 3rd/4th gear synchroniser | 19 - Spacer shim                 | 29 - Bush                      |
| 9 - 3rd gear cog              | 20 - Needle rollers              | 30 - Idler shaft               |
| 10 - Mainshaft thrust washers | 21 - Countershaft gear cluster   | 31 - Blocker bar retainer      |
| 10a - Thrust washer circlip   |                                  |                                |
| 11 - 2nd gear cog             |                                  |                                |

**16 118 8 TRANSMISSION ASSEMBLY - OVERHAUL**  
 ('N' Transmission)

**SPECIAL SERVICE TOOLS REQUIRED:**

Mounting bracket .. .. .	16-009
Extension housing bush extractor ..	16-011
Extension housing oil seal/bush installer .. .. .	16-016
5th gear cog remover/installer .. ..	16-033
Guide sleeve oil seal installer .. ..	17-002
Extension housing oil seal extractor ..	21-051

**To Dismantle**

1. Remove the clutch release bearing and release lever from the clutch housing.

2. Detach the clutch housing (4 bolts).

3. Mount the transmission on the assembly stand using Special Tool 16-009.

4. Remove transmission housing cover, Fig.114, swivel the transmission and drain gear oil.

NOTE: Carry-out sub-operation 5 and 6 below when oil seal and bush are being replaced.

5. Remove extension housing oil seal using Special Tool 21-051, Fig.115.

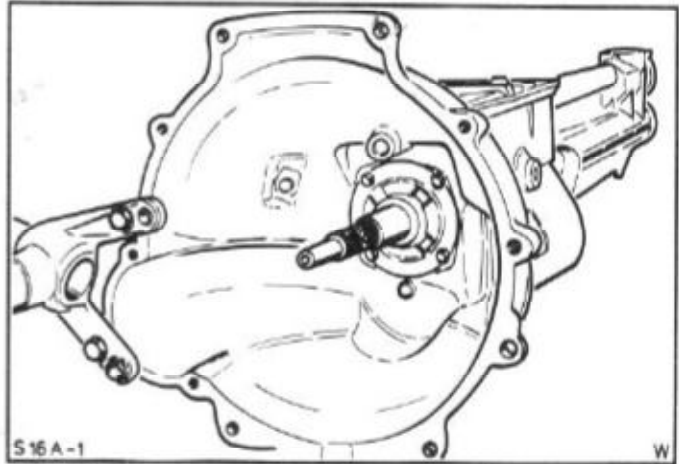


Fig.113. Mount transmission on assembly stand.

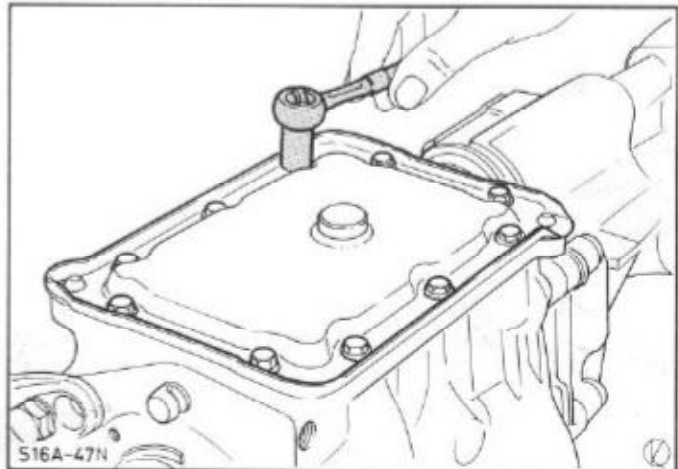


Fig.114. Remove transmission housing cover.

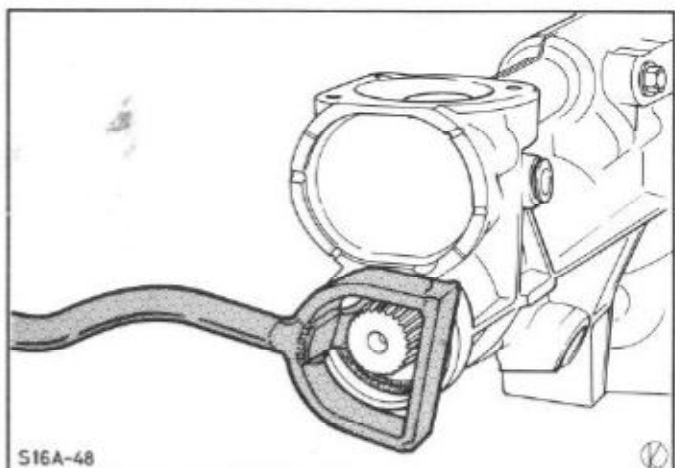


Fig.115. Remove oil seal using Special Tool.

6. Remove extension housing bush using Special Tool 16-011, Fig.116.

NOTE: Only remove the oil seal and bush when these parts are to be replaced. The bush can only be renewed with the extension housing and mainshaft in position.

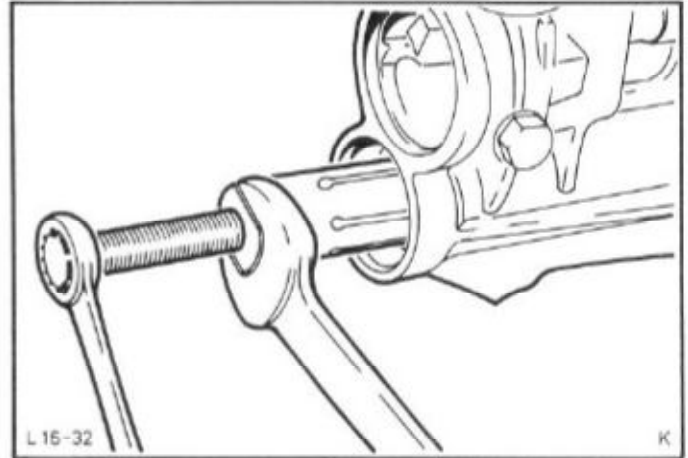


Fig.116. Extract extension housing bush.

7. Remove 5th gear locking plate and locking pin with spring from extension housing, Fig.117.

8. Detach selector crank from shift rod. To do this, pull shift rod towards the rear in reverse gear and support or brace the selector crank. Then drive out roll pin, Fig.118.

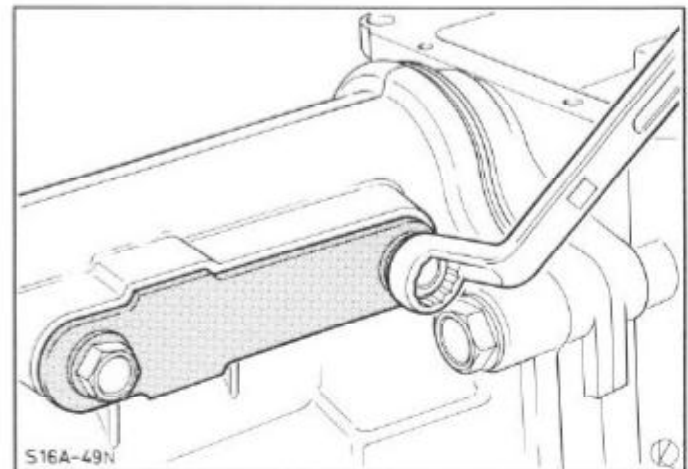


Fig.117. Remove 5th gear lock plate and locking pin with spring from extension housing.

9. Unbolt the extension housing from the intermediate housing (6 bolts) and pull it off towards the rear. Then remove the selector crank and roll pin.

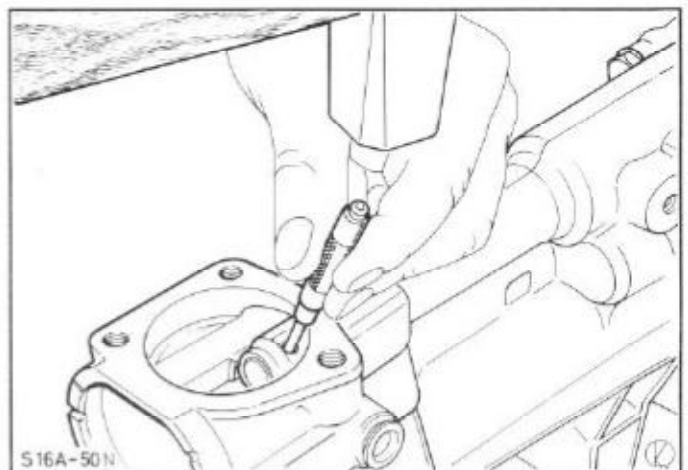


Fig.118. Detach selector crank from shift rod.

NOTE: Temporarily re-secure intermediate housing with 2 bolts.

10. Unscrew threaded plug of selector locking mechanism on the side of the transmission, Fig.119, withdraw spring and locking pin using a bar magnet.

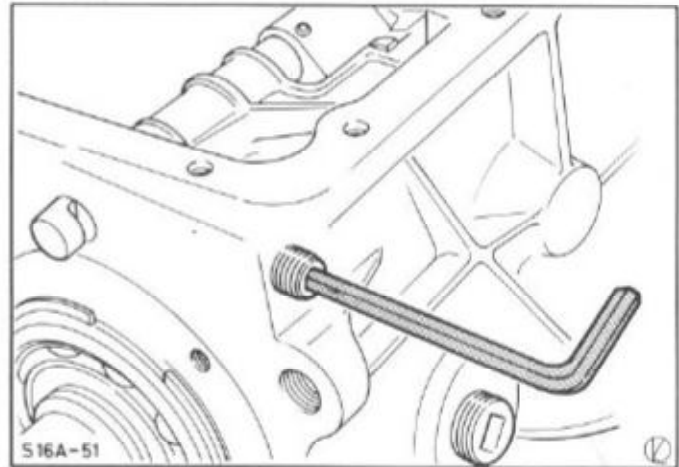


Fig.119. Unscrew selector locking mechanism.

11. Drive the roll pin out of the selector pin boss and shift rod, Fig.120.

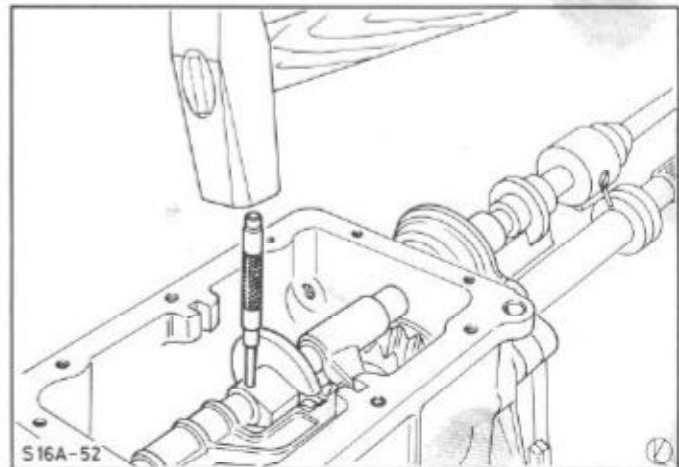


Fig.120. Drive out roll pin.

12. Withdraw the shift rod and remove 1st/2nd gear and 3rd/4th gear selector forks, selector pin boss with locking plate and 5th gear selector fork with selector sleeve.

13. Detach 5th gear synchroniser assembly from transmission mainshaft and slide back (1 snap ring).

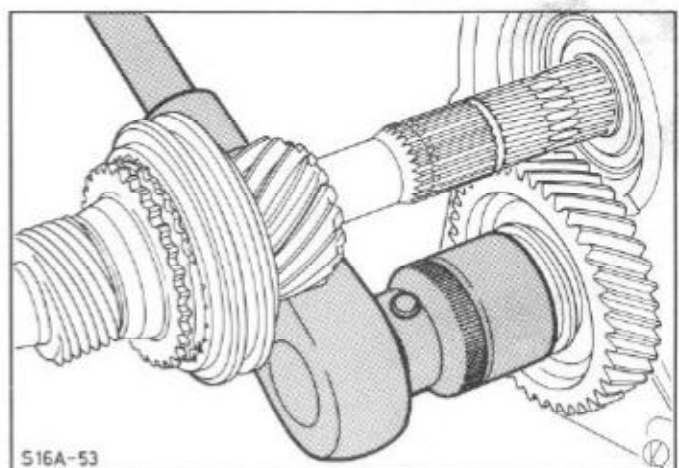


Fig.121. Unscrew 5th gear nut.

14. Detach nut (5th gear cog) from the countershaft gear cluster. Immobilise the mainshaft and countershaft gear train by engaging two gears (other than 4th gear), unlock the nut and unscrew it, Fig.121. Remove washer.

15. Drive out countershaft using Special Tool 16-033 (tool and shaft must remain in contact) and bolt tool securely to flywheel side, Fig.122. Screw round nut onto the threaded part of the Special Tool and tighten against the countershaft. Attach Special Tool 16-033 with pull-off sleeve, half shells, washer and ring and pull off gear, Fig.123. Remove bearing spacer and Special Tool.

NOTE: Both shafts must remain immobilised when 5th gear cog is pulled off.

16. Remove circlips of bearings of countershaft gear cluster and mainshaft. Unscrew the 2 bolts, tap intermediate housing loose with a plastic hammer and press off bearing from the rear using a screwdriver. Lower the countershaft and withdraw the mainshaft with the intermediate housing. Drive out Special Tool 16-033 with the countershaft and remove the countershaft gear cluster from the housing.

17. Detach clutch release bearing guide sleeve and remove input shaft complete with the bearing. Remove clutch release bearing guide sleeve oil seal.

18. Moisten lips of oil seal with gear oil and install in guide sleeve using Special Tool 17-002.

19. Remove reverse idler gear. Screw an M8 x 60 bolt carrying a nut, washer and a socket into the idler shaft. Withdraw the shaft by tightening the nut, Fig.124.

20. Remove reverse gear selector dog. Pull circlip off pivot pin and detach the selector dog from reverse gear.

21. Remove the magnetic disc and clean it.

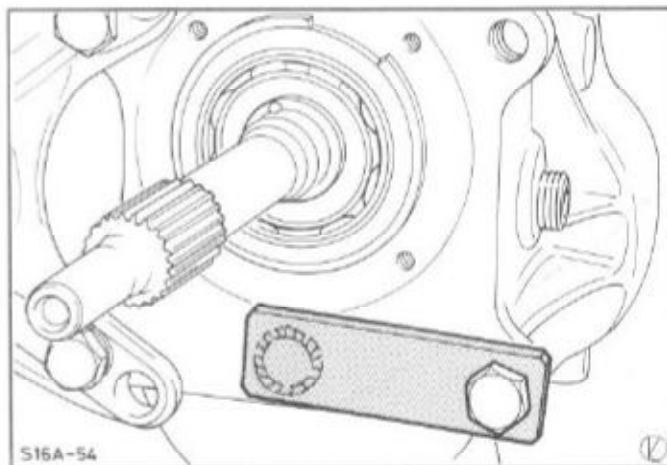


Fig.122. Bolt Special Tool securely to flywheel side.

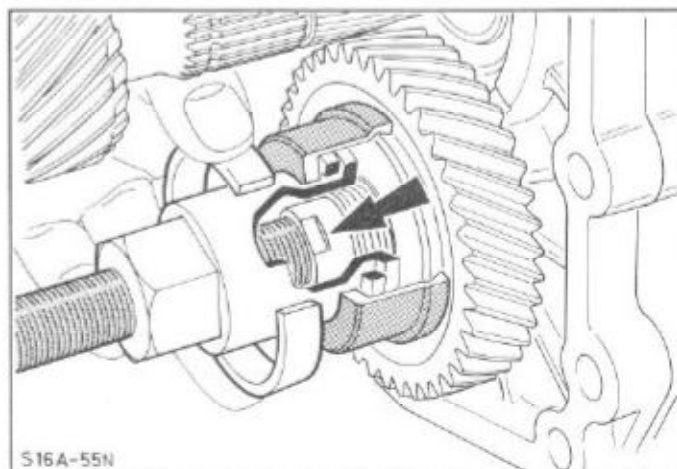


Fig.123. Attach Special Tool to 5th gear cog.

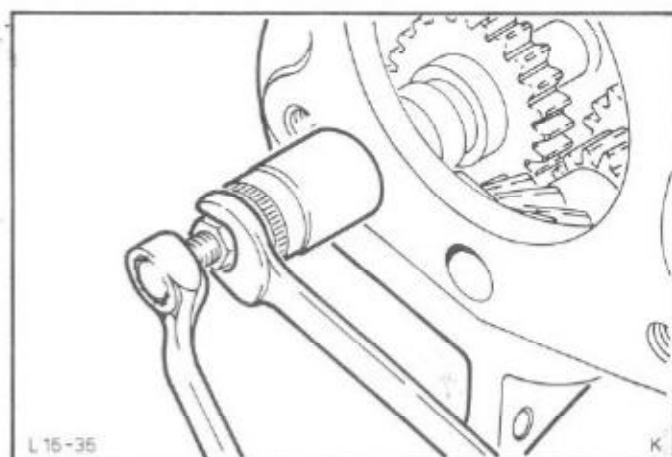
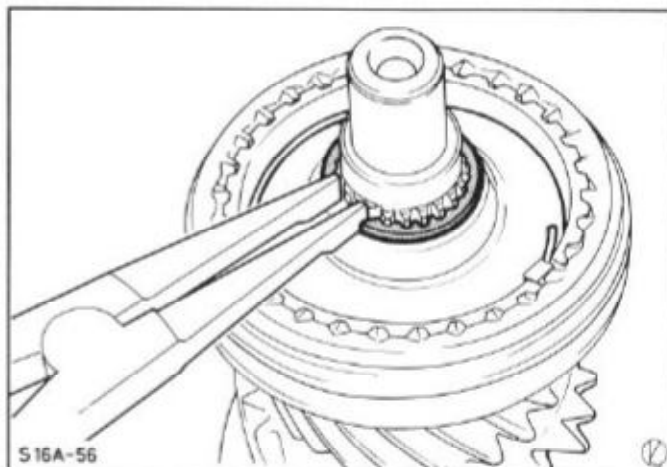


Fig.124. Withdraw reverse gear idler shaft.



To Dismantle the Mainshaft

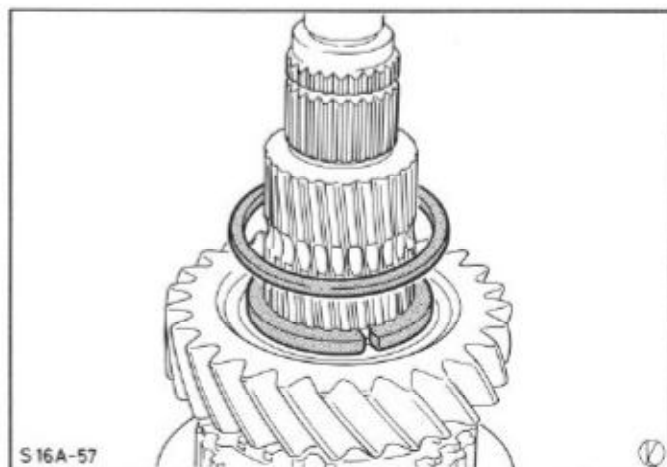
22. Detach 3rd and 4th gear synchroniser. Detach snap ring from mainshaft, Fig.125, pull off synchroniser complete with 3rd gear cog by hand. Note the direction in which the circumferential groove faces.



S16A-56

Fig.125. Remove snap ring of 3rd/4th gear synchroniser.

23. Remove 2nd gear cog. Remove thrust washers with retaining ring and gear from mainshaft, Fig.126.



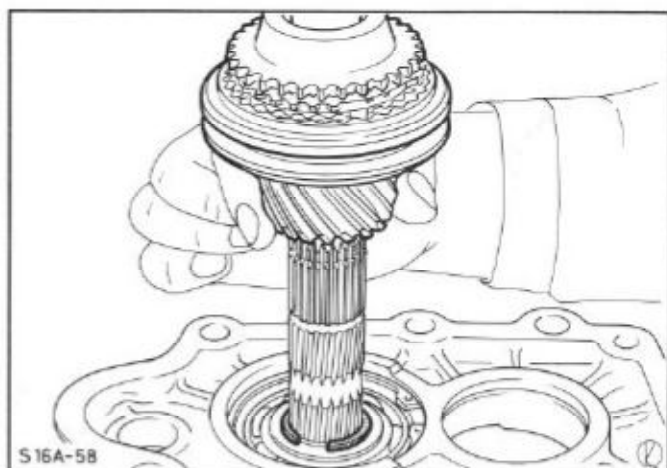
S16A-57

Fig.126. Detach mainshaft thrust washers and circlip of 2nd gear.

24. Dismantle 1st/2nd gear synchroniser.

NOTE: The synchroniser hub cannot be pulled off the mainshaft.

25. Press speedometer worm gear off mainshaft.



S16A-58

Fig.127. Remove 5th gear cog.

26. Remove snap ring with 5th gear cog, Fig.127, detach synchroniser complete with gear.

27. Detach the intermediate housing from the mainshaft (1 snap ring), Fig.128

28. Detach oil scoop ring, 1st gear cog and synchroniser ring from the mainshaft.

29. Remove snap ring from mainshaft ball bearing and press ball bearing together with bearing of countershaft gear cluster out of the intermediate housing.

30. Install mainshaft ball bearing in intermediate housing and secure.

NOTE: Refer to 4-speed transmissions for synchroniser dismantling and assembly procedure.

#### To Assemble the Mainshaft

NOTE: Clean parts and check for wear. All running and thrust surfaces must be smeared with specified grease (see Technical Data).

31. Insert 1st gear side synchroniser spring and position 1st gear cog with synchroniser ring and oil scoop ring on the hub, Fig.130.

NOTE: Fit oil scoop ring with the smooth side facing the intermediate housing bearing.

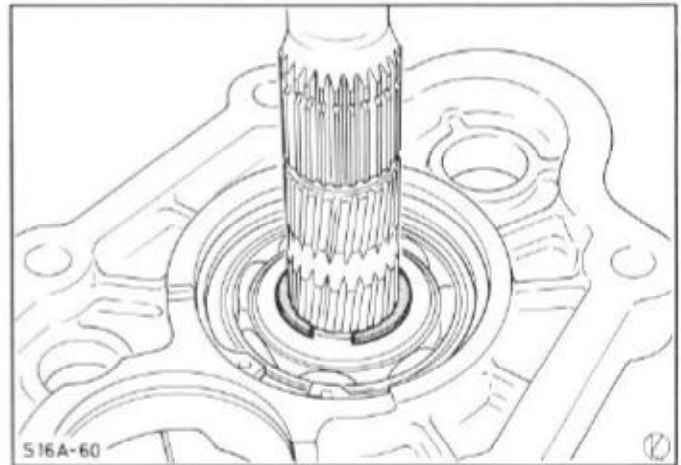


Fig.128. Detach intermediate housing from the mainshaft.

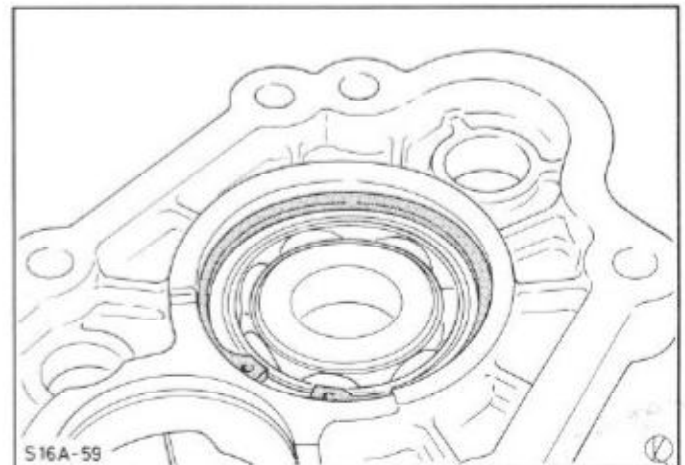


Fig.129. Secure mainshaft ball bearing in intermediate housing.

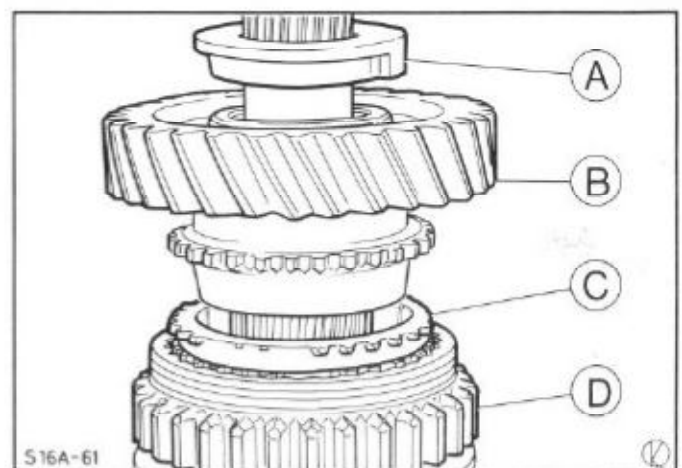


Fig.130. A - Oil scoop ring  
B - 1st gear cog  
C - Synchroniser ring  
D - 1st/2nd sliding gear.

32. Attach intermediate housing with bearing to mainshaft and secure.
33. Slide on 5th gear cog with the helical teeth towards the bearing, fit blocker bar retainer and synchroniser, Fig.131.

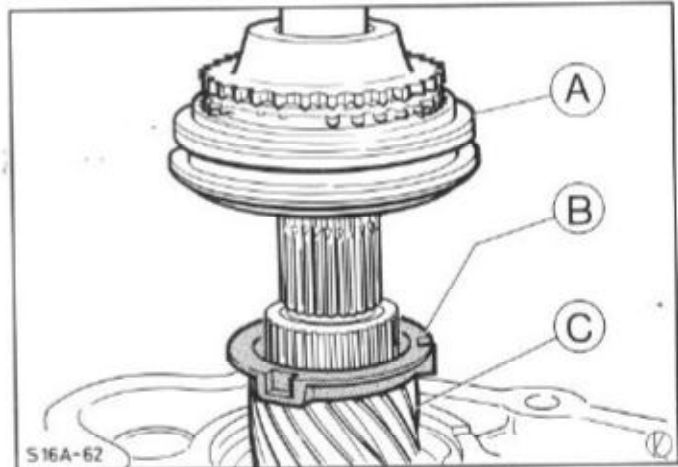


Fig.131. Slide on 5th gear cog.  
A - Synchroniser  
B - Blocker bar retainer  
C - Gear

34. Press on speedometer worm gear.

NOTE: The distance between the 5th gear synchroniser snap ring when in place and the speedometer worm gear is  $123,5 \pm 0,5$  mm, Fig.132.

35. Assemble 1st/2nd gear synchroniser. Insert blocker bars and fit synchroniser springs offset, starting from one blocker bar.

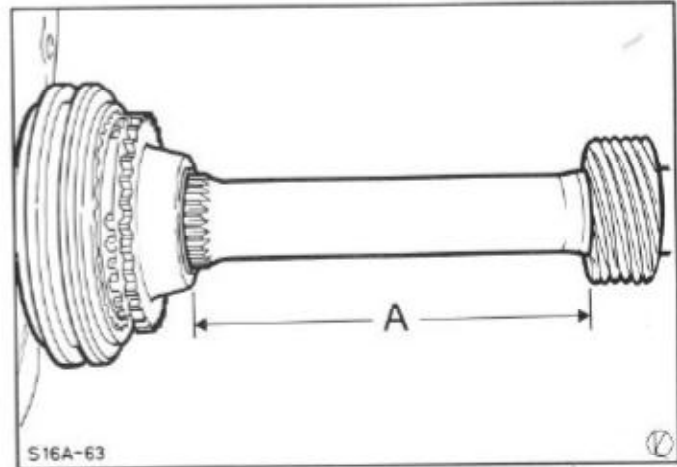


Fig.132. Distance between speedometer worm gear and synchroniser snap ring.  
A -  $123,5 \pm 0,5$ mm  
S16A-63

NOTE: Selector groove of 1st/2nd gear sliding gear must face the front, Fig.133. The coloured marks on the sliding gear and the synchroniser hub must line up.

36. Fit 2nd gear cog with synchroniser ring and thrust washers and secure with circlip.

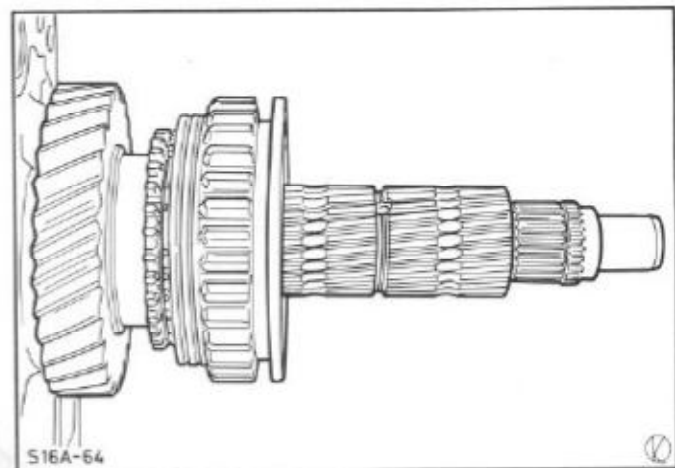


Fig.133. Selector groove of 1st/2nd sliding gear must face the front.

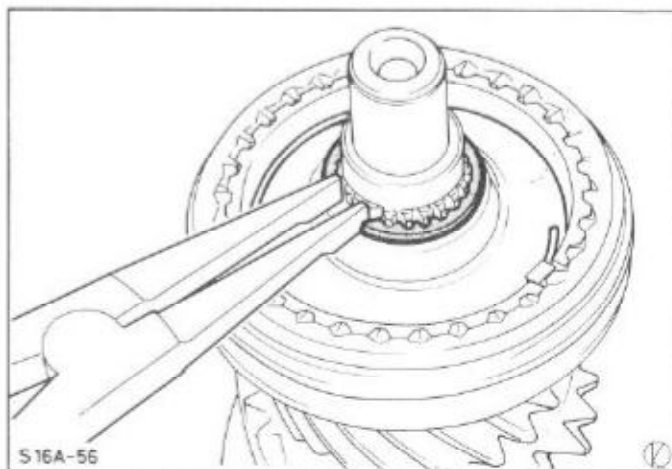


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37. Slide 3rd gear cog with synchroniser ring onto the mainshaft.

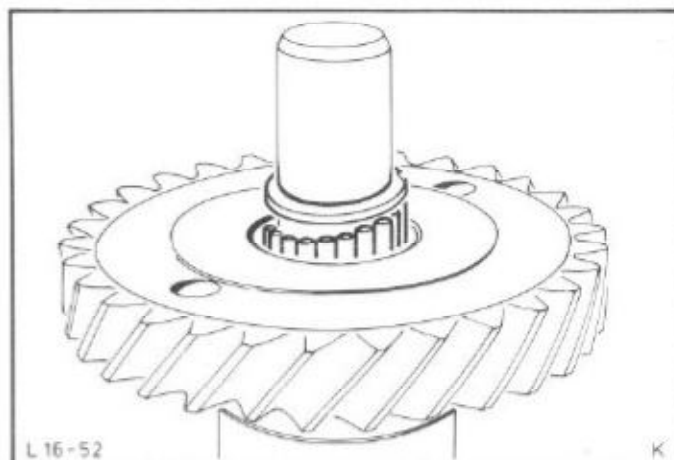
38. Attach 3rd/4th gear synchroniser. Fit the snap ring, Fig.134.



S16A-56

Fig.134. Fit snap ring of 3rd/4th gear synchroniser.

NOTE: Slide the synchroniser onto the mainshaft with the long side of the hub facing the front. The circumferential groove in the sliding gear must face in the same direction as it did before removal.



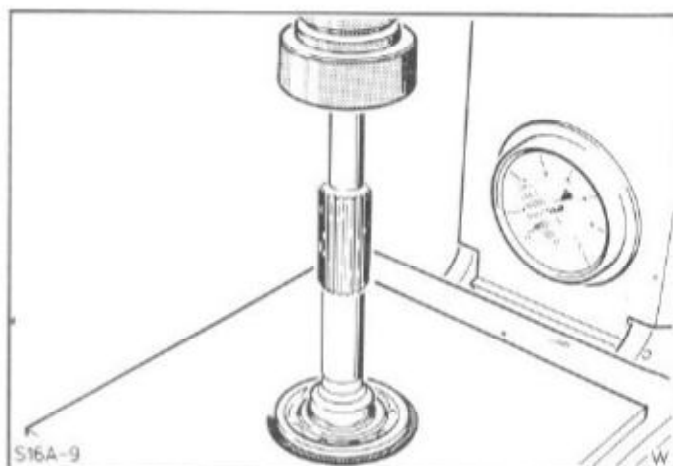
L16-52

K

Fig.135. Fit needle roller bearing with spacers.

39. Replace needle roller bearing of countershaft gear cluster. Slide the shaft out of the countershaft gear cluster and remove needle rollers and spacers. Insert 3 spacers or thicker spacer in the bore of the gear assembly. Insert 21 needle rollers with grease. Fit outer spacer, Fig.135.

40. Replace ball bearing of input shaft. Detach inner circlip, press off ball bearing and remove outer circlip, Fig.136. Press on ball bearing and fit new circlips.



S16A-9

Fig.136. Press off input shaft ball bearing.

### To Assemble Transmission

NOTE: Clean parts and check for wear. All running and thrust surfaces must be smeared with specified grease (see Technical Data).

41. Insert magnetic disc in transmission housing.
42. Slide reverse gear selector dog onto the pivot pin and fit the circlip.

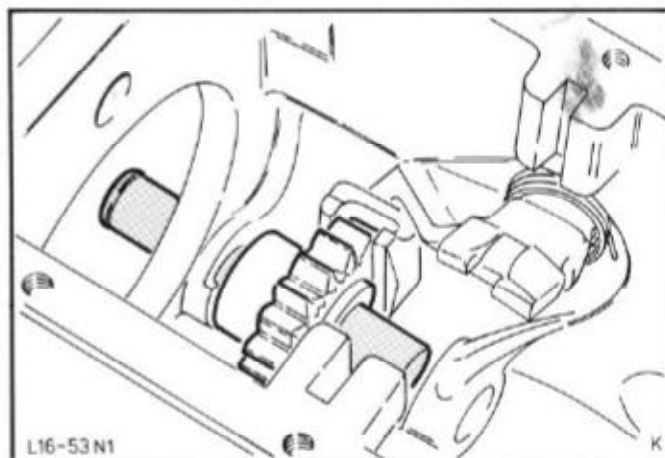


Fig.137. Install reverse idler gear.

43. Install reverse idler gear with the thicker shoulder facing the rear. Insert idler gear in selector dog, slide the shaft in and drive it in with a copper hammer, Fig.137.

NOTE: Insert idler gear with specified grease (see Technical Data).

44. Install the countershaft gear cluster and shaft in the transmission housing.



Fig. 138. Slide input shaft into housing.

45. Insert the mainshaft complete with the intermediate housing in the transmission housing and secure intermediate housing temporarily with 2 bolts.
46. Insert input shaft with ball bearing, needle roller bearing and synchroniser ring. Fit guide sleeve of clutch release bearing.
47. Install plain roller bearing of countershaft gear cluster in the intermediate housing and secure.

48. Install Special Tool 16-033 in countershaft gear cluster, pushing shaft out to do so. Fit spacer of plain roller bearing (with inscription, if any, facing outwards) and gear, Fig.139. Bolt Special Tool securely to side of flywheel. Press 5th gear cog onto the countershaft gear cluster by means of the nut and washer of the tool, Fig.140

NOTE: Installation marks: the line on the end of the 5th gear cog on the countershaft and the coloured mark in one of the circlip grooves must be in alignment.

Secure the gear with the washer and nut, engaging two gears (other than 4th gear) to do so.

NOTE: Tighten nut to specified torque and lock the nut using pliers on the collar.

Remove bolts from intermediate housing and extract the two engaged gears again.

49. Install the countershaft, driving out the Special Tool in the process.

NOTE: The flattened end of the shaft must be horizontal, Fig.141. Apply grease (see Technical Data) when installing shaft.

50. Attach 5th gear synchroniser and secure.

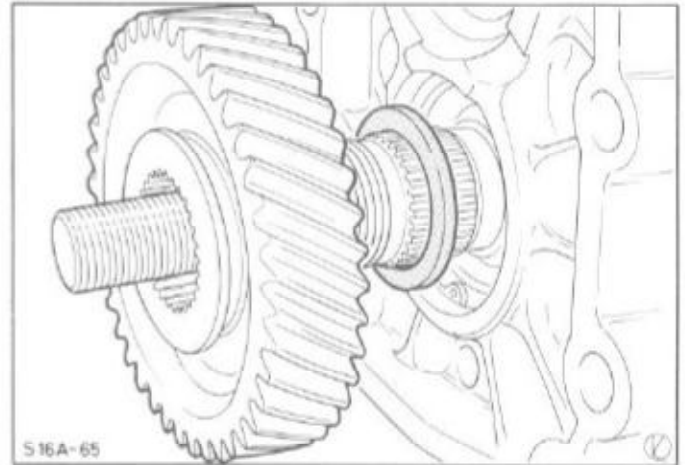


Fig.139. Fit 5th gear cog with spacer of bearing on countershaft gear cluster.

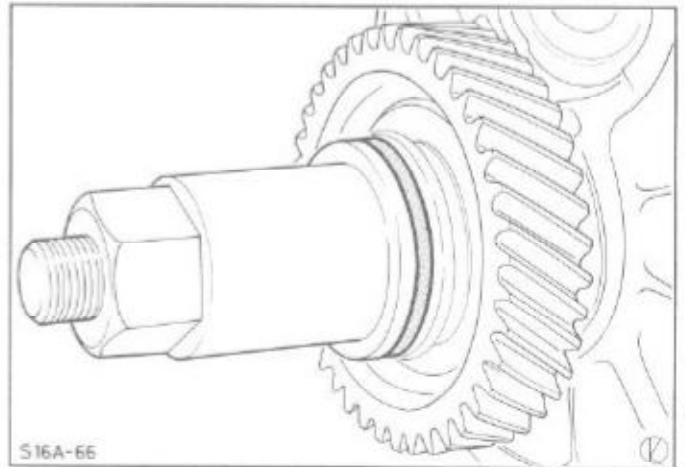


Fig.140. Press 5th gear cog onto countershaft.

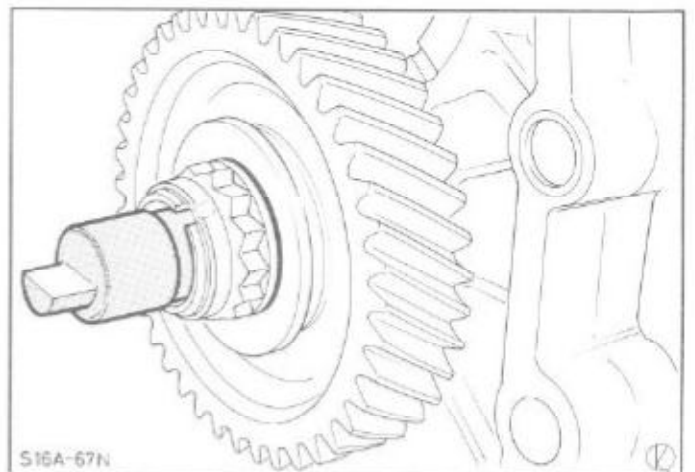


Fig.141. Align flattened end of countershaft horizontally.

51. Install shift rod and selector forks, Fig.142. Insert selector sleeve, 5th gear selector fork, 1st/2nd gear selector fork, selector pin boss with locking plate and 3rd/4th gear selector fork one at a time, aligning them flush with the shift rod, and press shift rod into the housing. Line up selector sleeve and selector pin boss with the selector forks, as appropriate.

NOTE: Install selector sleeve with short side and selector pin boss with long (drilled) side facing the front.

52. Secure selector pin boss and shift rod with roll pin.

53. Insert the locking pin and spring into the side of the transmission, apply specified sealer to retaining plug (see Technical Data) and refit, Fig.143.

54. Using a suitable drift, remove shift rod oil seal from transmission extension housing. Drive out shift rod sealing cover to do so.

55. Detach speedometer drive pinion cover and withdraw the speedometer pinion from the extension housing.

56. Install speedometer drive pinion in the extension housing, fitting a new oil seal. Apply specified sealer (see Technical Data) and press in sealing cover.

57. Install shift rod oil seal in transmission extension housing using an 18 mm socket and extension.

58. Move the shift rod into the 4th gear position and attach the extension housing to the intermediate housing with the selector crank in place. Insert the three bolts that go into the transmission housing, applying specified sealer (see Technical Data).

NOTE: Do not damage oil seal when installing the transmission extension housing.

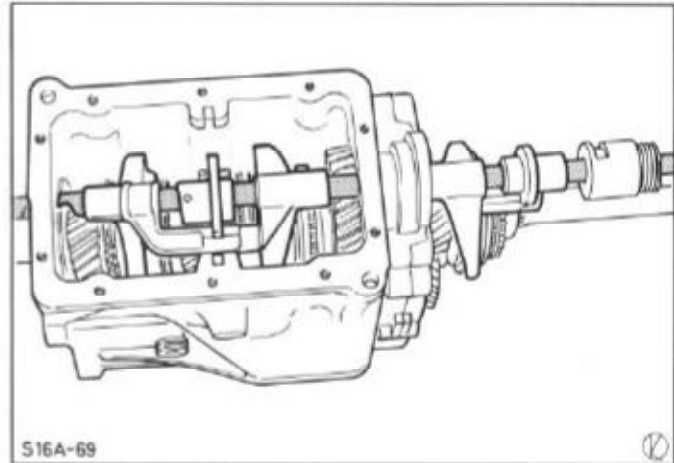


Fig.142. Insert shift rod and selector forks.

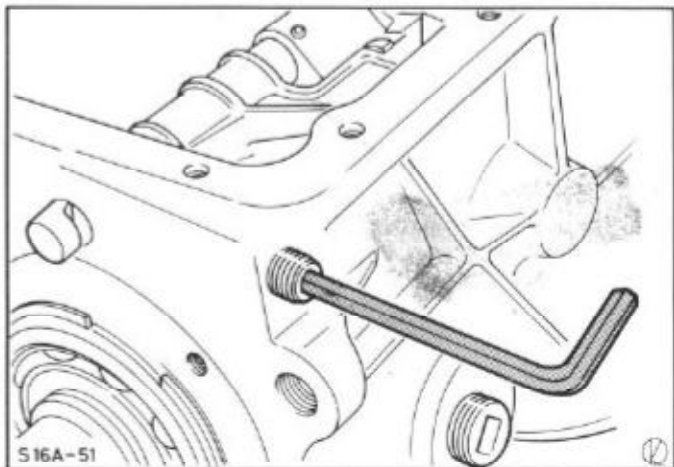


Fig.143. Refit pin and spring retaining plug.



## TECHNICAL DATA

Transmission

	"A"		"B"	"C"	"N"		
	1	2			1	2	3
Ratios - 1st gear	3,66/3,34		3,65	3,58	3,65/3,91/3,36		
2nd gear	2,18/1,99		1,97	2,01	1,97/2,32/1,81		
3rd gear	1,43/1,42		1,37	1,40	1,37/1,40/1,26		
4th gear	1,00/1,00		1,00	1,00	1,00/1,00/1,00		
5th gear	-		-	-	0,82/0,82/0,83		
reverse gear	4,24/3,87		3,66	3,32	3,66/3,66/3,36		
Oil fill capacity in litres	0,98		1,46	1,25	1,9		
Oil specification	SQM 2C 9008 A						

Grease specification    SM1C-115-A    For needle roller bearings and countershaft.  
                                  SM1C-4504-C    For all running and thrust surfaces.  
                                                                     Reverse idler gear.

Sealer specification    SM4G-4640-AA    Selector locking mechanism retaining screw.  
                                                                     Speedometer pinion cap.  
                                                                     Extension housing fixing bolts.

SKM4G-9526-A    Locking plate fixing bolts.  
 SKM4G-9527-A    5th gear locking plate.

Engine	Vehicle type		Number of teeth		Colour Code
	Saloon	Estate	Speedo. worm	Speedo. pinion*	
1,3 OHC	x		7	23	black
1,6 Econ	x		8	22	brown
1,6 litre OHC VV	x		7	22	brown green
		x	7	24	
2,0 litre OHC	x	x	8	24	grey yellow
		x	7	22	
2,0 litre HC V6	x		8	24	grey
2,3 litre V6	x		8	22	white grey
		x	8	24	
2,8 litre V6	x		7	22	yellow
2,3 litre Diesel	x	x	8	22	white

\*The tyre size used determines the number of teeth of the speedometer pinion. The figures given here are for the units fitted in production.





## TECHNICAL DATA (cont'd)

## Transmission Summary Chart

Engine	1,3 OHC	1,6 OHC	1,6 Econ	2,0 OHC	2,0 V6	2,3 V6	2,3 D	2,8 i
Transmission								
A1	x							
A2		x*						
B		o**		x	x	x		
C	x	x	x					
N1		o	o	o	o	o		
N2							x	
N3								x

x = fitted

o = on request

\* = for Saloon only

\*\* = for Estate only

## Clutch

Manufacturer	LUK /A/P	F & S / L & K / Laycock			F & S	
Engine	1,6 (OHC)	2,0 (V6)	2,0 (OHC)	2,3 (V6)	2,8 (V6)	2,3 Diesel (OHV)
Type	Single plate dry clutch					
Size	7 1/2"	8 1/2"		9 1/2"		
Operation	by cable					
Clutch lining (material)	Mintex (H 26/1) Ferodo (1F 324)			Ferodo 1F 324		
Lining outside dia. mm	190	216		232,3	241,68	232,3
Lining inside dia. mm	136	153		155 ± 0,12		
Lining thickness mm	3,85 ± 0,1			3,81 ± 0,13		
Number of torsion springs	4		6			
Grease specification	SM1C-1020-B					

## Tightening Torques

Nm  
all transmissions

Clutch housing to transmission housing	70 to 90	
Clutch housing to engine	40 to 51	
Pressure plate to flywheel	20 to 25	
Guide sleeve to transmission housing	9 to 11	21 to 25 ('C' transm.)
Extension housing to transmission housing	45 to 49	
Cover to transmission housing	9 to 11	21 to 25 ('C' transm.)
Driveshaft to rear axle extension shaft	57 to 67	
Driveshaft centre bearing to floor assembly	76 to 82	
Transmission crossmember to floor assembly	20 to 25	
Insulator to transmission crossmember	16 to 20	
Insulator to transmission	50 to 57	
Reversing light switch	1 to 2	
Selector interlock mechanism	17 to 19	
Oil filler plug	33 to 41	
12 sided collar nut - 5th gear	120 to 150	
5th gear locking plate	21 to 26	
Selector lever to extension housing	21 to 26	

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59. Move shift rod into reverse gear position. Support or brace selector crank and secure it to the shift rod with roll pin.

60. Fit gear lever and attach transmission cover with gasket.

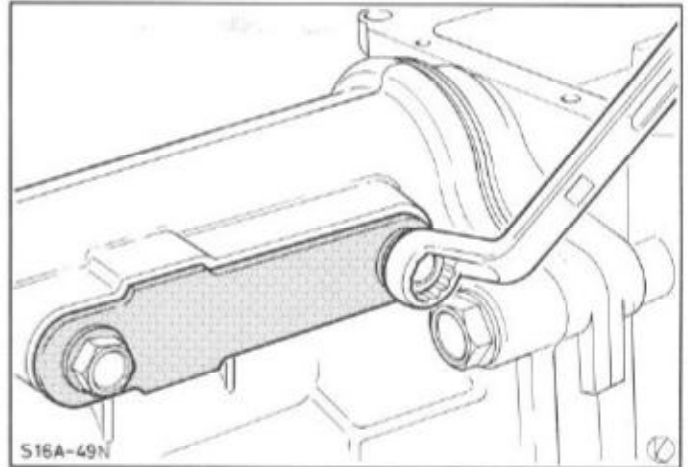


Fig.144. Fit 5th gear locking plate.

61. Apply specified sealer (see Technical Data) to locking plate (sealer must not get into locking bore) and fit locking plate with spring to extension housing fingertight, Fig.144.

Check for clear passage between all gear alleys. Move the locking plate to find optimum setting. Tighten fixing bolts to specified torque. Setting of selector mechanism must be rechecked. Remove gear lever again.

62. Install extension housing bush with Special Tool 16-016.

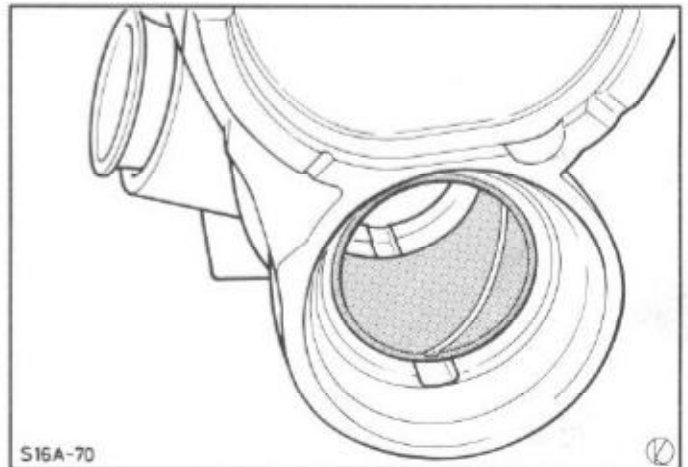


Fig.145. Oil return groove and notch line up.

- NOTE: Oil return groove in extension housing and start of oil groove in bush must line up when it is fitted, Fig.145.

63. Install extension housing oil seal with Special Tool 16-016.

64. Detach transmission from assembly stand and fit clutch housing.

65. Install clutch release bearing and release lever.

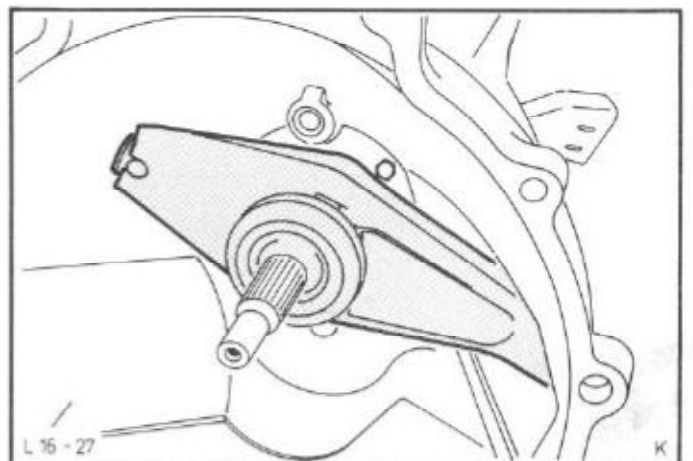


Fig.146. Install clutch releasing bearing and fork.

**16 134 4 PILOT BEARING - REPLACE**  
 (Engine or transmission removed)

**SPECIAL SERVICE TOOLS REQUIRED:**

<b>"B" Engine</b>			
Crankshaft needle bearing extractor	..	21-03	
Needle bearing installer and clutch disc locator	.. .. .	21-044	
<b>"C" Engine</b>			
Needle bearing extractor	.. .. .	21-037	
Needle bearing installer and clutch disc locator	. .. .	21-067	

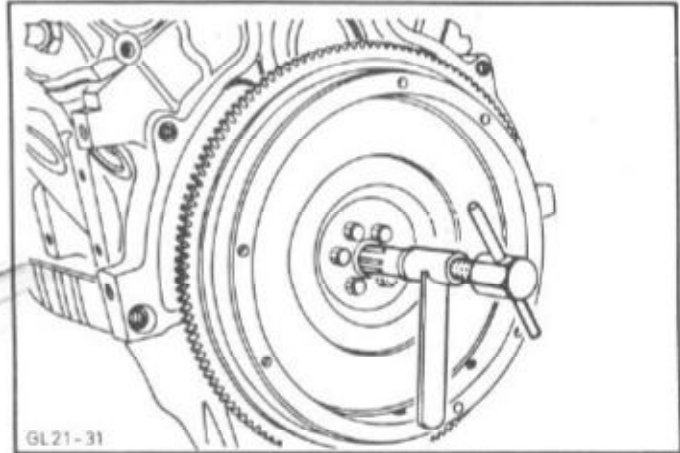


Fig.147. Withdraw pilot bearing with Special Tool.

**To Remove**

1. Detach the clutch pressure plate from the flywheel and remove the clutch disc.

2. Remove the pilot bearing using Special Tool, Fig.147.

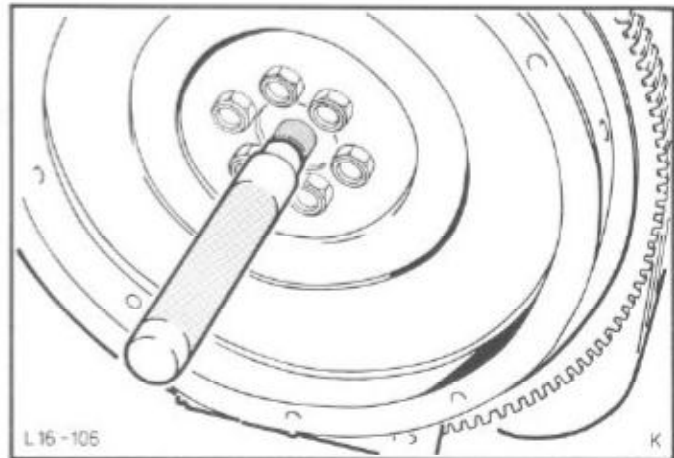


Fig.148. Drive in pilot bearing with Special Tool.

**To Install**

3. Drive in pilot bearing using Special Tool, Fig.148.

4. Locate the clutch disc on the flywheel with the aid of the centring tool, Fig.149.

**NOTE:** Fit the clutch disc with the smooth side facing the flywheel.

5. Fit the clutch pressure plate, using the locating pins. Fit the bolts with new spring lock washers and tighten them diagonally to the specified torque. Remove the centring tool.

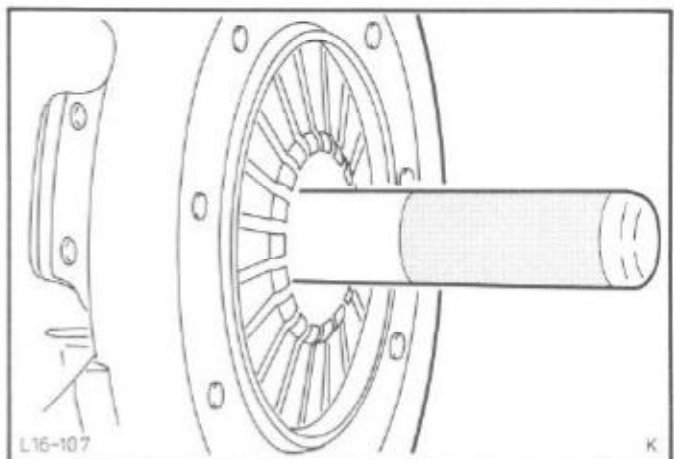


Fig.149. Centre the clutch disc.

**16 164 BUSH - EXTENSION HOUSING - REPLACE**
**SPECIAL SERVICE TOOLS REQUIRED:**

Oil seal extractor	21-051
Bush extractor: 'A' transmission	16-024
'B' transmission	16-025
'C' and 'N' transmissions	16-011
Bush installer: 'A' transmission	16-014
'B' and 'M' transmissions	16-016
'C' transmission	16-015

vehicle over a pit or onto a ramp.

2. Unbolt the rear left hand exhaust bracket when the vehicle is fitted with a V6 engine, and unhook the rubber loop from the tailpipe, Fig.150.

3. Detach the driveshaft from the drive flange and the centre bearing, Fig.151. Draw the driveshaft towards the rear and then withdraw it towards the front between the exhaust pipes.

**NOTE:** Insert a plug in the extension housing to ensure that no gear oil escapes.

4. Remove the oil seal using special tool 21-051, Fig.152.

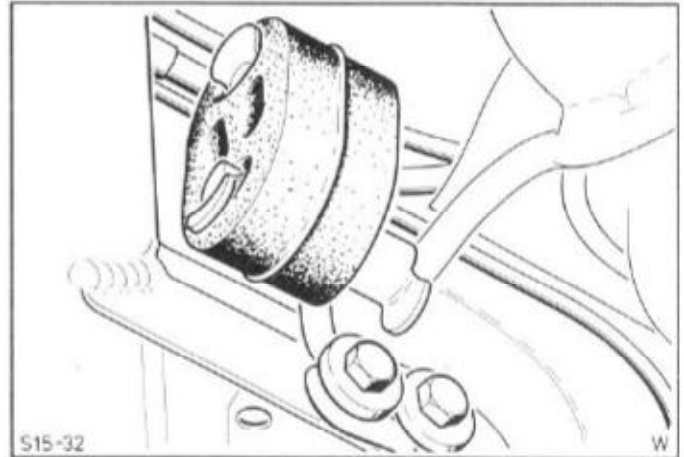


Fig.150. Unbolt rear left hand exhaust bracket when vehicle is fitted with a V6 engine.

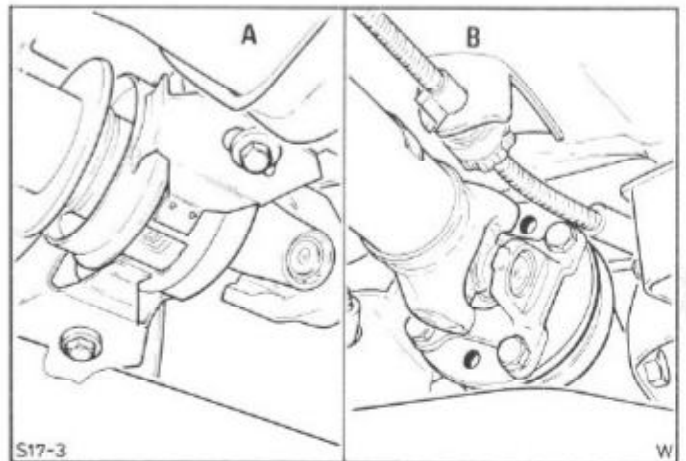


Fig.151. Remove the driveshaft.  
A - Centre bearing  
B - Drive flange

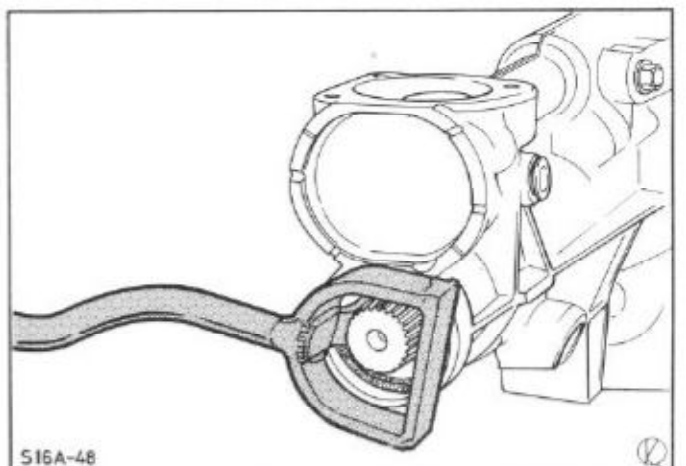


Fig.152. Remove the oil seal.

16 164

5. Remove the extension housing bush using appropriate special tool, Fig.153.

#### To Install

6. Drive a new bush into the extension housing using appropriate special tool.

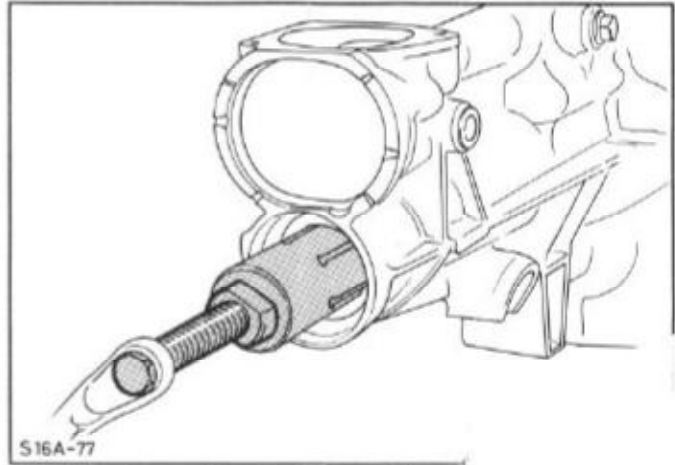


Fig.153. Draw the bush from the extension housing using appropriate special tool ('N' transmission shown).

NOTE: The oil return groove in the extension housing and the start of the oil groove in the bush must line up when installed, Fig.154.

7. Install a new oil seal using special tool.

8. Insert the driveshaft in the extension housing and attach it at the drive flange and the centre bearing.

9. When a V6 engine is fitted, hang the rear end of the exhaust system in the rubber loop and fit the bracket on the left hand side.

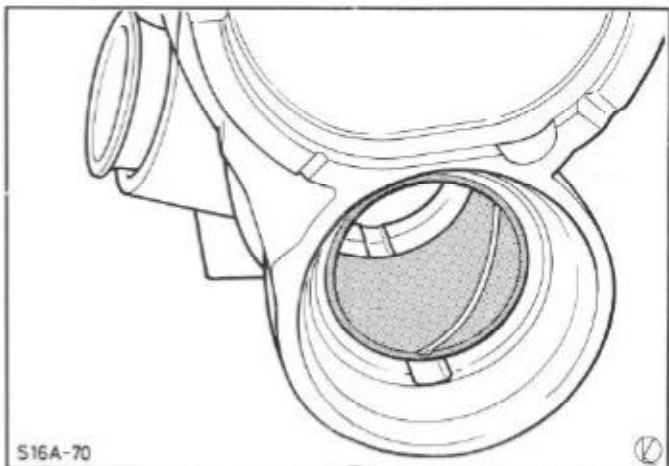


Fig.154. Alignment of oil return groove and start of oil groove in bush ('N' transmission shown).

10. Top up transmission oil.



## 16 172 GEAR - SPEEDOMETER DRIVEN - REMOVE AND INSTALL

SPECIAL SERVICE TOOLS REQUIRED: NONE

## To Remove

1. Jack up vehicle.
2. Detach the transmission crossmember and the heat shield from the floor assembly and the transmission, Fig.155.
3. Detach the circlip from the speedometer drive cable, Fig.156.
4. Remove the cover over the speedometer drive pinion and remove the drive pinion, Fig.157.

## To Install

5. Insert the drive pinion with an 'O' ring and fit the cover.
6. Fix the speedometer drive cable with the circlip.
7. Mount the transmission crossmember and heat shield on the transmission and the floor assembly.
8. Top up transmission oil and lower the vehicle to the ground.

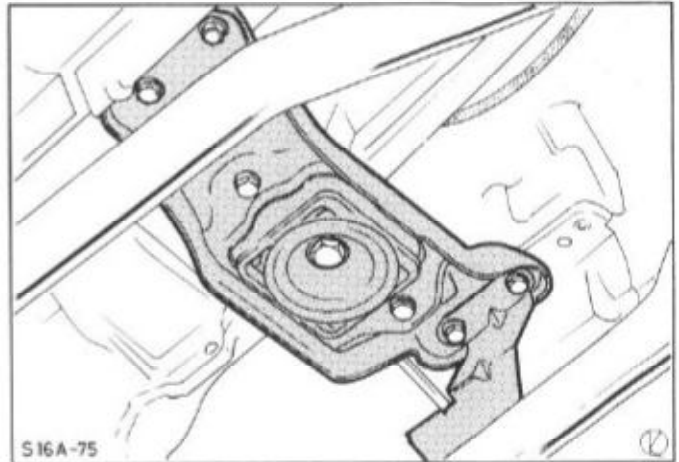


Fig.155. Remove transmission crossmember and heat shield.

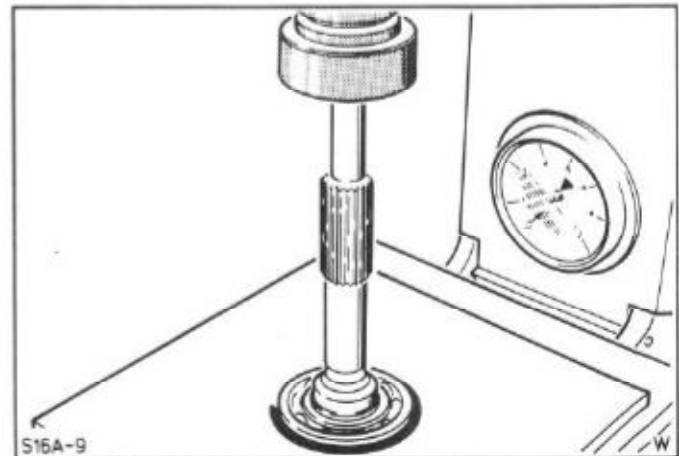


Fig.156. Detach circlip from speedometer drive cable ('B' transmission shown).

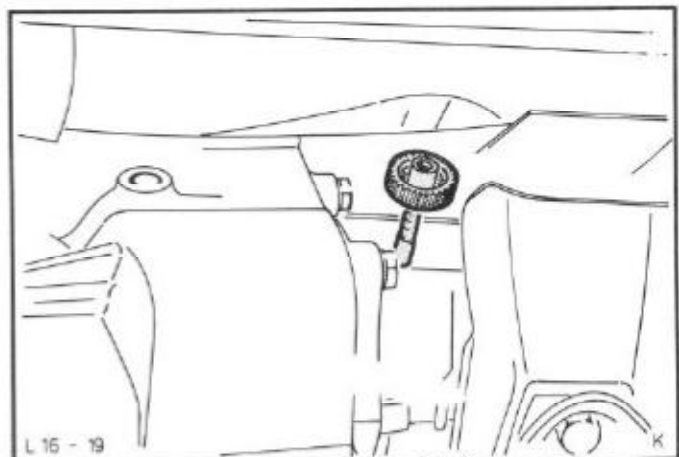


Fig.157. Withdraw the drive pinion.

**16 CLUTCH PEDAL - REMOVE AND INSTALL**
**S SPECIAL TOOLS REQUIRED: NONE**
**To Remove:**

1. Drive the vehicle over a pit or onto a ramp.
2. Pull off gaiter of clutch release lever. Detach the clutch cable from the release lever, pulling the cable downwards by hand into front of the release lever, holding it with pliers and unhooking it, Fig.158.
3. Remove the dash lower insulating panel on the left hand side.

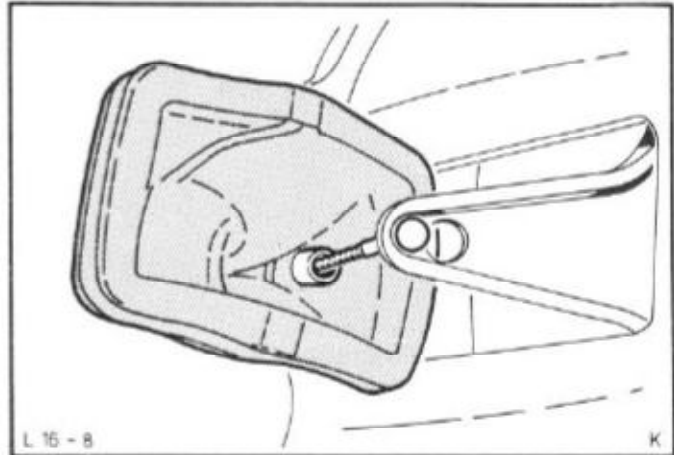
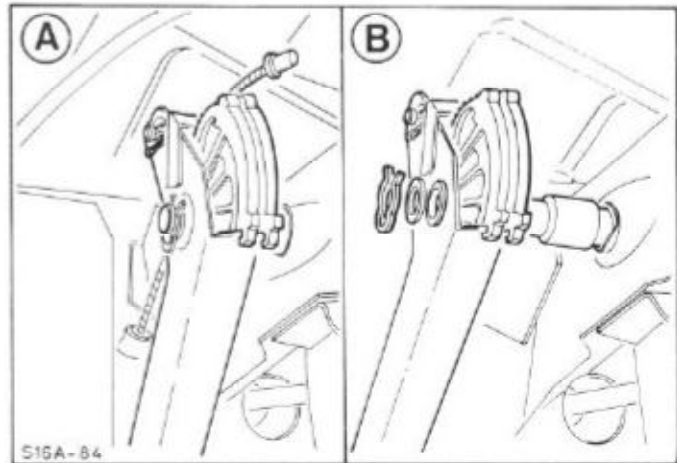
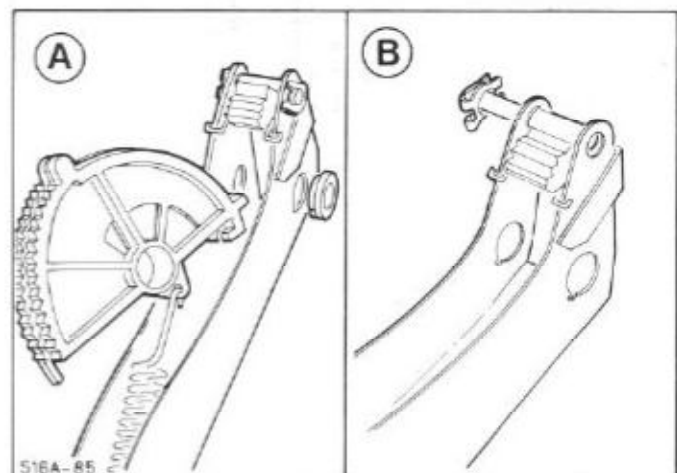


Fig.158. Unhook clutch cable from release lever.

4. Unhook the clutch cable from the toothed segment of the automatic adjusting mechanism, Fig.159A. Remove pedal shaft circlip and washer, slide off complete clutch pedal assembly with automatic adjusting mechanism sideways, Fig.159B.


 Fig.159. A - Pull out clutch cable  
 B - Pull the pedal assembly off the shaft.

5. Remove the bushes (2) and take out the toothed segment of the automatic adjusting mechanism with the tension spring, Fig.160A. Remove the pawl and sprig (1 clip), Fig.160B.


 Fig.160. A - Remove toothed segment of automatic adjusting mechanism  
 B - Remove pawl and spring

16 812

**To Install**

6. Install the automatic adjusting mechanism, Fig.161. Lubricate the bore in the toothed segment and the pawl with graphite grease. Insert the pawl and the spring and secure with the clip. Guide the toothed segment with the spring attached into the pedal and press the bushes into place. Lift the pawl and turn the toothed segment so that the teeth of the pawl rest on the part of the segment shown in Fig.162. Attach the tension spring in the pedal recess.

7. Install the clutch pedal:

Coat the pedal shaft with Molykote grease and slide the clutch pedal complete with the automatic adjusting mechanism and the washer onto the pedal shaft and secure. Position a block under the clutch pedal to disengage the pawl from the toothed segment. Attach the clutch cable to the toothed segment.

8. Attach the clutch cable to the clutch release lever:

Draw the clutch cable out of the sheath from below, hold it firmly with pliers and hook the cable into the release lever. Press the gaiter and spring retainer into the clutch housing. Remove the block from under the pedal.

9. Replace dash lower insulating panel on the left hand side.

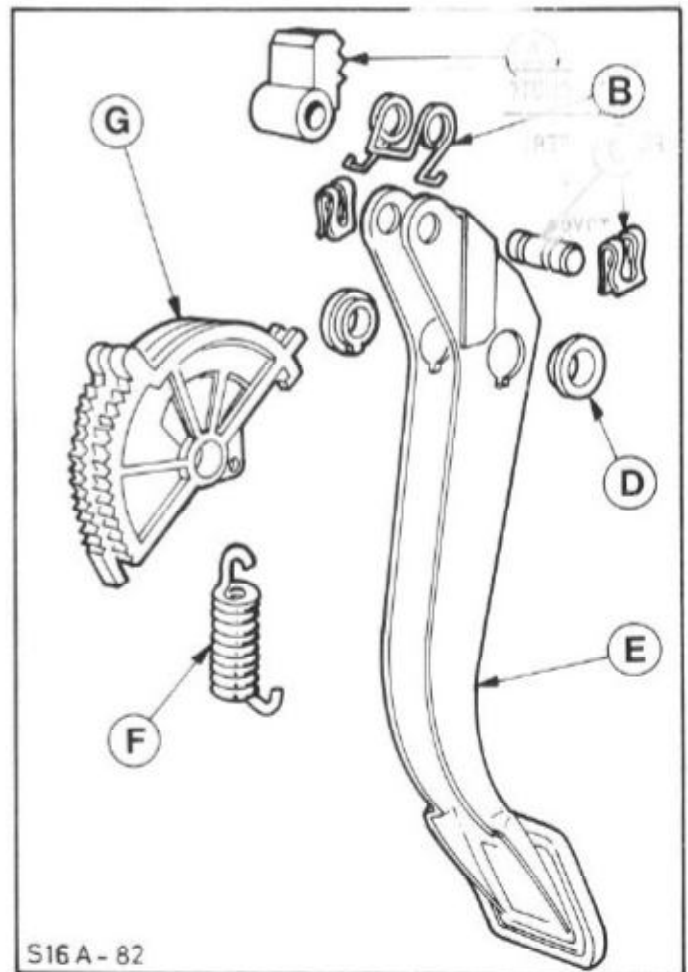


Fig.161. Clutch pedal and automatic adjusting mechanism.

- A - Pawl
- B - Pawl retaining spring
- C - Retaining pin and clip
- D - Bushes
- E - Clutch pedal
- F - Toothed segment tension spring
- G - Toothed segment

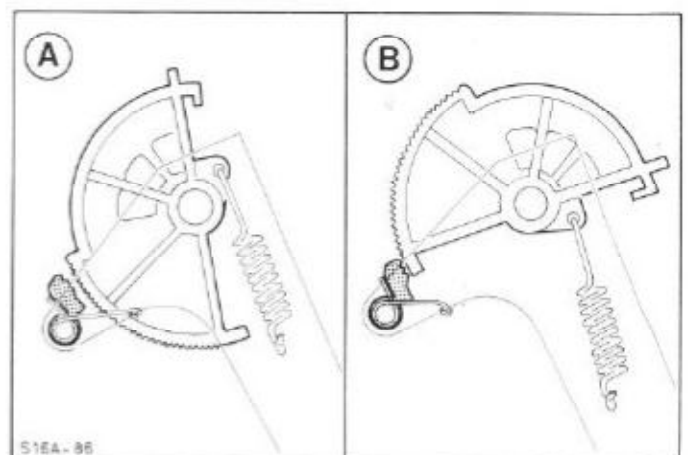


Fig.162. A - Lift pawl, turn toothed segment  
B - Position pawl on smooth curved surface

**16 814 CABLE - CLUTCH OPERATING - REMOVE AND INSTALL**
**SPECIAL SERVICE TOOLS REQUIRED: NONE**
**To Remove**

1. Drive the vehicle over a pit or onto a ramp.
2. Place a block under the clutch pedal to detach the pawl from the toothed segment. Withdraw the gaiter on the clutch release lever. Unhook the cable from the release lever by pulling the cable in front of the lever downwards by hand, holding it with pliers and then unhooking the end, Fig.163. Pull the gaiter off the cable.

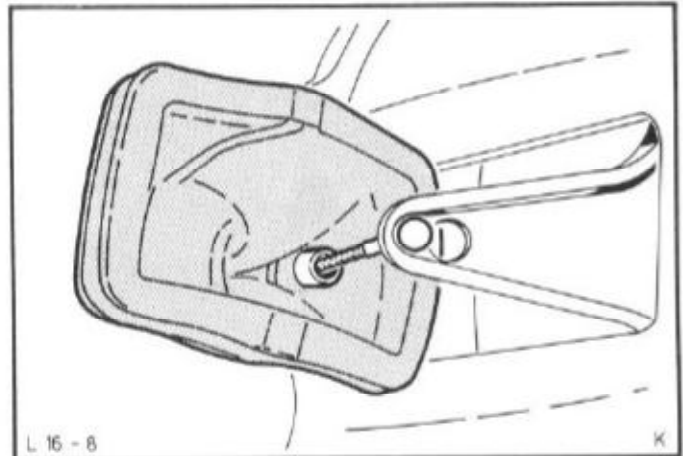


Fig.163. Unhook clutch cable from release lever.

3. Remove the dash lower insulating panel.
4. Unhook the clutch cable from the toothed segment of the automatic adjusting mechanism, Fig.164.
5. Withdraw the clutch cable through the engine compartment.

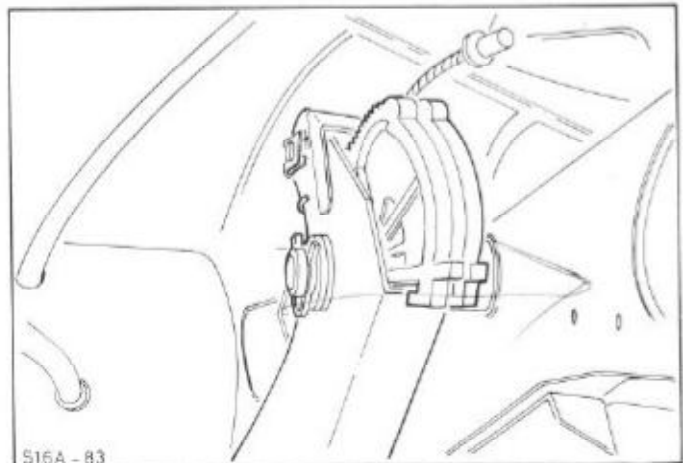


Fig.164. Withdraw clutch cable.

**To Install**

6. Guide the clutch cable through the bulkhead and attach it to the toothed segment.
7. Attach the clutch cable to the clutch release lever. Pass the clutch cable through the guide on the clutch housing, fit the gaiter, draw the cable out of the sheath, hold it with pliers and hook it into the release lever. Press the gaiter into the clutch housing with the spring retainer, Fig.165.
8. Remove the block from the pedal. Refit the dash lower insulating panel.

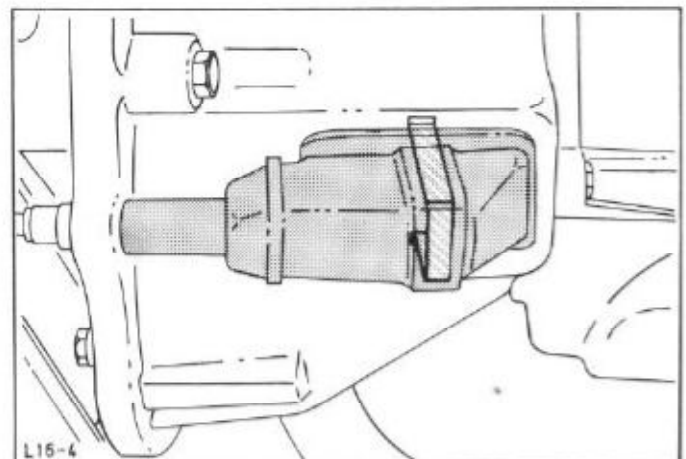


Fig.165. Gaiter and spring retainer in position.

16 207 4 SYNCHRONISER RING - 5TH GEAR -  
REPLACE (transmission removed)

SPECIAL SERVICE TOOLS REQUIRED:

Mounting bracket .. .. 16-009

To Remove

1. Remove clutch release bearing and release lever from clutch housing.
  2. Mount transmission on assembly stand.
  3. Remove transmission housing cover.
  4. Remove 5th gear locking plate and locking pin with spring from transmission extension housing.
  5. Detach selector crank from shift rod by pulling the shift rod towards the rear in 3rd gear position and supporting the selector crank. Then drive out roll pin, Fig.1.
  6. Unbolt the transmission extension housing from the intermediate housing (6 bolts) and pull it away towards the rear. Then remove selector crank and roll pin.
  7. Unbolt cap screw of selector locking mechanism at side of transmission, remove spring and locking pin with a bar magnet.
  8. Drive roll pin out of reverse gear selector arm pin assembly and shift rod as shown in Fig.2, taking care not to drop it inside the transmission case.
  9. Withdraw shift rod and remove 1st/2nd gear and 3rd/4th gear selector forks, selector pin holder with locking plate and 5th gear selector fork with selector sleeve.
  10. Detach the speedometer drive worm from the mainshaft using a standard puller.
- NOTE: Mark the speedometer worm drive position on the mainshaft before pulling it off.
11. Detach 5th gear synchroniser assembly from the transmission mainshaft by removing the snap ring.

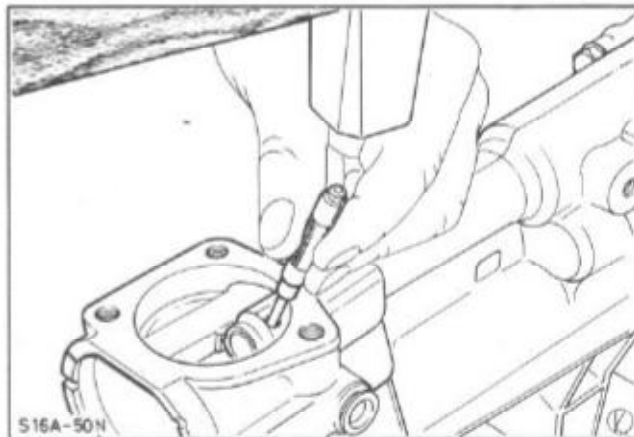


Fig.1. Detach selector crank from shift rod.

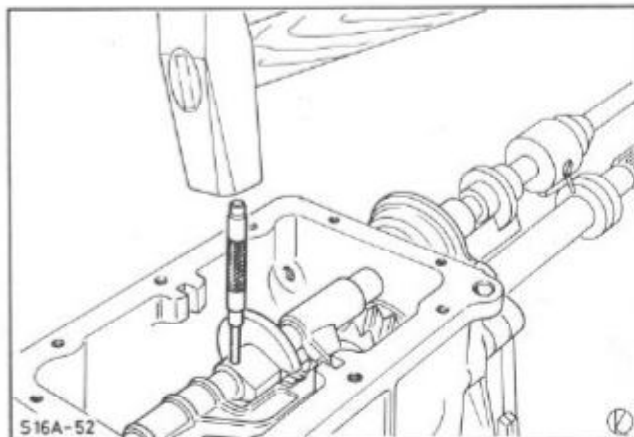


Fig.2. Drive out roll pin

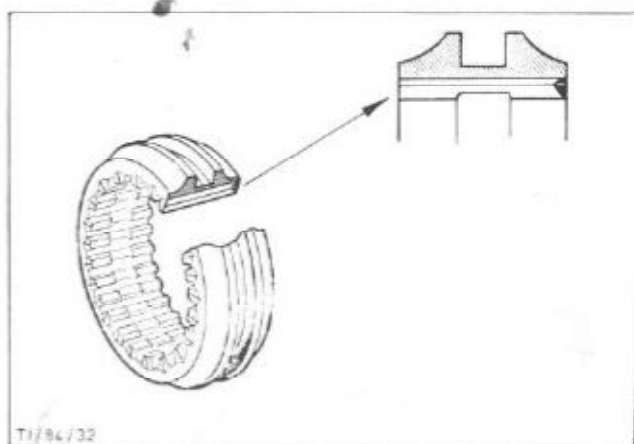


Fig.3. Latest version 5th gear synchroniser ring; only one side bevelled (see arrow)



12. Dismantle 5th gear synchroniser.
13. Assemble 5th gear synchroniser using the parts listed under "Parts Required".

When fitting 5th gear synchroniser rings which are only bevelled on one side, make sure that the bevelled side faces the rear (the driveshaft).

14. Fit 5th gear synchroniser and secure it.
15. Fit speedometer drive worm on transmission mainshaft. To do this, heat the speedometer drive worm for approximately 1.1/2 minutes with a hot air blower to a temperature of approximately 600°C. Then slide the worm into the prescribed position (123,5 + 0,5 mm from the snap ring of the 5th gear synchroniser) on the mainshaft.
16. Install shift rod and selector forks. Install selector sleeve, latest level 5th gear selector fork (see "Parts Required"), 1st/2nd gear selector fork, selector arm and pin assembly with locking plate and 3rd/4th gear selector fork one by one, lining them up flush with the shift rod. Press the shift rod into the housing. Align the selector sleeve and selector arm and pin assembly correctly with the selector forks.

NOTE: Fit the selector sleeve with the short side and the selector arm and pin assembly with the long (drilled) side facing towards the front.

17. Secure reverse gear selector arm and pin assembly and shift rod with roll pin.
18. Insert locking pin and spring in side of transmission housing, Fig.6. Apply prescribed sealing compound and secure cap screw of selector shaft locking mechanism.

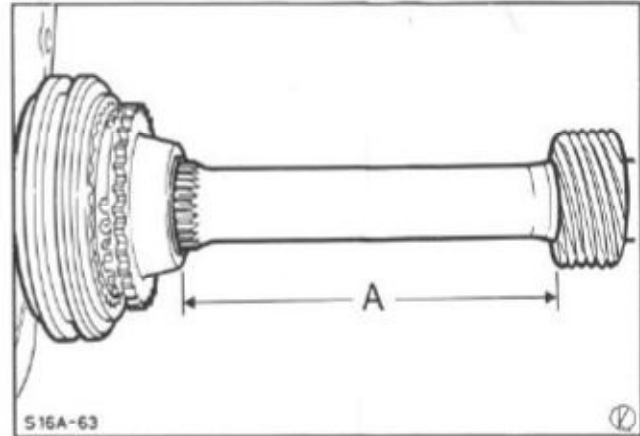


Fig.4. Distance between speedometer drive worm and synchroniser snap ring.  
A - 123,5 mm ± 0,5 mm

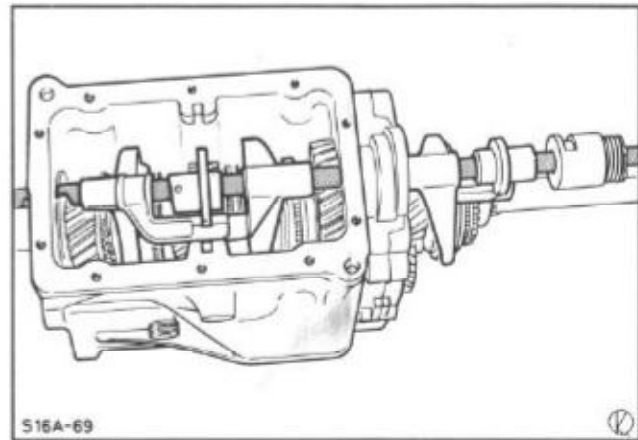


Fig.5. Fit shift rod and selector forks.

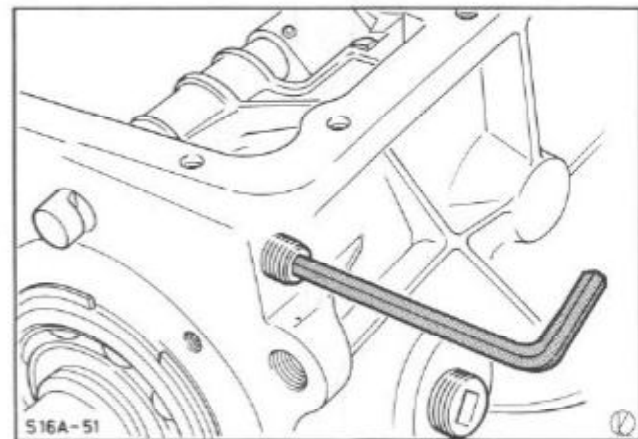


Fig.6. Screw in locking pin with spring.

19. Move shift rod into 3rd gear position and attach transmission extension housing to intermediate housing. Coat the three bolts inserted in the transmission with specified sealer.
20. Insert selector crank, support it and secure it to shift rod with roll pin.
21. Apply prescribed sealer to locking plate (sealer must not get into locking pin bore) and fit locking pin and spring to transmission extension housing hand-tight.

Adjust gear shift mechanism by pressing the gear lever fully to the right in neutral position and secure locking plate, Fig.7. Tighten retaining bolts to a torque of 21 - 26 Nm.

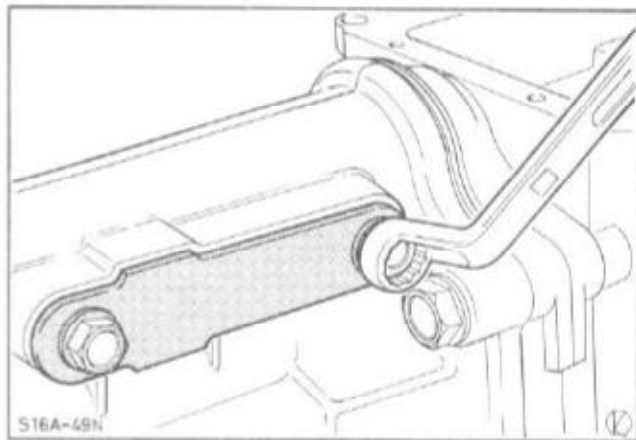


Fig.7. Fit 5th gear locking plate.

22. Fit transmission cover with gasket.
23. Detach transmission from assembly stand and refit clutch release bearing and lever.

