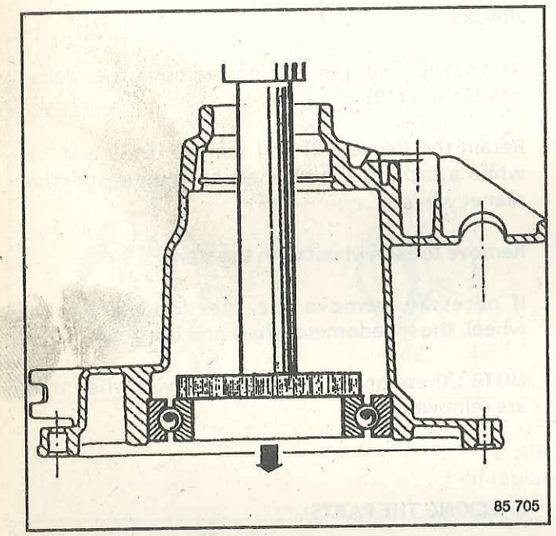
DIFFERENTIAL
REPLACING THE BEARINGS

Crown wheel side bearing

REMOVAL

Pass a bar into the housing and position it flat on the bearing.

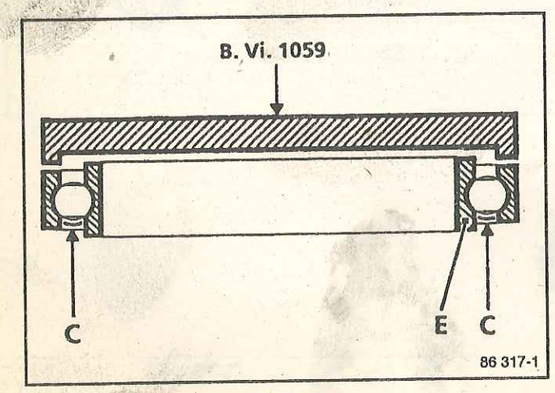
On the press, use an extension tube and extract the bearing.



REFITTING

Bearing cage (C) must be aligned with the other side of the crown wheel.

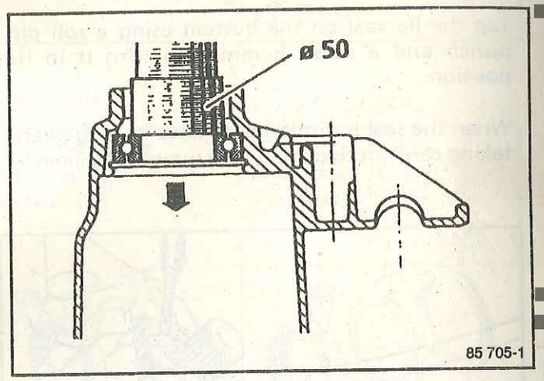
Press the bearing in using the press, and using tool **B. Vi. 1 059**, pressing on the external bearing ring.



Stem sunwheel side bearing

REMOVAL

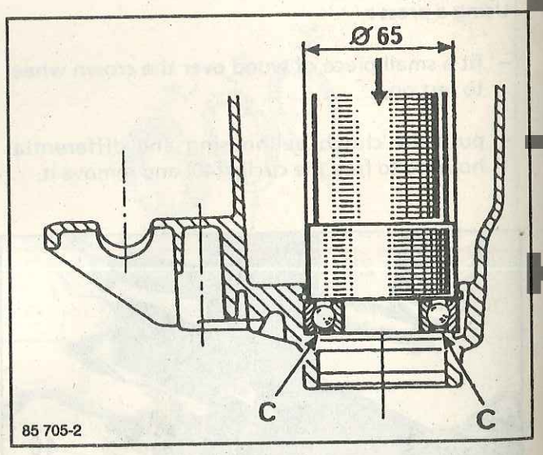
Remove the circlip (66) holding the bearing (65) in its position, then on the press, remove the bearing using a sleeve of Ø **50**, towards the inside of the housing.



REFITTING

Bearing cage (C) must be aligned with the other side of the crown wheel.

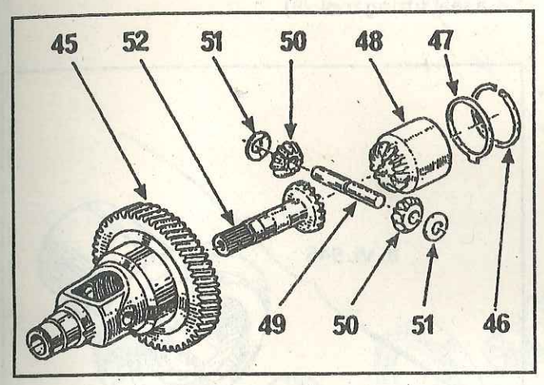
Use a sleeve of Ø **65** pressing on the external bearing cage (65).



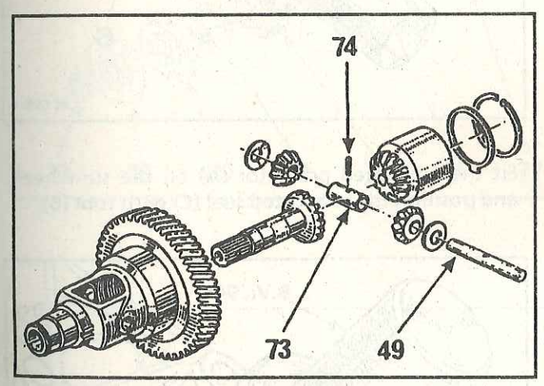
Replace the bearing retaining circlip.

DIFFERENTIAL
REFITTING-Special note

JB - 1st fitting



JB - 2nd fitting



A new roll pin (74) must be fitted (tool **B. Vi. 31-01**).

Position the speedometer crown wheel (41), with the lug in the housing location.

Refit the new gear and the speedometer shaft using flat nosed pliers.

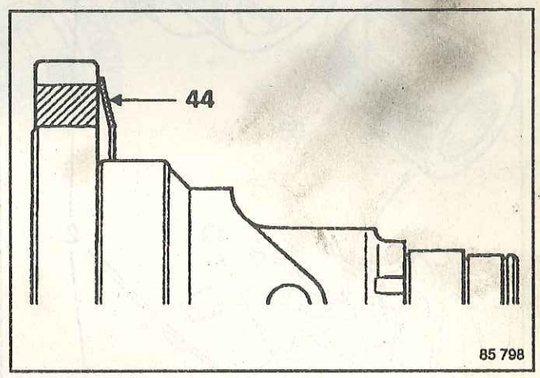
Ensure the parts are correctly clipped in.

REFITTING

Refit:

- 1st fitting : (44) then (43) and (41).
- 2nd and 3rd fittings (44) then (41).
- 4th fitting and repairs : (44) then (43) and (41).

NOTE : in all cases position (44) as shown below.



Replace the differential in the clutch and differential housings.

On the press:

- fit a wooden block under the crown wheel,
- ensure the circlip thickness corresponds to the groove size,
- fit the circlip (40) on the cone shaped end (1) of tool **B. Vi. 946**, then on the cone shaped end of the sunwheel,
- fit the tool (2) **B. Vi. 946** on end (1) and push with the press until the circlip is correctly fitted into the groove. Remove tool **B. Vi. 946**,
- turn the assembly and ensure the speedometer gear rotates.

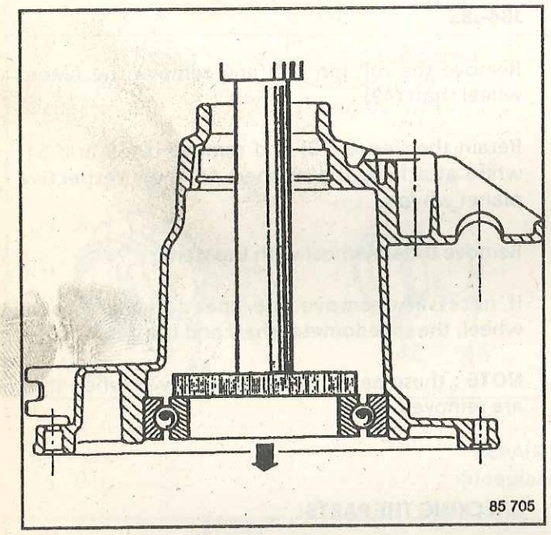
DIFFERENTIAL
REPLACING THE BEARINGS

Crown wheel side bearing

REMOVAL

Pass a bar into the housing and position it flat on the bearing.

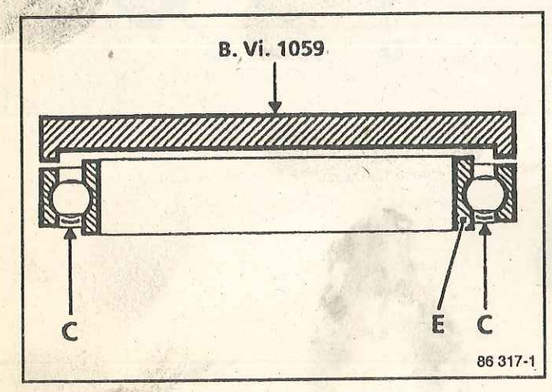
On the press, use an extension tube and extract the bearing.



REFITTING

Bearing cage (C) must be aligned with the other side of the crown wheel.

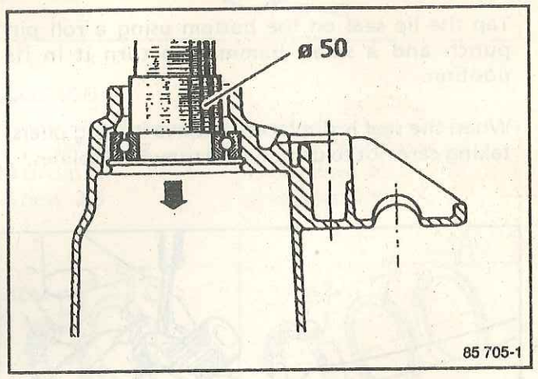
Press the bearing in using the press, and using tool **B. Vi. 1 059**, pressing on the external bearing ring.



Stem sunwheel side bearing

REMOVAL

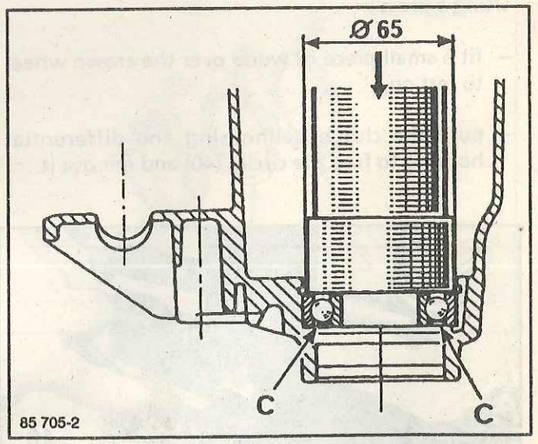
Remove the circlip (66) holding the bearing (65) in its position, then on the press, remove the bearing using a sleeve of Ø 50, towards the inside of the housing.



REFITTING

Bearing cage (C) must be aligned with the other side of the crown wheel.

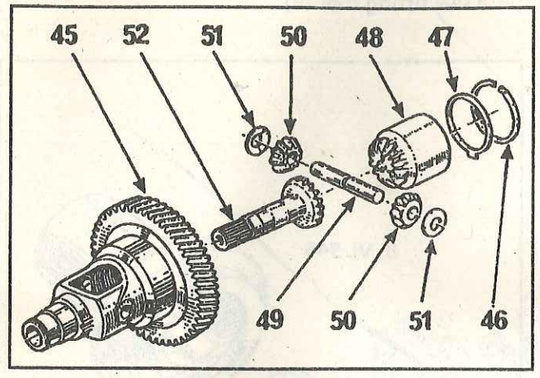
Use a sleeve of Ø **65** pressing on the external bearing cage (65).



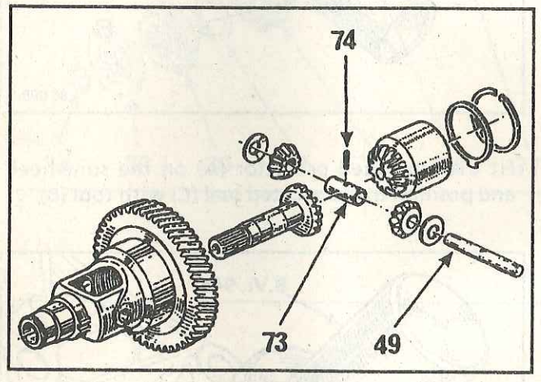
Replace the bearing retaining circlip.

DIFFERENTIAL
REFITTING-Special note

JB - 1st fitting



JB - 2nd fitting



A new roll pin (74) must be fitted (tool **B. Vi. 31-01**).

Position the speedometer crown wheel (41), with the lug in the housing location.

Refit the new gear and the speedometer shaft using flat nosed pliers.

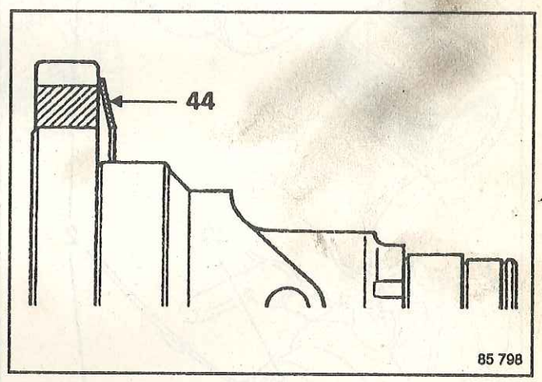
Ensure the parts are correctly clipped in.

REFITTING

Refit:

- 1st fitting : (44) then (43) and (41).
- 2nd and 3rd fittings (44) then (41).
- 4th fitting and repairs : (44) then (43) and (41).

NOTE : in all cases position (44) as shown below.

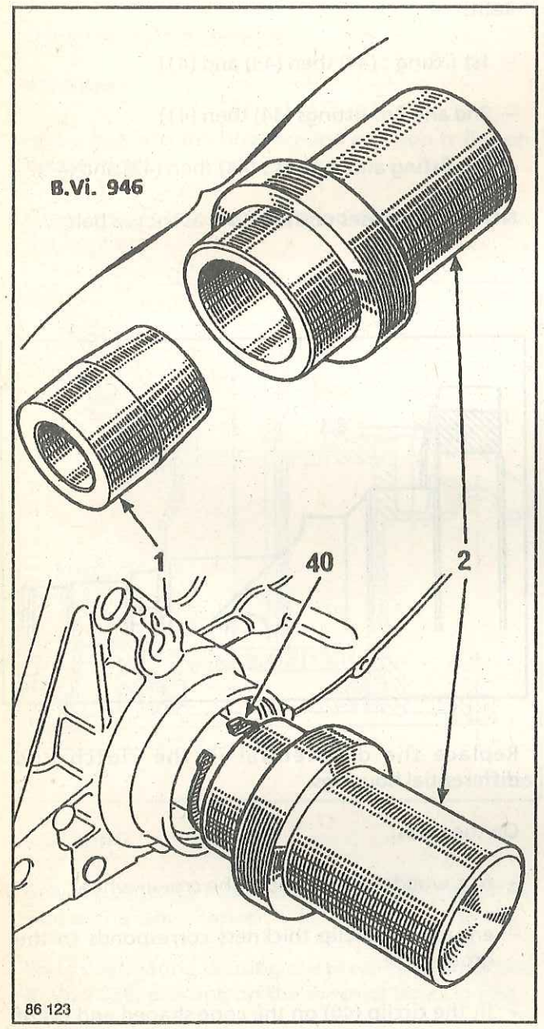


Replace the differential in the clutch and differential housings.

On the press:

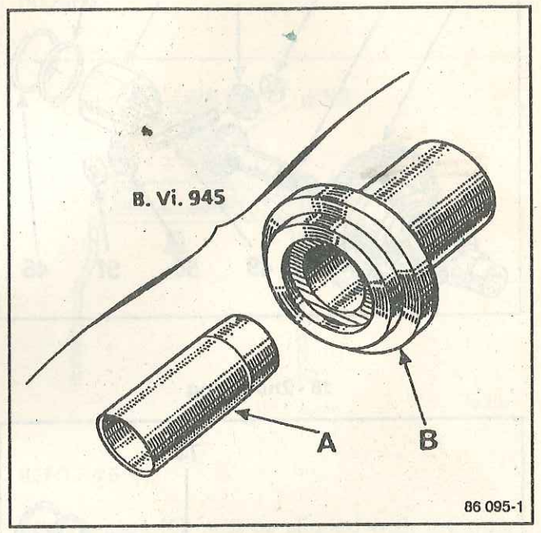
- fit a wooden block under the crown wheel,
- ensure the circlip thickness corresponds to the groove size,
- fit the circlip (40) on the cone shaped end (1) of tool **B. Vi. 946**, then on the cone shaped end of the sunwheel,
- fit the tool (2) **B. Vi. 946** on end (1) and push with the press until the circlip is correctly fitted into the groove. Remove tool **B. Vi. 946**,
- turn the assembly and ensure the speedometer gear rotates.

DIFFERENTIAL

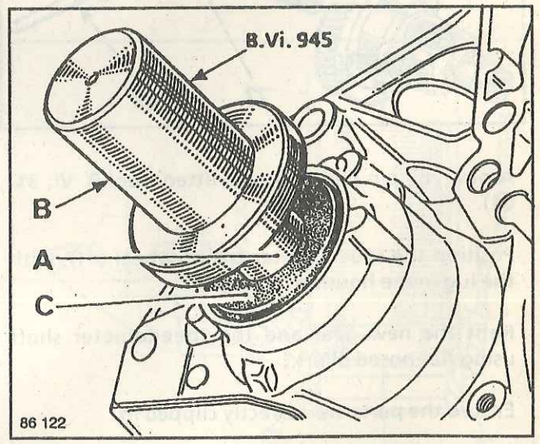


The seal is refitted using tool B. Vi. 945 comprising:

- a seal protector (A),
- a seal fitting tool (B).

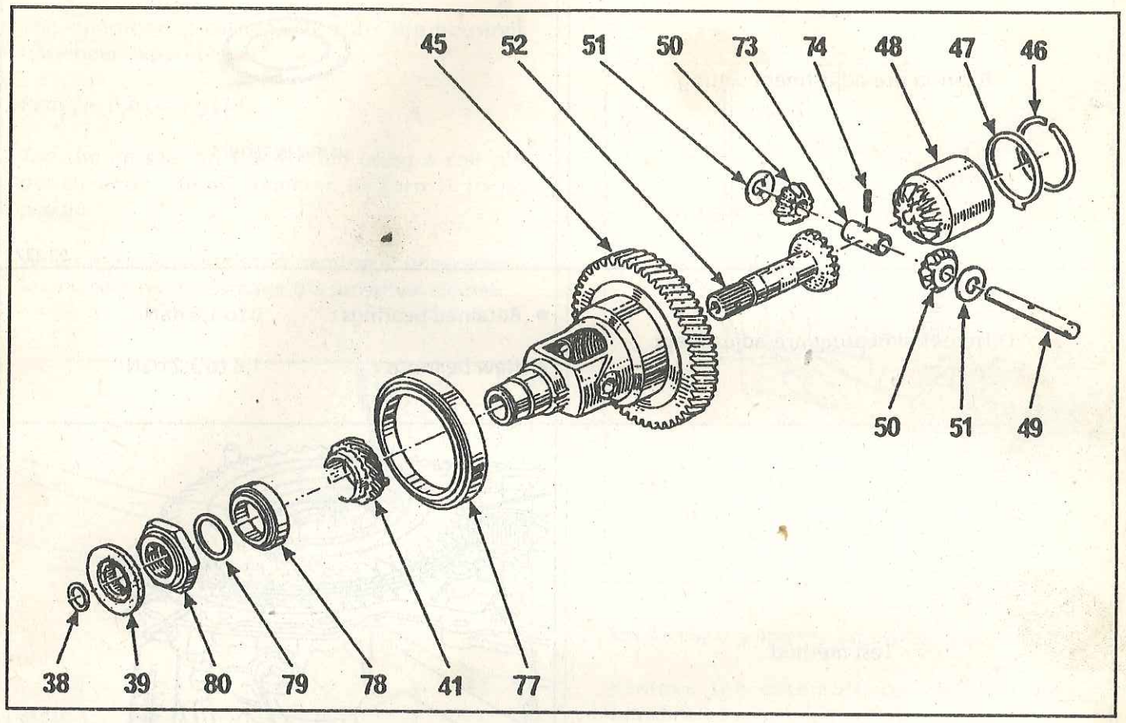


Fit the lubricated protector (A) on the sunwheel and position the lubricated seal (C) with tool (B).



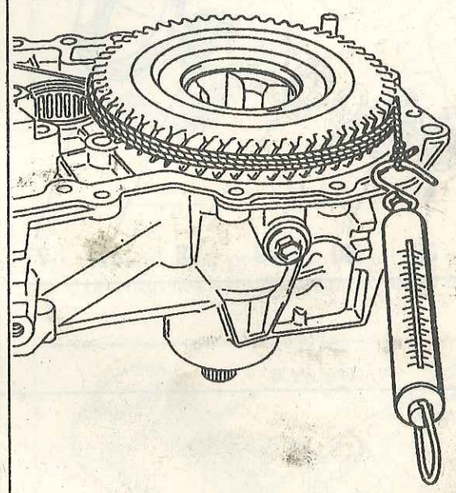
NOTE : the lip seal may be replace with the gear box on the vehicle.

DIFFERENTIAL (TAPER ROLLER BEARING MOUNTING ASSEMBLY)
for JB2 and JB3 gear boxes



Differential bearings	 with taper roller bearings assembly in O

93 227

Bearing pre-adjustment setting	 using washers 93 227
Differential bearing pre-adjustment	• Retained bearings : 0 to 1,6 daN. • New bearings : 1,6 to 3,2 daN.
Test method	 90 668
Thickness of washers sold by parts department	 2,225 mm to 2,525 mm in 0,05 to 0,05 mm

DIFFERENTIAL

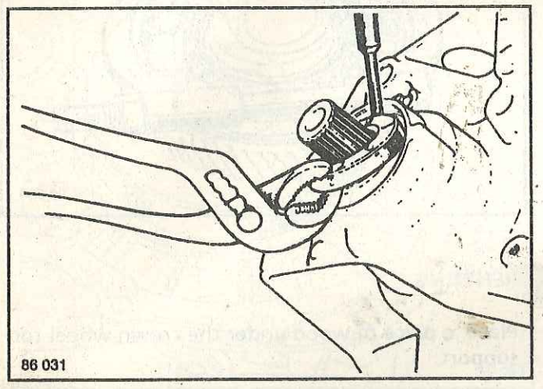
REMOVAL

This operation is carried out after the housings have been separated.

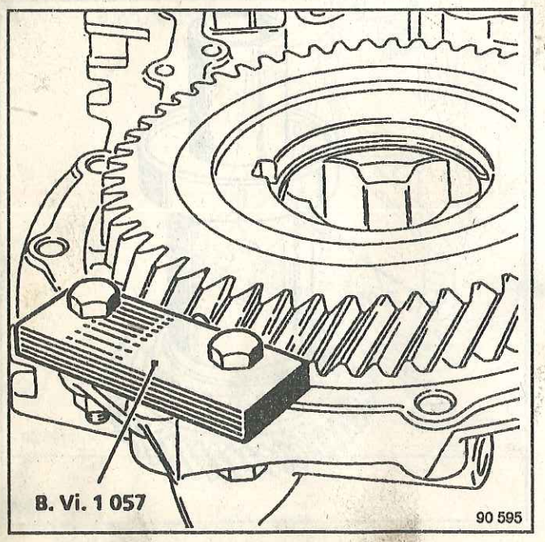
Remove the O ring (38).

Tap the lip seal on the bottom using a roll pin punch and a small hammer to turn it in its position.

When the seal is displaced, remove it using pliers, taking care not to damage the sunwheel splines.

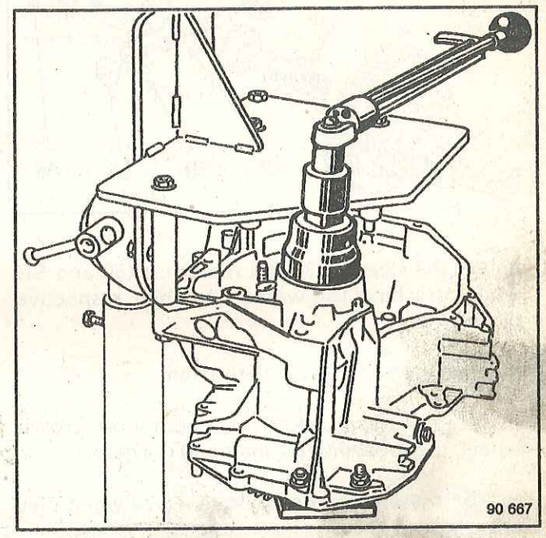

86 031

Lock the differential - crown wheel assembly using tool **B. Vi. 1 057** mounted on the housing.



90 595

Using a torque wrench and socket eg. **FACOM M50** and reducer **K232** and **S232** loosen and remove the housing mounting nut.


90 667

Retain the bearing pre-adjustment washer (79).

Remove the assembly by pushing on the sunwheel.

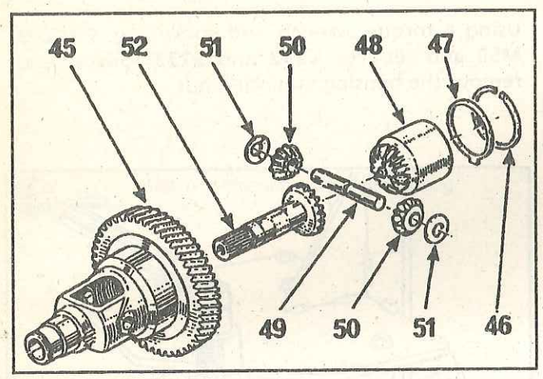
Turn the assembly over.

Tighten the housing (45) in a vice with soft jaws.

Remove the spring ring (46) and the shim (47).

Remove the sunwheel spider (48).

Remove the roll pin (74) and remove the planet wheel shaft (49).



Retain the sleeve (73) and remove it (50 and 51) while attaching the washers to their respective planet wheels.

Remove the sunwheel with the stem.

If necessary remove the speedometer crown wheel, the speedometer shaft and the gear.

NOTE : these parts should be renewed when they are removed.

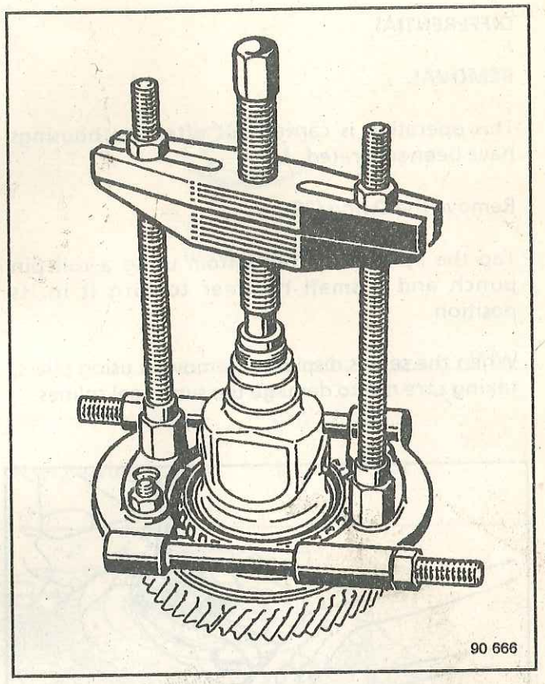
CHECKING THE PARTS:

Check the condition of:
- teeth,
- bearing surfaces,
- washers (for planet wheels),
- splines,
- housing.

Replacing the bearings on the crown wheel side

REMOVAL

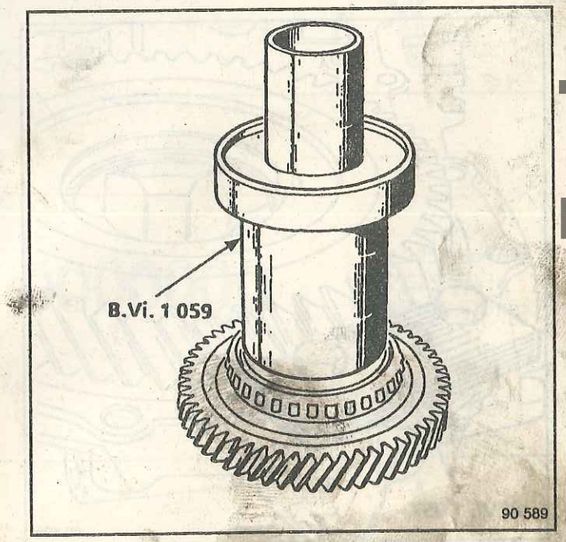
Loosen the bearing from its position in the housing then extract the bearing on the crown wheel side using a tool of type **FACOM U 53T + U 53K** or similar.



REFITTING

Place a piece of wood under the crown wheel for support.

Using tool **B. Vi. 1 059** and a press, fit the bearing until it reaches the stop on the housing.

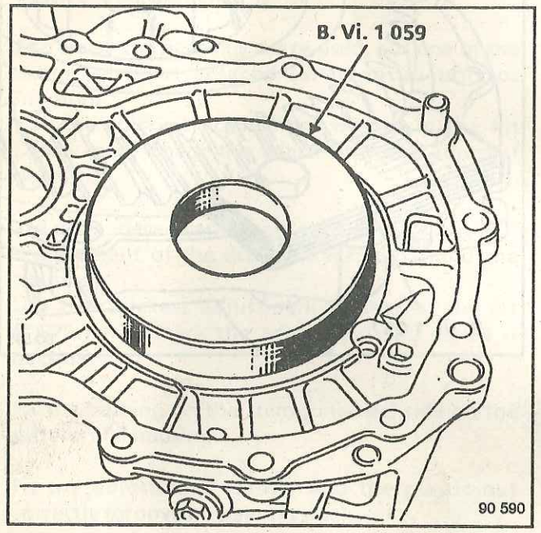


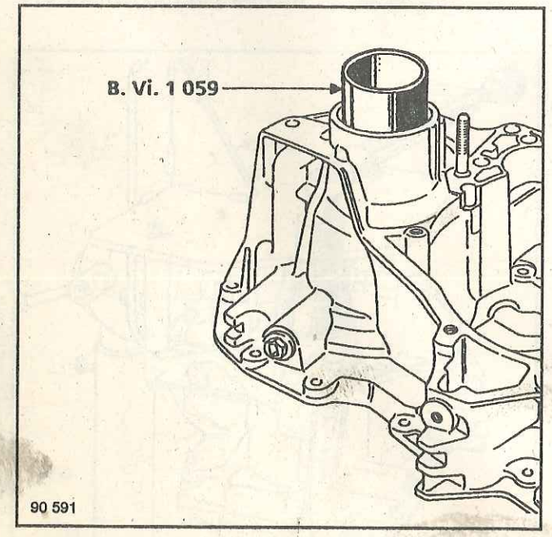
Bearing cages

Remove the bearing cages using a tube inserted from inside the housing.

REFITTING

Using tool **B. Vi. 1 059** and a press, fit the bearing cages until they contact the shoulder on the housing.





NOTE : ensure the cages are correctly positioned and correctly supported in their positions.

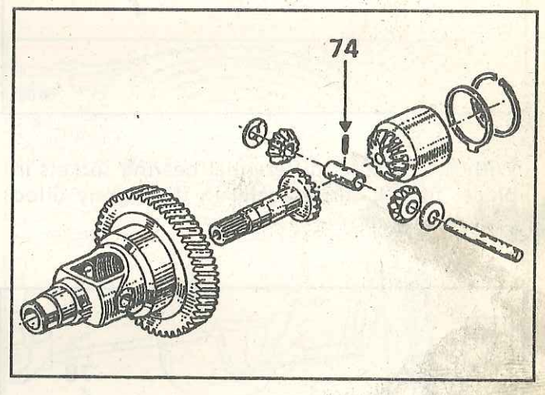
DIFFERENTIAL
(TAPER ROLLER BEARING MOUNTING ASSEMBLY)

REFITTING

All parts should be cleaned and checked and then oiled before being replaced.

All roll pins should be renewed.

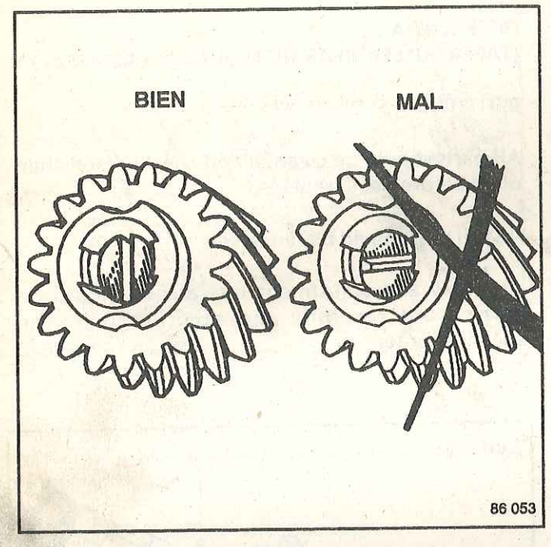
Assembly and adjustment operations should be carried out carefully and accurately, in the specified order.



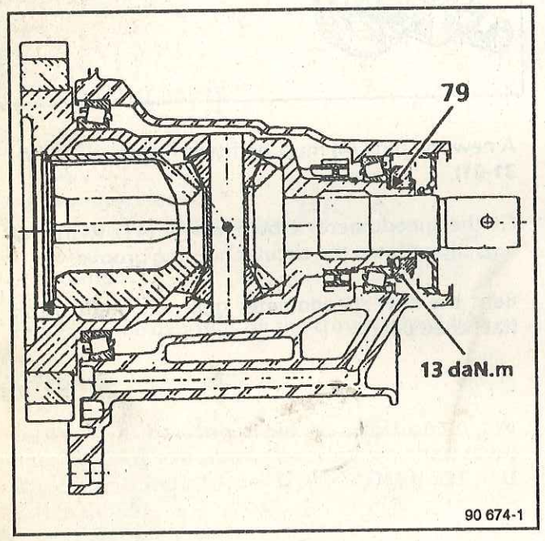
A new roll pin (74) must be fitted (using tool **B. Vi. 31-01**).

Fit the speedometer crown wheel (41) with the lugs clipped into the circular housing groove.

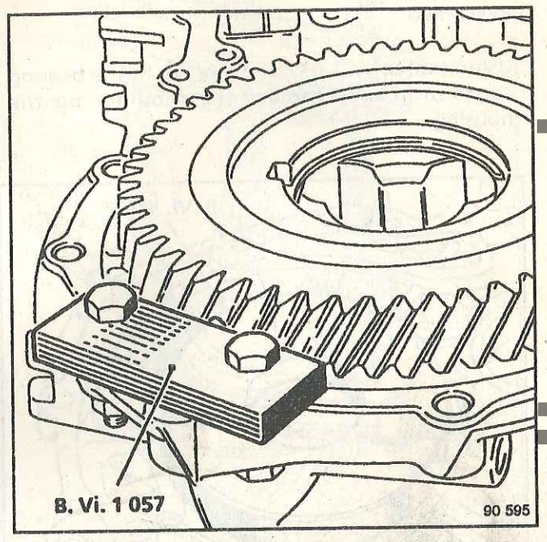
Refit the new speedometer gear and shaft using flat nosed pliers.



With the external differential bearing sockets in place, fit the differential in the lightly oiled bearing housing.



As for removal, lock the housing - crown wheel assembly using tool **B. Vi. 1 057** mounted on the housing.



DIFFERENTIAL

Bearing pre-adjustment settings.

SELECTION OF ADJUSTMENT WASHER

There are three possibilities :

1st case : all the parts are re-used (bearings, differential housing and housing).
Refit the original pre-adjustment washer (79) and check the adjustment.

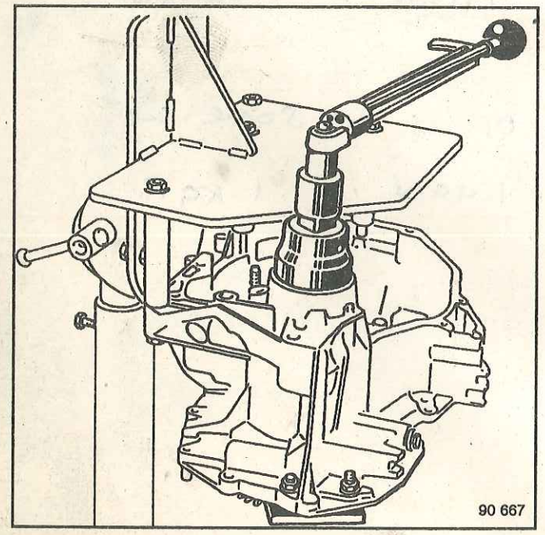
2nd case : the bearings are re-used, but one of the other parts is replaced (differential unit or housing).
Use the thickest adjustment washer in the kit **(2,525 mm)**. Check the adjustment and adjust if necessary.

3rd case : new bearings are used (with or without replacement of the differential housing and the housing).
Use the thickest adjustment washer in the kit **(2,525 mm)**. Check the adjustment and adjust if necessary.

Fit the bearing on the stem sunwheel side on the differential housing.

Fit the adjustment washer and the plastic nut correctly (groove on bearing side).

Pre-tighten to **1 to 2 daN.m.** 10 ft/lb



Remove tool **B. Vi. 1057** and rotate the differential to fit the bearings.

Refit tool **B. Vi. 1057** and torque tighten the nut to **13 daN.m.** 95

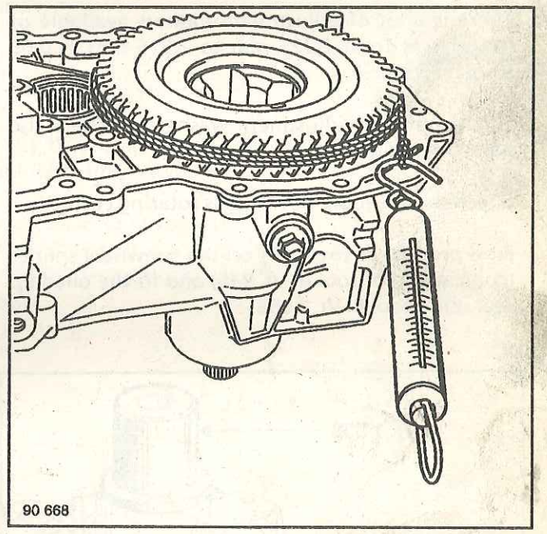
Remove the tool **B. Vi. 1057**.

CHECKING THE PRE-ADJUSTMENT

Turn the differential several times.

Wind a cord around the crown wheel.

Using a spring balance, pull on the cord.



1st and 2nd cases : bearings re-used.

The differential should turn under a load from **0** to **1,6 daN**.

3rd case : new bearings

The differential should turn under a load of **1,6** to **3,2 daN**. 2.2 to 6 13.

This load is the load required to retain differential rotation movement.

If the adjustment is not correct :

Determine the thickness of the adjustment washer to be fitted :

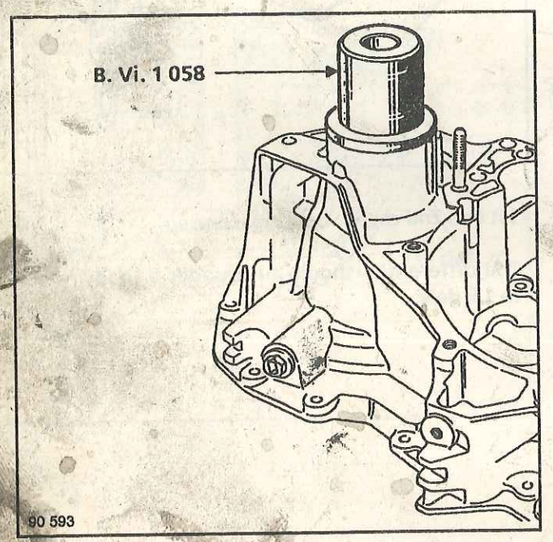
the pre-adjustment increases by approximately **0,7** to **0,8 daN**, for a reduction in pre-adjustment washer thickness of 0,05 mm and vice versa.

There is a kit of adjustment washers available of thicknesses from 2,225 mm to 2,525 mm in 0,05 from 0,05 mm.

Fit the new pre-adjustment washer and check the adjustment again.

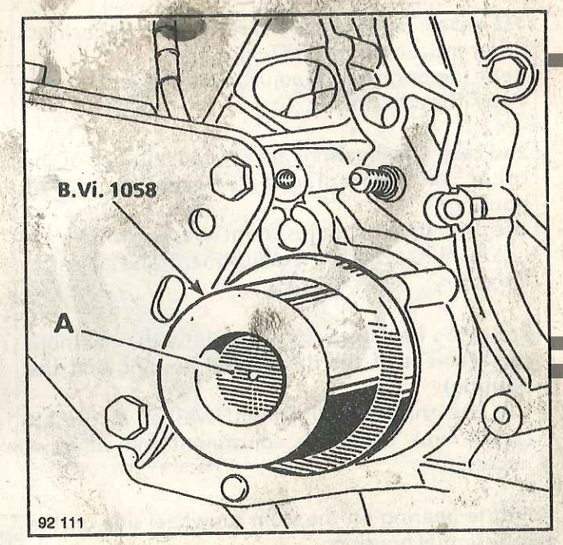
Check the speedometer shaft is rotating correctly.

Fit a protective cover (A) on the sunwheel splines (conical end of tool **B. Vi. 945)** and fit the oiled lip seal using tool **B. Vi. 1 058**.



Fit the O ring on the sunwheel and coat the splines with **MOLYKOTE "BR2"** grease.

NOTE : the lip seal may be replaced with the gear box still mounted in the vehicle.



1 daN. = 1.02 KgF.

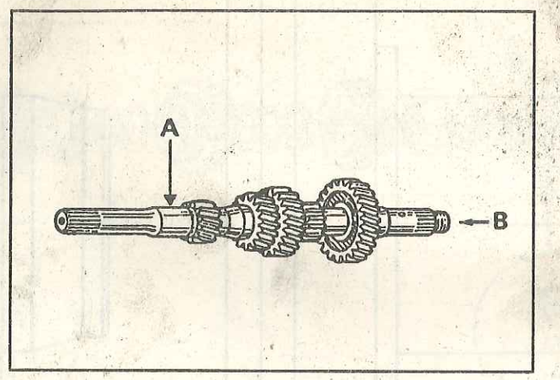
or is the same as

1 daN = 1 KgF.

PRIMARY SHAFT

The primary shaft cannot be repaired.

No adjustment may be made.

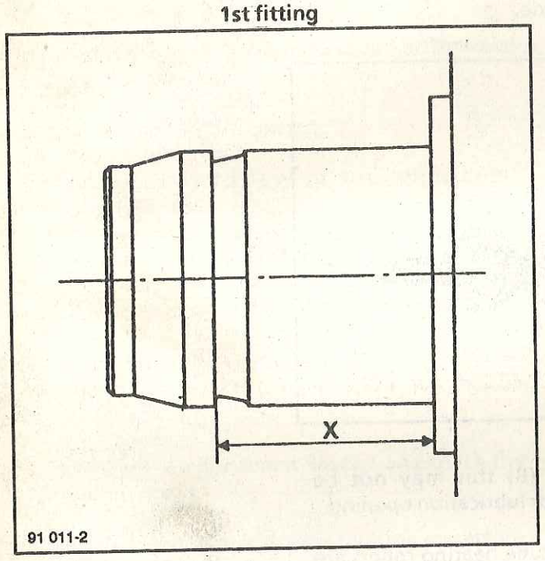


On shafts with a nozzle (B) this may not be removed ; clean the 5th gear lubrication opening.

The lip seal and the guide tube bearing rollers are directly in contact with the shaft; check the bearing surface (A), and if there are scratches or faults replace the primary shaft.

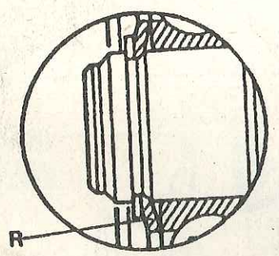
PRIMARY AND SECONDARY SHAFTS ON JB0 AND JB2 GEAR BOXES
Change in circlip groove on primary and secondary shafts, and the rubber washer fitted on the shafts.

1st fitting

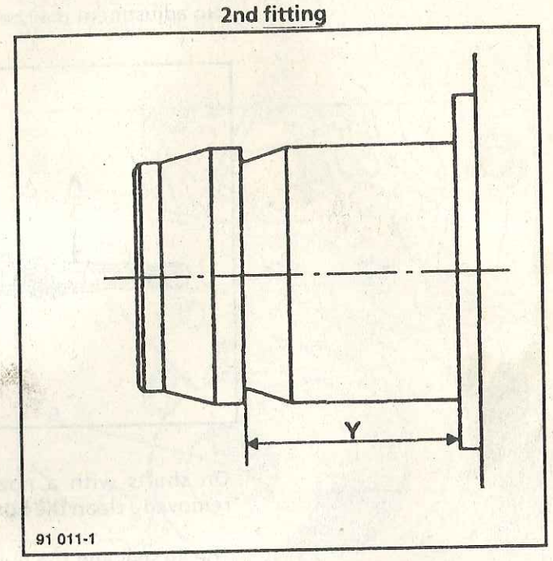


91 011-2

Assembly using bellville washer **"R" Ø 35,6 mm** thickness **2,6 mm.**



2nd fitting



91 011-1

Special note:

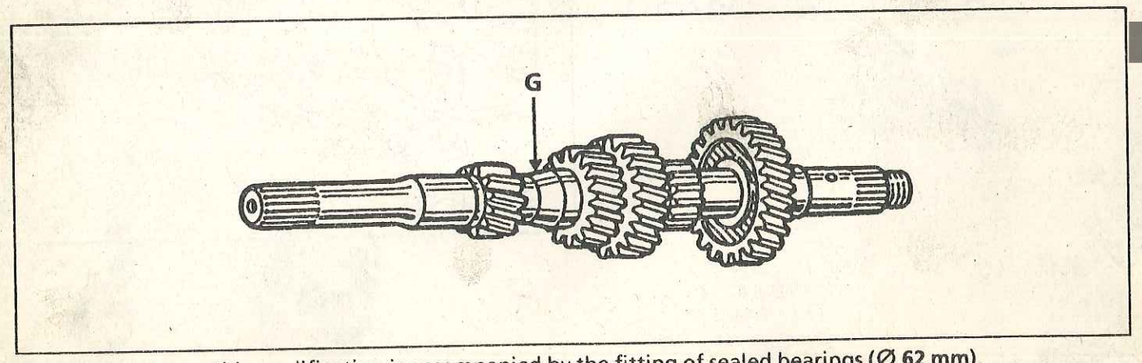
New circlip groove profile repositioned by **0,2 mm.**

$$Y = X - 0,2$$

New bellville washer **"R" Ø 33 mm** thickness **2,4 mm.**

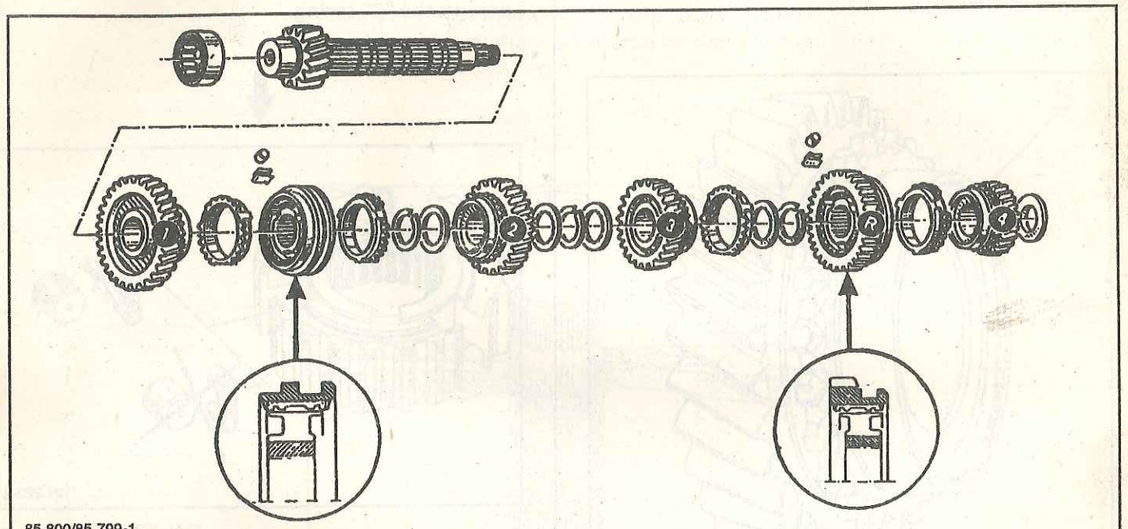
The correct bellville washer must be fitted on the appropriate shaft.

To identify the new shafts ; only the primary shaft is marked : Groove**"G"** on the 1/2 section.



On **JB2** gear boxes this modification is accompanied by the fitting of sealed bearings **(Ø 62 mm)**.

SECONDARY SHAFT



85 800/85 799-1

REMOVING THE GEARING

Fit the secondary shaft in a vice with soft jaws then remove the assembly from the right hand side to the left hand side.

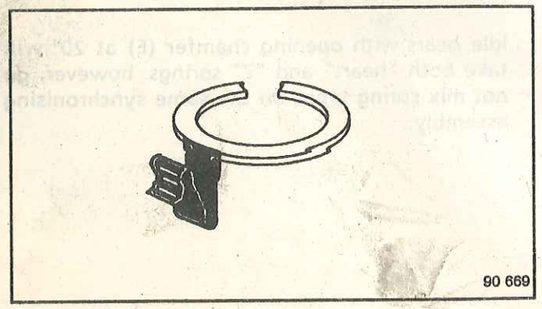
REFITTING

Refitting is the reverse of removal. Lubricate each gear before refitting.

Refit in the correct order :

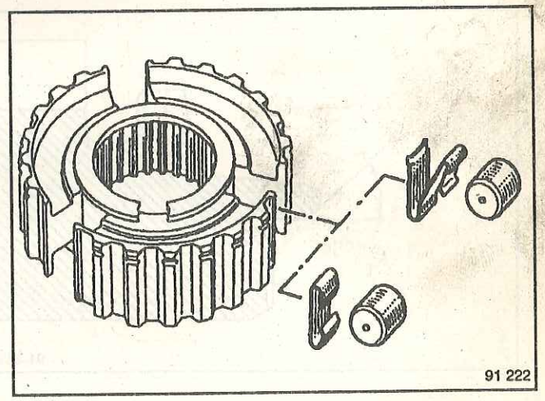
- sliding gear and synchro hubs
  1st, 2nd, 3rd, 4th and 5th

- synchro roller springs : stop tabs fitted on circlip side.



90 669

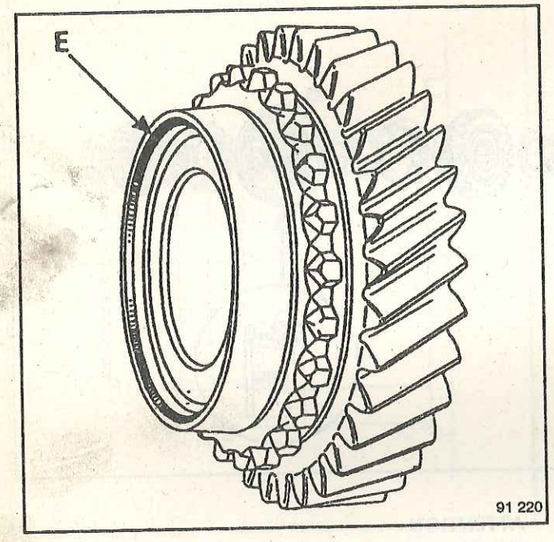
ATTENTION
There are two types of synchro roller spring used : "Z" springs have been replaced by "heart" springs.



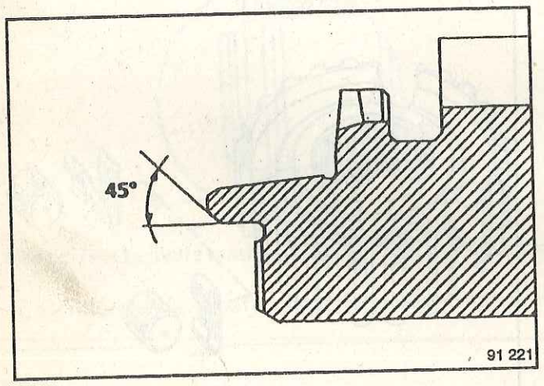
91 222

In order to fit the new "heart" springs, the opening chamfer for the groove and tongue joint under the idle gear synchronising cone has been modified.

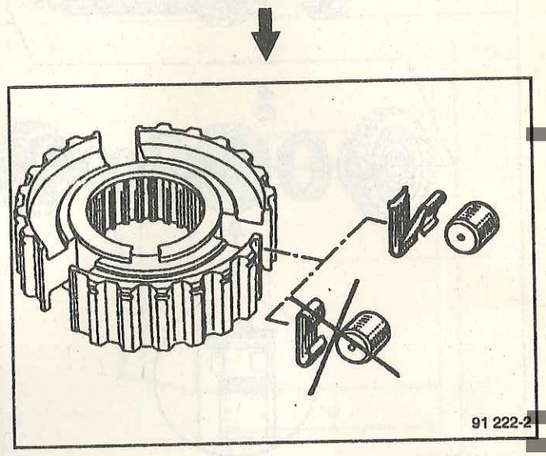
"Heart" springs may therefore only be used with modified idle gears.



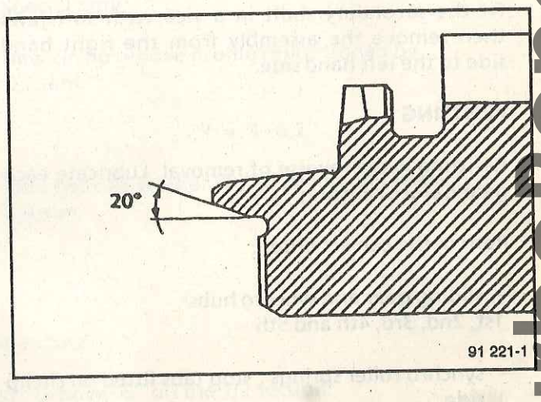
Detail (E) idle gear



The opening chamfer (E) at 45° for the groove and tongue joint under the synchronising cone only accepts the "Z" spring.



Detail (E) idle gear

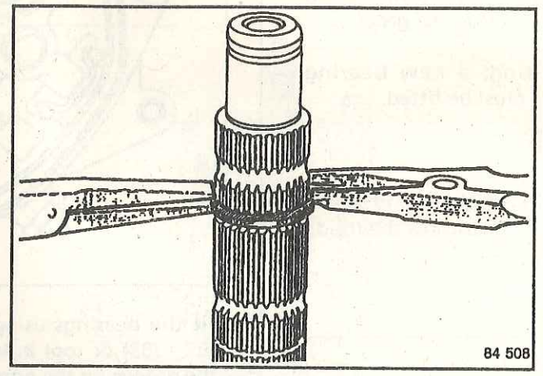


SPECIAL NOTE

Idle gears with opening chamfer (E) at 20° will take both "heart" and "Z" springs. however, **do not mix spring types on the same synchronising assembly.**

The circlips should be replaced systematically.

When refitting circlips, use circlip pliers to open the clip and flat pliers on the other side to stop the circlip from twisting.



REPLACING THE BEARINGS ON THE MECHANISM HOUSING

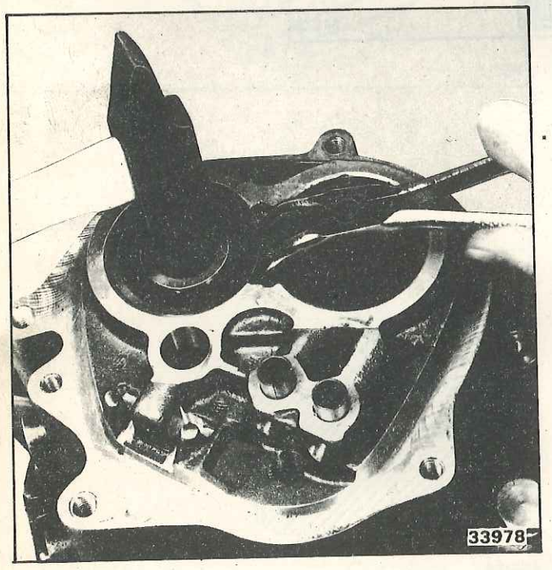
For gear boxes JB0 - JB1 - JB2 - JB3, there are three bearing types :

1st fitting :	thickness	**17 mm**
2nd fitting:	thickness	**17,5 mm**
3rd fitting :	thickness	**17,5 mm** with displaced groove.

When replacing the bearing, a new bearing identical to the original one must be fitted.

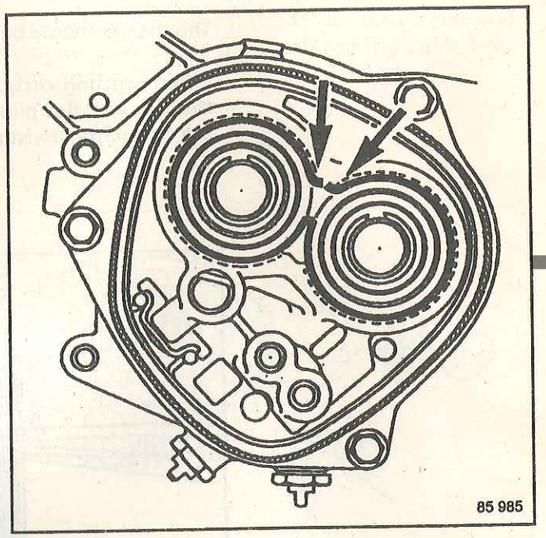
REMOVAL

Open the circlips with circlip pliers and use a hammer to remove the bearing towards the inside of the housing.



REFITTING

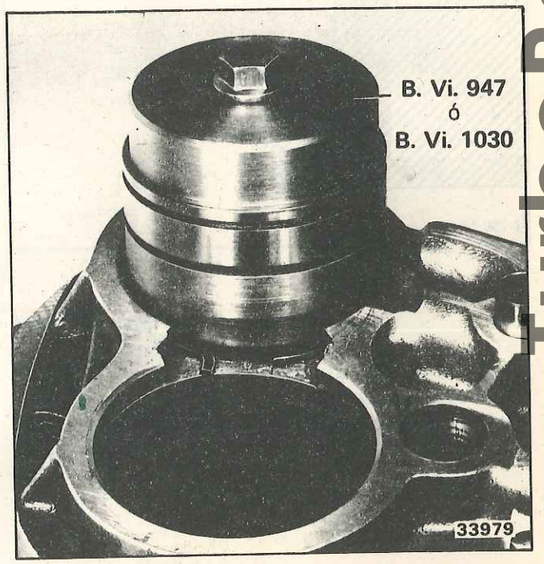
Refit the circlips into their positions ensuring the clips are in the correct position



Fit the bearings using tool **B. Vi. 947** (JB0 - JB1 - JB2 - JB3) or tool **B. Vi. 1 030** (JB4 and JB5), with the groove on the opposite side to the input cone.

Press the tool and bearing in using a weight or press.

The conical shape of the tool allows the circlip to be opened in the housing and the bearing to be fitted.

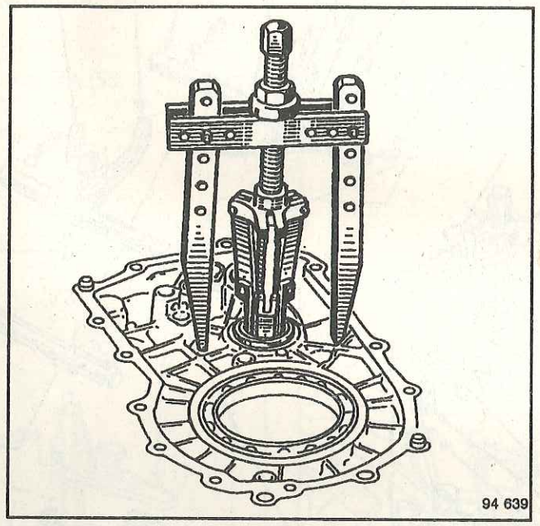


Ensure the circlip is correctly positioned in the bearing groove to stop the bearing moving in the bore.

REPLACEMENT OF THE BEARING ON THE DIFFERENTIAL - CLUTCH BELLHOUSING

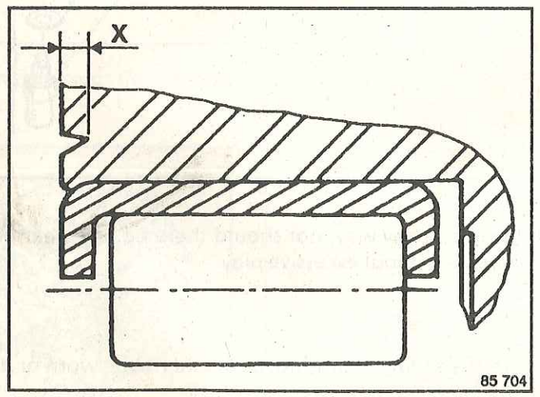
Cut the plastic channel in the centre of the bearing at the bottom.

Using tool **FACOM U40/U51B** (socket N° 3) or similar, extract the bearing.



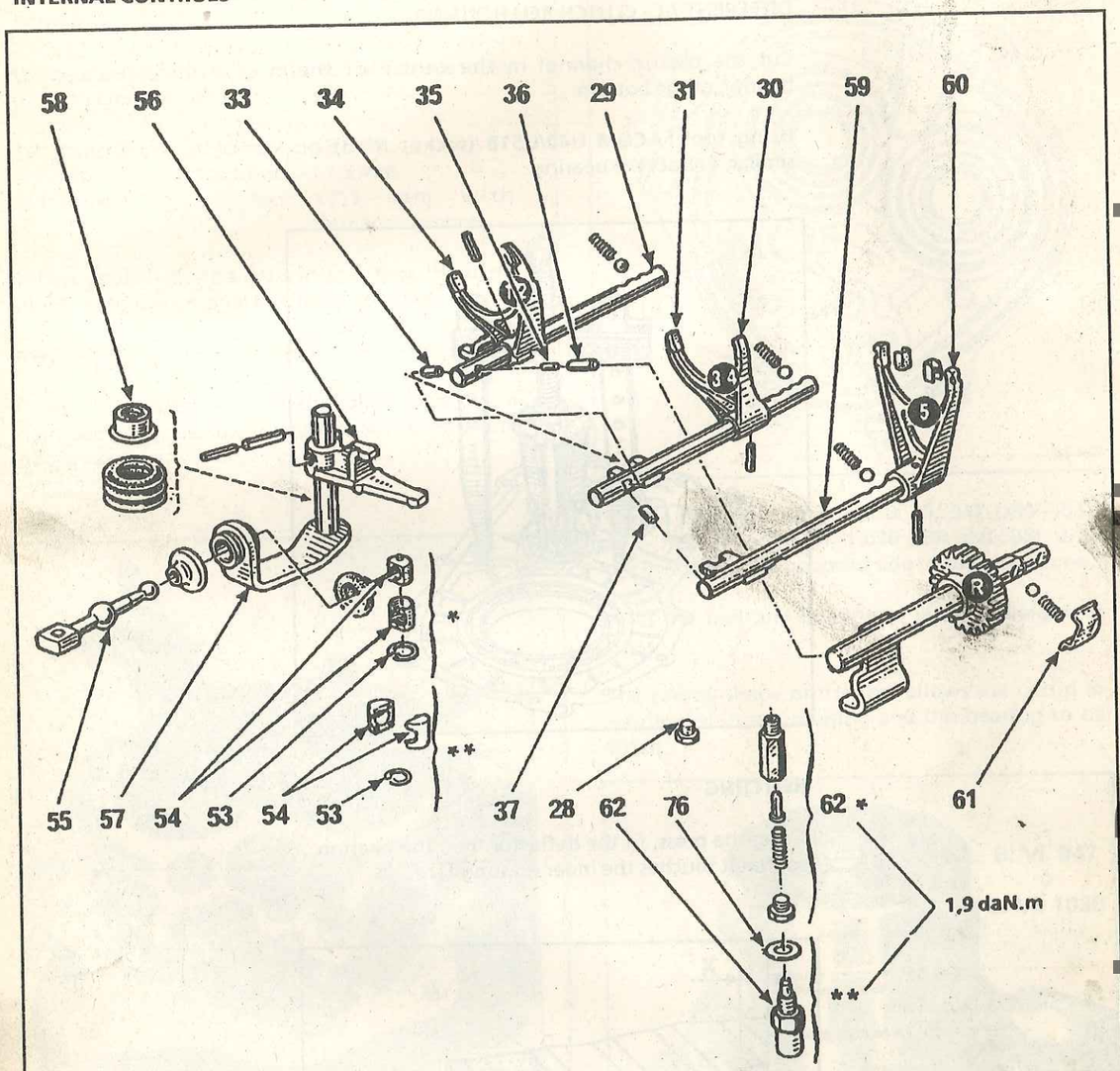
REFITTING

Using the press, fit the deflector then the bearing, so that it touches the inner housing face.



Insert the bearing using a punch, to the correct insertion depth (X).
X = 0,9 to 1,3 mm

INTERNAL CONTROLS



The shafts should not be deformed in any way, nor should there be any wear on the locking ball seats. They should slide freely on their bearings without excessive play.

Checking the forks :

the fork surface in contact with the sliding gear grooves should not be worn or deformed.

REPLACING THE CONTROL LINKAGE (SHAFT, LEVER AND SELECTION FINGER)

REMOVAL

Remove the circlip from the control rod (53).

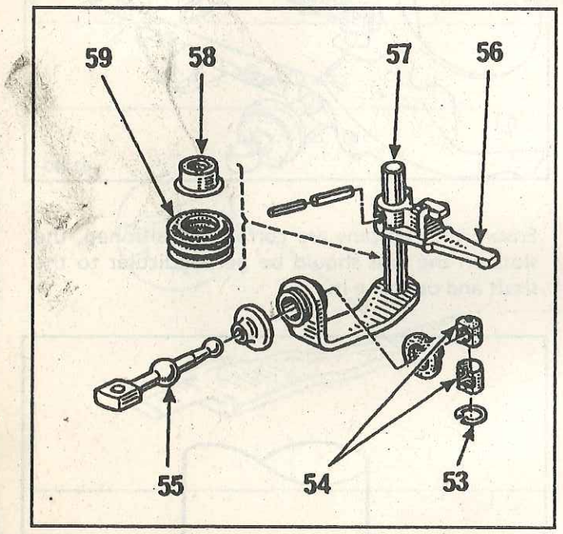
Remove the rod mounting (54) and the rod (55).

Remove the roll pin from the selection finger (56) using a punch Ø 7 mm.

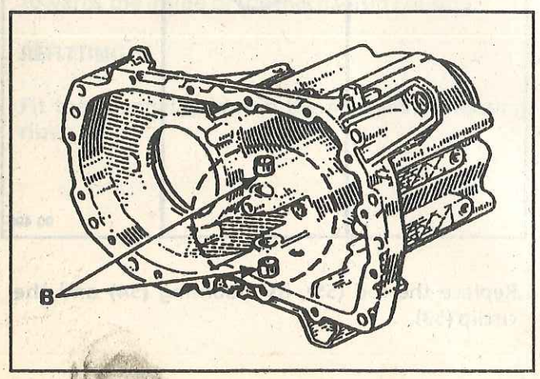
Remove the gaiter (59) from the ring (58).

Pull the control rod (57) outwards.

Remove the lip seal (58).



Remove the two bushes from the pivot (B) using a tube of external Ø 16,5 mm.

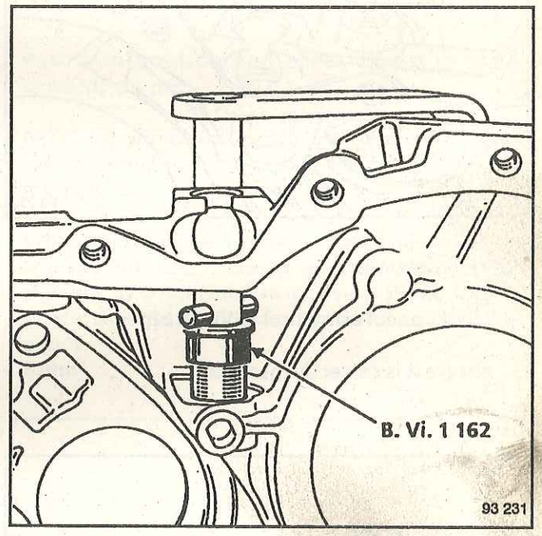


REFITTING

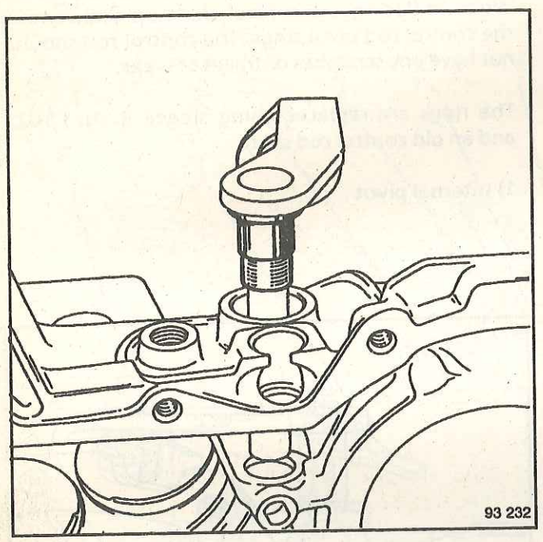
When replacing the control shaft lip seal,renew the control rod pivot rings. The control rod should not have any scratches or traces of wear.

The rings are replaced using sleeve **B. Vi. 1 162**, and an old control rod shaft.

1) Internal pivot

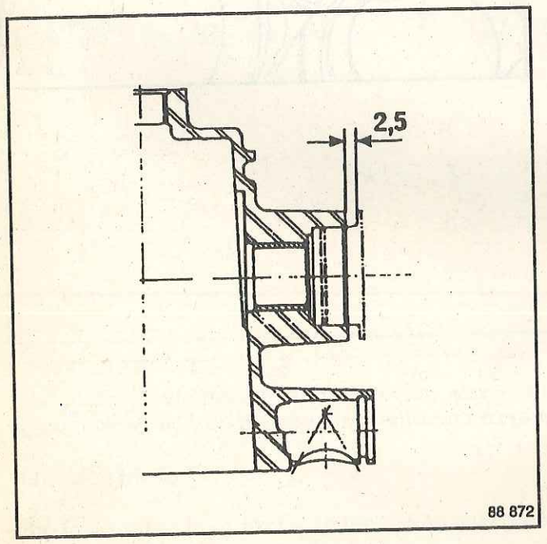


2) External pivot

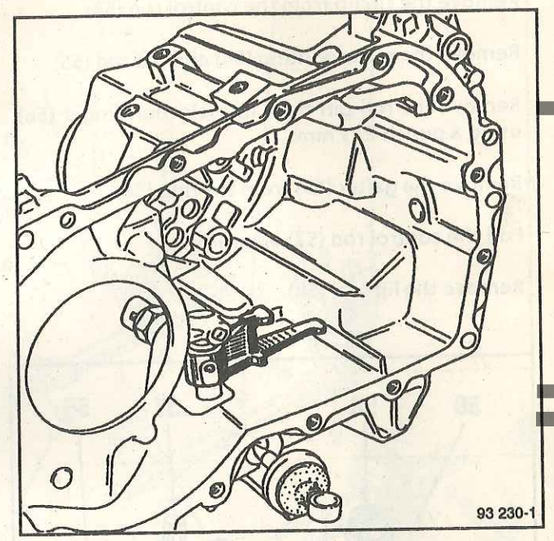


Refit in the order :

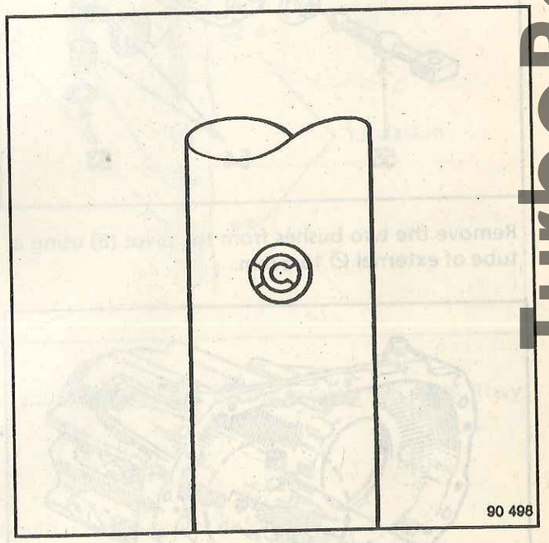
- oiled lip seal using tool **B. Vi. 1 162,**
- ensure it is correctly inserted,



- the selection finger (56), large fork on external rod side,
- oiled shaft (57) fitted with the gaiter (59).



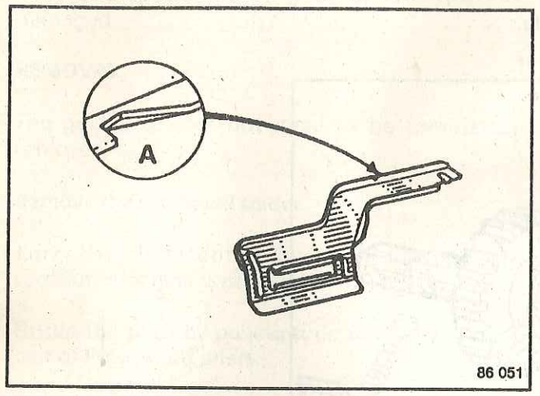
Ensure the roll pins are correctly positioned, the slots on the pins should be perpendicular to the shaft and opposite it.



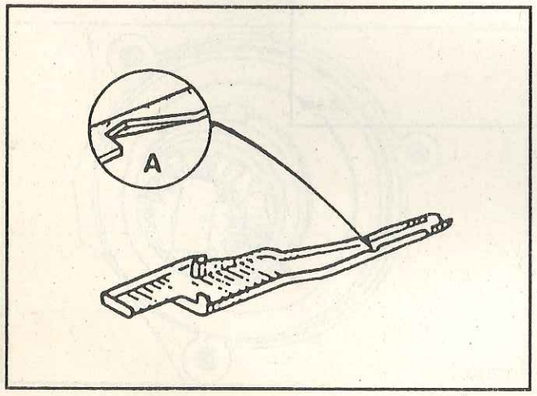
Replace the rod (55), its mounting (54) and the circlip (53).

REPLACING THE LUBRICATING CHANNEL

1st fitting



2nd fitting

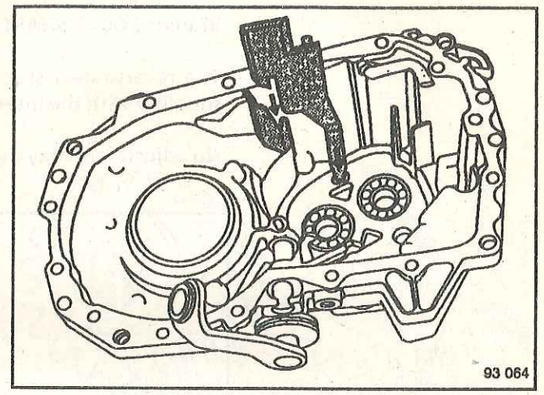


REMOVAL

Bend back the stop (A) on the channel and push it towards the inside of the mechanism housing.

REFITTING

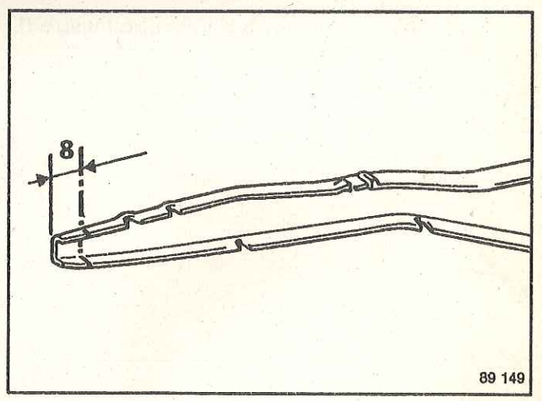
Fit the channel guides in the mechanism housing ribs.



Push into position and check the stop (A) is correctly clipped.

NOTE : modification in the 5th gear sliding gear lubrication channel due to a replacement of the mechanism housing.

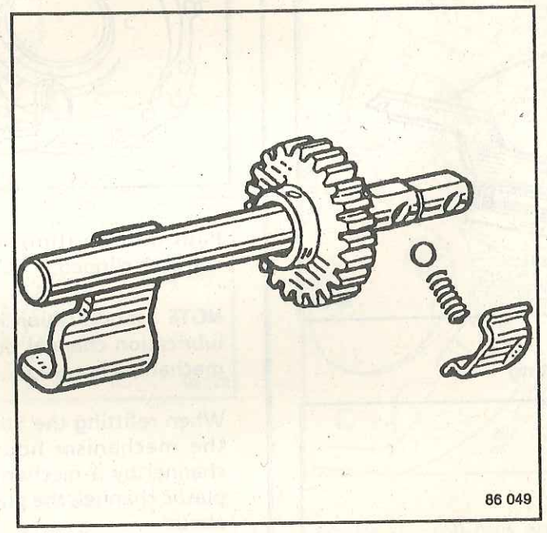
When refitting the 5th gear cover after replacing the mechanism housing with a sheet metal channel by a mechanism housing fitted with a plastic channel, the plastic channel must be cut by about
8 mm.



REVERSE GEAR SHAFT

The reverse gear shaft cannot be repaired and is supplied with the intermediate gear assembled.

No adjustment may be made.


86 049

SPEEDOMETER DRIVE

1st case:

Only the speedometer gear or the shaft is damaged.

REMOVAL

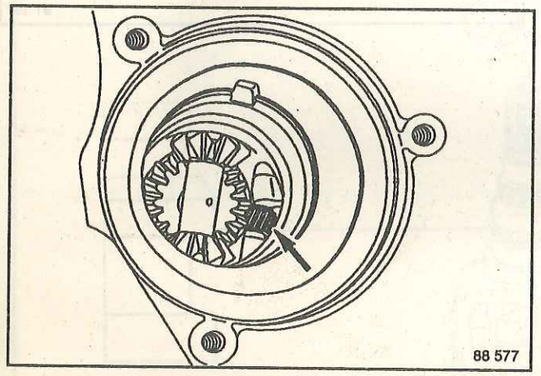
The gear box does not need to be completely removed.

Remove the sunwheel spider.

Turn the differential by hand so that the speedometer gear is accessible.

Unclip the shaft by pulling it up vertically using a pair of long nosed pliers.

Remove the gear from its position using the same pliers.

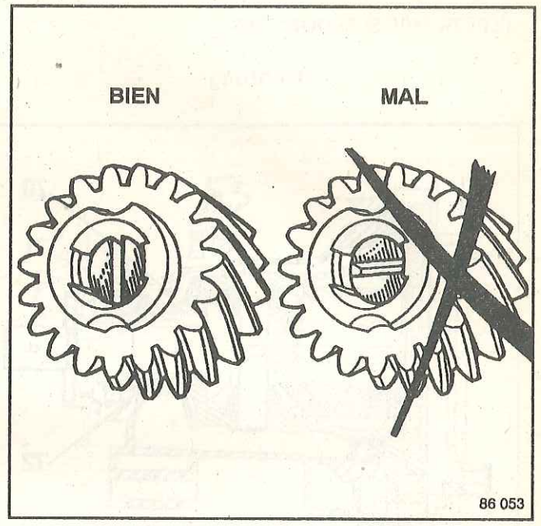

88 577

REFITTING

Refit the new speedometer gear using flat nosed pliers.

The gear and the shaft may be refitted by hand. The shaft must be correctly positioned in relation to the gear key lugs because of the elasticity of the shaft lips.

Ensure the shaft is correctly clipped using a mallet.



86 053

Refit the sunwheel spider.

2ns case:

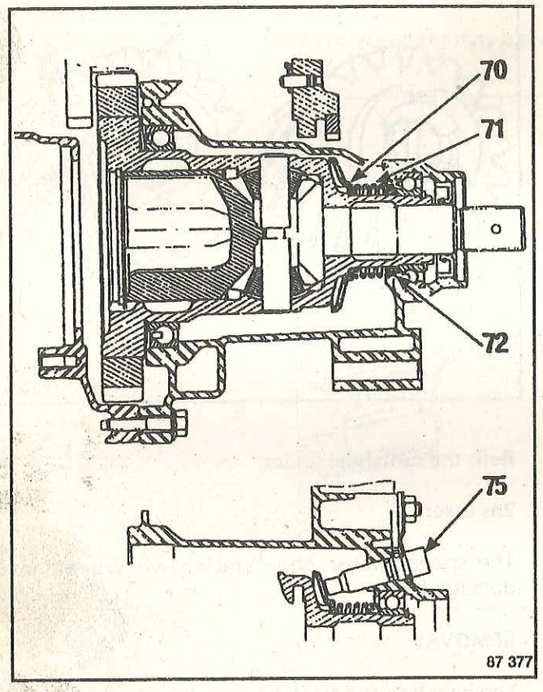
The speedometer gear and crown wheel are damaged.

REMOVAL

The gear box and final drive must be removed.

ELECTRONIC SPEEDOMETER

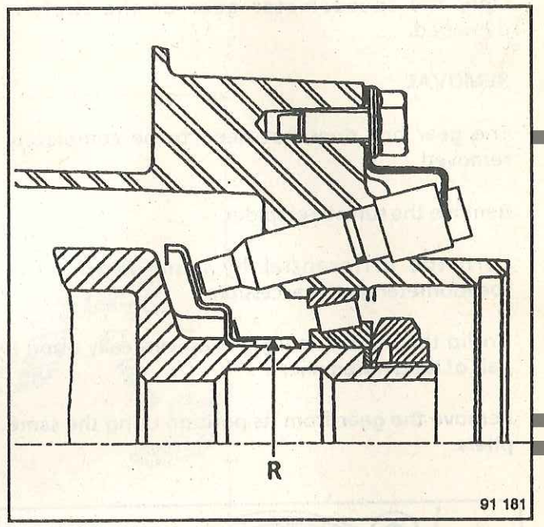
1st fitting



The speedometer sensor air gap cannot be adjusted.

70 Speedometer target
71 Spring
72 Thrust washer
75 Speedometer sensor

2nd fitting



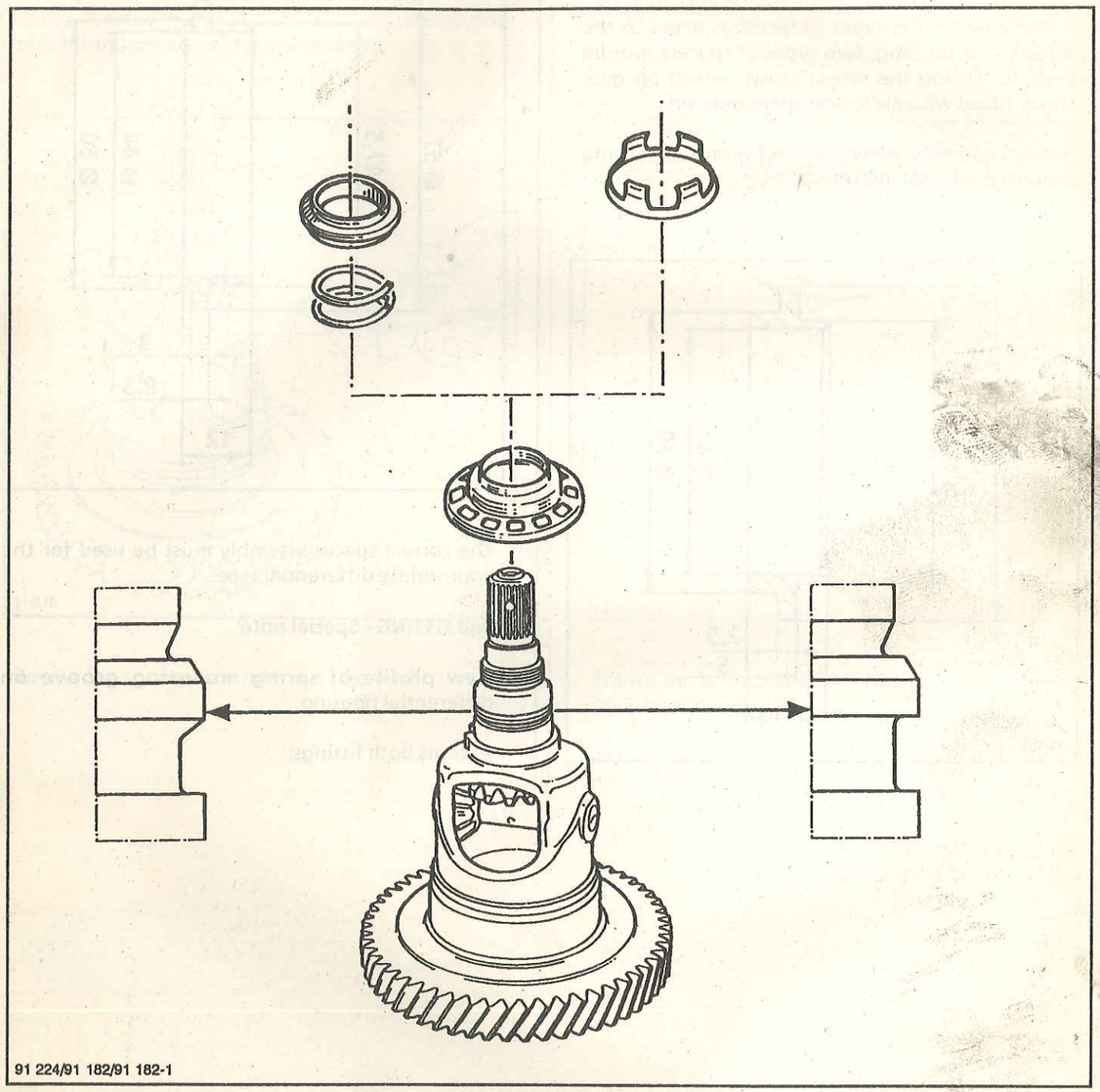
The spacer and the spring, which were previously used to mount the speedometer target on the crown wheel, are now replaced by a single spring (R) of a different type.

In order to fit the new spring, the profile of the spring mounting groove on the differential housing has been altered.

Consequently, the new spring cannot be fitted on an old differential housing (groove not altered). The first fitting assembly (spacer / old spring) may be fitted to a new, altered differential housing.

ELECTRONIC SPEEDOMETER

1st FITTING **2nd FITTING**

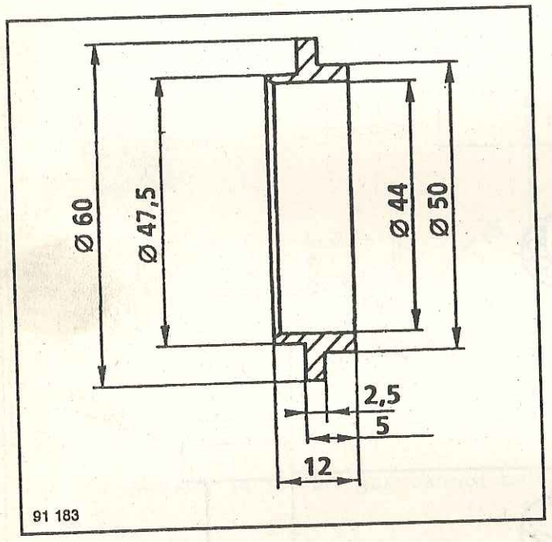


ELECTRONIC SPEEDOMETER (cont)

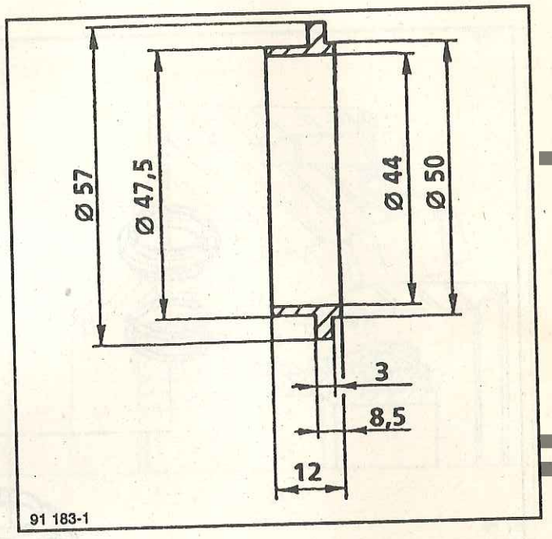
1st FITTING - REMINDER

Depending on the types of bearings fitted to the differential housing, two types of spacers may be used for fitting the sensor crown wheel on gear boxes fitted with electronic speedometers.

Spacer assembly fitted to a differential housing mounted on **BALL BEARINGS**.



Spacer assembly fitted to a differential housing mounted on **TAPER BEARINGS**.



The correct spacer assembly must be used for the appropriate differential type.

2nd FITTING - Special note

New profile of spring mounting groove on differential housing.

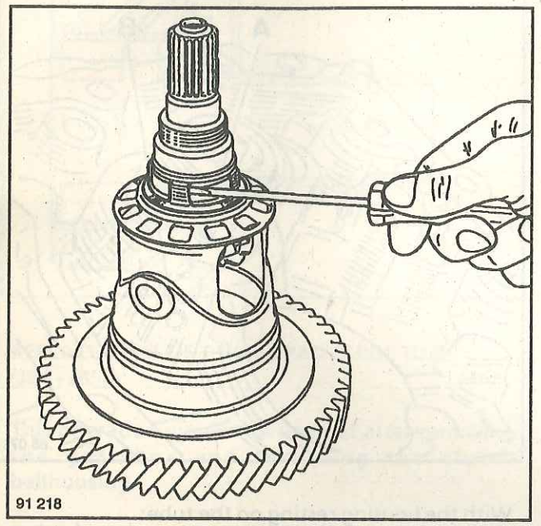
Accepts both fittings.

MANUAL GEAR BOX
Gear box repairs
21

ELECTRONIC SPEEDOMETER (cont)

REMOVAL - Special note

Using a small screwdriver, separate the spring mounting tabs and remove the spring.

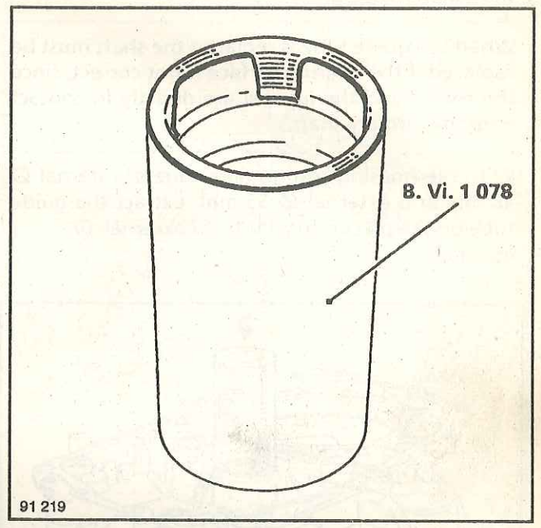


Renew the spring each time it is removed.

REFITTING - Special note

Fit the sensor on the differential housing.

Fit the sensor mounting spring using tool **B. Vi. 1 078** and a mallet.



Ensure the spring tabs are fitted in the differential housing groove.

NOTE : in order to avoid damaging the spring when refitting, tool **B. Vi. 1 078** must be used.

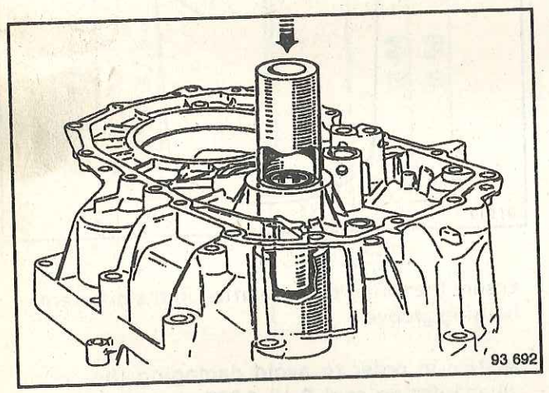
REPLACEMENT OF THRUST PAD GUIDE TUBE (JB0 - JB1 - JB2 - JB3)

REMOVAL

The lip seal and the clutch shaft bearing (primary) are fixed to the thrust pad guide tube. Lubrication is ensured via an opening connecting the bore to the clutch housing.

When the guide tube is replaced the shaft must be replaced if the bearing surface is not correct, since the rollers and the lip seal are directly in contact with the primary shaft.

With the housing resting on a tube of internal Ø 48 mm and external Ø 55 mm, extract the guide tube on the press using a tube of external Ø 45 mm.


93 692

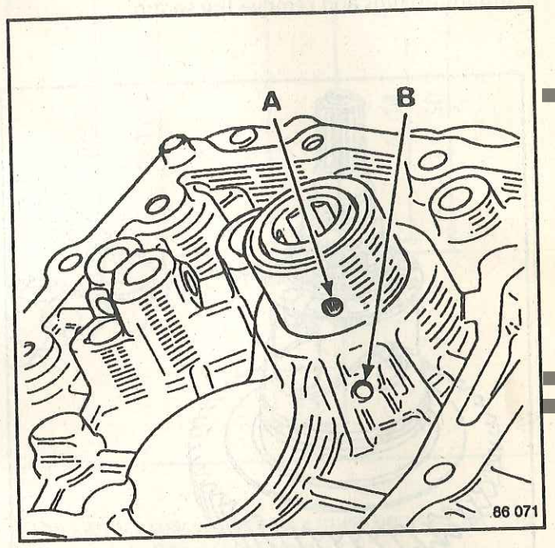
REFITTING

The guide tube is supplied with an integral lip seal protector in order to avoid damaging the lip seal when passing over the clutch shaft splines.

Apply a coating of **MOLYKOTE "BR2"** to the walls of the bore.

REFITTING

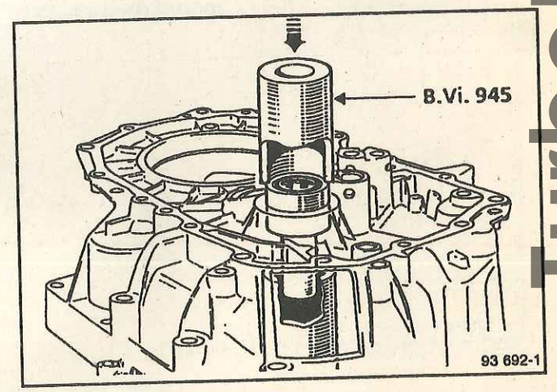
Align the bearing lubrication opening (A) in the guide tube opposite the opening in the clutch housing **(B)**.



86 071

With the housing resting on the tube:

insert the guide tube on the press until it touches the inner housing surface, using tool **B. Vi. 945**.



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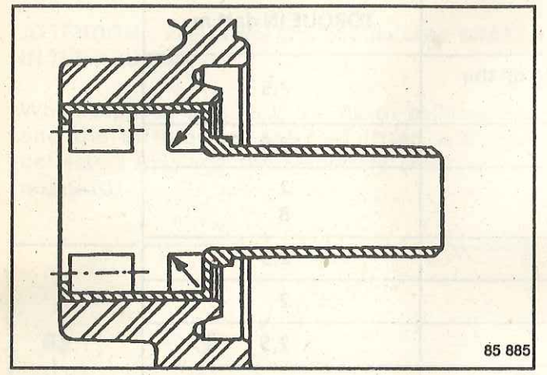
REPLACEMENT OF THRUST PAD GUIDE TUBE (JB0 - JB1 - JB2 - JB3)

Check the lubrication opening **(A)** is opposite that in the housing **(B)**.


85 885

REPLACEMENT OF THRUST PAD GUIDE TUBE (JB4 - JB5)

This operation may be carried out after removing the gear box and removing the clutch bellhousing.

Refer to Repair Manual " JB Gear Box" chapter "Separating the Housings".

TIGHTENING TORQUES (in daN.m)	▽
Housing bolts	2,5

REMOVAL

The lip seal and the clutch shaft bearing (primary) are fixed to the thrust pad guide tube. Lubrication is ensured via an opening connecting the bore to the clutch housing.

Extract the guide tube on the press.

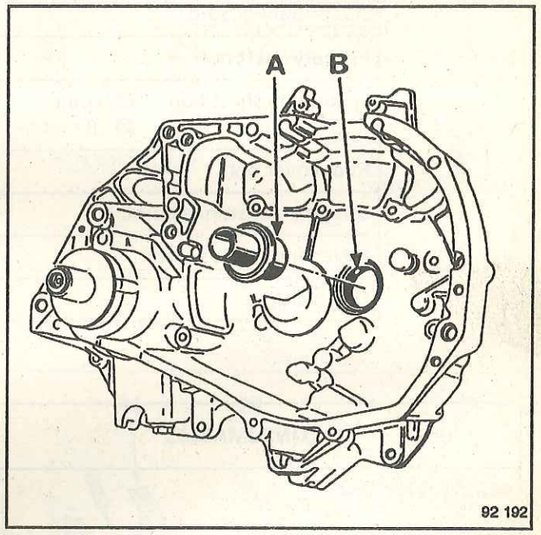
Once a guide tube has been extracted on the press, it may not be re-used.

REFITTING

The guide tube is supplied with an integral lip seal protector in order to avoid damaging the lip seal when passing over the clutch shaft splines.

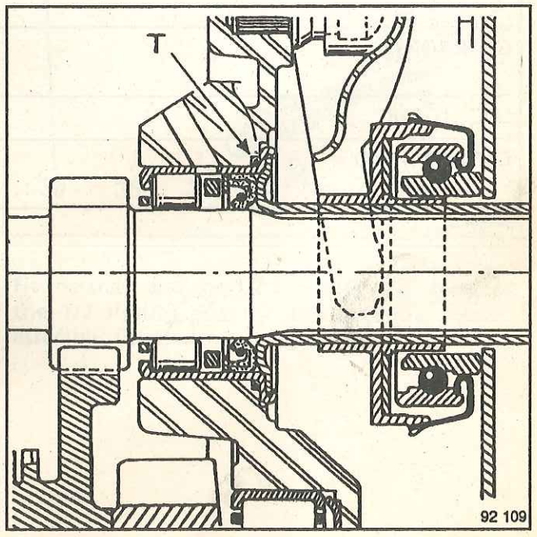
Check the presence of the O ring (T).

Apply a coat of **MOLYKOTE "BR2"** to the walls of the bore.
Align the bearing lubrication opening (A) in the guide tube opposite the opening in the clutch housing **(B)**.



92 192

Insert the guide tube on the press until it is in contact with the external surface of the housing.



92 109

HOUSING ASSEMBLY

TIGHTENING TORQUES

ALLOCATION	TORQUE IN daN.m
Base bolt mounting the mechanism housing on the clutch bellhousing	2,5
Primary shaft nut	13,5
Secondary shaft bolt Ø 8 mm Ø 10 mm	2 8
Rear cover bolt	2,5
5th gear resistance point	2
Reversing lights switch	2,5
Drain plug	2

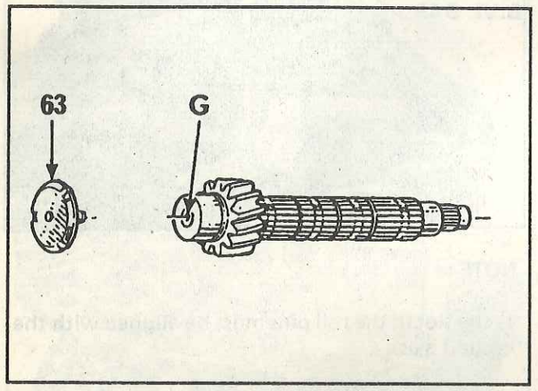
CONSUMABLES	Use for
MOLYKOTE "BR2"	Clutch fork pivot Thrust pad guide tube bore Straight sunwheel splines
LOCTITE FRENBLOC (locking and sealing resin)	5th gear fixed gear. 5th gear synchroniser hub Primary shaft nut Secondary shaft bolt
GEAR BOX OIL	5th gear fork pads Lip seals
LOCTITE 518	Housing assembly faces
CAF 4/60 THIXO	Threaded plugs. Switch threads.

HOUSING ASSEMBLY

This operation is carried out after determining the thickness of the pre-adjustment washer for the differential bearings (JB2, JB3 gear boxes) and after having refitted these bearings.

ATTENTION : REFITTING THE SECONDARY SHAFT IN THE HOUSING

When supplied as a part, the clutch bellhousing and the differential are sold fitted with oil deflectors (63) and the secondary shaft has a nozzle (G).



Ensure the assembly is correct for the housing :

Housing with oil deflector (63) = secondary shaft without nozzle (G) (if necessary, remove the nozzle by using a Ø 8 mm drill).

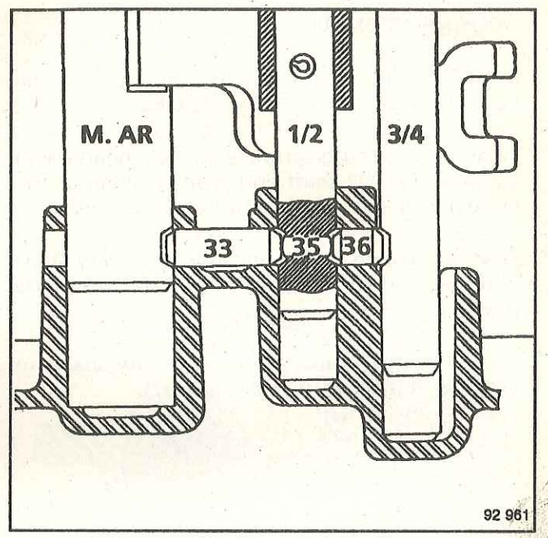
Housing without oil deflector (63) = secondary shaft with nozzle (G).

In the clutch and differential housing, fit the locking pins :

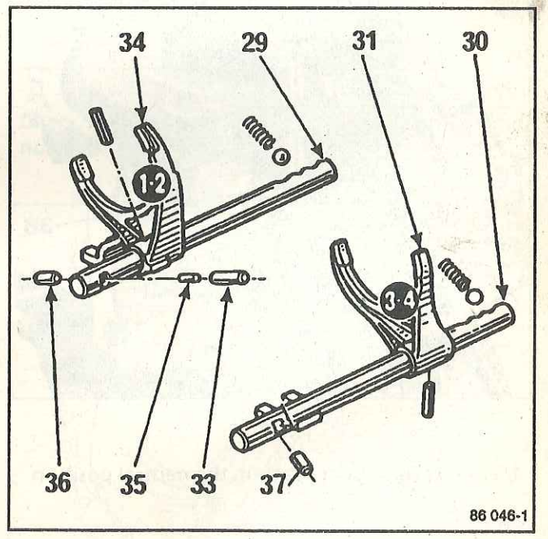
33 between the reverse gear and 1/2 shaft bore

36 between the 1/2 and 3/4 shaft bore,

37 between the 3/4 and 5th shaft bore.



Check these slide correctly.



Fit the shaft and the 1/2 fork (34) assemblies, on the 1/2 sliding gear on the secondary shaft assembly, fitted with locking pin (35).

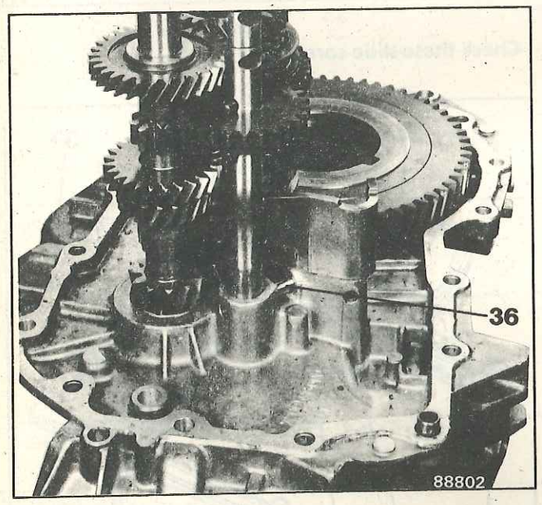
HOUSING ASSEMBLY

in order to avoid damaging the primary shaft seal lip, fit the protector on the guide tube.

Take the two shafts (primary and secondary) with the fork and 1/2 shaft and position them at the same time in the clutch and differential housing.

Pivot the crown wheel and the secondary shaft until the end of the secondary shaft enters the bearing.

Gently lift the primary and secondary shafts in order to fit the reverse gear shaft (32).



1/2 and reverse gear shafts in the neutral position.

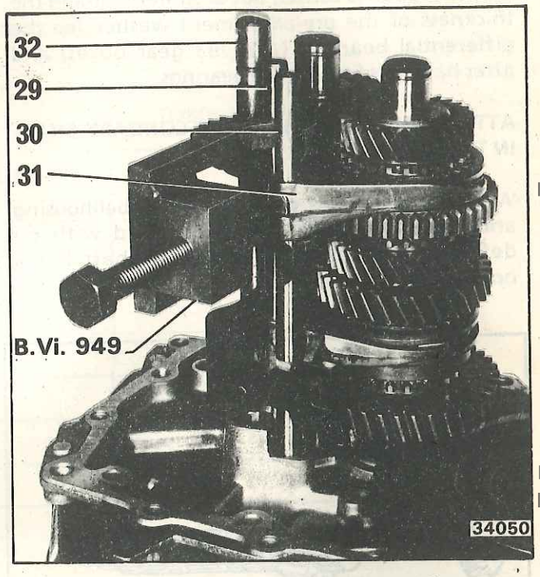
Fit :

- the 3/4 fork (31), (thick part on side of differential crown wheel),
- the 3/4 fork shaft (30), (ball profiles on shaft side).

Lower the 3/4 shaft into the housing bore.

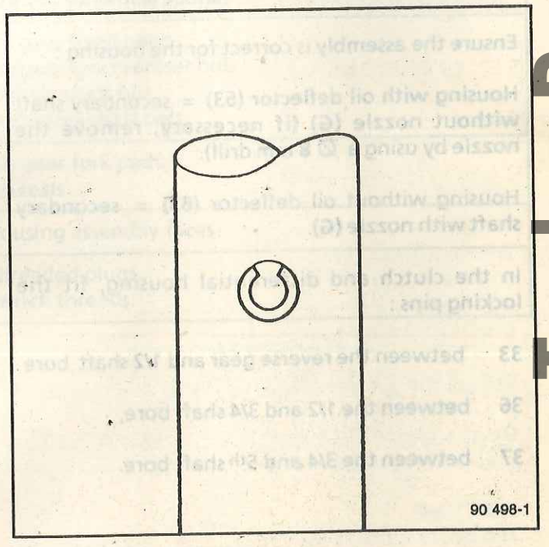
Ensure the locking pins (36), (33) and (37) are in place.

Fit the roll pins in the fork using tool **B. Vi. 949.**



NOTE :

1) the slot in the roll pins must be aligned with the shaft axis.

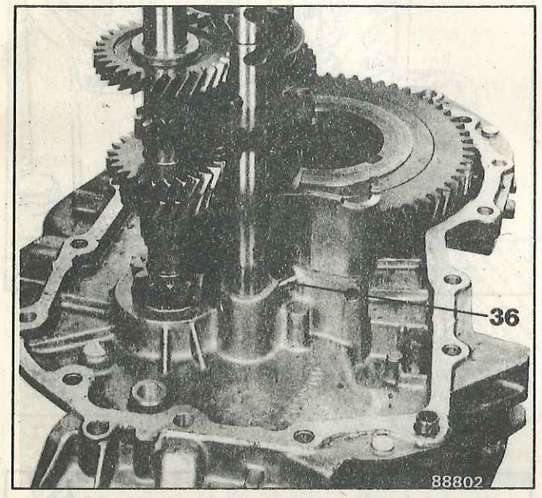


2) the roll pins must be renewed each time they are removed.

ALL TYPES

Ensure the correct positioning of :

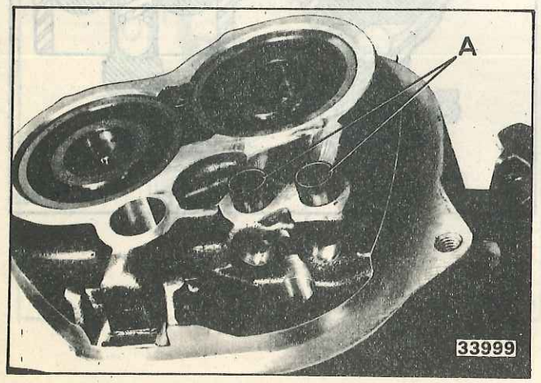
- the washer on the secondary shaft (chamfer outwards),
- the magnet,
- the two centring rings on the differential clutch housing.



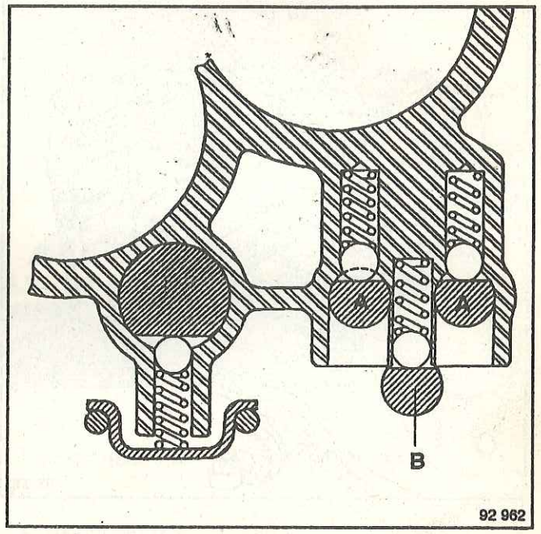
5 SPEED GEAR BOX

Fit the springs and the locking balls for the 1/2 and 3/4 shafts in the mechanism housing, then fit the dummy shafts (A) Ø 13 mm.

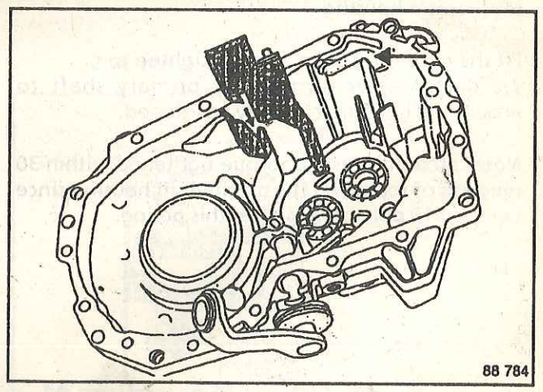
Example : engine - gear box centring dowel.



Fit the spring and the 5th gear locking ball in the mechanism housing then put the 5th gear fork shaft (B) in the neutral position.

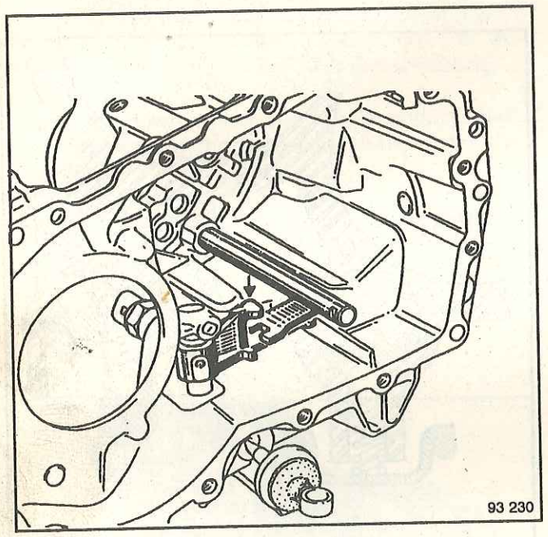


Check the position of the 5th gear lubrication nozzle and the breather.



Ensure the pipe is not damaged or obstructed.

Pull the control shaft outwards to put the selection finger in the 5th gear shaft dog.



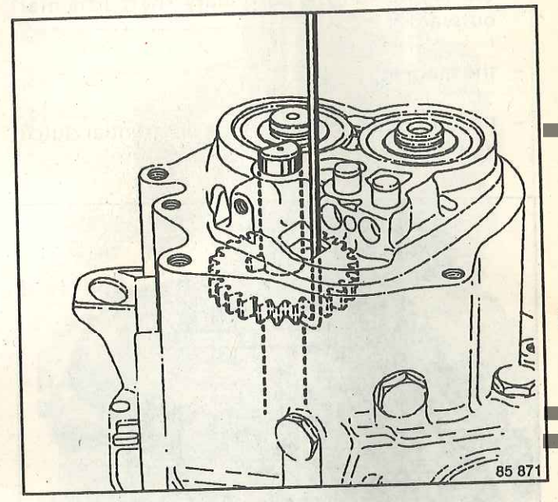
Apply Loctite 518 to the sealing face between the clutch and mechanism housings.

Centre the shafts and fork shafts, then fit the mechanism housing.

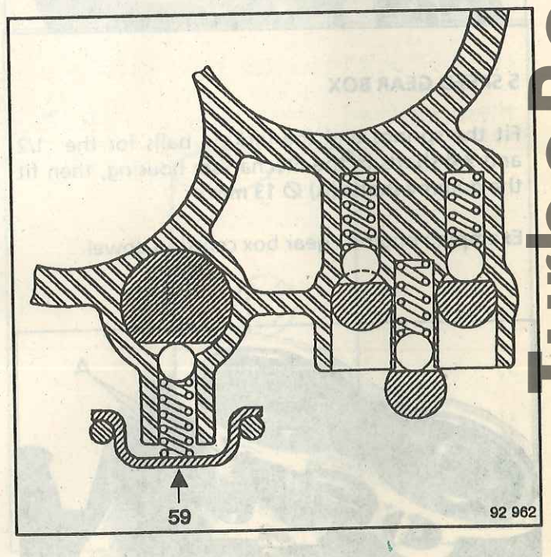
Fit the mounting bolts : torque tighten to 2,5 daN.m after turning the primary shaft to ensure the lines are correctly positioned.

Note: all bolts must be torque tightened within 30 minutes of replacing the mechanism housing since Loctite 518 polymerises after this period.

Support the reverse gear shaft by passing a hook through the opening in the housing.



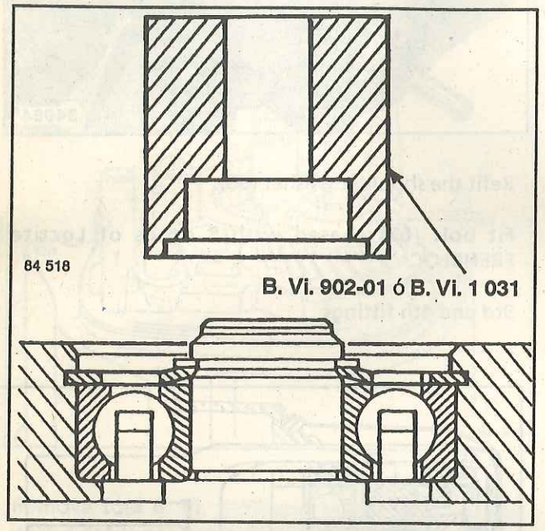
Fit the locking ball, spring and retaining boss (59).



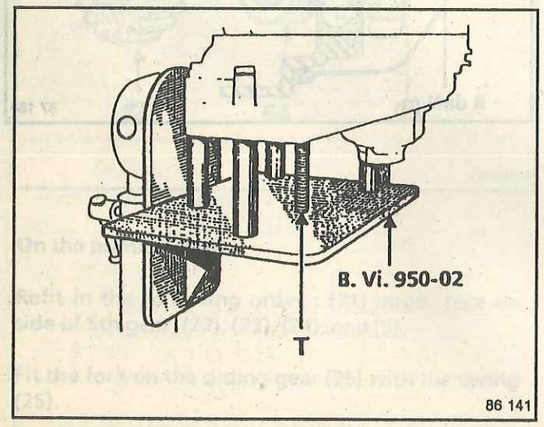
ON SECONDARY SHAFT

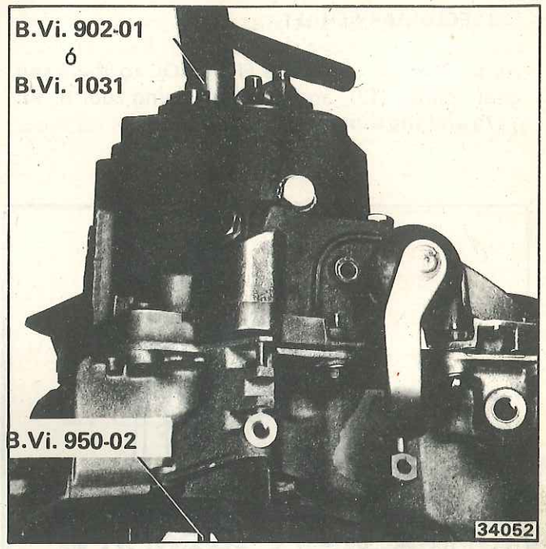
4 speed gear box :

Fit the secondary shaft washer and the circlip using tool **B. Vi. 902-01** (JB0 - JB2) or tool **B. Vi. 1 031** (JB4).



Fit the primary shaft washer and the circlip by reaction, adjusting the shaft on the clutch splines side with bolt (T) from plate **B. Vi. 950-02** and tool **B. Vi. 902-01** (JB0 and JB2) or tool **B. Vi. 1 031** (JB4). The shaft may also be adjusted on the bench using blocks of wood; ensure the circlip is correctly positioned in the groove.



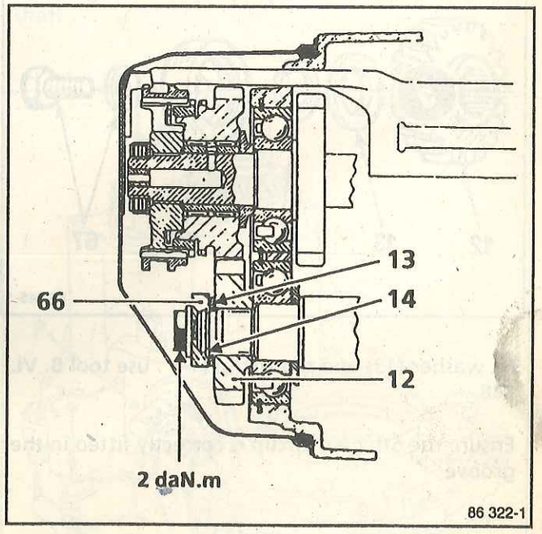


4 speed gear box : replace the threaded stop.

5 speed gear box:

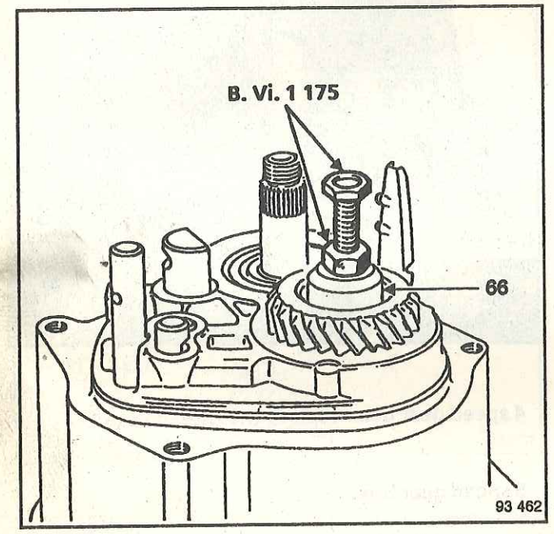
1st fitting
without shoulder washer, apply 2nd fitting systematically.

2nd fitting

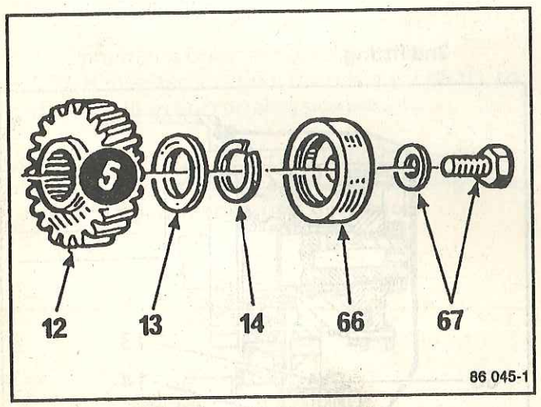


ON SECONDARY SHAFT

Apply 3 drops of Loctite FRENBLOC to the fixed gear splines (12), and assemble using tool **B. Vi. 1175** and the shoulder washer (66).

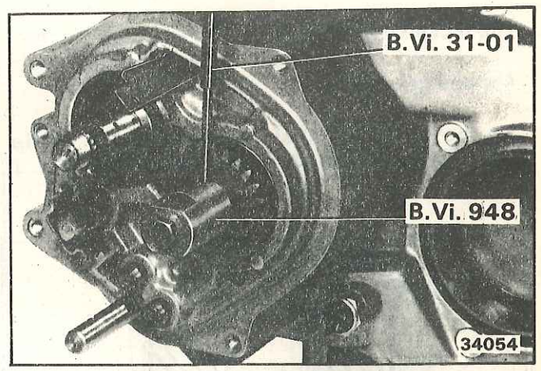


Remove tool **B. Vi. 1 175** and the washer (66).



Fit washer (13) and the circlip (14) : use tool **B. Vi. 948**.

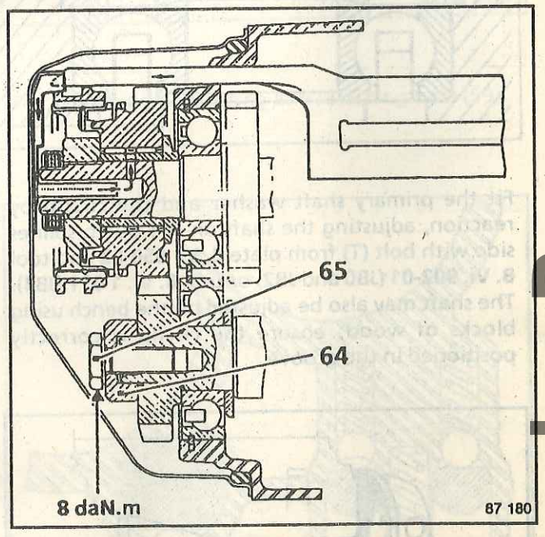
Ensure the 5th gear circlip is correctly fitted in the groove



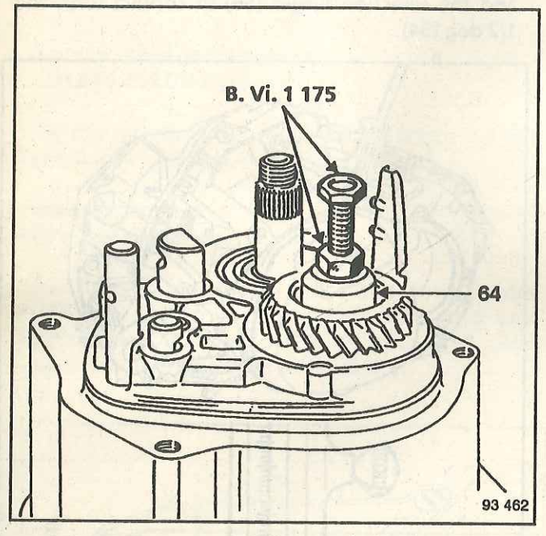
Refit the shoulder washer (66).

Fit bolt (67) coated with 3 drops of Loctite FRENBLOC.

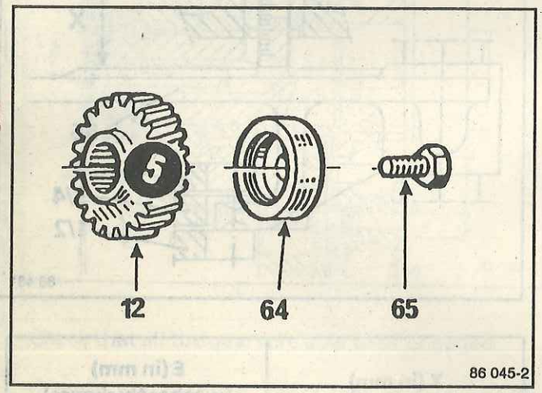
3rd and 4th fittings



Apply 3 drops of **Loctite FRENBLOC** to the fixed gear splines (12), and assemble using tool **B. Vi. 1175** and the shoulder washer (64).



Remove tool **B. Vi. 1175** and fit bolt (65) coated with 3 drops of **Loctite FRENBLOC**.



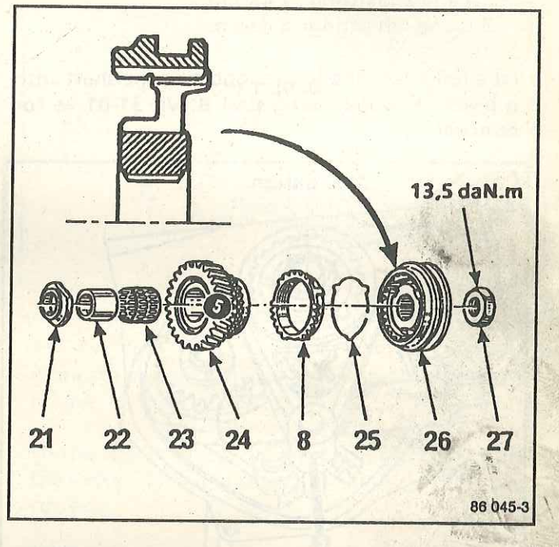
On the primary shaft

Refit in the following order : (21) large face on side of 5th gear, (22), (23), (24), and (8).

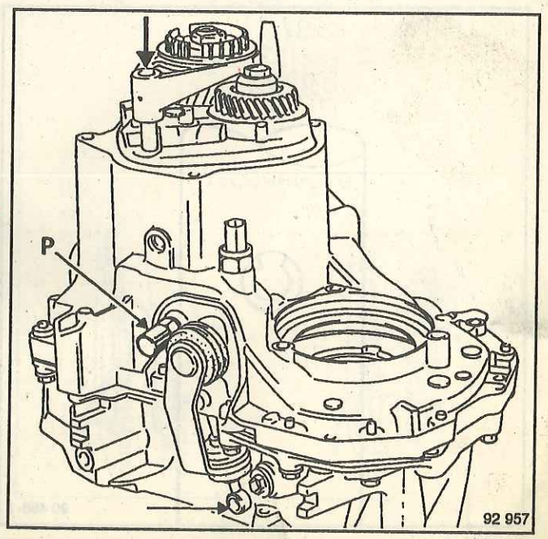
Fit the fork on the sliding gear (26) with the spring (25).

Apply 3 drops of **Loctite FRENBLOC** to the hub and replace the sliding gear hub and fork assembly.

position the synchro ring bosses in the hub cut-out sections.



In order to torque tighten the primary and secondary shaft bolt and nut, the two 5th gears must be fitted and two gears must be selected.
Select 1st gear using the gear lever and 5th gear on the gear box by sliding the 5th gear fork on its shaft.

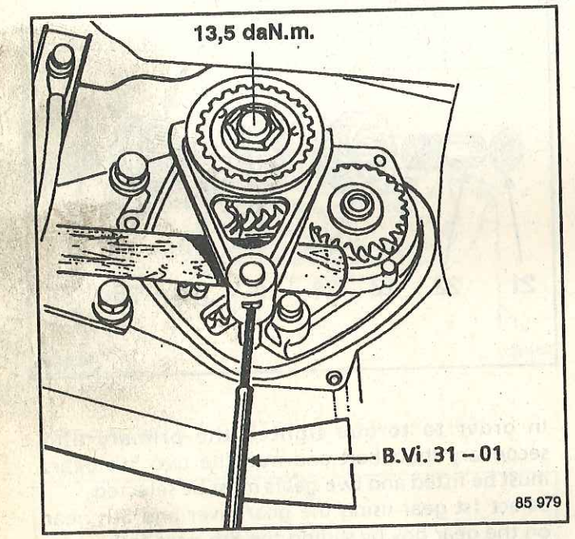


Apply 3 drops of Loctite **FRENBLOC** to the nut (27) on the primary shaft and the bolt on the secondary shaft.

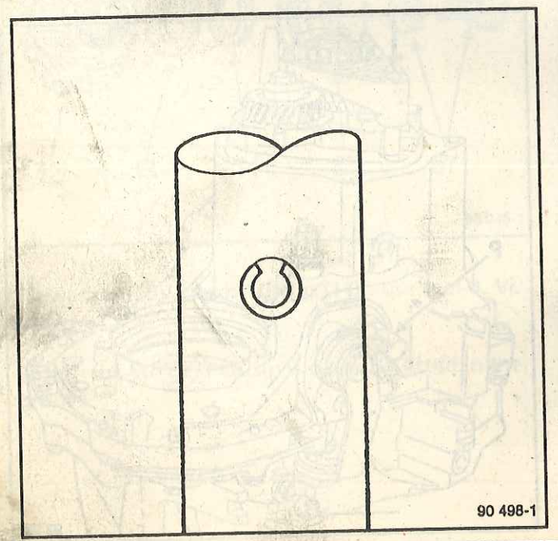
Primary shaft : **13,5 daN.m.**

Secondary shaft :
1st and 2nd fitting : **2 daN.m.**
3rd and 4th fitting : **8 daN.m.**

Fit a roll pin to the fork, supporting the shaft with a block of wood, using tool **B. Vi. 31-01** as for removal.



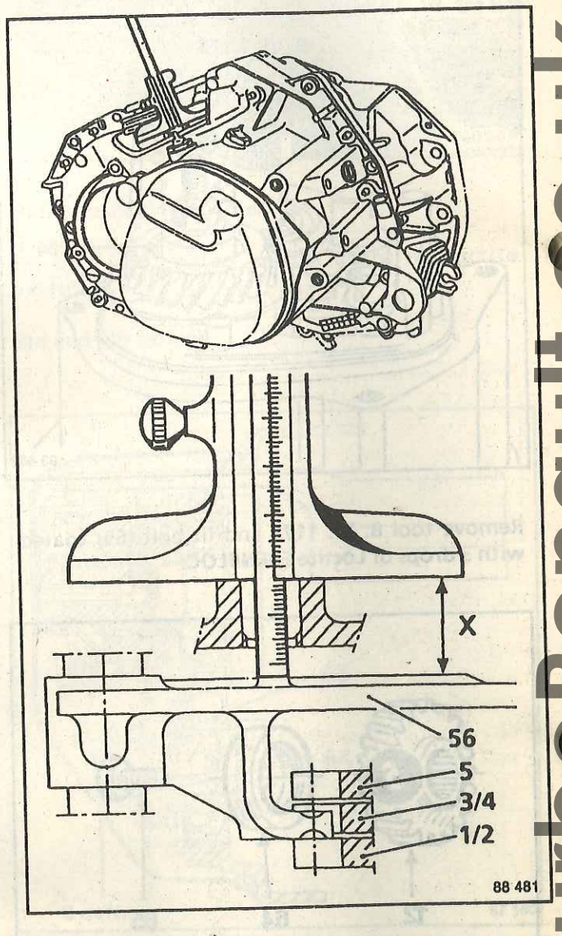
Ensure the pin is fitted correctly - the slot should face towards the rear housing.



Put the gear box in neutral again.

ADJUSTING THE 5TH GEAR RESISTANCE POINT

Dimension X is measured with 4th gear engaged, and the selection finger (56) in contact with the 1/2 dog (34).



X (in mm)	E (in mm) (washer thickness)
21,70 to 22,02	0,66
22,02 to 22,35	0,33
above 22,35	no washer

Depending on the dimension X measured, insert a washer (76) of thickness E between the housing and the 5th gear resistance point.

ALL TYPES

Fit a new O ring to ensure the rear housing is correctly sealed.

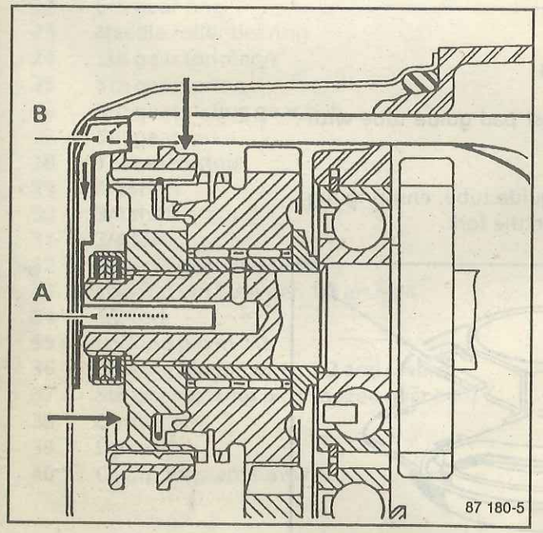
Put the gear box back into neutral.

4 and 5 speed gear boxes
(1st and 2nd fitting)

Fit the rear housing in place and torque tighten the bolts to **2,5 daN.m.**

5 speed gear box
(3rd and 4th fitting)

Fit the rear housing in place and position the channel (A) in the primary shaft and the lubricating channel in the oil guide (B) and torque tighten the bolts to **2,5 daN.m.**

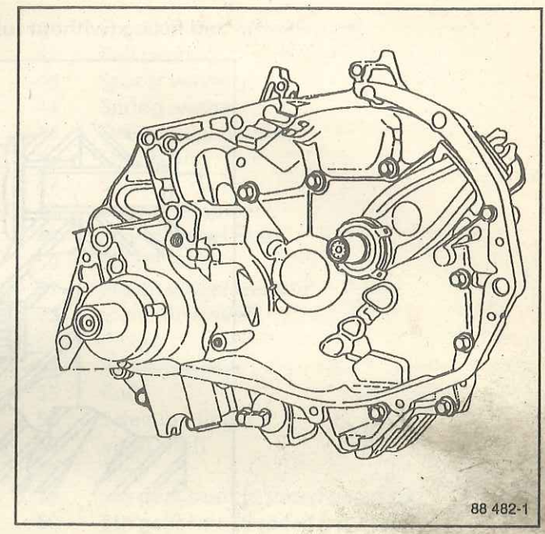


Check that all the gears are able to be engaged.

If there is a problem, check that reverse or 5th gear are not engaged.

ALL TYPES

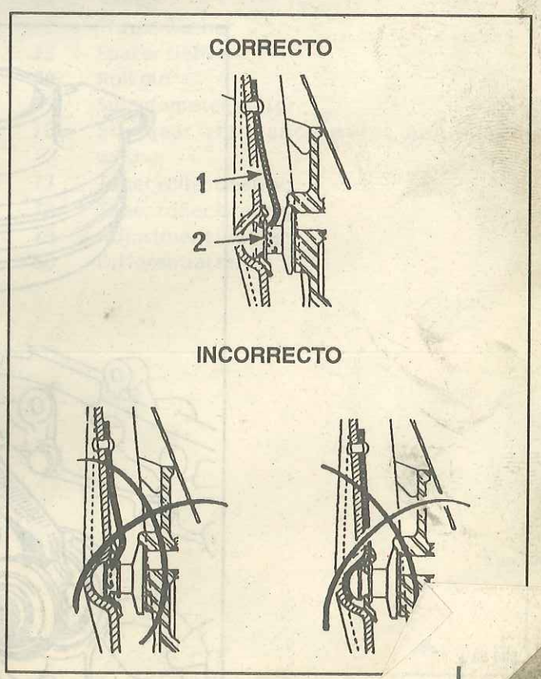
lower the gear box on stand **B. Vi. 950-01** or **B. Vi. 950-02** and fit the clutch bellhousing bolts and torque tighten them to **2,5 daN.m.**



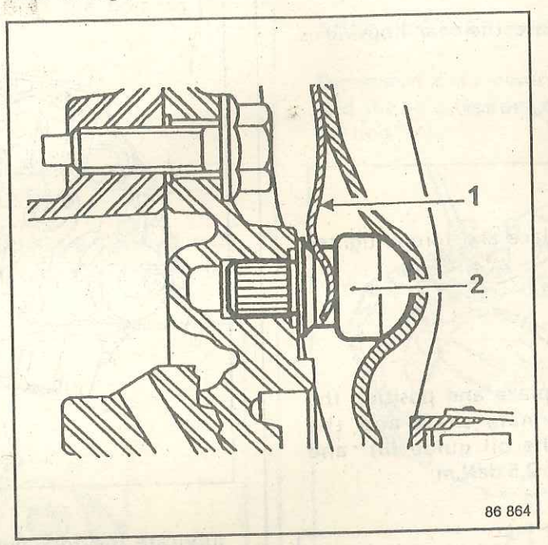
lubricate the fork pivot using **Molykote "BR2"** grease.

Fit the fork in place, fitting the spring (1) behind the socket (2) and ensuring the assembly operates correctly.

1st fitting



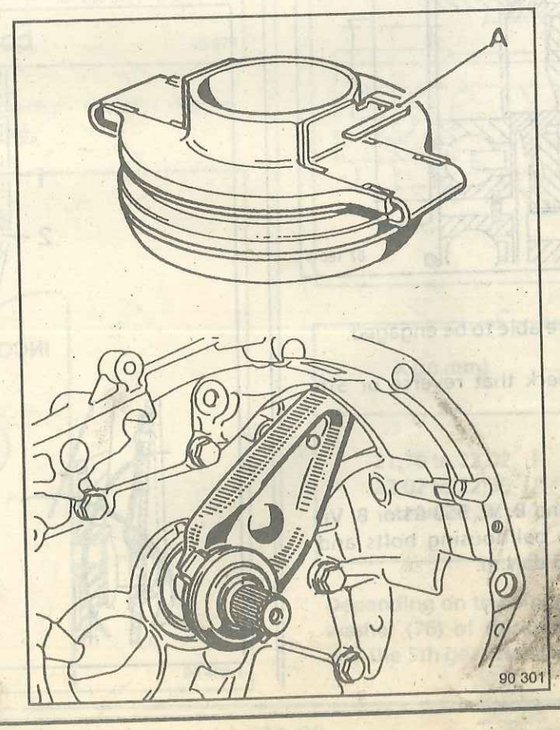
2nd fitting (without rubber washer)



3rd fitting : without spring

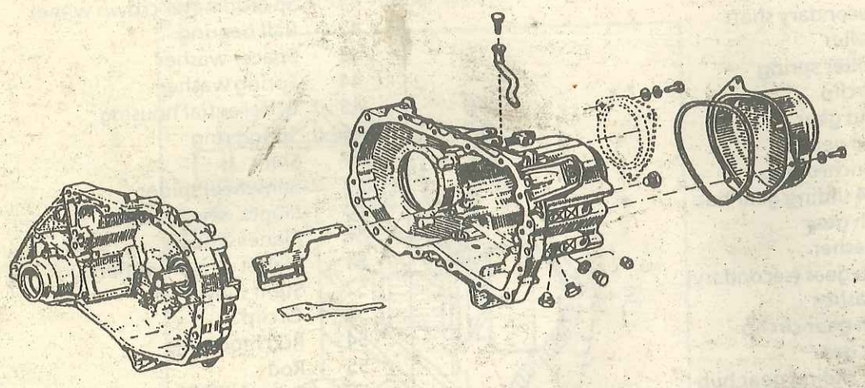
Coat the walls of the thrust pad guide tube with **Molykote "BR2"** grease.

Fit the thrust pad on the guide tube, ensuring lug (A) is correctly positioned in the fork.

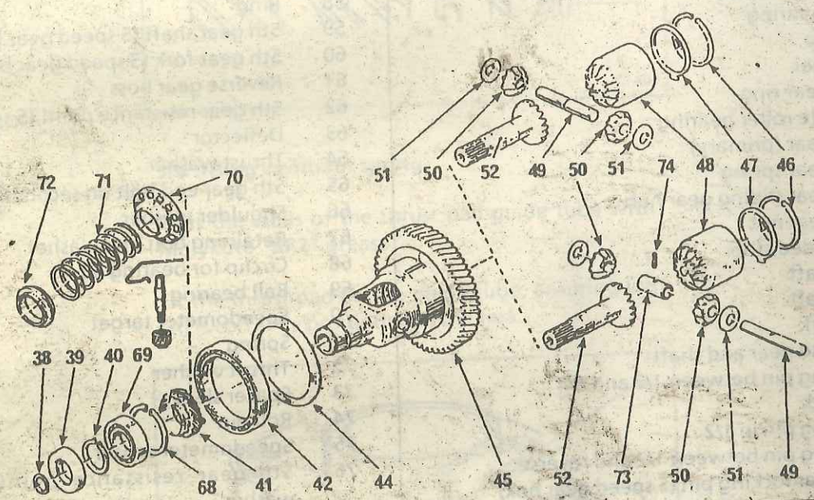


1	Roller bearing
2	Secondary shaft
3	Roller
4	Roller spring
5	Circlip
6	2nd gear
7	3rd gear
8	Synchro ring
9	3/4 sliding gear hub
10	4th gear
11	Washer
12	5th gear (secondary)
13	Washer
14	5th gear circlip
15	1st gear
16	1/2 sliding gear hub
17	Primary shaft
18	Splined washer
19	Ball bearing
20	Circlip
21	Washer
22	5th gear ring
23	Needle roller bearing
24	5th gear (primary)
25	5th gear spring
26	5th gear sliding gear hub
27	5th gear nut
28	Threaded stop
29	1/2 shaft
30	3/4 shaft
31	3/4 fork
32	Reverse gear and shaft
33	Locking pin between 1/2 and 3/4
34	1/2 fork
35	Locking pin in 1/2
36	Locking pin between 1/2 and reverse
37	5th gear locking pin (5 speed gear box)
38	O ring
39	Lip seal
40	Circlip for stem sunwheel
41	Speedometer crown wheel
42	Ball bearing
43	Spacer washer
44	Spring washer
45	Differential housing
46	Spring ring
47	Shim
48	Sunwheel spider
49	Planet wheel shaft
50	Planet wheels
51	Planet wheel washers
52	Stem sunwheel
53	Circlip
54	Rod mounting
55	Rod
56	Selection finger
57	Input shaft
58	Ring
59	5th gear shaft (5 speed gear box)
60	5th gear fork (5 speed gear box)
61	Reverse gear boss
62	5th gear resistance point (5 speed gear box)
63	Deflector
64	Thrust washer
65	5th gear end bolt on secondary shaft
66	Shoulder washer
67	Retaining bolt and washer
68	Circlip for bearing 69
69	Ball bearing
70	Speedometer target
71	Spring
72	Thrust washer
73	Spacer sleeve
74	Roll pin
75	Speedometer sensor
76	5th gear resistance point adjustment washer
77	Taper roller bearing
78	Taper roller bearing
79	Adjustment washer
80	Differential nut

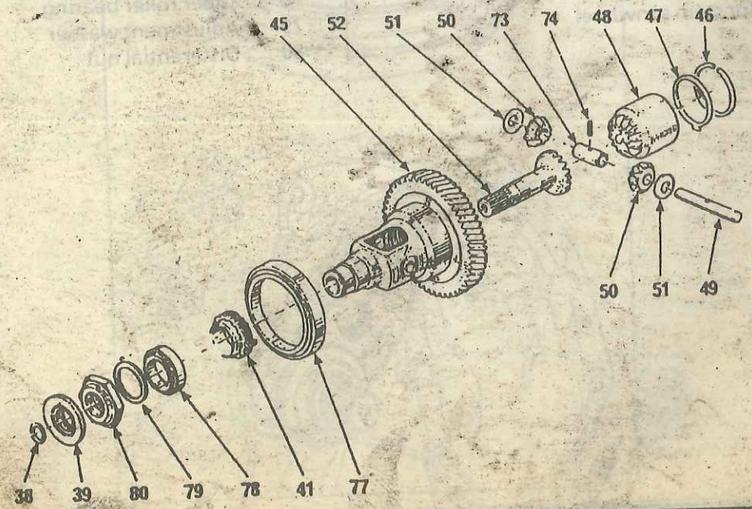
HOUSINGS



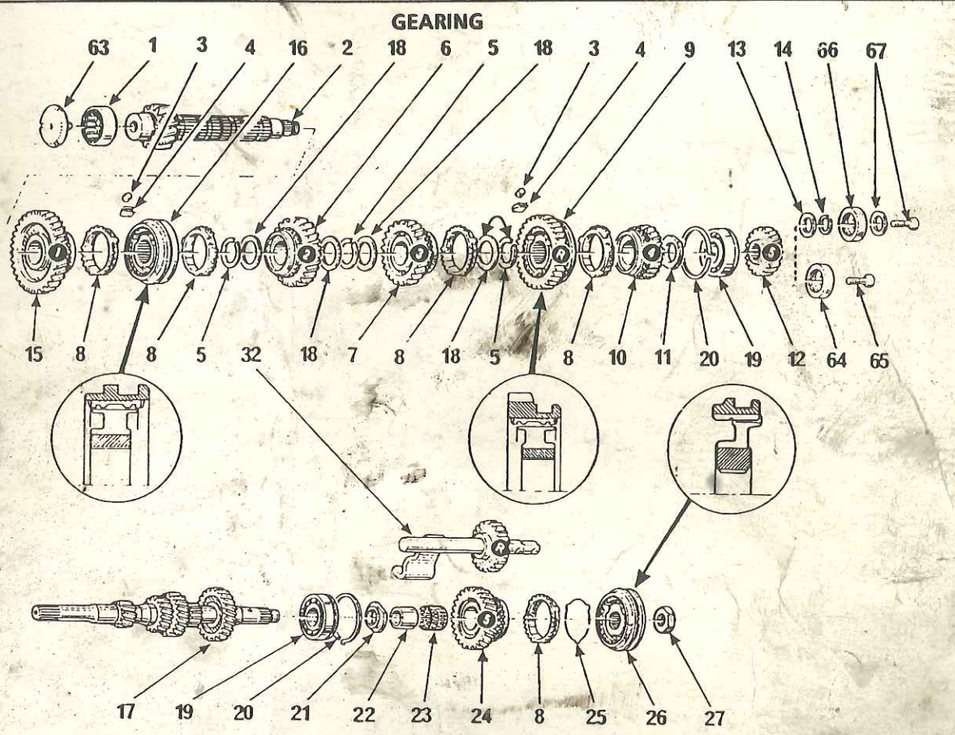
BALL BEARING DIFFERENTIAL MOUNTING



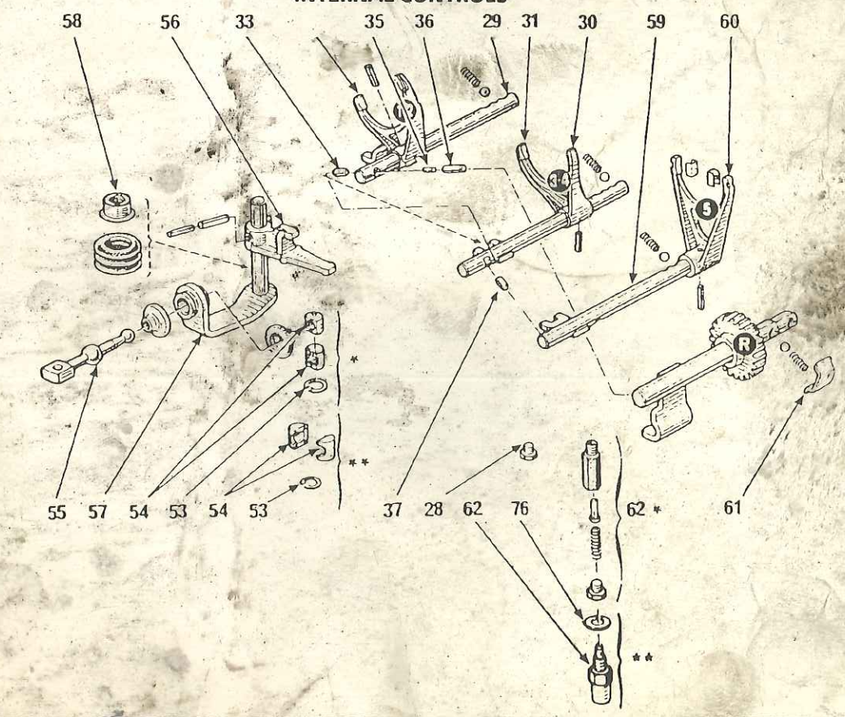
TAPER ROLLER BEARING DIFFERENTIAL MOUNTING



GEARING



INTERNAL CONTROLS



RENAULT

Automobiles

Après-Vente