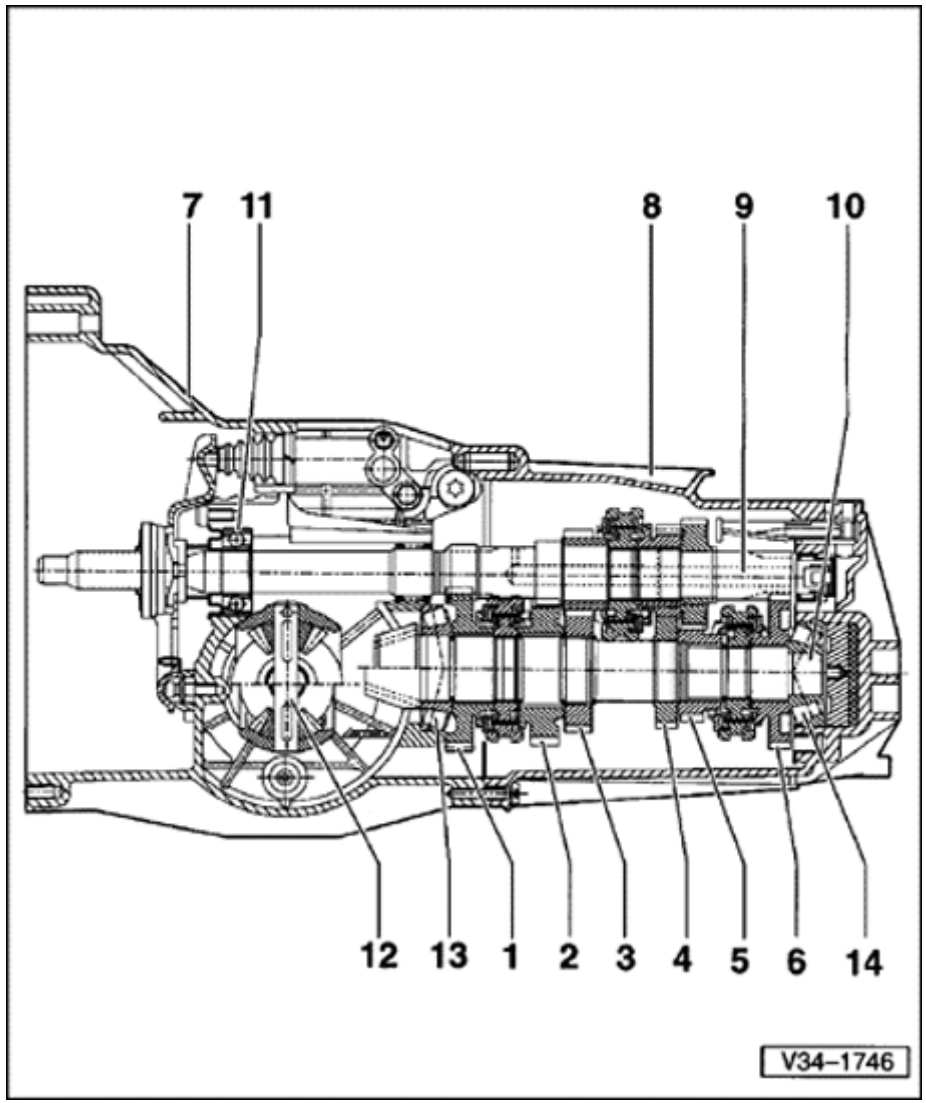


transmission, disassembling and assembling

Sequence for disassembling and assembling ⇒ Page 34-74

Overview

1 - 1st gear

2 - 2nd gear

3 - 3rd gear

4 - 4th gear

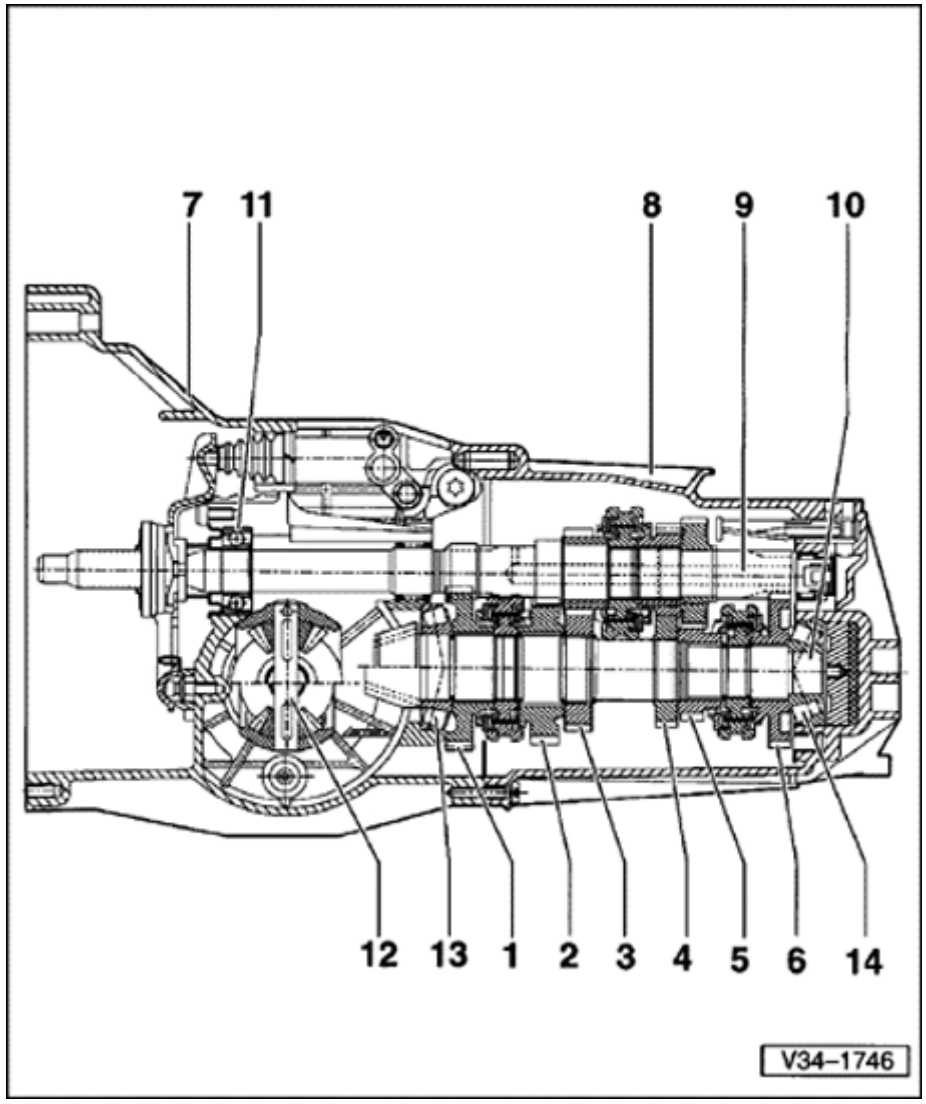
5 - 5th gear

6 - Reverse gear

- Removing and installing reverse idler gear ⇒ Page 35-56

7 - transmission housing

8 - transmission cover



9 - Input shaft

- Disassembling and assembling ⇒ Page 35-1

10 - Pinion shaft

- Disassembling and assembling ⇒ Page 35-23

11 - Ball bearing

- Adjusting ⇒ Page 35-18 ; adjusting input shaft

12 - Differential

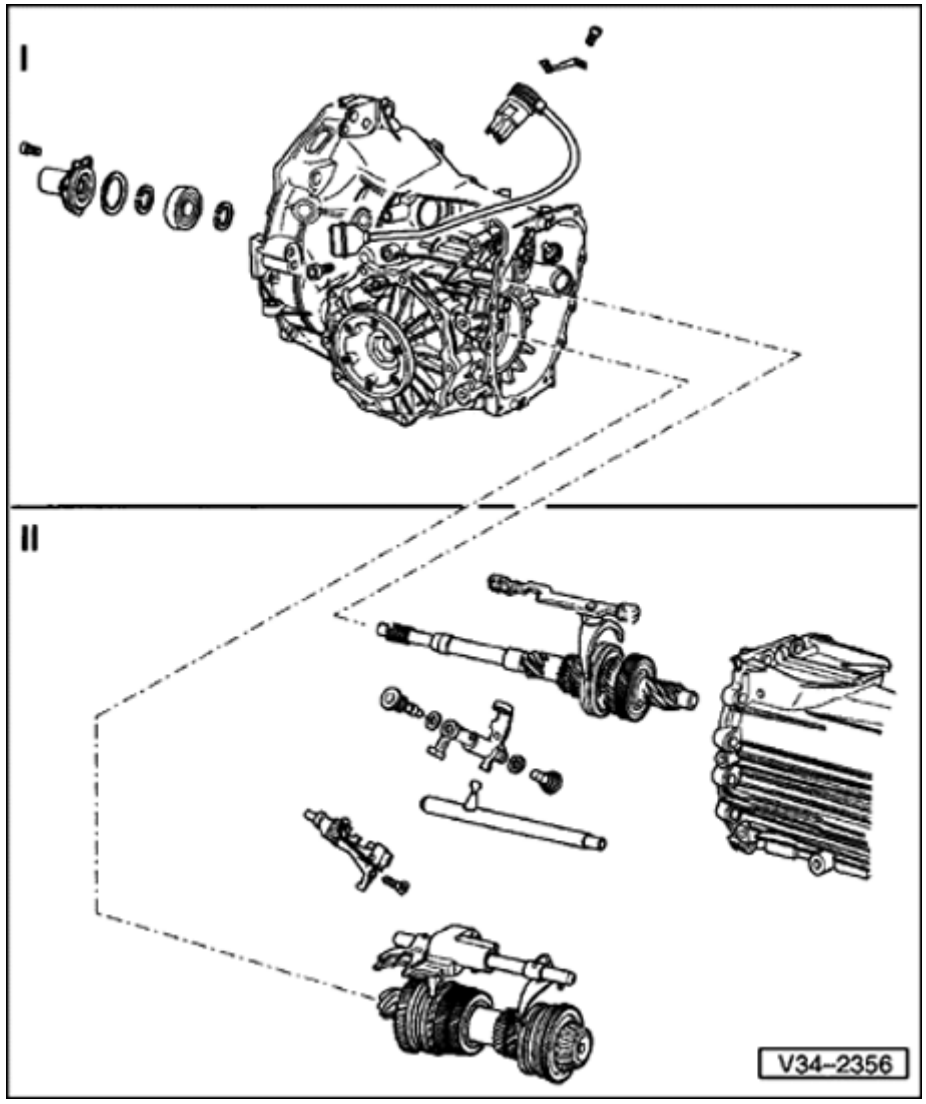
- Removing and installing ⇒ Page 39-10
- Disassembling and assembling ⇒ Page 39-18

13 - Taper roller bearing

- Adjusting ⇒ Page 39-39

14 - Taper roller bearing

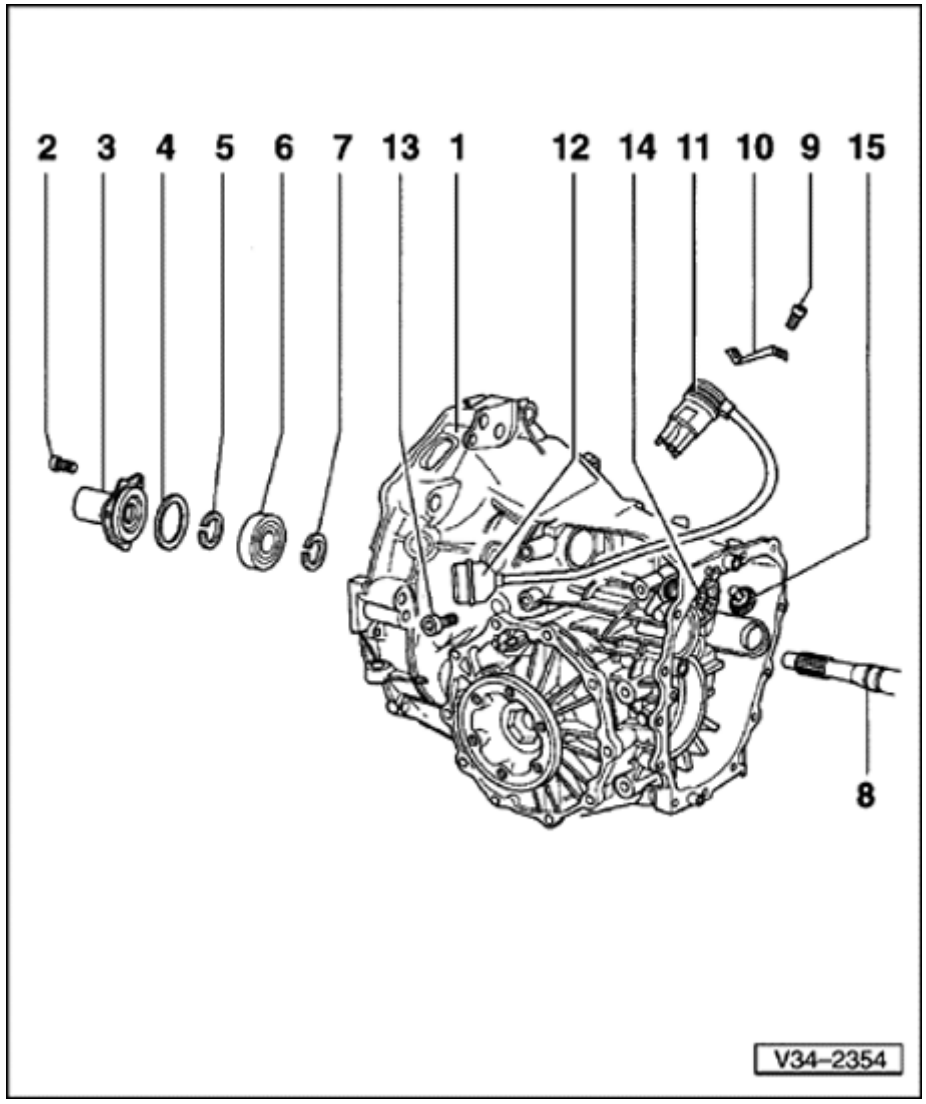
- Adjusting ⇒ Page 39-39



Assembly overview

I - Disassembling and assembling input shaft and multi-function sender ⇒ Page 34-61

II - Disassembling and assembling input shaft, pinion shaft, selector rods and transmission cover ⇒ Page 34-67

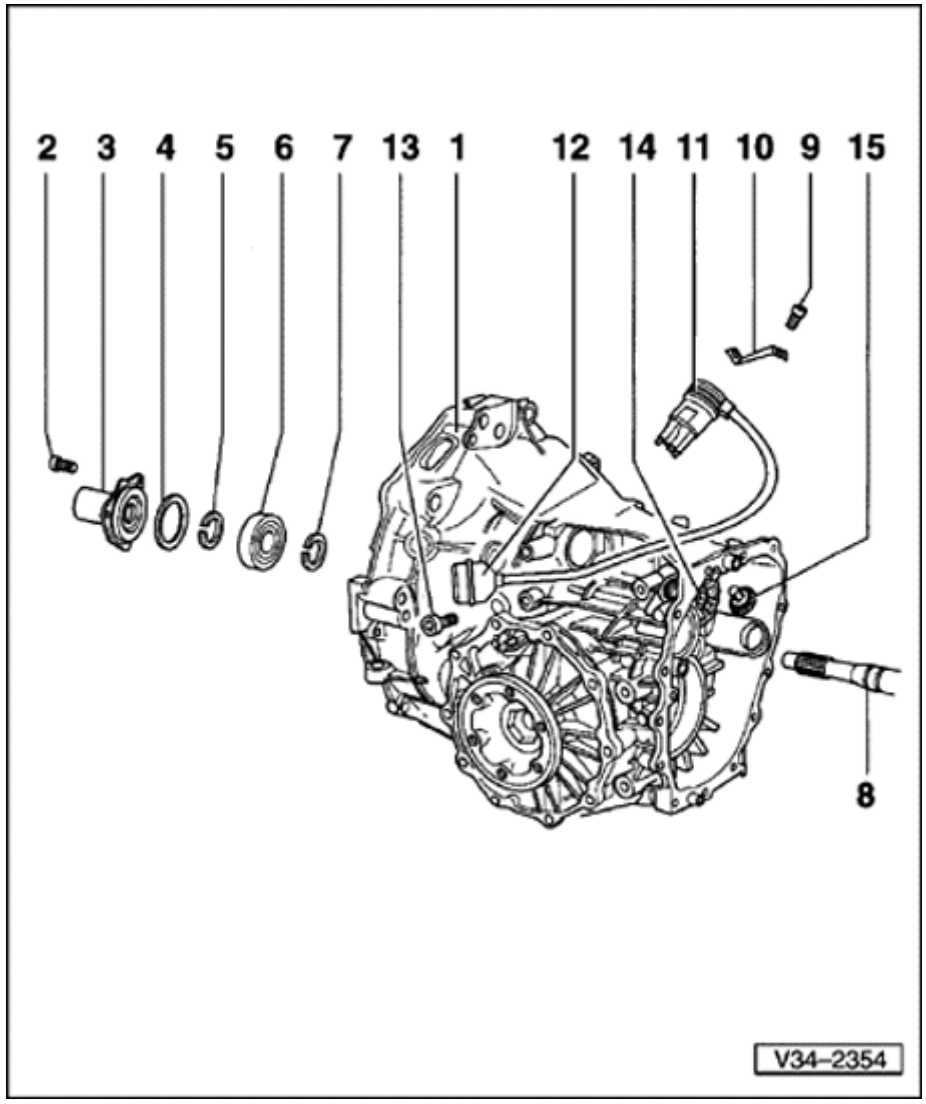


Drive shaft ball bearing and multi-function sender, disassembling and assembling

1 - transmission housing

- Casing manufactured from either aluminium or magnesium ⇒ Page 34-70
- With differential and flanged shafts
- Removing and installing differential and flanged shafts ⇒ Page 39-10
- Replacing speedometer sender and drive wheel ⇒ Page 39-6
- Breather installation position ⇒Fig. ⇒ 1
- Breather manufactured from different materials for aluminium and magnesium transmissions
- Allocation

⇒ *Parts catalog*



2 - Torx socket head bolt

- Self-locking
- Always replace
- Black; only for aluminium transmissions
- Bright; for aluminium and magnesium transmissions
- Allocation

⇒ *Parts catalog*

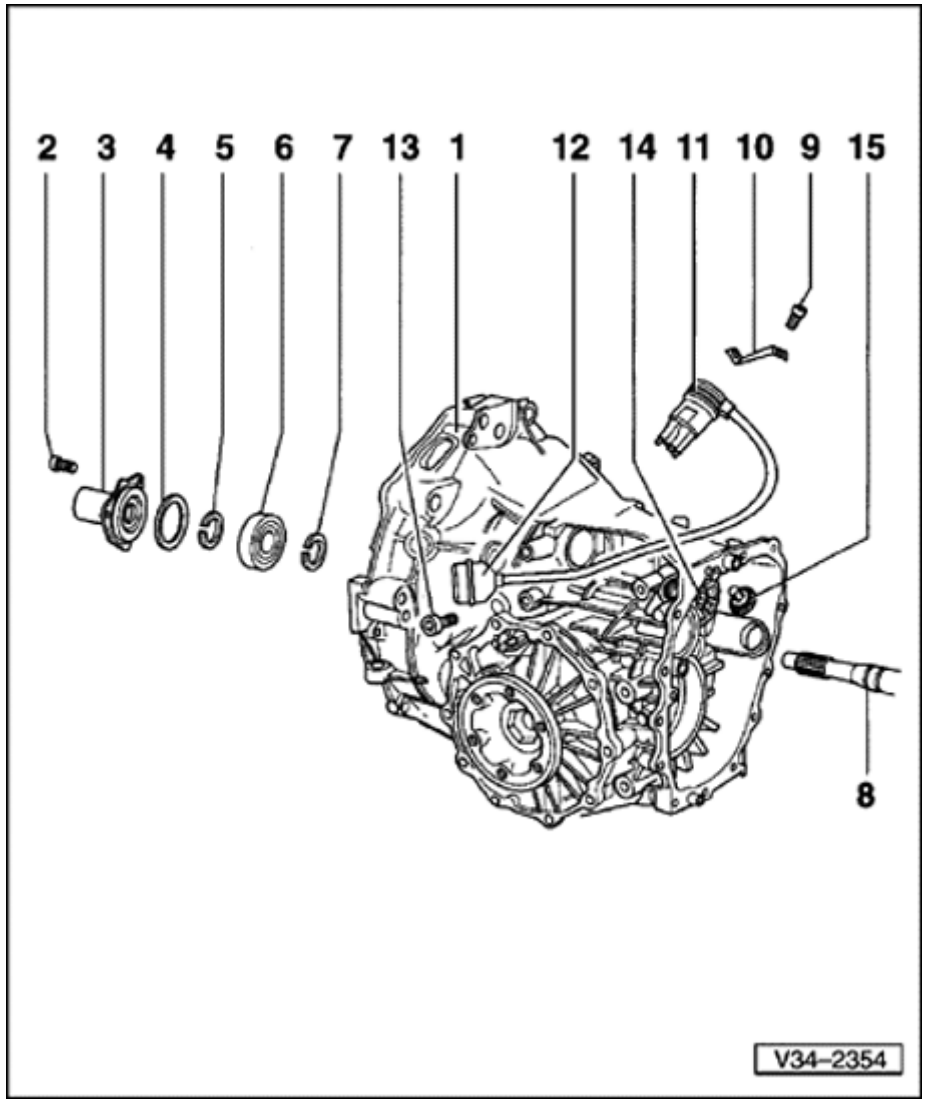
- For aluminium transmissions
- 35 Nm
- For magnesium transmissions
- 25 Nm

3 - Guide sleeve

- With O-ring and seal for input shaft ⇒ Page 30-23
- Guide sleeve made of different materials for aluminium and magnesium transmissions
- Allocation

⇒ *Parts catalog*

- Installation position: oil drain hole facing downwards



4 - Dished spring

- Smaller diameter (convex side) faces guide sleeve

5 - Securing clip

- Determining thickness ⇒ Page 35-18 ; adjusting input shaft

6 - Ball bearing

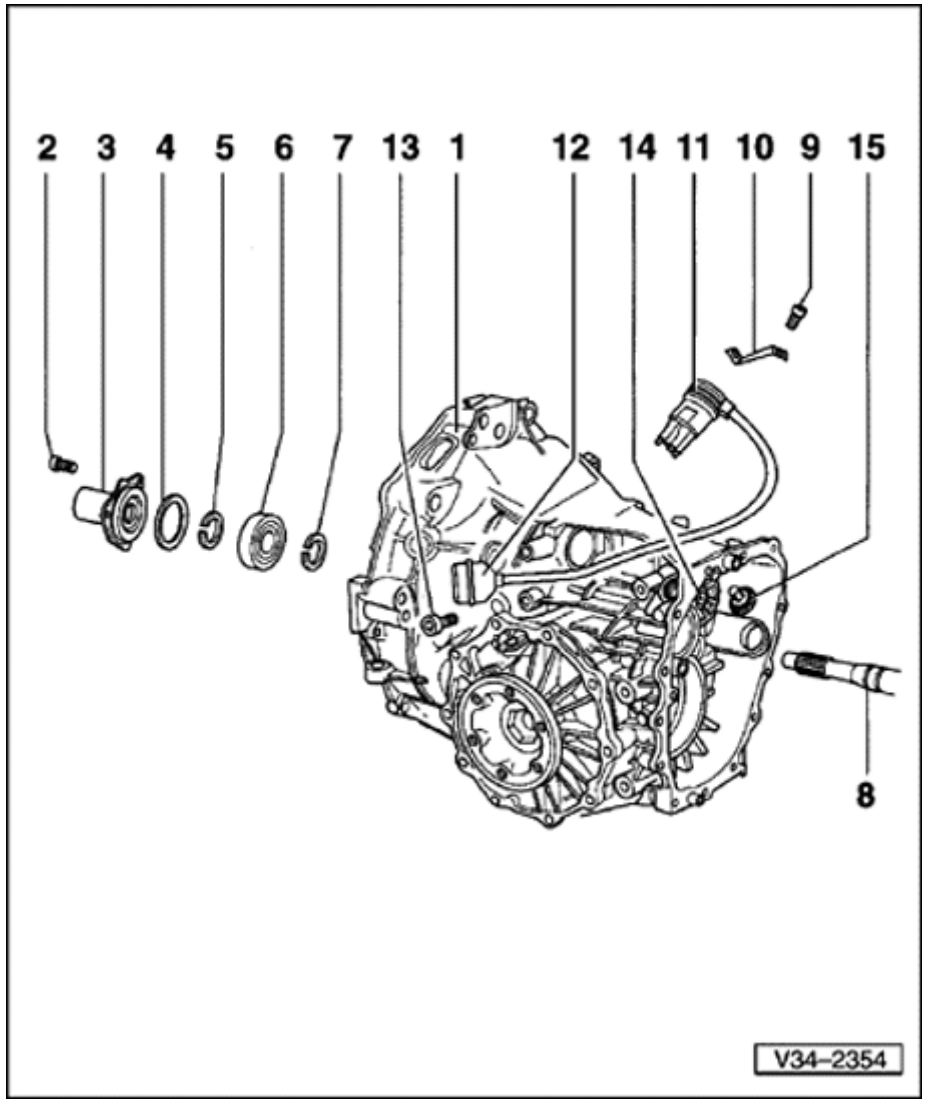
- Removing and installing ⇒ Page 34-74

7 - Securing clip

- Determining thickness ⇒ Page 35-18 ; adjusting input shaft

8 - Input shaft

- Removing and installing ⇒ Page 34-67
- Disassembling and assembling ⇒ Page 35-1
- Adjusting ⇒ Page 35-18
- Servicing input shaft bearings ⇒ Page 35-1



9 - Bolt

- Black; only for aluminium transmissions
- Bright; for aluminium and magnesium transmissions
- Allocation

⇒ *Parts catalog*

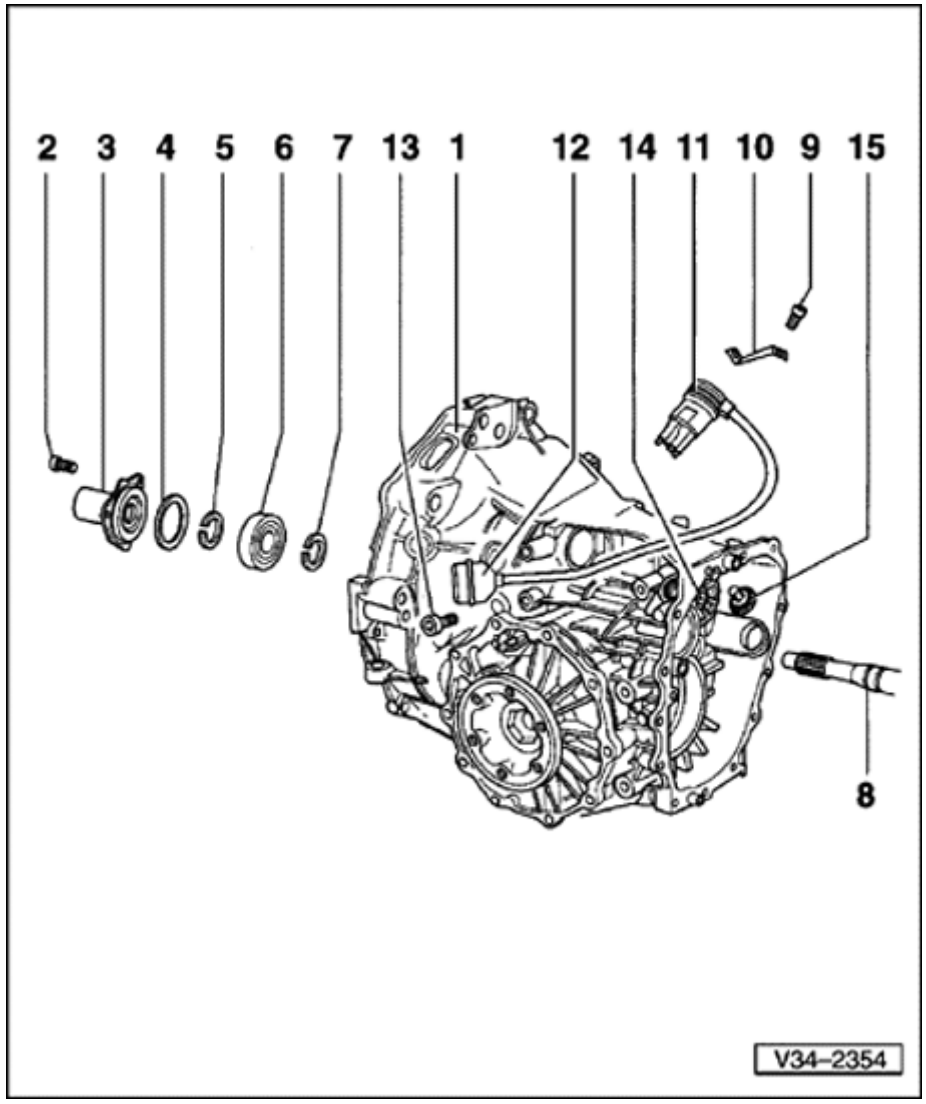
- For aluminium transmissions
  - 25 Nm
- For magnesium transmissions
  - 15 Nm

10 - Locking plate

- For multi-function sender
- Locking plate made from different material for aluminium and magnesium transmissions
- Allocation

⇒ *Parts catalog*

11 - Multi-function sender



12 - Multi-function sender connector

13 - Bolt, 10 Nm

14 - Selector shaft cover

- Removing and installing ⇒ Page 34-87

15 - Locking unit

- Removing, installing and checking ⇒ Page 34-96

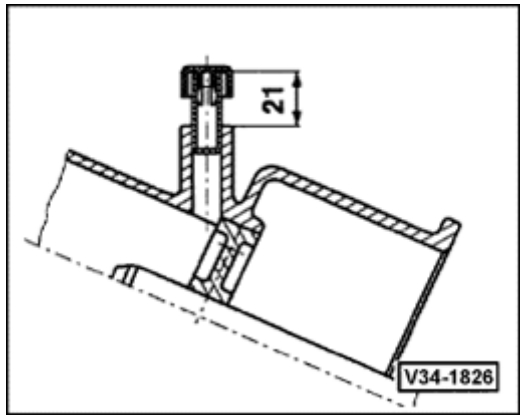
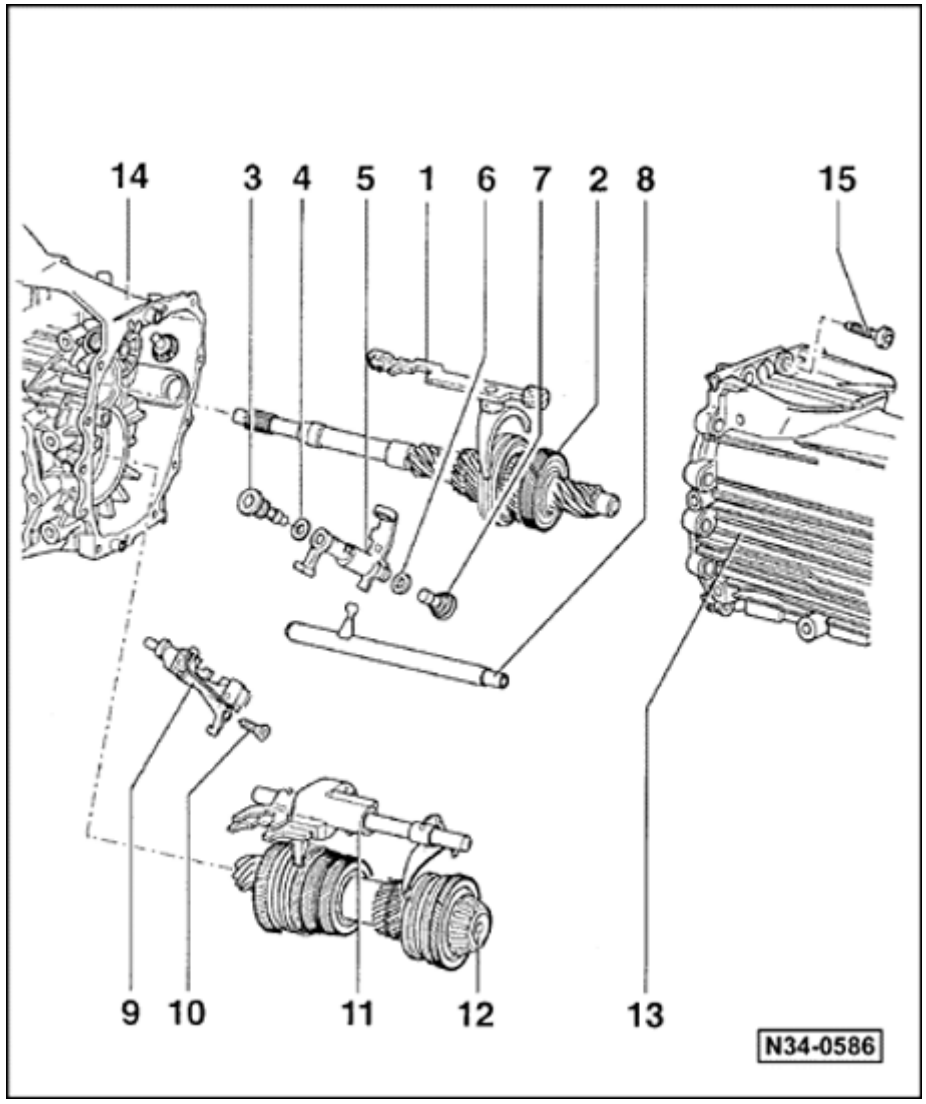


Fig. 1 Breather installation position

After pressing in, the breather must project 21 mm out of housing.



Input shaft, pinion shaft, selector rods and transmission cover, disassembling and assembling

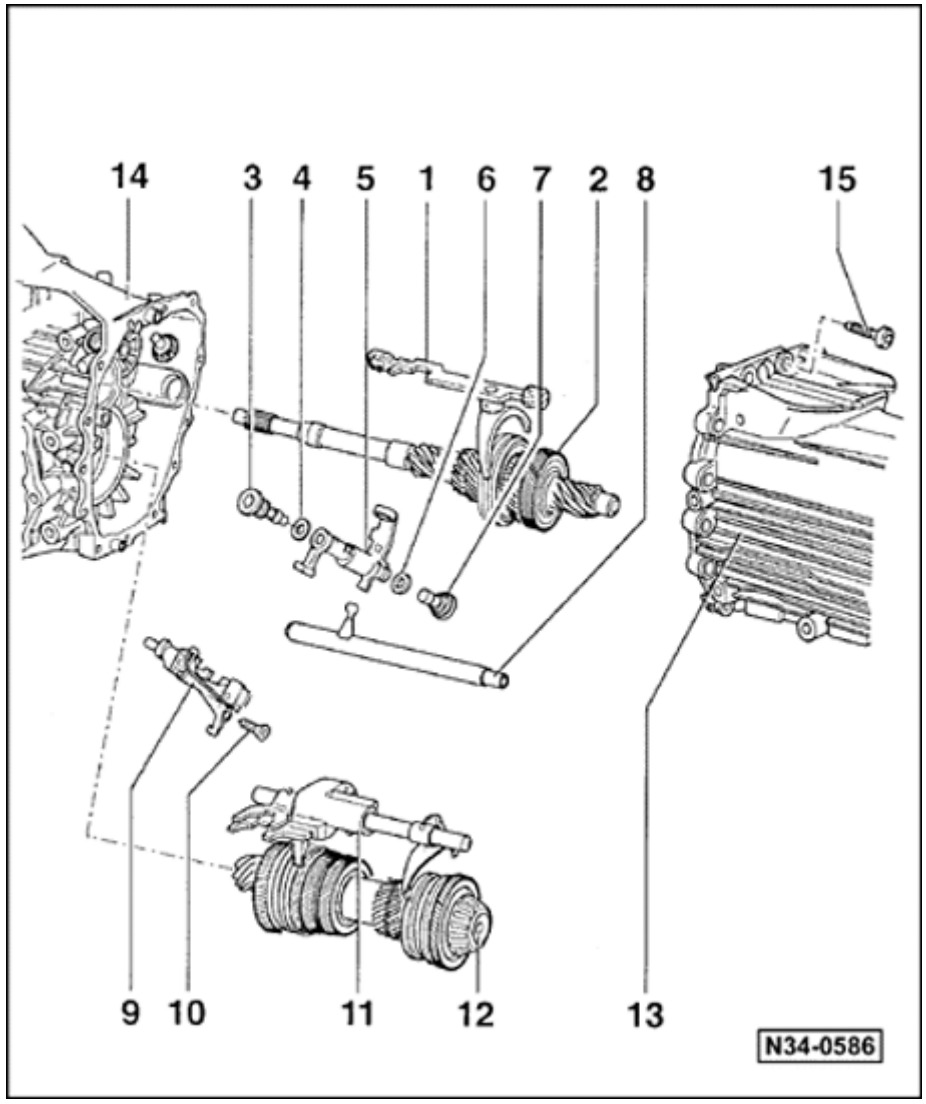
1 - Selector rod with selector fork for 3rd and 4th gear

- Disassembling and assembling ⇒ Page 34-87
- Replacing mounting bushes ⇒ Page 34-87

2 - Input shaft

- Disassembling and assembling ⇒ Page 35-1
- Adjusting ⇒ Page 35-18
- Servicing input shaft bearings ⇒ Page 35-1

3 - Left stop screw, 40 Nm



4 - Shim

5 - Relay shaft

- Installation position ⇒ Page 34-87

6 - Shim

7 - Right stop screw, 40 Nm

- The stop screws (items 3 and 7) are made from different materials for aluminium and magnesium transmissions
- Allocation

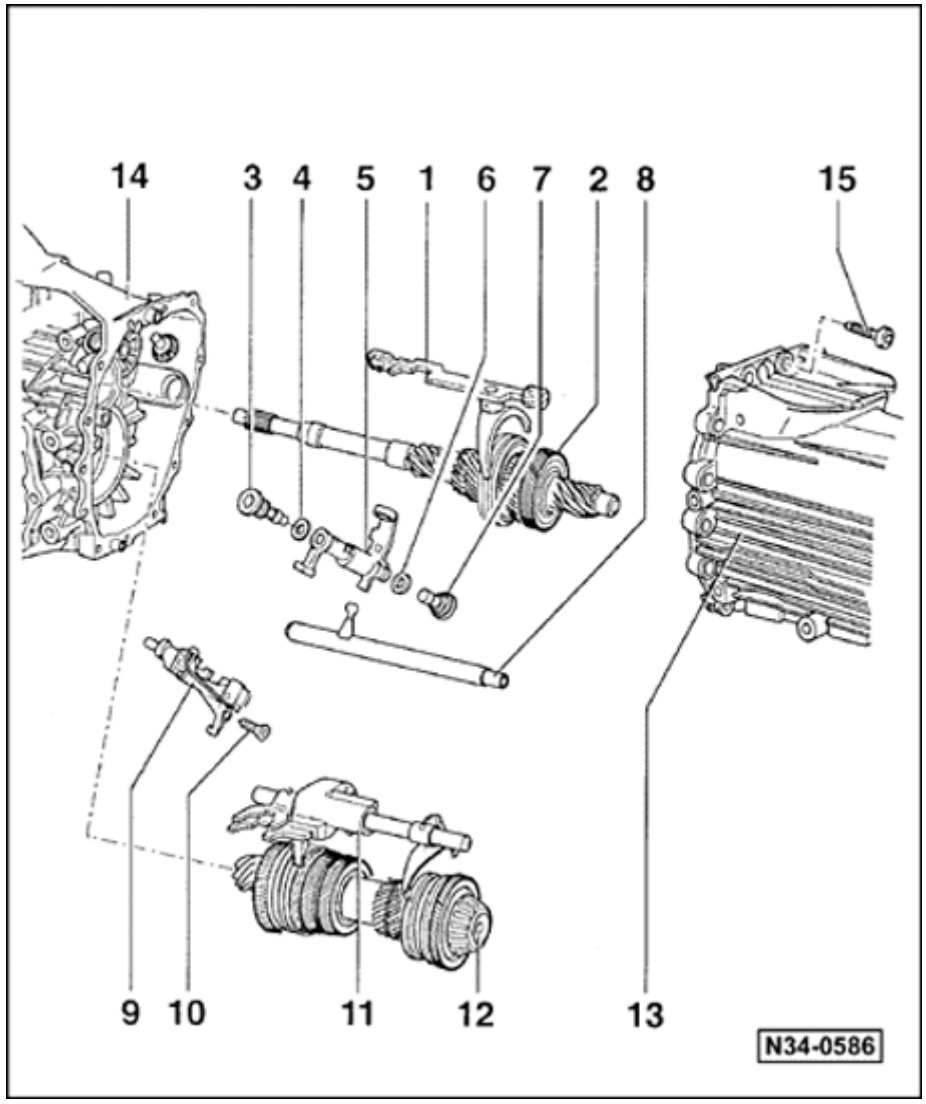
⇒ *Parts catalog*

8 - Selector shaft

- Installation position ⇒ Page 34-87
- Replacing selector shaft oil seal ⇒ Page 34-87

9 - Detent segment

- Installation position ⇒ Page 34-87



10 - Torx screw, 25 Nm

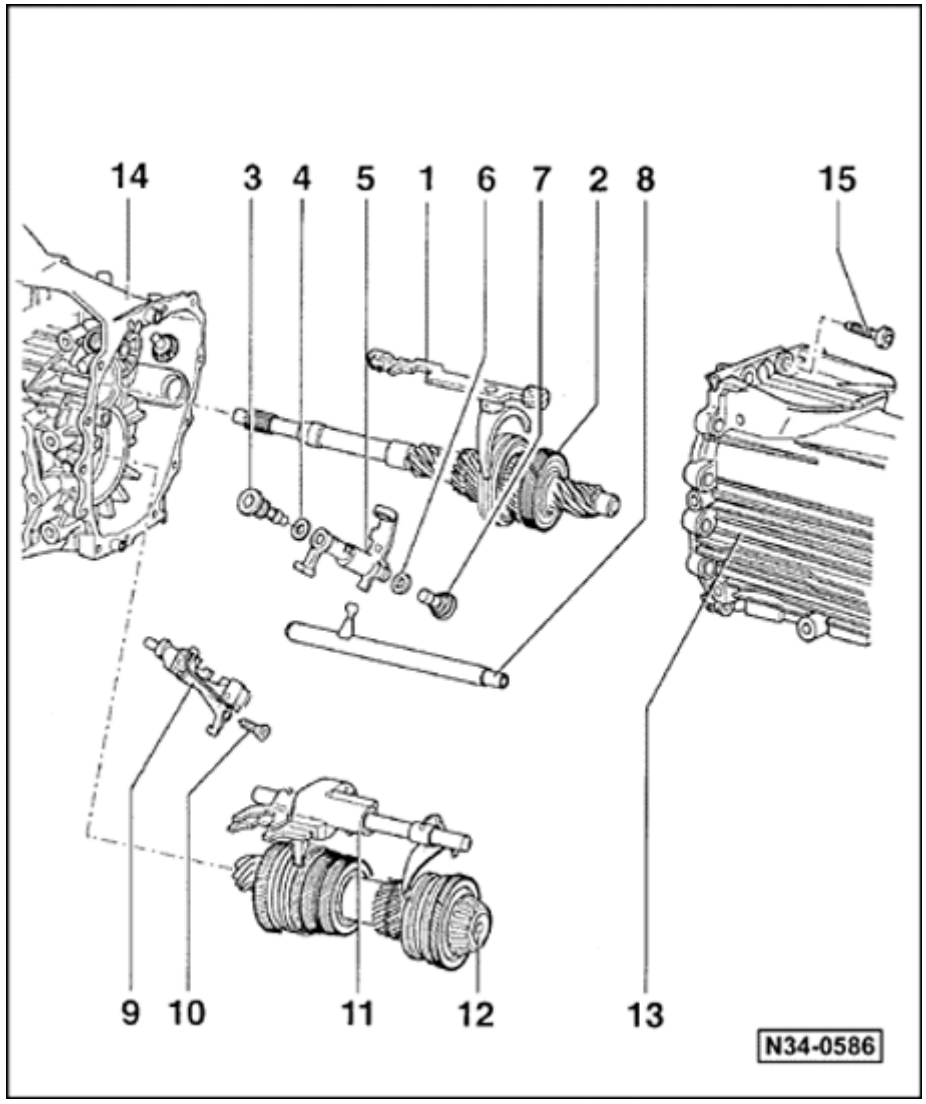
- With shoulder to secure the detent element spring

11 - Selector rod with 1st/2nd/5th and reverse selector forks

- Disassembling and assembling ⇒ Page 34-87
- Replacing mounting bushes ⇒ Page 34-87

12 - Pinion shaft

- Disassembling and assembling ⇒ Page 35-23
- Adjusting ⇒ Page 39-33
- Servicing pinion shaft bearings ⇒ Page 35-23

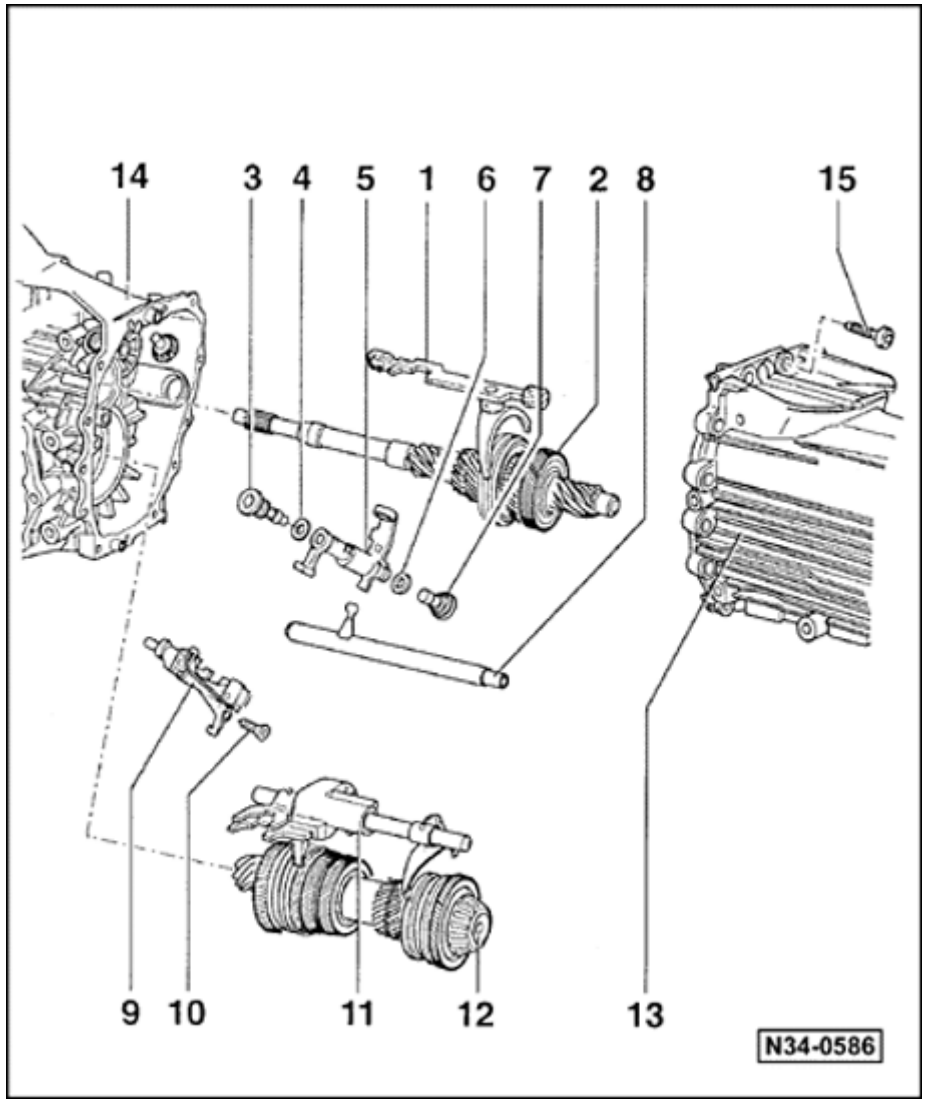


13 - transmission cover

- If aluminium (bright), can only be installed to an aluminium transmission housing
- If magnesium (matt grey), can only be installed to a magnesium transmission housing
- Removing and installing oil collector tray⇒Fig. ⇒ 1

14 - transmission housing

- If aluminium (bright), can only be installed to an aluminium transmission cover
- If magnesium (matt grey), can only be installed to a magnesium transmission cover
- transmission cover and transmission housing identification shortly after start of production ⇒Fig. ⇒ 2
- Allocate components according to transmission code letters using parts catalog ⇒ Page 00-3



15 - Torx screw

- For aluminium transmissions 43 mm long
- 25 Nm
- For magnesium transmissions 48 mm long
- From transmission build date 25 09 7 modified for magnesium transmissions ⇒ Fig. ⇒ 3
- Always replace
- 20 Nm

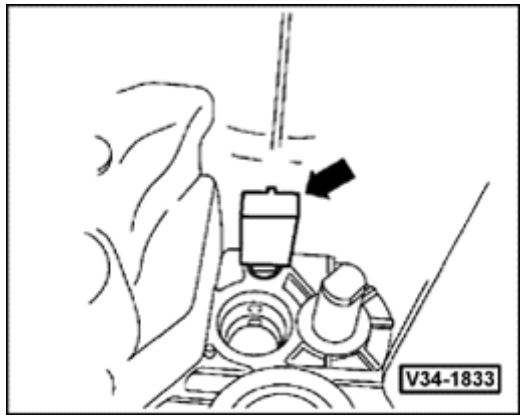


Fig. 1 Removing and installing oil collector tray

Removing

- Turn the oil collector tray and then pull out

Installing

Installation position:

The oil collector tray faces upwards in transmission cover.

- Push oil collector tray into the transmission, until it snaps in.

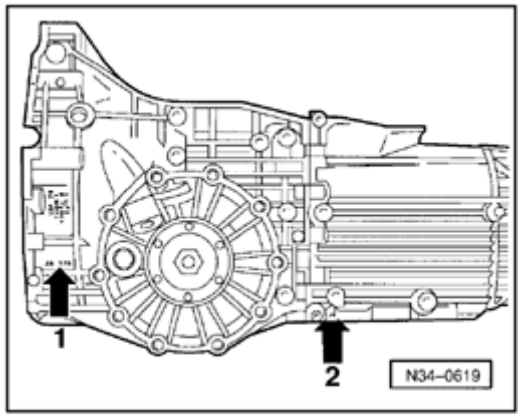


Fig. 2 transmission cover and transmission housing markings

The inscription Mg Al 9 Zn 1 can be found in vicinity of arrows 1 and 2 on transmissions manufactured from magnesium

Mg = Magnesium; additional data is only for production.

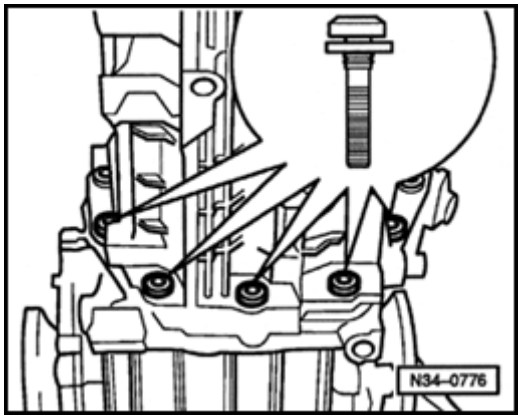


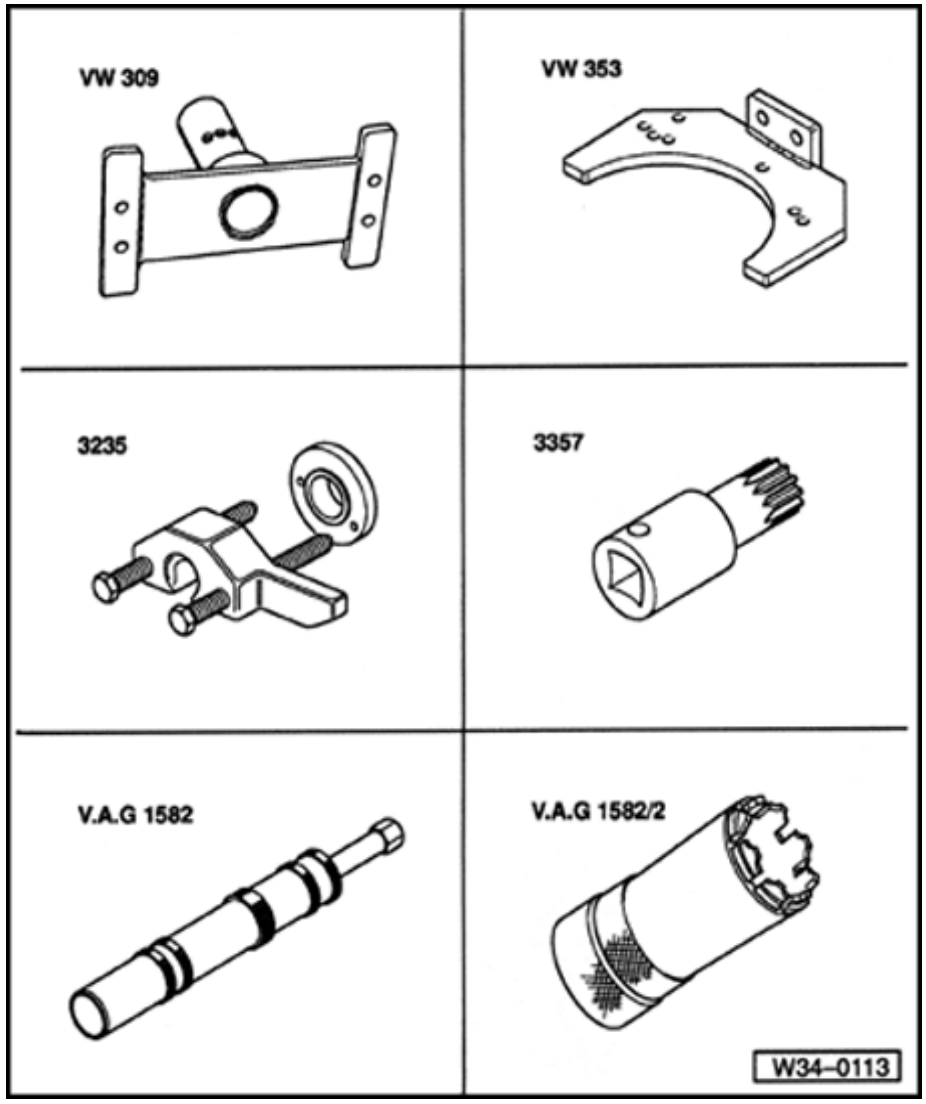
Fig. 3 transmission cover securing bolts to transmission housing modified for magnesium transmissions

From transmission build date 25 09 7 only bolts with a washer are installed in the 5 lower holes (arrows).

The bolts have a length of 51 mm

- In this area no bolts without washers must be installed.

Otherwise the transmission cover below the bolt head contact surface will be damaged due to contact corrosion.



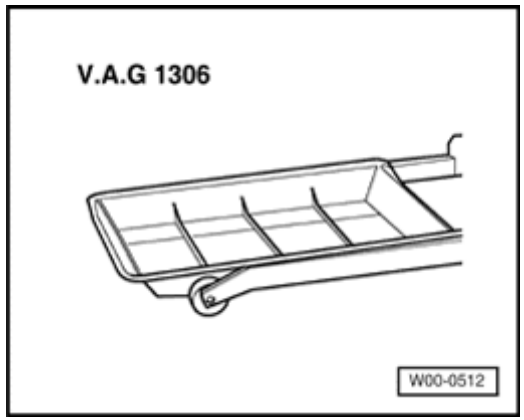
Assembly sequence

Disassembling and assembling input shaft ball bearing, multi-function sender, input shaft, pinion shaft, selector rods and transmission cover.

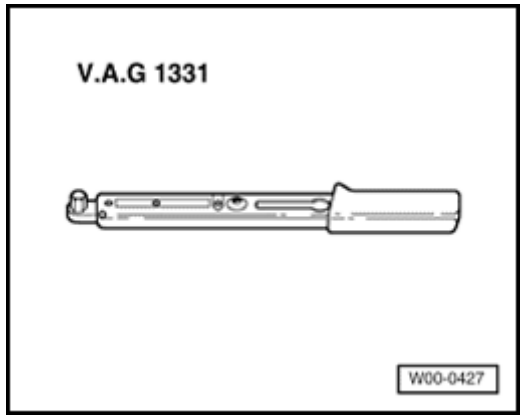
Special tools and workshop equipment required

- VW 309 Holding plate
- VW 353 transmission support
- 3235 Press
- 3357 Torx socket
- VAG 1582 Taper roller bearing puller
- VAG 1582/2 Adapter

Special tools and workshop equipment required



- VAG 1306 Drip tray



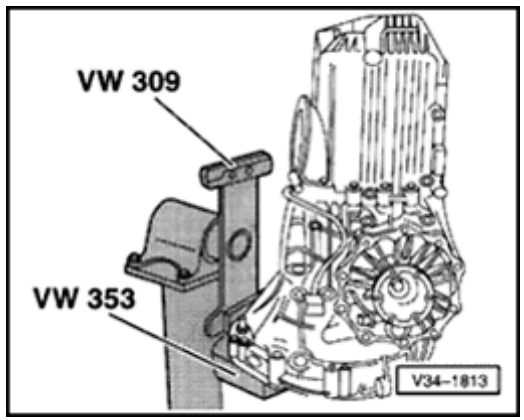
- VAG 1331 Torque wrench

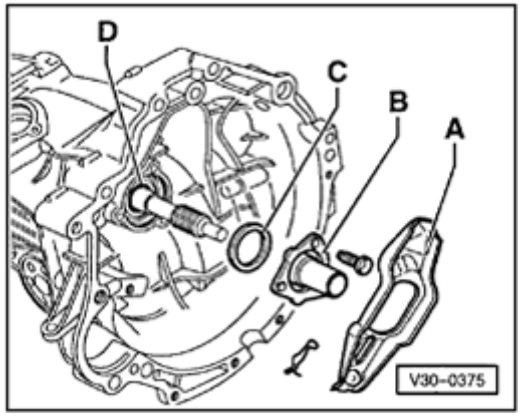
Notes:

- *To remove the above-mentioned components it is not necessary to remove the differential.*
- *Removal is only necessary when adjustment work must be carried out ⇒ Page 39-37 adjustment overview.*

Disassembling

- Place drip tray VAG 1306 under transmission.
- Drain transmission oil with key 3357.
- Mount transmission on repair stand.



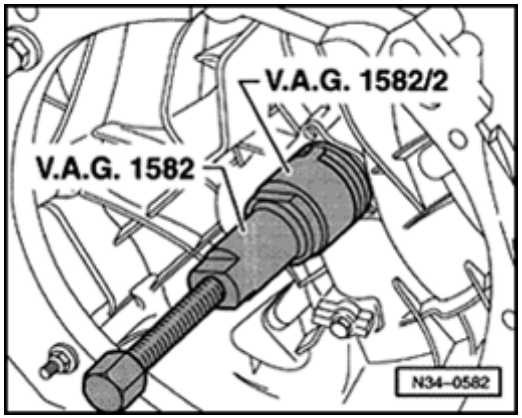


- Remove clutch release lever -A- with release bearing.

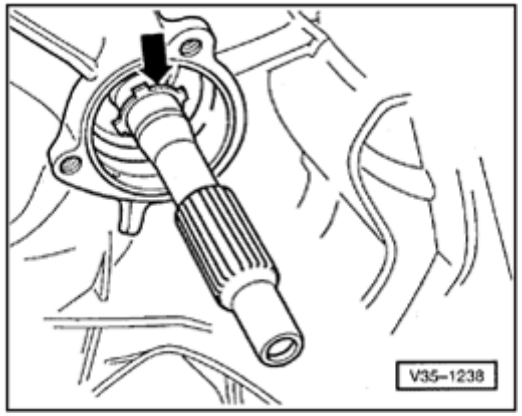
Note:

Before removing guide sleeve, pull shrink tube over input shaft splines to protect oil seal.

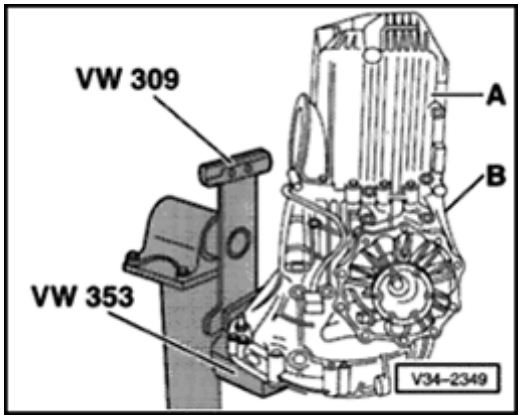
- Remove guide sleeve -B-
- Remove dished washer -C-
- Remove circlip -D- in front of ball bearing.
- If the ball bearing, input shaft or transmission housing is not to be replaced, note the thickness of the circlip.



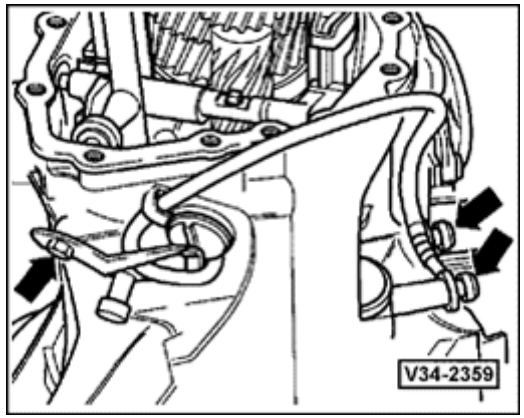
- Pull the input shaft ball bearing out of transmission housing.



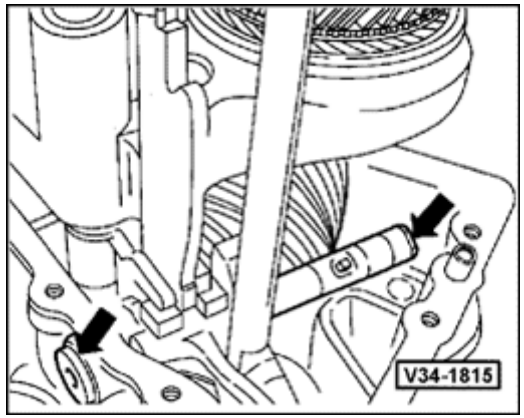
- Remove the circlip (arrow) behind the input shaft ball bearing.
- If the ball bearing, input shaft or transmission housing is not to be replaced, note the thickness of the circlip.



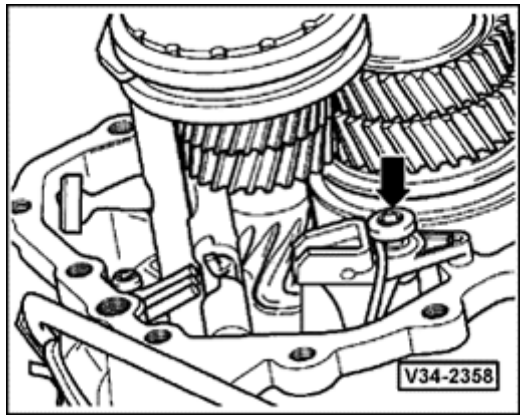
- Unbolt transmission cover -A- from transmission housing -B-.



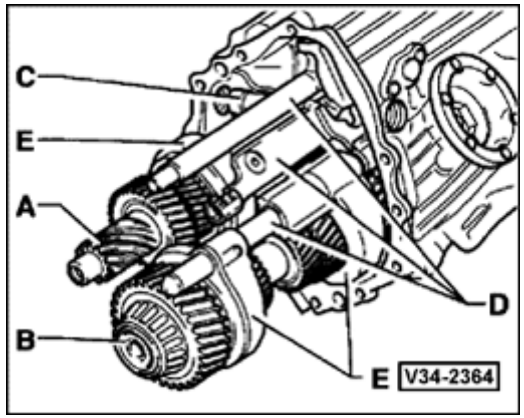
- Remove bolts (arrows) and pull out the multi-function sender.



- Remove relay shaft bolts (arrows)



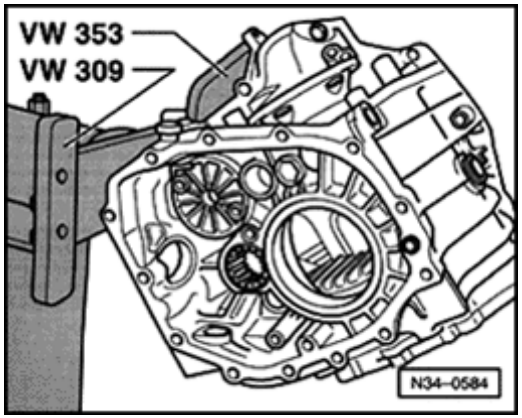
- Then unbolt the detent segment (arrow) and swing it out.



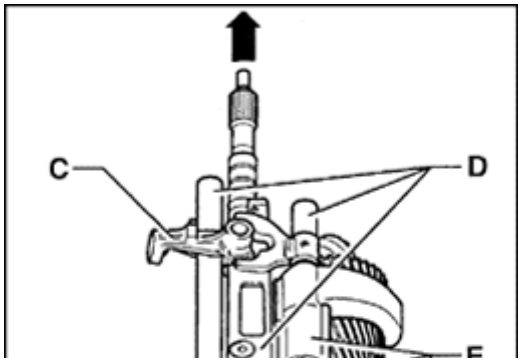
- The input shaft -A-, the pinion shaft -B-, the relay shaft -C-, the selector rods -D- with selector shaft and the selector forks -E- must be carefully pulled out together.

Assembling

When the input shaft ball bearing, the input shaft or the transmission housing is replaced, first of all the thickness of the circlip for the input shaft must be redetermined ⇒ Page 35-18 adjusting input shaft.



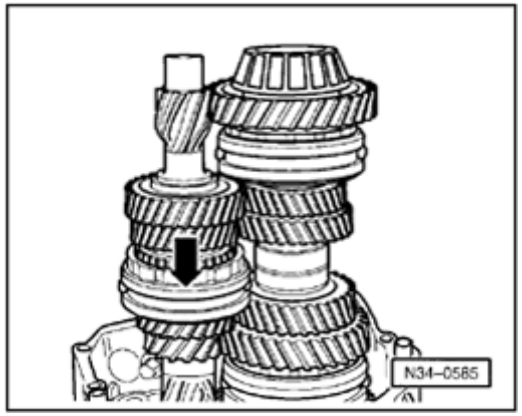
- Swing the transmission housing into the position shown.
- It is then easier to install the following mentioned components.



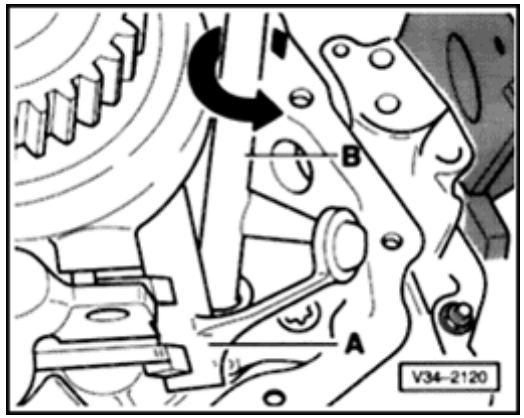
- Assemble the input shaft -A-, the pinion shaft -B-, the relay shaft -C-, the selector rods -D- with selector shaft and selector forks -E- together.
- Install these components together into the transmission housing.

Note:

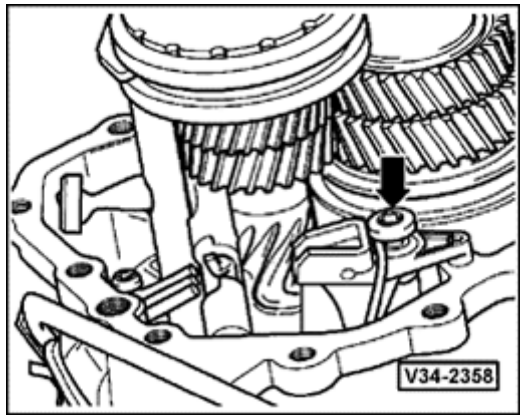
- If necessary the relay shaft -C- and the selector shaft can be subsequently installed ⇒ Page 34-82 , illustration N34 -0585 and illustration V34 -2120.



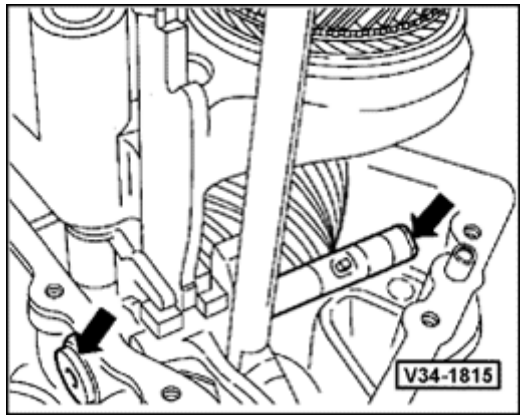
- Turn transmission housing and engage 3rd gear (direction of arrow).



- Now install relay shaft -A-.
- Insert selector shaft -B- sideways onto the drilling in transmission housing and assemble into mounting eye.
- Then turn the selector shaft carefully in direction of arrow.

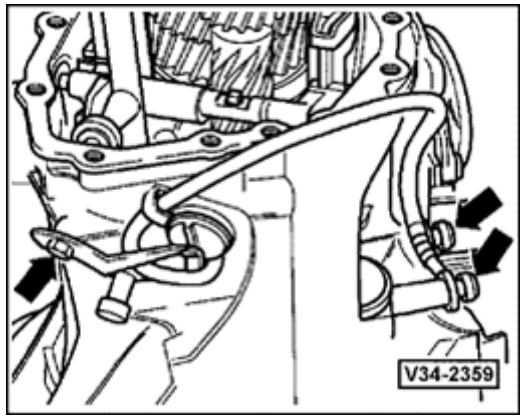


- Then insert the detent segment and bolt it tight (arrow).



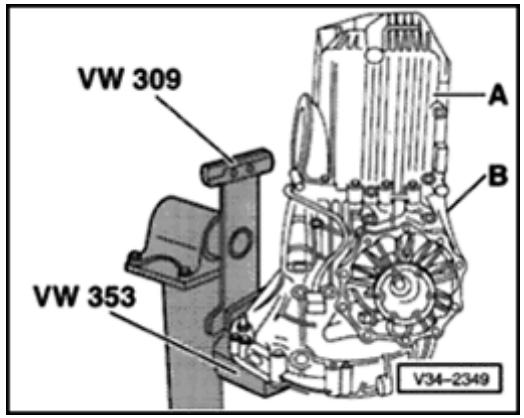
- Then insert detent element and bolt it tight (arrow).

- Replace O-ring for multi-function sender.

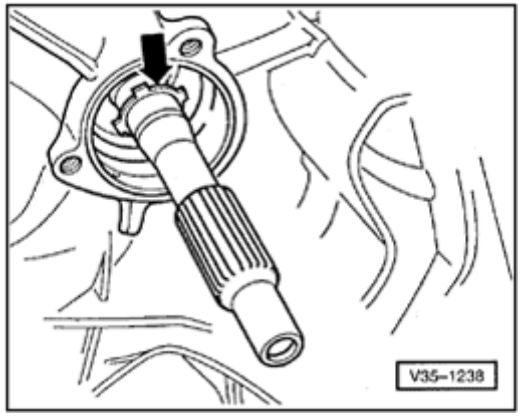


- Carefully insert multi-function sender and tighten (arrows).

Check whether the dowel sleeves for the transmission cover -A- are installed in transmission housing -B-.



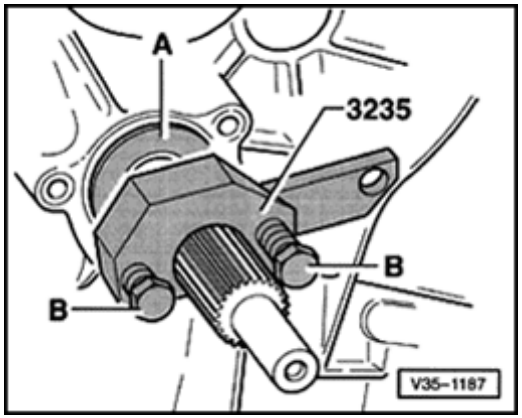
- Install transmission cover -A- onto transmission housing -B-.



- Install rear input shaft ball bearing circlip (arrow).
- Then slide the ball bearing onto the input shaft.

Installation position:

The closed side of the ball cage faces to transmission housing.

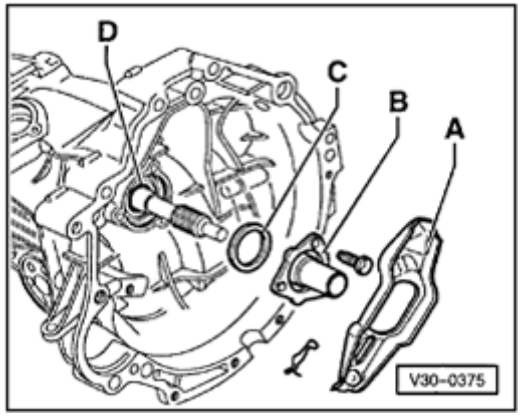


- Press in ball bearing:

Slide the pressure plate -A- of the installation tool onto the input shaft.

Place installation tool behind the clutch plate splines. Pretension bolts -B-. The bolts locate in the recess in the pressure plate -A-.

Press ball bearing in onto stop by alternately tightening the bolts (1/2 turn).



- Now install the input shaft ball race front circlip -D-.
- Then install dished washer -C-.

Installation position:

The convex side faces to guide sleeve -B-.

Note:

Before removing guide sleeve, pull shrink tube over input shaft splines to protect oil seal.

- Install release bearing guide sleeve -B-.
- Install clutch release lever -A- and release bearing.