

TRANSMISSION

Controls, Housing - Manual Transmission Internal Components 0B4 AWD (Sedan)

34 CONTROLS, HOUSING

DESCRIPTION AND OPERATION

TRANSMISSION OVERVIEW

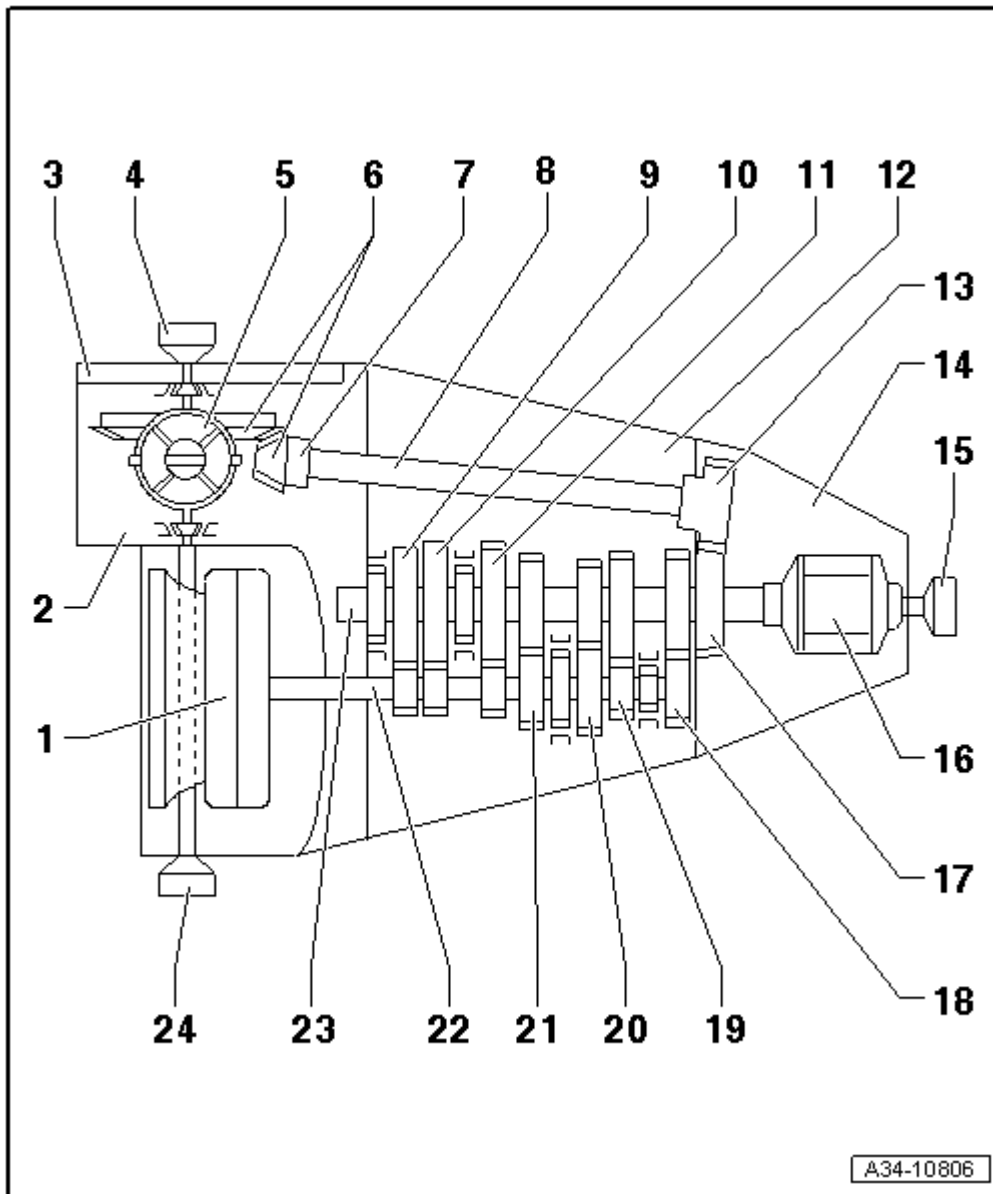


Fig. 1: Identifying Transmission Overview

Courtesy of AUDI OF AMERICA, LLC

1. Clutch Module
 - Consists of the pressure plate, clutch disc and dual mass flywheel with transfer plate
2. Transmission Housing
3. Final Drive Cover
4. Right Flange Shaft
5. Differential
 - With ring gear
6. Drive Train
 - Pinion with ring gear / differential
7. Double Angular Contact Ball Bearing
8. Pinion
9. Reverse Gear
10. 1st Gear
11. 2nd Gear
12. Transmission Cover
13. Output Wheel/Drive Wheel
14. Center Differential Housing
15. Rear Flange Shaft
16. Center Differential
17. Output Wheel/Drive Wheel
18. 4th Gear
19. 3rd Gear
20. 6th Gear
21. 5th Gear
22. Input Shaft
23. Output Shaft
24. Left Flange Shaft

ASSEMBLY OVERVIEW

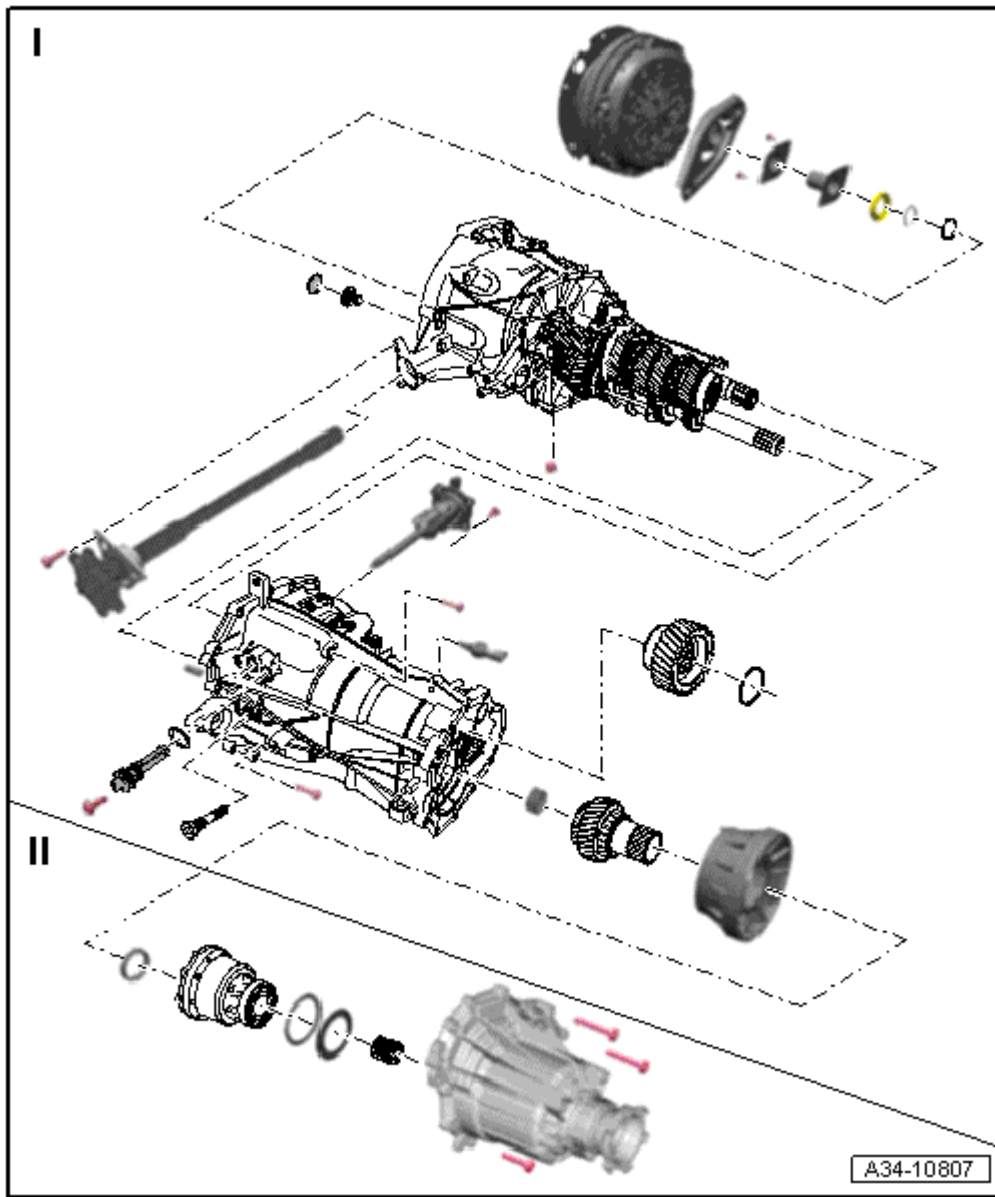


Fig. 2: Identifying Assembly Overview

Courtesy of AUDI OF AMERICA, LLC

1. I - Left flange shaft, clutch module, spur gears, gearshift shaft and transmission cover, removing and installing; refer to **LEFT FLANGE SHAFT, CLUTCH MODULE, SPUR GEARS, GEARSHIFT SHAFT AND TRANSMISSION COVER OVERVIEW**.
2. II - Center Differential Housing and Center Differential, Removing and Installing, refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL OVERVIEW**.

CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL OVERVIEW

NOTE: Removal can also be performed with the transmission still installed. Refer to **[For engine(s) CCBA] Removal and Installation** .

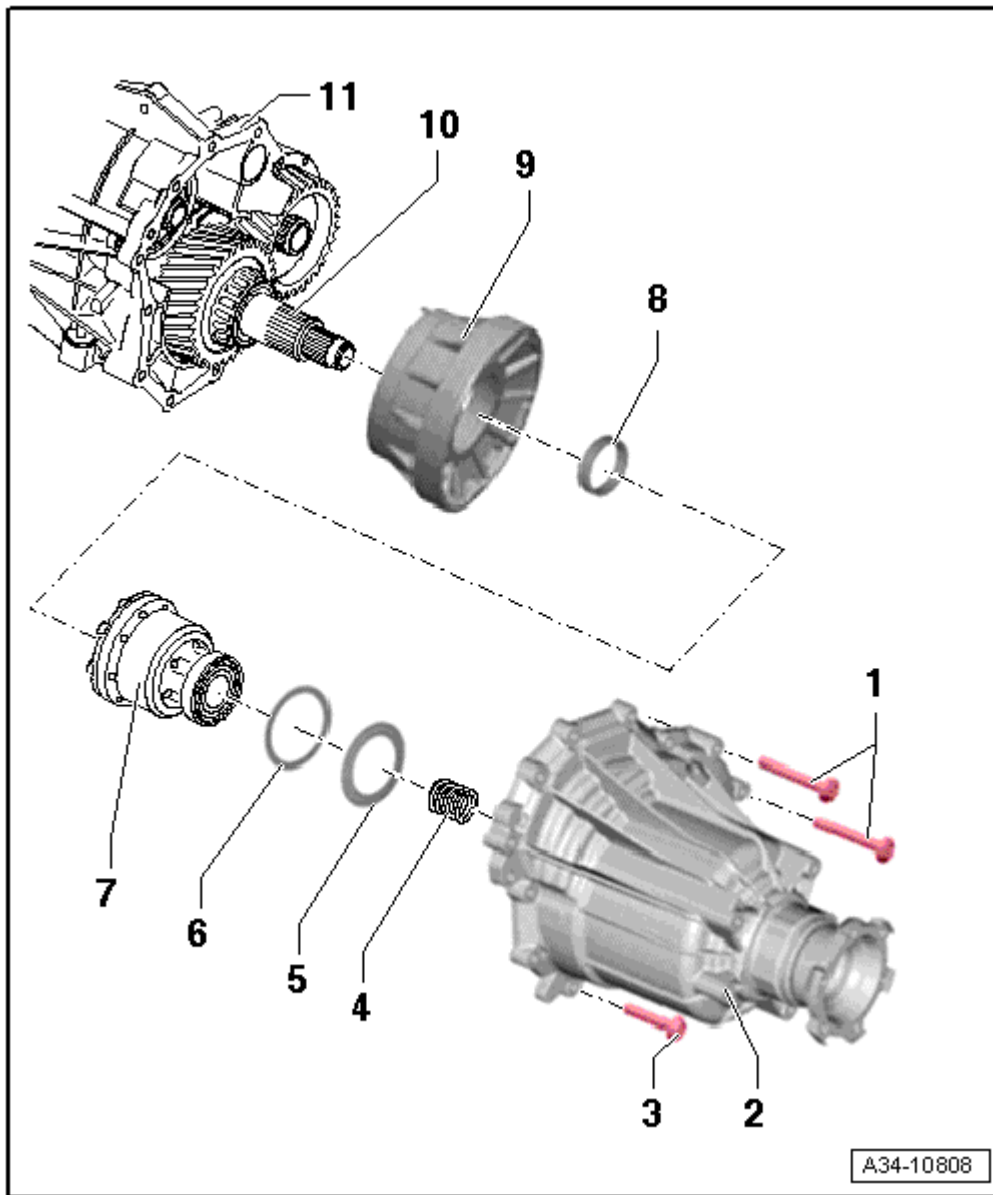


Fig. 3: Identifying Center Differential Housing And Center Differential Overview
 Courtesy of AUDI OF AMERICA, LLC

1. Bolt
 - 24 Nm
 - Steel bolts (M8; 63 mm long)
 - Quantity: 2
2. Center Differential Housing
 - With or without vibration dampener, depending on version
 - Removing and installing, refer to **TRANSMISSION**
 - For servicing, refer to **CENTER DIFFERENTIAL HOUSING**
3. Bolt

- Always replace
 - 10 Nm plus an additional 90° turn
 - Aluminum bolts (M8; 42 mm long)
 - Quantity: 11
4. Pressure Spring
 5. Plate Spring
 - Installed position: The camber on the inner diameter faces the center differential housing
 6. Adjusting Shim
 - For bearing pre-loading the ball bearings for the center differential
 - To select the correct thickness, refer to **BEARING PRE-LOAD FOR BALL BEARINGS FOR THE CENTER DIFFERENTIAL, REDETERMINING**
 7. Center Differential
 - Servicing only by the manufacturer
 - Center differential bearing, servicing, refer to **SPUR GEAR AND CENTER DIFFERENTIAL BEARING**
 8. Spacer Sleeve
 9. Gear Carrier
 - Pay attention to the installed position to the transmission cover **GEAR CARRIER -1- ON THE TRANSMISSION COVER AS FOLLOWS:**
 10. Output Wheel/Drive Wheel
 11. Transmission Cover / Transmission

LEFT FLANGE SHAFT, CLUTCH MODULE, SPUR GEARS, GEARSHIFT SHAFT AND TRANSMISSION COVER OVERVIEW

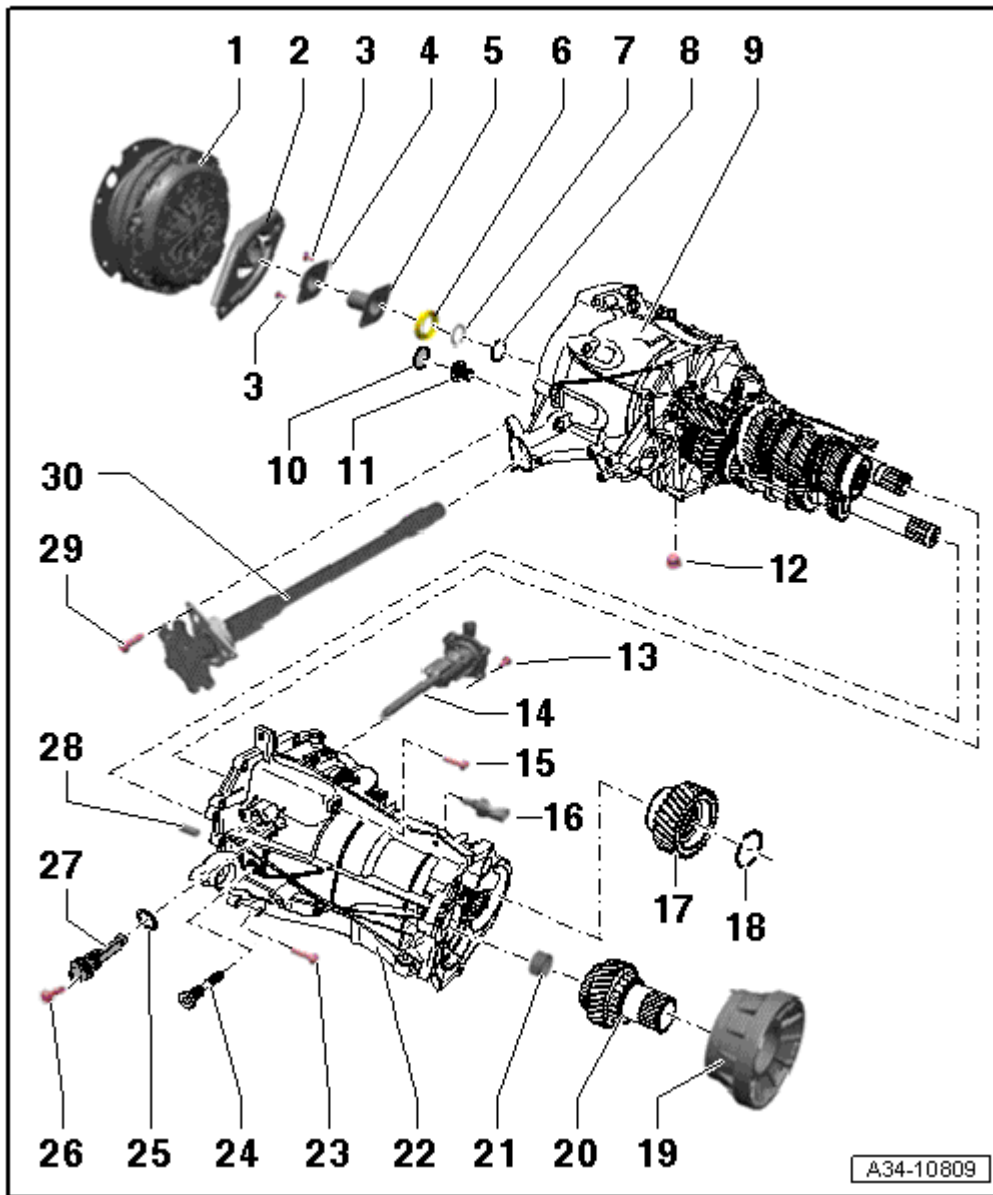


Fig. 4: Identifying Left Flange Shaft, Clutch Module, Spur Gears, Gearshift Shaft And Transmission Cover Overview

Courtesy of AUDI OF AMERICA, LLC

1. Clutch Module

- Removing and installing, refer to **CLUTCH MODULE**
- For servicing, refer to **CLUTCH, LUK OVERVIEW, SINGLE-DISK CLUTCH**
- For servicing, refer to **DUAL-DISK CLUTCH OVERVIEW**

2. Clutch Release Lever with Release Bearing and Spring

- Removing and installing, refer to **CLUTCH RELEASE LEVER WITH RELEASE BEARING AND GUIDE SLEEVE**
- Disassembling and assembling, refer to **CLUTCH RELEASE MECHANISM OVERVIEW**

3. Bolt

- 8 Nm
- Quantity: 2
- Insert with locking fluid AMV 185 101 A1

4. Securing Plate

- Not installed on all versions
- Installed position: The recess for the bolts **LEFT FLANGE SHAFT, CLUTCH MODULE, SPUR GEARS, GEARSHIFT SHAFT AND TRANSMISSION COVER OVERVIEW** faces the clutch module

NOTE: Deleted from 02.2008

Also deleted when installing a new guide sleeve CLUTCH RELEASE MECHANISM OVERVIEW

5. Guide Sleeve

- If present, remove any grease from the guide sleeve

6. Input Shaft Seal

- Removing and installing, refer to **INPUT SHAFT SEAL, A5 COUPE FROM MY 2008, THROUGH TRANSMISSION SERIES NUMBER 000760, REPLACING or INPUT SHAFT SEAL, A4 AND A5, FROM MY 2008, TRANSMISSION SERIES NUMBER 000761**

7. Locking Ring

- To select the correct thickness, refer to **DETERMINE THE INPUT SHAFT LOCKING RING - 1-**
- Insert in input shaft surrounding groove

8. Adjusting Shim

9. Transmission Housing

- Input and output shafts with shift rails and shift forks, removing and installing, refer to **INPUT SHAFT, OUTPUT SHAFT, REVERSE DRIVE GEAR AND SHIFT RAILS/SHIFT FORKS OVERVIEW**
- For servicing, refer to **TRANSMISSION HOUSING**
- Differential, removing and installing, refer to **DIFFERENTIAL OVERVIEW**

10. Cover

- Always replace
- For the output shaft

11. Bolt

- Always replace
- 110 Nm
- For the output shaft

12. Oil Drain Plug

- 40 Nm
13. Bolt
- 24 Nm
 - Steel bolts (M8; 25 mm long)
 - Quantity: 4
 - Insert with locking fluid AMV 185 101 A1
14. Selector Shaft with Selector Cover
- Different versions are installed (with and without a transmission neutral position sensor -G701-)
 - Allocate according to transmission code.
 - Coat the selector cover's sealing surface on the transmission cover with sealing compound AMV 188 001 02 before installing
15. Bolt
- 27 Nm
 - Steel bolts (M8; 30 mm long)
 - Quantity: 3
 - For the bearing bracket to the transmission cover
 - Insert with locking fluid AMV 185 101 A1
16. Transmission Range Gear Recognition Switch -F208-
- 20 Nm
 - Does not need to be removed when disassembling and assembling the transmission
17. Output Wheel/Drive Wheel
18. Locking Ring
19. Gear Carrier
- Pay attention to the installed position to the transmission cover, refer to **TRANSMISSION**
20. Output Wheel/Drive Wheel
21. Needle Bearing
- For the output wheel/drive wheel **LEFT FLANGE SHAFT, CLUTCH MODULE, SPUR GEARS, GEARSHIFT SHAFT AND TRANSMISSION COVER OVERVIEW.**
 - Mount on the output shaft
22. Transmission Cover
- For servicing, refer to **TRANSMISSION COVER**
23. Bolt
- 24 Nm
 - Steel bolts (M8; 42 mm long)
 - Quantity: 16
24. Bolt
- 24 Nm
 - For the reverse shaft to the transmission cover

25. O-ring

- Always replace
- On transmissions with a transmission neutral position sensor -G701- or a cap

26. Bolt

- 24 Nm
- Steel bolt (M8; 25 mm long)
- For the transmission neutral position sensor -G701- or the plug and at the same time for the cover/gearshift shaft to the transmission cover
- Not installed on all versions
- Insert with locking fluid AMV 185 101 A1

27. Transmission Neutral Position Sensor -G701- or Cap

- Transmission neutral position sensor for vehicles with the Start/Stop System
- A closure cap is installed in place of the **GEAR CARRIER -1- ON THE TRANSMISSION COVER AS FOLLOWS:** transmission neutral position sensor
- Allocate according to transmission code.

NOTE: It is not necessary to remove the cap with disassembling and assembling the transmission, if a cap is installed in place of the transmission neutral position sensor.

28. Alignment Pin

- Quantity: 2

29. Bolt

- 24 Nm
- Steel bolts (M8; 25 mm long)
- Quantity: 3
- Insert with locking fluid AMV 185 101 A1

30. Left Flange Shaft

- With bracket

INPUT SHAFT, OUTPUT SHAFT, REVERSE DRIVE GEAR AND SHIFT RAILS/SHIFT FORKS OVERVIEW

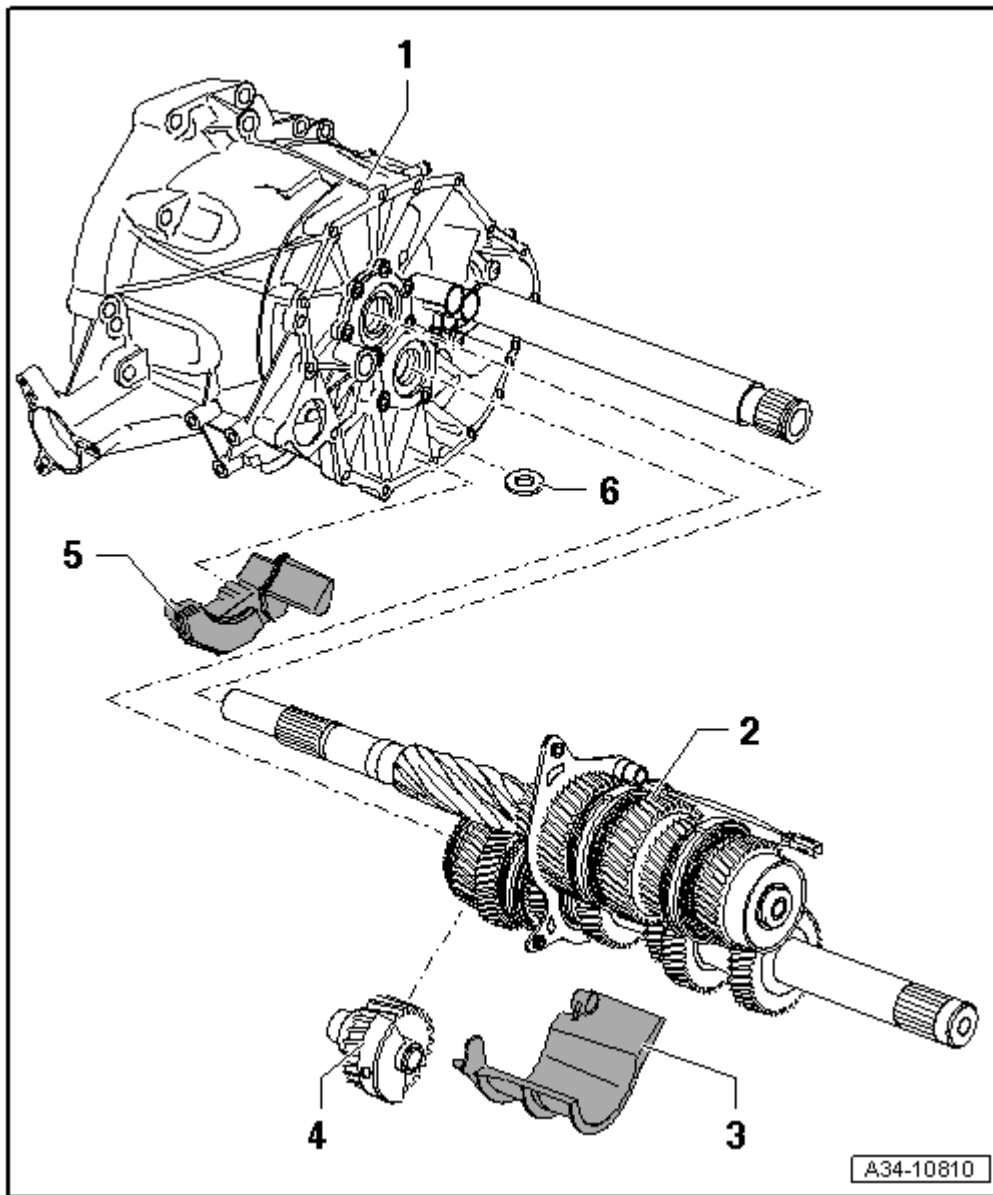


Fig. 5: Identifying Input Shaft, Output Shaft, Reverse Drive Gear And Shift Rails/Shift Forks Overview
 Courtesy of AUDI OF AMERICA, LLC

1. Transmission Housing
 - With differential and pinion
2. Input and Output Shafts with Shift Fork Group
 - Disassembling and assembling, refer to **SHIFT FORK GROUP, INPUT SHAFT, 1ST, 2ND AND REVERSE GEAR OUTPUT SHAFTS OVERVIEW**
3. Oil Catch Tray
 - Gets clipped in to the bearing bracket
4. Reverse Drive Gear
 - With the reverse shaft

- Reverse drive gear assembly overview; refer to **Fig. 6**
5. Oil Guide Element
 6. Magnet
 - Clean off

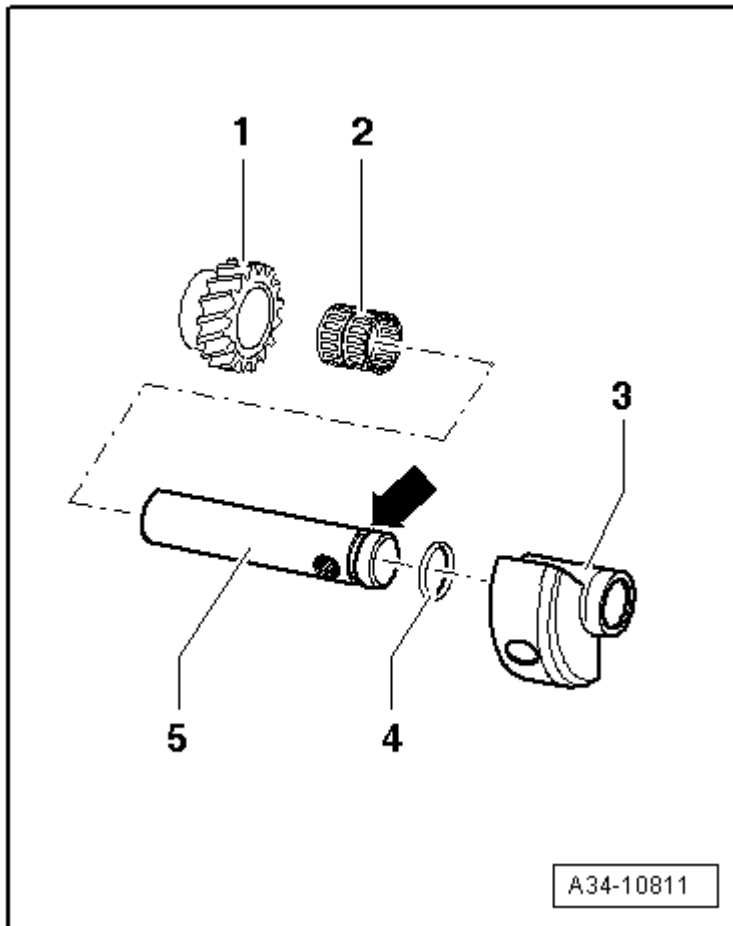


Fig. 6: Reverse Drive Gear Assembly Overview
Courtesy of AUDI OF AMERICA, LLC

1 - Reverse drive gear

Installed position: The shoulder faces the transmission housing.

2 - Needle bearing

3 - Reverse shaft support

4 - O-ring

5 - Reverse shaft

2012 Audi S4

TRANSMISSION Controls, Housing - Manual Transmission Internal Components 0B4 AWD (Sedan)

Slide the O-ring onto the circular groove, -arrow- item 4.

The threaded hole on the reverse shaft must line up down the center with the opening on the reverse shaft support.

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Component	Bolt Size	Nm
Ball studs Transmission Housing	-	25
Bearing Bracket to the Transmission Cover Steel Bolts (30 mm long) ²	M8	27
Cap Steel Bolts (25 mm long) ²	M8	24
Center Differential Housing		
-Steel Bolts (63 mm long)	M8	24
-Aluminum Bolts (42 mm long) ¹	M8	10 + 90°
Clutch Release Lever with Release Bearing and Spring ²	-	8
Final Drive Cover Steel Bolts (42 mm long)	M8	24
Left Flange Shaft Steel Bolts (25 mm long)	M8	24
Oil Drain Plug	-	40
Oil Fill Plug	-	40
Output Shaft ¹	-	110
Plate ²	-	24
Reverse Shaft to the Transmission Cover	-	24
Securing Plate	-	8
Selector Shaft with Selector Cover, Steel Bolts (25 mm long) ²	M8	24
Transmission Cover, Steel Bolts (42 mm long)	M8	24
Transmission Neutral Position Sensor, Steel Bolt (25 mm long) ²	M8	24
Transmission Range Gear Recognition Switch	-	20
Vibration Damper ²	-	24
¹ Always replace ² Insert with locking fluid AMV 185 101 A1		

DISASSEMBLY AND ASSEMBLY

TRANSMISSION

Center Differential Housing, Center Differential, Spur Gears, Transmission Cover, Input and Output Shafts Together with Transmission-Side Shift Mechanism

NOTE: **You do not need to remove the differential when removing the components listed above.**

General repair instructions, refer to GENERAL REPAIR INFORMATION .

Special tools and workshop equipment required

- Driving Sleeve VW 244 B
- Thrust Piece 40 -105
- Seal Driver 3013
- Clamping Sleeve 3116
- Puller for Wheel Hub 3349
- Pulling Hook T20143
- Subframe Support Assembling Device T40041
- Thrust Piece T40174
- Gearbox Support T40206
- Assembly Tool T40213
- Support Tool T40214
- Guide Pin T40216
- Hot Air Blower V.A.G 1416
- Locking fluid AMV 185 101 A1
- Sealing paste AMV 188 001 02
- Grease for clutch disc shaft splines G 000 100
- Adhesive lubricating paste G 000 150
- Sealing grease G 052 128 A1

Disassembling

- Place the drip tray underneath.
- Remove the plug -arrow- and drain the transmission fluid.

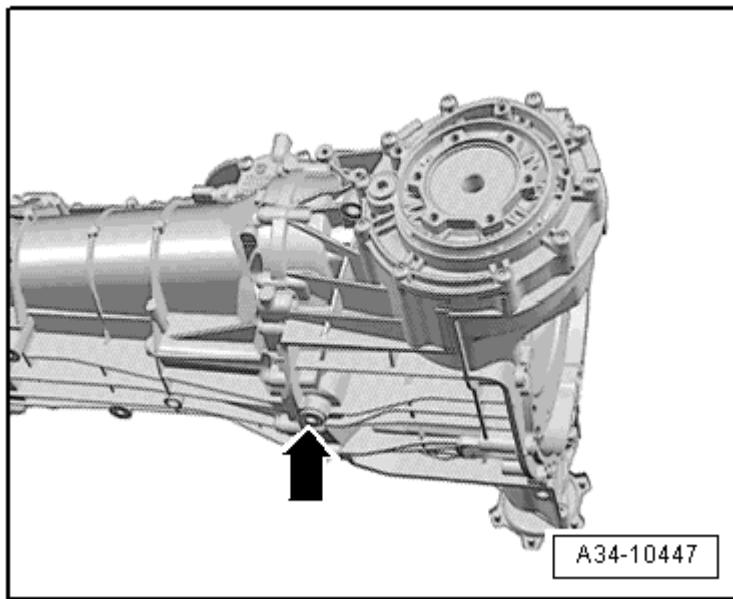


Fig. 7: Locating Transmission Fluid Drain Plug
Courtesy of AUDI OF AMERICA, LLC

-- Secure the T40206 to the transmission with the bolts -arrows- and tighten it in the assembly stand.

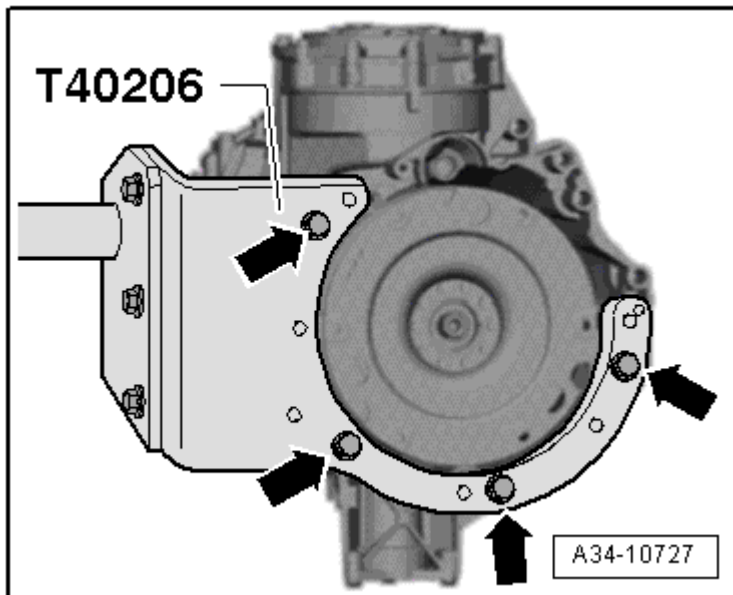


Fig. 8: Securing T40206 To Transmission With Bolts And Tighten It In Assembly Stand
Courtesy of AUDI OF AMERICA, LLC

- Remove the clutch module. Refer to **CLUTCH MODULE** .
- Carefully set down the clutch module, for example, on a workbench.
- Remove the clutch release lever -1- together with the release bearing -2- and the spring -3-.

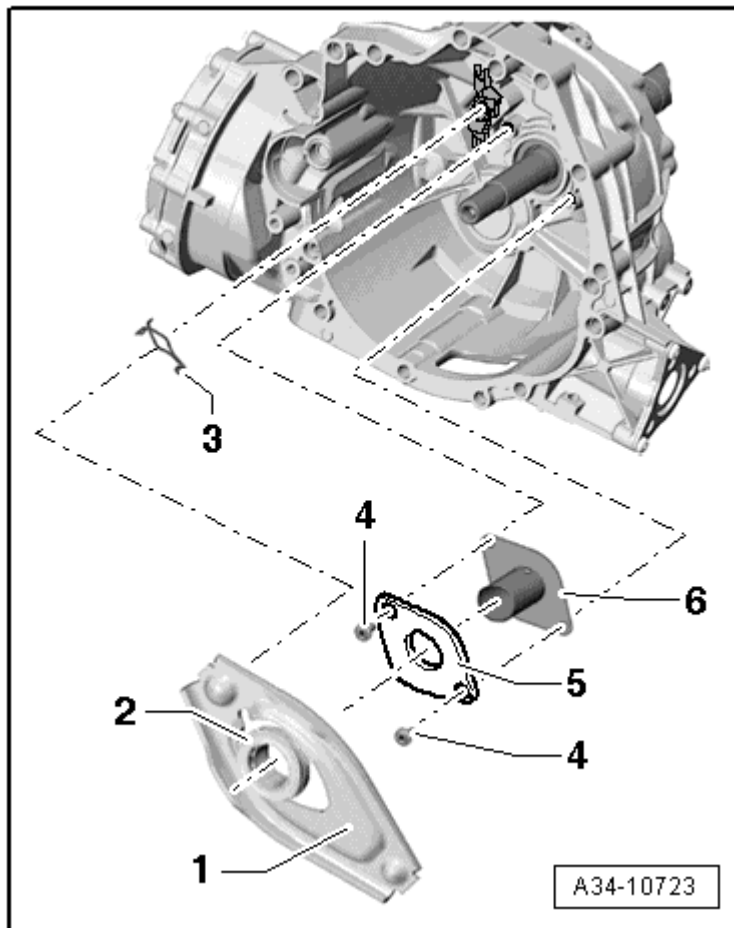


Fig. 9: Identifying Clutch Release Lever Components
Courtesy of AUDI OF AMERICA, LLC

- Remove the bolts -4-, the locking plate -5- (if equipped) and the guide sleeve -6-.
- If equipped, remove the transmission neutral position sensor -G701- -A-.

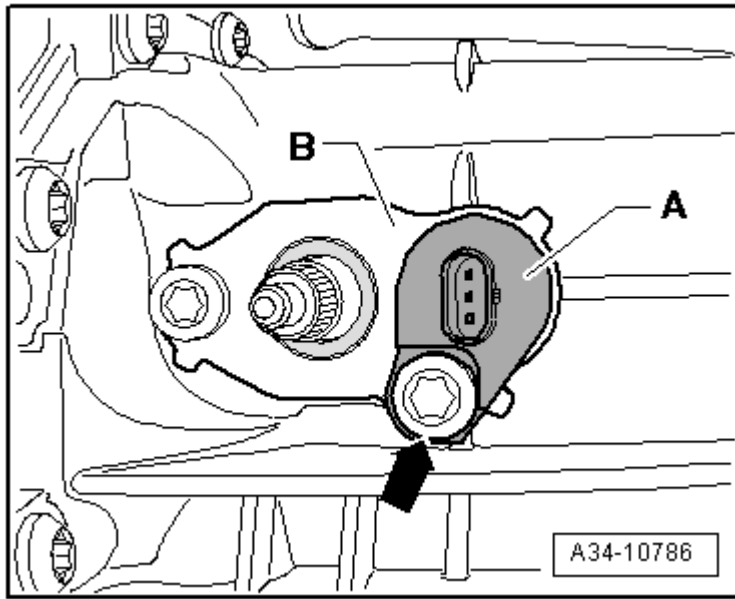


Fig. 10: Identifying Transmission Neutral Position Sensor -G701-
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -arrow- and remove the sensor from the cover -B-.

NOTE: The cover -B- remains installed.

It is not necessary to remove the cap with disassembling and assembling the transmission, if a cap is installed in place of the transmission neutral position sensor.

-- Remove the bolts -1- and pry the selector shaft cover -2- off carefully.

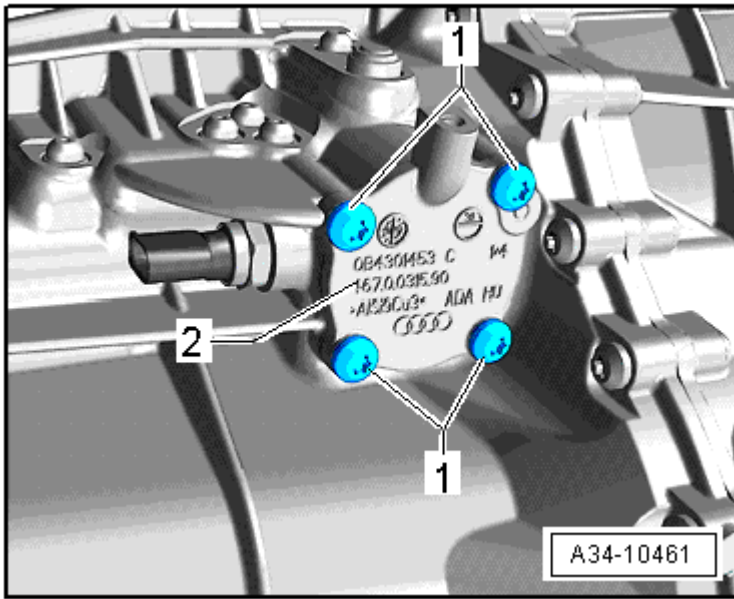


Fig. 11: Removing Bolts And Pry Selector Shaft Cover Off Carefully
Courtesy of AUDI OF AMERICA, LLC

-- Lift the gearshift shaft -arrow A- and remove it -arrow B-.

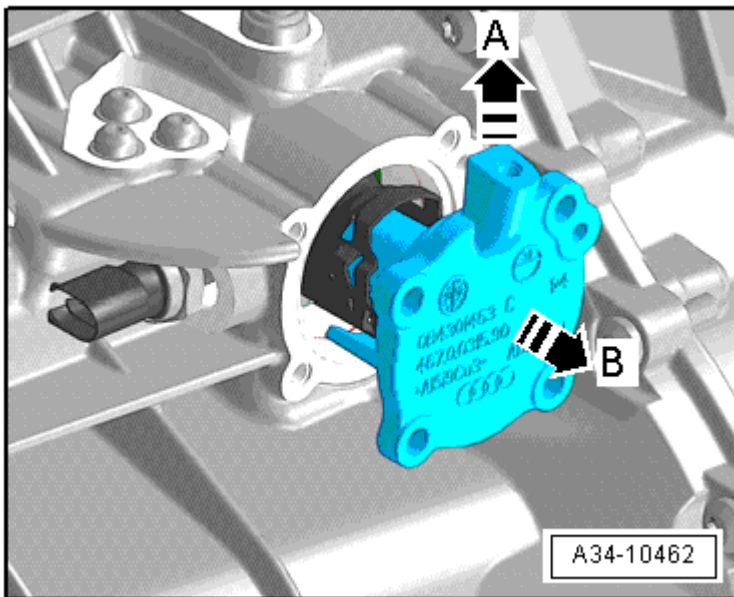


Fig. 12: Lift Gearshift Shaft And Remove It
Courtesy of AUDI OF AMERICA, LLC

-- Counterhold the in- and output shafts by sliding the selector rods -1- through -4- in direction of -arrow-.

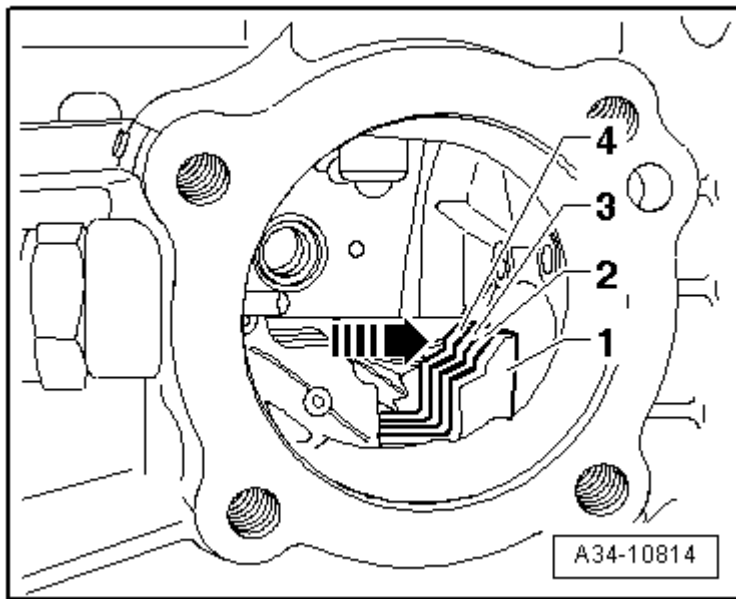


Fig. 13: Counterhold Output Shafts By Sliding Selector Rods
 Courtesy of AUDI OF AMERICA, LLC

NOTE: Insert a rag into the gearshift shaft opening between the tool and the housing wall to prevent damaging the transmission cover.

-- Push the cover -A- for the output shaft in the center and pry it out in direction of -arrow-.

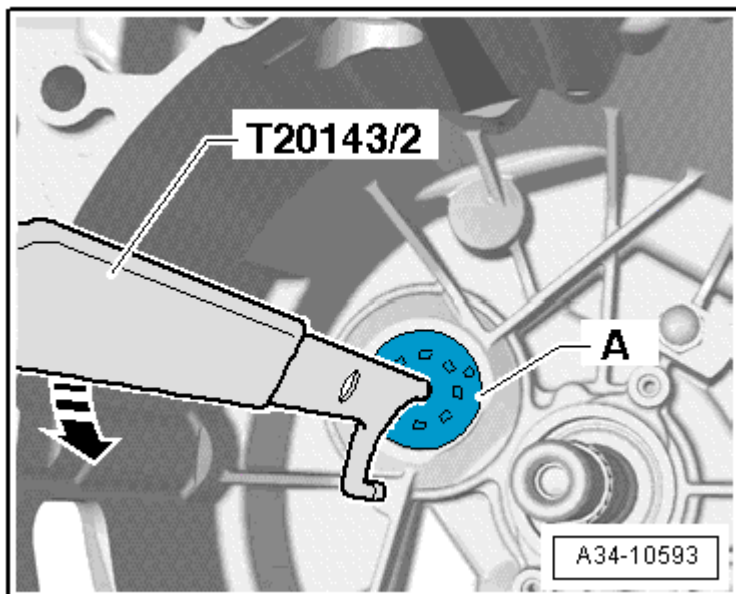


Fig. 14: Pushing Cover -A- For Output Shaft In Center And Pry It Out In Direction Of -Arrow-
 Courtesy of AUDI OF AMERICA, LLC

-- Now remove the bolt from the output shaft -A-.

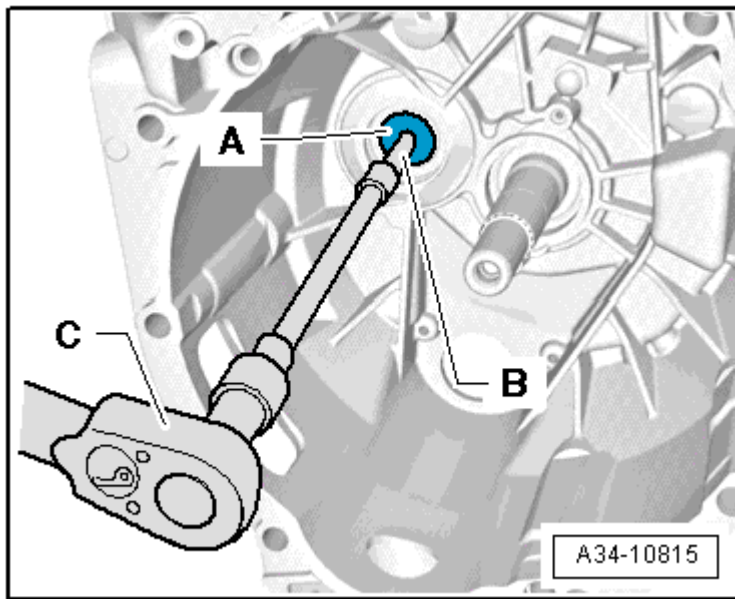


Fig. 15: Removing Bolt From Output Shaft
Courtesy of AUDI OF AMERICA, LLC

B - Allen key 12 mm

C - Torque wrench

-- Then shift gearshift rails into neutral position.

PRY OUT THE INPUT SHAFT SEAL

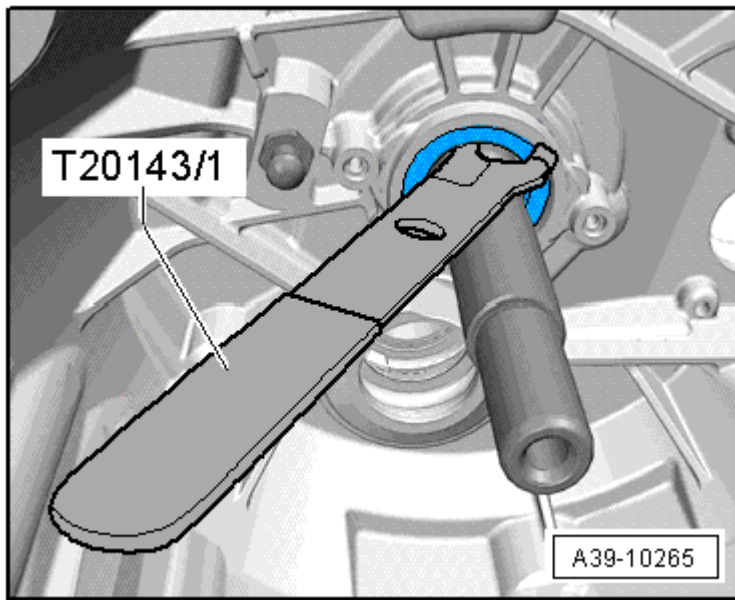


Fig. 16: Removing Input Shaft Seal
Courtesy of AUDI OF AMERICA, LLC

-- The locking ring -1- in front of the input shaft ball bearing must then be removed.

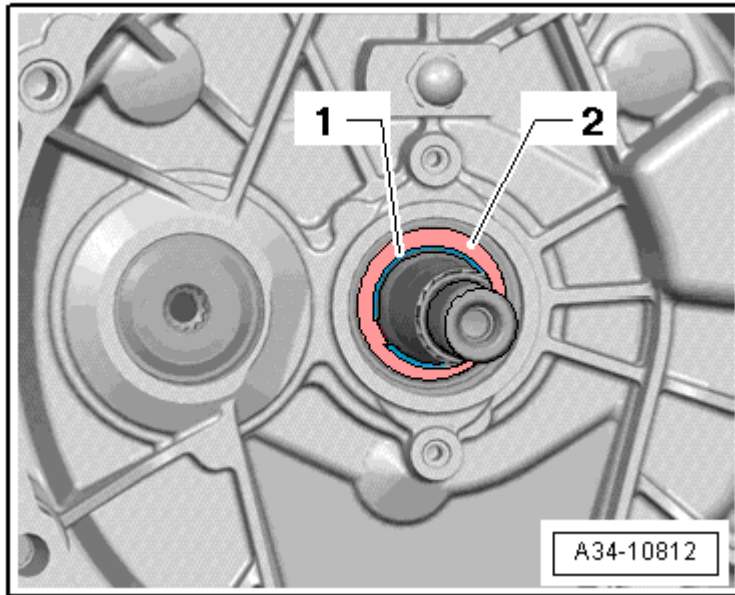


Fig. 17: Locking Ring -1- In Front Of Input Shaft Ball Bearing
Courtesy of AUDI OF AMERICA, LLC

-- Remove the shim -2-.

NOTE: If it is not possible to remove the locking ring -1-, then remove the center differential's transmission cover first and then move the input shaft forward using a rubber hammer.

The shim -2- must definitely be removed before pressing out the shift shaft package so that it does not slide into the locking ring groove.

-- Remove the bolts -A- and -arrows- that attach the center differential housing -B- to the transmission cover.

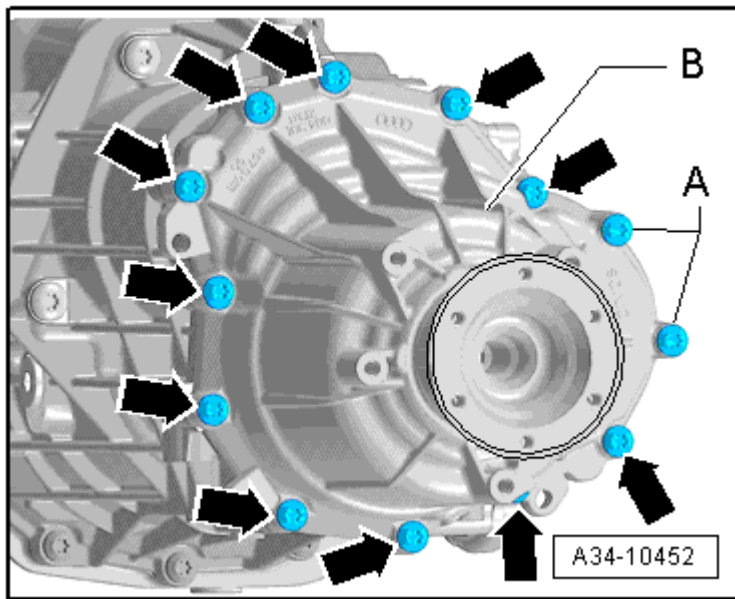


Fig. 18: Locating Center Differential Housing Bolts
 Courtesy of AUDI OF AMERICA, LLC

-- Carefully remove the center differential housing -6-, the pressure spring -3-, the adjusting shim -4- and the plate spring -5-.

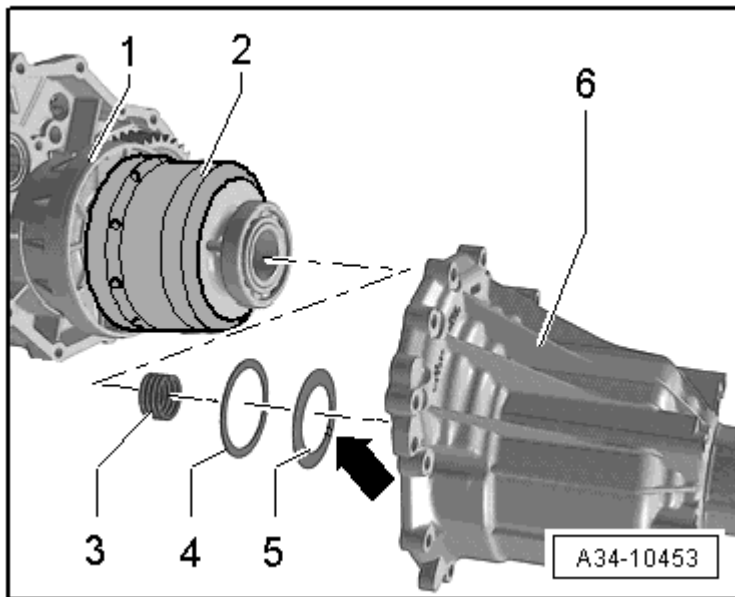


Fig. 19: Placing Center Differential On The Transmission
 Courtesy of AUDI OF AMERICA, LLC

-- Remove the center differential -2- and the gear carrier -1-.

If the gear carrier -1- remains in the center differential housing, proceed as follows:

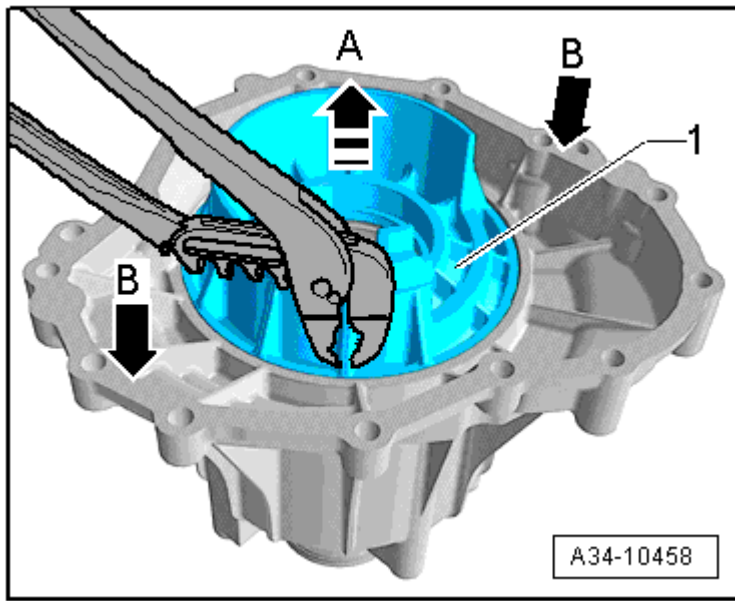


Fig. 20: Gripping Side Ridge On Gear Carrier -1- Using A Pair Of Pliers And Remove It In Direction Of -Arrow A-

Courtesy of AUDI OF AMERICA, LLC

-- Hold the gear carrier -1- by one of the side ribs with pliers and remove it in direction of -arrow A-.

-- At the same time, carefully hit housing -arrow B- alternating from one side to the other using a rubber hammer.

CAUTION: Do not damage sealing surfaces when doing this.

-- Remove the locking ring -1- and pull off the output wheel/drive wheel -2- from the pinion.

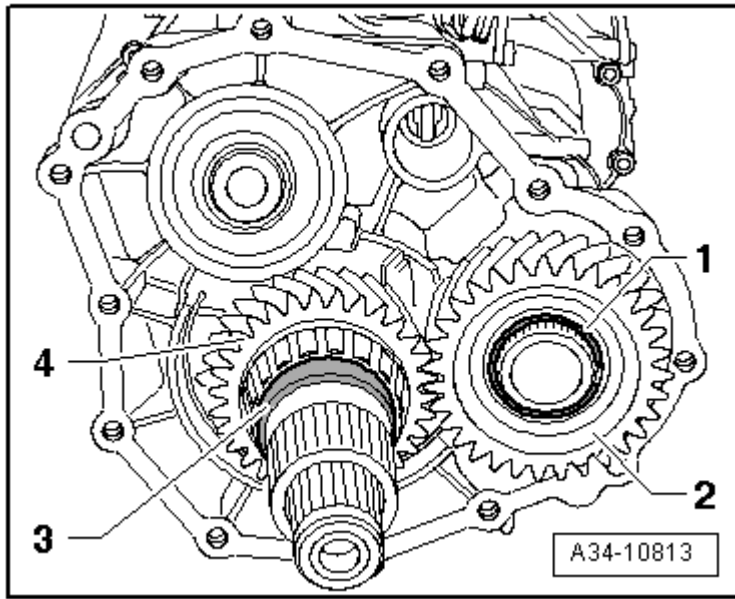


Fig. 21: Removing Locking Ring -1- And Pull Off Output Wheel/Drive Wheel -2- From Pinion
Courtesy of AUDI OF AMERICA, LLC

- Remove the spacer sleeve -3- and impeller wheel/drive gear -4- from the output shaft. Remove the impeller wheel/drive gear's needle bearing at the same time.
- Then turn transmission in assembly bracket so transmission cover -D- faces upward.

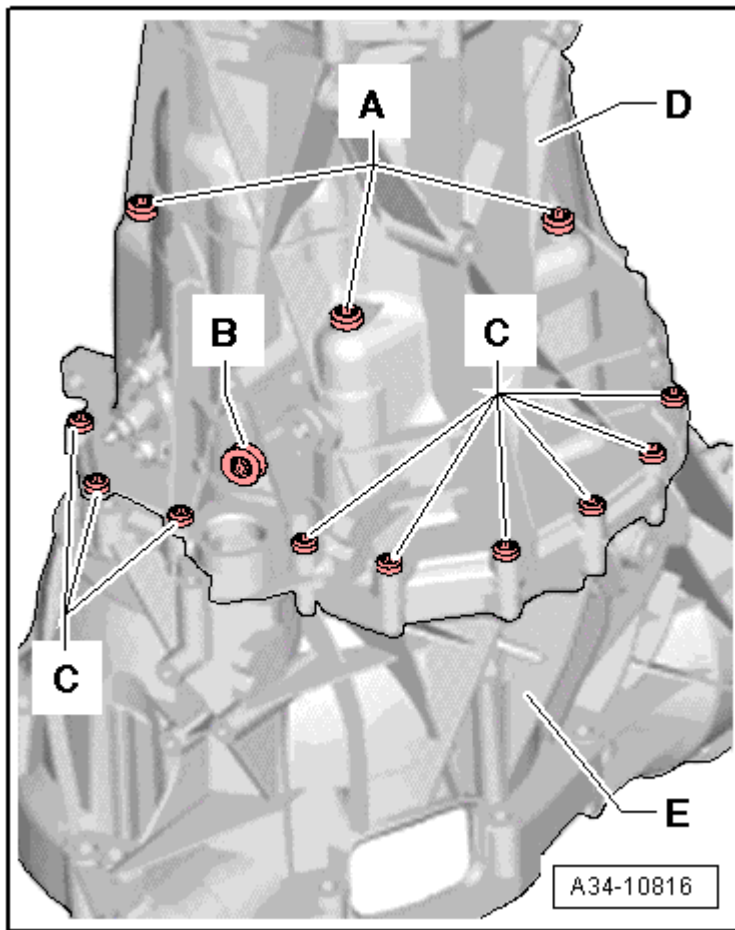


Fig. 22: Turning Transmission In Assembly Bracket So Transmission Cover -D- Faces Upward
Courtesy of AUDI OF AMERICA, LLC

-- Remove the following bolts: -A- (used for mounting the bearing bracket), bolt -B- (for mounting the reverse shaft) and bolt -C- (for the transmission cover) -D- on the transmission housing -E-.

-- Remove the transmission cover -D-, while being careful of the ball bearing on the input shaft (do not tilt the transmission cover when removing it).

NOTE: The ball bearing that is located at the back of the input shaft has a sliding fit in the transmission cover.

-- Remove the reverse wheel with reverse shaft -1-.

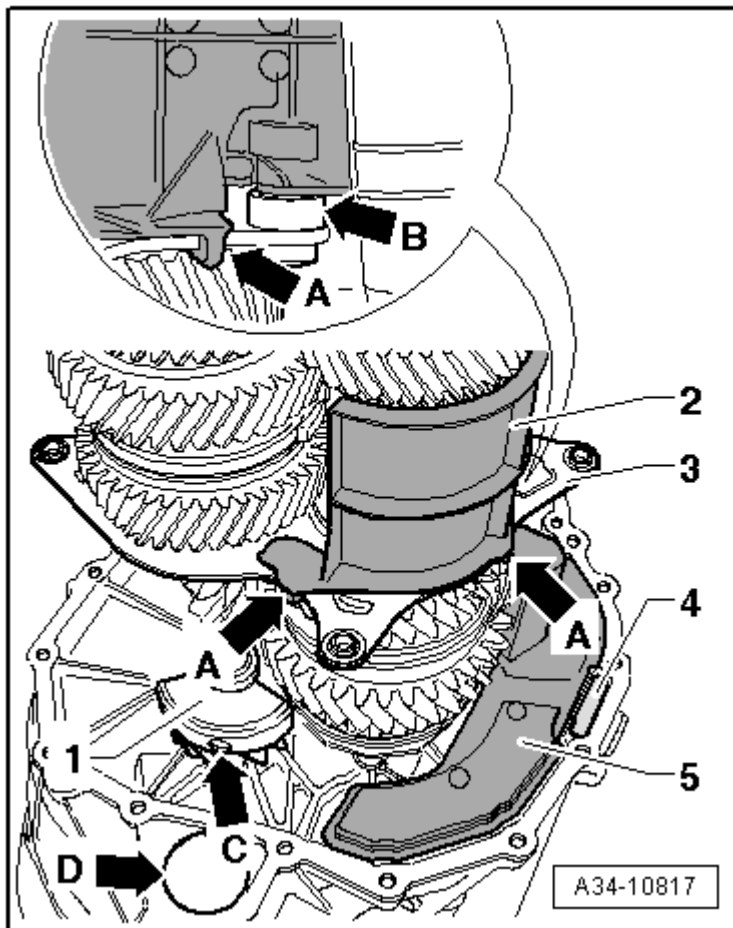


Fig. 23: Removing Reverse Wheel With Reverse Shaft
 Courtesy of AUDI OF AMERICA, LLC

- Remove the oil catch tray -2- from the bearing bracket -3- -arrows A- and -arrow B-.
- Remove the magnet -4- and the oil guide element -5- from the transmission housing.
- Attach the T40213 to the T40206 using the bolts -arrows-.

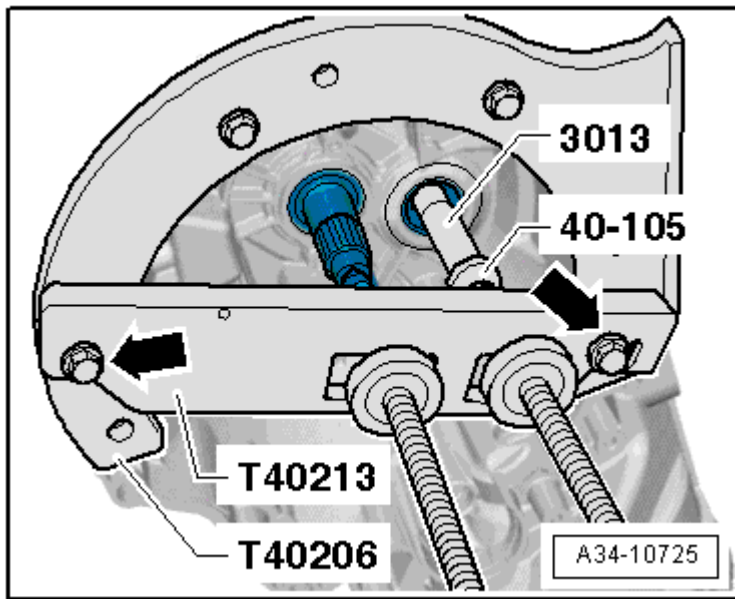


Fig. 24: Attaching T40213 To The T40206 Using Bolts
 Courtesy of AUDI OF AMERICA, LLC

CAUTION: There is a danger of causing damage to the toothed gears, the shafts and bearings.

- The input and output shafts must be removed together.
- It is permissible to remove the shaft alternating from side to side by turning each spindle maximum one turn.
- Pay special attention to synchronizing the reverse gear when removing the shift shaft package. It must not slide off of the output shaft!

-- Remove the input and output shafts from the ball bearings inside the transmission housing by turning the spindles on the T40213 one turn and alternating from side to side. Make sure the shift shaft package does not get dropped (get another technician to help you).

-- Remove the in- and output shaft and the shift fork group from the transmission housing.

Assembling

NOTE: The adjusting shim used for pre-loading the bearing on the impeller wheel/drive gear's tapered roller bearing must be determined again whenever replacing the transmission cover, the impeller wheel/drive gear, its tapered roller bearing, the bearing shield or the center differential housing. Refer to DRIVE WHEEL/SPUR GEAR TAPERED ROLLER BEARING PRE-LOAD, DETERMINING .

Use an assembly tool as follows to keep the synchronization for the reverse gear from sliding apart when installing the shift shaft package:

-- Install an extracting hook from the 3349 on the T40041, as shown in the illustration.

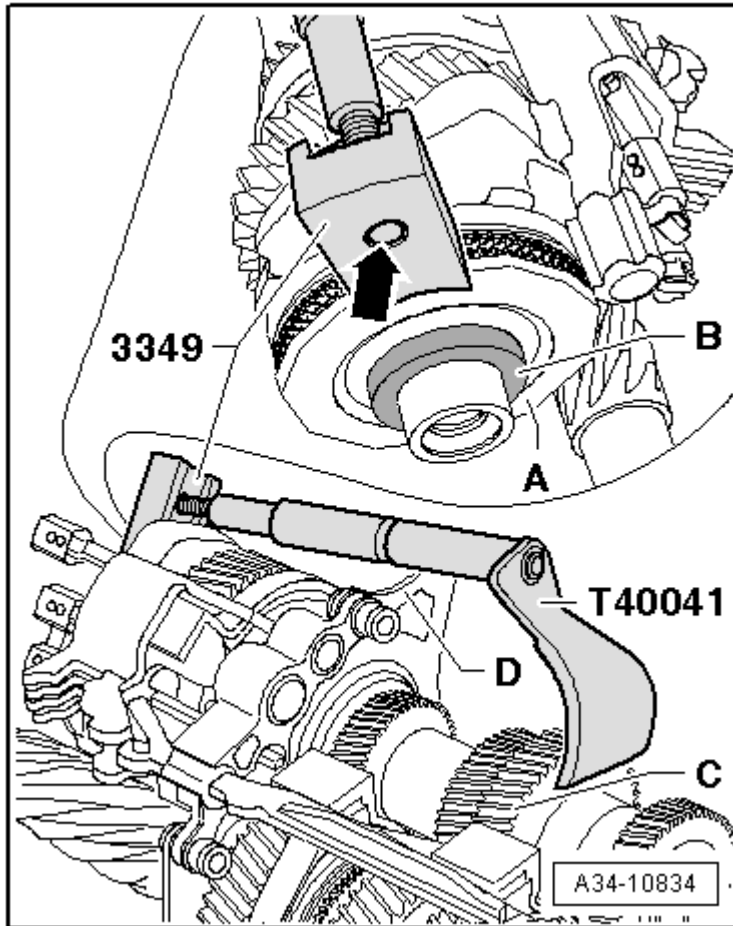


Fig. 25: Installing An Extracting Hook From 3349 On T40041
Courtesy of AUDI OF AMERICA, LLC

-- Next, position the assembly tool and the extraction hook on the reverse gear synchronizer hub -A- and on the third gear wheel -C- and tighten it down.

- The threaded spindle must not protrude past the T40041 on the extraction hook -arrow-.
- The assembly tool must be positioned within the radius of the transmission support -D-.

-- Use some grease to attach the thrust washer -B- onto the reverse gear synchronizer hub -A-.

-- Mount the 3116 on the output shaft.

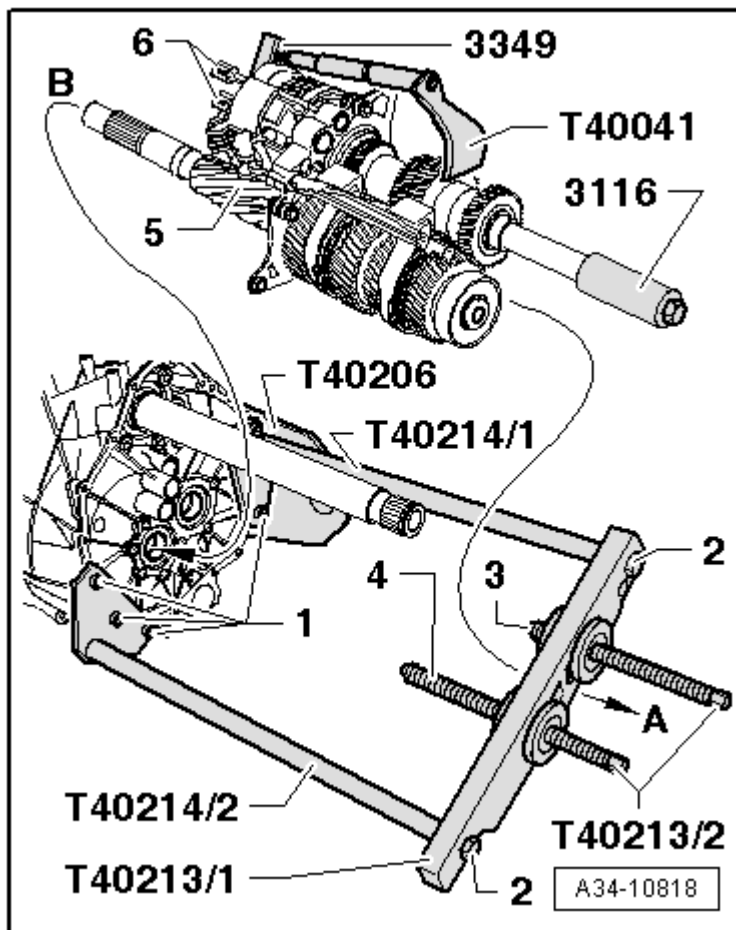


Fig. 26: Mounting 3116 On Output Shaft
 Courtesy of AUDI OF AMERICA, LLC

- Attach the mounts T40214/1 and T40214/2 to the transmission housing using the bolts -1- (6 in all), as illustrated.
- Install the plate T40213/1 using the bolts -2- on the mounts T40214/1 and T40214/2.
- Turn the spindle -3- back until it hits the end stop and position the spindle -4- in the center.
- Turn the transmission housing with the attached special tools in the assembly stands horizontally, as shown in the illustration.
- Heat up the ball bearing in the transmission housing using a V.A.G 1416.
- First, guide the shift shaft package -5- underneath the plate T40213/1 in the direction of -arrow A-.
- Next, install the shift shaft package and the driveshaft in the transmission housing in direction of -arrow B-.
- Keep the shift shaft package in this position and attach both of the spindles T40213/2 to the shafts. The gearshift rails -6- must be aligned with the bearing areas in the transmission housing.

NOTE: Due to the clearance the ball bearings have in the shift shaft package, the shift shaft package for some transmissions can be pressed all the way into the transmission housing by hand.

-- After doing this, turn the transmission in the assembly bracket and the shift shaft package so that they face up.

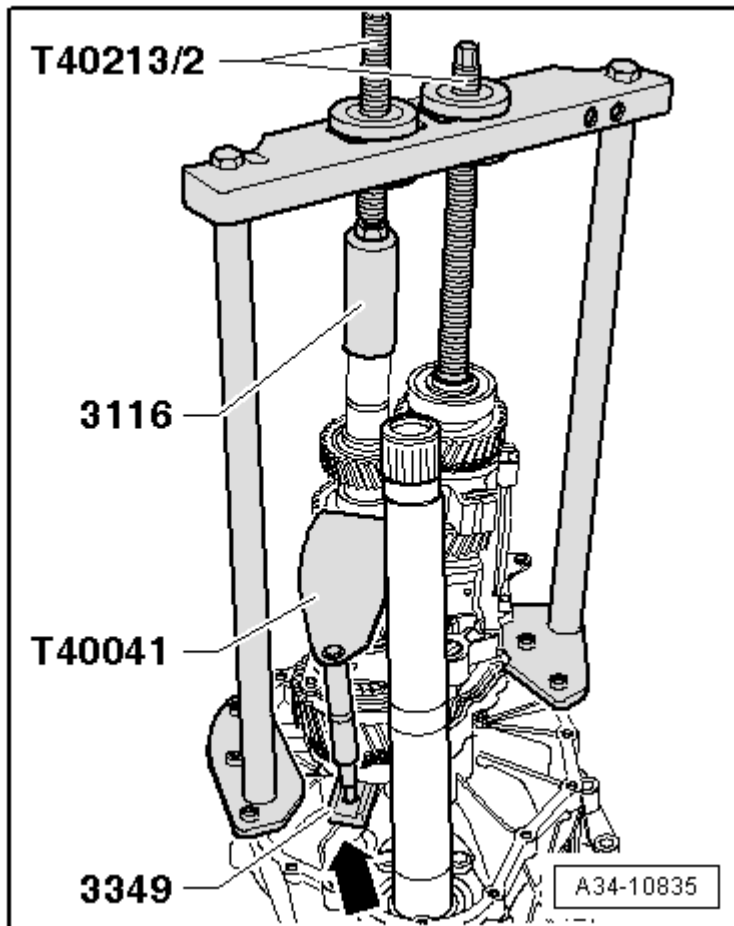


Fig. 27: Identifying Transmission Special Tool Assembly Setup

Courtesy of AUDI OF AMERICA, LLC

-- If necessary, align the spindles T40213/2 with the shafts again so that the spindles press in the center of the shafts.

CAUTION: There is a danger of causing damage to the toothed gears, the shafts and bearings.

- The input and output shafts must be installed together.
- It is permissible to install the shaft alternating from side to side by turning each spindle maximum one turn.

-- Then install the input and output shafts all the way into the ball bearing by turning the spindles T40213/2 one

turn alternating from side to side.

NOTE: Don't tilt the shafts when pressing them in. Guide the shift rails into their bearing areas in the transmission housing.

Remove the T40041 before fastening the extraction hook on the housing rib - arrow-.

Pay special attention to synchronizing the reverse gear! The intermediate ring tabs must lock in the reverse gear synchronizer hub!

-- Remove the T40213 and the T40214.

-- Install the magnet -4- and the oil guide element -5- in the transmission housing.

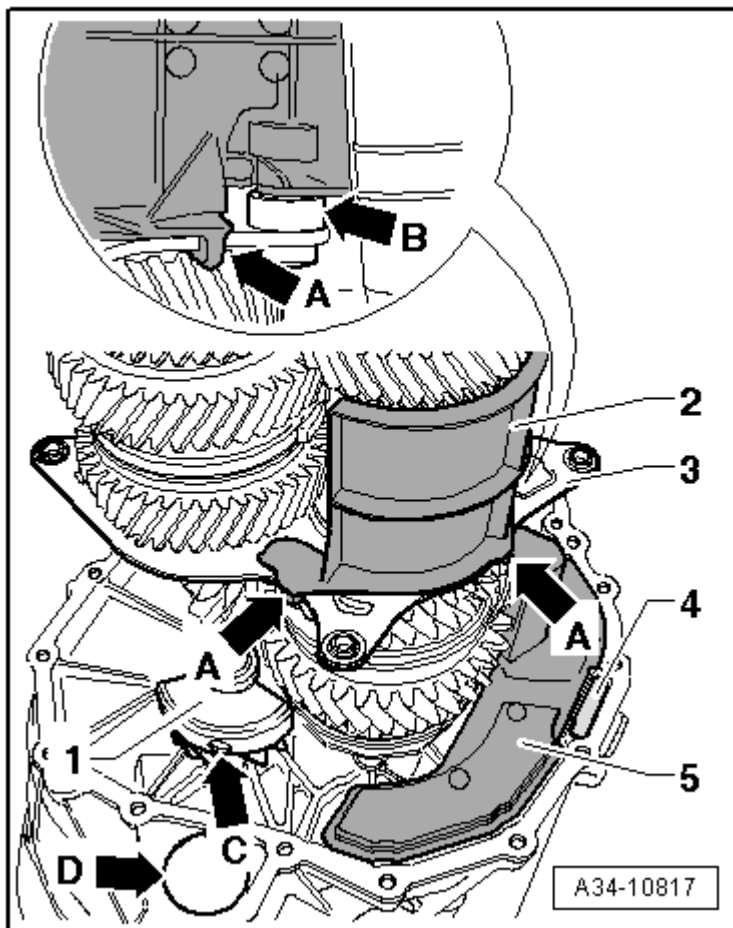


Fig. 28: Installing Magnet And Oil Guide Element In Transmission Housing
Courtesy of AUDI OF AMERICA, LLC

-- Position the oil catch tray -2- on the pins -arrow B- located on the bearing support -3- and then clip them onto the bearing support -arrows A-.

- Install the reverse drive gear and the reverse shaft -1-, while also aligning the threaded opening -arrow C- with the locating bore -arrow D- for the clutch slave cylinder.
- Check whether there are 2 alignment pins for centering the transmission cover/transmission housing in the transmission housing or transmission cover.
- Apply sealing paste AMV 188 001 02 evenly and not too thick on transmission housing joint surfaces at transmission cover.
- Place the transmission cover -D- on the transmission housing -E- ; don't -C- install bolts yet.

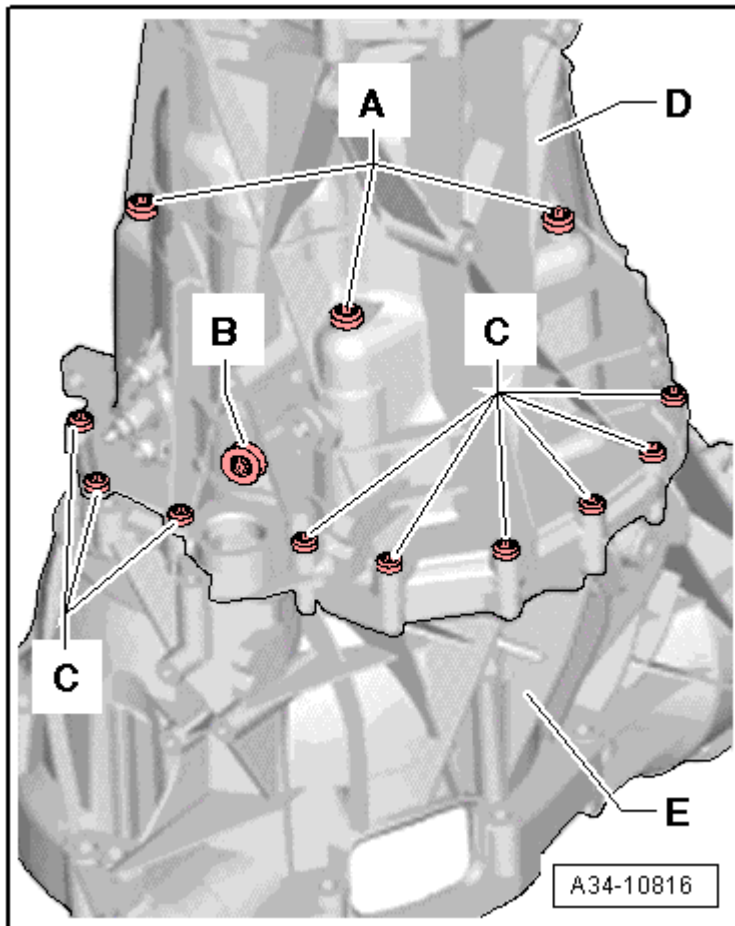


Fig. 29: Placing Transmission Cover On Transmission Housing
Courtesy of AUDI OF AMERICA, LLC

- Hand tighten the bolt -B- into the reverse shaft.
- Clean bolt threads -A- with a wire brush. Install the bolts with locking fluid AMV 185 101 A1 and hand-tighten them into the bearing bracket.
- Tighten the bolts -C- using the specified torque.

-- Then tighten the bolts -A- and -B- to the specified torque.

-- Place the shim -2- on the input shaft.

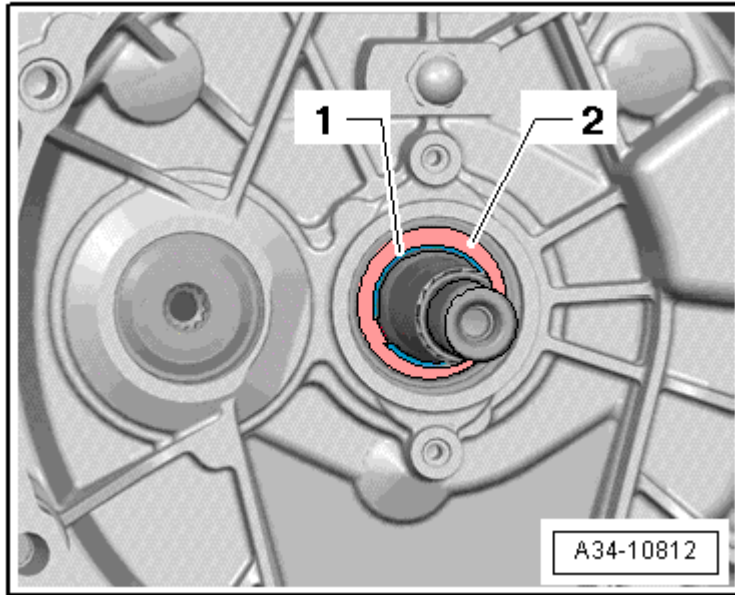


Fig. 30: Placing Shim On Input Shaft
Courtesy of AUDI OF AMERICA, LLC

DETERMINE THE INPUT SHAFT LOCKING RING -1-

-- Determine thickest circlip which can still just be installed and insert it. For the correct part number.

NOTE: **Begin with the thickest locking ring.**

The following locking rings are available:

Locking Ring Thickness (mm)		
1.95	2.10	2.25
2.00	2.15	
2.05	2.20	

-- Mount the impeller wheel/drive gear -4-, needle bearing LEFT FLANGE SHAFT, CLUTCH MODULE, SPUR GEARS, GEARSHIFT SHAFT AND TRANSMISSION COVER OVERVIEW and the spacer sleeve -3- on the output shaft.

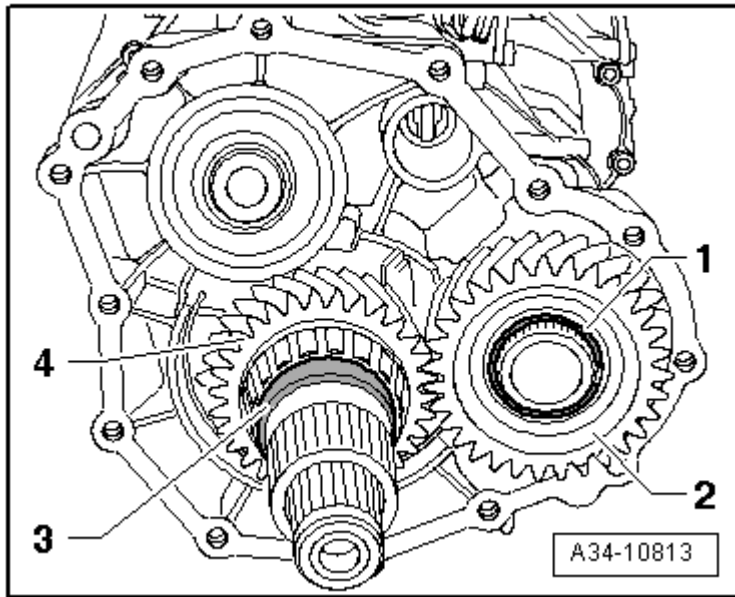


Fig. 31: Mounting Impeller Wheel/Drive Gear
Courtesy of AUDI OF AMERICA, LLC

NOTE: If the transmission cover, the impeller wheel/drive gear or the center differential is replaced, you will have to redetermine the shim for pre-loading the center differential's ball bearing. Refer to **BEARING PRE-LOAD FOR BALL BEARINGS FOR THE CENTER DIFFERENTIAL, REDETERMINING** .

-- Place the output gear/drive gear -2- on the pinion and install the locking ring -1-.

GEAR CARRIER -1- ON THE TRANSMISSION COVER AS FOLLOWS:

install the gear carrier -1- on the transmission cover as follows:

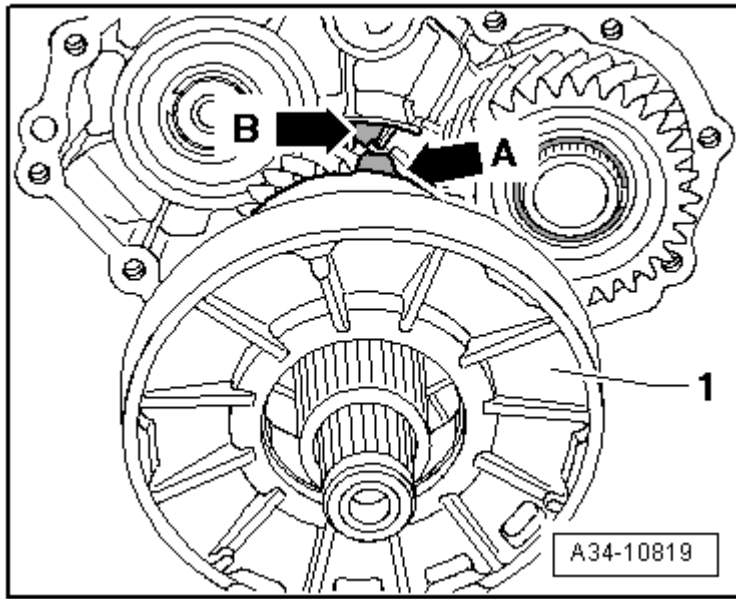


Fig. 32: Installing Gear Carrier On Transmission
 Courtesy of AUDI OF AMERICA, LLC

- Installed position: The tab -arrow A- on the gear carrier -1- must be installed into the opening -arrow B- inside the transmission cover.

-- Slide the center differential -2- all the way in direction of the gear carrier -1-.

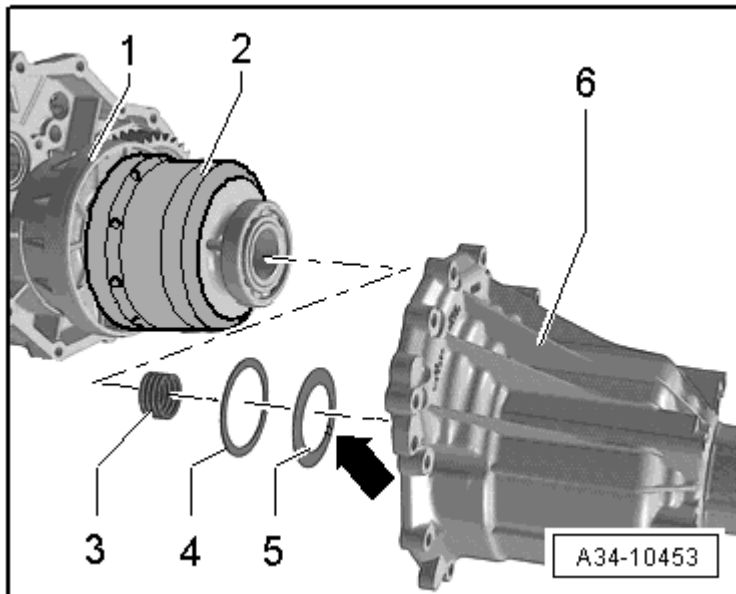


Fig. 33: Placing Center Differential On The Transmission
 Courtesy of AUDI OF AMERICA, LLC

-- Insert the plate spring -5-, the adjustment shim(s) -4- and the spring -3- in the center differential housing -6-.

- Plate spring installed location -5- : The camber on the inner diameter -arrow- faces toward the center differential housing -6-.

-- Apply sealing compound AMV 188 001 02 evenly and not too thickly.

-- Then position the center differential housing -6- on the transmission.

-- Press the center differential housing -B- on until it makes contact with the transmission cover and hold it securely.

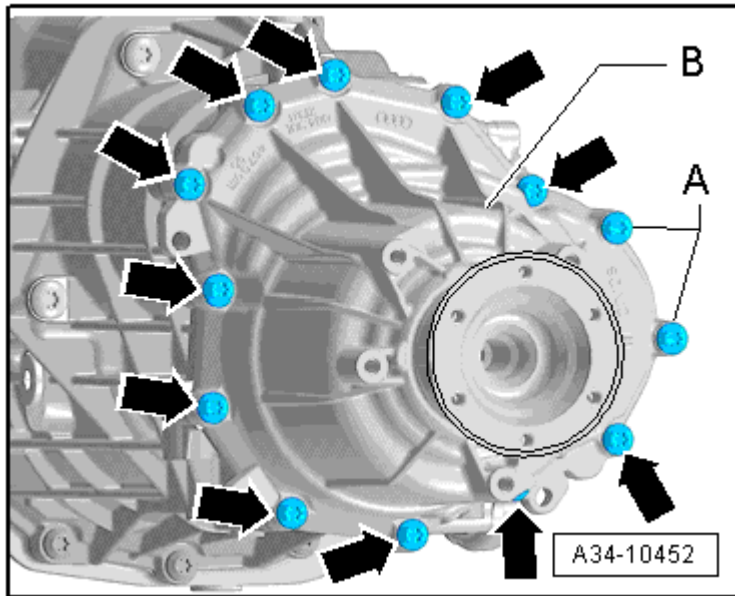


Fig. 34: Locating Center Differential Housing Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Install bolts -A-, including new bolts, -arrows- and tighten to the specified torque.

-- Counterhold the in- and output shafts by sliding the selector rods -1- through -4- in the direction of -arrow-.

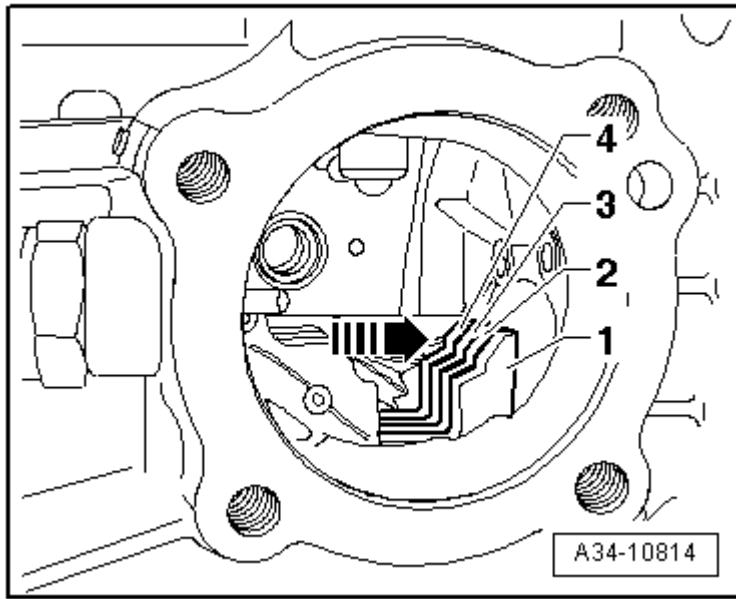


Fig. 35: Counterhold Output Shafts By Sliding Selector Rods
 Courtesy of AUDI OF AMERICA, LLC

NOTE: Insert a rag into the gearshift shaft opening between the tool and the housing wall to prevent damaging the transmission cover.

-- Tighten down the new output shaft bolt -A- to the specified torque.

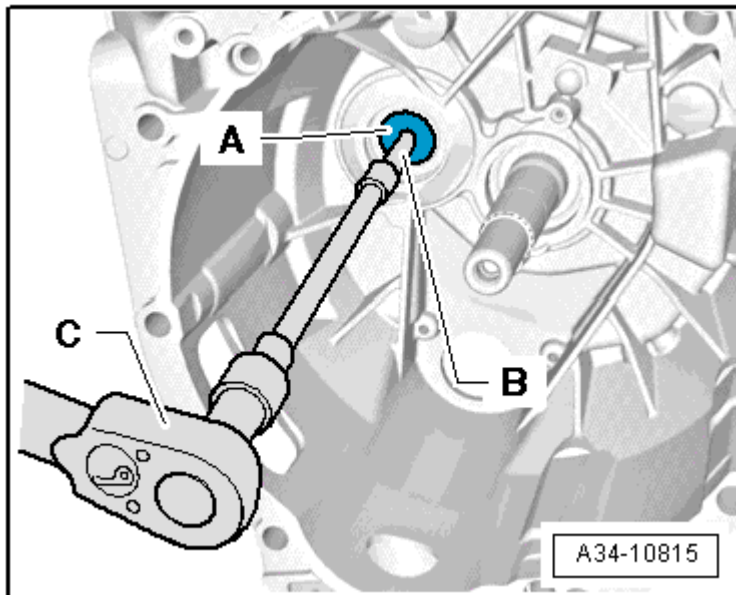


Fig. 36: Tightening Down New Output Shaft Bolt To Specified Torque
 Courtesy of AUDI OF AMERICA, LLC

B - Allen key 12 mm

C - Torque wrench

-- Then shift gearshift rails into neutral position.

-- Lightly coat the cover -A- for the output shaft with oil on the outer circumference and then install it.

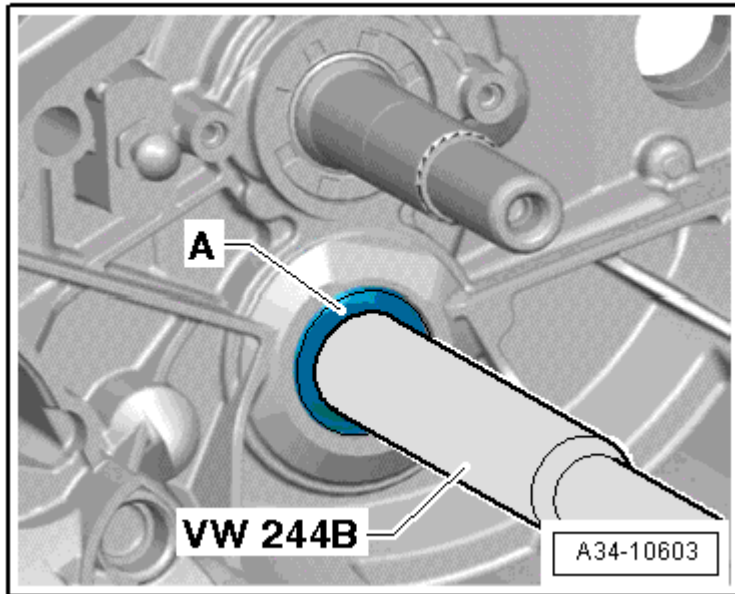


Fig. 37: Lightly Coat Cover For Output Shaft With Oil On Outer Circumference And Then Install It
Courtesy of AUDI OF AMERICA, LLC

FOR THE TRANSMISSION: AUDI A5 COUPE 2008 &RARR; THROUGH TRANSMISSION SERIES NUMBER 000760

NOTE: **Transmission with these transmissions series numbers were installed only in the Audi A5 Coupe from MY 2008.**

-- Lightly oil outer circumference of new shaft seal for the input shaft.

-- Fill the space between the sealing- and dust lip half way with sealing grease G 052 128 A1.

-- Drive the new seal in until it is flush without tilting it.

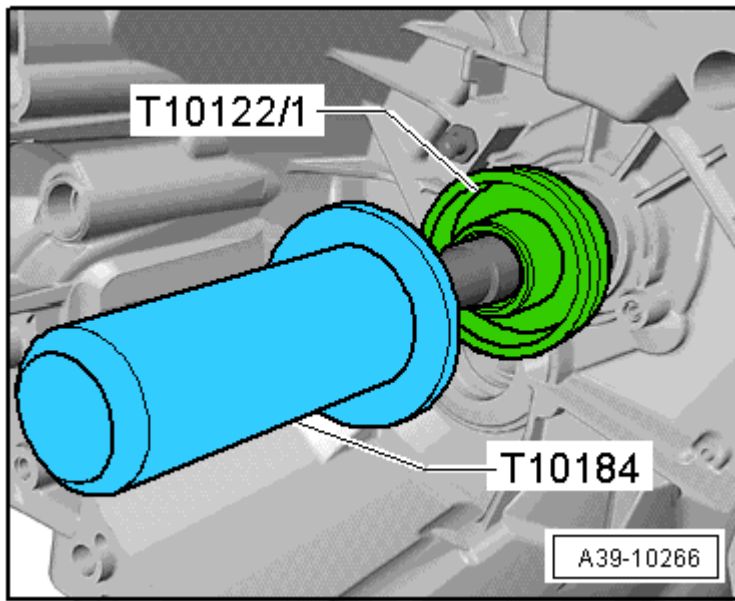


Fig. 38: Installing Input Shaft Seal

Courtesy of AUDI OF AMERICA, LLC

FOR THE TRANSMISSION: AUDI A4 2008 &RARR;; AUDI A5 COUPE 2008 &RARR;; FROM TRANSMISSION SERIES NUMBER 000761

- Lightly oil new seal on outer circumference.
- Fill the space between the sealing- and dust lip half way with sealing grease G 052 128 A1.
- Drive in the new sealing ring with T40174 all the way on without tilting the sealing ring.

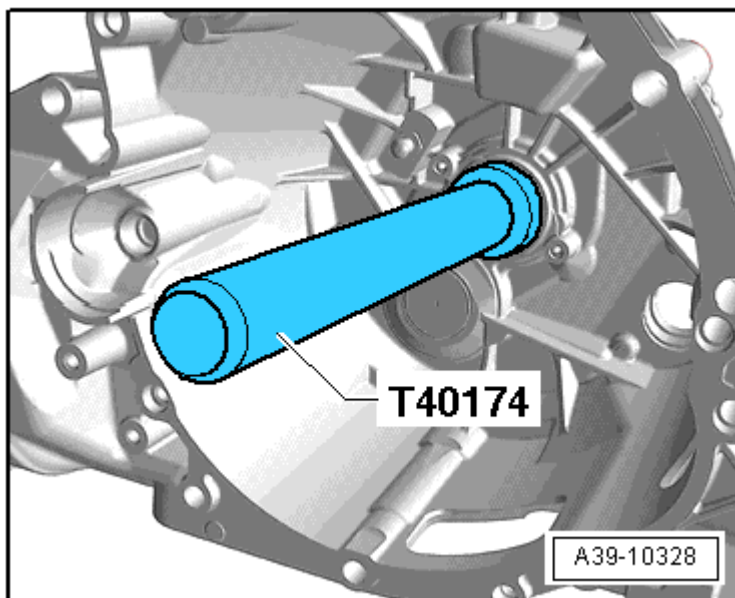


Fig. 39: Installing Shaft Seal

Courtesy of AUDI OF AMERICA, LLC

Continuation for All Transmissions

-- Apply the sealing compound AMV 188 001 02 evenly and not too thickly on the sealing surface on the transmission cover.

-- Install the T40216 on the selector shaft -1-.

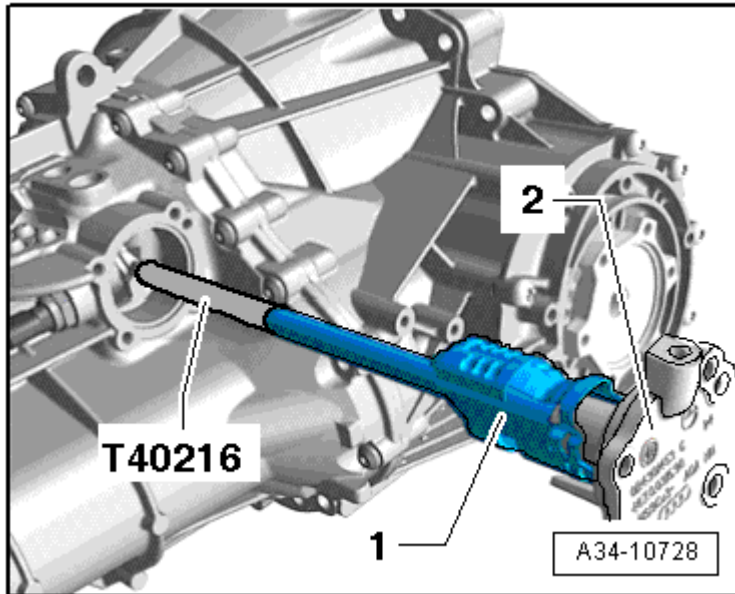


Fig. 40: Installing T40216 On Selector Shaft

Courtesy of AUDI OF AMERICA, LLC

-- Install the gearshift shaft into the transmission -arrow A- and lift it slightly -arrow B-.

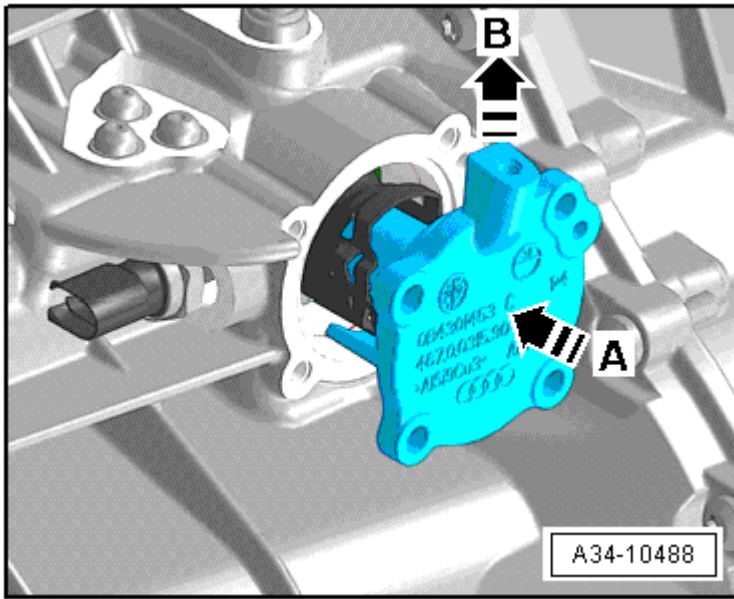


Fig. 41: Installing Gearshift Shaft Into Transmission And Lift It Slightly
 Courtesy of AUDI OF AMERICA, LLC

-- Bring the selector shaft cover -2- into contact with the transmission cover.

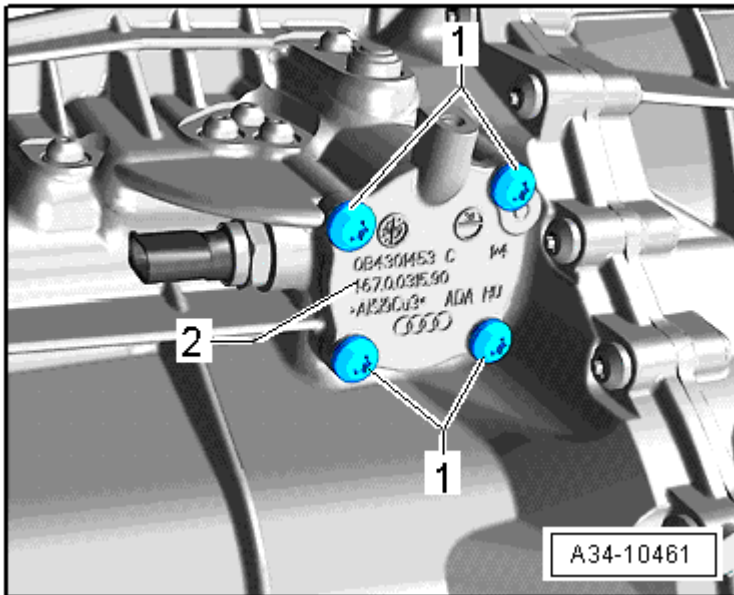


Fig. 42: Removing Bolts And Pry Selector Shaft Cover Off Carefully
 Courtesy of AUDI OF AMERICA, LLC

-- Clean the bolt threads -1- with a wire brush. Then install and tighten the bolts with locking fluid AMV 185 101 A1.

-- Remove the guide pin T40216.

-- If equipped, install the transmission neutral position sensor -G701- -A- with a new O-ring in the gearshift shaft cover -B-.

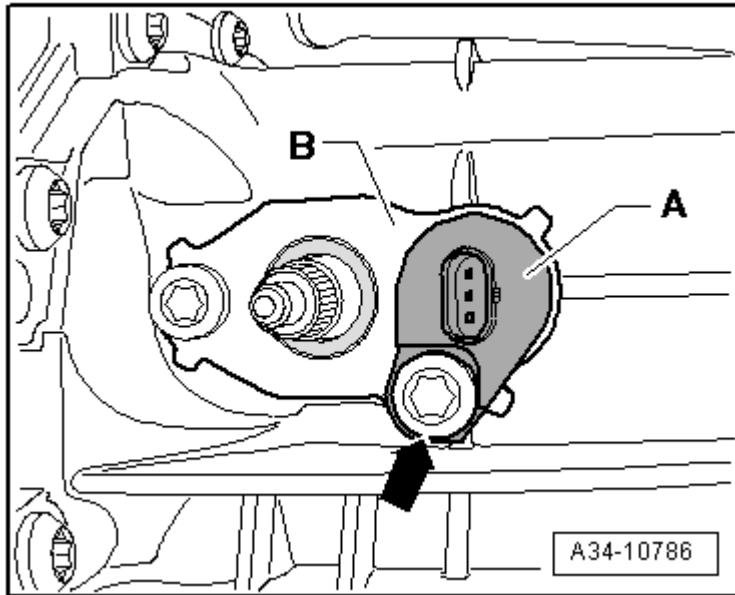


Fig. 43: Identifying Transmission Neutral Position Sensor -G701-
Courtesy of AUDI OF AMERICA, LLC

-- Clean bolt threads -arrow- with a wire brush. Then install and tighten the bolts with locking fluid AMV 185 101 A1.

-- Install the guide sleeve -6- and the locking plate -5-, if equipped.

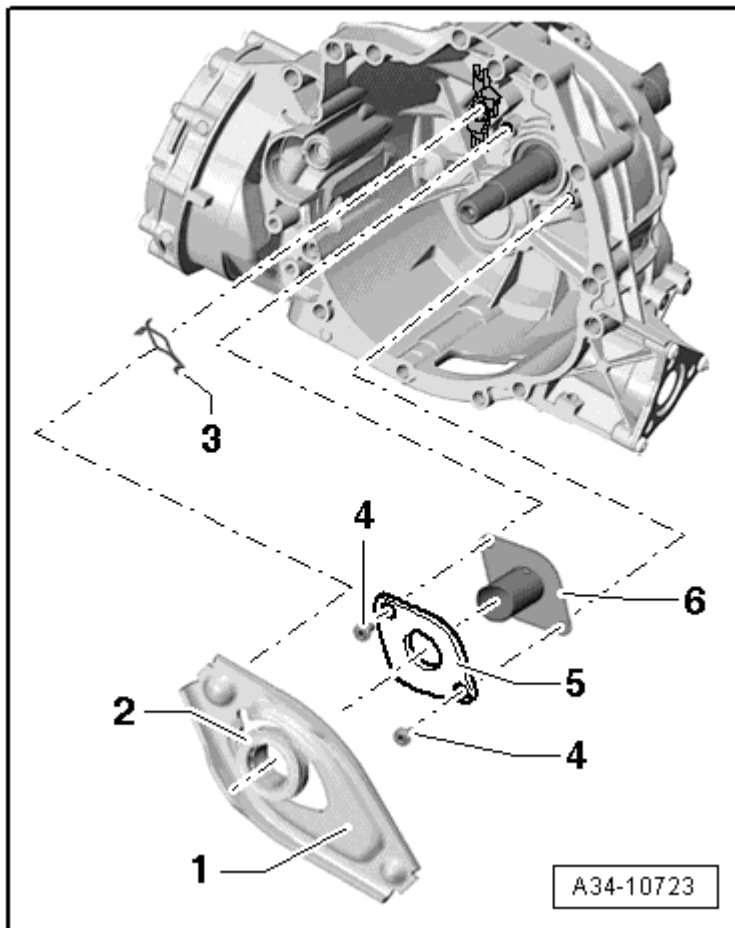


Fig. 44: Identifying Clutch Release Lever Components

Courtesy of AUDI OF AMERICA, LLC

-- Clean the bolt threads -4- with a wire brush. Then install and tighten the bolts with locking compound AMV 185 101 A1 CLUTCH RELEASE MECHANISM OVERVIEW to the tightening specification.

CAUTION: Rattling noises when using the clutch

- Rattling noises can occur when pressing the clutch if there is not enough grease on the release bearings -2-.
- Lubricate the release bearings generously with adhesive lubricating paste G 000 150. Refer to Fig. 45.
- Remove any grease still in the guide sleeve bearing area - mounting for the release bearing on the guide sleeve.

-- Install the clutch release lever -1- together with the release bearing -2- and the spring -3-. Refer to CLUTCH RELEASE MECHANISM OVERVIEW.

-- Install the clutch module and the left flange shaft CLUTCH MODULE => Installing.

-- Fill transmission fluid and check transmission fluid level in manual transmission. Refer to **[For engine(s) CCBA] General Information** .

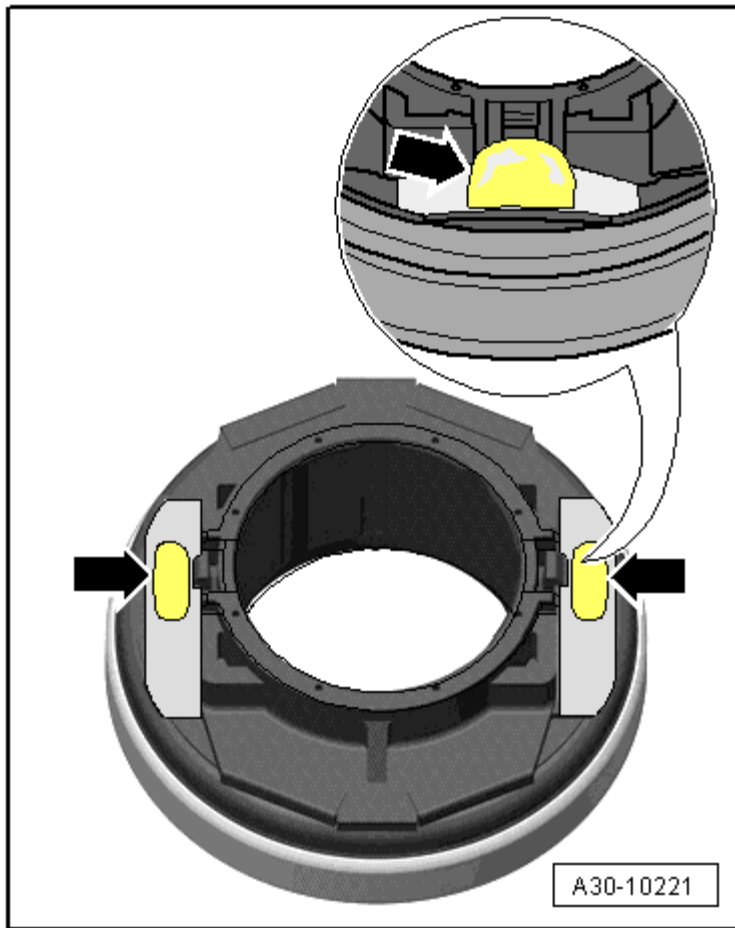


Fig. 45: Lubricating Release Bearing
Courtesy of AUDI OF AMERICA, LLC

CENTER DIFFERENTIAL HOUSING

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Thrust Disc VW 412
- Tube 60 mm Dia. VW 415 A
- Press Tube 30 - 100
- Press Tube 2040
- Thrust Piece for Final Drive at Gearbox T40165
- Locking fluid AMV 185 101 A1
- Sealing grease G 052 128 A1

NOTE: The housing for the center differential can also be installed and removed with the engine installed. Refer to [For engine(s) CCBA] Removal and Installation .

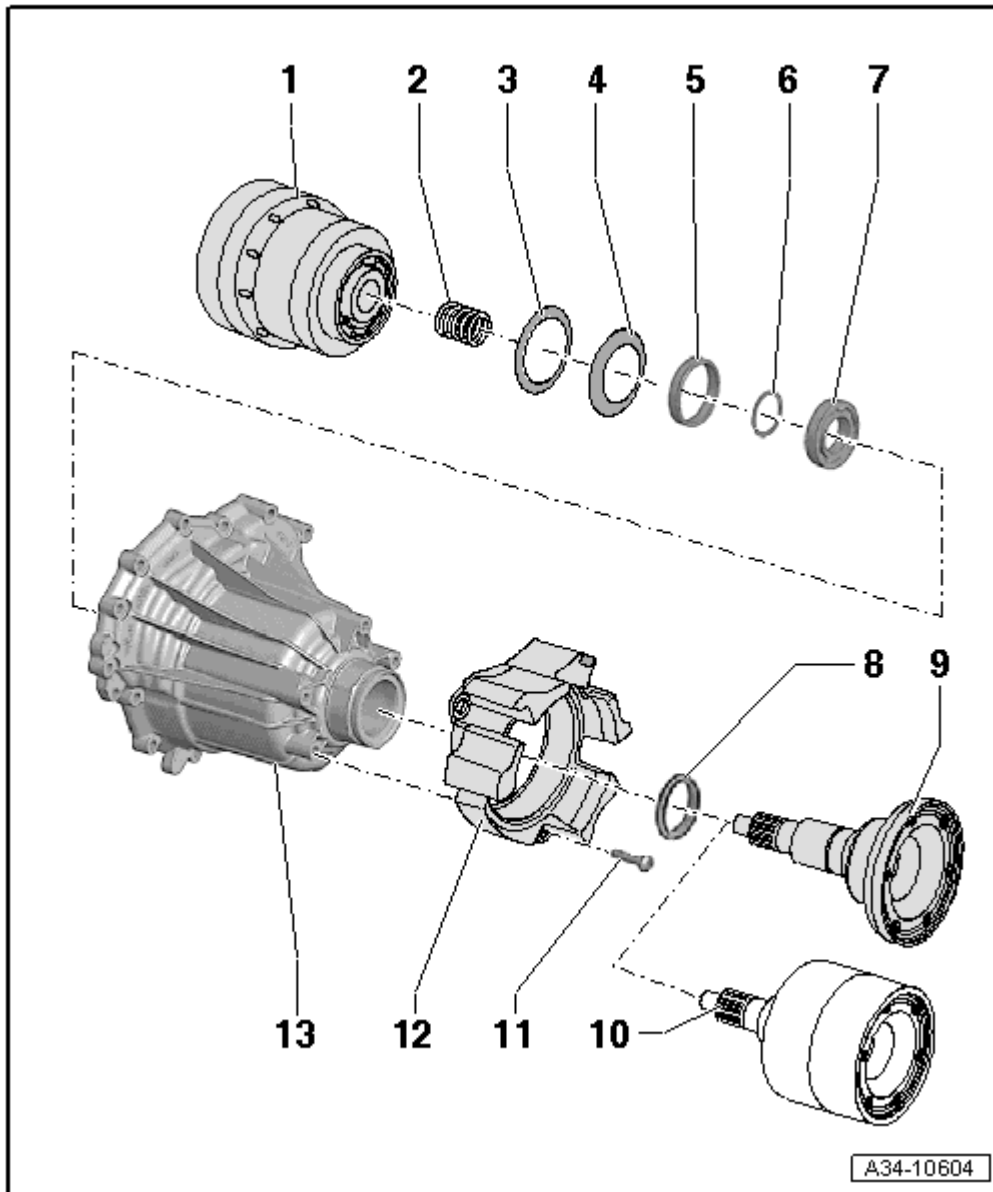


Fig. 46: Identifying Center Differential Housing

Courtesy of AUDI OF AMERICA, LLC

1. Center Differential
 - Servicing only by the manufacturer
2. Pressure Spring
3. Adjusting Shim
 - For bearing preloading the ball bearings for the center differential
 - To select the correct thickness, refer to **BEARING PRE-LOAD FOR BALL BEARINGS FOR**

THE CENTER DIFFERENTIAL, REDETERMINING

4. Plate Spring
 - Installed position: The camber on the inner diameter faces toward the rear of the flange shaft
5. Spacer Sleeve
 - Removing, refer to **Fig. 50**
 - Installing, refer to **Fig. 51**
6. Locking Ring
 - For the flange shaft
 - Removing and Installing, refer to **Fig. 47**
7. Ball Bearing
 - For the flange shaft
 - Removing, refer to **Fig. 50**
 - Installing, refer to **Fig. 51**
8. Shaft Seal
 - Pry it out, refer to **Fig. 49**
 - Installing, refer to **Fig. 52**
9. Rear Flange Shaft
 - Without vibration damper
 - Removing, refer to **Fig. 48**
 - Installing, refer to **Fig. 53**
10. Rear Flange Shaft
 - With vibration damper
 - Removing, refer to **Fig. 48**
 - Installing, refer to **Fig. 53**
11. Screw
 - 24 Nm
 - For vibration damper
 - Quantity: 3
 - Insert with locking fluid AMV 185 101 A1
12. Vibration Damper
 - Not present on all versions
13. Center Differential Housing
 - Removing and installing with transmission installed, refer to **[For engine(s) CCBA] Removal and Installation**

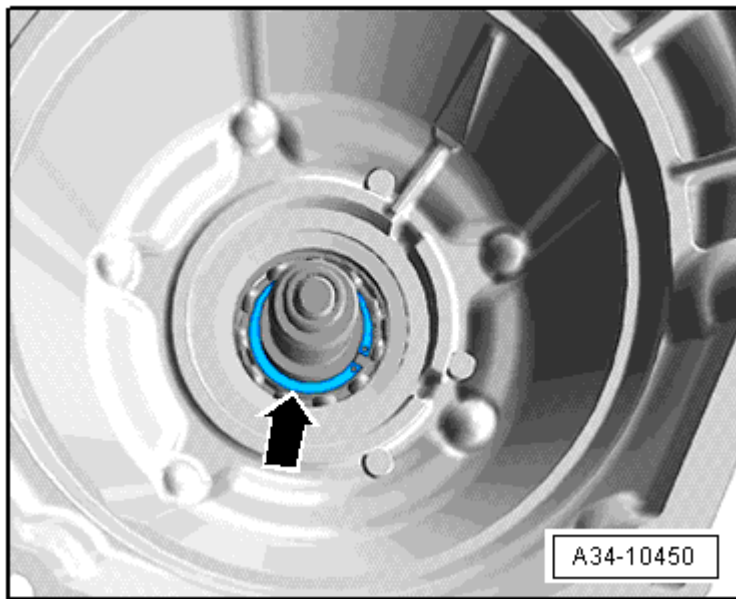


Fig. 47: Removing Locking Ring -Arrow-
Courtesy of AUDI OF AMERICA, LLC

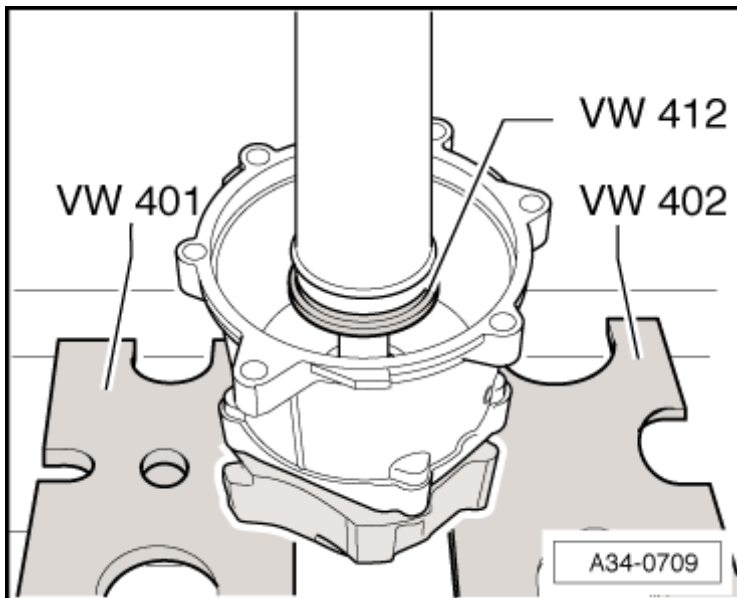


Fig. 48: Pressing Out Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

- Remove the circlip before remove the flange shaft. Refer to **Fig. 47**.
- Position the center differential housing so the flange shaft does not come into contact with the VW 401 and VW 402 when pressing it off.

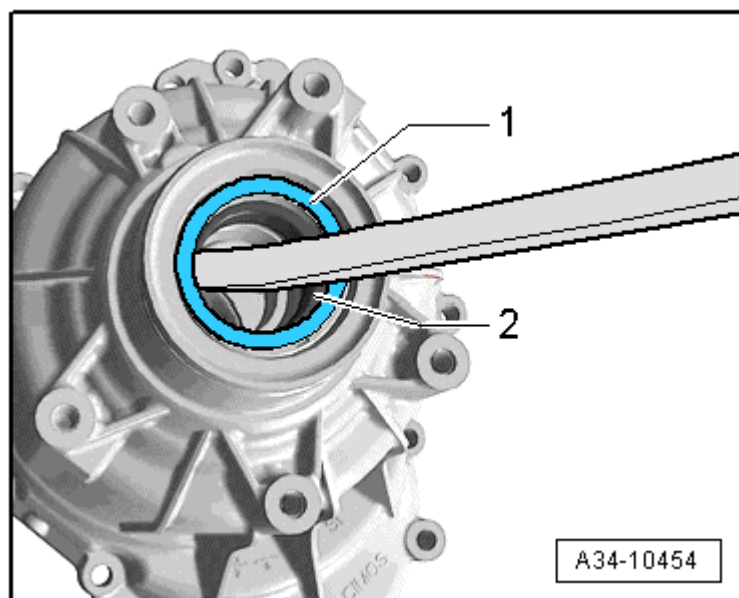


Fig. 49: Prying Out Shaft Seal -1-
Courtesy of AUDI OF AMERICA, LLC

NOTE: Ignore -2-.

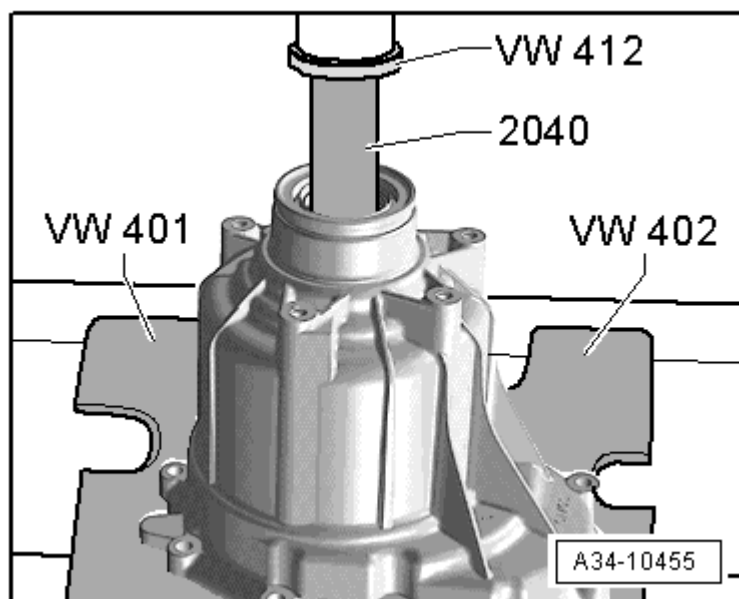


Fig. 50: Removing Flange Shaft Ball Bearing And Spacer Sleeve
Courtesy of AUDI OF AMERICA, LLC

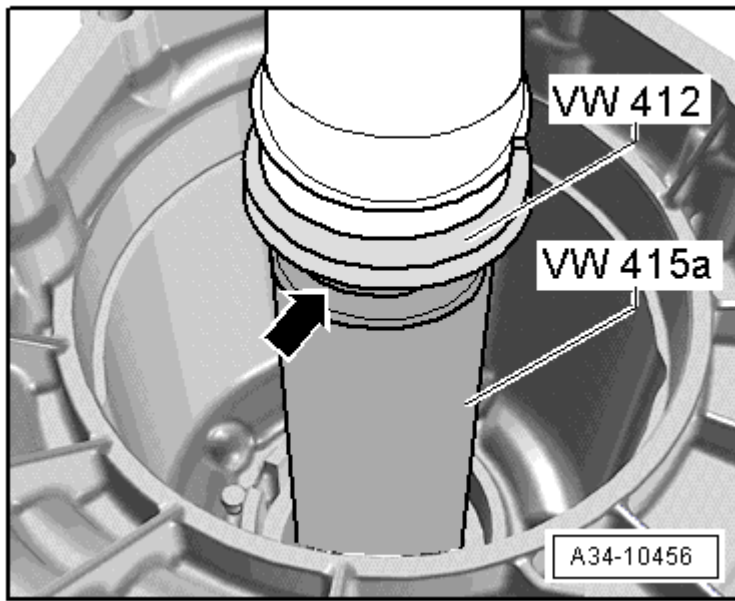


Fig. 51: Removing Flange Shaft Ball Bearing And Spacer Sleeve
 Courtesy of AUDI OF AMERICA, LLC

- The shoulder on the VW 415 A -arrow- faces the VW 412.

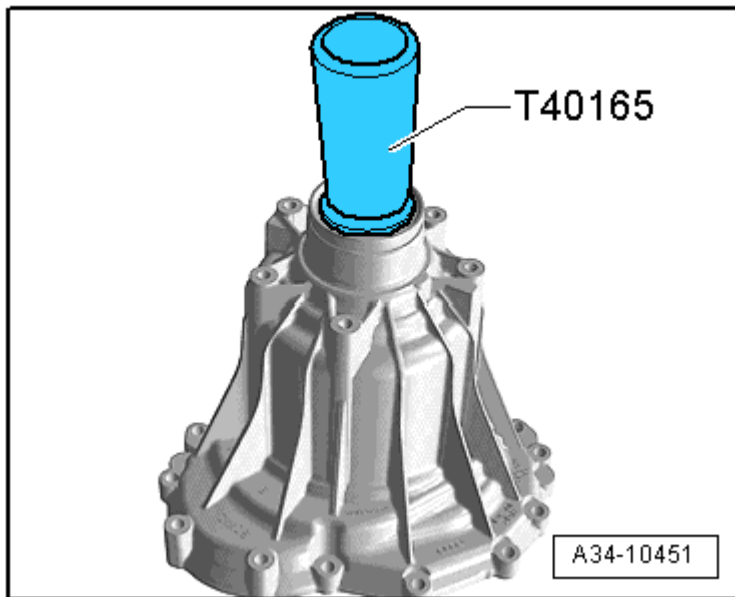


Fig. 52: Installing Seal For Rear Flange Shaft
 Courtesy of AUDI OF AMERICA, LLC

- Lightly coat the shaft seal on the outer circumference with oil and then install it.
- Fill the space between the sealing- and dust lip half way with sealing grease G 052 128 A1.

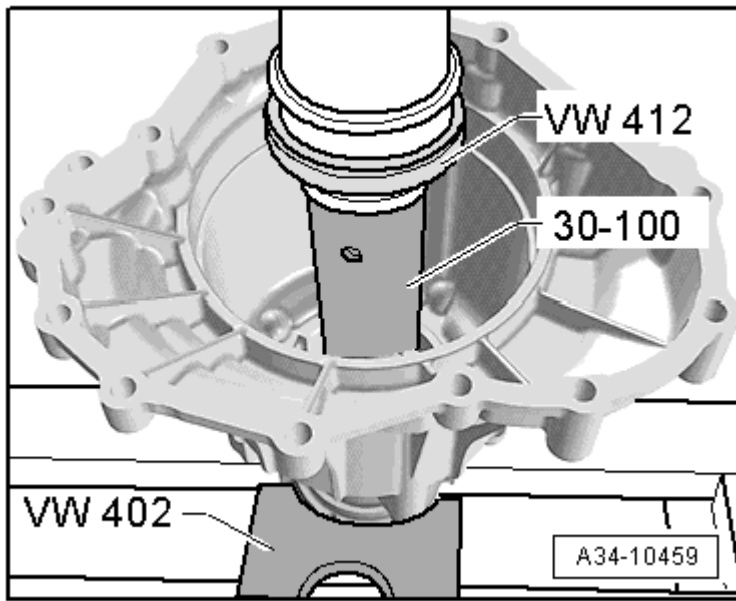


Fig. 53: Installing Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

-- Tighten the vibration damper, if applicable, before pressing the flange shaft in. Tightening specification; refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL OVERVIEW.**

- The flange shaft ball bearing is installed.
- The sleeve 30 - 100 presses on the inner race of the ball bearing when pressing it onto the flange shaft.

TRANSMISSION COVER

Special tools and workshop equipment required

- Drift VW 207 C
- Thrust Plate VW 402
- Punch VW 408 A
- Punch VW 411
- Thrust Disc VW 412
- Tube 28 mm Dia. 210 mm VW 420
- Sleeve VW 423
- Arbor VW 434
- Thrust Ring VW 470
- Sleeve VW 472/2
- Guide Bolt 10 - 15
- Drift Sleeve 40-20
- Thrust Pad 3005

2012 Audi S4

TRANSMISSION Controls, Housing - Manual Transmission Internal Components 0B4 AWD (Sedan)

- Thrust Pad 3062
- Extension 3161
- Guide Bearing Inst. Tool 3347
- Shock Absorber Set T10001
- Pulling Hook T20143
- Drift T40085
- Internal Puller 56 to 110 mm, for example, Kukko 21/89
- Counter-Support, for example, Kukko 22/4
- Sealing paste AMV 188 001 02
- Sealing grease G 052 128 A1
- Locking fluid AMV 185 101 A1

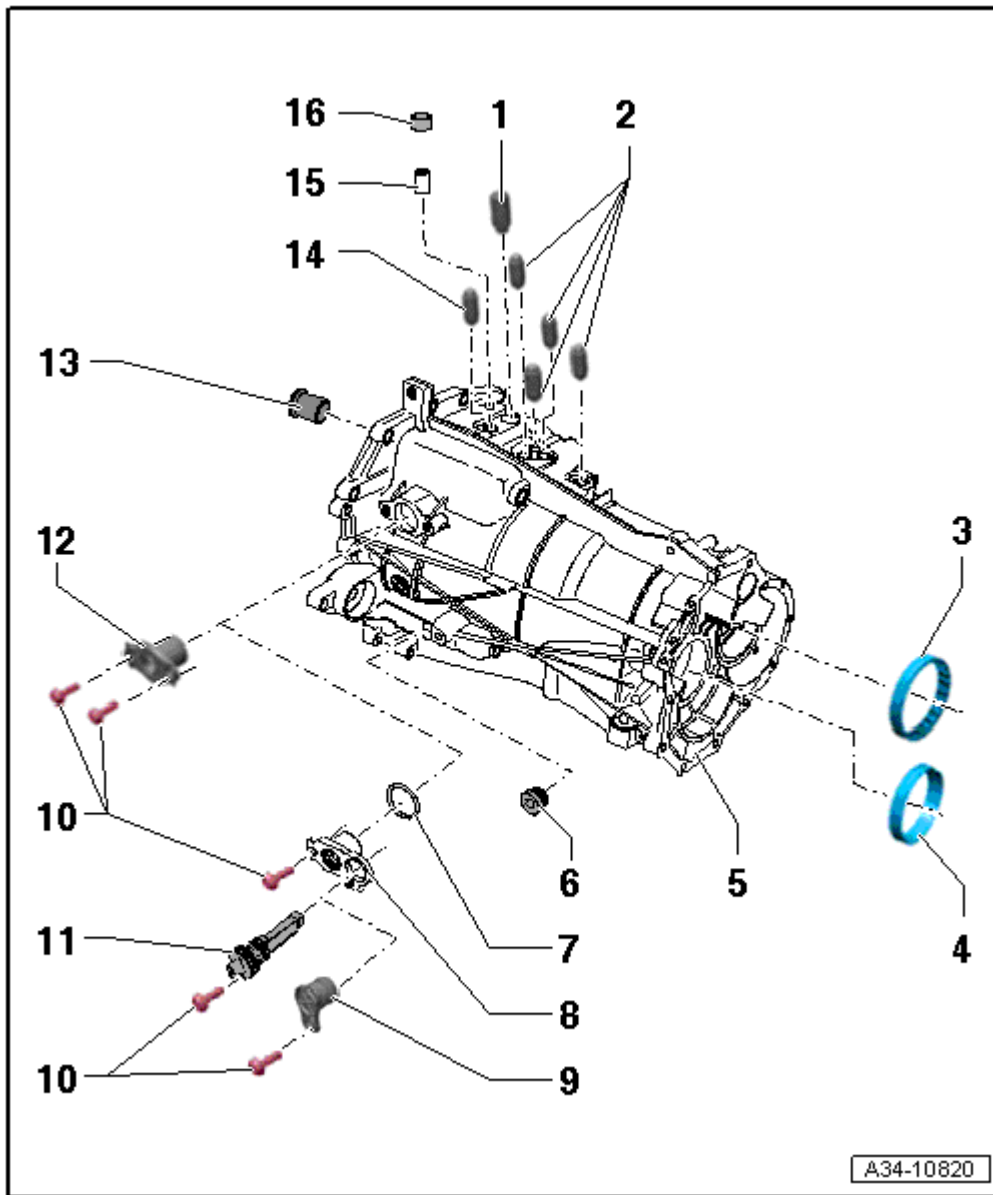


Fig. 54: Identifying Transmission Cover
 Courtesy of AUDI OF AMERICA, LLC

1. Large Securing Bushing
 - For the gearshift shaft
 - Removing and installing, refer to **Fig. 55**
 - Installed dimension, refer to **Fig. 56**
2. Securing Bushing
 - For the gearshift rail / shift fork
 - Removing and installing is currently not possible.
3. Needle Bearing
 - For the output shaft/drive gear mounting

- Removing, refer to **Fig. 57**
 - Always replace
 - Installing, refer to **Fig. 58**
 - Secure after installing with peen, refer to **Fig. 59**
4. Outer Race/Tapered Roller Bearing
 - For mounting the impeller wheel/drive gear in the transmission cover
 - Removing, refer to **Fig. 60**
 - Installing, refer to **Fig. 61**
 5. Transmission Cover
 6. Oil Fill Plug
 - 40 Nm
 7. O-ring
 - Installed only on transmissions with a cover / gearshift shaft together with a transmission neutral position sensor -G701- or cap
 - Always replace
 8. Cover
 - For the gearshift shaft together with a transmission neutral position sensor -G701- or a cap
 - Not present on all versions
 - Assembly overview, refer to **Fig. 64**
 - Selector shaft seal, removing and installing, refer to **Fig. 65**
 - Remove the gearshift shaft ball sleeve, refer to **Fig. 66**
 - Install the gearshift shaft ball sleeve, refer to **Fig. 68**
 9. Cap
 - Not present on all versions
 - Replace the O-ring with a cap, use the transmission code to allocate.
 10. Bolt
 - 24 Nm
 - Steel bolts (M8; 25 mm long)
 - Insert with locking fluid AMV 185 101 A1
 11. Transmission Neutral Position Sensor -G701-
 - Not present on all versions
 - Allocate according to transmission code.
 - Replace the O-ring on the transmission neutral position sensor -G701-, allocate according to the transmission code.
 12. Cover
 - For the gearshift shaft without a transmission neutral position sensor -G701- or a cap
 - Not present on all versions
 - Allocate according to transmission code.

- Removing and installing, refer to **Fig. 62**
 - Assembly Overview **Fig. 63**
 - Selector shaft seal, removing and installing, refer to **Fig. 65**
 - Remove the gearshift shaft ball sleeve, refer to **Fig. 66**
 - Install the gearshift shaft ball sleeve, refer to **Fig. 67**
13. Bearing Bushing
- For the 3rd/4th gear gearshift rail / shift fork
 - Removing, refer to **Fig. 69**
 - Installing, refer to **Fig. 70**
14. Small Locking Bushing
- For the gearshift shaft
 - Removing and installing is currently not possible.
15. Ventilation Pipe
- Installed dimension: 17.5 mm $\pm$ 0.5 mm from the upper edge of the pipe on the housing
 - Unclip the transmission breather cap
16. Cap
- For the transmission ventilation

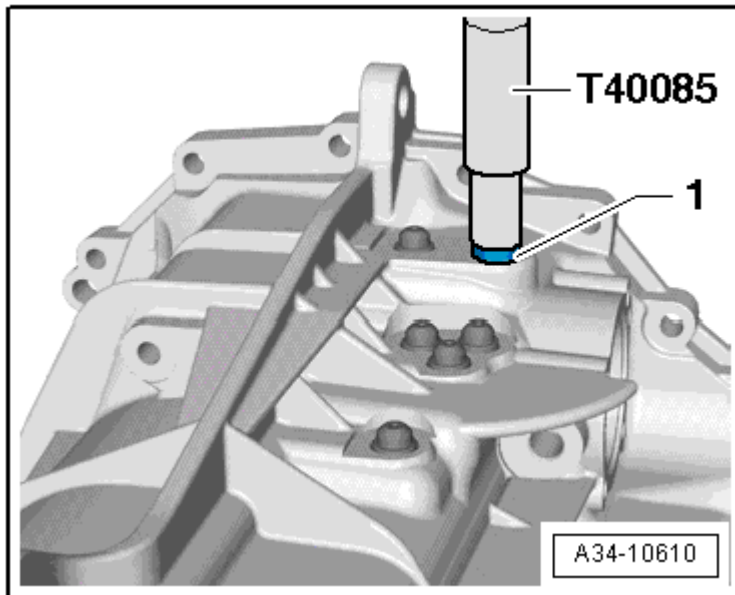


Fig. 55: Removing And Installing Large Locking Bushing -1- On Gearshift Shaft
Courtesy of AUDI OF AMERICA, LLC

- The gearshift shaft must be removed.
- If the transmission is not disassembled, place a cloth in the opening for the gearshift shaft to prevent the locking bushing from falling into the transmission.

- Remove the large locking bushing using the T40085 toward the inside, in the transmission cover.
- Install the locking bushing using the T40085 to the installation dimension. Refer to **Fig. 56**.

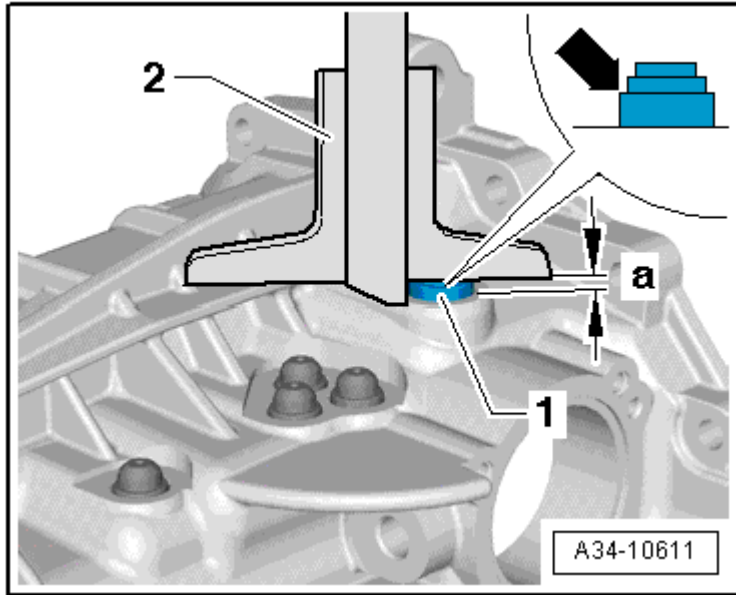


Fig. 56: Installed Dimension For Large Locking Bushing -1- Inside Transmission Cover
 Courtesy of AUDI OF AMERICA, LLC

- Use a depth gauge -2- to check the installed dimension -a- = 5 +/- 0.2 mm.
 - Insert the depth gauge on the first shoulder -arrow- of the locking bushing.

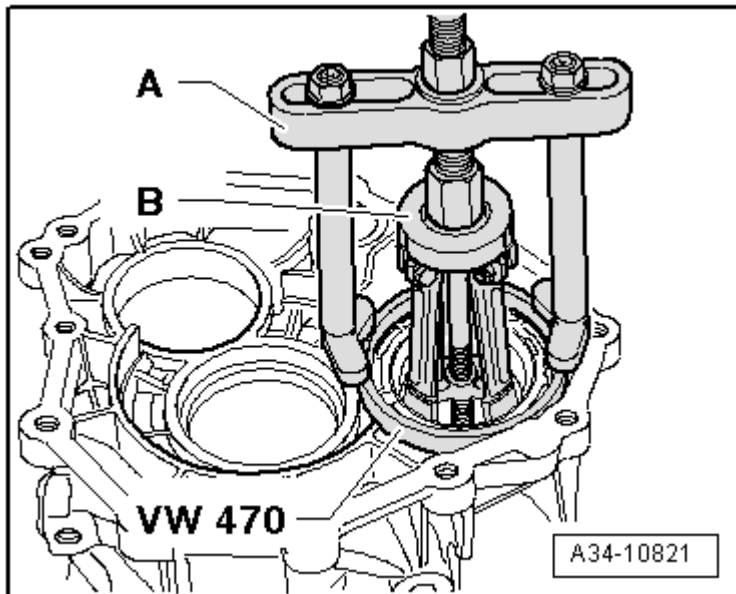


Fig. 57: Removing Needle Bearing From Transmission Cover
 Courtesy of AUDI OF AMERICA, LLC

A - Counter-support, for example, Kukko 22/4

B - Internal puller 56 to 110 mm, for example, Kukko 21/89

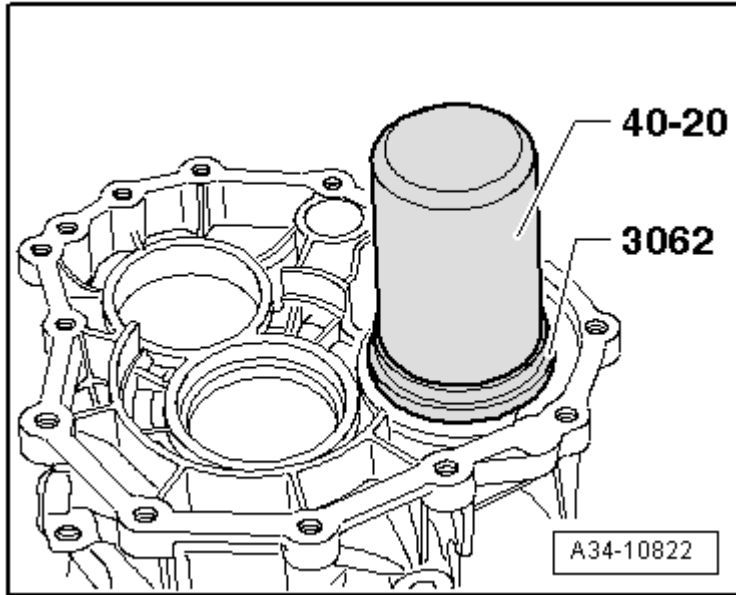


Fig. 58: Installing Needle Bearing All Way Into Transmission Cover
Courtesy of AUDI OF AMERICA, LLC

NOTE: Remove peening indentations, if present.

Install needle bearings with the lettering on the bearing (the side with thicker metal) facing towards 3062.

-- Secure needle bearing after pressing into transmission cover with peen. Refer to **Fig. 59**.

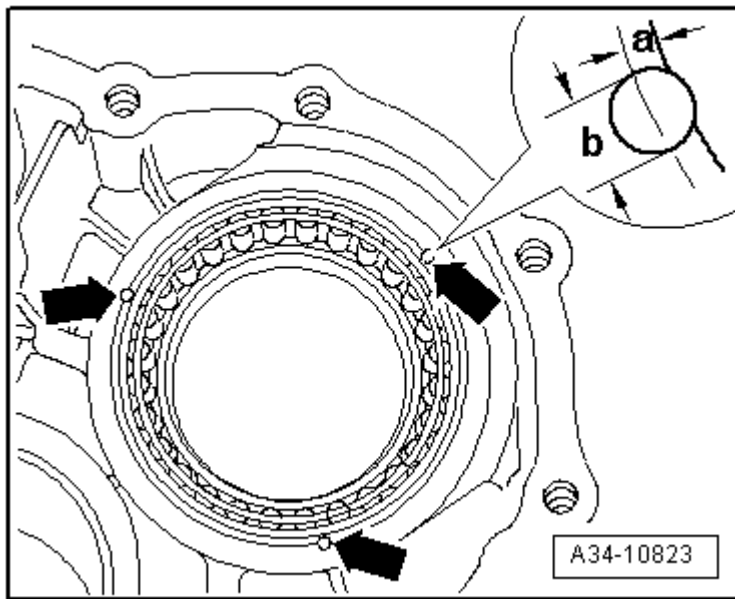


Fig. 59: Securing Needle Bearing Inside Transmission Cover By Peening It
 Courtesy of AUDI OF AMERICA, LLC

- To peen, use blunt center punch with ball-shaped end (ball 5 mm diameter).
- Needle bearing is secured with 3 peening marks on circumference every 120° -arrows-.

Pay special attention to the position and the diameter of the peen points:

- -a- = 2 mm
- Dimension -b- = 3 mm

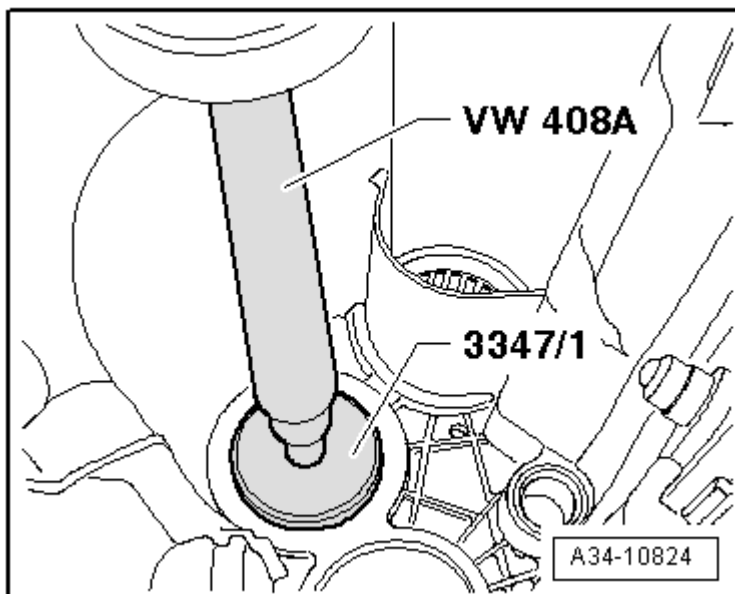


Fig. 60: Pressing Tapered Roller Bearing Outer Race Out From Transmission Cover
Courtesy of AUDI OF AMERICA, LLC

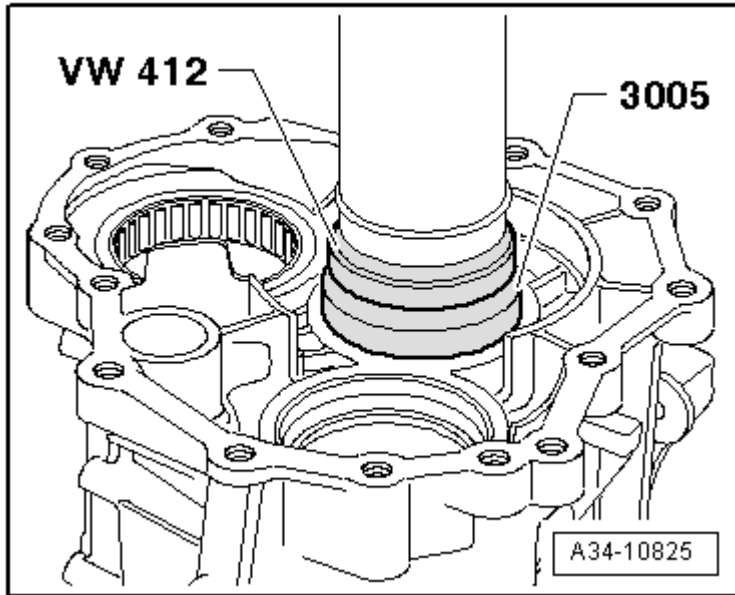


Fig. 61: Installing Outer Race / Tapered Roller Bearing All Way Into Transmission Cover
Courtesy of AUDI OF AMERICA, LLC

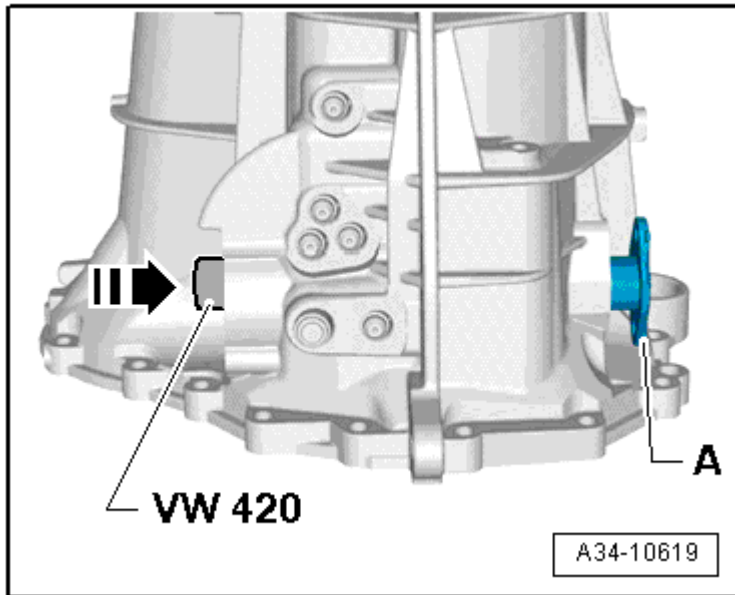


Fig. 62: Removing And Installing The Gearshift Shaft Cover -A-
Courtesy of AUDI OF AMERICA, LLC

- The gearshift shaft is removed.

-- Remove the bolts that attach the cover -A- to the transmission cover.

- Remove the cover using the VW 420 in direction of -arrow-.
- Clean the sealing surfaces on the cover and transmission cover.
- Clean screw threads with a wire brush.
- Apply the sealing compound AMV 188 001 02 evenly on the sealing surface on the sealing cover.
- Install the sealing push-in cap while installing the bolts using locking fluid AMV 185 101 A1 and tighten down to the specified torque. Refer to **TRANSMISSION**.

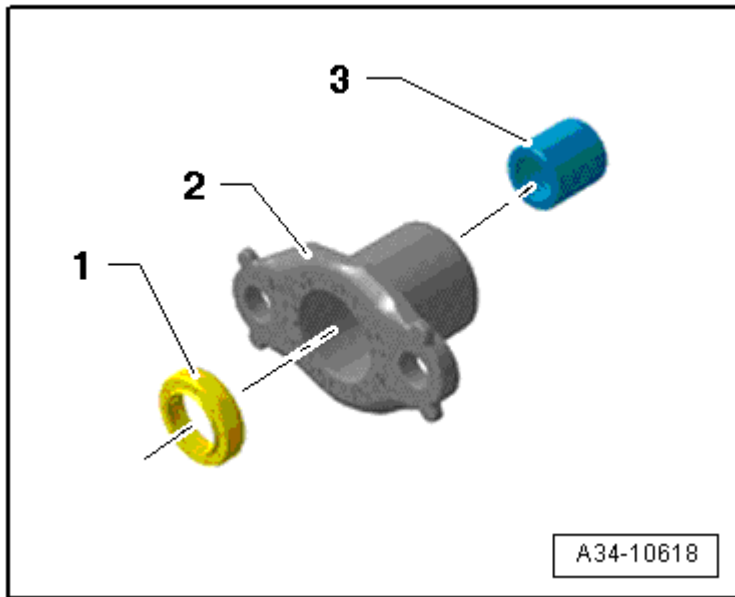


Fig. 63: Gearshift Shaft Cover Assembly Overview
Courtesy of AUDI OF AMERICA, LLC

1. Selector shaft seal, removing and installing, refer to **Fig. 65**
2. Cover
3. Gearshift shaft ball sleeve, removing, refer to **Fig. 66** and Installing **Fig. 67**

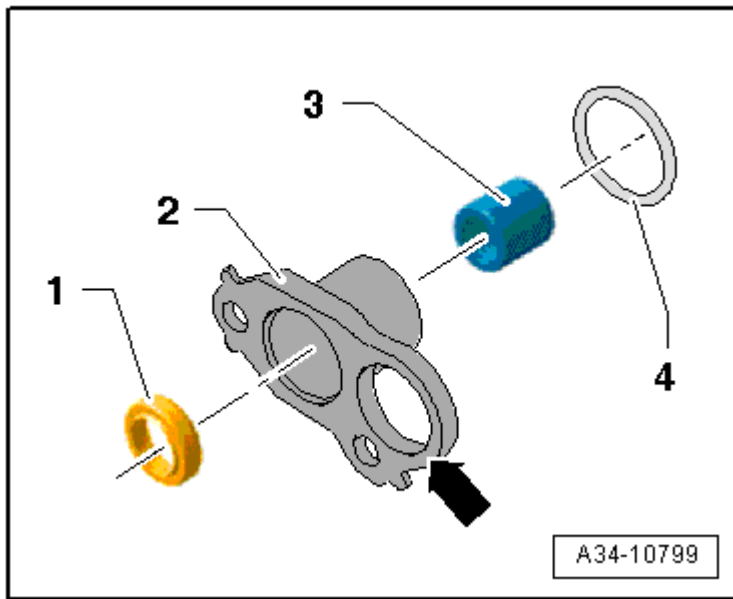


Fig. 64: Assembly Overview - Gearshift Shaft Cover With A Hole -Arrow- For Transmission Neutral Position Sensor -G701- Or Cap
 Courtesy of AUDI OF AMERICA, LLC

1. Selector shaft seal, removing and installing, refer to **Fig. 65**
2. Cover
3. Gearshift shaft ball sleeve, removing, refer to **Fig. 66** and Installing **Fig. 68**
4. O-ring

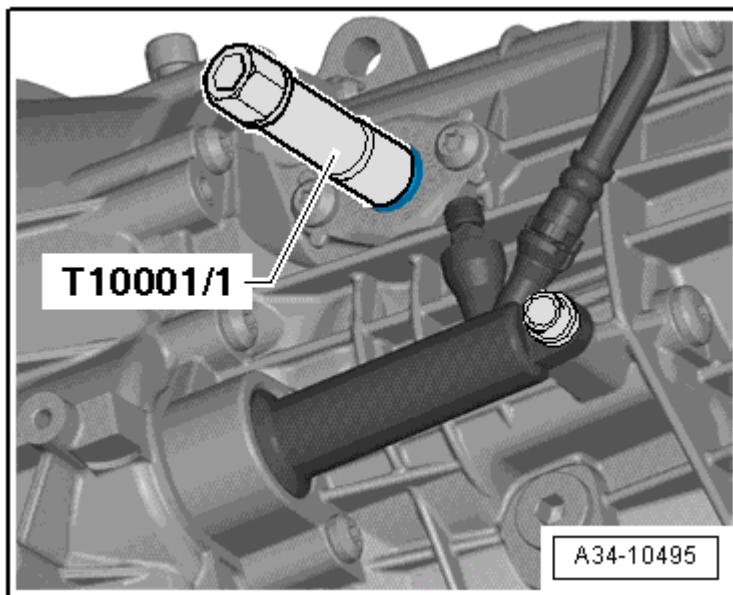


Fig. 65: Gearshift Shaft Seal, Removing and Installing
 Courtesy of AUDI OF AMERICA, LLC

- Pry out the shaft seal using the pulling hook T20143/1.
- Lightly coat the outer circumference of the shaft seal with oil.
- Fill the space between the sealing- and dust lip half way with sealing grease G 052 128 A1.
- Install the shaft seal using the T10001/1 or the VW 423.
 - Installed dimension: 2 mm under the upper edge of the cover

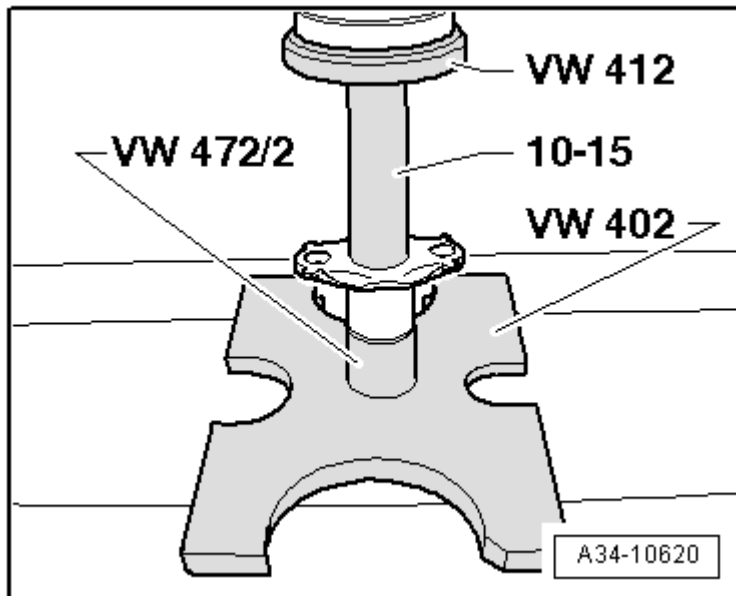
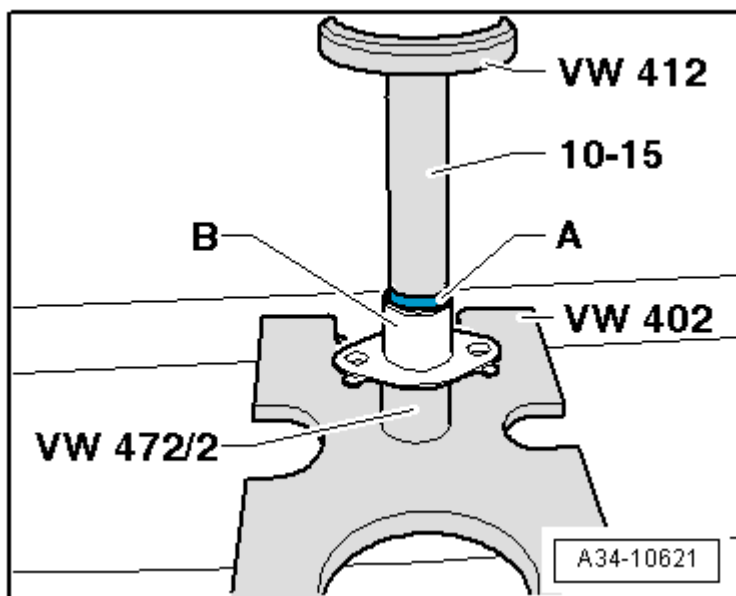
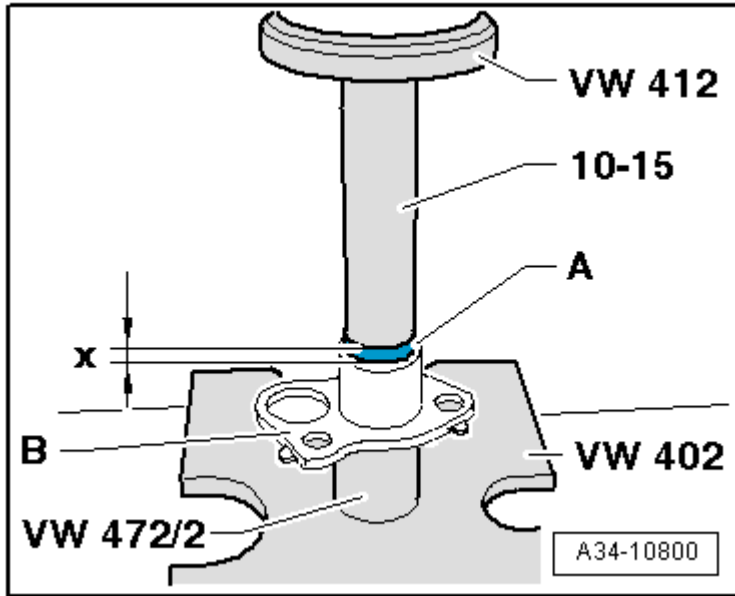


Fig. 66: Removing Gearshift Shaft Ball Sleeve From Cover
Courtesy of AUDI OF AMERICA, LLC



**Fig. 67: Installing Gearshift Shaft Ball Sleeve -A- Evenly In Cover -B-
Courtesy of AUDI OF AMERICA, LLC**

Set ball sleeve in place with inscribed side (thicker wall) facing toward guide pin 10 - 15.



**Fig. 68: Installing Gearshift Shaft Ball Sleeve -A- Up To Dimension -X- Into Cover -B-
Courtesy of AUDI OF AMERICA, LLC**

Set ball sleeve in place with inscribed side (thicker wall) facing toward 10 - 15.

- Installed dimension -x- = 2.5 +/- 0.5 mm

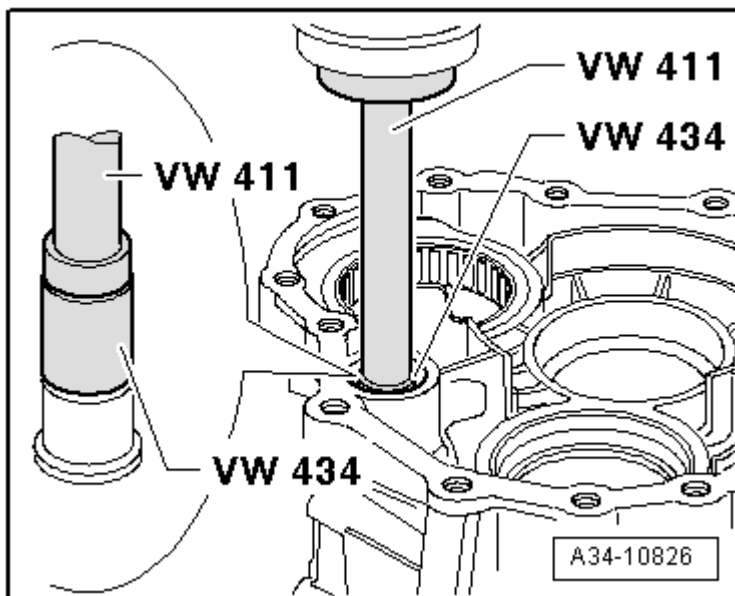


Fig. 69: Removing Bearing Bushing For 3Rd And 4Th Gear Gearshift Rail / From Transmission Cover

Courtesy of AUDI OF AMERICA, LLC

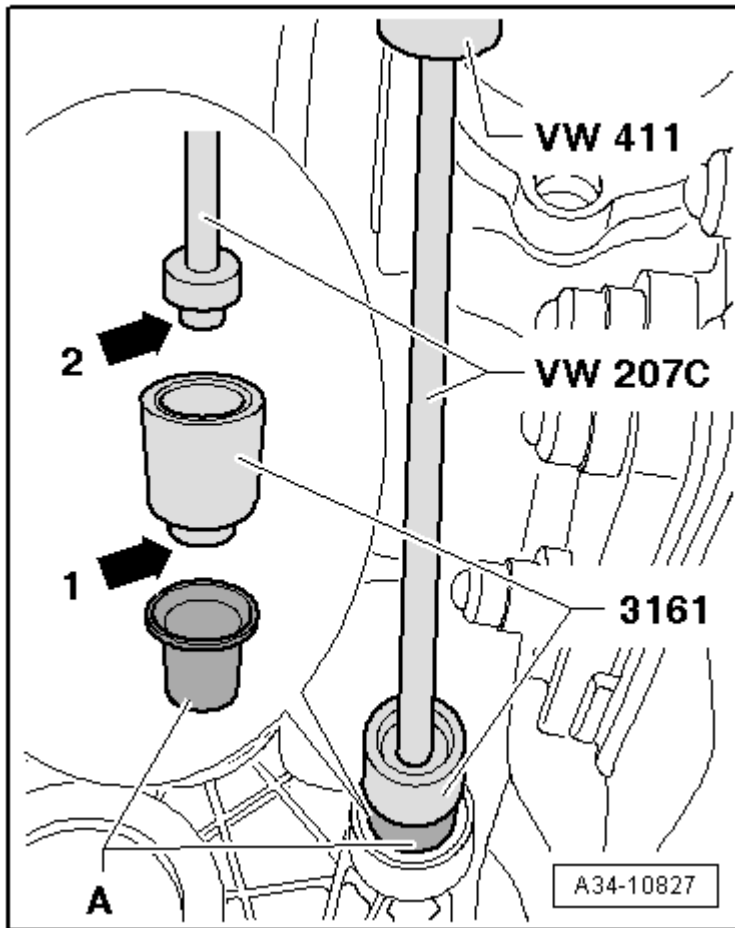


Fig. 70: Installing Bearing Bushing -A- For 3Rd And 4Th Gear Gearshift Rail / Shift Fork All Way Into Transmission Cover

Courtesy of AUDI OF AMERICA, LLC

-- Install the 3161 and shoulder -arrow 1- in the bearing bushing -A-.

-- Install the bearing bushing all the way using the VW 207 C and at the same time with the shoulder -arrow 2- into the 3161.

TRANSMISSION HOUSING

Special tools and workshop equipment required

- Driving Sleeve VW 244 B
- Slide Hammer-Complete Set VW 771
- Locking Pin 30 - 505
- Sleeve 40 - 20
- -1- Internal Puller Kukko 21/3

- Locking fluid AMV 185 101 A1

NOTE: It is not possible to disassemble and assemble the differential.

Removing and installing the pinion is currently not possible.

Adjusting the pinion and the ring gear is currently not possible.

When replacing: Replace the transmission housing together with the installed pinion and differential.

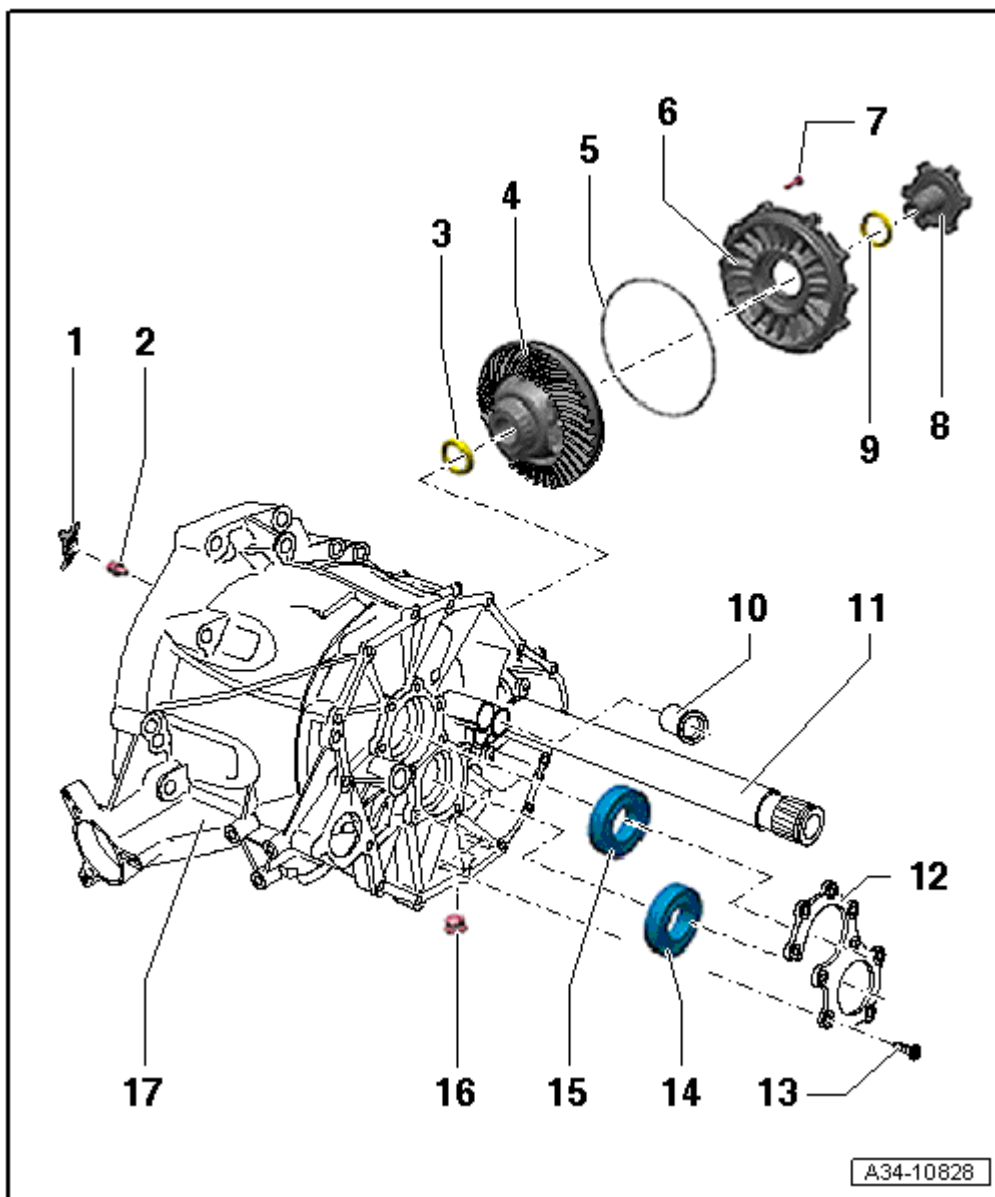


Fig. 71: Transmission Housing Overview
Courtesy of AUDI OF AMERICA, LLC

1. Intermediate Piece
 - Replace if damaged
2. Ball Studs
 - 25 Nm
 - Grease the clutch release lever bearing surface with grease for clutch disc shaft splines G 000 100.
3. Shaft Seal
 - For the left flange shaft
 - Removing and installing, refer to **LEFT FLANGE SHAFT SEAL WITH TRANSMISSION REMOVED**
4. Differential
 - Can currently be replaced only with the transmission housing and the pinion

NOTE: **The differential bevel gears cannot be removed or installed.**
5. O-ring
 - Always replace
 - Coat with transmission fluid
6. Final Drive Cover
 - Removing and installing, refer to **FINAL DRIVE COVER**
7. Bolt
 - 24 Nm
 - Steel bolts (M8; 42 mm long)
 - Quantity: 10
8. Right Flange Shaft
 - With locking ring
 - Removing and installing, refer to **RIGHT FLANGE SHAFT SEAL WITH TRANSMISSION REMOVED**
9. Shaft Seal
 - For the right flange shaft
 - Removing and installing, refer to **RIGHT FLANGE SHAFT SEAL WITH TRANSMISSION REMOVED**
10. Bearing Bushing
 - For the gearshift rail / shift fork
 - Quantity: 2
 - Removing, refer to **Fig. 72**
 - Installing, refer to **Fig. 73**
11. Pinion
 - Can currently be replaced only with the transmission housing and the differential
12. Plate

- To lock the ball bearing in the transmission housing on
 - Installed position: The recesses for the bolts face the transmission cover
13. Bolt
- 24 Nm
 - Insert with locking fluid AMV 185 101 A1
14. Ball Bearing
- For the output shaft
 - Bearing height is 19 mm
 - Do not swap out with a ball bearing TRANSMISSION OVERVIEW.
 - Removing, refer to Fig. 75
 - Installing, refer to Fig. 76
15. Ball Bearing
- For the input shaft
 - Bearing height is 17 mm
 - Do not swap out with a ball bearing TRANSMISSION HOUSING.
 - Removing, refer to Fig. 78
 - Installing, refer to Fig. 78
16. Oil Drain Plug
- 40 Nm
17. Transmission Housing
- Can currently be replaced only with the differential and the pinion

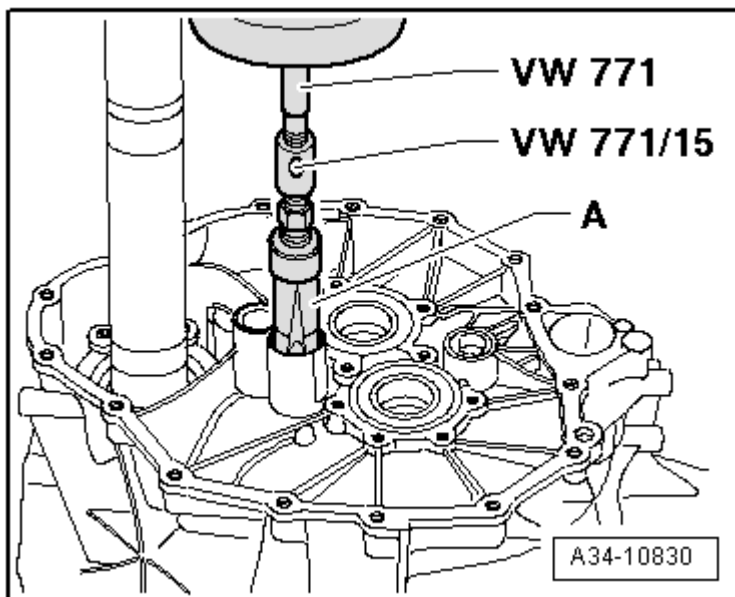


Fig. 72: Removing Bearing Bushing For Gearshift Rail / Shift Fork
Courtesy of AUDI OF AMERICA, LLC

A - Internal puller 18.5 to 23.5 mm, for example, Kukko 21/3

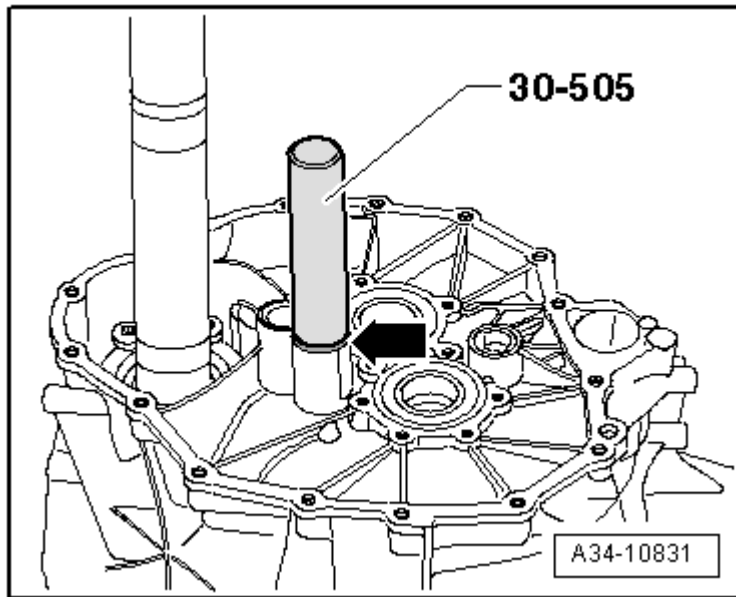


Fig. 73: Installing Bearing Bushing -Arrow- For Gearshift Rail / Shift Fork
Courtesy of AUDI OF AMERICA, LLC

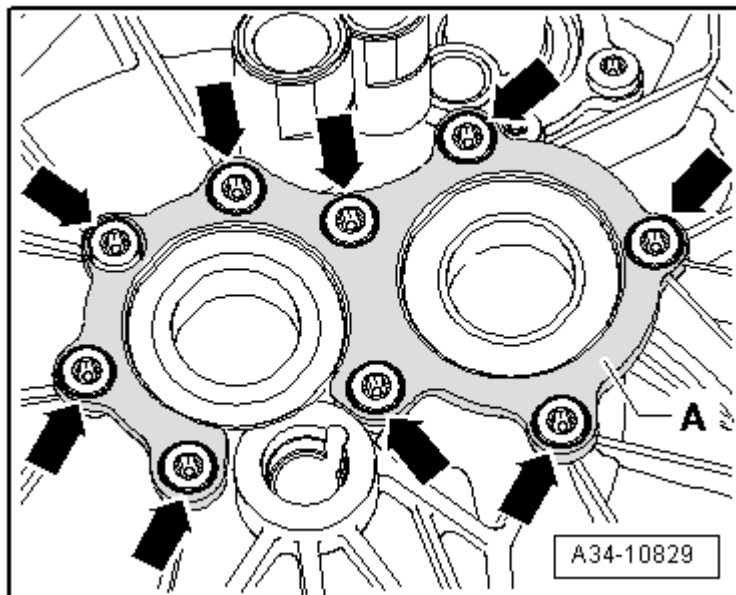


Fig. 74: Identifying Bolts -Arrows- To Remove Plate -A-
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolts -arrows- to remove the plate -A-.

NOTE: To install the bolt threads -arrows- for example clean them with a wire brush to rid them of locking fluid residue. Next, use locking compound AMV 185 101 A1

to install the bolts.

-- Tighten bolts diagonally, -arrows- from the inside toward the outside using the specified torque **FOR THE TRANSMISSION: AUDI A4 2008 & RARR;; AUDI A5 COUPE 2008 ; AUDI A5 COUPE 2008 AUDI A5 COUPE 2008 & RARR; FROM TRANSMISSION SERIES NUMBER 000761.**

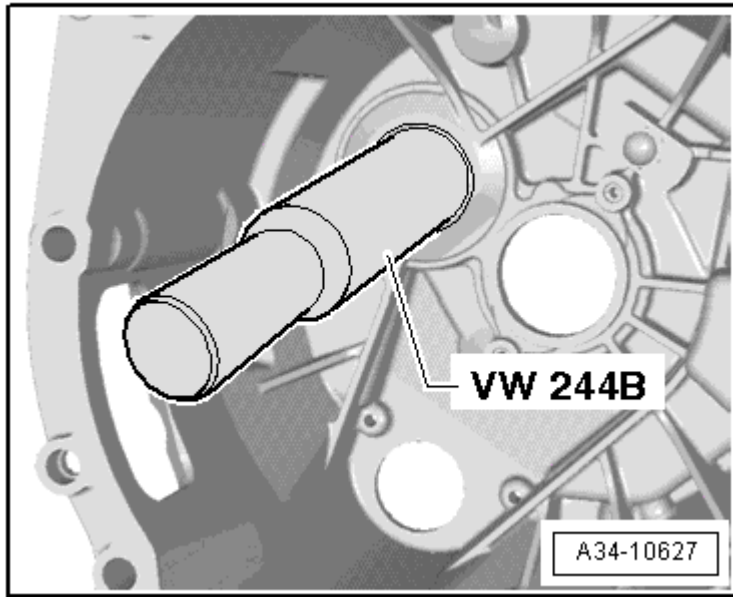


Fig. 75: Removing Output Shaft Ball Bearing From Transmission Housing
Courtesy of AUDI OF AMERICA, LLC

- First, remove the plate that locks the ball bearings in place; refer to **Fig. 74.**

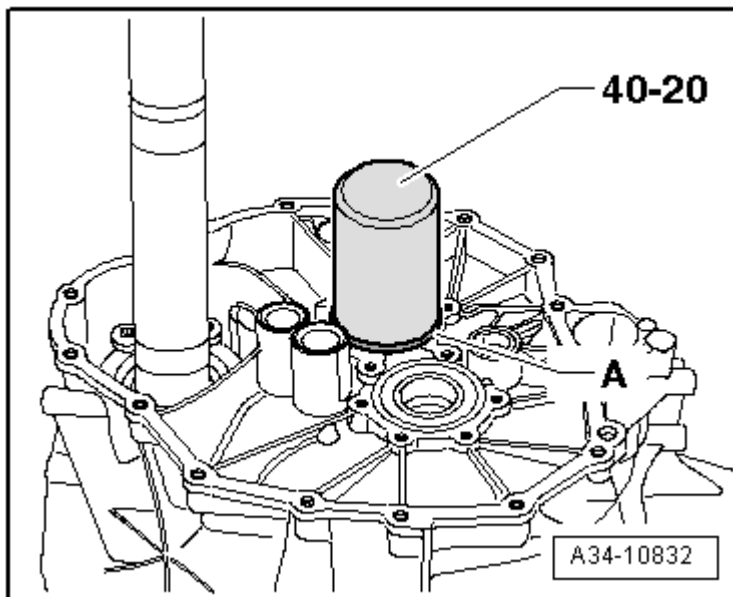


Fig. 76: Installing Output Shaft Ball Bearing -A- In Transmission Housing

Courtesy of AUDI OF AMERICA, LLC

NOTE: Do not swap out the ball bearings for the in- and output shaft; they are different heights.

-- Next, remove the plate that locks the ball bearings in place, refer to **Fig. 74**.

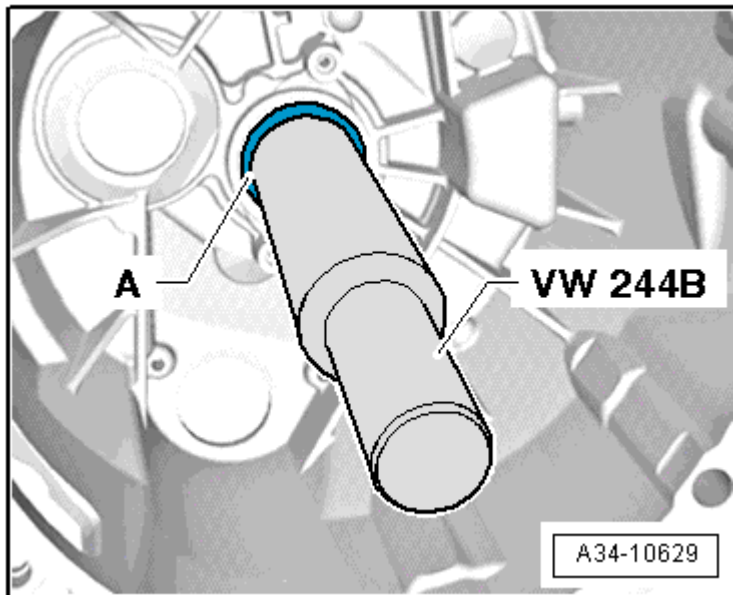


Fig. 77: Removing Input Shaft Ball Bearing -A- From Transmission Housing
Courtesy of AUDI OF AMERICA, LLC

- First, remove the plate that locks the ball bearings in place, refer to **Fig. 74**.

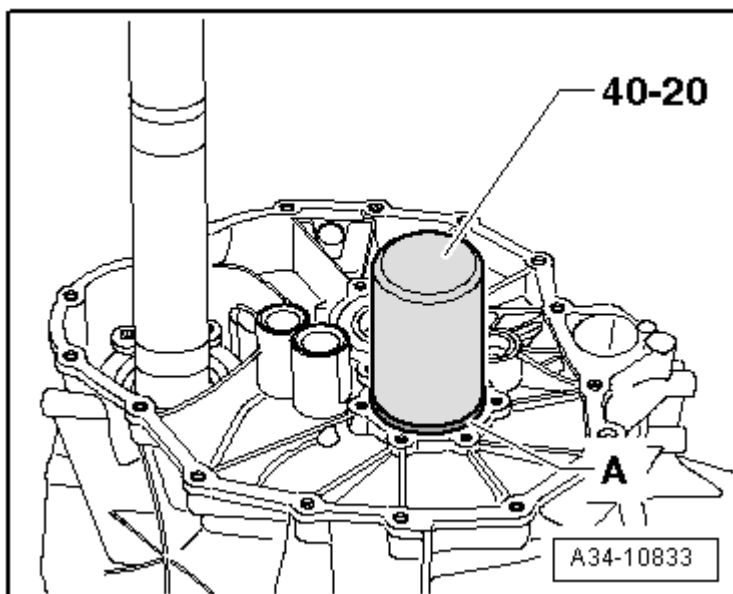


Fig. 78: Installing Input Shaft Ball Bearing -A- In transmission Housing

Courtesy of AUDI OF AMERICA, LLC

NOTE: Do not swap out the ball bearings for the in- and output shaft; they are different heights.

-- Next, remove the plate that locks the ball bearings in place, refer to **Fig. 74**.

GEARSHIFT RAILS AND SELECTOR FORKS

NOTE: Removing the shift fork group from the bearing brackets for the input and output shafts. Refer to **SHIFT FORK GROUP, INPUT SHAFT, 1ST, 2ND AND REVERSE GEAR OUTPUT SHAFTS OVERVIEW** .

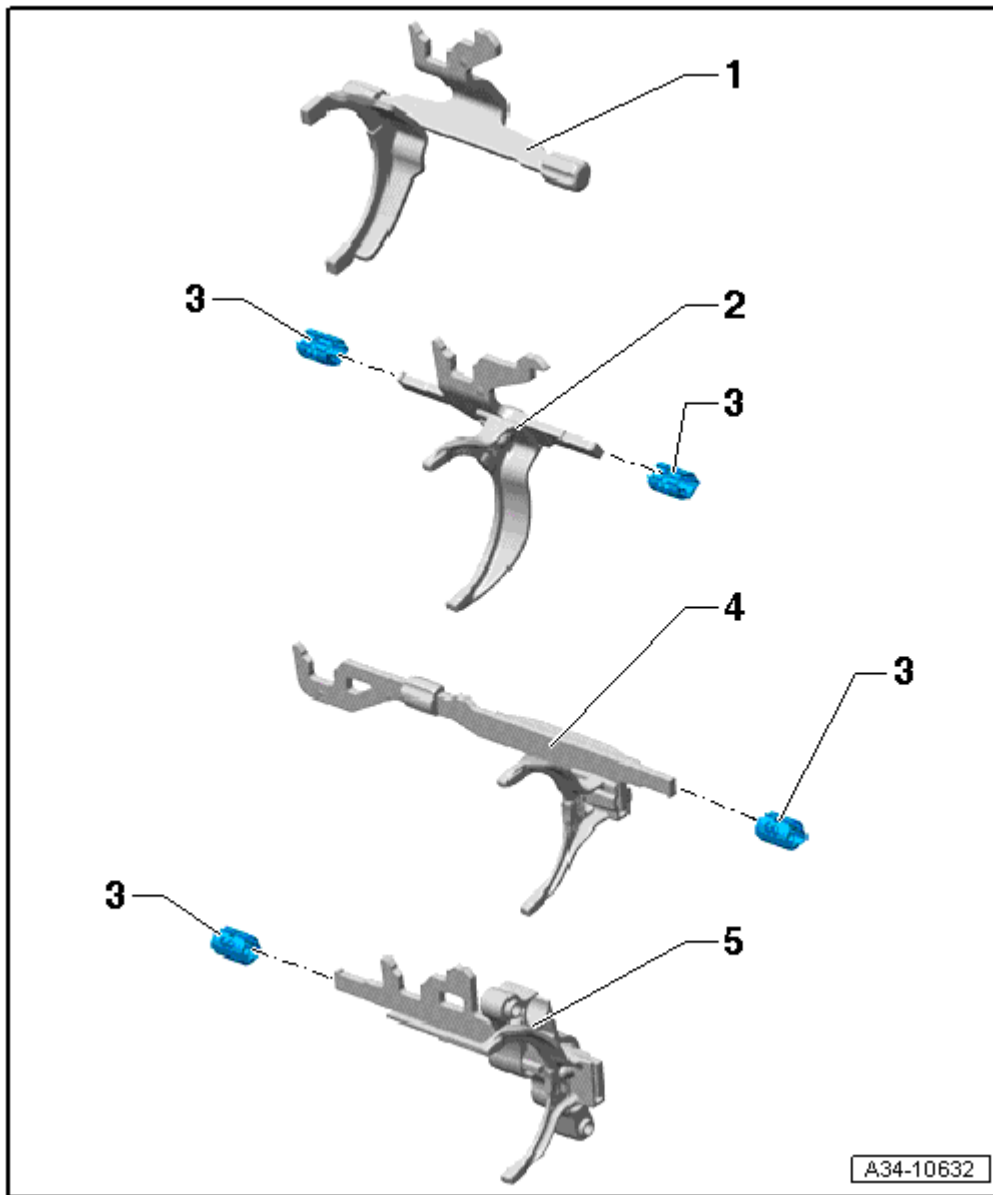
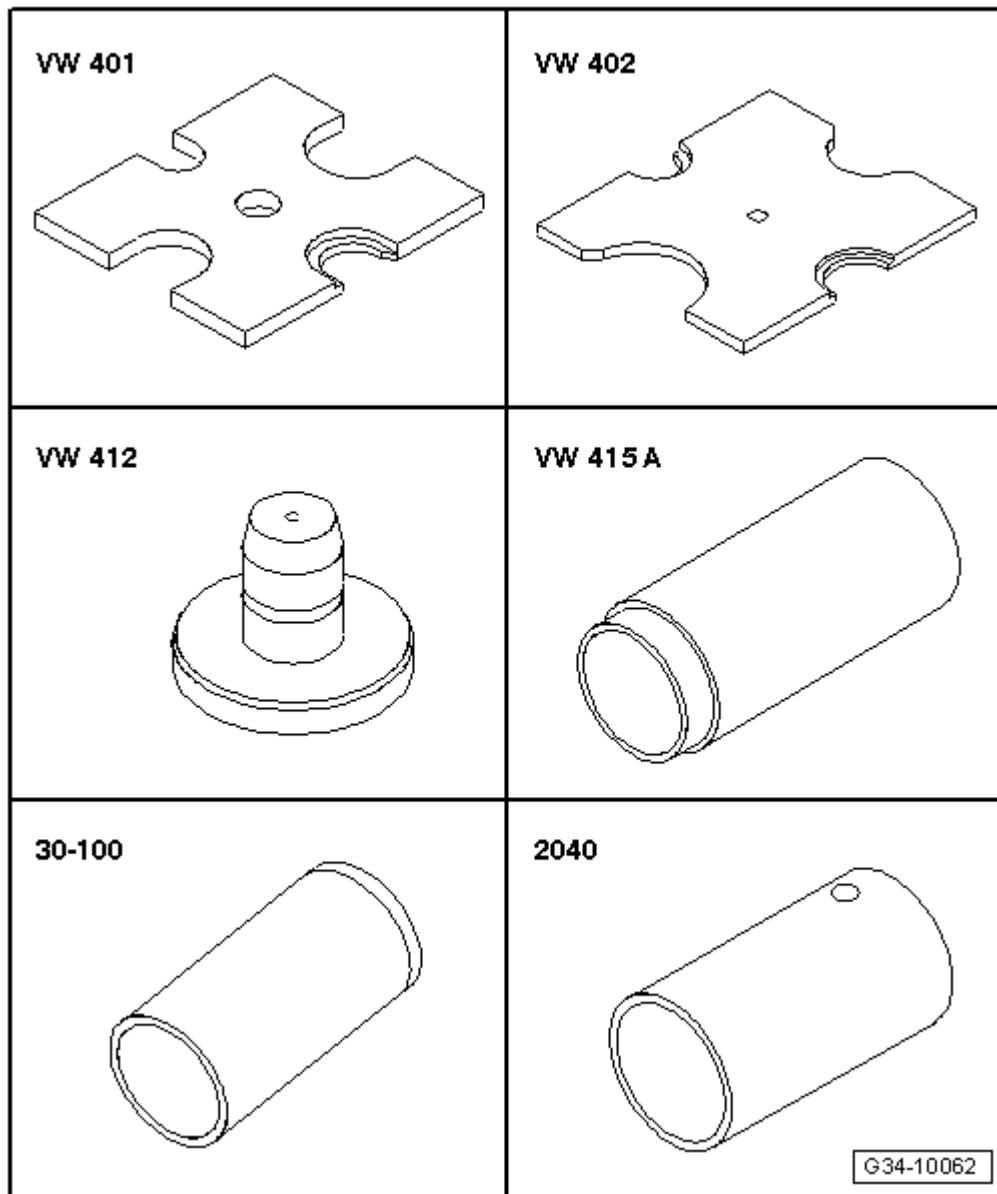


Fig. 79: Identifying Gearshift Rails And Selector Forks

Courtesy of AUDI OF AMERICA, LLC

1. Gearshift Rail / Reverse Gear Shift Fork
2. Gearshift Rail / Shift Fork for 1st and 2nd Gear
3. Ball Sleeve
 - Remove and install, for example, using locking ring pliers (for the outer races) from the gearshift rail / shift fork
4. Gearshift Rail / Shift Fork for 3rd and 4th Gear
5. Gearshift Rail / Shift Fork for 5th and 6th Gear
 - With yoke for the gearshift rail / shift fork mounting
 - The shift fork cannot be separated from the yoke.

SPECIAL TOOLS**Fig. 80: Identifying Special Tools**

Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Thrust Disc VW 412
- Tube 60 mm Dia. VW 415 A
- Press Tube 30 - 100

- Press Tube 2040

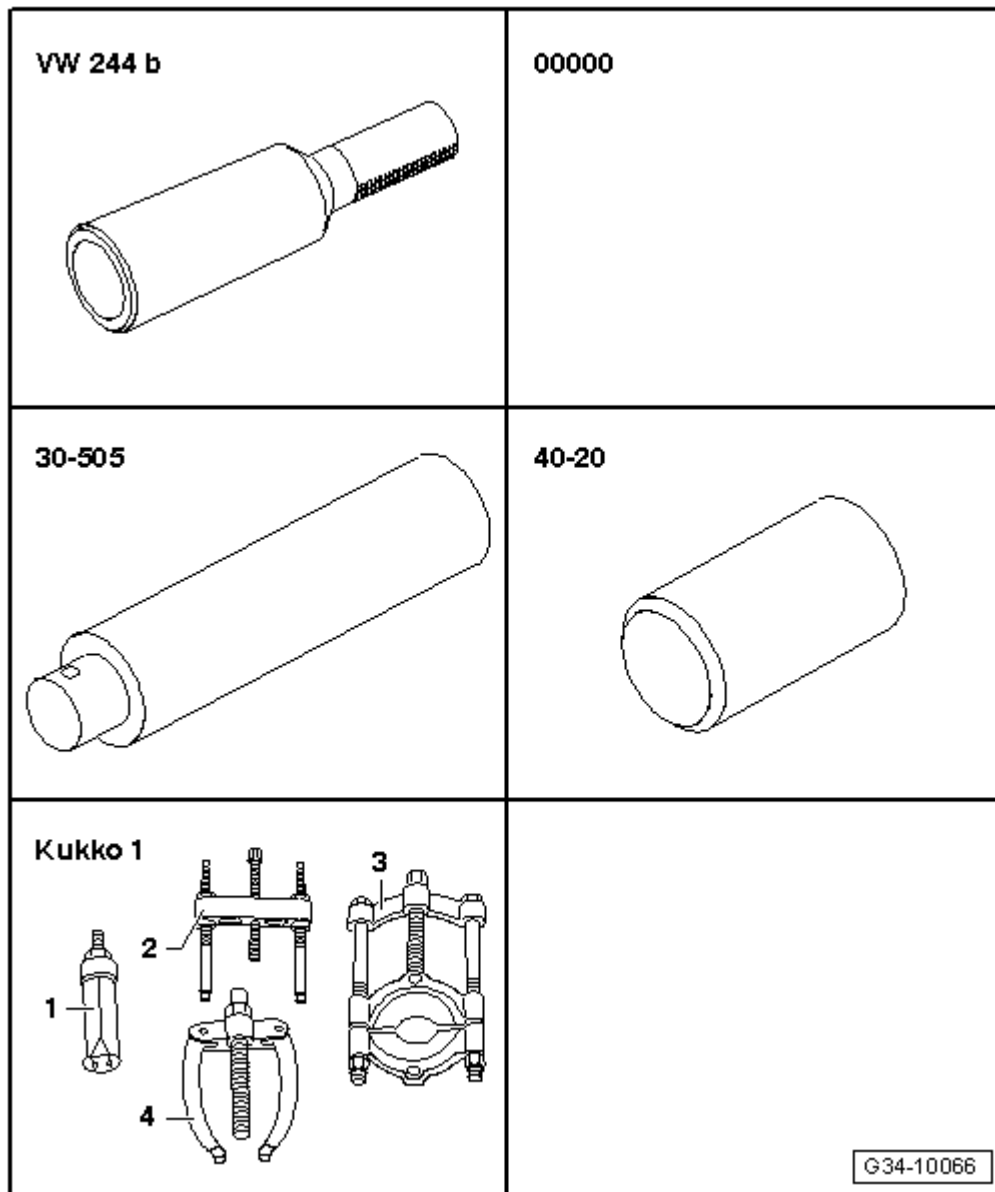


Fig. 81: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Driving Sleeve VW 244 B
- Slide Hammer-Complete Set VW 771
- Locking Pin 30 - 505
- Sleeve 40 - 20
- -1- Internal Puller Kukko 21/3

- Locking fluid AMV 185 101 A1

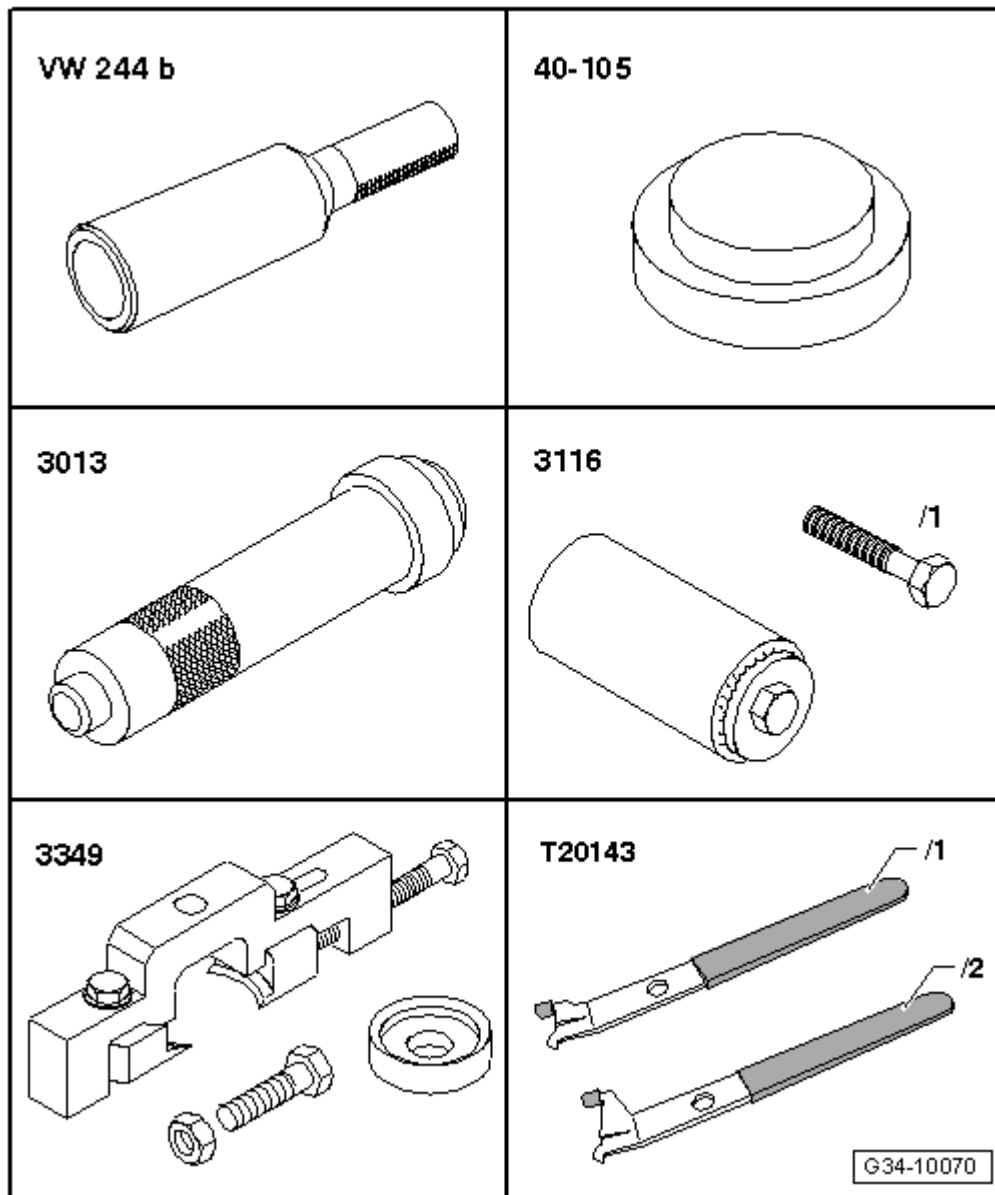


Fig. 82: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Driving Sleeve VW 244 B
- Thrust Piece 40 -105
- Seal Driver 3013
- Clamping Sleeve 3116
- Puller for Wheel Hub 3349

- Pulling Hook T20143

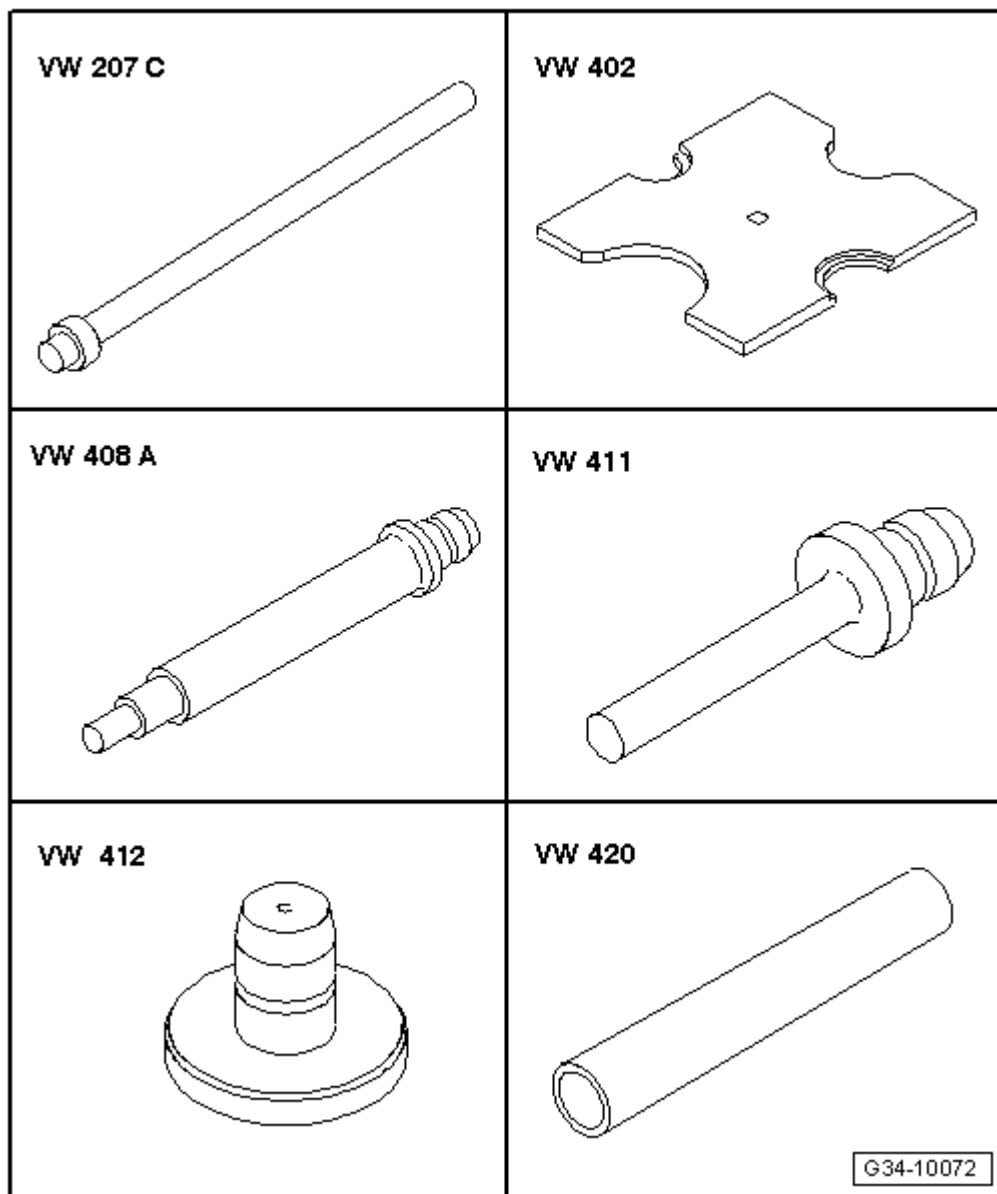


Fig. 83: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Drift VW 207 C
- Thrust Plate VW 402
- Punch VW 408 A
- Punch VW 411
- Thrust Disc VW 412

- Tube 28 mm Dia. 210 mm VW 420

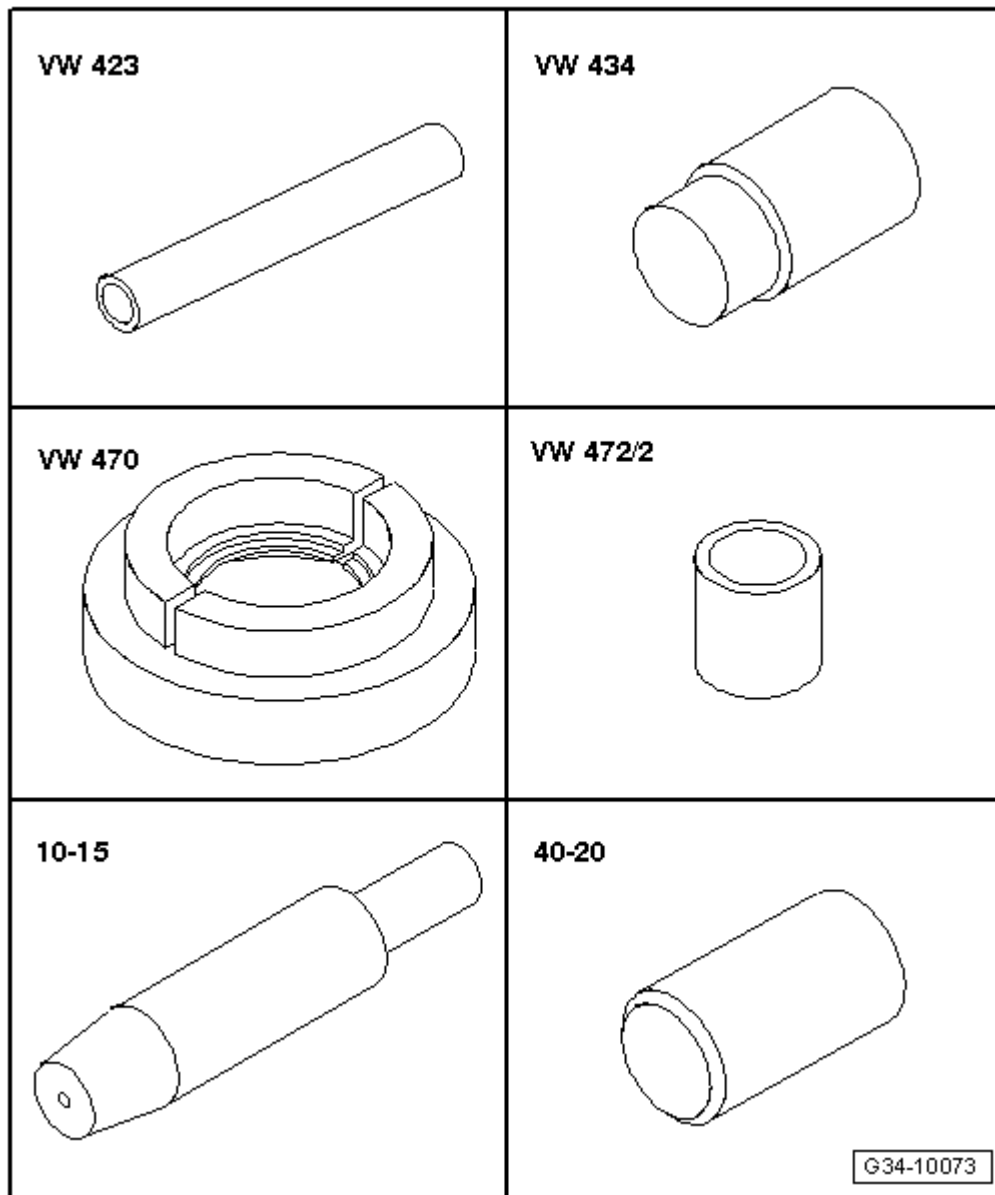


Fig. 84: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Sleeve VW 423
- Arbor VW 434
- Thrust Ring VW 470
- Sleeve VW 472/2
- Guide Bolt 10 - 15

- Drift Sleeve 40-20

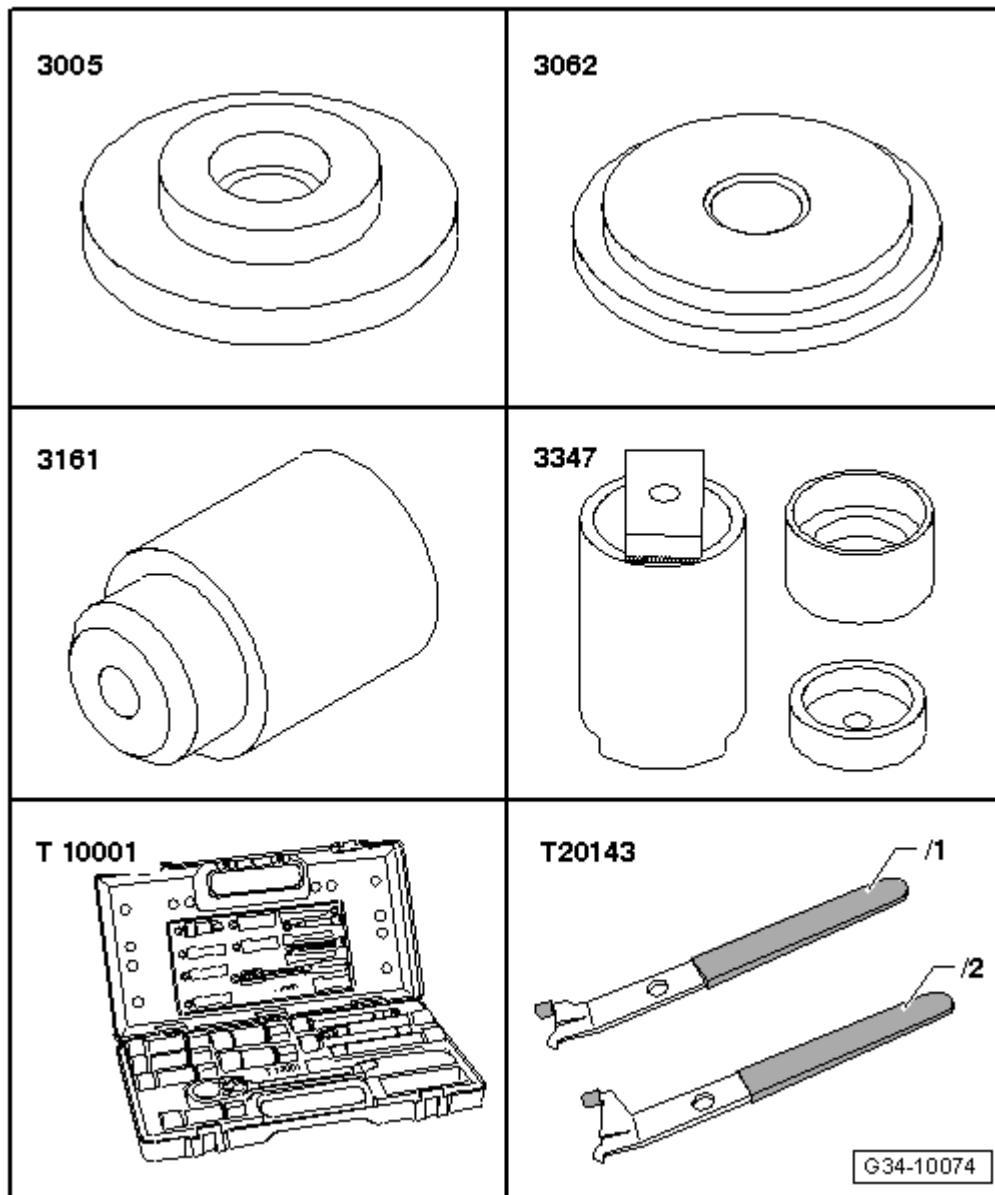


Fig. 85: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Thrust Pad 3005
- Thrust Pad 3062
- Extension 3161
- Guide Bearing Inst. Tool 3347
- Shock Absorber Set T10001

- Pulling Hook T20143

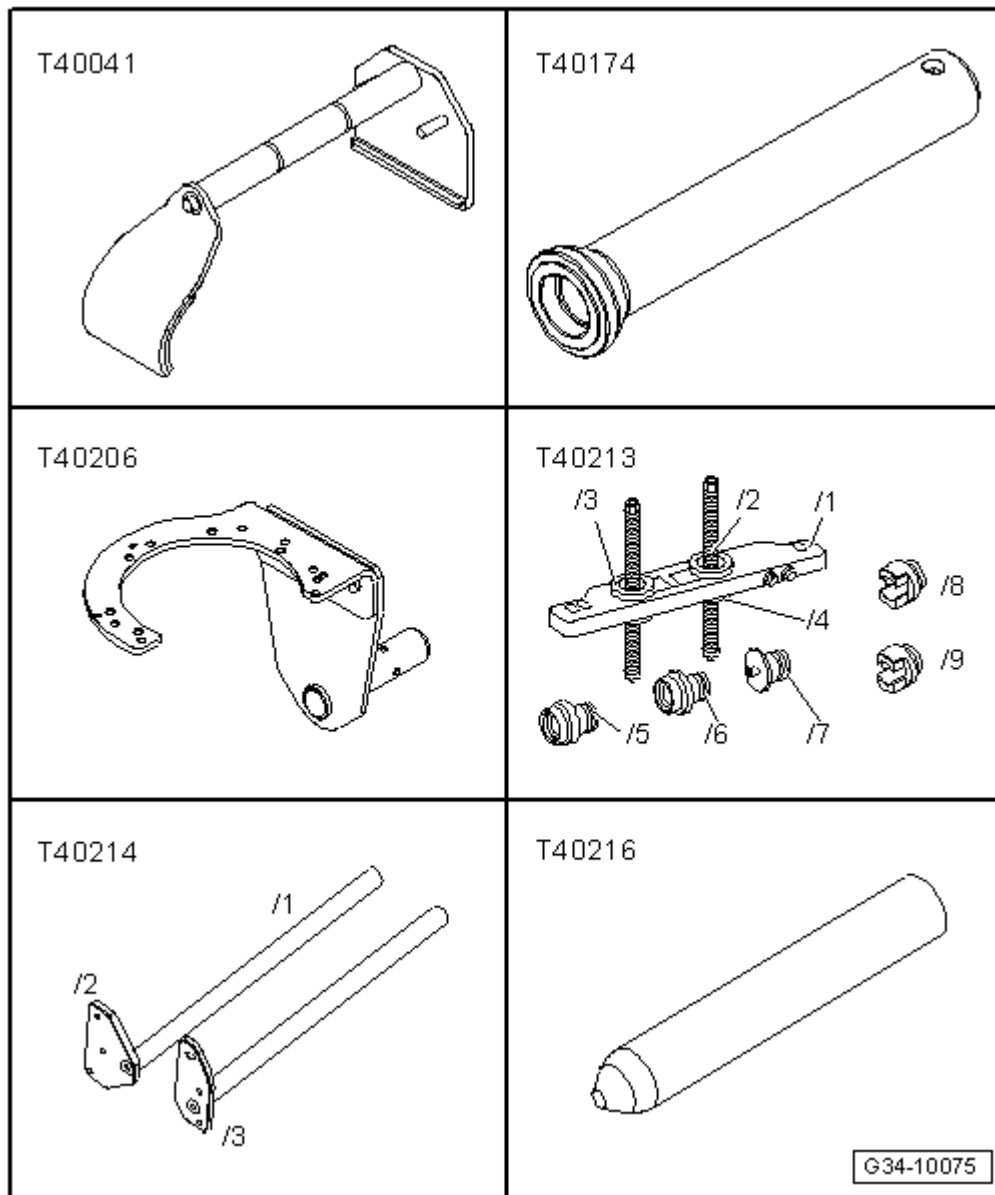


Fig. 86: Identifying Special Tools And Workshop Equipment Required
 Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Subframe Support Assembling Device T40041
- Thrust Piece T40174
- Gearbox Support T40206
- Assembly Tool T40213
- Support Tool T40214

- Guide Pin T40216

Special tools and workshop equipment required

- Hot Air Blower V.A.G 1416

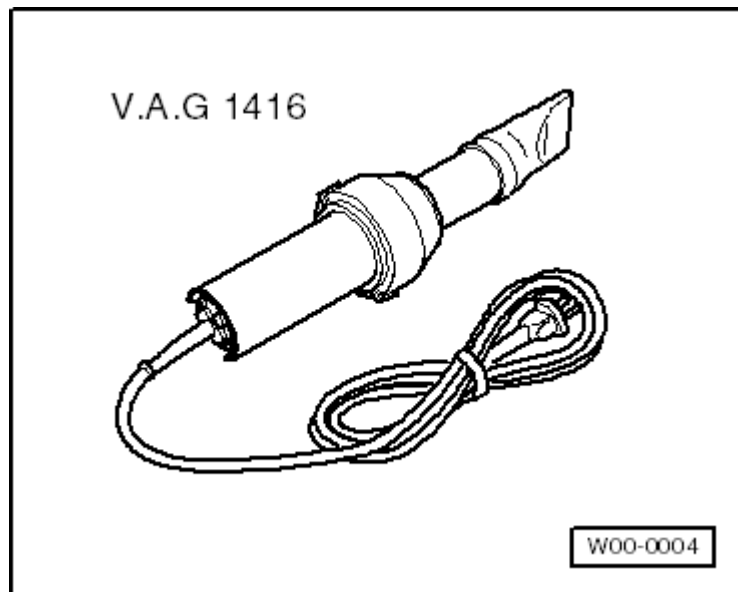


Fig. 87: Heat Gun V.A.G 1416

Courtesy of AUDI OF AMERICA, LLC

- Thrust Piece for Final Drive at Gearbox T40165

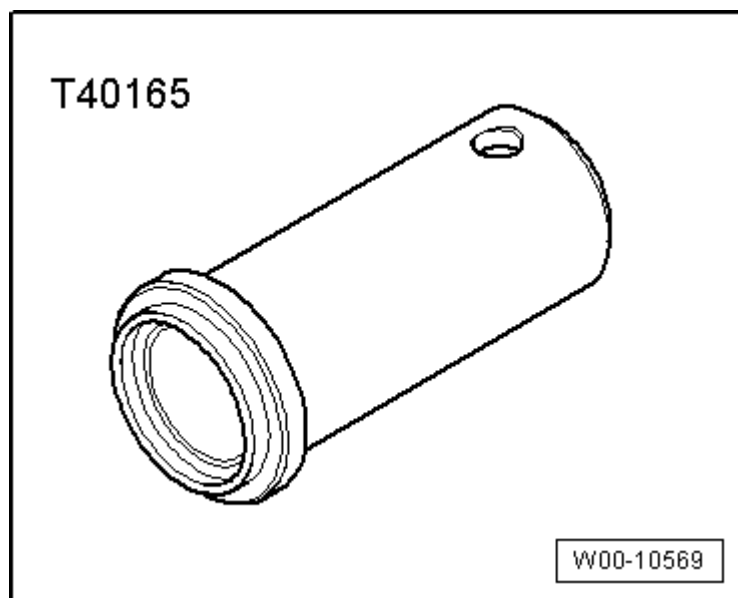


Fig. 88: Thrust Piece for Final Drive at Gearbox T40165

Courtesy of AUDI OF AMERICA, LLC

- Internal Puller 56 to 110 mm, for example, Kukko 21/89

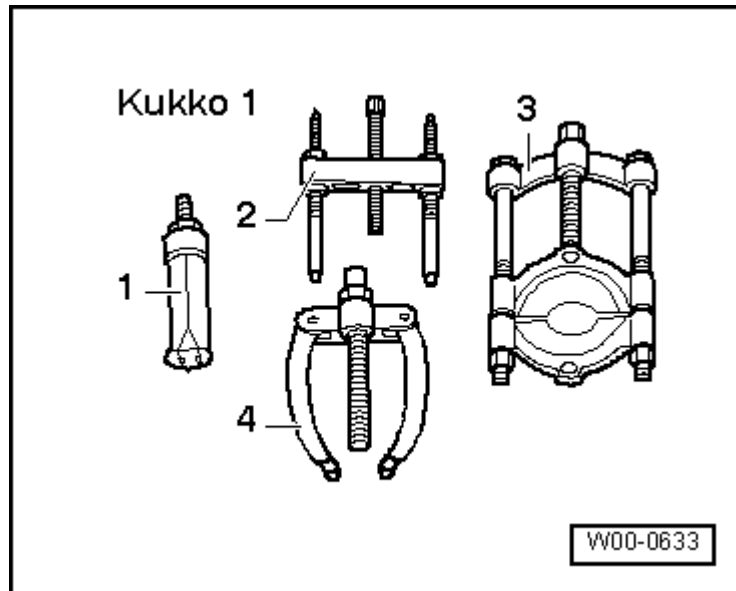


Fig. 89: Identifying Kukko Tools
Courtesy of AUDI OF AMERICA, LLC

- Counter-Support, for example, Kukko 22/4
- Drift T40085

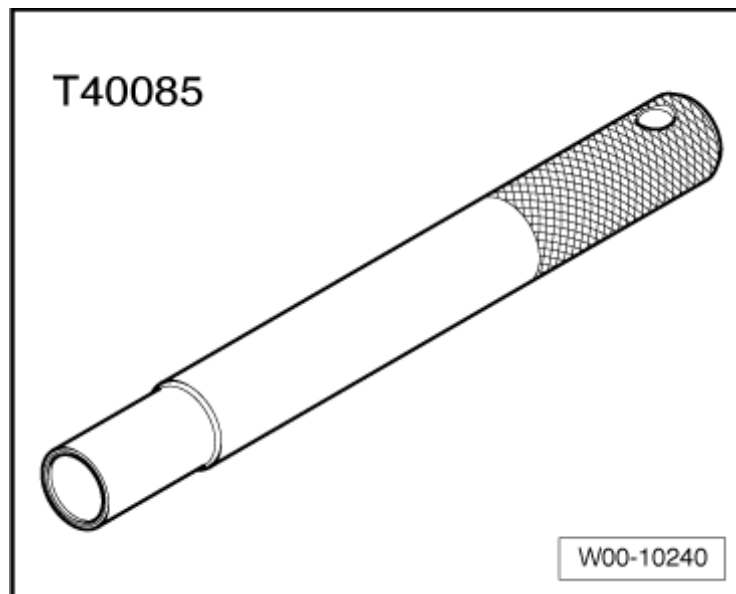


Fig. 90: Drift T40085
Courtesy of AUDI OF AMERICA, LLC