

TRANSMISSION

Final Drive, Differential - S-Tronic Transmission Internal Components 0B5 AWD (Sedan)

39 FINAL DRIVE, DIFFERENTIAL

DESCRIPTION AND OPERATION

FRONT FINAL DRIVE SEALING RINGS OVERVIEW

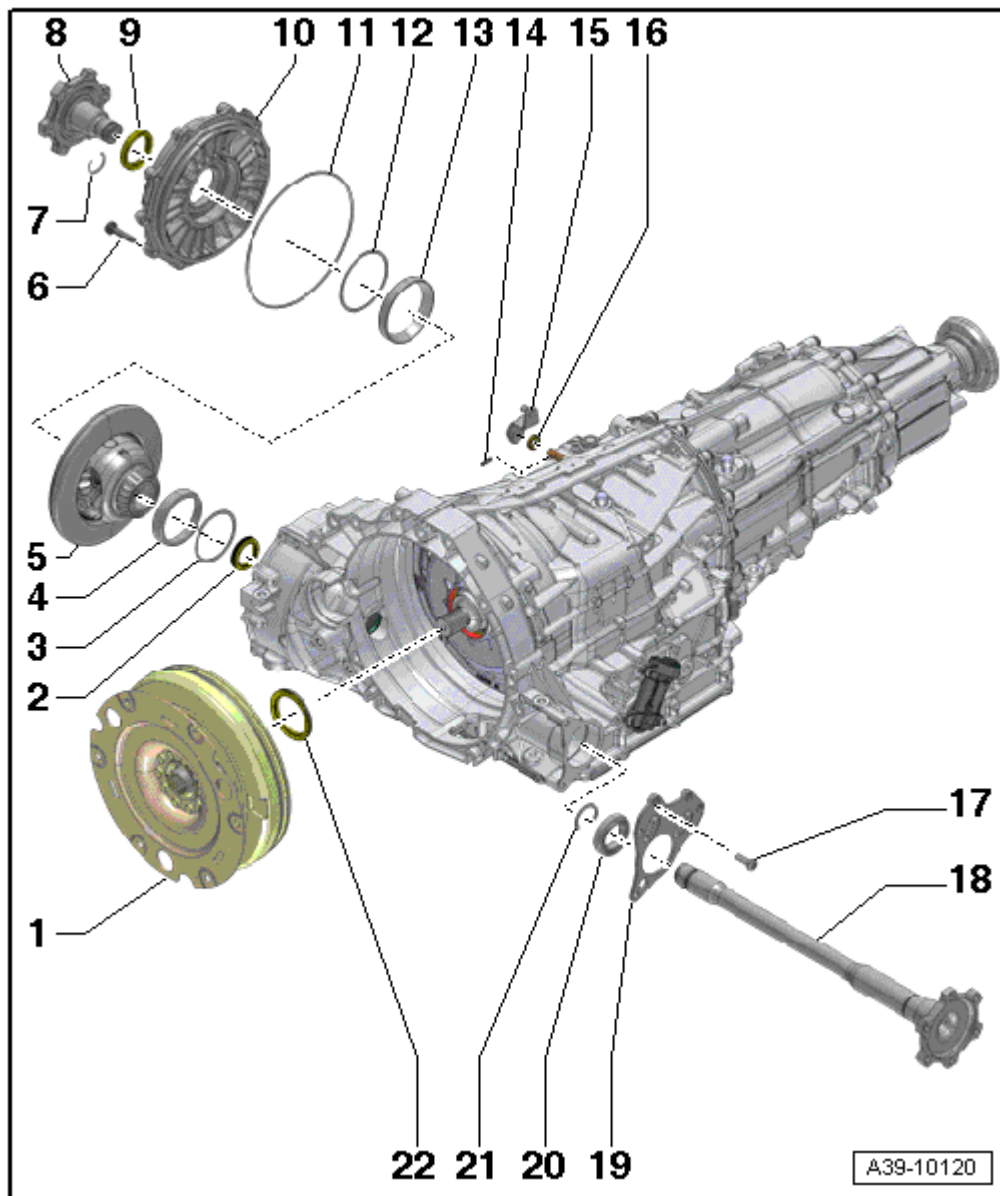


Fig. 1: Front Final Drive Sealing Rings Overview
Courtesy of AUDI OF AMERICA, LLC

1. Flywheel
 - Removing and installing, refer to **FLYWHEEL**
2. Shaft Seal
 - For the left flange shaft
 - Between the final drive and the transmission housing
 - Removing and installing, refer to **LEFT FLANGE SHAFT SEAL**
3. Adjusting Shim
 - Behind the taper roller bearing outer race
4. Taper Roller Bearing Outer Race
5. Differential
6. Bolt
 - Quantity: 10
 - Tightening specification and sequence, refer to **Fig. 2**
7. Locking Ring
 - Replace
8. Right Flange Shaft
 - Removing and installing, refer to **RIGHT FLANGE SHAFT**
9. Shaft Seal
 - For the right flange shaft
 - Removing and installing, refer to **RIGHT FLANGE SHAFT SEAL**
10. Front Final Drive Cover
 - Removing and installing, refer to **LEFT FLANGE SHAFT SEAL**
11. O-ring
 - On the front final drive cover
 - Replace
12. Adjusting Shim
 - Behind the taper roller bearing outer race
13. Taper Roller Bearing Outer Race
14. Spring Pin
15. Selector Lever
16. Shaft Seal
 - For the gearshift shaft
 - Replace, refer to **[For engine(s) CCBA] Removal and Installation**
17. Bolt
 - 10 Nm + 45°
 - Quantity: 3
18. Left Flange Shaft
 - Removing and installing, refer to **LEFT FLANGE SHAFT**

19. Bracket

- Attached to the left flange shaft with the bearing -20- and the circlip -21-
- Check for traces of wear on the bearing bracket and check the pretension on the ball bearing for the left flange shaft, refer to **LEFT FLANGE SHAFT BALL BEARING PRETENSION, CHECKING**

20. Bearings

- For the left flange shaft
- Left flange shaft ball bearing pretension, checking, refer to **LEFT FLANGE SHAFT BALL BEARING PRETENSION, CHECKING**
- Removing and installing, refer to **LEFT FLANGE SHAFT BALL BEARING MOUNTING BRACKET**

21. Locking Ring

- For the left flange shaft bearing
- Replace

22. Shaft Seal

- For the input shaft
- Removing and installing, refer to **INPUT SHAFT SEAL**

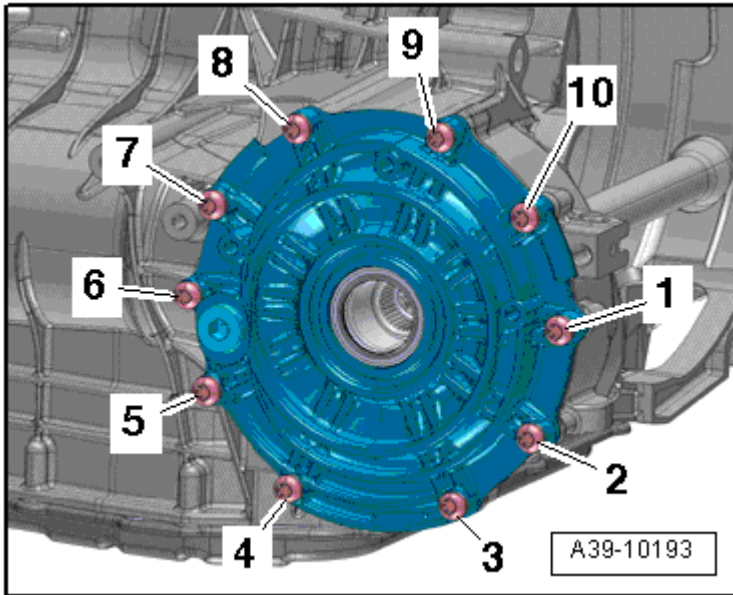


Fig. 2: Tightening Specification And Sequence, Front Final Drive Cover
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NOTE: Replace bolts that are tightened to the specification.

-- Tighten the bolts in three steps in the sequence shown:

		Tightening
--	--	-------------------

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Stage	Bolts	Specification/Additional Turn
1.	-1 to 10-	3 Nm
2.	-1 to 10-	20 Nm
3.	-1 to 10-	Tighten 90° further

CENTER DIFFERENTIAL HOUSING OVERVIEW, BOLTED DRIVESHAFT

NOTE: REPAIR INFORMATION

CLEAN WORKING CONDITIONS

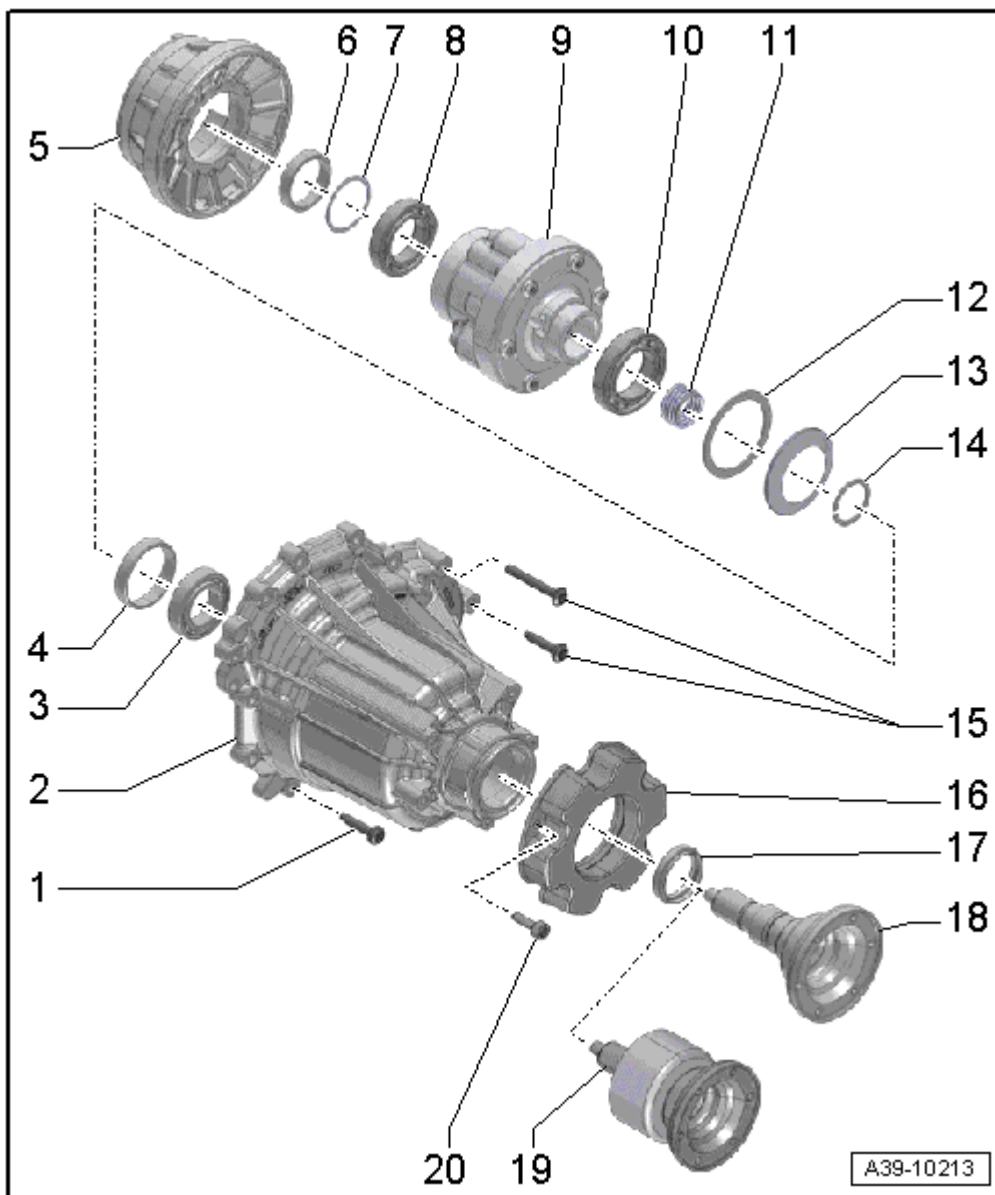


Fig. 3: Center Differential Housing

Courtesy of AUDI OF AMERICA, LLC

1. Bolt
 - Aluminum bolts
 - Replace
 - Quantity: 11
 - Tightening specification and sequence, refer to **Fig. 4**
2. Center Differential Housing
 - Removing and installing, refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT**
3. Ball Bearing
 - For the flange shaft
 - Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**
4. Spacer Sleeve
 - Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**
5. Gear Carrier
 - Installed position: The tab must fit into the opening in the transmission intermediate housing
6. Spacer Sleeve
7. Adjusting Shim
8. Ball Bearing
 - For the center differential
9. Center Differential
10. Ball Bearing
 - For the center differential
11. Pressure Spring
12. Adjusting Shim
13. Plate Spring
 - Installed position: The side curved outward faces the shaft seal -17-
14. Locking Ring
 - For the flange shaft
 - Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**
15. Bolt
 - Steel bolts
 - Quantity: 2
 - Replace
 - Tightening specification and sequence, refer to **Fig. 4**

16. Balance Weight

- Installed depending on the version

17. Shaft Seal

- Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**

18. Rear Flange Shaft

- Without vibration damper
- For the correct allocation
- Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**

19. Rear Flange Shaft

- With vibration damper
- For the correct allocation
- Removing and installing, refer to **REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING**

20. Bolt

- 20 Nm + 90° turn
- Replace

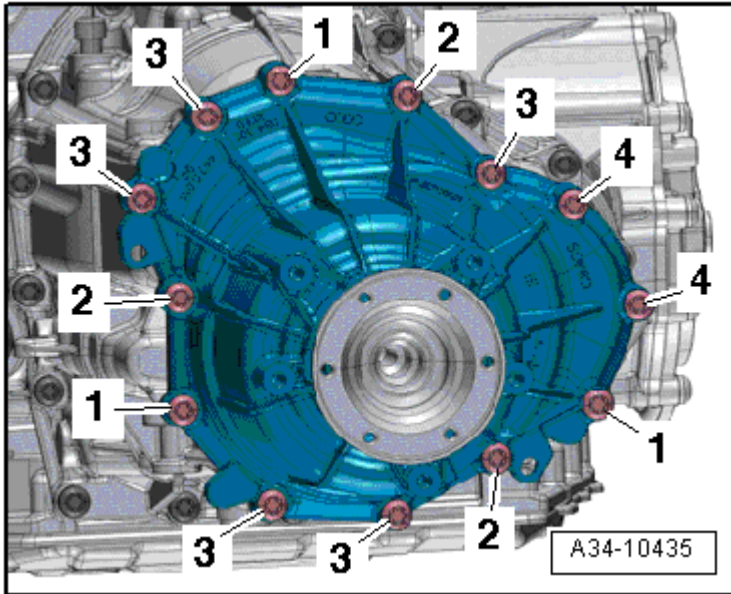


Fig. 4: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

-- Tighten bolts in 8 stages as follows:

Stage	Bolts	Tightening Specification/Additional
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		Turn
1.	Aluminum bolts -1-	8 Nm
2.	Aluminum bolts -2-	Tighten the bolt hand-tight.
3.	Aluminum bolts -1-	Loosen again and then install all the way hand-tight
4.	Aluminum bolts -3-	Tighten the bolt hand-tight.
5.	Steel bolts -4-	Tighten the bolt hand-tight.
6.	-1, 2, 3, 4-	10 Nm diagonally
7.	Steel bolts -4-	15 Nm
8.	-1, 2, 3, 4-	90° additional turn, diagonally

CENTER DIFFERENTIAL HOUSING OVERVIEW, ATTACHED DRIVESHAFT**NOTE:** **REPAIR INFORMATION****CLEAN WORKING CONDITIONS**

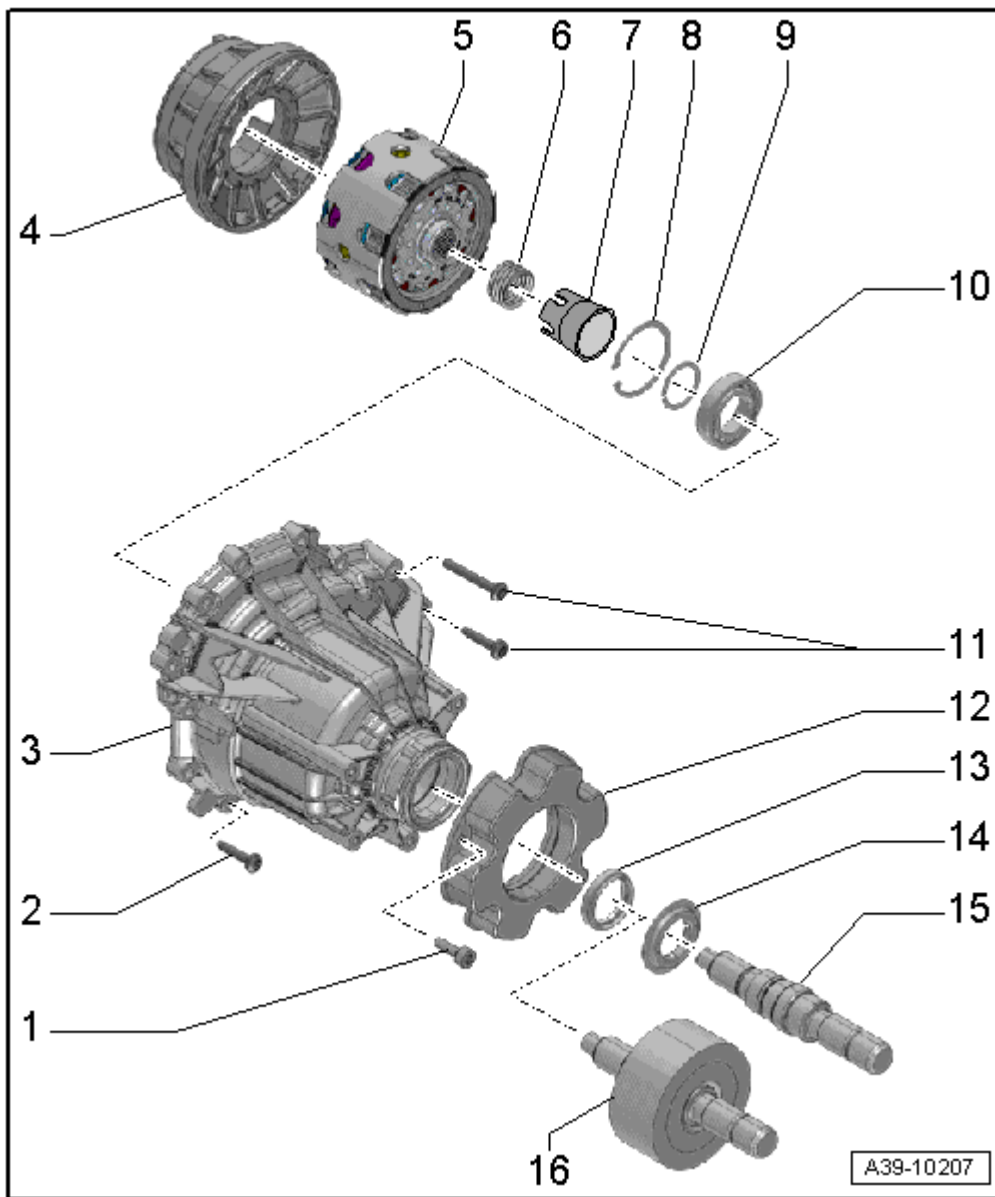


Fig. 5: Center Differential Housing Overview, Attached Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

1. Bolt
 - 20 Nm + 90° turn
 - Replace
2. Bolt
 - Aluminum bolts
 - Quantity: 11
 - Replace
 - Tightening specification and sequence, refer to **Fig. 6**
3. Center Differential Housing

- Removing and installing, refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT** or **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, ATTACHED DRIVESHAFT**
4. Gear Carrier
 - Installed position: The tab must fit into the opening in the transmission intermediate housing
 5. Center Differential
 6. Pressure Spring
 7. Guide Sleeve
 - Does not have to be installed again
 8. Locking Ring
 - For the transmission output shaft ball bearing with splines
 - Removing and installing, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**
 9. Locking Ring
 - For the transmission output shaft with splines
 - Removing and installing, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**
 10. Ball bearing
 - For the transmission output shaft with splines
 - Removing and installing, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**
 11. Bolt
 - Steel bolts
 - Quantity: 2
 - Replace
 - Tightening specification and sequence, refer to **Fig. 6**
 12. Balance Weight
 - Installed depending on the version
 13. Shaft Seal
 - Replace on vehicles with vibration damper, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**
 - Replace on vehicles without vibration damper, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, VEHICLES WITHOUT VIBRATION DAMPER**
 14. Dust Ring
 - Replace after removing
 15. Transmission Output Shaft with Splines without Vibration Damper
 - For the correct allocation
 - Removing and installing, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**

16. Transmission Output Shaft with Splines and Vibration Damper

- For the correct allocation
- Removing and installing, refer to **TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES**
- **VIBRATION DAMPER, INSTALLING ON TRANSMISSION OUTPUT SHAFT WITH SPLINES**

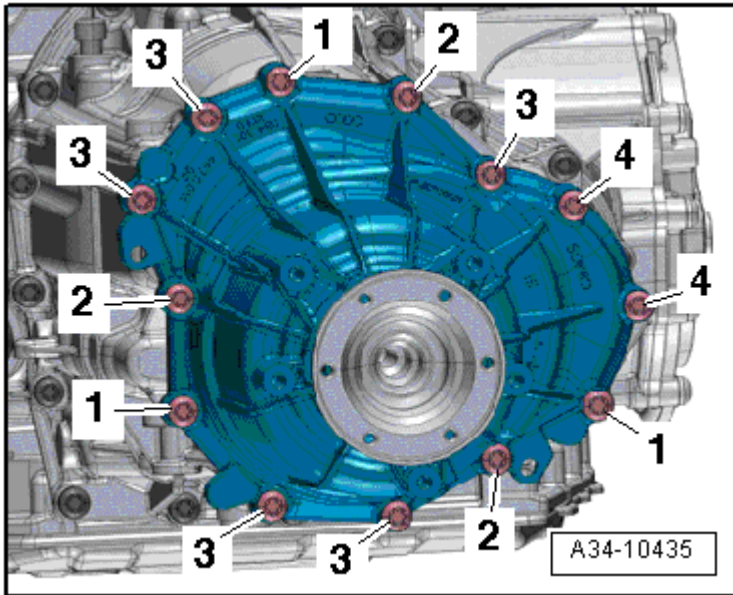


Fig. 6: Tightening Specification And Sequence, Center Differential Housing - Attached Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

-- Tighten bolts in 8 stages as follows:

Stage	Bolts	Tightening Specification/Additional Turn
1.	Aluminum bolts -1-	8 Nm
2.	Aluminum bolts -2-	Tighten the bolt hand-tight.
3.	Aluminum bolts -1-	Loosen again and then install all the way hand-tight
4.	Aluminum bolts -3-	Tighten the bolt hand-tight.
5.	Steel bolts -4-	Tighten the bolt hand-tight.
6.	-1, 2, 3, 4-	10 Nm diagonally
	Steel bolts	

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7.	-4-	15 Nm
8.	-1, 2, 3, 4-	90° additional turn, diagonally

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Components	Fastener Size	Nm
Balance Weight to Center Differential Housing ¹	-	20 + 90°
Bracket to the Left Flange Shaft with the Bearing	-	10 + 45°
Center Differential Housing to Transmission Housing ^{1, 2}		
-Bolt ¹	-	20 + 90°
<u>-Tightening Specification and Sequence for Aluminum and Steel Bolts TIGHTENING SPECIFICATION AND SEQUENCE, CENTER DIFFERENTIAL HOUSING - BOLTED DRIVESHAFT</u>		
• ¹ Replace		

Tightening Specification and Sequence, Front Final Drive Cover

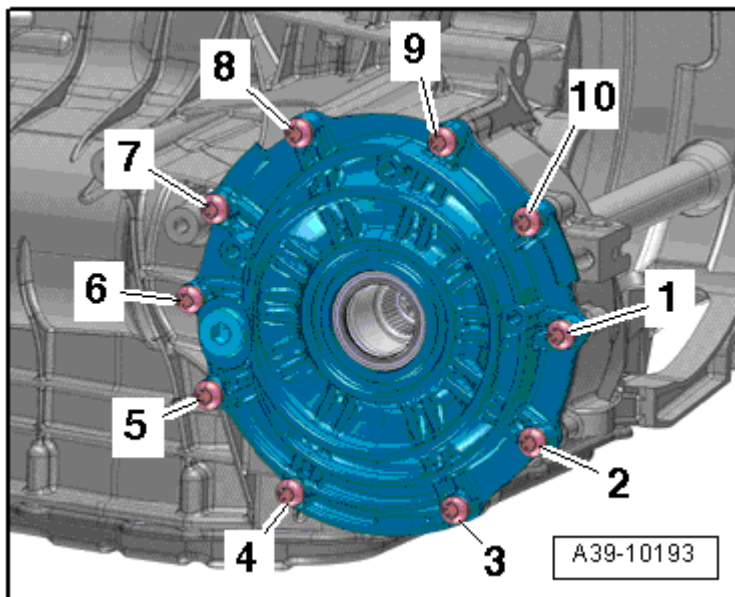


Fig. 7: Tightening Specification And Sequence, Front Final Drive Cover
Courtesy of AUDI OF AMERICA, LLC

NOTE: Replace bolts that are tightened to the specification.

-- Tighten the bolts in three steps in the sequence shown:

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Stage	Bolts	Tightening Specification/Additional Turn
1.	-1 to 10-	3 Nm
2.	-1 to 10-	20 Nm
3.	-1 to 10-	Tighten 90° further

TIGHTENING SPECIFICATION AND SEQUENCE, CENTER DIFFERENTIAL HOUSING - BOLTED DRIVESHAFT

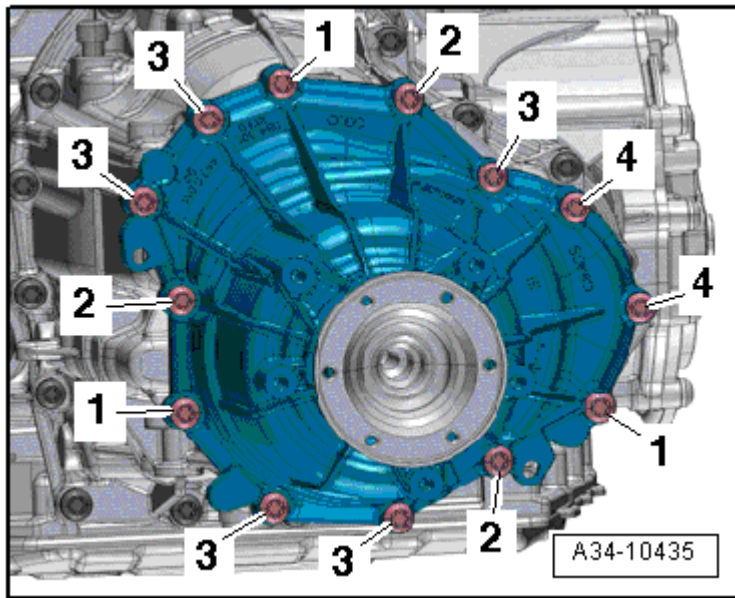


Fig. 8: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft

Courtesy of AUDI OF AMERICA, LLC

-- Tighten bolts in 8 stages as follows:

Stage	Bolts	Tightening Specification/Additional Turn
1.	Aluminum bolts -1-	8 Nm
2.	Aluminum bolts -2-	Tighten the bolt hand-tight.
3.	Aluminum bolts -1-	Loosen again and then install all the way hand-tight
4.	Aluminum bolts -3-	Tighten the bolt hand-tight.
5.	Steel bolts -4-	Tighten the bolt hand-tight.

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6.	-1, 2, 3, 4-	10 Nm diagonally
7.	Steel bolts -4-	15 Nm
8.	-1, 2, 3, 4-	90° additional turn, diagonally

DIAGNOSIS AND TESTING

LEFT FLANGE SHAFT BALL BEARING PRETENSION, CHECKING

Check the ball bearing pretension using the wear pattern on the bearing bracket -arrow-.

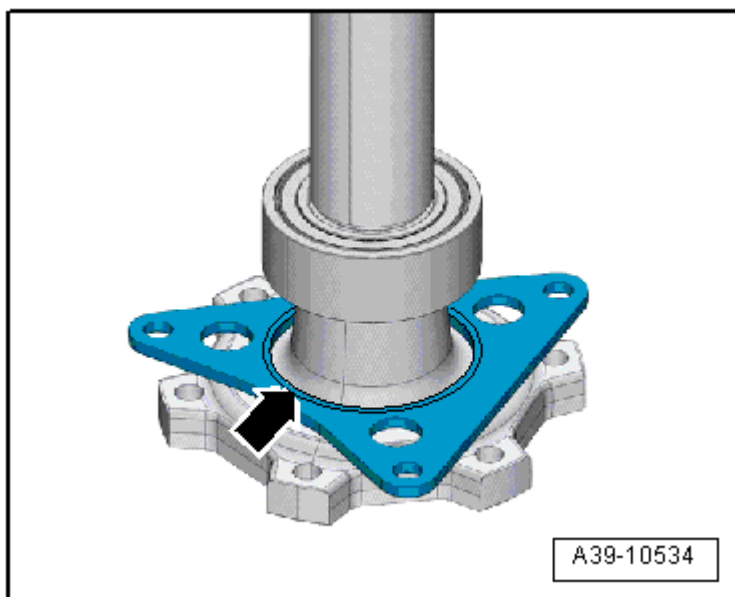


Fig. 9: Check Ball Bearing Pre-Tension Using Wear Pattern On Bearing Bracket

Courtesy of AUDI OF AMERICA, LLC

NOTE: The pretension on the left flange shaft ball bearing must be checked only on certain vehicles. Refer to the table for a list of the vehicles LEFT FLANGE SHAFT.

This is not necessary on vehicles built later because they have been redesigned.

- Left flange shaft removed, refer to LEFT FLANGE SHAFT.

WEAR PATTERN "A"

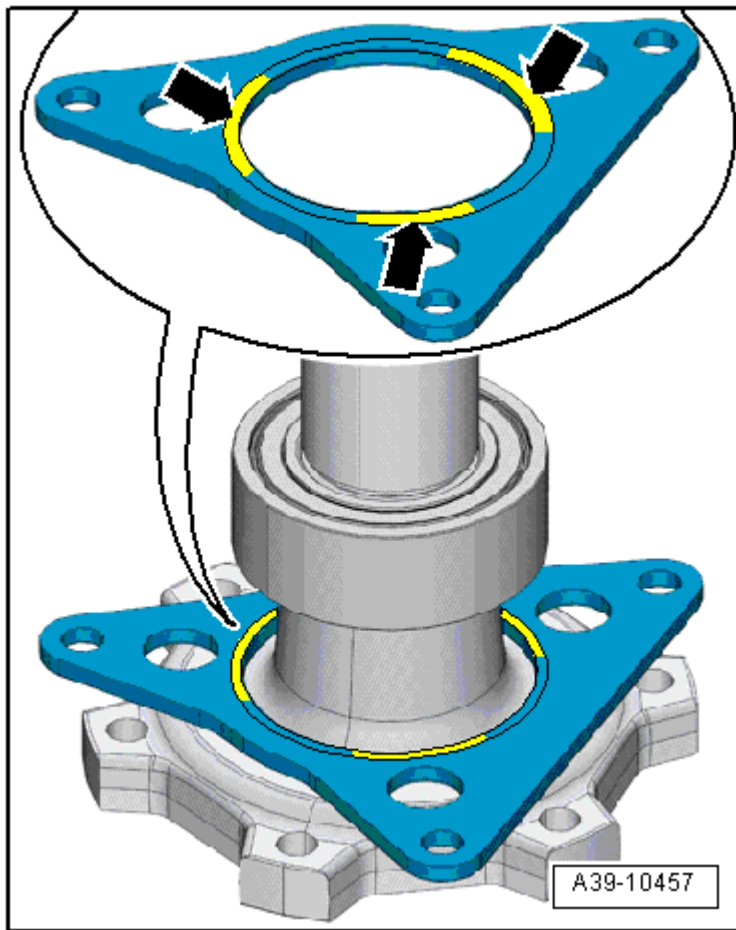


Fig. 10: Wear Pattern A

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- Small indentations near the hole on the bearing bracket -arrows-.
- No trace of wear or material erosion.

-- Optimize the pretension on the ball bearing for the left flange shaft, refer to **PRETENSION ON BALL BEARING, OPTIMIZING, LEFT FLANGE SHAFT.**

WEAR PATTERN "B"

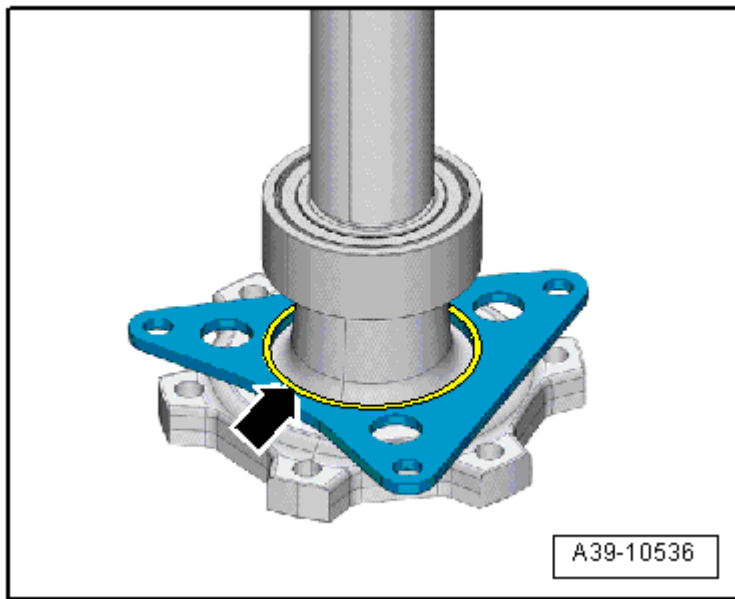


Fig. 11: Bearing Bracket With Wear Pattern "B"
 Courtesy of AUDI OF AMERICA, LLC

- Traces of wear, if necessary, with material erosion all around the hole on the bearing bracket -arrow-.

-- Adjust the pretension on the left flange shaft bearing. Refer to **PRETENSION ON BALL BEARING, ADJUSTING, LEFT FLANGE SHAFT**.

-- Replace the bearing bracket, the ball bearing and the circlip. Refer to **LEFT FLANGE SHAFT BALL BEARING MOUNTING BRACKET**.

PRETENSION ON BALL BEARING, OPTIMIZING, LEFT FLANGE SHAFT

NOTE: The pretension on the left flange shaft ball bearing must be optimized only on certain vehicles. Refer to the table for a list of the vehicles **LEFT FLANGE SHAFT**.

This is not necessary on vehicles built later because they have been redesigned.

Procedure

- Left flange shaft removed. Refer to **LEFT FLANGE SHAFT**.

Conditions for optimizing:

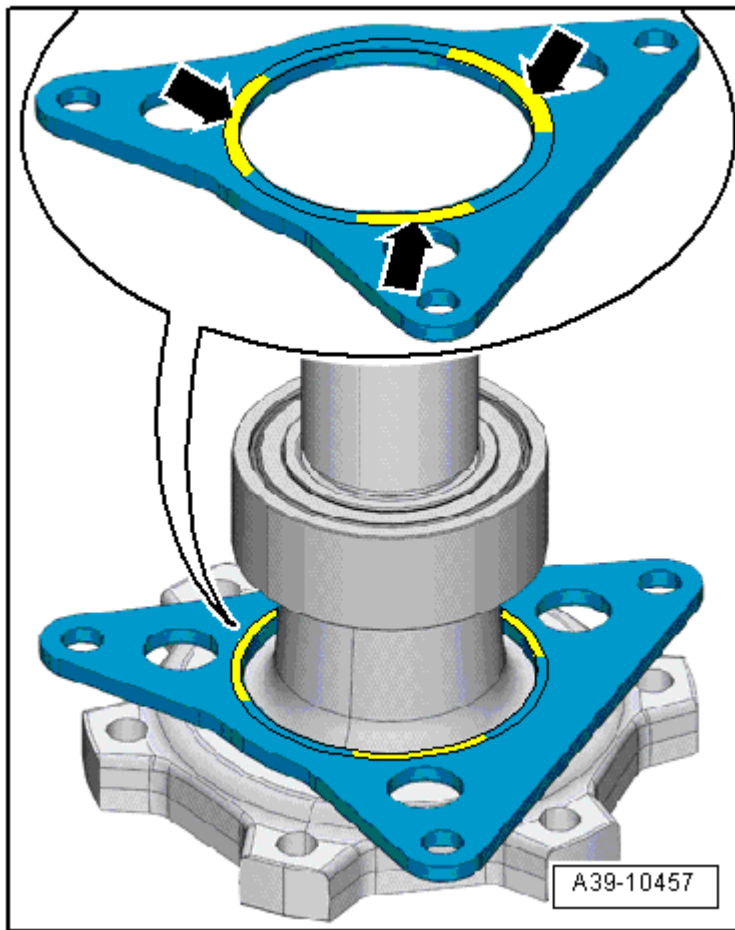


Fig. 12: Wear Pattern

Courtesy of AUDI OF AMERICA, LLC

- The bearing bracket does not show any traces of wear or material erosion.
- Small indentations near the hole on the bearing bracket -arrows- are permissible.
- Bearing bracket with wear pattern "A" **WEAR PATTERN "A"** (the bearing bracket does not show any traces of wear or material erosion).

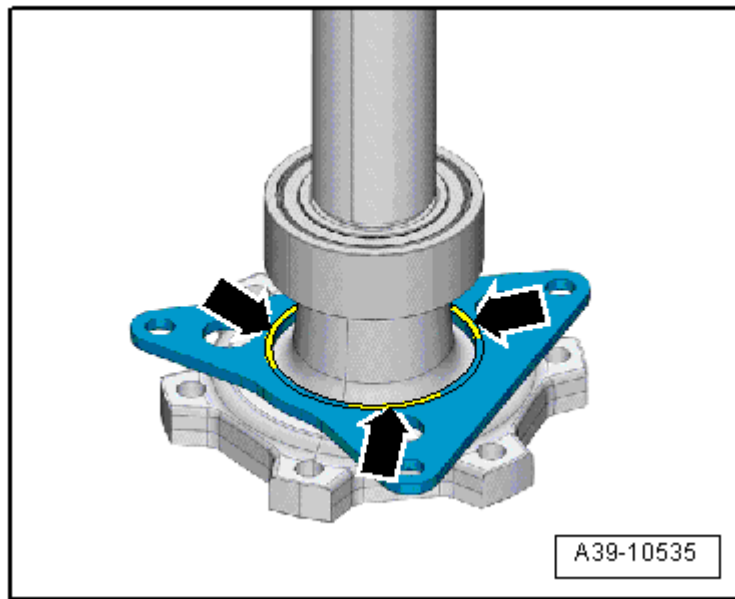


Fig. 13: Bearing Bracket With Wear Pattern "A"
 Courtesy of AUDI OF AMERICA, LLC

- A shim is inserted into the bearing seat on the transmission to optimize the pretension on the ball bearing.

-- Insert a shim 0B4 409 227 -1- into the bearing seat on the transmission before installing the flange shaft to improve the pretension.

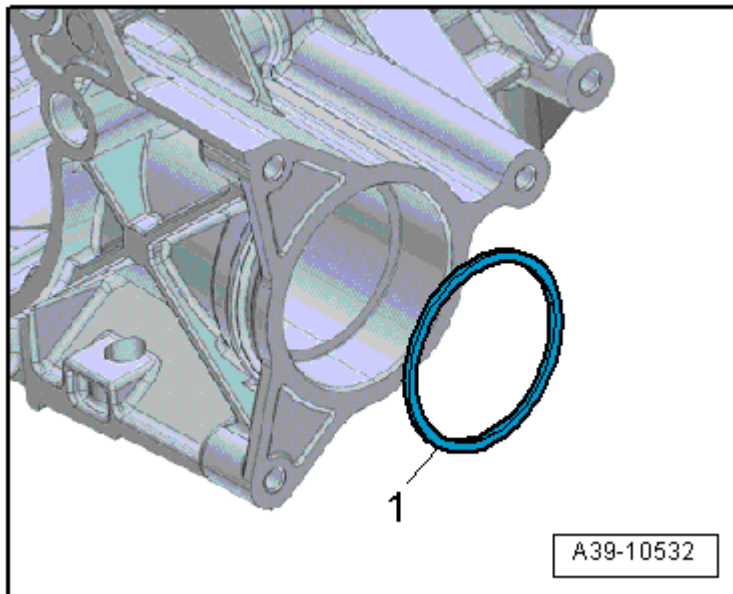


Fig. 14: Insert A Shim 0B4 409 227 Into Bearing Seat On Transmission Before Installing Flange Shaft
 Courtesy of AUDI OF AMERICA, LLC

-- Install the left flange shaft. Refer to **LEFT FLANGE SHAFT**.

PRETENSION ON BALL BEARING, ADJUSTING, LEFT FLANGE SHAFT**Special tools and workshop equipment required**

- Straight Edge 500 mm VAS 6075

NOTE: The pretension on the left flange shaft ball bearing must be optimized only on certain vehicles. Refer to the table for a list of the vehicles LEFT FLANGE SHAFT.

This is not necessary on vehicles built later because they have been redesigned.

- Left flange shaft removed, refer to LEFT FLANGE SHAFT.
- Bearing bracket with wear pattern "B" WEAR PATTERN "B" (traces of wear if necessary with material erosion all around the hole).

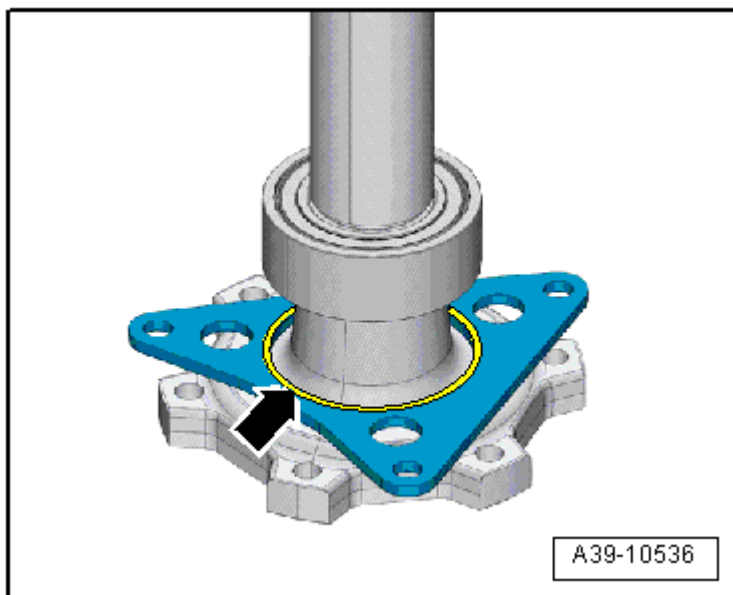


Fig. 15: Bearing Bracket With Wear Pattern "B"
Courtesy of AUDI OF AMERICA, LLC

- The bearing bracket and ball bearing must be replaced. Refer to LEFT FLANGE SHAFT BALL BEARING MOUNTING BRACKET

Procedure

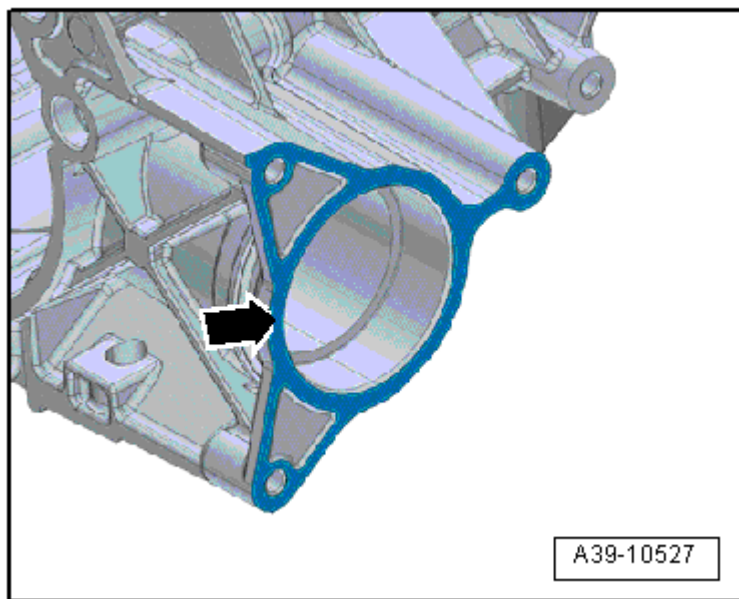


Fig. 16: Clean Off Any Dirt And Corrosion From Contact Surface
Courtesy of AUDI OF AMERICA, LLC

-- Clean off any dirt and corrosion from the contact surface -arrow- using 150 grain sand paper.

NOTE: It is not necessary to sand the contact surfaces all the way down to bare metal. It is enough to just remove any dirt and corrosion.

-- Clean the contact surface and bearing seat.

-- Install the new left flange shaft ball bearing -arrow- into the bearing seat.

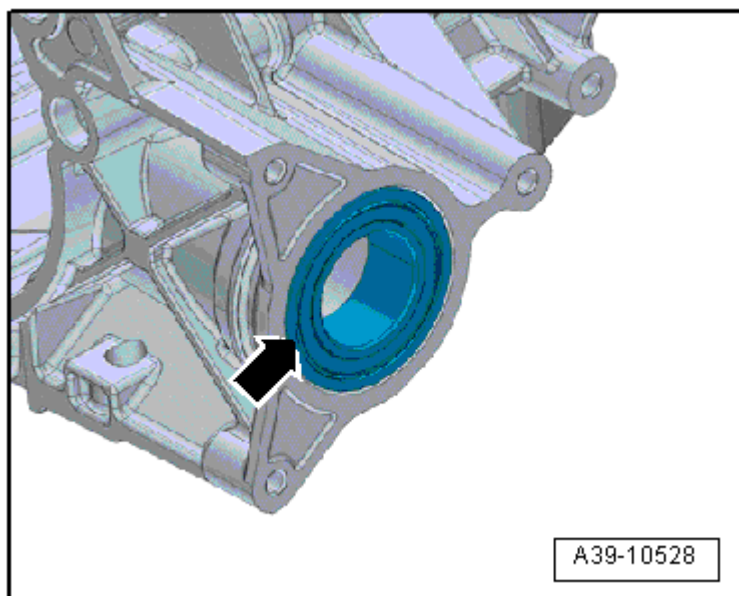


Fig. 17: Install New Left Flange Shaft Ball Bearing
 Courtesy of AUDI OF AMERICA, LLC

Next procedure:

- By bearing oversize (the bearing sticks out slightly above the contact surface) **PROCEDURE IF THERE IS BEARING OVERSIZE.**
- With bearing under size (the bearing sits deeper than the contact surface) **PROCEDURE IF THERE IS BEARING UNDER SIZE.**

PROCEDURE IF THERE IS BEARING OVERSIZE

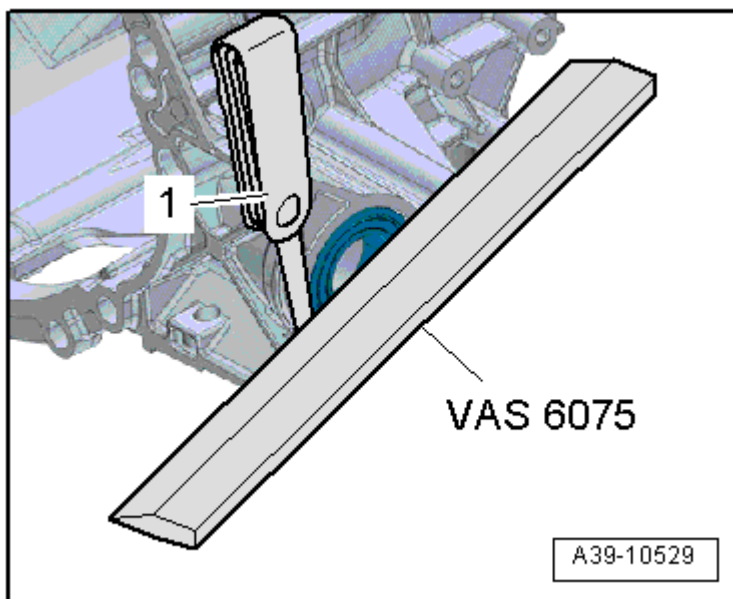


Fig. 18: Measure Value
 Courtesy of AUDI OF AMERICA, LLC

-- Place VAS 6075 straight across the bearing and determine the distance to the contact surface on the transmission housing on both sides with the feeler gauge.

-- Write down the measured value.

-- Place the straight edge 90° offset across the bearing and determine the distance to the contact surface on the transmission housing on both sides with the feeler gauge.

-- Write down the measured value.

Selecting the Shim(s):

NOTE: Use the smallest value take from the four values to select the shim(s).

- Specified value, bearing oversize = 0.5 to 0.8 mm

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	Smallest bearing oversize (example = 0.1 mm)
+	Shim(s) thickness, (thickness = 0.3 mm)
=	Bearing preload, (specified value = 0.5 to 0.8 mm)

Example:

1 shim:

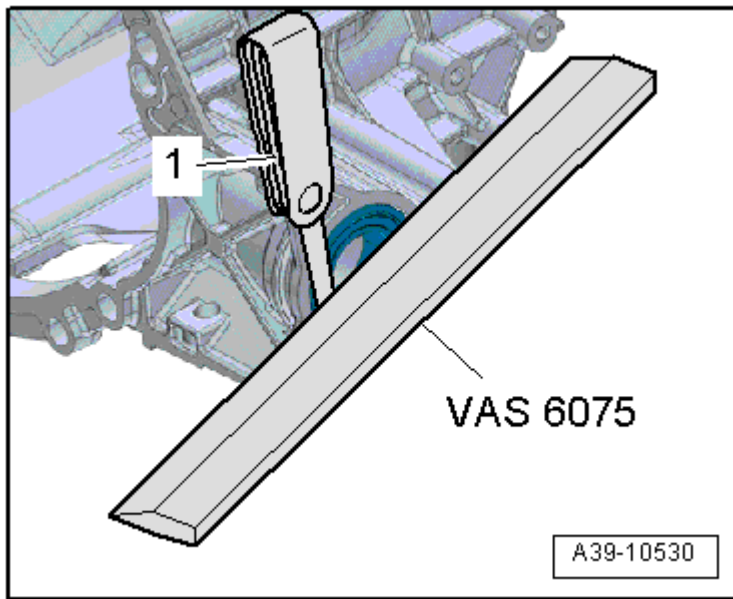
$0.1 \text{ mm} + 0.3 \text{ mm} = 0.4 \text{ mm}$, "bearing pre-load is too small"

2 shims:

$0.1 \text{ mm} + 0.3 \text{ mm} + 0.3 \text{ mm} = 0.7 \text{ mm}$, "bearing pre-load is in the specified range"

- Result: Insert two 0.3 mm shims to reach the bearing preload = 0.7 mm within the 0.5 to 0.8 mm specified value.

PROCEDURE IF THERE IS BEARING UNDER SIZE

**Fig. 19: Measured Value**

Courtesy of AUDI OF AMERICA, LLC

NOTE: The bearing under size can only be determined in the described procedure.

-- Place VAS 6075 straight across the contact surface on the transmission housing and measure the distance to the bearing on both sides with a feeler gauge.

-- Write down the measured value.

-- Place a straight edge 50 mm offset across the contact surface on the transmission housing and measure the distance to the bearing on both sides with a feeler gauge.

-- Write down the measured value.

Selecting the Shim(s):

NOTE: Use the largest value take from the four values to select the shim(s).

Enter the measured bearing under size as negative value ("-") into the calculation.

- Specified value, bearing oversize = 0.5 to 0.8 mm

-	Larger determined bearing under size (example -
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	0.15 mm)
+	Shim(s) thickness, (thickness = 0.3 mm)
=	Bearing preload (specified value = 0.5 to 0.8 mm)

Example:

1 shim:

$-0.15 \text{ mm} + 0.3 \text{ mm} = 0.15 \text{ mm}$, "bearing preload is too small"

3 shims:

$-0.15 \text{ mm} + 0.3 \text{ mm} + 0.3 \text{ mm} + 0.3 \text{ mm} = 0.75 \text{ mm}$, "bearing preload is in the specified range"

- Result: A 0.75 mm bearing preload within the specified value of 0.5 to 0.8 mm is reached by installing three 0.3 mm shims.

Continuation for All

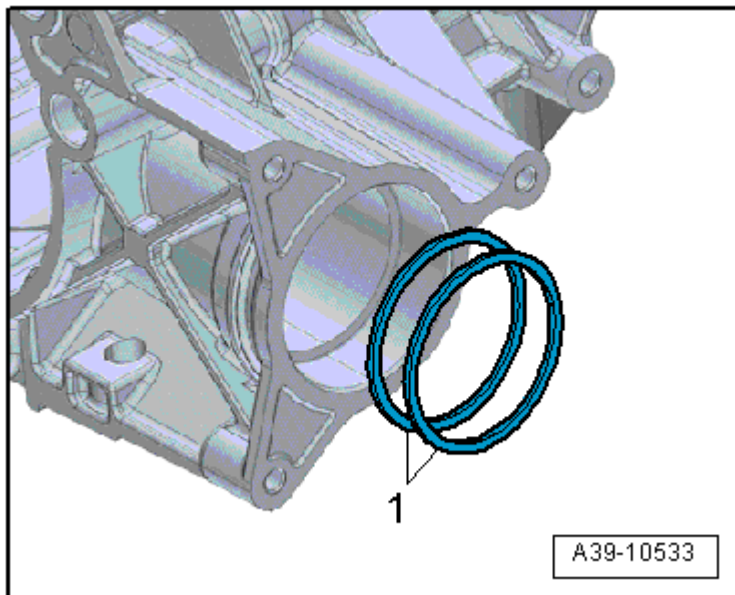


Fig. 20: Insert Determined Number Of Shims
Courtesy of AUDI OF AMERICA, LLC

-- Replace the bearing bracket, the ball bearing and the circlip. Refer to **LEFT FLANGE SHAFT BALL BEARING MOUNTING BRACKET**.

-- Insert the determined number of shims 0B4 409 227 -1- into the bearing seat on the transmission before installing the flange shaft.

-- Install the left flange shaft. Refer to **LEFT FLANGE SHAFT**.

REMOVAL AND INSTALLATION

LEFT FLANGE SHAFT

Special tools and workshop equipment required

- Engine and Transmission Holder VAS 6095
- Grease

Removing

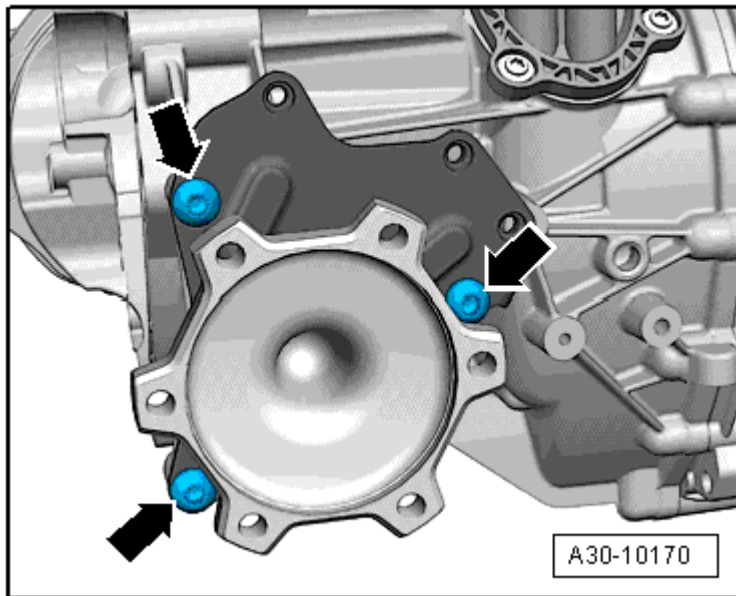


Fig. 21: Identifying Flange Shaft Mounting Bracket & Bolts -Arrows-
Courtesy of AUDI OF AMERICA, LLC

- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER**.

-- Tilt the transmission back on the engine and transmission holder so the transmission fluid does not drain out.

-- Remove the bolts -arrows- from the flange shaft mounting bracket.

-- Remove the left flange shaft -2- from the transmission -arrow A-.

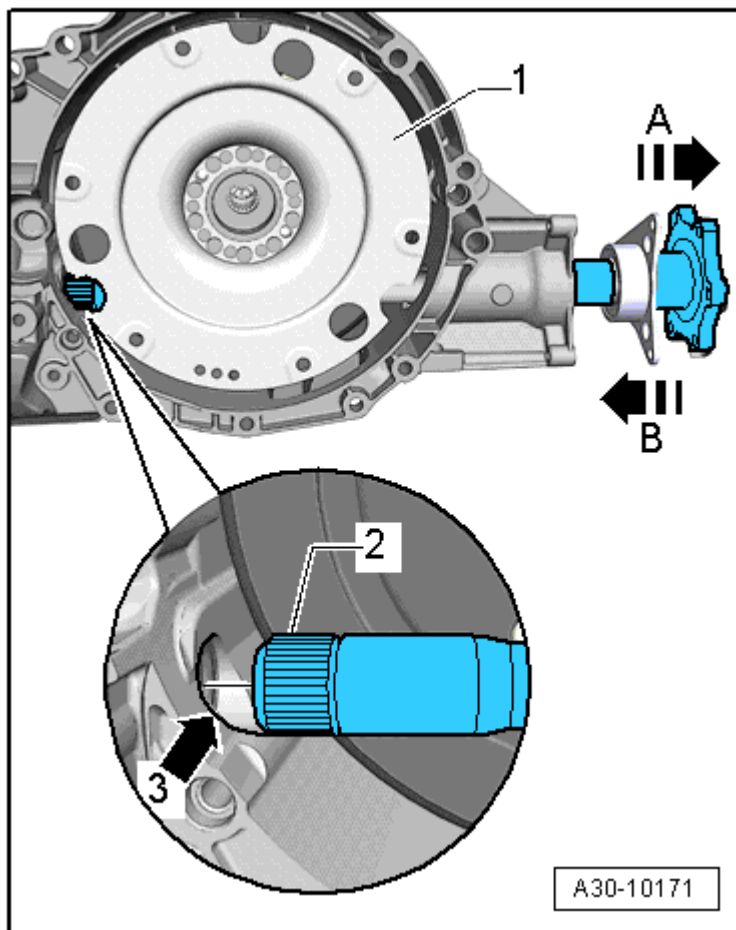


Fig. 22: Remove Left Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

NOTE: Ignore -1 and arrow 3, B-.

-- Remove the flywheel. Refer to **FLYWHEEL**.

Installing

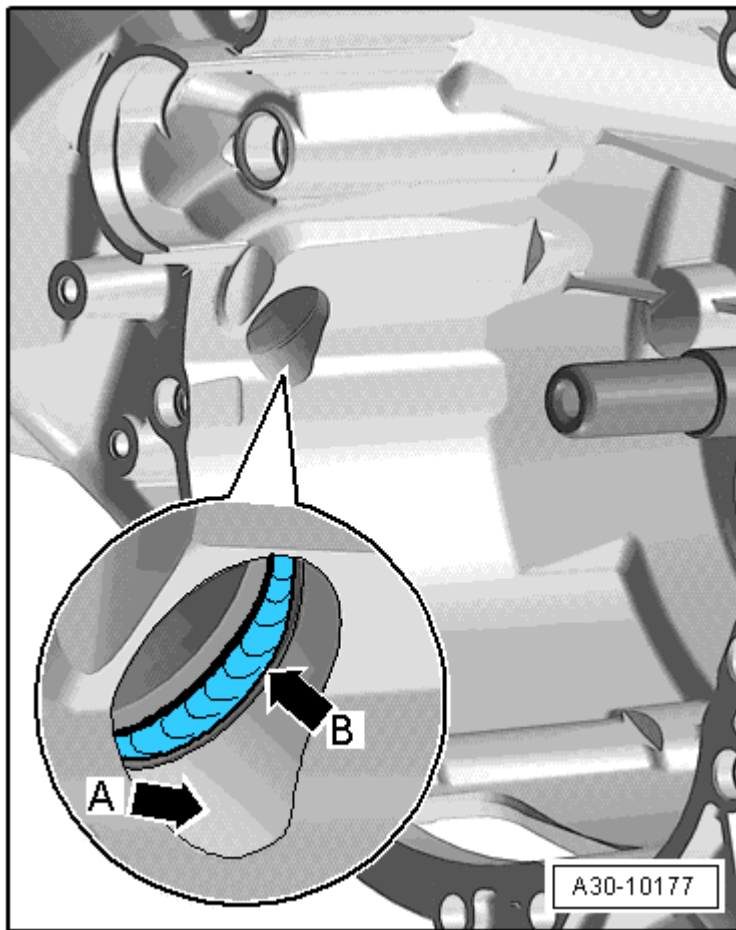


Fig. 23: Replace Shaft Seal Between Differential And Transmission Housing

Courtesy of AUDI OF AMERICA, LLC

Install in reverse order of removal. Note the following:

- Tightening specification, refer to **FRONT FINAL DRIVE SEALING RINGS OVERVIEW**.

-- Always clean the left flange shaft, the transmission housing in the area where the differential is accessed - arrow A- and the shaft seal -arrow B-.

NOTE: **Replace the shaft seal between the differential and transmission housing -arrow B- if it is damaged. Refer to LEFT FLANGE SHAFT SEAL.**

-- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease

-- Clean the left flange shaft thoroughly.

The following work must be performed on the listed vehicle types up to the specified VIN:

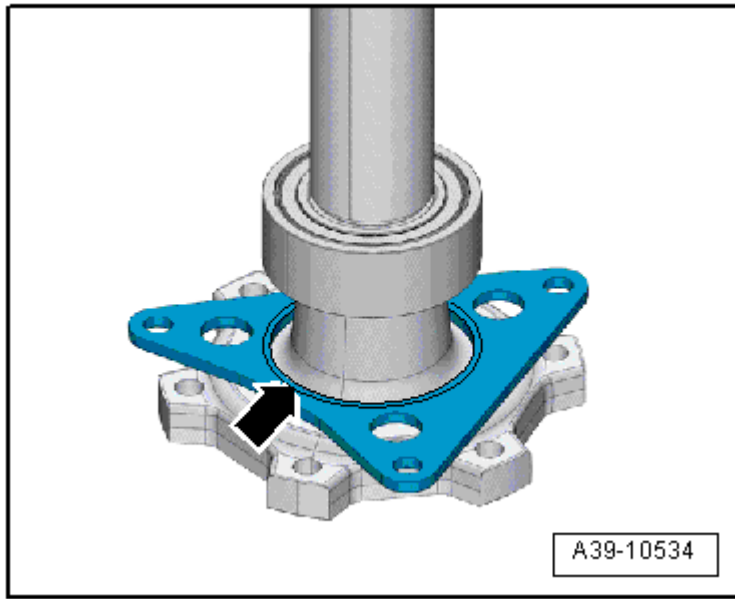


Fig. 24: Check Ball Bearing Pre-Tension Using Wear Pattern On Bearing Bracket
 Courtesy of AUDI OF AMERICA, LLC

Vehicle Model	VIN	Factory
Audi A4 MY 08	Through WAUZZZ8K9BN034383	Germany, Neckarsulm
Audi A4 MY 08	Through WAUZZZ8KXBA082742	Germany, Ingolstadt
Audi A5 Cabriolet MY 2008	Through WAUVGAFH3BN009542	Germany, Neckarsulm
Audi A5 Coupe MY 08	Through WAUZZZ8T9BA902081	Germany, Ingolstadt
Audi Q5 MY 08	Through WAUZZZ8R2BA061817	Germany, Ingolstadt

-- Check the pretension on the ball bearing for the left flange shaft based on the wear pattern on the bearing bracket -arrow-. Refer to **LEFT FLANGE SHAFT BALL BEARING PRETENSION, CHECKING**.

- Optimize the pretension on the ball bearing for the left flange shaft if necessary. Refer to **PRETENSION ON BALL BEARING, OPTIMIZING, LEFT FLANGE SHAFT**.
- Adjust the pretension on the ball bearing for the left flange shaft if necessary. Refer to **PRETENSION ON BALL BEARING, ADJUSTING, LEFT FLANGE SHAFT**.

For All Vehicle Models

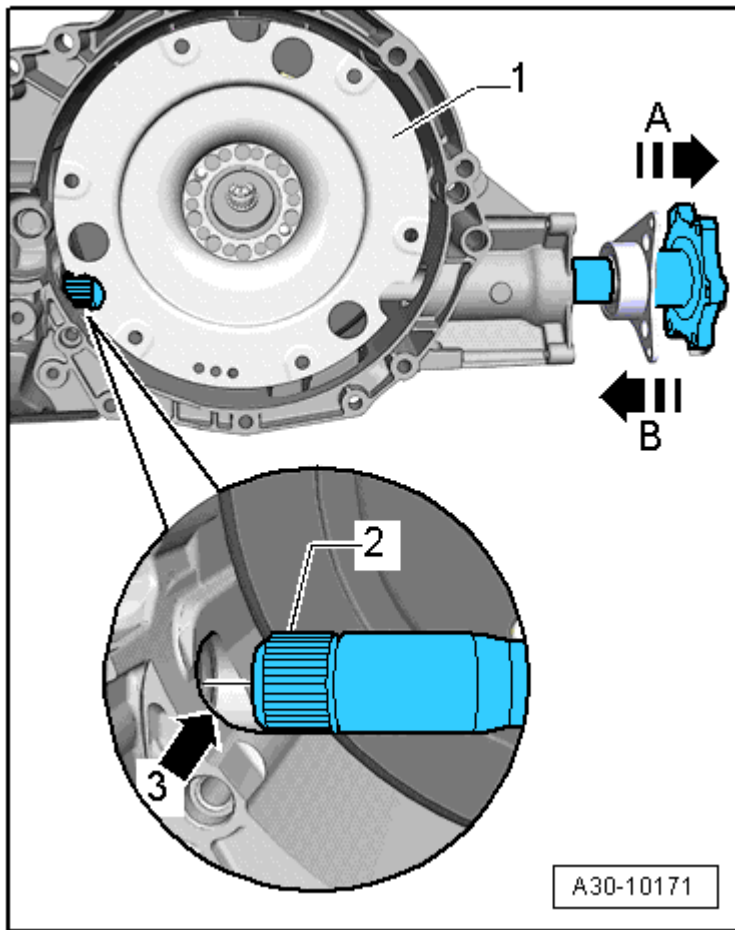


Fig. 25: Remove Left Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

-- Install the flywheel. Refer to **FLYWHEEL** .

-- Rotate the flywheel -1- until the opening to the differential -arrow 3- is seen.

-- Install the left flange shaft -2- into the transmission -arrow B-. When doing this, insert the flange shaft centrally into the shaft seal on the front differential -arrow 3-.

NOTE: If the flange shaft is not centered, the flange shaft splines -2- will damage the shaft seal between the final drive and the transmission housing.

The shaft seal must be replaced if it is damaged.

Ignore -arrow A-.

-- Fill the manual transmission fluid. Refer to **[For engine(s) CCBA] General Information** .

RIGHT FLANGE SHAFT

Special tools and workshop equipment required

- Needle Bearing Drift VW 295
- Slide Hammer-Complete Set VW 771
- Lifting Eyebolt 3368
- Oil Collecting and Extracting Device V.A.G 1782
- Engine and Transmission Holder VAS 6095
- Grease.
- M10 nut, quantity: 2

Removing

- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER**.

-- Place the V.A.G 1782 under the transmission.

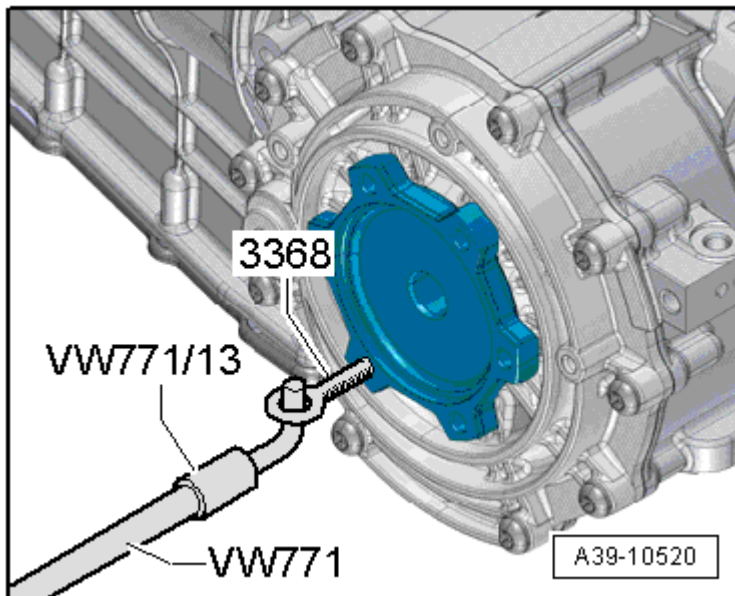


Fig. 26: Place V.A.G 1782 Under Transmission
Courtesy of AUDI OF AMERICA, LLC

-- Install the 3368 into a threaded hole in the right flange shaft.

-- Mount VW 771 with pulling hook VW 771/13 on the 3368 and remove the flange shaft.

Installing

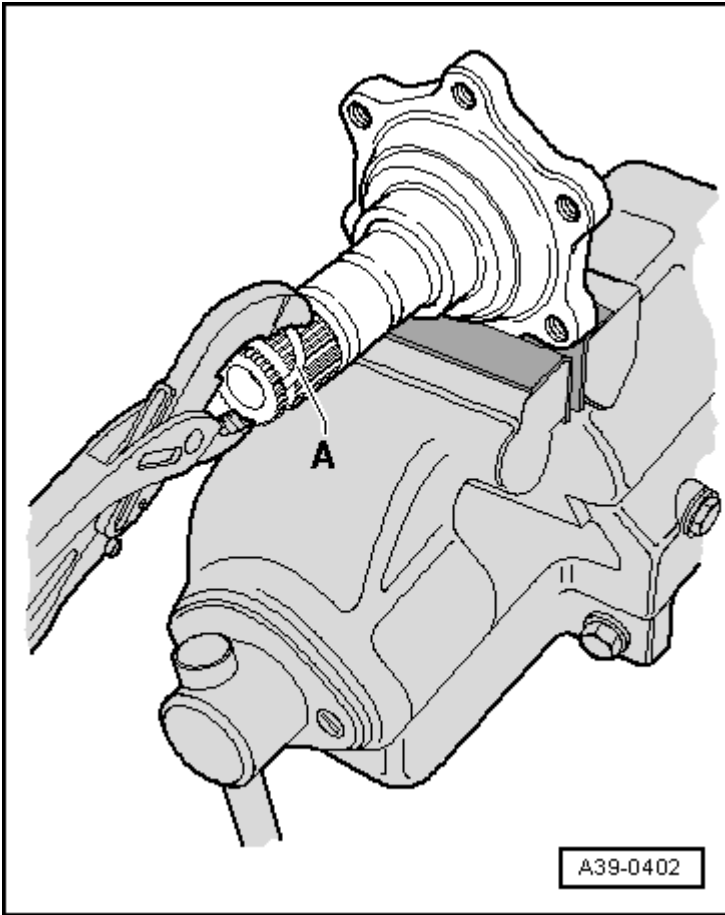


Fig. 27: Identifying Flange Shaft Clamped In Vise And Using New Circlip To Press Old Circlip Out Of Groove In Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

Install in reverse order of removal. Note the following:

NOTE: Replace the circlip on the right flange shaft.

- Clamp the flange shaft in a vise with jaw protectors. Remove the old circlip from the groove in the flange shaft using the new circlip -A-.
- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease
- Drive the right flange shaft in using the VW 295.
- Fill the manual transmission fluid. Refer to [For engine(s) CCBA] General Information .

LEFT FLANGE SHAFT SEAL

Special tools and workshop equipment required

- Oil Collecting and Extracting Device V.A.G 1782
- Thrust Piece for Final Drive at Gearbox T40164
- Engine and Transmission Holder VAS 6095
- Grease

Procedure

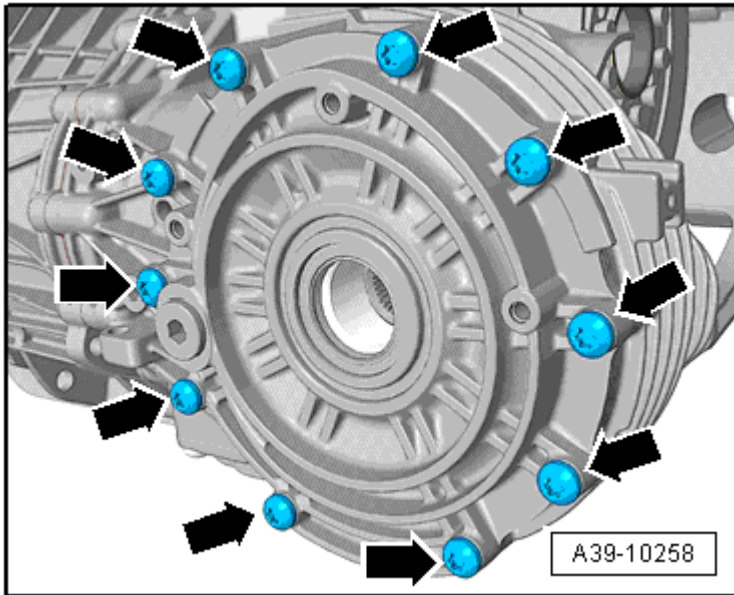


Fig. 28: Left Flange Shaft Seal

Courtesy of AUDI OF AMERICA, LLC

- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER**.

- Place the V.A.G 1782 under the transmission.
- Remove the right flange shaft. Refer to **RIGHT FLANGE SHAFT**.
- Remove the bolts -arrows-.
- Carefully remove the front final drive cover; when doing this, the transmission fluid will drain out.

CAUTION: Danger of causing damage to the differential.

- **Slowly and carefully remove front final drive cover from transmission housing. Otherwise the differential can fall out of transmission.**
- **A differential that has fallen out can no longer be installed. If differential falls out, transmission must be replaced.**
- **Make sure the differential bearing inner race and adjustment shims**

do not fall out of the transmission housing and front final drive cover.

- Bearing inner races and adjustments that have fallen out cannot be allocated with shop equipment.

-- Carefully remove the differential -arrow- and lay it on a soft support.

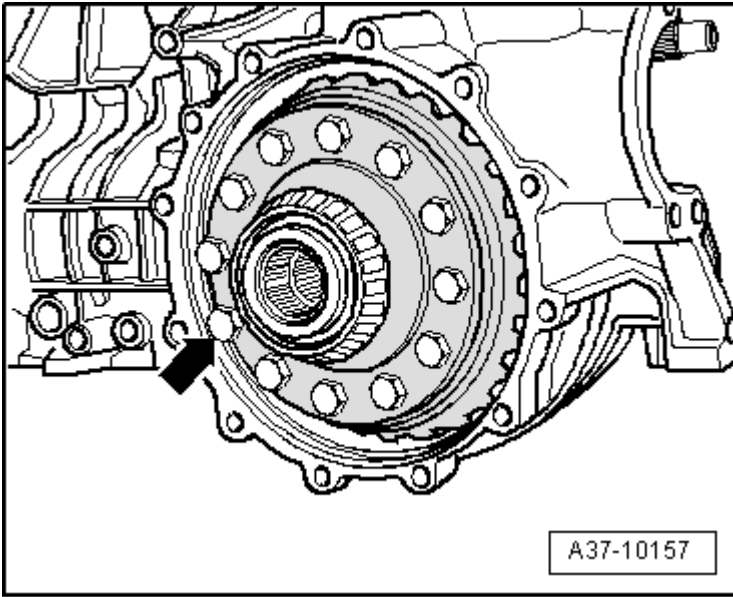


Fig. 29: Removing/Installing Differential
Courtesy of AUDI OF AMERICA, LLC

-- Remove the left flange shaft. Refer to LEFT FLANGE SHAFT.

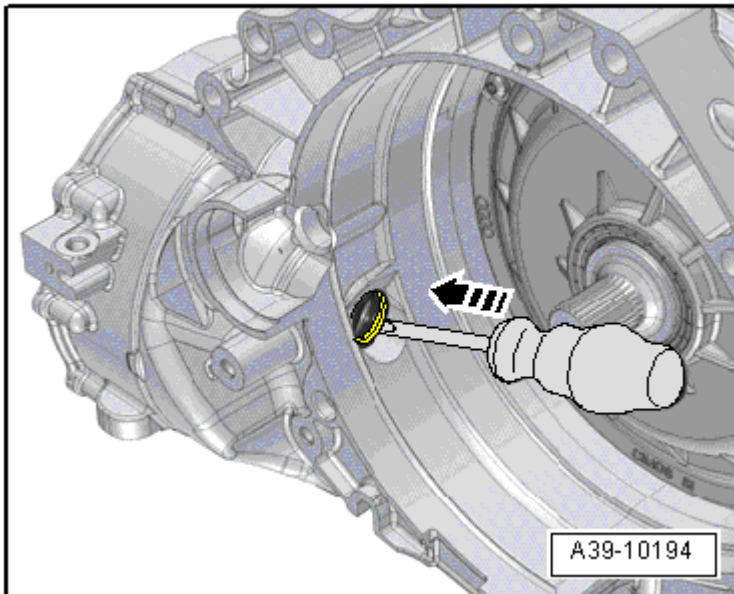


Fig. 30: Pry Out Seal From Back
Courtesy of AUDI OF AMERICA, LLC

CAUTION: Danger of damaging the seating surface in the transmission housing.

- **Position the screwdriver.**

-- Pry out the seal from the back.

-- Lightly coat the new seal on the outside with oil and install it using the T40164.

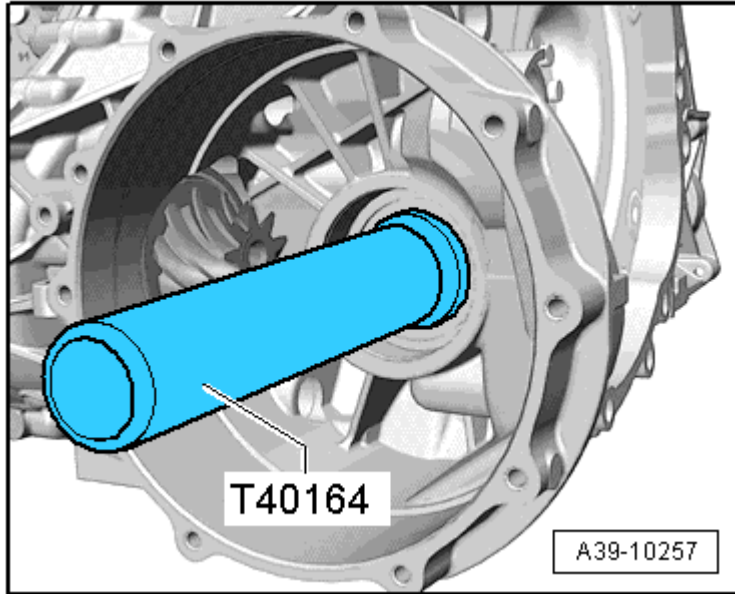


Fig. 31: Install Seal Using T40164

Courtesy of AUDI OF AMERICA, LLC

- The open side of the seal faces the T40164.

-- Install the shaft seal for the left flange shaft using the T40164 all the way; when doing this, do not bend it.

-- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease

-- **Install the differential.**

-- Install the front final drive cover with a new O-ring and tighten the bolts. Refer to **Fig. 2**.

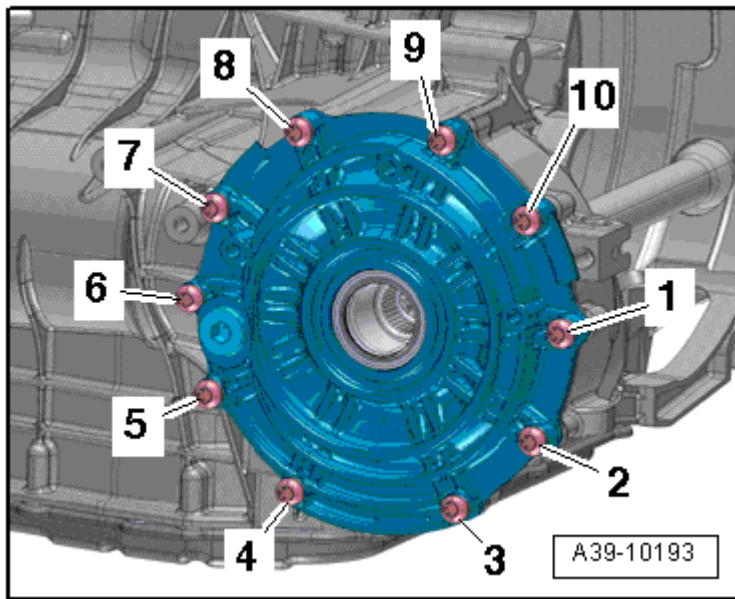


Fig. 32: Tightening Specification And Sequence, Front Final Drive Cover
Courtesy of AUDI OF AMERICA, LLC

- Install the left flange shaft. Refer to **LEFT FLANGE SHAFT**.
- Install the right flange shaft. Refer to **RIGHT FLANGE SHAFT**.
- Fill with manual transmission fluid. Refer to **[For engine(s) CCBA] General Information** .

RIGHT FLANGE SHAFT SEAL

Special tools and workshop equipment required

- Thrust Piece T40163
- Pry lever
- Grease

Procedure

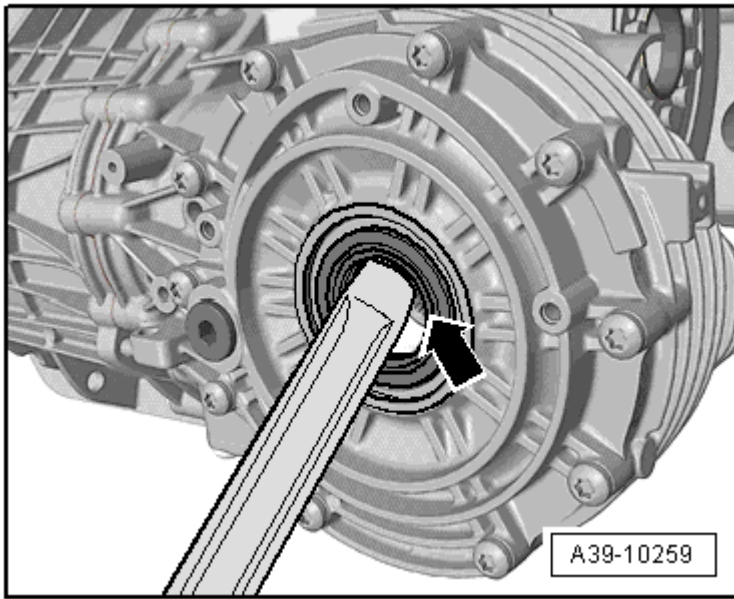


Fig. 33: Pry Out Flange Shaft Sealing Ring
Courtesy of AUDI OF AMERICA, LLC

- Remove the right flange shaft. Refer to **RIGHT FLANGE SHAFT**.
- Pry out the flange shaft sealing ring -arrow-.
- Lightly coat the outer circumference of the new shaft seal with oil.
- Install the shaft seal for the right flange shaft all the way in using the T40163. Be careful not to bend it while installing.

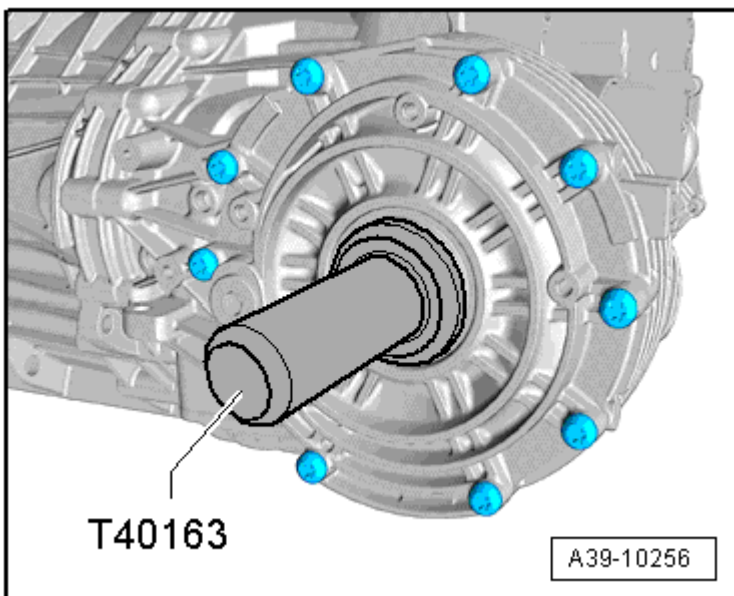


Fig. 34: Install Shaft Seal

Courtesy of AUDI OF AMERICA, LLC

- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease
- Install the right flange shaft. Refer to **RIGHT FLANGE SHAFT**.

SELECTOR SHAFT SEAL

- Transmission installed

Description of the procedure, refer to **[For engine(s) CCBA] Removal and Installation** .

INPUT SHAFT SEAL**Special tools and workshop equipment required**

- Pulling Hook T20143/2
- Assembly Tool T40198
- Guide Sleeve T40198/1
- Engine and Transmission Holder VAS 6095
- Grease

Procedure

- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER** .
- Remove the flywheel. Refer to **FLYWHEEL** .
- Remove the input shaft seal using the T20143/2.

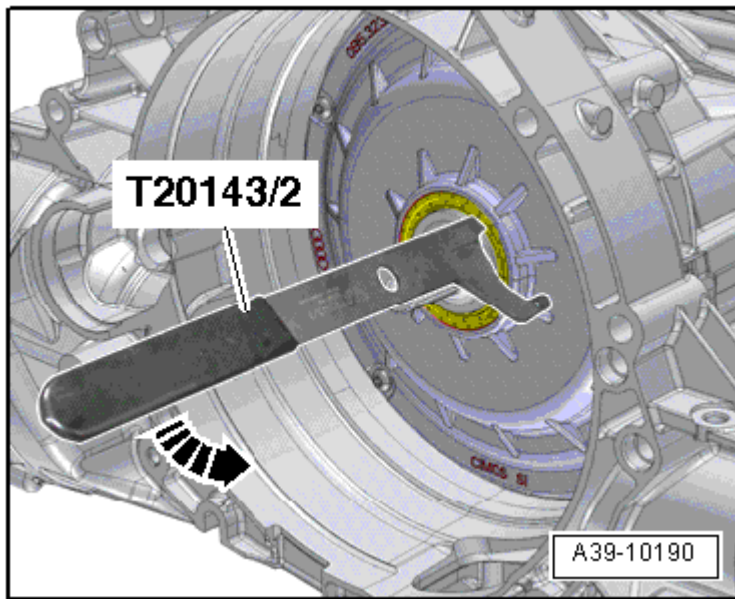


Fig. 35: Remove Input Shaft Seal Using T20143/2.
Courtesy of AUDI OF AMERICA, LLC

-- Install the T40198/1 on the input shaft.

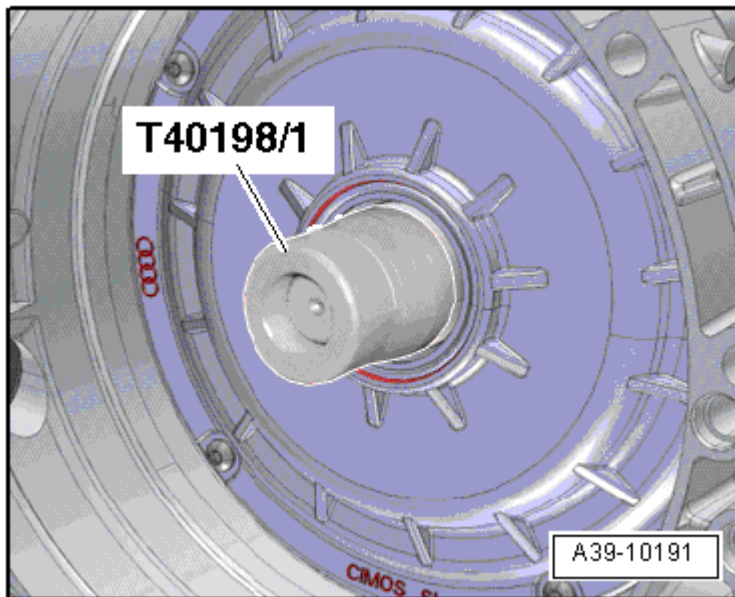


Fig. 36: Install T40198/1 On Input Shaft
Courtesy of AUDI OF AMERICA, LLC

- Lightly coat the outer circumference of the new shaft seal with oil.
- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease
- Install the shaft seal on the guide sleeve.

- Installed position: Open side of shaft seal faces transmission.

-- Install the shaft seal with the T40198 all the way in. Be careful not to bend it.

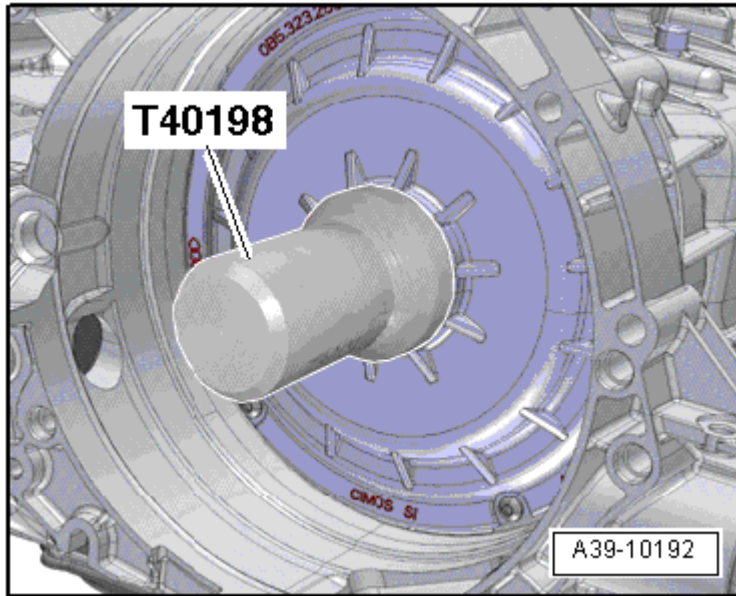


Fig. 37: Install Shaft Seal All Way In, Do Not Tilt It While Installing
Courtesy of AUDI OF AMERICA, LLC

-- Install the flywheel. Refer to **FLYWHEEL** .

CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT

Special tools and workshop equipment required

- Oil Collecting and Extracting Device V.A.G 1782
- Engine and Transmission Holder VAS 6095
- Sealant

Removing with Transmission Installed

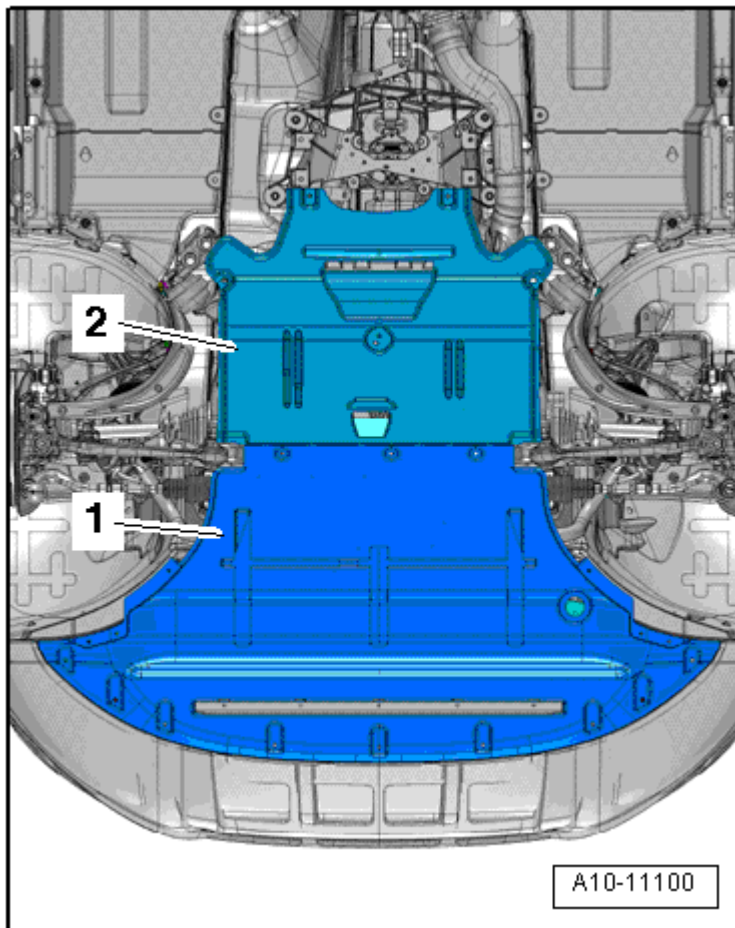


Fig. 38: Identifying Noise Insulation

Courtesy of AUDI OF AMERICA, LLC

It is possible to remove the center differential housing with the transmission still installed.

-- Perform the vehicle-specific preliminary work. Refer to **[For engine(s) CCBA] Removal and Installation** .

Removing with the Transmission Removed

-- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER** .

Continuation for a Removed or Installed Transmission

-- Place the V.A.G 1782 under the transmission.

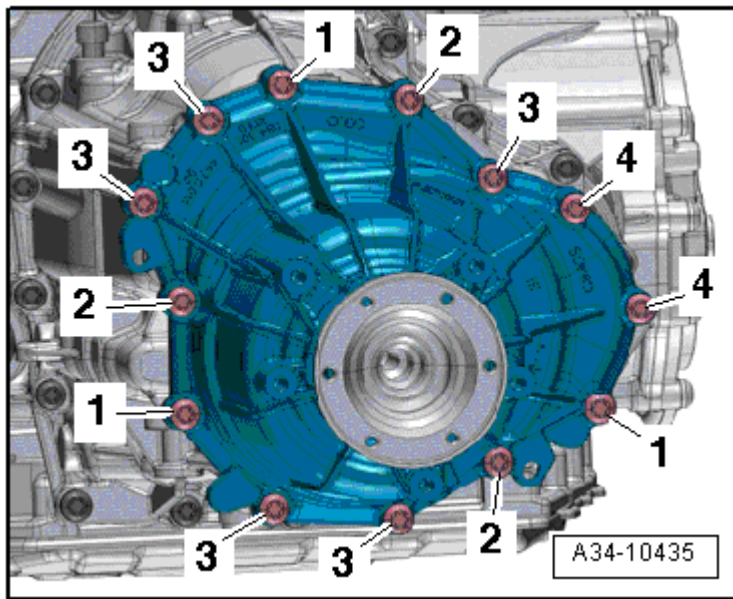


Fig. 39: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolts -1 through 4- and carefully remove the center differential housing. The transmission fluid (MTF) will leak out while doing this.

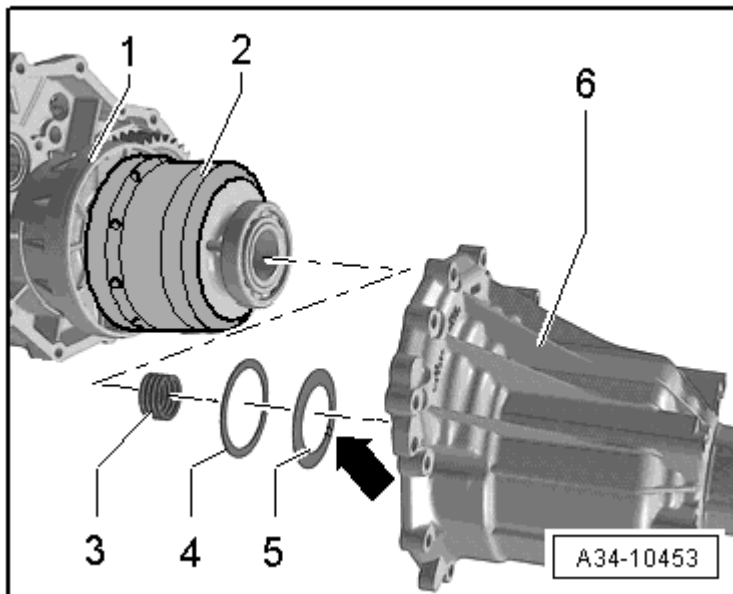


Fig. 40: Place Center Differential On Transmission
 Courtesy of AUDI OF AMERICA, LLC

CAUTION: Danger of damaging the center differential.

- Carefully and slowly pull center differential housing off of

transmission toward rear. Otherwise the center differential can fall out of the transmission.

- A center differential that has fallen out may not be installed.

-- Remove the pressure spring -3-, shim(s) -4- and plate spring -5-.

-- Pull the center differential -2- toward the rear.

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

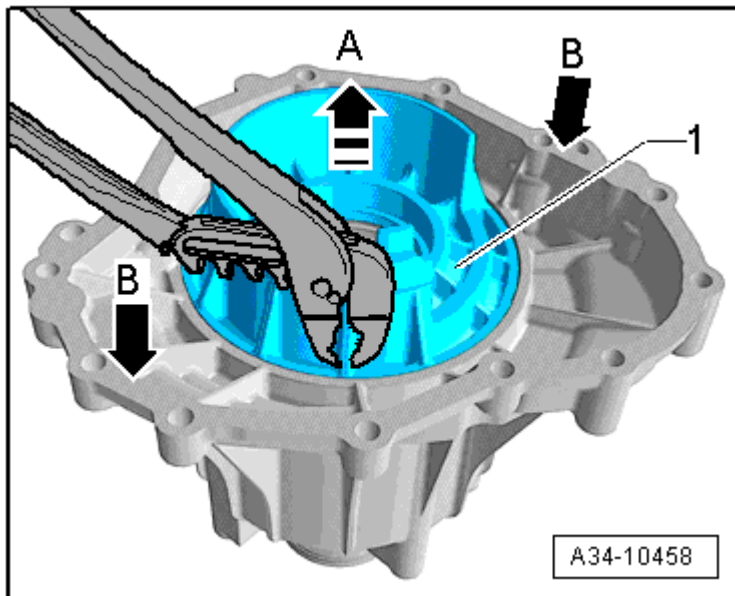


Fig. 41: Hold Gear Carrier -1- By One Of Side Ribs With Pliers And Remove It In -Arrow A-
Courtesy of AUDI OF AMERICA, LLC

CAUTION: Danger of damaging the sealing surface on the center differential housing.

- Use a hammer to hit the housing on several places.

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

-- Using a rubber hammer, tap the housing on alternating sides -arrows B-.

Installing

Install in reverse order of removal. Note the following:

- Tightening specifications, refer to **CENTER DIFFERENTIAL HOUSING OVERVIEW, BOLTED DRIVESHAFT.**

NOTE: Replace the bolts for the center differential housing.

- Clean both housing separating surfaces thoroughly. They must be free of oil and grease.
- Apply a bead sealant -arrow 1- evenly and not too thick on the housing surfaces; sealant

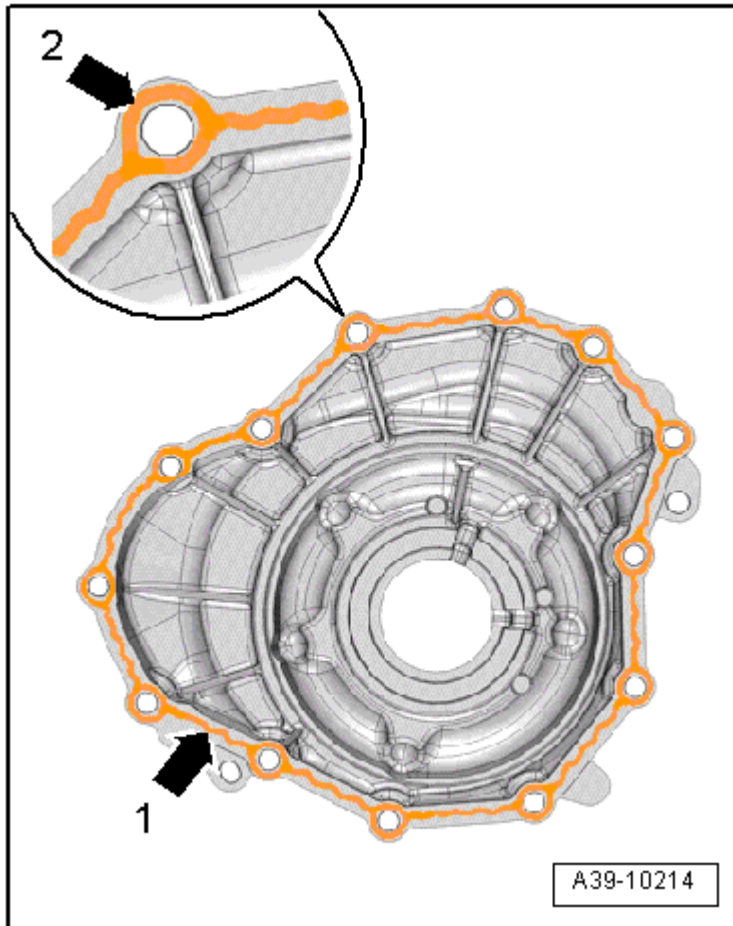


Fig. 42: Apply A Sealant Bead On Housing Surface
Courtesy of AUDI OF AMERICA, LLC

- Place a sealing ring round each bolt hole to prevent contact corrosion -arrow 2-.
- Coat the gear carrier surfaces with transmission fluid (MTF).
- Make sure the spacer sleeve -2- and the shim -1- are mounted on the output shaft.

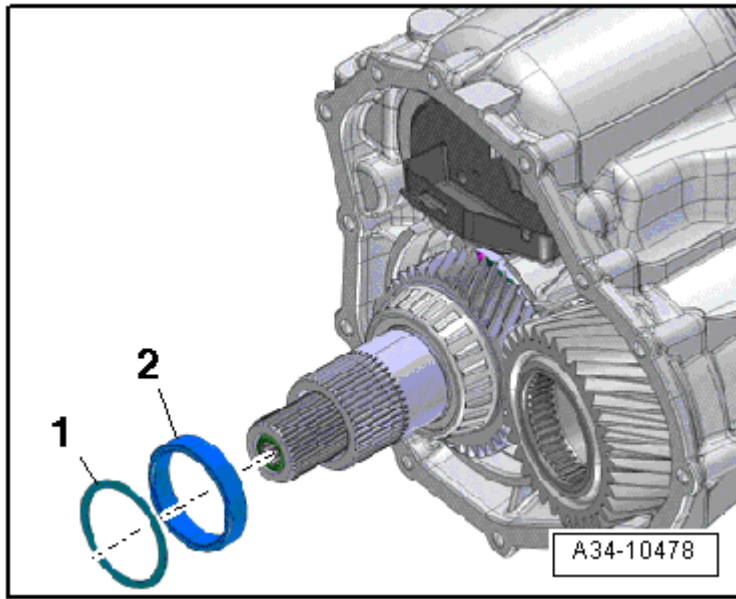


Fig. 43: Make Sure Spacer Sleeve And Shim Are Mounted On Output Shaft
 Courtesy of AUDI OF AMERICA, LLC

-- Coat both outer ring surfaces on the gear carrier slightly with transmission fluid (MTF).

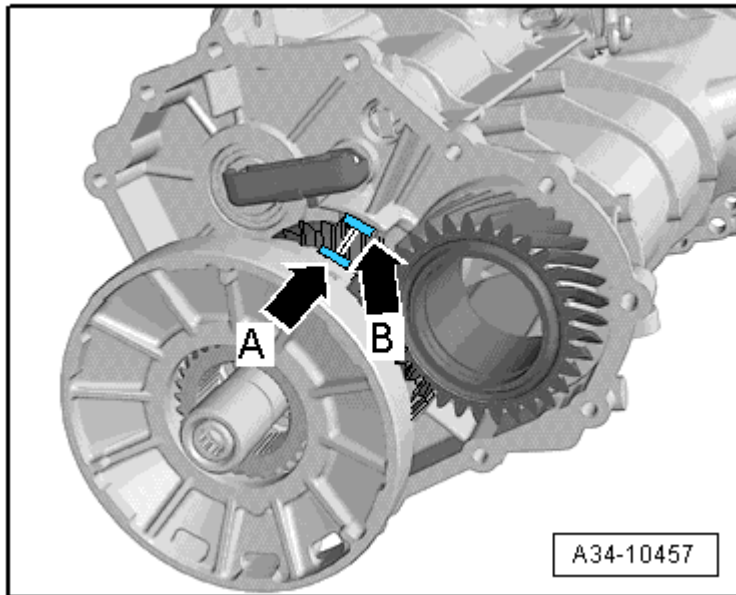


Fig. 44: Coat Both Surfaces On Gear Carrier Slightly With Transmission Fluid
 Courtesy of AUDI OF AMERICA, LLC

-- Insert the gear carrier.

- Installed position: The tab on the gear carrier -arrow A- must fit into the opening in the transmission intermediate housing -arrow B-.

-- Place the center differential -2- on the transmission -1-.

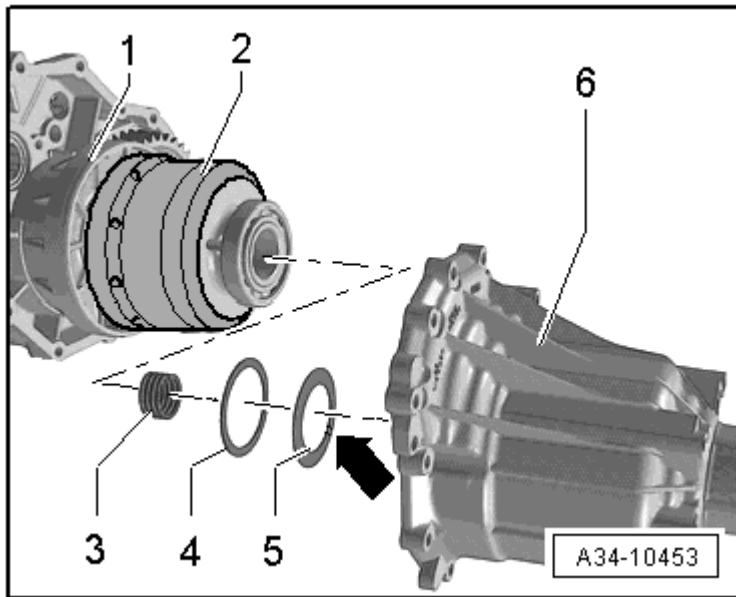


Fig. 45: Place Center Differential On Transmission

Courtesy of AUDI OF AMERICA, LLC

-- Install the pressure spring -3- into the center differential.

-- Attach the plate spring -5- and shim(s) -4- in the center differential housing -6- with a little grease.

- Plate spring installation location: The side rounded on the outside faces the flange shaft.

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

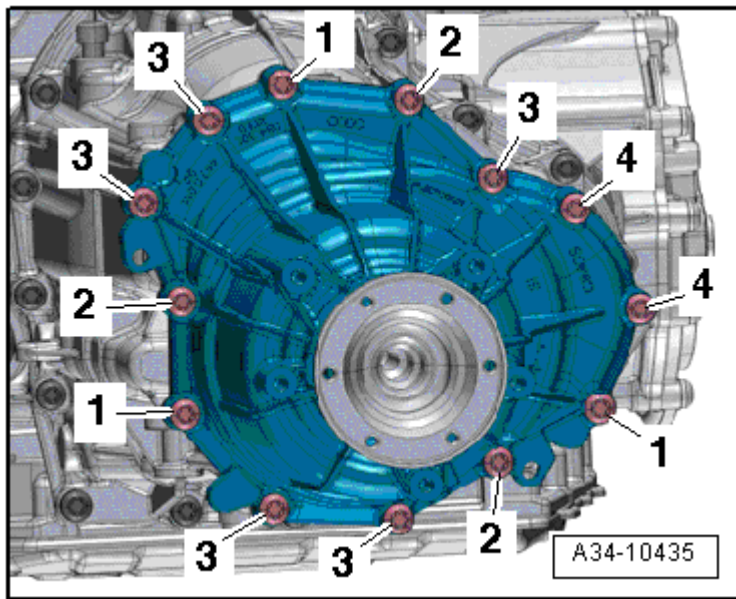


Fig. 46: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

-- Tighten the center differential housing bolts. Refer to **Fig. 4**.

CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, ATTACHED DRIVESHAFT

Special tools and workshop equipment required

- Oil Collecting and Extracting Device V.A.G 1782
- Engine and Transmission Holder VAS 6095
- Sealant

Removing with Transmission Installed

It is possible to remove the center differential housing with the transmission still installed.

-- Perform the vehicle-specific preliminary work. Refer to **[For engine(s) CCBA] Removal and Installation**.

Removing with the Transmission Removed

-- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER**.

Continuation for a Removed or Installed Transmission

-- Place the V.A.G 1782 under the transmission.

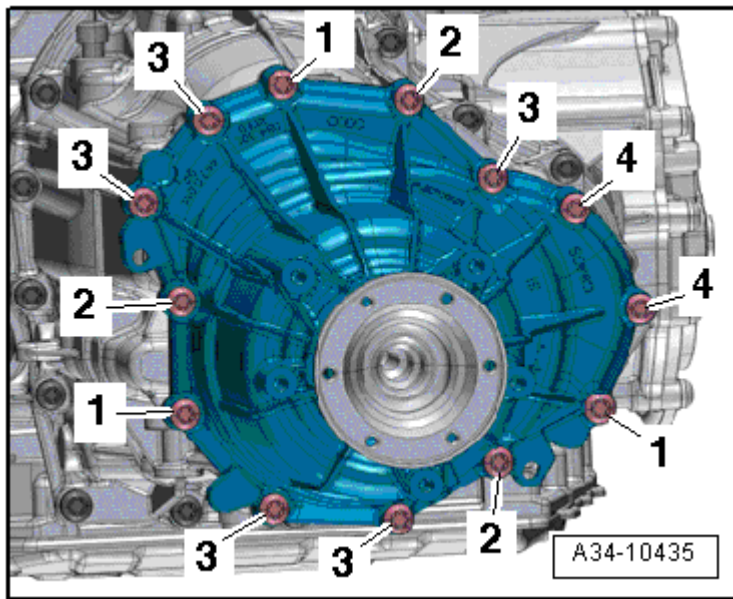


Fig. 47: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolts -1 through 4- and carefully remove the center differential housing. The transmission fluid (MTF) will leak out while doing this.

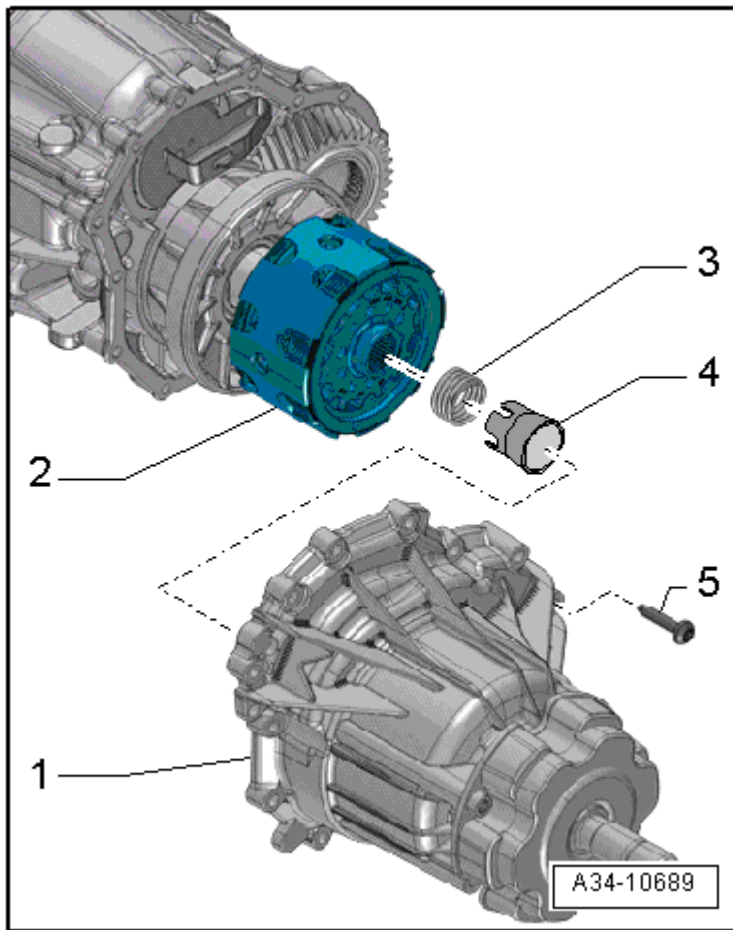


Fig. 48: Center Differential

Courtesy of AUDI OF AMERICA, LLC

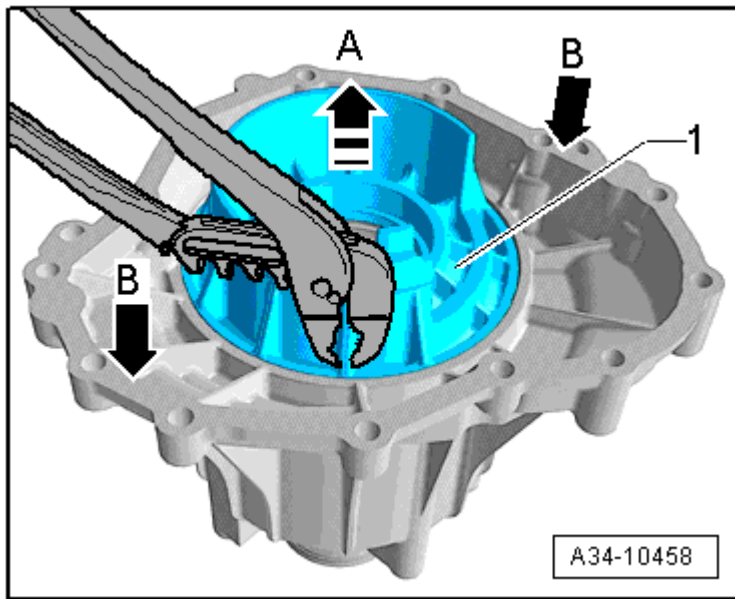
CAUTION: Danger of damaging the center differential.

- Carefully and slowly pull center differential housing off of the transmission toward the rear. Otherwise the center differential can fall out of the transmission.
- A center differential that has fallen out may not be installed.

-- Remove the guide sleeve -4- and pressure spring -3-.

-- Pull the center differential -2- toward the rear.

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



**Fig. 49: Hold Gear Carrier -1- By One Of Side Ribs With Pliers And Remove It In -Arrow A-
Courtesy of AUDI OF AMERICA, LLC**

CAUTION: Danger of damaging the sealing surface on the center differential housing.

- Use a hammer to hit the housing carefully on several places.

NOTE: In this case the center differential is pulled off together with the center differential housing.

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

-- Using a rubber hammer, tap the housing on alternating sides -arrows B-.

Installing

Install in reverse order of removal. Note the following:

- Tightening specifications, refer to **CENTER DIFFERENTIAL HOUSING OVERVIEW, BOLTED DRIVESHAFT** or **CENTER DIFFERENTIAL HOUSING OVERVIEW, ATTACHED DRIVESHAFT**.

NOTE: Replace the bolts for the center differential housing.

-- Clean both housing separating surfaces thoroughly. They must be free of oil and grease.

-- Apply a bead of sealant -arrow 1- evenly and not too thick on the housing surfaces; sealant

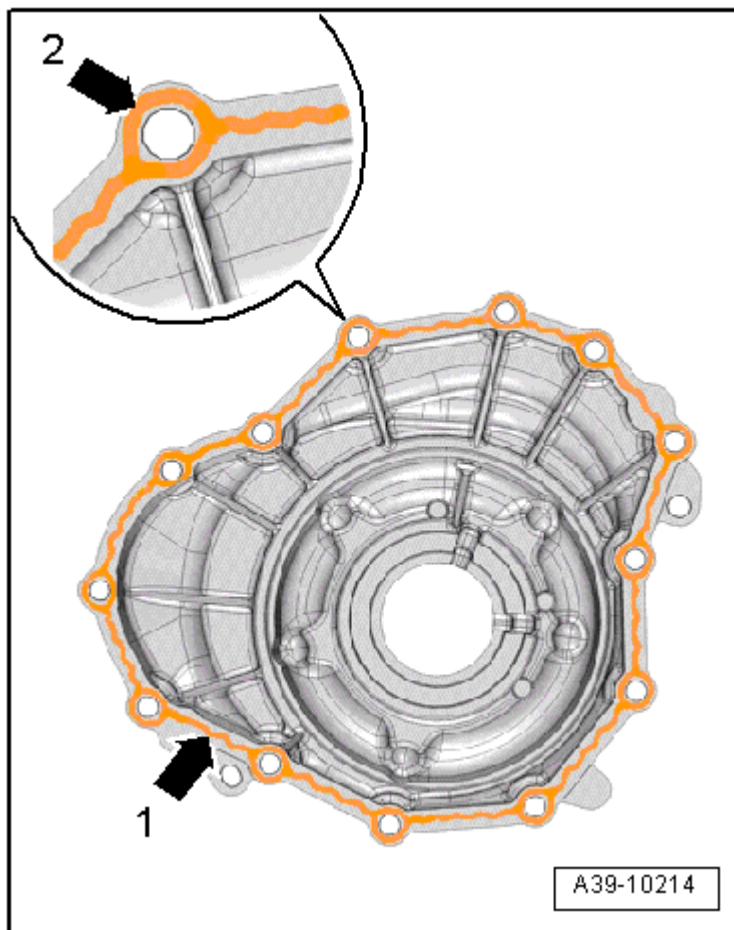


Fig. 50: Apply A Sealant Bead On Housing Surface
Courtesy of AUDI OF AMERICA, LLC

- Place a sealing ring round each bolt hole to prevent contact corrosion -arrow 2-.
- Coat the gear carrier surfaces with transmission fluid (MTF).
- Coat both outer ring surfaces on the gear carrier slightly with transmission fluid (MTF).

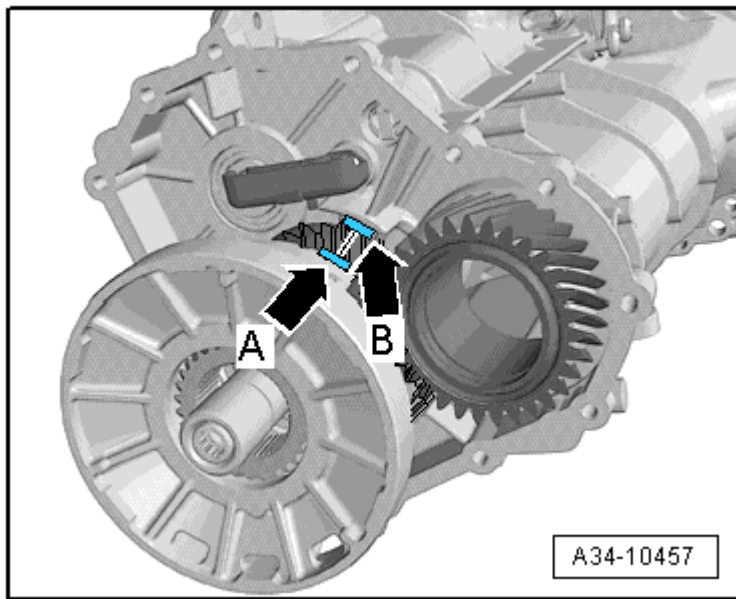


Fig. 51: Coat Both Surfaces On Gear Carrier Slightly With Transmission Fluid
Courtesy of AUDI OF AMERICA, LLC

-- Insert the gear carrier.

- Installed position: The tab on the gear carrier -arrow A- must fit into the opening in the transmission intermediate housing -arrow B-.

-- Place the center differential -2- on the transmission -1-.

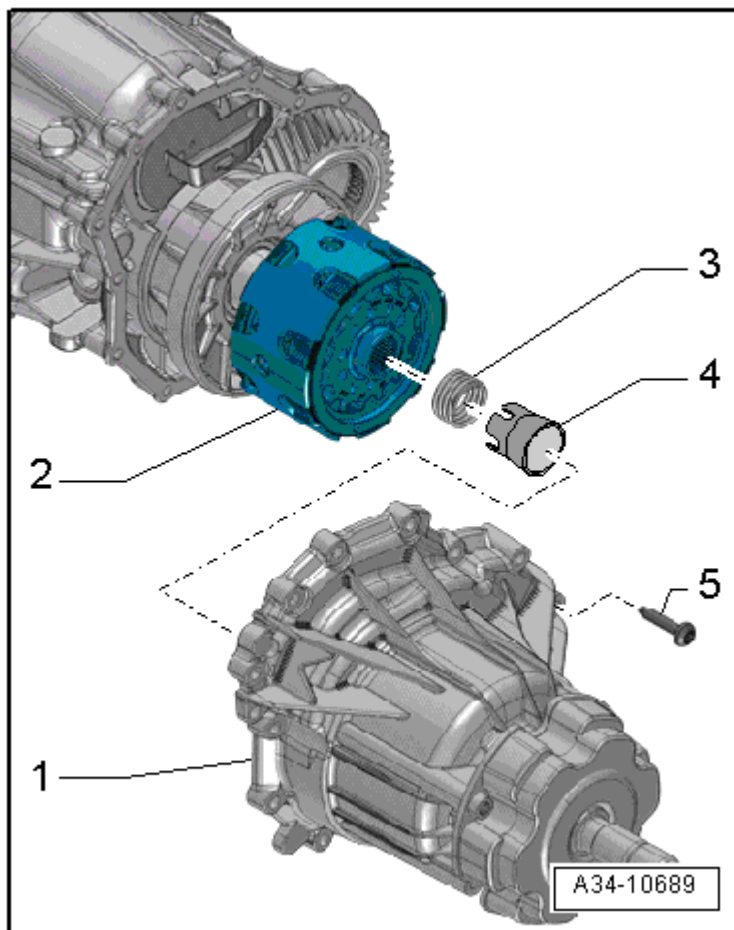


Fig. 52: Center Differential

Courtesy of AUDI OF AMERICA, LLC

- Mount the guide sleeve -4- on the center differential.
- Install the pressure spring -3- into the center differential.
- Press the center differential housing centrally on until it makes contact with the transmission intermediate housing and hold it securely.

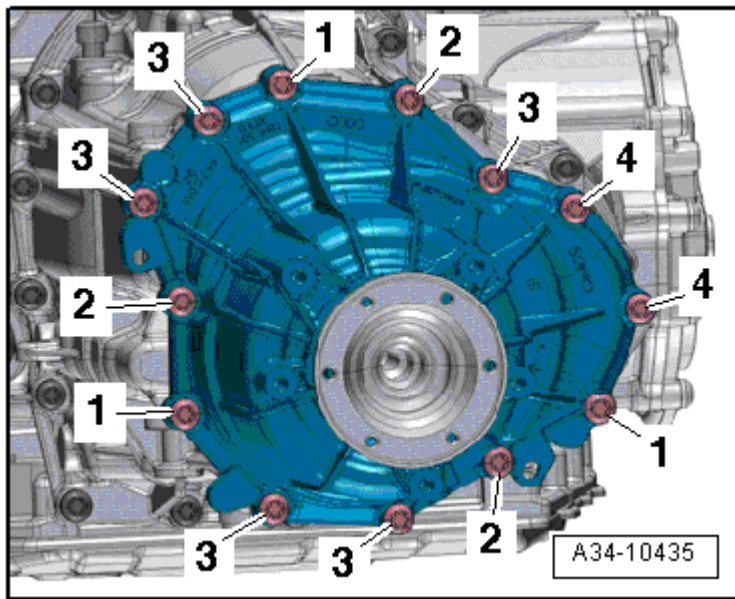


Fig. 53: Tightening Specification And Sequence, Center Differential Housing - Bolted Driveshaft
 Courtesy of AUDI OF AMERICA, LLC

-- Tighten the center differential housing bolts. Refer to **Fig. 4**.

NOTE: Check the vehicle data label or the designation on the rear final drive itself to determine which one is installed in the vehicle. Then select the correct rear final drive repair information.

-- Install the driveshaft (attached). Refer to General Information or General Information .

-- Fill the manual transmission fluid. Refer to [For engine(s) CCBA] General Information .

VIBRATION DAMPER, INSTALLING ON TRANSMISSION OUTPUT SHAFT WITH SPLINES

Special tools and workshop equipment required

- Sleeve VW 284/1 from Driver Sleeve VW 284
- Thrust Tube VW 455
- Tube T40104/2 from Removal and Assembly Tool T40104
- Thrust Plate VW 402

Requirements

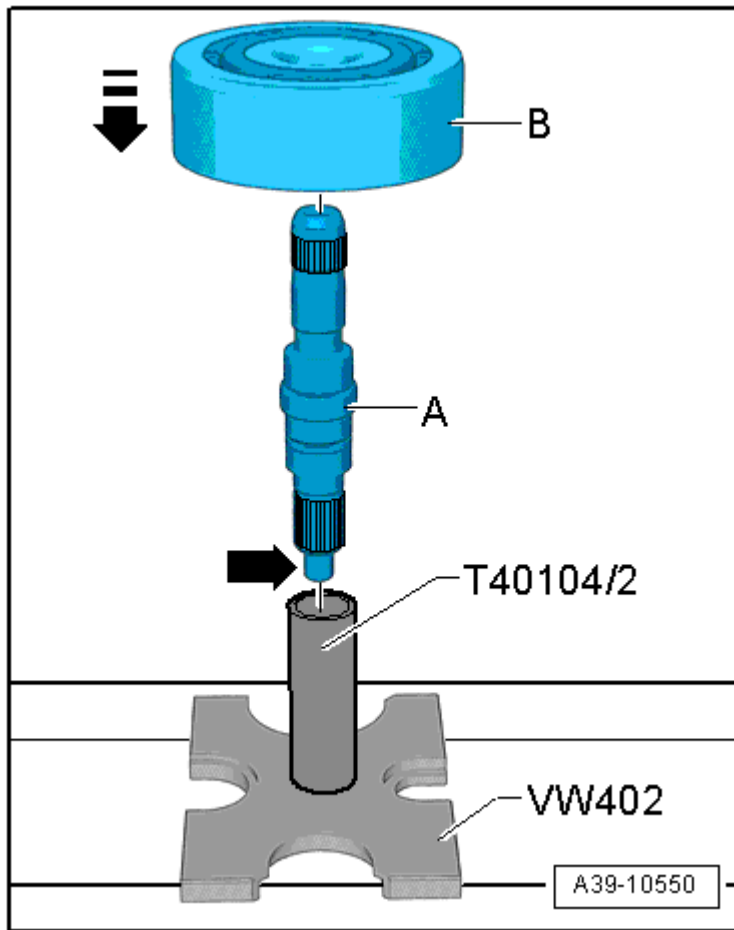


Fig. 54: Vibration Damper Must Be Pressed Onto Transmission Output Shaft With Splines
Courtesy of AUDI OF AMERICA, LLC

If the transmission output shaft with vibration damper is being replaced, it is possible the transmission output shaft -A- may be delivered separated from the vibration damper

ONLY in this case, the vibration damper must be pressed onto the transmission output shaft with splines.

CAUTION: Danger of damaging the components.

- Do not remove the vibration damper from the transmission output shaft with splines and cannot be used again. Using the vibration damper again does not assure that the transmission output shaft is attached securely. The vibration damper will come loose off the transmission output shaft and damage the transmission and other components.

Procedure

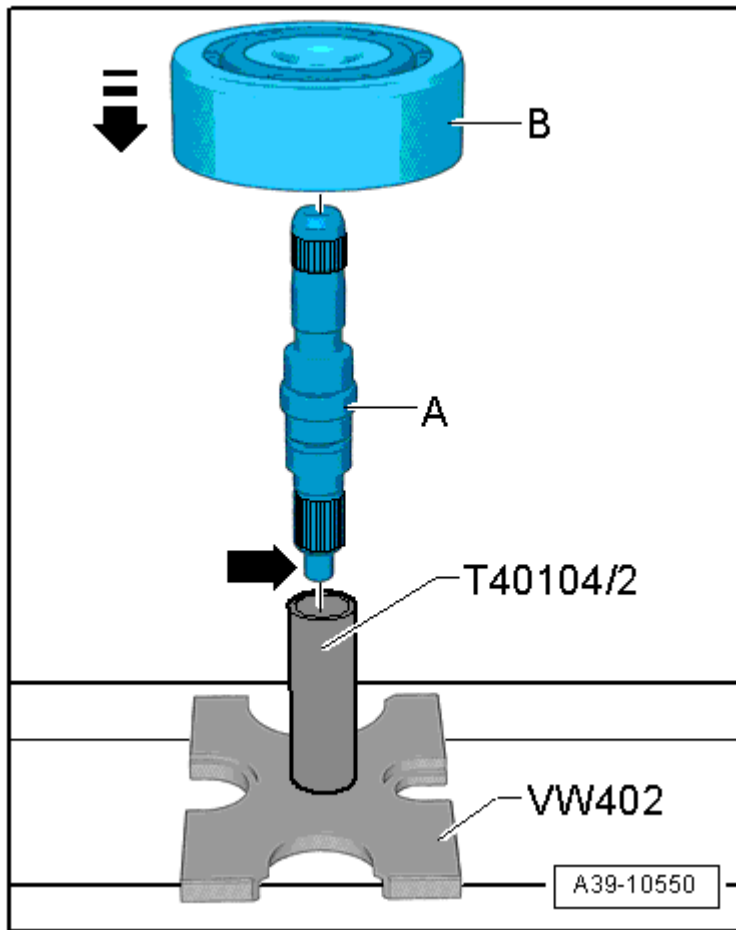


Fig. 55: Vibration Damper Must Be Pressed Onto Transmission Output Shaft With Splines
Courtesy of AUDI OF AMERICA, LLC

- Place the T40104/2 on the VW 402 with the opening facing upward.
- Place the new transmission output shaft with splines -A- into the T40104/2 with the thin guide -arrow-.
- Install the new vibration damper -B-.
- Install the vibration damper -B- all the way using VW 455 and VW 284/1.

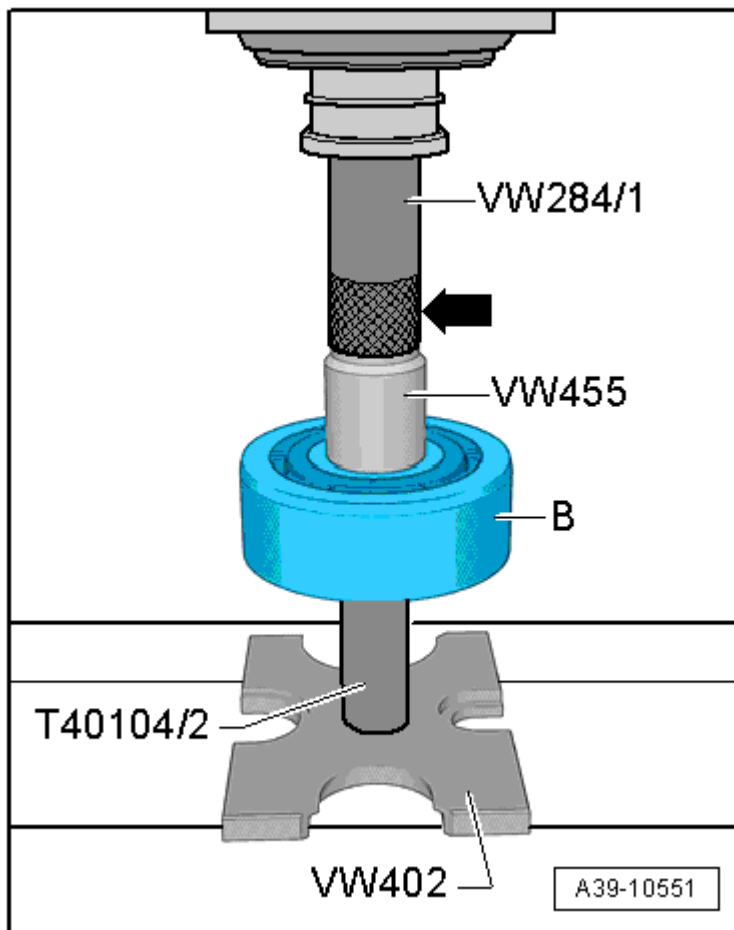


Fig. 56: Install Vibration Damper

Courtesy of AUDI OF AMERICA, LLC

NOTE: VW 284/1: corrugation -arrow- faces down.

REAR FLANGE SHAFT AND REAR FLANGE SHAFT SEAL AND BALL BEARING

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
- Grease

Procedure

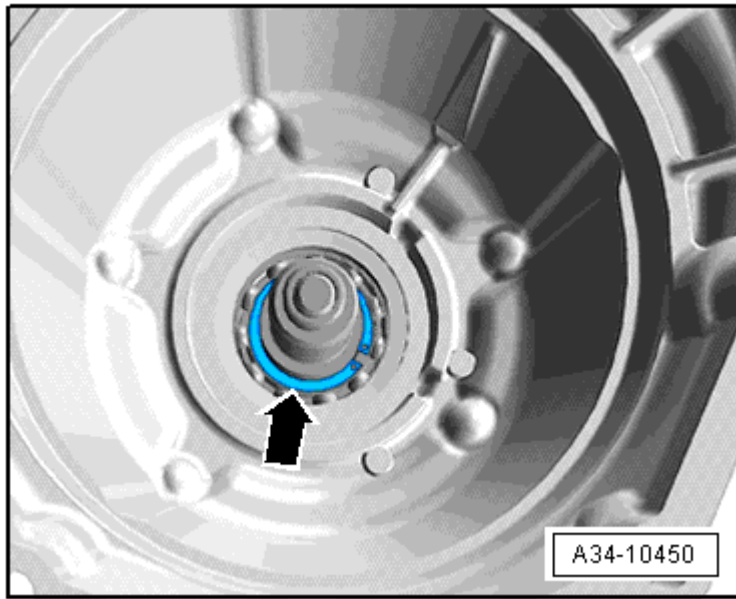


Fig. 57: Install A New Circlip -Arrow- On Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

-- Remove the center differential housing. Refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT.**

-- Remove the circlip -arrow-.

-- Remove the flange shaft by positioning the center differential housing so the flange shaft does not touch the VW 401 and VW 402.

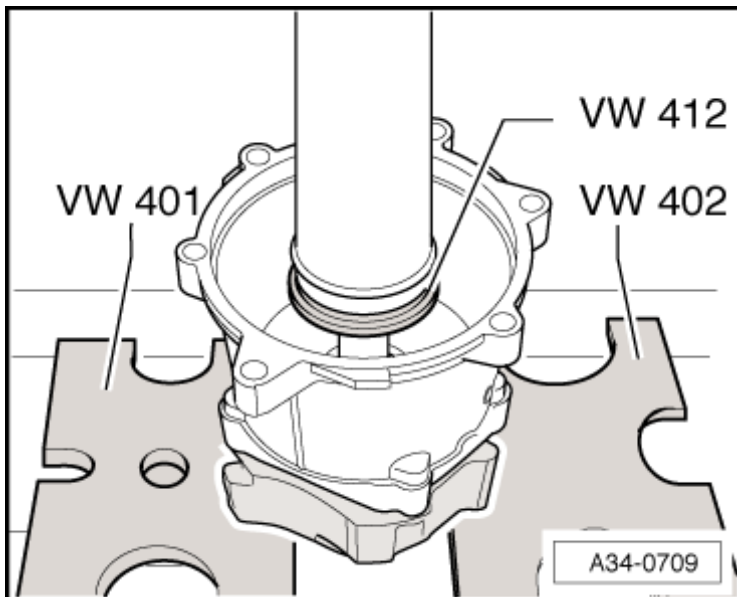


Fig. 58: Pressing Out Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

-- Remove the flange shaft using a suitable drift.

-- Pry out the shaft seal -1-.

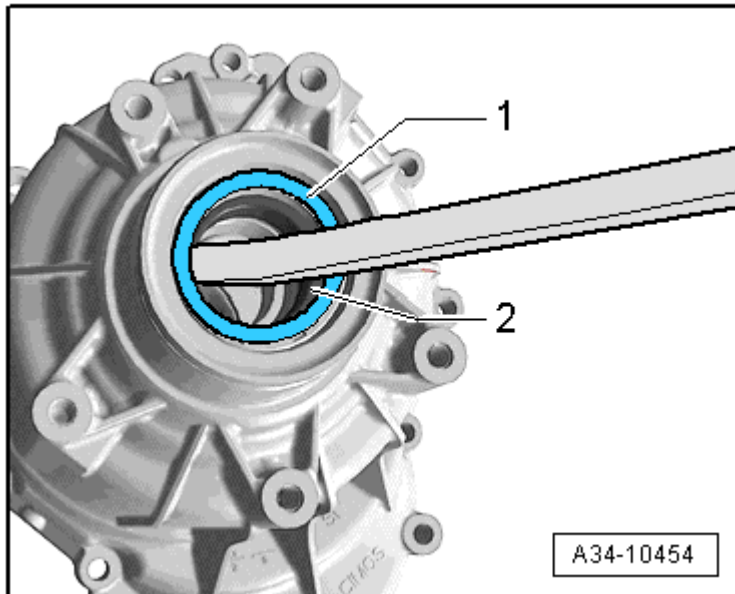


Fig. 59: Prying Out Shaft Seal -1-
Courtesy of AUDI OF AMERICA, LLC

NOTE: Ignore -2-.

-- Remove the flange shaft ball bearing and spacer sleeve if necessary.

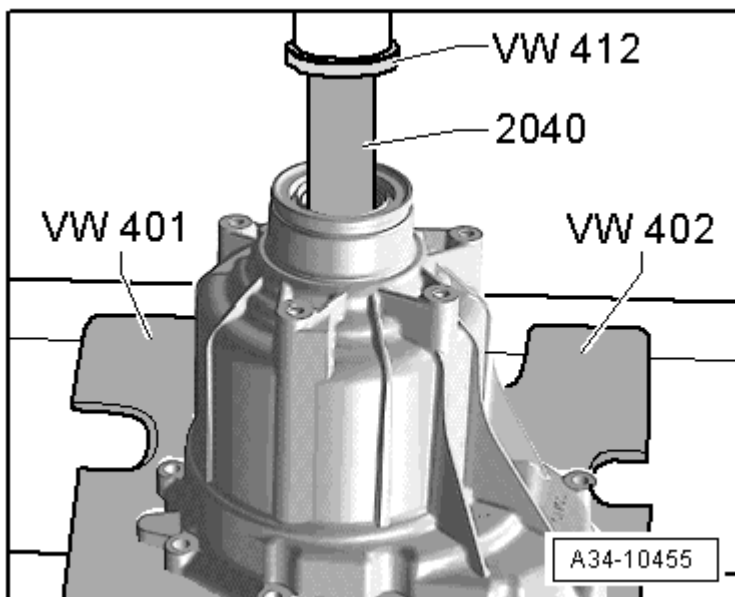


Fig. 60: Remove Flange Shaft Ball Bearing And Spacer Sleeve

Courtesy of AUDI OF AMERICA, LLC

-- Installing the flange shaft ball bearing.

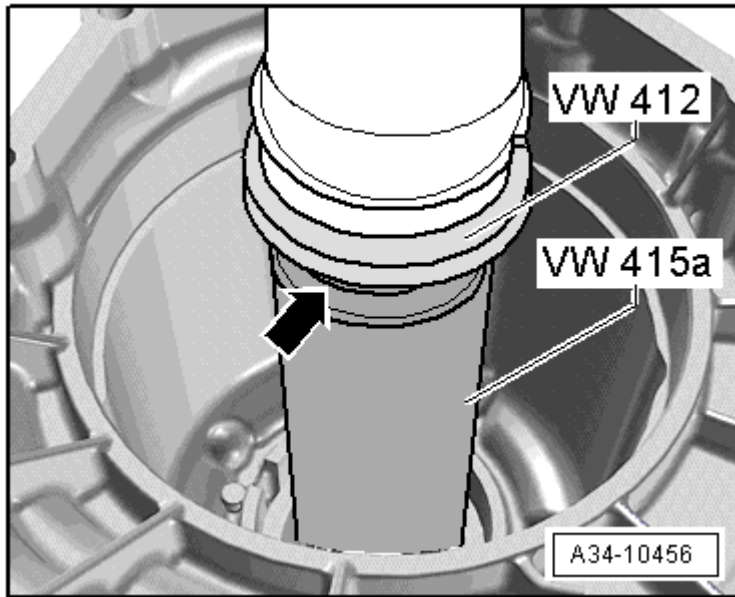


Fig. 61: Removing Flange Shaft Ball Bearing And Spacer Sleeve
Courtesy of AUDI OF AMERICA, LLC

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

-- Install the spacer sleeve -item 4- **CENTER DIFFERENTIAL HOUSING OVERVIEW, BOLTED DRIVESHAFT** using VW 415 A.

-- Lightly oil the outer circumference on the shaft seal and then install it all the way using the T40165.

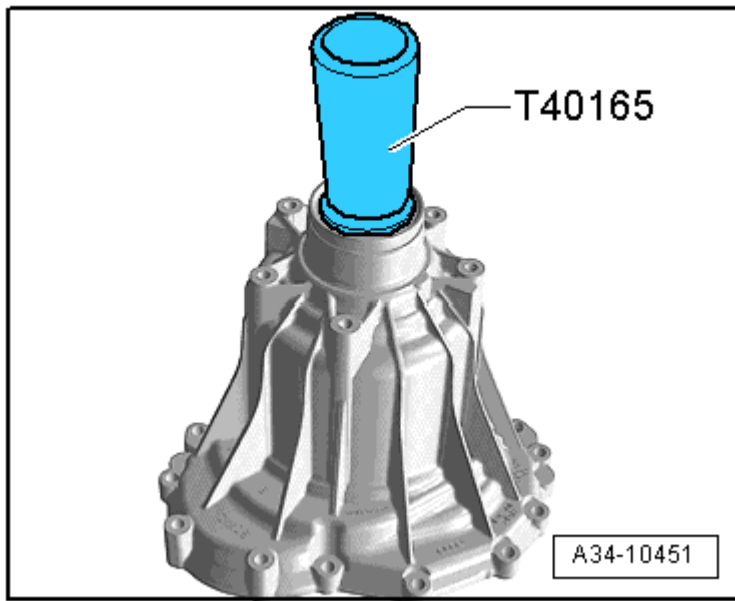


Fig. 62: Installing Seal For Rear Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

- Installed position: Open side of shaft seal faces transmission.
- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease.
- Install the flange shaft.

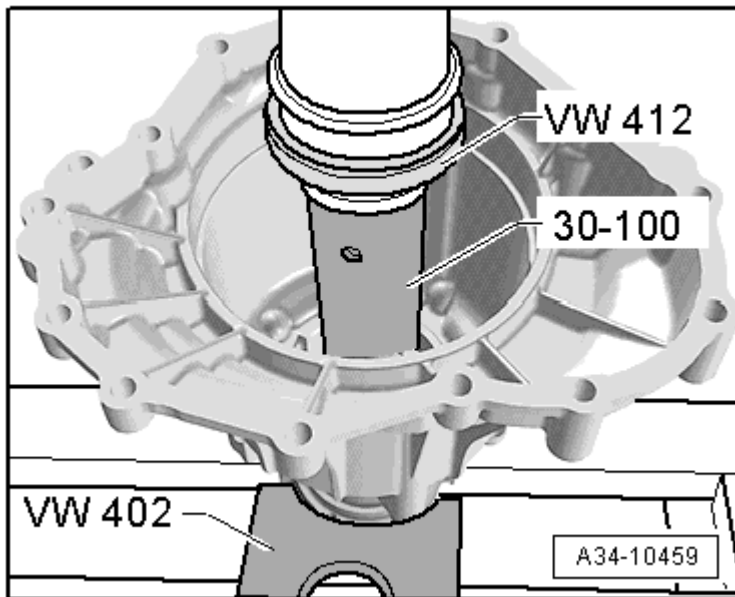


Fig. 63: Installing Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

- Install the flange shaft into the center differential housing from underneath.

- Position the housing and flange shaft on the VW 402 under the shop press.
- Install the inner bearing race with using the 30 - 100 on the flange shaft.
- Install a new circlip -arrow- on the flange shaft.

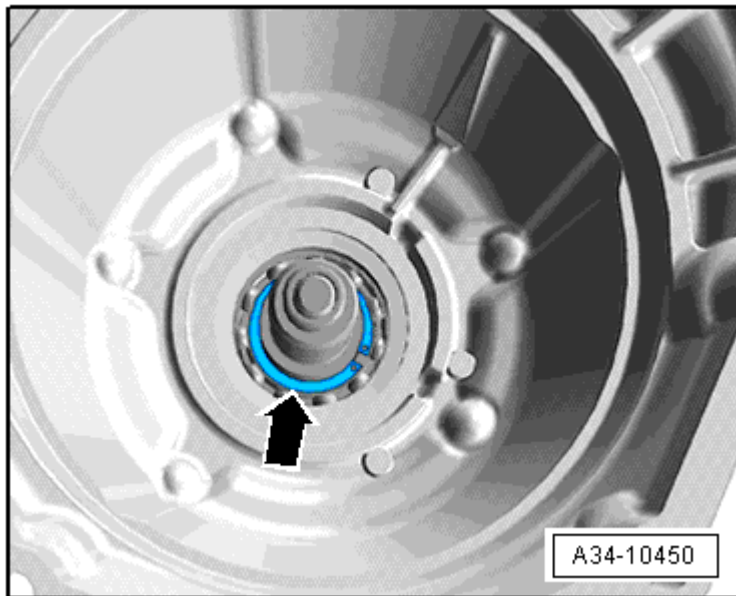


Fig. 64: Install A New Circlip -Arrow- On Flange Shaft
Courtesy of AUDI OF AMERICA, LLC

- Install the center differential housing. Refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT.**

TRANSMISSION OUTPUT SHAFT WITH SPLINES, TRANSMISSION OUTPUT SHAFT BALL BEARING WITH SPINES

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Thrust Disc VW 412
- Press Tube 30 - 100
- Press Tube 2040
- Oil Seal Installing Tool T40238
- Grease

Procedure

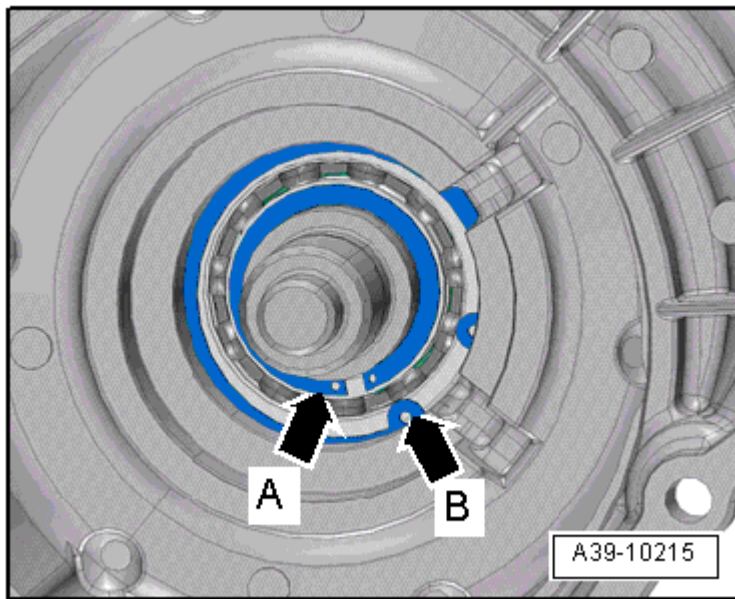


Fig. 65: Remove Circlip

Courtesy of AUDI OF AMERICA, LLC

-- Remove the center differential housing. Refer to **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, BOLTED DRIVESHAFT** or **CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, ATTACHED DRIVESHAFT**.

-- Remove the circlip -arrow A-.

-- Remove the locking ring -arrow B- as well, if the ball bearing is also being removed.

Transmission Output Shaft with Splines without Vibration Damper

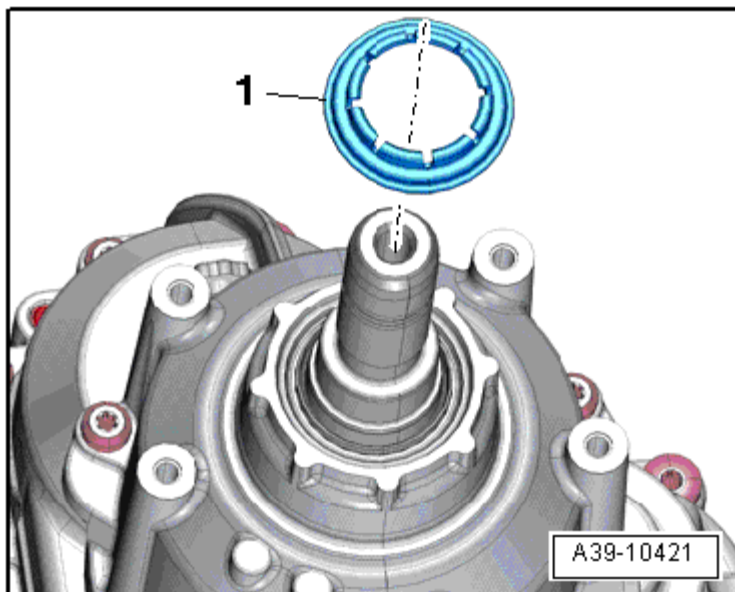


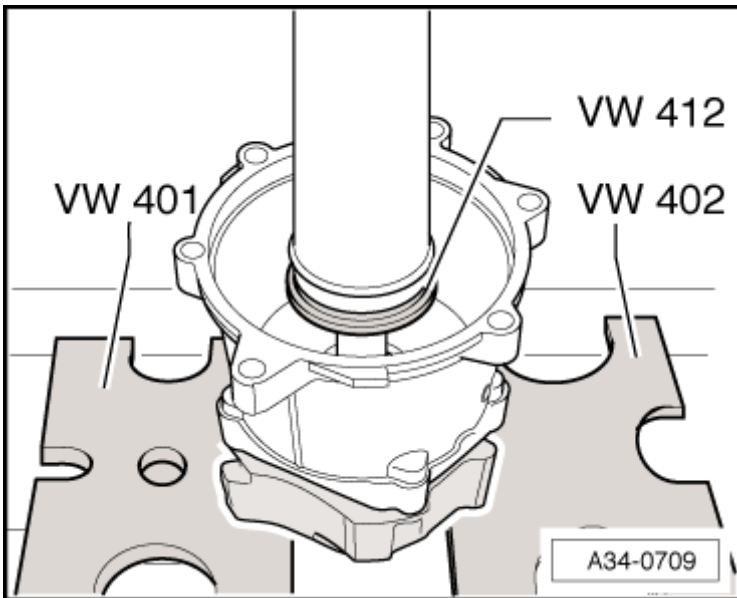
Fig. 66: Pry Out Dust Ring

Courtesy of AUDI OF AMERICA, LLC

-- Pry off the dust ring -1-.

NOTE: The dust ring cannot be removed without destroying it.

-- Position the center differential housing so that the transmission output shaft with splines does not touch the VW 401 and VW 402 and remove the transmission output shaft with splines.

**Fig. 67: Pressing Out Flange Shaft**

Courtesy of AUDI OF AMERICA, LLC

Transmission Output Shaft with Splines and Vibration Damper

-- Position the center differential housing so that the vibration damper does not touch the VW 401 and VW 402 and remove the transmission output shaft with splines.

All

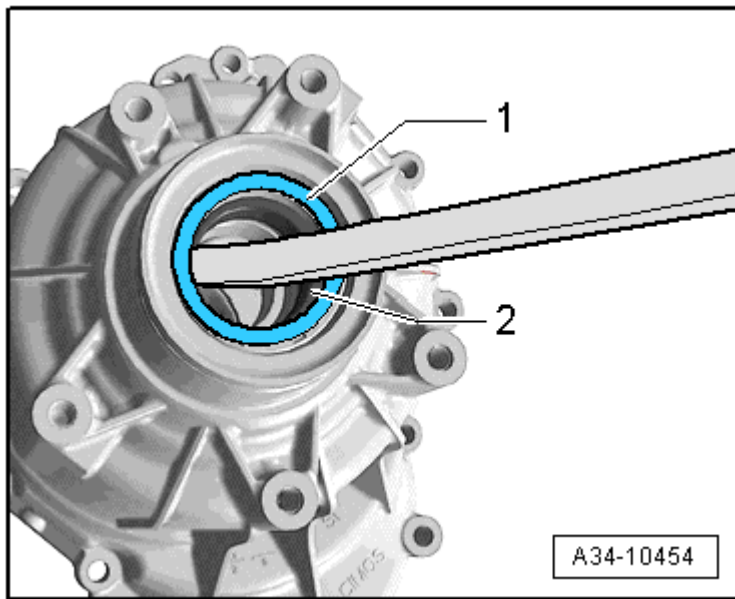


Fig. 68: Prying Out Shaft Seal -1-
Courtesy of AUDI OF AMERICA, LLC

-- Pry out the shaft seal -1-.

NOTE: Ignore -2-.

-- Remove the transmission output shaft ball bearing with splines, if necessary.

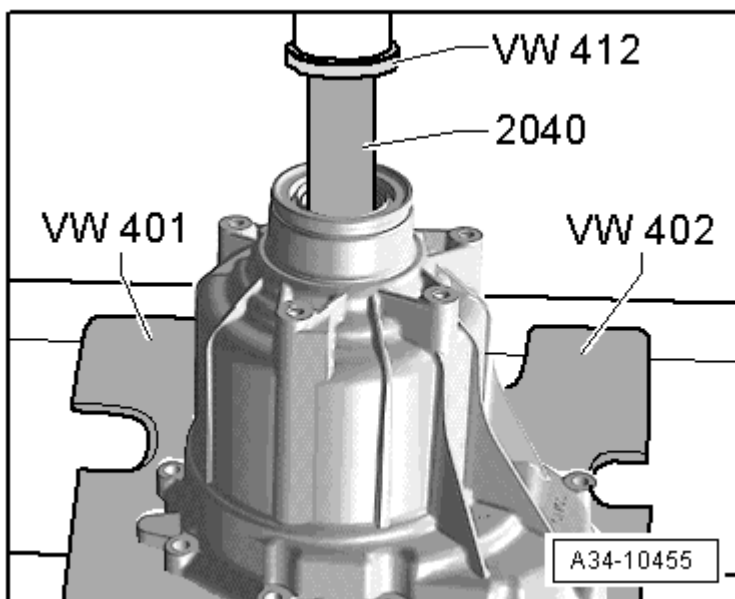


Fig. 69: Remove Flange Shaft Ball Bearing And Spacer Sleeve
Courtesy of AUDI OF AMERICA, LLC

-- Install the transmission output shaft ball bearing.

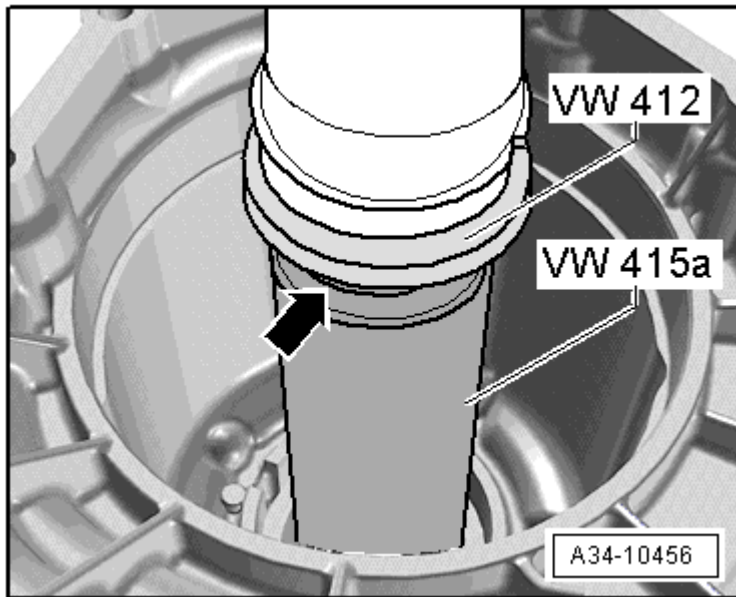


Fig. 70: Removing Flange Shaft Ball Bearing And Spacer Sleeve
Courtesy of AUDI OF AMERICA, LLC

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

-- Coat the seal on the outer circumference lightly with oil and then install it all the way in using T40238.

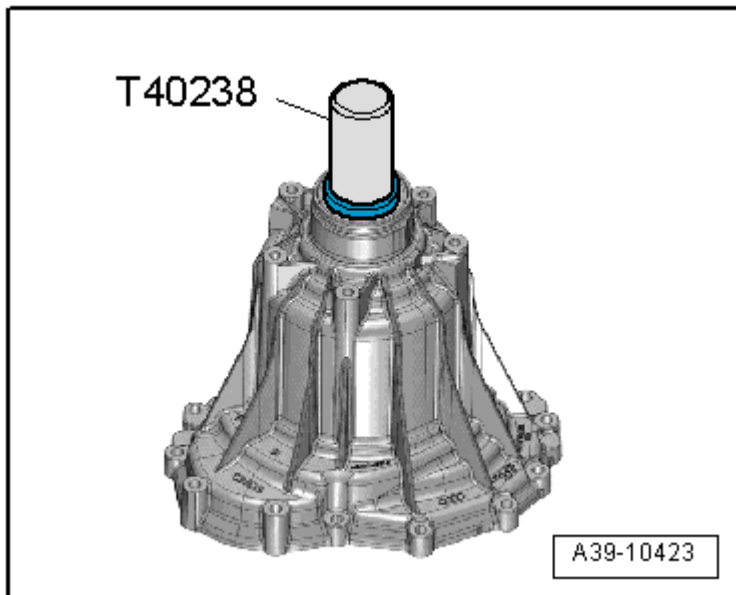


Fig. 71: Install Shaft Seal
Courtesy of AUDI OF AMERICA, LLC

- Installed position: Open side of shaft seal faces transmission.

- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease
- Install the transmission output shaft into the center differential housing as follows:

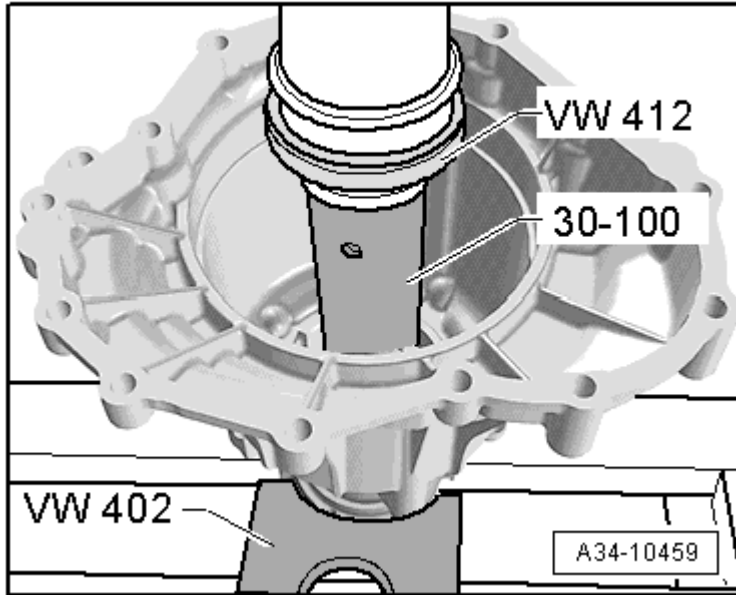


Fig. 72: Installing Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

- Attach the vibration damper (if equipped) to the center differential housing. Tightening specification, refer to **CENTER DIFFERENTIAL HOUSING OVERVIEW, BOLTED DRIVESHAFT** or **CENTER DIFFERENTIAL HOUSING OVERVIEW, ATTACHED DRIVESHAFT**.
- Install the transmission output shaft with splines into the center differential housing from underneath.
- Position the housing and transmission output shaft on the VW 402 under the shop press.
- Mount the 30 - 100 on the ball bearing inner race.
- Install the transmission output shaft.
- Mount the new locking ring -arrow A- for the transmission output shaft with splines and -arrow B- for the ball bearing.

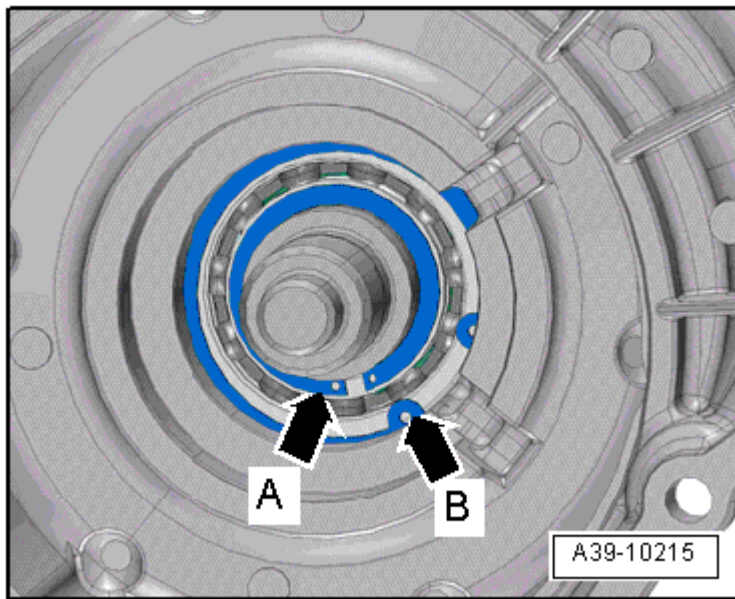


Fig. 73: Remove Circlip

Courtesy of AUDI OF AMERICA, LLC

Transmission Output Shaft with Splines without Vibration Damper

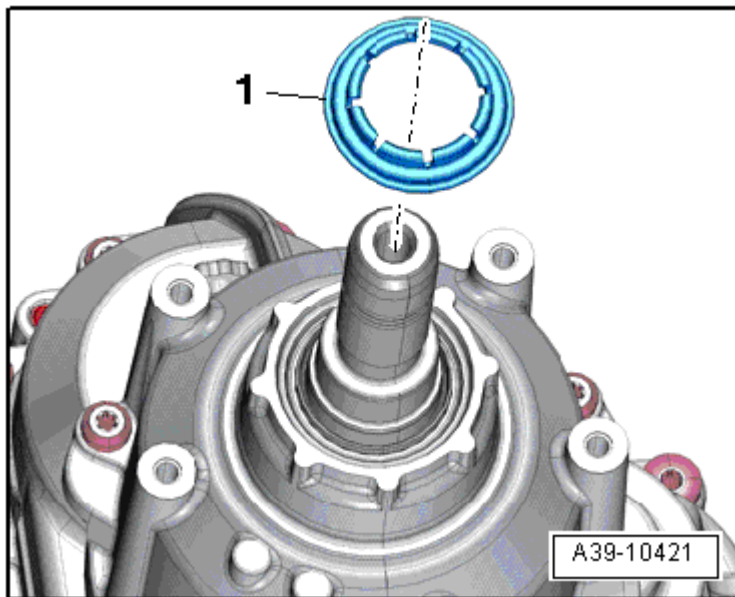


Fig. 74: Pry Out Dust Ring

Courtesy of AUDI OF AMERICA, LLC

-- Install a new dust ring -1-.

All

-- Install the center differential housing. Refer to **CENTER DIFFERENTIAL HOUSING AND CENTER**

DIFFERENTIAL, BOLTED DRIVESHAFT or CENTER DIFFERENTIAL HOUSING AND CENTER DIFFERENTIAL, ATTACHED DRIVESHAFT.

TRANSMISSION OUTPUT SHAFT WITH SPLINES, VEHICLES WITHOUT VIBRATION DAMPER

Special tools and workshop equipment required

- Pulling Hook T20143/1
- Subframe Support Assembling Device T40238
- Pulling Sleeve T40238/1
- Gearbox Support T40173
- Engine and Transmission Holder VAS 6095
- Grease

Procedure

NOTE: **REPAIR INFORMATION**

CLEAN WORKING CONDITIONS

Transmission Installed

It is possible to replace the transmission output shaft seal with the transmission installed.

NOTE: **Check the vehicle data label or the designation on the rear final drive itself to determine which one is installed in the vehicle. Then select the correct rear final drive repair information.**

-- Remove the driveshaft (attached). Refer to **Removal and Installation** or **Removal and Installation** .

Transmission Removed

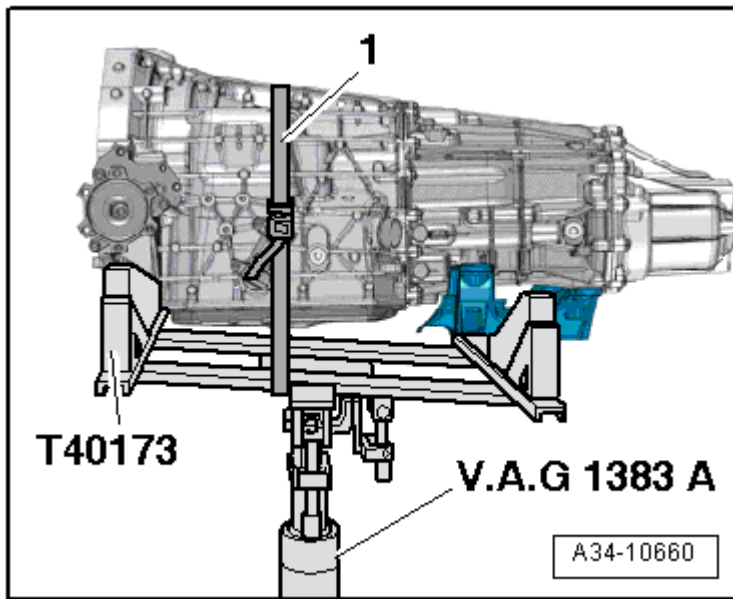


Fig. 75: Securing Transmission With A Tensioning Strap
 Courtesy of AUDI OF AMERICA, LLC

-- Secure the transmission to the T40173 using a tension strap -1-.

or

-- Secure the transmission to the VAS 6095. Refer to **SECURING ON ENGINE AND TRANSMISSION HOLDER** .

Continuation for a Removed or Installed Transmission

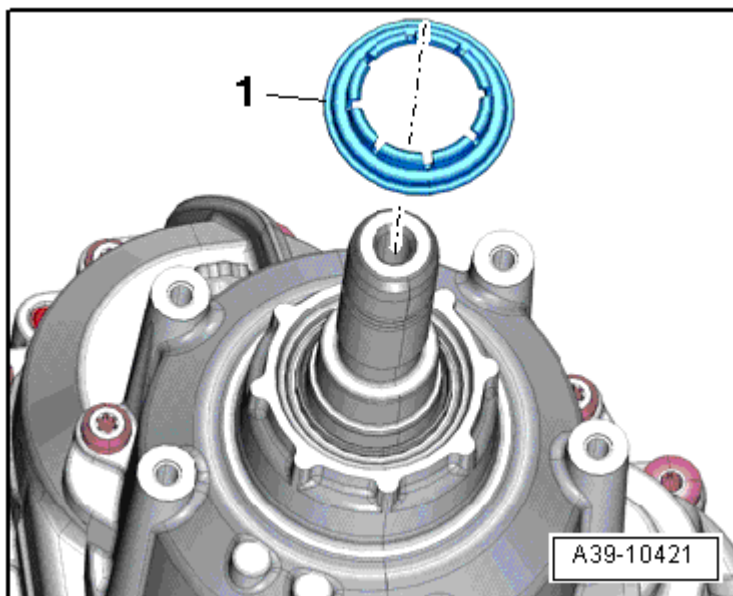


Fig. 76: Pry Out Dust Ring

Courtesy of AUDI OF AMERICA, LLC

-- Pry off the dust ring -1-.

NOTE: The dust ring cannot be removed without destroying it.

-- Shaft seal, transmission output shaft with splines, removing TRANSMISSION OUTPUT SHAFT WITH SPLINES, VEHICLES WITH VIBRATION DAMPER.

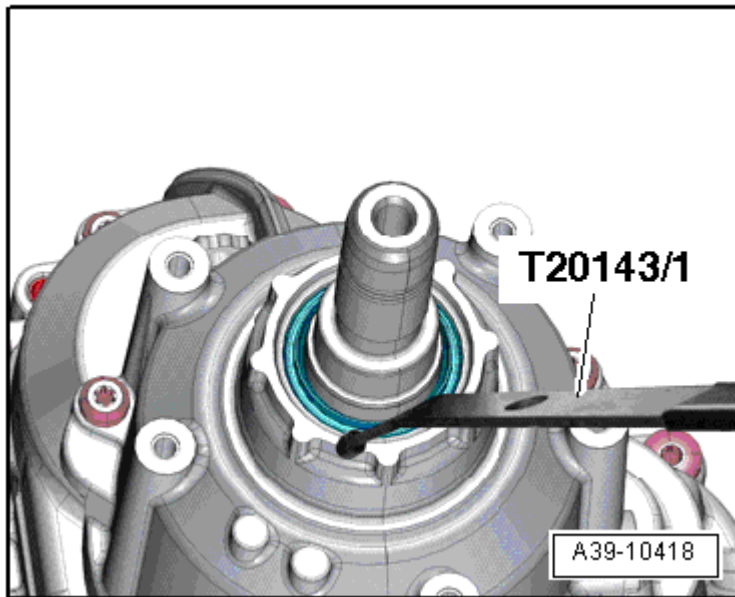
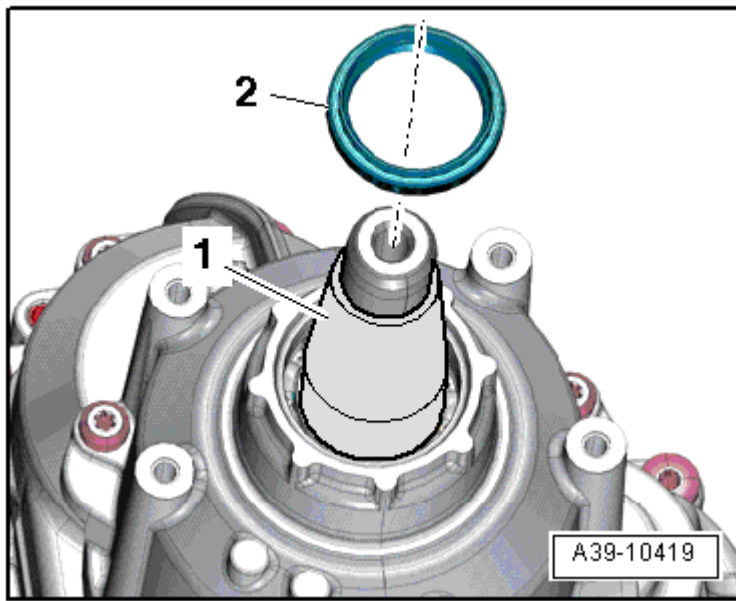


Fig. 77: Dust Ring Cannot Be Removed Without Destroying It
Courtesy of AUDI OF AMERICA, LLC

-- Clean the running and sealing surface.

-- Coat outer edge of seal with gear oil.

-- Mount the T40238/1 -1- on the transmission output shaft with splines.

**Fig. 78: Install Oil Seal**

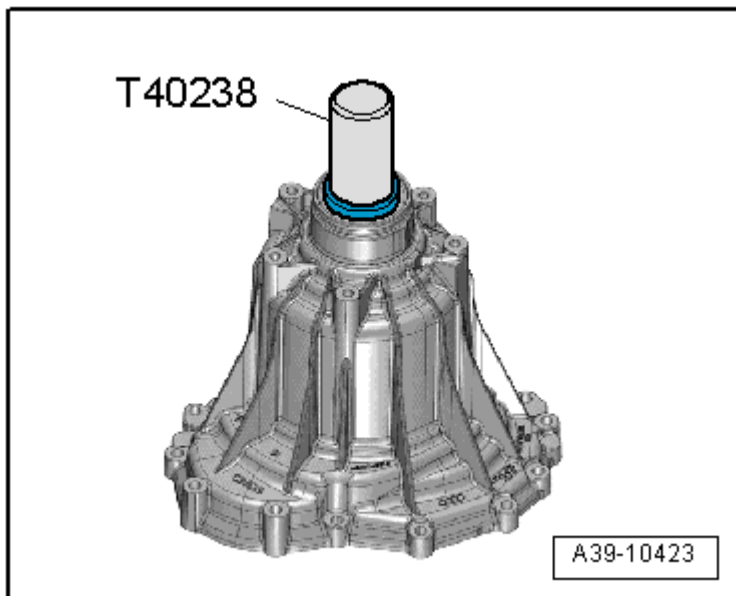
Courtesy of AUDI OF AMERICA, LLC

-- Fill the space between the sealing and dust lip half way with sealing grease; for the correct sealing grease.

-- Install the shaft seal -2-.

- Installed position: The open side of the seal faces the transmission housing.

-- Install the shaft seal all the way around evenly using T40238. Do not bend the seal.

**Fig. 79: Install Shaft Seal**

Courtesy of AUDI OF AMERICA, LLC

-- Install a new dust ring -1-.

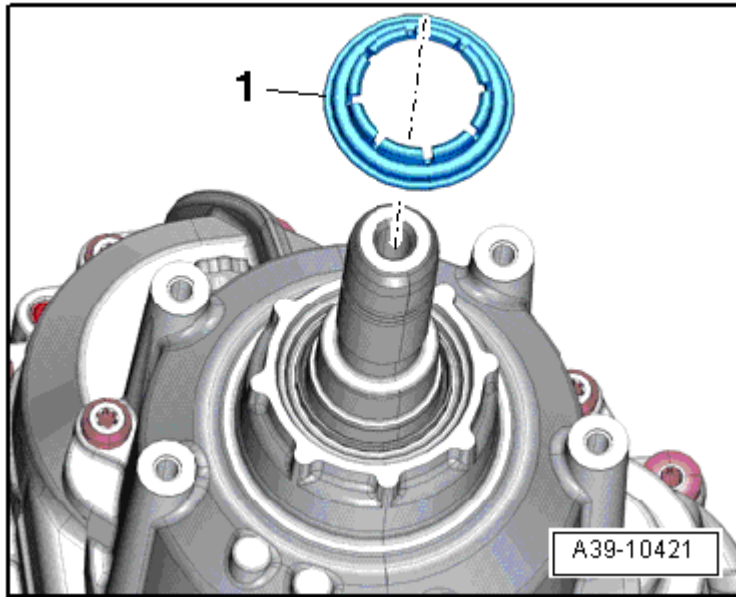


Fig. 80: Pry Out Dust Ring

Courtesy of AUDI OF AMERICA, LLC

Continuation for an Installed Transmission

NOTE: Check the vehicle data label or the designation on the rear final drive itself to determine which one is installed in the vehicle. Then select the correct rear final drive repair information.

-- Install the driveshaft (attached). Refer to Removal and Installation or Removal and Installation or Removal and Installation .

TRANSMISSION OUTPUT SHAFT WITH SPLINES, VEHICLES WITH VIBRATION DAMPER

The transmission output shaft with splines on vehicles with a vibration damper must be removed in order to replace the transmission output shaft seal with splines.

LEFT FLANGE SHAFT BALL BEARING MOUNTING BRACKET

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Thrust Disc VW 412
- Tube 42 mm Dia. VW 516

-- Remove the left flange shaft. Refer to LEFT FLANGE SHAFT.

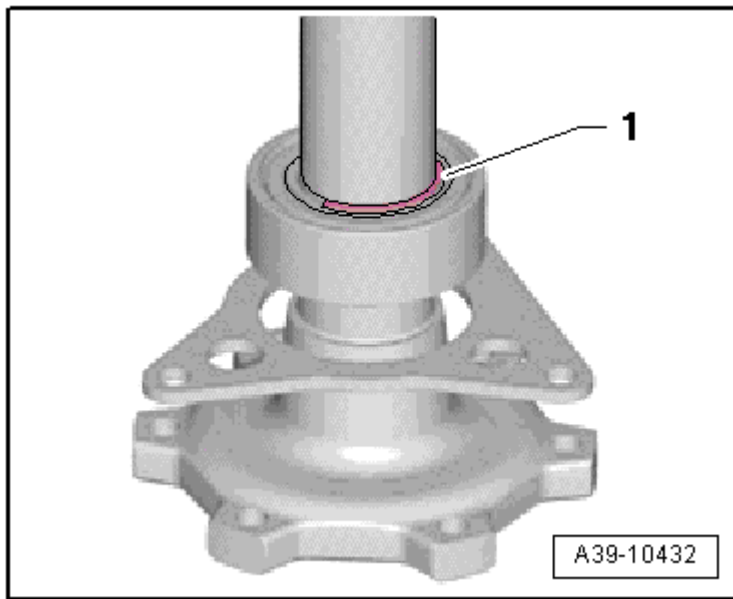


Fig. 81: Remove Left Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

- Remove the locking ring -1- from the flange shaft.
- Remove the ball bearing -A- from the flange shaft

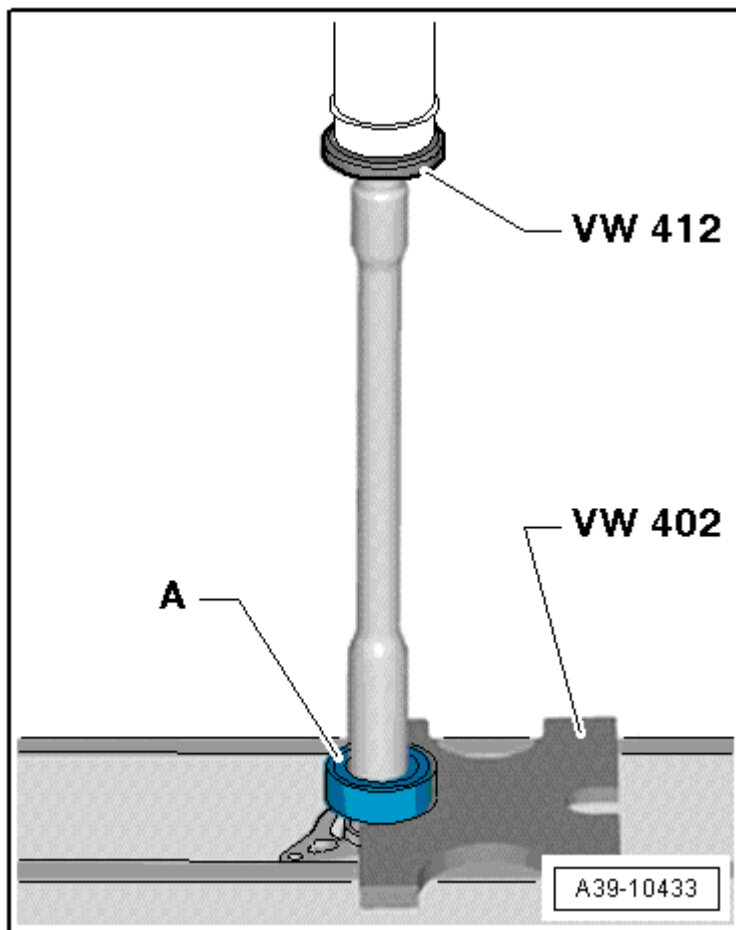


Fig. 82: Remove Locking Ring, Remove Ball Bearing
Courtesy of AUDI OF AMERICA, LLC

-- Install the new bearing bracket -1-.

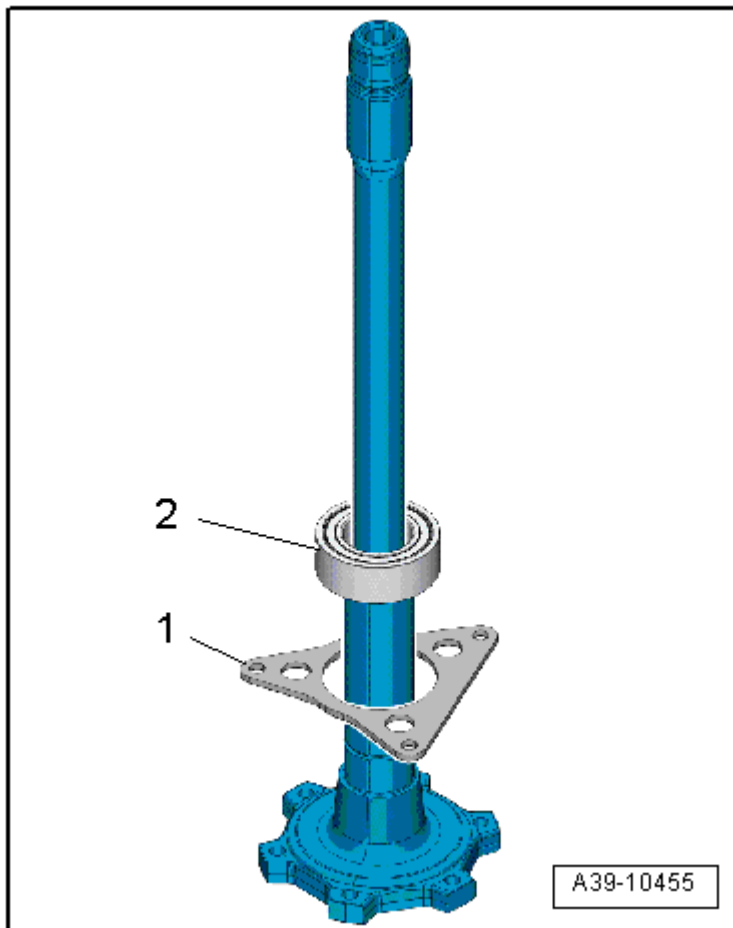


Fig. 83: Install New Bearing Bracket
Courtesy of AUDI OF AMERICA, LLC

- Installed position: the printed side faces the drive axle flange
- Install the new ball bearing -2-.
- Install the ball bearing -A- all the way on with the bearing bracket -B- installed.

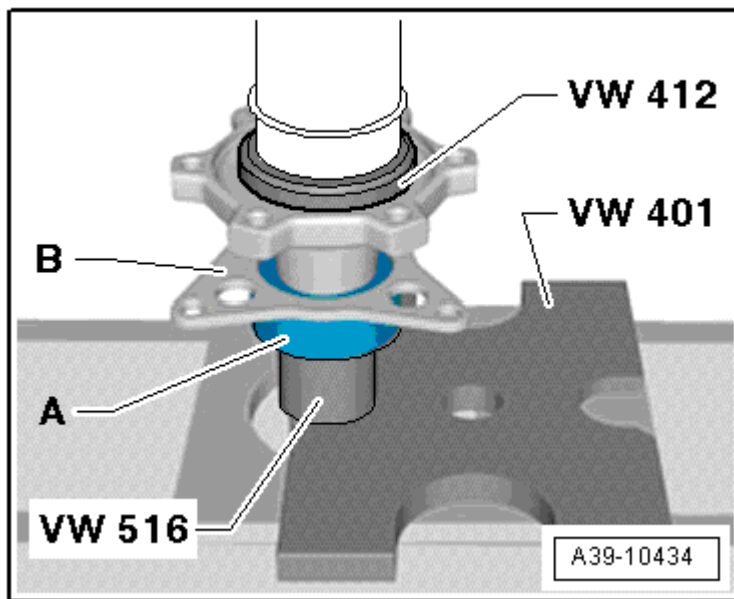


Fig. 84: Install Ball Bearing

Courtesy of AUDI OF AMERICA, LLC

-- Install the circlip -1- in the flange shaft groove.

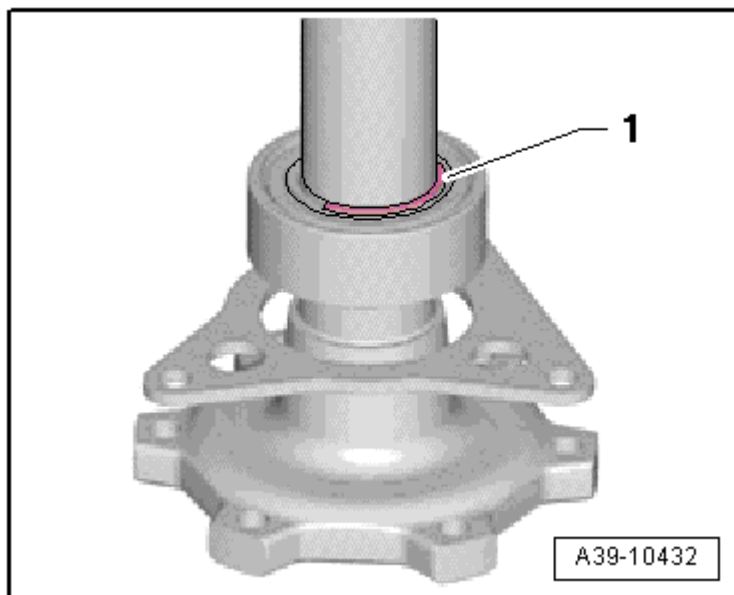


Fig. 85: Remove Left Flange Shaft

Courtesy of AUDI OF AMERICA, LLC

SPECIAL TOOLS

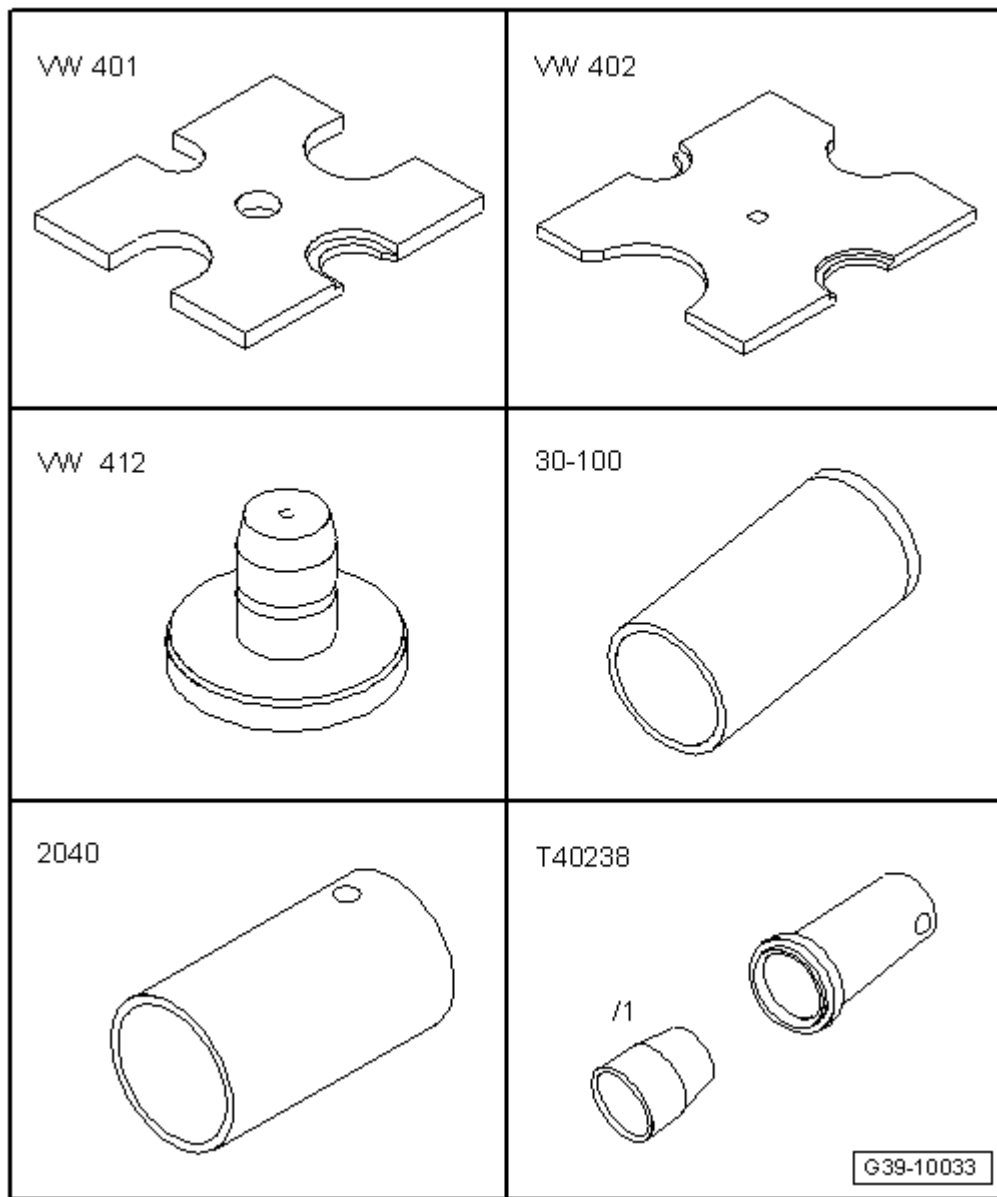
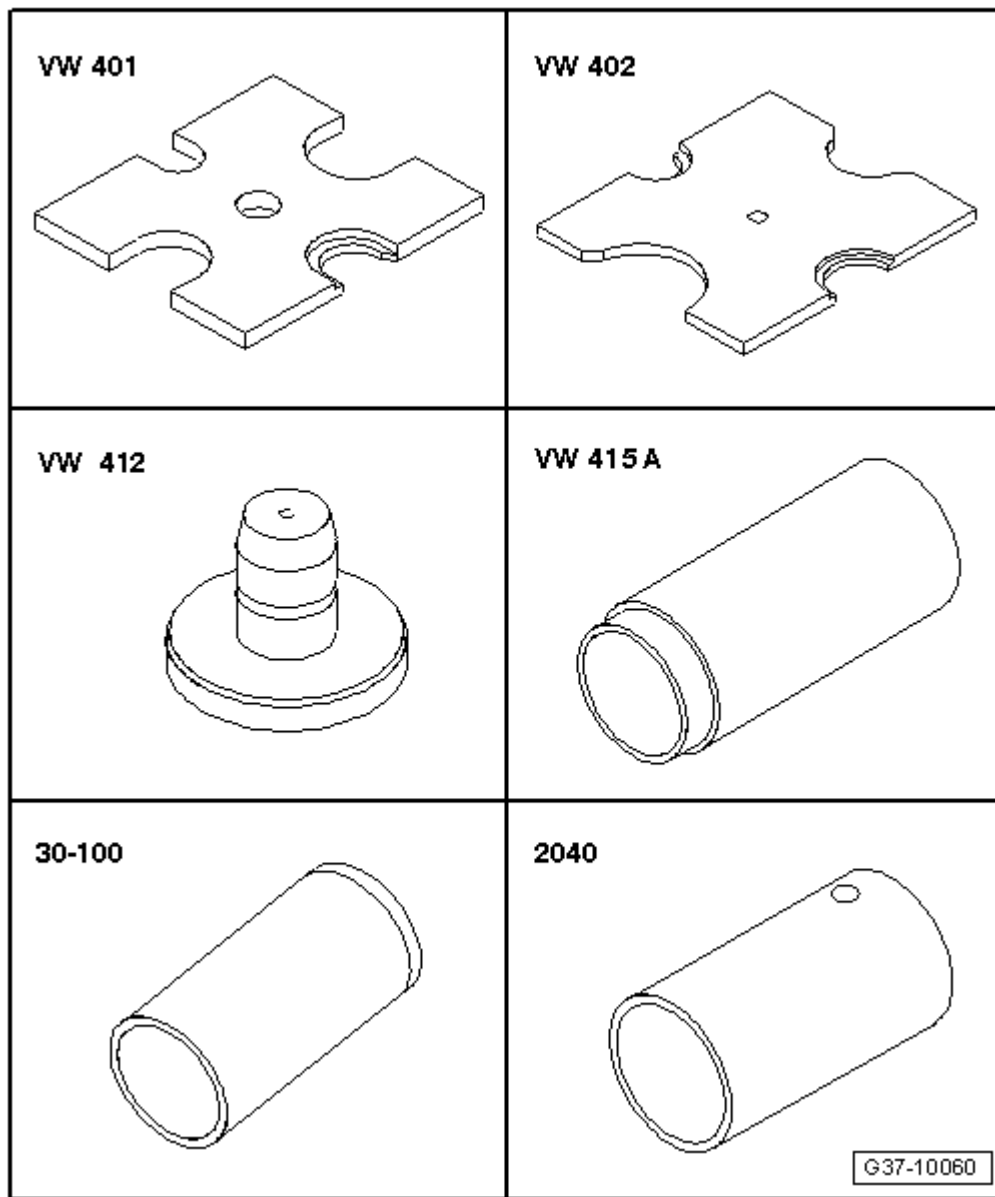


Fig. 86: Special Tools Overview

Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Thrust Disc VW 412
- Press Tube 30 - 100
- Press Tube 2040
- Oil Seal Installing Tool T40238

**Fig. 87: Special Tools Overview**

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

Special tools and workshop equipment required

- Lifting Eyebolt 3368

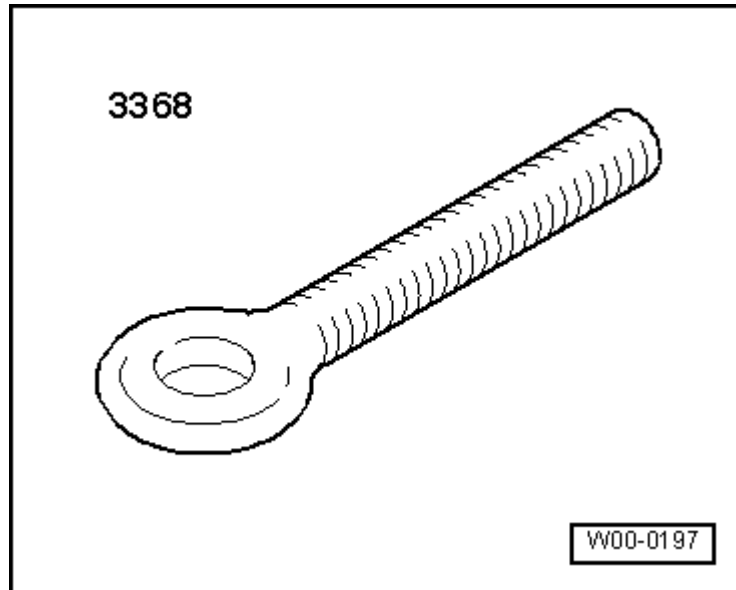


Fig. 88: Lifting Eyebolt 3368
Courtesy of AUDI OF AMERICA, LLC

- Pulling Hook T20143/2

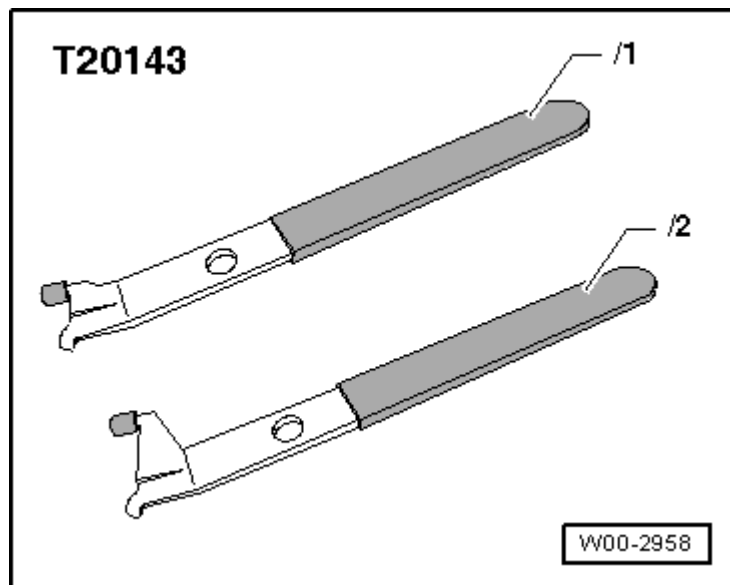


Fig. 89: Extractor Hook T20143
Courtesy of AUDI OF AMERICA, LLC

- Thrust Piece T40163

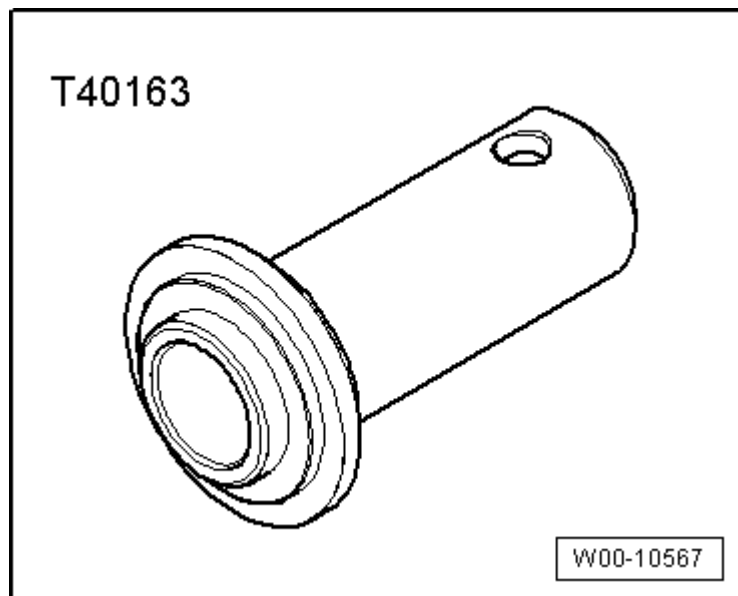


Fig. 90: Thrust Piece T40163
Courtesy of AUDI OF AMERICA, LLC

- Thrust Piece for Final Drive at Gearbox T40164

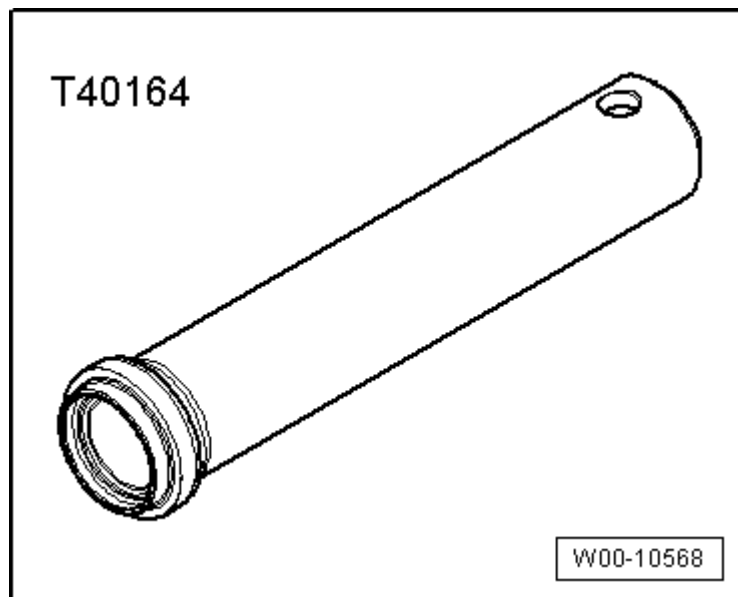


Fig. 91: Thrust Piece for Final Drive at Gearbox T40164
Courtesy of AUDI OF AMERICA, LLC

- Thrust Piece for Final Drive at Gearbox T40165

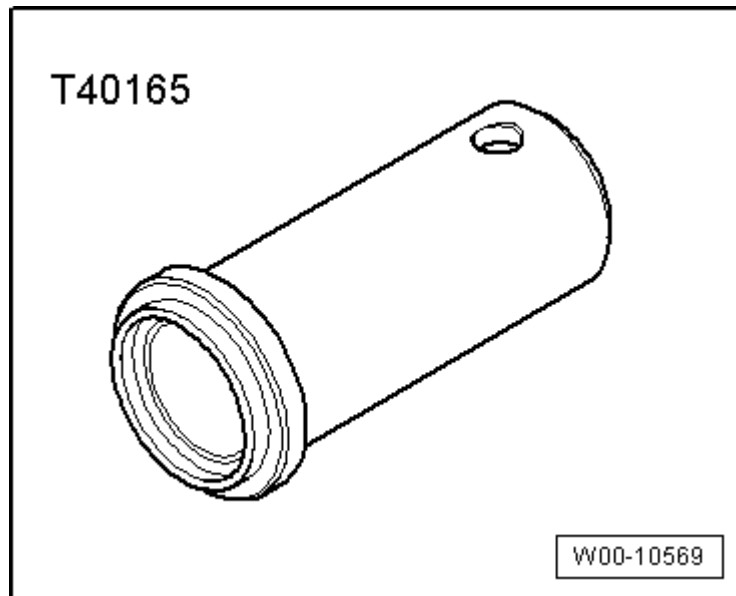


Fig. 92: Thrust Piece for Final Drive at Gearbox T40165
Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T40198

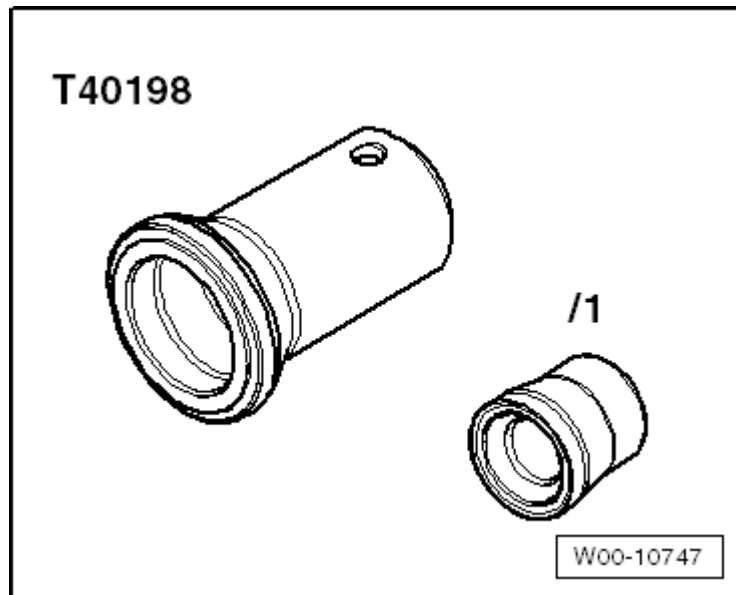


Fig. 93: Assembly Tool T40198
Courtesy of AUDI OF AMERICA, LLC

- Subframe Support Assembling Device T40238

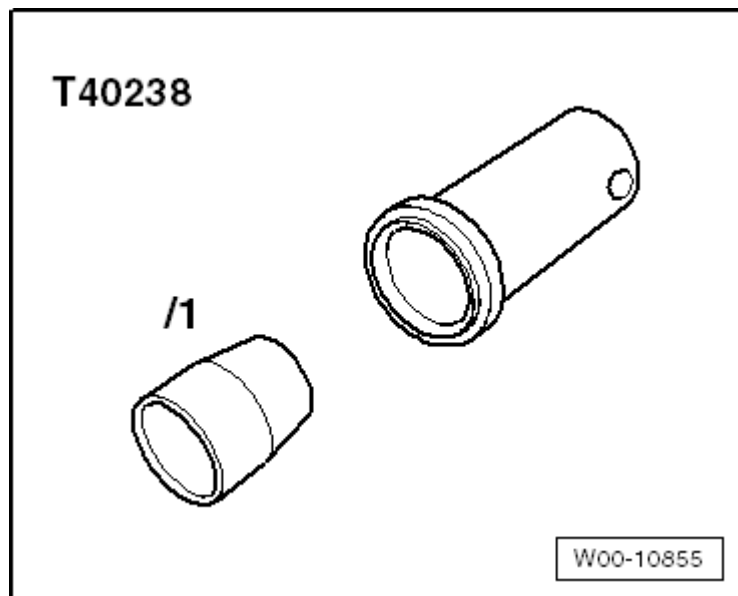


Fig. 94: Subframe Support Assembling Device T40238
Courtesy of AUDI OF AMERICA, LLC

- Oil Collecting and Extracting Device V.A.G 1782

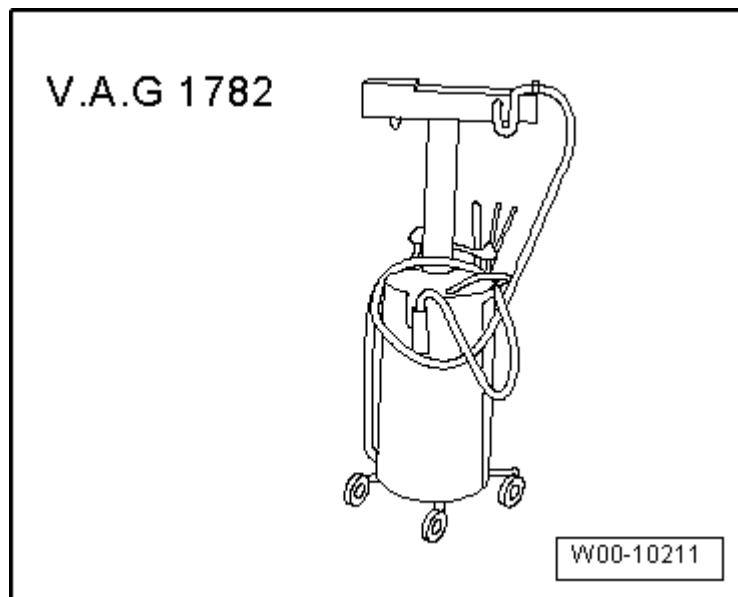


Fig. 95: Identifying Oil Extractor V.A.G 1782
Courtesy of AUDI OF AMERICA, LLC

- Needle Bearing Drift VW 295

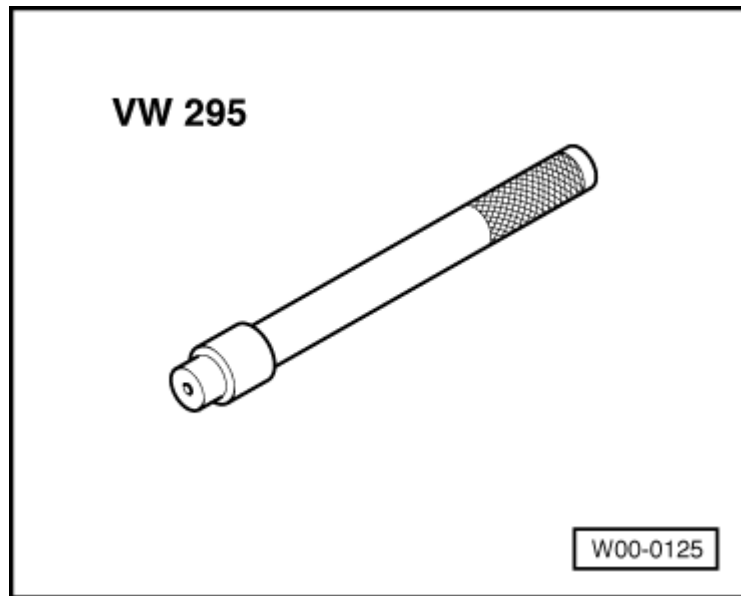


Fig. 96: Drift VW 295

Courtesy of AUDI OF AMERICA, LLC

- Tube 42 mm Dia.VW 516

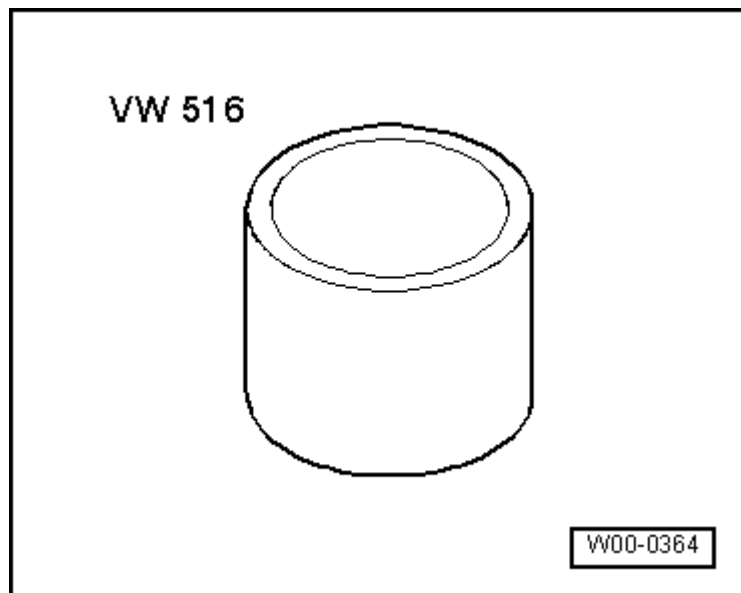


Fig. 97: Tube 42 mm Dia VW 516

Courtesy of AUDI OF AMERICA, LLC

- Slide Hammer-Complete Set VW 771

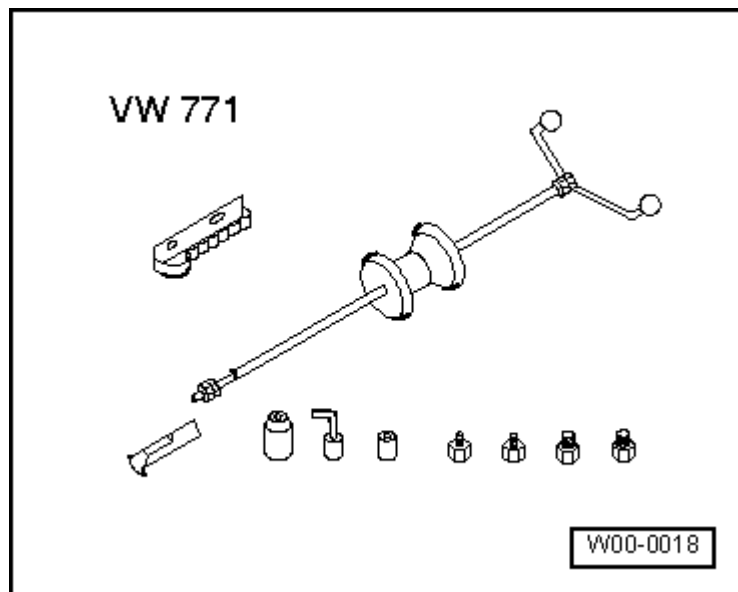


Fig. 98: Identifying Slide Hammer VW 771

Courtesy of AUDI OF AMERICA, LLC

- Not illustrated:
- Guide Sleeve T40198/1
- Tube T40104/2 from Removal and Assembly Tool T40104
- Gearbox Support T40173
- Pulling Sleeve T40238/1
- Straight Edge 500 mm VAS 6075
- Engine and Transmission Holder VAS 6095
- Sleeve VW 284/1 from Driver Sleeve VW 284
- Thrust Tube VW 455

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