

Repair Manual

Audi A4 2008 ➤ ,
Audi A5 Cabriolet 2009 ➤ ,
Audi A5 Coupé 2008 ➤ , Audi A6 2011 ➤ ,
Audi A6 China 2012 ➤ ,
Audi A7 Sportback 2011 ➤ ,
Audi A8 2010 ➤ , Audi Q5 2008 ➤ ,
Audi Q5 China 2010 ➤

Rear Final Drive 0BC, 0BD, 0BE, 0BF

Edition 03.2020



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List of Workshop Manual Repair Groups

Repair Group

00 - General, Technical Data

39 - Final Drive, Differential



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

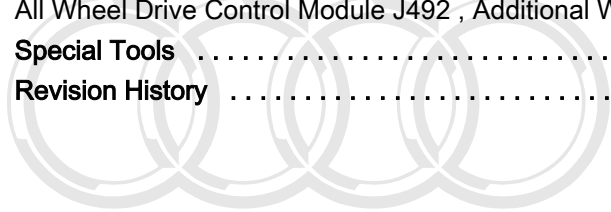
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00 – General, Technical Data

1 Identification

(Edition 03.2020)

⇒ [“1.1 Final Drive Identification”, page 1](#)

1.1 Final Drive Identification

⇒ [“1.1.1 Final Drive Identification, 0BC”, page 1](#)

⇒ [“1.1.2 Final Drive Identification, 0BD”, page 2](#)

⇒ [“1.1.3 Final Drive Identification, 0BE, 0BF”, page 3](#)

1.1.1 Final Drive Identification, 0BC

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The 0BC rear final drive unit is used with the following transmissions:

- ◆ 6-Speed Manual Transmission 0B2 All Wheel Drive (AWD)
- ◆ 6-Speed Manual Transmission 0B4 All Wheel Drive (AWD)
- ◆ 7-Speed DSG Transmission 0B5 All Wheel Drive (AWD)
- ◆ Automatic Transmission 0B6 All Wheel Drive (AWD)
- ◆ 8-Speed Automatic Transmission 0BK All Wheel Drive (AWD)
- ◆ 8 speed automatic transmission 0BW All Wheel Drive (AWD)
(only Q5 hybrid)

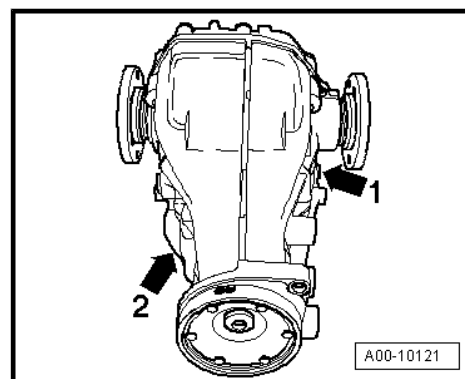
Rear Final Drive Allocation

- ◆ Refer to ⇒ [“2.1 Transmission/Engine Allocation”, page 5](#)

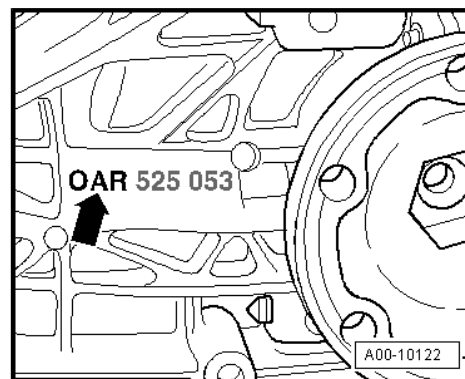
Layout on Rear Final Drive

Final drive 0BC -arrow 1- and 0AR

Engine code and production date -arrow 2-

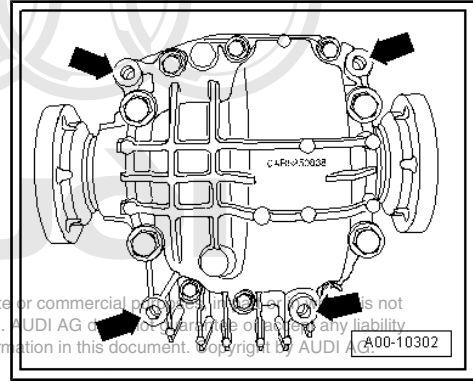


Final Drive 0BC -arrow- and 0AR



i Note

- ◆ The designation "0AR" can always be found on the rear final drive housing. Changes to the housings is what differentiate the "0BC" and "0AR" final drives.
- ◆ Another characteristic is the location of the threaded holes -arrows- for securing the crossmember on the rear final drive.
- ◆ The final drive "0BC" has four threaded holes -arrows- for the crossmember mounting in the final drive housing. There is also an additional threaded hole for securing the final drive to the subframe under the flange/driveshaft.



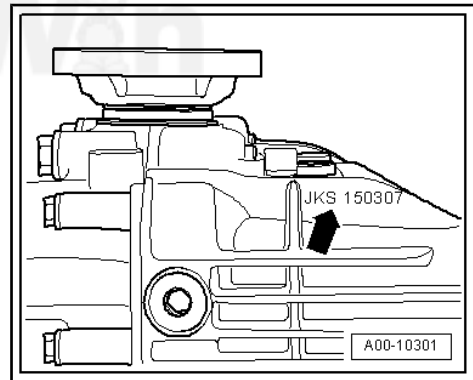
Rear Final Drive Code Letters and Build Date

| | | | | |
|----------|-------|-----|-------|-----------------|
| Example: | JKS | 15 | 03 | 07 |
| | | | | |
| | Codes | Day | Month | Production year |
| | | | | -2007- |

Additional data can be ignored.

i Note

When installing a new rear final drive unit, the final drive code, the PR number and the vehicle engine code must be verified in the Parts Catalog. This is the only to assure the correct allocation.



1.1.2 Final Drive Identification, 0BD

The 0BD rear final drive unit is assigned to the following transmissions:

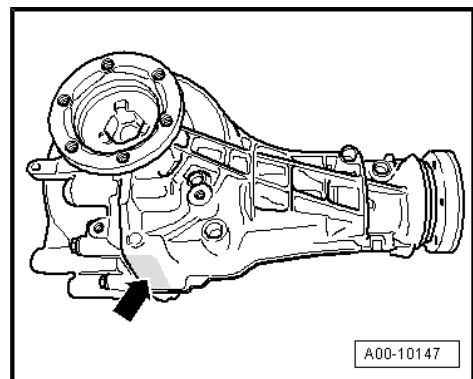
- ◆ 6-Speed Manual Transmission 0B2 All Wheel Drive (AWD)
- ◆ 6-Speed Manual Transmission 0B4 All Wheel Drive (AWD)
- ◆ 7-Speed DSG Transmission 0B5 All Wheel Drive (AWD)
- ◆ Automatic Transmission 0B6 All Wheel Drive (AWD)
- ◆ 8-Speed Automatic Transmission 0BK All Wheel Drive (AWD)

Rear Final Drive Allocation

- ◆ Refer to ⇒ ["2.1 Transmission/Engine Allocation", page 5](#)

Layout on Rear Final Drive

Final drive 0BD, code letters and manufacture date -arrow-

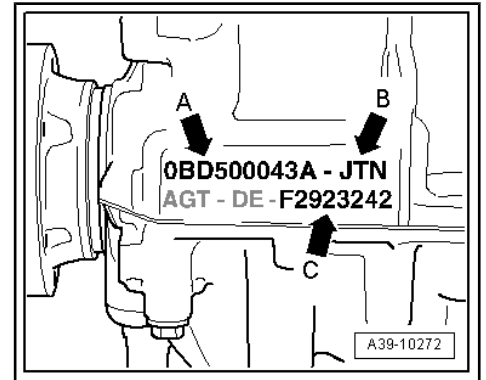


-Arrow A- Final Drive 0BD with Part Number (example: 0BD 500 043A)

-Arrow B- Code Letters "JTN"

-Arrow C- Rear Final Drive Date of Manufacture

| | | | |
|---------------|---|---|-------------------------------------|
| Exam- ple: | F | 292 | 3242 |
| | | | |
| | Production year- 2006- F = 2006, G = 2007, H = 2008, etc. | Production date -292nd calendar day- (always given in three-digit for- mat) | day of manufacture serial number |



Additional data can be ignored.

 Note

If the rear final drive unit is replaced, not only the rear final drive code, but also the PR number and the vehicle engine code must be verified in the Parts Catalog. This is the only to assure the correct allocation.

1.1.3 Final Drive Identification, 0BE, 0BF

The »Rear Final Drive 0BF« is installed in Audi A4 from MY 2008, Audi A5 Coup from MY 2008, Audi A5 Cabriolet from 2009, Audi A6 from MY 2011, Audi A7 from MY 2011, and Audi A8 from My 2010.

Allocation to the following transmissions:

- ◆ 6-Speed Manual Transmission 0B2 All Wheel Drive (AWD)
- ◆ 6-Speed Manual Transmission 0B4 All Wheel Drive (AWD)
- ◆ 7-Speed DSG Transmission 0B5 All Wheel Drive (AWD)
- ◆ Automatic Transmission 0B6 All Wheel Drive (AWD)
- ◆ 8-Speed Automatic Transmission 0BK All Wheel Drive (AWD)

The »Rear Final Drive 0BE« is an enhanced version of the »0BF« and is installed exclusively with the V8 TDI Engine in the Audi A8 from MY 2010.

Allocation to the following transmission:

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- ◆ 8-Speed Automatic Transmission 0BL All Wheel Drive (AWD)

Rear Final Drive Allocation

- ◆ Refer to ⇒ ["2.1 Transmission/Engine Allocation", page 5](#)

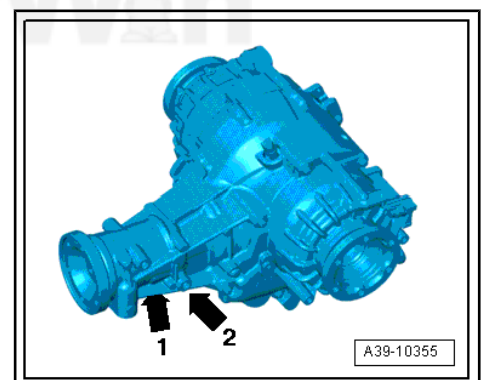
Layout on Rear Final Drive

Clutch classification -arrow 1-

Engine code and production date -arrow 2-

 Note

A characteristic of the rear final drive "0BF and 0BE" is the hydraulic control unit with the side chambers.

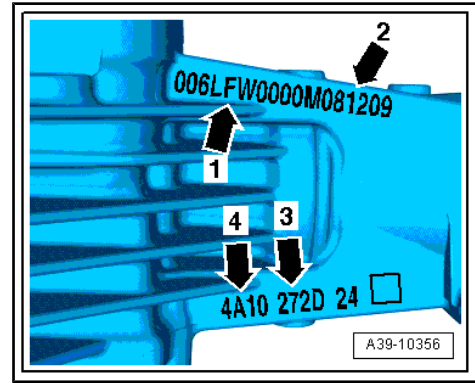




- ◆ -Arrow 1- code -LFW-
- ◆ -Arrow 2- Rear final drive build dates

| | | | |
|-----------------------|------------------------|-------|-----|
| Exam- ple: | 08 | 12 | 09 |
| | | | |
| | Production year -2008- | Month | Day |

- ◆ -Arrow 3- Classification (classification of the clutch friction values) for the right clutch. Example: -272D-
- ◆ -Arrow 4- Classification (classification of the clutch friction values) for the left clutch. Example: -4A10-



Additional data can be ignored.



Note

When the rear final drive is replaced, not only the final drive code but also the PR number and the vehicle engine code must be verified in the Parts Catalog. This is the only to assure the correct allocation.



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2 Technical Data

⇒ [“2.1 Transmission/Engine Allocation”, page 5](#)

⇒ [“2.2 Capacities”, page 5](#)

2.1 Transmission/Engine Allocation

Refer to the Parts Catalog for the following information.

- ◆ Codes
- ◆ Production time period.
- ◆ Axle ratio
- ◆ Drive Axle flange allocation
- ◆ Allocated to the engine, manual transmission and automatic transmission using the code letters and the PR numbers

2.2 Capacities

⇒ [“2.2.1 Capacities, Rear Final Drive 0BC”, page 5](#)

⇒ [“2.2.2 Capacities, Rear Final Drive 0BD”, page 5](#)

⇒ [“2.2.3 Capacities, Rear Final Drive 0BF”, page 5](#)

⇒ [“2.2.4 Capacities, Rear Final Drive 0BE”, page 5](#)

2.2.1 Capacities, Rear Final Drive 0BC

Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03

- Checking gear oil level. Refer to
⇒ [“4.2 Gear Oil, Checking Level”, page 101](#) .

2.2.2 Capacities, Rear Final Drive 0BD

Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03

- Checking gear oil level. Refer to
⇒ [“4.2 Gear Oil, Checking Level”, page 101](#) .

2.2.3 Capacities, Rear Final Drive 0BF



Caution

Gear oil and ATF fluid change.

- *For some RS models the gear oil as well as the ATF must be changed.*
- *Refer to ⇒ Maintenance Intervals; Rep. Gr. 03 for the change interval.*
- *For all other vehicles there is no change interval.*

Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03

2.2.4 Capacities, Rear Final Drive 0BE



Note

The rear final drive 0BE is only installed with the V8 TDI engine.

Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03



3 Overview - Transmission

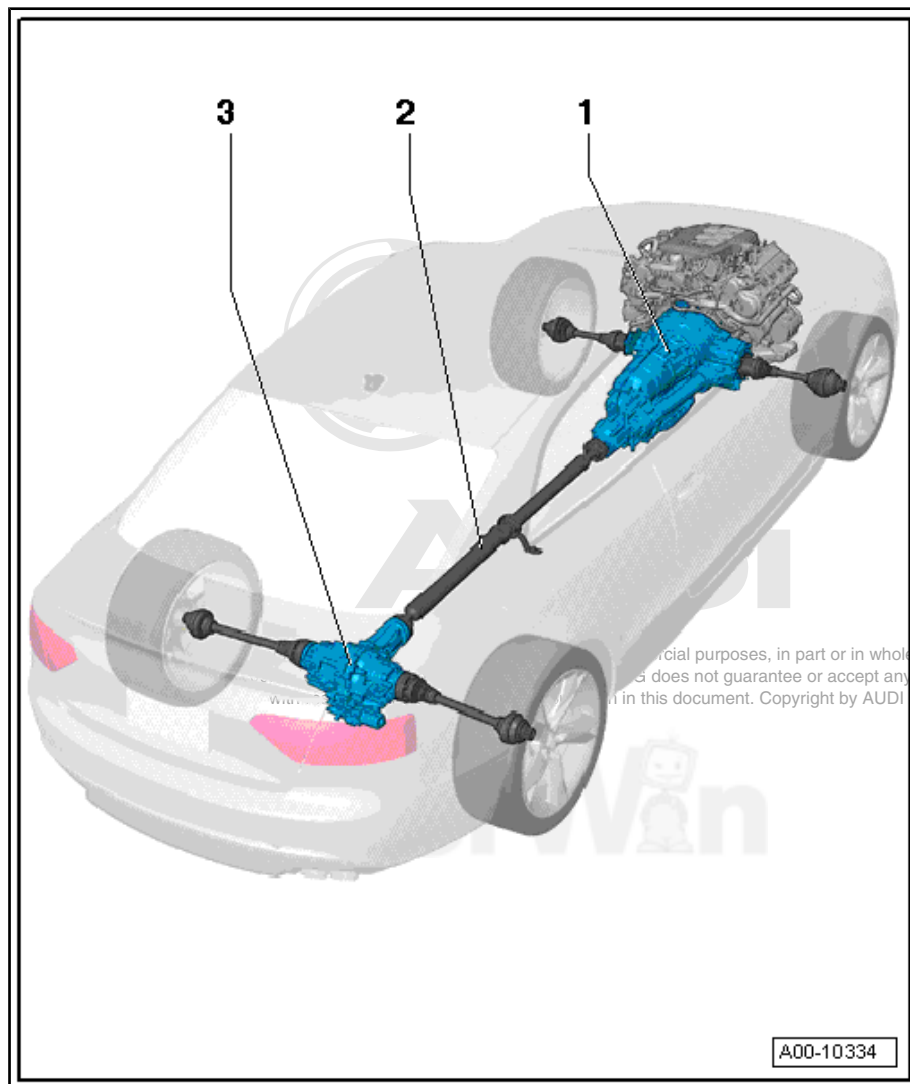
1 - Transmission

2 - Driveshaft

- ❑ Overview. Refer to [⇒ "1.1 Overview - Driveshaft", page 18](#) .
- ❑ Removing and installing. Refer to [⇒ "1.2 Driveshaft, Removing and Installing", page 23](#) .

3 - Rear Final Drive

- ❑ Removing and installing. Refer to [⇒ "2 Final Drive", page 43](#) .
- ❑ Disassembling and assembling. Refer to [⇒ "3 Final Drive, Disassembling and Assembling", page 84](#) .



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4 Electrical Components

⇒ [“4.1 Component Location Overview - Electrical Components”, page 7](#)

4.1 Component Location Overview - Electrical Components

1 - All Wheel Drive Control Module - J492-

- ❑ Component location A4 Sedan, A5 Coupe and A5 Cabriolet. Refer to ⇒ [Fig. ““ All Wheel Drive Control Module -J492- in the A4 Sedan, A5 Coupe and the A5 Cabriolet””](#) , page 151 .

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- ❑ Component location A4 Avant. Refer to ⇒ [Fig. ““ All Wheel Drive Control Module -J492- in the A4 Avant””](#) , page 151 .

- ❑ Component location A5 Sportback. Refer to ⇒ [Fig. ““ All Wheel Drive Control Module -J492- in the A5 Sportback””](#) , page 152 .

- ❑ Component location A6 and A7. Refer to ⇒ [Fig. ““ All Wheel Drive Control Module -J492- in the Audi A6/A7””](#) , page 152 .

- ❑ Component location A8. Refer to ⇒ [Fig. ““ All Wheel Drive Control Module -J492- in the A8””](#) , page 152 .

- ❑ Removing and installing. Refer to ⇒ [“8.2 All Wheel Drive Control Module J492 , Removing and Installing”](#) , page 153 .

- ❑ Additional work after replacing the control module. Refer to ⇒ [“8.3 All Wheel Drive Control Module J492 , Additional Work after Replacing”](#) , page 154 .

- ❑ Important signals from engine control module and ABS Control Module - J104- are transmitted via the Data bus to the All Wheel Drive Control Module .

2 - ABS Control Module - J104-

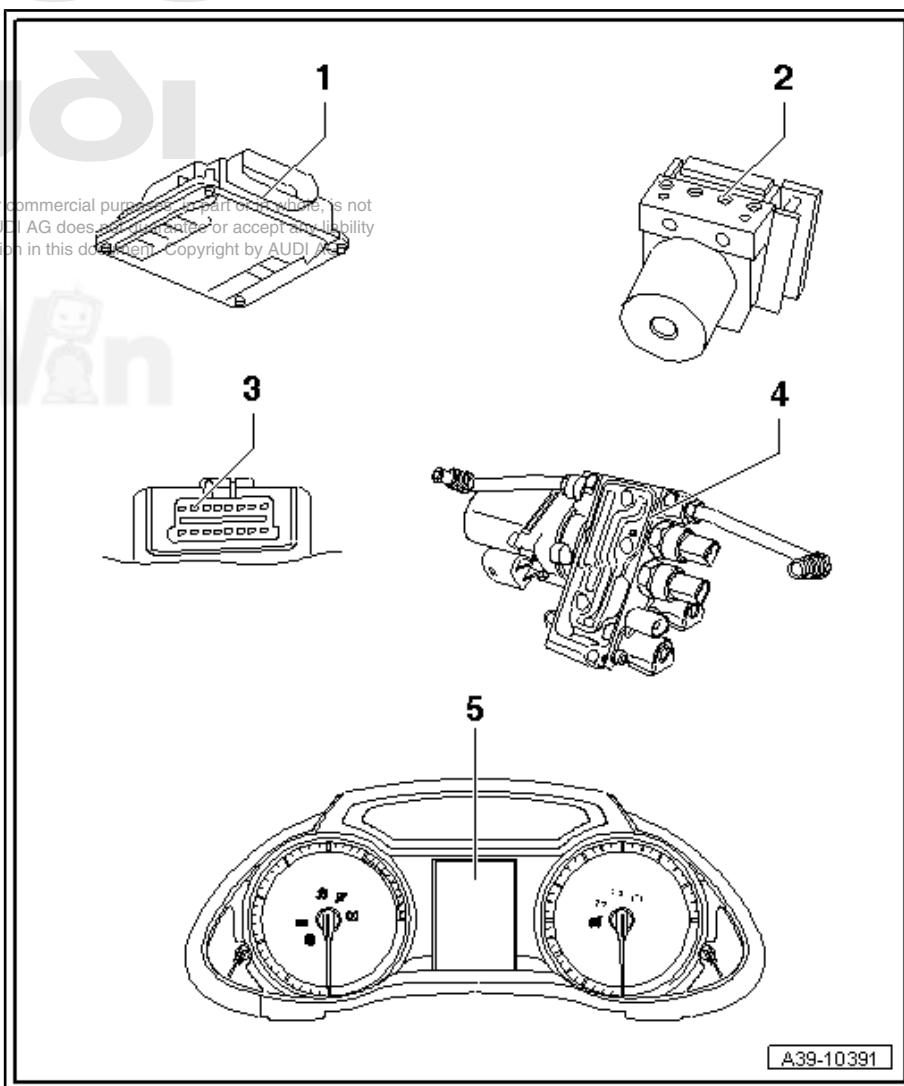
- ❑ Installed location, removing and installing. Refer to ⇒ Brake System; Rep. Gr. 45 ; Component Location Overview .

3 - Diagnostic Connection

- ❑ Installed location: Driver side footwell. Refer to ⇒ [Fig. ““Diagnostic Connection””](#) , page 151 .
- ❑ Vehicle Diagnostic Tester, Connecting and Selecting Functions

4 - Hydraulic Control Unit

- ❑ Component location: on rear final drive
- ❑ Removing and installing. Refer to ⇒ [“3.2 Hydraulic Control Unit, Removing and Installing”](#) , page 87 .





- ❑ Disassembling and assembling. Refer to
⇒ [“3.3 Hydraulic Control Unit, Disassembling and Assembling”, page 90](#) .
- ❑ Hydraulic control unit with:
 - ◆ All Wheel Drive Pump - V415- . Refer to
⇒ [“3.4 All Wheel Drive Pump V415 , Removing and Installing”, page 93](#) .
 - ◆ Oil Pressure/Temperature Sensor 2 - G640- . Refer to
⇒ [“3.5 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640 , Removing and Installing”, page 94](#) .
 - ◆ Oil Pressure/Temperature Sensor - G437- . Refer to
⇒ [“3.5 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640 , Removing and Installing”, page 94](#) .
 - ◆ All Wheel Drive Clutch Valve 2 - N446- . Refer to
⇒ [“3.6 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing”, page 98](#) .
 - ◆ All Wheel Drive Clutch Valve - N445- . Refer to
⇒ [“3.6 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing”, page 98](#) .

5 - Display in Instrument Cluster



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5 Safety Precautions

⇒ ["5.1 General Safety Precautions", page 9](#)

⇒ ["5.2 Safety Precautions when Working on High-Voltage Vehicles", page 10](#)

5.1 General Safety Precautions

Pay attention to the following to avoid personal injury and vehicle damage:

 **WARNING**


Risk of injury and accident by accidentally engaging a gear with the engine running.

- ◆ *Shift the transmission into "P" and set the parking brake to lock the electro-mechanical parking brake before working on a running engine.*

Danger of poisonous exhaust gas with the engine running.

- ◆ *When engine is running, an exhaust extracting system must always be connected to the exhaust system.*

Safety Precautions, Vehicles with Start/Stop System


 **WARNING**

Risk of injury if the engine starts automatically in vehicles with a Start/Stop System.

- ◆ *For vehicles with an activated Start/Stop System (recognizable from a notification in the instrument cluster), the engine can be started automatically if needed.*
- ◆ *Make sure the Start/Stop system is deactivated when working on the vehicle (turn off ignition and turn the ignition back on if needed).*

To prevent personal injury, damage or destruction of electrical and electronic components, observe the following:

- ◆ Only connect and disconnect test equipment when the ignition is off.

 **Caution**

Risk of destroying electronic components when disconnecting the battery.

- ◆ *Follow the steps when disconnecting the battery.*
- ◆ *Always turn off the ignition before disconnecting the battery.*

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .



Pay attention to the following if testing equipment must be used during a road test:



WARNING

There is a risk of an accident due to distractions and improperly secured testing equipment.

The front passenger airbag poses a risk if it deploys during an accident.

- *Operating testing equipment while driving is a distraction.*
- *Testing equipment that is not secured properly increases the risk of personal injury.*
- ◆ *Always secure testing equipment to the rear seat with a strap and have a second technician operate it in the rear seat.*

5.2 Safety Precautions when Working on High-Voltage Vehicles

⇒ [“5.2.1 Safety Precautions for De-Energizing the Voltage in the High-Voltage System”, page 10](#)

⇒ [“5.2.2 Safety Precautions for Re-Energizing the High-Voltage System”, page 11](#)

5.2.1 Safety Precautions for De-Energizing the Voltage in the High-Voltage System

- The high-voltage system may only be turned off by qualified personnel (Audi high-voltage technician). Definition and explanation of qualifications. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System General Warnings ..
- Before beginning any work on high-voltage systems, the high-voltage system must be turned off. Refer to the individual repair procedure on how to de-energize the high-voltage system. Additional information regarding the disabling of the high-voltage system: Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System, De-Energizing .
- All additional warning messages and instructions must be observed when working with high-voltage systems. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System General Warnings .

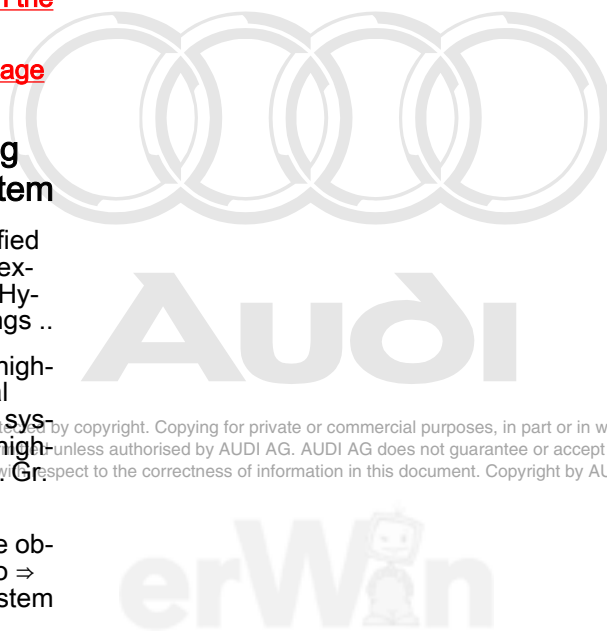


Note

For concerns or questions about the concepts see persons with “special training in electrical systems”, “Audi high-voltage technicians”, “Audi subject specialists for work on high-voltage systems” or speak with the corresponding importer about questions before beginning any work on the high-voltage system.

For work during which the voltage must be de-energized.

Turning off the voltage in the high-voltage system is carried out exclusively via the Guided Fault Finding on the Vehicle Diagnostic Tester .



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DANGER!

Extremely dangerous high-voltage

Electrocution can cause death or severe bodily injury.

- ◆ ***The high-voltage system may only be turned off by qualified personnel (Audi high-voltage technician).***
- ◆ ***It must be certain that the high-voltage system is de-energized. The de-energized state is guaranteed only on the Vehicle Diagnostic Tester via "Guided Fault Finding".***
- ◆ ***The qualified technician (Audi high-voltage technician) will make sure the voltage is turned off and that the system cannot turn back on again using a Service Disconnect Lock - T40262- . The qualified technician should make sure the system cannot turn on again by keeping the key and the High-Voltage System Maintenance Connector - TW- in a safe place.***
- ◆ ***The qualified personnel (Audi high-voltage technician) marks the vehicle with a warning label.***

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5.2.2 Safety Precautions for Re-Energizing the High-Voltage System

- The high-voltage system may only be re-energized by qualified personnel (Audi high-voltage technician). Definition and explanation of qualifications. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System General Warnings ..
- Energizing the high-voltage system. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System, Re-Energizing .
- All additional warning messages and instructions must be observed when working with high-voltage systems. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93 ; High Voltage System General Warnings .



Note

For concerns or questions about the concepts see persons with "special training in electrical systems", "Audi high-voltage technicians", "Audi subject specialists for work on high-voltage systems" or speak with the corresponding importer about questions before beginning any work on the high-voltage system.

Only by using the Guided Fault Finding in the Vehicle Diagnostic Tester can the high-voltage system be restarted.



DANGER!

Extremely dangerous high-voltage

Electrocution can lead to severe bodily injury or death

- ◆ *The high-voltage system may only be re-energized by qualified personnel (Audi high-voltage technician).*
- ◆ *Only the Vehicle Diagnostic Tester via "Guided Fault Finding" can guarantee if the system has been re-energized.*
- ◆ *The qualified personnel (Audi high-voltage technician) re-starts the vehicle.*
- ◆ *The qualified personnel (Audi high-voltage technician) marks the vehicle with a warning label.*



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6 Repair Information

⇒ [“6.1 General Repair Information”, page 13](#)

⇒ [“6.2 Safety Precautions and Test Procedures”, page 13](#)

⇒ [“6.3 Vehicle Lift Mode, Vehicles with Air Suspension”, page 15](#)

⇒ [“6.4 Special Tools”, page 15](#)

⇒ [“6.5 Components”, page 15](#)

6.1 General Repair Information

The highest level of care and cleanliness along with tools that function properly are required to ensure a proper and successful transmission repair. Of course the general safety precautions also apply when carrying out repair work.

A list of general instructions that apply to multiple repair procedures throughout the repair manual are summarized once here under the “Components” section. Refer to [“6.5 Components”, page 15](#). They apply to this repair manual.

6.2 Safety Precautions and Test Procedures



WARNING

Incorrect repairs to the rear final OBF and OBE could cause the final drive to malfunction.

- ***Testing, assembling and servicing must be performed by qualified personnel only.***

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Correct Oil Level

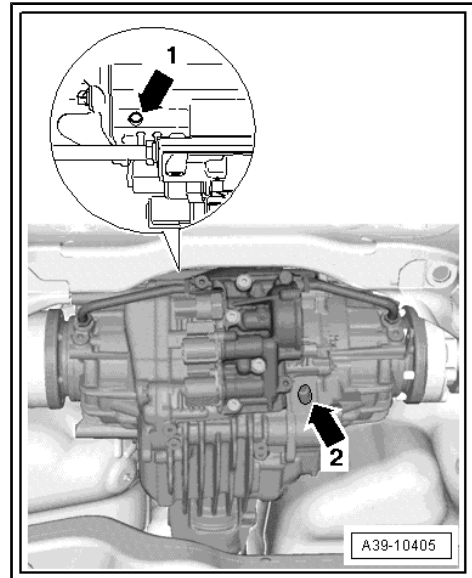
- ◆ Make sure the rear final drive is filled to specified oil capacity. Refer to ⇒ [“2.2 Capacities”, page 5](#) .
- ◆ Fix any leaks on the rear final drive, for example, on the sealing surfaces or the seals. The oil can leak out through the holes between the left -arrow 1- or right -arrow 2- chamber and the rear final drive.



Caution

Rear final drive malfunction.

- ◆ *Do not drive the rear final drive if there are leaks or insufficient oil.*
- ◆ *Leaks on the rear final drive must be corrected.*
- ◆ *Fill the ATF and/or gear oil if the levels are low.*
- ◆ *Only use ATF or gear oil available as a replacement part. Refer to the Parts Catalog.*
- ◆ *If the leaks cannot be repaired, then the rear final drive must be replaced.*



Rear Final Drive Performance



WARNING

Transmission control malfunction.

- *Always maintain all specifications when replacing transmission components. Only by doing so assures the performance and the response characteristics of the rear final drive 0BF and 0BE.*

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Replacing Transmission Components

- ◆ When replacing the All Wheel Drive Control Module - J492- , the adaptation values for the transmission mount (for example clutch wear, oil ageing) must be transmitted with the Vehicle Diagnostic Tester otherwise the performance of the rear final drive will be impaired.
- ◆ When replacing a chamber or the complete rear final drive, the clutch classification must be entered again in the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester . If the clutch classification is not performed in the All Wheel Drive Control Module - J492- then the rear final drive performance will be impaired. When replacing a chamber, the classification identification on the rear final drive housing must be made unrecognizable. The identification of the new classification is made on the new chamber housing.
- ◆ Do not place the removed rear final drive on any of the components from the hydraulic control unit (for example, clutch valves). This could damage the components.

Replacing the Oil Pressure/Temperature Sensor - G437- and/or Oil Pressure/Temperature Sensor 2 - G640- .

- ◆ The identity of the sensor in the All Wheel Drive Control Module - J492- must be adapted using the Vehicle Diagnostic Tester after replacing the Oil Pressure/Temperature Sensor - G437- or the Oil Pressure/Temperature Sensor 2 - G640- .



- ◆ Do not replace both the Oil Pressure/Temperature Sensor - G437- and Oil Pressure/Temperature Sensor 2 - G640- at the same time because a valid sensor identity is needed for the rear final drive classification to the All Wheel Drive Control Module - J492- . If the both sensors are replaced at the same time, the All Wheel Drive Control Module - J492- will interpret this as the rear final drive is being replaced. By doing this, adaptation values in the control module will be erased and the performance of the rear final drive will be impaired.
- ◆ If both the Oil Pressure/Temperature Sensor - G437- and the Oil Pressure/Temperature Sensor 2 - G640- must be replaced due to mechanical damage, for example, if the connector housing gets damaged, then this must be performed in two steps. After replacing the first sensor, the identity of the must be adapted in the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester . Do the same for the second sensor.
- ◆ If both the Oil Pressure/Temperature Sensor - G437- and Oil Pressure/Temperature Sensor 2 - G640- must be replaced at the same time due to an electrical fault, then the clutch classification must be entered into the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester . Additionally the ATF must be changed. Refer to [⇒ "5.3 ATF, Draining and Filling", page 111](#) .

Torque Displacement, Checking

After the following work the function 22- Checking the torque displacement must be performed:

- ◆ Working on the rear final drive wiring
- ◆ Working on the valves: All Wheel Drive Clutch Valve - N445- and All Wheel Drive Clutch Valve 2 - N446- .
- ◆ Working on the hydraulic control unit

Refer to [⇒ "3.7 Torque Displacement, Checking", page 100](#)

6.3 Vehicle Lift Mode, Vehicles with Air Suspension

Activate the lift mode before lifting the vehicle on a frame contact hoist (when there is no weight on the wheels). Refer to [⇒ Suspension, Wheels Steering; Rep. Gr. 00 ; Repair Instructions; Wheel Bearing in Control Position, Lifting Vehicles with Air Suspension](#) .

6.4 Special Tools

Refer to the Special Tools Catalog for the complete list of special tools used in this repair manual.

6.5 Components

Rear Final Drive

- ◆ Allocate bolts and other components according to final drive code using the Parts Catalog
- ◆ When installing, check the oil level in the rear final drive (Refer to [⇒ "4.2 Gear Oil, Checking Level", page 101](#) .) and the ATF level (Refer to [⇒ "5.2 ATF Level, Checking", page 110](#) .) and fill if necessary.
- ◆ Capacities and specifications. Refer to [⇒ "2.2 Capacities", page 5](#) .



- ◆ Clean the contact surfaces when installing brackets and waxed components. Contact surfaces must be free of wax and grease.
- ◆ Thoroughly clean the connection points and the surrounding area before loosening.

Oil, Environmental and Disposal Regulations

- ◆ Handle ATF, transmission fluid and other oils with care.
- ◆ Dispose of drained fluid properly.
- ◆ Follow the legal environmental and disposal regulations.
- ◆ Follow the instructions listed on the fluid packaging.

ATF and Gear Oil

Rear final drive 0BF and 0BE works with separated oil chambers for the ATF and gear oil.

- ◆ For the hydraulics (hydraulic control unit and left and right chambers) use only ATF which can be obtained as replacement part. Refer to Parts Catalog.
- ◆ For the final drive (gear set, differential) use only the gear oil which can be obtained as replacement part. Refer to the Parts Catalog.
- ◆ Other ATF or gear oil can cause function problems.



Caution

Gear oil and ATF fluid change.

- ***For some RS models the gear oil as well as the ATF must be changed.***
- ***Refer to ⇒ Maintenance Intervals, Rep. Gr. 03 for the change interval.***
- ***For all other vehicles there is no change interval.***

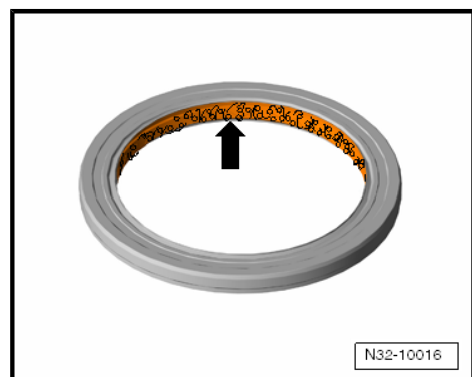
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Shaft Seals

- ◆ Lightly coat the shaft seal on the outer diameter with oil before installing.
- ◆ The open side on the shaft seals faces the fluid to be sealed off.
- ◆ After replacing any of the shaft seals, check the gear oil level (Refer to ⇒ [“4.2 Gear Oil, Checking Level”, page 101](#) .) or the ATF level in the final drive (Refer to ⇒ [“5.2 ATF Level, Checking”, page 110](#) .).

Shaft Seal for the Flange/Driveshaft

- ◆ Fill the space between the sealing lips -arrow- halfway with Sealing Grease - G 052 128 A1- .

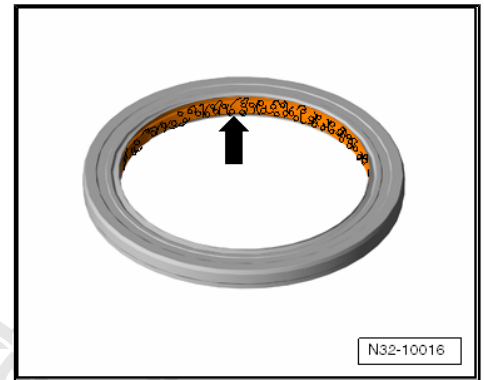


Flange Shaft Seals

- ◆ Coat the space between the sealing lips -arrow- with ATF .

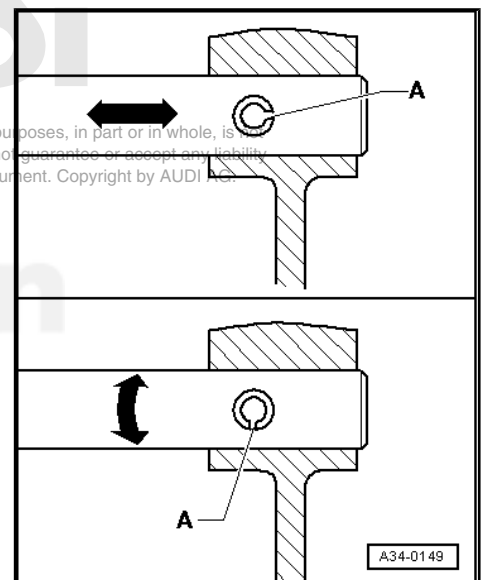
O-Rings, Gaskets and Seals

- ◆ O-rings, gaskets and seals must always be replaced.
- ◆ After removing the seals, examine the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- ◆ Thoroughly clean the housing separating surfaces before assembling.
- ◆ Lightly lubricate the O-rings before inserting to prevent the rings from being crushed during assembly.
- ◆ After replacing any of the gaskets, seal and o-rings, check the gear oil level (Refer to ["4.2 Gear Oil, Checking Level", page 101](#) .) or the ATF level in the final drive (Refer to ["5.2 ATF Level, Checking", page 110](#) .).



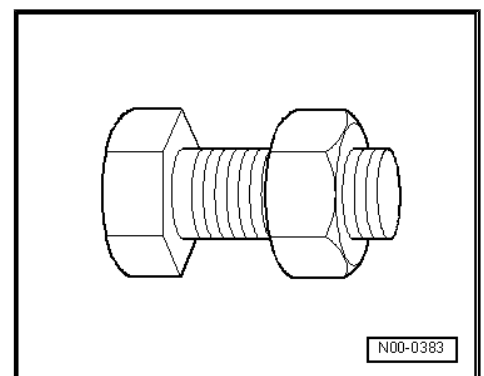
Circlips

- ◆ Do not stretch the circlips.
- ◆ Always replace damaged or stretched circlips.
- ◆ The circlips must rest at the bottom of the groove.
- ◆ Replace the adapter sleeves. Installation position: the slot -A- should align with the line of force -arrow-.



Bolts and Nuts

- ◆ Always loosen or tighten bolts and nuts on covers and housings diagonally.
- ◆ Parts which are particularly sensitive must not be tilted and must be loosen or tighten diagonally in stages.
- ◆ The tightening specifications given apply to uncoiled bolts and nuts.
- ◆ Always replace self-locking bolts and nuts.
- ◆ Clean threads of bolts that were applied with locking fluid using a wire brush (does not apply to driveshaft bolts: these must be replaced). Then insert the bolts with Locking Fluid - AMV 185 101 A1- .
- ◆ If self-locking bolts were installed or if regular bolts were installed with locking fluid, then the threaded holes must be cleaned, for example with a thread tap. Otherwise there is the risk that the bolts could break off the next time they are removed.





39 – Final Drive, Differential

1 Driveshaft

⇒ [“1.1 Overview - Driveshaft”, page 18](#)

⇒ [“1.2 Driveshaft, Removing and Installing”, page 23](#)

⇒ [“1.3 Drive Shaft, Removing and Installing from Rear Final Drive”, page 35](#)

⇒ [“1.4 Driveshaft, Installing on Transmission and Removing”, page 38](#)

⇒ [“1.5 Boot, Replacing”, page 40](#)

1.1 Overview - Driveshaft

⇒ [“1.1.1 Overview - Driveshaft, Mounted On Transmission Side”, page 18](#)

⇒ [“1.1.2 Overview - Driveshaft, Bolts On Transmission Side”, page 21](#)

1.1.1 Overview - Driveshaft, Mounted On Transmission Side

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Note

- ◆ *Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”, page 13](#).*
- ◆ *The attached driveshaft can only be separated from the transmission if it is completely removed.*
- ◆ *No repair work can be carried out on the driveshaft with the exception of removing, installing and adjusting.*
- ◆ *Always store and transport the driveshaft when it is fully extended.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*
- ◆ *If the driveshaft is separated only from the rear final drive, the driveshaft must be tied up or supported. If necessary, the driveshaft can be bent as far as the end stop of the center without force.*
- ◆ *Use the Counterhold - Kit - Multiple Use - T10172- with the Adapters - T10172/5- to loosen or tighten the driveshaft bolts.*
- ◆ *Always remove or install the driveshaft horizontally from the transmission output shaft.*
- ◆ *Tightening sequence for the attaching the driveshaft to the rear final drive. Refer to ⇒ [Fig. ““Driveshaft to Rear Final Drive - Tightening Specification and Sequence””, page 20](#).*

Should there be complaints (noise, vibration), do the following before replacing the driveshaft:

- ◆ Make sure the intermediate bearing is free of tension.
- ◆ Remove the driveshaft bolts from the rear final drive. Attaching the driveshaft according to the tightening sequence Refer to



⇒ Fig. ““Driveshaft to Rear Final Drive - Tightening Specification and Sequence”” , page 20 .

1 - Transmission

2 - Hose Clamp

- Replacing

3 - Driveshaft

- Removing and installing. Refer to ⇒ “1.2.1 Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side”, page 23 .
- Removing and installing on the rear final drive. Refer to ⇒ “1.3 Drive Shaft, Removing and Installing from Rear Final Drive”, page 35 .
- Boot replacement. Refer to ⇒ “1.5 Boot, Replacing”, page 40 .

4 - Locking Plate

- Replace after removing

5 - Bolt

Final Drive 0BC, 0BD, 0BF

- M8 x 45
- Tightening specification and sequence. Refer to ⇒ Fig. ““Driveshaft to Rear Final Drive - Tightening Specification and Sequence”” , page 20 .

Final drive 0BE

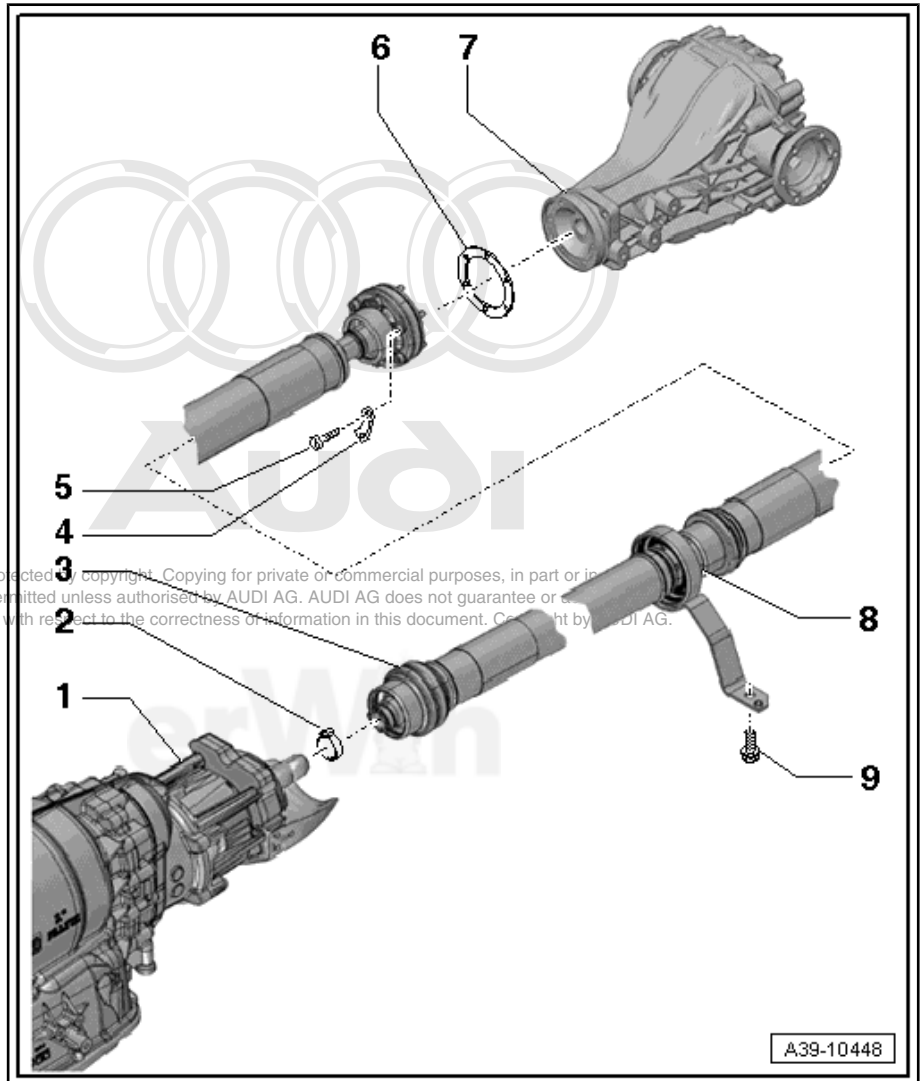
- M10 x 45 x 1
- Tightening specification and sequence. Refer to ⇒ Fig. ““Driveshaft to Rear Final Drive - Tightening Specification and Sequence”” , page 20 .
- Always replace after removing.
- Self-locking
- The threads in the flange shaft on the rear final drive must be cleaned of locking fluid residue. Use a thread tap to clean.

6 - Seal

- Replace after removing
- Clean the flange shaft and position the seal
- Ignore different colored sides when installing

7 - Rear Final Drive

Removing and installing. Refer to ⇒ “2 Final Drive”, page 43 .



8 - Intermediate Bearing

9 - Bolt

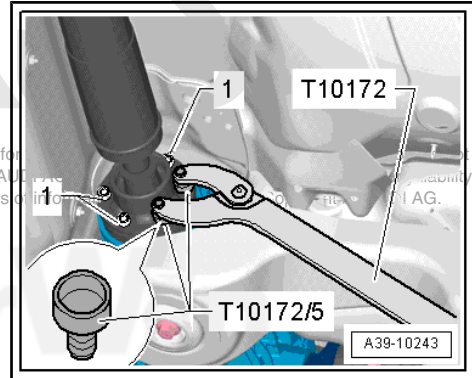
- 20 Nm

Driveshaft to Rear Final Drive - Tightening Specification and Sequence

- Always replace the driveshaft bolts -1-.
- Counterhold with Counterhold - Kit - Multiple Use - T10172- and Counterhold - Kit - Adapter 5 - T10172/5.
- Tighten the bolts -1- in three steps:

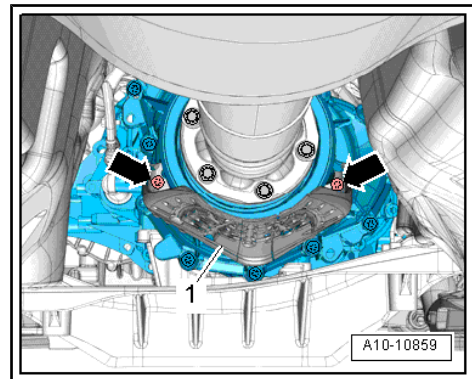
| Step | Bolts | Tightening Specification/Additional Turn M8 Bolts | Tightening Specification/Additional Turn M10 Bolts |
|------|-------|--|---|
| 1. | -1- | Next to the color dot 30 Nm ¹⁾ | Next to the color dot 50 Nm ¹⁾ |
| 2. | -1- | Next 30 Nm | Next 50 Nm |
| 3. | -1- | All around 90° additional turn | All around 90° additional turn |

- ¹⁾ By doing this, the CV joint is pushed slightly to the opposite side and imbalance is avoided.



Driveshaft Heat Shield - Tightening Specification

- Tighten the bolts -arrows- to 24 Nm.





1.1.2 Overview - Driveshaft, Bolts On Transmission Side



Note

- ◆ *Pay attention to the general repair information. Refer to ⇒ "6 Repair Information", page 13 .*
- ◆ *No repair work can be carried out on the driveshaft with the exception of removing, installing and adjusting.*
- ◆ *Always store and transport the driveshaft when it is fully extended.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*
- ◆ *If the driveshaft is separated only from the transmission or the rear final drive, the driveshaft must be tied up by the end or otherwise supported. If necessary, the driveshaft can be bent as far as the end stop of the center without force.*
- ◆ *Label the position of all the parts to each other before removing them. Install in the same position otherwise the imbalance will be excessive and the bearings could get damaged causing rumbling noises.*
- ◆ *Use the Counterhold - Kit - Multiple Use - T10172- with the Adapters - T10172/5- to loosen or tighten the driveshaft bolts.*
- ◆ *After detaching the driveshaft from the rear final drive, do not reinstall the balance disc (thicker washer between the backing plate and the internal multi-point bolt), if applicable.*
- ◆ *If there are concerns (noises, vibrations), check the intermediate bearing for tension before replacing the drive axle.*



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1 - Rear Final Drive

- Removing and installing. Refer to ["2 Final Drive", page 43](#) .

2 - Seal

- Replace after removing
- Clean the flange shaft and position the seal
- Ignore different colored sides when installing

3 - Driveshaft

- Removing and Installing. Refer to ["1.2.2 Driveshaft, Removing and Installing, Driveshaft Bolted on Transmission Side", page 30](#) .
- Removing and installing on the transmission. Refer to ["1.4 Driveshaft, Installing on Transmission and Removing", page 38](#) .
- Removing and installing on the rear final drive. Refer to ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .

4 - Balance Disc

- Not on every vehicle
- May be installed between the multi-point socket bolt -item 5- [=> Item 5 \(page 22\)](#) and the backing plate -item 6- [=> Item 6 \(page 22\)](#) on the rear final drive.
- If fitted, balance disc must not be installed when driveshaft has been detached from rear final drive.

5 - Bolt

- Always replace after removing
- Self-locking
- Always clean the threaded holes in the flange shafts. Use a thread tap.

• On the rear final drive:

- Tightening specification and sequence. Refer to ["Fig. "Driveshaft to Rear Final Drive - Tightening Specification", page 23](#)

• At the transmission:

- 30 Nm + 90°

6 - Locking Plate

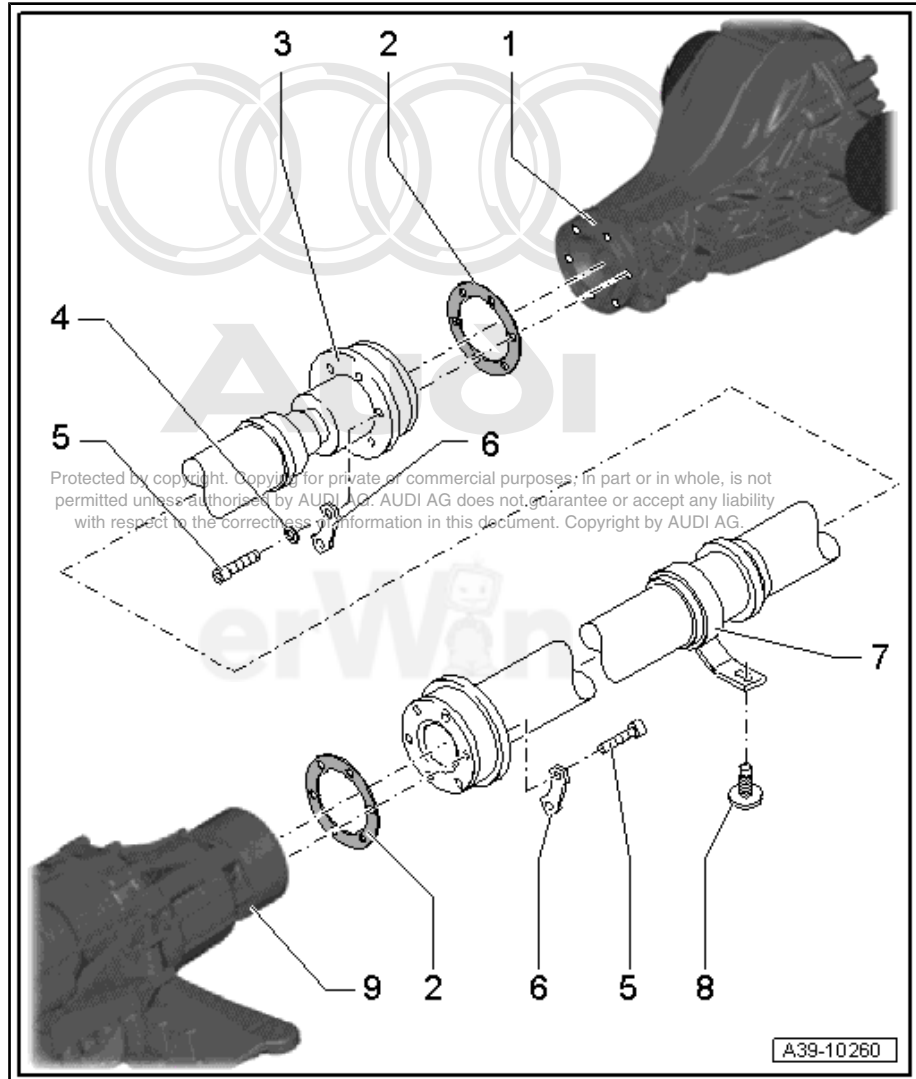
- Replace after removing

7 - Intermediate Bearing

8 - Bolt

- 20 Nm

9 - Transmission

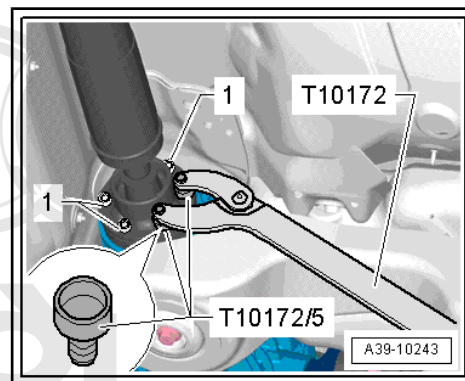


Driveshaft to Rear Final Drive - Tightening Specification and Sequence

- Always replace the driveshaft bolts -1-.
- Counterhold with Counterhold - Kit - Multiple Use - T10172- and Counterhold - Kit - Adapter 5 - T10172/5- .
- Tighten the bolts -1- in three steps:

| Step | Bolts | Tightening Specification/Additional Turn M8 Bolts | Tightening Specification/Additional Turn M10 Bolts |
|------|-------|--|---|
| 1. | -1- | Next to the color dot 30 Nm ¹⁾ | Next to the color dot 50 Nm ¹⁾ |
| 2. | -1- | Next 30 Nm | Next 50 Nm |
| 3. | -1- | All around 90° additional turn | All around 90° additional turn |

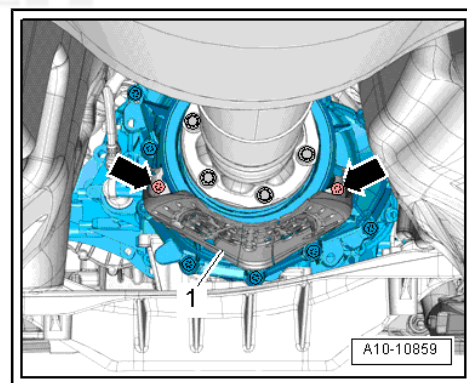
- ¹⁾ By doing this, the CV joint is pushed slightly to the opposite side and imbalance is avoided.



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Driveshaft Heat Shield - Tightening Specification

- Tighten the bolts -arrows- to 24 Nm.



1.2 Driveshaft, Removing and Installing

⇒ [“1.2.1 Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side”, page 23](#)

⇒ [“1.2.2 Driveshaft, Removing and Installing, Driveshaft Bolted on Transmission Side”, page 30](#)

1.2.1 Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side

Special tools and workshop equipment required

- ◆ Transmission Support - VW785/1B-
- ◆ Counterhold - Kit - Multiple Use - T10172-
- ◆ Counterhold - Kit - Adapter 5 - T10172/5-
- ◆ Hose Clip Pliers - VAG1275- or Pliers for CLIC-Hose Clamps - VAS6653- or Pinch-on Clamp Tool - VAS6199A-
- ◆ Hose Clip Pliers - VAG1275A-
- ◆ High Temperature Grease - G 052 133 A3-

Removing



Note

- ◆ *The attached driveshaft can only be separated from the transmission if it is completely removed.*
- ◆ *Perform work on driveshaft on a two-column workshop hoist if possible.*
- ◆ *After removing the driveshaft from the rear final drive, tie up the shaft ends or hold them up.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*
- ◆ *Always remove or install the driveshaft horizontally from the transmission output shaft.*

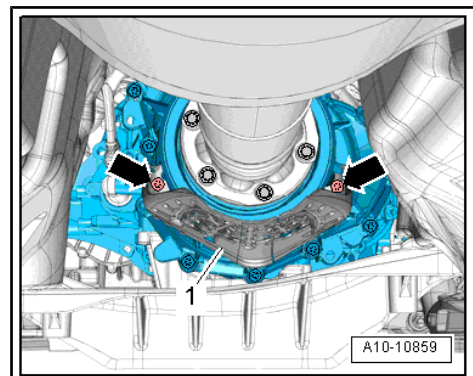
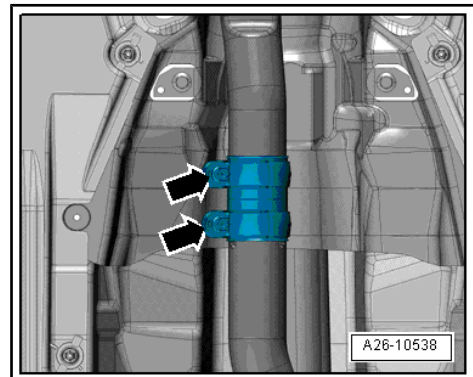


Caution

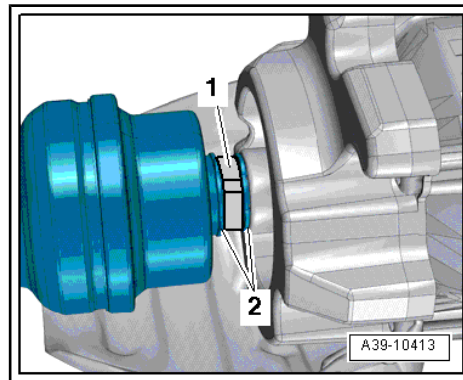
Risk of damaging the coupling elements.

- ◆ *Do not bend the coupling more than 10°.*
- ◆ *Do not load the coupling.*
- ◆ *Do not damage the wire mesh on the coupling.*

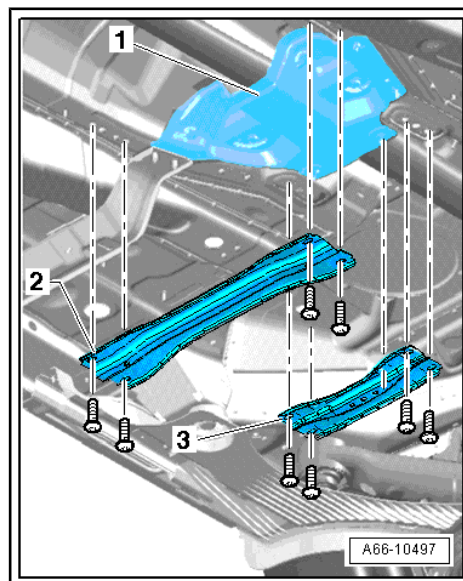
- Loosen clamping sleeve(s) -arrows- and push it toward the rear.
- Tie the front muffler or the left and right front exhaust pipe to the underbody.
- Remove the bolts -arrows- and remove the driveshaft heat shield -1- (if equipped).



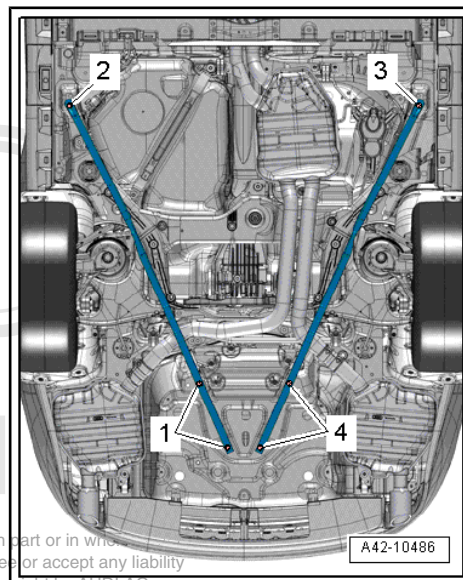
- Cut the clamp -1- for the driveshaft boot and remove it.



- If equipped, remove the crossmembers -2 and 3-.
- Remove the heat shield -1-.



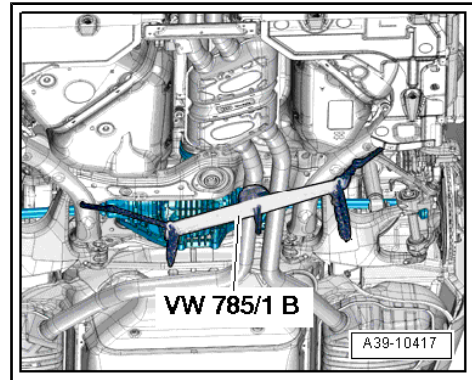
- If equipped, remove bolts -1, 2, 3 and 4- and remove the diagonal braces.



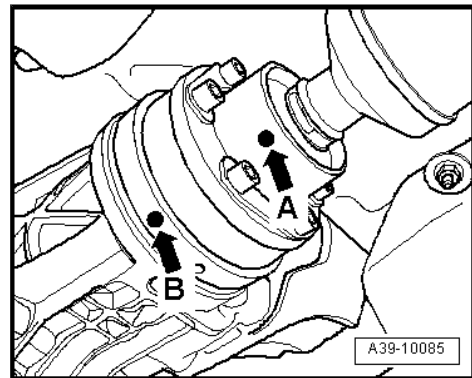
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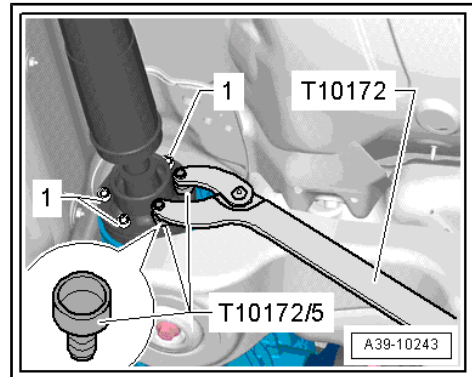
- Lower the front of the exhaust system rear section and then secure it using the -VW785/1B- , as illustrated.



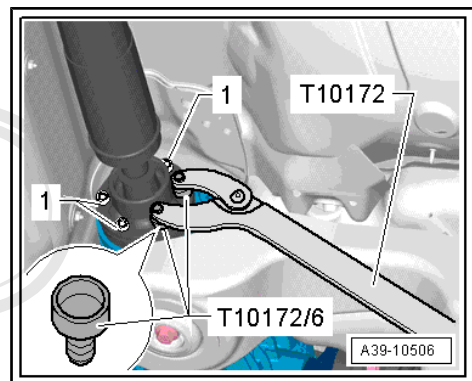
- Make sure there is a mark (color dot) on the driveshaft and on the rear final drive driveshaft flange -arrows A and B- .
- Make a color dot again if the original mark is no longer visible.
- The dots on the driveshaft -arrow A- and on the rear final drive -arrow B- must line up.



- Remove the driveshaft bolts -1- from the rear final drive.
- Counterhold with -T10172- and -T10172/5- .



- Use the -T10172/6- for the rear final drive 0BE.

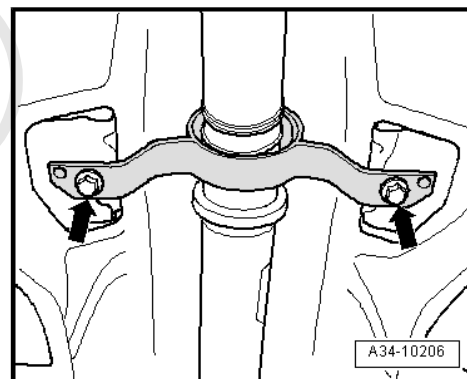


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- Remove the bolts -arrows- for the driveshaft intermediate bearing.
- Bend the driveshaft on the intermediate bearing all the way without force.

 **Note**

- ◆ *The driveshaft can be bent slightly further in some positions.*
- ◆ *Turn the driveshaft slightly.*
- Guide the rear driveshaft on the fuel tank and on the rear sub-frame downward and remove it from the transmission.



Installing

- Tightening specifications. Refer to
⇒ ["1.1.1 Overview - Driveshaft, Mounted On Transmission Side", page 18](#) and
⇒ [Fig. "Driveshaft Heat Shield - Tightening Specification", page 20](#) .

i Note

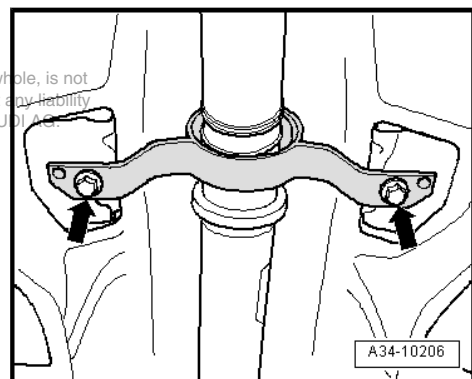
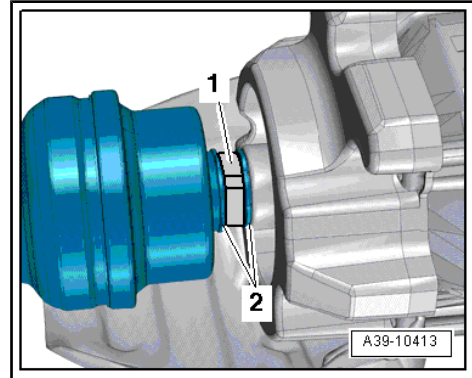
- ◆ Remove any old, dry high-temperature grease from the CV joint and the driveshaft flange. Fill with the exact same amount of new High Temperature Grease .
- ◆ The threads in the flange shaft on the rear final drive must be cleaned of locking fluid residue. They can be cleaned with a thread tap. If the threads are not clean, the bolts will break off when they are being installed.
- ◆ Replace the self-locking driveshaft bolts.
- ◆ Replace the hose clamps -1- for the driveshaft boot -2-.
- ◆ Check the driveshaft seal on the rear final drive flange for damage (bent, rubber layer worn off) and replace if damaged. Replace the damaged seal.
- ◆ Wipe the splines on the transmission output shaft with a towel before installing the driveshaft. The splines are not lubricated.

- First mount the driveshaft on the transmission.
- Maximum bend angle: 10°.
- After the driveshaft is inserted approximately 50 mm into the transmission output shaft, turn the driveshaft slightly to make sure that the transmission output shaft splines are meshed into the inner splines of the driveshaft.
- Push the driveshaft all the way onto the splines on the transmission output shaft.
- Bend the driveshaft on the intermediate bearing all the way without force.

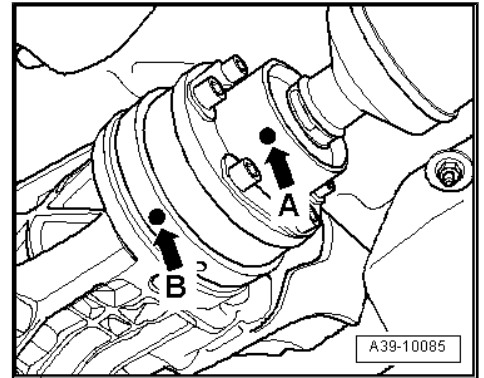
i Note

- ◆ The driveshaft can be bent slightly further in some positions.
- ◆ Turn the driveshaft slightly.
- Guide the rear driveshaft on the subframe and fuel tank upward.
- Install the bolts -arrows- just far enough so that the so the intermediate bearing can still be moved.

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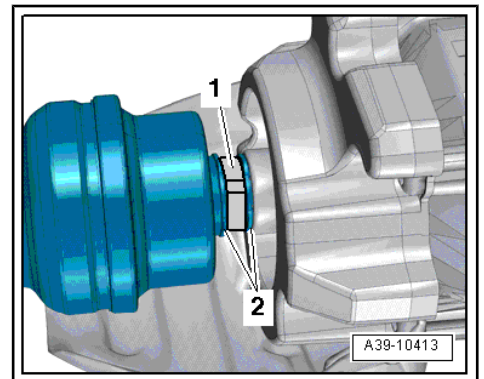
- Position the driveshaft on the rear final drive while paying attention to the installation position:
- The dots on the driveshaft -arrow A- and on the rear final drive -arrow B- must line up.
- Maximum difference between the markings: 30°.
- Install the new bolts all the way in by hand but do not tighten them.



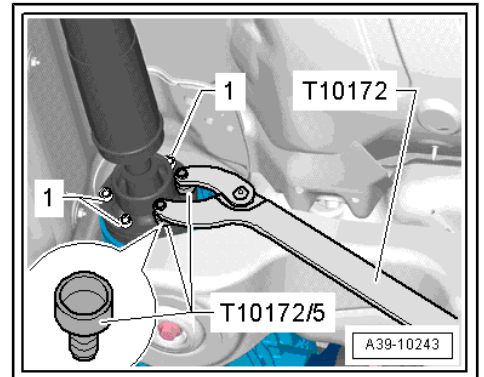
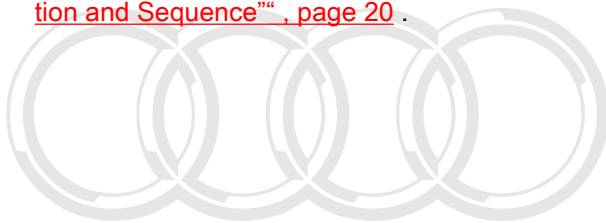
- Line up the hose clamp -1- for the driveshaft boot with the retainers -2- and then tighten the clamp using for example the -VAG1275A- .

 **Note**

In order to use the -VAG1275A- correctly, move the driveshaft a little toward the rear.

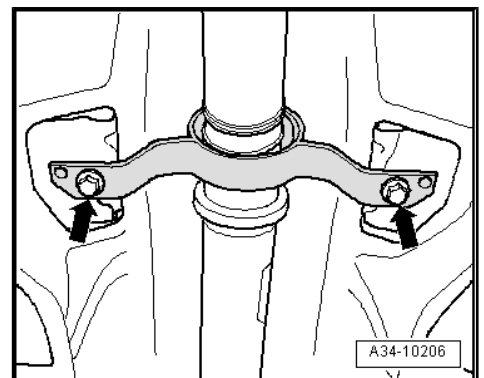


- Tighten the driveshaft bolts -1-. Follow the tightening sequence. Refer to [⇒ Fig. "Driveshaft to Rear Final Drive - Tightening Specification and Sequence"](#) , page 20 .



- Tighten the driveshaft intermediate bearing on the body without tension. Tightening specification. Refer to -item 9- ⇒ [Item 9 \(page 20\)](#) .

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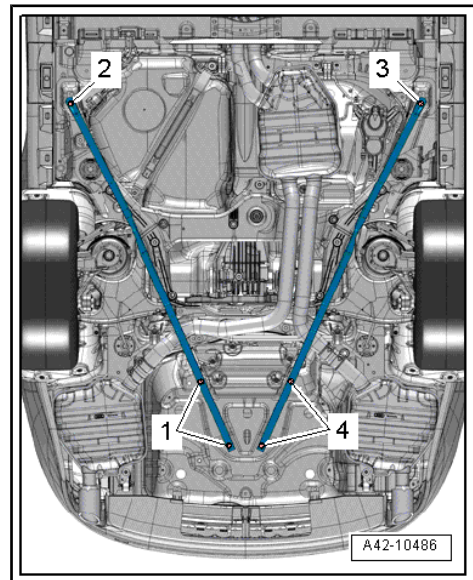
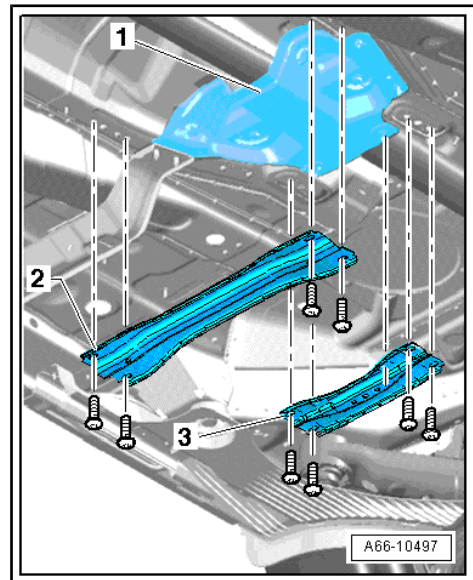
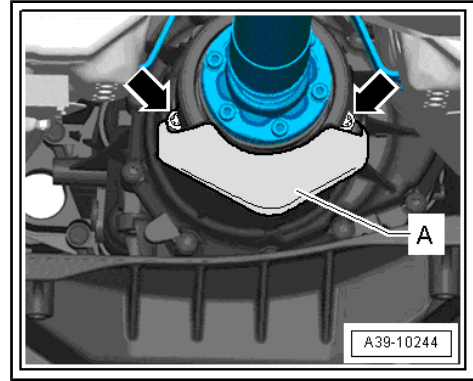


Install in reverse order of removal. Note the following:

- If equipped, tighten the heat shield -A- to the transmission -arrows-. Tightening Specification. Refer to => Fig. [““Driveshaft Heat Shield - Tightening Specification””](#), page 20 .

- Install the heat shield -1-. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Trim Panel .
- If equipped, install the front crossmember -2- and the rear crossmember -3-. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Trim Panel .

- If equipped, install the bolts -1, 2, 3 and 4- and install the diagonal braces. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel ; Diagonal Braces, Removing and Installing
- Install the exhaust system and align it without tension. Refer to => Rep. Gr. 26 ; Exhaust Pipes/Muffler; Overview - Muffler .



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1.2.2 Driveshaft, Removing and Installing, Driveshaft Bolted on Transmission Side

Special tools and workshop equipment required

- ◆ Drive Axle Alignment Fixture - 3139-
- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-



- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG1359/2-
- ◆ High Temperature Grease . Refer to the Parts Catalog.

Driveshaft, Removing

- ◆ Note the instructions. Refer to [⇒ "1.1.2 Overview - Driveshaft, Bolts On Transmission Side", page 21](#) .
- ◆ A two-column workshop hoist should be used when working on the driveshaft.



Note

Do not bend the flex joint in the front exhaust pipe more than 10° or it will be damaged.

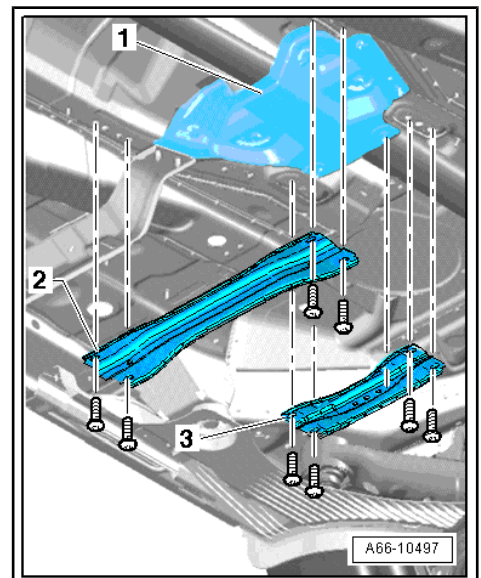
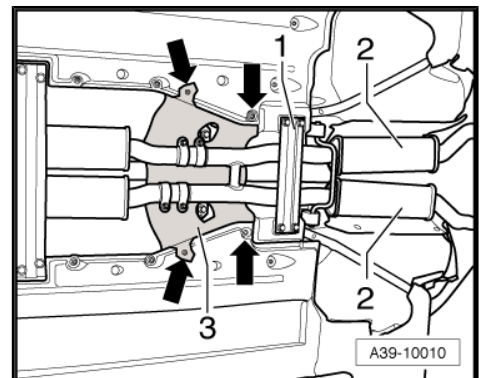
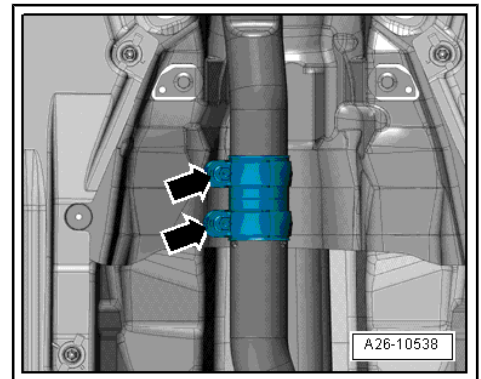
- Loosen the clamping sleeve(s) -arrows- and separate the exhaust system.
 - Tie the front exhaust pipe(s) to the underbody.
-
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



Note

A second technician is needed to help remove the rear section of the exhaust system.

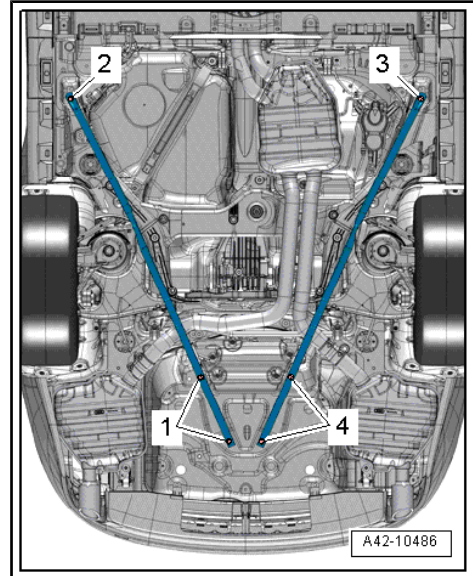
- If equipped, remove the crossmembers -2 and 3-.
- Remove the heat shield -1-.



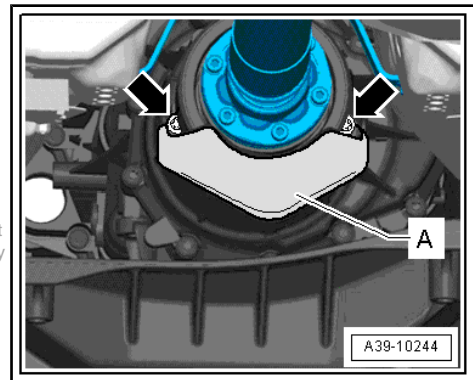
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- If equipped, remove bolts -1, 2, 3 and 4- and remove the diagonal braces.

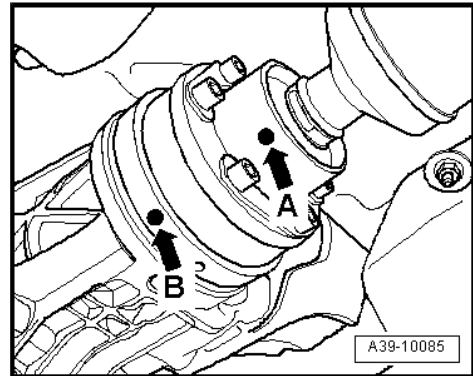


- Remove the heat shield -A- from the transmission -arrows-, if applicable.



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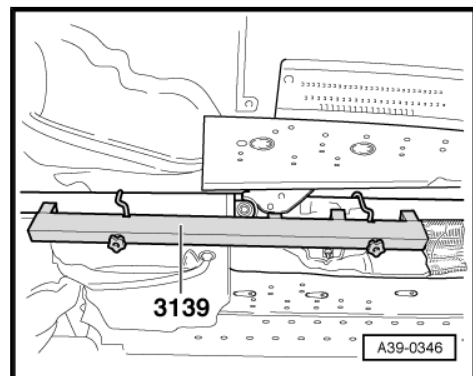
- Check whether there is a color dot on the driveshaft and at flange/driveshaft on the rear final drive -arrow A and arrow B-
- If one of these markings is no longer visible (for example -arrow A- on the driveshaft), then mark the missing point in color.
- The mark on the driveshaft -arrow A- and on the rear final drive -arrow B- are on one line.



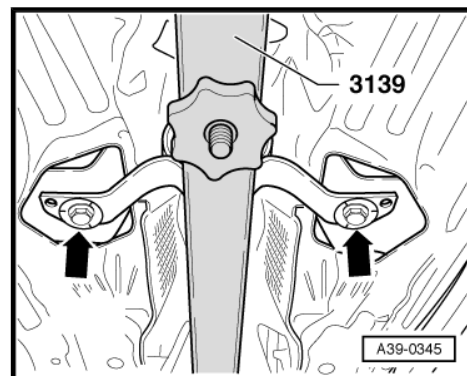
- Attach the Drive Axle Alignment Fixture - 3139- and tighten the plastic nuts.

i Note

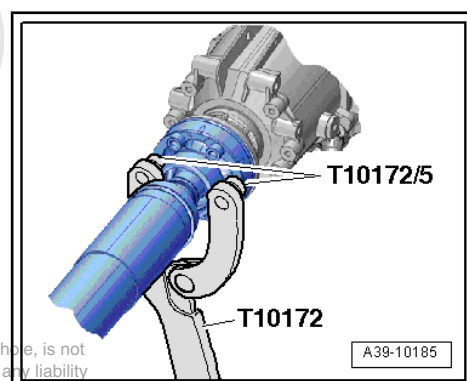
Never place the Alignment Fixture on the balance plates.



- Remove the intermediate bearing bolts -arrows-.



- Remove the bolts attaching the driveshaft to the transmission by counterholding with the -T10172A- and with the -T10172/5- or .
- Remove the driveshaft from the transmission and support the driveshaft with the -VAS6931- .



- Remove the bolts -1- (quantity: 6) from the rear CV joint.
- Use the -T10172- with -T10172/5- or -T10172/6- .
- Remove the driveshaft.

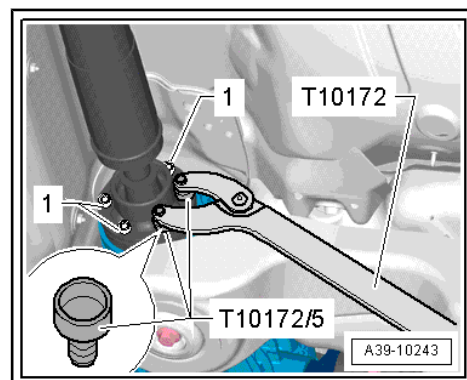
 **Note**

Always transport and store driveshaft when it is fully extended.

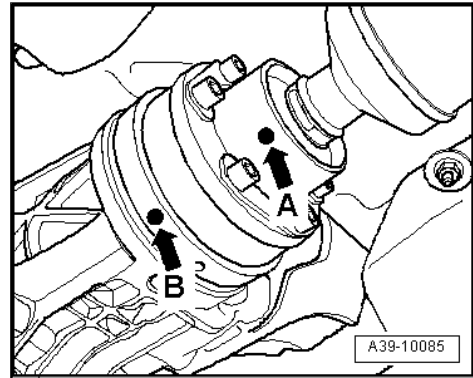
Driveshaft, Installing

Install in reverse order of removal. Note the following:

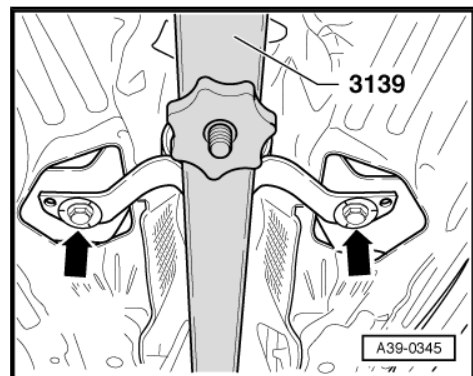
- ◆ Remove the old, dry High Temperature Grease from the CV joints and the driveshaft flanges. Fill with the exact same amount of new High Temperature Grease .
- ◆ Always remove any remaining locking fluid from thread bores in drive flanges for transmission driveshaft and for rear final drive. They can be cleaned with a thread tap. If the threads are not clean, the bolts will break off when they are being installed.
- ◆ After removing the driveshaft from the rear final drive, do not install the additional balance washer (thicker washer) that may be between the backing plate and the bolt.
- ◆ Always replace the bolts for driveshaft (self-locking bolts).
- ◆ Pay attention to the installed position of the driveshaft: the center of the CV joint is located behind the intermediate bearing facing the rear final drive.
- ◆ Check the driveshaft seal on the rear final drive flange and the transmission for damage (bent, rubber layer worn off) and replace if damaged. Replace the damaged seal.



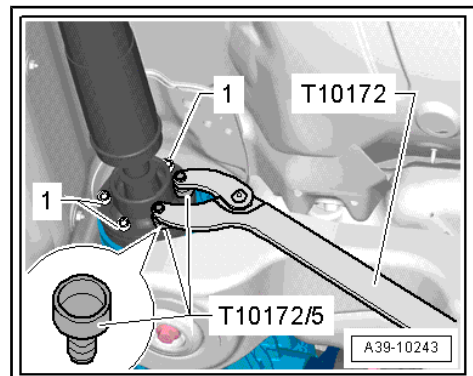
- Install the driveshaft while paying attention to the rear final drive:
- The dots on the driveshaft -arrow A- and on the rear final drive -arrow B- must line up.
- Maximum difference between the markings: 30°.
- Install the new bolts all the way in by hand but do not tighten them.



- Install the bolts -arrows- just far enough so that the so the intermediate bearing can still be moved.

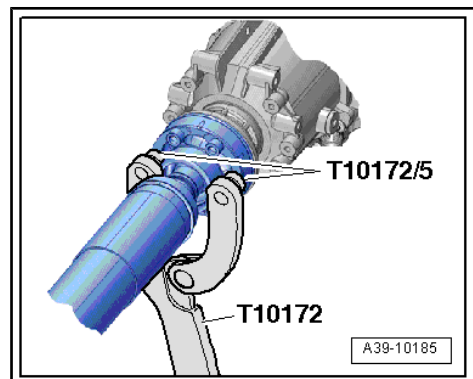


- Tighten the bolts -1- on the rear driveshaft. Follow the tightening sequence. Refer to ⇒ [Fig. "Driveshaft to Rear Final Drive - Tightening Specification and Sequence"](#) , page 23 .



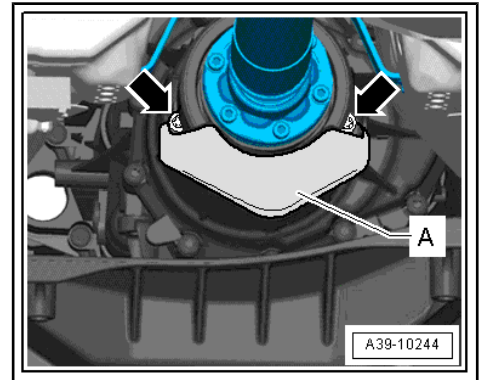
- Tighten the bolts on the front driveshaft. Tightening specification: Refer to -item 5- ⇒ [Item 5 \(page 22\)](#) .

- Remove the Drive Axle Alignment Fixture - 3139- .
- Tighten the driveshaft intermediate bearing on the body without tension. Tightening specification. Refer to -item 8- ⇒ [Item 8 \(page 22\)](#) .

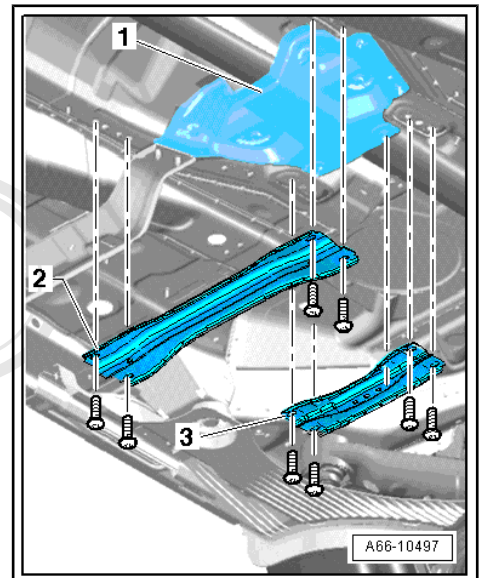


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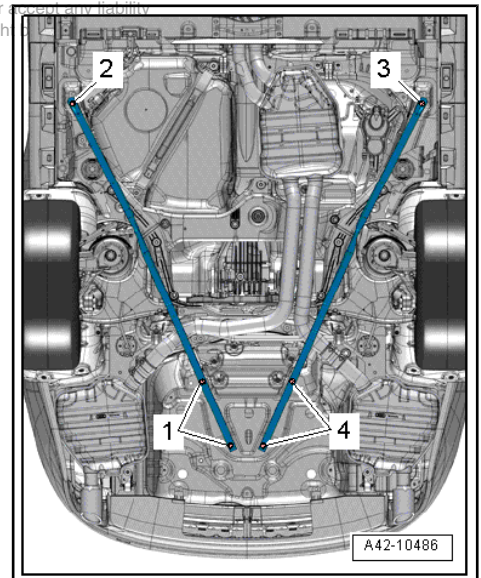
- Tighten the heat shield -A- to the transmission -arrows-. Tightening Specification. Refer to => Fig. [““Driveshaft Heat Shield - Tightening Specification””](#), page 23 .



- Install the heat shield -1-.
- If equipped, install the front crossmember -2- and the rear crossmember -3-. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .



- If equipped, install the bolts -1, 2, 3 and 4- and install the diagonal braces. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel ; Diagonal Braces, Removing and Installing
- Install the exhaust system and align it without tension. Refer to => Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



1.3 Drive Shaft, Removing and Installing from Rear Final Drive

Special tools and workshop equipment required

- ◆ Counterhold - Kit - Multiple Use - T10172-
- ◆ Counterhold - Kit - Adapter - T10172/5- (M8 Bolts)

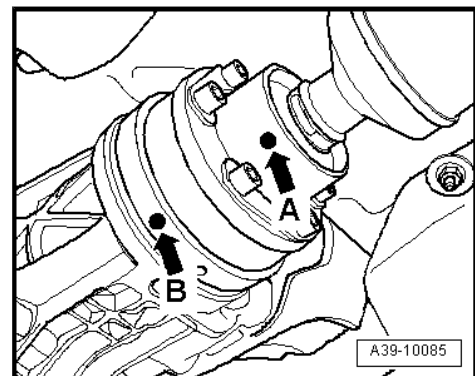
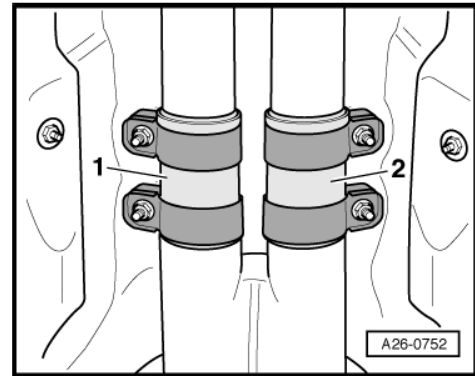
- ◆ Counterhold - Kit - Adapter - T10172/6- (M10 Bolts)
- ◆ High Temperature Grease . Refer to the Parts Catalog.
- ◆ Pay attention to the notes. Refer to
⇒ ["1.1.2 Overview - Driveshaft, Bolts On Transmission Side"](#),
[page 21](#) .
- ◆ A two-column workshop hoist should be used when working on the driveshaft.

Drive Shaft, Removing from Rear Final Drive

- Disconnect the exhaust system at the clamping sleeves -1- and -2-.
- Tie the front exhaust pipe(s) to the underbody.

Note

- ◆ *Do not bend the flex joint in the front exhaust pipe more than 10° or it will be damaged. Tie up the front exhaust pipes on the body and to the side.*
- ◆ *A second technician is needed to help remove the rear section of the exhaust system.*
- Remove the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Check whether there is a color marking on the driveshaft and at flange/driveshaft on the rear final drive -arrows A and B-.
- If one of these markings is no longer visible (for example -arrow A- on the driveshaft), then make a mark for the missing colored dot in color.
- The mark on the driveshaft -arrow A- and on the rear final drive -arrow B- line up.



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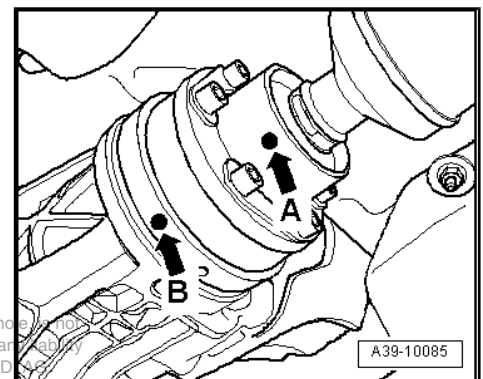
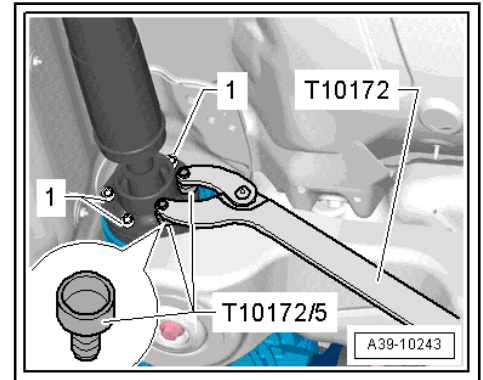
erWin

- Remove the bolts -1- (quantity: 6) from the rear CV joint.
- Counterhold with -T10172A- and -T10172/5- or -T10172/6- .
- Remove the driveshaft from the rear final drive and move it to the side of the subframe.

Install the Driveshaft on the Rear Final Drive.

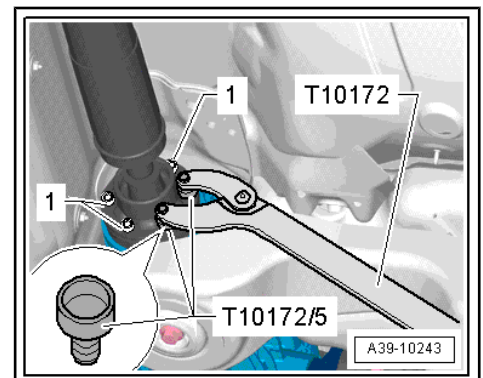
Install in reverse order of removal. Note the following:

- ◆ Remove the old, dry High Temperature Grease from the CV joint and the driveshaft flange. Fill with the exact same amount of new High Temperature Grease .
 - ◆ The threads in the flange shaft on the rear final drive must be cleaned of locking fluid residue. They can be cleaned with a thread tap. If the threads are not clean, the bolts will break off when they are being installed.
 - ◆ After removing the driveshaft from the rear final drive, do not install the additional balance washer (thicker washer) that may be between the backing plate and the bolt.
 - ◆ Always replace the bolts for driveshaft (self-locking bolts).
 - ◆ Check the driveshaft seal on the rear final drive flange for damage (bent, rubber layer worn off) and replace if damaged. Replace the damaged seal.
- Position the driveshaft on the rear final drive while paying attention to the installation position:
 - The marks on the driveshaft -arrow A- and on the rear final drive -arrow B- must line up.
 - Maximum difference between the markings: 30°.



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- Insert and tighten the new bolts -1- for the driveshaft. Follow the tightening sequence. Refer to ⇒ [Fig. "Driveshaft to Rear Final Drive - Tightening Specification and Sequence"](#) , page 23 .
- Install the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .





1.4 Driveshaft, Installing on Transmission and Removing

⇒ [“1.4.1 Driveshaft on Transmission, Removing and Installing, Driveshaft Inserted on Transmission Side”, page 38](#)

⇒ [“1.4.2 Driveshaft on Transmission, Removing and installing, Driveshaft Bolted on Transmission Side”, page 38](#)

1.4.1 Driveshaft on Transmission, Removing and Installing, Driveshaft Inserted on Transmission Side

The driveshaft inserted on the transmission side can only be removed as a whole. Refer to
⇒ [“1.2.1 Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side”, page 23](#) .

1.4.2 Driveshaft on Transmission, Removing and installing, Driveshaft Bolted on Transmission Side

Special tools and workshop equipment required

- ◆ Counterhold - Multiple Use - T10172A- with adapters
- ◆ Counterhold - Kit - Adapter - T10172/5- (M8 Bolts)
- ◆ Counterhold - Kit - Adapter 6 - T10172/6- (M10 Bolts)
- ◆ High Temperature Grease - G 000 633- . Refer to the Parts Catalog.

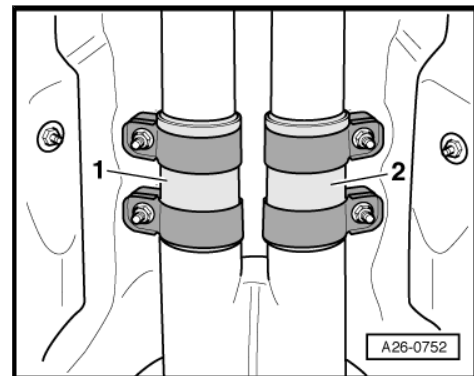
Remove the Driveshaft

- ◆ Pay attention to the notes. Refer to
⇒ [“1.1.2 Overview - Driveshaft, Bolts On Transmission Side”, page 21](#) .
- ◆ A two-column workshop hoist should be used when working on the driveshaft.

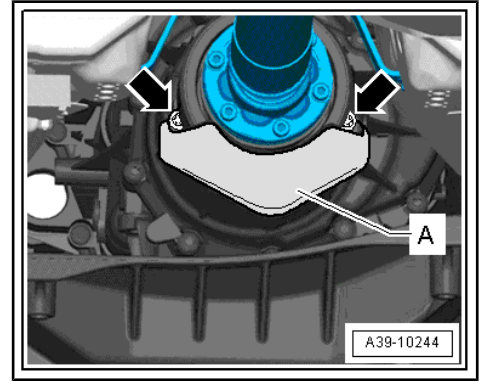
Note

Do not bend the flex joint in the front exhaust pipe more than 10° or it will be damaged.

- Loosen the clamping sleeves -1 and 2- and disconnect the exhaust system.
- Tie the front exhaust pipe(s) to the underbody.



- Remove the heat shield -A- from the transmission -arrows-, if applicable.

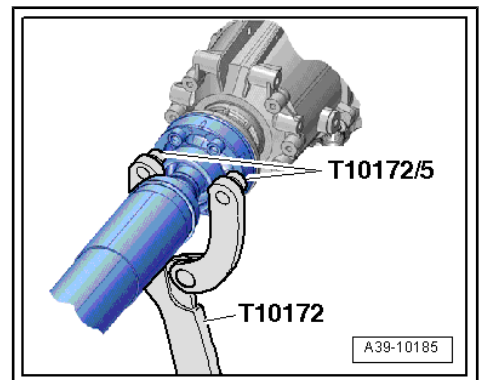
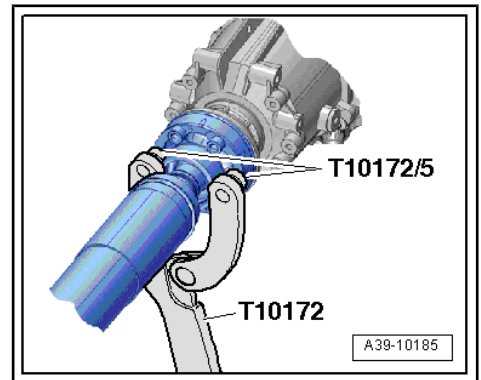


- Remove the bolts for attaching the driveshaft to the transmission by counterholding with the -T10172A- and with the -T10172/5- .
- Secure the driveshaft to the underbody.

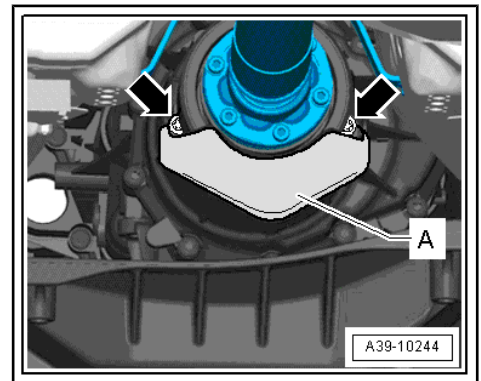
Install the driveshaft.

Install in reverse order of removal. Note the following:

- ◆ Remove the old, dry High Temperature Grease - G 000 633- from the CV joint and the driveshaft flange. Fill with the exact same amount of new High Temperature Grease - G 000 633- .
 - ◆ The threads in the flange shaft on the transmission must be cleaned of locking fluid residue. They can be cleaned with a thread tap. If the threads are not clean, the bolts will break off when they are being installed.
 - ◆ Always replace the bolts for driveshaft (self-locking bolts).
 - ◆ Check the driveshaft seal on the transmission flange for damage (bent, rubber layer worn off). Replace the damaged seal.
- Install the driveshaft and the new CV joint bolts.
 - Tighten the bolts on the front driveshaft. Tightening specification -item 5- ⇒ [Item 5 \(page 22\)](#) .
 - Use the -T10172A- with the -T10172/5- .



- If equipped, tighten the heat shield -A- to the transmission -arrows-. Tightening Specification. Refer to ⇒ [Fig. ““Driveshaft Heat Shield - Tightening Specification””](#) , [page 23](#) .
- Assemble the exhaust system and align it without tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



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1.5 Boot, Replacing

⇒ ["1.5.1 Boot, Replacing, Driveshaft Connected on Transmission Side", page 40](#)

1.5.1 Boot, Replacing, Driveshaft Connected on Transmission Side

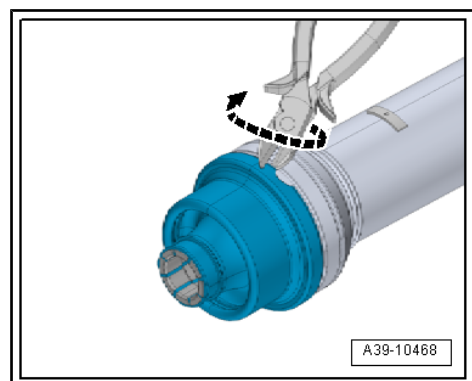
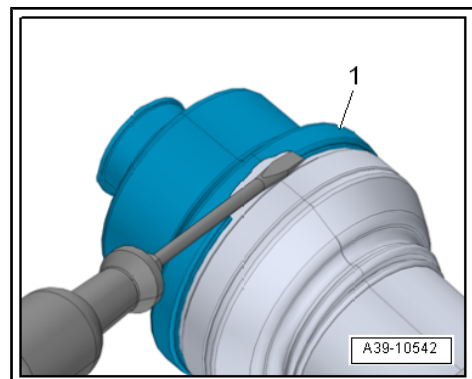
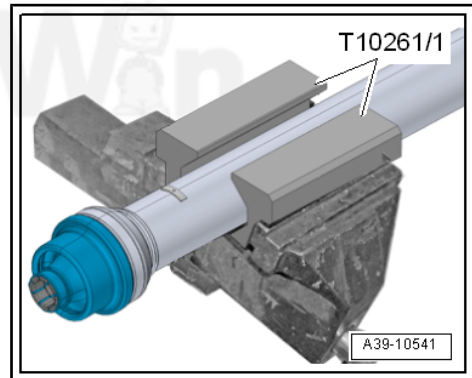
Special tools and workshop equipment required

- ◆ Flanging Tool - T40261-
- ◆ Hose Clamp - 23 to 35 mm Diameter-

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Procedure

- Remove the driveshaft. Refer to ["1.2.1 Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side", page 23](#) .
- Clamp the driveshaft with the Flanging Tool - Protective Jaws - T40261/1- into the vise, as shown in the illustration.
- Carefully loosen the metal sleeve flanging -1- from the driveshaft joint at one place with a screwdriver.
- The surface on the driveshaft joint must not be damaged.
- Open the rest of the metal sleeve flanging -arrow- with a side cutter.
- Remove the old boot with the metal sleeve from the driveshaft joint.



- Break the support ring with the water pump pliers -arrows- and remove the boot with the metal sleeve.

 **Note**

The inside of the joint and the balls remain in the driveshaft joint.

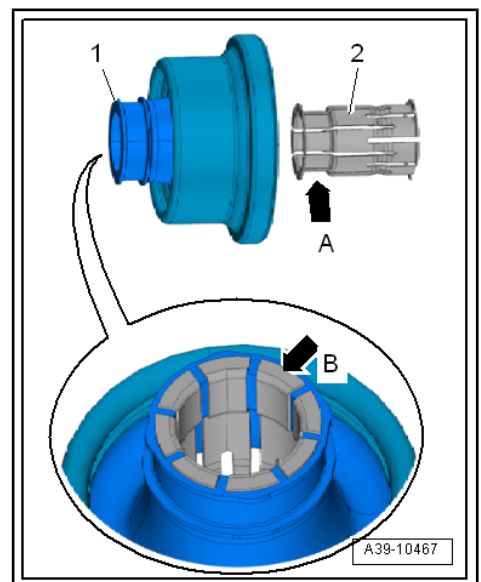
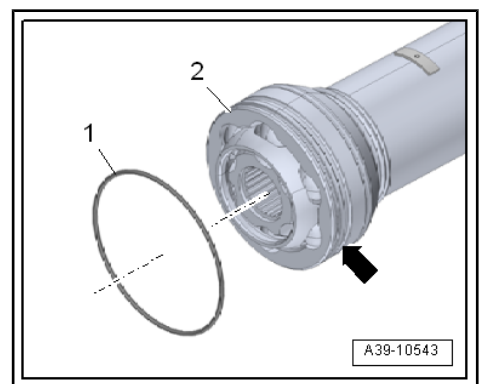
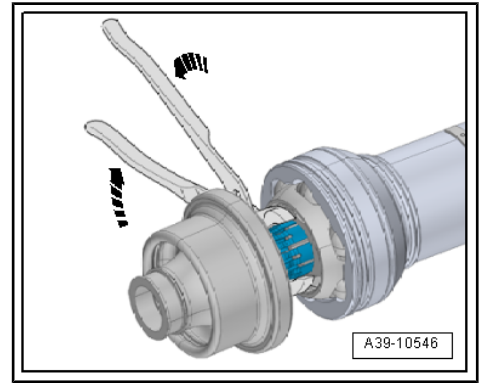
- Wipe away any excess grease.
- Grease the driveshaft joint with grease from the installation kit.

 **Note**

Fill with the same amount of grease, that has been clean off plus the amount that remains in the old boot.

- Clean the sealing surface -arrow- on the driveshaft joint -2-.
- If there are scratches left behind after removing the old boot, smooth them out.
- Insert a new O-ring -1- in the groove.

- Install the support ring -2- in the boot opening -1-.
- Direction of installation: the depression -arrow A- is slid into the boot.
- The guides for the support ring -arrow B- must be visible on the edge of the boot opening.

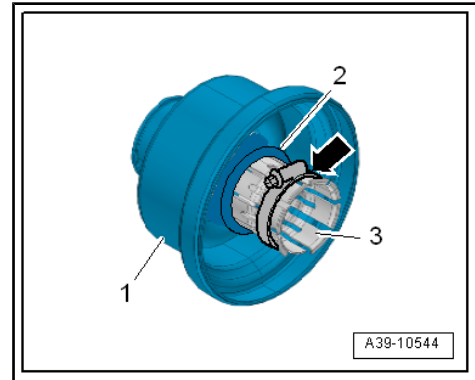


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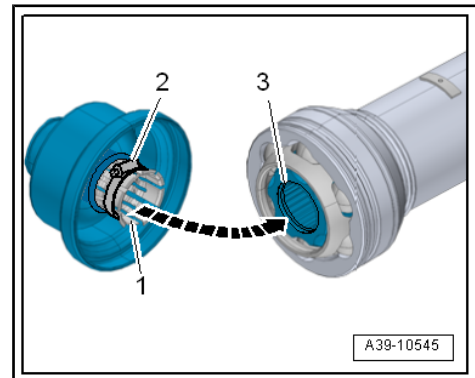




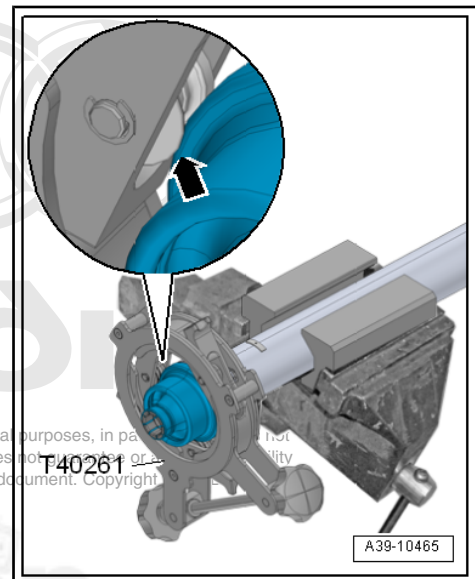
- Fold the boot -2- inward inside the metal sleeve -1-.
- Slide the hose clamp -arrow- onto the open guides for the support ring -3- as shown in the illustration.
- The end of the support ring must be freed up.



- Tighten the hose clamp -2- until the support ring guides -1- are able to be inserted into the groove -3- of the inside of the joint.
- Loosen the hose clamp -2- and remove.
- The support ring guides must catch on the inside of the groove -arrow-.
- Slide the metal sleeve for the boot all the way onto the joint.



- Attach the Flanging Tool - T40261- to the metal sleeve so that the guide roller stops -arrow- are touching the edge of the metal sleeve.
- Flange the metal sleeve by turning the Flanging Tool - T40261- back and forth.
- The turning angle must be at least 90° when turning it back and forth.
- While turning it back and forth, turn the hand wheel for the Flanging Tool - T40261- .
- The flanging is finished when the hand wheel for the Flanging Tool - T40261- can only be turned if a lot of force is used.



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2 Final Drive

⇒ [“2.1 Overview - Final Drive”, page 43](#)

⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#)

2.1 Overview - Final Drive

⇒ [“2.1.1 Overview - Final Drive 0BC, 0BD”, page 43](#)

⇒ [“2.1.2 Overview - Final Drive 0BE, 0BF”, page 45](#)

2.1.1 Overview - Final Drive 0BC, 0BD

Rear Final Drive

1 - Subframe

- ◆ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Subframe; Overview - Subframe .

2 - Bolt

- 95 Nm

3 - Bolt

- 55 Nm

4 - Bolt

- 55 Nm
- Depending on the date of manufacture for the balance weight fastener. Refer to ⇒ [page 43](#)

5 - Heat Shield

6 - Bolt

- 20 Nm

7 - Drive Axle

- Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .

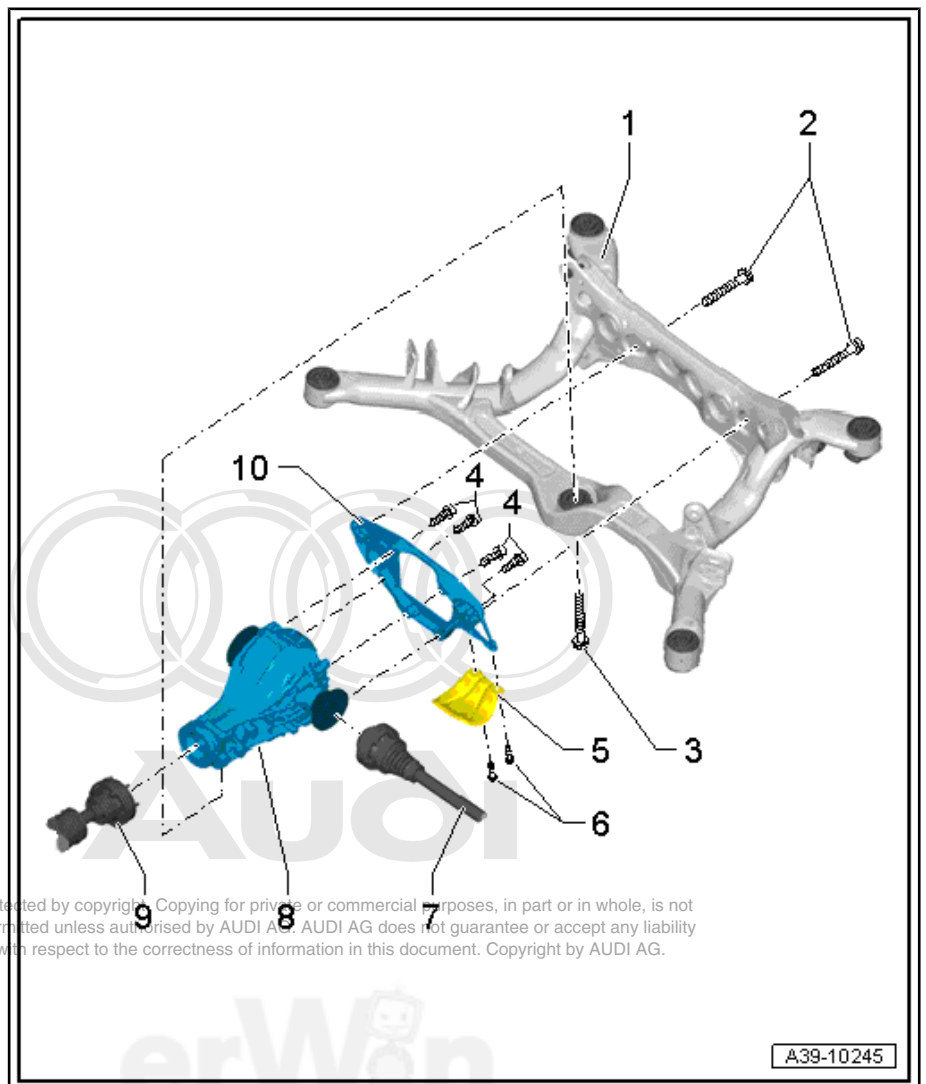
8 - Rear Final Drive

- Versions with balance weight. Refer to ⇒ [page 43](#)
- Refer to ⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#)

9 - Driveshaft

- Removing and installing. Refer to ⇒ [“1.2 Driveshaft, Removing and Installing”, page 23](#) .
- Removing and installing on the rear final drive. Refer to ⇒ [“1.3 Drive Shaft, Removing and Installing from Rear Final Drive”, page 35](#) .

10 - Crossmember



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A39-10245

Balance Weight on the Rear Final Drive



1 - Bolt

- 22 Nm

2 - Balance Weight

- Depending on the date of manufacture; for allocation. Refer to Parts Catalog

3 - Rear Final Drive

- Refer to ["2.2 Final Drive, Removing and Installing", page 46](#)

4 - Crossmember

5 - Balance Weight

- Depending on the date of manufacture; for allocation. Refer to Parts Catalog

6 - Bolt

- Tightening Specification. Refer to -item 4- [⇒ Item 4 \(page 43\)](#) .

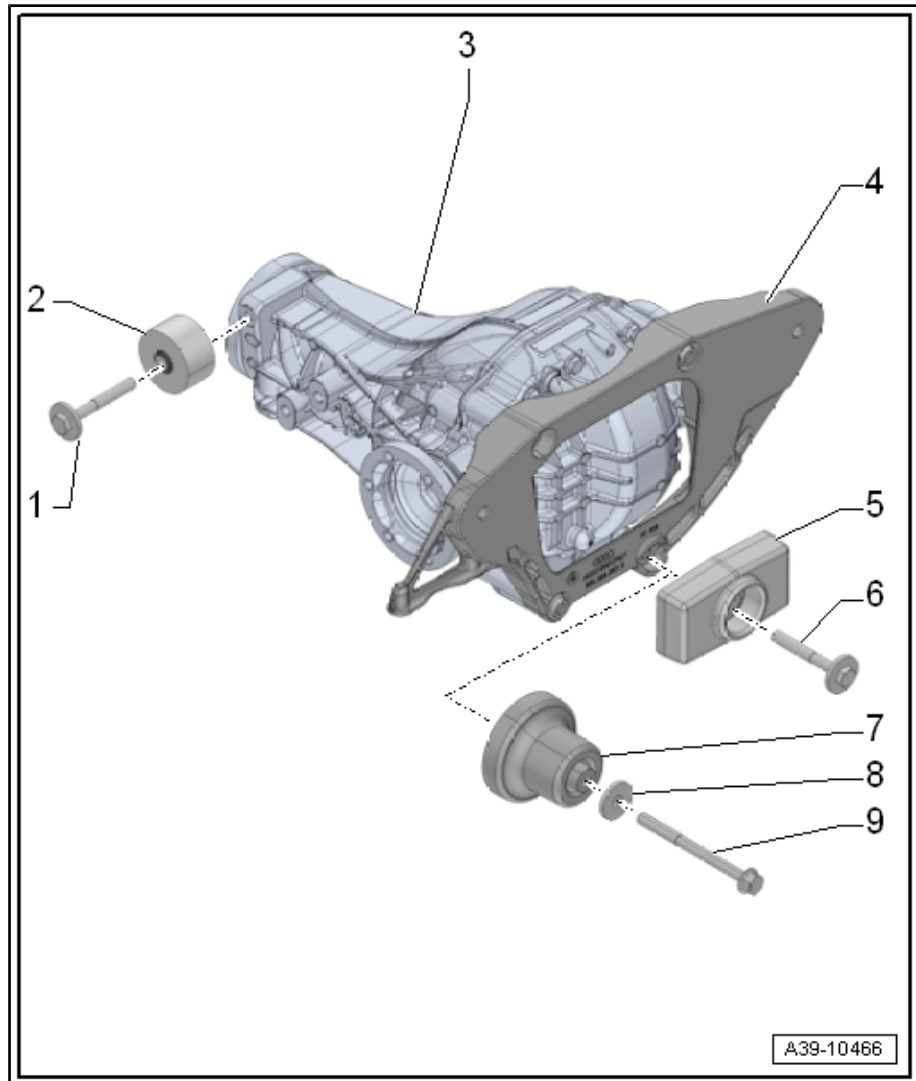
7 - Balance Weight

- Depending on the vehicle; allocation for Parts Catalog

8 - Washer

9 - Bolt

- Tightening Specification. Refer to -item 4- [⇒ Item 4 \(page 43\)](#) .



Audi

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2.1.2 Overview - Final Drive 0BE, 0BF

1 - Bolt

- 55 Nm

2 - Subframe

- Overview. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Subframe; Overview - Subframe .

3 - Driveshaft

- Overview. Refer to ⇒ ["1.1 Overview - Driveshaft", page 18](#) .
- Removing and installing. Refer to ⇒ ["1.2 Driveshaft, Removing and Installing", page 23](#) .

4 - Rear Final Drive

- Refer to ⇒ ["2.2 Final Drive, Removing and Installing", page 46](#)
- Additional work after replacing the rear final drive. Refer to ⇒ ["2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83](#) .

5 - Drive Axle

- Overview. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .

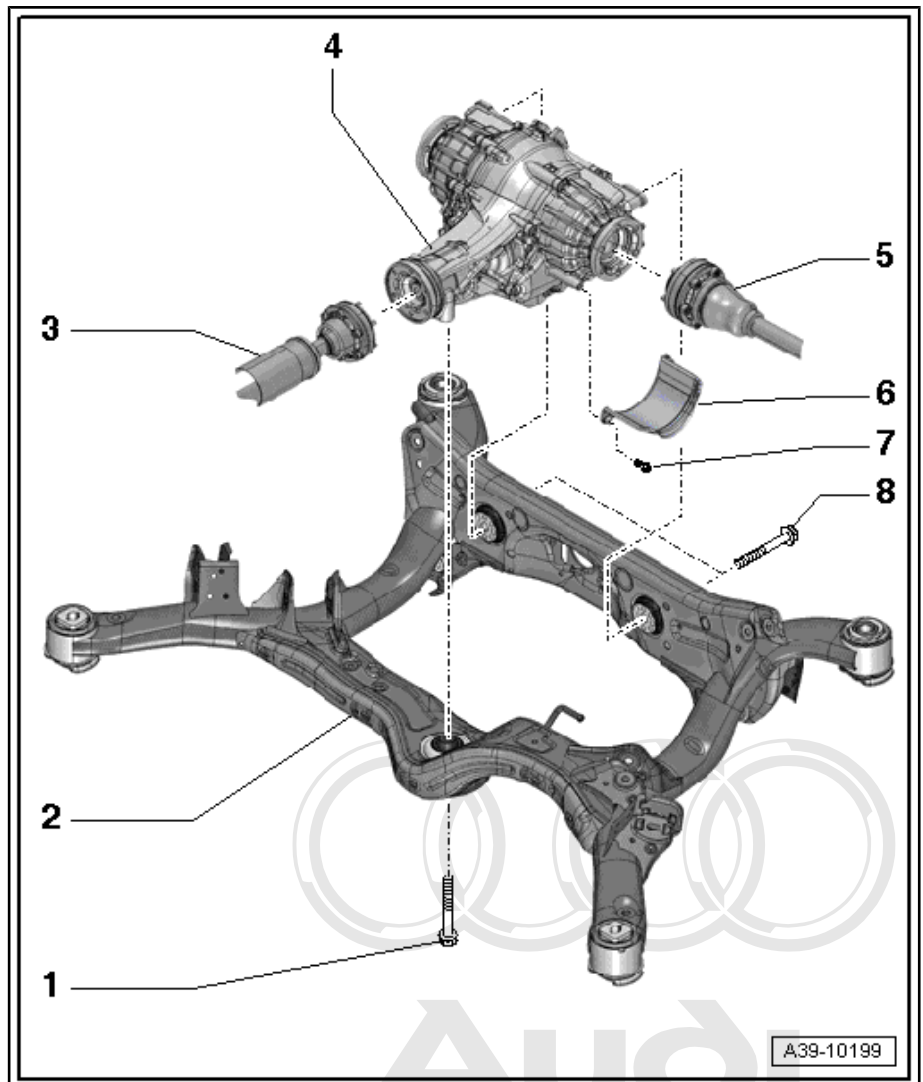
6 - Heat Shield

7 - Bolt

- 20 Nm

8 - Bolt

- 95 Nm



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2.2 Final Drive, Removing and Installing

⇒ [“2.2.1 Final Drive Removing and Installing 0BC, Audi A4, A5, A6, A7, and Q% \(not Q5 Hybrid\)”, page 46](#)

⇒ [“2.2.2 Final Drive 0BC Removing and Installing, Audi Q5 Hybrid”, page 52](#)

⇒ [“2.2.3 Final Drive Removing and Installing 0BC, Audi A8”, page 60](#)

⇒ [“2.2.4 Final Drive Removing and Installing OBD, Audi A4, A5 and Q5”, page 65](#)

⇒ [“2.2.5 Final Drive, Removing and Installing 0BF, Audi A4, A5, A6 and A7, Q5”, page 71](#)

⇒ [“2.2.6 Final Drive 0BF, Removing and Installing, Audi RS4 and RS5”, page 76](#)

⇒ [“2.2.7 Final Drive 0BE, 0BF, Removing and Installing, Audi A8”, page 79](#)

⇒ [“2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF”, page 83](#)

2.2.1 Final Drive Removing and Installing 0BC, Audi A4, A5, A6, A7, and Q% (not Q5 Hybrid)

Removing. Refer to ⇒ [page 46](#)

Installing. Refer to ⇒ [page 50](#)

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG1359/2-
- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-
- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-
- ◆ Socket - Xzn 12 - T40154-

Removal

Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”, page 13](#) .

- Place the vehicle on a lift.
- Remove the wheel hubcap from the left rear wheel. On alloy wheels, remove the cap using the puller in the vehicle tool kit.
- Remove the left rear wheel.

Vehicles with 6- or 8-Cylinder Engines (except for Q5)

- Remove the rear crossmember -1-.
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

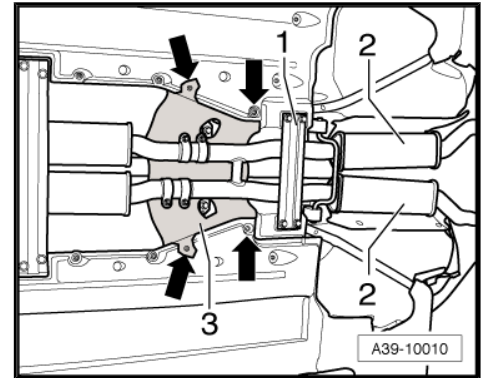
Note

A second technician is needed to help remove the rear section of the exhaust system.

- Secure the rear crossmember -1- again to the body.

Continuation for all Vehicles

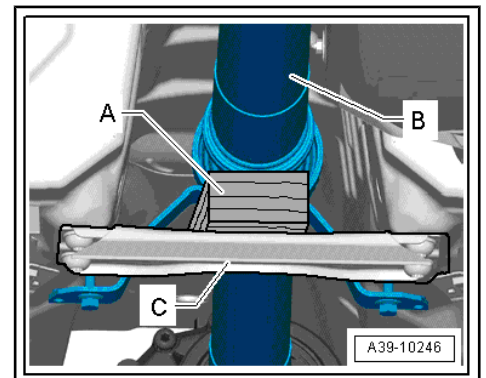
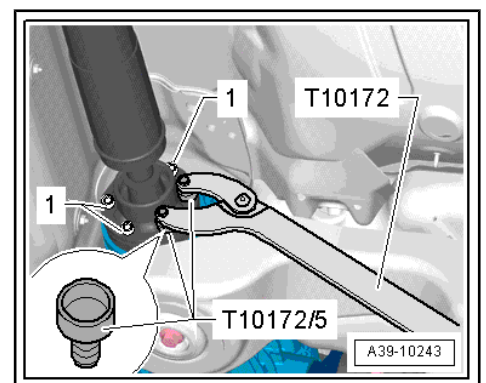
- Remove the heat shield -3- -arrows-.
- Remove the driveshaft from the rear final drive. Refer to ⇒ [“1.3 Drive Shaft, Removing and Installing from Rear Final Drive”, page 35](#) .



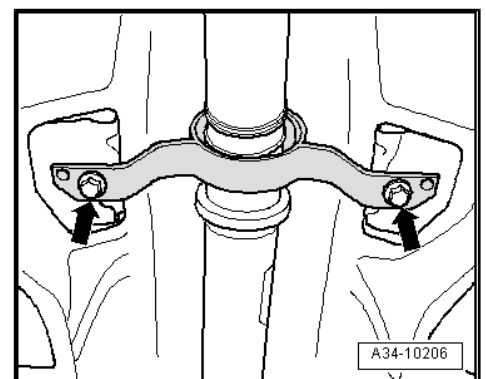
- Place a block of wood -A- (approximately 40 mm high) on the rear crossmember -C- and support the driveshaft -B-.

Note

- ◆ *The driveshaft -B- is supported under the intermediate bearing by the heat shield on the Audi Q5.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*



- Remove the driveshaft intermediate bearing mounting bolts -arrows-.
- Push the driveshaft forward and at the same time remove it from the rear final drive.
- Secure the driveshaft on the side to the subframe.

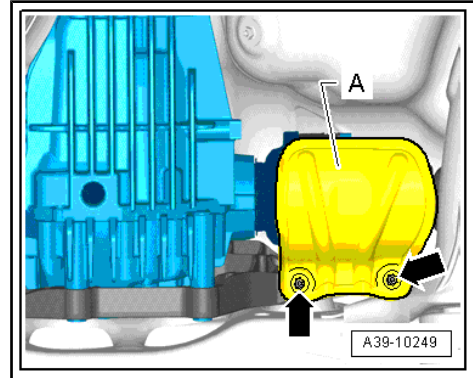


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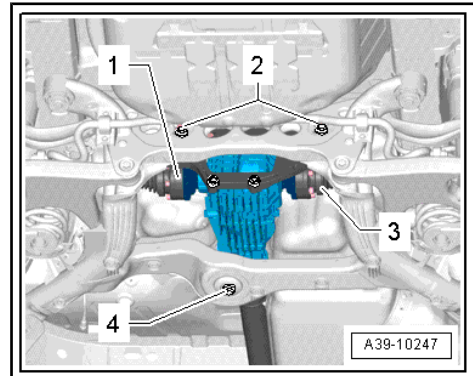
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erWin

- Remove the left drive axle heat shield -A- from the crossmember/rear final drive -arrows-.



- Remove the left -1- and right -3- drive axles.
- Loosen the bolts -2- approximately three turns.
- Remove the bolt -4-.

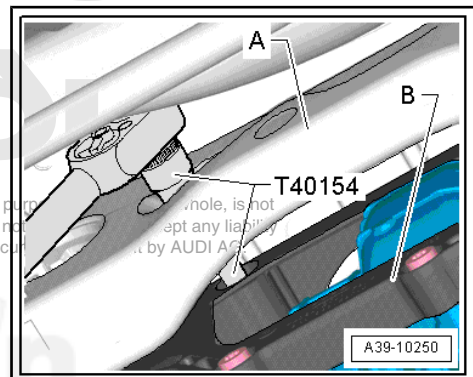
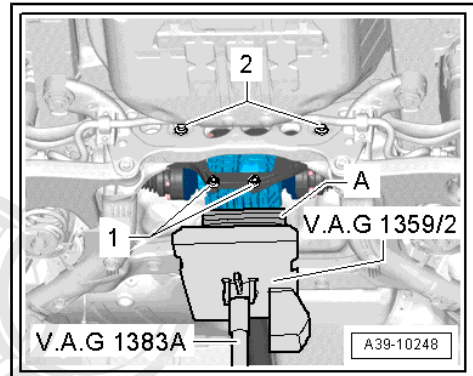


- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood -A- (approximately 80 mm tall) under the rear final drive.

i Note

Pay attention that the Universal Transmission Support - VAG1359/2- does not make contact with the fuel tank.

- Remove the bolts -1- (lower bolts attaching the crossmember to the rear final drive) and -2-.
- Remove the two upper bolts that connect the crossmember -B- to the rear final drive.
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



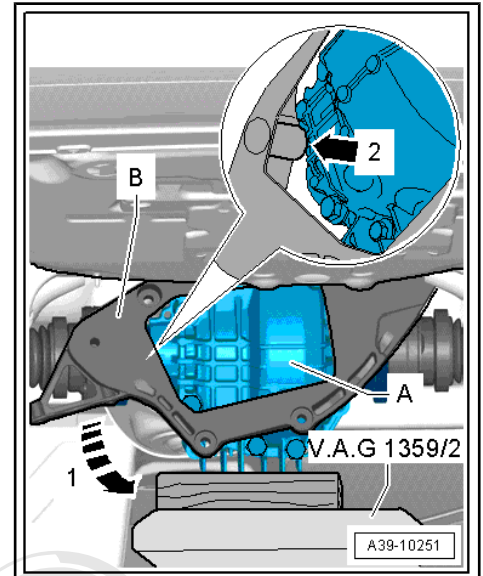
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- Move the final drive -A- forward slightly.
- Turn the lower crossmember -B- direction of -arrow 1- and guide the final drive -arrow 2- and remove it.

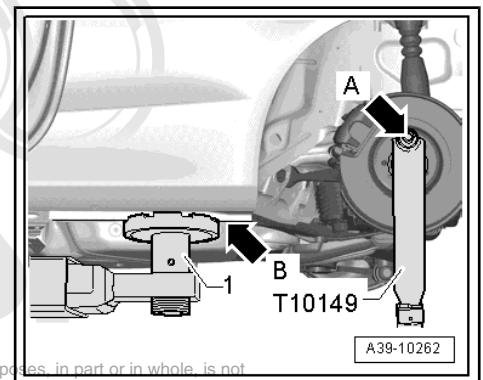
 **Note**

- ◆ *A second technician must help with the next steps.*
- ◆ *Before raising the left rear suspension, secure the vehicle to the lifting arm on the hose using a Tensioning Strap - T10038-.*

- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive while a second technician keeps the rear final driving from falling down.
- Insert the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- in the Engine and Gearbox Jack - VAS6931- .



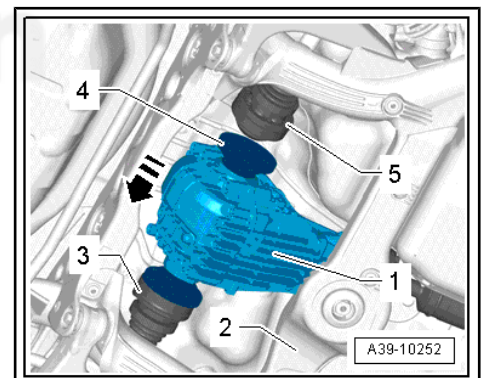
- Attach the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- using a wheel bolt -arrow A- to the left rear suspension wheel hub.
- Lift the left rear suspension using the Engine and Gearbox Jack - VAS6931- just until the support arm -1- on the vehicle hoist just starts to lift the vehicle -arrow B-.



 **WARNING**

- ◆ *Do not raise or lower the vehicle when the Engine and Gearbox Jack - VAS6931- is underneath it.*
- ◆ *Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle longer than necessary.*

- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.
- Then guide the right drive axle -5- upward out of the final drive flange shaft -4-.
- Guide the left drive axle -3- out and then, together with the second technician, remove the final drive from the subframe -2- toward the rear.



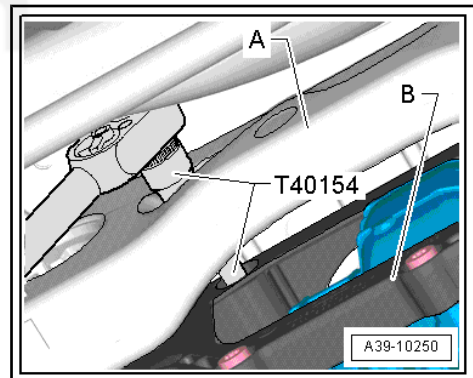
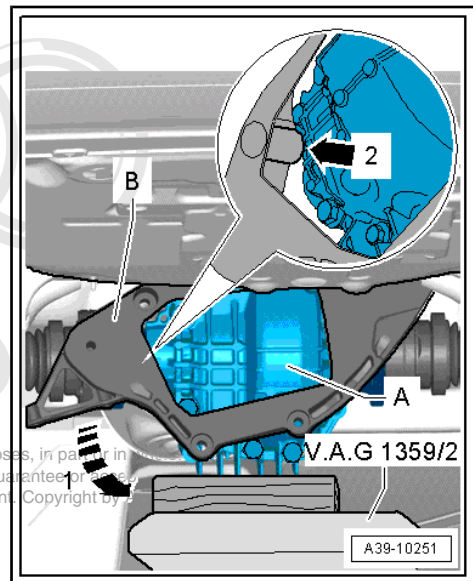
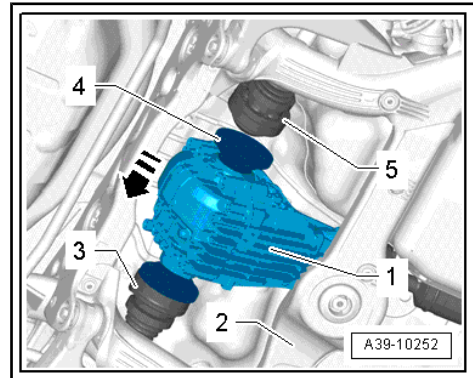
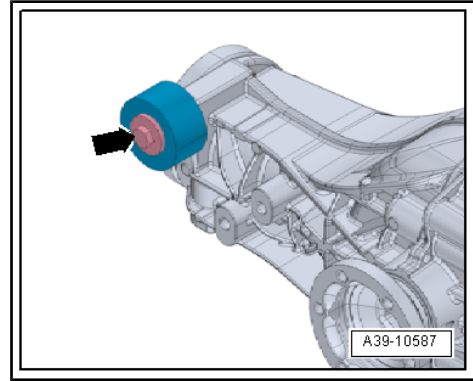


- If the rear final drive is replaced, the balance weight -arrow- must be rebuilt on the new rear final drive. Refer to [⇒ page 43](#) .

Installing

Install in reverse order of removal. Note the following:

- Tightening specifications. Refer to [⇒ "2.1.1 Overview - Final Drive OBC, OBD", page 43](#) .
- With a second technician, position the rear final drive -1- on the subframe -2- in its installed position.
- Insert the left drive axle -3- into the final drive flange shaft.
- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.
- Then install the right drive axle -5- into the final drive flange shaft -4-.
- Remove the Engine and Gearbox Jack - VAS6931- with the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- from the left rear suspension.
- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood (approximately 80 mm tall) under the rear final drive -A-.
- Move the final drive -A- forward slightly.
- Turn the upper crossmember -B- opposite the direction of -arrow 1- to the left and insert it while guiding it past the final drive -arrow 2-.
- Tighten the four bolts connecting the crossmember -B- to the rear final drive diagonally. Tightening specification. Refer to -item 4- [⇒ Item 4 \(page 43\)](#) .
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



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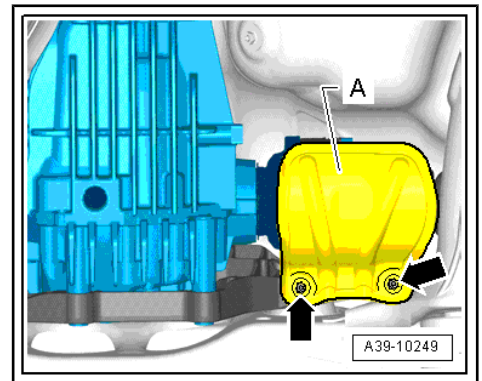
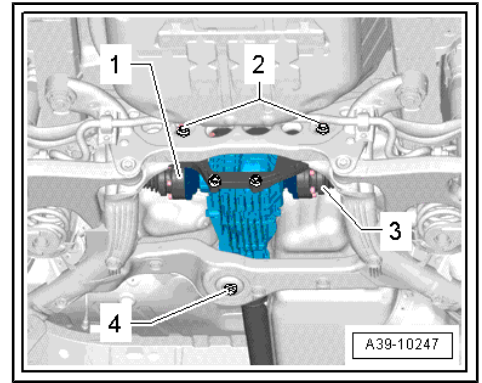


- First tighten the bolt -2 and 4- hand-tight.

i Note

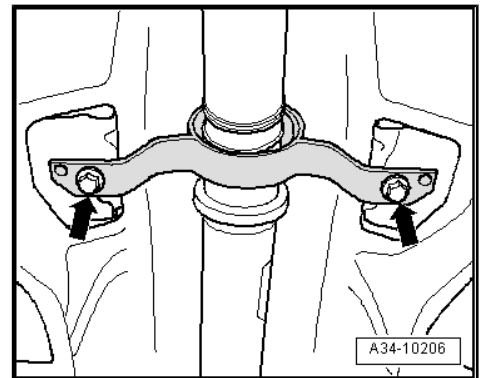
For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown.

- Tighten the bolt -4-. Tightening specification. Refer to -item 3- ⇒ [Item 3 \(page 43\)](#) .
- Tighten the bolts -2-. Tightening specification. Refer to -item 2- ⇒ [Item 2 \(page 43\)](#) .
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive.
- Tighten the left -1- and right -3- drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .
- Attach the left drive axle heat shield -A- to the crossmember/ rear final drive -arrows- -item 6- ⇒ [Item 6 \(page 43\)](#) .

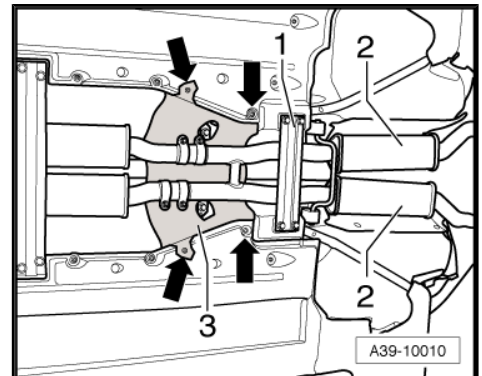


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- Attach the driveshaft to the rear final drive. Refer to ⇒ [page 37](#) .
- Attach the driveshaft intermediate bearing to the body free of tension. Tightening specification. Refer to -item 8- ⇒ [Item 8 \(page 22\)](#) .
- Check the gear oil level in the rear final drive. Refer to ⇒ [“4.2.1 Gear Oil, Checking Level, 0BC”, page 101](#) .



- Attach the heat shield -3- to the body -arrows-.
- Install the rear section of the exhaust system and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .
- If equipped, install the cross member -1-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .
- Install the left rear wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .





2.2.2 Final Drive 0BC Removing and Installing, Audi Q5 Hybrid

Removing ⇒ [page 52](#)

Installing ⇒ [page 56](#)

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG359/2-
- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-
- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-
- ◆ Socket - Xzn 12 - T40154-

Removal

Pay attention to the safety precautions. Refer to ⇒ ["5 Safety Precautions", page 9](#) .

Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#) .

- Place the vehicle on a lift.

De-energizing the High-Voltage System



WARNING

Follow the High-Voltage System General Warnings. Refer to ⇒ Electrical System Hybrid; Rep. Gr. 93; High Voltage System General Warnings .

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Turning off the voltage in the high-voltage system is carried out exclusively via the [Guided Fault Finding](#) on the Vehicle Diagnostic Tester .



DANGER!

Extremely dangerous high-voltage

Electrocution can cause death or severe bodily injury.

- ◆ ***The high-voltage system may only be turned off by qualified personnel (Audi high-voltage technician).***
- ◆ ***It must be certain that the high-voltage system is de-energized. The de-energized state is guaranteed only on the Vehicle Diagnostic Tester via "Guided Fault Finding".***
- ◆ ***The qualified technician (Audi high-voltage technician) will make sure the voltage is turned off and that the system cannot turn back on again using a Service Disconnect Lock - T40262- . The qualified technician should make sure the system cannot turn on again by keeping the key and the High-Voltage System Maintenance Connector - TW- in a safe place.***
- ◆ ***The qualified personnel (Audi high-voltage technician) marks the vehicle with a warning label.***



i Note

- ◆ De-energizing the high-voltage system:
- ◆ Connect the Vehicle Diagnostic Tester
- ◆ Select the Guided fault finding mode
- ◆ Using the Go To button, move through the following menu points
- ◆ Function/component selection
- ◆ Body
- ◆ Electrical Equipment
- ◆ OBD-capable system
- ◆ 8C - hybrid battery management -J840
- ◆ 8C - hybrid battery management, functions
- ◆ 51 - De-energize the high-voltage (Repair Group 93) 93)

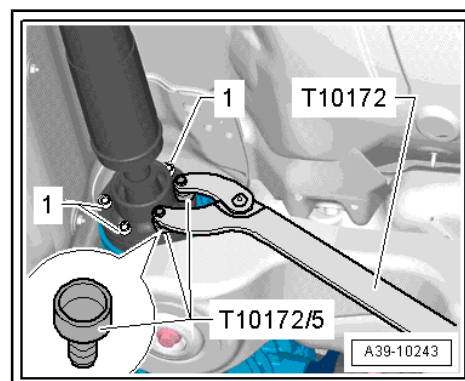
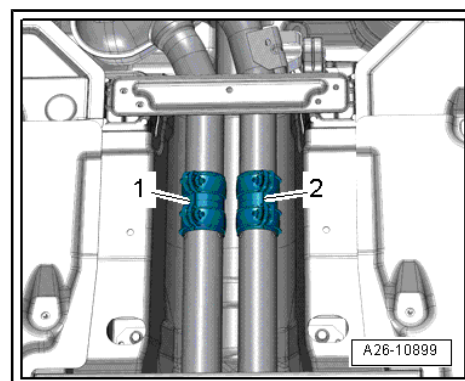
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- Remove the wheel hubcap from the left rear wheel. On alloy wheels, remove the cap using the puller in the vehicle tool kit.
- Remove the left rear wheel.
- loosen the clamping sleeves -1 and 2- and remove the rear section of the exhaust system. Refer to → Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

i Note

A second technician is needed to help remove the rear section of the exhaust system.

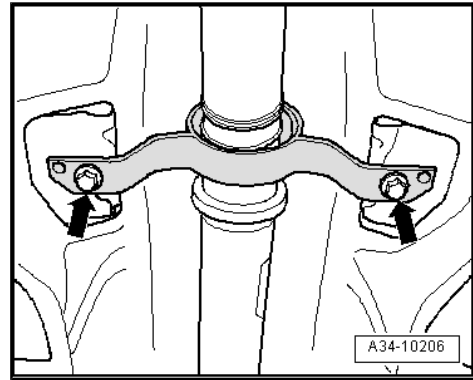
- Remove the driveshaft from the rear final drive. Refer to ⇒ ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .



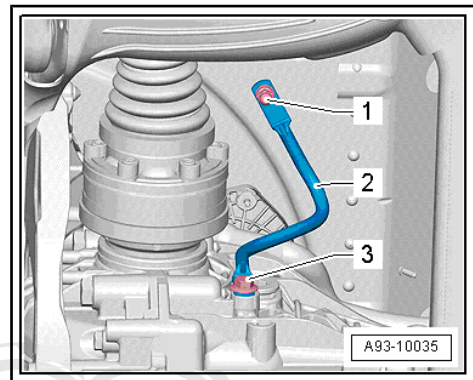
- Remove the driveshaft intermediate bearing mounting bolts -arrows-.
- Push the driveshaft forward and at the same time remove it from the rear final drive.

i Note

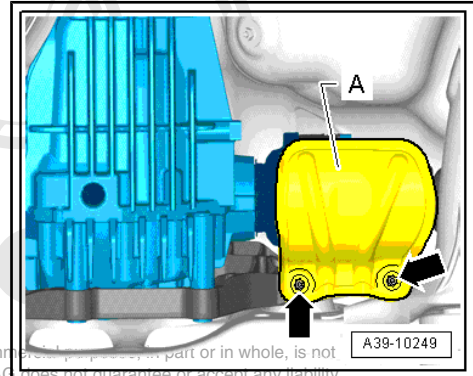
- ◆ *The driveshaft is supported by the heat shield under the intermediate bearing.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*



- Secure the driveshaft on the side to the subframe.
- Remove the bolt -3- for the potential equalization cable -2-.

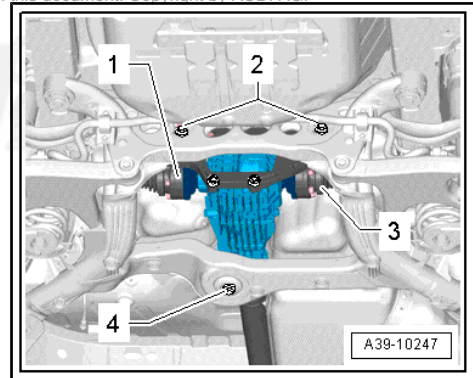


- Remove the left drive axle heat shield -A- from the crossmember/rear final drive -arrows-.



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- Remove the left -1- and right -3- drive axles.
- Loosen the bolts -2- approximately three turns.
- Remove the bolt -4-.

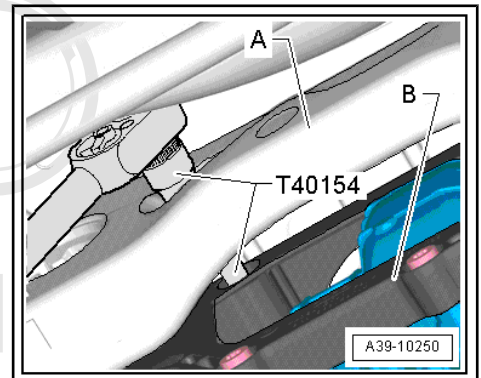
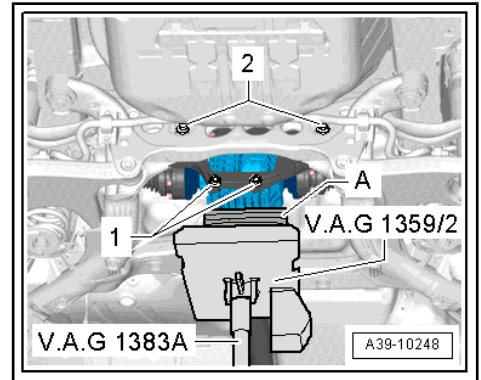


- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood -A- (approximately 80 mm tall) under the rear final drive.

 **Note**

Pay attention that the Universal Transmission Support - VAG1359/2- does not make contact with the fuel tank.

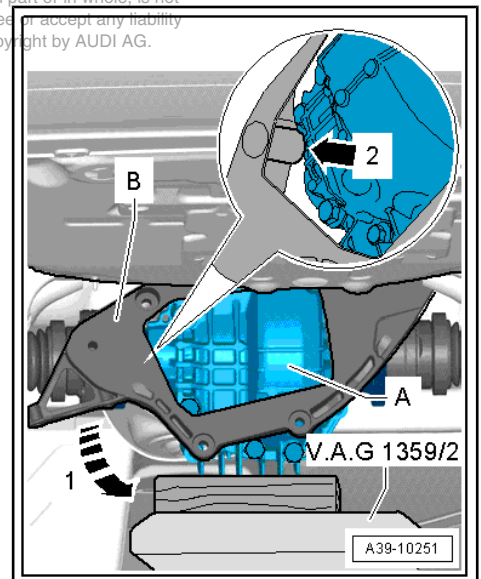
- Remove the bolts -1- (lower bolts attaching the crossmember to the rear final drive) and -2-.
- Remove the two upper bolts that connect the crossmember -B- to the rear final drive.
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



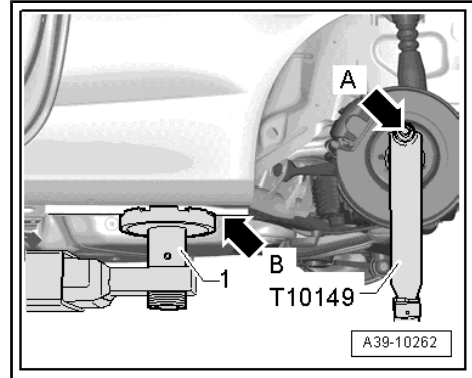
- Move the final drive -A- forward slightly.
- Turn the lower crossmember -B- direction of -arrow 1- and guide the final drive -arrow 2- and remove it.

 **Note**

- ◆ *A second technician must help with the next steps.*
- ◆ *Before raising the left rear suspension, secure the vehicle to the lifting arm on the hose using a Tensioning Strap - T10038-.*
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive while a second technician keeps the rear final drive from falling down.
- Insert the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- in the Engine and Gearbox Jack - VAS6931- .



- Attach the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- using a wheel bolt -arrow A- to the left rear suspension wheel hub.
- Lift the left rear suspension using the Engine and Gearbox Jack - VAS6931- just until the support arm -1- on the vehicle hoist just starts to lift the vehicle -arrow B-.

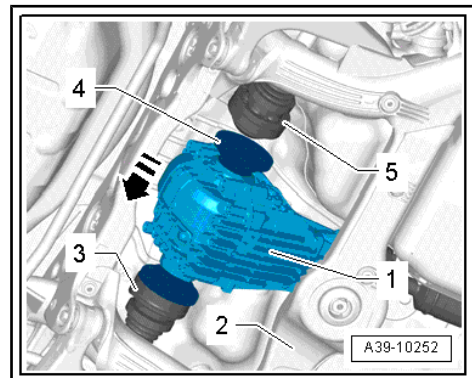


WARNING

- ◆ **Do not raise or lower the vehicle when the Engine and Gearbox Jack - VAS6931- is underneath it.**
- ◆ **Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle longer than necessary.**

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- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.
- Then guide the right drive axle -5- upward out of the final drive flange shaft -4-.
- Guide the left drive axle -3- out and then, together with the second technician, remove the final drive from the subframe -2- toward the rear.

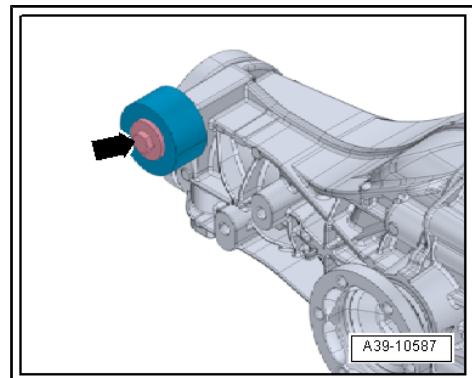


- If the rear final drive is replaced, the balance weight -arrow- must be rebuilt on the new rear final drive. Refer to [⇒ page 43](#) .

Installing

Install in reverse order of removal. Note the following:

- Tightening specifications. Refer to [⇒ "2.1.1 Overview - Final Drive 0BC, 0BD", page 43](#) .

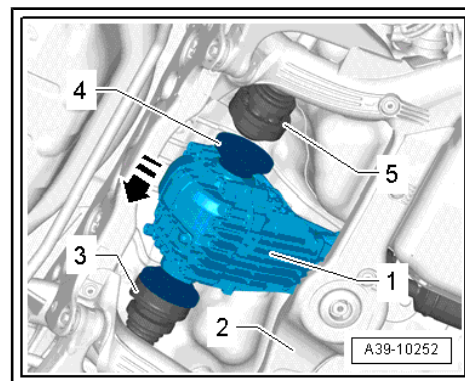


WARNING

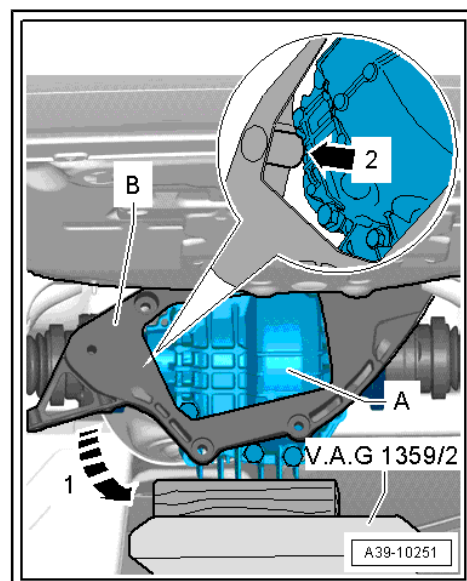
Handling the high-voltage cables:

- **Do not stand on or place tools on the high-voltage cables or their components. This may damage the insulation.**
- **Do not bend or kink high-voltage cables as this may damage the insulation.**
- **The round high-voltage connectors are color coded with an exterior colored ring and mechanically coded with guide or code tabs. Observe the coding when connecting the round high-voltage connector in order to avoid mechanical damage to the high-voltage connector.**

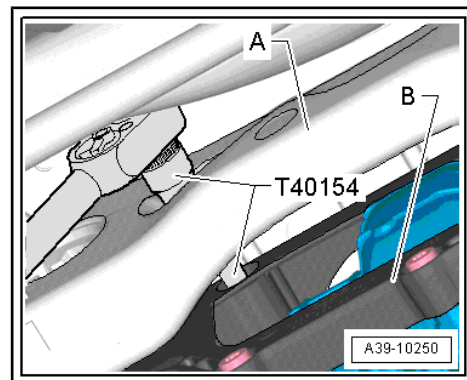
- With a second technician, position the rear final drive -1- on the subframe -2- in its installed position.
- Insert the left drive axle -3- into the final drive flange shaft.
- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.
- Then install the right drive axle -5- into the final drive flange shaft -4-.
- Remove the Engine and Gearbox Jack - VAS6931- with the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- from the left rear suspension.



- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood (approximately 80 mm tall) under the rear final drive -A-.
- Move the final drive -A- forward slightly.
- Turn the upper crossmember -B- opposite the direction of -arrow 1- to the left and insert it while guiding it past the final drive -arrow 2-.



- Tighten the four bolts connecting the crossmember -B- to the rear final drive diagonally. Tightening specification. Refer to -item 4- ➔ [Item 4 \(page 43\)](#) .
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



Audi

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erWin

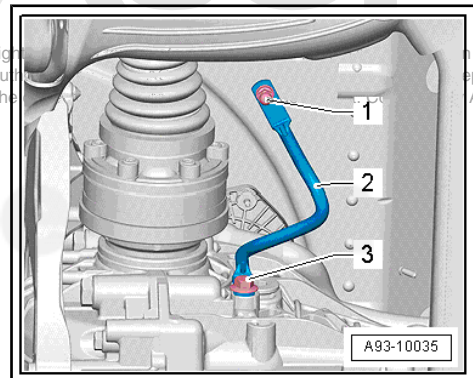
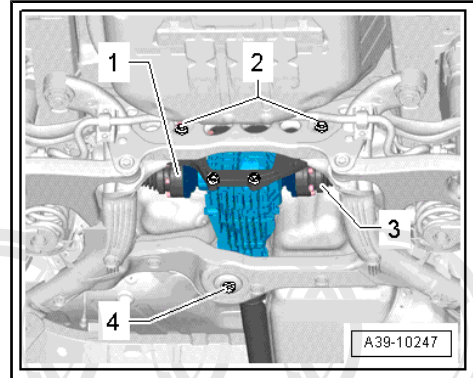
- First tighten the bolt -2 and 4- hand-tight.



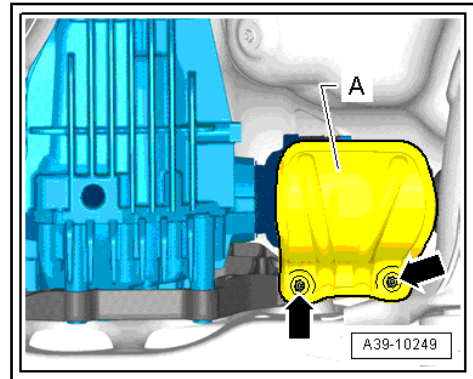
Note

For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown.

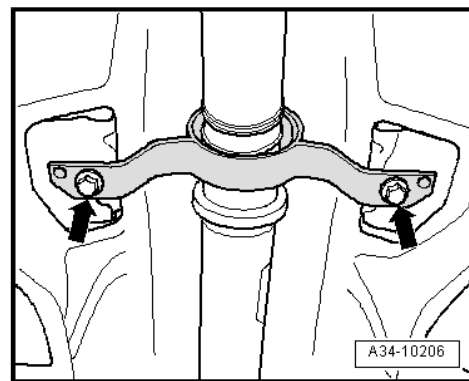
- Tighten the bolt -4-. Tightening specification. Refer to -item 3- => [Item 3 \(page 43\)](#) .
- Tighten the bolts -2-. Tightening specification. Refer to -item 2- => [Item 2 \(page 43\)](#) .
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive.
- Tighten the left -1- and right -3- drive axles. Refer to => Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .
- Tighten the potential equalization cable -2- to the rear final drive.
- Bolt tightening specification -3- on the final drive: 20 Nm



- Attach the left drive axle heat shield -A- to the crossmember/ rear final drive -arrows- -item 6- => [Item 6 \(page 43\)](#) .




- Attach the driveshaft to the rear final drive. Refer to [⇒ page 37](#) .
- Attach the driveshaft intermediate bearing to the body free of tension. Tightening specification. Refer to -item 8- [⇒ Item 8 \(page 22\)](#) .
- Check the gear oil level in the rear final drive. Refer to [⇒ "4.2.1 Gear Oil, Checking Level, 0BC", page 101](#) .
- Install the rear section of the exhaust system and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .
- Install the left rear wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires; Wheel Bolt Tightening Specifications .



Energizing the High-Voltage System

Only by using the Guided Fault Finding in the Vehicle Diagnostic Tester can the high-voltage system be restarted.

 **DANGER!**

Extremely dangerous high-voltage

Electrocution can lead to severe bodily injury or death

- ◆ *The high-voltage system may only be re-energized by qualified personnel (Audi high-voltage technician).*
- ◆ *Only the Vehicle Diagnostic Tester via "Guided Fault Finding" can guarantee if the system has been re-energized.*
- ◆ *The qualified personnel (Audi high-voltage technician) re-starts the vehicle.*
- ◆ *The qualified personnel (Audi high-voltage technician) marks the vehicle with a warning label.*

Note

- ◆ *Energizing the high-voltage system:*
- ◆ *Connect the Vehicle Diagnostic Tester*
- ◆ *Select the Guided fault finding mode*
- ◆ *Using the Go To button, move through the following menu points*
- ◆ Function/component selection
- ◆ Body
- ◆ Electrical Equipment
- ◆ OBD-capable system
- ◆ 8C - hybrid battery management -J840
- ◆ 8C - hybrid battery management, functions
- ◆ 51 - High-voltage re-energizing (Rep.Gr. 93)

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2.2.3 Final Drive Removing and Installing OBC, Audi A8

Removing ⇒ [page 60](#)

Installing ⇒ [page 63](#)

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG359/2-
- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-
- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-
- ◆ Socket - Xzn 12 - T40154-

Removal

Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#) .

- Place the vehicle on a lift.
- Remove the left rear wheel.
- Remove the rear crossmember -1-.



Note

A second technician is needed to help remove the rear section of the exhaust system.

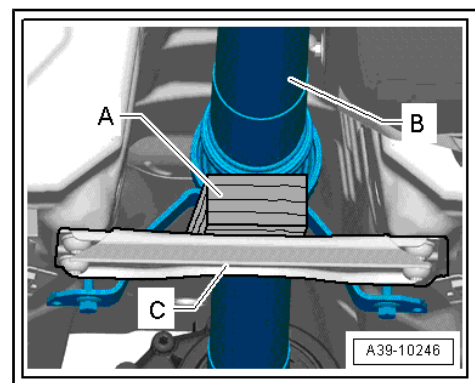
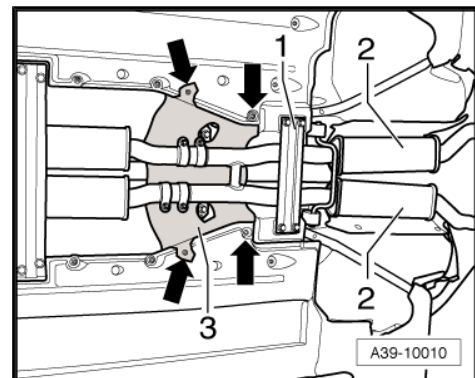
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Remove the driveshaft from the rear final drive. Refer to ⇒ ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .
- Place a wooden block -A- (approximately 40 mm high) on the rear crossmember -C- to support the driveshaft -B-.



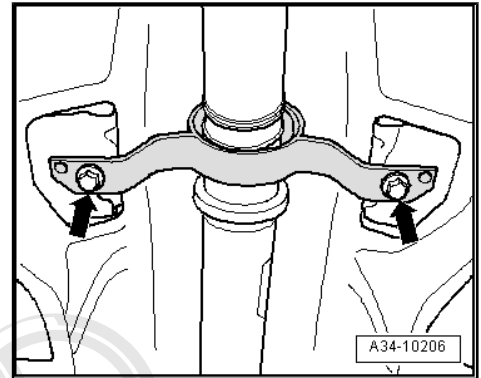
Note

The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.

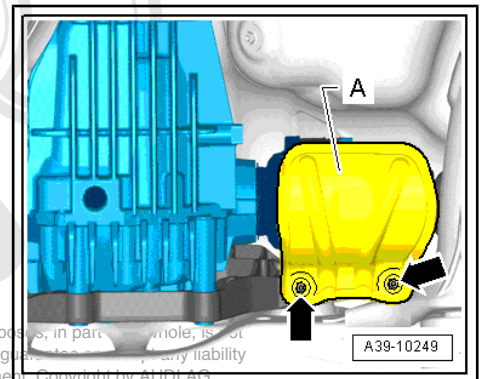
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- Remove the driveshaft intermediate bearing mounting bolts -arrows-.
- Push the driveshaft forward and at the same time remove it from the rear final drive.
- Tie the driveshaft to the side.

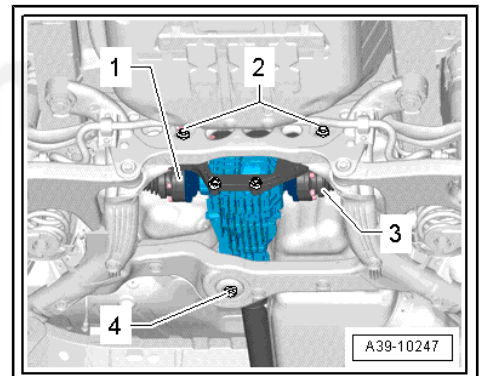


- Remove the left drive axle heat shield -A- from the crossmember/rear final drive -arrows-.



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- Remove the left -1- and right -3- drive axles.
- Loosen the bolts -2- approximately three turns.
- Remove the bolt -4-.

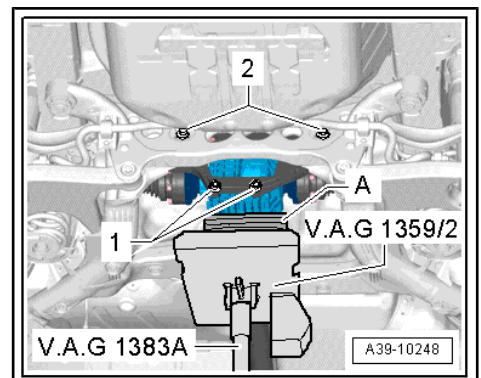


- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood -A- (approximately 80 mm tall) under the rear final drive.

 **Note**

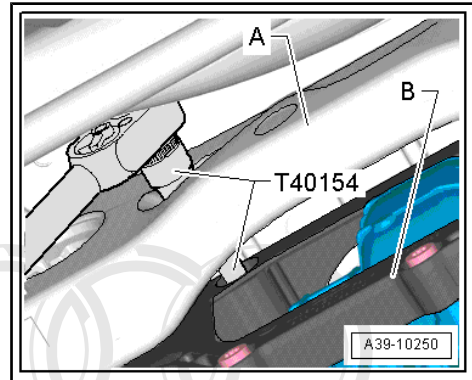
Pay attention that the Universal Transmission Support - VAG1359/2- does not make contact with the fuel tank.

- Remove the bolts -1- (lower bolts attaching the crossmember to the rear final drive) and -2-.





- Remove the two upper bolts that connect the crossmember -B- to the rear final drive.
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.

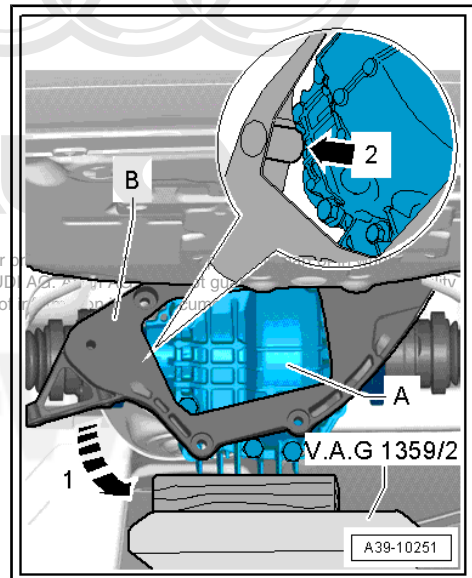


- Move the final drive -A- forward slightly.
- Turn the lower crossmember -B- direction of -arrow 1- and guide the final drive -arrow 2- and remove it.

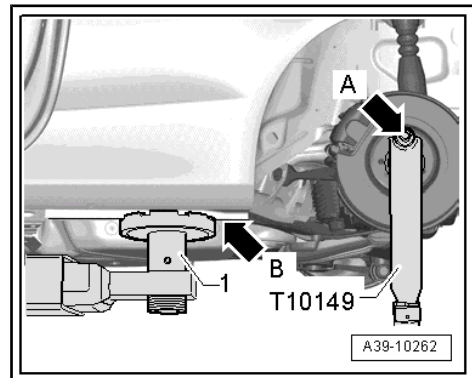


Note

- ◆ *A second technician must help with the next steps.*
- ◆ *Before raising the left rear suspension, secure the vehicle to the lifting arm on the hose using a Tensioning Strap -T10038-.*
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive while a second technician keeps the rear final driving from falling down.
- Insert the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- in the Engine and Gearbox Jack - VAS6931- .



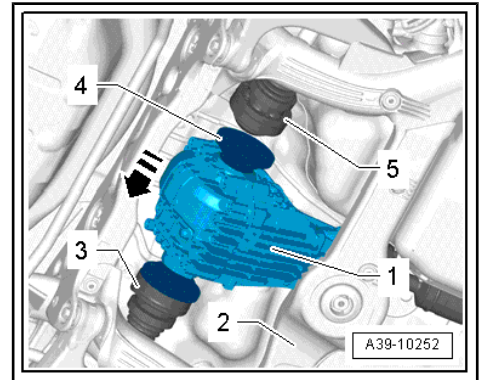
- Attach the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- using a wheel bolt -arrow A- to the left rear suspension wheel hub.
- Lift the left rear suspension using the Engine and Gearbox Jack - VAS6931- just until the support arm -1- on the vehicle hoist just starts to lift the vehicle -arrow B-.



WARNING

- ◆ *Do not raise or lower the vehicle when the Engine and Gearbox Jack - VAS6931- is underneath it.*
- ◆ *Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle longer than necessary.*

- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.
- Then guide the right drive axle -5- upward out of the final drive flange shaft -4-.
- Guide the left drive axle -3- out and then, together with the second technician, remove the final drive from the subframe -2- toward the rear.

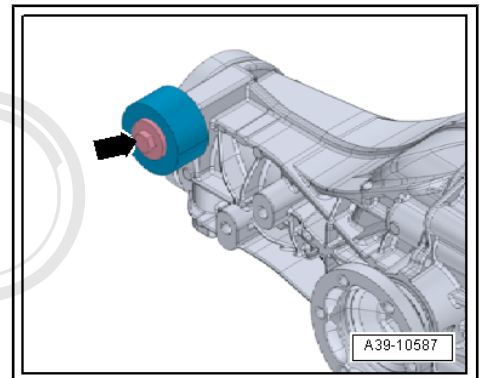


- If the rear final drive is replaced, the balance weight -arrow- must be rebuilt on the new rear final drive. Refer to [⇒ page 43](#).

Installing

Install in reverse order of removal. Note the following:

- Tightening specifications. Refer to [⇒ "2.1.1 Overview - Final Drive 0BC, 0BD", page 43](#).



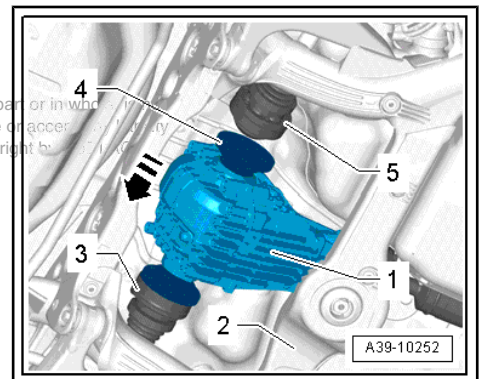
- With a second technician, position the rear final drive -1- on the subframe -2- in its installed position.

- Insert the left drive axle -3- into the final drive flange shaft.

- The second technician must now push the rear final drive -1- toward the left side of the vehicle in direction of -arrow-.

- Then install the right drive axle -5- into the final drive flange shaft -4-.

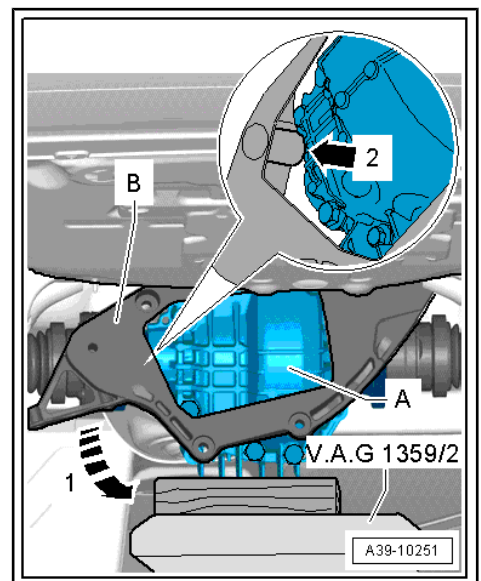
- Remove the Engine and Gearbox Jack - VAS6931- with the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- from the left rear suspension.



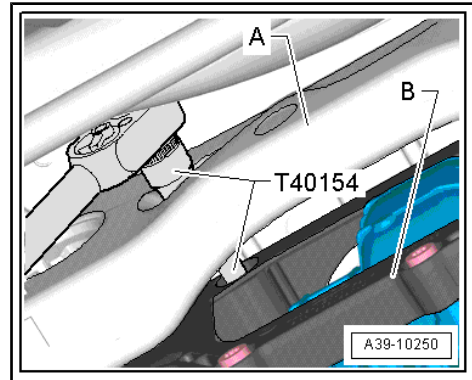
- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood (approximately 80 mm tall) under the rear final drive -A-.

- Move the final drive -A- forward slightly.

- Turn the upper crossmember -B- opposite the direction of -arrow 1- to the left and insert it while guiding it past the final drive -arrow 2-.



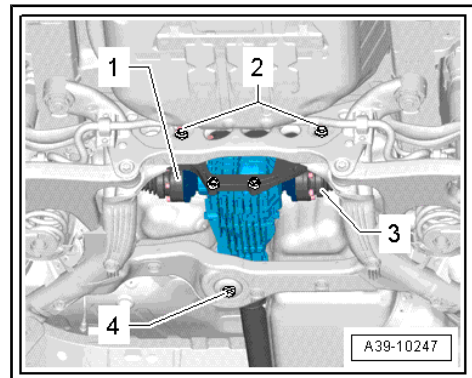
- Tighten the four bolts connecting the crossmember -B- to the rear final drive diagonally. Tightening specification. Refer to -item 4- ⇒ [Item 4 \(page 43\)](#) .
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



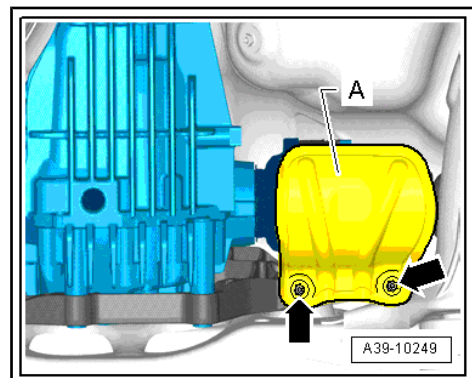
- First tighten the bolt -2 and 4- hand-tight.

 **Note**

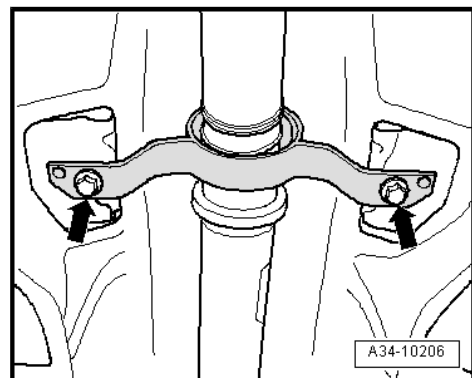
For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown.



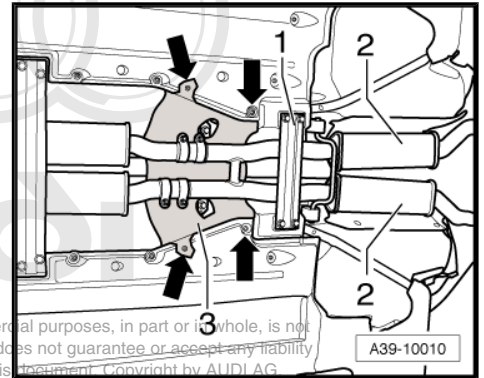
- Tighten the bolt -4-. Tightening specification. Refer to -item 3- ⇒ [Item 3 \(page 43\)](#) .
- Tighten the bolts -2-. Tightening specification. Refer to -item 2- ⇒ [Item 2 \(page 43\)](#) .
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive.
- Install the left -1- and right -3- drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .
- Attach the left drive axle heat shield -A- to the crossmember/ rear final drive -arrows- -item 6- ⇒ [Item 6 \(page 43\)](#) .



- Attach the driveshaft to the rear final drive. Refer to ⇒ [page 37](#) .
- Attach the driveshaft intermediate bearing to the body free of tension. Tightening specification. Refer to -item 8- ⇒ [Item 8 \(page 22\)](#) .
- Check the gear oil level in the rear final drive. Refer to ⇒ [“4.2.1 Gear Oil, Checking Level, 0BC”, page 101](#) .



- Attach the heat shield -3- to the body -arrows-.
- Install the rear section of the exhaust system and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- If equipped, install the cross member -1-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .
- Install the left rear wheel and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .



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2.2.4 Final Drive Removing and Installing OBD, Audi A4, A5 and Q5

Removing ⇒ [page 65](#)

Installing ⇒ [page 69](#)

Special tools and workshop equipment required

- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-
- ◆ Socket - Xzn 12 - T40154-
- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG1359/2-

Removal

Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#) .

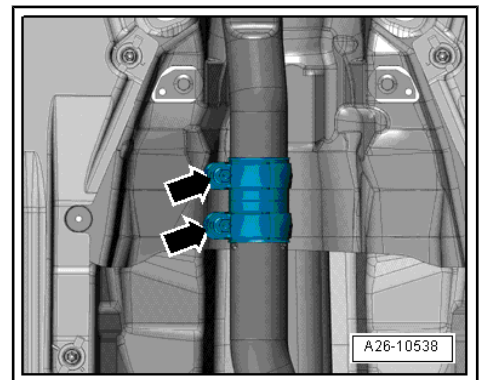
- Place the vehicle on a lift.



Note

Do not bend the flex joint in the front exhaust pipe more than 10° or it will be damaged.

- Loosen the clamping sleeve(s) -arrows- and separate the exhaust system.
- Tie the front exhaust pipe(s) to the underbody.



- Remove the rear crossmember -1-, if applicable.
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

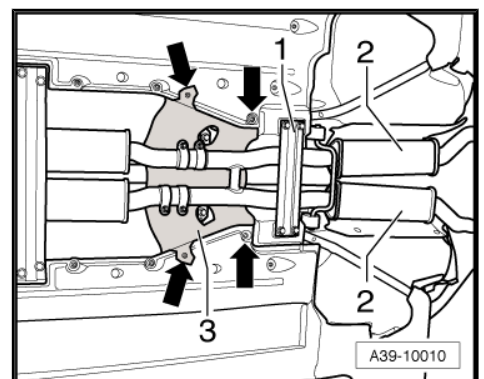


Note

A second technician is needed to help remove the rear section of the exhaust system.

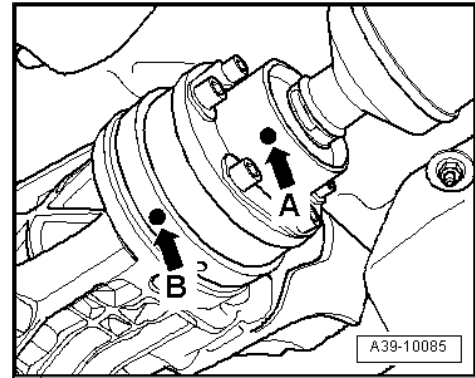
Audi A4 and Audi A5

- Remove the heat shield -3- -arrows-.

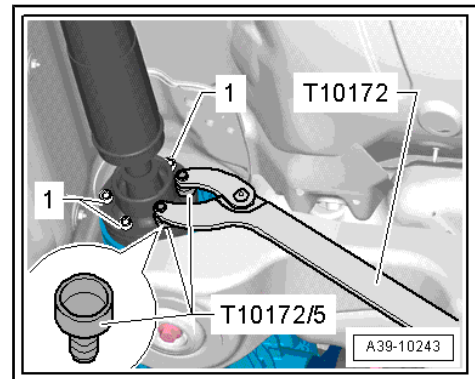


Continuation for all Vehicles

- Check whether there is a color dot on the driveshaft and at flange/driveshaft on the rear final drive
-arrow A and arrow B-
- If one of these dots is no longer visible (for example -arrow A- on the driveshaft), then make a mark for the missing markings in color.
- The mark on the driveshaft -arrow A- and on the rear final drive -arrow B- are on one line.



- Remove the bolts -1- (quantity: 6) from the rear CV joint.
- Use the Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5- .



Audi A4 and Audi A5

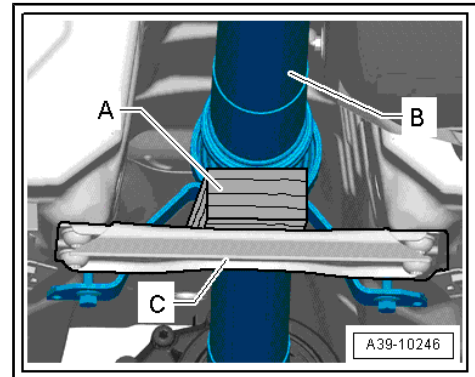
- Attach the rear crossmember -C- to the vehicle body, if it was removed.
- Place a block of wood -A- (approximately 40 mm high) on the rear crossmember -C- and support the driveshaft -B-.



Note

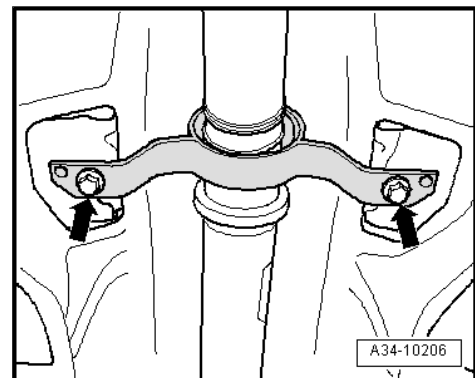
- ◆ *The driveshaft -B- is supported under the intermediate bearing by the heat shield on the Audi Q5.*
- ◆ *The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.*

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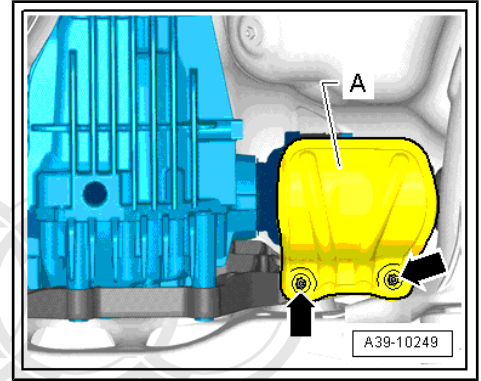


Continuation for all Vehicles

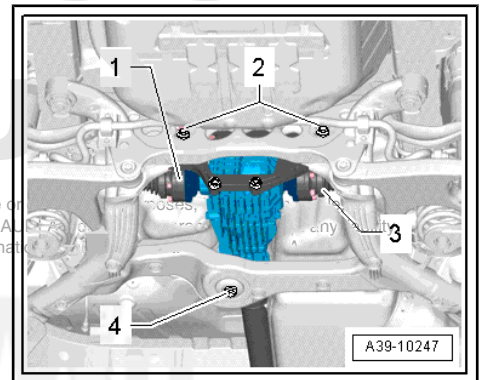
- Remove the driveshaft intermediate bearing mounting bolts -arrows-.
- Push the driveshaft forward and at the same time remove it from the rear final drive.
- Secure the driveshaft on the side to the subframe.



- Remove the left drive axle heat shield -A- from the crossmember/rear final drive -arrows-.



- Remove the left -1- and right -3- drive axles.
- Loosen the bolts -2- approximately three turns.
- Remove the bolt -4-.

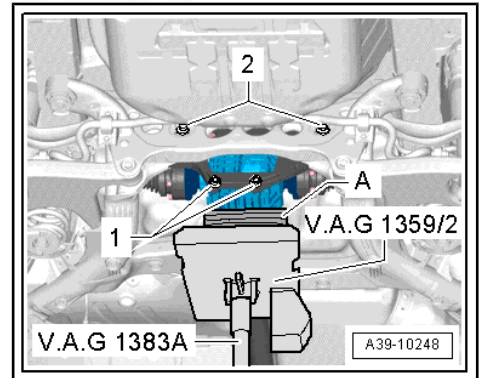


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- Position the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- and a block of wood -A- (approximately 80 mm tall) under the rear final drive.

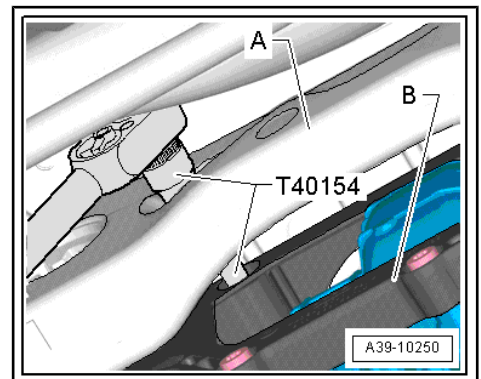
 **Note**

Pay attention that the Universal Transmission Support - VAG1359/2- does not make contact with the fuel tank.



- Remove the bolts -1- (lower bolts attaching the crossmember to the rear final drive) and -2-.

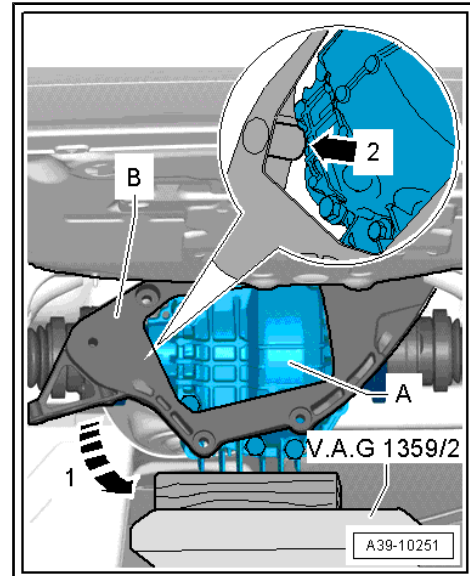
- Remove the two upper bolts that connect the crossmember -B- to the rear final drive.
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.



- Move the final drive -A- forward slightly.
- Turn the lower crossmember -B- direction of -arrow 1- and guide the final drive -arrow 2- and remove it.

i Note

A second technician must help with the next steps.

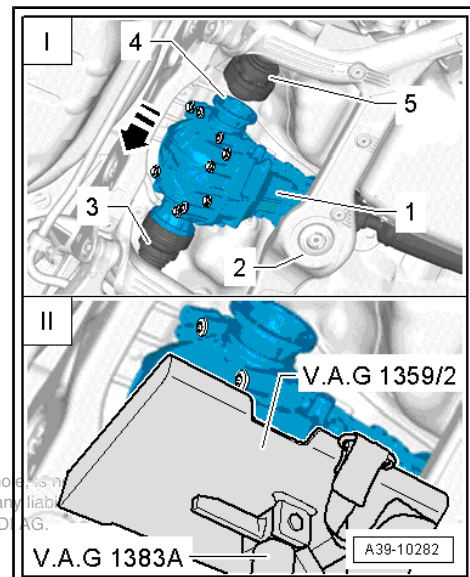


- The second technician must now lift the rear final drive -1- at the right side slightly and press it to the left in the direction of the -arrow-.

i Note

For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown in the upper area "I".

- Then guide the right drive axle -5- upward out of the right final drive flange shaft -4-.
- Then guide the left drive axle -3- out.

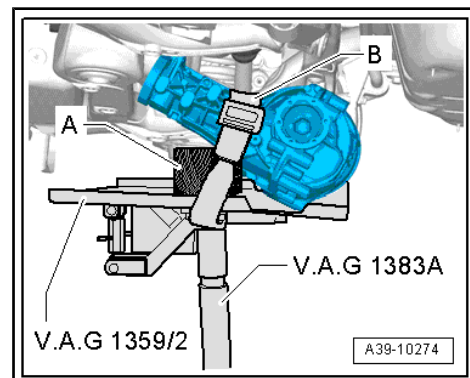


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- Secure the rear final drive with the strap -B-.

A - Wooden block

- Lower the rear final drive completely.



Installing

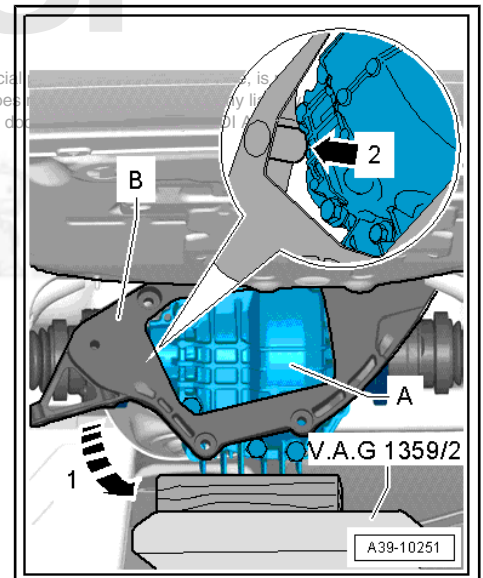
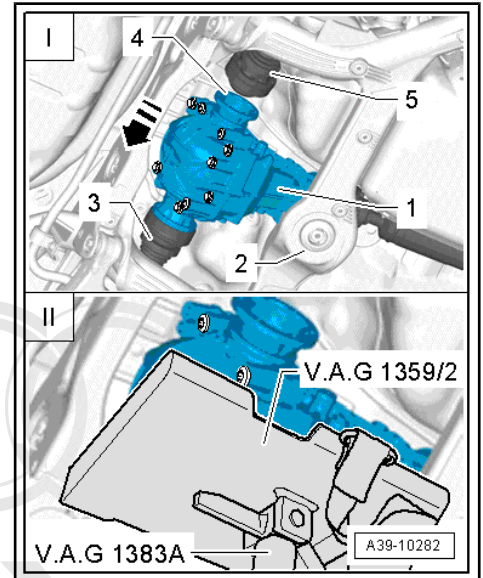
Install in reverse order of removal. Note the following:

- Mount the rear final drive -1- with the Engine and Gearbox Jack - VAS6931- and the Universal Transmission Support - VAG1359/2- on the subframe -2- in the installed position.

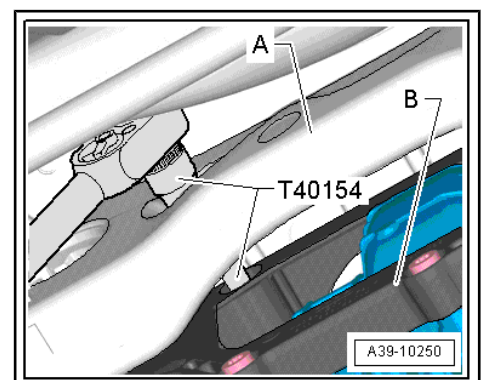
Note

For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown in the upper area "I".

- Insert the left drive axle -3- into the final drive flange shaft.
- The second technician must now lift the rear final drive -1- at the right side slightly and press it to the left in the direction of the -arrow-.
- Then install the right drive axle -5- into the right final drive flange shaft.
- Move the final drive -A- forward slightly.
- Turn the upper crossmember -B- opposite the direction of -arrow 1- to the left and insert it while guiding it past the final drive -arrow 2-.



- Tighten the four mounting bolts from the crossmember -B- to the rear final drive to the tightening specification -item 4- => [Item 4 \(page 43\)](#) in a diagonal sequence.
- Guide the Socket - Xzn 12 - T40154- through the holes in the subframe -A-. Move the final drive to the left or right just a little, if necessary.





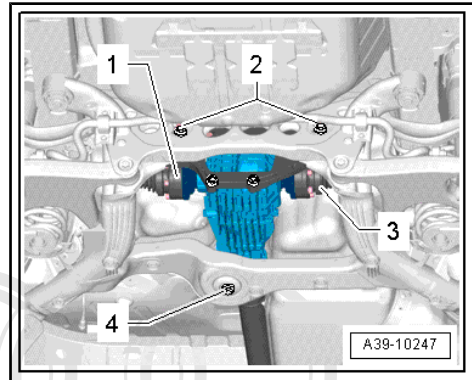
- First tighten the bolt -2- and 4- hand-tight.



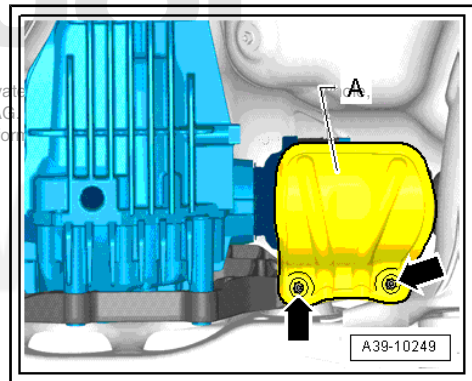
Note

For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown.

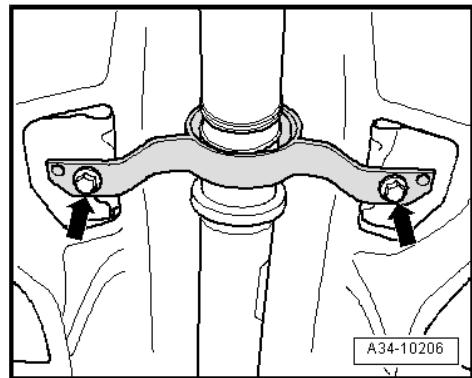
- Tighten the bolt -4- to the tightening specification. Refer to -item 3- => [Item 3 \(page 43\)](#) .
- Then tighten the bolts -2- to the tightening specification -item 2- => [Item 2 \(page 43\)](#) .
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive.
- Install the left -1- and right -3- drive axles. Refer to => Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axles; Drive Axles, Removing and Installing .
- Attach the left drive axle heat shield -A- to the crossmember/ rear final drive -arrows- -item 6- => [Item 6 \(page 43\)](#) .



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- Attach the driveshaft to the rear final drive. Make sure the markings align and follow the tightening sequence. Refer to => [page 37](#) .
- Attach the driveshaft intermediate bearing to the body so that it is free of tension -arrows-. Tightening specification. Refer to -item 8- => [Item 8 \(page 22\)](#) .
- Check the gear oil level in the rear final drive. Refer to => ["4.2.2 Gear Oil, Checking Level, 0BD"](#), [page 102](#) .

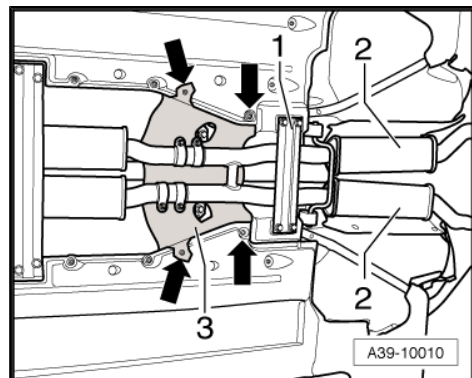


Audi A4 and Audi A5

- Attach the heat shield -3- to the body -arrows-.

Continuation for all Vehicles

- Install the rear section of the exhaust system and align it so it is free of tension. Refer to => Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .
- If equipped, attach the crossmember -1- to the body. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .



2.2.5 Final Drive, Removing and Installing OBF, Audi A4, A5, A6 and A7, Q5

Removing. Refer to ⇒ [page 71](#)

Installing. Refer to ⇒ [page 74](#)

Pay attention to the general repair information. Refer to
 ⇒ [“6 Repair Information”, page 13](#) .

Pay attention to the safety precautions. Refer to
 ⇒ [“5 Safety Precautions”, page 9](#) .

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931- with Universal Transmission Support - VAG359/2-
- ◆ Tensioning Strap - T10038-
- ◆ Counterhold - Kit - Multiple Use - T10172- with Counterhold - Kit - Adapter 5 - T10172/5-

Removal

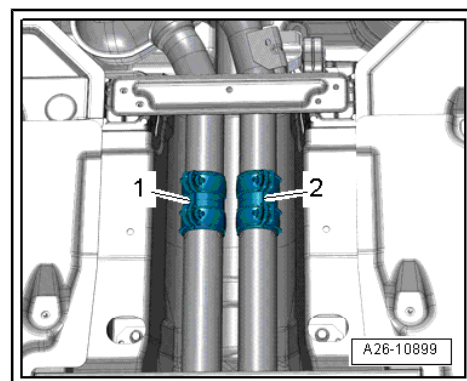
- Place the vehicle on a lift.
- Remove the wheel hubcap from the left rear wheel. On alloy wheels, remove the cap using the puller in the vehicle tool kit.
- Remove the rear wheels.



Note

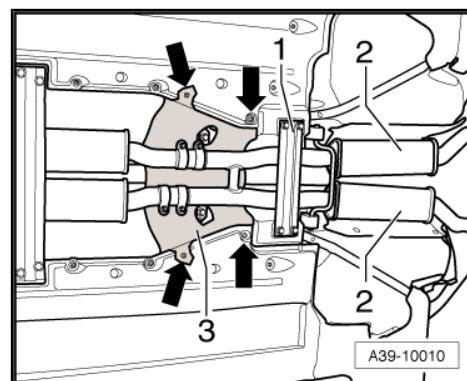
Do not bend the flex joint in the front exhaust pipe more than 10° or it will be damaged.

- Loosen the clamping sleeves -1 and 2- and disconnect the exhaust system.
- Attach the front exhaust pipe on the underbody side.



- If equipped, remove the rear crossmember -1-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .

- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



Note

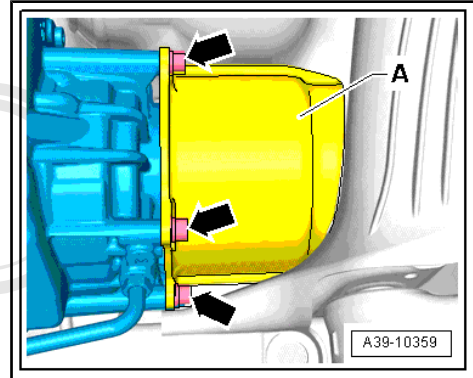
A second technician is needed to help remove the rear section of the exhaust system.

- Remove the driveshaft. Refer to
 ⇒ [“1.2 Driveshaft, Removing and Installing”, page 23](#)

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- Remove the left drive axle heat shield -A- from the rear final drive -arrows-.



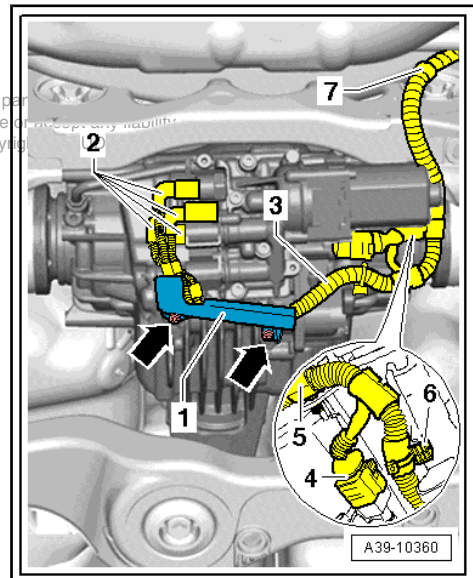
- Remove the bolts -arrows- and remove the bracket -1- from the rear final drive.

 **Note**

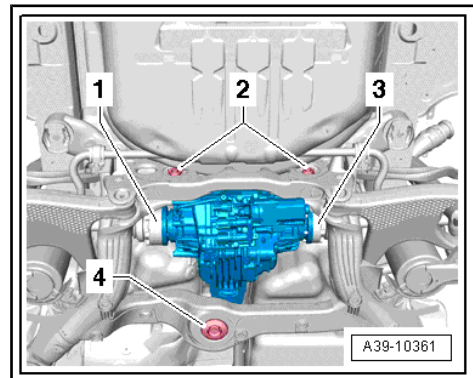
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Mark the connectors -2- for the Oil Pressure/Temperature Sensor and on the Clutch Valves .

- Disconnect the connectors -2- from the Oil Pressure/Temperature Sensor and the Clutch Valves .
- Disconnect the connector -4- from the All Wheel Drive Pump - V415- .
- Unclip the wiring harness -3- from the final drive and the sub-frame and tie it up -items 5 through 7-.

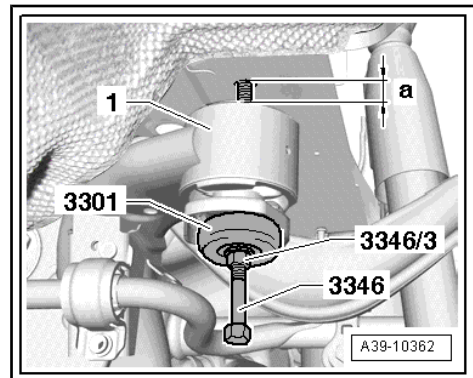


- Remove the left -1- and right -3- drive axles from the final drive.
- Loosen the bolts -2- approximately three turns.
- Remove the bolt -4-.



Lower the subframe -1- at the rear as follows:

- Remove the right rear bolt that connects the subframe to the body.
- Install the Bearing Installer - Control Arm - 3346- with Control Arm Bearing Installer - Nut - 3346/3- and Bearing from the Subframe Bushing Tool Kit - 3301- .
- Then remove the left rear bolt that connects the subframe to the body.
- Lower the subframe to dimension -a- = 40 mm. While doing so counterhold the Bearing Installer - Control Arm - 3346- and turn the Control Arm Bearing Installer - Nut - 3346/3- counter-clockwise.



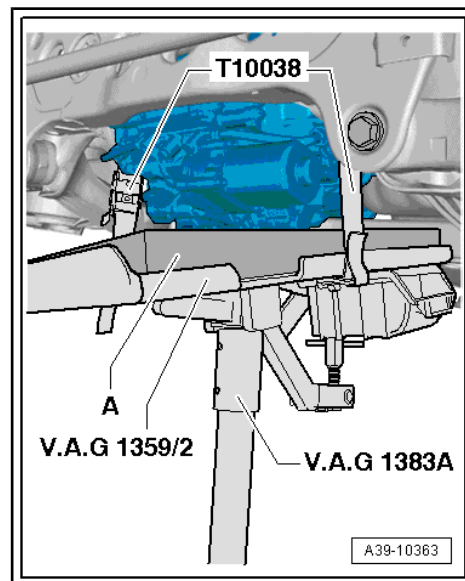
- Position the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- and a corresponding rubber or hard foam mat -A- under the rear final drive.



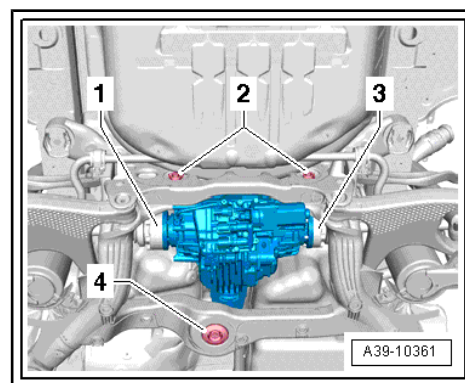
Caution

The rubber or hard foam mat is needed to protect the Clutch Valves on the rear final drive from getting damaged.

Use a Tensioning Strap - T10038- to secure the rear final drive from falling.



- Remove the two rear bolts -2- that connect the rear final drive to the subframe.
- A second technician must help with the next steps in removing the final drive.

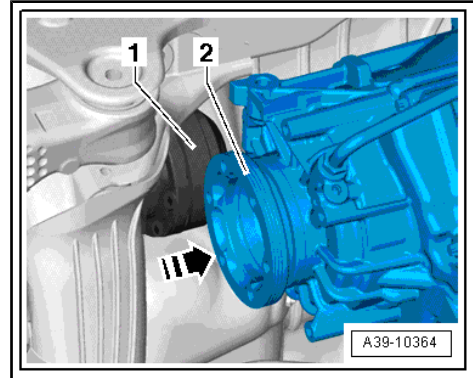


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- A second technician must now push the rear final drive in direction of -arrow- toward the right side of the vehicle.
- Then guide the left drive axle -1- upward and out of the final drive flange shaft -2-.
- Guide the right drive axle out and tilt the final drive toward the rear and downward.
- Carefully lower the final drive together with the second technician. Pay attention to the subframe.



WARNING

- ◆ Do not raise or lower the vehicle when the Engine and Gearbox Jack - VAS6931- is underneath it.
- ◆ Do not leave the Engine and Gearbox Jack - VAS9631- under the vehicle longer than necessary.

Installing

Install in reverse order of removal. Note the following:



WARNING

Malfunctions on the rear final drive.

If the rear final drive was replaced, additional work is necessary. Refer to ⇒ "2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83 .

- Carefully raise the rear final drive using the Engine and Gearbox Jack and, with a second technician, position it on the subframe in its installed position.

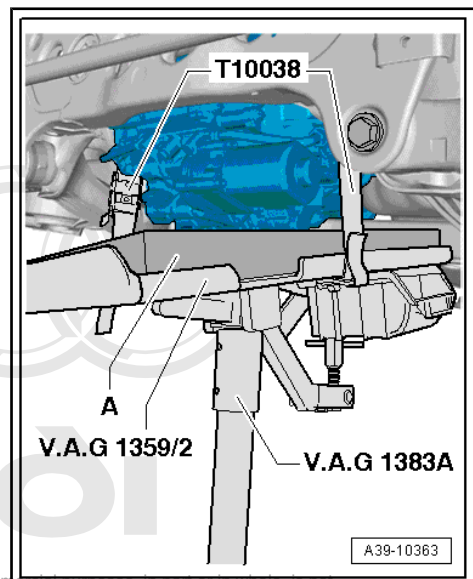
-A- = rubber or hard foam mat



Caution

The rubber or hard foam mat is needed to protect the Clutch Valves on the rear final drive from getting damaged.

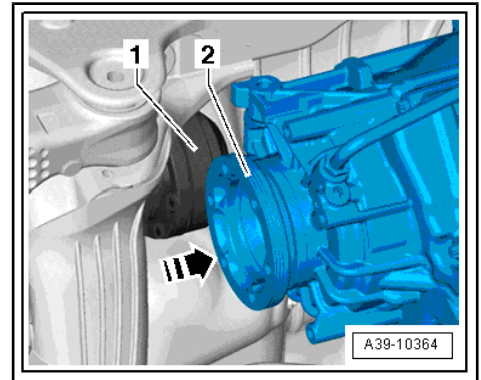
Use a Tensioning Strap - T10038- to secure the rear final drive from falling.



- Install the right drive axle into the final drive flange shaft.

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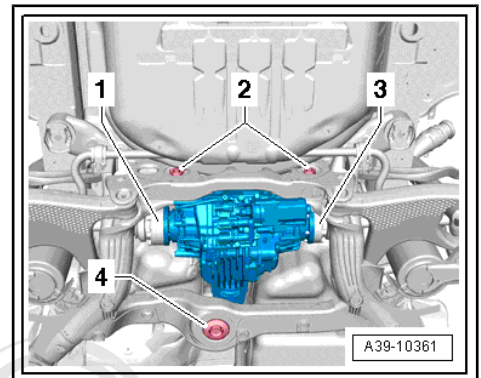
- A second technician must now push the rear final drive in direction of -arrow- toward the right side of the vehicle.
- Install the left drive axle -1- into the final drive flange shaft -2-.



- Install the bolts -2- that connect the rear final drive to the subframe hand-tight.

 **Note**

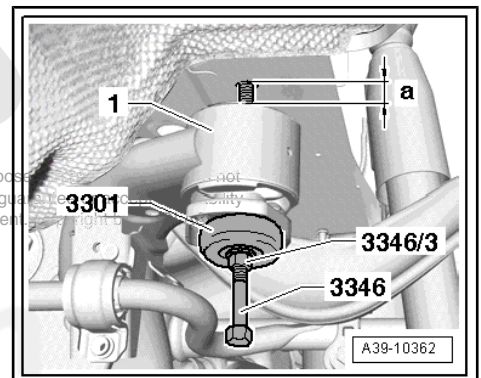
For better illustration the Engine and Gearbox Jack - VAS6931- with the Universal Transmission Support - VAG1359/2- are not shown.



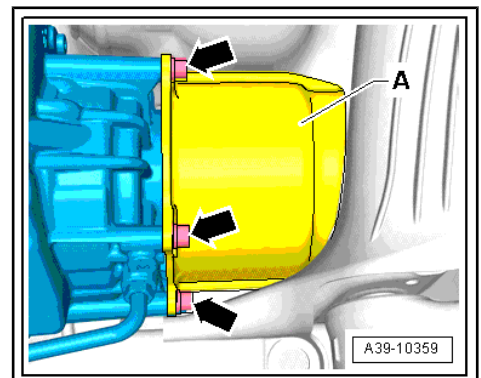
- Tighten the bolt -4- to the tightening specification and then the bolts -2- to the tightening specification. Refer to ⇒ ["2.1.2 Overview - Final Drive 0BE, 0BF"](#), page 45 .
- Remove the Engine and Gearbox Jack - VAS6931- from under the final drive.
- Install the left -1- and right -3- drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .

Attach the subframe -1- to the body in the rear as follows:

- First turn the Control Arm Bearing Installer - Nut - 3346/3- clockwise until the subframe touches the body. While doing this, counterhold the Bearing Installer - Control Arm - 3346- .
- Then install the left rear bolt that connects the subframe to the body and tighten it to the tightening specification. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42; Subframe; Overview - Subframe .
- The remove the Bearing Installer - Control Arm - 3346- and the right rear bolt for the subframe on the body and tighten to the tightening specification. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Subframe; Overview - Subframe .



- Attach the left drive axle heat shield -A- to the rear final drive -arrows-. Refer to ⇒ ["2.1.2 Overview - Final Drive 0BE, 0BF"](#), page 45 .



- Install the wiring harness -3- to the final drive and subframe -items 5 through 7-.
- Connect the connectors -4 and 2-. Pay attention to the marks made during the removal, that identify the allocation to the Oil Pressure/Temperature Sensor and which connectors go to the Clutch Valves .

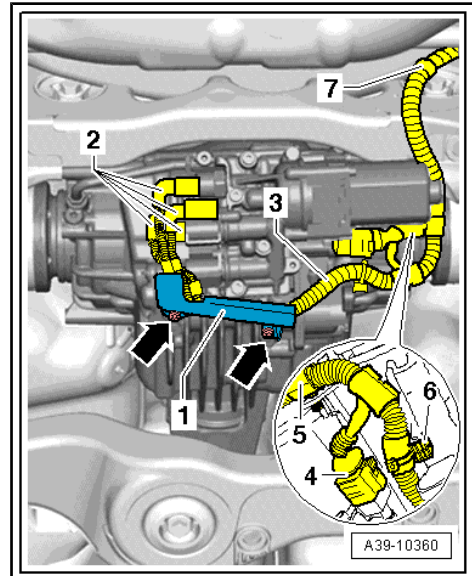


Caution

Risk of damaging the wiring harness.

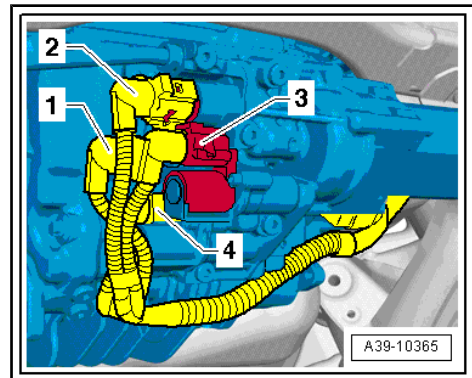
- ◆ **Make sure the wiring harness -3- does not get pinched when installing the bracket -1- to the rear final drive.**

- Position the bracket -1- on the final drive and tighten the bolts -arrows- to the tightening specification. Refer to ⇒ [page 83](#) .



Note

- ◆ Allocation for the Oil Pressure/Temperature Sensor and Clutch Valves connectors:
- ◆ -1- = Oil Pressure/Temperature Sensor 2 - G640- Connector
- ◆ -2- = Oil Pressure/Temperature Sensor - G437- Connector
- ◆ -3- = All Wheel Drive Clutch Valve 2 - N446- Connector
- ◆ -4- = All Wheel Drive Clutch Valve - N445- Connector
- Install the driveshaft. Align the markings and follow the tightening sequence. Refer to ⇒ [page 37](#) .
- Check the gear oil in rear final drive. Refer to ⇒ ["4.2.3 Gear Oil, Checking Level, 0BE, 0BF"](#), [page 102](#) .
- Check the ATF inside the rear final drive. Refer to ⇒ ["5.2.1 ATF Level, Checking, 0BE, 0BF"](#), [page 110](#) .
- Install the rear section of the exhaust system and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .
- If equipped, install the rear cross member. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .
- Install the rear wheels and tighten. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .
- If the rear final drive was replaced, additional work is necessary. Refer to ⇒ ["2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF"](#), [page 83](#) .



2.2.6 Final Drive 0BF, Removing and Installing, Audi RS4 and RS5

Removing. Refer to ⇒ [page 77](#)

Installing. Refer to ⇒ [page 79](#)

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-

Removal

- Remove the rear crossmember -1-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .

Note

A second technician is needed to remove the exhaust system rear section.

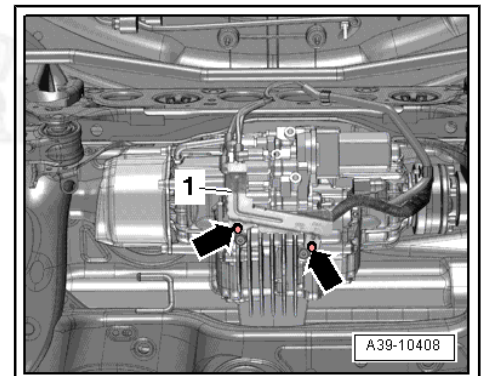
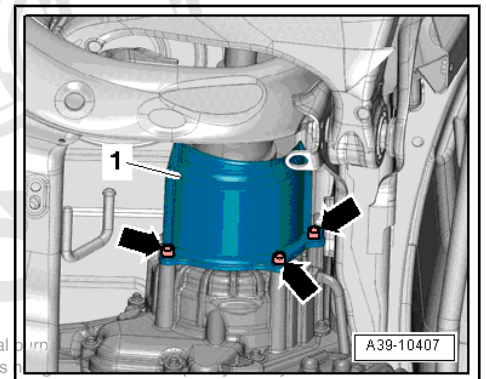
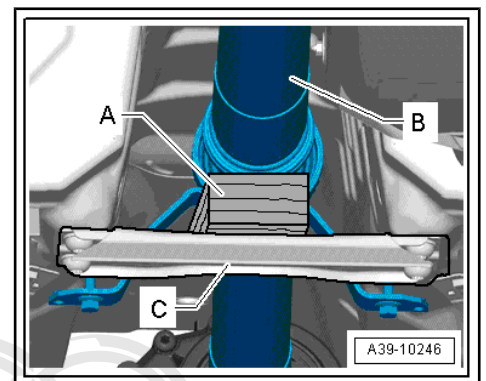
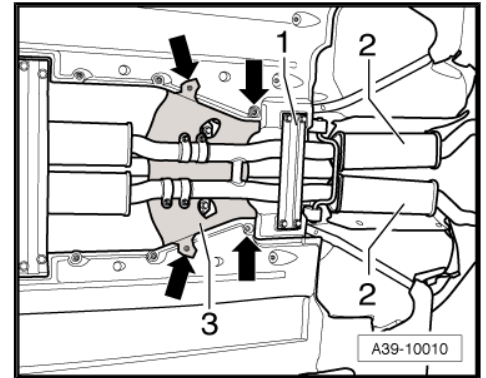
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Remove the driveshaft from the rear final drive. Refer to ⇒ ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .
- Place a wooden block -A- (approximately 40 mm high) on the rear crossmember -C- to support the driveshaft -B-.

Note

The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.

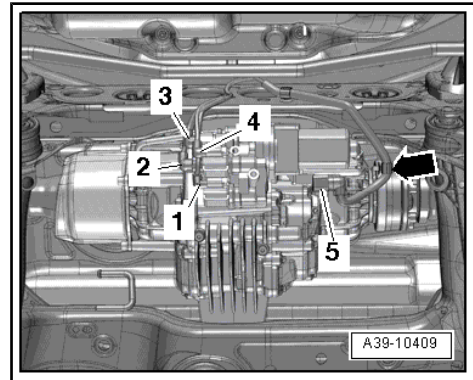
- Remove the bolts -arrows- and the left drive axle heat shield -1-.
- Remove left and right drive axles from rear final drive. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .

- Remove the bolts -arrows-, and remove the wire protective plate.

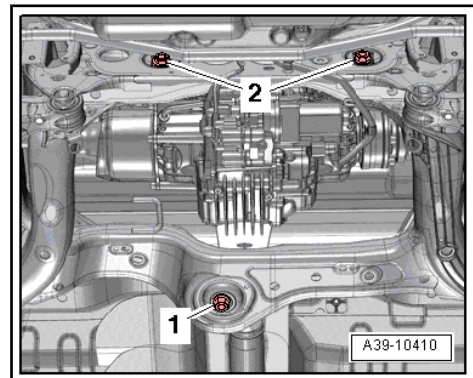


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- Disconnect the connectors -1 through 5- and free up the wiring harness -arrow-.



- Remove the bolt -1- and loosen the bolt -2-.

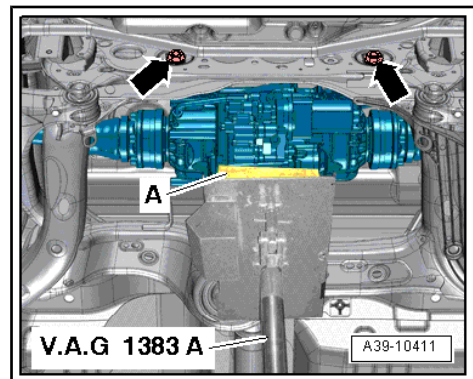


- Place the Engine and Gearbox Jack - VAS6931- and a wooden block -A- on the mounting plate under the rear final drive and secure.

 **Note**

Make sure the engine and transmission jack mounting plate does not make contact with the fuel tank.

- Remove the bolts -arrows-.



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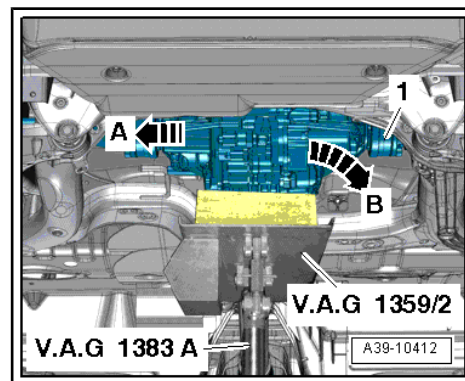
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- Push the rear final drive to the left in direction of -arrow A-.
- Move the right drive axle -1- upward.
- To loosen the left flange shaft from the drive axle, the rear final drive must first be lowered to the right in direction of -arrow B-.
- Secure the rear final drive with a strap and continue lowering with the Engine and Gearbox Jack - VAS6931- .

Installing

Install in reverse order of removal. At the same time note the following:



 **WARNING**

Malfunctions on the rear final drive.

If the rear final drive was replaced, additional work is necessary. Refer to
⇒ "2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83 .

- Tightening specifications. Refer to ⇒ "2.1.2 Overview - Final Drive 0BE, 0BF", page 45 .
- Attach the drive shaft to the rear final drive. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .
- Install the driveshaft. Refer to ⇒ page 37 .
- Install the exhaust system and align free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Install the rear cross member. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .
- Check the ATF inside the rear final drive. Refer to ⇒ "5.2.1 ATF Level, Checking, 0BE, 0BF", page 110 .
- Check the gear oil level in the rear final drive. Refer to ⇒ "4.2.3 Gear Oil, Checking Level, 0BE, 0BF", page 102 .
- If the rear final drive was replaced, additional work is necessary. Refer to ⇒ "2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83 .

2.2.7 Final Drive 0BE, 0BF, Removing and Installing, Audi A8

Removing. Refer to ⇒ page 80

Installing. Refer to ⇒ page 82

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-

Removal

- Remove the rear crossmember -1-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .

Note

A second technician is needed to remove the exhaust system rear section.

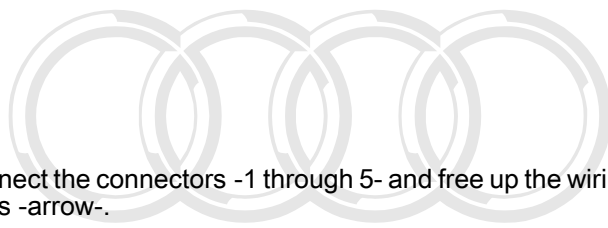
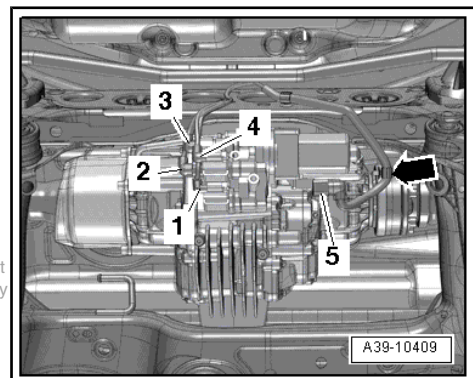
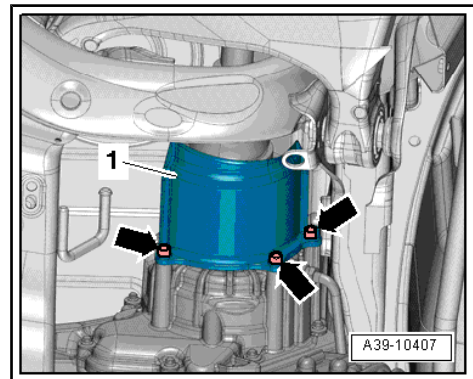
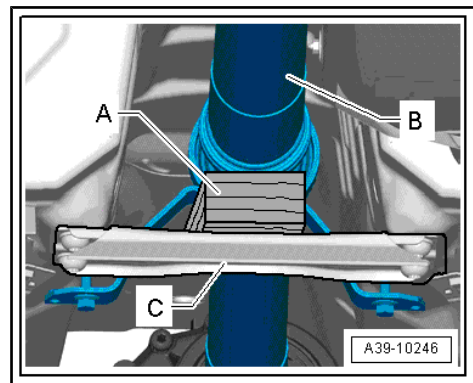
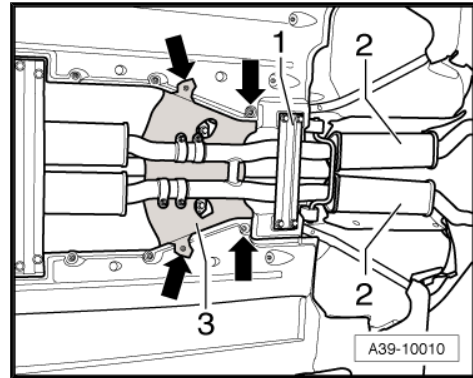
- Remove the rear section of the exhaust system -2-. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Remove the driveshaft from the rear final drive. Refer to ⇒ ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .
- Place a wooden block -A- (approximately 40 mm high) on the rear crossmember -C- to support the driveshaft -B-.

Note

The driveshaft can be bent all the way to the center joint without force. Bending the joint forcibly all the way can damage the center joint and/or the protective boot.

- Remove the bolts -arrows- and the left drive axle heat shield -1-.
- Remove left and right drive axles from rear final drive. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .

- Disconnect the connectors -1 through 5- and free up the wiring harness -arrow-.



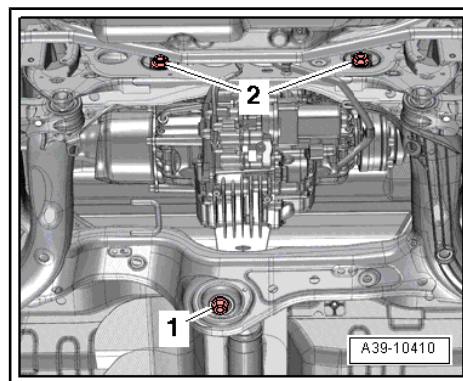
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- Remove the bolt -1- and loosen the bolt -2-.



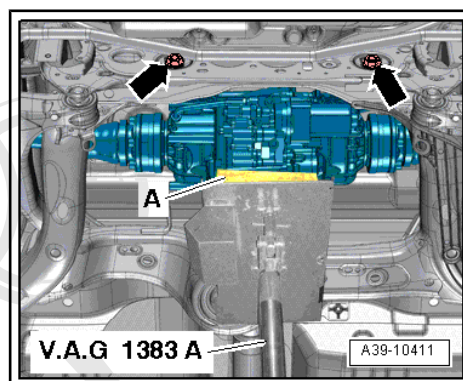
- Place the Engine and Gearbox Jack - VAS6931- and a wooden block -A- on the mounting plate under the rear final drive and secure.



Note

Make sure the engine and transmission jack mounting plate does not make contact with the fuel tank.

- Remove the bolts -arrows-.

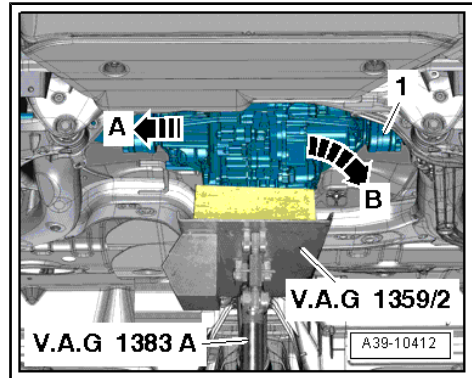


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- Push the rear final drive to the left in direction of -arrow A-.
- Move the right drive axle -1- upward.
- To loosen the left flange shaft from the drive axle, the rear final drive must first be lowered to the right in direction of -arrow B-.
- Secure the rear final drive with a strap and continue lowering with the Engine and Gearbox Jack - VAS6931- .



Installing

Install in reverse order of removal. At the same time note the following:



WARNING

Malfunctions on the rear final drive.

If the rear final drive was replaced, additional work is necessary. Refer to **"2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83** .

- Tightening specifications. Refer to [⇒ "2.1.2 Overview - Final Drive 0BE, 0BF", page 45](#) .
- Attach the drive shaft to the rear final drive. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 42 ; Drive Axle; Drive Axle, Removing and Installing .
- Install the driveshaft. Refer to [⇒ page 37](#) .
- Install the exhaust system and align free of tension. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Install the rear cross member. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .
- Check the gear oil level in the rear final drive. Refer to [⇒ "4.2.3 Gear Oil, Checking Level, 0BE, 0BF", page 102](#) .
- Check the ATF inside the rear final drive. Refer to [⇒ "5.2.1 ATF Level, Checking, 0BE, 0BF", page 110](#) .
- If the rear final drive was replaced, additional work is necessary. Refer to [⇒ "2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF", page 83](#) .

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2.2.8 Additional Work after Replacing Rear Final Drive 0BE, 0BF



WARNING

Malfunctions on the rear final drive.

If the rear final drive was replaced, the following additional work is necessary.

- ◆ *Bleed the hydraulic control module using the Vehicle Diagnostic Tester .*
- ◆ *Program the rear final drive on the All Wheel Drive Control Module - J492- use the Vehicle Diagnostic Tester .*
- *The additional work can only be performed when the rear final drive is replaced.*

Procedure:

- Connect the Vehicle Diagnostic Tester and turn on the ignition.
- Select the function 22 - Rear Final Drive Replacing in the Vehicle Diagnostic Tester under Guided Functions in the directory 22- All Wheel Drive (AWD) Electronics.
- Follow all the instructions given by the Vehicle Diagnostic Tester exactly.

The new rear final drive is “adapted” on the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester .



Note

A system check will take place when the function 22 - Rear Final Drive Replacing is complete. If malfunctions appear, then use “Guided Fault Finding” to correct them.

Tightening Specification

| Component | Nm |
|--|----|
| Wiring harness bracket on the rear final drive | 9 |



3 Final Drive, Disassembling and Assembling



Note

Disassembling the Final drive 0BC and 0BD is not possible at this time.

⇒ [“3.1 Overview - Final Drive, Disassembling and Assembling”](#), page 84

⇒ [“3.2 Hydraulic Control Unit, Removing and Installing”](#), page 87

⇒ [“3.3 Hydraulic Control Unit, Disassembling and Assembling”](#), page 90

⇒ [“3.4 All Wheel Drive Pump V415 , Removing and Installing”](#), page 93

⇒ [“3.5 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640 , Removing and Installing”](#), page 94

⇒ [“3.6 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing”](#), page 98

⇒ [“3.7 Torque Displacement, Checking”](#), page 100

3.1 Overview - Final Drive, Disassembling and Assembling

⇒ [“3.1.1 Overview - Final Drive 0BE, 0BF, Disassembling and Assembling”](#), page 84

3.1.1 Overview - Final Drive 0BE, 0BF, Disassembling and Assembling



Caution

Only some components on the rear final drive can be disassembled.

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◆ ***Currently both chambers -item 12-
⇒ [Item 12 \(page 86\)](#) and -item 26-
⇒ [Item 26 \(page 87\)](#) cannot be removed from the final drive.***

◆ ***It is therefore currently not possible to repair the interior components.***



1 - Bolt

- 50 Nm + 180° additional turn
- Always replace.

2 - Right Flange Shaft

- Removing and installing. Refer to ⇒ [“6.2.3 Left Seal, Replacing, OBE, OBF”, page 120](#) .
- Do not confuse with the left flange shaft, they are different

3 - Protective Ring

- Replacing. Refer to ⇒ [“6.5.3 Flange Shaft Ring, Replacing, OBE, OBF”, page 144](#) .

4 - Protective Cap

- Only for Audi A8
- If it is not present on the Audi A8 retrofit it. Refer to the Parts Catalog.
- Installation position. Refer to ⇒ [Fig. ““Protective Cap Installation Position \(only for Audi A8\)””, page 87](#) .

5 - ATF Breather Pipe

- For the left chamber
- Clip onto the bleed pipe

6 - Seal

- With strainer

7 - Hydraulic Control Unit

- With the All Wheel Drive Pump - V415- and lines to the chambers
- Removing and installing. Refer to ⇒ [“3.2 Hydraulic Control Unit, Removing and Installing”, page 87](#) .
- Disassembling and assembling. Refer to ⇒ [“3.3 Hydraulic Control Unit, Disassembling and Assembling”, page 90](#) .

8 - Bolt

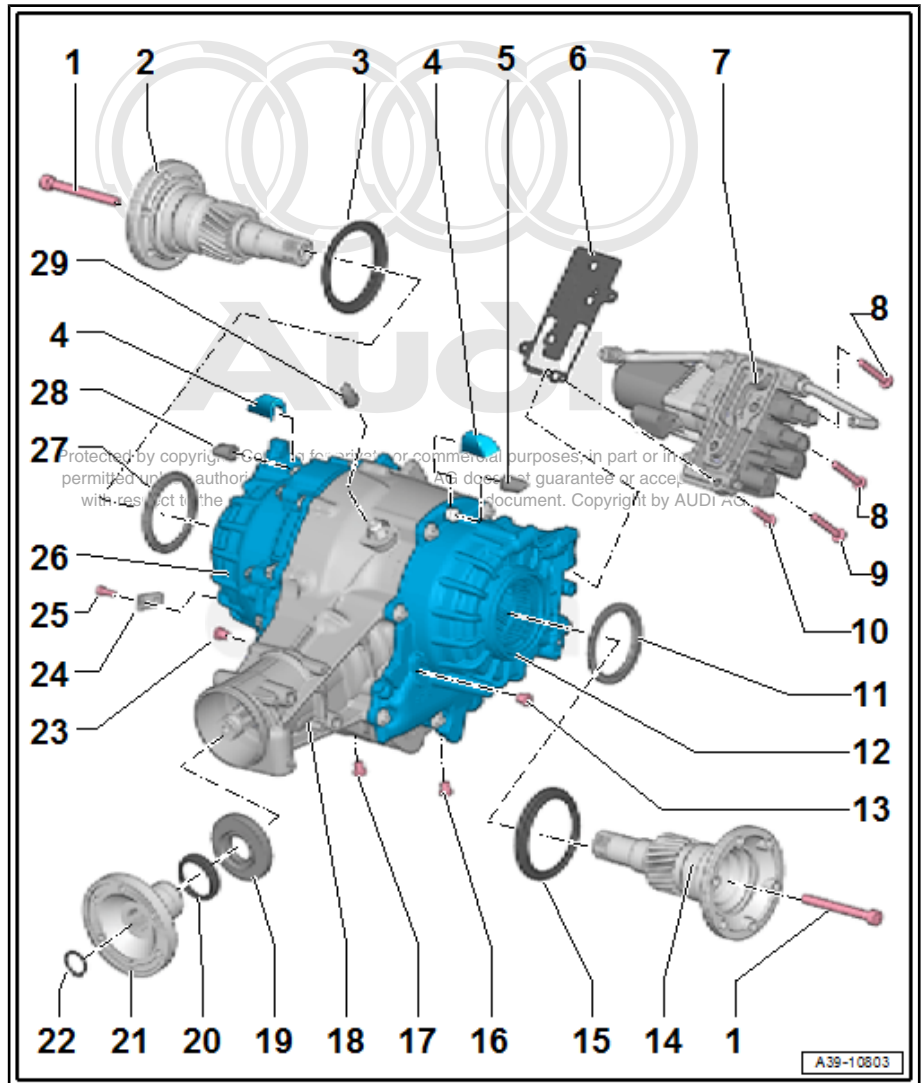
- 20 Nm
- Quantity: 2
- M8; 50 mm long
- Follow the tightening sequence. Refer to ⇒ [page 89](#) .

9 - Bolt

- 20 Nm
- M8; 50 mm long
- with a permanent seal under the bolt head
- Coat the threads with Sealing Compound - D 176 501 A1- .
- Follow the tightening sequence. Refer to ⇒ [page 89](#) .

10 - Bolt

- 20 Nm
- M8; 30 mm long





- Follow the tightening sequence. Refer to [⇒ page 89](#) .

11 - Shaft Seal

- For the left flange shaft
- Replacing. Refer to [⇒ “6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#) .

12 - Left Chamber

13 - ATF Check Plug

- 15 Nm
- Always replace.
- With permanent seal

14 - Left Flange Shaft

- Removing and installing. Refer to [⇒ “6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#) .
- Do not confuse with the right flange shaft, they are different

15 - Protective Ring

- Replacing. Refer to [⇒ “6.5.3 Flange Shaft Ring, Replacing, 0BE, 0BF”, page 144](#) .

16 - ATF Drain Plug

- 15 Nm
- Always replace.
- With permanent seal

17 - Gear Oil Drain Plug

- 15 Nm
- Always replace.
- With permanent seal

18 - Final Drive Housing

19 - Shaft Seal

- For the flange/driveshaft
- Replacing on rear final drive 0BF. Refer to [⇒ “6.4.4 Input Shaft Seal, Replacing, 0BF”, page 136](#) .
- Replacing on rear final drive 0BE. Refer to [⇒ “6.4.3 Input Shaft Seal, Replacing, 0BE”, page 132](#) .

20 - Protective Ring

- Replacing. Refer to [⇒ “6.6.3 Flange Input Shaft Ring, Replacing, 0BE, 0BF”, page 146](#) .

21 - Flange/Driveshaft

- Removing and Installing on final drive 0BF. Refer to [⇒ “6.4.4 Input Shaft Seal, Replacing, 0BF”, page 136](#) .
- Removing and Installing on final drive 0BE. Refer to [⇒ “6.4.3 Input Shaft Seal, Replacing, 0BE”, page 132](#) .

22 - Circlip

- Always replace.
- Installing on final drive 0BF. Refer to [⇒ page 142](#) .
- Installing on final drive 0BE. Refer to [⇒ page 136](#) .

23 - Gear Oil Check Plug

- 15 Nm
- Always replace.
- With permanent seal

24 - Bracket

- For the wiring harness

25 - Bolt

- 9 Nm



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26 - Right Chamber

27 - Shaft Seal

- For the right flange shaft
- Replacing. Refer to ⇒ [“6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#) .

28 - ATF Breather Pipe

- For the right chamber
- Clip onto the bleed pipe

29 - Final Drive Bleeder

- Clip onto the bleed pipe

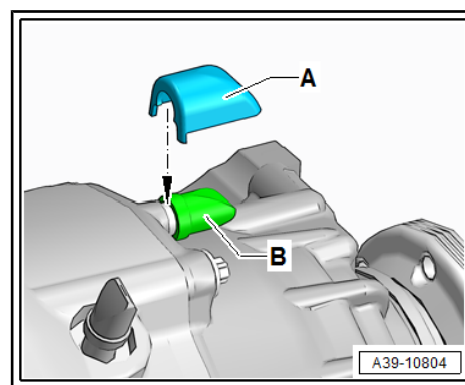
Protective Cap Installation Position (only for Audi A8)

- The protective cap -A- is clipped in the groove behind the ATF breather pipe -B-.



Note

The protective cap must be present on both sides on the ATF breather pipe.



3.2 Hydraulic Control Unit, Removing and Installing

⇒ [“3.2.1 Hydraulic Control Unit, Removing and Installing, 0BE, 0BF”, page 87](#)

3.2.1 Hydraulic Control Unit, Removing and Installing, 0BE, 0BF



Note

- ◆ *Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”, page 13](#) .*
- ◆ *Pay attention to the safety precautions. Refer to ⇒ [“5 Safety Precautions”, page 9](#) .*

Removing

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- The ignition is off.
- Place the vehicle on a lift.
- Lower the back section of the exhaust system just a little and secure it. If necessary remove the back section of the exhaust system. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



Note

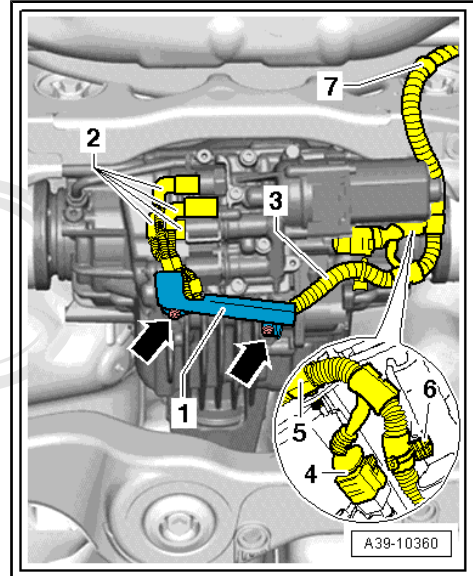
A second technician is needed to help remove the rear section of the exhaust system.

- If equipped, remove the screws -arrows- and remove the wiring harness bracket -1- from the rear final drive.

i Note

Mark the Oil Pressure/Temperature Sensor and the Clutch Valves connectors -2-.

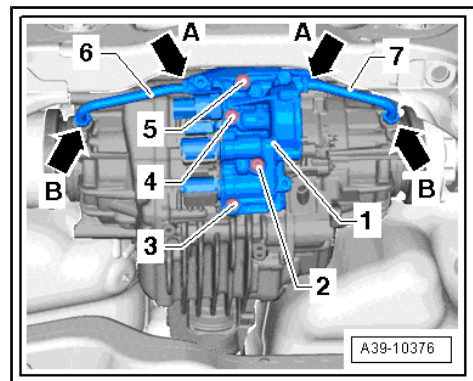
- Disconnect the connectors -2- from the Oil Pressure/Temperature Sensor and the Clutch Valves .
- Disconnect the connector -4- from the All Wheel Drive Pump - V415- .
- Unclip the wiring harness -3- from the final drive and the sub-frame and tie it up -5 through 7-.
- Place the Drip Tray under the rear final drive.
- Drain the ATF from the rear final drive. Refer to ⇒ ["5.3 ATF, Draining and Filling", page 111](#) .
- Drain the gear oil from the rear final drive. Refer to ⇒ ["4.3.1 Gear Oil, Draining, OBE, OBF", page 103](#) .
- Remove the All Wheel Drive Pump - V415- . Refer to ⇒ ["3.4 All Wheel Drive Pump V415, Removing and Installing", page 93](#) .



i Note

The All Wheel Drive Pump - V415- must be removed in order to loosen and tighten the nut on the right line to the hydraulic control unit. Refer to ⇒ [page 88](#) .

- Loosen the left -6- and right -7- lines to the hydraulic control unit -1- one turn -arrows A- and remove them from the chambers -arrows B-.
- Remove the screws -2 through 5- and remove the hydraulic control unit -1- with the seal.





Installing



Note

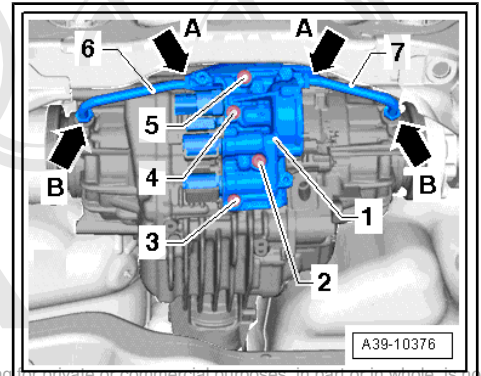
Follow all safety precautions exactly when replacing the hydraulic control unit. Install the "old" sensors again if possible. Refer to ⇒ ["6.2 Safety Precautions and Test Procedures", page 13](#)

Conditions:

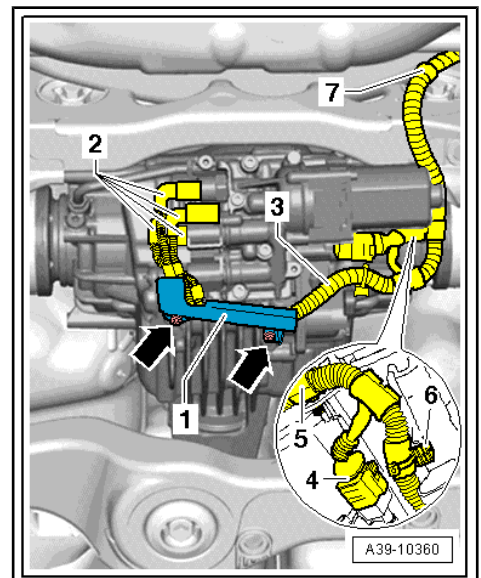
- Replace the seal between the hydraulic control unit -1- and the final drive housing.
- The centering pins -item 18- ⇒ [Item 18 \(page 92\)](#) must be installed inside the housing for the hydraulic control unit.
- The left -6- and right -7- lines must be installed loosely when attaching the hydraulic control unit -1-.

Attach the hydraulic control unit -1- to the rear final drive as follows:

- First install the lines -6- and -7- into the chambers hand-tight -arrows B-.
- Install the bolts -2 to 5- hand-tight.
- Coat the bolt threads -2- with Sealing Compound - D 176 501 A1- and attach the respective seal.
- Tighten the M8 x 30 bolts -2 through 5- to the tightening specification in the sequence: -4-, -2-, -5- and -3-.
- Tighten the nuts -A arrows- and -B arrows- on the left -6- and right -7- lines to the tightening specification.
- Install the All Wheel Drive Pump - V415- . Refer to ⇒ ["3.4 All Wheel Drive Pump V415 , Removing and Installing", page 93](#) .
- Install the wiring harness -3- to the final drive and subframe -items 5 through 7-.
- Connect the connectors -4 and 2-. Pay attention to the marks made during the removal, that identify the allocation to the Oil Pressure/Temperature Sensor and which connectors go to the Clutch Valves .
- If equipped, position the wiring harness bracket -1- on the rear final drive and tighten the bolts -arrows- to the tightening specification. Make sure the wiring harness -3- does not get pinched.

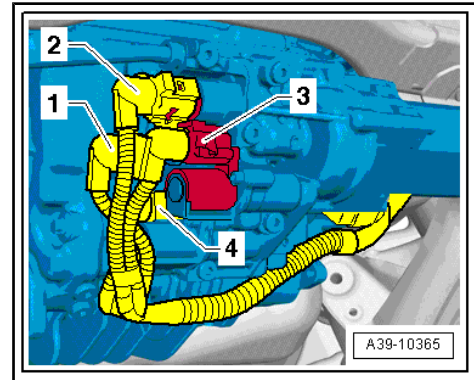


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i Note

- ◆ Allocation for the Oil Pressure/Temperature Sensor and Clutch Valves connectors:
- ◆ -1- = Oil Pressure/Temperature Sensor 2 - G640- Connector
- ◆ -2- = Oil Pressure/Temperature Sensor - G437- Connector
- ◆ -3- = All Wheel Drive Clutch Valve 2 - N446- Connector
- ◆ -4- = All Wheel Drive Clutch Valve - N445- Connector



- Fill the rear final drive with gear oil and then check the level.
Refer to
[⇒ "4.2.3 Gear Oil, Checking Level, 0BE, 0BF", page 102 .](#)
- Fill the ATF in the rear final drive and check the ATF level.
Refer to
[⇒ "5.2.1 ATF Level, Checking, 0BE, 0BF", page 110 .](#)
- Install the rear section of the exhaust system and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .

3.3 Hydraulic Control Unit, Disassembling and Assembling

[⇒ "3.3.1 Hydraulic Control Unit, Disassembling and Assembling, 0BE, 0BF", page 90](#)

3.3.1 Hydraulic Control Unit, Disassembling and Assembling, 0BE, 0BF

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1 - Bolt

- 5 Nm

2 - All Wheel Drive Pump - V415-

- Removing and installing. Refer to ⇒ ["3.4 All Wheel Drive Pump V415, Removing and Installing", page 93](#).

3 - O-Ring

- Always replace.

4 - Adapter



Note

- ◆ *The adapter could fall out when removing the All Wheel Pump - V415-.*
- ◆ *Insert the adapter into the recesses in the hydraulic pump before installing the All Wheel Drive Pump - V415-.*

5 - Hydraulic Pump

- Consists of a guide ring, the housing and six pistons
- Assembling. Refer to ⇒ [Fig. "Assembling the Hydraulic Pump", page 93](#)

6 - Ball Bearing

- Can be installed and removed by hand

7 - Left Line

- Tighten the nuts to 30 Nm.
- Is installed between the hydraulic control unit and the left chamber
- Tighten both nuts hand-tight when installing

8 - O-Ring

- Always replace.

9 - Oil Pressure/Temperature Sensor - G437-

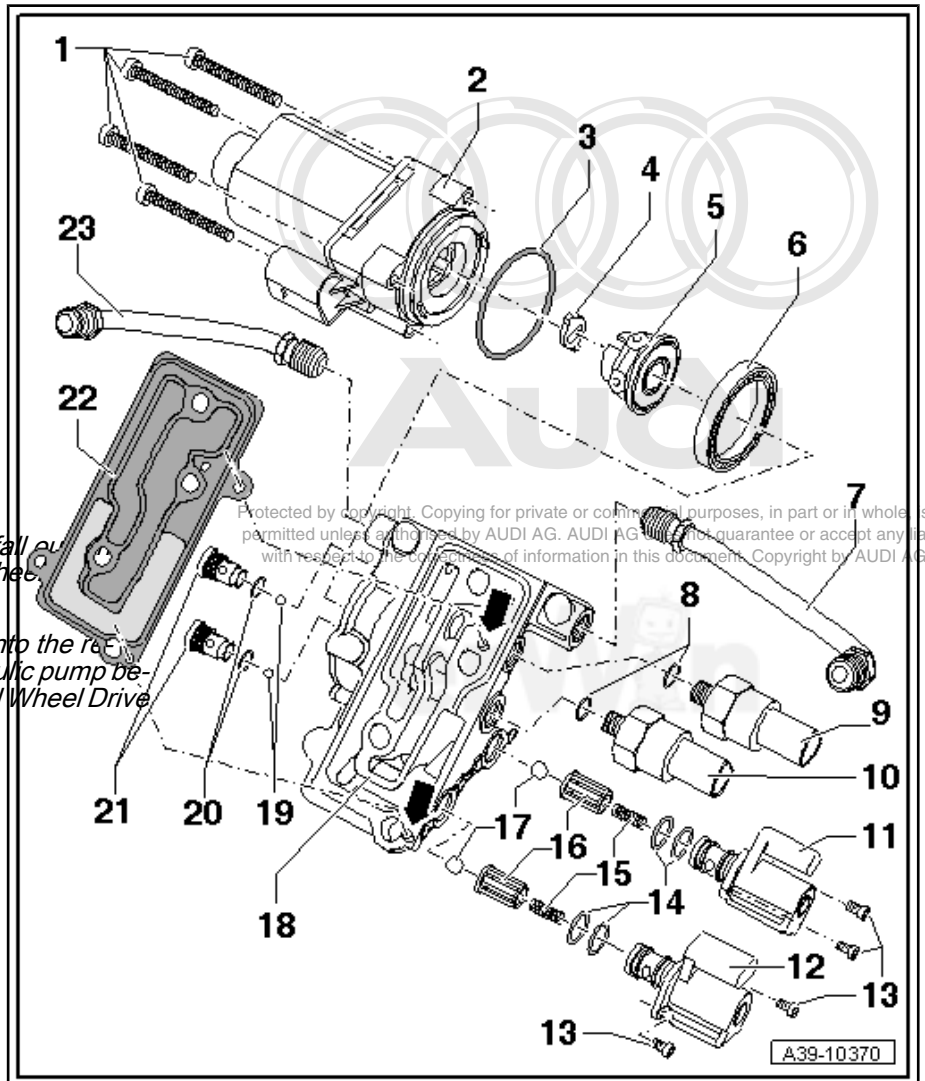
- 10 Nm
- Brown connector
- Removing and installing. Refer to ⇒ ["3.5 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640, Removing and Installing", page 94](#).

10 - Oil Pressure/Temperature Sensor 2 - G640-

- 10 Nm
- Black connector
- Removing and installing. Refer to ⇒ ["3.5 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640, Removing and Installing", page 94](#).

11 - All Wheel Drive Clutch Valve 2 - N446-

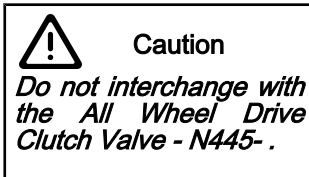
- Color: brown



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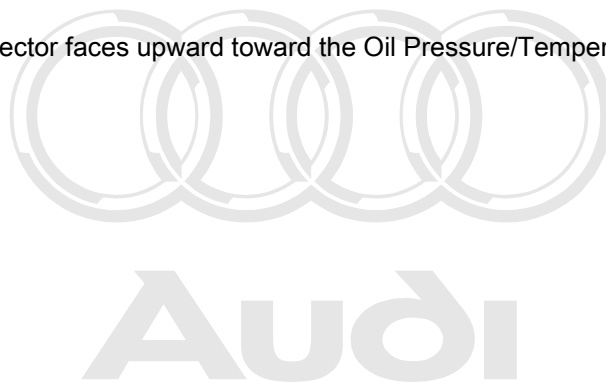
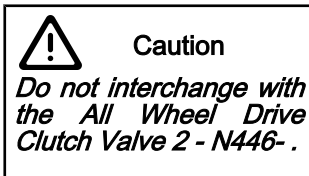


- Removing and installing. Refer to
⇒ [“3.6 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing”, page 98](#) .
- Installed position, the connector faces upward toward the Oil Pressure/Temperature Sensor



12 - All Wheel Drive Clutch Valve - N445-

- Color: black
- Removing and installing. Refer to
⇒ [“3.6 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing”, page 98](#) .
- Installed position, the connector faces upward toward the Oil Pressure/Temperature Sensor



13 - Bolt

- 2.5 Nm

14 - O-Ring

- Always replace.
 - Mount onto the Clutch Valve
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15 - Pressure Spring

- Insert into the guide -item 16- ⇒ [Item 16 \(page 92\)](#)

16 - Guide

- Installation position, large diameter faced the ball -item 17- ⇒ [Item 17 \(page 92\)](#)

17 - Ball

- Insert into the guide before installing -item 16- ⇒ [Item 16 \(page 92\)](#)

18 - Hydraulic Control Unit Housing

- with centering pins -arrows-
- The centering pins lock the hydraulic control unit and seal to the final drive housing.

19 - Ball

- Install in the hole in the shuttle valve before installing -item 21- ⇒ [Item 21 \(page 92\)](#)

20 - O-Ring

- Always replace.

21 - Shuttle Valve

- 8 Nm
- Removing and installing. Refer to ⇒ [Fig. ““Removing and Installing the Shuttle Valves”” , page 93](#) .

22 - Seal

- With strainer
- Install on the centering pins in the hydraulic control unit housing

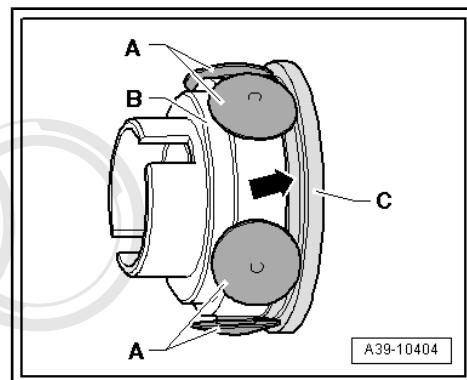
23 - Right Line

- Tighten the nuts to 30 Nm.
- Is installed between the hydraulic control unit and the right chamber

- ❑ Tighten both nuts hand-tight when installing

Assembling the Hydraulic Pump

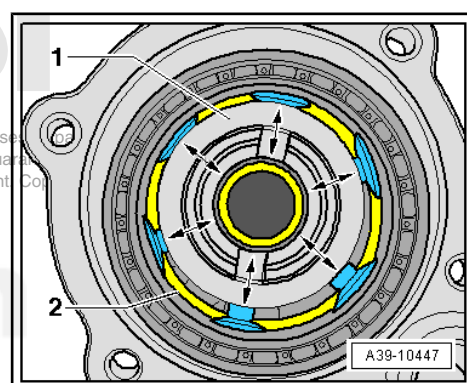
- Install the six pistons -A- in the housing -B-.
- Install the guiding ring -C- so that the piston touches the collar -arrow-.



- Insert the hydraulic pump -1- with the guide ring -2- in the in the hydraulic control unit housing.

Function Test:

- Turn the hydraulic pump -1- several times. While doing so pay attention to the following:
- ◆ When turning the hydraulic pump must not become hooked or tilted.
- ◆ All pistons must be removed and pressed in.



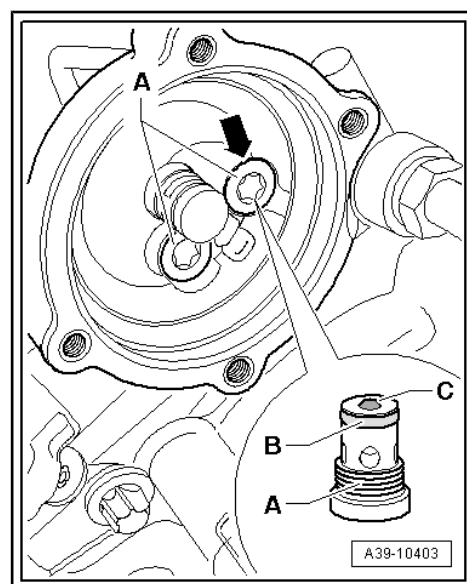
Removing and Installing the Shuttle Valves



Note

Remove the All Wheel Drive Pump - V415- , hydraulic pump and ball bearing -item 6- ➔ [Item 6 \(page 91\)](#) beforehand.

- Remove the shuttle valves -A-. Always remove the ball -C- as well.
- Insert the ball into the hole in the shuttle valve when installing.
- Install the shuttle valve all the way with a new O-ring -B-.
- The shuttle valve must rest lower than the opposing housing surface -arrow-. If this is not the case, then the remove the valve again and adjust the position of the ball.
- Tighten the shuttle valve to the tightening specification -item 21- ➔ [Item 21 \(page 92\)](#) .



3.4 All Wheel Drive Pump - V415- , Removing and Installing

➔ ["3.4.1 All Wheel Drive Pump V415 , Removing and Installing, 0BE, 0BF", page 93](#)

3.4.1 All Wheel Drive Pump - V415- , Removing and Installing, 0BE, 0BF

Special tools and workshop equipment required

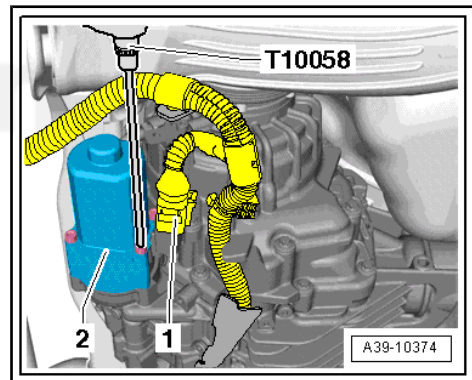
- ◆ Hex Ball Socket - T10058-

i Note

- ◆ Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#).
- ◆ Pay attention to the safety precautions. Refer to ⇒ ["5 Safety Precautions", page 9](#).

Removing

- Place the vehicle on a lift.
- The ignition is off.
- Place the Drip Tray under the rear final drive.
- Disconnect the connector -1- from the All Wheel Drive Pump - V415- -2-.
- Remove the four bolts that connect the All Wheel Drive Pump - V415- to the hydraulic control unit using the Hex Ball Socket - T10058- .
- Carefully remove the All Wheel Drive Pump - V415- -2-. Pay close attention to the adapter -item 4- ⇒ [Item 4 \(page 91\)](#) inside the hydraulic pump while doing this.

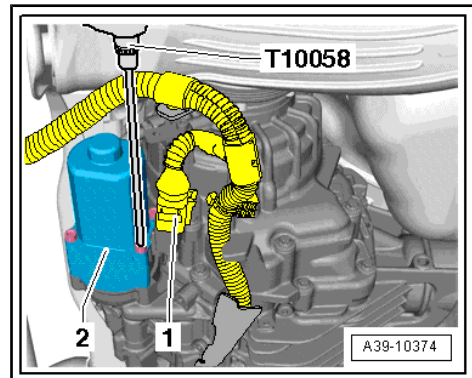
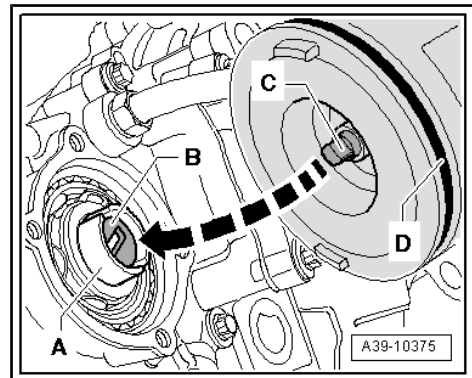


i Note

- ◆ The adapter could fall out when removing the All Wheel Drive Pump - V415- .
- ◆ Insert the adapter into the recesses in the hydraulic pump before installing the All Wheel Drive Pump - V415- .

Installing

- The hydraulic pump -A- is installed inside the hydraulic control unit. Assembling the hydraulic pump. Refer to ⇒ [Fig. "Assembling the Hydraulic Pump", page 93](#).
- The adapter -B- is installed in the recesses in the hydraulic pump.
- A new O-ring -D- is on the All Wheel Drive Pump - V415- .
- Install the All Wheel Drive Pump - V415- with the coupling -C- in the adapter -B-.
- Diagonally tighten the four bolts on the All Wheel Drive Pump - V415- -2- to the tightening specification -item 1- ⇒ [Item 1 \(page 91\)](#).
- Connect the connector -1- to the All Wheel Drive Pump - V415- .
- Fill the ATF in the rear final drive. Refer to ⇒ ["5.3.3 ATF, Filling, 0BE, 0BF", page 112](#).



3.5 Oil Pressure/Temperature Sensor - G437- or Oil Pressure/Temperature

Sensor 2 - G640- , Removing and Installing

⇒ [“3.5.1 Oil Pressure/Temperature Sensor G437 or Oil Pressure/Temperature Sensor 2 G640 , Removing and Installing, 0BE, 0BF”, page 95](#)

3.5.1 Oil Pressure/Temperature Sensor - G437- or Oil Pressure/Temperature Sensor 2 - G640- , Removing and Installing, 0BE, 0BF

Special tools and workshop equipment required

- ◆ Socket - 27mm - T40218-
- ◆ Vehicle Diagnostic Tester

Important Safety Precautions



Caution

- ◆ *The identity of the sensor in the All Wheel Drive Control Module - J492- must be adapted using the Vehicle Diagnostic Tester after replacing the Oil Pressure/Temperature Sensor - G437- or the Oil Pressure/Temperature Sensor 2 - G640- .*
- ◆ *Do not replace both the Oil Pressure/Temperature Sensor - G437- and Oil Pressure/Temperature Sensor 2 - G640- at the same time because a valid sensor identity is needed for the rear final drive classification to the All Wheel Drive Control Module - J492- . If the both sensors are replaced at the same time, the All Wheel Drive Control Module - J492- will interpret this as the rear final drive is being replaced. By doing this, adaptation values in the control module will be erased and the performance of the rear final drive will be impaired.*
- ◆ *If both the Oil Pressure/Temperature Sensor - G437- and the -G640- must be replaced due to mechanical damage, for example, if the connector housing gets damaged, then this must be performed in two steps. After replacing the first sensor, the identity of the must be adapted in the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester . Do the same for the second sensor.*
- ◆ *If both the Oil Pressure/Temperature Sensor - G437- and Oil Pressure/Temperature Sensor 2 - G640- must be replaced at the same time due to an electrical fault, then the clutch classification must be entered into the All Wheel Drive Control Module - J492- using the Vehicle Diagnostic Tester ⇒ Vehicle diagnostic tester. Also, the ATF in the rear final drive must be replaced. Refer to ⇒ [“5.3 ATF, Draining and Filling”, page 111](#) .*



Note

- ◆ *Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”, page 13](#) .*

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- ◆ *Pay attention to the safety precautions. Refer to ⇒ [“5 Safety Precautions”, page 9](#) .*

Removing

- The ignition is off.
- Place the vehicle on a lift.
- Lower the back section of the exhaust system just a little and secure it.
- Remove the wiring harness bracket from the rear final drive, if necessary. Refer to ⇒ [page 88](#) .
- Disconnect the connector -1- from the Oil Pressure/Temperature Sensor 2 - G640- and the connector -2- from the Oil Pressure/Temperature Sensor - G437- .



Note

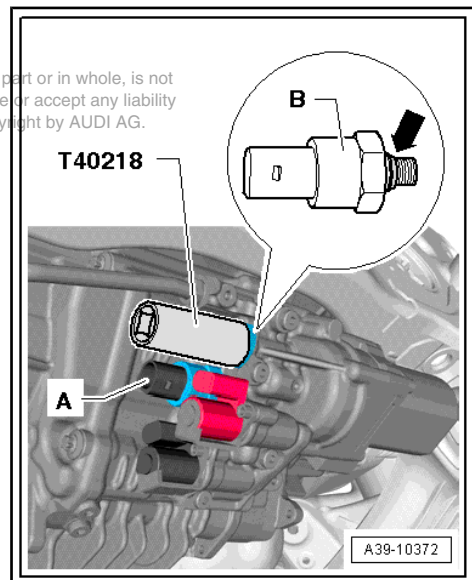
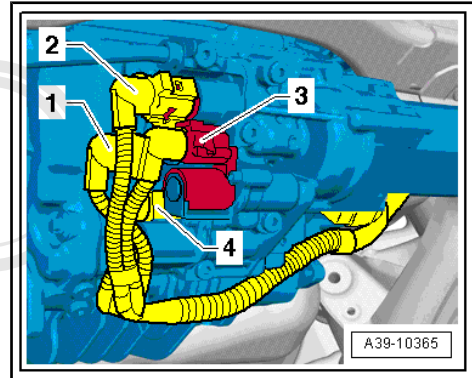
Disconnect connectors -3- and -4- if necessary.

- Place the Drip Tray under the rear final drive.

- Remove the Sensor with the Socket Wrench - T40218- .

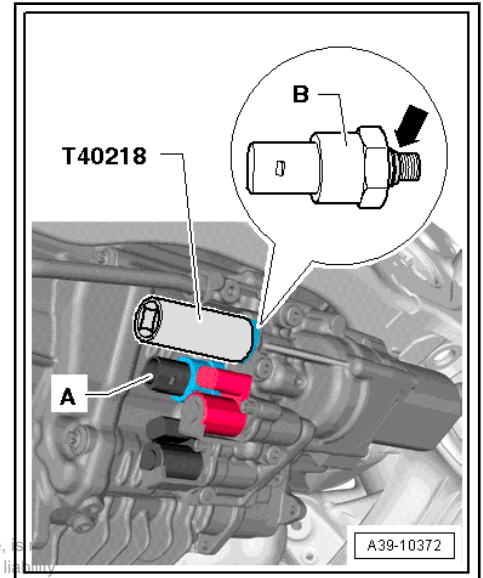
-A- = Oil Pressure/Temperature Sensor 2 - G640- black connector

-B- = Oil Pressure/Temperature Sensor - G437- brown connector



Installing

- Install the new Sensor with a new o-ring -arrow- and tighten to the tightening specification -item 9- ➔ [Item 9 \(page 91\)](#) or -item 10- ➔ [Item 10 \(page 91\)](#) .
- A- = Oil Pressure/Temperature Sensor 2 - G640- black connector
- B- = Oil Pressure/Temperature Sensor - G437- brown connector



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- Disconnect the connector -1- on the Oil Pressure/Temperature Sensor 2 - G640- and the connector -2- on the Oil Pressure/Temperature Sensor - G437- .



Note

Connect connectors -3 and 4- if they were disconnected earlier.

- Attach the wiring harness bracket to the rear final drive if it was removed earlier. Refer to ➔ [page 76](#) .
- Connect the Vehicle Diagnostic Tester and turn on the ignition.
- Select the function [22 - Rear Final Drive Replacing](#) in the Vehicle Diagnostic Tester under [Guided Functions](#) in the directory [22- Sensor Programing](#).
- Follow all the instructions given by the Vehicle Diagnostic Tester exactly.

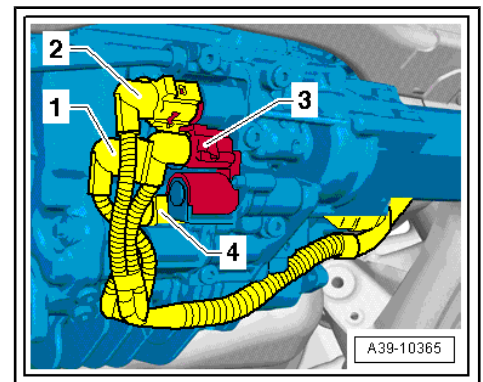
The new sensor is “adapted” on the All Wheel Drive Control Module - J492- with the Vehicle Diagnostic Tester .



Note

A system check will take place when the [22 - Sensor Programing](#) function is complete. If malfunctions appear, then use “Guided Fault Finding” to correct them.

- Fill the ATF in the rear final drive. Refer to ➔ [“5.3.3 ATF, Filling, 0BE, 0BF”, page 112](#) .
- Install the rear section of the exhaust system on the body and align it so it is free of tension. Refer to ➔ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .





3.6 All Wheel Drive Clutch Valve - N445- or All Wheel Drive Clutch Valve 2 - N446- , Removing and Installing

⇒ [“3.6.1 All Wheel Drive Clutch Valve N445 or All Wheel Drive Clutch Valve 2 N446 , Removing and Installing, 0BE, 0BF”](#), page 98

3.6.1 All Wheel Drive Clutch Valve - N445- or All Wheel Drive Clutch Valve 2 - N446- , Removing and Installing, 0BE, 0BF

Special tools and workshop equipment required

- ◆ Hex Socket - 4mm - T10370-



Note

- ◆ Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”](#), page 13 .
- ◆ Pay attention to the safety precautions. Refer to ⇒ [“5 Safety Precautions”](#), page 9 .



Caution

Malfunctions on the rear final drive.

- Do not confuse the All Wheel Drive Clutch Valve - N445- component location with the All Wheel Drive Clutch Valve 2 - N446- component location.

Removing

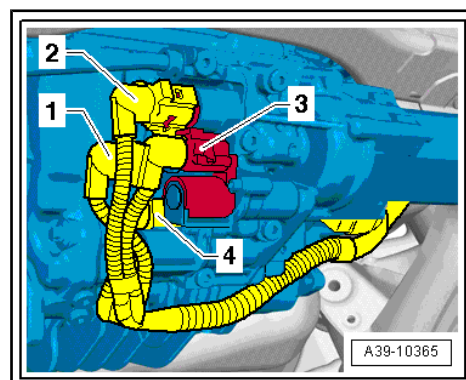
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- The ignition is off.
- Place the vehicle on a lift.
- Lower the back section of the exhaust system just a little and secure it.
- Remove the wiring harness bracket from the rear final drive. Refer to ⇒ [page 88](#) .



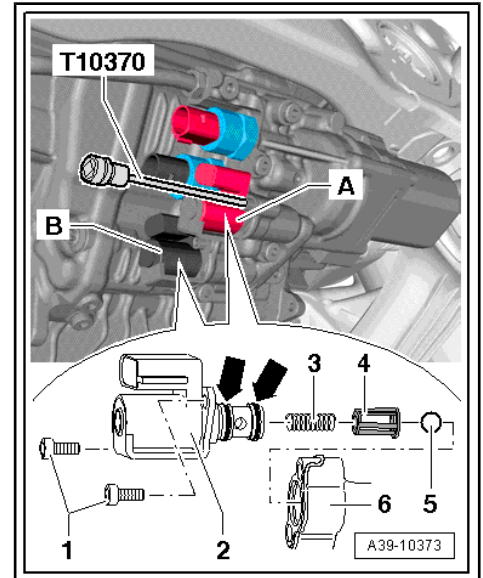
Note

- ◆ Mark the connectors -1 through 4- for the Oil Pressure/Temperature Sensor and for the Clutch Valves .
- ◆ Disconnect the connectors -1 and 2-.
- Disconnect the connector -3- from the All Wheel Drive Clutch Valve 2 - N446- and the connector -4- from the All Wheel Drive Clutch Valve - N445- .
- Place the Drip Tray under the rear final drive.





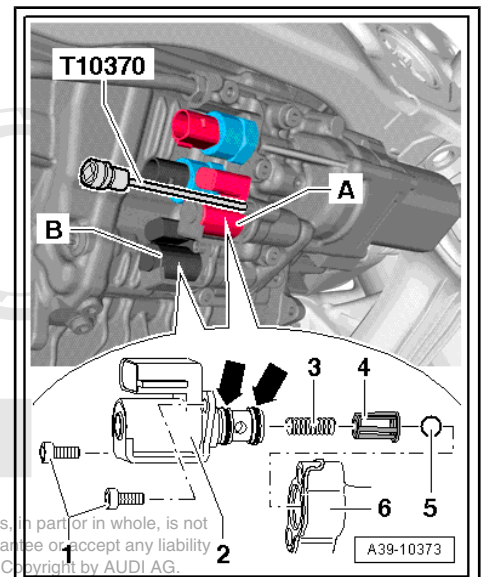
- Remove the bolts -1- from each of the Clutch Valves using the Hex Socket - 4mm - T10370- .
- Carefully pry out the Clutch Valve with a flat blade screwdriver -3-. Be careful of the pressure spring when doing this. The pressure spring could fall out of the opening in the hydraulic control unit -6-.
- A- = All Wheel Drive Clutch Valve 2 - N446- identification color brown
- B- = All Wheel Drive Clutch Valve - N445- identification color black



Installing

- The ball -5-, the guide -4- (the smaller diameter faces the spring) and the spring -3- must be installed in the housing opening -6- for the Clutch Valve -2-.
- Coat the O-rings with ATF and install the new Clutch Valve with the new O-rings -arrows-.
- Tighten the bolts -1- evenly until stop by hand. Then tighten to the tightening specification -item 13- ⇒ [Item 13 \(page 92\)](#) .

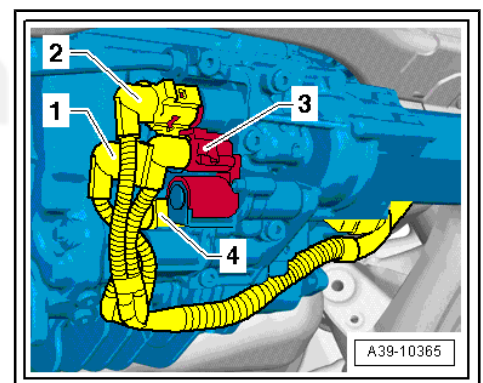
Further installation is performed in reverse order of the removal. Note the following.



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Note

- ◆ Allocation for the Oil Pressure/Temperature Sensor and Clutch Valves connectors:
- ◆ -1- = Oil Pressure/Temperature Sensor 2 - G640- Connector
- ◆ -2- = Oil Pressure/Temperature Sensor - G437- Connector
- ◆ -3- = All Wheel Drive Clutch Valve 2 - N446- Connector
- ◆ -4- = All Wheel Drive Clutch Valve - N445- Connector
- Attach the wiring harness bracket to the rear final drive. Refer to ⇒ [page 76](#) .
- Fill the ATF in the rear final drive. Refer to ⇒ ["5.3.3 ATF, Filling, OBE, OBF", page 112](#) .
- Install the rear section of the exhaust system on the body and align it so it is free of tension. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .





3.7 Torque Displacement, Checking

⇒ ["3.7.1 Torque Development, Checking, 0BE, 0BF", page 100](#)

3.7.1 Torque Development, Checking, 0BE, 0BF

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

Procedure:



Note

- ◆ *Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#).*
- ◆ *Pay attention to the safety precautions. Refer to ⇒ ["5 Safety Precautions", page 9](#).*

After the following work the function [\[22- Checking the torque displacement\]](#) must be performed:

- ◆ Working on the rear final drive wiring
- ◆ Working on the valves: All Wheel Drive Clutch Valve - N445- and All Wheel Drive Clutch Valve 2 - N446- .
- ◆ Working on the hydraulic control unit
- Lift the vehicle on a hoist just far enough until the wheels are no longer touching the floor.
- Connect the Vehicle Diagnostic Tester and turn on the ignition.
- Select the function [\[22 - Rear Final Drive Replacing\]](#) in the vehicle diagnostic tester under [\[Guided Functions\]](#) in the directory [\[22- Torque Development, Checking\]](#).
- Follow all the instructions given by the Vehicle Diagnostic Tester exactly.

Use the Vehicle Diagnostic Tester to check if the torque is stored for the correct side when the rear final drive is activated.



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4 Gear Oil

⇒ [“4.1 Component Location Overview - Drain and Check Plugs, OBE and OBF”, page 101](#)

⇒ [“4.2 Gear Oil, Checking Level”, page 101](#)

⇒ [“4.3 Gear Oil, Draining and Filling”, page 103](#)

4.1 Component Location Overview - Drain and Check Plugs, OBE and OBF

⇒ [“4.1.1 Gear Oil Drain and Inspection Plugs Overview, OBE, OBF”, page 101](#)

4.1.1 Gear Oil Drain and Inspection Plugs Overview, OBE, OBF

Gear Oil Drain Plug on Rear Final Drive OBF

1- Check plug for gear oil

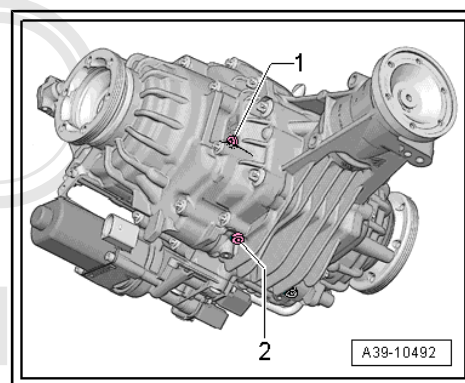
◆ Tightening Specification -item 23- ⇒ [Item 23 \(page 86\)](#) .

◆ Always replace.

2- Gear oil drain plug

◆ Tightening Specification -item 17- ⇒ [Item 17 \(page 86\)](#) .

◆ Always replace.



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Gear Oil Drain Plug on Rear Final Drive OBE

1- Check plug for gear oil

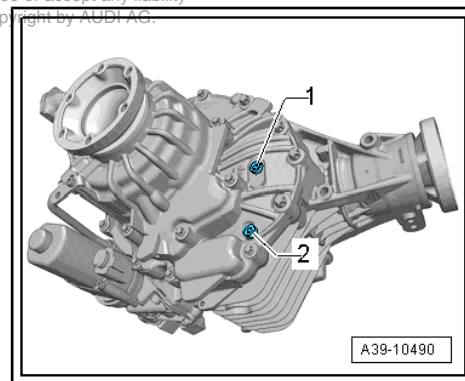
◆ Tightening Specification -item 23- ⇒ [Item 23 \(page 86\)](#) .

◆ Always replace.

2- Gear oil drain plug

◆ Tightening Specification -item 17- ⇒ [Item 17 \(page 86\)](#) .

◆ Always replace.



4.2 Gear Oil, Checking Level

⇒ [“4.2.1 Gear Oil, Checking Level, OBC”, page 101](#)

⇒ [“4.2.2 Gear Oil, Checking Level, OBD”, page 102](#)

⇒ [“4.2.3 Gear Oil, Checking Level, OBE, OBF”, page 102](#)

4.2.1 Gear Oil, Checking Level, OBC

Special tools and workshop equipment required

◆ Used Oil Collection and Extraction Unit - SMN372500-

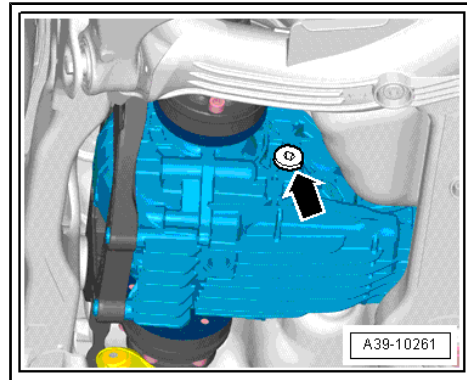


- Remove the plug to check the transmission fluid level -arrow-.

The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.

- Refer to the Parts Catalog for the correct transmission fluid specification.
- Install the plug -arrow- and tighten it.

Tightening specification 30 Nm.



4.2.2 Gear Oil, Checking Level, 0BD

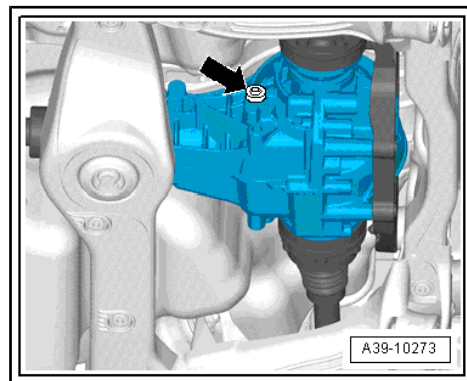
Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- Remove the plug to check the transmission fluid level -arrow-.

The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.

- Refer to the Parts Catalog for the correct transmission fluid specification.
- Install the plug -arrow- and tighten it.

Tightening Specification: 45 Nm



4.2.3 Gear Oil, Checking Level, 0BE, 0BF

Special tools and workshop equipment required

- ◆ Drip Tray

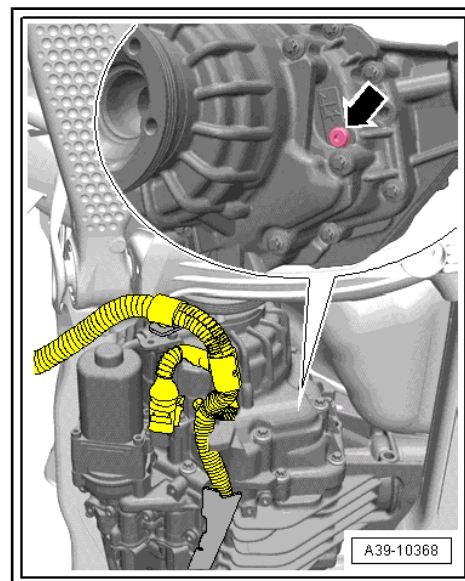
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Test Requirement

- Gear oil temperature: 10 °C to 60 °C (50° to 140 °F)
- The rear final drive must be in the installed position.
- The vehicle must be level.
- Gear oil plug overview. Refer to [⇒ "4.1.1 Gear Oil Drain and Inspection Plugs Overview, 0BE, 0BF", page 101](#) .

Rear Final Drive 0BF

- Remove the gear oil check plug -arrow-, located on the right side of the final drive.

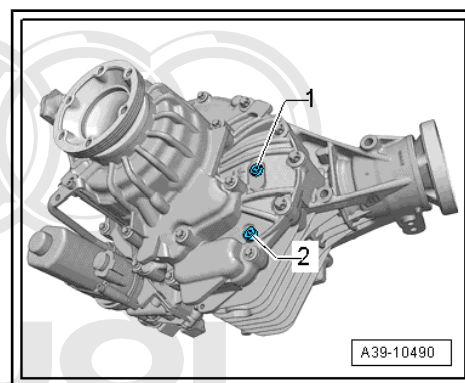


Rear Final Drive 0BE

- Remove the gear oil check plug -1-.

Continuation for All Rear Final Drives

- The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.
- Refer to the Parts Catalog for the correct transmission fluid specification.
- If necessary fill the gear oil.
- ◆ Refer to ⇒ [“4.3.2 Gear Oil, Filling, 0BE”, page 105](#)
- ◆ Refer to ⇒ [“4.3.3 Gear Oil, Filling, 0BF”, page 107](#)
- Install the gear oil inspection plug -arrow- and tighten. Tightening specification: -item 23- ⇒ [Item 23 \(page 86\)](#)



4.3 Gear Oil, Draining and Filling

⇒ [“4.3.1 Gear Oil, Draining, 0BE, 0BF”, page 103](#)

⇒ [“4.3.2 Gear Oil, Filling, 0BE”, page 105](#)

⇒ [“4.3.3 Gear Oil, Filling, 0BF”, page 107](#)

4.3.1 Gear Oil, Draining, 0BE, 0BF

Special tools and workshop equipment required

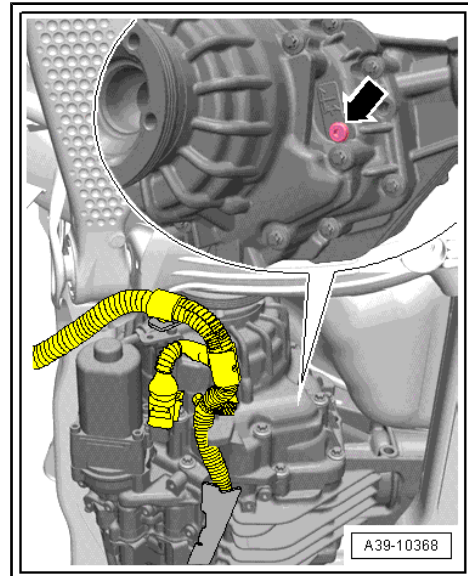
- ◆ Drip Tray

Rear Final Drive 0BF

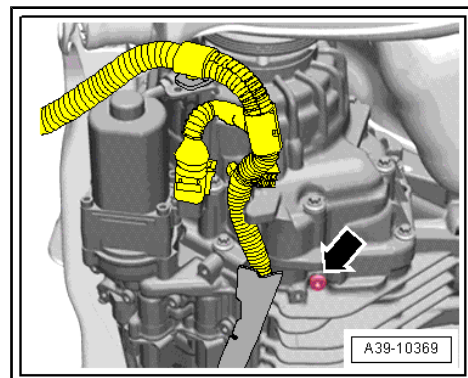
- Remove the gear oil check plug -arrow-.

i Note

- ◆ Gear oil plug overview. Refer to ⇒ [“4.1.1 Gear Oil Drain and Inspection Plugs Overview, 0BE, 0BF”, page 101](#) .
- ◆ Removing the gear oil check plug allows the gear oil to drain faster.



- Remove the drain plug -arrow- and drain the gear oil.



Rear Final Drive 0BE

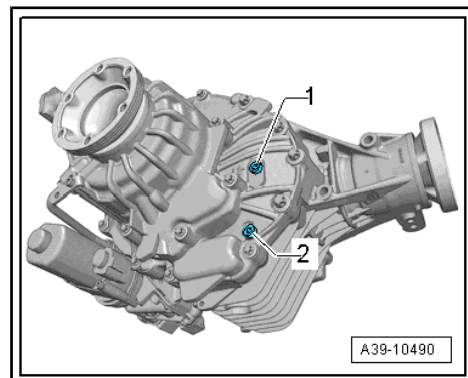
- Remove the gear oil check plug -1-.

i Note

- ◆ Gear oil plug overview. Refer to ⇒ [“4.1.1 Gear Oil Drain and Inspection Plugs Overview, 0BE, 0BF”, page 101](#) .
- ◆ Removing the gear oil check plug allows the gear oil to drain faster.

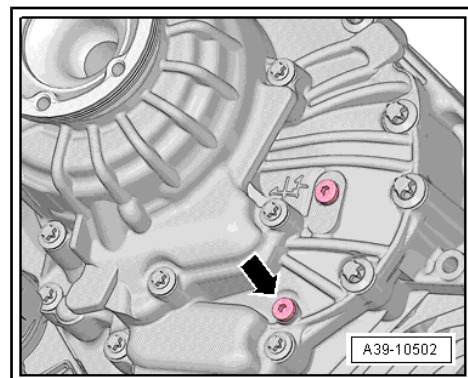
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- Remove the drain plug -arrow- and drain the gear oil.



Continuation for All Rear Final Drives

- Install the new drain plug -arrow- and tighten it. Tightening Specification -item 17- ⇒ [Item 17 \(page 86\)](#) .
- ◆ Refer to ⇒ [“4.3.2 Gear Oil, Filling, 0BE”, page 105](#)
- ◆ Refer to ⇒ [“4.3.3 Gear Oil, Filling, 0BF”, page 107](#)

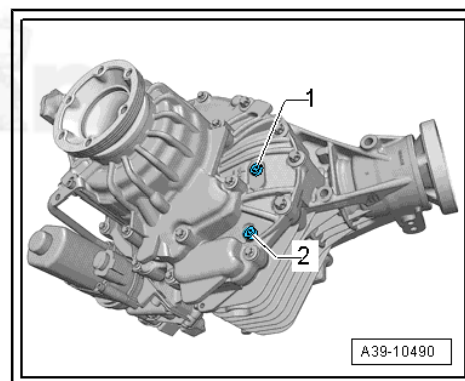


4.3.2 Gear Oil, Filling, OBE

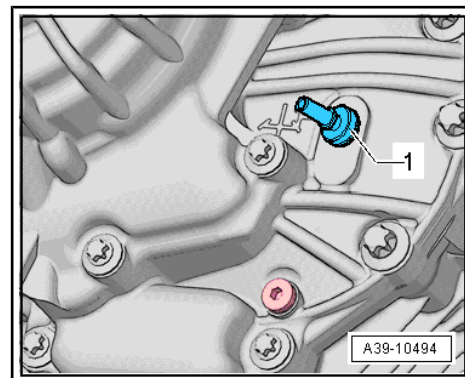
Special tools and workshop equipment required

- ◆ Charging Device For Haldex Coupling 2 - VAS6291- or Charging Device For Haldex Coupling 2 - VAS6291A-
- ◆ Charging Device For Haldex Coupling 2 - Adapter 2 - VAS6291/2- or Charging Device For Haldex Coupling 2 - Adapter 3 - VAS6291/3-
- ◆ Used Oil Collection and Extraction Unit - SMN372500- or
- ◆ If necessary: Oil Filler - Adapter 6 - VAS6262/6- or Oil Filler - Adapter - VAS6262/7-
- The rear final drive must be in the installed position.
- The vehicle must be level.
- Gear oil plug overview. Refer to [⇒ "4.1.1 Gear Oil Drain and Inspection Plugs Overview, OBE, OBF", page 101](#) .
- The gear oil drain plug is installed and tightened. Tightening specification. Refer to -item 17- ⇒ [Item 17 \(page 86\)](#) .
- Oil specifications. Refer to the Parts Catalog.
- Use the Charging Device For Haldex Coupling 2 - VAS6291A- to fill.
- Lift the vehicle.
- Remove the gear oil check plug -1-.

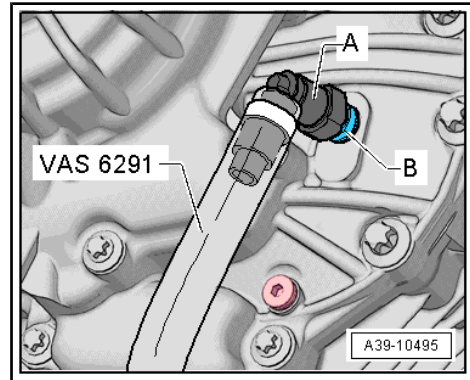
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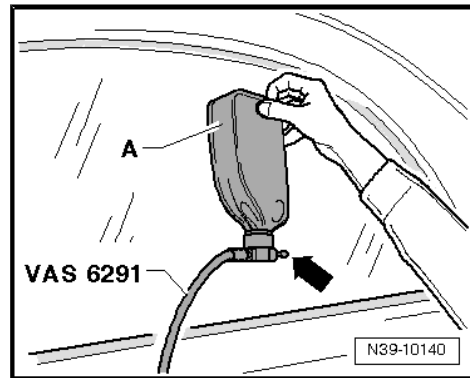
- Install the Charging Device For Haldex Coupling 2 - Adapter 1 - VAS6291/1- or Charging Device For Haldex Coupling 2 - Adapter 2 - VAS6291/2- -1-.



- Attach the elbow -A- to the adapter -B-.
- Route the hose over the right drive axle.
- The hose must not sag. It must be routed over the right rear wheel.
- Lower the vehicle.



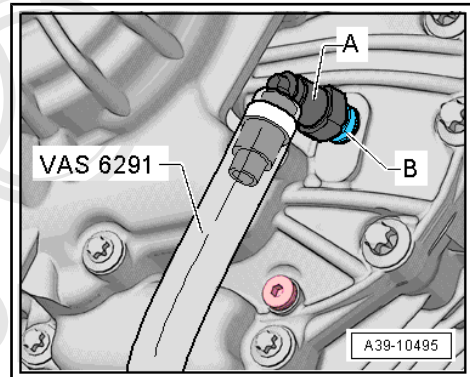
- Make sure that the valve -arrow- is closed.
 - Install the oil container -A- on the Charging Device For Haldex Coupling 2 - VAS6291- .
 - Open the valve -arrow- and hold the oil container as shown.
- The rear final drive will not be filled.



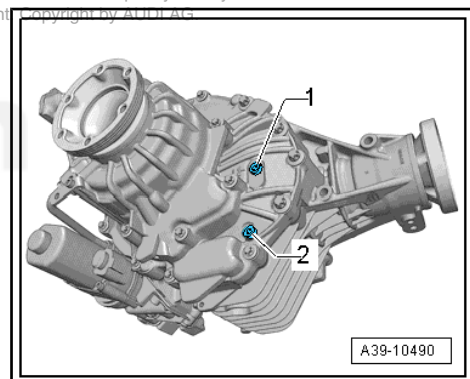
- When at the correct filling of the rear final drive oil drips between the adapter -B- and the final drive housing.
- Lift the vehicle.
- If oil leaks from the adapter -B-, set down the oil container (for example, on a tool trolley).

A portion of the excess oil runs back into the oil container.

- If no more oil runs back, remove the Charging Device For Haldex Coupling 2 - VAS6291A- .
- The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.
- If necessary fill the gear oil again.



- Install the new plug -1- and tighten. Tightening specification -item 23- => [Item 23 \(page 86\)](#) .



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4.3.3 Gear Oil, Filling, OBF

Special tools and workshop equipment required

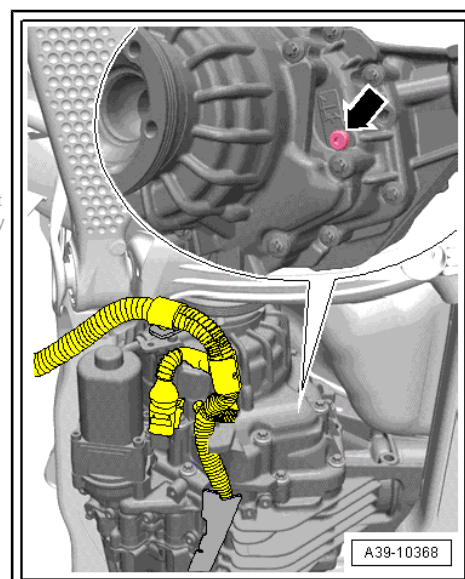
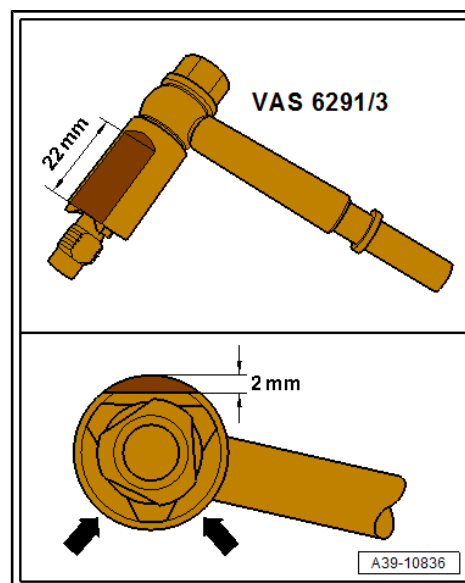
- ◆ Charging Device For Haldex Coupling 2 - VAS6291- or Charging Device For Haldex Coupling 2 - VAS6291A-
- ◆ Charging Device For Haldex Coupling 2 - Adapter 3 - VAS6291/3- (rework if necessary. Refer to ⇒ [Fig. "“Depending on the version the spacer tube from the -VAS6291/3- can line up on the housing rib on the final drive.””, page 107 .\)](#)
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ If necessary: Oil Filler - Adapter 6 - VAS6262/6- or Oil Filler - Adapter - VAS6262/7-

Depending on the version the spacer tube from the -VAS6291/3- can line up on the housing rib on the final drive.

- Grind the adapter spacer tube as shown, opposite the side holes -arrows-.

Gear Oil, Filling

- The rear final drive must be in the installed position.
- The vehicle must be level.
- Gear oil plug overview. Refer to ⇒ [“4.1 Component Location Overview - Drain and Check Plugs, OBE and OBF”, page 101 .](#)
- The gear oil drain plug is installed and tightened. Tightening specification. Refer to -item 17- ⇒ [Item 17 \(page 86\)](#) .
- Oil specifications. Refer to the Parts Catalog.
- Lift the vehicle.
- Remove the gear oil check plug -arrow-.



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- Disconnect the adapter -A- and elbow -B-.
- Install in the adapter -A- all the way.



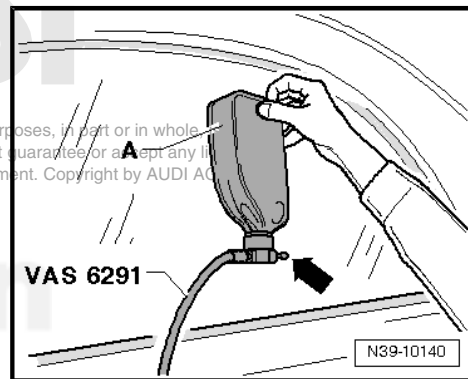
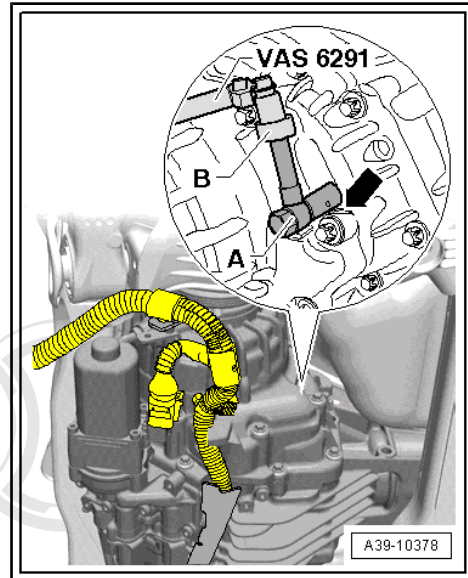
Caution

Risk of damaging the fluid filler hole threads.

- Do not install the adapter -A- at an angle.
- The sanded side on the adapter -A- must point to the housing rib -arrow-.

- Attach the elbow -B- to the adapter -A-.
- Route the hose over the right drive axle.
- The hose must not sag. It must be routed over the right rear wheel.
- Lower the vehicle.
- Make sure that the valve -arrow- is closed.
- Install the oil container -A- on the Charging Device For Haldex Coupling 2 - V- .
- Open the valve -arrow- and hold the oil container as shown.

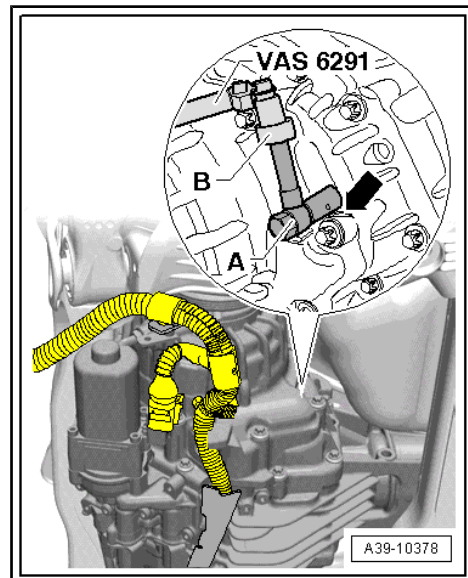
The rear final drive will now be filled.



- When at the correct filling of the rear final drive oil drips between the adapter -A- and the final drive housing -arrow-.
- Lift the vehicle.
- If oil leaks from adapter -A-, set down the fluid container (for example, on a tool cart).

A portion of the excess oil runs back into the oil container.

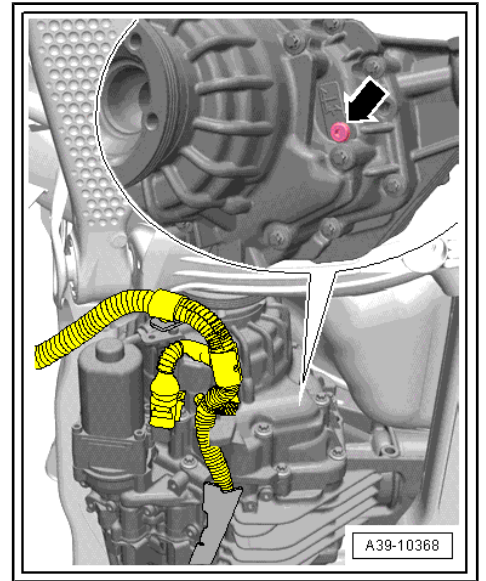
- If no more oil runs back, remove the Charging Device For Haldex Coupling 2 - VAS6291A- .
- The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.
- If necessary fill the gear oil again.



- Install the new gear oil check plug -arrow- and tighten. Tightening specification. Refer to -item 23- ➔ [Item 23 \(page 86\)](#) .



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5 ATF

⇒ [“5.1 Component Location Overview - Drain and Check Plugs”, page 110](#)

⇒ [“5.2 ATF Level, Checking”, page 110](#)

⇒ [“5.3 ATF, Draining and Filling”, page 111](#)

5.1 Component Location Overview - Drain and Check Plugs

⇒ [“5.1.1 Component Location Overview - Drain and Check Plugs, 0BE”, page 110](#)

⇒ [“5.1.2 Component Location Overview - Drain and Check Plugs, 0BF”, page 110](#)

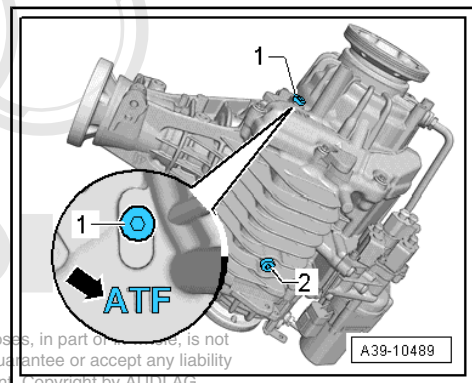
5.1.1 Component Location Overview - Drain and Check Plugs, 0BE

1- ATF check plug

- ◆ Identification »ATF« on the final drive housing -arrow-
- ◆ Tightening Specification -item 13- ⇒ [Item 13 \(page 86\)](#) .
- ◆ Always replace.

2 - ATF drain plug

- ◆ Tightening Specification -item 16- ⇒ [Item 16 \(page 86\)](#) .
- ◆ Always replace.



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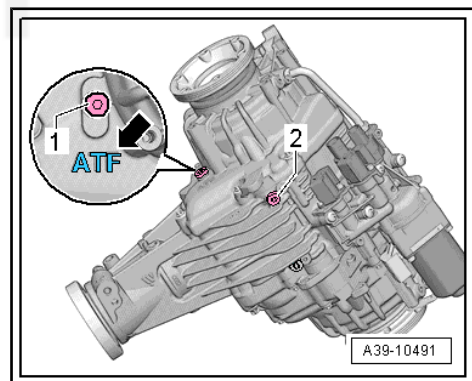
5.1.2 Component Location Overview - Drain and Check Plugs, 0BF

1- ATF check plug

- ◆ Identification »ATF« on the housing -arrow-
- ◆ Tightening Specification -item 13- ⇒ [Item 13 \(page 86\)](#) .
- ◆ Always replace.

2 - ATF drain plug

- ◆ Tightening Specification -item 16- ⇒ [Item 16 \(page 86\)](#) .
- ◆ Always replace.



5.2 ATF Level, Checking

⇒ [“5.2.1 ATF Level, Checking, 0BE, 0BF”, page 110](#)

5.2.1 ATF Level, Checking, 0BE, 0BF


Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-

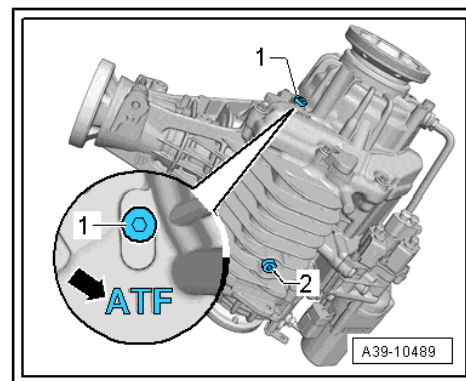
Test requirement

- ATF temperature: 10 °C to 60 °C (50° to 140 °F)
- The rear final drive must be in the installed position.

- The vehicle must be level.
- Remove the ATF check plug -1- to check the ATF level.

 **Caution**

- ◆ **The ATF check plug -1- is located on the left side of the rear final drive. Identification »ATF« on the final drive housing -arrow-**
- ◆ **ATF plug overview**
 ⇒ **“5.1 Component Location Overview - Drain and Check Plugs”, page 110** .



- The ATF level is correct when the rear final drive is filled to the lower edge of the fill hole.

If the ATF is correct:

- Install the new ATF check plug and fasten. Tightening specification. Refer to -item 13- ⇒ **Item 13 (page 86)** .

If the ATF is not correct:

- Fill the ATF. Refer to
 ⇒ **“5.3.3 ATF, Filling, 0BE, 0BF”, page 112** .

5.3 ATF, Draining and Filling

⇒ **“5.3.1 ATF, Draining, 0BE”, page 111**

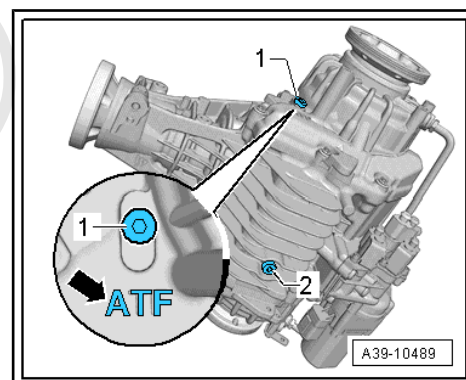
⇒ **“5.3.2 ATF, Draining, 0BF”, page 111**

⇒ **“5.3.3 ATF, Filling, 0BE, 0BF”, page 112**

5.3.1 ATF, Draining, 0BE

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ATF plug overview. Refer to
 ⇒ **“5.1 Component Location Overview - Drain and Check Plugs”, page 110** .
- Remove the ATF check plug -1- so that the ATF drains faster out of the drain hole.
- Remove the ATF drain plug -2- and drain the ATF.
- Install the new ATF drain plug -2- and tighten. Tightening specification. Refer to -item 16- ⇒ **Item 16 (page 86)** .
- Fill the ATF in the rear final drive. Refer to
 ⇒ **“5.3.3 ATF, Filling, 0BE, 0BF”, page 112** .



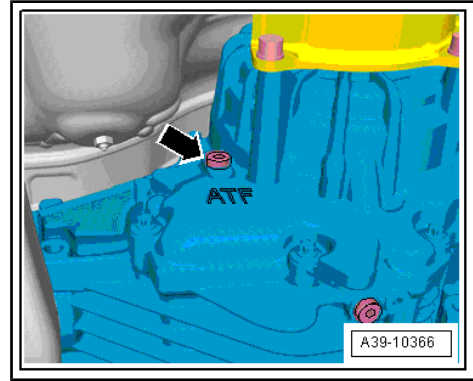
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5.3.2 ATF, Draining, 0BF

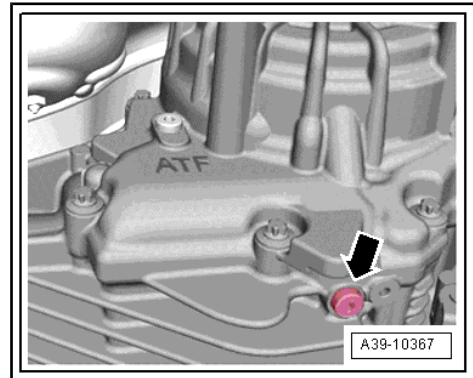
Special tools and workshop equipment required

- ◆ Drip Tray
- ATF plug overview. Refer to
 ⇒ **“5.1.2 Component Location Overview - Drain and Check Plugs, 0BF”, page 110** .

- Remove the ATF check plug -arrow- so that the ATF drains faster.



- Remove the ATF drain plug -arrow- and drain the ATF.
- Install the new ATF drain plug -arrow- and tighten. Tightening specification. Refer to -item 16- => [Item 16 \(page 86\)](#) .
- Fill the ATF in the rear final drive. Refer to => ["5.3.3 ATF, Filling, OBE, OBF", page 112](#) .



5.3.3 ATF, Filling, OBE, OBF

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester
- ◆ Charging Device For Haldex Coupling 2 - VAS6291- or Charging Device For Haldex Coupling 2 - VAS6291A-
- ◆ Charging Device For Haldex Coupling 2 - Adapter 3 - VAS6291/3-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ If necessary: Oil Filler - Adapter 6 - VAS6262/6- or Oil Filler - Adapter - VAS6262/7-

Test Conditions:

- The rear final drive must be in the installed position.
- The vehicle must be level.
- The ATF drain plug is installed and tightened. Tightening specification. Refer to -item 16- => [Item 16 \(page 86\)](#) .

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Caution

There is a risk of damaging the rear final drive.

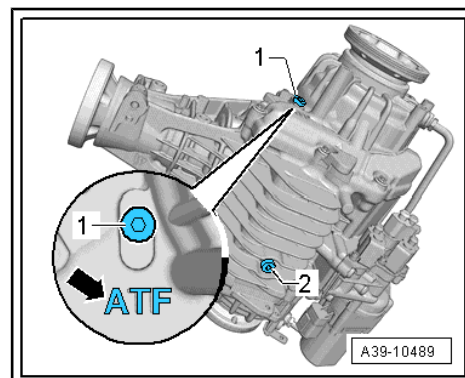
- ◆ *Only use ATF available as a replacement part. Refer to the Parts Catalog.*
- ◆ *Using other fluids can cause malfunctions or final drive failure.*
- ◆ *Note the allocation. Refer to the Parts Catalog*
- ◆ *The ATF filler tool must be clean and the ATF must not be mixed with any other oils.*

- Use the Charging Device For Haldex Coupling 2 - VAS6291A- to fill.
- Lift the vehicle.
- Remove the ATF check plug -1-.

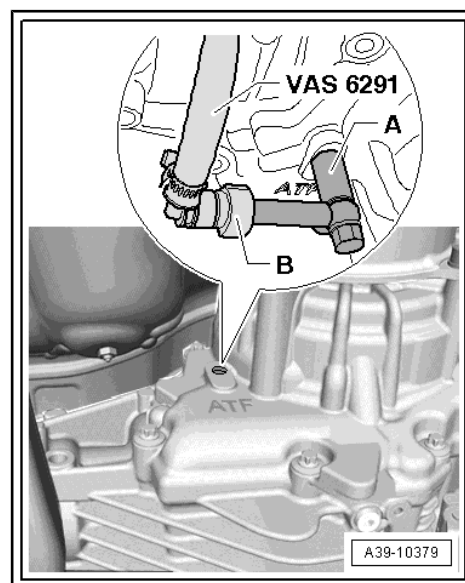
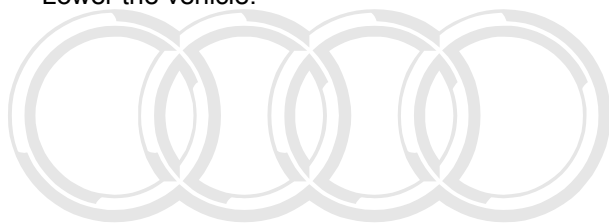


Caution

The ATF check plug -1- is located on the left side of the rear final drive. Identification »ATF« on the final drive housing -arrow-



- Disconnect the adapter -A- and elbow -B-.
- Install in the adapter -A- all the way.
- Attach the elbow -B- to the adapter -A-.
- Route the hose over the left drive axle.
- The hose must not sag. It must be routed over the left rear wheel on the vehicle.
- Lower the vehicle.

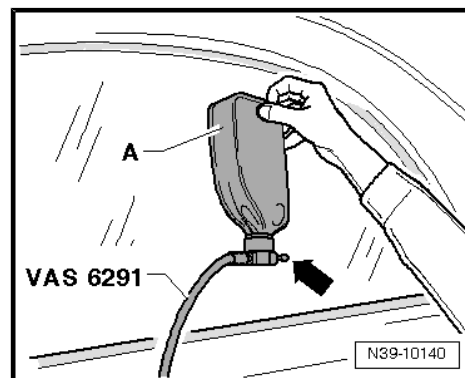


- Make sure that the valve -arrow- is closed.
- Install the oil container -A- on the Charging Device For Haldex Coupling 2 - VAS6291-

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Open the valve -arrow- and hold the oil container as shown.

The hydraulic control unit and the left and right chambers in the rear final drive are now filled.





- When the correct filling of the rear final drive hydraulic control module ATF drips from the adapter -A-

If there still is no ATF in the adapter -A-:

- Continue filling until the level is correct.

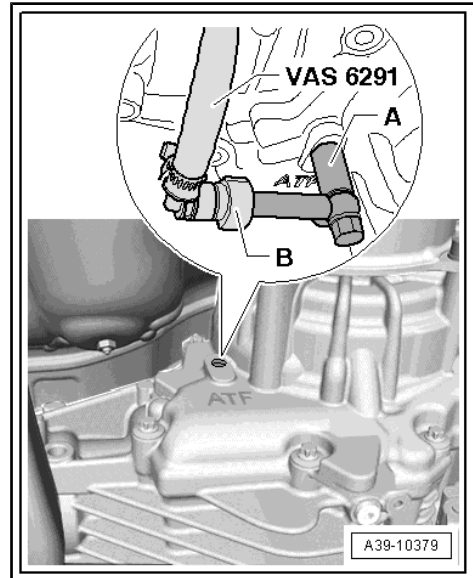
When ATF starts to leak out of the adapter -A-:

- Lift the vehicle.
- Place the oil container for example on a tool box.

A portion of the excess oil runs back into the oil container.

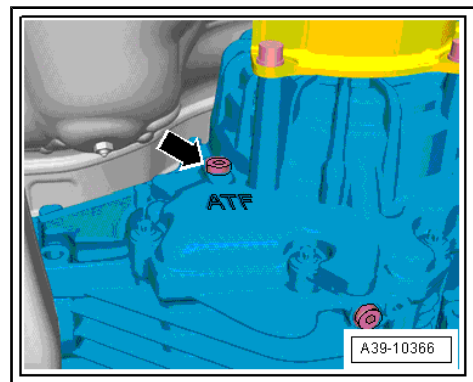
- If no more ATF runs back, remove the Charging Device For Haldex Coupling 2 - VAS6291A- .

- The oil level is correct when the rear final drive is filled up to the lower edge of the oil fill hole.



- Install the ATF check plug -arrow- hand-tight.
- Connect the Vehicle Diagnostic Tester and turn on the ignition.
- Select the function 22 - All Wheel Drive (AWD) Electronics in the Vehicle Diagnostic Tester under Guided Functions in the directory 22- ATF Filling.
- Follow all the instructions given by the Vehicle Diagnostic Tester exactly.

The system is filled and bled using the Vehicle Diagnostic Tester .



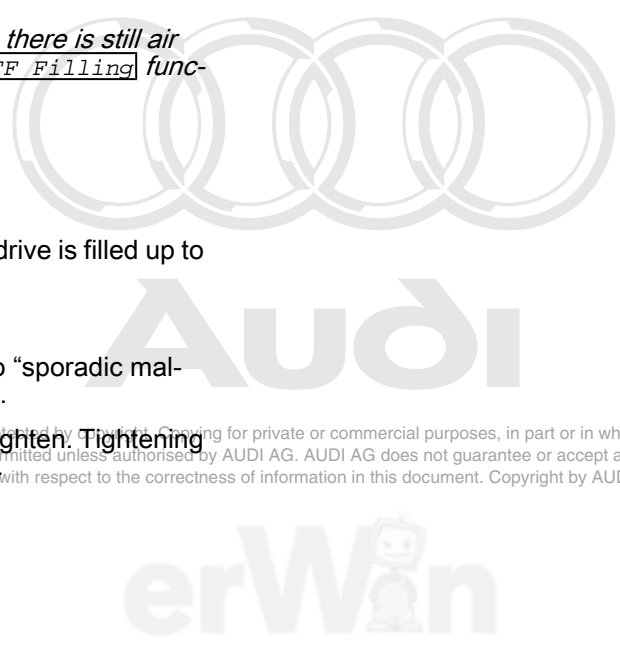
i Note

Repeat the filling process if the system detects there is still air inside the system after performing the 22 - ATF Filling function.

- Remove the ATF check plug -arrow- again.

Test Condition:

- The ATF level is correct when the rear final drive is filled up to the lower edge of the filler hole -arrow-.
- If necessary fill the ATF.
- In the DTC memory there is no entry and no “sporadic malfunction” use the Vehicle Diagnostic Tester .
- Install the new ATF check plug -arrow- and tighten. Tightening specification -item 13- => [Item 13 \(page 86\)](#).



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6 Seals

⇒ [“6.1 Component Location Overview - Seals”, page 115](#)

⇒ [“6.2 Left Seal, Replacing”, page 116](#)

⇒ [“6.3 Right Seal, Replacing”, page 121](#)

⇒ [“6.5 Flange Shaft Protective Ring, Replacing”, page 142](#)

⇒ [“6.6 Flange Input Shaft Ring, Replacing”, page 145](#)

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6.1 Component Location Overview - Seals

⇒ [“6.1.1 Seals Component Location Overview, 0BC, 0BD”, page 115](#)

⇒ [“6.1.2 Seals Component Location Overview, 0BE, 0BF”, page 116](#)

6.1.1 Seals Component Location Overview, 0BC, 0BD

1 - Right Ring

- ❑ Replacing. Refer to ⇒ [“6.5 Flange Shaft Protective Ring, Replacing”, page 142](#) .

2 - Right Seal

- ❑ Replacing. Refer to ⇒ [“6.3 Right Seal, Replacing”, page 121](#) .

3 - Left Seal

- ❑ Replacing. Refer to ⇒ [“6.2 Left Seal, Replacing”, page 116](#) .

4 - Left Ring

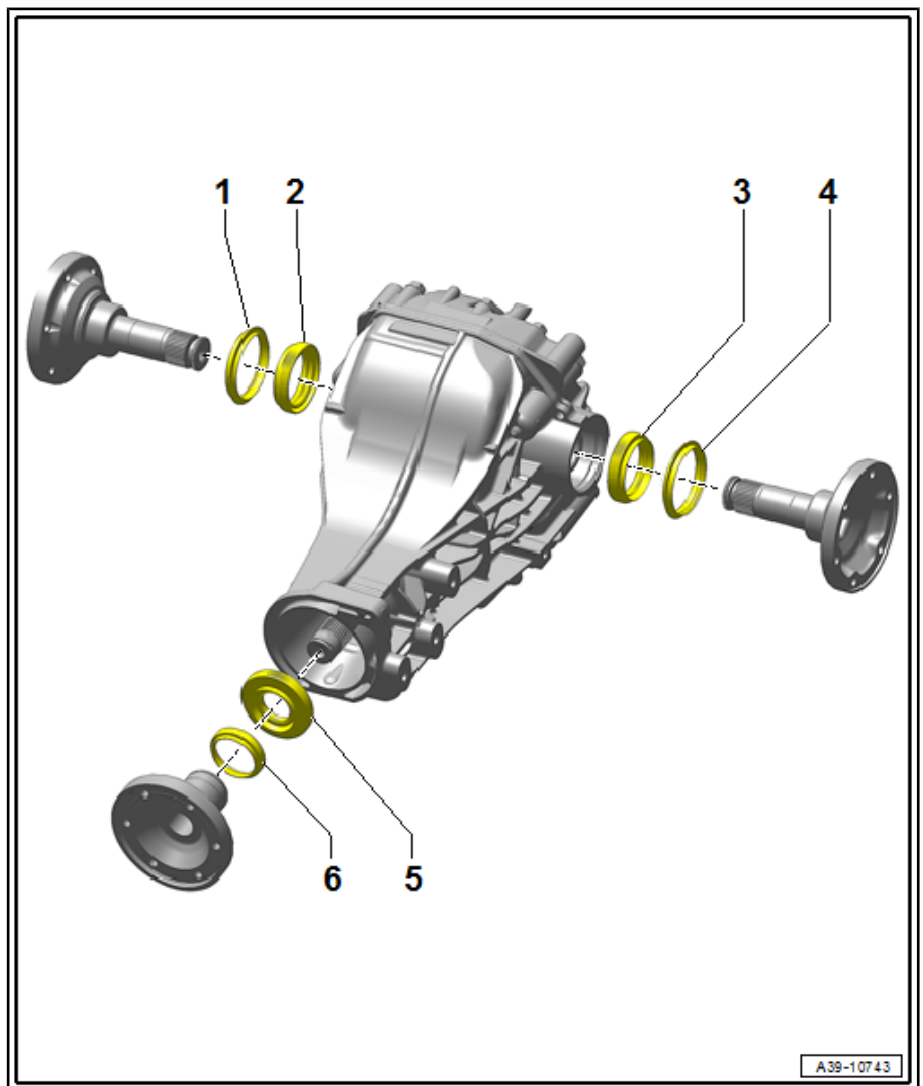
- ❑ Replacing. Refer to ⇒ [“6.5 Flange Shaft Protective Ring, Replacing”, page 142](#) .

5 - Input Shaft Seal

- ❑ Replacing. Refer to ⇒ [“6.4 Input Shaft Seal, Replacing”, page 122](#) .

6 - Input Shaft Ring

- ❑ Replacing. Refer to ⇒ [“6.6 Flange Input Shaft Ring, Replacing”, page 145](#) .





6.1.2 Seals Component Location Overview, 0BE, 0BF

1 - Right Ring

- ❑ Replacing. Refer to
⇒ [“6.5.3 Flange Shaft Ring, Replacing, 0BE, 0BF”, page 144](#) .

2 - Right Seal

- ❑ Replacing. Refer to
⇒ [“6.3 Right Seal, Replacing”, page 121](#) .

3 - Left Seal

- ❑ Replacing. Refer to
⇒ [“6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#) .

4 - Left Ring

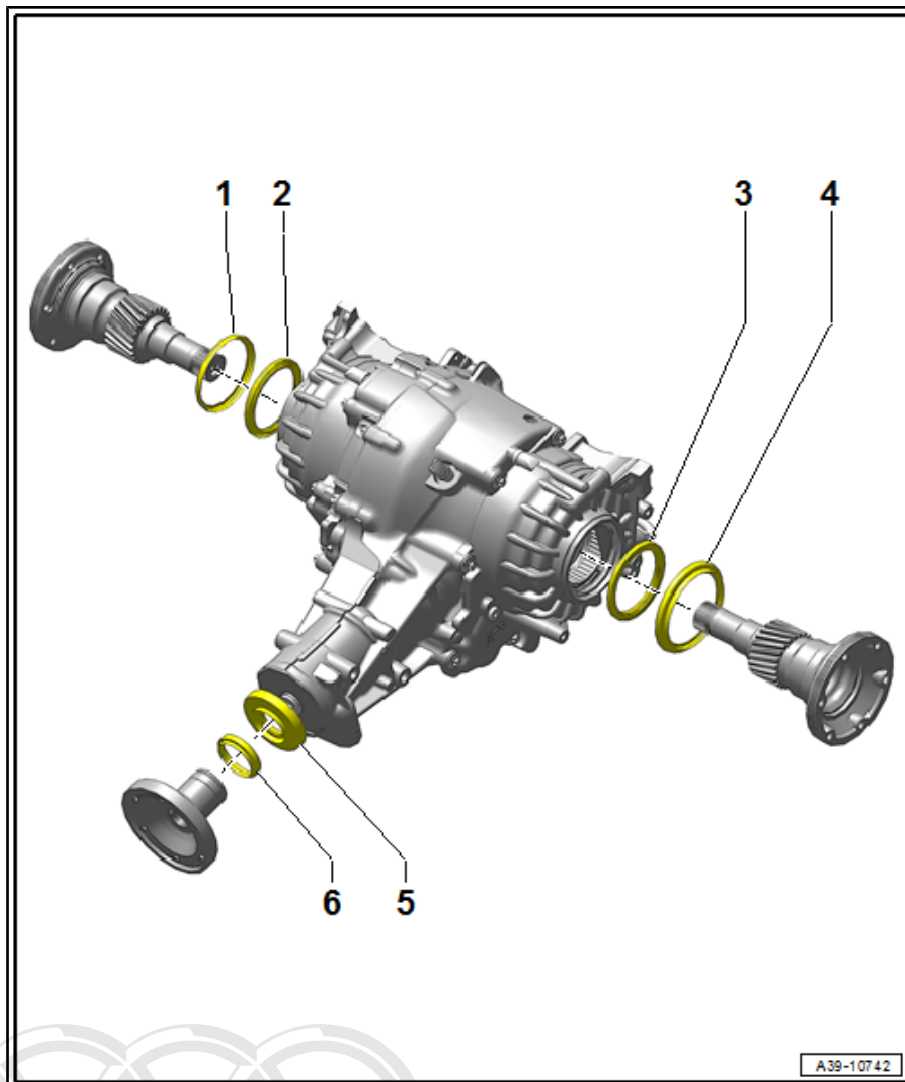
- ❑ Replacing. Refer to
⇒ [“6.5.3 Flange Shaft Ring, Replacing, 0BE, 0BF”, page 144](#) .

5 - Input Shaft Seal

- ❑ Replacing. Refer to
⇒ [“6.4 Input Shaft Seal, Replacing”, page 122](#) .

6 - Input Shaft Ring

- ❑ Replacing. Refer to
⇒ [“6.6.3 Flange Input Shaft Ring, Replacing, 0BE, 0BF”, page 146](#) .



6.2 Left Seal, Replacing

⇒ [“6.2.1 Left Seal, Replacing, 0BC”, page 116](#)

⇒ [“6.2.2 Left Seal, Replacing, 0BD”, page 118](#)

⇒ [“6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#)

6.2.1 Left Seal, Replacing, 0BC

Special tools and workshop equipment required

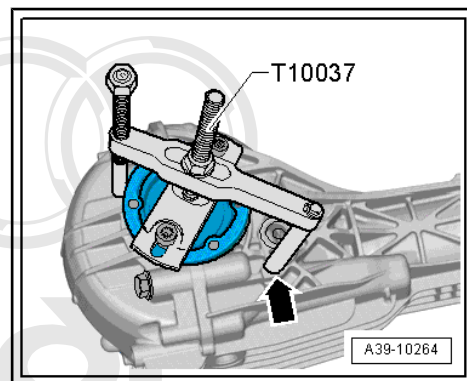
- ◆ Puller - Flanged Shaft - T10037
- ◆ Bearing/Bushing Installer - Multiple Use - VW295-
- ◆ Seal Installer - Flange Shaft - T40108-
- ◆ Sealing Grease - G 052 128 A1-
- In this chapter “right seal, replacing” is also described.
- The shaft seal can be only be replaced with the final drive removed.

Removing

- Follow all general repair information. Refer to
 ⇒ [“6 Repair Information”, page 13](#) .
- Remove the rear final drive. Refer to
 ⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#) .

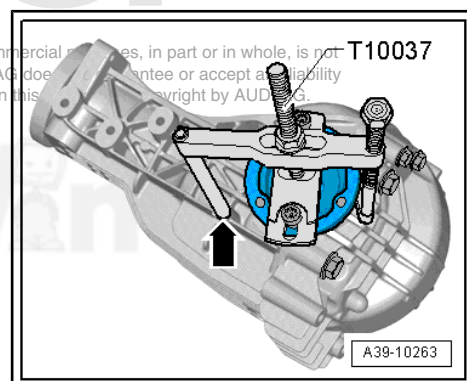
Remove the Right Flange Shaft.

- Attach the Puller - Flanged Shaft - T10037- to the housing
 -arrow- and remove the flange shaft.



Left Flange Shaft, Removing

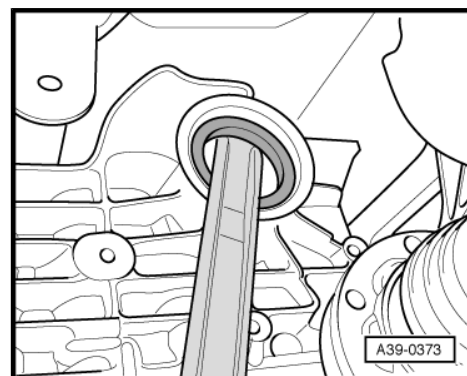
- Attach the Puller - Flanged Shaft - T10037- to the housing
 -arrow- and remove the flange shaft.



- Use a suitable tool to pry out the seal.

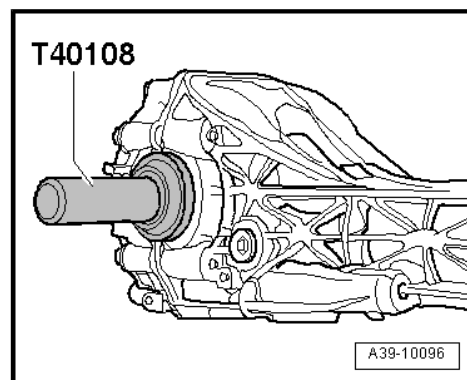
Installing

Install in reverse order of removal. Note the following:



Right Shaft Seal, Installing

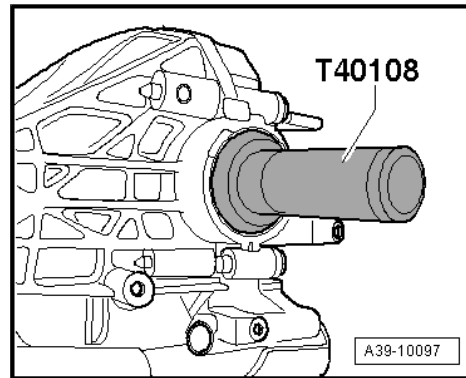
- Coat outer edge of the seal with gear oil.
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in new shaft seal as far as stop without tilting it.





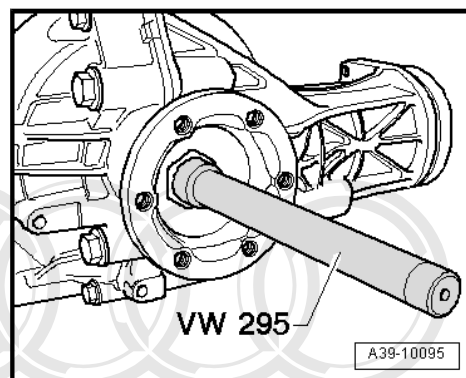
Left Shaft Seal, Installing

- Coat outer edge of the seal with gear oil.
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in new shaft seal as far as stop without tilting it.



Right and Left Flange Shafts, Installing

- Drive the flange shaft in using a Bearing/Bushing Installer - Multiple Use - VW295- .
- Install the rear final drive. Refer to [⇒ "2.2 Final Drive, Removing and Installing", page 46](#) .
- Check the gear oil in rear final drive. Refer to [⇒ "4.2.1 Gear Oil, Checking Level, 0BC", page 101](#) .



6.2.2 Left Seal, Replacing, 0BD

- In this chapter "right seal, replacing" is also described.
- The shaft seal can be only be replaced with the final drive removed.

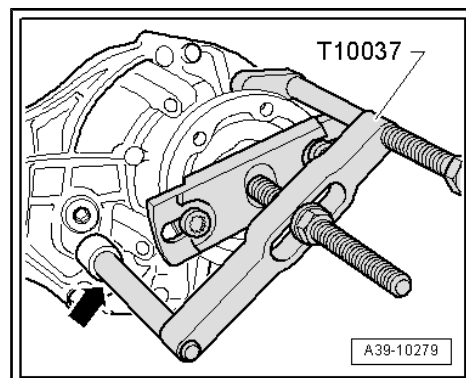
Special tools and workshop equipment required

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- ◆ Bearing/Bushing Installer - Multiple Use - VW295-
- ◆ Puller - Flanged Shaft - T10037-
- ◆ Seal Installer - Flange Shaft - T40110-
- ◆ Seal Installer - Flange Shaft - T40111-
- ◆ Sealing Grease - G 052 128 A1-
- Follow all general repair information. Refer to [⇒ "6 Repair Information", page 13](#) .
- Remove the rear final drive. Refer to [⇒ "2.2 Final Drive, Removing and Installing", page 46](#) .

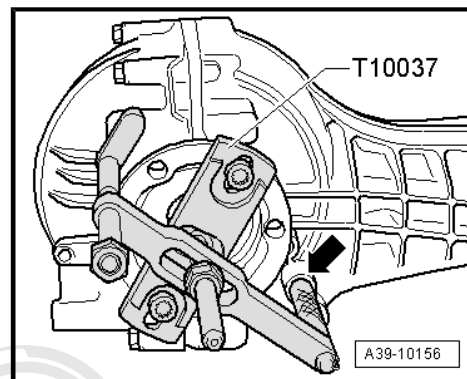
Left Flange Shaft, Removing

- Attach the Puller - Flanged Shaft - T10037- to the housing -arrow- and remove the flange shaft.

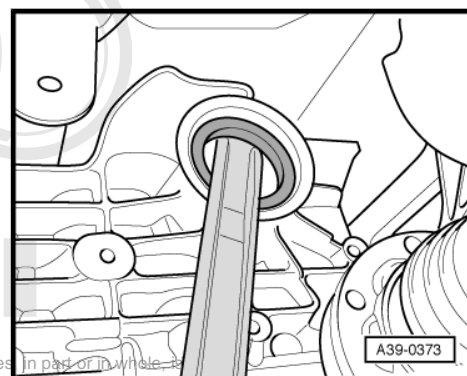


Right Flange Shaft, Removing

- Attach the Puller - Flanged Shaft - T10037- to the housing -arrow- and remove the flange shaft.



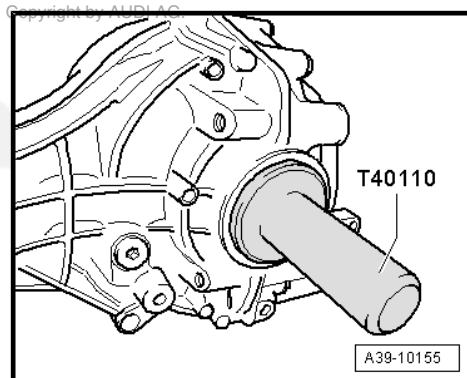
- Use a suitable tool to pry out the seal.



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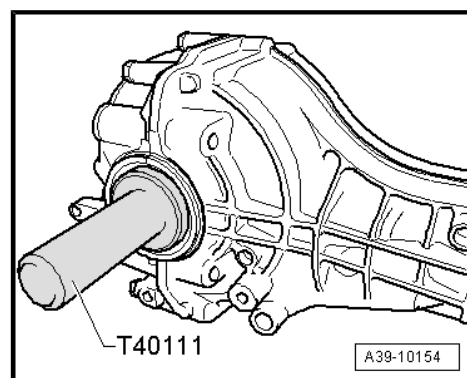
Left Shaft Seal, Installing

- Coat outer edge of the seal with gear oil.
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in new shaft seal as far as stop without tilting it.



Right Shaft Seal, Installing

- Coat outer edge of the seal with gear oil.
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in new shaft seal as far as stop without tilting it.



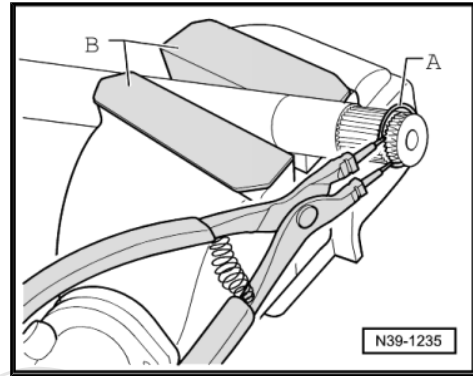


Before installing the flange shaft, check ring for damage. Replace the ring if necessary
⇒ [“6.5.2 Flange Shaft Ring, Replacing, OBD”, page 143](#) .

- Remove the locking ring -A- from the groove on the flange shaft with pliers .

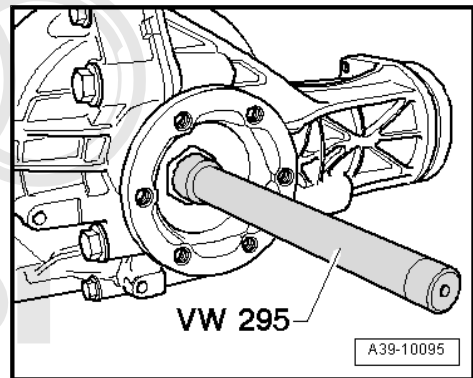
B - Protective Jaws

- Install the new locking ring into the groove in the flange shaft being careful not to overextend it.



Right and Left Flange Shafts, Installing

- Drive the flange shaft in using a Bearing/Bushing Installer - Multiple Use - VW295- .
- Install the rear final drive. Refer to
⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#) .
- Check the gear oil in rear final drive. Refer to
⇒ [“4.2.2 Gear Oil, Checking Level, OBD”, page 102](#) .



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6.2.3 Left Seal, Replacing, OBE, OBF

Special tools and workshop equipment required

- ◆ Slide Hammer Set - VW771-
- ◆ Seal Installer - Drift Shaft - T40221-
- ◆ ATF
- In this chapter “right seal, replacing” is also described.
- The shaft seal can be only be replaced with the final drive removed.

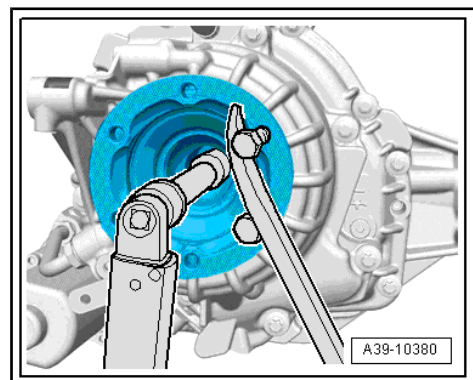
Removing

- Follow all general repair information. Refer to
⇒ [“6 Repair Information”, page 13](#) .
- Remove the rear final drive. Refer to
⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#) .
- Remove the flange shaft bolt. To do this, install two bolts into the flange and counterhold the flange shaft using an assembly lever.
- Remove the flange shaft.



Note

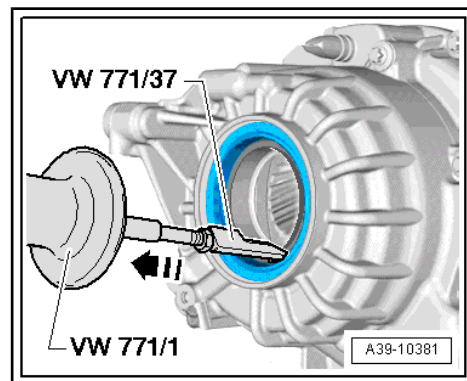
If it not possible to remove the flange shaft by hand, then use the Slide Hammer Set - VW771- to remove it.



- Remove flange shaft seal with the Slide Hammer Set - VW771- and Slide Hammer Set - Pulling Hook - VW771/37- .

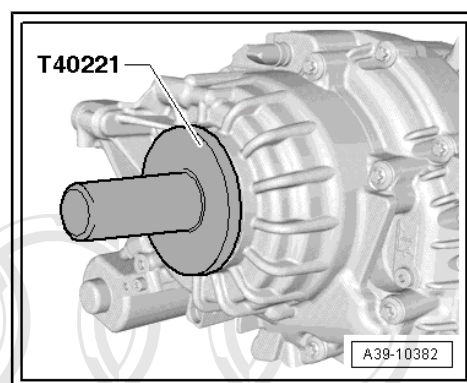
Installing

Install in reverse order of removal. Note the following:



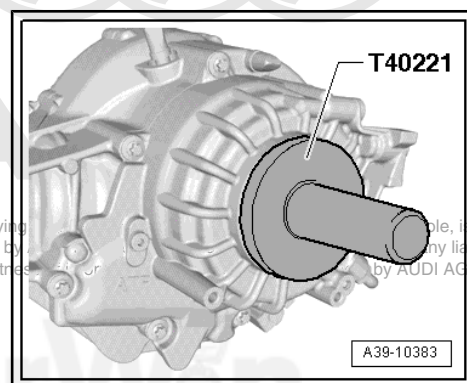
Right Shaft Seal, Installing

- Coat the outer circumference and the sealing lips on the shaft seal with ATF.
- Install the shaft seal all the way. Be careful not to bend it.



Left Shaft Seal, Installing

- Coat the outer circumference and the sealing lips on the shaft seal with ATF.
- Install the shaft seal all the way. Be careful not to bend it.
- Install the flange shaft.



Note

If it is not possible to install the flange shaft all the way in by hand, then use a plastic mallet.

- Tighten the new flange shaft bolt to the tightening specification. Refer to -item 1- ⇒ [Item 1 \(page 85\)](#) .
- Install the rear final drive. Refer to ⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#) .
- Check the ATF level in the rear final drive. Refer to ⇒ [“5.2.1 ATF Level, Checking, 0BE, 0BF”, page 110](#) .

6.3 Right Seal, Replacing

Note

Replacing the right seal is described in the chapter “left seal, replacing”.



⇒ [“6.2.1 Left Seal, Replacing, 0BC”, page 116](#)

⇒ [“6.2.2 Left Seal, Replacing, 0BD”, page 118](#)

⇒ [“6.2.3 Left Seal, Replacing, 0BE, 0BF”, page 120](#)

6.4 Input Shaft Seal, Replacing

⇒ [“6.4.1 Input Shaft Seal, Replacing, 0BC”, page 122](#)

⇒ [“6.4.2 Input Shaft Seal, Replacing, 0BD”, page 127](#)

⇒ [“6.4.3 Input Shaft Seal, Replacing, 0BE”, page 132](#)

⇒ [“6.4.4 Input Shaft Seal, Replacing, 0BF”, page 136](#)

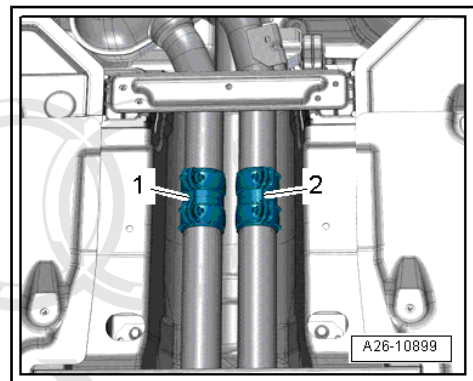
6.4.1 Input Shaft Seal, Replacing, 0BC

Special tools and workshop equipment required

- ◆ Puller - Multiple Use - VW391-
- ◆ Slide Hammer Set - Adapter 40 - VW771/40- from the Slide Hammer Set - VW771-
- ◆ Retainer - Drive Flange - 3028-
- ◆ Puller - Unit Injector - T10055-
- ◆ -2- Puller - Unit Injector - Adapter 2 - T10055/2-
- ◆ Seal Installer - Driveshaft Flange - T40109-
- ◆ Seal Installer - Input Shaft - Guide Sleeve - T40222/1-
- ◆ Sealing Grease - G 052 128 A1-
- ◆ Two M 8 x 30 Bolts
- ◆ One M 8 x 45 bolt

Removing

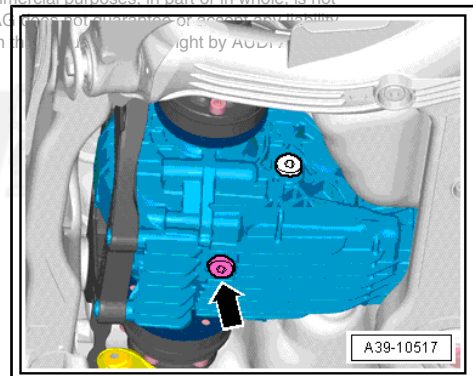
- Rear final drive installed
- Pay attention to the general repair information. Refer to ⇒ [“6 Repair Information”, page 13](#) .
- Disconnect the exhaust system at the clamping sleeves -1 and 2-.
- Remove the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



Note

A second technician is needed to help remove the rear section of the exhaust system.

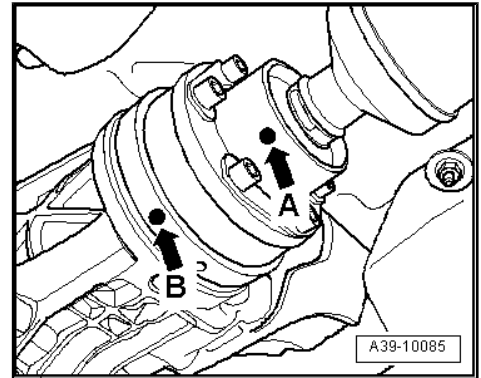
- Open the gear oil drain plug -arrow- and allow approximately 250 ml of gear oil to drain out.
- Install the drain plug -arrow- and tighten it.
- Tightening specification 30 Nm.



- Remove the driveshaft from the rear final drive. Refer to [⇒ "1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .

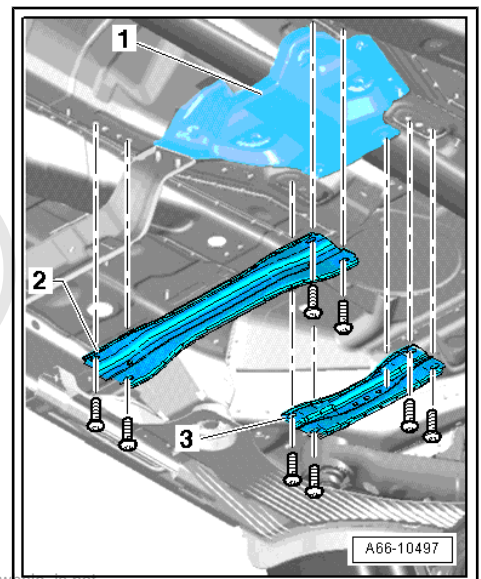
Audi A8

- Guide the driveshaft between the fuel tank and the subframe downward toward the rear and attach it on the side.



Audi A4, A5 Coupe/Sportback/Cabrio, Q5

- Remove the front crossmember -2-.
- Remove the rear crossmember -3- and the heat shield -1-.

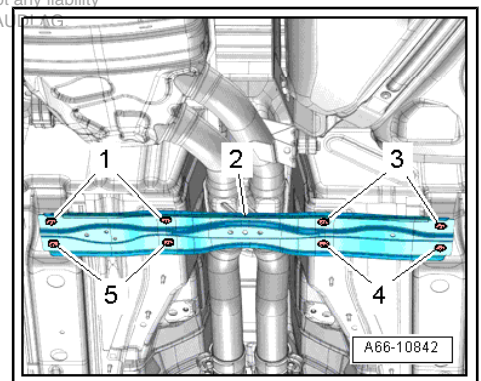


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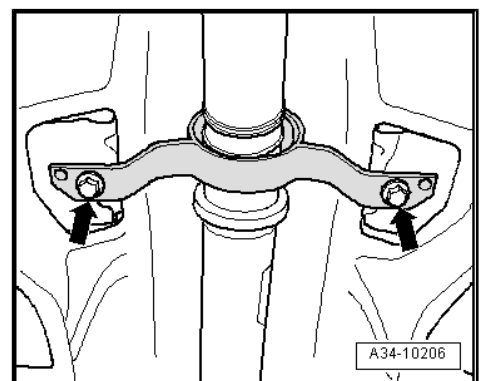
Audi A6 and A7

- Remove the crossmember -2-. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Panel; Overview - Underbody Panels .

Continuation for all vehicles - except Audi A8



- Remove the bolts -arrows- for the driveshaft intermediate bearing.
- Lower the driveshaft at the intermediate bearing.
- Guide the driveshaft between the fuel tank and the subframe downward and toward the rear while doing this.
- Install the intermediate bearing bolts -arrows- by hand.
- Tie the driveshaft to the side.



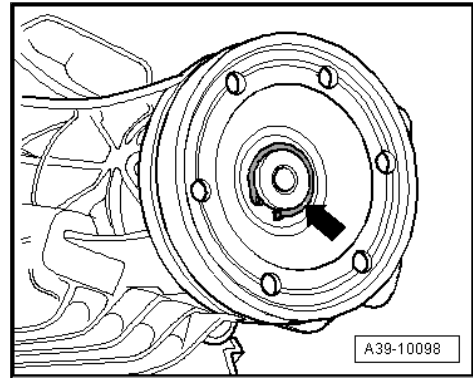
Continuation for all Vehicles

- Remove the High Temperature Grease in the flange/drive-shaft.
- Remove the circlip -arrow-.



Caution

Replace the circlip with a new one of the same thickness if it is stretched or damaged. Allocation. Refer to the Parts Catalog.

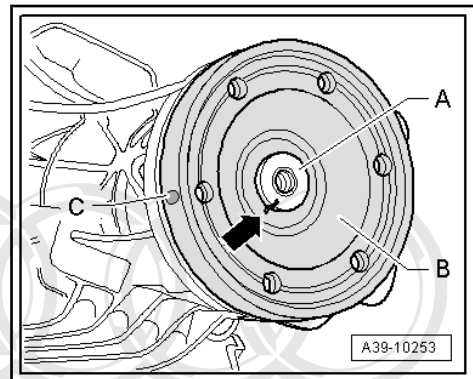


- Mark the position of the flange/driveshaft -B- on the pinion -A- -arrow-.

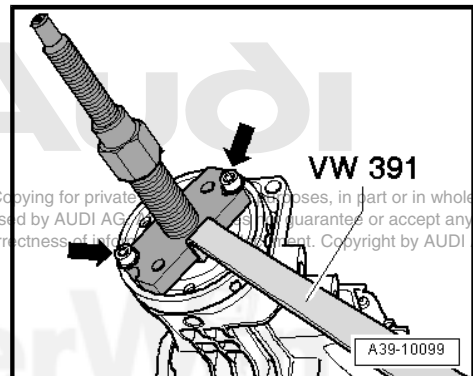


Note

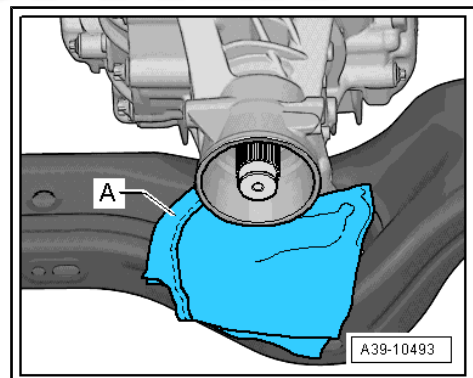
- ◆ *This marking -arrow- is needed so the colored dot -C- on the outer flange remains in its original position.*
- ◆ *This ensures the imbalance in the rear final drive will be as small as possible.*



- Install the Two M8 x 30 bolts -arrow- in the flange.
- Remove the flange/driveshaft with the Puller - Multiple Use - VW391- .

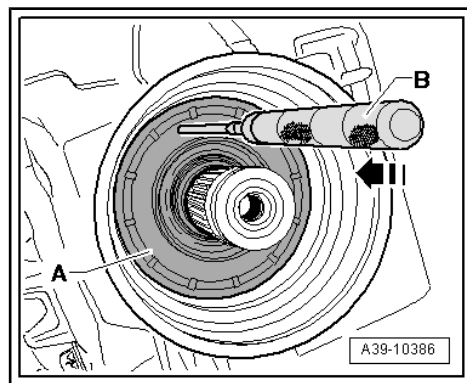


- Lay a super absorbent cloth -A- under the final drive on the subframe.

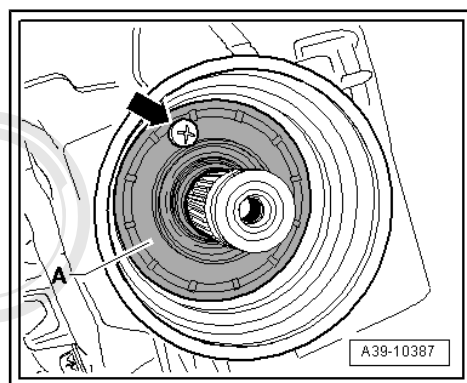


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- Knock through the metal ledge of the shaft seal -A-, for example, with a scriber -B- direction of the -arrow-.



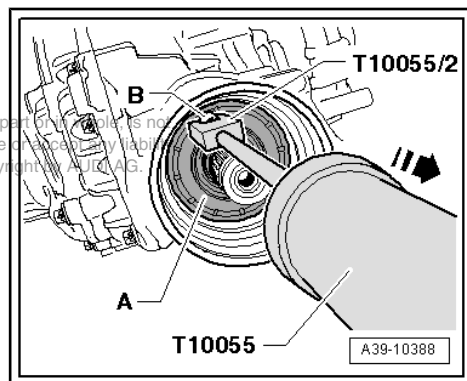
- Then install a bolt -arrow- in this shaft seal opening -A-.



- Remove the flange/driveshaft seal -A- in the direction of the -arrow-.

-B- bolt

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Installing

Install in reverse order of removal. Note the following:

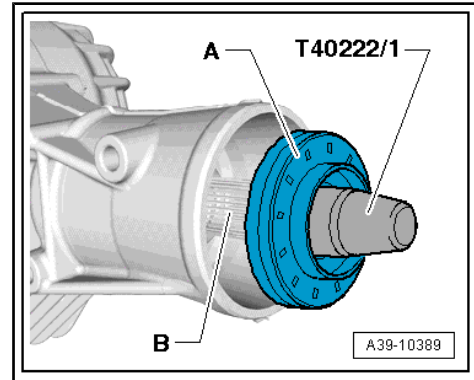
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Place the new shaft seal -A- on the Seal Installer - Input Shaft - Guide Sleeve - T40222/1- .



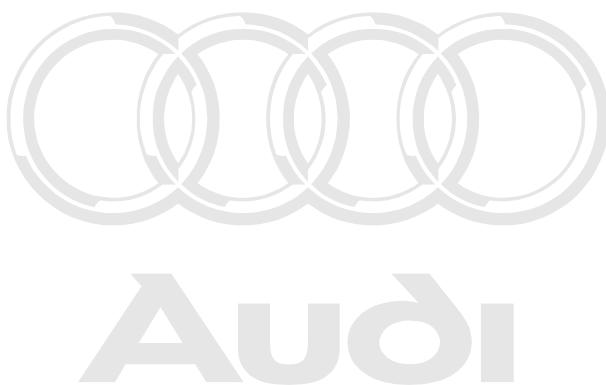
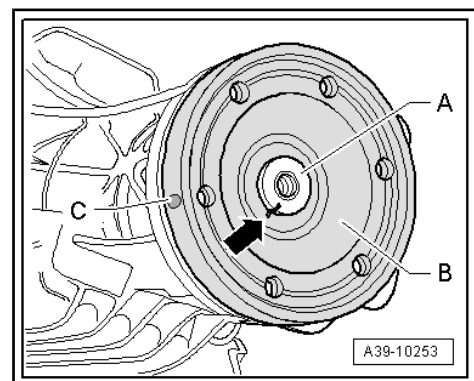
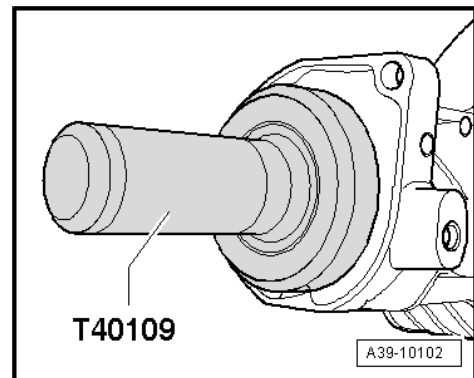
Note

Make sure the shaft seal spring is in its installation position behind the sealing lip.

- Coat outer edge of the seal with gear oil.
- Push the Seal Installer - Input Shaft - Guide Sleeve - T40222/1- and the shaft seal -A- onto the pinion -B-.
- Install the shaft seal -A- all the way in.
- Remove the Seal Installer - Input Shaft - Guide Sleeve - T40222/1- .
- Drive in new shaft seal as far as stop without tilting it.



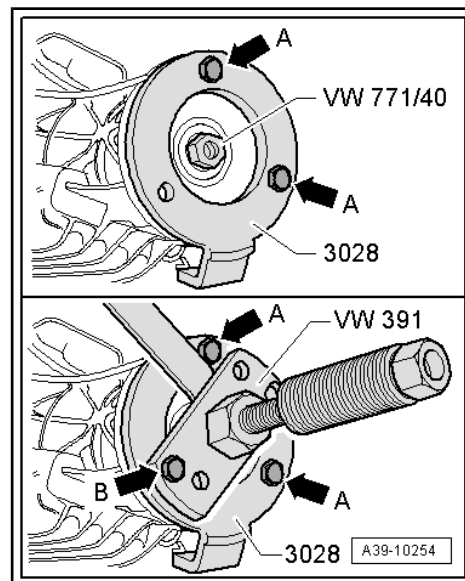
- Position the flange/driveshaft -B- on the pinion -A- so that the marking -arrow- lines up.



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- Install the Slide Hammer Set - Adapter 40 - VW771/40- in the threaded hole on the pinion.
- Secure the Retainer - Drive Flange - 3028- on the flange/driveshaft using the bolts (M8 x 30) -arrows A-
- Secure the Puller - Multiple Use - VW391- with the bolt (M 8 x 45) -arrow B-. Turn the spindle on the Puller - Multiple Use in the Slide Hammer Set - Adapter 40 - VW771/40-
- Counterhold the spindle on the Puller - Multiple Use - VW391- using a socket wrench and pull the flange/driveshaft all the way in.

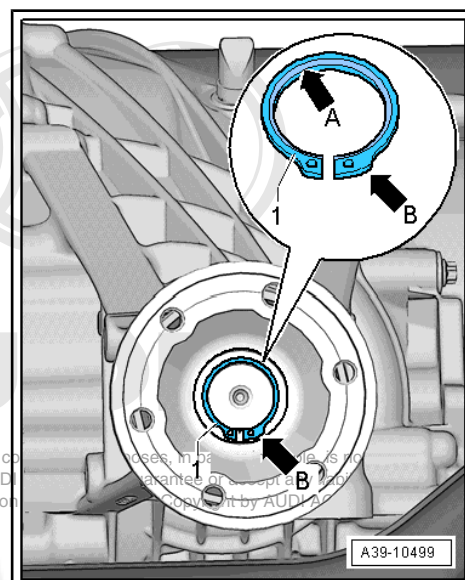


Install the circlip -1- as follows:

- The bevel on the inner diameter of the circlip -arrow A- faces out, toward the driveshaft.
- If present, the wide strap on the circlip -arrow B- must be on the right side, as illustrated.

Note the Following when Replacing the Flange/Driveshaft:

- The locking ring -1- must be determined again.
- For this, determine and insert the thickest locking ring -1- that can still be installed in the groove; for part number see Parts Catalog.



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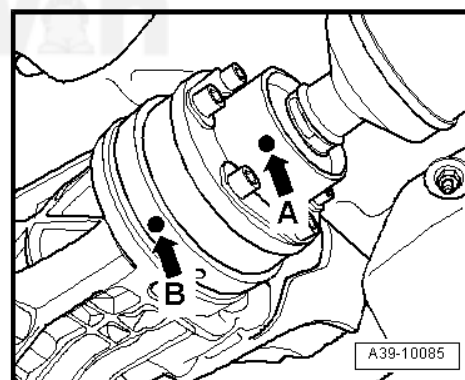
- Install the driveshaft on the rear final drive. Refer to [⇒ page 37](#) .

Audi A4, A5 Coupe/Sportback/Cabrio, Q5, A6, A7

- Attach the driveshaft intermediate bearing to the body free of tension. Tightening specification. Refer to -item 9- [⇒ Item 9 \(page 20\)](#) .
- Install the heat shield and crossmember. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Trim Panel .

Continuation for all Vehicles

- Check the gear oil in rear final drive. Refer to [⇒ "4.2.1 Gear Oil, Checking Level, OBC", page 101](#) .
- Install the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



6.4.2 Input Shaft Seal, Replacing, OBD

Special tools and workshop equipment required

- ◆ Puller - Multiple Use - VW391-



- ◆ Slide Hammer Set - VW771-
- ◆ Slide Hammer Set - Hook - VW771/37-
- ◆ Seal Installer - Driveshaft Flange - T40112-
- ◆ Retainer - Drive Flange - 3028-
- ◆ Seal Installer - Wheel Bearing Seal - 3143-
- ◆ Holding Fixture - Gearbox Adapter - T10235-
- ◆ Friction Gauge - VAS6222-
- ◆ Inductive Heater - VAS6414-
- ◆ Sealing Grease - G 052 128 A1-
- ◆ Locking Fluid - AMV 185 101 A1-
- ◆ Three M8 x 25 bolts
- ◆ Two Bolts M10 x 50 (10.9)
- The flange/driveshaft used before must be installed.
- If the flange/driveshaft is also being replaced, do the following.
Refer to
⇒ ["6.5.2 Flange Shaft Ring, Replacing, 0BD", page 143](#) .

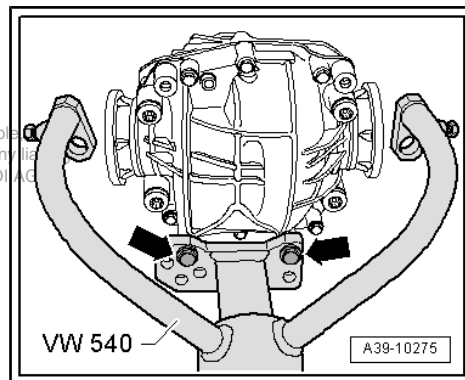
Removing

- The flange/driveshaft seal can be replaced only when the rear final drive is removed.

Pay attention to the general repair information. Refer to
⇒ ["6 Repair Information", page 13](#) .

- Remove the rear final drive. Refer to
⇒ ["2.2 Final Drive, Removing and Installing", page 46](#) .
- Secure the rear final drive to the Holding Fixture - VAS6095A-
using the bolts (M10 x 50) -arrows-.
- Tightening specification: 25 Nm

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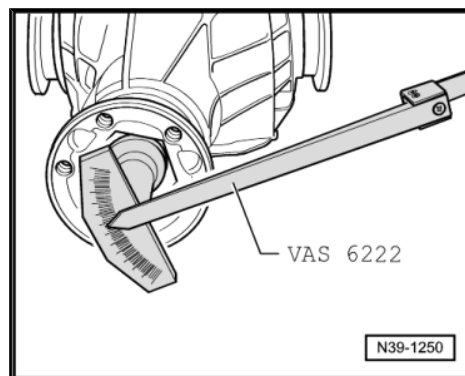


- Measure the friction torque before loosening the pinion nut.
- Write down this value.

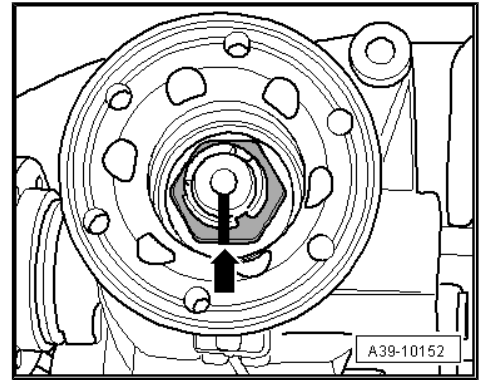


Caution

*If, during the repair, the flange/driveshaft must be replaced, then this measured must be adjusted once again. Refer to
⇒ ["6.5.2 Flange Shaft Ring, Replacing, 0BD", page 143](#) .*

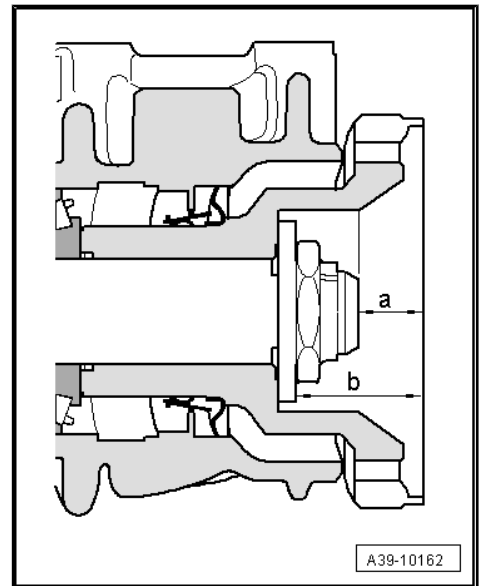


- Mark the position of the drive pinion nut to the drive pinion -arrow-.



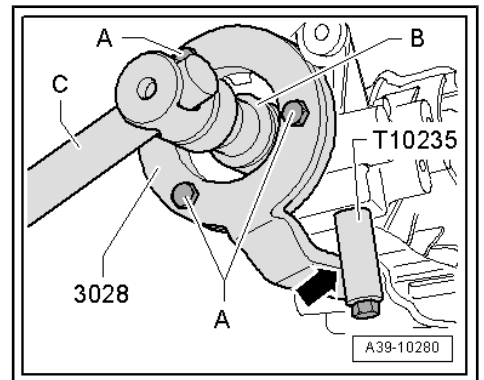
Determining dimension "-a-" and dimension "-b-"

- ◆ Flange distance to the pinion = dimension -a-
- ◆ Distance from the flange to the drive pinion nut = dimension -b-
- Write down the established dimensions.



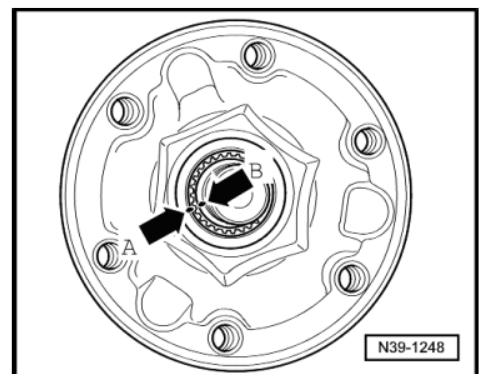
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- Secure the Retainer - Drive Flange - 3028- to the flange/driveshaft with the bolts -A-.
- Secure the Holding Fixture - Gearbox Adapter - T10235- in the threaded hole below the flange/driveshaft.
- Loosen the pinion nut, at the same time the Retainer - Drive Flange - 3028- must be supported on the Holding Fixture - Gearbox Adapter - T10235- -arrow-.
- Count the number of turns when removing the drive pinion nut and write it down.

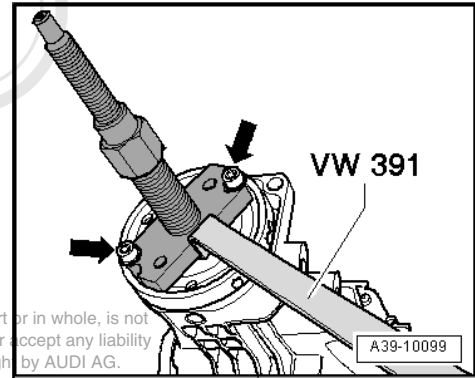


- A - Three M 8 x 25 bolts
- B - 32 mm Socket
- C - Toggle

- Mark the position of the flange/driveshaft -arrow A- to the drive pinion -arrow B-.

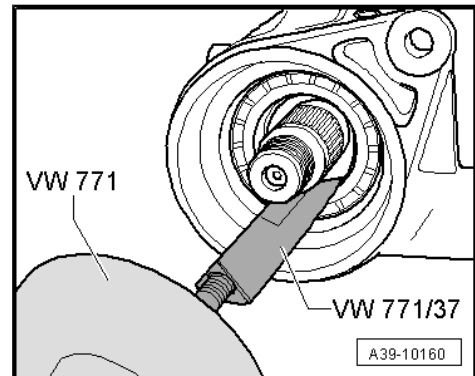


- Place the Drip Tray underneath.
- Secure the Puller - Multiple Use - VW391- using the Two bolts M 8 x 25 -arrows-.
- Remove the flange/driveshaft.



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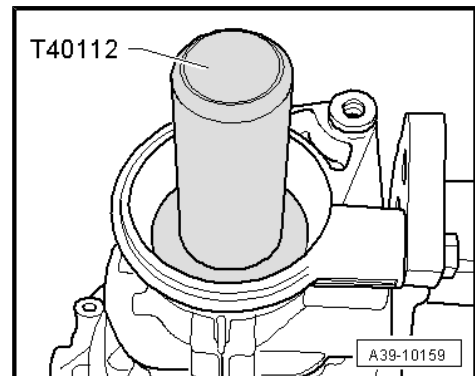
- Remove the shaft seal.
- Clean the threads on the drive pinion.



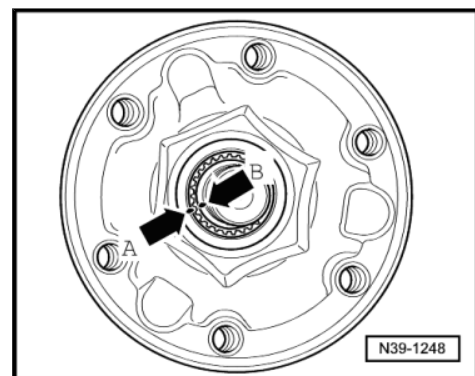
Installing

Install in reverse order of removal. Note the following:

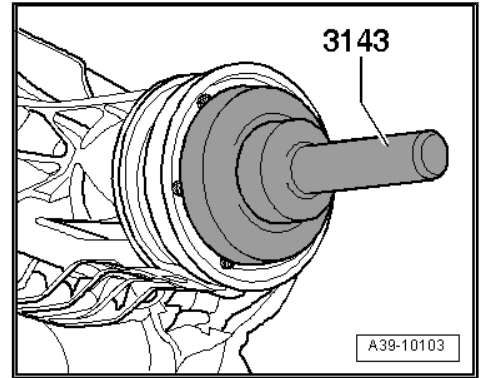
- Coat outer edge of the seal with gear oil.
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in new shaft seal as far as stop without tilting it.



- Warm the flange/driveshaft to approximately 80 °C (176 °F) using an Inductive Heater - VAS6414- .
- Align the markings on the flange/driveshaft -arrow A- and the drive pinion -arrow B-.

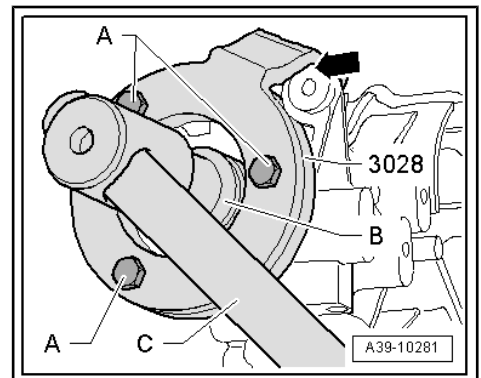


- Install the flange/driveshaft.
- Insert the old pinion nut with Locking Fluid - AMV 185 101 A1- .

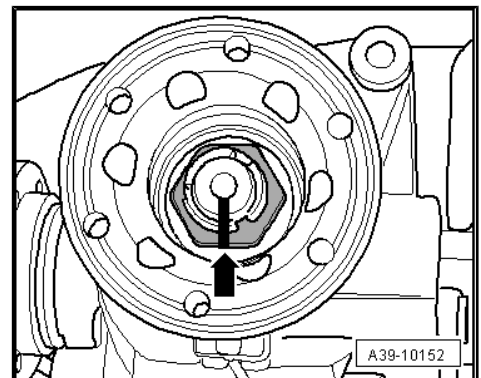


- Secure the Retainer - Drive Flange - 3028- to the flange/driveshaft with the bolts -A-.
- When tightening the pinion nut, the Retainer - Drive Flange - 3028- must be supported on the housing brace -arrow-.

- A - Three M 8 x 25 bolts
- B - 32 mm Socket
- C - Toggle



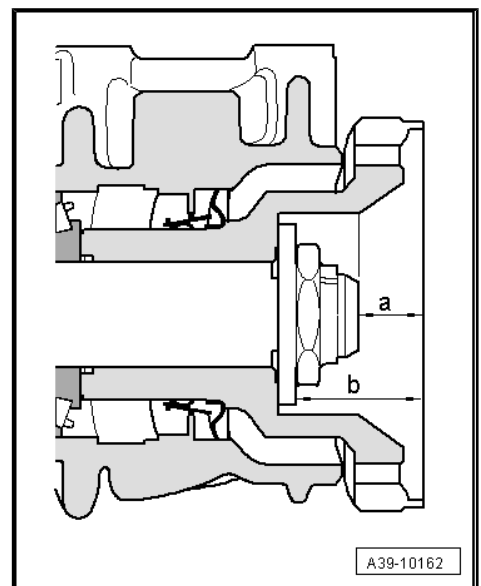
- Install the drive pinion nut using the number of turns noted earlier and tighten to the position marked -arrow-.



Perform the measuring check - check dimension -a- and dimension -b-.

- The measurement may differ by ± 0.2 mm.
- Install the rear final drive. Refer to [⇒ "2.2 Final Drive, Removing and Installing", page 46](#) .
- Check the gear oil in rear final drive. Refer to [⇒ "4.2.2 Gear Oil, Checking Level, 0BD", page 102](#) .

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6.4.3 Input Shaft Seal, Replacing, OBE

Special tools and workshop equipment required

- ◆ Press Piece - Multiple Use - VW431-
- ◆ Puller - Unit Injector - T10055-
- ◆ -2- Puller - Unit Injector - Adapter 2 - T10055/2-
- ◆ Seal Installer - Hollow Shaft - T10380-
- ◆ Seal Installer - Driveshaft - T40247-
- ◆ Seal Installer - Driveshaft - Guide Sleeve - T40247/1-
- ◆ -1- Puller - Kukko 2-Arm - 70-180mm - 20/10-
- ◆ Inductive Heater - VAS6414-
- ◆ or
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- ◆ Commercially Available Hot Plate
- ◆ and
- ◆ Digital Thermometer - VAS6519-
- ◆ Drip Tray
- ◆ Sealing Grease - G 052 128 A1-

Removing

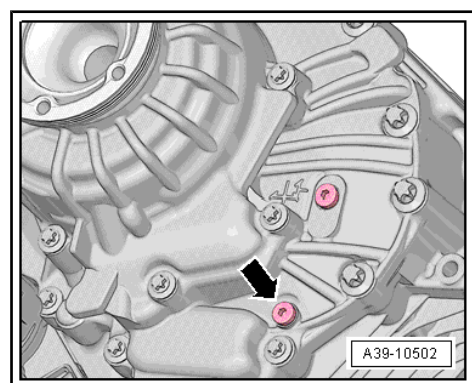
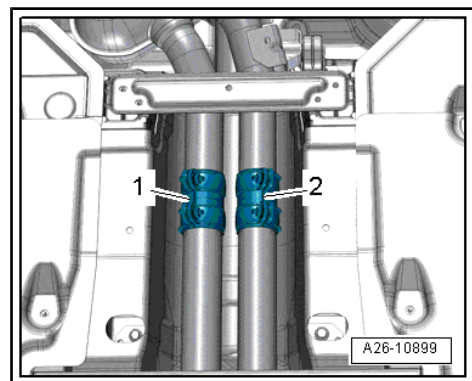
- Rear final drive installed
- Disconnect the exhaust system at the clamping sleeves -1 and 2-
- Remove the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



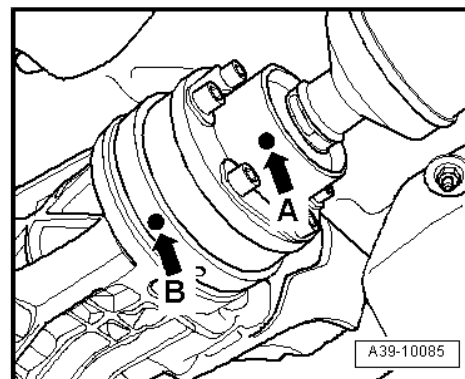
Note

A second technician is needed to help remove the rear section of the exhaust system.

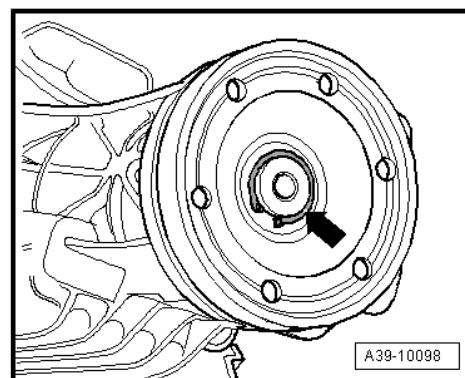
- Open the gear oil drain plug -arrow- and allow approximately 300 ml (10.1 oz) of gear oil to drain out.
- Insert the new drain plug -arrow- and tighten. Tightening Specification. Refer to -item 17- ⇒ [Item 17 \(page 86\)](#) .



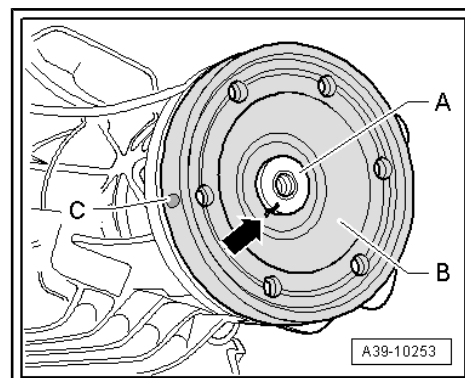
- Remove the driveshaft from the rear final drive. Refer to ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#).
- Guide the driveshaft between the fuel tank and the subframe downward toward the rear and attach it on the side.



- Remove the High Temperature Grease in the flange/driveshaft.
- Remove the circlip -arrow-.



- Mark the position of the flange/driveshaft -B- on the pinion -A- -arrow-.

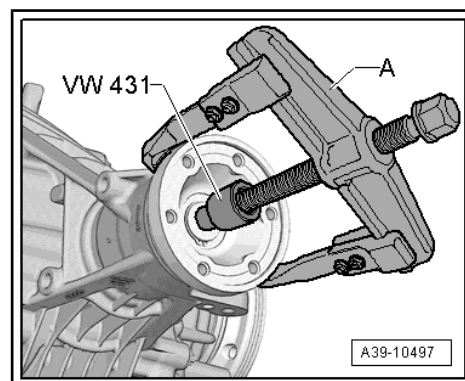


 **Note**

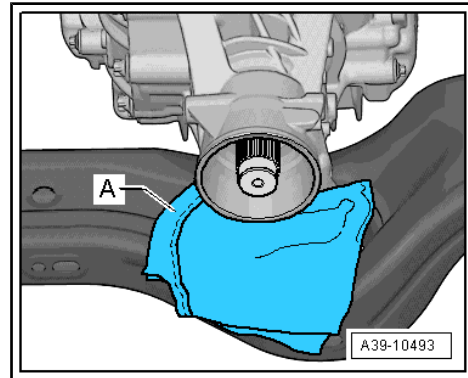
- ◆ *This marking -arrow- is needed so the colored dot -C- on the outer flange remains in its original position.*
- ◆ *This ensures the imbalance in the rear final drive will be as small as possible.*

- Remove the flange/driveshaft.

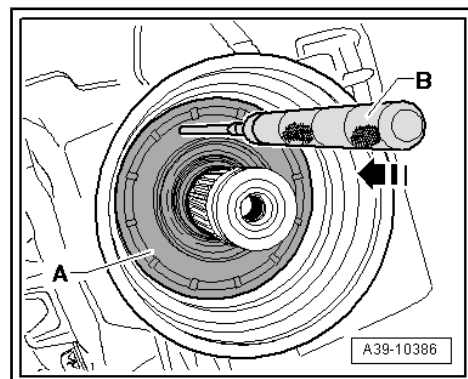
A - For example the Puller - Kukko 2-Arm - 70-180mm - Kukko 20/10-



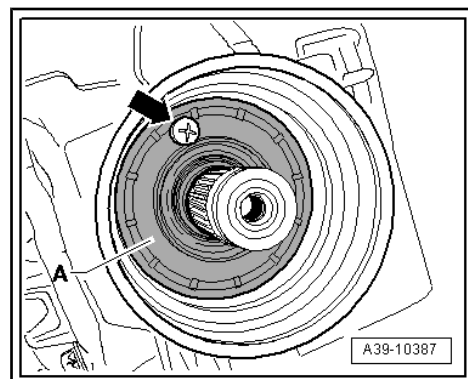
- Lay a super absorbent cloth -A- under the final drive on the subframe.



- Knock through the metal ledge of the shaft seal -A-, for example, with a scriber -B- direction of the -arrow-.

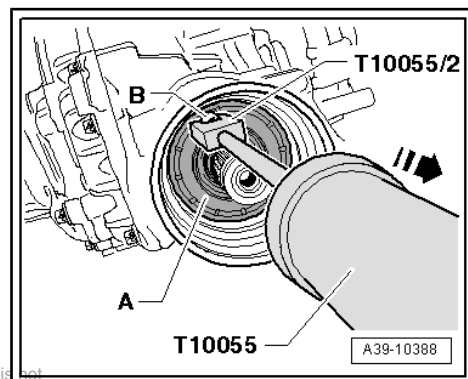


- Then install a bolt -arrow- in this shaft seal opening -A-.



- Remove the flange/driveshaft seal -A- in the direction of the -arrow-.

B - Bolt



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Installing

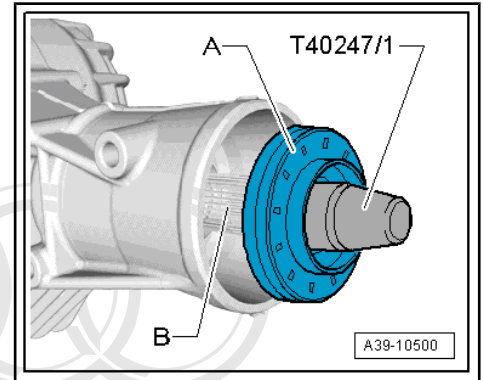
Install in reverse order of removal. Note the following:

- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Coat outer edge of the seal with gear oil.
- Place the new shaft seal -A- on the Seal Installer - Driveshaft - Guide Sleeve - T40247/1- .

Note

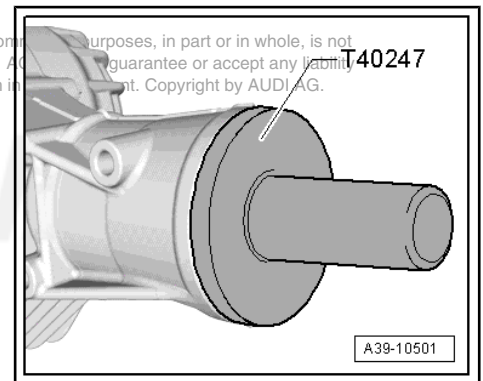
Make sure the shaft seal spring is in its installation position behind the sealing lip.

- Push the Seal Installer - Driveshaft - Guide Sleeve - T40247/1- and the shaft seal -A- onto the pinion -B-.
- Install the shaft seal all the way. **Be careful not to bend it.**




- Push the Seal Installer - Driveshaft - Guide Sleeve - T40247/1- and the shaft seal -A- onto the pinion -B-.
- Install the shaft seal all the way. **Be careful not to bend it.**
- Warm the flange/driveshaft -B- with a Inductive Heater - VAS6414- or a Heating Plate to 115 °C (239 °F).

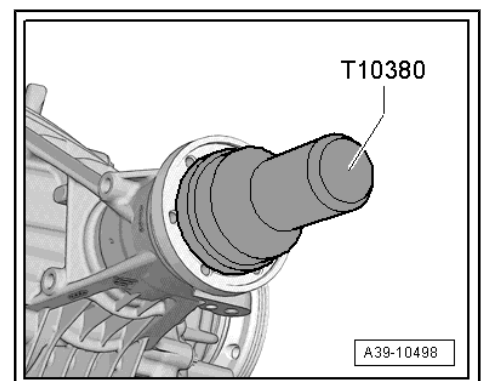
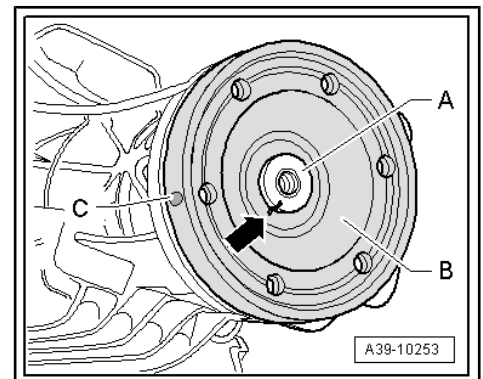
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- Position the flange/driveshaft -B- on the pinion -A- so that the marking -arrow- lines up.
- Install the flange/driveshaft with the Seal Installer - Hollow Shaft - T10380- .

 **WARNING**

- ◆ *Wear safety gloves.*
- ◆ *If using a Heating Plate the temperature must be observed using a Digital Thermometer - VAS6519- .*





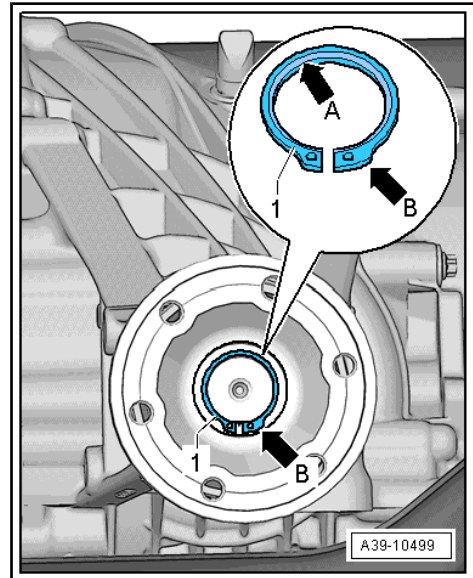
Install the circlip -1- as follows:

- Always replace the circlip -1-.
- The bevel on the inner diameter of the circlip -arrow A- faces out, toward the driveshaft.
- The wide tab on the circlip -arrow B- must be on the right side, as illustrated.
- Measure the thickness of the old circlip -1-.
- Install a new circlip -1- having the same thickness as the old one. Refer to the Parts Catalog.
- Install the new circlip -1-.



Note

- ◆ *A new circlip -arrow- must be selected when replacing the flange/driveshaft.*
- ◆ *For this, determine and insert the thickest circlip -arrow- that can still be installed in the groove. Refer to the Parts Catalog for the part number.*
- Fill the gear oil in the rear final drive 0BE. Refer to ⇒ ["4.3.2 Gear Oil, Filling, 0BE"](#), page 105 .
- Install the driveshaft on the rear final drive. Refer to ⇒ [page 37](#) .
- Install the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



6.4.4 Input Shaft Seal, Replacing, 0BF

Special tools and workshop equipment required

- ◆ Puller - Multiple Use - VW391
- ◆ Puller - Unit Injector - T10055-
- ◆ -2- Puller - Unit Injector - Adapter 2 - T10055/2-
- ◆ Two M 8 x 30 Bolts
- ◆ Seal Installer - Hollow Shaft - T10380-
- ◆ Seal Installer - Input Shaft - T40222-
- ◆ Seal Installer - Input Shaft - Guide Sleeve - T40222/1-
- ◆ Sealing Grease - G 052 128 A1-
- ◆ Inductive Heater - VAS6414-
- ◆ or
- ◆ Commercially Available Hot Plate
- ◆ and
- ◆ Digital Thermometer - VAS6519-

Removing

- Rear final drive installed
- Pay attention to the general repair information. Refer to ⇒ ["6 Repair Information", page 13](#) .
- Disconnect the exhaust system at the clamping sleeves -1 and 2-.
- Remove the rear section of the exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

Note

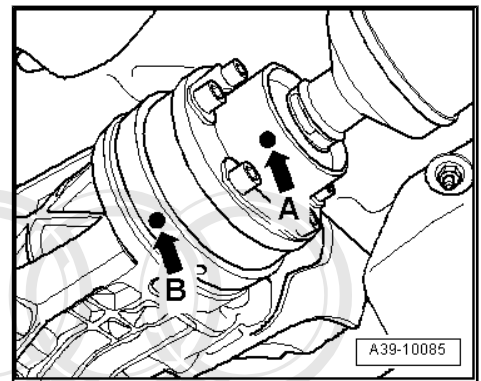
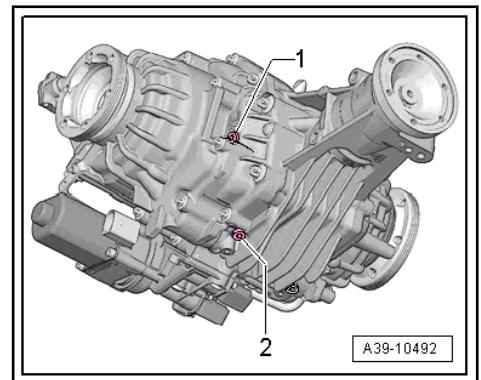
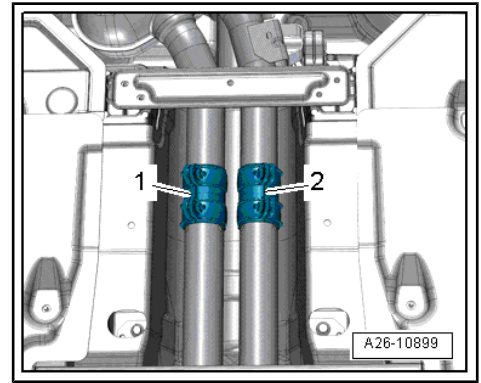
A second technician is needed to help remove the rear section of the exhaust system.

- Open the gear oil drain plug -2- and allow approximately 300 ml of gear oil to drain out.
- Insert the new drain plug -2- and tighten. Tightening Specification. Refer to -item 17- ⇒ [Item 17 \(page 86\)](#) .

- Remove the driveshaft from the rear final drive. Refer to ⇒ ["1.3 Drive Shaft, Removing and Installing from Rear Final Drive", page 35](#) .

Audi A8

- Guide the driveshaft between the fuel tank and the subframe downward toward the rear and attach it on the side.



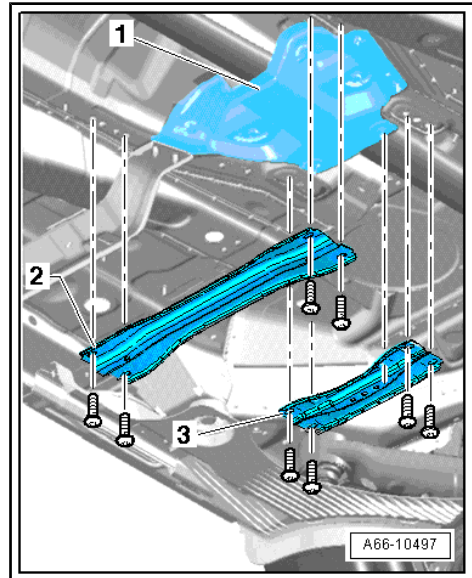
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erWin



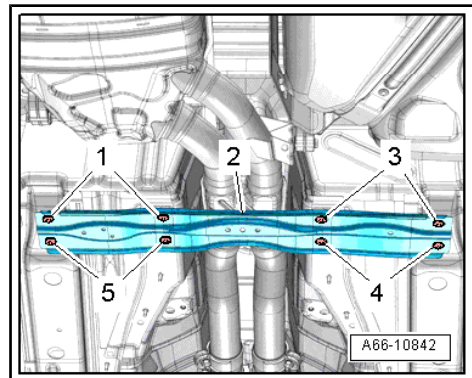
Audi A4, A5 Coupe/Sportback/Cabrio

- Remove the front crossmember -2-.
- Remove the rear crossmember -3- and the heat shield -1-.



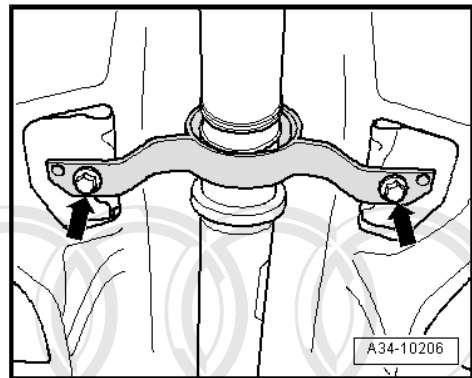
Audi A6 and A7

- Remove the crossmember -2-. Refer to => Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Trim Panel .



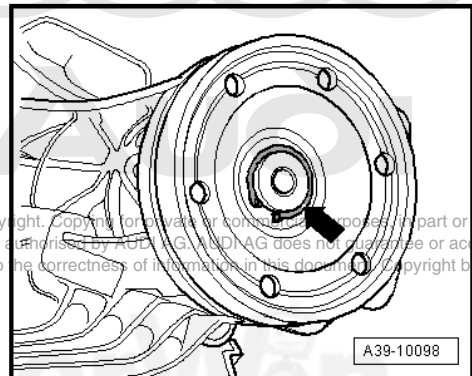
Audi A4, A5 Coupe/Sportback/Cabrio, A6, A7

- Remove the bolts -arrows- for the driveshaft intermediate bearing.
- Lower the driveshaft at the intermediate bearing.
- Guide the driveshaft between the fuel tank and the subframe downward and toward the rear while doing this.
- Install the intermediate bearing bolts -arrows- by hand.
- Tie the driveshaft to the side.



Continuation for all Vehicles

- Remove the High Temperature Grease in the flange/drive-shaft.
- Remove the circlip -arrow-.



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- Mark the position of the flange/driveshaft -B- on the pinion -A- -arrow-.

 **Note**

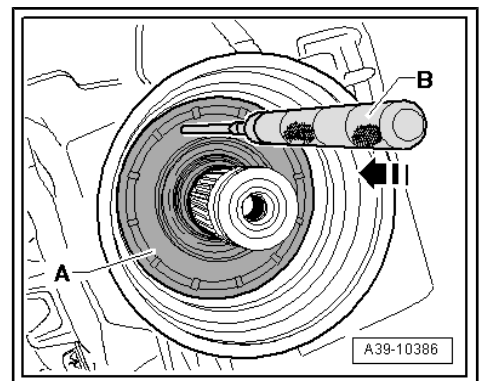
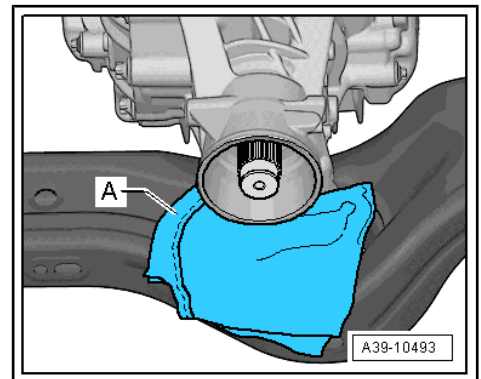
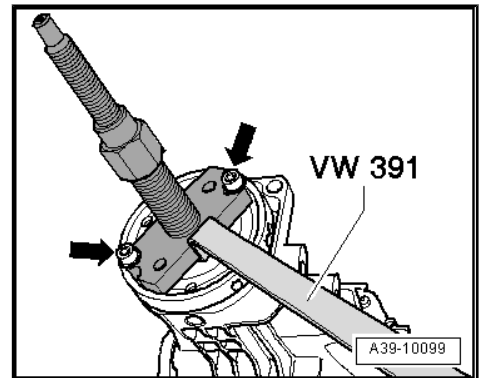
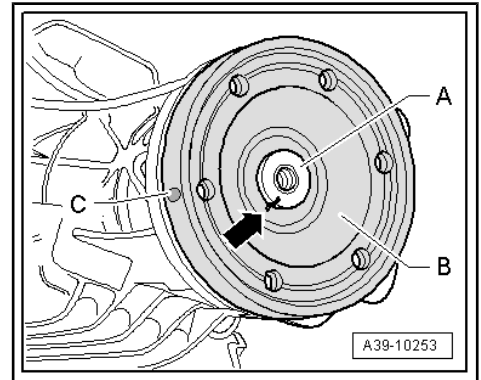
- ◆ *This marking -arrow- is needed so the colored dot -C- on the outer flange remains in its original position.*
- ◆ *This ensures the imbalance in the rear final drive will be as small as possible.*

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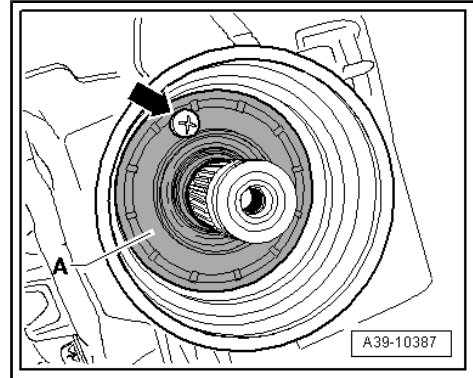
- Install the Two M8 x 33 bolts -arrow- in the flange.
- Remove the flange/driveshaft with the Puller - Multiple Use - VW391- .

- Lay a super absorbent cloth -A- under the final drive on the subframe.

- Knock through the metal ledge of the shaft seal -A-, for example, with a scriber -B- direction of the -arrow-.

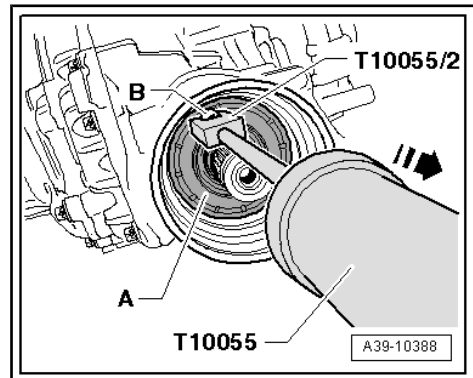


– Then install a bolt -arrow- in this shaft seal opening -A-.



– Remove the flange/driveshaft seal -A- in the direction of the -arrow-.

-B- bolt



Installing

Install in reverse order of removal. Note the following:

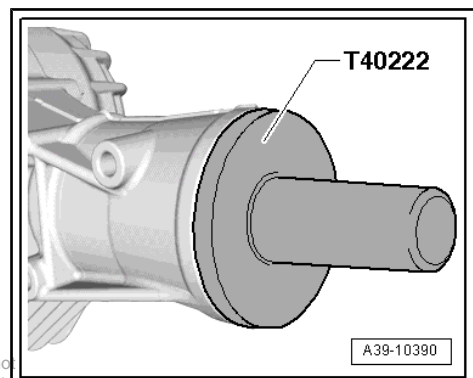
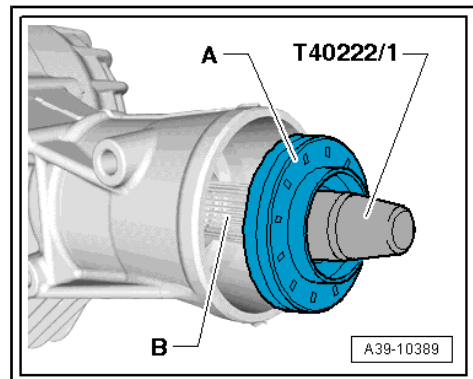
- Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
- Place the new shaft seal -A- on the Seal Installer - Input Shaft - Guide Sleeve - T40222/1- .



Note

Make sure the shaft seal spring is in its installation position behind the sealing lip.

- Coat outer edge of the seal with gear oil.
- Push the Seal Installer - Input Shaft - Guide Sleeve - T40222/1- and the shaft seal -A- onto the pinion -B-.
- Install the shaft seal all the way. Be careful not to bend it.



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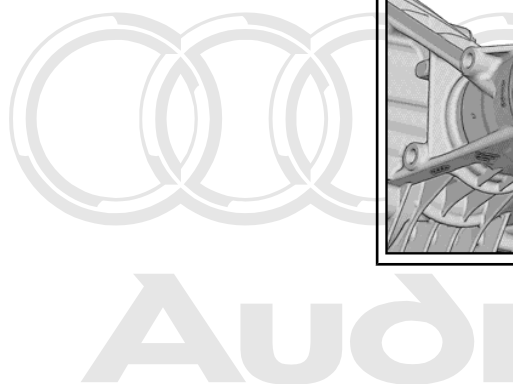
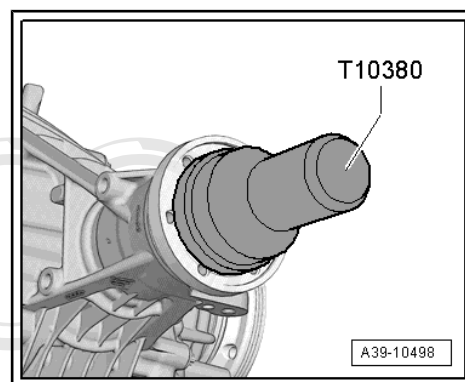
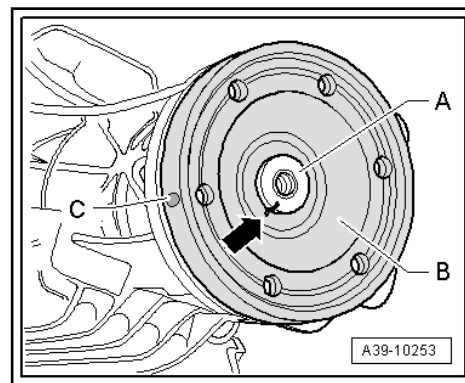
- Warm the flange/driveshaft -B- with a Inductive Heater - VAS6414- or a Heating Plate to 115 °C.



WARNING

- ◆ *Wear safety gloves.*
- ◆ *If using a Heating Plate the temperature must be observed using a Digital Thermometer - VAS6519- .*

- Position the flange/driveshaft -B- on the pinion -A- so that the marking -arrow- lines up.
- Install the flange/driveshaft with the Seal Installer - Hollow Shaft - T10380- .



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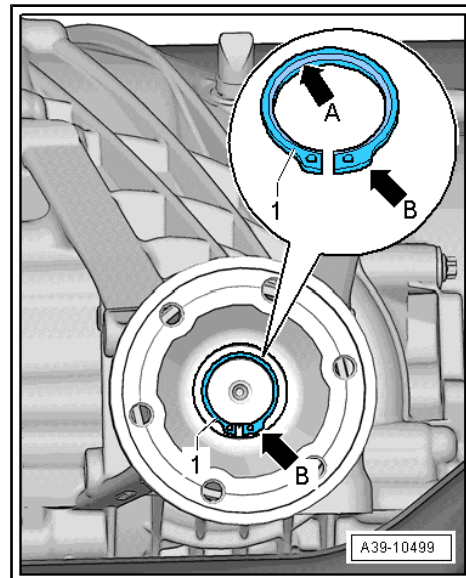
Install the circlip -1- as follows:

- Always replace the circlip -1-.
- The bevel on the inner diameter of the circlip -arrow A- faces out, toward the driveshaft.
- The wide tab on the circlip -arrow B- must be on the right side, as illustrated.
- Measure the thickness of the old circlip -1-.
- Install a new circlip -1- having the same thickness as the old one. Refer to the Parts Catalog.
- Install the new circlip -1-.



Note

- ◆ A new circlip -arrow- must be selected when replacing the flange/driveshaft.
- ◆ For this, determine and insert the thickest circlip -arrow- that can still be installed in the groove. Refer to the Parts Catalog for the part number.
- Fill the rear final drive gear oil 0BF. Refer to [⇒ "4.3.3 Gear Oil, Filling, 0BF", page 107](#) .
- Install the driveshaft on the rear final drive. Refer to [⇒ page 37](#) .



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- Attach the driveshaft intermediate bearing to the body free of tension. Tightening specification. Refer to -item 9- [⇒ Item 9 \(page 20\)](#) .
- Install the heat shield and crossmember. Refer to [⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Trim Panel](#) .

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Continuation for all Vehicles

- Install the rear section of the exhaust system. Refer to [⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler](#) .

6.5 Flange Shaft Protective Ring, Replacing

[⇒ "6.5.1 Flange Shaft Ring, Replacing, 0BC", page 142](#)

[⇒ "6.5.2 Flange Shaft Ring, Replacing, 0BD", page 143](#)

[⇒ "6.5.3 Flange Shaft Ring, Replacing, 0BE, 0BF", page 144](#)

6.5.1 Flange Shaft Ring, Replacing, 0BC

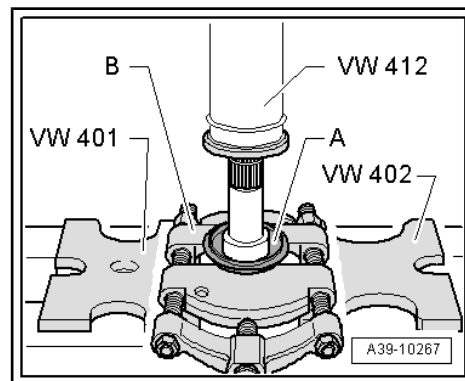
Special tools and workshop equipment required

- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Multiple Use - VW412-
- ◆ Press Piece - Lower Ball Joint - 3146-
- ◆ -3- Separating Tool - 22-115mm , for example Puller - Kukko Quick Action Separating Tool - 22-115mm - Kukko 17/2-
- The ring can only be replaced with the final drive and the flange shaft removed.

- The rear final drive is removed. Refer to
 ⇒ ["2.2 Final Drive, Removing and Installing", page 46](#) .
- Flange shaft removed. Refer to
 ⇒ ["6.2.1 Left Seal, Replacing, OBC", page 116](#) .

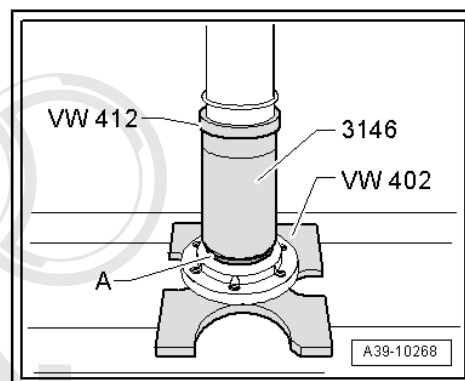
Removing the protective ring -A- from the flange shaft

B - Puller - Quick Action Separating Tool - 22-115mm , for example -Kukko 17/2-



Installing the ring -A- on the flange shaft

- Ring installed position -A-: the larger outer diameter faces the flange.



6.5.2 Flange Shaft Ring, Replacing, OBD

Special tools and workshop equipment required

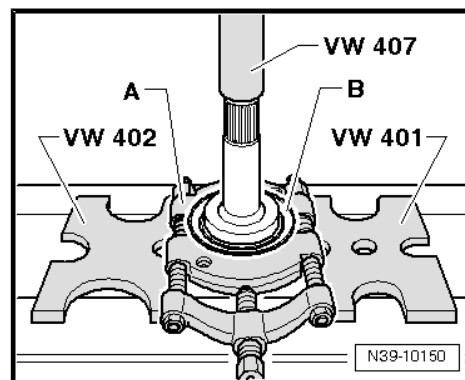
- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW407-
- ◆ Circlip Sleeve - 32-119-
- ◆ Bearing Installer - Multiple Use - 3062-
- ◆ Separating Tool - 22-115mm , such as Puller - Kukko Quick Action Separating Tool - 22-115mm - 17/2-

- The ring can only be replaced with the final drive and the flange shaft removed.

- The rear final drive is removed. Refer to
 ⇒ ["2.2 Final Drive, Removing and Installing", page 46](#) .
- Flange shaft removed. Refer to
 ⇒ ["6.2.2 Left Seal, Replacing, OBD", page 118](#) .

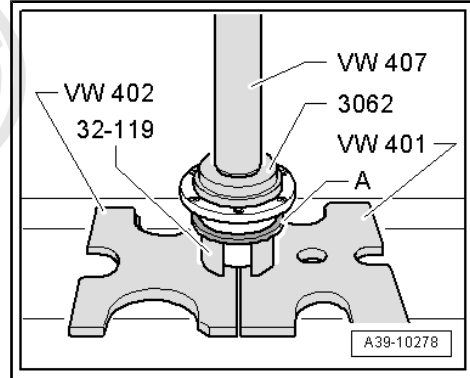
Remove the ring -B- from the flange shaft.

A - Separating Tool - 22-115mm , such as Puller - Kukko Quick Action Separating Tool - 22-115mm - Kukko 17/2-



Installing the ring -A- on the flange shaft

- Protective ring -A- installation position: the protective ring notch points to the Circlip Sleeve - 32-119- .



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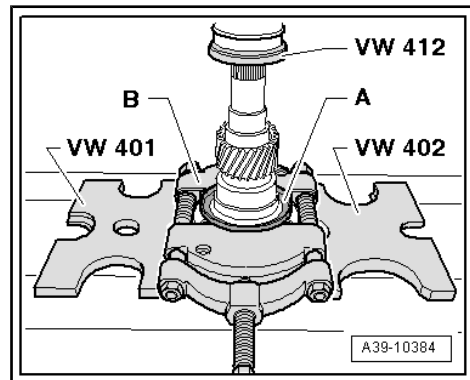
6.5.3 Flange Shaft Ring, Replacing, OBE, OBF

Special tools and workshop equipment required

- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Multiple Use - VW412-
- ◆ Bearing Installer - Differential Bearing - 40-21-
- ◆ Seal Installer - Flywheel Oil Seal Kit - Press Sleeve - 2003/1-
from the Seal Installer - Flywheel Oil Seal Kit - 2003-
- ◆ Bearing Installer - Wheel Bearing - 3345-
- ◆ Separating Tool - 22-115mm , such as Puller - Kukko Quick
Action Separating Tool - 22-115mm - 17/2-
- The ring can only be replaced with the final drive and the flange shaft removed.
- The rear final drive is removed. Refer to
⇒ ["2.2 Final Drive, Removing and Installing", page 46](#) .
- Flange shaft removed. Refer to
⇒ ["6.2.3 Left Seal, Replacing, OBE, OBF", page 120](#) .

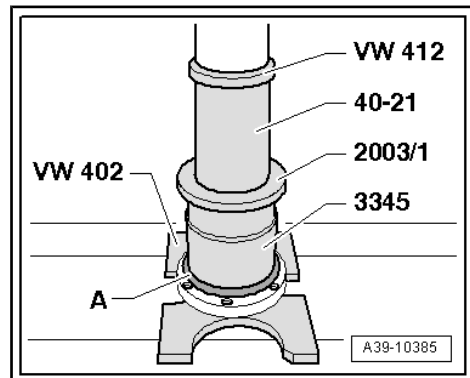
Removing the protective ring -A- from the flange shaft

B - Separating Tool - 22-115mm , such as Puller - Kukko Quick
Action Separating Tool - 22-115mm - Kukko 17/2-



Carefully press the ring -A- onto the flange shaft.

- Protective ring installation location -A-: The larger outer diameter on the protective ring faces the Bearing Installer - Wheel Bearing - 3345- .





6.6 Flange Input Shaft Ring, Replacing

⇒ [“6.6.1 Flange Input Shaft Ring, Replacing, OBC”, page 145](#)

⇒ [“6.6.2 Flange Input Shaft Ring, Replacing, OBD”, page 146](#)

⇒ [“6.6.3 Flange Input Shaft Ring, Replacing, OBE, OBF”, page 146](#)

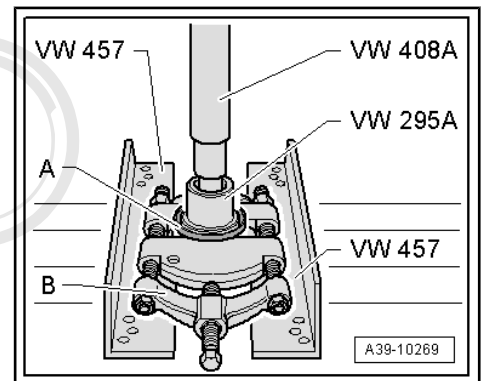
6.6.1 Flange Input Shaft Ring, Replacing, OBC

Special tools and workshop equipment required

- ◆ Bearing/Bushing Installer - Multiple Use - VW295A-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Support Channels - VW457-
- ◆ -3- Separating device 12 to 75 mm , for example Puller - Kukko Quick Action Separating Tool - 12-75mm - 17/1-
- The ring can only be replaced with the input shaft removed.
- Input shaft removed. Refer to
⇒ [“6.4.1 Input Shaft Seal, Replacing, OBC”, page 122](#) .

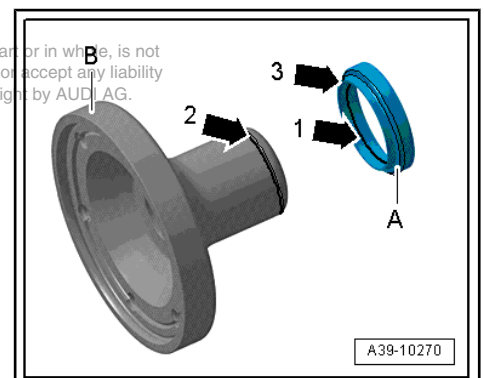
Remove the Ring -A- from the Flange/Driveshaft

B - Puller , for example, Puller - Kukko Quick Action Separating Tool - 12-75mm - Kukko 17/1-



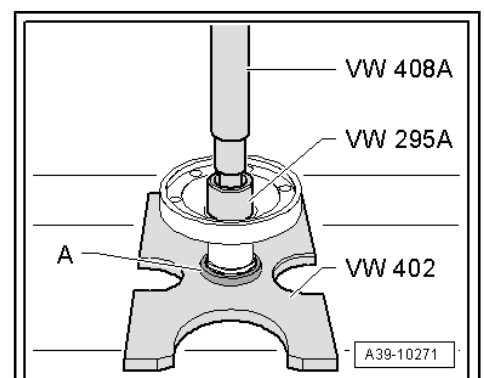
Installation Location of the Protective Ring -A- on the Flange/ Driveshaft

- The ridge -arrow 1- on the protective ring -A- must fit into the groove -arrow 2- on the flange -B-. The smaller outer circumference -arrow 3- faces the flange.



Install the Protective Ring -A- onto the Flange/Driveshaft.

- The protective ring -A- must fit into the groove all around the flange. Refer to
⇒ [Fig. “Installation Location of the Protective Ring -A- on the Flange/Driveshaft”, page 145](#) .





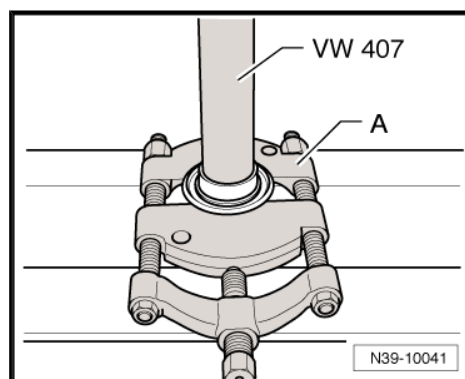
6.6.2 Flange Input Shaft Ring, Replacing, 0BD

Special tools and workshop equipment required

- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW407-
- ◆ Press Piece - Multiple Use - VW412-
- ◆ Bearing Installer - Multiple Use - 40-20-
- ◆ Separating tool 22 to 75 mm , such as -17/1-
- The ring can only be replaced with the input shaft removed.
- Input shaft removed. Refer to [⇒ "6.4.2 Input Shaft Seal, Replacing, 0BD", page 127](#) .

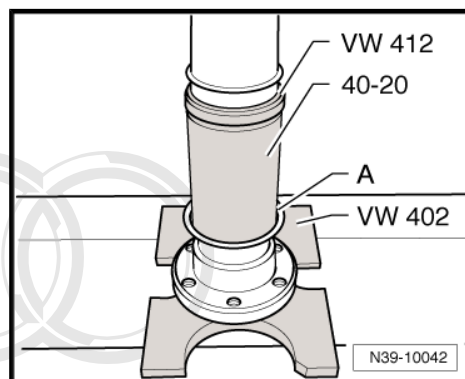
Press the Protective Ring off the Flange/Driveshaft

A - Separating Tool - 22-115mm , such as Puller - Kukko Quick Action Separating Tool - 22-115mm - 17/2-



Install the Protective Ring -A- onto the Flange/Driveshaft

- Protective ring -A- installation position: the protective ring notch points upward to the Bearing Installer - Multiple Use - 40-20- .



6.6.3 Flange Input Shaft Ring, Replacing, 0BE, 0BF

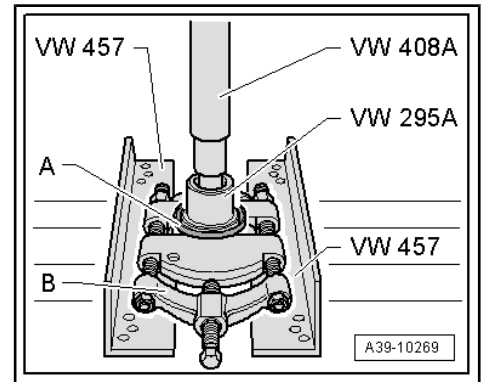
Special tools and workshop equipment required

- ◆ Bearing/Bushing Installer - Multiple Use - VW295A- for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Support Channels - VW457-
- ◆ -3- Separating tool 22 to 75 mm , such as Puller - Kukko Quick Action Separating Tool - 12-75mm - 17/1-
- The ring can only be replaced with the input shaft removed.

- Input shaft removed. OBE (refer to ["6.4.3 Input Shaft Seal, Replacing, OBE", page 132](#) .) or OBF (refer to ["6.4.4 Input Shaft Seal, Replacing, OBF", page 136](#) .)

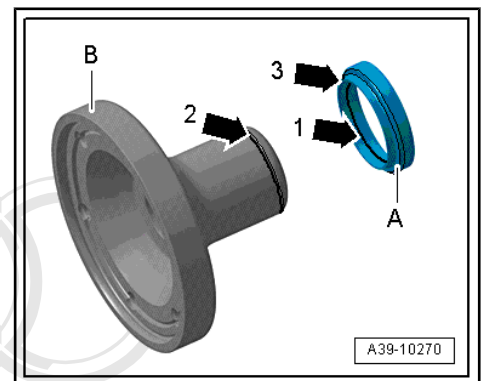
Remove the Ring -A- from the Flange/Driveshaft

B - Separating Tool - 12-75mm , such as Puller - Kukko Quick Action Separating Tool - 12-75mm - 17/1-



Installation Location of the Protective Ring -A- on the Flange/ Driveshaft

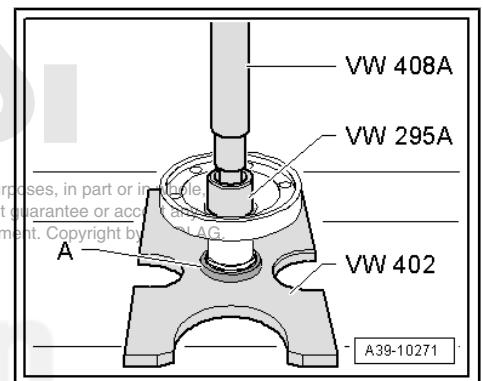
- The ridge -arrow 1- on the protective ring -A- must fit into the groove -arrow 2- on the flange -B-. The smaller outer circumference -arrow 3- faces the flange.



Install the Protective Ring -A- onto the Flange/Driveshaft

- The protective ring -A- must fit into the groove all around the flange. Refer to [Fig. "Installation Location of the Protective Ring -A- on the Flange/Driveshaft", page 147](#) .

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7 Flange/Driveshaft, Replacing, 0BD

Special tools and workshop equipment required

- ◆ Puller - Multiple Use - VW391-
- ◆ Slide Hammer Set - VW771-
- ◆ Slide Hammer Set - Hook - VW771/37-
- ◆ Seal Installer - Propshaft Flange - T40112-
- ◆ Retainer - Drive Flange - 3028-
- ◆ Seal Installer - Wheel Bearing Seal - 3143-
- ◆ Holding Fixture - Gearbox Adapter - T10235-
- ◆ Friction Gauge - VAS6222-
- ◆ Inductive Heater - VAS6414-
- ◆ Sealing Grease - G 052 128 A1-
- ◆ Locking Fluid - AMV 185 101 A1-
- ◆ Three M8 x 25 bolts
- ◆ Two Bolts M10 x 50 (10.9)
- (The rear final drive is removed.)

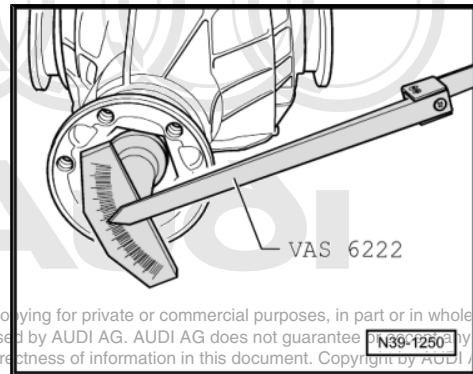
Pay attention to the general repair information. Refer to
⇒ ["6 Repair Information", page 13](#) .

- Remove the rear final drive. Refer to
⇒ ["2.2 Final Drive, Removing and Installing", page 46](#) .
- Secure the rear final drive to the -VAS6095A- using the bolts (M10 x 50).
- Tightening specification: 25 Nm
- Measure the friction torque before loosening the pinion nut.
- Write down this value.



Caution

After the seal is replaced, friction torque must be restored to this measured value.

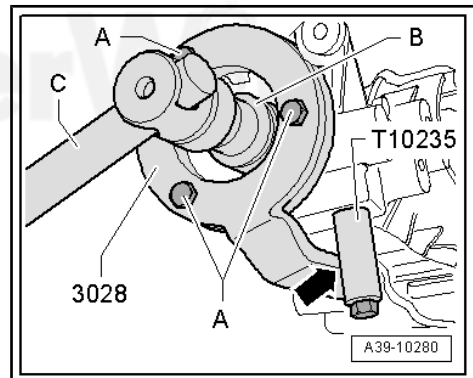


- Secure the Retainer - Drive Flange - 3028- to the flange/driveshaft with the bolts -A-.
- Secure the Holding Fixture - Gearbox Adapter - T10235- in the threaded hole below the flange/driveshaft.
- Loosen the pinion nut, at the same time the Retainer - Drive Flange - 3028- must be supported on the Holding Fixture - Gearbox Adapter - T10235- -arrow-.

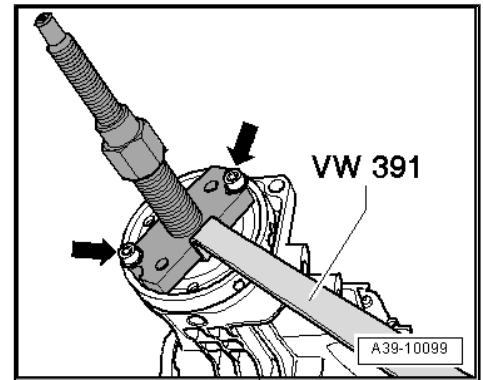
-A - Three M 8 x 25 bolts

-B - 32 mm Socket

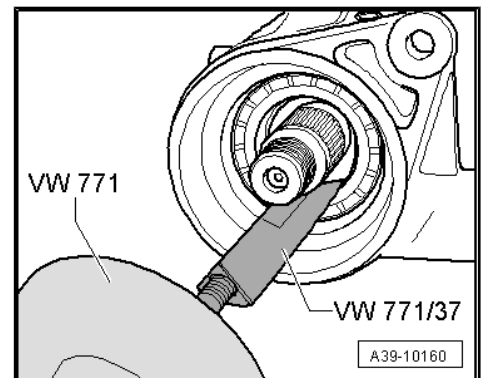
-C - Toggle



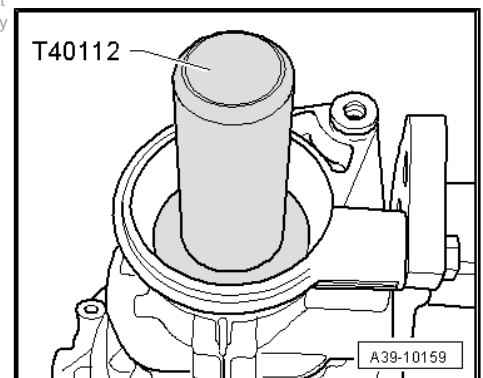
- Secure the Puller - Multiple Use - VW391- using the Two bolts M 8 x 25 -arrows-.
- Remove the flange/driveshaft.



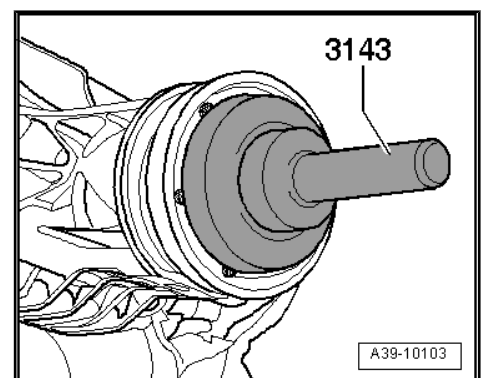
- Remove the shaft seal.
- Clean the threads on the drive pinion.



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- Coat **outer edge of the seal with gear oil**.
 - Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .
 - Drive in new shaft seal as far as stop without tilting it.



- Warm the flange/driveshaft to approximately 80 °C (176 °F) using an Inductive Heater - VAS6414- .
- Install the new flange/driveshaft.
- Coat the threads on the new nut with Locking Fluid - AMV 185 101 A1- .



- Secure the Retainer - Drive Flange - 3028- to the flange/driv-
eshaft with the bolts -A-.
- When tightening the pinion nut, the Retainer - Drive Flange -
3028- must be supported on the housing brace -arrow-.

-A - Three M 8 x 25 bolts

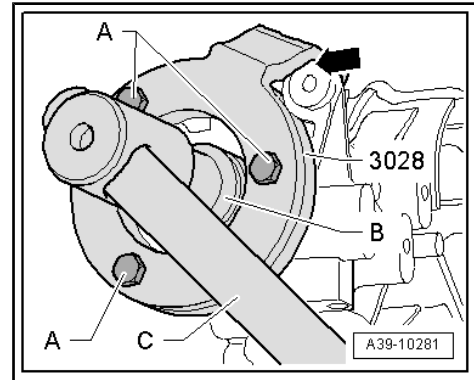
-B - 32 mm Socket

-C - Toggle

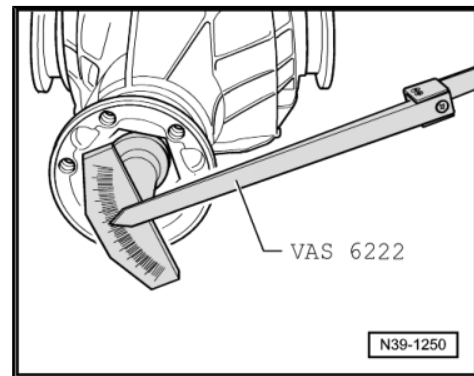


Caution

Increase the torque slowly and read the friction torque several times. The friction torque must not exceed the value that was measured before the removal, otherwise the rear final drive must be replaced.



- Tighten the new drive pinion nut just enough until the meas-
ured friction torque is reached before removing.
- Install the rear final drive. Refer to
⇒ [“2.2 Final Drive, Removing and Installing”, page 46](#) .
- Check the gear oil in rear final drive. Refer to
⇒ [“4.2.2 Gear Oil, Checking Level, 0BD”, page 102](#) .



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8 Transmission Control

⇒ [“8.1 Component Location Overview - Transmission Control”, page 151](#)

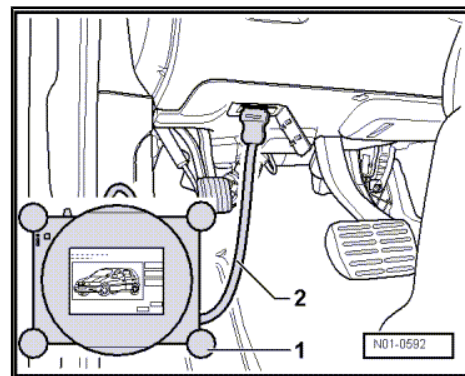
⇒ [“8.2 All Wheel Drive Control Module J492 , Removing and Installing”, page 153](#)

⇒ [“8.3 All Wheel Drive Control Module J492 , Additional Work after Replacing”, page 154](#)

8.1 Component Location Overview - Transmission Control

Diagnostic Connection

Installed location: the diagnostic connection for the Vehicle Diagnostic Tester in inside the footwell on the driver side.

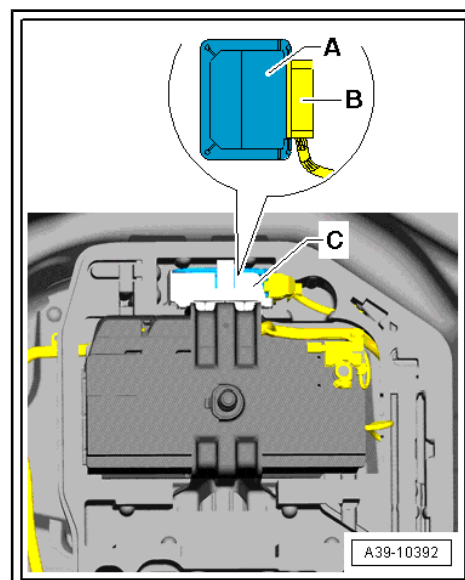


All Wheel Drive Control Module - J492- in the A4 Sedan, A5 Coupe and the A5 Cabriolet

Component location: The All Wheel Drive Control Module - J492-A- is located in the spare wheel well in front of the battery.

Refer to

⇒ [“8.2 All Wheel Drive Control Module J492 , Removing and Installing”, page 153](#)

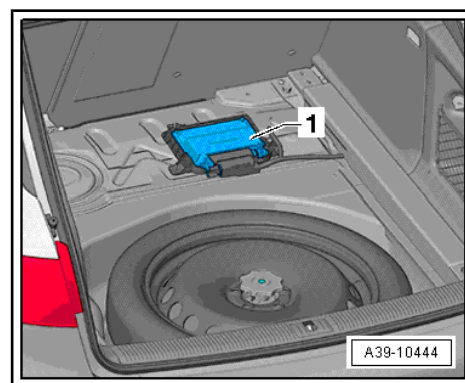


All Wheel Drive Control Module - J492- in the A4 Avant

Component location: The All Wheel Drive Control Module - J492-1- is in the luggage compartment on the right in front of the spare wheel well.

Refer to

⇒ [“8.2 All Wheel Drive Control Module J492 , Removing and Installing”, page 153](#)



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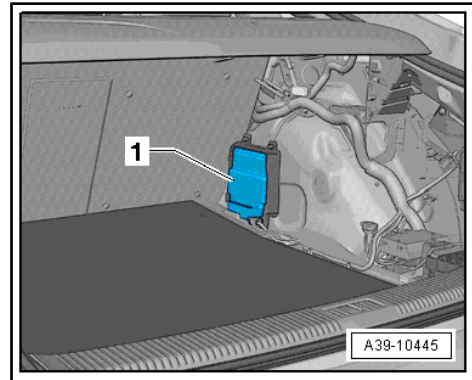


All Wheel Drive Control Module - J492- in the A5 Sportback

Installed location: The All Wheel Drive Control Module - J492-
-1- is in the rear right wheel housing under the luggage compart-
ment side trim. Refer to => Body Interior; Rep. Gr. 70 ; Luggage
Compartment Trim .

Refer to

=> ["8.2 All Wheel Drive Control Module J492 , Removing and In-
stalling", page 153](#)

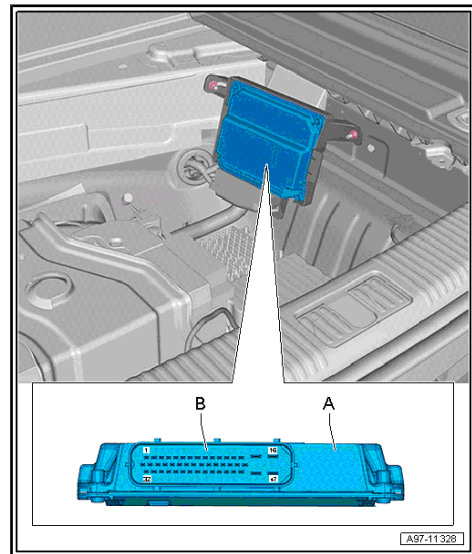


All Wheel Drive Control Module - J492- in the Audi A6/A7

Component location: The All Wheel Drive Control Module - J492-
-A- is located on the right in the spare wheel well.

Refer to

=> ["8.2 All Wheel Drive Control Module J492 , Removing and In-
stalling", page 153](#)

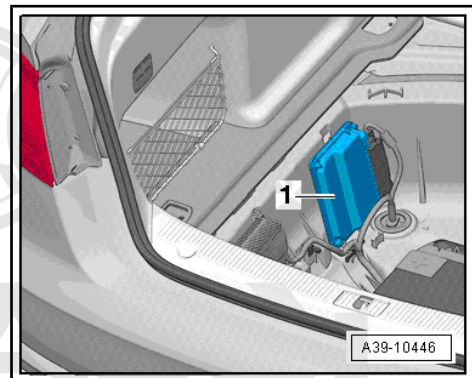


All Wheel Drive Control Module - J492- in the A8

Component location: The All Wheel Drive Control Module - J492-
-1- is located on the left in the spare wheel well.

Refer to

=> ["8.2 All Wheel Drive Control Module J492 , Removing and In-
stalling", page 153](#)



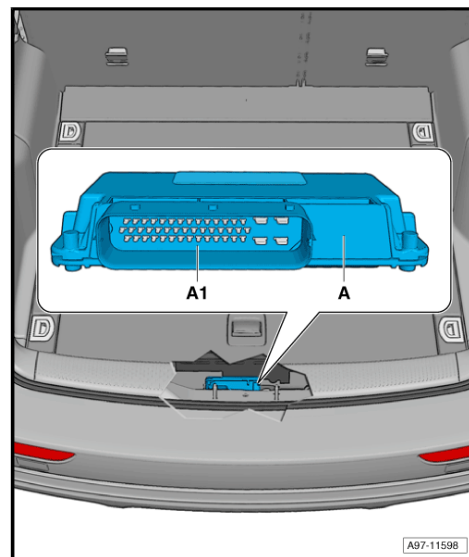
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All Wheel Drive Control Module - J492- in the Q5

Refer to

⇒ [“8.2 All Wheel Drive Control Module J492 , Removing and Installing”](#), page 153

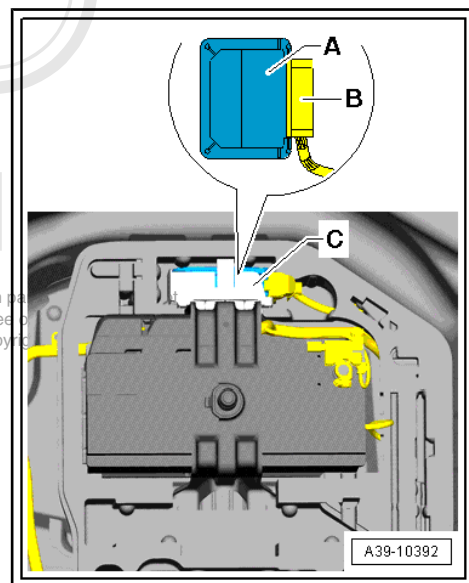


8.2 All Wheel Drive Control Module - J492- , Removing and Installing



Note

- ◆ *All Wheel Drive Control Module - J492- component location. Refer to ⇒ [“8.1 Component Location Overview - Transmission Control”](#), page 151 .*
- ◆ *Removing and installing is on the A4 Sedan.*
- The ignition is off.
- Remove the luggage compartment floor covering.
- Remove the covering and the vehicle tools mount.
- Remove the All Wheel Drive Control Module - J492- -A- from the bracket -C-.
- Disconnect the connector -B- from the All Wheel Drive Control Module - J492- .
- Install the All Wheel Drive Control Module - J492- in reverse order of removal.
- If the All Wheel Drive Control Module - J492- was replaced then additional work is necessary. Refer to ⇒ [“8.3 All Wheel Drive Control Module J492 Additional Work after Replacing”](#), page 154 .





8.3 All Wheel Drive Control Module - J492- , Additional Work after Replacing



Note

Only perform the additional work only if the All Wheel Drive Control Module - J492- was replaced.

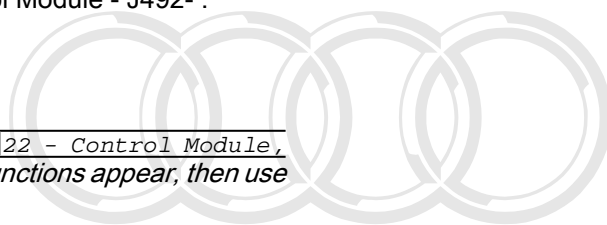
- Connect the Vehicle Diagnostic Tester and turn on the ignition.
- Select the function 22 - All Wheel Drive (AWD) Electronics in the vehicle diagnostic tester under Guided Functions in the directory 22- Replacing Control Module.
- Follow all the instructions given by the Vehicle Diagnostic Tester exactly.

With the vehicle diagnostic tester the installed rear final drive is "adapted" on the All Wheel Drive Control Module - J492- .



Note

A system check will take place when the 22 - Control Module, Replacing function is complete. If malfunctions appear, then use "Guided Fault Finding" to correct them.



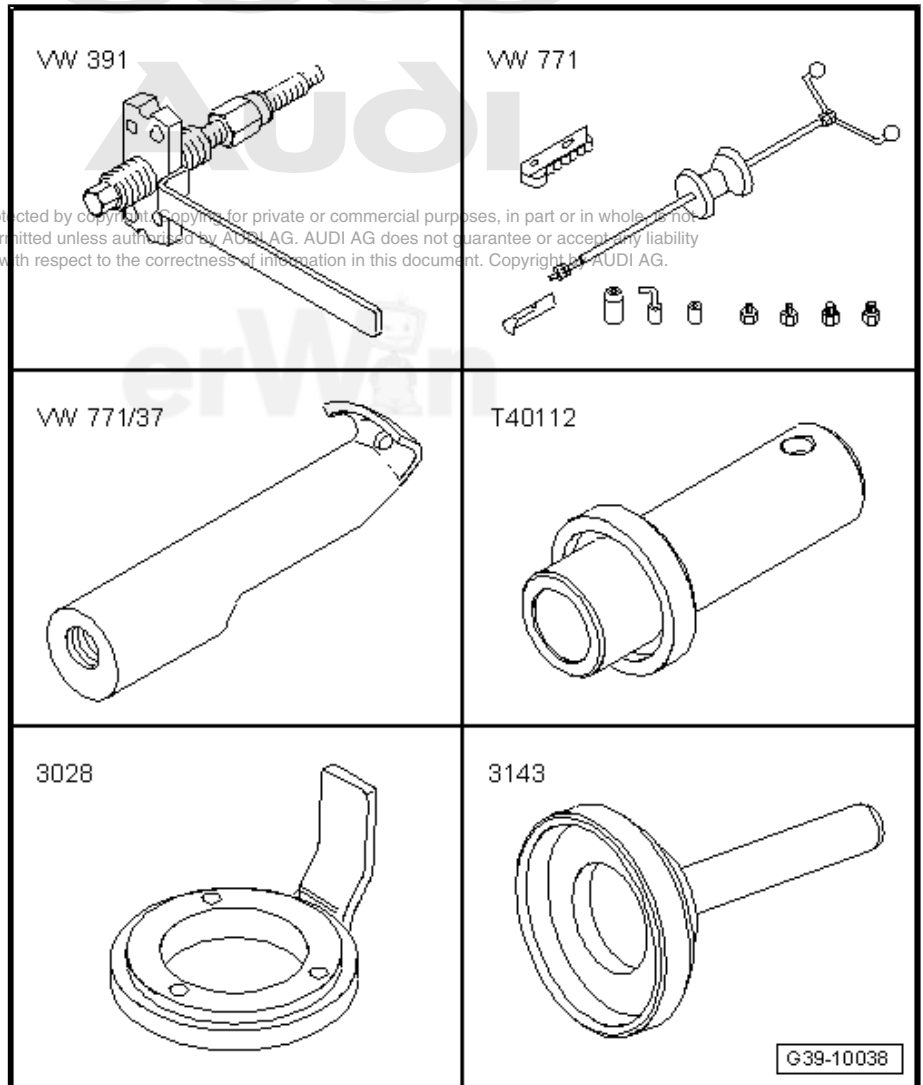
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9 Special Tools

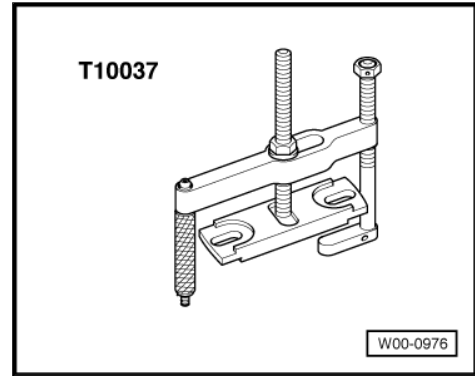
Special tools and workshop equipment required



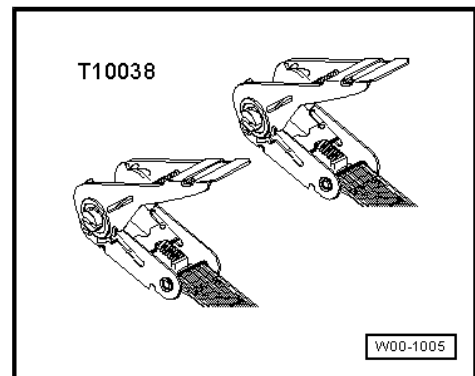
- ◆ Puller - VW391-
- ◆ Slide Hammer-Complete Set - VW771-
- ◆ Additional Part for VW771 - VW771/37-
- ◆ Thrust Piece - T40112-
- ◆ Retainer - 3028-
- ◆ Seal Driver-Frt Wheel Bearing - 3143-



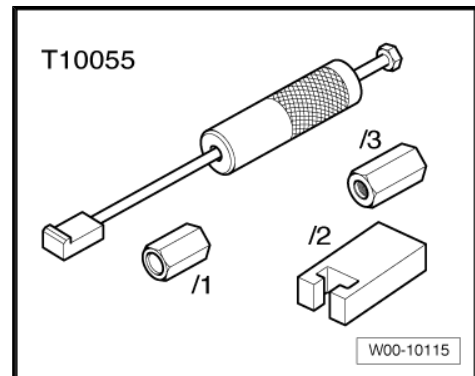
◆ Puller - T10037-



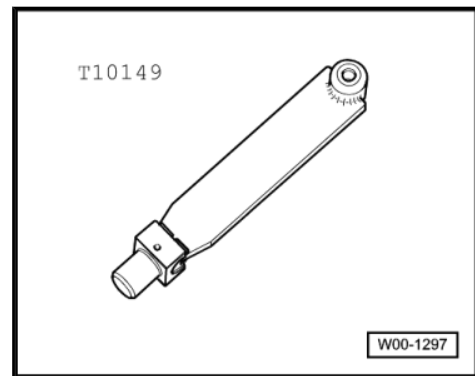
◆ Tensioning Strap - T10038-



◆ Puller - T10055-

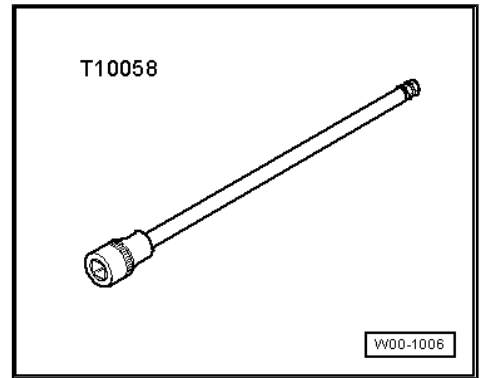


◆ Wheel Hub Support - T10149-

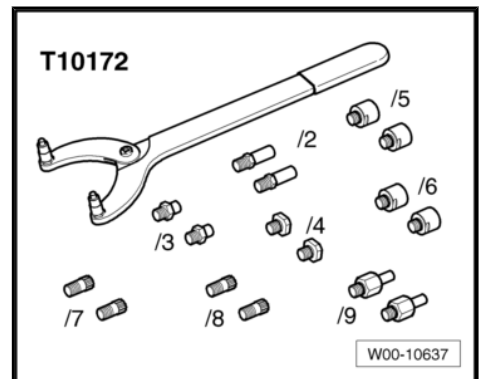


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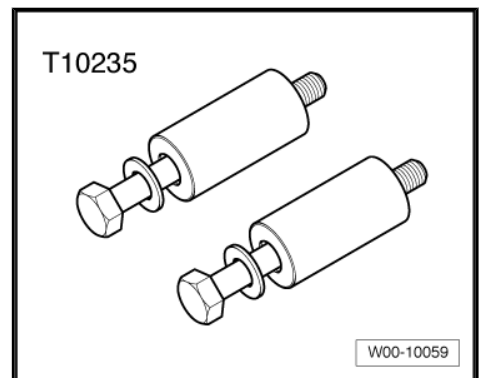
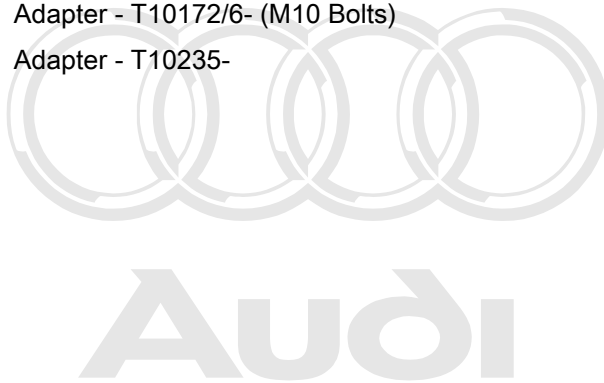
- ◆ Hex Ball Socket - T10058-



- ◆ Counterhold Tool Touareg V10 - T10172-

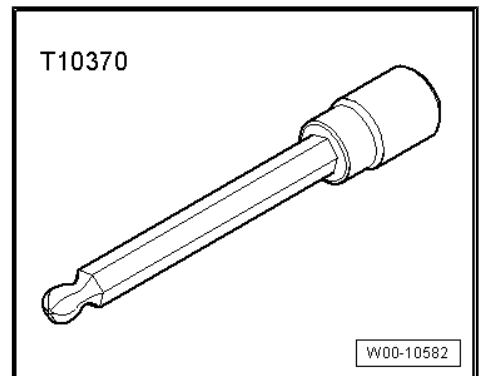


- ◆ Adapter - T10172/5- (M8 Bolts)
- ◆ Adapter - T10172/6- (M10 Bolts)
- ◆ Adapter - T10235-



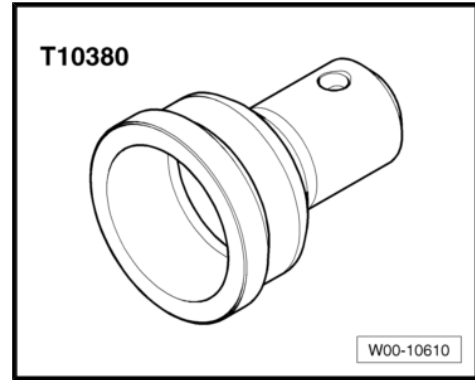
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- ◆ Socket 4 mm - T10370-

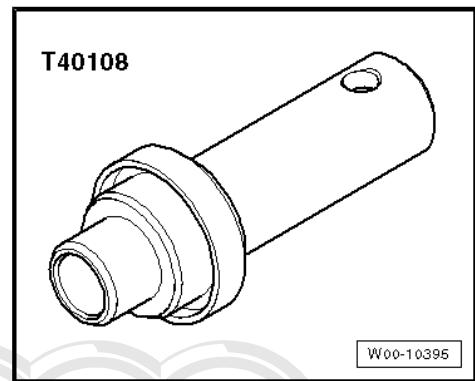




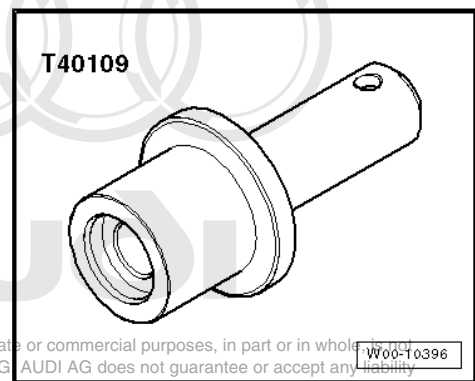
◆ Thrust Piece - T10380-



◆ Thrust Piece - T40108-

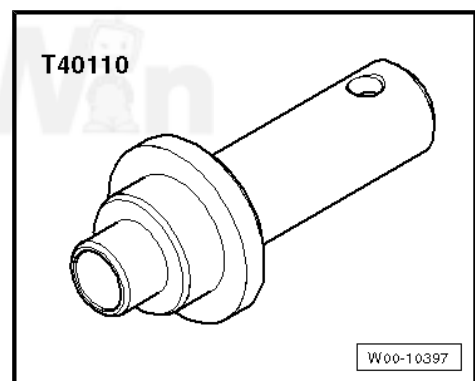


◆ Thrust Piece - T40109-

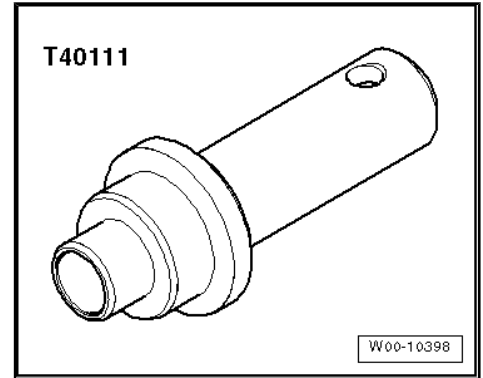


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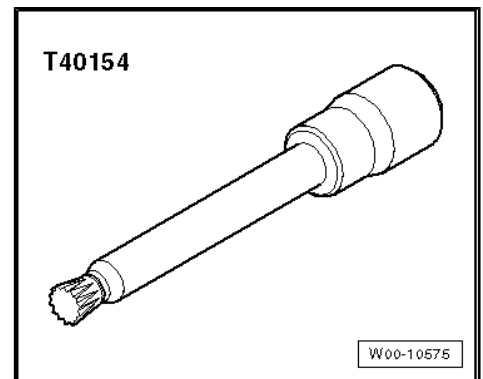
◆ Thrust Piece - T40110-



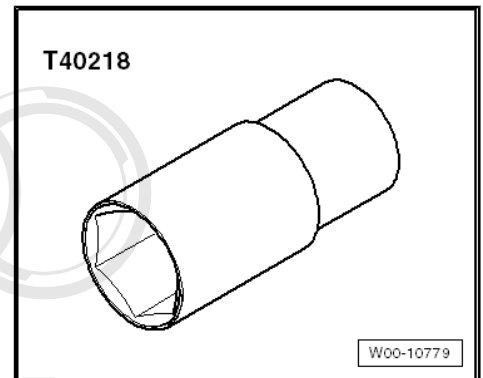
◆ Thrust Piece - T40111-



◆ Socket XZN 12 - T40154-

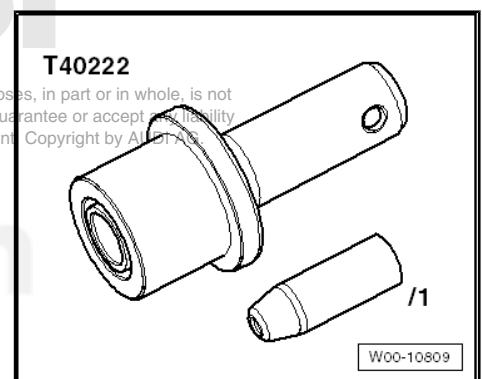


◆ Socket 27 mm - T40218-



◆ Assembly Tool - T40222-

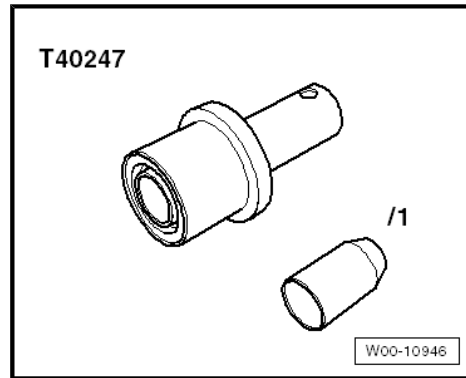
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◆ Assembly Tool - T40222/1-

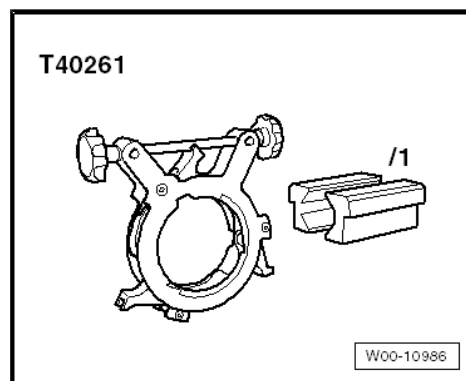


◆ Assembly Tool - T40247-



◆ Guide Sleeve - T40247/1-

◆ Flanging Tool - T40261-



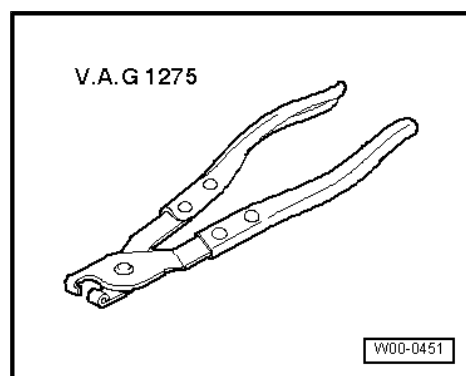
◆ Hose Clamp Pliers - VAG1275-



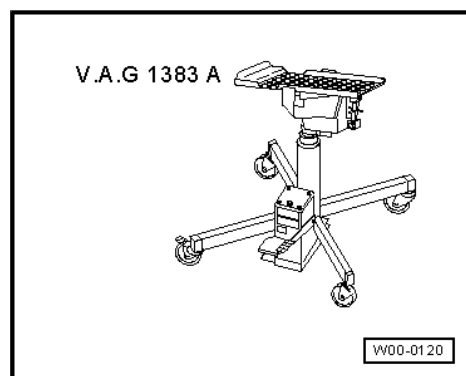
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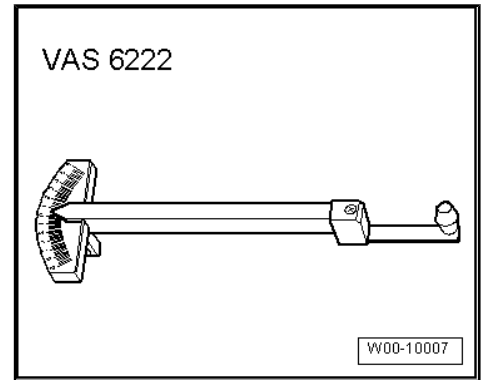
erWin



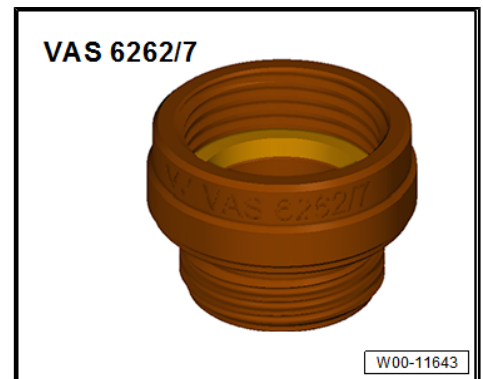
◆ Engine-Transmission Jack - VAG1383A- with Universal Transmission Support - VAG359/2- .



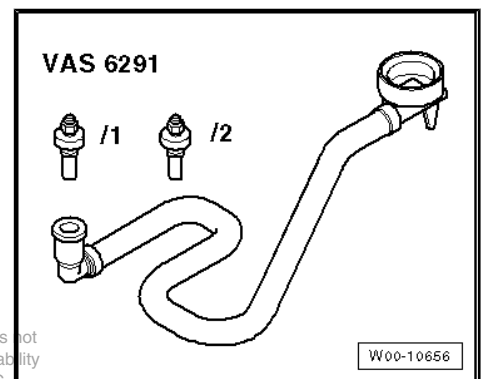
◆ Friction Gauge - VAS6222-



◆ If necessary: Oil Filler - Adapter 6 - VAS6262/6- or Oil Filler - Adapter - VAS6262/7-

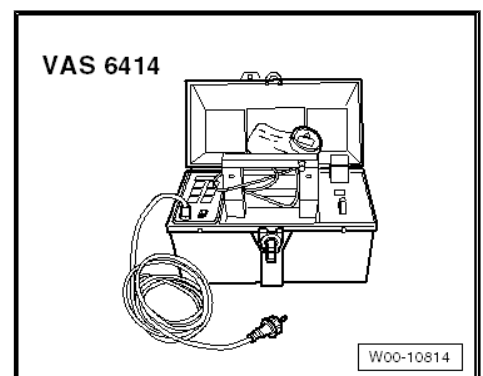


◆ Charging Device for Haldex Coupling 2 - VAS6291- or Charging Device for Haldex Coupling 2 - VAS6291A-



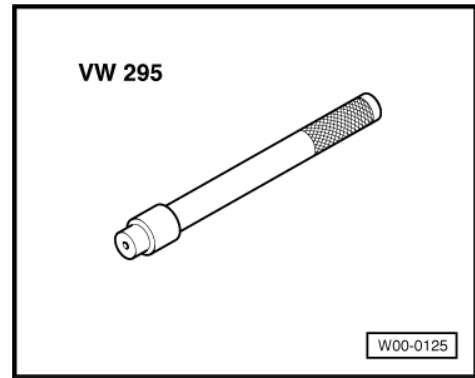
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◆ Inductive Heater - VAS6414-

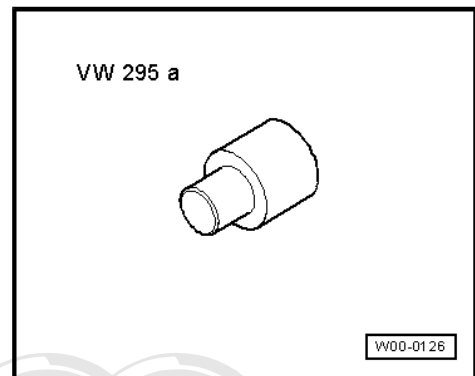




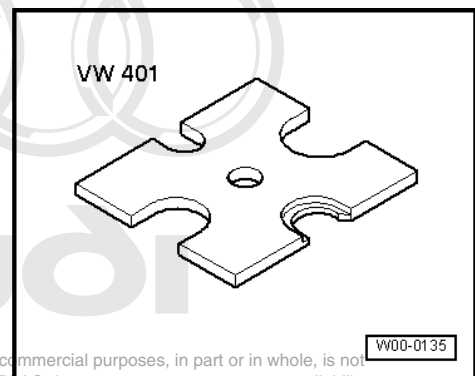
◆ Needle Bearing Drift - VW295-



◆ Needle Bearing Drift - VW295A-

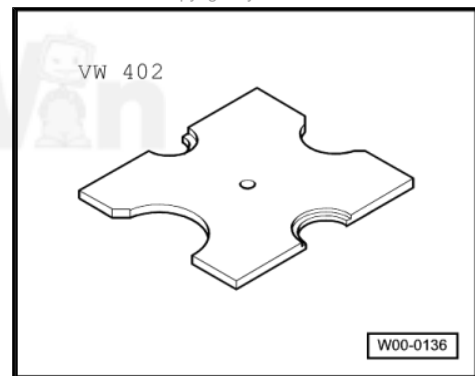


◆ Thrust Plate - VW401-

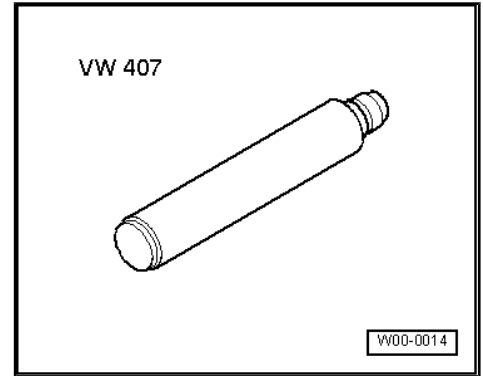


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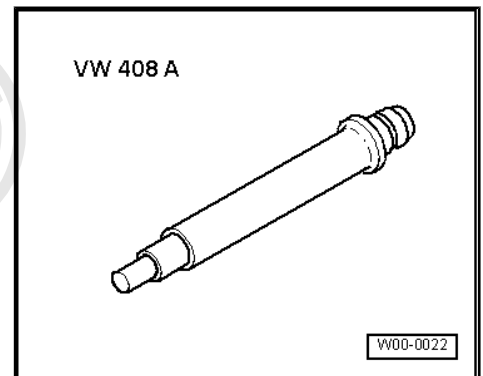
◆ Thrust Plate - VW402-



◆ Punch - VW407-

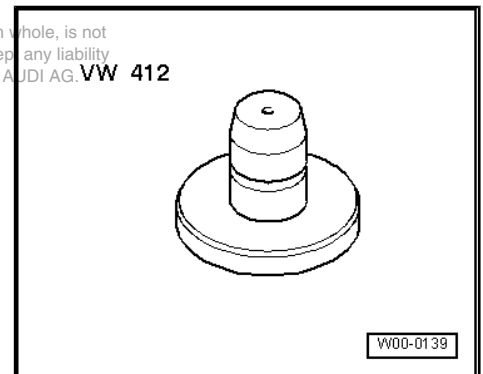


◆ Punch - VW408A-

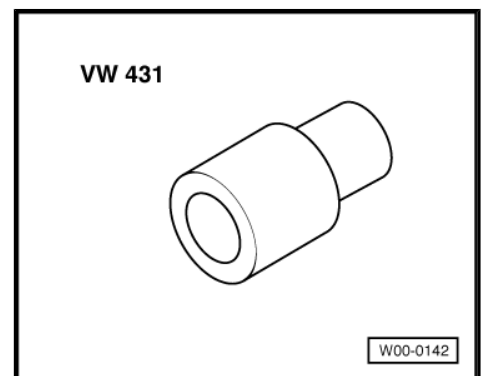


◆ Punch - VW412-

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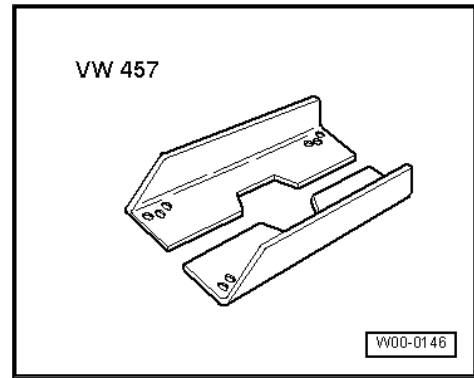


◆ Thrust Pad 16.5/28 mm Diameter - VW431-

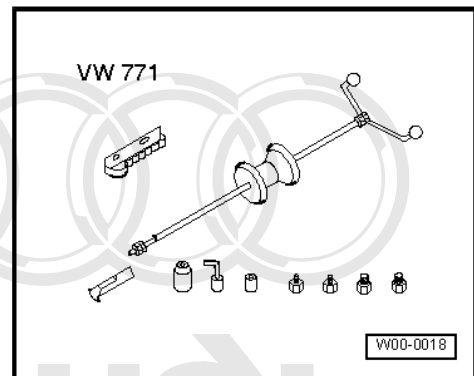




◆ Support Channels - VW457-

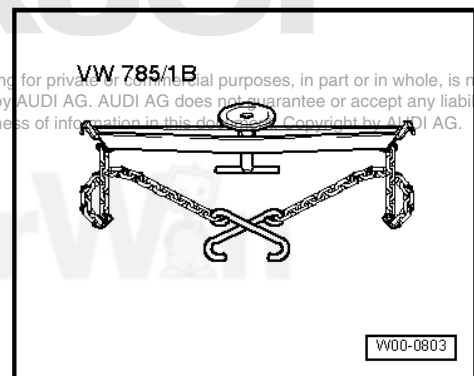


◆ Slide Hammer-Complete Set - VW771-

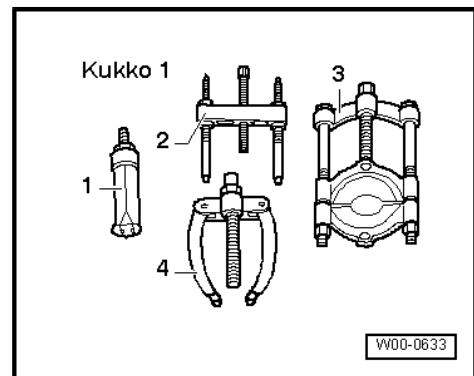


◆ Transmission Support - VW785/1B-

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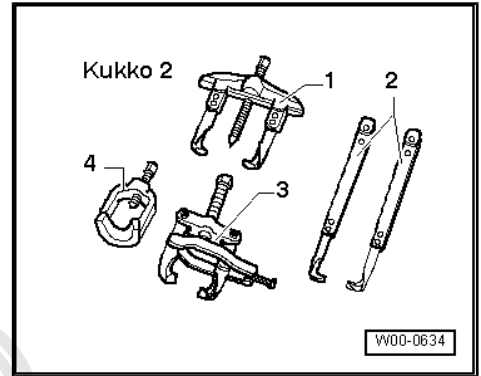


◆ -3- Separating Tool 22 to 75 mm , for example, Kukko Separating Tool 12-75 mm - 17/1-

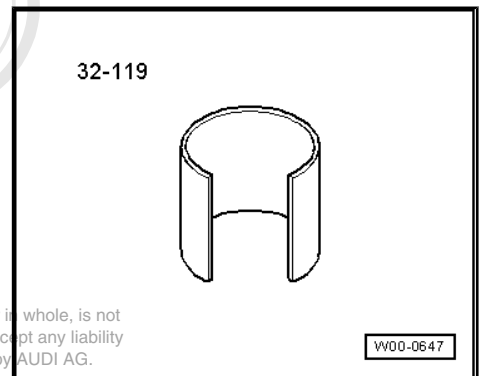


◆ -3- Kukko Separating Tool 22-115 mm , for example, Kukko Separating Tool 22-115 mm - 17/2-

◆ -1- 2-Arm Puller Kukko - 20/10-

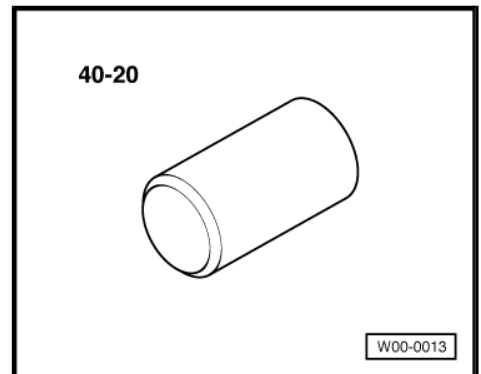


◆ Sleeve - 32-119-

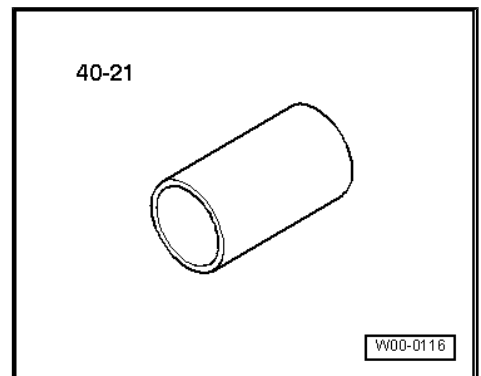


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◆ Sleeve - 40-20-

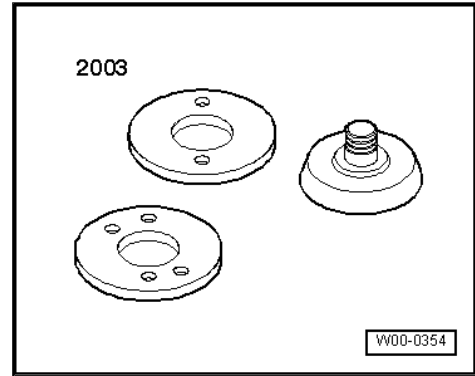


◆ Sleeve - 40-21-

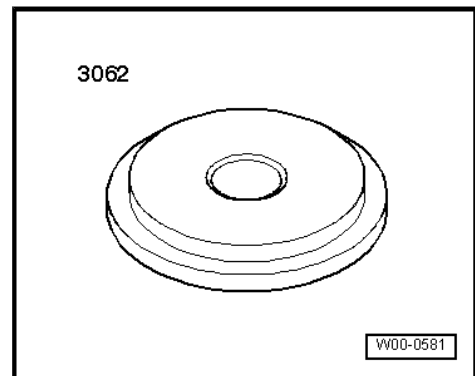




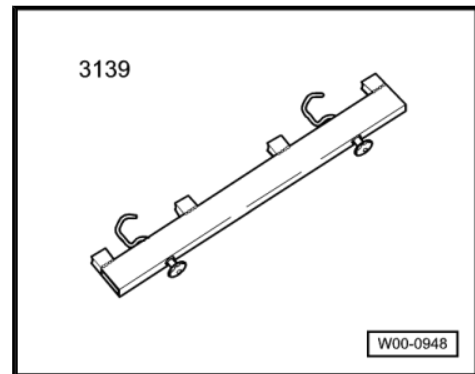
◆ Seal Press Sleeve - 2003/1- from the Seal Installer - 2003-



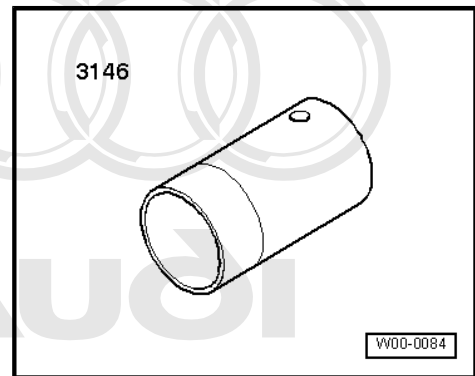
◆ Thrust Pad - 3062-



◆ Alignment Fixture-4W Dr. Shaft - 3139-



◆ Press Support-R and R Ball Joints - 3146-

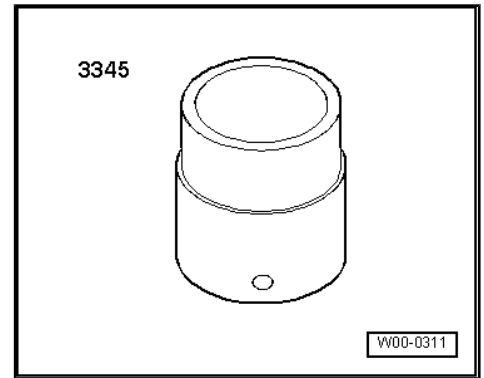


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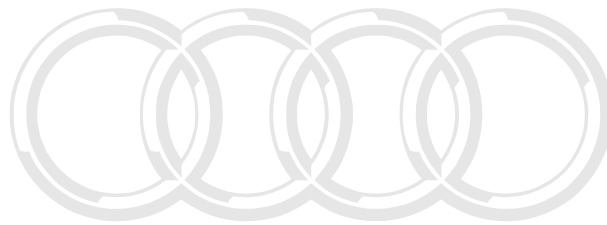
◆ Press Tube - 3345-



◆ Not illustrated:

◆ Thrust Piece - T40221-

◆ Oil Filling Adapter - VAS6291/2- or Oil Filling Adapter -
VAS6291/3-



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10 Revision History

DRUCK NUMBER: A005A502721

| Factory Edition | Edit Edition | Job Type | Feedback | Notes | Quality Checked By |
|-----------------|--------------|----------------|----------|---|--------------------|
| 03.2020 | 05/15/2020 | Local Update | | Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG. | Tom Perry |
| 03.2020 | 03/30/2020 | Factory Update | N/A | | Eric P. |
| 06.2018 | 01/29/2019 | Feedback | 1410196 | Changed The rear final drive will not be filled to The rear final drive will now be filled in the Gear Oil, Filling, OBF | Eric P. |
| 06.2018 | 07/19/2018 | Factory Update | | Performed Factory update. Driveshaft, Removing and Installing, Driveshaft Connected on Transmission Side; 3.0 TDI steps removed. | Juan S. |
| 06.2015 | 09.01.2017 | Feedback | 1278397 | Added tools for Gear Oil Filling. | Juan S. |
| 06.2015 | 03/14/2017 | Feedback | 1236465 | Added new diagonal brace step | Juan S. |
| 06.2015 | 08/16/2016 | Local Update | | Change Obergrup to "Drive-train" | Tom Perry |
| 06.2015 | 07/30/2015 | Factory Update | | | Joe. Y |
| 05.2015 | 06/05/2015 | Factory Update | | | Joe Y. |
| | 1/15/2015 | Title Change | | | Jim Harder |

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Audi retailer or other qualified shop. We especially urge you to consult an authorized Audi retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Audi.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Audi Factory Approved Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

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Cautions & Warnings

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.
- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

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Cautions & Warnings

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or service the airbag system.
- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Audi Service technicians using the Audi Factory Approved Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.