

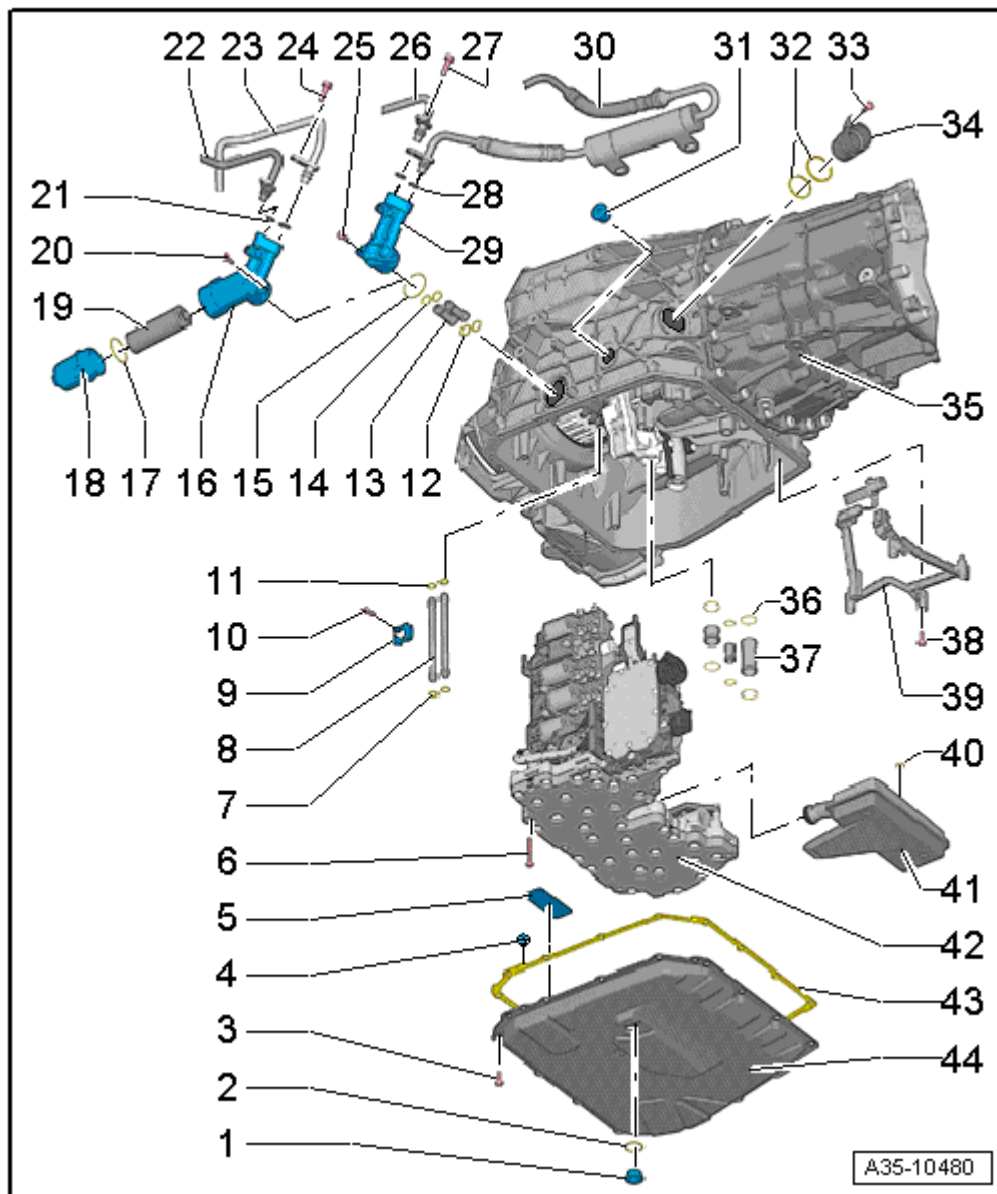
TRANSMISSION**Gears, Shafts - S-Tronic Transmission 0B5 AWD (Sedan)****35 GEARS, SHAFTS****DESCRIPTION AND OPERATION****DSG TRANSMISSION MECHATRONIC -J743 - OVERVIEW**

Fig. 1: Identifying DSG Transmission Mechatronic -J743- Overview
 Courtesy of AUDI OF AMERICA, LLC

1. ATF Drain Plug
 - Tightening specification, refer to item 1: **ATF DRAIN, FILL AND CHECK PLUGS ASSEMBLY OVERVIEW**
2. Seal
 - Replace
3. Bolt
 - Tightening specification and sequence, refer to **Fig. 2**
4. Expanding Rivet
 - For attaching the gasket to the ATF oil pan
 - Not required for installation
5. Magnet
 - Quantity: 2
 - Insert into the depression in the ATF oil pan
 - Make sure the entire surface contacts oil pan
6. Bolt
 - Replace
 - Tightening specification and sequence, refer to **Fig. 3**
7. O-rings
 - Replace
8. ATF Pressure Pipes (coupling pressure)
9. Retaining Plate
 - For the ATF pressure pipes (coupling pressure)
10. Bolt
 - 10 Nm
11. O-rings
 - Replace
12. O-rings
 - Replace
13. ATF Oil Pipes
 - Different versions, depending on date of manufacture
14. O-rings
 - Replace
15. O-ring
 - Replace
 - Different versions, depending on date of manufacture
16. ATF Filter Housing
 - For transmissions with an ATF filter
 - Different versions, depending on date of manufacture

17. O-ring
 - For transmissions with an ATF filter
 - Replace
18. ATF Filter Cover
 - For transmissions with an ATF filter
 - Tightening specification, refer to **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW**
19. ATF Filter
 - Replace each time the ATF is changed and after performing a repair on the transmission
 - Allocation, refer to the Electronic Parts Information, is also called a filter
 - Removing and installing, refer to **ATF FILTER**
20. Bolt
 - 10 Nm
 - Quantity: 3
 - For transmissions with an ATF filter
21. O-rings
 - Replace
 - For transmissions with an ATF filter
22. ATF Return Pipe
 - For transmissions with an ATF filter
 - Removing and installing, refer to **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW**
23. ATF Supply Pipe
 - For transmissions with an ATF filter
 - Removing and installing, refer to **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW**
24. Bolt
 - Tightening specification, refer to **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW**
 - For transmissions with an ATF filter
25. Bolt
 - 10 Nm
 - Quantity: 3
 - For transmission with ATF pipe filter
26. ATF Return Pipe
 - For transmission with ATF pipe filter
 - Removing and installing, refer to **ATF PIPES** or **ATF PIPES**
27. Bolt

- For transmission with ATF pipe filter
 - Tightening specification, refer to **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW** or **ATF COOLER, ATF PIPES AND ATF FILTER OVERVIEW**
28. O-rings
- Replace
 - For transmission with ATF pipe filter
29. ATF Pipe Connection
- For transmission with ATF pipe filter
30. ATF Pipe Filter
- Replace the ATF pipe filter whenever replacing the transmission or repairing the transmission
 - Removing and installing, refer to **ATF PIPE FILTER**
31. ATF Fill and Check Plug
- Tightening specification, refer to item 4: **ATF DRAIN, FILL AND CHECK PLUGS ASSEMBLY OVERVIEW**
32. O-rings
- Replace
33. Bolt
- 8 Nm
34. Connector Housing
- To remove, remove the bolt -33- and turn the connector housing counter-clockwise.
35. Transmission Housing
36. O-rings
- Replace
37. ATF Oil Pipes
- Refer to the Electronic Parts Information because there are different versions depending on the date of manufacture.
38. Bolt
- 8 Nm
39. Cable Guide for the RPM Sensors
40. O-ring
- Replace
41. ATF Suction Filter
- Removing and installing, refer to **ATF SUCTION FILTER**
42. DSG Transmission Mechatronic -J743-
- Removing and installing, refer to **DSG Transmission Mechatronic -J743-**
 - Perform "Guided Functions" using the vehicle diagnosis tester after replacing the DSG transmission Mechatronic. Refer to **TRANSMISSION GUIDED FUNCTIONS** .

- Separate the circuit board from the DSG transmission Mechatronic. Refer to **Description and Operation**

43. Gasket

- Replace
- Installing **AUTOMATIC TRANSMISSION FLUID OIL PAN**

44. ATF Pan

- Removing and installing, refer to **AUTOMATIC TRANSMISSION FLUID OIL PAN**.

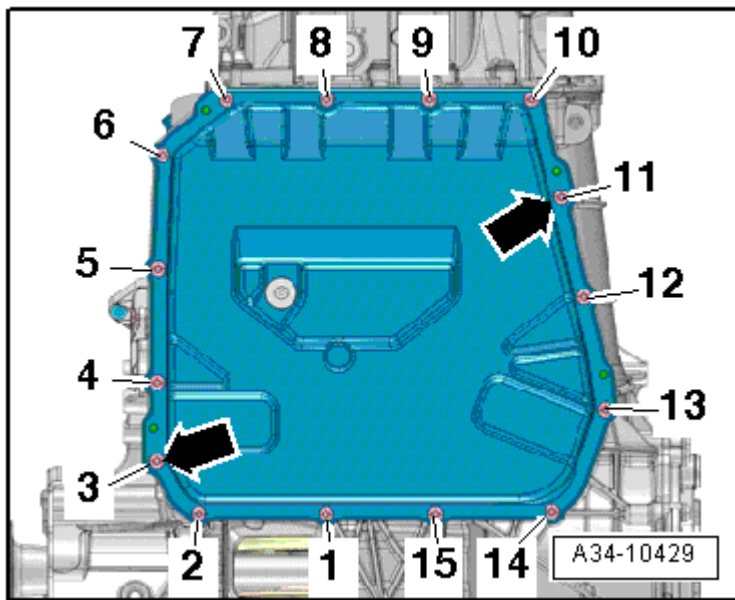


Fig. 2: Identifying ATF Oil Pan, Tightening Sequence

Courtesy of AUDI OF AMERICA, LLC

-- Tighten bolts in 2 stages as follows:

-- Install the bolts -arrows- hand-tight.

-- Tighten the bolts -1 through 15- diagonally to 10 Nm and in steps.

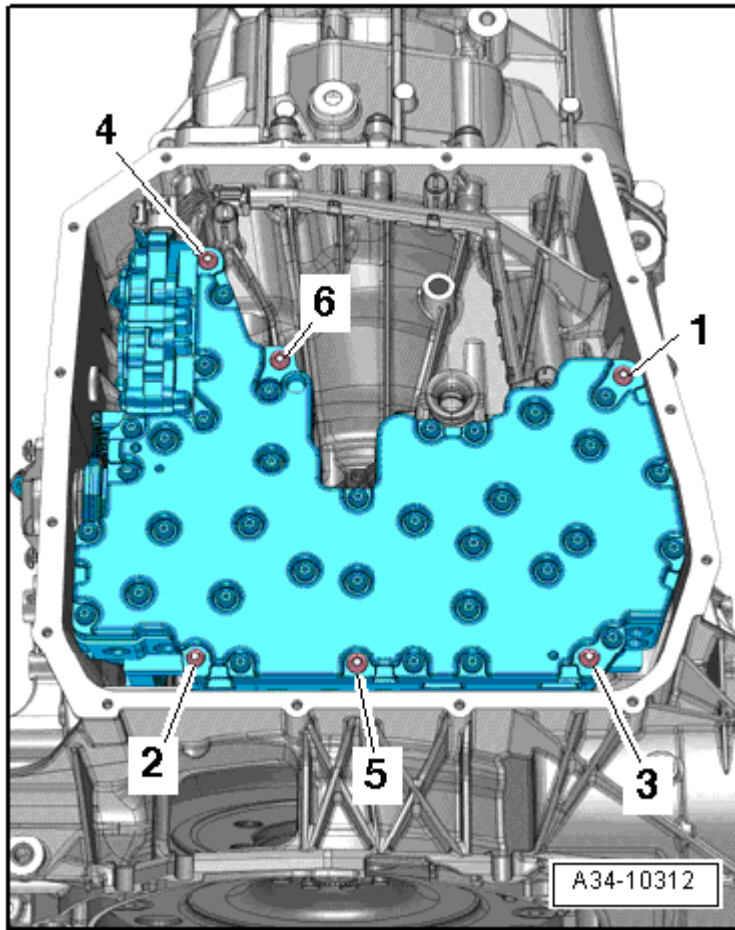


Fig. 3: Identifying Mechatronic, Tightening Sequence
 Courtesy of AUDI OF AMERICA, LLC

-- Tighten the bolts to 10 Nm in the following sequence: -1 to 6-

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Component	Fastener Size	Nm
ATF Filter to Transmission	-	10
ATF Pipe Filter to Transmission	-	10
Cable Guide for the RPM Sensors to Transmission	-	8
Connector Housing to Transmission	-	8
Connector Piece for ATF pipes	-	8
Retaining Plate for the ATF Oil Pipes	-	10

ATF Oil Pan, Tightening Specification and Sequence

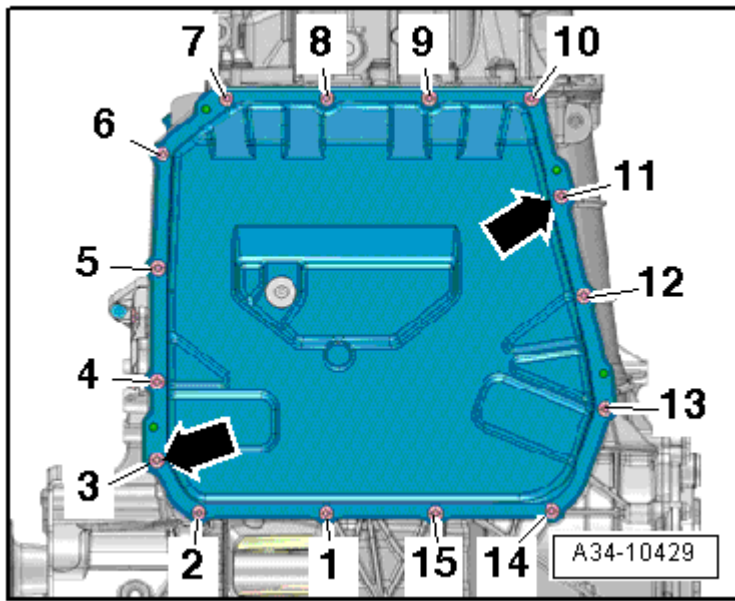


Fig. 4: Identifying ATF Oil Pan, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

-- Tighten bolts in 2 stages as follows:

-- Install the bolts -arrows- hand-tight.

-- Tighten the bolts -1 through 15- diagonally to 10 Nm and in steps.

Mechatronic, Tightening Specification and Sequence

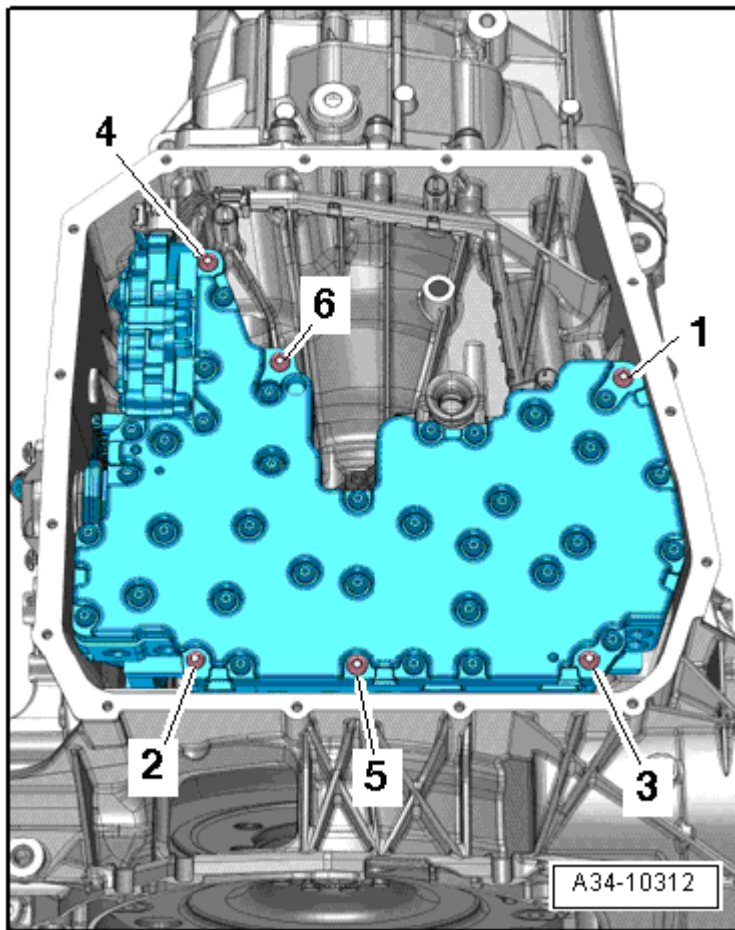


Fig. 5: Identifying Mechatronic, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

-- Tighten the bolts to 10 Nm in the following sequence: -1 to 6-

REMOVAL AND INSTALLATION

AUTOMATIC TRANSMISSION FLUID OIL PAN

REMOVING

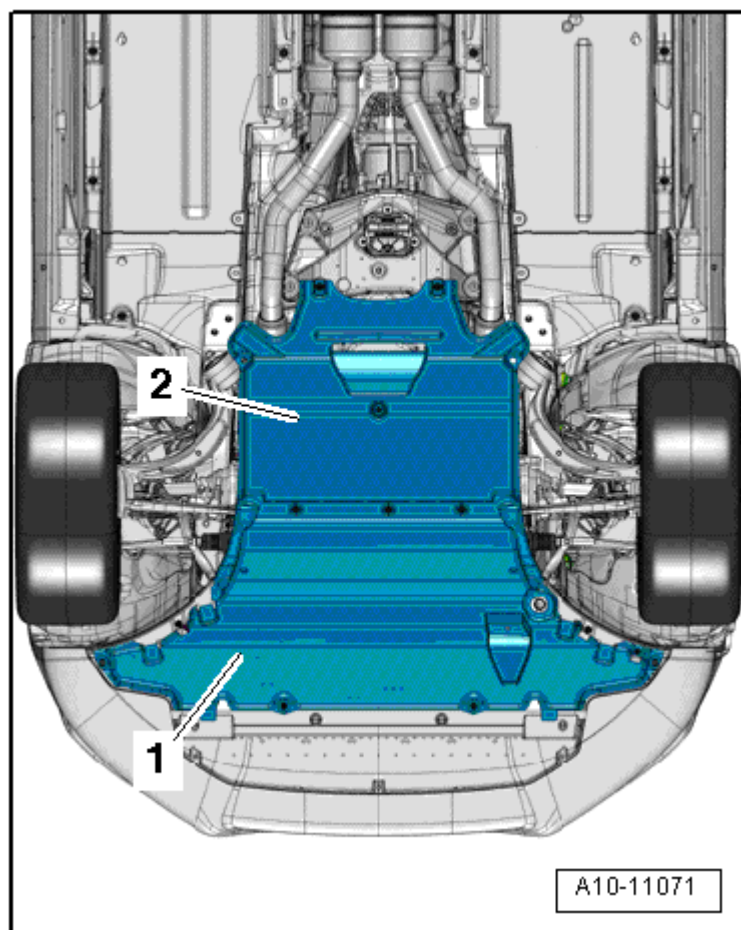


Fig. 6: Identifying Noise Insulation

Courtesy of AUDI OF AMERICA, LLC

NOTE: **REPAIR INFORMATION**

CLEANLINESS WORKING CONDITIONS

-- Remove the noise insulation -1 and 2-. Refer to **Description and Operation** .

A5 Cabriolet

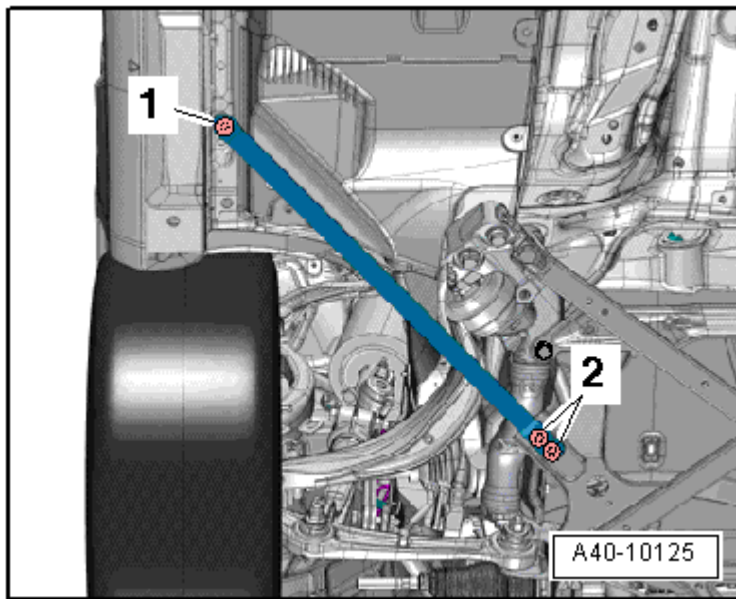


Fig. 7: Identifying Clamping Sleeve

Courtesy of AUDI OF AMERICA, LLC

-- Remove the left and right diagonal braces. Refer to **Removal and Installation** .

All Vehicles

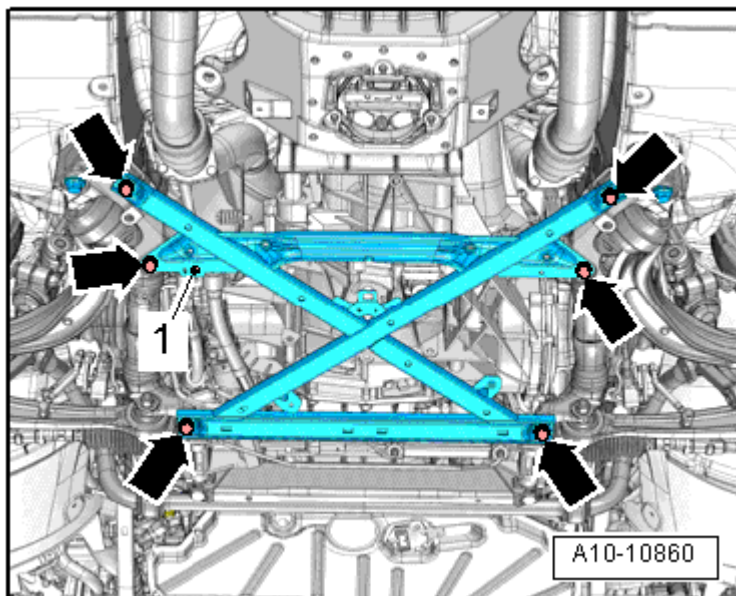


Fig. 8: Identifying Subframe Crossbrace

Courtesy of AUDI OF AMERICA, LLC

-- Remove the subframe crossbrace. Refer to **Removal and Installation** .

CAUTION: The suspension components could be damaged.

- Do not rest the vehicle on its wheels if the subframe mount, the steering gear or the subframe crossbrace are not installed correctly.

All Vehicles

-- Draining the ATF ATF, DRAINING AND FILLING .

CAUTION: There is a risk of damaging the transmission.

- Do not start the engine when there is no ATF in the transmission.

-- Diagonally loosen the bolts -1 through 15-.

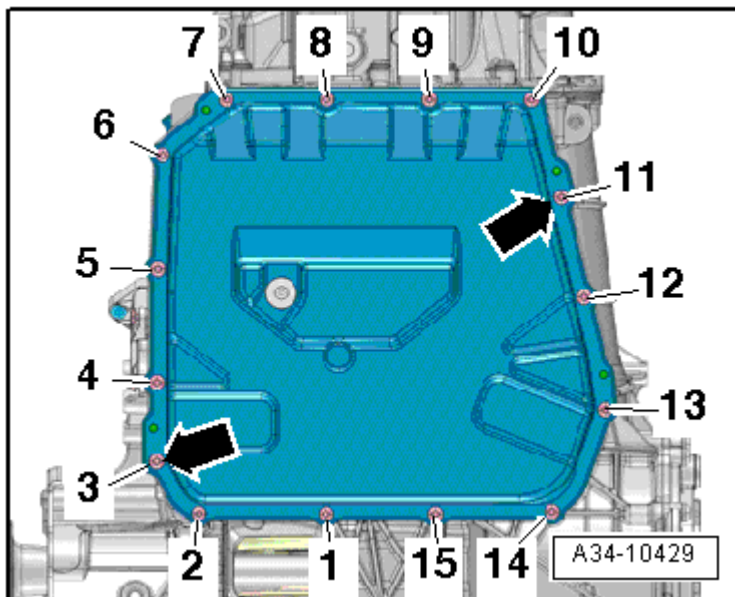


Fig. 9: Identifying ATF Oil Pan, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

-- Remove the ATF oil pan.

NOTE: Ignore -arrows-.

INSTALLING

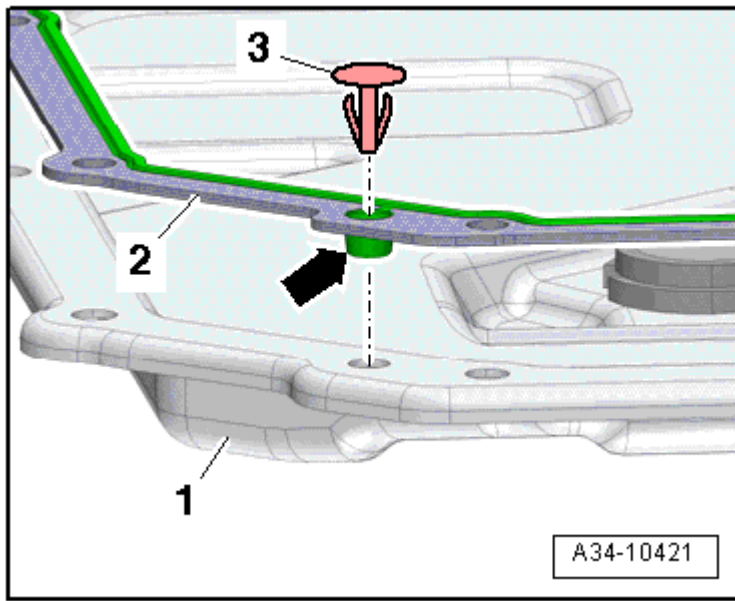


Fig. 10: Identifying ATF Fluid Pan Guides & Gasket
Courtesy of AUDI OF AMERICA, LLC

Install in reverse order of removal. Note the following:

NOTE: Replace the ATF oil pan bolts and gasket.

- Clean the sealing surfaces.
- Insert the guides -arrow- on the new gasket -2- into the ATF fluid pan -1-.
- Attach the gasket and clips -3- to the ATF pan.
- Clean the magnets -arrows- in the ATF pan.

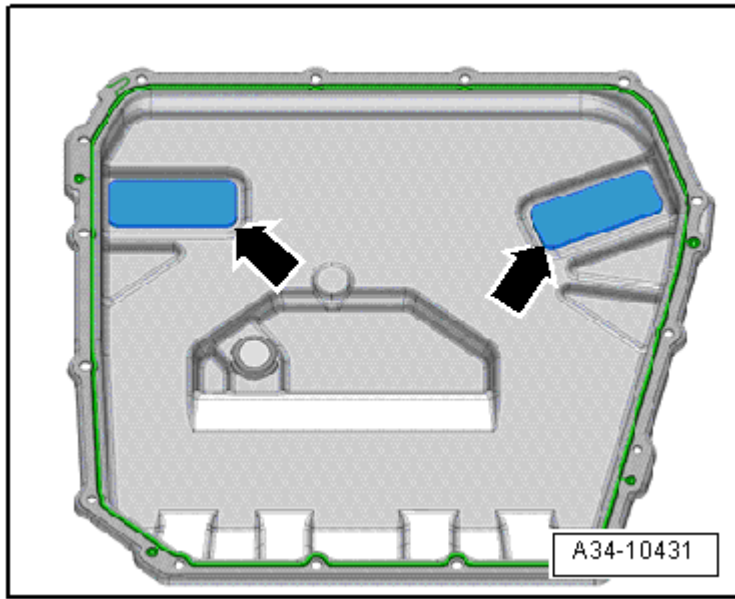


Fig. 11: Locating ATF Fluid Pan Magnets
Courtesy of AUDI OF AMERICA, LLC

- Make sure the magnets completely contact the depressions in the ATF oil pan.
- Tighten the ATF oil pan bolts. Refer to **Fig. 2**.

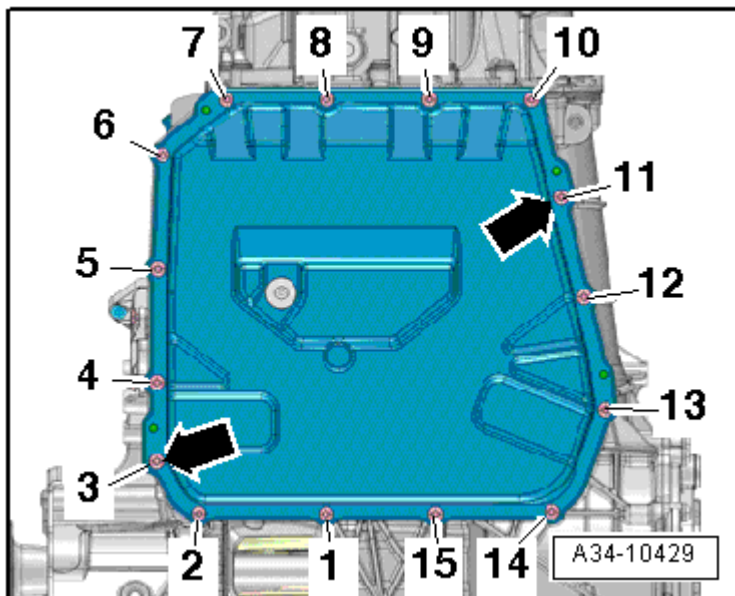


Fig. 12: Identifying ATF Oil Pan, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

- Install the subframe crossbrace. Refer to **Removal and Installation** .
- Install the diagonal braces. Refer to **Removal and Installation** .

-- Fill the ATF. Refer to ATF, CHECKING LEVEL AND CORRECTING .

ATF SUCTION FILTER

Special tools and workshop equipment required

- Used Oil Collection and Extraction Device V.A.G 1782

Removing

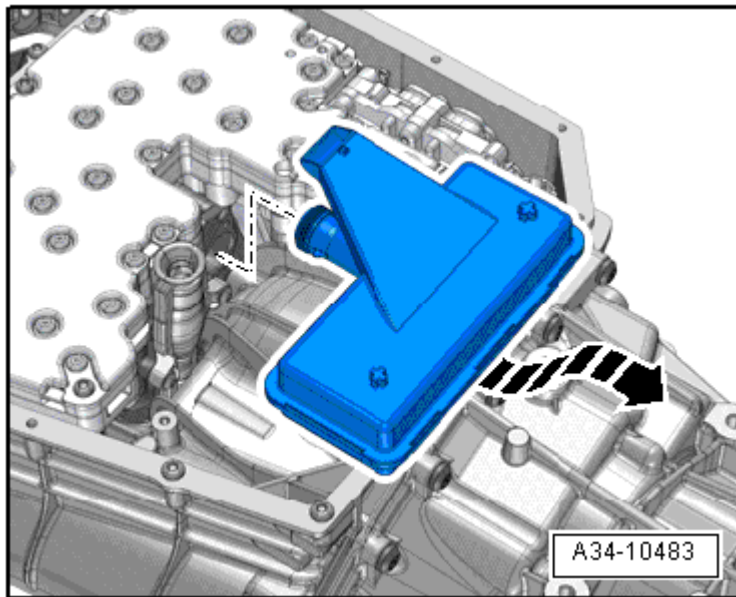


Fig. 13: Identifying ATF Filter
Courtesy of AUDI OF AMERICA, LLC

NOTE: General Repair Instructions, refer to REPAIR INFORMATION .

Rules for cleanliness when working on the S-Tronic transmission, refer to CLEANLINESS WORKING CONDITIONS .

-- Remove the ATF oil pan. Refer to AUTOMATIC TRANSMISSION FLUID OIL PAN.

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

-- Carefully pull the ATF suction filter to the rear and off the Mechatronic -arrow-.

Installing

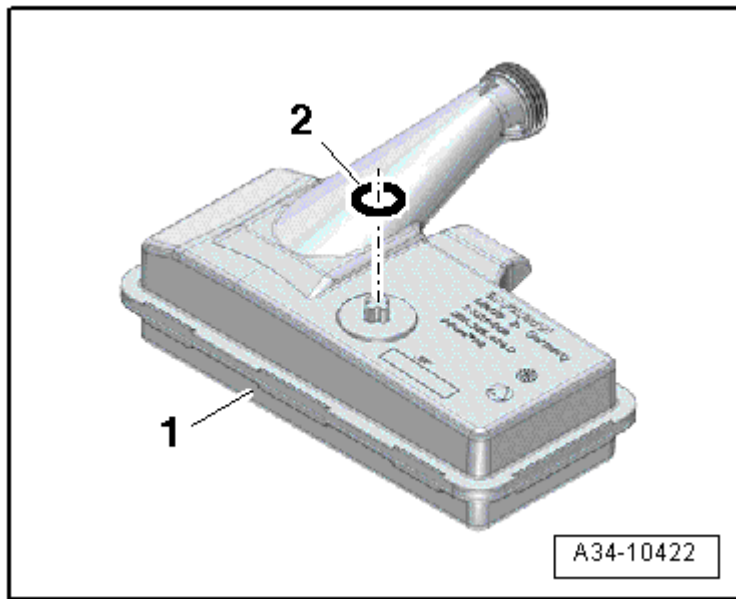


Fig. 14: Locating ATF Suction Filter O-Ring
Courtesy of AUDI OF AMERICA, LLC

Install in reverse order of removal. Note the following:

- Install the O-ring -2- on the rear support on the ATF suction filter -1-.
- Install the ATF suction filter suction collar all the way into the opening in the transmission fluid pump.
 - The support with the O-ring must fit into the hole inside the transmission housing.
- Install the ATF pan. Refer to **AUTOMATIC TRANSMISSION FLUID OIL PAN**.
- Fill with ATF. Refer to **ATF, CHECKING LEVEL AND CORRECTING**.

DSG TRANSMISSION MECHATRONIC -J743-

Special tools and workshop equipment required

- Used Oil Collection and Extraction Device V.A.G 1782

Removing

- Transmission installed

CAUTION: There is a risk of damaging the transmission.

- Do not start the engine if there is no ATF in the transmission or if the DSG transmission Mechatronic is removed.

NOTE: **REPAIR INFORMATION**

CLEANLINESS WORKING CONDITIONS

S-Tronic transmission 0B5 information, refer to TRANSMISSION INFORMATION .

- Move the selector lever into "P".
- Turn off the ignition and remove the key.

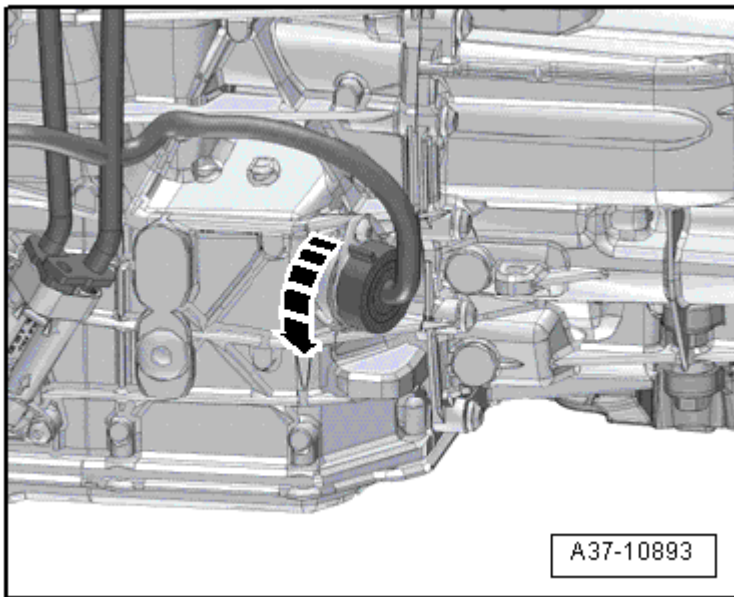


Fig. 15: Moving Selector Lever Into "P"
Courtesy of AUDI OF AMERICA, LLC

CAUTION: There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- Always "discharge" the static electricity. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- Do not touch contacts in transmission connector with hands.

- Disconnect the connector on the transmission by rotating screw connections counter-clockwise -arrow-.
- Remove the bolt -1-.

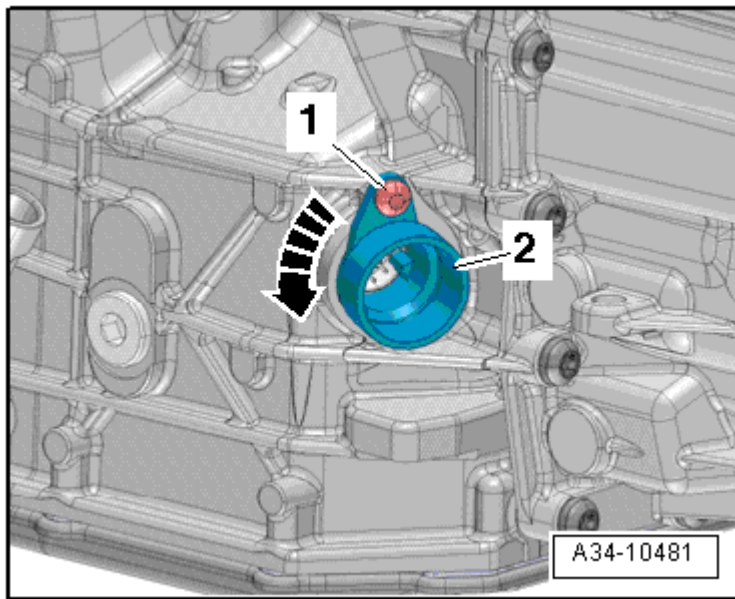


Fig. 16: Disconnecting Connector On Transmission
Courtesy of AUDI OF AMERICA, LLC

- Turn the connector housing -2- counter-clockwise -arrow- and remove it.
- Remove the bolts -arrows- and then slightly pull out the connection for the ATF pipes.

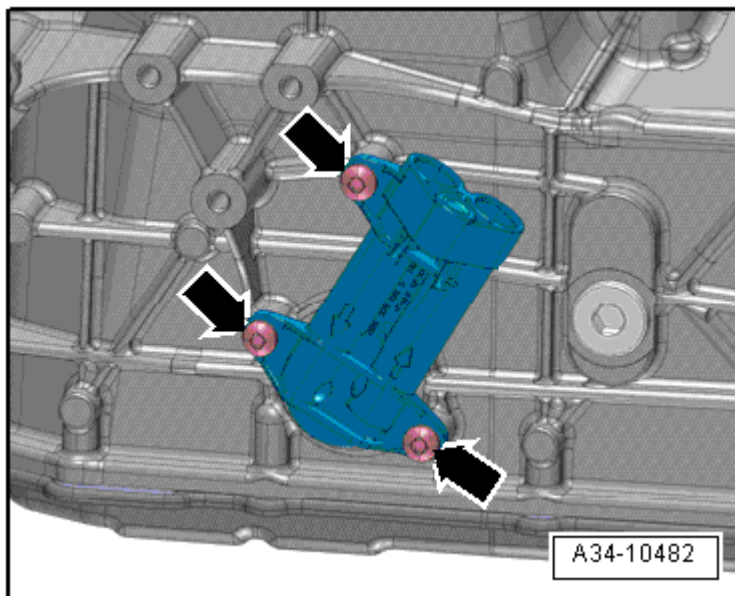


Fig. 17: Locating ATF Pipe Bolts (ATF Pipe Removed)
Courtesy of AUDI OF AMERICA, LLC

NOTE: The connection with the ATF pipe removed is shown in the illustration.

-- Remove the ATF oil pan. Refer to **AUTOMATIC TRANSMISSION FLUID OIL PAN**.

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

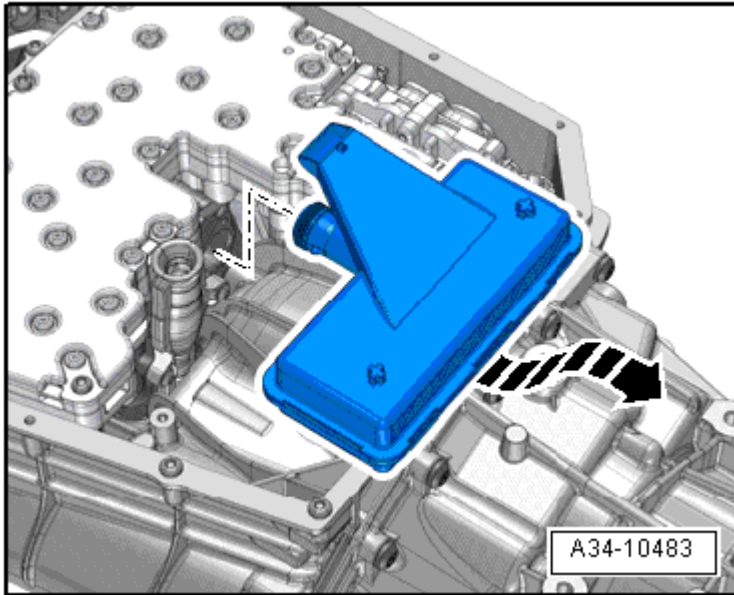


Fig. 18: Identifying ATF Filter
Courtesy of AUDI OF AMERICA, LLC

-- Carefully pull the ATF filter to the rear and off the Mechatronic -arrow-.

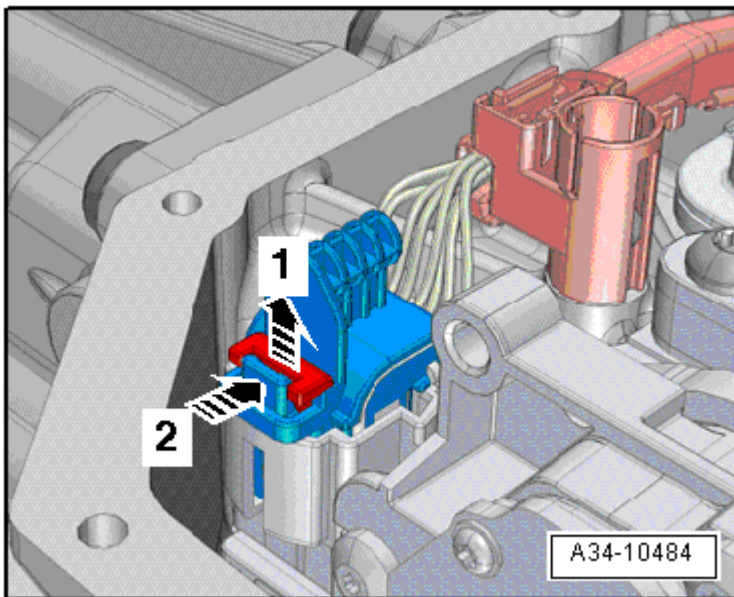


Fig. 19: Identifying Connector Retainer & Release
Courtesy of AUDI OF AMERICA, LLC

CAUTION: There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- Always "discharge" the static electricity. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- Do not touch contacts in transmission connector with hands.

-- Pull the retainer -arrow 1-, push the release down -arrow 2- and disconnect the connector.

-- Remove the bolts -1 through 6-.

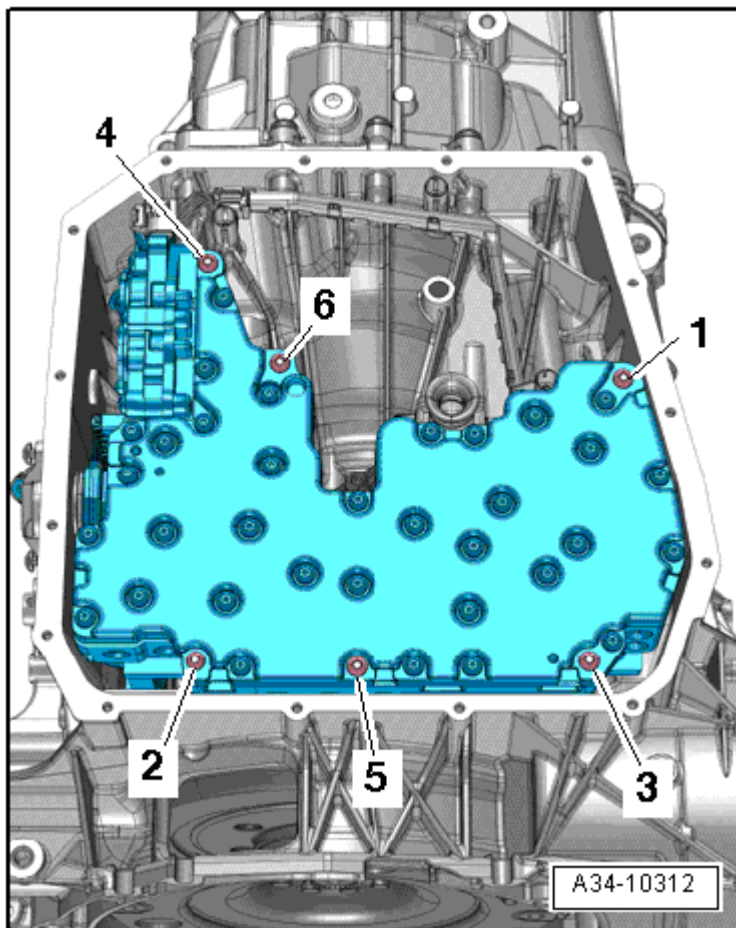


Fig. 20: Identifying Mechatronic, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

CAUTION: Risk of causing damage to the Mechatronic.

- Only bolts -1 through 6- may be loosened.
- If other bolts are loosened, this may affect the function of the Mechatronic unit or it may come apart.

NOTE: The sealing surface must not be damaged.

The Mechatronic fits partially inside the transmission.

If the Mechatronic must be removed, then a second technician will be needed to keep it from falling. Another alternative, the bolts -1 and 2- can be installed slightly to hold the Mechatronic in place while it is being removed.

-- Remove the Mechatronic.

CAUTION: Danger of damaging the sensor on the back side of the Mechatronic.

- Lay the Mechatronic with the bolt head side facing down only.

Installing

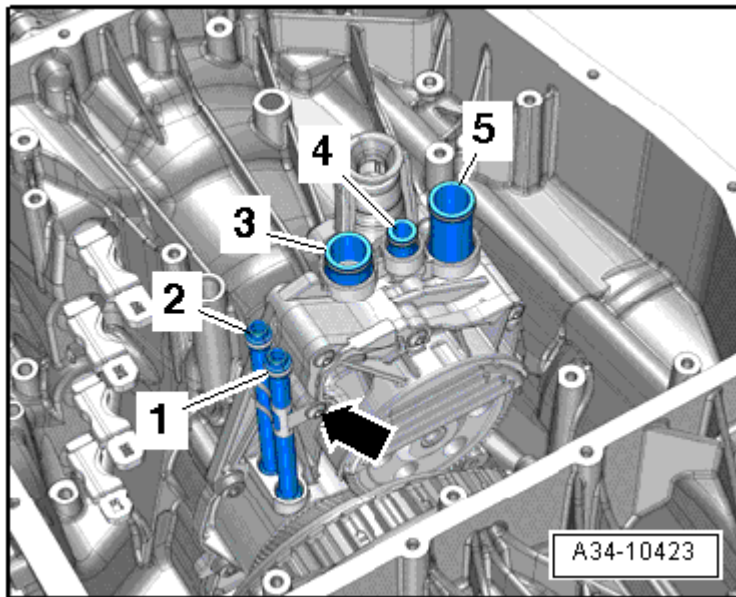


Fig. 21: Identifying Mechatronic Pipes & O-rings
Courtesy of AUDI OF AMERICA, LLC

- Tightening specifications, refer to DSG Transmission Mechatronic -J743 - OVERVIEW.

NOTE: Replace the Mechatronic O-rings and bolts.

Do not bend the ATF oil pipe brackets.

-- Remove the bolt -arrow-.

-- Remove the ATF pipes -1 and 2-.

- Remove the ATF pipes -3 through 5-
- Replace the O-rings and install the ATF oil pipes.
- Tighten the bolt -arrow-.

NOTE: Make sure all shift forks and gear positions are in the center position before installing the DSG transmission Mechatronic.

Adjust the Shift Forks

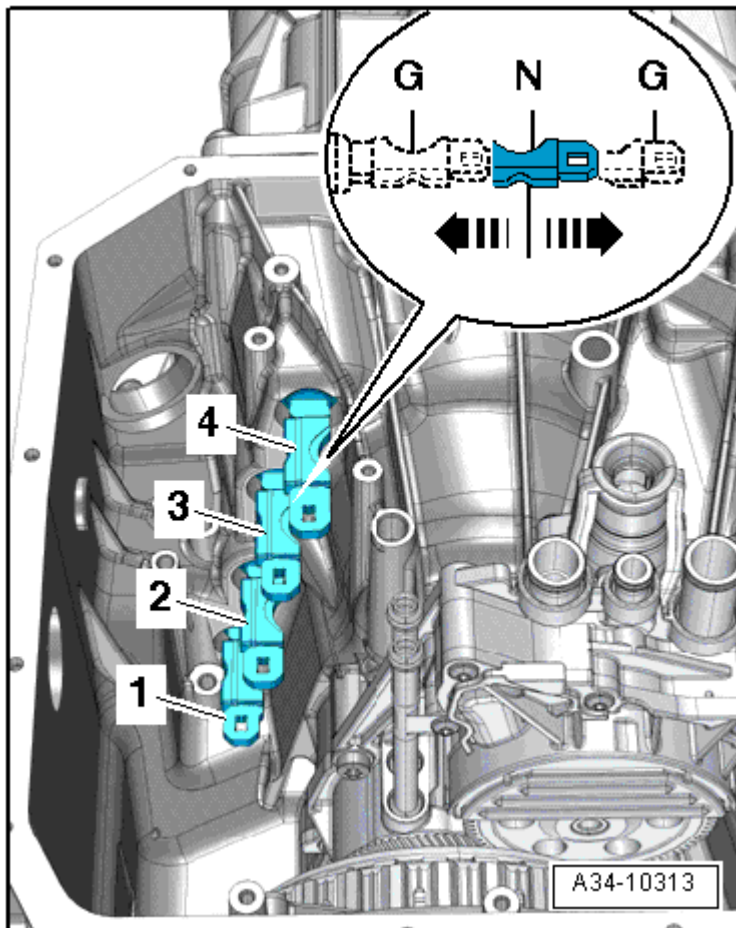


Fig. 22: Identifying Shift Forks

Courtesy of AUDI OF AMERICA, LLC

- First check the shift positions for the shift forks -1 through 4- by hand.

Each shift fork has three positions:

- -G- is engaged
- Idle -N- (center position)

- -G- is engaged

-- Move all four shift forks one time into each position -arrows- one after the other.

-- After doing this, move the shift forks back into the center position -N-.

Adjust the Gear Selector

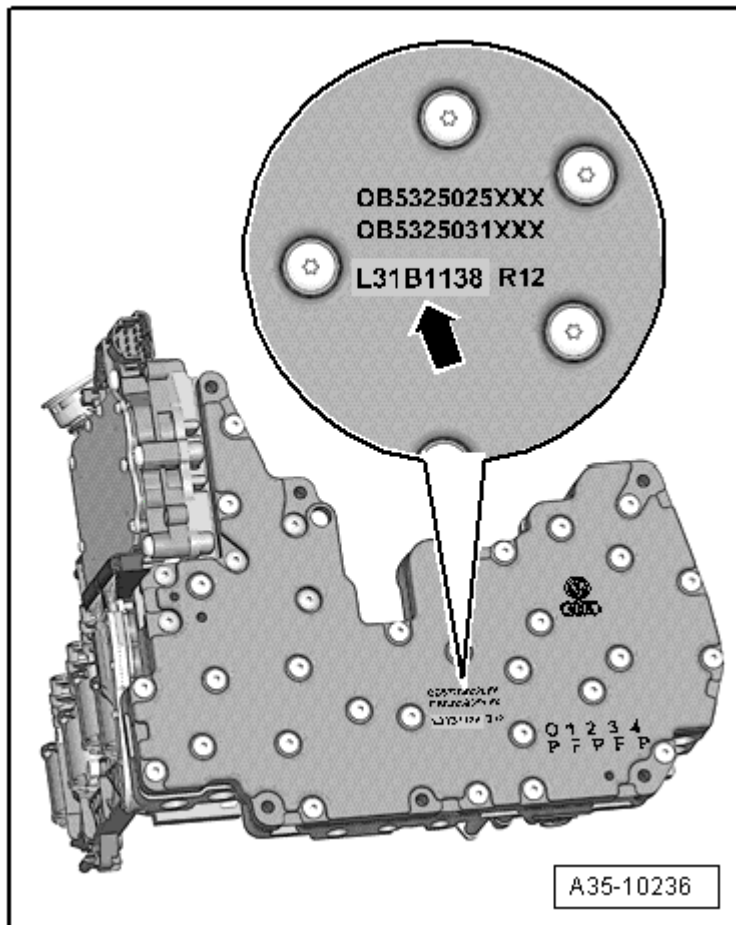


Fig. 23: Locating Mechatronic Identification

Courtesy of AUDI OF AMERICA, LLC

CAUTION: There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- Always "discharge" the static electricity. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- Do not touch contacts in transmission connector with hands.
- Do not pry out the plunger on the sensors.

The gear shifter must be adjusted differently depending on the date of manufacture of the Mechatronic.

2012 Audi S4

TRANSMISSION Gears, Shafts - S-Tronic Transmission 0B5 AWD (Sedan)

The date of manufacture is located only on the Mechatronic identification -arrow-.

The Mechatronic identification consists of:

Mechatronic identification				Example "L31B1138"
L	31	B1	138	
L				Year of manufacture: L = 2010 K = 2009 J = 2008... etc.
	31			Calendar week in the year of manufacture
		B1		Manufacturer day shift identification: Monday: Shift 1 = A1, Shift 2 = B1, Shift 3 = C1 Tuesday: Shift 1 = D1, Shift 2 = E1, Shift 3 = F1 Wednesday: Shift 1 = G1, Shift 2 = H1, Shift 3 = I1... etc.
			138	Running manufacturing number of the shift per day, here, the 138th Mechatronic from shift B1

The gear positions must be adjusted to a different adjustment value from Mechatronic "L31B1138".

NOTE: A Mechatronic with the identification. "L31A1140" was built before Mechatronic "L31B1138" because it was built by the 1st shift (A1) on a Monday.

A Mechatronic with the identification "L31C1009" was built after Mechatronic

"L31B1138" because it was built by the 3rd shift (C1) on Monday.

-- Move the gear position back and forth and set the 4 gear positions on the back of the Mechatronic in the center position to dimension -a-.

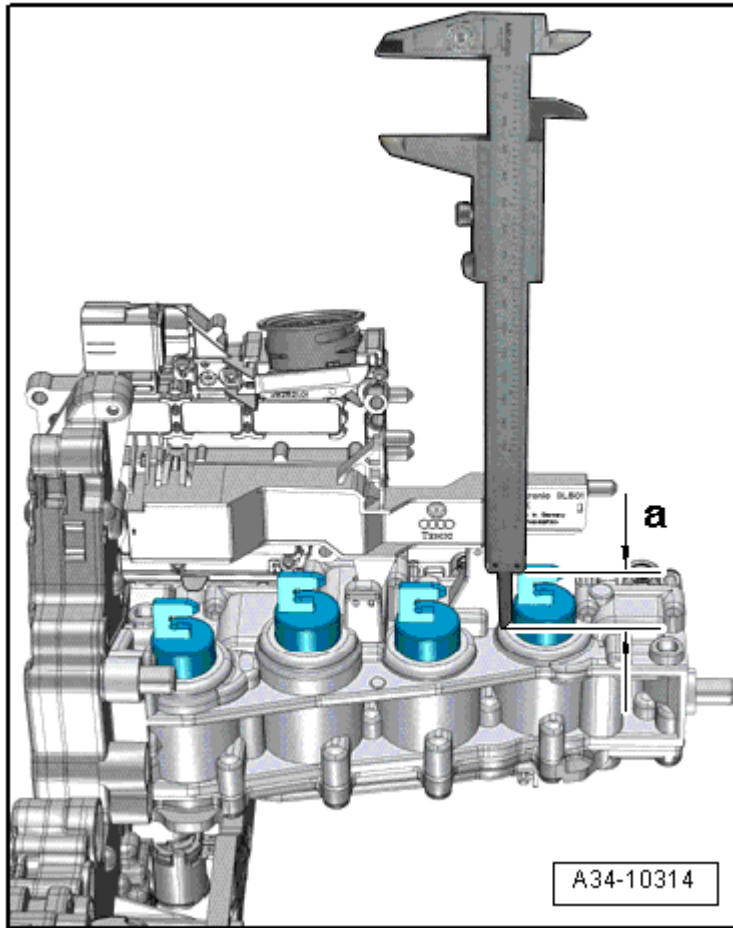


Fig. 24: Identifying Mechatronic Center Position Dimensions
Courtesy of AUDI OF AMERICA, LLC

For Mechatronic with Identification through "L31B1137" :

- -a- = 28 mm

For Mechatronic with Identification from "L31B1137" :

- -a- = 32 mm

-- Align the gear selector yokes -arrows- so that they engage into the eyes in the shift fork when being installed.

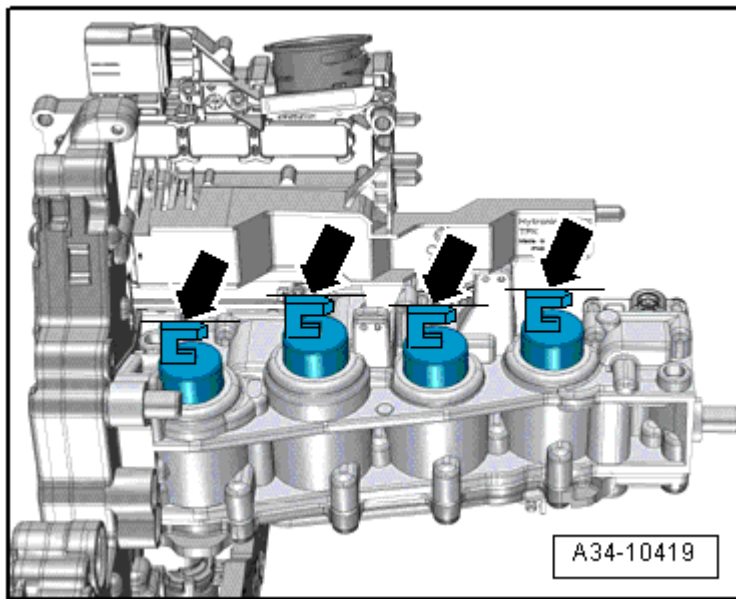


Fig. 25: Aligning Gear Selector Yokes
Courtesy of AUDI OF AMERICA, LLC

-- Insert the Mechatronic into the transmission housing.

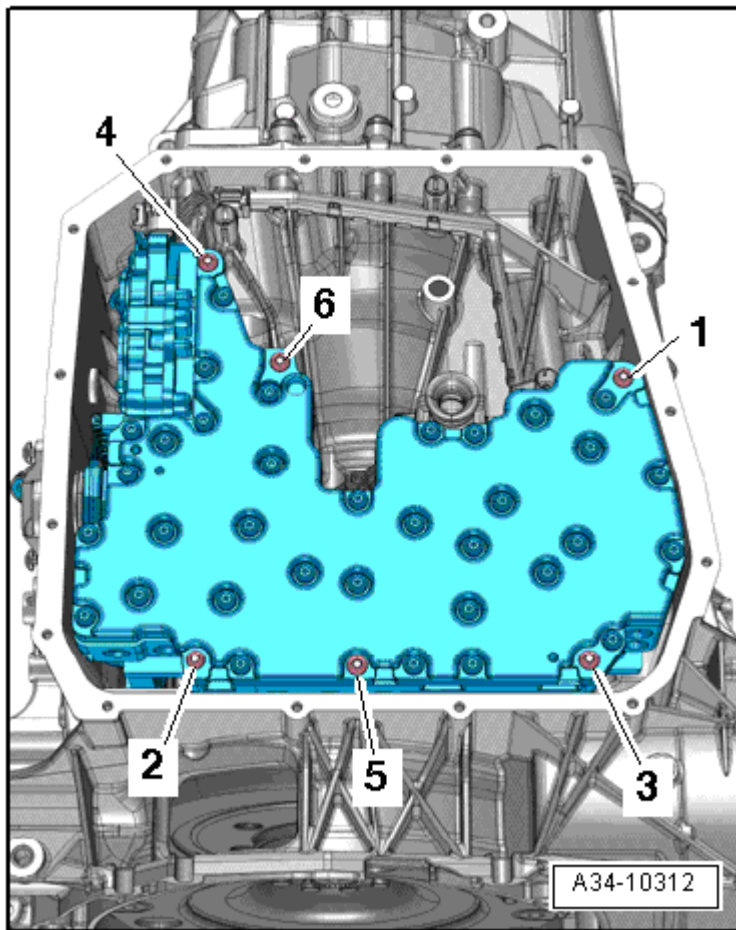


Fig. 26: Identifying Mechatronic, Tightening Sequence
Courtesy of AUDI OF AMERICA, LLC

- The Mechatronic and its bolts must fit easily into the holes in the transmission.
- If the Mechatronic does not go in easily, then it is possible that a shift fork or a gear selector is not in its center position. Check the center position and adjust if necessary.

After installing the Mechatronic:

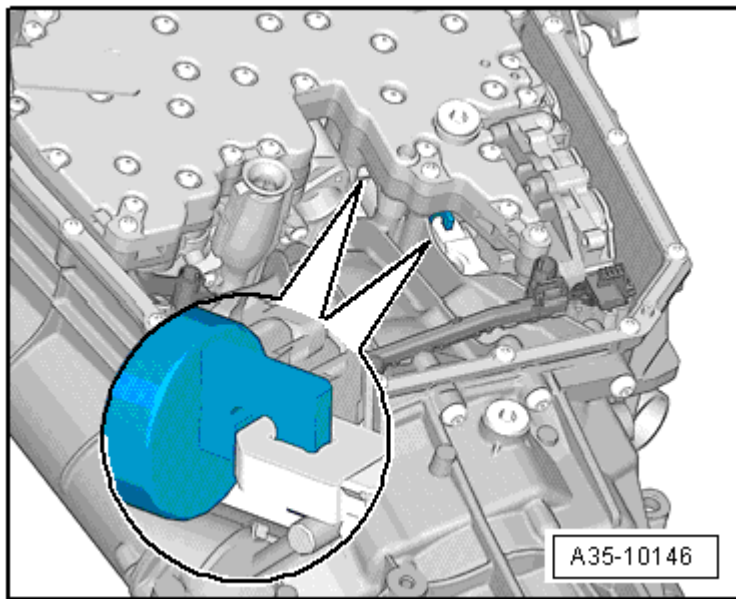


Fig. 27: Checking Gear Selector Yoke Position
Courtesy of AUDI OF AMERICA, LLC

-- Using a flashlight, check all the gear selectors through the opening between the Mechatronic and the transmission housing.

- All four gear selector yokes must fit correctly in the shift fork eyes.

-- Tighten the Mechatronic bolts. Refer to **Fig. 3**.

Install in reverse order, paying attention to the following:

CAUTION: There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- Always "discharge" the static electricity. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- Do not touch contacts in transmission connector with hands.

-- Make sure the connector is correctly connected to the Mechatronic.

-- Complete the steps required after connecting the battery. Refer to **Removal and Installation** .

-- Install the ATF filter. Refer to **ATF SUCTION FILTER**.

-- Install the ATF pan. Refer to **AUTOMATIC TRANSMISSION FLUID OIL PAN**.

-- Fill the ATF. Refer to **ATF, CHECKING LEVEL AND CORRECTING** .

- Perform "Guided Functions" using the vehicle diagnosis tester after replacing the DSG transmission Mechatronic. Refer to **TRANSMISSION GUIDED FUNCTIONS** .

SPECIAL TOOLS

Special tools and workshop equipment required

- Used Oil Collection and Extraction Device V.A.G 1782

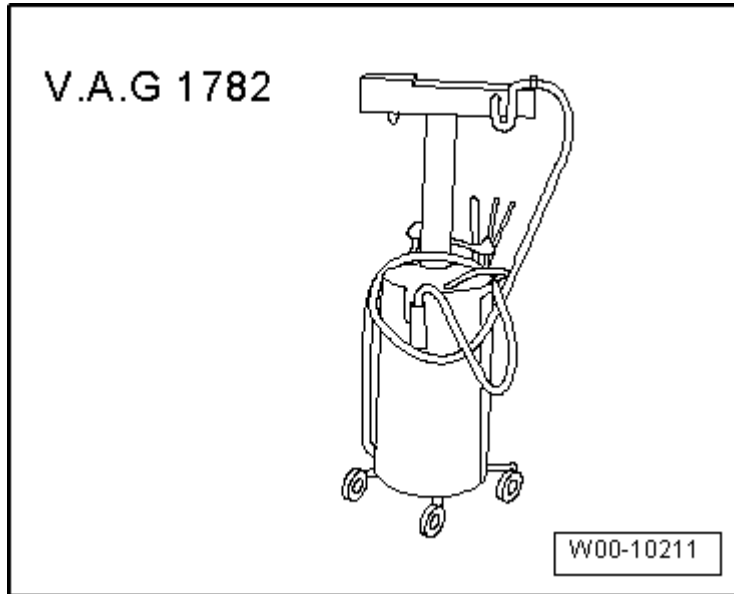


Fig. 28: Identifying Oil Extractor V.A.G 1782
Courtesy of AUDI OF AMERICA, LLC