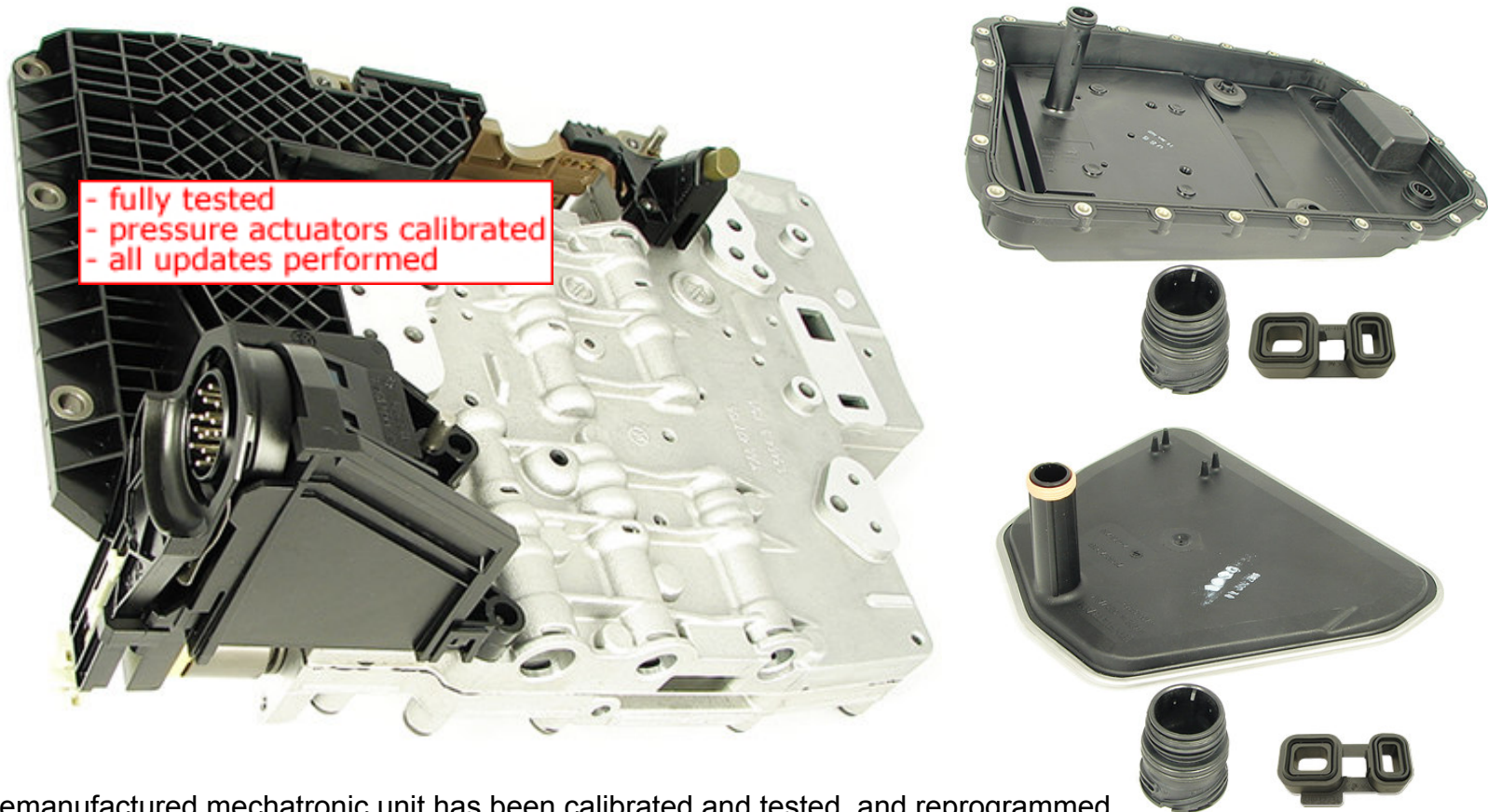


Remanufactured Mechatronic Installation Instructions

ZF 6HP Models

europeantransmissions.com



This remanufactured mechatronic unit has been calibrated and tested and reprogrammed with the correct software for your vehicle. test results included.

After initial install, clear all codes and reset Adaptation, poor shift quality may be experienced but improve overtime during the Adaptation process.

This remanufactured Mechatronic will NOT repair internal transmission faults or wear

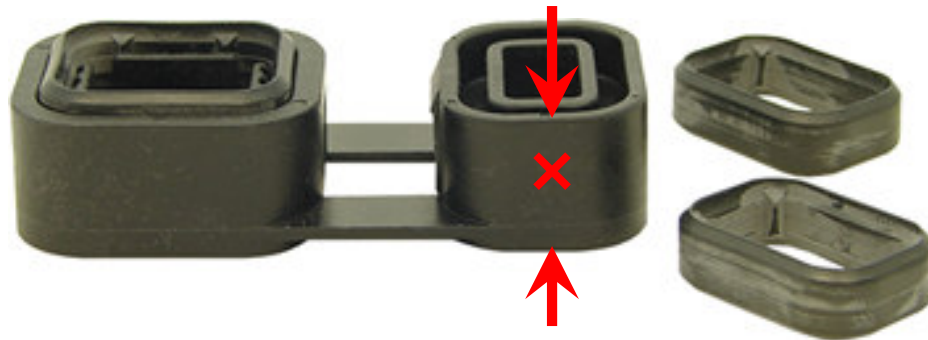
The following installiation instructions apply to M-shift Type and E-shift Type Mechatronics

Mechatronic Replacement Hints

Adapter replacement



- Remove the mechatronic adapter from the transmission housing and replace it with the new one that came with the mechatronic. Use transmission fluid to coat the adapter seals.
- The 6HP19-21 and the 6HP26-28-32 adapters are different in their height. Check the height of the adapter without the seals installed.

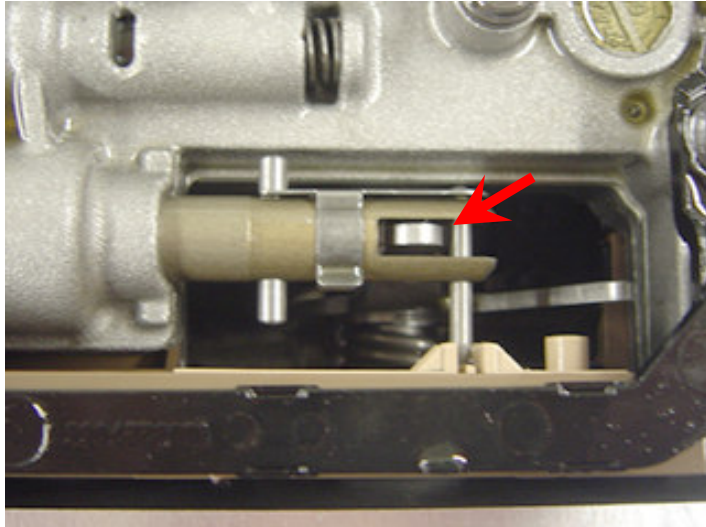


Note

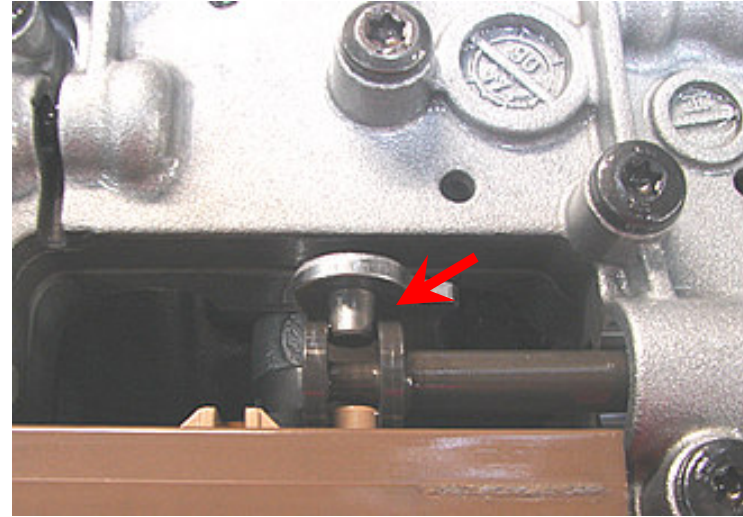
- Adapter height **X** on 6HP19 & 21 = **15.4 mm ± 0.1 mm**
- Adapter height **X** on 6HP26 & 28 & 32 = **14.4 mm ± 0.1 mm**

Mechatronic Replacement Hints

Park cylinder rod or selector valve alignment



E - shift



M - shift

- When installing the replacement mechatronic make sure the park cylinder rod on E-shift or the manual valve on M-shift is properly engaged before installing any of the mechatronic mounting bolts.

Note

- If the screws were installed without the park cylinder or manual valve in place, do not force the components in place, irreversible damage will occur. Remove all mechatronic mounting screws and start from the beginning.

Mechatronic Replacement Hints

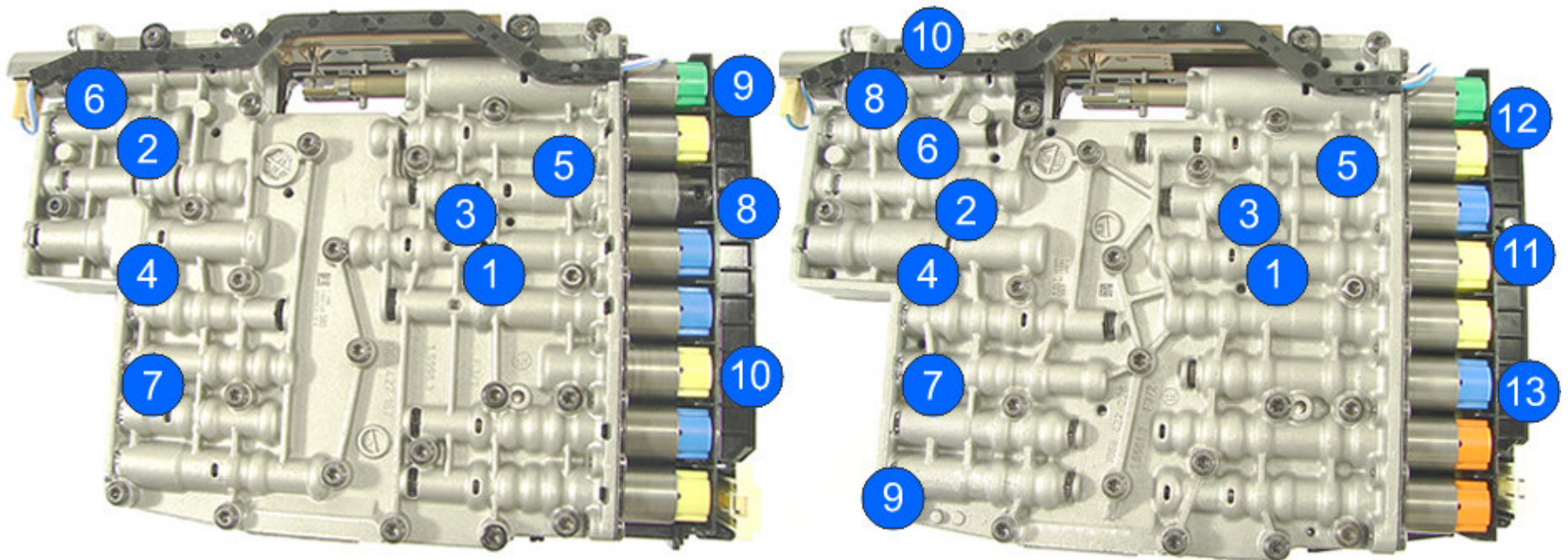
Installing the mechatronic mounting bolts

Note

- Use hand tools – do not use power tools for screw installation. Improper torque of the mechatronic mounting screws will cause erratic transmission operation.

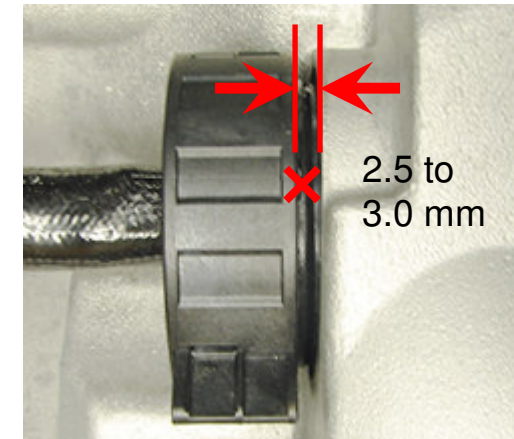
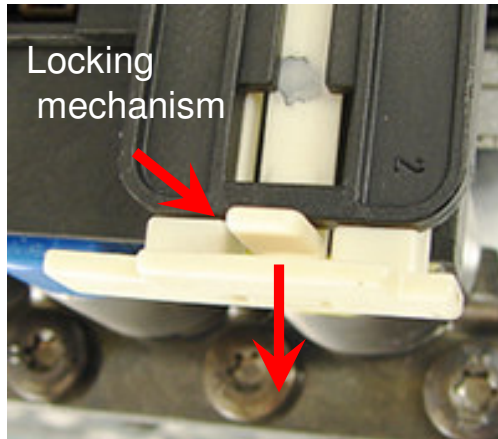
First install and turn screw 1 and 4 alternately until seated then install all other screws until they make contact with the mechatronic. After all screws are installed, tighten screws in order 1 through 10 or 1 through 13 as shown in the schematic below.

Torque for screws is **8 NM ± 0.8 Nm**.



Mechatronic Replacement Hints

Sleeve installation



- Unlock the sealing sleeve locking mechanism and install the sealing sleeve with the locating tab properly aligned with the mechatronic. Use transmission fluid to lubricate the seals for installation. After the sleeve is properly seated, push the locking mechanism to the locked position. Install the vehicle connector plug and check that the sleeve is properly seated. The gap **x** should be between **2.5 to 3.0 mm**.



Note

Attention
ESD sensitive device.
Do not touch the pins
of the electrical connector.

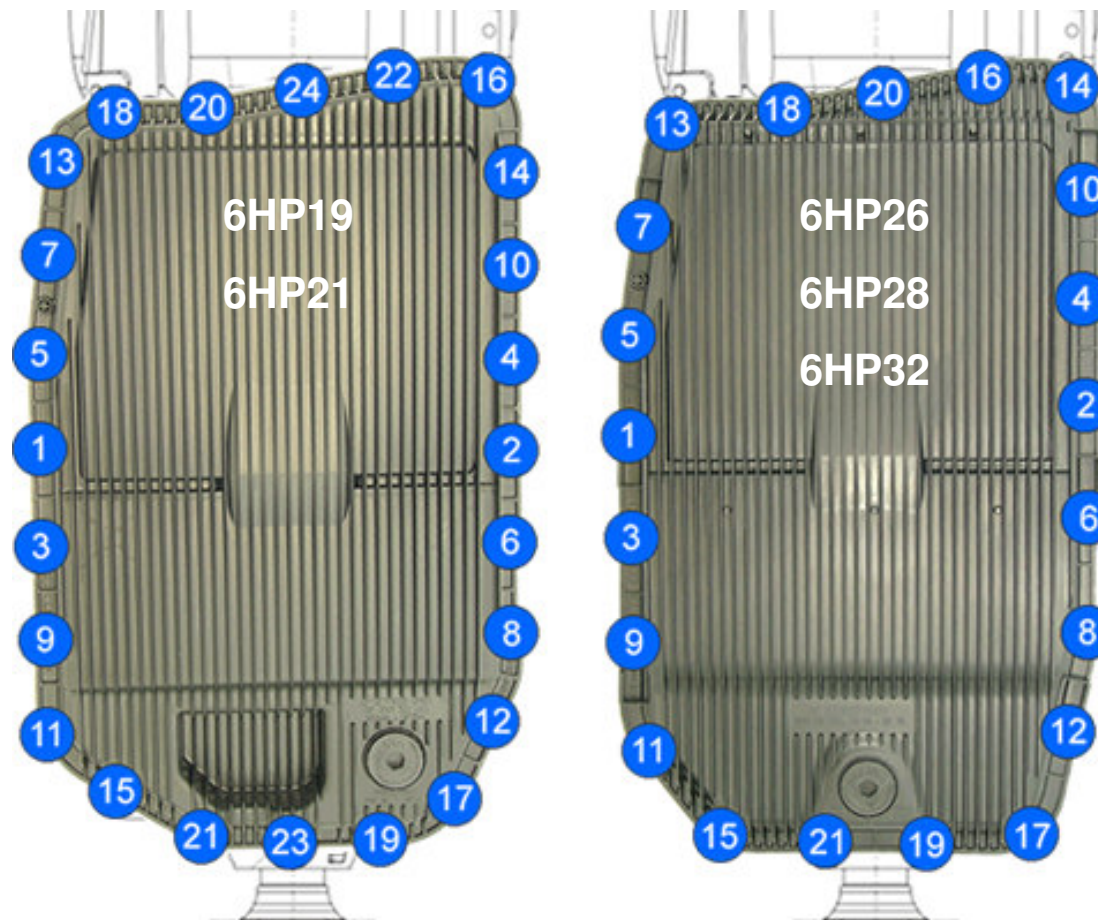
Mechatronic Replacement Hints

Oil pan torque sequence

- Install the oil pan and attach all screws until they just make contact with the oil pan. After all screws are installed, tighten screws in order **1** through **24** or **1** through **21** as shown in the schematic below.

The tightening torque for screws on a plastic oil pan is **10 Nm ± 1.0 Nm**.

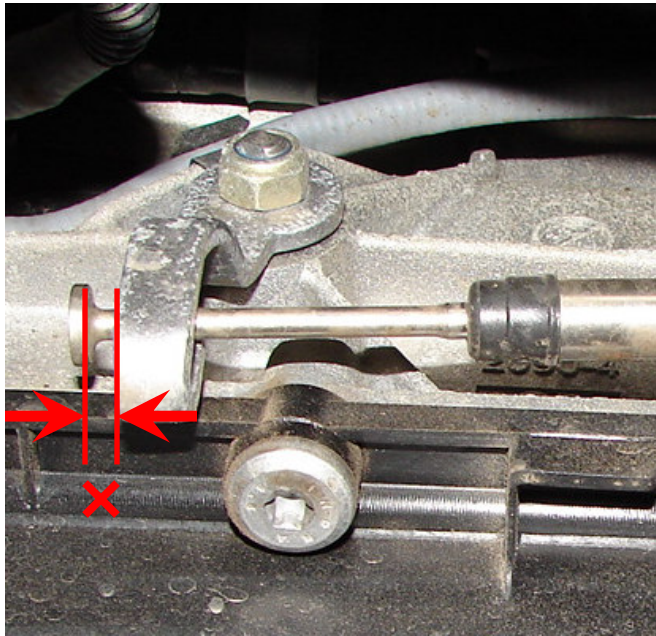
The tightening torque for screws on a steel oil pan is **12 Nm ± 1.0 Nm**. (steel pan not pictured)



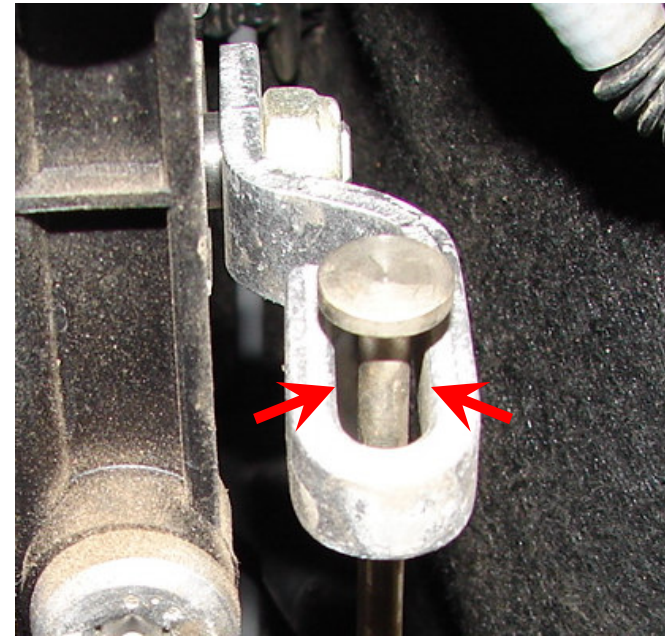
Mechatronic Replacement Hints

Emergency release cable adjustment

- E-shift vehicles only, remove the tie strap or wire that held the emergency park release lever in the backwards position and adjust cable as follows.



With the emergency cable released the clearance **X** indicated above must be adjusted to **1.0 to 2.0 mm**.



The cable should not touch the lever at any time, even if the lever is moved back and forth. If the cable does come in contact then check for a bent lever or a bent cable bracket.

Mechatronic Replacement Hints

ZF LifeguardFluid



Notes on transmission fluid

- Use of **ANY** transmission fluid other than ZF LifeguardFluid can cause transmission slippage, harsh shifting, noise, lock-up clutch cycling and reduced service life.

LifeguardFluid6 S671 090 255

all 6HP19,
all 6HP19X **except for Audi Q7**,
all 6HP21, 6HP21X, 6HP26, 6HP26X,
all 6HP26A61(2) **except vehicles with Audi W12-engine**
all 6HP28, 6HP28X, 6HP28A61,
all 6HP32, 6HP32A (2), 6HP32X

LifeguardFluid6+ S671 090 281

6HP26A61(2) **for vehicles with Audi W12-engine**

LifeguardFluid8 AA00 601 304

all 6HP19A (2)
6HP19X **for Audi Q7**
all 6HP28AF (2)

(2) differential require different oil, see TE-ML11 for specifications.

Mechatronic Replacement Hints

Fluid level procedures

Transmissions fluid level checking.

- The transmission fluid temperature must be between 30°C and 35°C before checking can begin. Use test equipment to determine the trans temperature.
- The vehicle must be level with engine running at idle speed and air conditioning turned on.
- Step on the brakes firmly, apply parking brake fully and shift to D and R, briefly pausing in each position before shifting back to the Park position.
- With the engine running at idle speed and the selector in Park position, remove the filler plug. Monitor the transmission temperature, if a small stream of oil runs out at 40°C, the fluid level is correct.
- If no oil runs out when the filler plug is removed, the fluid level is too low and oil needs to be added until it overflows.
- With engine running, install the oil filler plug and tighten to proper torque.

Adding fluid after repairs.

- With the engine stopped and the transmission in Park position, remove the oil filler plug. Add transmission fluid until a small stream of oil runs out.
- Insert the filler plug and tighten by hand. Start the engine.
- With the engine running, remove the oil filler plug and add transmission fluid until a small stream of oil runs out. Insert the filler plug and tighten by hand.
- Follow the “Transmission fluid level checking” procedure described in section **Transmission fluid level checking** above.

Mechatronic Replacement Hints

Fluid level procedures

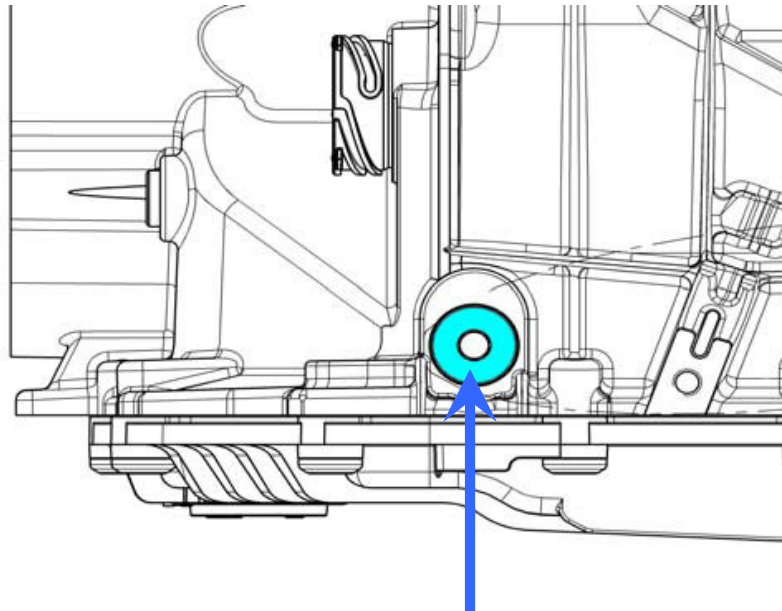


Notes on fluid level and adding procedure.

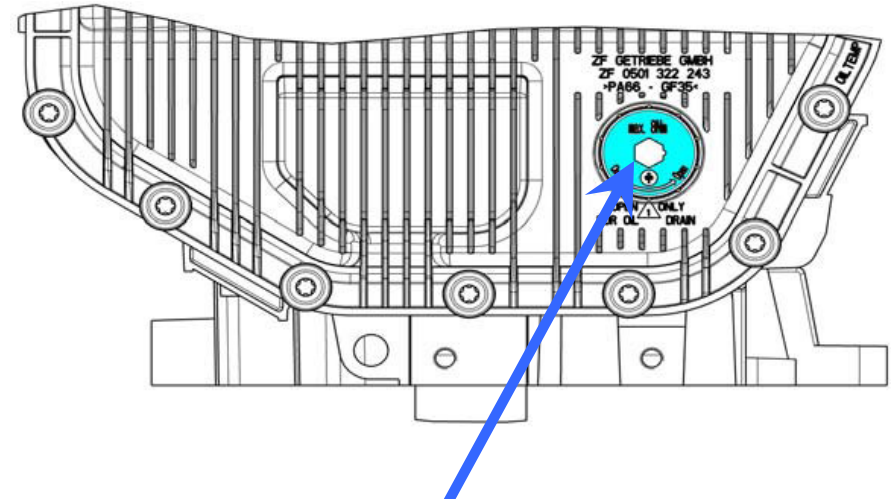
- Use only ZF-LifeguardFluid6 or OE approved transmission fluid.
- If the transmission temperature rises above 50°C during the fluid level checking procedure the resulting oil level will be too low. Let the transmission cool down and repeat the fluid level procedure.
- Have transmission fluid and a suitable oil pump available before starting the fluid level procedure. The transmission fluid temperature will rise quickly during the checking procedure.

Mechatronic Replacement Hints

Drain and filler plug location for 6HP19/21 with plastic oil pan



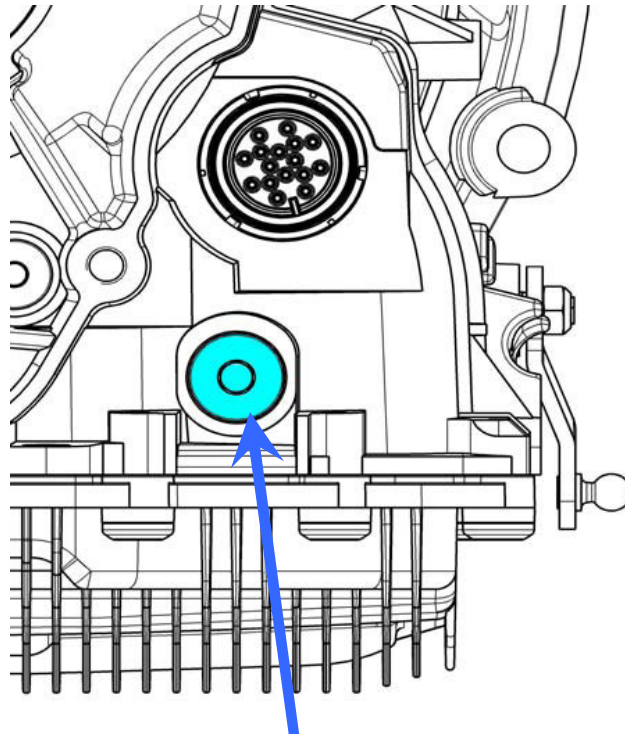
Filler plug **M18x1.5**
Inner hexagon **8mm**
Tightening torque **35 Nm ± 3.5 Nm**



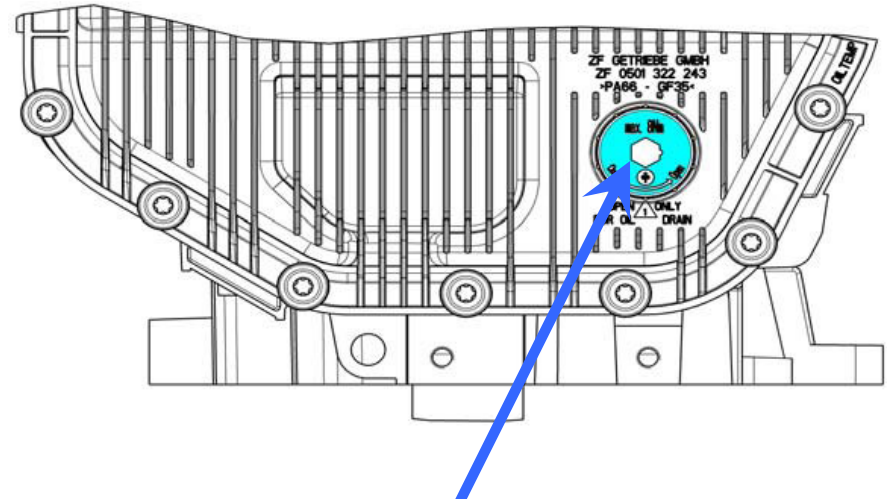
Drain plug **M24x1**
Inner hexagon **10mm**
Tightening torque **8 Nm - 0.5 Nm**

Mechatronic Replacement Hints

Drain and filler plug location for 6HP19X/21X with plastic oil pan



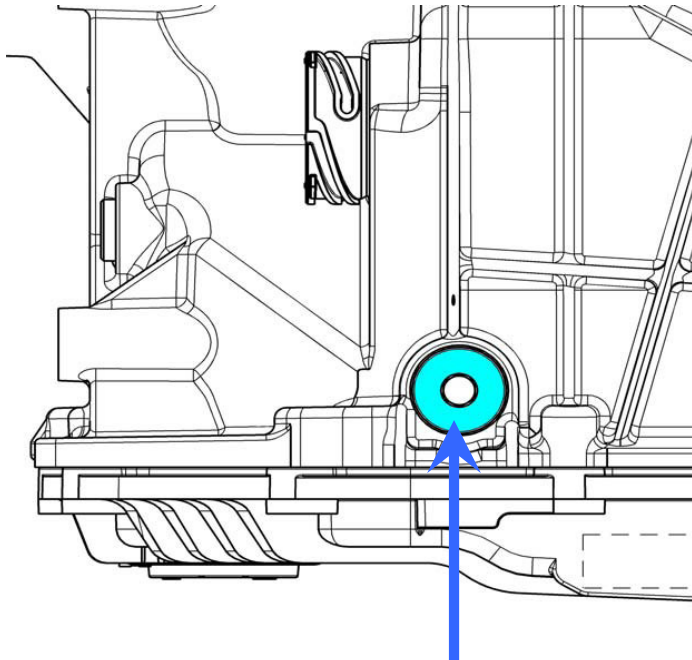
Filler plug **M18x1.5**
Inner hexagon **8mm**
Tightening torque **35 Nm ± 3.5 Nm**



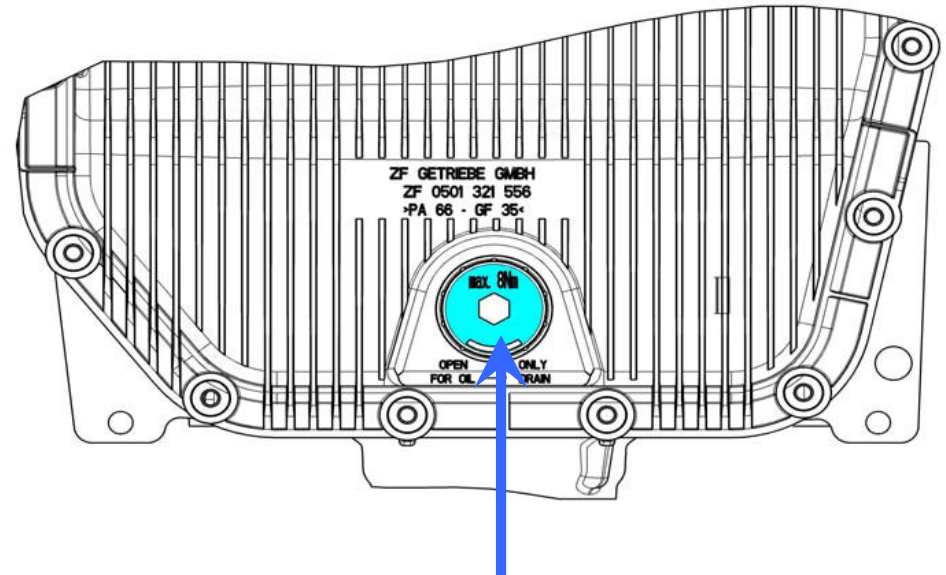
Drain plug **M24x1**
Inner hexagon **10mm**
Tightening torque **8 Nm - 0.5 Nm**

Mechatronic Replacement Hints

Drain and filler plug location for 6HP26/28/32 with plastic oil pan



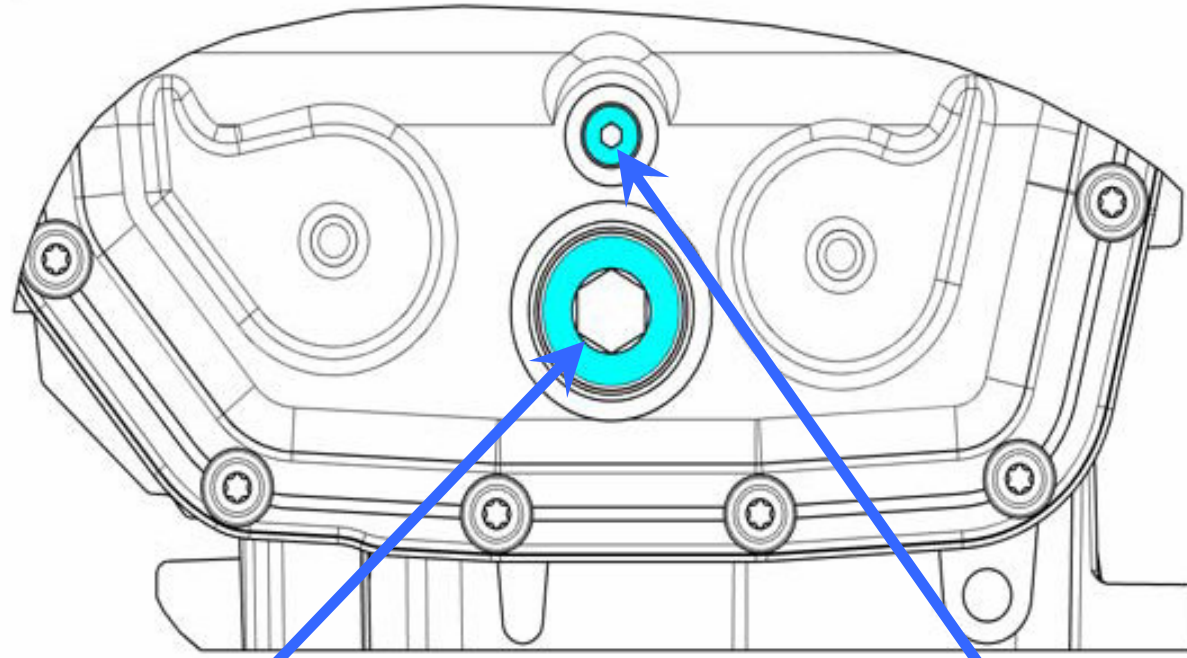
Filler plug **M18x1.5**
Inner hexagon **8mm**
Tightening torque **35 Nm ± 3.5 Nm**



Drain plug **M24x1**
Inner hexagon **10mm**
Tightening torque **8 Nm - 0.5 Nm**

Mechatronic Replacement Hints

Drain and filler plug location for 6HP26X with steel oil pan



Filler plug **M30x1.5**
Inner hexagon **17mm**
Tightening torque **80 Nm ± 8 Nm**

Drain plug **M10x1**
Inner hexagon **5mm**
Tightening torque **12 Nm ± 1.2 Nm**

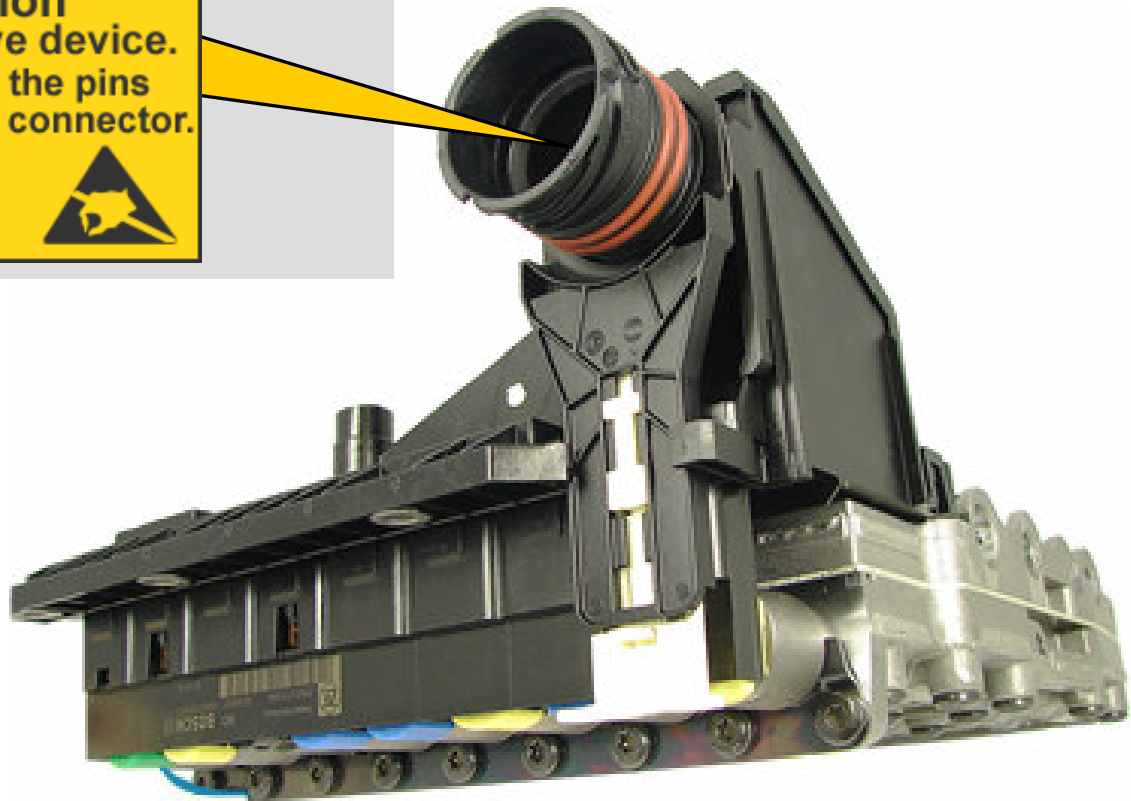
Mechatronic Replacement Hints

Core Return

- Insert the old sealing sleeve back into the mechatronic, push the locking tab into its locked position for core return shipping.

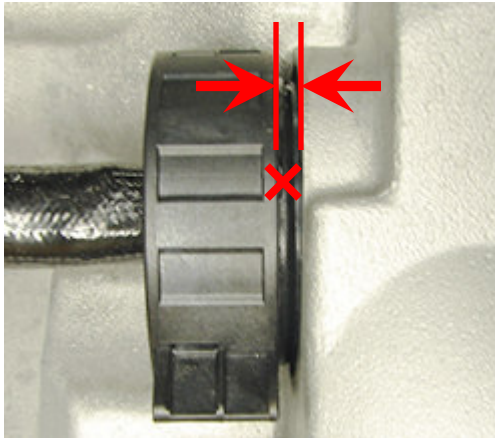
Note

- Avoid touching any electrical pins to prevent ESD (electrostatic discharge) damage.



No Communication - Failsafe

Most common issues after mechatronic replacement



CHECK GAP BETWEEN HOUSING AND CONNECTOR

IS THE GAP X LARGER THAN 3.0mm?

YES

NO

THE SLEEVE IS NOT PROPERLY SEATED IN THE MECHATRONIC. REINSTALL PROPERLY.

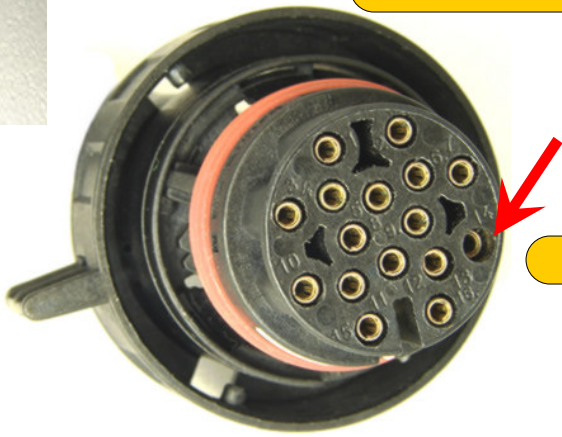
CHECK FOR PUSHED BACK PINS AT THE VEHICLE CONNECTOR?

PINS PUSHED BACK?

YES

NO

REPAIR AS NECESSARY



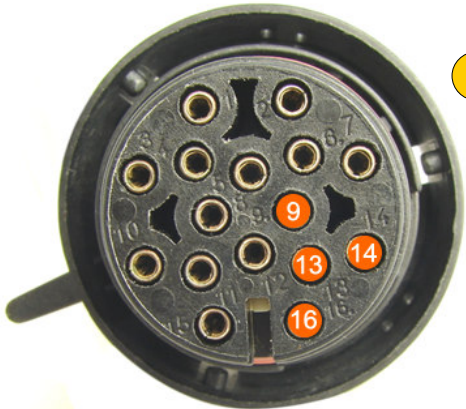
ARE YOU ABLE TO ACCESS ALL OTHER SYSTEMS?

YES

NO

TROUBLESHOOT COMMUNICATION PATH

WITH VEHICLE CONNECTOR DISCONNECTED AND IGNITION ON, CHECK VOLTAGE AS FOLLOWS



PIN 13 to PIN 14 – RECORD VOLTAGE
 PIN 13 TO PIN 9 – RECORD VOLTAGE
 PIN 16 TO PIN 14 – RECORD VOLTAGE
 PIN 16 TO PIN 9 – RECORD VOLTAGE

IS VOLTAGE BETWEEN PINS BATTERY VOLTAGE?

YES

NO

RECOMMEND MECHATRONIC REPLACEMENT

TROUBLESHOOT POWER PATH - FUSES