Repair instruction

Removing and installing/replacing high-pressure pump (N47) (32 FRU)

13 51 004 Removing and installing/replacing high-pressure pump (N47)

Special tools required:

- 11 8 740
- 11 8 741
- 11 8 742
- 32 1 270
- 37 1 152

Important!

Special tool 11 8 741 must - after it has been installed - without fail remain bolted in the sprocket wheel until all tasks have been completed.

When working on the oil, coolant or fuel circuit, you must protect the alternator against contamination.

Cover alternator with suitable materials. Failure to comply with this procedure may result in an alternator malfunction.

Note:

After disconnecting the injection line, it is absolutely essential to seal the high-pressure pump and the high-pressure accumulator with protective caps. 32 1 270
The position of the high-pressure pump in relation to the valve train has no effect on the function, but must be observed during removal and installation.

For purposes of clarity, all pictures have been created to show the engine removed.

**Recycling:**
Catch and dispose of escaping fuel.
Observe country-specific waste-disposal regulations.

**Necessary preliminary tasks:**
- Turn off ignition
- Layout of common rail system
- Remove acoustic covers
- Remove intake air manifold
- Remove glow control unit
- Remove reinforcement plate
- Remove rear underbody guard
- Secure crankshaft position; for more information, refer to Checking timing

Unlock plug (1) on metering unit and detach. Detach fuel feed and return lines of high-pressure pump.

**Installation:**
Replace clamps. Tightening torque, 13 51 1AZ.

Release union nut (1) from high pressure pump with special tool 37 1 152.
Installation:
Tightening torque 13 53 2AZ.

Release union nut from pressure accumulator (1) with special tool 37 1 152.

Remove high-pressure line.

Installation:
Tightening torque 13 53 2AZ.

Pay attention to installation position of rubber mount (2) and abrasion protection on high-pressure line.

Remove front propeller shaft.

Release end cover in gear case from below. The picture shows the end cover on the removed engine. Replace sealing cap with O-ring.

Installation:
Tightening torque 11 14 1AZ.

Screw in special tool 11 8 741 for positioning sprocket wheel of high-pressure pump. The remove special tool 11 8 742. Special tool 11 8 741 remains in the gear case until the end of the repair work.
Remove high-pressure pump support.

Release retaining screws on front of high-pressure pump.
Release mounting bolt (1) on side of gear case.

**Important!**
- Special tool 11 8 741 remains in gear case housing.
- Central screw remains in sprocket wheel.

Release screw connection between high-pressure pump and sprocket wheel.

**Note:**
- Central bolt is supported on special tool 11 8 740 until high-pressure pump is pressed out.

Remove H.P. pump.

**Note:**
- Central screw remains in sprocket wheel!

**Installation:**
- Tightening torque 13 52 2AZ.

Picture shows the high-pressure pump
sprocket wheel (1) when removed.

To insert the high-pressure pump shaft in the secondary sprocket wheel, it may be necessary to swing the high-pressure pump through several degrees (taper groove-lug fit [arrow]). Then rotate high-pressure pump back into screwing position.

**Replacing high-pressure pump:**

When installing a new high-pressure pump, adapt the high-pressure pump/camshaft sprocket assignment. To do so, turn back high-pressure pump with standard pliers at set-back part of shaft 45° clockwise (top view). Do not damage shaft.

When installing the high-pressure pump support, adhere to the screwing sequence.

**Installation:**

1. Tighten down to head (gap-free), sequence 1-2-3-4
2. Tighten to final torque 13 51 2AZ
   Tightening sequence 2-3-4-1

**Installation:**

Assemble engine.

To vent fuel system:

Bleed fuel system using BMW diagnosis system.

Check fuel system for leaks.

Reset adaptation of electric fuel pump with BMW diagnosis system.