

INSTRUCTION

REMOVAL AND INSTALLATION OF INJECTION PUMP VM SERIES D700/D750, 4- AND 6- CYLINDER

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Important notes

The instructions in this manual are intended exclusively for skilled personnel with the necessary training!
Improper handling releases the manufacturer from any liability.
These instructions are an excerpt from the workshop manual. For a complete description of the repair procedure, please refer to the workshop manual.

1 Removal of the injection pump

1.1 Correct position of the injection pump

Loosen screw **A** at the spur gear cover.

Loosen the injection pump gear nut and carefully remove the spring washer (if present) with the help of a magnet so that it cannot fall inside the engine under any circumstances.

Turn the motor until the key (attention: 2 keyways) is at 11 o'clock (see Fig. 2)

= 1st cylinder TDC compression:

Place a mark between the engine block and the injection pump (Fig. 3).

1.2 Loosening the pump gear

Mount the special tool (Fig. 4) as follows:

Fasten the ring nut **C** on the spur gear cover.

Attach part **D** to the gear thread.

Turn in screw **E** until the pump gear is separated from the pump cone.

1.3 Disassemble injection pump

Loosen the nuts **F** to remove the injection pump **G**.

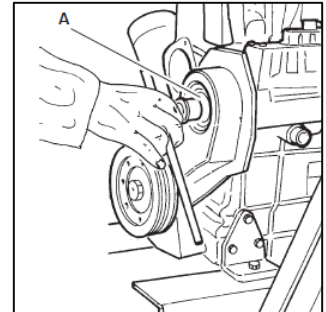


Fig. 1

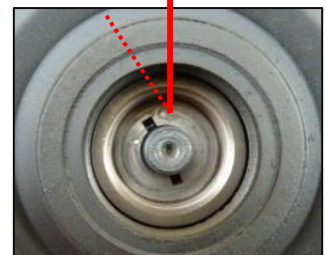


Fig. 2

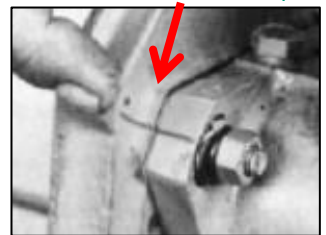


Fig. 3

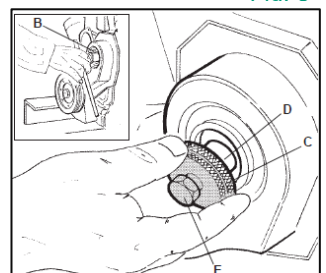


Fig. 4

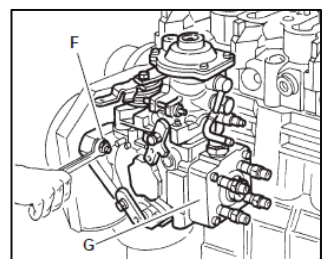


Fig. 5

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2 Installation of the injection pump

2.1 Preparation injection pump

Make sure that the wedge on the pump cone is at 11 o'clock (as seen from the thread of the cone) and is properly seated.

2.2 Detach KSB (if present)

Loosen screw **A** and push lever **B** counterclockwise to the rest position. Slightly tighten the screw **A**.

2.3 Assembly of the injection pump

Mount the injection pump and tighten the 3 nuts according to your marking. If there is no marking, tighten them in the center of the slotted holes. (25 Nm)

Disassemble the special tool (Fig. 4).

Install the spring washer and nut (88 Nm) at the pump gear.

Reattach screw **A** at the spur gear cover.



Fig. 6

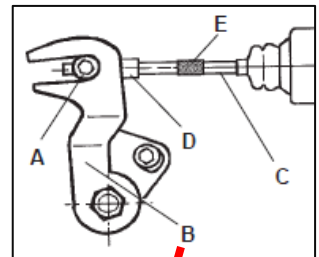


Fig. 7

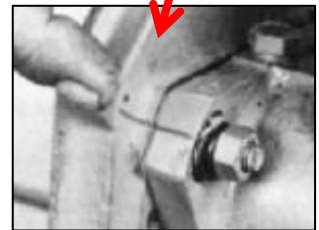


Fig. 8

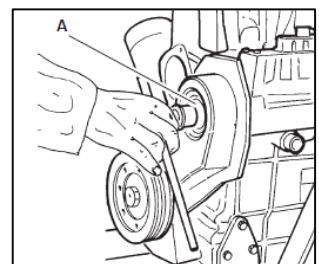


Fig. 9

2.4 Set start of conveying

Dismantle the No. 1 injection nozzle (on the face drive side). If this is inaccessible, injection nozzle No. 4 (on the 4th cylinder) or No. 6 (on the 6th cylinder) can also be dismantled. If necessary, the special trigger must be used (Fig. 10).

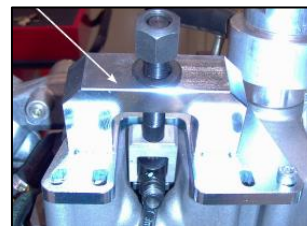


Fig. 10

Mount the special tool (68490020F see heading 5) with a dial gauge, find out the exact TDC and zero the dial gauge.



Fig. 11

Remove the central screw **C** (Fig. 12) on the back of the pump and mount the special tool (68490014F see heading 5) with a dial gauge **D** (Fig 13).

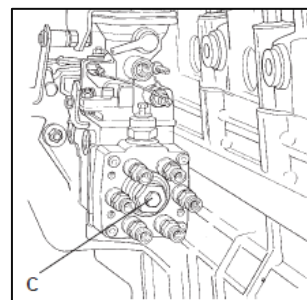


Fig. 12

Turn the motor counterclockwise (as seen from the face drive) until the needle of the dial gauge **D** stops moving. At exactly this point, set the dial gauge to zero.

Turn the motor clockwise until the exact TDC is reached. Read the value from the dial gauge and compare it with the table in the appendix.

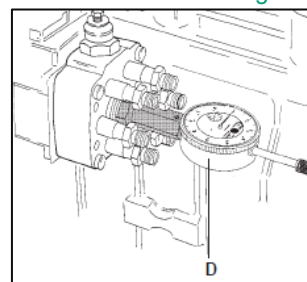


Fig. 13

Minor corrections can be made as follows:

- Bring the motor to TDC.
- Slightly tighten the 3 nuts of the injection pump.
- Rotate the pump until the displayed value matches the preset value.

Tighten the 3 nuts again and check the dial gauge values again.

2.5 Set KSB (if present)

Loosen screw **A** of the adjustment nipple.

Turn (with the help of a screwdriver or similar) the lever **B** clockwise until the nipple **D** rests against the black plastic cover **E**.

Tighten the screw **A** again.

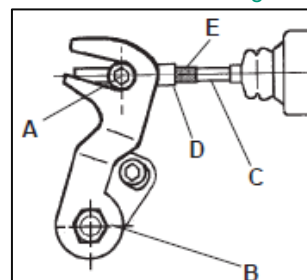
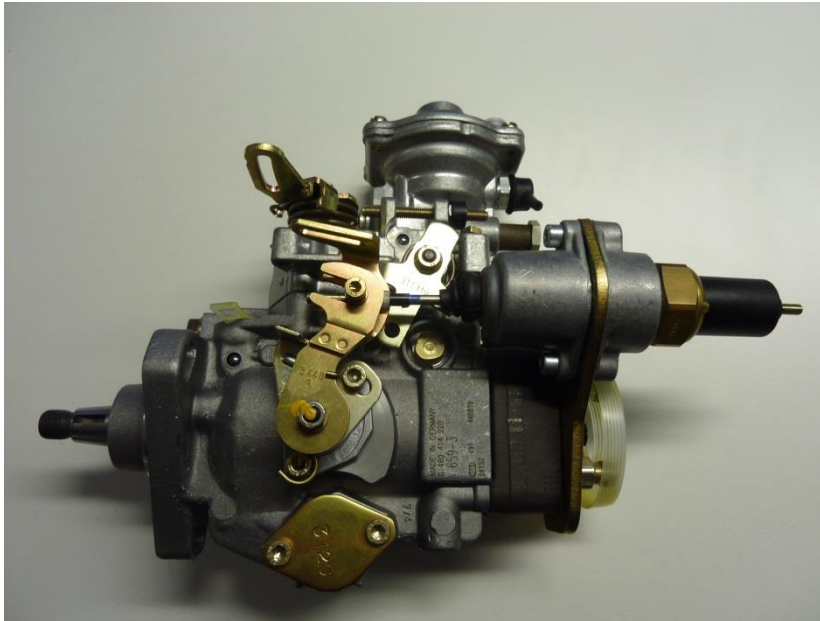


Fig. 14

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3 Pump replacement information

3.1 Distinguishing features of the pumps



Pump old

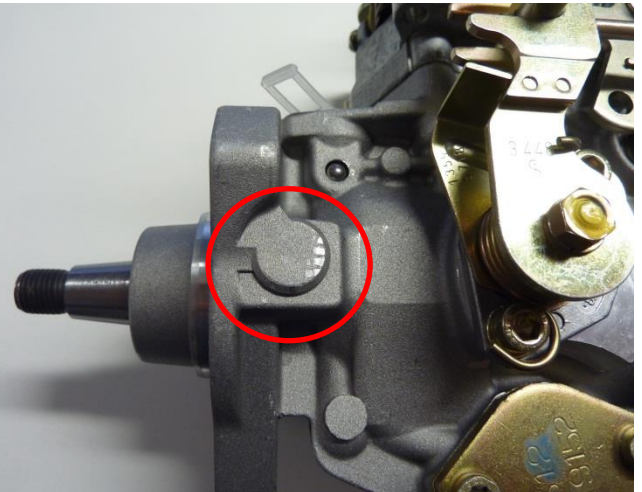
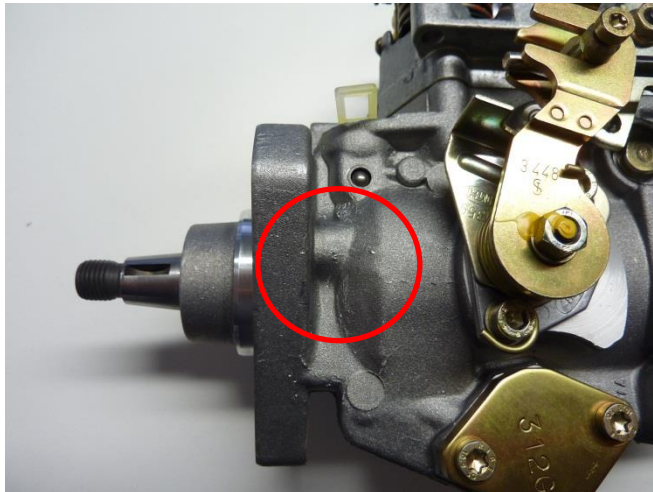


Pump new

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Pump old

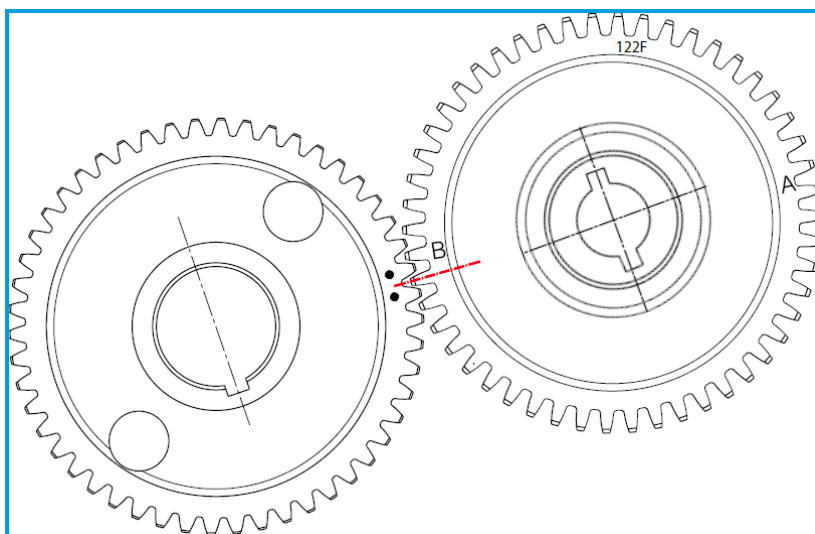
Pump new



3.2 Reset the start of conveying

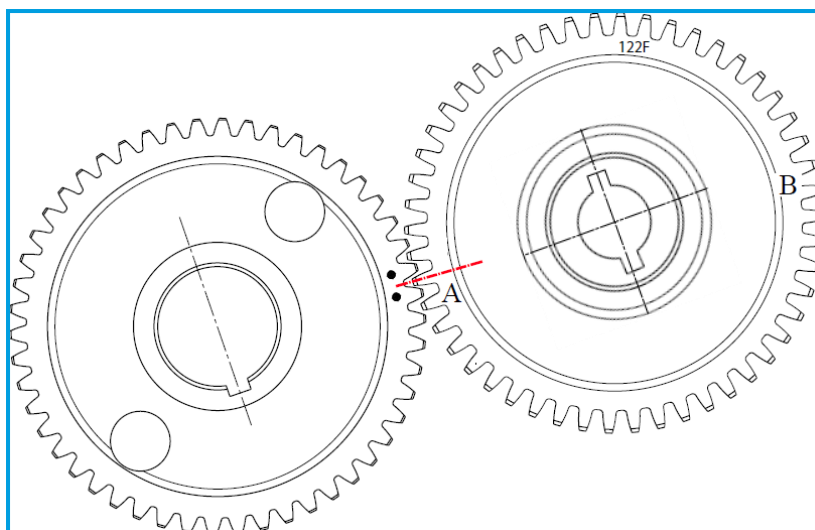
3.2.1 Preparation

In order to set the correct start of delivery, the injection pump pinion must be rotated 180°. When the spur gear cover is removed, you can see from the graphics below how the pinion must be positioned. If the pump is replaced with the cover attached, simply rotate the pinion the aforementioned 180° until the opposite groove is back to 11 o'clock.



Situation **old**

This is the starting position when the engine is at TDC. (1st cylinder, compression stroke)



Situation **New**

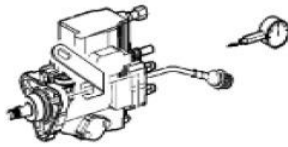

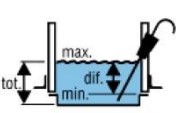

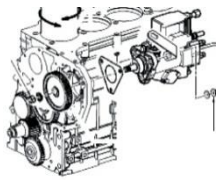
This is how the wheels must stand after the injection pump wheel has been rotated 180°.

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3.2.2 Table Start of delivery D754SE3/TE3/IE3

Motor	Injection pump	Start of funding	Rotate pinion 180
D754SE3 D754TE3 D754IE3	Old	0.59 - 0.61	NO
D754SE3 D754TE3 D754IE3	New	0.59 - 0.61	YES

4 Workshop data

Series D700-D754	 Injection timing Pre-stroke with 1st cyl. to TDC	 Setting Nozzle pressure	 Oil pan capacity Standard max.	 Injection nozzle nut tightening torque	 Tightening torque nut Injection pump gear
Motor typeCode	mm	bar	l	Nm - kgm	Nm - kgm
D704LE76B	1.25 - 1.28 1.09 - 1.11 (2000 min-1)	250 - 258	D704 7 - 8	21.6 - 2.2	D704/754/706 86.3 - 8.8
D704LTE77B	1.03 - 1.05 1.20 (77B/8) . 09A-11A-14A	250 - 258			
D704TE277B	1.03 - 1.05 0.99 - 1.01 Version . 44A	230 - 238			
D706LTE78B	1.23 - 1.25	250 - 258	D704TE2 - D754E2/TE2 7 - 8	21.6 - 2.2	86.3 - 8.8
D706LI91B	1.70 - 1.72	250 - 264			
D754E113C (1001-60000)	1.09 - 1.11	270 - 278	D754 SE3/TE3/IE3 7 - 10	21.6 - 2.2	86.3 - 8.8
D754E213C (60001-99999)	0.99 - 1.01	230 - 238			
D706IE224C	1.24 - 1.26	230 - 238			
D754TE233C	0.93 - 0.97	230 - 238	D706 8.5	21.6 - 2.2	86.3 - 8.8

This is an excerpt from the workshop data that you can obtain from us.

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5 Special tools

5.1 Rental tools

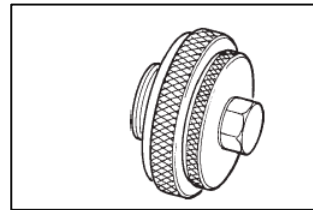
68499930 Rental tool E-pump extraction set "ALL"
All special tools can be rented from us individually or as a set.



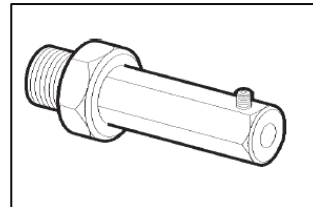
5.2 Spare parts

68400025A Detachment and assembly tool for injection pumps until D700

68400037F Amounting and removal tool for injection pumps from D750 (+D700TE2)



68490014F Measuring adapter for setting the start of conveying on Bosch pumps



68490020F Tool for TDC adjustment

