

SERVICE LETTER 920160

Instruction for disassembly, cleaning and testing HJ SIP II valve(s) onboard.

***We recommend that HJ SIP II valve(s) are returned to HJL for overhaul.
If an overhaul onboard is necessary, please follow below instruction.***



PLEASE NOTE: For demounting the HJ SIP II valve(s) please refer to instruction in HJ SIP II valve manual (*subsection 2.1 to 2.6*) and follow the instruction in reverse order.



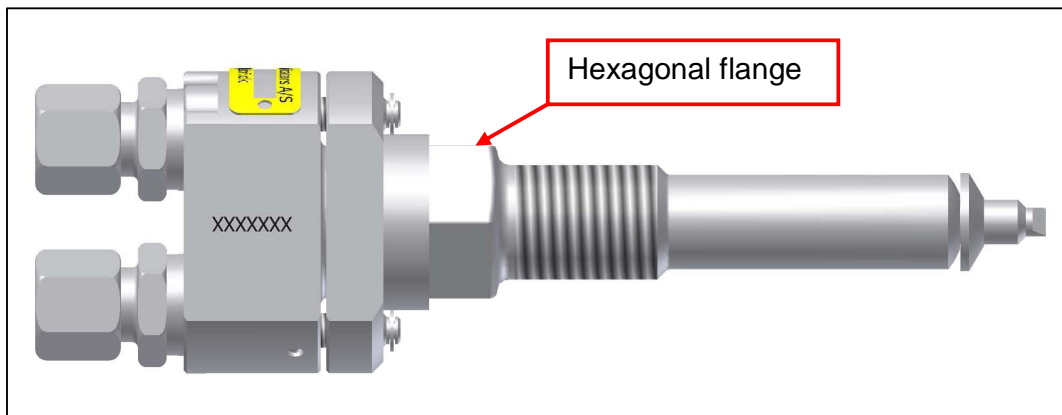
WARNING:
When demounting a HJ SIP II valve make sure to use a socket wrench on the hexagonal flange only (*see illustration below*)! Using a socket wrench on the valve head will damage the HJ SIP II valve!

1. Disassembling and cleaning HJ SIP II valve(s)

1.1 Preparation

It is important that the work is carried out in a completely clean environment.

For the cleaning of the valves, use kerosene for cleaning the parts, an $\varnothing 0.3\text{mm}$ drill for cleaning the nozzle hole, compressed air free from water and impurities for blowing the parts clean and rag free from fluff.



1.2 Disassembly of HJ SIP II valve(s)

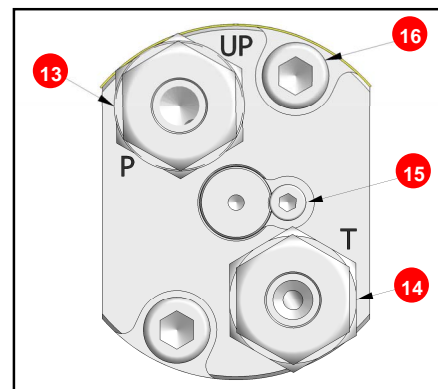
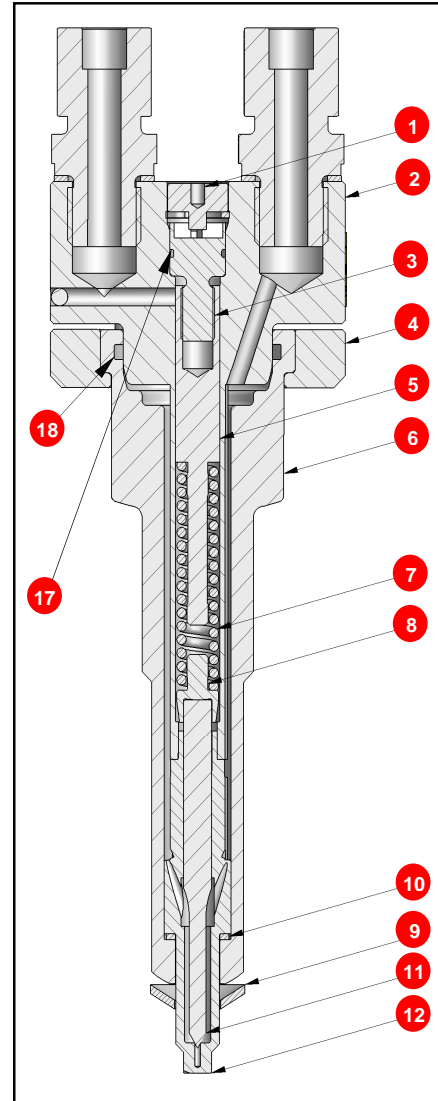
- 1.2.1 Clean the valve carefully on the outside before commencing disassembly.
- 1.2.2 Dismantle the screws (15 and 16)
- 1.2.2 Remove the cover (1)
- 1.2.3 Lift of the tightening bush (2) carefully and be careful not to drop it.
- 1.2.4 Adjustable screw (3) and adjustable spring nut (5) to be dismantled.
- 1.2.5 Dismantle the nozzle (12) and needle (11)
- 1.2.6 Remove the packing (9, 17 and 18)

1.3 Cleaning

Clean the individual parts with kerosene. Clean the nozzle hole carefully with an $\varnothing 0.3\text{mm}$ drill. Blow the parts through with compressed air inside out.

If the needle (11) in the nozzle (12) does not move freely and without resistance as it is supposed to do after cleaning, it must be removed and replaced.

Both the needle (11) and the nozzle (12) must be removed and replaced as the parts are matched together in pairs.



1.4 Assembly of the HJ SIP II valve(s)

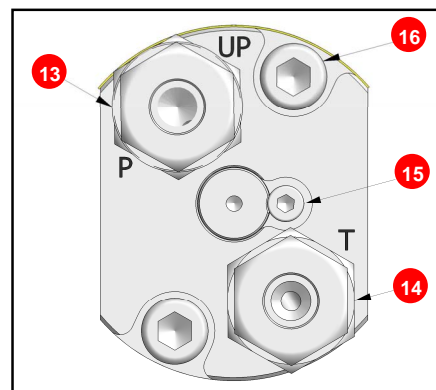
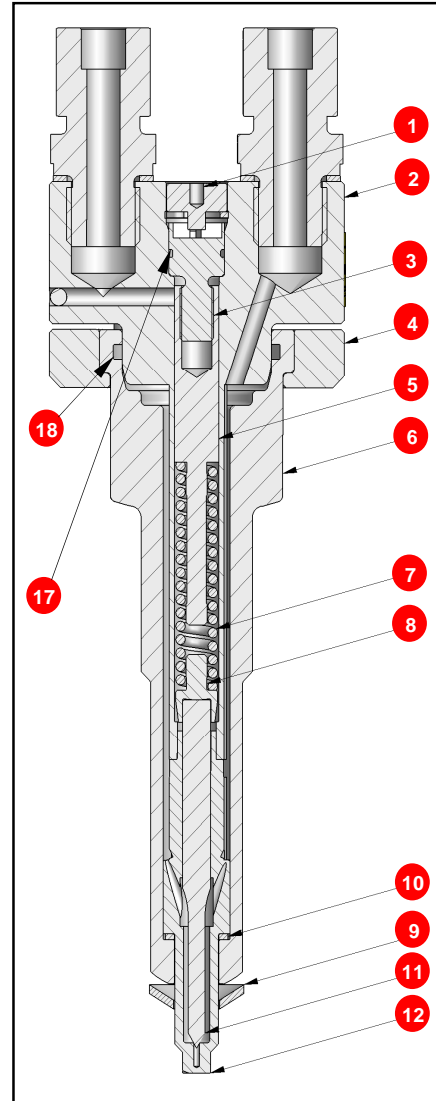
It is important that the components are placed at the same positions as before the valve was disassembled. Please note that the carrier between the tightening bush and the nozzle is different.

We recommend a change of all packing after disassembly of a HJ SIP II valve.

Order no. for packing set, consisting of different O-rings, gaskets and shims (**9, 10, 17 and 18**) can be found in the spare parts list, in the HJ manual

Oil all parts with thin acid-free oil, e.g. hydraulic oil **SAE 15-20** before assembly.

- 1.4.1 Place the adjustable screw (**3**) and the adjustable spring nut (**5**) in the tightening bush (**2**).
- 1.4.2 Place the tightening bush (**2**) with the smallest diameter upward. Then place the nozzle (**12**) with needle (**11**) on the tightening bush (**2**).
- 1.4.3 Place the copper gasket (**10**) on the nozzle (**12**) and push the valve house (**6**) down over the nozzle (**12**) and the tightening bush (**2**).
- 1.4.4 Place the mounting ring (**4**) down over the valve house (**6**) and place the valve in the fixing tool (HJL no. **208607**).
- 1.4.5 The screws (**16**) are to be mounted and tightened **10Nm**.



2. Adjustment and test of HJ SIP II valve(s)

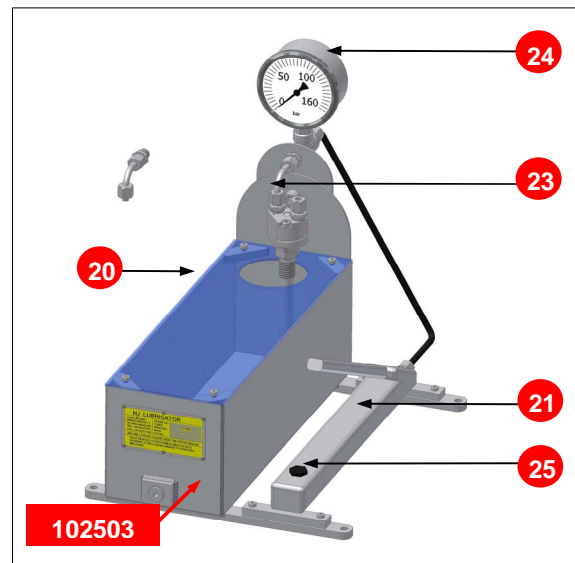
2.1 Safety precautions

Before mounting the HJ SIP II valve in the HJ Test rig (HJL no. **102503**) make sure that the following safety precautions are followed:

- 2.1.1 During testing make sure that eyes and hands are in a safe distance from the nozzle.
- 2.1.2 Make sure that the cover **(20)** is mounted on the HJ Test rig.
- 2.1.3 The max. Permissible flow to the hand pump **(21)** must not exceed a flow corresponding to the adjustment of the lubricator, approx 0.4l/h.

2.2 Testing

- 2.2.1 Loosen and remove the screw **(25)**. Fill the hand pump **(21)** with hydraulic oil **SAE 15-20** at the oil-filling branch. Remember to mount the screw **(25)** after filling.
- 2.2.2 Place the HJ SIP II valve in the HJ Test rig (HJL no. **102503**). Connect the union **(23)** to the joint marked "P" **(22)** on the HJ SIP II valve. Before tightening the union **(23)**, pump with the hand pump **(21)** until the oil flows at the union **(23)**. Then tighten the union **(23)**.



- 2.2.3 Pump with the hand pump and adjust the closing pressure according to manometer **(24)** on the HJ Test rig during pumping to 35^{+5}_0 bar by screwing the adjustment screw **(3)** on the HJ SIP II valve anti-clockwise for higher pressure or clockwise for lower pressure.
- 2.2.4 Correct spray is checked when pumping with the hand pump. There is to be a continuous cone of droplets of oil through the nozzle hole – “droplets” is not accepted.
- 2.2.5 If the spray is not acceptable, impurities have entered the valve and a disassembly and a cleaning is necessary. If the valve needle **(11)** does not move freely after cleaning, the nozzle **(12)** must be replaced.
- 2.2.6 Mount the lock cover **(1)** with the screw **(15)**.

2.3 Mounting

- 2.3.1 The SIP II valve is now ready for mounting in the cylinder. Please follow the instructions for mounting in the HJ SIP II valve manual (*subsection 2.1 to 2.6*).
- 2.3.2 Do not forget to check the distance from the nozzle tip to the cylinder liner running surface – see below table.

Parameter	On delivery	Service
Valve closing pressure	35^{+5}_0 bar	Suitable intervals e.g. each time a cylinder is overhauled or every 12,000-15,000 hours.
Leak per HJ SIP II valve	Max. 18ml/h	The leak quantity may increase over time. Therefore we recommend that it is checked at suitable intervals, e.g. each time a cylinder is overhauled or every 12,000-15,000 hours.
Distance from nozzle tip to running surface	MAN = 1.5 ^{+0.5} mm MHI = 2.5 ^{+0.5} mm WNSD = 3 ^{+0.5} mm	Suitable intervals e.g. each time a cylinder is overhauled or once every 12,000-15,000 hours. Adjust the distance by means of conical shims (9) .