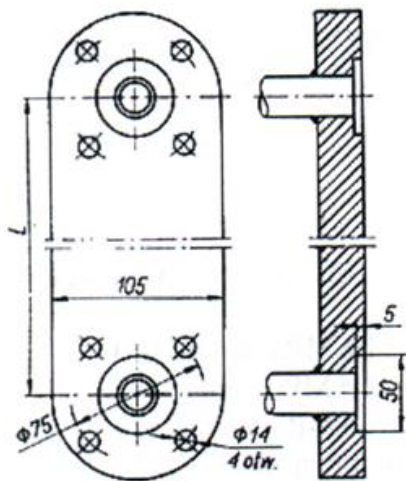
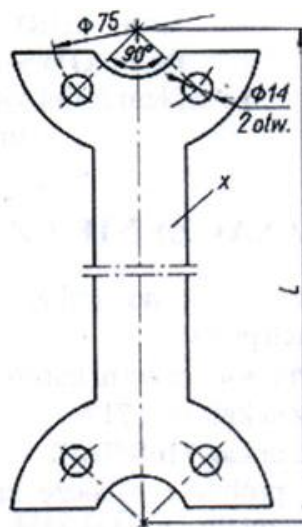


Before installing liquid level gauge on device, check if liquid level gauge is not damage after transport and if glass is not cracked. Liquid level gauges should be assembled to device on stiff or additionally stiffened fittings in order to protect liquid level gauge against possibility of self-disassembly . For example - solution of stiffening are shown on drawings 2 and 3.



Drawing 2. Stiffening of connectors of boiler

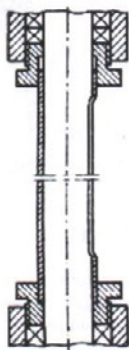


Drawing 3. Stiffening of liquid level gauges heads

Assembly of liquid level gauge:

- Screw flange of liquid level gauge to device flange applying flat gaskets. First the flange of bottom head should be screwed and then upper head to adjust to required dimension and to screw to connector.
- In case of applying the gauge with glass tube, tube shall be protected against mechanical damages.
- User should mark min. and max. level on the frame.
- Exemplified protection is shown on Drawing 4. Length of glass pipe should be established as follows:

Axle base – 28mm = length of pipe



Drawing 4. Protection of glass pipe

4. First run

During of start of the boiler, at opened liquid level gauge cocks, pressure and temperature grow up slowly and danger of thermal shock does not exist. Fast raising of temperature at liquid level gauges can be cause of shortened time of exploitation of glasses or their cracking.

In case of starting of liquid level gauge, after previous disassembling from working boiler (for example to exchange glass pipe), danger of fast raising of temperature at liquid level gauge exists. In order to avoid this, the recommendations should be followed:

- Close bottom cock, open drain cock, and then gap a top cock to get a clearly visible stream of flowing down of condensate along glass. After period of 50 min. all elements of liquid level gauge should obtained working temperature.

- Close the drain cock. Liquid level gauge will start to fill with condensate.
- Full open top cock.
- Full open bottom cock.
- During slow heating, gaskets settle down, and after some time, leakages are possible. All screws, nuts or screw plugs in place of leaks should be screwed by dynamometer key. Before screwing the nut (6) (Drawing 1) heads should be open and close few time with key. This sealing operation should be made at closed heads cock and with open drain cock.
- In case of leaking during exploitation, connections should be sealed as in previous point. If leaks continue, gaskets should be replaced.
- During long stop, liquid level gauge should be drained. This means, top and bottom cock has to be closed, and drain cock open. Position „O” for open and „Z” for close, are marked on gauge of drain cock.

5. Replacement of glasses

Before replacement of reflex glasses, top and bottom cock should be closed and the drain cock opened. In order to replace of glasses, screw (5) in upper and bottom head should be unscrew and frame or glass tube with gland box has to be removed from the heads (3).

Replacement of glass pipe

- Screw plug (6) should be loosen and took out of the glass pipe with cover.
- Set up a new glass pipe with sealing, seal up connection initially with screw plug (6), and then push gland box (3) with the frame onto liquid level gauge’s heads with a glass pipe. Screw screws (5) with gaskets (2 pcs. of gaskets $\Phi 22 \times 18 \times 2,5$) in upper and bottom heads.
- In case of glass pipe with cover, follow above instruction taking into account the cover.

After fulfilling the steps above, it is necessary to seal all connections and attempt to restart the liquid level gauge in accordance with paragraph 4.

6. Checking for chokepoint of chamber

Because of the possibility of limescale deposition or different dirt inside, liquid level gauge’s chambers should be to checked for chokepoint. Frequency is dependent on the exploitation conditions and supervision requirements. In aim of checking of chamber chokepoint, liquid level gauge should be blown. Blowing is made for every head separately, by closing one head to blow the second one at open drain cock.

In case of choked chamber:

- Close bottom cock.
- Unscrew the screw (5) from bottom head, insert a rod with a maximum diameter of 8 mm to chamber and open the bottom cock.
- Unblock a channel with a rod and then take out the rod and close the bottom cock.
- Fix the bottom screw (5).

Repeat above for top head.

Due to perform the above actions under pressure, special caution should be exercised, and the person should be trained and protected against possible burn (in case of hot medium). After cleaning of heads, frame should be also cleaned. For cleaning frame, top and bottom headcocks should be closed, drain cock opened and a rod used to clean chamber of the frame carefully through open drain cock.

7. Final remarks

During service of liquid level gauges in exploitation, regulations of UDT as well as different regulations related to pressure devices has to be obey.

Liquid level gauges are assembled in two types dependent on cock's switch handle location: right or left. If client does not specify the type, liquid level gauges are delivered in right type. Change of design is obtained by loosening of screw (5) and turn of liquid level gauges heads about 180° in relation to gland box and turn of drain cock.

As a standard, flanges are drilled at PN 25/40 bar, as for DN20.

Inlet hole in heads Φ 15 mm.

If during inspections or repairs some parts will prove for replacement, the order of new part should include: number of position, name of the element, size and using material.

8. Warranty

ZETKAMA grants quality warranty with assurance for proper operation of its products, providing that assembly of them is done according to the user's manual and they are operated according to technical conditions and parameters described in ZETKAMA's catalogue cards. Warranty period is 18 months starting from assembly date, however not longer than 24 months from the sales date.

Other warranty terms are to be agreed between the manufacturer of the valve and the purchaser. **The manufacturer reserves the right to introduce technical changes as the result of improving construction and manufacturing technology.** Failure to comply by the user with the regulations and indications included in this user's manual shall exempt the manufacturer from any liability and warranty.