Dismantling the pulsation damper

- Disconnect and close the pulsation damper inlet and discharge the hydraulic fluid from the pulsation damper.
- Remove the pulsation damper from its mounting and lay it horizontally in a vice or other fixation system.
  Take care not to damage the pulsation damper.
- Unscrew the protective cap (Fig. 1).
- Unscrew the gas valve cap (Fig. 2).
- Deflate the bladder using OLAER tester and pressurize instrument (Fig. 3).
  Operate the tester and pressurize instrument as described in its manual.
- Remove the gas valve (Fig. 4).
- Release the gas inlet valve sub-assembly nut and remove the name plate (Fig. 5).
- Unscrew the flange or reduction from the hydraulic fluid end (not used with every model).
- **With the pulsation damper completely free of pressure (gas and fluid), the poppet valve in the fluid port is open or can be pushed inside with hand force. If this is not the case all further work has to be stopped!**
  Please contact OLAER!
- Release ring nut and remove gland ring (Fig. 6).
- Carefully push the hydraulic valve inside the vessel casing (Fig. 7).
- Extract the O-Ring.
- Separate the divided anti-extrusion ring / retention ring from the hydraulic valve sub-assembly, carefully fold together and remove from the vessel (Fig. 8).
- Remove the hydraulic valve (Fig. 9).
- Extract the bladder through the hydraulic end opening. Be careful, not to damage the bladder (Fig. 10).
Cleaning, inspection and repairs

- Carefully clean all metallic parts of the pulsation damper and dry with compressed air.
- Inspect the vessel from any internal damage.
- By depressing the valve head, check the valve for correct operation.
- Check that the safety nut on the valve tappet is fully tightened (secured with Loctite).
- Check that the O-ring shows no sign of wear or any indication of rubbing.
- Check that the bladder has no sign of major frictional wear or other damage.
- Under no circumstances attempt to repair the bladder.
- Replace all worn or damaged parts.

Assembly

- Ensure that no foreign bodies are in the pulsation damper.
- To facilitate the reassemblying of bladder, smear it and vessel interior with the system hydraulic fluid.
- Press the upper part of the bladder together and feed in through the hydraulic end opening (Fig. 11).
- Literally screw the name plate and gas inlet valve sub-assembly nut on (Fig. 12).
- Check that the bladder is neither folded or twisted.
- Put the hydraulic valve into the vessel. Put the divided anti-extrusion ring / retention ring into the vessel and position on the hydraulic valve. Retract the hydraulic valve so that it sits on the interior of the vessel.
- Mount the O-ring and the gland ring (Fig. 13).
- Screw the ring nut on Centralize the parts. With a plastic hammer strike the hydraulic valve carefully from all sides while tightening the ring nut by hand.
- Tighten the ring nut fully (Fig. 14).
- Before mounting the reduction on the hydraulic end, inflate the bladder slowly with nitrogen to a pressure of 1 – 1.5 bar with the tester and pressurizer instrument. Operate the tester and pressurizer instrument as described in its manual.
- Mount the flange or the reducing fitting (if existing).
- Check the hydraulic valve seal by manipulating the valve tappet.
- Tighten the name plate and gas inlet valve sub-assembly nut fully (Fig. 15).
- Inflate the shock absorber to the precharge pressure required by the system.

Filling

- The first filling of the bladder with N2 must be done slowly!

<table>
<thead>
<tr>
<th>Volume damper</th>
<th>1 liter</th>
<th>5 liter</th>
<th>10 liter</th>
<th>50 liter</th>
<th>100 liter</th>
<th>200 liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filling time 0 to 1.5 bar in sec.</td>
<td>10 s</td>
<td>20 s</td>
<td>40 s</td>
<td>120 s</td>
<td>200 s</td>
<td>400 s</td>
</tr>
</tbody>
</table>

First operation

- Pressurise the system at maximum pressure and check the tightness of all connections and gaskets.
- **No welding/soldering or mechanical operations of any kind must be undertaken on the pulsation damper!**
- Hydropneumatic pulsation dampers are subject to official pressure vessel regulations. These regulations demand that the pulsation dampers must be inspected on a regular basis. The interval between inspections varies from state to state. Request the appertaining.