

1. Installation

In order for pulsation dampeners to dampen pressure peaks and pulsations perfectly they have to be installed correctly. Therefore it is necessary to mount them very close to the point where pressure peaks are to be dampened. For metering pumps, this place would be right after the discharge valve (or for suction air chambers, just before the suction valve). To avoid superfluous deflection and pipe friction loads, it is recommended to use a straight connecting pipe, which corresponds to the connection nominal width of the pulsation dampener.

Large-size pulsation dampeners and those with tubing connections must be fastened separately; piping must not transmit mechanical stress to the PDS.

2. Pressurizing

CAUTION!

Use air or nitrogen. Do never use oxygen. The pulsation dampeners are not charged when stored or dispatched. (See section 3 for suction air chambers).

The pulsation dampener is most effective if the initial pressure is about 0.6 times the final average operating pressure. If the pulsation dampener is not fitted with a pressure gauge, it is recommended to check the initial pressure (pv) after 500 working hours. The same should be done before startup and after long periods of disuse. Check the device every three months.

Charging with air

Before checking or refilling, disconnect the pulsation dampener from the system under pressure by means of shutoff valve V1 and stop the liquid flow by means of valve 2.

PDS pulsation dampeners with separating diaphragm are charged with compressed air. For this purpose, they are fitted with commercial tire inflator valves. As the pulsation dampeners are plastic and suitable for an operating pressure of maximum 10 bar requiring an initial pressure of maximum 6 bar, virtually any available compressed air system can be used.

If the air pressure exceeds the maximally permissible operating pressure of the pulsation dampener, a pressure reducing valve must be added the pressure of which must be lower than the maximum operating pressure.

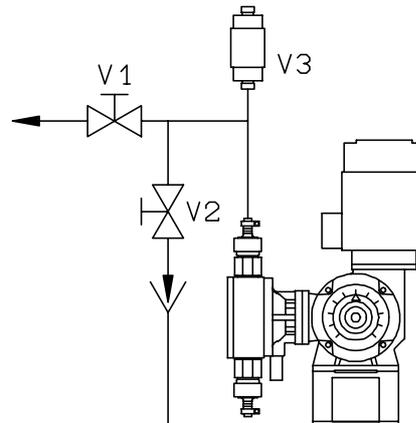


Figure 1
Connection via tee-fitting

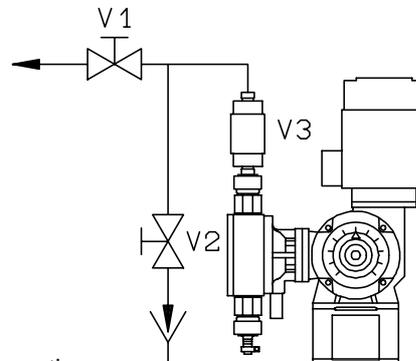


Figure 2
Inline connection

V1: Shutoff valve (ball tap)

V2: Shutoff valve (ball tap)

V3: PDS gas charging valve (tire inflator valve)

CAUTION!

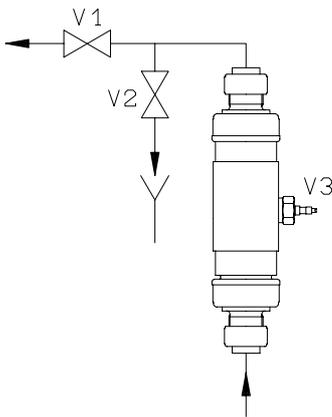
To pressurize the gas cushion, the liquid flow must be stopped. Otherwise, the actual dampening volume remains too small although the gas pressure can be brought up to the desired level. By interrupting the liquid flow, the gas pressure is able to displace the liquid and optimally fill the gas chamber. For this purpose, switch off the metering pumps, shut valve V1 and open valve V2.

3. Suction air chamber

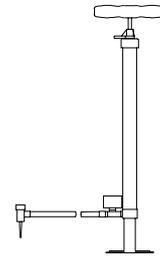
PDS pulsation dampeners for suction air chamber use are not pressurized. The air trapped in the dead spaces during PDS manufacturing expands with the suction stroke and usually provides sufficient dampening. If this is not the case, just press down the valve pin briefly to prime air (vacuum filling) until dampened operation is achieved. For filling in the case of excess pressure in the suction line, see section 2.

4. Fitting a new separating diaphragm

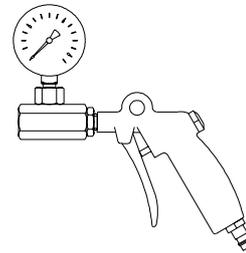
If the separating diaphragm has to be replaced because, due to lacking chemical resistance, another material must be used, or a new diaphragm is required due to operational wear, disconnect the pulsation dampener from the pressure system (figures 1 and 2; switch off the metering pump, shut valve V1 and open valve V2). Dismount the PDS. At both ends, the flanges or union nuts which press the sealing cones into the separating diaphragm have to be detached. Remove sealing cones and support pipe. Insert the new separating diaphragm so that the ends project the same distance on both sides. Push one sealing cone with the support pipe through the separating diaphragm and place the second cone against it. Fasten flanges / union nuts evenly (press/screw clamp) after pressing the sealing cones mechanically against each other.



Filling device for compressed air (max. 6 bar)



Supply by foot pum



Supply by compressed air system