



Fawcett Christie Hydraulics Ltd

# SERVICING INSTRUCTIONS for PULSATION DAMPERS



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Pulsation Dampers (repairable)

PVSI - 02

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This document is to be read in conjunction with the booklet 'Product Information for Gas Loaded Accumulators'.

# Safety Note



**Gas loaded accumulators operate at high pressures and must always be treated with caution.**

**You must ensure that you are competent to work with this equipment.**

## Polypropylene Pulsation Dampers

These units are recognised by the prefix 'PPD' and have a shell and head made from polypropylene. This makes them lightweight, low cost and good chemical compatibility. The maximum working pressure of this range is 10 Bar.

The polypropylene dampers are designed for a maximum life of 10 years. The replacement of the internal bladder is not recommended for this range. It should be noted that this model of damper is Non-Repairable in design.

**WARNING – Do NOT attempt to disassemble these units. Replace with new if necessary.**

The fitting of any permanent pressure gauge is strongly prohibited, however if fitted without manufacturers knowledge then the gauge should be appropriate for the maximum design pressure of 10 bar. The recommended nitrogen pressure setting for pulsation damping is 80% of the mean line pump pressure.

**WARNING – Use dry Nitrogen only  
Do NOT fill with more than 8 Bar Nitrogen Maximum**

If in doubt please contact FCH technical department direct.

# Re-certification for continued safe use

In the UK most gas-loaded accumulators fall within the requirements of the Pressure Systems Safety Regulations 2000 No.128; ISBN 0-11-085836-0.

Key points of this legislation include:

Requirements to determine the safe operating limits of the accumulator and record the fact that these are not exceeded by the system pressure.

Preparation of a Written Scheme of Examination for accumulators used to store energy above certain limits.

Establishing a maintenance procedure and carrying out regular safety checks and examinations.

PROFESSIONAL ASSISTANCE IN MEETING THE REQUIREMENTS OF THE REGULATIONS CAN BE PROVIDED BY FAWCETT CHRISTIE TRAINED ACCUMULATOR RE-CERTIFICATION CENTRES AROUND THE COUNTRY. PLEASE CONTACT OUR SALES OFFICE FOR DETAILS

## Parts List

- 1. Gas Valve Assembly
- 2. Lockring
- 3. End Cap
- 4. Damper Body
- 5. Bladder
- 6. Studs (or dowel pins)
- 7. PTFE Back up Ring  
(if fitted) Not shown



### SAFETY NOTE:

THE ACCUMULATOR CAN ONLY BE REMOVED FROM THE SYSTEM PIPEWORK ONCE THE HYDRAULIC PRESSURE HAS BEEN REMOVED FROM THE ACCUMULATOR

## Removal of Precharge

1. Remove Sealing Cap from the Gas Valve Assembly.
2. Connect Charging Set to the Gas Valve Assembly, ensuring the spindle is fully wound out before connecting.
3. Screw the top knurled nut to depress the pin and open the valve core. **DO NOT OVER COMPRESS GAS VALVE PIN.** If charging set plunger is continued to be forced into gas valve then this can cause permanent damage to the core of the gas valve.
4. Release all the gas pressure by opening the Vent Valve.
5. Disconnect the Charging Set from the Damper.



## Removal of Bladder

1. Ensure all pressures are released
  - check that the bladder has free movement by pushing a blunt implement into the fluid port checking that there is no resistance when it enters the storage chamber. If resistance is felt further investigate for trapped pressure. If in doubt contact FCH.
2. Unscrew the Gas Valve Assembly (Item 1) from the End Cap (Item 3) by turning anti-clockwise.
3. Locking ring will have either tapped or plain holes to aid disassembly. Screw 2 off (M6 or M10) studs (Item 6) or dowel pins into the holes provided in the Lockring (Item 2).
4. Using a convenient bar remove the Lockring and End Cap from the Body (Item 4) by turning the Lockring anti-clockwise.
5. Carefully pull out the head & bladder. Pull the bladder off the head and remove PTFE back up ring if fitted.



# Cleaning and Inspection

1. Clean all Metallic Components with an Organic Solvent.
2. Inspect the condition of all components
3. Inspect the Bladder (Item 5) for any visible signs of damage. (Cracking or Surface Abrasion etc.)
4. Inspect the Body (Item 4), both Inside and Outside for signs of corrosion.
5. Replace any parts found or considered to be defective.



PLEASE NOTE:

THE 'HEART' OF A BLADDER ACCUMULATOR IS THE BLADDER ITSELF. FAWCETT CHRISTIE HYDRAULICS STRONGLY RECOMMEND THAT ALL ELASTOMERIC COMPONENTS ARE REPLACED DURING SERVICING / RE-CERTIFICATION.

## Re-Assembly of Bladder

This is the reverse operation of removal of the bladder ensuring the following.

1. Carefully fit new PTFE back up ring onto head (if model contains it e.g. BPD range)
2. Ensure that:-
  - The bladder is fully fitted onto the head. Bladder Inner support strip should be tightly fitted into correct head groove.
  - The bladder, especially around the o-ring seals, is suitably lubricated.
  - The thread on the Locking ring is suitably lubricated to avoid risk of seizure.
  - That the two stud bolts or dowel pins do not protrude below the thickness of the Lockring, otherwise this will prevent correct seating of the ring.
3. Assembly is complete when the end cap and lockring are fully screwed against the shell body.

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