



HIDRACAR S.A.

INSTRUCTIONS FOR THE INSTALLATION AND STARTING OF ACCUMULATORS AND PULSATION DAMPENERS

The hydraulic circuit pump must NEVER be started if the accumulator or dampener is discharged (with no gas pressure present inside).

Dry nitrogen (N₂) gas must be used to charge / fill the accumulator. For pressures below 10 bar compressed air can be used as long as there is no incompatibility between the liquid in the circuit and the oxygen contained in the air.

The proper pressure accumulators and dampeners must be charged / filled with is:

- a) 90% of the circuit's MINIMUM pressure. This minimum pressure is what is required by the machine from its cylinder(s) in order to perform its task.
- b) 70% or 80% of the theoretical or average working pressure of the dosing or volumetric pump, when the accumulator is used as a pulsation dampener. When the value of the theoretical or average liquid pumping pressure is unknown, the dampener must then be charged / filled at a pressure that could be considered higher enough above average and then, once the pump has been started, purge the gas inside the dampener until the vibration in the piping stops or the pressure gauge pointer becomes steady. The purge operation must be carried out with the help of the proper tool (filling kit).
- c) If the circuit pressure varies because of the conditions required by the liquid pumping process, filling pressure will always be calculated relative to the minimum value.
- d) **IMPORTANT!**: Make sure there is no pressure in the circuit (the liquid side of the accumulator) before checking the pressure or filling the dampener with gas.

WARNING!!!: Regardless of the accumulator or pulsation dampener application, the following equation must always be taken into account:

$$\text{maximum circuit pressure / gas filling pressure} \leq K$$

The value of **K** comes specified in the accumulator's technical data sheet.

In order to maintain the accumulator's guarantee the value of **K** must never be exceeded, and the filling valve cap must remain sealed. If due to lack of knowledge about the circuit's working pressure the gas charge of the accumulator must be purged, it will make the guarantee void (except in particular cases, in agreement with **HIDRACAR, S.A.**).

Note: Exceeding the K value puts the dampener bladder, membrane or bellows at risk of deterioration.

Further information regarding proper use and operation of the dampeners or accumulators can be found in our technical brochure "Some technical and practical recommendations about pulsation dampeners in circuits with dosing pumps".

WARNING!!!: Other manufacturer's accessories, like filling valves, must not be used instead of our original equipment. Threads are not identical and using the wrong equipment could cause an accident. Also, no fixing bracket must ever be welded to the body of the accumulator or pulsation dampener due to the potential risk of explosion this implies.