ACCU-PULSE Installation and Operation Instructions

Chargeable Models

ACCU-PULSE Unit Information

Serial Number:_____ **Model Number:** _____

Material of Construction: **Body:**_____

Bladder:_____

Pump Area & Number: _____

Date of Purchase: _____

Supplier: **Company:** _____

Contact: _____

Phone: _____

Notes:
- Primary Fluid Systems Inc. recommends installing a pressure relief valve such as TOP VALVE in all pump systems to ensure compliance with pressure limits on system equipment.
- Mount ACCU-PULSE as close to pump discharge, inlet and/or quick closing valve as possible.
- Temperature and pressure affect the strength and chemical resistancy of plastic and rubber; Consult Primary Fluid Systems Inc. for assistance.
- Remove all pressure from ACCU-PULSE unit and pump system before attempting maintenance.
- Do not exceed 150 PSI for standard models; 300 PSI for metallic units.
- For APH High Pressure Modules, do not exceed maximum pressure range of 600 PSIG if they have a PTFE bladder;1000 PSIG for all other bladder materials.
- If a system pressure test is to be performed, ACCU-PULSE must be charged with 80% of the system test pressure, prior to test. This will avoid possible bladder damage.

Limited Warranty:

Primary Fluid Systems Inc. (Primary) warrants its products against defects in workmanship or materials for one (1) year under normal use. Primary's obligations and liabilities under this warranty shall be limited to replacement of the product, or a refund of an amount not to exceed the purchase price of the product(s) to which such warranty claim is made. Repairs or replacements are made subject to our inspection of the returned product(s). Primary's decision of one of these alternatives shall be the buyer's exclusive remedy.

This warranty does not extend to damage by corrosion or other decomposition by chemical action. Primary does not warrant damages caused by (a) improper use of the product, (b) unauthorized modification or attachment to product, (c) misuse, abuse, accident or negligent handling or installation of product, or (e) alterations or repairs made by purchaser. The materials of construction offered are recommendations subject in all cases to acceptance by purchaser. These recommendations do not constitute guarantee against corrosion or decomposition, but are based on previous experience and best available information of the industry.

Statements and instructions set forth herein are based on the best information and practices known to Primary, but it should not be assumed that every acceptable safety procedure is contained herein. Of necessity Primary cannot guarantee that actions in accordance with such statements and instructions will result in the complete elimination of hazards and it assumes no liability for accidents that may occur.

Except as specifically provided herein, Primary makes no warranty, representations, promise or guarantee, either express or implied, statutory or otherwise, with respect to the product and technical information including their quality, performance, merchantability, or fitness for a particular purpose. In no event will Primary be liable for indirect, special, incidental, economic, covert or consequential damages arising out of the use or inability to use the product, including without limitation, damages or costs relating to the loss of profits, business and goodwill even if advised of the possibility of such damages. In no event shall Primary's liability exceed the amount paid by you for the product.

The warranty and remedies set forth herein are exclusive and in lieu of all others, oral or written, express or implied. No Primary dealer, distributor, agent or employee is authorized to make any modification or addition to this warranty. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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Pump Discharge Installation: Chargeable Models

Step 1: Mounting Position

Mount ACCU-PULSE as close to the pump discharge as possible to absorb the pulse at its source. The pulsation dampener will optimally perform if mounted at the first 90 ° turn in the discharge piping. If using a flexible connector from the pump to your point of discharge, ACCU-PULSE should be hard piped to the pump discharge manifold, then continue with flexible tubing from dampener. Since pressure is equal in all directions, ACCU-PULSE can be installed in any position - vertically, horizontally, upside down. Primary Fluid Systems Inc. does recommend a vertical position for better draining of the unit.

Limitations for horizontal and upside down mounting include high specific gravity, high viscosity, settling of heavy material or possible air entrapment.

Step 2: Air Line Connection

Chargeable models do not require an air line connection, the units must be charged with compressed air or nitrogen, using a hand pump, tank or compressor.

Step 3: Charging and Start Up

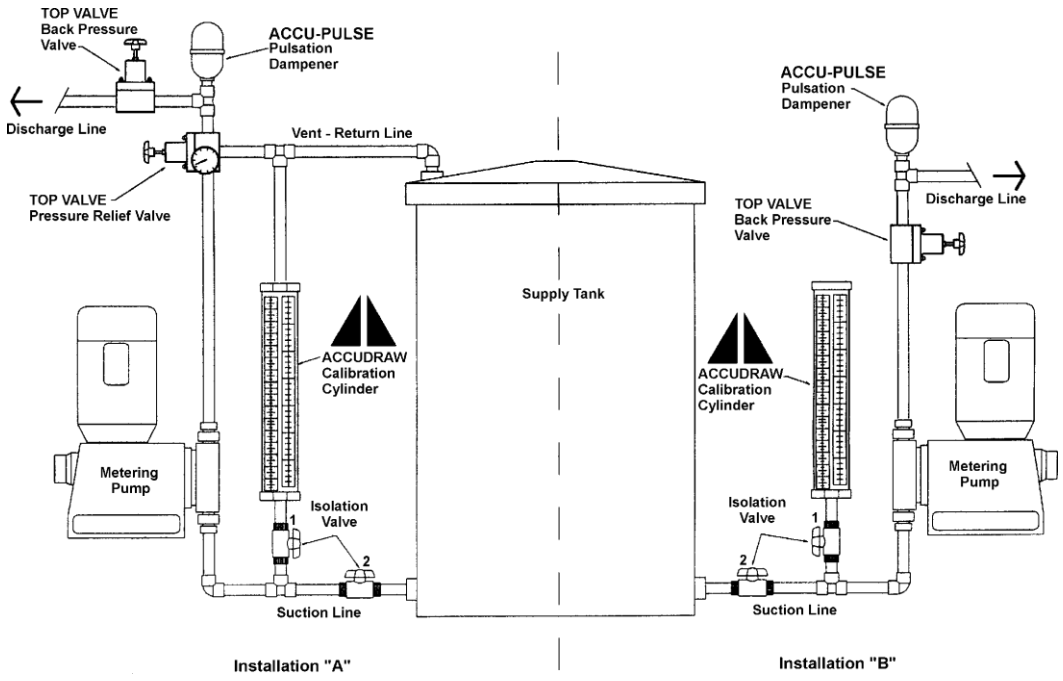
Prior to starting the pump, charge ACCU-PULSE with compressed air or nitrogen to approximately 70 to 85% of expected system pressure, to a maximum of 150 PSI for standard models; 300 PSI for metallic models. Start the pump to generate working or system pressure. Once working pressure is achieved, ad- justment may be necessary; gradually increase or decrease the gas charge in the dampener by bleeding or filling through the gas valve. Allow the system to respond to each adjustment (this may take a minute or two) before continuing any further adjustments. Generally, pulsation is most effectively minimized when the gas charge is 80 to 85 % of system/pump discharge pressure. Pressure should be checked periodically. Re- charge when necessary.

Note: APH High Pressure models have a maximum pressure range of 600 PSIG if they have a PTFE bladder, and 1000 PSIG for all other bladder materials.

Typical Installations

The installations below are typical installation examples only. Consult your engineering department for the appropriate installation of your application or call the factory for advice.

Maintenance: We recommend verifying the pre-charge pressure every six months. If the dampener is under extreme working conditions, such as limit temperatures, highly corrosive liquid, or uninterrupted functioning 24 hours a day, we recommend verifying the pre-charge pressure every month. For dampeners with a PTFE bellows, pre-charge pressure should be checked more frequently (monthly or every 2 weeks.)



ACCU-PULSE Safety Warnings

This dampener should only be installed and used by experienced and trained professional mechanics. Observe all safety warnings. Read all safety warnings and operating manuals before using or repairing this Pulsation Dampener (hereafter referred to as “dampener”).

General Safety

This dampener is not intended to be used as a stand alone machine. EU member states must note: Do not use this dampener before it is combined into another machine or assembly that complies with all relevant EU safety directives and that the assembler’s CE mark is affixed on completion.

The internal dampener pressure will equal the maximum fluid pressure of the system in which it is installed.

Do not exceed maximum pressure as stated on dampener tag. If tag is missing, do not use this dampener without consulting distributor or factory for maximum pressure rating.

Always make sure safety shut off valves, regulators, pressure relief valves, gauges etc. are working properly before starting system or assembly.

Always wear protective gloves, safety glasses, etc. when working on or near this dampener.

Before starting a system or assembly, make certain the discharge point of the piping system is clear and safe, and all persons have been warned to stand clear.

Always wear safety glasses when installing, charging or repairing this dampener.

Do not put your face or body near dampener when the system assembly is operating or dampener is pressurized.

Do not operate a dampener that is leaking, damaged, corroded or otherwise unable to contain internal fluid, air or gas pressure.

Do not pump incompatible fluids through the dampener. Consult your distributor or the factory if you are not sure of the compatibility of the fluids with the dampener materials.

Dampeners are designed to operate with compressed air or nitrogen. Other compressed gases have not been tested and may be unsafe to use in dampeners.

Bleed all pressure from system and dampener before removing equipment from the system.

Always shut off air supply, bleed internal dampener pressure and shut isolation valve before performing maintenance or repair on dampener.

Static spark can cause an explosion resulting in severe injury or death. Ground dampeners and pumping system when pumping flammable fluids.

Equipment Misuse Hazard

General Safety:
Any misuse of this equipment such as over pressurization, modifying parts, incompatible chemicals, using worn or damage parts or using gases other than air or nitrogen to charge dampener is not recommended. Any of these circumstances could result in serious bodily injury, death, fire, explosion or property damage.

Over-Pressurization:
Never exceed the maximum operating pressure recommended for the dampener model being used. Maximum operating pressure is stated on tag. Pressure limits are stated at 20°C / 70°F.

Temperature Limits
Do not exceed the recommended operating temperatures for the shell and elastomer materials, independently. Excessive temperature will result in dampener failure.
Temperature limits are stated at zero psig / bar.

Installation and Start Up Hazards:
Install dampener before charging or pressurizing.

Do not start system or assembly without first charging or pressurizing dampener. Failure to charge may result in damage to the elastomeric bladder.

Temperature & Pressure Hazard:
Temperature and pressure reduce the strength and chemical resistance of plastic, metal and rubber.

Charging / Pressurization:
Charge or pressurize the dampener with compressed air or nitrogen only. **Do NOT use oxygen.**

Dampener Bladder Failure:
Dampeners utilize an elastomeric membrane to separate system fluid from the air supply or gas charge. When this membrane ruptures, system fluid may be expelled from the air valve. Always perform preventive maintenance and replace elastomers before excessive wear occurs.

Maintenance Hazards:
Never over-tighten clamp bands. This may cause leakage of system fluid and damage to dampener shell.