

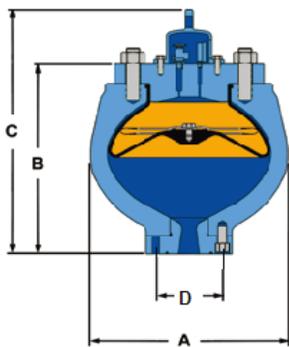
Pulsation Dampener

TSC offers a broad range of spherical pulsation dampeners for drilling and production applications ranging in size from 1 to 20 gallon capacities and ranging in pressure from 250 psi to 7,500 psi. The dampener body is manufactured from a one-piece steel forging, eliminating the possibility of weld fatigue failure, which is possible with some other designs.

The one-piece spherical design produces high efficiency in a small volume and does not require additional structural support. The spherical design also offers much more piping flexibility than appendage-style dampeners. Our proven stabilizer-supported bladders offer superior life and reaction time in the most demanding applications.



RANGE AND CONNECTION SIZE



Type	Volume	Pressure	Weight	Dimensions			
				A	B	C	D
Model	(gal)	(psi)	(lb)	(inch)	(inch)	(inch)	(inch)
TS-3.0-K10	10	3,000	950	23.75	22.68	29.44	9.50
TS-5.0-K10	10	5,000	950	23.75	22.68	29.44	9.50
TS-3.0-K20	20	3,000	2,500	28.25	29.00	38.50	9.50
TS-5.0-K20	20	5,000	2,500	28.25	29.00	38.50	9.50
TS-7.5-K20	20	7,500	2,500	28.25	29.00	38.50	9.50

FEATURES

- Single-piece forged body (no circumferential welds) for a stronger body and smoother inside surface
- Machined inside surface
- Field-replaceable top and bottom plates
- Bottom plate connection customized to customer application
- Diaphragms available in various materials to suit application requirements
- Diaphragm with stabilizer plate eliminates folding and fluid trapping
- Nitrile (NBR) and Hydrogenated Nitrile (HNBR) diaphragms standard
- Diaphragms replaceable without removing the unit from service

PERFORMANCE

Flaw detection: Conforms to API Spec 16A standard requirements

Nominal working pressure: 34.5 MPa (5,000 psi)

Peak test pressure: 51.7 MPa (7,500 psi)

Nitrogen test pressure: 10.3 MPa (1,500 psi)



TYPICAL APPLICATIONS

Suction Stabilization



Cavitation can cause premature damage to valves, seats, plungers and other pump components. TSC Pulsation Dampeners operate as suction stabilizers, when installed on the upstream side of a pump, to help eliminate cavitation by smoothing fluid flow into the pump cylinders.

When mounted close to the pump inlet or suction flange, pulsation dampeners ensure complete filling of the cylinders during each stroke.

Pressure surges or pulsations on the discharge side of pumps and compressors cause vibration and fatigue failure of major pump parts such as valves, seats and cylinders. If not addressed, these vibrations can cause fatigue failure of downstream pipe, pipe supports, other critical components and equipment.

A TSC Pulsation Dampener, appropriately sized and mounted near the discharge flange, will assist in dampening pressure surges and pulses on the discharge side of the pump, prolonging the life of the pump fluid end components as well as critical downstream equipment.

Pulsation Dampening



Surge Absorption



Water Hammer

Surges in flowing systems, caused by the sudden closure of valves, pump shut-downs or start-ups, can lead to pressure build-ups that are large enough to rupture piping, piping supports and damage downstream equipment. This phenomenon, also known as water hammer, results from the sudden change of the flowing fluid's kinetic energy into pressure energy.

A TSC Pulsation Dampener, mounted at an appropriate location, can assist in absorbing these surges, thereby saving costly equipment.



Back Surge

When the elevation head of a pump is high, back surges can occur from sudden pump shut-downs. Fluid then flows back and slams into the pump valve damaging it.

A TSC Pulsation Dampener, installed close to valve, helps absorb the surge.

Due to the design of the TSC Pulsation Dampener, it can be used as an energy storage device (accumulator) in a hydraulic system. An appropriately sized dampener can supply hydraulic power for a short period of time. This is important in lube oil systems, which must supply oil to critical rotating equipment where an interruption can cause costly failure to the equipment, and has the potential to shut down the downstream operation.

Energy Storage



Special Applications

TSC Pulsation Dampeners/Accumulators can also compensate for leakage in a hydraulic system, as well as compensate for pressure change due to thermal expansion.

