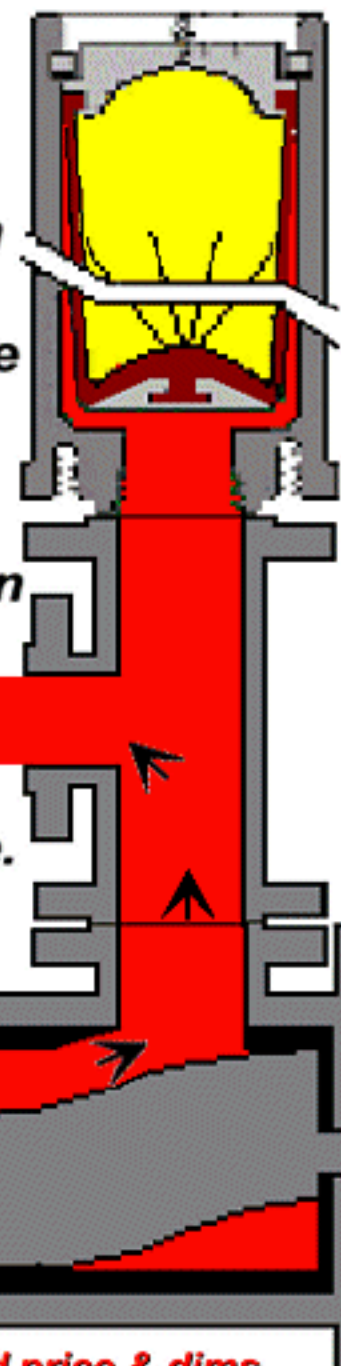


BELOW: How to ensure lowest in place cost and most performance by standard installation methods.

**P13**  **Smoothing Progressive Cavity pump systems with the most economical PULSEGUARD® Pulsation Dampener**  
 (1) Hope, (2) Sure, but only — —, (3) Certainty 3" thru. 12" best value.

When you see a damper or a pump of particular interest, please request literature dedicated to that subject.

**PipeGuard, with gas in the bag.**  
 GUARDS AGAINST PIPE PROBLEMS  
 Provided the pumpage is not highly viscous, then the amount of pulsation caused by having the excess flow go up the dead leg into the damper, come to a halt, then reverse back out again in a fraction of a minute, - will not be so great as to shake the system. The only benefit to the one connection approach, is the largest connection.



**BAD! (1)**  
 PipeGuard, introduced in 1965 to the process liquids market, has the advantage of a gas bag that is molded as one piece.  
 Not needing to be glued or bonded to other pieces of material, the gas bag can be provided in highly resistant elastomer formulations.

When you add the "T" and 3 flanges this method will not look inexpensive.

GOTO [www.pulseguard.com](http://www.pulseguard.com) for PipeGuard price & dims.

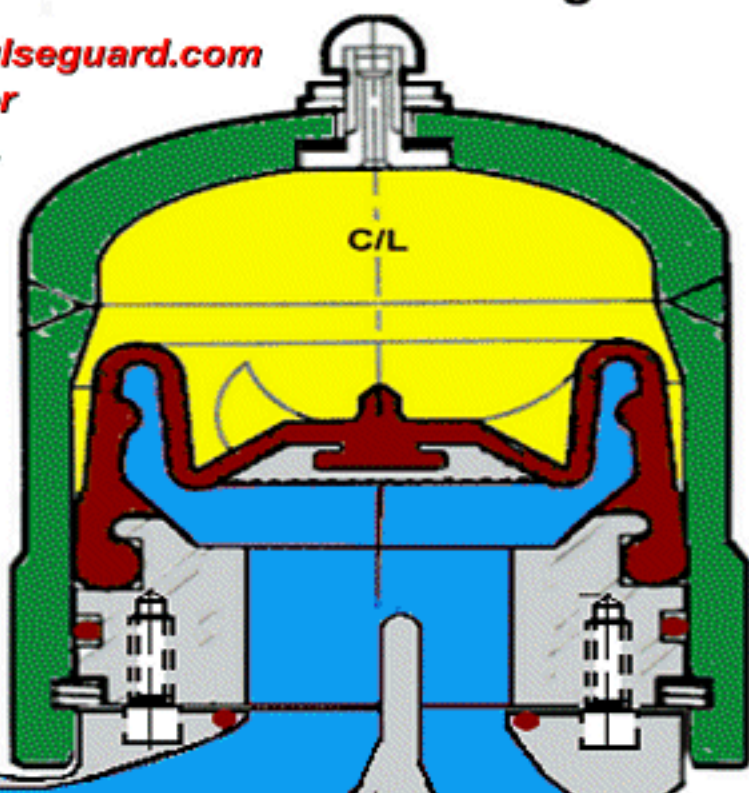
**PipeHugger, with liquid in bladder.**  
 Where the viscosity of the liquid being pumped, is sufficiently low that the pump could if necessary perform a suction lift, then the benefits of directing the flow fluctuations straight at the inside of the flexing bladder, without any pressure change necessitated to cause a flow reversal, gives the smoothest result.

The advantage of being able to flush in place, along with first in - first out - constant temperature, agitation and tolerance for suspended solids, makes the PIPEHUGGER first choice for small systems up to 2" pipe diameter.

Off the shelf inventory dampers are lowest cost standard flow-through.

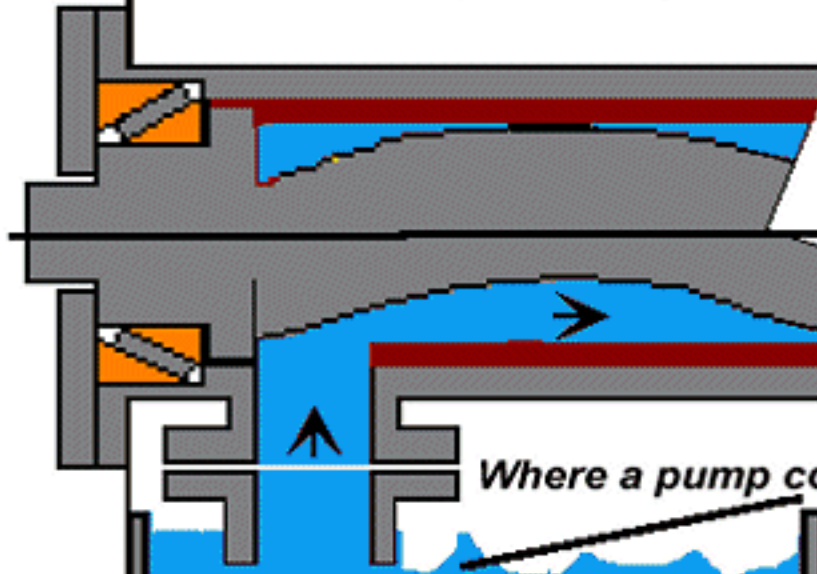
GOTO [www.pulseguard.com](http://www.pulseguard.com) for PipeHugger prices & dims.

**BETTER!**



**(2)**

**PipeHugger, HAVE YOU "HUGGED" - CARED FOR - YOUR PIPES TODAY!**  
 Introduced in 1979, to provide a membrane which did not pack into a cake against the wall of the housing, but which naturally shook any solids or particulate free. The additional advantage being that the vessel no longer had to be made from process liquid corrosion resistant materials.

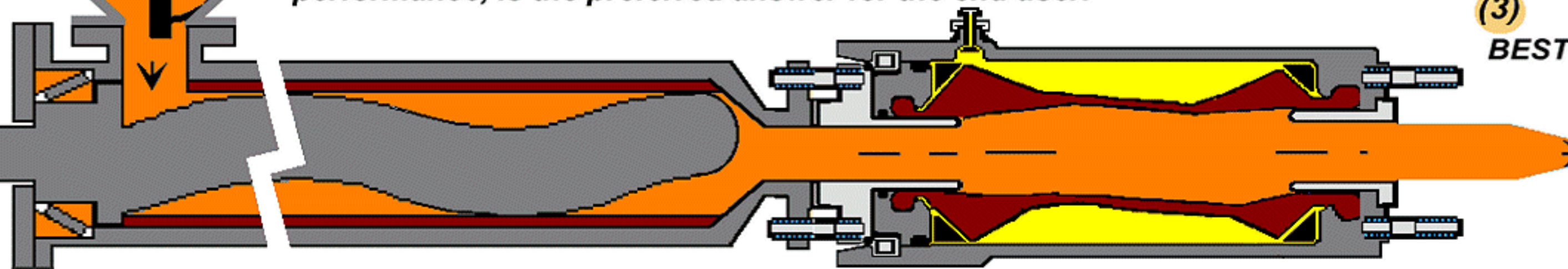


Where a pump could "suction lift", the direction change in a PipeHugger LP will help you.

Low enough viscosity

Pulsation Interception  
 flowthrough flushing  
 quick release for service

**PumpGuard - with - "ClearFlow" FlexTube.**  
 GUARDS AGAINST PUMP DAMAGE.  
 For systems that are characterized by such high viscosity that a force feed is required at the pump inlet, PUMPGUARD with clear unobstructed flow path, available for pipelines 2" diameter through 12", and in low pressure rating, prevents pump overload and ensures shake free performance, is the preferred answer for the end user.



**(3)**  
**BEST ?**