Saving 40%, AND having stable pressure for free,
when flow smoothing systems with an AODD
by avoiding single connection "Pulse Dampers" because they can not respond.

22 M3/Hr. (100 USGPM) heavy oxides slurry at only 1.5 meters / sec in a DN80mm line settles our and plugs the Damper / Accumulator. The need is for flow-through constant agitation & lower connection cost. 160 in3 pulse volume from diaphragm reversal & 1,000 in3 - 16Lt. Acc., only reduced spike 30%

3 pcs. CPVC Ts3" $102
1x3"Flg + 3" NPT $17
pipe coupling $5
6 Hrs prime, bondfit-up & Hydro $430
4.3 USG PVC Acc $1,136
Total $1,680

2 Ts and a flange were saved by using a *accumulator safety block*, to which the damper face "O" seals and which provides for bracket mounting.
The straight line from pump to damper guts gave pressure peak clipping. 2" pipe gave 3M/s. velocity
The 720 in3, 4 connection damper does more than the 16 Liter Accumulator; but as the path is not through the damper, stable pressure was not evident.

1 pc. 3" socket T $32
3.75 Hrs. fitting prep. & Hydro $269
11.8 Lt. Damper c/w pipe base $1,248
Total $1,549

A (415 in3) 6.75 Liter (125 psi) 8.5 Bar 4 connection true flow through FLEXORBER LP damper, provides continuous agitation, in place flushability, saves all 3 T pieces and out performs an accumulator more than twice its size -

2.9 Hrs. Fitting prep. & Hydro. $208
6.7 Lt. Flexorber LP $800
Total $1,008
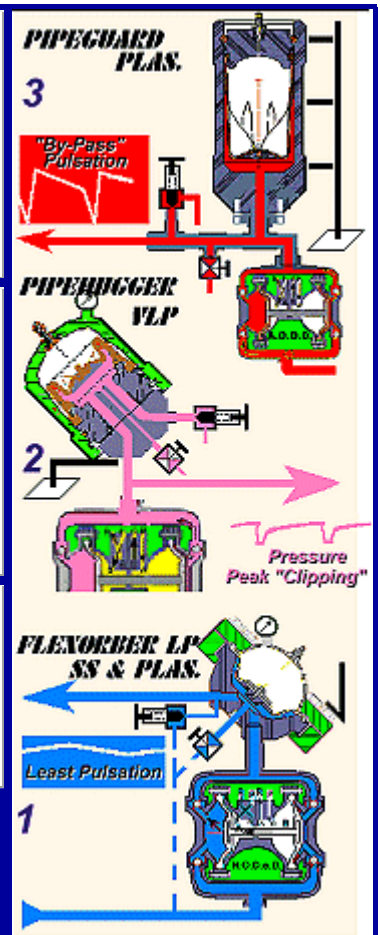
Pressure travels 300 times faster than flow
## So pulsation - flies straight past a "T"!
Because flow is so slow, there is time to flow up, come to a stop, and flow back down a "T" on the other

hand, whatever the residual pressure pulsation level is, it will fly straight past a "T".

Volume Accumulator Only

Flow Fluctuation

VOLUME

T I M E
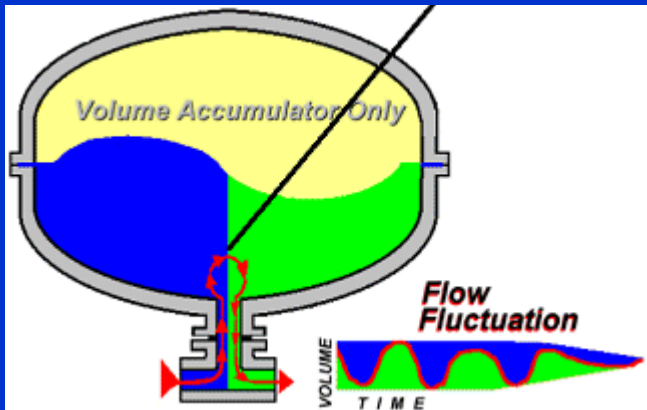
Mass of liquid in a pipe is transferred at not above 180 inches/sec or say 460 cm/sec

A Pulsation Dampener intercepts pressure pulsation and smooths flow fluctuations; *is smaller & costs less to instal.*

Pressure Pulsation

PRESSURE

Dampener

T I M E

FlexGuard
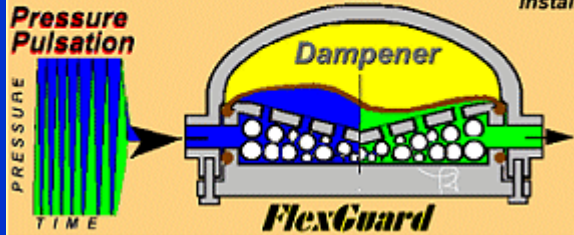
Pressure in a fluid travels at, Mach 1 (in Air) In harder substances (liquid) is transferred at up to 4000 MPH, or say 140,000 cm/sec.

CONCLUSION:- With 300% greater efficiency, because flow fluctuations & pressure pulsation are forced to see the inside of PULSEGUARD PULSE DAMPERS, are more compact vessels and DO MORE WORK FOR A LOWER COST. Hence the saying:-

Dampers that do, flow goes through, BUT pressure pulsation is caught