

HOW SMOOTH DO YOU NEED YOUR SYSTEM TO BE ?

Generally accepted levels of residual fluctuation percentage allowed, to protect against the average level of the problems listed.

COARSE DAMPENING

STOP PUMP PARTS DAMAGE
 GEAR TOOTH WEAR, CHATTER, AND FRACTURE.
 DRIVE BELT SLIP, BURN-OUT, AND BREAK-UP
 CROSS-HEAD, ROD, AND YOKE DEFLECTION

KEEP PRESSURE VARIATION LESS THAN 12%

PmpPtsDm.bmp

STOP WEEPAGE
 RELIEF VALVE WEEPING
 SURGES CAUSING PREMATURE LIFT
 FATIGUE CRACKING OF BURST DISKS

KEEP PRESSURE VARIATION LESS THAN 9%

RVBDweep.bmp

STOP GAUGE DAMAGE
 GAUGES DON'T READ PULSATION
 Springy Bourdon Tube, Rack & Pinion wag at their own natural frequency, WITHOUT VIBRATIONS YOU READ AVERAGE STEADY STATE PRESSURE

KEEP PRESSURE VARIATION LESS THAN 6%

GageDang.bmp

INCOMPLETE ATOMIZATION
 BEFORE Stop Globlets, Drops & Squirts
 AFTER - when you want a fine spray -

Depending on viscosity and nozzle design

KEEP PRESSURE VARIATION LESS THAN 5%

Atomize.bmp

MEDIUM DAMPENING

IMPROVE STATIC MIXING
 BEFORE Pulsed in Un-mixed out
 AFTER Pulseless in Mixed out

KEEP PRESSURE VARIATION LESS THAN 4%

StatMix.bmp

MAKE SET FREQUENCY MAG. METERS USEABLE

Kg./Sec.
 4.0
 3.0
 2.0
 1.0

0.5 Sec. 0.5 Sec. 0.5 Sec.

Sample at Any Frequency
 1.72Kg./S. 1.74Kg./S.
 2 Hz.

KEEP FLOW FLUCTUATION LESS THAN 3%

MagMetr.bmp

STOP PADDLE WHEEL METER SURGING
 BEFORE Erratic Jerks
 AFTER Constant Rotation

KEEP PRESSURE VARIATION LESS THAN 2%

PadlWheel.bmp

TURBINE SCREW METER "RATCHETING"
 KICK FROM PULSE STARTS THE SPIN
 WEIGHT OF SCREW BLADES & SHAFT
 KEEPS IT SPINNING, NEXT KICK GIVES
 OVERSPEED OR STOPS IT,
 SOON YOU HAVE NO ACCURACY

STAY LESS THAN 1.5%
 DEPENDING ON VISCOSITY

TurbMetr.bmp

FINE DAMPENING

CORIOLIS Loop tube 90 Hz or Straight tube 900 Hz
 Hit a multiple or divisor of, or that frequency
 AND THE TUBES SWING WILDLY

They can register 100 Kilos /sec.
 When you have only 5

The more the swing the more mass flow is indicated

Stabilize to LESS THAN 1.0%

Coriolis.bmp

NO NON-SENSE VORTEX SHEDDING
 BEFORE 294.71 VORTEXES, ARE MINUTE LOW PRESSURE ZONES
 AND ARE CREATED AT A RATE
 RELATIVE TO FLOW VELOCITY

AFTER 75.5

WITHOUT PRESSURE PULSATION
 "VORTEX SHEDDING" METERS WORK

GO LESS THAN 0.75%

VortShed.bmp

DELTA P. METER A SHARP EDGED ORIFICE & A DIFFERENTIAL PRESSURE GAUGE

BEFORE

0,2 Bar
 3,0 psi

0,4 x D
 12 x D

7°

AFTER

0,05 Bar
 0,75 PSI

**KEEP PULSES LESS THAN 1 PSI
 0,07 Bar**

DPmeter.bmp

MECHANICAL DAMAGE PROTECTION

Pipe Shake, Fatigue, Weld Cracking, & Over Stress Unions, Flanges, & Fittings.

The level of allowable pressure pulsation, depends on three factors :
 1. Diameter of pipe. 2. Operating Pressure. 3. Pulse Frequency.
 A Nomogram - or " 3 axis Graph " - to help you specify allowable residual pressure fluctuation has been included.

PULSEGUARD