

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
BEFORE GAUGES DON'T READ PULSATION **AFTER**
 Springy Bourdon Tube, Rack & Pinnion wag at their own natural frequency, WITHOUT VIBRATIONS YOU READ AVERAGE STEADY STATE PRESSURE
KEEP PRESSURE VARIATION LESS THAN 6%

GageDamp.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%

PadfWhet.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
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 **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

Pipe Shake Diagram