

# CONNECTION OPTIONS, For "Close Coupling"

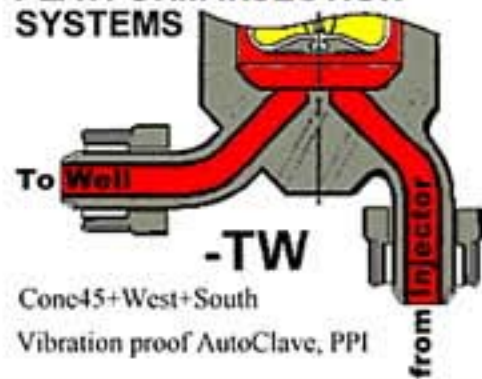


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A SMALL DAMPER OF LARGE DIAMETER FITTED CLOSE TO A PUMP IS BETTER THAN A LARGE DAMPER OF SMALL DIAMETER FITTED AWAY FROM A PUMP

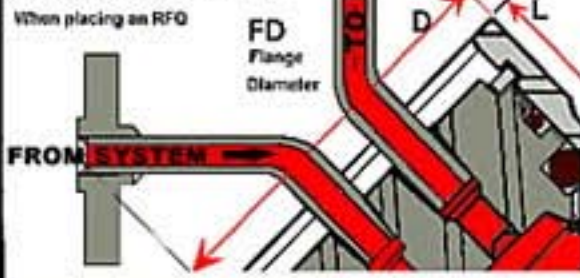
KEEP THE DISTANCE FROM DAMPER INTERNALS TO PUMP INTERNALS LESS THAN 10 PIPE DIAMETERS

STANDARD FOR OFFSHORE PLATFORM INJECTION SYSTEMS



Conc45+West+South  
Vibration proof AutoClave, PPI

PLEASE SPECIFY  
PIPE DIAM.  
PIPE SCHD.  
FLANGE #  
FLG. FACE TYPE

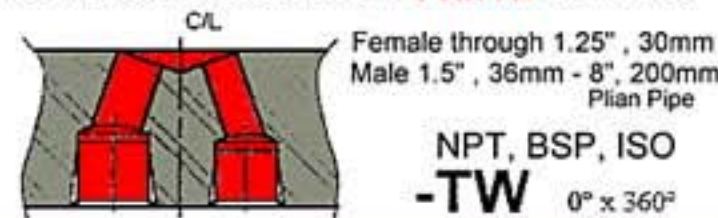


TYPICAL FOR PUMP SUCTION SUPPLY DAMPER

STANDARD FOR SoG & PeG UNITS FOR LOW PRESSURE & THIN-WALL DAMPERS  
AKA "New England Style" - one up, and one in left field



STANDARD FOR HP & HEAVY WALL DAMPERS. STANDARD FOR PHr/TW DAMPERS



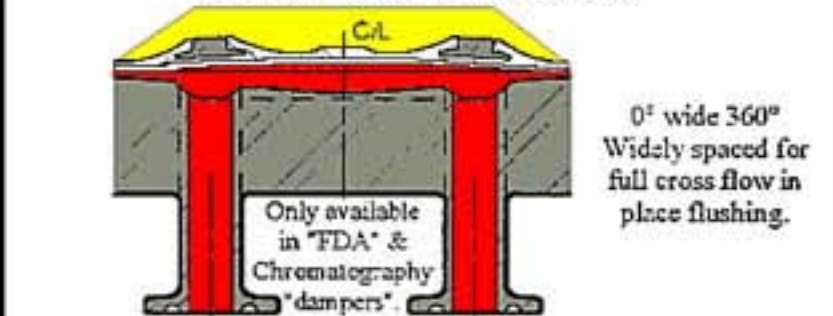
45° x 45° Clamp Hubs Seaboard Lloyd  
GrayLok, Teelok, SecureMax...

FITS IN PLACE OF A PIPE SPOOL. LENGTH RF to RF normally 1.5 x Damper Diameter

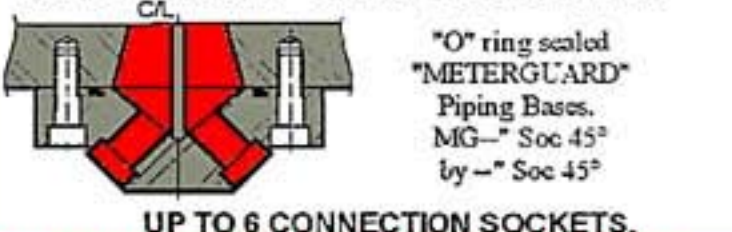


MG/SIMP-X 45° x 45° Flanged:  
ANSI, BS, DIN...

FOOD + DRUG STANDARDS



"BUILD YOUR OWN" CONNECTION SYSTEM.



**"DAMPERS THAT DO - FLOW GOES THROUGH, PRESSURE PULSES DO NOT"**

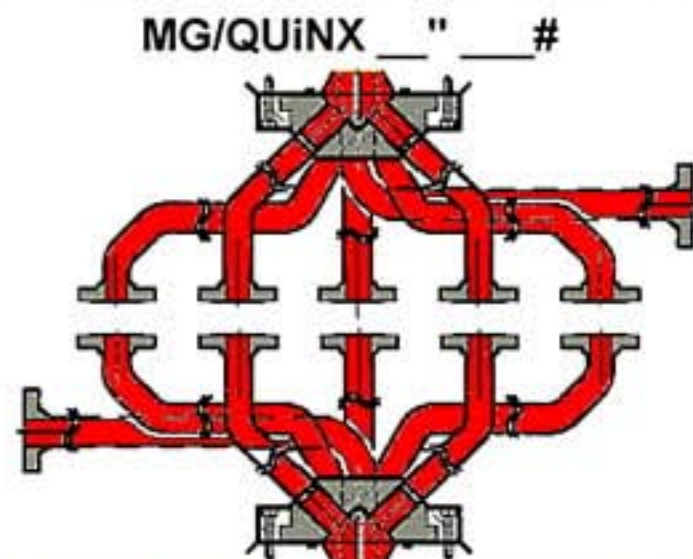
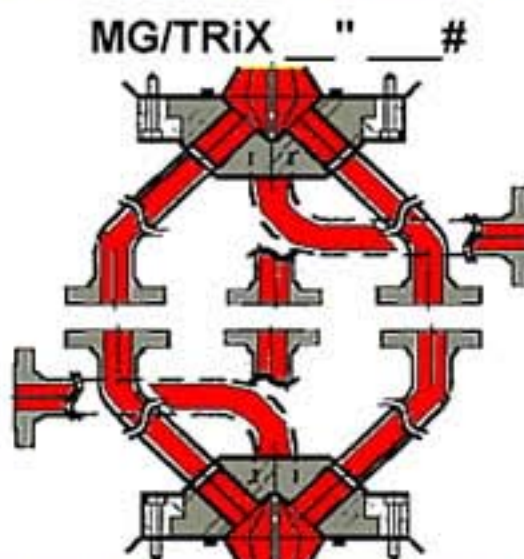
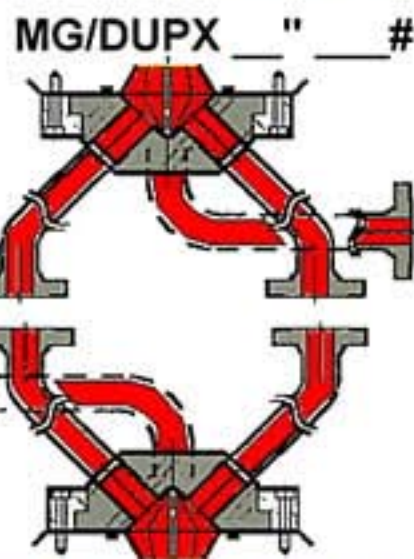
**2 CONNECTION (minimum) FOR IN PLACE FLUSHING BEFORE SERVICE**

or if you only require flow fluctuation reduction, with no guarantee of pressure pulsation damping, then **USE THE EXTRA CONNECTION TO SAVE A "T" FOR THE SYSTEM RV, DRAIN, or GAUGE.**

STANDARDS FOR MULTIPLE & MULTIHEAD PUMPS

DISCHARGE

SUCTION



In multi pump, & multi head, systems: Pressure pulsation reduction level can be guaranteed by preventing interaction between pump head check valves, and preventing resonance

**Octopussy multi-leg PIPING BASES are an "LDI" product. Pt Nbrs - PB/--**

SIMP-X = For 1 pump head. DUP-X = For 2 pumps or 2 individual pump heads.  
TRI-X = For the confluence 3 pumps or 3 individual pump heads. QIN-X For 5 pumps or heads.  
All ---X designations prevent individual pump and valve activities from the system responses "talking to each other".

Close coupling ensures that the small mass of the liquid column is unable to excite the pump parts by going into oscillation. True thru-flow ensures that pressure fluctuations are captured and can not bypass. Alternately liquid mass that has to go up one hole, come to a halt, then reverse back out again in a fraction of a second, requires huge pressure fluctuations to produce this instantaneous mass reversal.