

CONNECTION OPTIONS, For "Close Coupling"

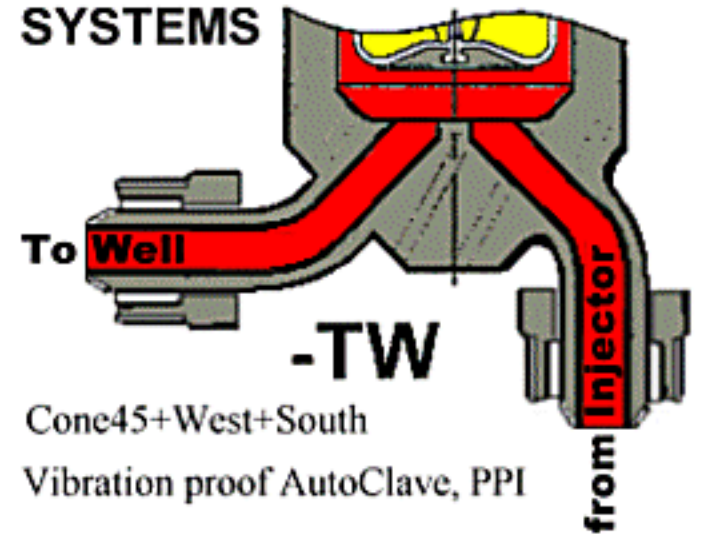


Licensed, M. Packer '63

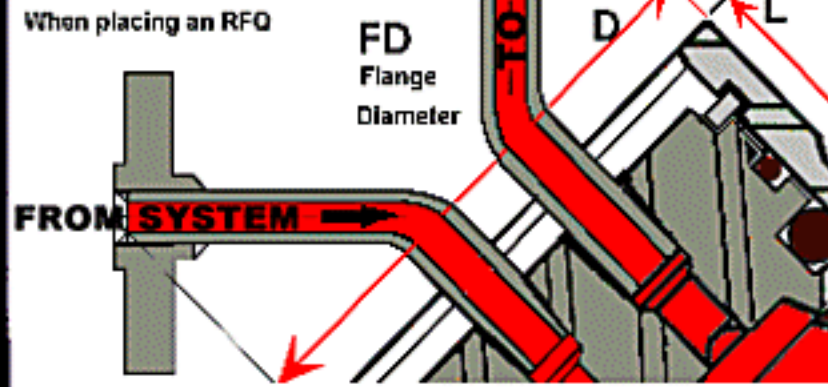
A SMALL DAMPER OF LARGE DIAMETER FITTED CLOSE TO A PUMP IS BETTER THAN A LARGE DAMPER OF SMALL DIAMETER FITTED AWAY FROM A PUMP

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

STANDARD FOR OFFSHORE PLATFORM INJECTION SYSTEMS



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

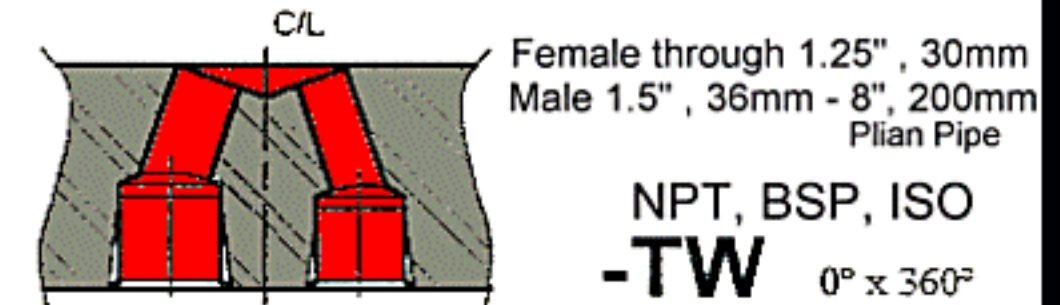


TYPICAL FOR PUMP SUCTION SUPPLY DAMPER

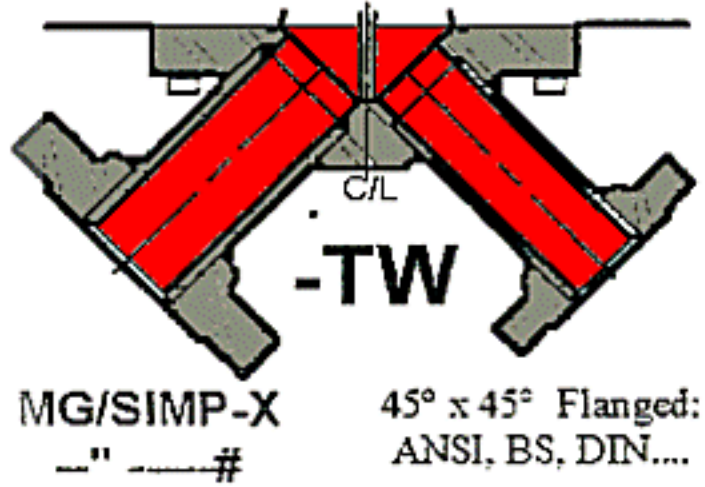
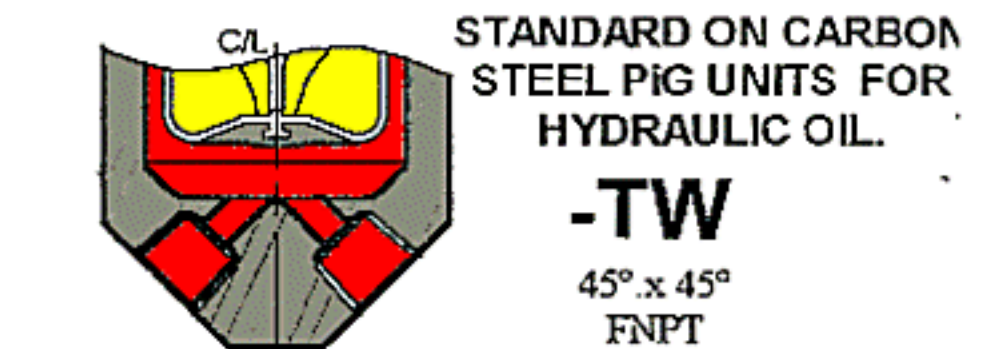
STANDARD FOR SoG & PeG UNITS FOR LOW PRESSURE & THIN-WALL DAMPERS
AKA "New England Style" - one up, and one in left field



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



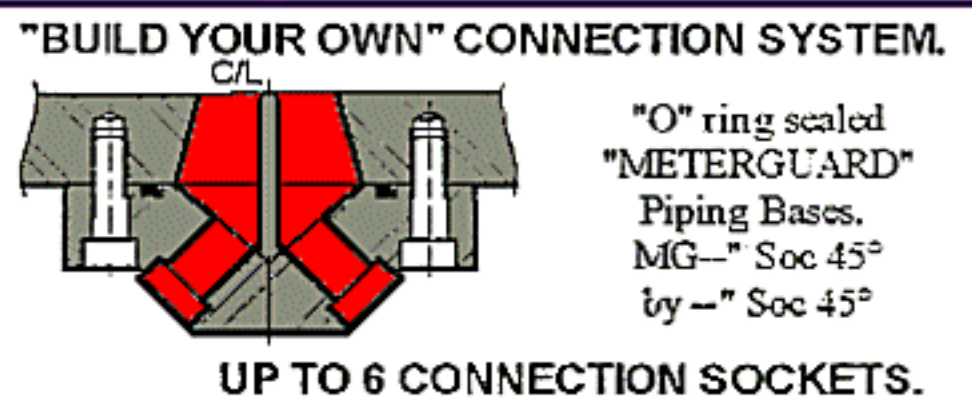
FITS IN PLACE OF A PIPE SPOOL. LENGTH RF to RF normally 1.5 x Damper Diameter



FOOD + DRUG STANDARDS



0° wide 360°
Widely spaced for full cross flow in place flushing.

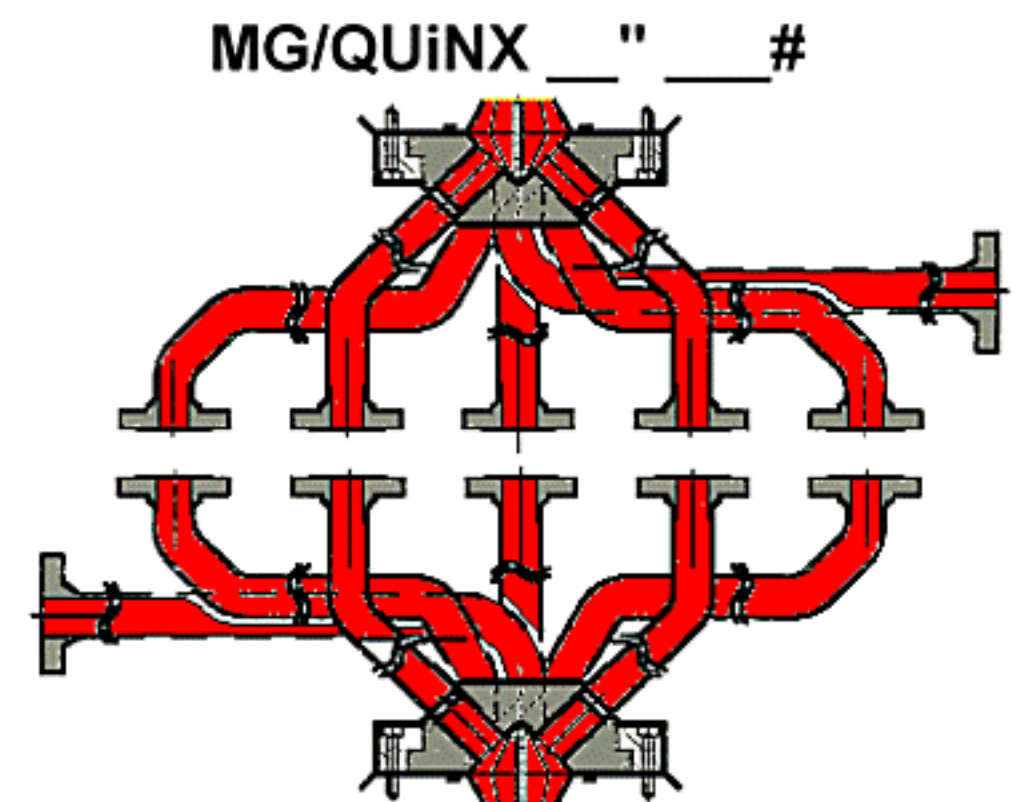
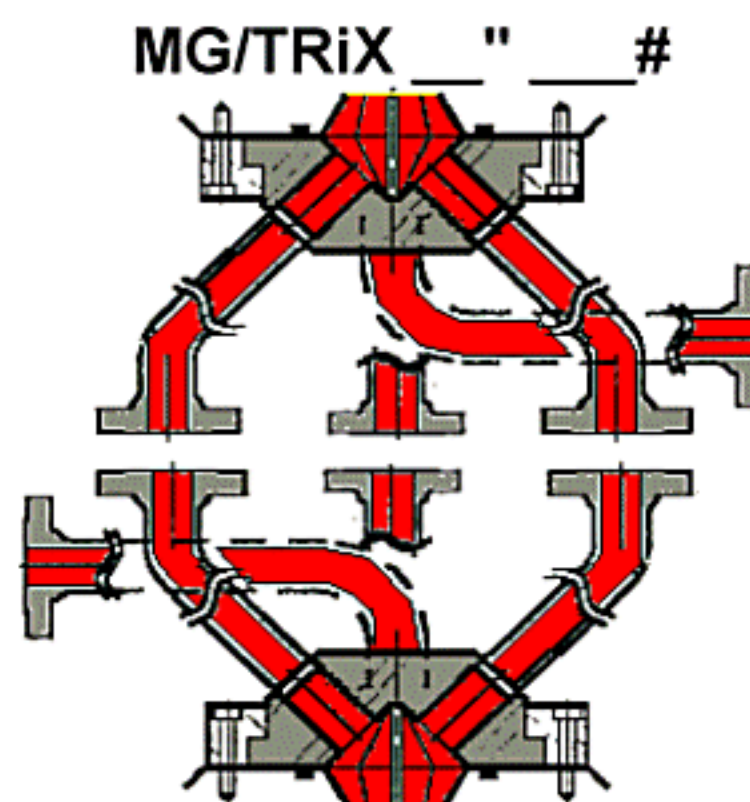
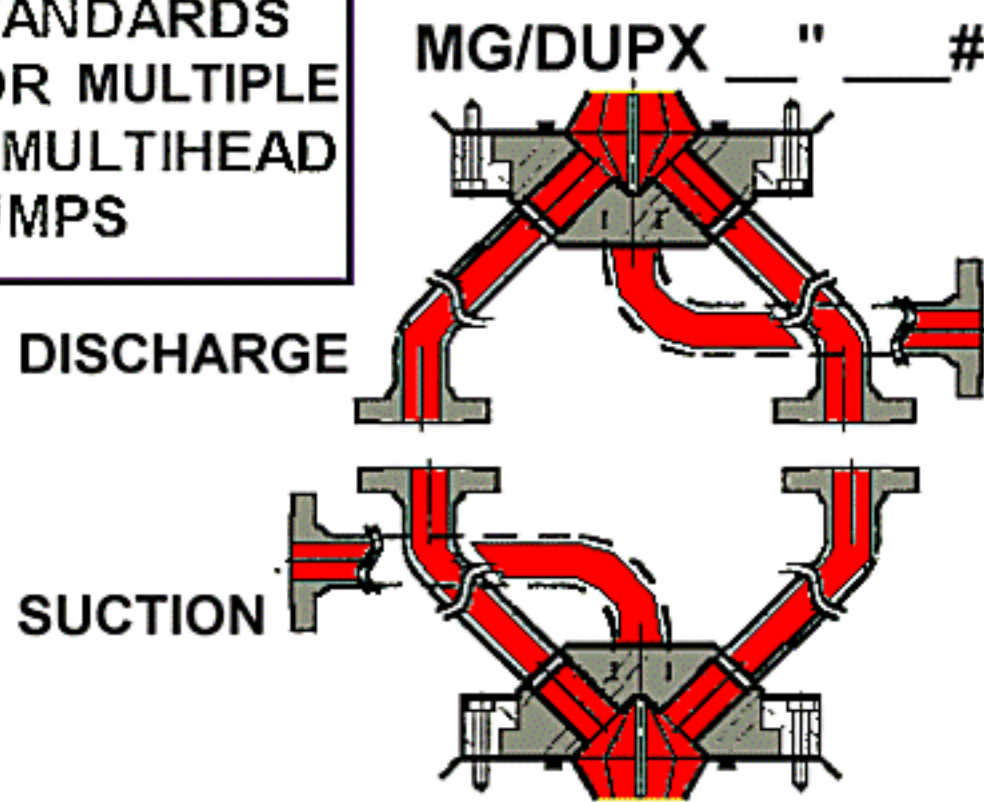


"DAMPERS THAT DO - FLOW GOES THROUGH, PRESSURE PULSES DO NOT"

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



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 by-pass. 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.