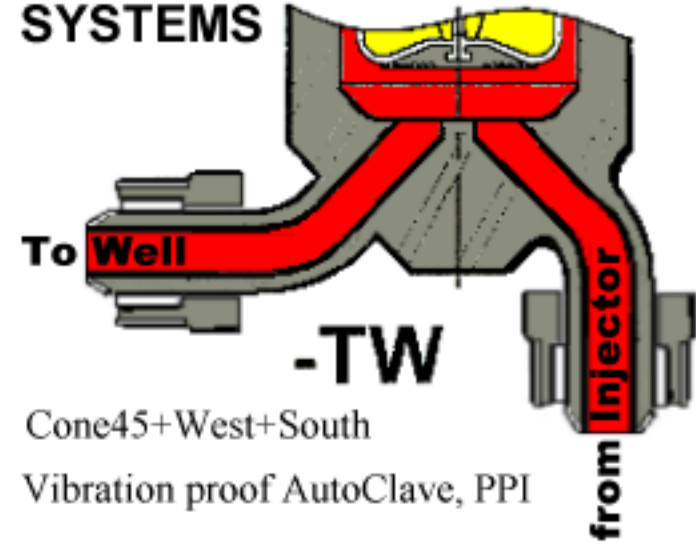


# CLOSE COUPLING ENSURES PERFORMANCE A SMALL DAMPER FITTED CLOSE TO A PUMP IS BETTER THAN A LARGE DAMPER FITTED REMOTELY

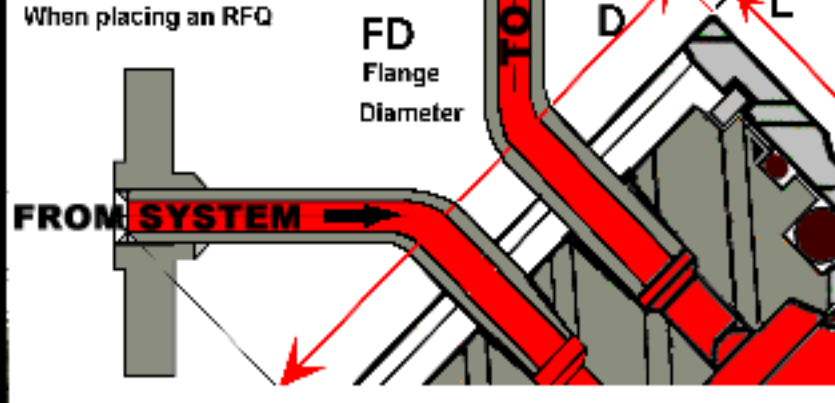
KEEP THE DISTANCE FROM DAMPER INTERNALS TO PUMP INTERNALS LESS THAN 10 PIPE DIAMETERS



**STANDARD FOR OFFSHORE PLATFORM INJECTION SYSTEMS**

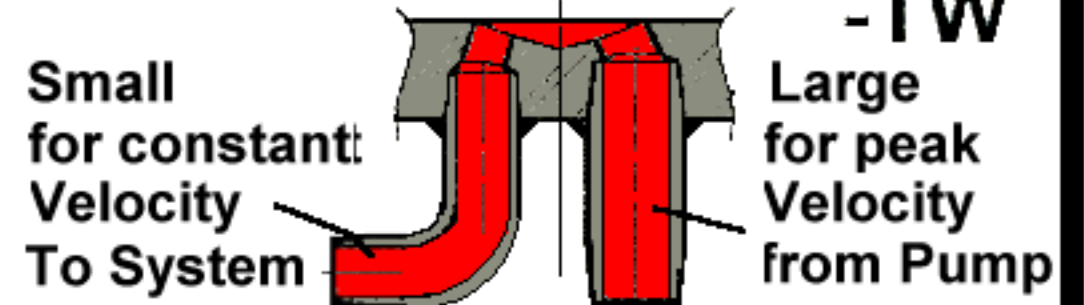


PLEASE SPECIFY  
PIPE DIAM.  
PIPE SCHD.  
FLANGE #  
FLG. FACE TYPE

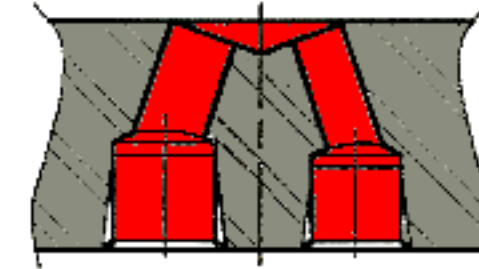


**TYPICAL FOR PUMP SUCTION SUPPLY DAMPER**

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



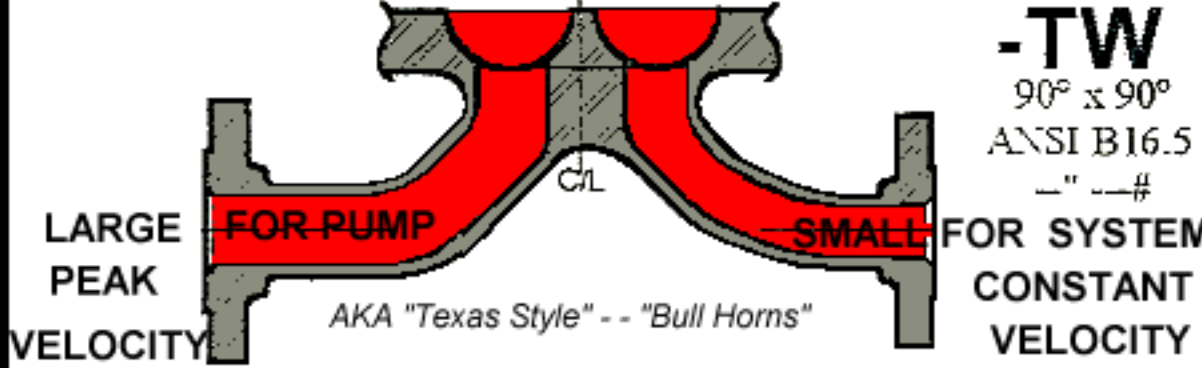
STANDARD FOR HP & HEAVY WALL DAMPERS. STANDARD FOR PH UNITS



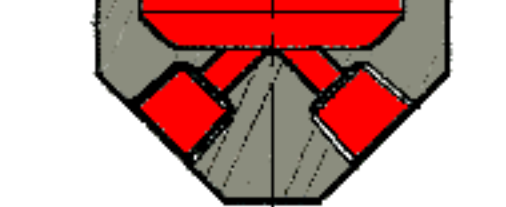
1.25" PC...  
-TW  
0° x 360°  
FNPT



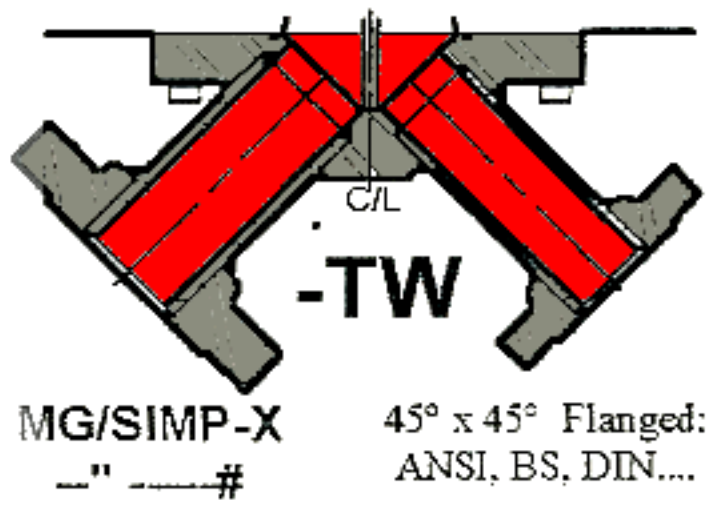
FITS IN PLACE OF A PIPE SPOOL. LENGTH RF to RF normally 1.5 x Damper Diameter



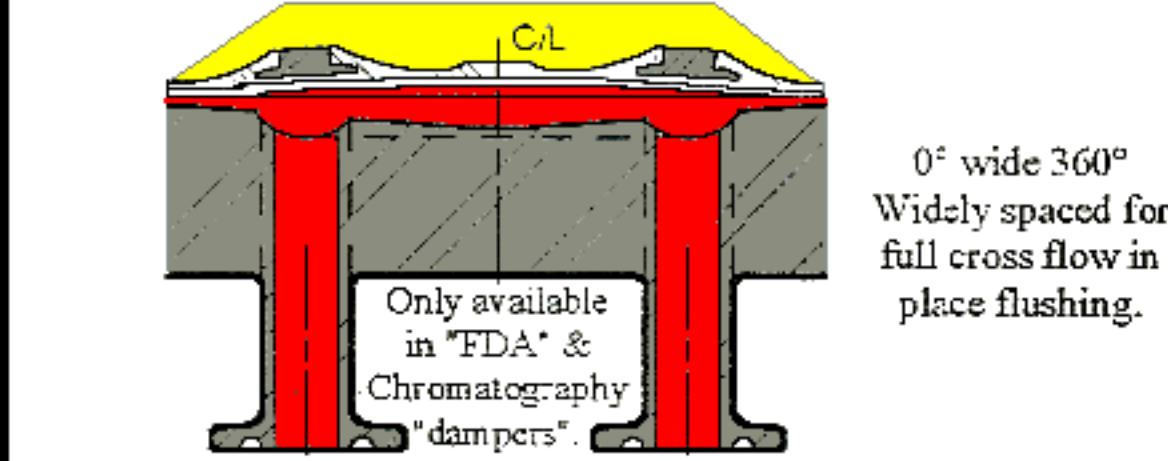
STANDARD ON CARBON STEEL PIG UNITS FOR HYDRAULIC OIL.



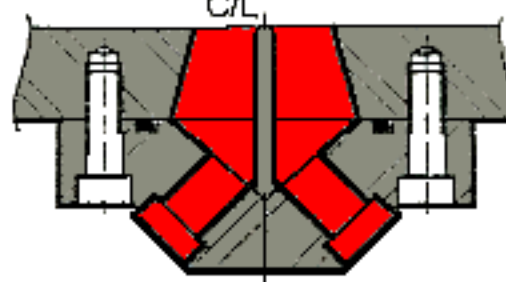
-TW  
45° x 45°  
FNPT



FOOD + DRUG STANDARDS



"BUILD YOUR OWN" CONNECTION SYSTEM.

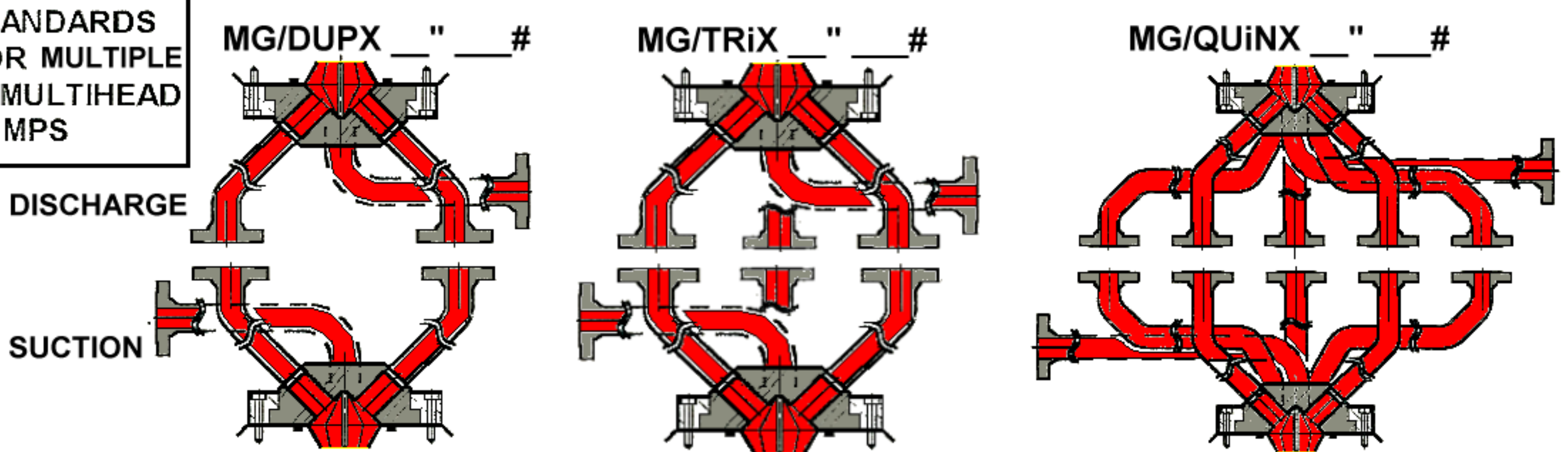


"O" ring sealed  
"METERGUARD"  
Piping Bases.  
MG---" Soc 45°  
by ---" Soc 45°

UP TO 6 CONNECTION SOCKETS.

**"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**

**METERGUARD PIPING BASES part number MG/**

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.

**PulseGuard** Inc. USA Color Fax 910-270-0320, UK Colour Fax 44(0)161 443 1486  
& Ltd. Your One Stop Damper Shop, with total in house capability PlsGd-p3.bmp