

**OPTIONS**  
Fill Valve  
Connection for Air Tank  
Vent etc.

We are able to warrant safety when following our own 30 year proven methods :-  
We can not accept end user statement that design pressure is working pressure

Where Allowable Working Stress = S  
Design Pressure P = MAWP + 10% + 15%  
Joint Efficiency = E

E is 1.0 No Welds, or radiographed.  
E is 0.7 Welded but not radiographed.

$$T = \frac{\text{Design Pressure} \times \text{Radius Internal}}{S(\text{From Pt. II D 1992}) \times E - (0.6P)}$$

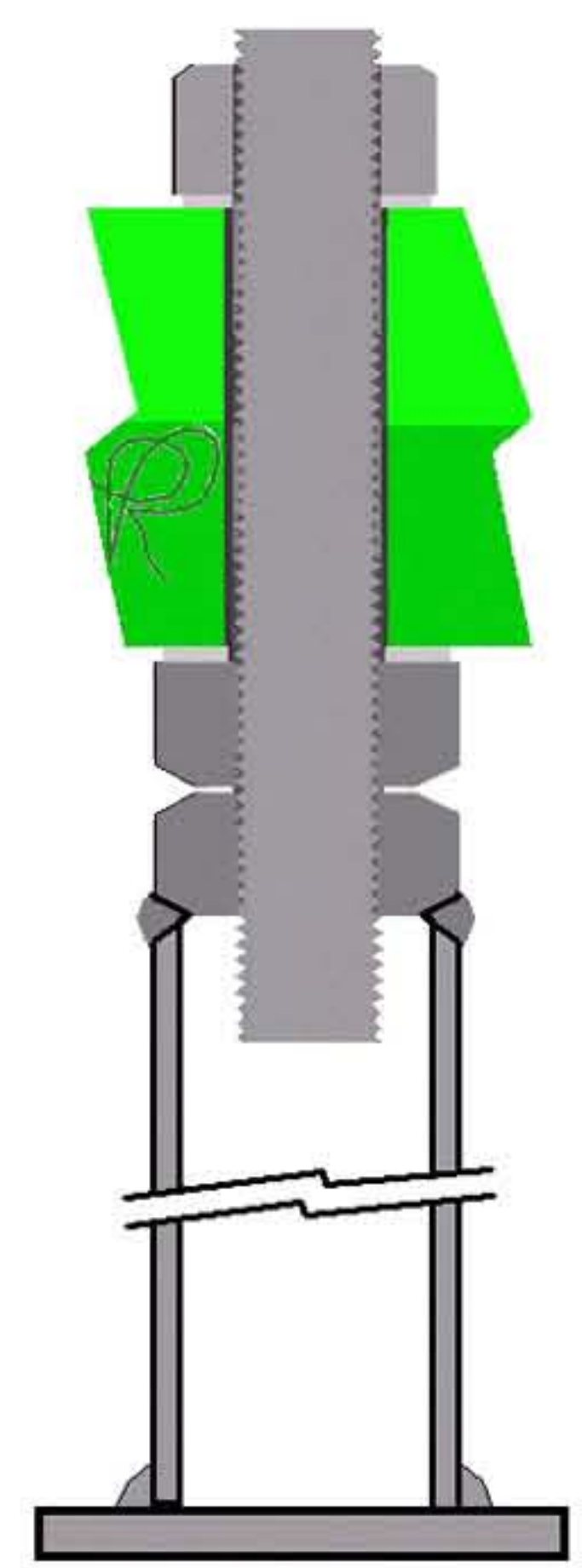
RV is for relief safety valve set pressure  
RVacc for relief valve accumulation pressure

As the ASME have increased allowable working stress, enabling cheaper less safe vessels, so "U" certification business can be expanded competitively, and hence ASME income; and concurrently the European PED has no Safety Coefficients in its ESRs approved for cyclic duty snubber dampers, whilst allowing ductility as low as 14%, therefore we are unable to offer any suitability for purpose on "Coded" items, and must warn accordingly.

**DECLARATION**  
as required by  
PED Mandatory Essential  
Safety Requirement "ESR"  
- to use  
"SAFETY COEFFICIENTS"  
is not complied with  
because neither EN 5500  
EN 13445 have Safety  
Coefficients.



Typical-Water-Hammer-Alleviator-BLO.bmp



Item Nbr	Description / function	Internal "Heat/Cast No" PURCHASE No
16	SS Data Plate	IDENTIFICATION / TRACEABILITY
15	Body pipe	
14	Seal Set - (White = PTFE, Brown = Elastomer)	
12	Closure bolting	
11	Bellows capsule mounting screws	
10	Vessel open end flange	
9	Service entry closure	
8	Bellows assembly capsule mounting plate.	
7	Static bellows guide for crush and snaking prevention	
6	Edge welded bellows assembly	
5	Bellows guide travel skirt	
4	Bellows guide travel glide rings	
3	Bellows guide travel head	
2	Bellows guide travel stop	
1	2:1 S.E. Head	

Item Nbr	Description / function	Internal "Heat/Cast No" PURCHASE No
↑ BILL OF MATERIALS ↓		

Scale : Please do not print without "MAINTAIN ASPECT RATIO" on, Use A3 paper on A3 paper. Landscape 420mm wide

Part Nbr. / Drawing Ref : \_\_\_\_\_ Date \_\_\_\_\_ th 200- Rev Nbr ▲

Blo / \_\_\_\_\_ Lt. / \_\_\_\_\_ bar / \_\_\_\_\_ y / '316L \_\_\_\_\_ Flange Designation 316L.

- SHOCKGUARD** <http://www.shockguard.co.uk>
- SHOCKGUARD** <http://www.shock-guard.com>
- SHOCKGUARD** Waermeausdehnung-Kompensator [www.waermeausdehnung.com](http://www.waermeausdehnung.com)
- SHOCKGUARD** Druckschlagverhinderer [www.schockabsorber.com](http://www.schockabsorber.com)
- SHOCKGUARD** Rohrleitungsschockabsorber
- SHOCKGUARD** suppressors & arrestors [www.ShockGuard.us](http://www.ShockGuard.us)
- SHOCKGUARD** line shock alleviators [Shock-alleviators.co.uk](http://Shock-alleviators.co.uk)
- SHOCKGUARD** for pump start-up surge, [Surge-alleviators.com](http://Surge-alleviators.com)
- SHOCKGUARD** noise caused by rapid valve closure [www.water-hammer.com](http://www.water-hammer.com)

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