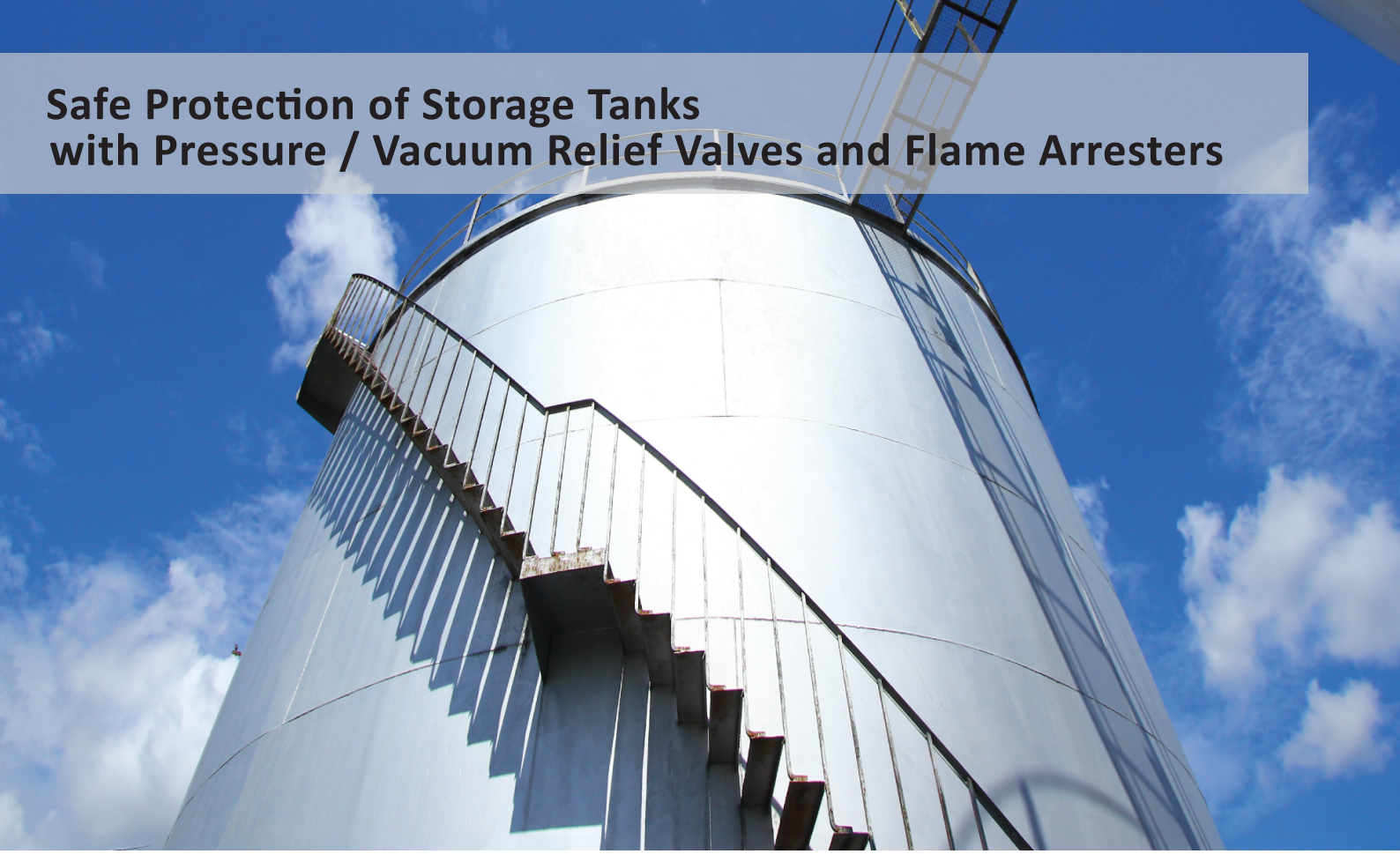
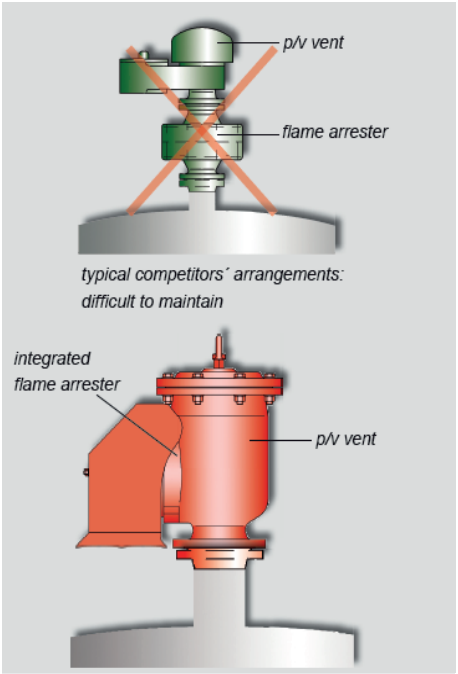
Safe Protection of Storage Tanks with Pressure / Vacuum Relief Valves and Flame Arresters



MANY TRADITIONAL CONFI GURATIONS (SEE FIGURE 1) ARE A SAFETY RISK.

- ISO 16852 requires both flow and flame transmission testing of Pressure Vacuum Relief Valves combined with Flame Arresters but lots of Pressure Vacuum Valves combined with Flame Arresters are not fully tested
- at subsonic flow small pressure losses can impact the lift of a valve pallet quite severely
- combining a Flame Arrester with a Pressure Vacuum Relief Valve can lead to reduced flow or even severe chattering in high flow relief scenarios when protection is needed most
- placing Flame Arresters below the Pressure Vacuum Relief Valve leads to:
  - additional risk of clogging and hence storage tank collapse
  - may not be safe if explosions or endurance burning occurs
  - Flame Arrester element cannot be serviced without losing explosion mitigation effect
  - difficult and lengthy maintenance procedure particularly with larger sizes



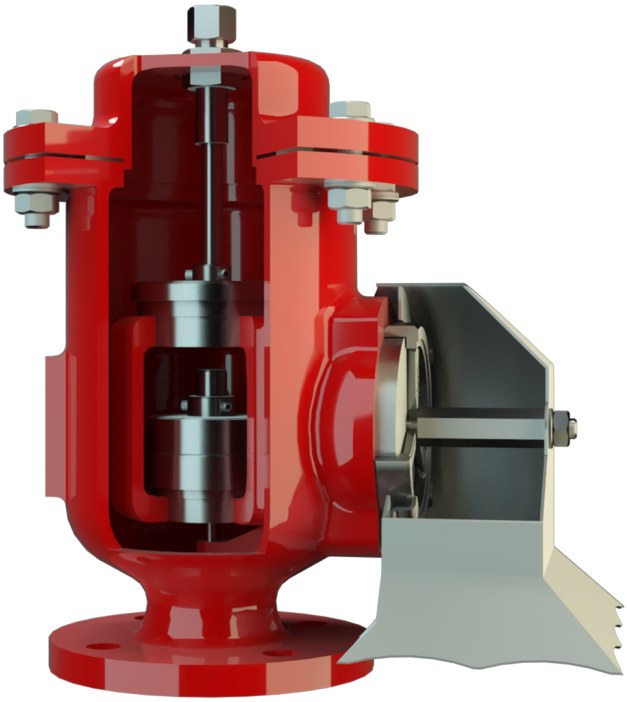
[Figure 1] PROTEGO® VD/TS: easy to maintain and price competitive

PROTEGO

PROTEGO® Pressure / Vacuum Relief Valves with integrated Flame Arrester

PROTEGO® provides reliable devices that comply with ISO 16852 fl ow test and explosion requirements and far beyond

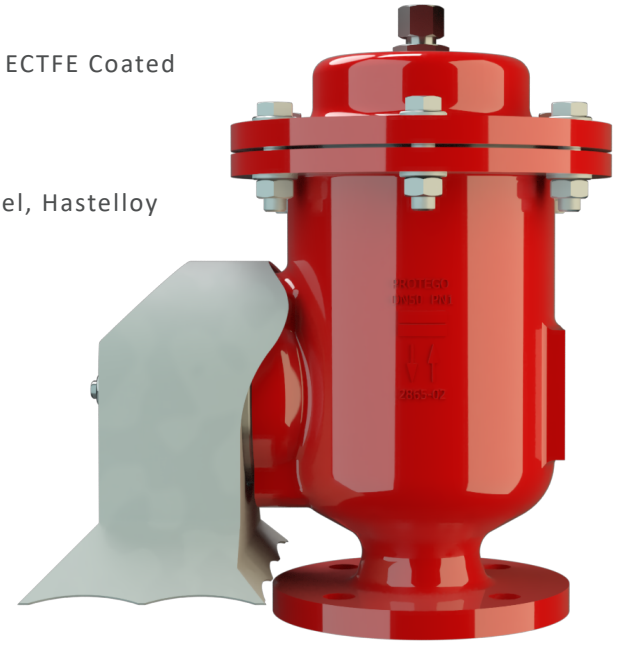
- PROTEGO® VD/TS is ATEX 2014/34/EU and EN ISO 16852 approved
- Valve and Flame Arrester performance is assured for all relief and explosion scenarios that may occur according to the design case
- Pressure drop is determined on TUV certified flow test rig according to API 2000 7th Edition requirements for the combined device (Flame Arrester and Pressure Vacuum Valve)
- Optimized weather hood for severe weather conditions
- Installation of electrical heating possible for standard design
- Extremely maintenance friendly
- No loss of explosion mitigation effect for routine inspection of the Flame Arrester
- 10% overpressure technology to reduce vapor emission to a minimum
- Very low leak rates to reduce explosion risk and compliance with environmental requirements



High intensity rain test

Material of Construction

- Housing: Aluminium, Steel, Stainless Steel, Hastelloy, ECTFE Coated
- Valve Seat: Stainless Steel, Hastelloy
- Gasket: PTFE
- Weather Hood: Aluminium, Stainless Steel, Hastelloy
- Pressure and Vacuum Pallet: Aluminium, Stainless Steel, Hastelloy
- FLAMEFILTER® Cage: Stainless Steel, Hastelloy
- FLAMEFILTER®: Stainless Steel, Hastelloy



PROTEGO MIDDLE EAST FZE

FZS1 BL05, JAFZ
Dubai, United Arab Emirates P.O. Box 261505

Phone: +971-4-88 600 95
Fax: +971-4-88 600 96
Email: me-sales@protego.com

WWW.PROTEGO.COM