

LO-LOSS

AUTOMATED LIQUID CYLINDER FILLING

Lo-Loss is an automated filling system that dramatically reduces depressurization (flash) losses during liquid cylinder filling. By maintaining an optimal pressure difference between the bulk tank and liquid cylinder, losses are kept at a minimum without increasing fill times.



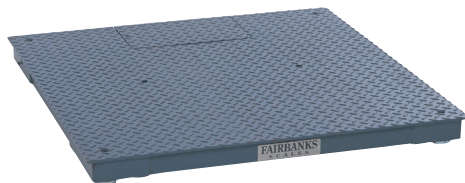
CONTROLLER FEATURES

- Customized software for liquid cylinder filling
- Automatic fill termination based on user inputs
- Large LED display and keypad for user input



FLOOR SCALE FEATURES

- 3 ft x 3 ft, 2500 lbs. capacity
- Easy to install with optional ramp
- Low profile - platform height is only three inches



PRODUCT HIGHLIGHTS

- Designed for pressure transfer filling in argon, oxygen and nitrogen* service
- Automatic liquid cylinder pressure regulation throughout the fill cycle
- Modular design allows integration into existing systems
- Automatic shutoff improves labor utilization by allowing unattended filling
- Promotes DOT-compliant filling and eliminates wasted product associated with vent filling

* Each product requires a separate pressure control unit

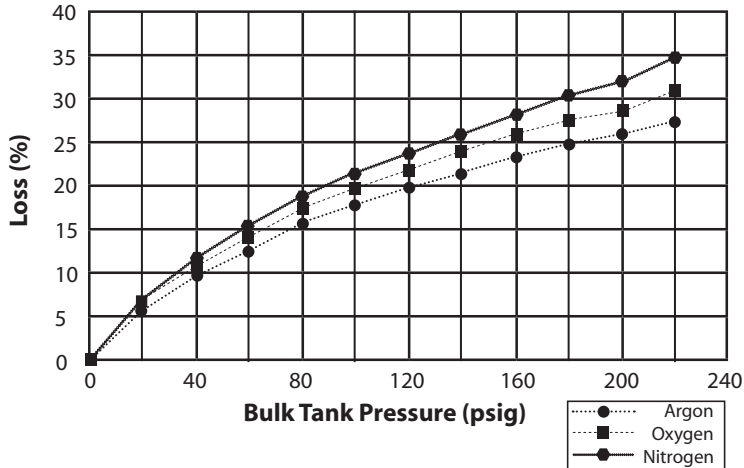


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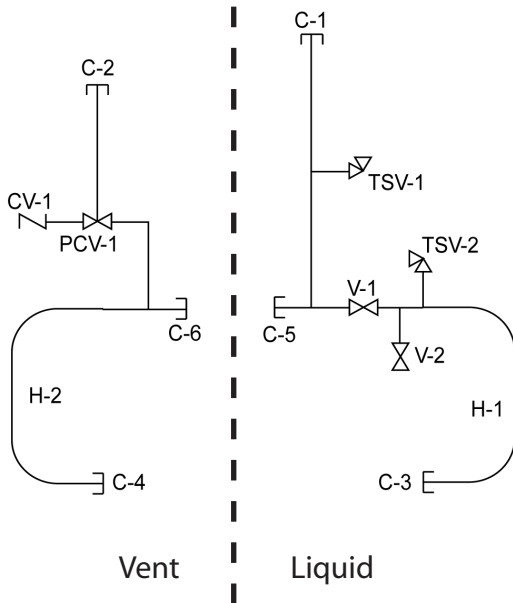
Depressurization (flash) Losses



The Lo-Loss System reduces flash losses during liquid cylinder filling to 3-5% without compromising fill times. For example, flash losses of up to 23%* (1,217 SCF) will occur when filling a 200 liter liquid cylinder in argon service from a bulk tank at 150 psig (see graph). By maintaining the liquid cylinder vent pressure at 30 psig lower than the bulk tank pressure, Lo-Loss reduces flash losses in this example to 3%* (160 SCF).

* An additional 2-4% of product based on gross volume will be lost due to transfer and cool-down losses.

Flow Schematic



Nomenclature

- C-1 Connection, Bulk Tank Liquid
- C-2 Connection, Bulk Tank Vapor
- C-3 Connection, Cylinder Liquid Valve
- C-4 Connection, Cylinder Vent Valve
- C-5 Connection, Secondary Liquid
- C-6 Connection, Secondary Vent
- CV-1 Check Valve, Vent Outlet
- H-1 Hose, Liquid Transfer
- H-2 Hose, Vent
- PCV-1 Pressure Control Valve, Vent
- TSV-1 Thermal Safety Valve, Liquid
- TSV-2 Thermal Safety Valve, Hose
- V-1 Electric Solenoid or Manual Ball Valve, Liquid Fill
- V-2 Valve - Hose Blowdown