Industrial Gases –

"How to get more from what is already paid for"

Challenge

Compressed gases have increasing use in almost every area of industry. Industrial gases (N_2, O_2, CO_2, Ar, SF_6, etc.) are stored in high-pressure cylinders and need to be transferred to the process or another vessel.

Too often, the cylinders are returned with large volumes of remaining gas which is already paid for.

Solution

Scavenge the remaining gas from cylinders when pressures equalize:

Example: Nitrogen Cylinder (typical "K" size) @ 2265 psi 230 SCF

> The application requires a continuous supply of N2 @ 800 psi. The cylinder pressure will eventually drop to the regulator setting of 800 psi requiring another cylinder to be installed & the existing cylinder returned for refil. The total volume left in the cylinder is calculated as follows:
>
> Cylinder size = 1.5 actual cubic feet (ACF) by water volume
>
> $$\text{SCF}_{\text{remaining}} = \frac{\text{ACF (PSI + 14.7)}}{14.7} = \frac{1.5\ (800 + 14.7)}{14.7} = 83.1\ \text{SCF}$$

Results

83.1 SCF equates to 36% gas returned in each cylinder. A Haskel gas booster can recover 80% of the remaining gas resulting in gas savings and reduced cylinder handling and rental fees.

Haskel gas boosters often have a payback in less than one year.

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