

Seal Leakage Measurements

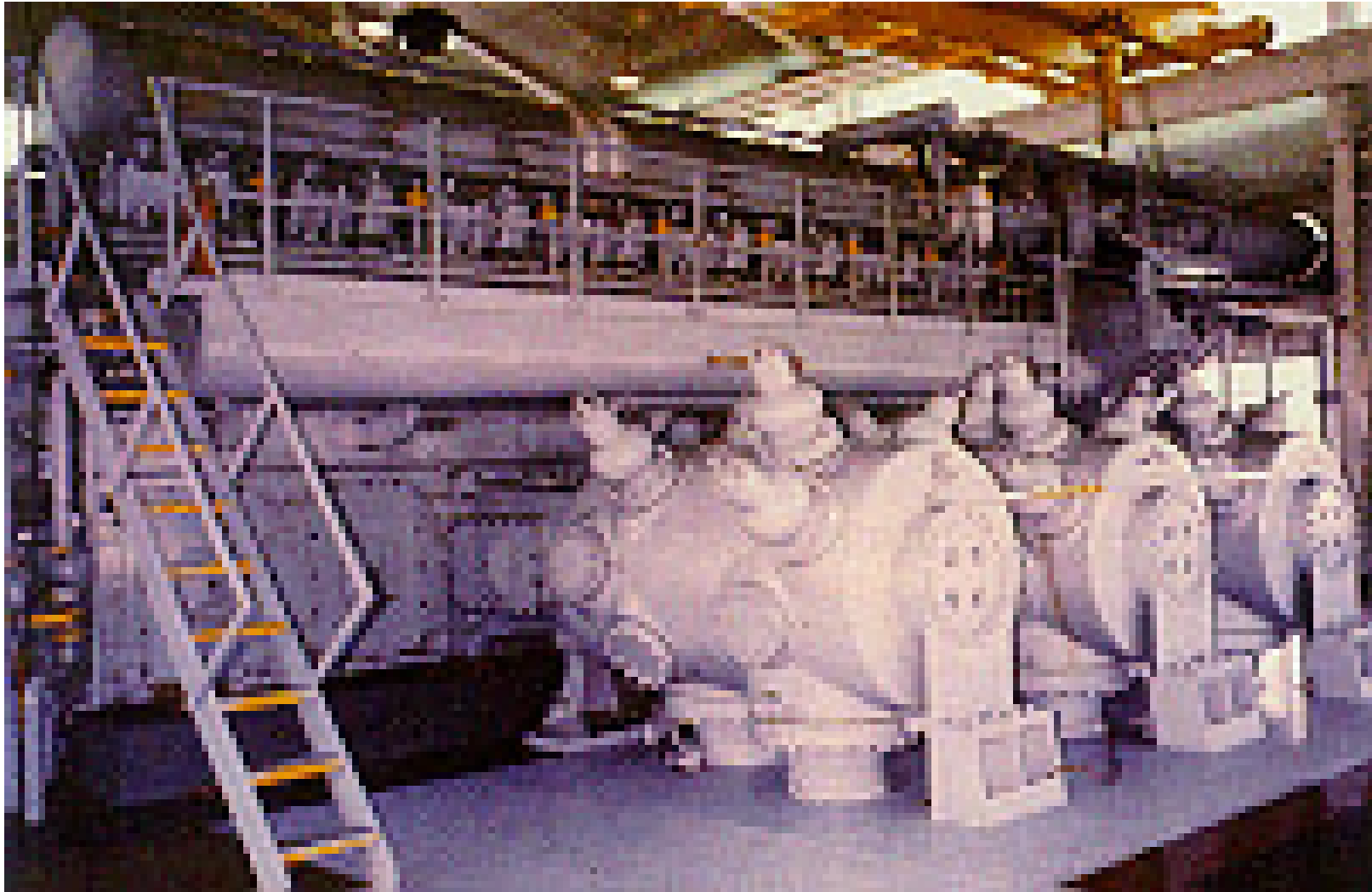
For: EPA Gas Star Technology Transfer Workshop

By: Steve Suarez, Metrix Instrument Co.

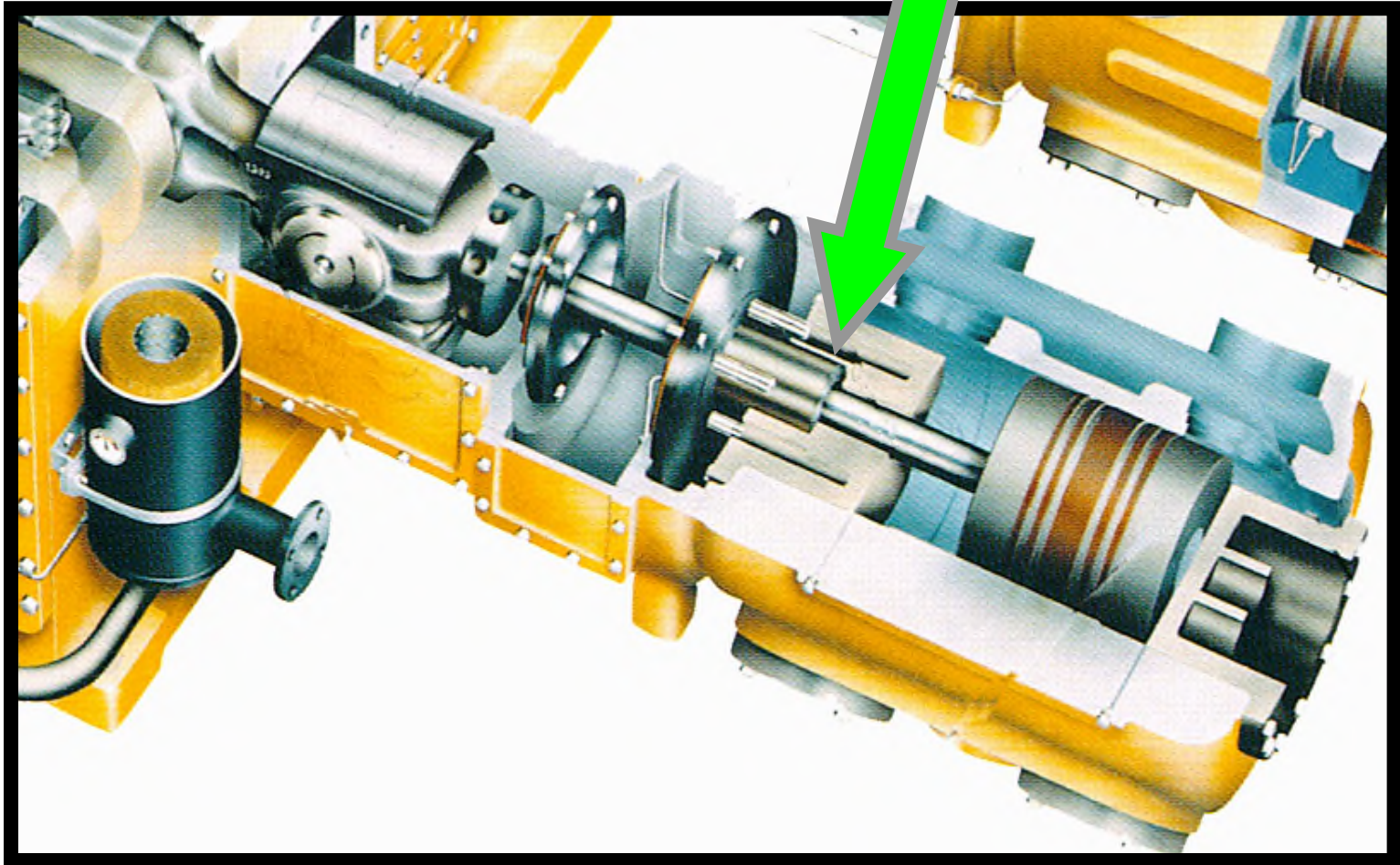
Bob Parr, T.F. Hudgins Incorporated



Seal Leakage Measurements



Seal Location



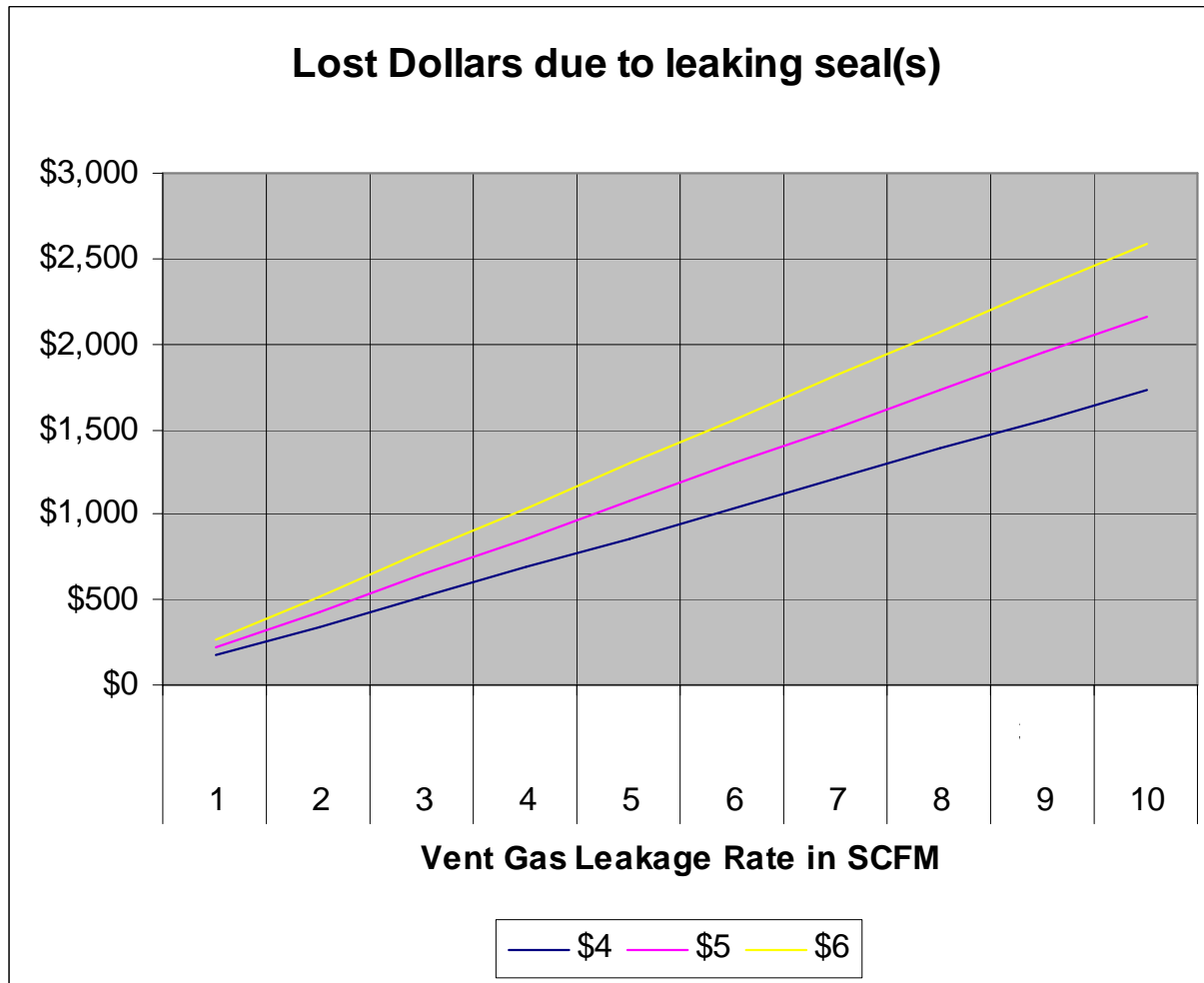
Seal Leakage Vent Line



Seal Leakage is a Problem Elsewhere

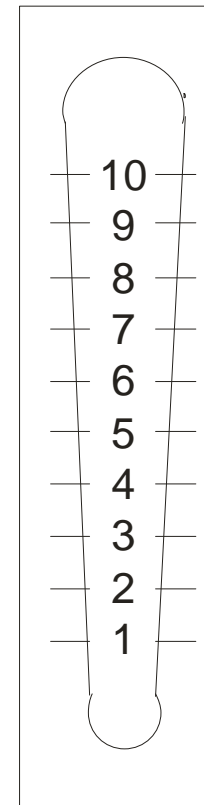


Lost Dollars



Flow Sensing via Flow Column

- Works well when measuring dry clean gas
- Low cost easy to understand



Flow Sensing via Turbine Flow Meter

- Multiply the velocity times the cross sectional area of the turbine provides the volumetric flow rate



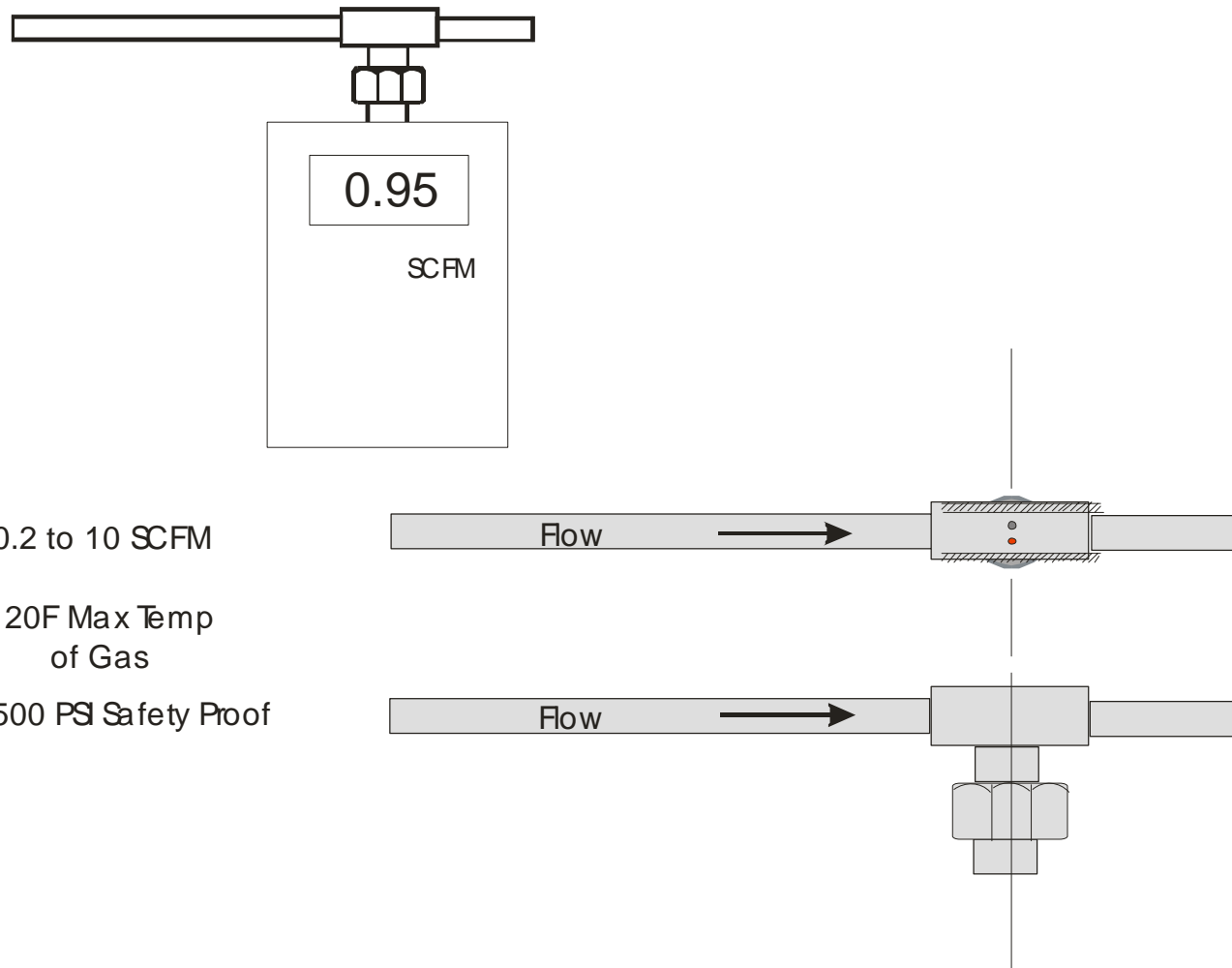
Excellent measurement accuracy for clean gases!

Moving parts subject to wear

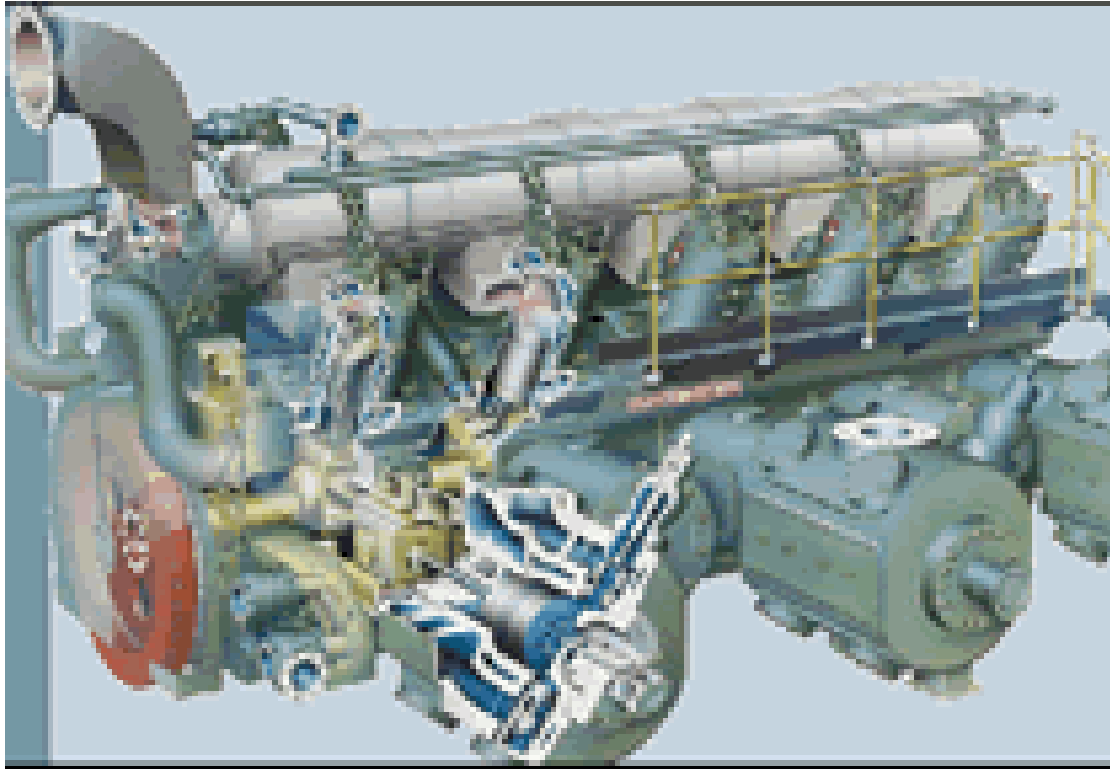
Drag, a particular problem at low flows

Buildup caused by oily gas which erode the accuracy

Flow Sensing via Thermo Mass Flow Technology



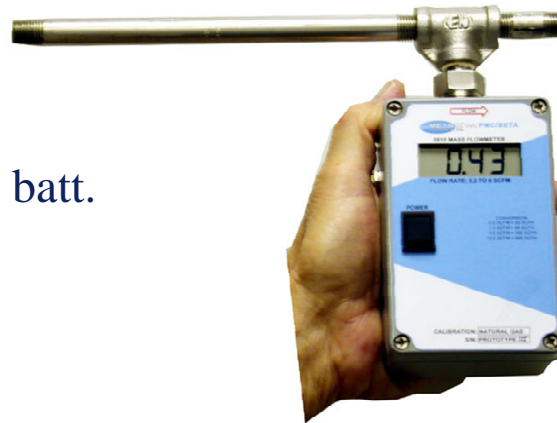
Number of Leaking Cylinders in a Station



No. of engines x No. of cylinders = 24 leaking seals

Package Vent Leakage Meters

Flow



Model 8510-002

Flow: 0.2 to 10 SCFM
Input Power: 9 V rechargeable batt.
Operating Temp: 40 to 120 F
Class 1 Div.II rated pending
Option Output: 4 to 20 mA

Flow: 0.2 to 10 SCFM
Input Power: 24 Vdc
Operating Temp: 40 to 120 F
Output: 4 to 20 mA
Class 1 Div.I rated
Option: remote meter

Flow



Model 8520-002