CHEMICAL FEED SYSTEMS - BASIC DESIGN
• Common accessories - why used.
  • Strainer
  • Calibration column
  • Pressure gauge
  • Pressure relief valve
  • Diaphragm seal
  • Pulsation dampener
  • Back pressure valve
  • Flow meter
CHEMICAL FEED SYSTEMS - BASIC DESIGN

• SUCTION
  • **Strainer** removes particulates from process fluid.
  • **Calibration column** used to determine actual flow at different set points.
CHEMICAL FEED SYSTEMS - BASIC DESIGN

- SUCTION AND DISCHARGE
  - **Pressure gauge with isolator** provides visual indication of process pressure.
  - **Pulsation dampener** - used on reciprocating pumps transforms reciprocating flow to laminar flow.
WHY USE A PULSATION DAMPENER?

- **Suction pulsation dampener** transforms flow between tank and dampener to laminar flow.
- **Discharge pulsation dampener** transforms flow between dampener and discharge point to laminar flow.
CHEMICAL FEED SYSTEMS
- BASIC DESIGN

• DISCHARGE
  • **Pressure relief valve** protects the feed system from overpressurization.
  • **Back pressure valve** creates a consistent artificial pressure against which the pumps operate.
• Keep suction pipe as short as possible
• Keep pump stroke rate low to moderate
• Keep piping diameters large
• Flooded suction is ideal
• Do not be fooled by reciprocating flow - use pulsation dampening devices
• Pressure relief valves always recommended
• Consider closing the loop when high precision automated flow control is required.
• The more pressure gauges the better
CHEMICAL FEED SYSTEMS - BASIC DESIGN

QUESTIONS?