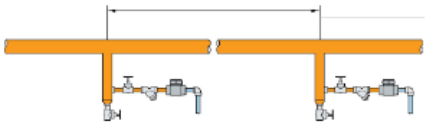
COOLEY
COIL & ENERGY
A DIVISION OF COONEY TECHNOLOGIES

STEAM SYSTEM SUMMARY

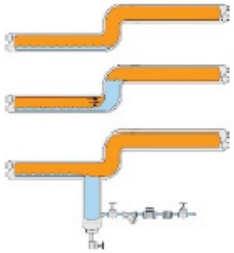
STEAM TRAPS

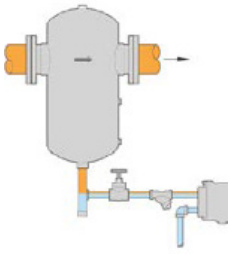
INSTALLATION TIPS



Drip Traps on steam mains located every **150 - 300 ft.** of straight run of piping

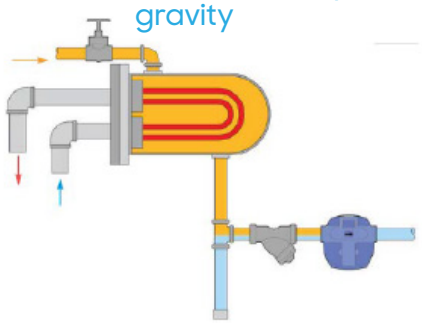
Drip Traps on ALL low points & upward changes in piping direction





Consider **Separators** when steam is suspsected to be wet

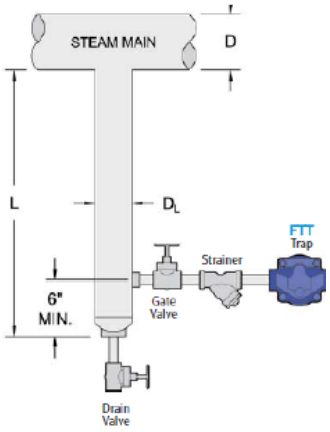
Process Traps should be installed BELOW heating equipment to allow condensate to drain by gravity



DRIP LEG DESIGN

Length (L)

- Automatic Start-Up → 28" min (=1 psig head pressure)
- Supervised Start-Up → 1.5x the drip leg diameter (D_L), not less than 8"



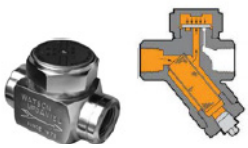
Diameter (D_L)

- Up to 4" steam main diameter → Equal to steam main diameter (D)
- Over 4" steam main diameter → Can be 1/2 of the steam main diameter (D), not less than 4"

STEAM TRAP SELECTION

PRIMARY CHOICES FOR DRIP APPLICATION:

30 psig & above

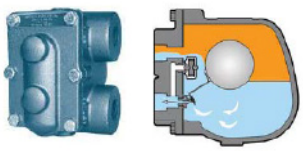


TD 600

Thermodynamic

- Single moving part (disc) opens to discharge condensate and closes for steam
- Small & compact
- Cyclic discharge makes testing easy

up to 30 psig

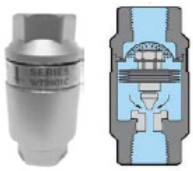


WFT SERIES

Float & Thermostatic

- Float-operated valve opens to discharge condensate
- Thermostatic air vent discharges air, but closes for steam
- **Float & Thermostatic Traps are the primary selection for process heating applications**

OTHER STEAM TRAP CHOICES:



WT 2000

Thermostatic

- Heavy-duty, industrial-purpose welded stainless steel controls condensate discharge
- Extremely versatile
- **Consider for undersized return lines when flash steam is a concern**

IB SERIES

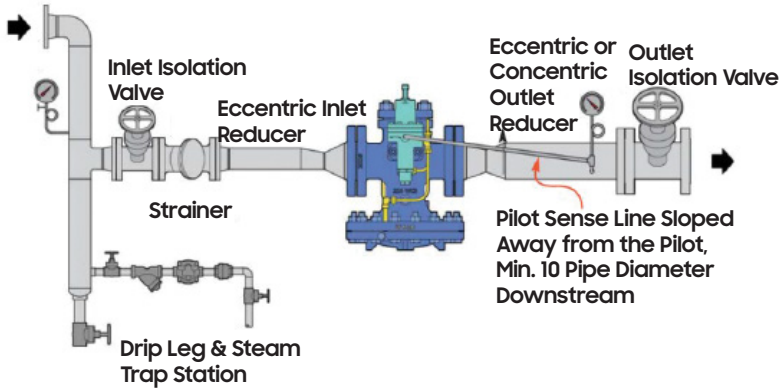
Inverted Bucket

- Rugged & simple design
- Not recommended for process heating applications due to lack of air vent and need for priming
- **Top mounted ofifice ideal for drip applications with excessive pipe scale**

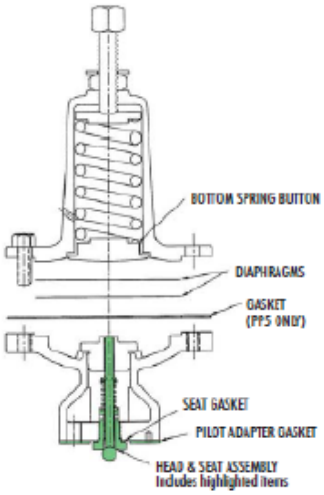
PRESSURE REDUCING VALVES (PRVs)

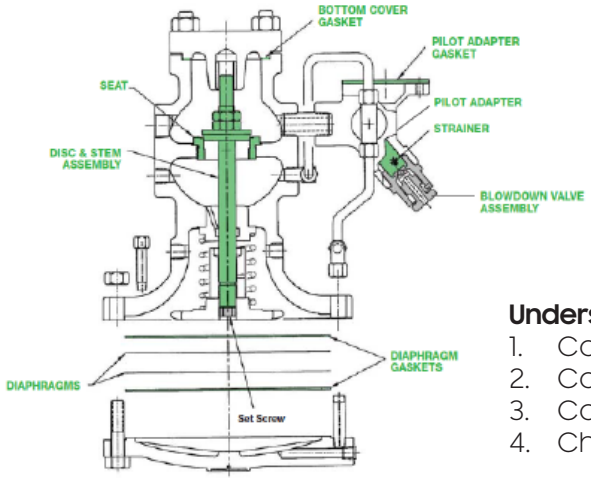
INSTALLATION TIPS

DO NOT LINE SIZE STEAM PRVs!



MAINTENANCE TIPS





TROUBLESHOOTING

Overshooting PRV (will not close)

1. Confirm PRV is properly sized for the application
2. Check outlet pipe sizing and sense line distance
3. Replace pilot diaphragms if steam discharging from weep hole in spring case
4. Open pilot blowdown (if equipped) in effort to remove possible dirt/debris on pilot
5. Isolate PRV & perform tubing testing to determine pilot or main valve as leakage source (see I&M)

   If pilot is determined as leakage source:
   - Check pilot head & seat for proper seal (replacement cartridges available)

   If main valve is determined as leakage source:
   - Confirm main valve free of condensate
   - Check main valve seat/disc for dirt/debris/wear

Undershooting PRV (will not open)

1. Confirm steam to valve
2. Confirm pilot gasket installed correctly
3. Confirm bleed orifice istalled
4. Check main valve diaphragms

CONDENSATE RECOVERY PUMPS (ELECTRIC & MECHANICAL)

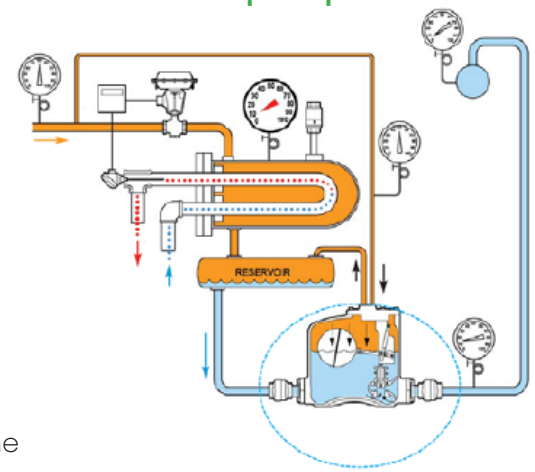
Electric Pumps

- Ideal for low pressure & temperature condensate or condensate that has cooled
- Consider NPSHA & NPSHR requirements when installing
- Do not insulate!
- Reciever is NOT designed or intended for flash steam

Pressure Motive Pumps

- Ideal for high pressure & high temperature condensate
- Consider mfg. recommended fill head requirements when installing
- Flash steam should be recovered or vented before the PMP
- Can be insulated

Remember Pump-Traps when...



...draining condensate from heating applications with **lift** after the equipment

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