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# CSI Hot Tips

NEWS ABOUT THE PRODUCTS AND SERVICES OF CONTROLS SOUTHEAST, INC.

## Chilly Things Happen On The Way To The Trap

Steam traps are prime suspects when frequent freeze-ups of jacketed process lines occur. Trapped condensate, often the real culprit may go undetected for days or weeks and... several steam trap replacements.

This problem occurs most frequently in tight places where it's a struggle just to route steam to pipe and components. In areas of dense piping it's easy to overlook the conditions that prevent drainage of condensate.

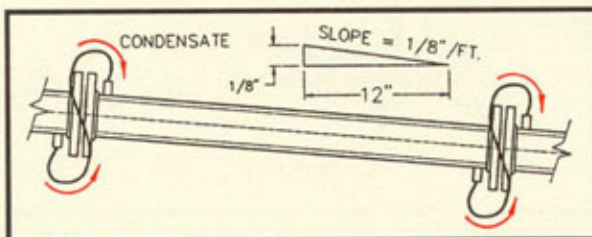
Without good drainage, condensate pockets develop and chilling occurs in the areas of buildup. Result: processes become sluggish or freeze up, and good traps take the rap.

So, removing all the condensate from a system is an important task, one that may require a bit of cleverness, finesse

and a suspicious nature.

Here are some things we've learned about getting rid of condensate. Hopefully, they can save you a headache or two.

**Always Slope It.** Jacketed piping systems heated with steam should always be sloped. On horizontal runs, a slope of 1/8" per foot of pipe is typical. This axiom holds true even



Slope on horizontal runs of jacketed pipe assures that condensate migrates toward the steam trap.

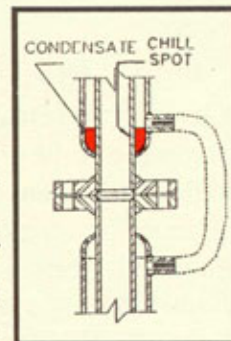
when the core pipe does not need slope for drainage, as with some gas-phase processes. Slope on horizontal runs assures that condensate migrates to the low point of the jacketed spool, where drain connections are located. When the trap opens to replenish the steam, condensate discharges to the next spool, always moving toward the trap.

**Be Suspicious Of Vertical Runs.** Locating drains at the very bottom of the jacket on a vertical run can be

impractical due to bolting or fabrication requirements.

In swaged constructions, jacket terminations normally leave 1-1/2" to 2" of unheated core pipe.

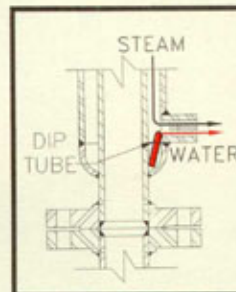
Condensate buildup below the discharge coupling on the vertical run doubles the unheated core pipe area.



Condensate below drains can double unheated areas of core pipe.

### The Dip Tube Solution.

Inexpensive to use, dip tubes are an easy way to control condensate buildups. A dip tube is a piece of 1/8" to 3/8" tubing, usually stainless, open on both ends. One end of the tube is placed at the bottom of the condensate pocket with enough clear-



Dip tubes keep non-draining areas free of condensate buildup.

ance to allow passage of liquid. The other open end of the tube is located at the internal

( See Chill Spots, over)

## Chill Spots (cont'd)

orifice of the drain coupling. Tack welding holds the tube in place.

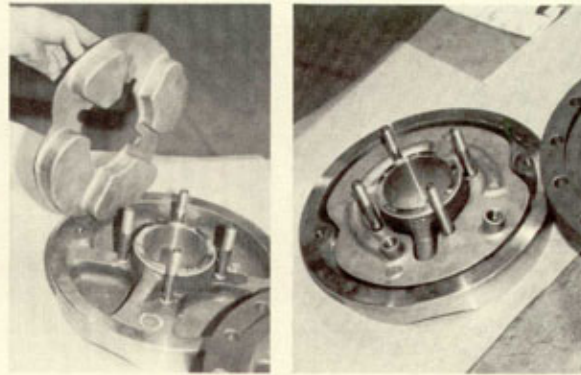
In operation, condensate gradually builds up below the opening of the drain.

When the trap opens downstream to discharge condensate, the rush of steam across the top of the tube creates a vacuum, sucking all of the condensate out of the pocket. Score: traps one, chill spots zero.

### Four Dip Tubes For One Problem.

Jacketed components like pumps, valves and meters can be particularly sensitive to condensate buildup due to their basic design. Sometimes, the awkward positions available for steam supply and drain couplings make removal of condensate a real challenge.

The clamp-on jacket for the pump backplate shown in photo and diagram, right, is a good example of how dip tubes can be used for effective condensate

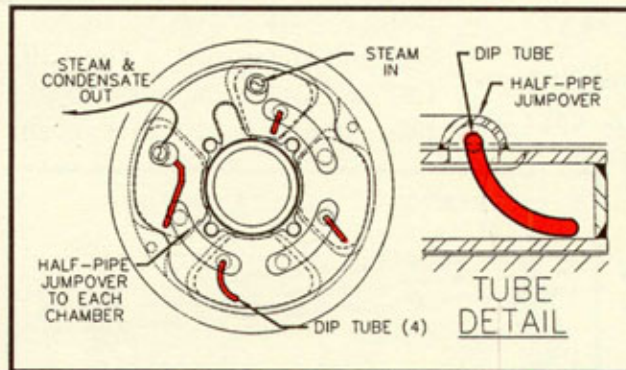


Each steam chamber in this clamp-on jacket for the pump backplate has a dip tube that keeps condensate from causing chill spots.

removal in cramped quarters. The pump frame dictated that the condensate drain be located at the top of the backplate adjacent to the steam inlet. The

the backplate.

Easy access for steam connections on the assembled pump were critical. By placing dip tubes in each of the four steam chambers, where condensate would normally collect, the entire backplate was uniformly heated without condensate buildup. Score and game: traps two, chill spots zero. ○

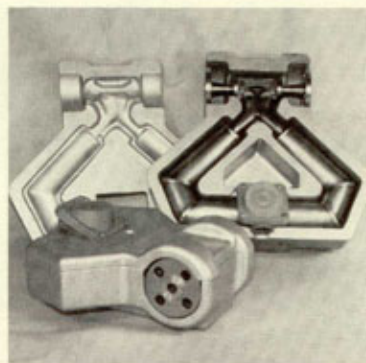


By placing a dip tube in each of the four chambers, condensate buildup is eliminated while allowing drain coupling to be located at top of backplate.

## NEW MASS FLOW METER SPORTS NEW JACKET.

Reduced pressure drop and increased accuracy are state of the art improvements cited for Micro Motion's newest mass flow meters, the Elite line.

Several one-piece ControHeat jackets have already gone into service, maintaining meter temperatures up to 400 F.



One-piece ControHeat jackets complement the sleek looks of Micro Motion's new Elite mass flow meters.

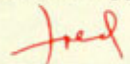
## The ControTrace Surprise

Just about the time we think our product line of ControTrace (CT) heating elements has reached market potential, we get surprised. And it's fun, because our customers constantly are teaching us new things about our own product.

Recently, a customer decided that steam-heated CT panels were the best way to eliminate moisture condensation on the walls of a bag house. Another customer decided that CT systems on their highway tankers gave them the greatest overall value of several options considered.

For your imagination and support, all of us at CSI say,

Thanks.

  
Fred Stubblefield, Jr.  
President