

**MAXIMIZING**  
Worker and Site Safety

**MINIMIZING**  
Fugitive Emissions

**MASTERING**  
Application Challenges

## How to Get the **Best** of Winter's **Worst**

**Swagelok Electric-Traced and Steam-Traced Pre-Insulated Tubing Bundles** ensure process fluid freeze protection and temperature maintenance in numerous instrumentation applications, including impulse, process, and sampling lines.

- Available in an array of configurations with multiple process tubes and electric or steam tracers
- Insulated with non-wicking, fibrous glass insulation; covered with a PVC or urethane jacket for exceptional abrasion and chemical resistance
- For faster installation and a more consistent thermal performance versus field traced and insulated systems
- Because the process and tracer lines are parallel within the bundle, all tubes bend together for easier routing and field connections

### ELECTRIC-TRACED BUNDLE

- Maintains uniform temperatures (up to 250° F) in long, continuous impulse and sample lines
- Self-regulating Raychem® tracer lowers heat output as bundle gets warmer
- Tinned, copper braided shield

### LIGHT STEAM-TRACED BUNDLE

- Superior freeze protection of impulse and analyzer transport lines
- Ideal for maintaining temperatures (50° F to 200° F) in small-diameter process lines
- Individually wrapped process and tracer tubes reduce heat transfer

### HEAVY STEAM-TRACED BUNDLE

- Yields optimal high process temperatures (200° F to 400° F) and/or viscosity control
- Maximum high heat transfer due to direct contact of process and tracer tubes
- Effective alternative when electrification is not possible

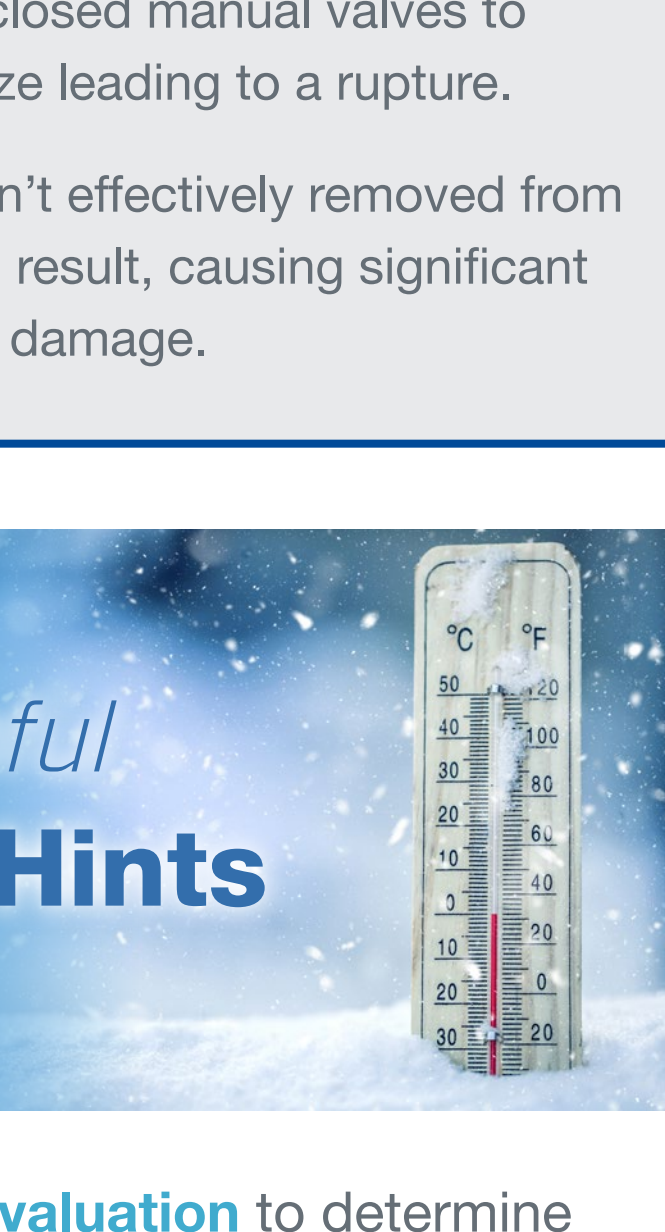
## Steam Traps

**Strongly recommended for every steam-traced line in your system.**

Should be located at every 100' or so of heated line – or if you have turns or elevation changes in your main line.

Separates condensate from steam. Also removes non-condensable gaseous mixtures. Should be installed before any pressure-relief, control, or closed manual valves to prevent seat erosion and a freeze leading to a rupture.

**REMEMBER:** If condensate isn't effectively removed from your lines, water hammer could result, causing significant operator risk and/or equipment damage.



## A Few More Helpful Winterization Hints

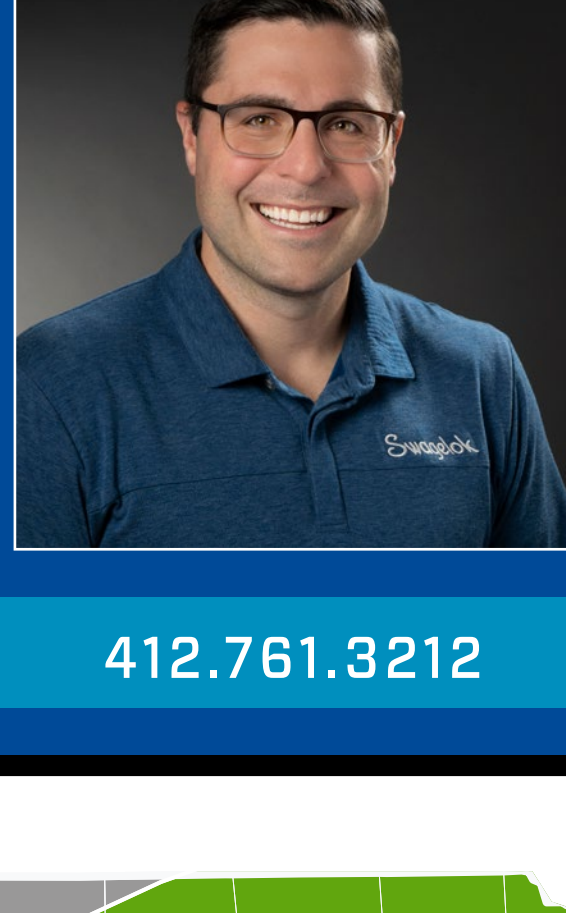


- **Conduct an Energy-Loss Evaluation** to determine current line leakage and to prevent fugitive emissions that could cause system failure in extreme cold
- **Employ Grab Sampling** - Safely, efficiently, and effectively capture gas and liquid samples for transportation to a lab for analysis; whether you require closed-loop sampling into pressure-rated cylinders OR want to collect liquids and non-volatile process fluid into glass bottles, our options are safe, intuitive, easy to maintain, and available as a single part number
- **Construct heated housing**, even for temporary use, to protect critical outside equipment

For complete details on trusted and proven Swagelok winterization tips and techniques, contact:

**Gary Osman**

Swagelok Field Engineer



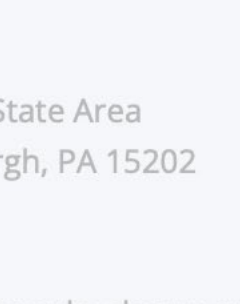
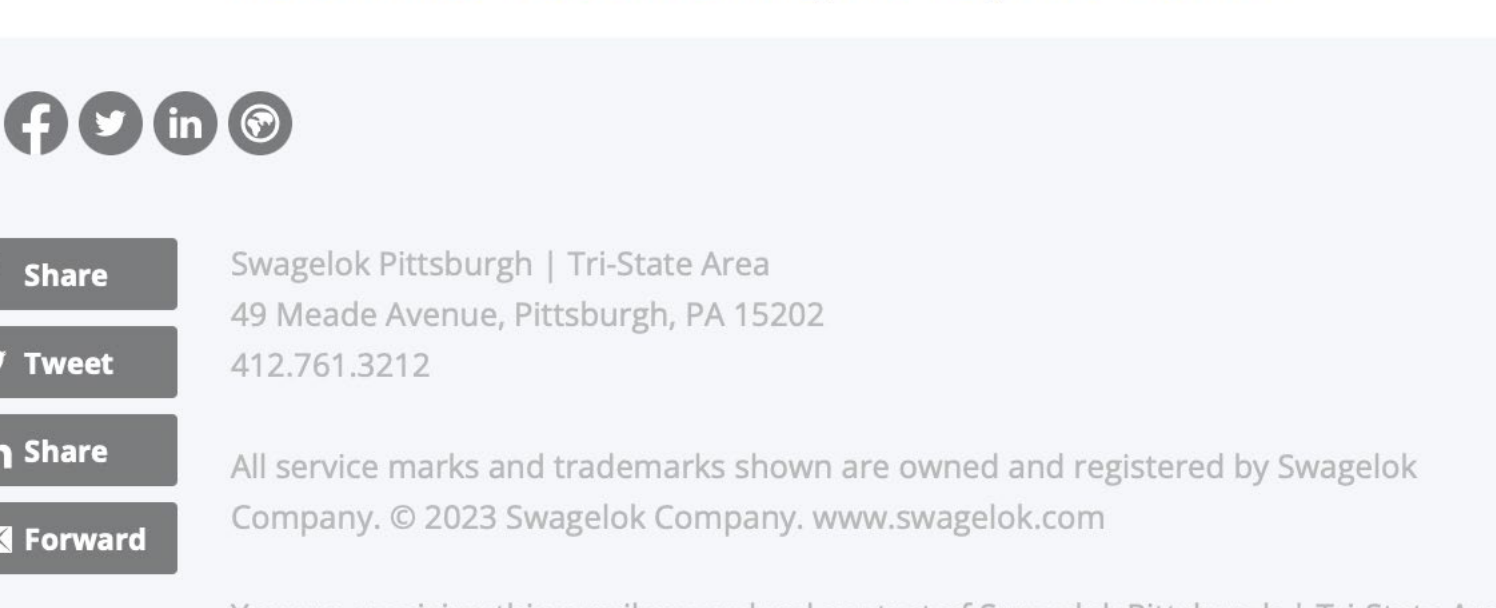
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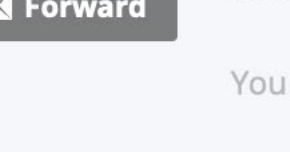


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