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Do It Right the First Time Let's Demystify the Installation of the Steam Line

Unless the application calls for a space distribution unit mounted on the humidifier, the installation of a humidifier will require a steam line to connect the steam outlet(s) of the evaporation chamber to the steam distribution system (SAM, Multi-Steam, and remote SDU).

Consider the total steam line length between the humidifier and the steam distributor to determine the type of steam line material (flexible steam hose or hard pipe).

For a flexible steam hose, the total steam line should not exceed 16 feet (5 meters). The steam hose supplied by Neptronic is flexible and must be supported at all times to maintain a proper slope. Dips and hard bends (kinking) are the most common issues that will cause a disruption to the flow of steam.

For longer distances, use insulated hard pipes. The total steam line length is determined by the humidifier capacity: one equivalent foot for each lb/h capacity of the humidifier (0.67m for each kg/h), with a maximum of 50 feet (15m). For example, an SK310 has a capacity of 30 lb/hr (13 kg/h), the maximum length of the steam line would be 30 feet (9m). For the smallest units, up to 18 lb/hr (8 kg/hr), the maximum length should not exceed 20 feet (6m).

Copper pipe for the hard pipe steam line is the most common material. Copper has a high thermal conductivity value and using a "type M" (that has the thinnest wall) allows the pipe to warm up quickly and therefore reduce the amount of condensate generated. Soldering the copper tubes and fittings provides sufficient strength for the assembly.

Also, it is important to insulate the steam line with a minimum 1" thickness, (2" recommended) to diminish the heat transfer.

Nothing must impede the flow of steam to the steam distributor or condensate to a drain. Run the steam line with a proper slope, a 15% slope (ratio of 7:1) going upward (condensate is returning to the humidifier) and 5% slope (ratio 20:1) going downward (steam and condensate are flowing in the same direction).

Use two 45° angles or long radius elbows instead of sharp 90° elbows to reduce the restriction to the flow of steam. Avoid low spots that could collect condensate or restrict the flow of steam.

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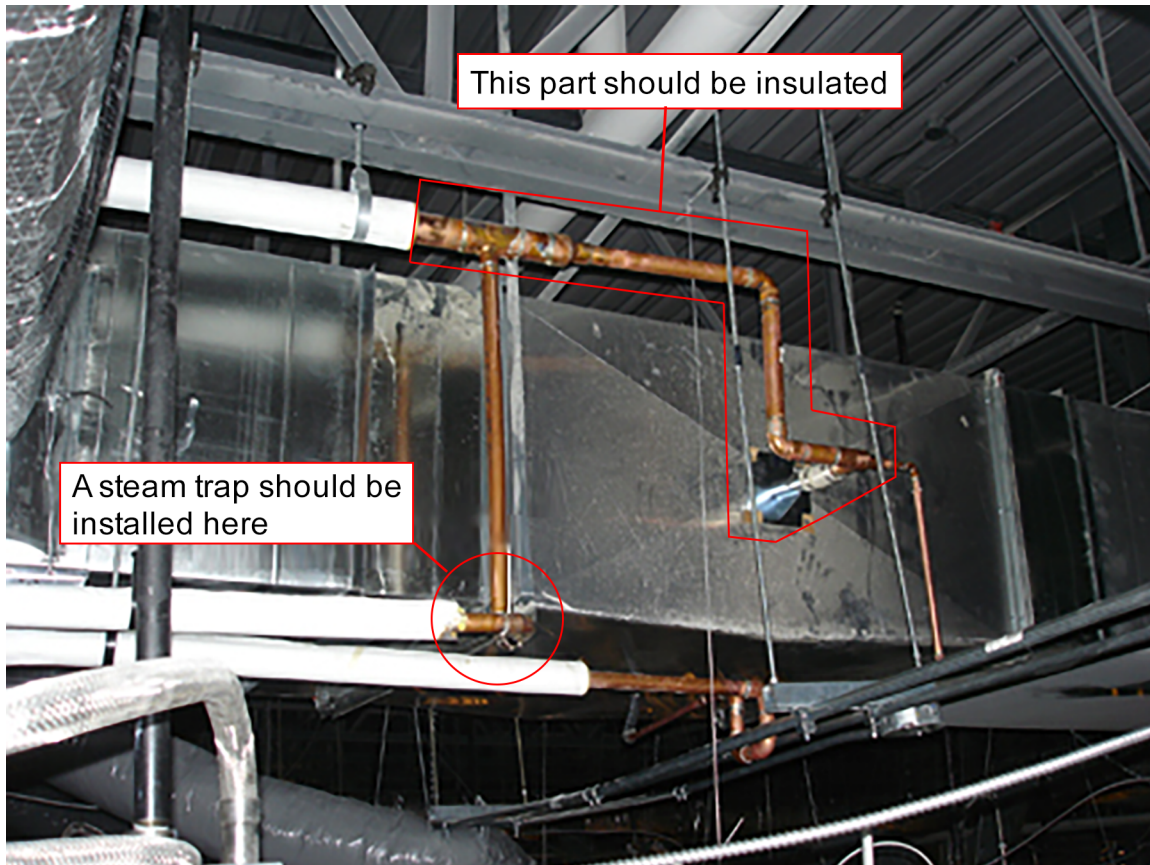
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Install an S-trap on the steam line at every 15ft (5m) to remove the condensate and install an S-trap where condensate could collect. The S-trap can be made from a 1/2" or 3/4" pipe.

Follow these simple rules to ensure a proper installation of the steam line and operation of the humidifier.

Below you can see an example of a bad installation where the steam line is not completely insulated and traps are not installed to prevent the steam to travel into the condensate pipe.



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