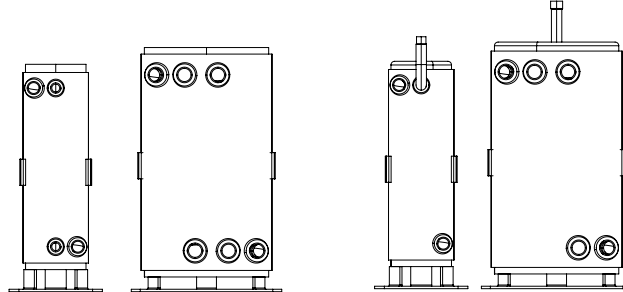


Coil-in-Shell Heat Exchangers - Installation Guideline

Installation / Location / Positioning of Coil-in-Shell Heat Exchanger in HVAC&R System



Vertically Installed Coil-in-Shell Heat Exchanger

Dry All®
Evaporator Coil-in-Shell Heat Exchanger

Dry All®
Condenser Coil-in-Shell Heat Exchanger with Receiver


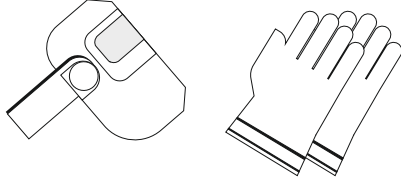
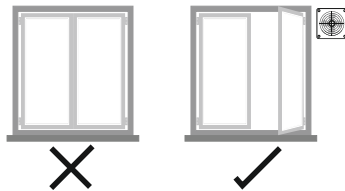
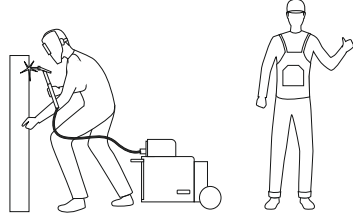
- To prevent moisture from entering the Coil in shell Heat Exchanger while in transit and storage, the same is charge with positive nitrogen pressure. Hence open Cap/rubber plug when needs to install.
- Install Coil in shell Heat Exchanger as per installation position given in refer image.
- Choose Coil in shell Heat Exchanger model according to Dry All's capacity rating only.
- Ensure that incoming refrigerant line tubing and secondary fluid tubing is connected as per image.
- Install the heat exchanger in a shaded, ventilated area, away from direct heat ources (e.g., sunlight or hot ducts) to avoid excessive temperature rise.
- Ensure the unit is securely mounted and adequately supported to handle operational vibrations and weight.
- After installation, perform a leak test and pressure test as per standard refrigeration practices to ensure system integrity.
- Insulate the refrigerant lines and shell surface to avoid sweating and improve efficiency.
- Ensure no mechanical load is applied to the connections; use appropriate pipe support Do not install in a location prone to freezing unless antifreeze is used in the water side.
- Ensure easy access for maintenance and monitoring of the unit.

Anti-Freeze Protection Methods for Coil-in-Shell Heat Exchangers

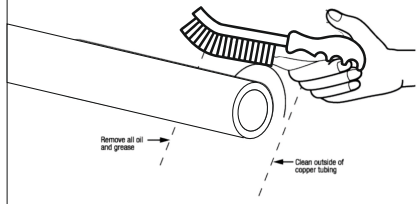
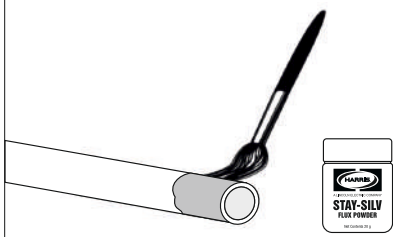
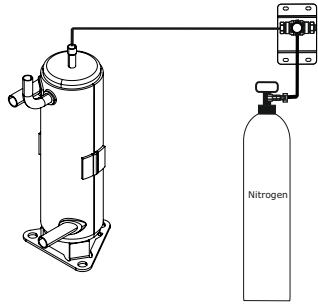
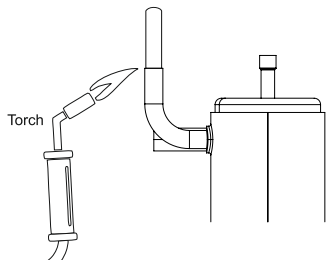
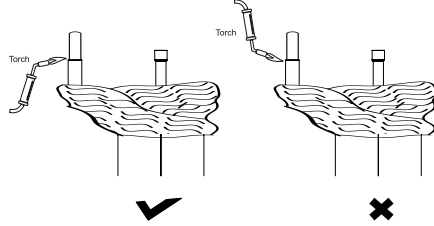
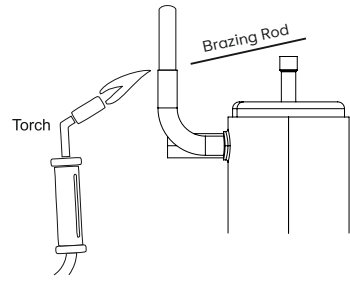
Freezing or icing can seriously damage the coil and compromise the performance of the refrigeration system. The following methods help to minimize the risk of freezing in coil-in-shell heat exchangers:

1. Use Strainer or Filter <1 mm, 16 mesh before Inlet Water to prevent debris or particulate matter from entering the shell side.
2. Use Brine (e.g., Glycol) When Evaporation Temperature is Close to Freezing Point
3. Always start the water pump and allow water circulation for a few minutes before starting the refrigeration compressor.
4. During shutdown, stop the compressor first, and then stop the water pump. This avoids freezing due to refrigerant pump-down while water is not flowing.
5. Install a low-pressure switch to protect against excessively low refrigerant pressure, which may indicate dangerously low evaporation temperatures. Use Dry All Cartridge Pressure Switch for reliable operation.
6. Use a thermostat to monitor and prevent the evaporation temperature from dropping below 0°C.
7. Install a temperature sensor at the water outlet (shell side). Set it to trigger at 4°C as a precautionary buffer against freezing.
8. A Water flow switch in the water line is recommended to detect loss or reduction of water flow. Low flow can lead to localized freezing. Causes may include pump failure, leaks, pipe blockage, or a dirty filter.

Doe's & Don't

<p>Installation should be done in normal, clean and safe atmospheric conditions. Please don't do any work in hazardous and unsafe conditions.</p> <div data-bbox="284 275 609 409">  <div style="border: 1px solid black; padding: 5px; display: inline-block;"> DANGER HAZARDOUS AREA </div> </div> <p>1</p>	<p>Use face shield or green goggles as protection for eyes. Use heat resistance gloves. Use protective coveralls made of breathable materials.</p> <div data-bbox="930 253 1332 432">  </div> <p>2</p>
<p>When working make sure that the area has enough ventilation or working exhaust</p> <div data-bbox="284 600 630 790">  </div> <p>3</p>	<p>Wear impervious coverall clothing with breathable fabrics.</p> <div data-bbox="978 589 1332 801">  </div> <p>4</p>

Brazing Technique:

<p>Clean the mating parts with cleaning pad or special wire brush</p> <div data-bbox="100 1070 518 1272">  </div> <p>1</p>	<p>Apply flux to the male connection after cleaning operation</p> <div data-bbox="563 1048 957 1283">  </div> <p>2</p>	<p>During brazing bleed an insert gas (Dry Nitrogen or CO2)</p> <div data-bbox="1082 1025 1401 1328">  </div> <p>3</p>
<p>Use a torch tip which is large enough to provide uniform heating on the mating parts.</p> <div data-bbox="167 1451 494 1709">  </div> <p>4</p>	<p>Place cold wet rag on receiver body and direct the flame of torch away from end of the shell so as to avoid damaging the shell and paint due to excessive heating</p> <div data-bbox="582 1496 1018 1720">  </div> <p>5</p>	<p>Use copper or high silver brazing rod as required. After brazing the joint, wipe the solder joint with a rag and allow it to cool. Clean to remove excess flow (to improve the appearance) of flux if any.</p> <div data-bbox="1082 1440 1433 1720">  </div> <p>6</p>