neptronic®

Drain Cooler

Water Tempering Device

Installation Instructions and User Manual

READ AND SAVE THESE INSTRUCTIONS

Foreword

Neptronic Company Overview

Founded in 1976, we're a private corporation that designs, manufactures and distributes products for the HVAC industry. Our product line includes intelligent controllers, electronic actuators, actuated valves, humidifiers and electric heaters.

Our products are designed and manufactured by over 250 dedicated employees in our 7,500 m^2 (80,000 ft^2) state-of-the-art facility located in Montreal, Canada. Using a vertical integration model, our entire manufacturing chain is under one roof, from software and hardware development to SMT circuit board assembly, to sheet metal fabrication, to product testing, ensuring that our products are engineered to last.

We currently hold several national and international patents and with our continued commitment to research and development, we provide innovative products and technologies for the ever-evolving challenges of the HVAC industry. Exporting over 70% of our sales, we have an exclusive distribution network around the globe that provides comprehensive solutions to our worldwide customers.

About the Manual

These installation and operation instructions have been developed to facilitate the installation of the Drain Cooler.

1. The strict application of these instructions will ensure the conformity of your installation and operation as per manufacturer's recommendations.
2. The application of these instructions is one of the conditions for the application of the warranty.
3. The application of these instructions does not ensure at any time conformity to procedures, regulation or local codes, regarding connection to local water supply.

Electricity

All work concerned with electrical installation MUST only be performed by skilled and qualified technical personnel, such as an electrician or a technician with appropriate training. The customer is always responsible for ensuring the suitability of the technical personnel.

Please observe the local regulations concerning the provision of electrical installations.

Correct Use

Neptronic systems and its products are designed only for humidification use. Any other application is not considered appropriate for the intended purpose. The manufacturer cannot be made liable for any damage resulting from incorrect use.

General Warranty

This product is subject to the terms and conditions described at http://www.neptronic.com/Sales-Conditions.aspx.

Handling and Lifting

Lifting or handling MUST be carried out by trained and qualified personnel. Ensure that the lifting operation has been properly planned, assessed for risk and that the equipment has been checked by a competent Health & Safety representative, and effective control measures are in place.

It is the customer's responsibility to ensure that the operators are trained in handling heavy goods and to enforce the relevant lifting regulations.

The Steam Humidifier MUST be handled and lifted with care at all times and remain in its original packaging for as long as possible, prior to installation.

The Steam Humidifier package may be carried using a forklift from the underside. Exercise caution before lifting to ensure that the load is balanced.

Unpacking

The Steam Humidifier is shipped inside carton boxes or in a wooden crate. Remove packing and skids prior to commissioning.

Contents

Overview

Presentation

Thank you for choosing a Neptronic® product. The Drain Cooler is a stainless-steel cylindrical mixing chamber that blends cold water from a humidifier or condensate of a steam dispersion system. The result is drain water cooled to a temperature below 140°F (60°C).

Definition

Cooling chamber

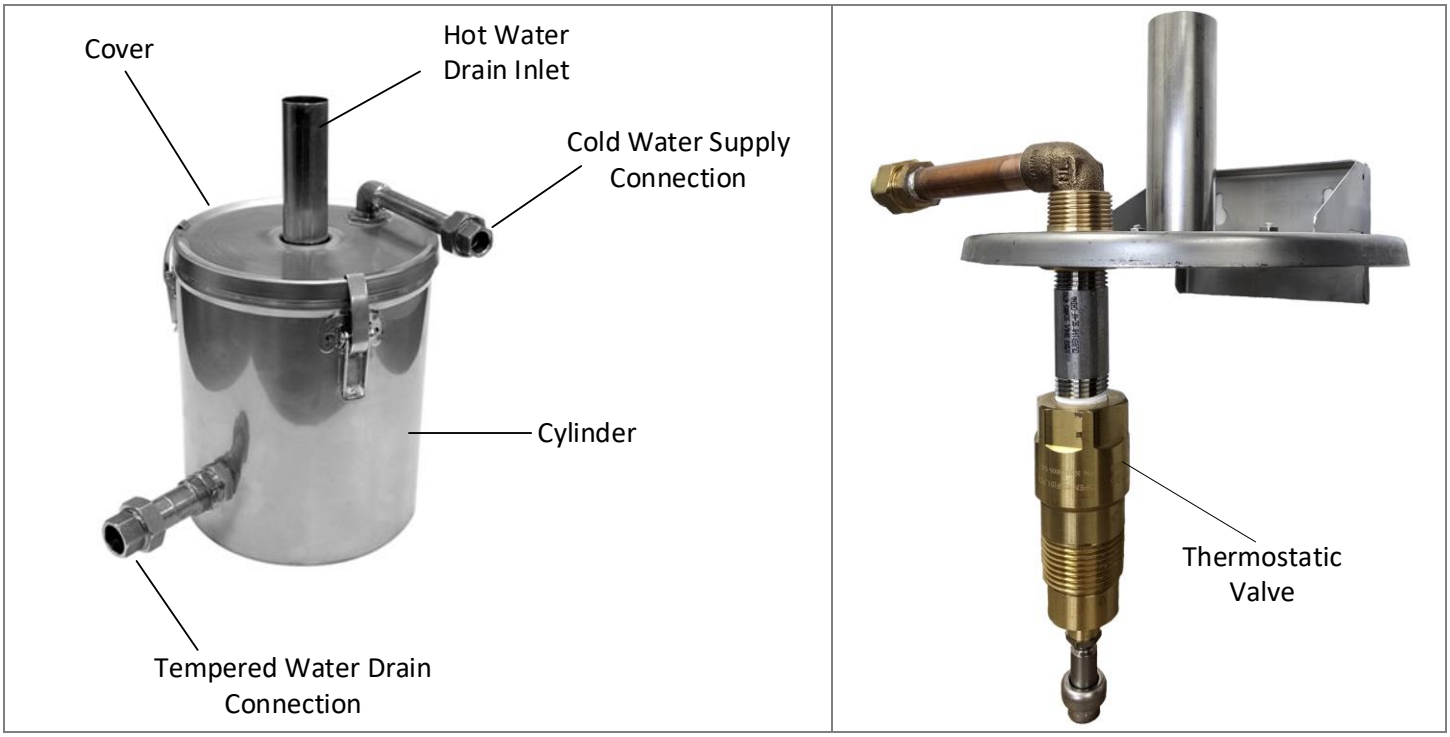

Illustration 1 - Cooling Chamber

Mechanical installation

General recommendations

- **IMPORTANT:** Mechanical installation should conform to Local and National Codes.
- Location: Plan a location which is easy to access in order to permit a proper inspection and servicing of the Drain Cooler.

Do not install Drain Cooler where failure of the appliance could cause damage to the building structure or to costly equipment. For indoor installation, ambient temperature must be above freezing.

Plumbing connections

IMPORTANT: Plumbing installation should conform to Local and National Codes.

Cold Water supply

- Water inlet specifications:
  - ✓ Inlet water pressure: 15 to 70 psig (1 to 4,8 bars)

  IMPORTANT: Risk of malfunction. Do not reduce water supply flow. Do not connect to a supply water line that is dedicated to other appliances.
  - ✓ Maximum temperature: 70°F (21°C)
  - ✓ 1/2" (15mm) copper sweat connection
- To facilitate servicing, a shut off valve (not supplied) should be installed in the water supply line, close to the Drain Cooler.

Hot Water Drain Inlet

- Hot water inlet specification:
  - ✓ Inlet water opening is 1-1/4” I.D.
- Run a 3/4” pipe as directly as possible from the drain outlets of the humidifier to the Drain Cooler.

Tempered Water Drain Connection

- Drain outlet specifications:
  - ✓ Drain 3/4” (20mm) copper sweat connection.
  - ✓ Water drain temperature: 140°F (60°C) or less.
- Run a 3/4” pipe as directly as possible from the Drain Cooler to the drain.

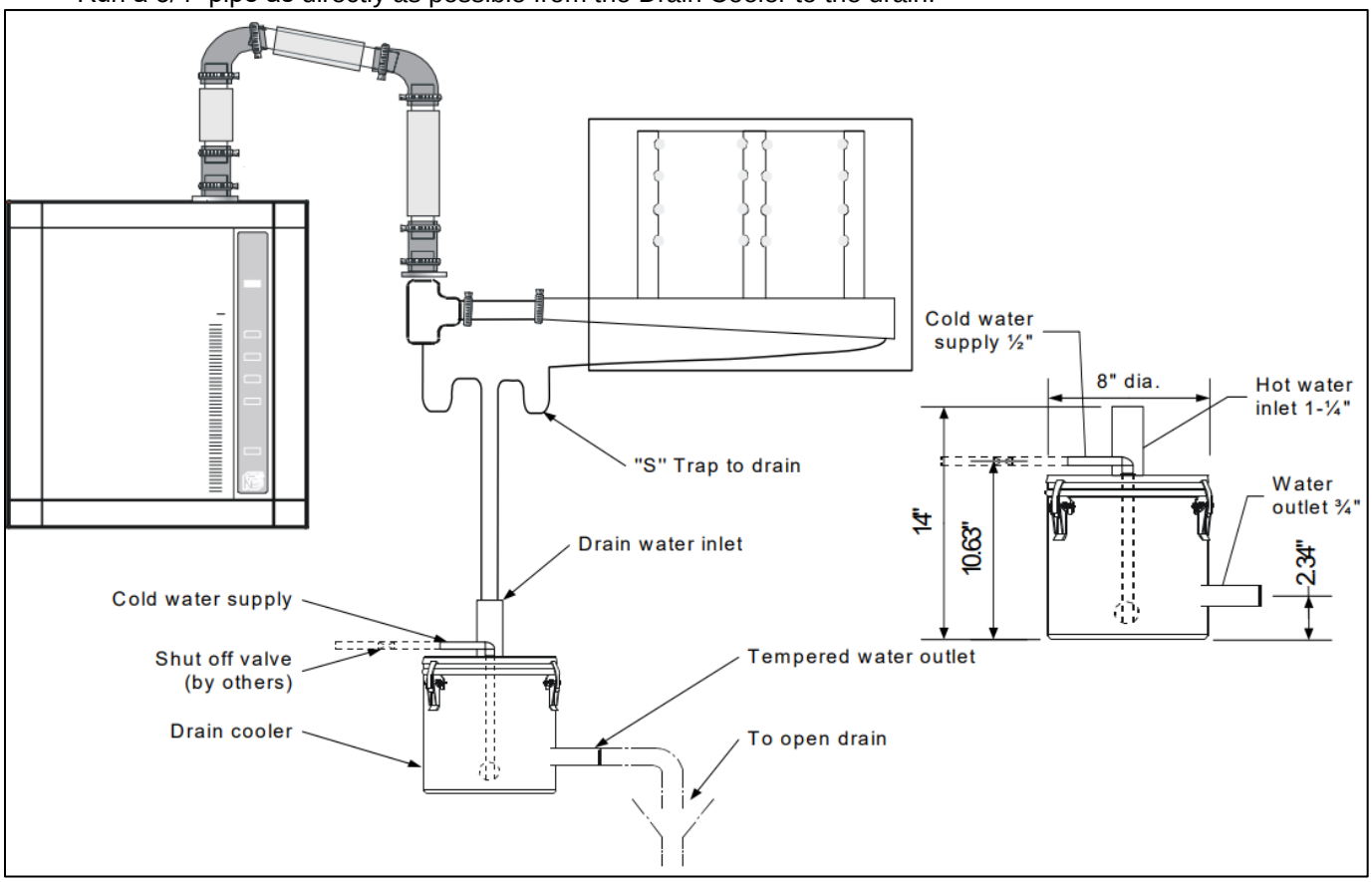

Illustration 2 - Drain Cooler Connections

Start-up Procedure

Follow this start-up procedure to avoid improper system operation:

1. Ensure that plumbing connections have been done in accordance with the instructions in this manual.
   a) Verify that the supply and drain water connections are connected.
2. Open the water shut off valve (external to the Drain Cooler).
3. Your Drain Cooler is now fully operational. No other action is necessary; your Drain Cooler will temper the drain water automatically.

Drain Cooler Operation

Following is the procedure for the system operation:

1. Hot water from a humidifier or condensate of s steam dispersion system enters the Drain Cooler thru the opening on top of the cover.
2. Cold water enters through the thermostatic valve, which ensure the mixing of hot and cold water.
3. Tempered water exits the Drain Cooler at 140°F (60°C) or less.

Maintenance

General

- **IMPORTANT:** Failure to perform the required periodic maintenance will void the warranty.
- The routine service is a cleaning of the cooling chamber.

Cooling Chamber Cleaning

CAUTION: Risk of burn. The cooling chamber and its contents can be hot, check temperature before handling.

1. ***Disconnecting the water pipes***
   a) Shut off the cold water supply valve.
   b) Unscrew the supply water coupling.
   c) Unscrew the tempered drain water coupling.
2. ***Removing the Drain Cooler***
   a) Remove the Drain Cooler from the piping.
3. ***Opening the cooling chamber***
   a) Unfasten the 3 latches located around the cooling chamber.

   CAUTION: Risk of injury, latches are tight. It is recommended to use pliers or a screwdriver to unfasten the latches.

   b) Remove the cover from the cooling chamber.
   c) Do not misplace the gasket located between the cover and the cylinder.
4. ***Cleaning the cooling chamber***
   a) Pour out any remaining water and scale from the bottom of the cooling chamber.
   b) Clean out the remaining scale, use a non-metallic brush and water. Some vinegar or any weak acid for cleaning stainless steel may be required.

      IMPORTANT: The use of wire brush or any non-recommended acid will void the warranty.

   c) If the amount of scale to be removed is significant, increase the frequency of maintenance as necessary. Too much scale may impair the normal operation of the Drain Cooler or damage it.
5. ***Cleaning the thermostatic valve and cover.***
   a) The cover of the Drain Cooler and thermostatic valve will, in general, not require cleaning. However, if cleaning is required, proceed as per the cleaning of the cooling chamber.

   IMPORTANT: The use of wire brush or any non-recommended acid will void the warranty.
6. ***Checking the gasket***
   a) Check the gasket.
   b) The gasket should not be cracked.
   c) Replace the gasket if required.
7. ***Reassembling the cooling chamber***
   a) Rinse out the cylinder and cover with water.
   b) Place the gasket inside the cover before installing the cover on the cooling chamber.
   c) Tighten the three latches around the cover.
   d) Replace the Drain Cooler to the piping.
   e) Tighten the tempered water drain and supply water couplings.
   f) Open the cold-water supply valve.

Troubleshooting

Problem	Causes	Corrective actions
The temperature of the tempered water is exceeding 140°F (60°C).	• The cold water supply valve is closed. • Mineral accumulation inside the cooling chamber. • Mineral accumulation on the thermostatic valve. • Malfunction of the thermostatic valve. • Inadequate cold water flow to the Drain Cooler.	• Open the cold water supply valve. • Do maintenance of the Drain Cooler (see page 7). • Replace the thermostatic valve.
Water is leaking thru the top opening of the cover.	• Mineral accumulation inside the cooling chamber, the tempered drain opening is blocked.	• Do maintenance of the Drain Cooler (see page 7).

Notes

neptronic®

400 Lebeau blvd, Montreal, Qc, H4N 1R6, Canada
www.neptronic.com
Toll free in North America: 1-800-361-2308
Tel.: (514) 333-1433
Fax: (514) 333-3163
Customer service fax: (514) 333-1091
Monday to Friday: 8:00am to 5:00pm (Eastern time)