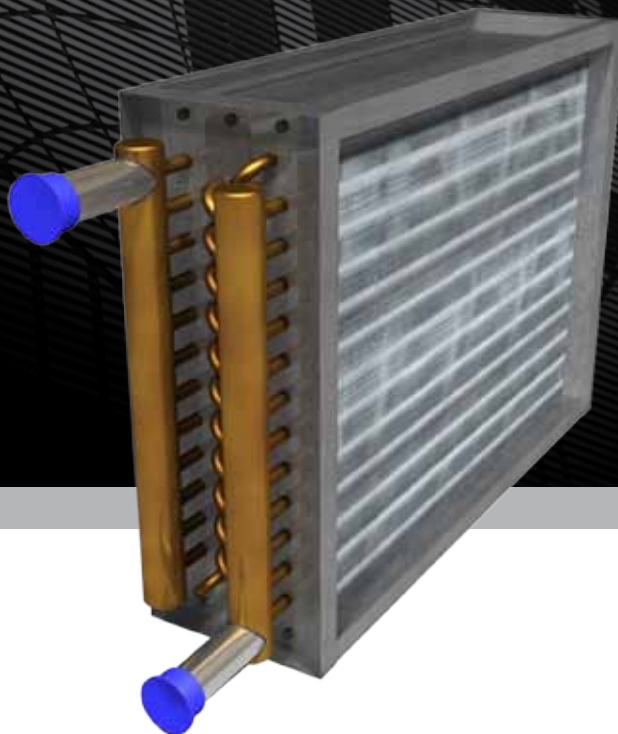


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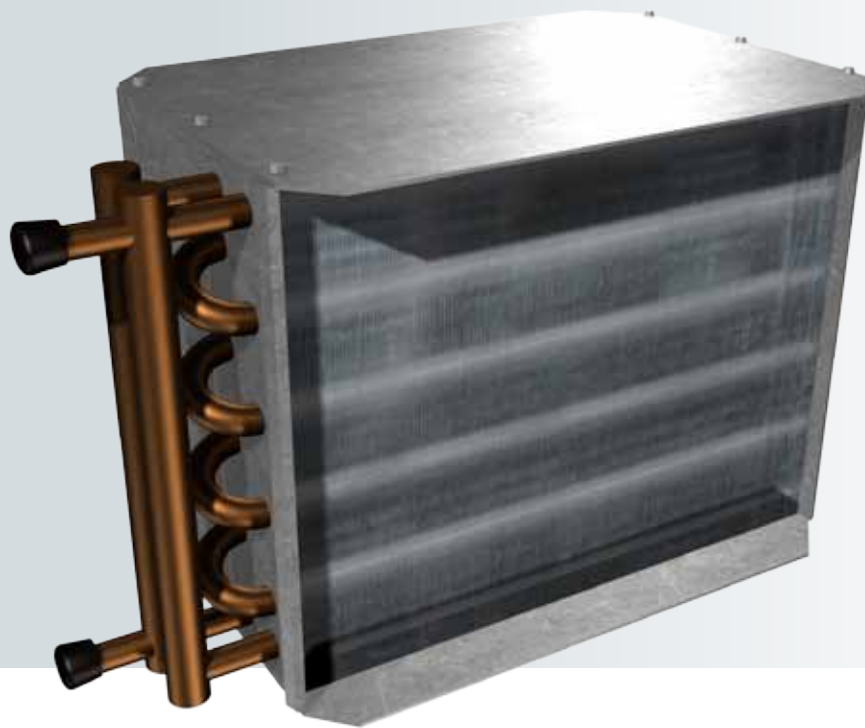
Water Coils

Installation Manual

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Contents

General	2
Safety Precautions	3
Receiving Inspection	4
Installation	4
Water System Balancing	5
Maintenance and Service	5
Cleaning	6



General

➔ The coil is built of copper tubes and aluminum fins. The profile fins with staggered tubes have been developed for effective and economic heat transfer between the circulating medium and the air. The finned coil body is fabricated of tubes mechanically expanded to the fins.

Safety Precautions

➔ Read all the instructions before you handle, install or do any maintenance work on the product. Permit only trained persons who have knowledge of the product and appropriate safety precautions to carry out any work on the coil.

- A. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
B. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer:

in the United States
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Winnipeg, Manitoba
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- C. Before servicing or cleaning unit, switch power off at service panel and lock service panel to prevent power from being switched on accidentally.
D. Protect flammable materials nearby when brazing, Use flame and heat protection barriers where needed. Always have a fire extinguisher ready.
E. The manufacturer assumes no responsibility for personal injury or property damage resulting from improper handling, installation, service or operation of the product.

- Before lifting the coil insure the coil is empty of water.
- Do not use the headers as handles to lift the coil.
- Do not let the fins come in contact with any object that can damage them.
- The coil must be used in a system that does not exceed the design pressure of the coil.
- Connect the coil to the pipe work in such a manner that the expansion forces or the deadweight of the pipe work will not be applied to the liquid connections.

- Protect the connections against shocks, external tension and stress.

CAUTION! Deadweight and Shocks can damage the tubes of the coil.

- The various components of the coil, such as the headers and casing can become hot while the coil is in use. Even air blown out of the coil may be hot as it leaves the coil. Caution should be used when handling the coil in these conditions.

➔ **When installing air heaters, which use 212° F or hotter water great care should be exercised when opening air vents or gate valves in the system.**

Failure to do this may result in serious damage through water hammering or a discharge of steam. Price Industries assumes no responsibility for the connection of air heaters to the heating system, or for any damage, which may arise through faulty planning, installation or maintenance of such system. Piping, valves, etc. should be sized according to pressure drop and function and not according to the size of the air heater connections.

Receiving Inspection

➡ All Price Water Coils are inspected before shipment. If damage is found, report it immediately to the delivery carrier.

- Check that the coil hasn't been damaged during transport or while being unloaded. It is especially important to check the condition of the fins on the coil surface, lifting lugs, headers and the tube bends on the backside of the coil.
- To avoid damage to the finned surface area, carefully remove the coil from the shipping package. If necessary, damaged fins can be straightened using an appropriate fin comb.

Installation

➡ Prior to installation, check the coil hand designation to insure that it matches the system. Generally, water and glycol coils are plumbed with the supply connection located on the bottom of the leaving air-side of the coil and the return connection at the top of the entering air-side of the coil. This arrangement provides counter flow heat exchange and positive coil drainage. If a universal coil is supplied, cap off the two unused connections.

- To insure ability to drain, standard coils must be mounted level. Coils with intermediate headers can be pitched 1/8" per foot of coil finned length towards the coil's header/connection end.
 - Maintain proper clearance between the coil and other structures such as the fan, filter racks, transition areas, etc.
- ➡ All field piping must be self-supporting. System piping should be flexible enough to allow for thermal expansion and contraction of the coil.

Mounting:

The coil shall be firmly secured at its location.

Inlet for the heating medium:

The coil is provided with copper connectors with the customers requested ends. If pipe fittings have been furnished use a back-up wrench to install or un-install the coil.

Venting/Draining:

Typically Price coils do not have provisions for venting or draining as these are typically provided by others in the field. For products where the headers of the water coil are equipped with plugged connections for venting and drainage as requested by the customer. The system must be adequately vented to operate effectively. If freezing is likely, blow compressed air into the coil. This will ensure that it has been thoroughly drained.

Anti-freeze protection:

Anti-freeze protection can be a mechanical device. Mechanical devices should be discussed with the mechanical contractor installing the coils or equipment. We do not make any recommendations for this and it is up to the customer to add these devices if needed.

Water System Balancing

A complete knowledge of the hydronic system, its components, and controls is essential to proper water system balancing and this procedure should not be attempted by unqualified personnel. The system must be complete and all components must be in operating condition BEFORE beginning water system balancing operations. Each hydronic system has different operating characteristics depending on the devices and controls in the system. The actual balancing technique may vary from one system to another. After the proper system operation is established, the appropriate system operating conditions such as various water temperatures and flow rates should be recorded in a convenient place for future reference. Before and during water system balancing, conditions may exist which can result in noticeable water noise or undesired valve operation due

to incorrect system pressures. After the entire system is balanced, these conditions will not exist on properly designed systems.

Prior to the water system start-up and balancing, the chilled/hot water systems should be flushed to clean out dirt and debris, which may have collected in the piping during construction. During this procedure, all unit service valves must be in the closed position. This prevents foreign matter from entering the unit and clogging the valves and metering devices. Filters should be installed in the piping mains to prevent this material from entering the units during normal operation. During system filling, air venting from the unit is accomplished by the use of the standard manual air vent fitting installed on the coil. The air vent screw should be turned counterclockwise no more than 1-1/2 turns to operate the air vent.

CAUTION! The air vent provided on the unit is not intended to replace the main system air vents and may not release air trapped in other parts of the system. Inspect the entire system for potential air traps and vent those areas as required, independently. In addition, some systems may require repeated venting over a period of time to properly eliminate air from the system.

Maintenance and Service

The coil should be regularly inspected to prevent stoppages. The following should be checked:

1. Fasteners – Check that no supporting bolts are defective.
2. Finned-tubed body - Check that it isn't dirty or damaged.

If freezing is likely, do one of the following:

- Fill the heat exchanger with an appropriate quantity of suitable anti-freezing agent.
- Drain all the water from both the pipe work and the coil. Do not refit the drain plugs to the coils until just before the system is filled with water. Blow compressed air through the coils to make certain that all water has been drained.
- All air vents should be opened so that air is eliminated from within the coil circuitry and headers. Verify that all vents and drains discharge a stream of water and are not obstructed.
- Fill the coil with water then close all vents.
- Conduct an initial hydrostatic leak test of all brazed, threaded or flanged joints, valves and interconnecting piping. Recheck the coil level and correct if necessary. Discharge and discard initial water charge when the setup is found to be leak free. It is important that all grease, oil, flux, and sealing compounds present from the installation be removed.

Cleaning

Not even an effective air filter can remove all the dust from the air.

Any dust deposits on the heat transfer surfaces will obstruct the airflow and impair the heat transfer. Coils must therefore be kept clean. Cleaning can suitably be carried out by any of the following methods or combinations of them.

1. Vacuum cleaning.
2. Blowing with compressed air, towards normal air direction.
3. Blowing clean with steam, towards normal air direction. **CAUTION! Not to be used on coils that contain evaporative refrigerant.**
4. Hosing or flushing with water (max. permissible water temp. 104F for coils that contain evaporative refrigerant). If the heating surfaces are coated with greasy dust, first spray the entire coil with environmentally compatible solvent under low pressure. Then clean the coil with water using a high-pressure jet after 10-12 minutes.

CAUTION: It is important to hold the nozzle perpendicular to the fins and not closer than 150 mm to prevent damaging the fins.

Use a fin comb (ACEW LANCE) to straighten any deformed fins. The fin comb can be ordered most HVAC supply house. The finned-tube body must not contain any traces of solvent after cleaning as remaining solvent will bind new dust. After cleaning, remove all fallen dust before starting the fan.

If you are cleaning cooling coils, also clean the drip tray, if one is fitted and cleaning is necessary. It is important to clean the drains between the collection boxes and the drip tray. Also check that the water trap is filled with water, if one is fitted.

Dismantling

Whenever a coil is to be dismantled and removed from a system, it is important that the coil be emptied of liquid. Further particulars see the paragraph dealing with venting/drainage above.

CAUTION! Liquids that are hazardous to the environment shall be collected in a vessel and be handed over for deposition or recycling. The coil must not be lifted before it has been emptied of liquid.

Heating coils

Ensure that the outlet water temperature does not drop by an abnormal amount and that the water is always in circulation. Make sure that the valves are open, the pipes and the coils are thoroughly vented and the circulation pump is running, even if heating is temporarily interrupted.

Cooling coils

Cooling coils shall be emptied, if the air temperature is likely to drop below the freezing point of the cooling medium. Do not insert and tighten the drain plugs because the shut-off valves may leak and refill the coil with cooling medium. Blow compressed air through the coils to make certain that all water has been drained.

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Grilles & Diffusers



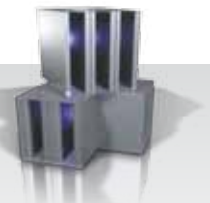
Critical
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