

EngA[®]

ENGINEERED AIR[®]

**INSTALLATION, OPERATION
AND MAINTENANCE MANUAL
FOR
STEAM COILS**



UNIT MODEL NO. _____
UNIT SERIAL NO. _____
SERVICED BY: _____
TEL. NO: _____

**CANADIAN
HEAD OFFICE
AND FACTORY**

**1401 HASTINGS CRES.
SE
CALGARY, ALBERTA
T2G 4C8
Ph: (403) 287-2590
Fx: 888-364-2727**

**USA
HEAD OFFICE
AND FACTORY**

**32050 W. 83rd STREET
DESOTO, KANSAS
66018
Ph: (913) 583-3181
Fx: (913) 583-1406**

www.engineeredair.com

**CANADIAN
EASTERN FACTORY**

**1175 TWINNEY DRIVE
NEWMARKET,
ONTARIO
L3Y 5V7
Ph: (905) 898-1114
Fx: (905) 898-7244**

SALES OFFICES ACROSS CANADA AND USA

Retain instructions with unit and maintain in a legible condition.
Please give model number and serial number when contacting
the factory for information and/or parts.

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RECEIVING

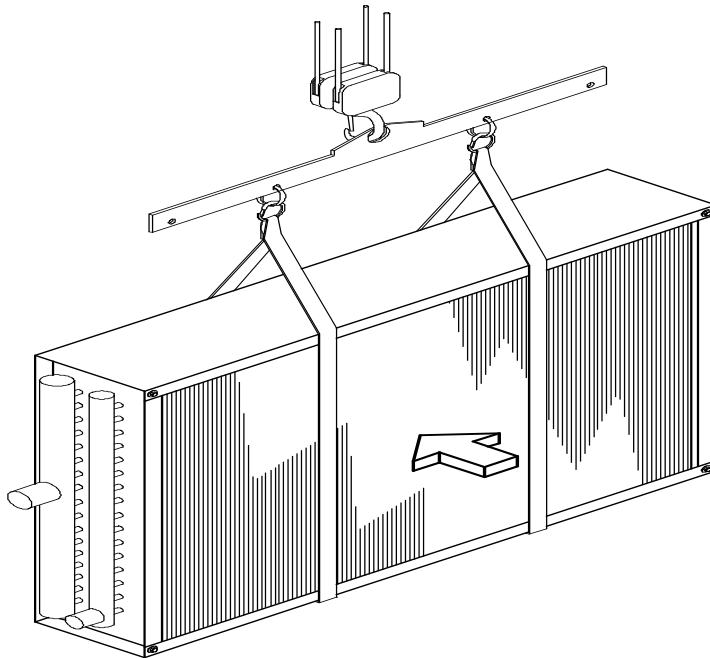
All Engineered Air coils are inspected and factory tested prior to shipment. All Coils should be inspected upon receipt to determine that all items on the bill of lading are received and are in an undamaged condition. If there is any damage or shortage it should be reported immediately and a claim filed with the carrier. Should hidden damage be found upon uncrating or during installation, file a concealed damage claim with carrier. Several coils may be shipped within a single crate. Refer to the important freight procedure notice located on the back of the packing slip.

COIL TYPES

Engineered Air coils are custom designed for a particular application. While two coils may look similar, their may be variances in the fin spacing, circuiting pattern, and header design. Steam coils may be designed for horizontal or vertical configurations. Note the tag number on each coil for reference. Depending on the requirements, tubing may be copper or steel. The fin is typically aluminum, however copper may be used.

RIGGING

Coils must not be lifted by the connections, headers or tubing. Move and lift coil using only the outer frame, and lift using a sling.



INSTALLATION

GENERAL

Carefully remove the coil from the shipping container to avoid damage to the finned surface and tubing. Damaged fins can be straightened using a fin comb. The coil should be cleaned prior to installation. Ensure the coil and all connections have sufficient working clearance and component access.

Always use a back-up wrench for all threaded coil connections. The supply connection is typically in the middle of the coil, with the return at the lower connection. Steam coils must be properly mounted for condensate removal.

Utilize a vacuum breaker on each coil. Failure to install a vacuum breaker will allow the heat exchanger shell to operate at a negative pressure, which can cause condensate to be retained causing water hammer and creating a potential freezing hazard. Trap each coil independently.

Install strainers upstream of control valves, traps and steam coils to catch dirt and scale. Coils should have provisions for eliminating non-condensable gases.

Steam piping must be installed in accordance with all national and local codes, and in accordance with the local authorities having jurisdiction. The supply pressure of the steam must not exceed the maximum pressure noted on the coil label.

After installation, the coil must be pressure tested. If the coil is found to be leaking, contact Engineered Air prior to attempting a repair. Damage to the coil incurred on site is not warrantable.

MOUNTING

The perimeter of the coil must be sealed to the surrounding enclosure to prevent air from bypassing the coil. Air entering the face of the coil must be uniform for proper heat transfer.

Do not locate the coil near fan outlets, duct elbows or transitions which could affect the airflow. Ensure the coil and all connections have sufficient working clearance and component access.

PIPING

All piping is to be installed by a qualified pipe fitter, using approved steam piping practices. Always use a back-up wrench for all threaded coil connections to avoid damaging the header and spigots.

All piping must be self-supporting and allow for thermal expansion and contraction. Manual valves should be installed to isolate the coil for servicing.

Steam coils must be protected from freezing. They should not be used with a throttling valve when entering air temperatures are below freezing.

STARTUP

To prevent plugging of tubes, clean the piping system and blow down all strainers prior to initial startup.

Once the system has stabilized at operating temperature recheck all bolted connections and tighten if necessary.

On startup, feed steam to the coil slowly to avoid thermal shock.

Ensure the coil has been operating for at least 15 minutes before starting fans or opening dampers.

SHUTDOWN

Drain coil to prevent corrosion during shutdown. Remove all condensate to prevent freezing damage.

MAINTENANCE

Regularly inspect the coil for signs of corrosion or leaks.

Coil fins are easily damaged. The external surface of finned coils can be cleaned using a low-pressure water spray. Where possible, clean coils in the reverse direction to airflow so that dirt is pushed back out rather than deeper into the coil. Do not use high-pressure steam or water to clean coils; it will permanently damage the coil. When using cleaning additives or solutions they must be compatible with the coil materials or coatings.

All associated steam traps, vacuum breakers, strainers and control valves must be regularly inspected and functional.

WARNING:

Follow the cleaning instructions and recommended inspection schedule to reduce the risk of mold or other bacterial growth. Property damage or personal injury claims may result from mold or bacterial growth arising from improper installation, inadequate maintenance, or failure to inspect. The manufacturer has no responsibility for and makes no express or implied warranties regarding mold or bacterial growth or and other indoor air quality issues. If mold or bacterial growth is present determine and fix the cause and remove the contamination. Properly clean and sanitize the affected area using only approved sanitizer's approved for HVAC equipment. Moisture carry over can also result from dirty coils.

CAUTION:

Coil fins are easily damaged. The finned surfaces of coils can be cleaned using a low pressure water spray. When using cleaning additives or solutions they must be compatible with the coil materials or coatings. Where possible clean coils reverse to airflow so dirt is pushed back out rather than deeper into the coil.

CAUTION:

Use of high pressure steam or water may damage the coil.

HERESITE® MAINTENANCE

Heresite® is a baked on phenolic coating used to protect metals from some forms of chemical corrosion. At the time of purchase new coils can, as an option, have Heresite® applied at the factory.

If you have a Heresite® coated coil:

- Inspect once per year or more often as required.
- Clean with low pressure air and vacuum with a soft brush.
- Low pressure, chemical free water may be used.

Repair Instructions (using air-dried Heresite® touch-up spray):

1. Ensure surfaces are completely dry.
2. Use a nylon brush to remove any loose scale.
3. Roughen up areas to be repaired with a wire brush.
4. Vacuum fins or the affected area to ensure any loose residue is gone.
5. Spray or brush S-440 solvent* (or any equivalent cleaner) to dissolve any oils or grease.
6. Again, vacuum the affected area.
7. Allow one hour for the solvent to dissolve completely.
8. Cover areas not requiring repair with plastic (or equivalent) and masking tape.
9. Using Heresite® VR-554-T* coating spray all affected areas from different angles to ensure complete coverage. Apply 2-3 full coats. Let dry 3 to 4 hours between coats.
10. Allow Heresite® to cure 24 hours before putting equipment back into service.

* Review the MSDS documentation included with the solvent and coating spray.