MODEL E

INSTALLATION & MAINTENANCE FOR ALPHA AIRE UNITS

AIR-TO-AIR HEAT EXCHANGERS

HEATEX

NORTH AMERICAN ADDRESS AND CONTACT DATA

Mailing Address:

Heatex INC.
P.O. Box 254
Natural Bridge Station, VA 24579
USA

Physical Address:

Heatex INC.
70 Douglas Way
Natural Bridge Station, VA 24579
USA

Telephone: +1 540-291-4001

info.northamerica@heatex.com

www.heatex.com

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This is information is available upon request from Heatex Inc., or via the complete Model E Installation and Maintenance Manual, available on Heatex's website. The herein manual is tailored to only include information pertinent to the Model E Rotary wheels included in this Alpha Aire Unit.

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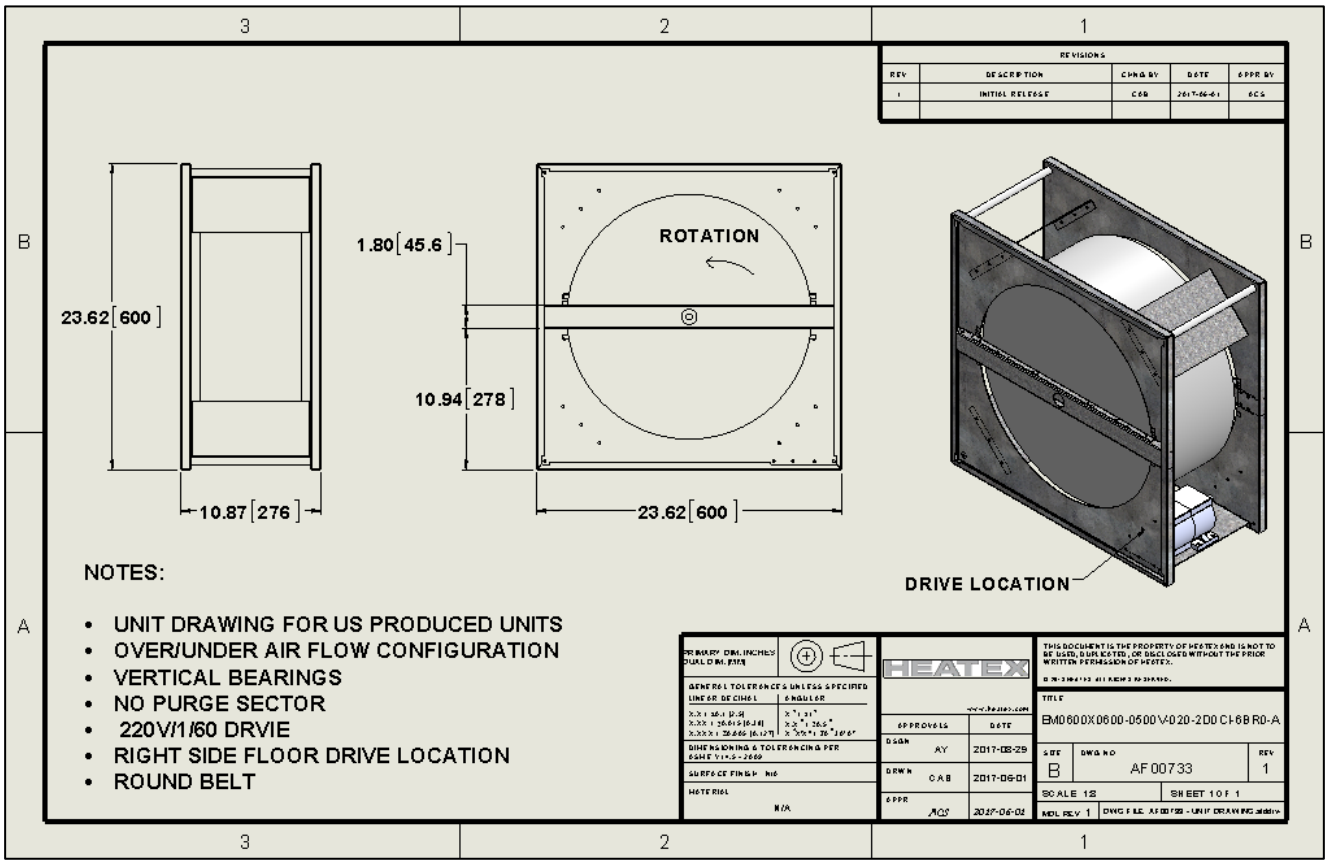
1. GENERAL

The rotary heat exchanger included in this Alpha Aire product is as follows, and pictured in picture 1:

Product Code: AF00733

Rotor Model: EM0600X0600-0500V-020-2D0CI-6BR0-A

Drive Model: Brother Gear Motors - GL15N007-BMRE5N – 220V/1Phase/60Hz



Picture 1. Rotor unit drawing.

A rotary heat exchanger with casing and drive is "partly completed machinery" as defined in Directive 2006/42/EC. This product is delivered in compliance with the Directive 2006/42/EC but when installed in the complete machinery it is up to the installer to make sure that the final product complies with the directive.

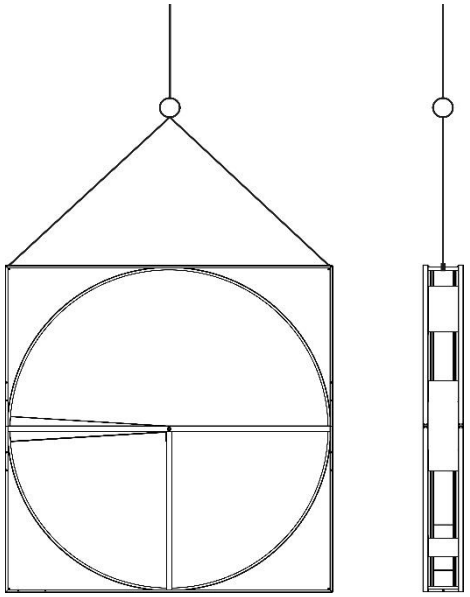
Special attention should be paid to sharp edges (risk of cuts) and that when the wheel is rotating the rotating parts may cause injuries.

The surfaces of the drive motor and gear can be hot and attention should be paid to the risk of burn injuries.

The sound level from the heat exchanger is less than 70 dB (A).

2. Transport

- Always transport the exchanger vertically.
- Lift the exchanger in the upper two corner distance pipes according to Picture 1.



Picture 2. Lift the casing at the corner distance pipes.

- It is important that all transport and handling is carried out by qualified staff.

All transport and handling shall be carried out by qualified staff.

3. STORAGE

Adsorption wheels are sensitive to moisture. Please make sure that you store the wheels to avoid the conditions described above.

Furthermore, the unit is to be placed on a horizontal and even surface. Please note that an uneven surface can warp the rotor and affect the factory adjustments.

Placing the unit on an uneven surface may warp the rotor.

Always make sure that the heat exchanger is supported and secured during transport, handling, storage and installation so it cannot fall over and cause damage or injuries.

Heat exchanger may fall over if not secured.

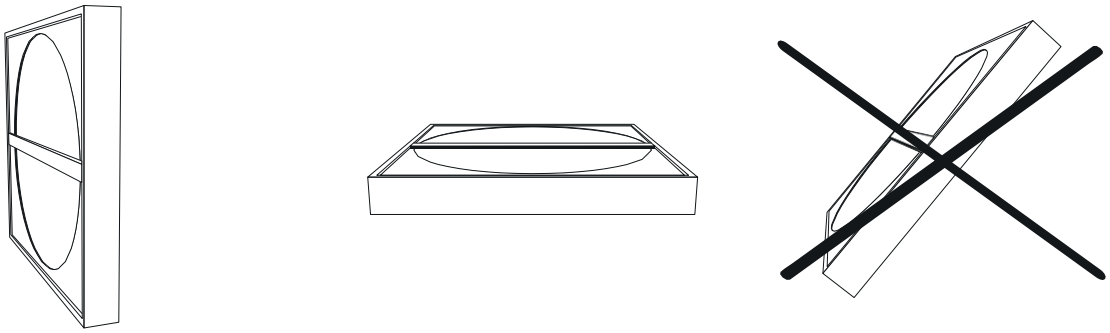
Please observe that there may be sharp edges and a risk for cuts so we recommend that gloves should be used when the heat exchanger is handled.

Use gloves when handling the heat exchanger.

Always make sure that the storage temperature is kept above 0°C (32°F).

4. Installation

- Prior to initial operation, please make sure no objects are blocking the rotors movement. The rotor should move evenly and smoothly around its shaft.
- Rotor may only be installed either in a vertical or a horizontal position according to design, not tilted unless approved by Heatex. In case of horizontal rotors, check that rotor is ordered and manufactured as a horizontal rotor.



Picture 3. Rotor positions.

- Pressure difference and pressure drop should under no circumstances exceed the limits. Please refer to Application Limits for further information.

5. ADJUSTMENTS

- If necessary, adjust the brush sealing to minimize leakage.
- If the belt slides adjust belt tension.
- The round belt should have a tension of 3%. For adjustments, see maintenance instructions below.

6. MAINTENANCE

6.1. Matrix

To secure the function and performance, the face of the rotor has to be inspected regularly for dust and dirt. In most cases, the rotor is self-cleaning due to counter flow and rotation of the matrix and this makes manual cleaning unnecessary. If the self-cleaning is insufficient dirt or/and dust can appear in the matrix.

Depending on the degree of soiling it is recommended to use following cleaning:

1. For only a small amount of easily removable dirt, Heatex recommends to use a vacuum cleaner.
2. For heavier dirt it is also possible to use compressed air but with caution.
3. Firmly attached dirt in the rotor is easiest removed by using hot water and a mild detergent. The mild detergent may be removed with high-pressure water cleaner with the nozzle placed 50-100 mm from the matrix.
4. If required, Heatex recommends disinfection with the substance known as LIV +45 (isopropanol based substance).

6.2. Adsorption and Enthalpy Wheels

The adsorption material is aluminum coated with molecular sieve 3Å coating. There is a small amount of surplus material that might leave the matrix during the first usage. This will NOT affect the hygroscopic properties. The excess powder is harm- less and easy to remove using a vacuum cleaner.

Just as for the adsorption wheel, a small amount of surplus material might leave the matrix during the first usage.

6.3. Round Belt

In addition, the round belt may need adjustment during its lifetime. If adjustment is needed the belt must be cut, shortened and joined together again with a joining pin. Belt tension should be 4-6%.

6.4. Brush Sealings

Tightness between brush sealings and casing has to be checked during inspection. The brush sealings are easily adjusted by unscrewing the screws and moving the brush sealing into the right position.

6.5. Application Limits

Recommended temperature limits for rotary heat exchanger Model E are -40°C (-40°F) to +65°C (149°F).

It is however important not to exceed the temperature limits on mounted components:

Component	Min	Max
Bearings	-40°C (-40°F)	110°C (230°F)
Yellow belt	-30°C (-22°F)	66°C (150°F)
Constant motor	-10°C (14°F)	40°C (104°F)
Standard seals	-25°C (13°F)	90°C (190°F)

Maximum and recommended pressure drop as well as differential pressure for rotary heat exchanger:

- Pressure drop max 300 Pa (1.2" WC) up to outer diameter 1600 mm (62.99"), even during start up and maintenance.
- Recommended pressure drop 100-200 Pa (0.4-0.8" WC) (normal operation).
- Differential pressure max 600 Pa (2.4" WC).

NOTE! The temperature inside the casing is approximately the mean temperature of supply and exhaust air temperatures.

6.6. Troubleshooting

If the rotary heat exchanger does not rotate properly, please follow these steps to solve/locate the problem.

1. If the motor runs properly, please jump to step 5.
2. If there is a controller installed please check controller technical specifications, chapter trouble shooting.
3. If there is a constant drive installed: Please check that the drive is correctly connected. Note that all electrical maintenance and installation must be performed by qualified personal.
4. The position of the pulley should be placed as near the center of the rotor as possible.
5. Disconnect the belt. Is the motor running correctly?
6. If the belt is sliding, please tighten the belt according to maintenance instruction.
7. Rotate the wheel by hand in the indicated direction (belt disconnected from the motor). Is it possible to smoothly rotate the wheel or does the wheel interact with the casing? If there is excessive friction between the wheel and the casing (making it hard to rotate), please locate the position.
8. Make sure the connected ducts do not press on the casing making it squeeze against the wheel. Make sure the diagonal measures of the casing side where the motor is positioned are equal.

7. SUPPORT

For questions or information regarding this product, please communicate your order number and product code along with your message.

Heatex is available for support during office hours: 8 am – 4.30 pm (EST) on weekdays