

CAREFULLY READ COMPLETE "INSTALLATION, OPERATION and MAINTENANCE INSTRUCTIONS" BEFORE INSTALLING AND USING YOUR ENERGY RECOVERY WHEEL

START-UP AND OPERATION

1. Confirm that all placement and installation items have been completed. Remove shipping brackets.
2. It is recommended to have roughing filters in both airstreams ahead of the heat wheel. When properly installed (opposite airflow directions on supply and exhaust) the rotor is self-cleaning.
3. Verify that all switches, fuses, circuit breakers, overload relays and interlocks in the electric system serving the drive motor are operational.
4. Confirm wheel rotates freely by hand.
5. Energize the motor and verify correct rotation direction as indicated by the arrow(s) on the shroud face of the wheel frame. The wheel must rotate from exhaust to supply through the purge (wedge shaped portion of the wheel frame). Motor rotation direction may be changed as follows:
 - a. 1 Phase AC - rewire motor start capacitor per diagram shown on the motor nameplate or conduit box cover.
 - b. 3 Phase AC - reverse any two of the three power conductors to the motor.

With operating air pressures and airflows at the wheel, adjust the screw-fastened brush seals mounted on the wheel frame—

- a. Peripheral: perimeter of rotor, building (shroud) face.
- b. Divider: diameter of rotor, both sides.
- c. Capstrip: axial seals at two point on the outermost edge of rotor "inside" frame.

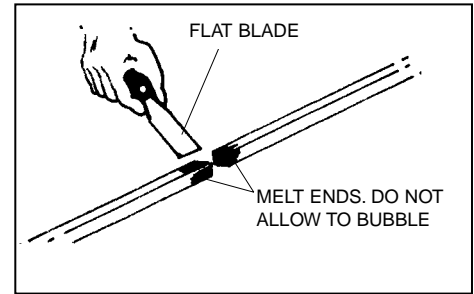
Properly adjusted seal brushes should maintain light contact with the rotor at all points of rotation, but never be compressed to more than 1/8". Excessively tight seals may overload the drive motor and prematurely wear the seal bristles, whereas very light seals may allow undesirable leakage levels. Always adjust seals with the rotor stopped to avoid personal injury or damage to the rotor.

6. Make calibration adjustments to optional speed controllers, rotational detectors, thermostat(s), pressure switch and/or timer per the supplied instructions.
7. Measure the drive motor current and verify that it is not higher than nameplate full load amps, with operating air pressure and airflows.

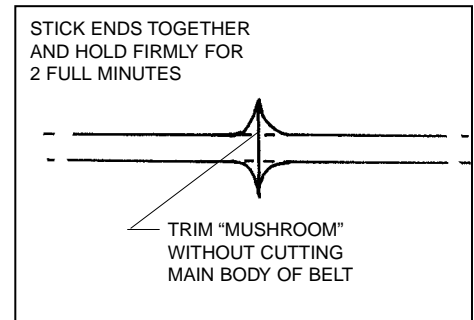
MAINTENANCE

The following routine inspection and maintenance must be done after 200 hours operation and carried out at least every three months thereafter--more frequently if dirty, hot or corrosive air is being handled.

1. In operating in high moisture conditions, wheel bearings should be greased with a quality general purpose lithium or aluminum based grease suited for the operating temperatures included.
2. Verify that the seal brushes are properly adjusted as described in Start-Up and Operation. Replace the seals if the seal bristles have deformed or eroded to the point that they cannot be adjusted to obtain an acceptable fit. Ensure white divider seals do not damage media.
3. Inspect the rotor surfaces for accumulated or embedded dirt and debris. Depending on the nature of any accumulation, it may be vacuumed from the rotor surface, blown away from the rotor with a compressed air nozzle.
4. The very "stretchy" urethane wheel drive belt should not require belt tension adjustment. If cracks or belt breakage occur, it may be repaired by the following fusing procedure:
 - a. Tools Required
 1. Razor blade (or sharp knife)
 2. Propane torch or spade-tipped soldering gun.
 - b. Preparation
 1. Route the belt so the closed loop will be properly located with no twists.
 2. Arrange the belt so it is not under tension while welding. The finished belt should stretch 6-8 percent [about 7/8" (22mm) per foot] beyond its relaxed length when in operation. Note the relaxed length of a new rotor belt is *nearly tight* to the outer rim of the rotor itself.
 3. Cut both ends of the belt *squarely* using the razor blade.
 4. Weld the belt in an open or ventilated area to minimize inhalation of the fumes.
 - c. *Welding*
 1. Hold both ends of the belt in outer ring of the propane torch flame until the ends soften visibly. Note that slight blackening of the belt material is no problem, but it should not be charred excessively. The material can burn, but extinguishes when removed from the torch flame.
 2. Immediately push the belt ends firmly and squarely together for two minutes. The softened material should "mushroom" out when this is done.



3. After the belt has cooled at least 10 minutes, trim the flash from the welded joint. If two people can pull the weld apart, repeat the process.



5. Wipe the lenses clean of the optional rotation detector and reflector. If optional thermostats, times, speed controllers or pressure switches are located where tampering may be a problem, verify that settings are acceptable.
6. If the wheel does not appear to operate properly, check the following items:
 - a. Seal brushes adjusted properly. Confirm rotor rotates freely by hand.
 - b. Drive belt unbroken, not slipping and properly aligned sheave-to-rotor. (Does the gearmotor out-put shaft turn?)
 - c. All electrical switches, fuses, circuit breakers, overload relays and interlocks operating. (Does voltage reach the motor, optional speed controller or optional timer?)
 - d. All adjustments properly made to optional speed controller, thermostats, timer, rotation detector and/or pressure switches per Carnes wiring diagrams.
 - e. Rotor bearings properly lubricated.
 - f. Rotor surfaces free of debris.

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