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#### OPERATING AND MAINTENANCE INSTRUCTIONS FOR R&R PRODUCTS

# **IMPORTANT**

Before start up of complete coolers, set screws and bolts in the fan assembly, sheaves and locking coolers of all bearings. These items should be checked again several days after start up. IT IS ESSENTIAL THAT THESE ITEMS BE CHECKED PERIODICALLY. Operating vibrations may cause loosening of these items and could result in expensive repairs and shutdown time.

## **FAN & DRIVE**

Although the fan and drive of complete coolers are inspected before shipment, alignment of the fan shaft and clearance between the fan blades and the fan ring and guard should be checked to assure that rough handling during shipment has not loosened bearing mounting bolts or caused misalignment. IF REQUESTED, additional information and instructions for either Aerovent or Moore fans may be provided.

If it is ever necessary to change fans or to adjust the fan blade angle, care must be taken when tightening the bolts. Do not over tighten. IF REQUESTED, additional information on the fan manufacturer's "assembly instructions" for the correct procedures and torque values may be provided.

On complete coolers, v-belt drives should be adjusted until tight enough to prevent excessive belt slippage. Over tensioning should be avoided. The belt is generally tight enough when it can be twisted one quarter of a turn with thumb and forefinger.

### **LUBRICATION**

In plants having established maintenance procedures, the bearings on complete coolers should be greased accordingly. In general, about one cubic inch premium grade grease in each bearing every 2 to 3 months is adequate.

The operating temperature of the bearing may indicate how much lubrication is required. Normal temperature may range from "cool to warm to the touch" up to a point "too hot to touch for more than a few seconds", depending on bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. High temperature with no grease showing at the seals, particularly if the bearing seems noisy usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication. All R&R Coolers are equipped with heavy-duty ball or roller bearings. These superior bearings should provide long satisfactory service if proper lubrication procedures are followed.



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## **TUBE CLEANING**

It is important that the fins and exposed tube surfaces be cleaned periodically to remove accumulated dirt, grease, oil, and other foreign matter. This can be removed by directing compressed air or a greaseless solvent through the fins in a direction opposite the normal airflow. The inside of the tubes should be inspected periodically and cleaned as necessary. Removal of access plugs allows visual inspection, and, if necessary, the use of mechanical tube cleaners. Tapered plugs that are removed for inspection or cleaning should be replaced in the same hole.

### **PLUG LEAKS**

Should tapered plugs develop leaks, additional tightening is normally all that is required. Thread dope may be used if tightening alone is not sufficient. If shoulder type plugs develop leaks, the gaskets should be replaced.

# **TUBE LEAKS**

The repair of tube leaks depends upon the location of the leak. If the leak occurs in the tube-wall (normally caused by corrosion), it is usually most practical to use tapered tube-sealing pins to plug both ends of the tube. When so many tubes have been plugged that performance is affected, re-tubing will be necessary. If leaks develop in the tube to tube-sheet joints, the tubes may either be plugged or re-rolled. If re-rolling is attempted, care must be used in selection of the proper tube expander for the size and gauge of the tube being rolled. As with all rolled tube joints, over-rolling must be avoided.

### **GENERAL**

If it is ever necessary to contact our plant for service or replacement parts, it is essential that our serial number or other identifying data is obtained from the metal nameplate attached to the cooler. This is the only way to positively identify the correct parts that may be required.