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## Heat Exchangers

### Steam to Water or Liquid to Liquid Installation, Operation & Maintenance Instructions

1. Allow sufficient clearance for removal of tube bundle.
2. After initial start and run at operating temperatures and pressures, shut down and tighten head bolts.
3. Make certain that tubing is full of water before introducing steam or hot water into shell, otherwise flashing or noise may occur.

### CLEANING

Shell and tube bundle should be flushed out periodically. If cleaning is necessary, remove head and bundle to clean inside of shell and outside of tubes. Replace gaskets if necessary.

If unit is installed in a hard water area, inside of tubing can be cleaned as follows;

- 1) Break water connections and plug bottom opening.
- 2) Fill the tubes with a solution of 1 part muriatic acid to 10 parts water and allow to stand for 2 hours.  
*CAUTION: A longer period may cause damage to the copper tubing.*
- 3) Drain off and flush thoroughly with clean water.
- 4) Re-assemble unit.

### NOTE

Commercially available cleaners can be used, too.

### REPLACEMENT PARTS

When ordering replacement parts specify

- 1) Complete Model Number
- 2) Date of Manufacture
- 3) Special Materials if required

Normally, the only replacement parts required would be: 1 -- Tube Bundle  
1 -- Set of Gaskets