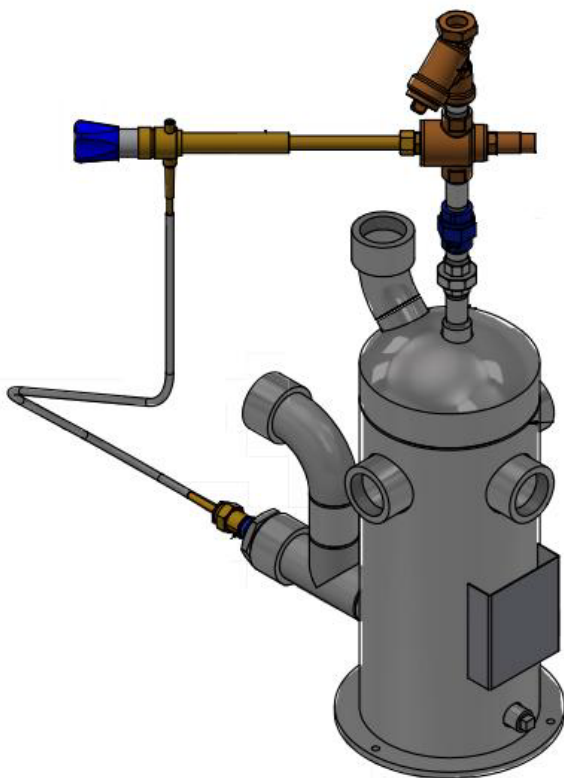


JC Series Condensate Cooler and Flash Steam Condenser

Installation and Maintenance Instructions



Contents

1. Safety information
2. General product information
3. Receiving inspection
4. Installation
5. Operation
6. Commissioning and startup
7. Normal operation
8. Maintenance
9. Troubleshooting
10. Storage
11. Disposal
12. Spare parts

1. Safety information



WARNING

Hot condensate, flash steam, and pressurized systems can cause serious injury.

Isolate, depressurize, drain, and allow the system to cool before installation or maintenance.

- Read and understand these instructions before installation, operation, or maintenance.
- Use appropriate PPE when working around steam, hot condensate, and drain systems.
- Verify that drain piping is suitable for the discharge temperature and local requirements.
- Do not mix condensate sources operating at different pressures within the same connection. Separate pressure condensate returns must enter through dedicated connections.
- Ensure cooling water is available whenever hot condensate may enter the cooler.
- Local regulations may restrict the conditions under which this product may be used.
- Ensure the vent line is unrestricted and discharged to a safe location.

2. General product information

The JC Series Condensate Cooler is designed to receive condensate, cool it with a self-actuated cooling water system, suppress flash steam generation, and discharge tempered condensate to drain at a temperature that complies with local regulations.

Condensate enters the vessel through designated inlet connections and cooling water is automatically regulated by a temperature sensing valve.

Model/Family	Typical service	Primary function	Notes
JC200C	Light condensate loads	Cool condensate to drain	Canadian design reference document
JC210/JC320/JC440	Expanded JC family	Flash condensate cooling/flash steam condensing	Refer to applicable product drawing and TI for dimensions and connection orientation

3. Receiving inspection

- Verify model number and supplied documentation against the purchase order.
- Inspect the unit for visible shipping damage.
- Confirm connection plugs, accessories, and temperature control components are present.
- Inspect the temperature sensing element and capillary tube for damage before installation.

4. Installation

4.1 Location

- Install the unit on a level, stable surface or support structure suitable for the operating weight.
- Provide clearance for inspection, temperature adjustment, capillary routing, and maintenance access.
- Route drain and discharge piping in accordance with local codes and site requirements.

4.2 Piping connections

Refer to the applicable JC product drawing for exact connection sizes, orientation, and model-specific arrangement.

Please note that the vent line must be discharged to a safe atmospheric location.

4.3 Cooling water supply

- Cooling water shall be clean and available during operation.
- Confirm the supply pressure and flow meet the application requirements.
- Install isolation valves to allow service of the cooling water control valve and associated accessories.
- Where water quality is poor, consider strainer protection upstream of the control valve.

4.4 Condensate inlet

- Connect condensate only to designated condensate inlet connections.
- Do not use the cooler as a common header for condensate sources at different pressures.
- Allow for thermal expansion and ensure external piping loads are not transmitted to the cooler body.

5. Operation

A temperature sensor monitors the discharge temperature and actuates the cooling water valve. Cooling water is injected into the vessel through the spray arrangement to reduce the temperature of the condensate mixture before it is discharged to drain.

The control valve opens cooling water to maintain the desired discharge temperature set point.

6. Commissioning and startup

1. Confirm mechanical installation is complete and all unused connections are plugged or piped as intended.
2. Open the cooling water supply and confirm water is available at the control valve.
3. Set the temperature controller to the required discharge temperature. A typical discharge setting is 140 °F (60 °C), subject to local requirements.
4. Introduce hot condensate gradually and verify continuous flow through the unit.
5. Measure the discharge temperature using a suitable thermometer.
6. Adjust the temperature controller as required: counter-clockwise to lower discharge temperature and clockwise to increase discharge temperature.
7. Confirm stable operation, acceptable drain temperature, and absence of leaks.

7. Normal operation

- The unit is intended for automatic operation once commissioned.
- Regularly verify stable discharge temperature and cooling water availability.
- Inspect for leakage, vibration, restricted drain flow, or unusual noise.
- Do not operate if cooling water supply is unavailable while hot condensate may enter the cooler.

8. Maintenance

Maintenance frequency should be adjusted based on site conditions, condensate quality, cooling water quality, duty cycle, and local requirements.

Frequency	Inspection/Task	Purpose
Monthly	Inspect for leaks, abnormal noise, vibration, and cooling water availability.	Confirm safe visible condition.
	Verify discharge temperature at normal load.	Confirm controller response and set point.
Semi-annual	Inspect capillary tube, sensing bulb, accessible strainers, and spray nozzle condition.	Detect damage, fouling, or blockage.
Annual	Isolate, drain, and inspect accessible internal components and threaded connections.	Confirm mechanical condition and readiness for continued service.
As required	Clean or replace clogged strainers, nozzles, valves, or damaged control components.	Restore cooling performance.

9. Troubleshooting

Symptom	Probable cause	Corrective action
Outlet temperature too high	Insufficient cooling water or low water pressure.	Verify cooling water supply, isolation valves, and upstream restrictions.
	Control valve not opening or sensor/capillary damage.	Inspect control assembly and replace damaged components.
Excessive cooling water consumption	Set point too low or valve not closing.	Re-adjust set point and inspect valve operation.
Unstable discharge temperature	Intermittent condensate load or fouled spray arrangement.	Confirm loading condition and clean spray/nozzle components.
Poor condensate discharge	Restricted drain or blocked outlet.	Inspect and clear outlet/drain piping.
Leakage at connections	Loose fittings, damaged threads, or failed sealant.	Isolate, drain, repair, and pressure-check before returning to service.

10. Storage

- Drain all water and condensate from the unit before storage.
- Protect all open connections from contamination.
- Store indoors in a clean, dry environment.
- Protect the temperature sensor and capillary tube from impact or kinking.

11. Disposal

Dispose of materials according to local regulations. Metallic components such as stainless steel, bronze, brass, and carbon steel should be recycled where practical.

12. Spare parts

- Self-acting temperature control valve.
- Temperature sensing element/capillary assembly.
- Spray nozzle assembly.
- Sensor pocket or capillary tube seal, where applicable.
- Check valve and strainer components, where fitted.
- Plugs, seals, and miscellaneous service fittings as defined by the product drawing or TAS drawing.