

HRS-BP001 Bypass piping set

Thermo chiller

Applicable model: HRS Series

Read before using

Thank you for purchasing SMC's thermo-chiller (hereinafter referred to as the "product"). This by-pass piping set is a set of parts for by-pass piping for the circulating fluid used in the thermo-chiller HRS series. Please confirm the following procedure before handling.

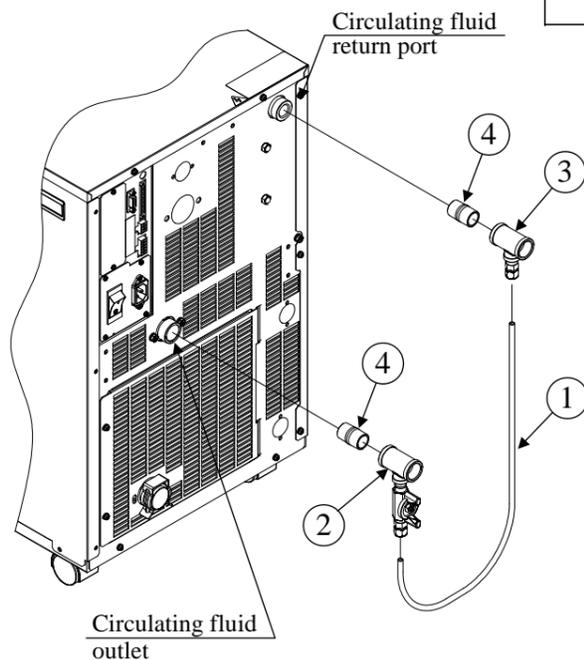
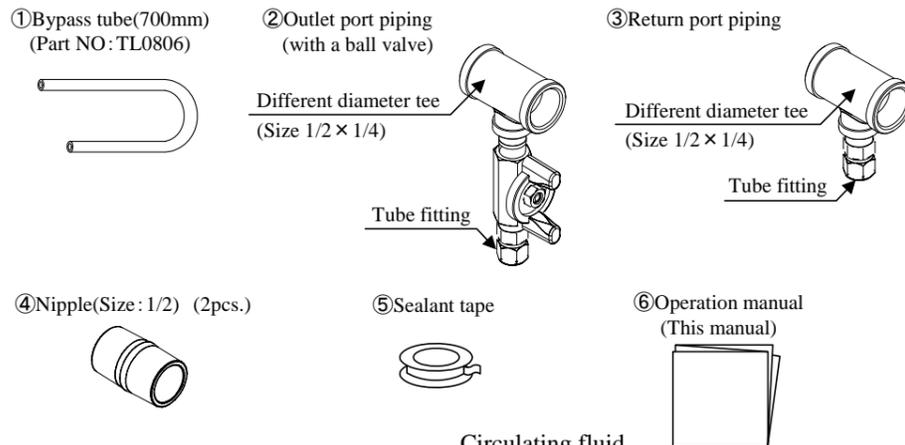
Safety Instructions

- Check that safety is assured and that the fitting is mounted by someone who has sufficient knowledge of general machinery and equipment.
- Read the thermo chiller operation manual thoroughly to understand the contents.
- Do not supply power during mounting. Be sure to check that the power supply is shut off.
- Start mounting before supplying circulating fluid or discharge all circulating fluid from the thermo chiller.
- Ensure no fluid leakage and condensation formation after mounting.

I. Parts and Accessories

- This [By-pass piping set] includes the following parts. Please check that all required parts are included.

Parts list



【Wetted materials】

Stainless steel ,PFA,PTFE

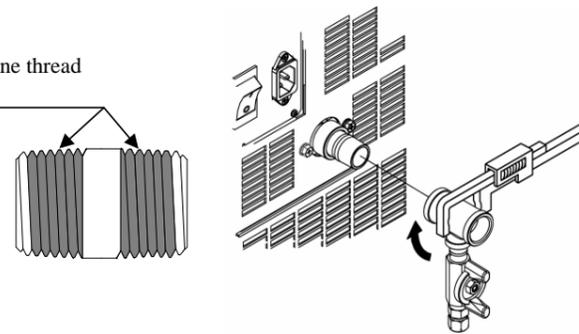
【Applicable models】

HRS01※-A※-10-※※, HRS01※-W※-10-※※
HRS01※-A※-20-※※, HRS01※-W※-20-※※
HRS024-A※-20-※※, HRS024-W※-20-※※

2. Mounting

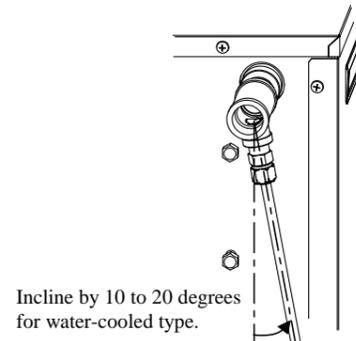
- 1) Confirm that there is no foreign matter, including dust and dirt, stuck to the connection port, the piping, and the tube.
- 2) Apply the sealant tape to the nipple. Mount the piping to the outlet and the return of the circulating fluid.
- 3) Mount the outlet piping (Part (2) in the drawing) and the return piping (part (3) in the drawing) to the nipple mentioned in 2) above. (Tightening torque : 28 to 30N·m)

Apply the sealant tape leaving one thread at the end.(Gray area)



【Tips】

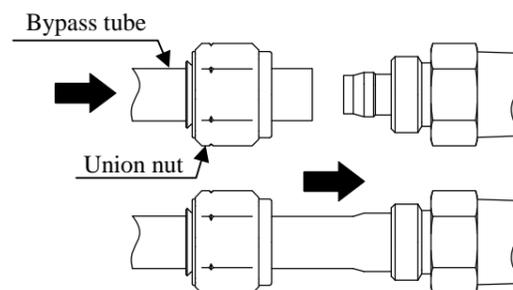
For water-cooled type, incline the return piping a little so that the by-pass tube can be rotated without interference with the piping for the facility water.



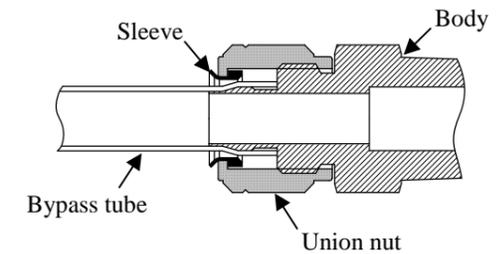
CAUTION

Mount so that the tube does not contact other parts.
If the tube contacts other parts, the tube may be damaged by friction.

- 4) Mount the by-pass tube (part (1) in the drawing) to the tube fitting of the outlet piping (Part (2) in the drawing) and the return piping (part (3) in the drawing).
 - Insert the tube into the union nut with the union nut removed.
 - Hold the tube and push it in slowly, inserting it securely all the way into the body.



- Temporarily tighten the union nut manually after the insertion.
- Fix the body with a tightening tool. Tighten the union nut into the end surface of the body with a suitable spanner (width across flats 14mm). (Tightening torque : 8 to 8.5N·m)

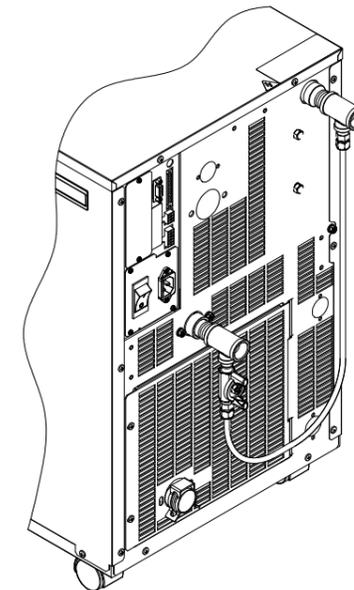


Construction of insert fitting

CAUTION

- Be careful not to scratch, dent or squash the tube during mounting.
- The minimum bending radius is 40mm.

- 5) After mounting the fitting, operate the thermo-chiller to check that liquid does not leak.



Completion drawing

3. Opening of the ball valve

The ball valve is mounted to the by-pass piping. Refer to the chart below for the relationship between the opening of the valve and the by-pass flow for the by-pass piping alone. Please use the table as a guide for the opening of the valve. (Thermo-chiller HRS series rated flow rate : 7L/min)



【The relationship between the opening of the valve of the standard pump / by-pass piping and the guide for the flow rate】

Valve opening	Bypass flow rate	
	Power supply frequency : 50Hz	Power supply frequency : 60Hz
Valve half opened	Approx.5L/min	Approx.5.5L/min
Valve fully opened	Approx.9L/min	Approx.10L/min