



HRW-BP001

By-pass piping set

Operation Manual

Applicable model : HRW Series
(Thermo Chiller)

Introduction

This operation manual is for personnel with adequate knowledge of general industrial equipment and device and also the knowledge of assembly, operation, and maintenance of them. Do not start assembly, operation and maintenance before thoroughly reading and understanding of this operation manual and the manual of Thermo Chiller, HRW series.
Please refer the operation manual of Thermo Chiller for the guarantee.
This manual is subject to change without prior notice.

Safety caution

- Please read through after understanding display and symbol

Display	Meaning
Warning	Incorrect operation leads to cause loss of life or serious injury of operator
Caution	Incorrect operation leads to cause injury or damage or failure to the product facility and equipment.

Warning

• Confirm the specification range

This product is designed as a part of the set of circulating fluid by-pass piping for Thermo Chiller, HRW series. Do not use this for application other than that in specification range.

• Operation manual and procedure shall be fully understood

Read Thermo Chiller operation manual (HRX-OM-K003) thoroughly to understand the content. Keep the manual so that it is accessible any time.

• Do not supply power during mounting

Ensure lock out and tag out of the power supply. Otherwise, Thermo Chiller may start by mistake.

• Mount parts with Thermo Chiller piping empty.

Start mounting before supplying circulating fluid or discharge all circulating fluid in Thermo Chiller. Circulating fluid temperature shall be back to room temperature before discharge to avoid burn.

Caution

• Do not disassemble nor remode to avoid fluid leakage and operation failure

Fluid leakage and operation failure are led to cause.

• Ensure no fluid leakage and dew formation after mounting.

Operate the Thermo Chiller and ensure no fluid leakage nor dew formation. If fluid leaks, stop operation immediately.

• Use silicone sealant (SMC part no.:HRZ-S0003) for sealing material . Sealing material is not equipped. Please purchase separately.

Other material is used fluid may leak.

• Do not drop or strongly impact the unit.

The components may shift from their proper mounting position or leakage may occur

Part descriptions

Part No.	Part name	Quantity
1	By-pass piping	1 pc.
2	Tube fitting	2 pcs.
3	Supply port piping Ass'y (with a ball valve)	1 pc.
4	Return port piping Ass'y	1 pc.
5	Supply port piping Ass'y insulator	1 pc.
6	Return port piping Ass'y insulator	1 pc.
7	By-pass piping insulator	1 pc.
8	Operation manual (This manual / HRX-OM-L004)	1 pc.
9	Operation manual (HRX-OM-K028)	1 pc.

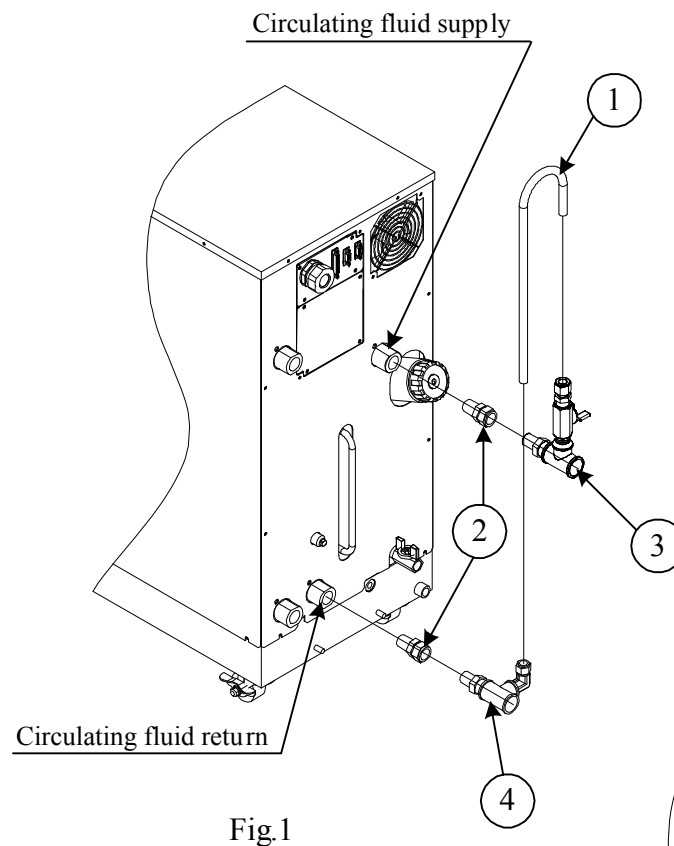


Fig.1

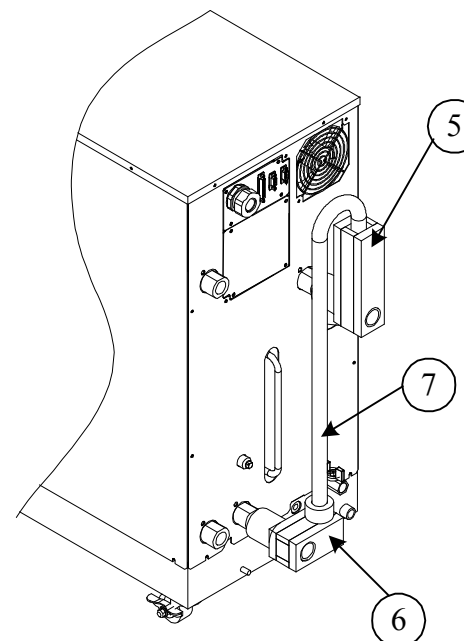


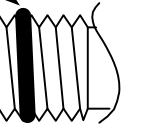
Fig.2

Parts Mounting

Procedure 1.

Apply the sealant to part 2 and screw the fittings into the circulating fluid supply port and circulating fluid return port respectively (spanner across flat: 27mm, recommended torque: 28 to 30Nm). It will take approx. 8 hours of the sealant to be hardened. Do not operate the Thermo Chiller while the sealant is hardening.

Apply sealing material to the part one thread apart from the end the thread (all around).
Too much sealing material may leak.



Procedure 2.

Insert part 3 and part 4 into part 2, and temporarily tighten the nut.

Procedure 3.

Insert part 1 into parts 3 and 4 until the ends of the part 1 come in contact with either part 3 or 4.

Procedure 4 .

By hand, tighten the nuts that were temporarily tightened in procedure 2, and additionally tighten their 1/4 turns with spanners. Use two wrenches (across flat: 27mm, 29mm) so that the fittings tightened in procedure do not rotate.

Procedure 5.

By hand, tighten the nuts where part 1 is inserted, and additionally tighten them 1/4 turn with wrenches. Use two spanners so that the self-aligning fittings where part 1 is inserted do not rotate. (Use two spanners across flat 23mm for supply port piping Ass'y, and also across flat 21mm, 23mm for return port piping Ass'y).

Procedure 6.

Install parts 5 to 7 in accordance with Figure 2 (By using double coated adhesive tape attached to the slit of the insulator).
Installation is now complete.

How to Operate

Procedure 1.

Operate the Thermo Chiller at close to room temperature and check that there is no leakage.

Procedure 2.

Open / close the ball valve and adjust it while checking the flow-rate and outlet pressure of the recirculating fluid on the operation display panel.

Specifications

Applicable model	Thermo Chiller HRW series
Purpose	Adjustment of flow-rate and outlet pressure of circulating fluid
Specifications	In accordance with the product specifications for the Thermo Chiller HRW series (Doc. No. HRX-PS-K002).
Circulating fluid flow-rate indication	The combined flow rate of the customer's system and the by-pass piping is indicated on the operation display panel.

Flow chart

