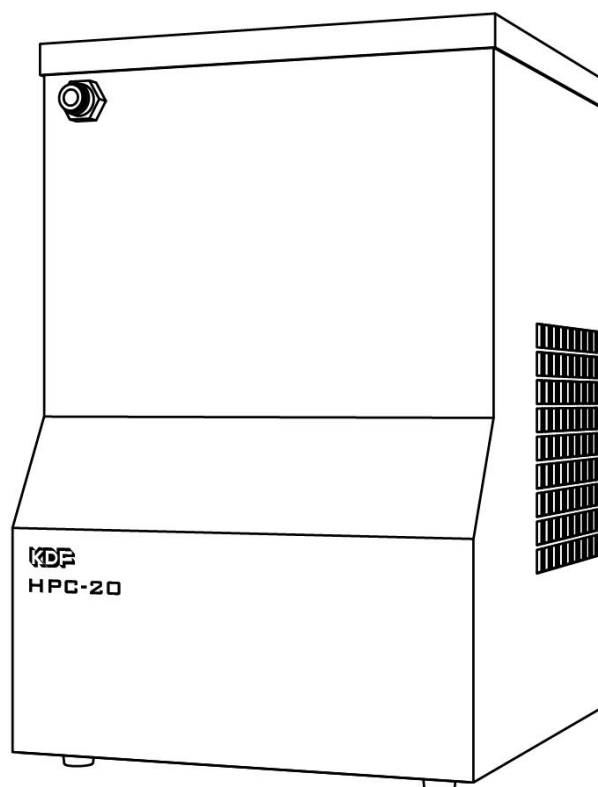


Chiller for **CascomSE**

HPC-20

Instruction Manual



Before using the HPC-20, please read the manual thoroughly and understand the capabilities and proper usage for this machine.

DENKEN-HIGHDENTAL Co.,Ltd.

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■ Safety Precautions




We recommend you to follow these instruments for proper use of the unit.

The safety precautions contained herein and the accompanying icons are provided for the safe use of this machine and to prevent injuries and loss on material resources. Please read them carefully prior to your actual machine operation. It is recommended that use of this unit should not be attempted by anyone who is not well informed of the precautions necessary for machine operation.















Reference pages of the related topics in this manual are illustrated with arrow marks (i.e. -> P12)

 WARNING	Failure to follow or ignorance of the directions may cause severe injury or death.
 CAUTION	Failure to follow or ignorance of the directions may cause injuries or damages to material properties.














Examples of Precaution Icons

	This mark requires a user to pay attention to the caution mark as shown inside or around it. The illustration on the left means to exercise caution for shock hazard.
	This mark means prohibited actions as shown inside or around it. The illustration on the left means "Do not disassemble."
	This mark means forced action and directions to follow as shown inside or around it. The illustration on the left means "Unplug out of power outlet".

WARNING

 <p>Unplug</p>	<p>In the event when there is smoke, abnormal odors or sounds, unplug immediately and contact the dealer for repairs. Continued use may cause electric shock or fire. We recommend you not to attempt repairs yourself.</p> 
 <p>Unplug</p>	<p>In the event when water or debris enters the machine, unplug immediately and contact the dealer for advice. Continued use may cause electric shock or fire.</p> 
 <p>Unplug</p>	<p>In the event when the machine is dropped or the furnace frame is dented, unplug immediately and contact the dealer for advice. Continued use may cause electric shock or fire.</p> 
 <p>Unplug</p>	<p>When the water leaking warning (Warning 01 & 02) is displayed, unplug and stop using immediately. Continued use may cause electric shock.</p> 
 <p>Do Not Disassemble</p>	<p>Do not remove the panels or parts uninstructed or modify them in any manner. Some of the parts inside contain high voltage and contact with them may cause fire or electric shock. We recommend you to contact the dealer for repairs or machine maintenance.</p> 
 <p>Ground Connection</p>	<p>Connect a grounded outlet. Improper connection may cause electric shock.</p>
 <p>Prohibited</p>	<p>Connect the unit to the CHILLER OUTLET of the Cascom SE to supply power supply voltage.</p> 
 <p>Prohibited</p>	<p>Keep the unit away from other equipment and walls.</p> <ul style="list-style-type: none"> • Leave minimum of 10cm of space around the unit. If it is impossible, conduct fire prevention.

CAUTION

 Prohibited	<p>Do not use or place anything flammable near the machine. Fire or skin burns may result.</p>
 Prohibited	<p>When you unplug the power cord from the power outlet, do not pull the cord. If the cord is damaged, it may cause fire or shock. Always remove by handling the plug.</p>
 Prohibited	<p>Do not place heavy items or place machine on the power cord and make sure that the cord is not pulled too tightly and not damaged. This may cause fire or electric shock.</p> 
 Prohibited	<p>This machine is for Cascom SE. We do not recommend you to use the machine for any other purpose. This may cause disasters.</p>
 Check prior to use	<p>Check the machine for signs of parts damage prior to use and make sure the unit is in normal state. Contact the dealer for advice when you find anything abnormal.</p>
 Strictly Required	<p>Plug the main power cord completely into the power outlet. The plug may heat up and cause fire or burns if not entirely plugged in. In addition, if the metal part of plug is touched while the plug is not fully plugged in, electric shock may result.</p> 
 Unplug	<p>Unplug the main power cord from the power outlet when the machine is not in use for a long period of time.</p>
 Unplug	<p>In case of periodic machine maintenance, unplug the power cord from the power outlet. Do not handle the plug with wet hands. This may cause electric shock.</p> 
 Wet Handing Prohibited	<p>Do not handle the machine with wet hands as this may cause electric shock.</p> 

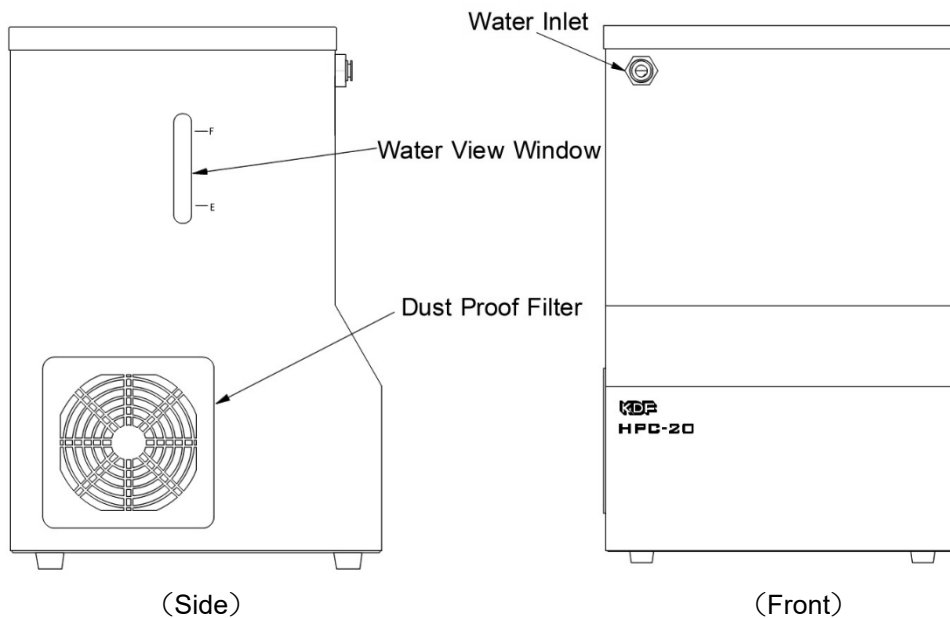
■ Standard Accessories

When you unpack the machine, we recommend you to make sure that the following standard accessories are included. In addition, please check the machine for any damage or dent on the unit surface. Contact the dealer if there is any damage on the unit.

Coolant	1pc	Packed in a box of chiller and it prevents rust and freeze.
Water Funnel	1pc	Used to pour water into chiller.
White Piping Tube for Water	2pcs	Used to circulate water of the unit and chiller.
Instruction Manual	1booklet	Operation manual with precautions for safe and proper uses of the unit.

■ Descriptions of Component Parts

● Chiller Parts and Descriptions



Water Inlet	The chiller is water-cooled and used to supply water with water funnel.
Water View Window	Used to check volume of water. F means full. E means lack of water.
Dust Proof Filter	Used to prevent dust from entering the unit and to cool radiator, fan is built into.

■ Preparation before use

● Location & Environment

Set up the unit on the center of a flat stable table.

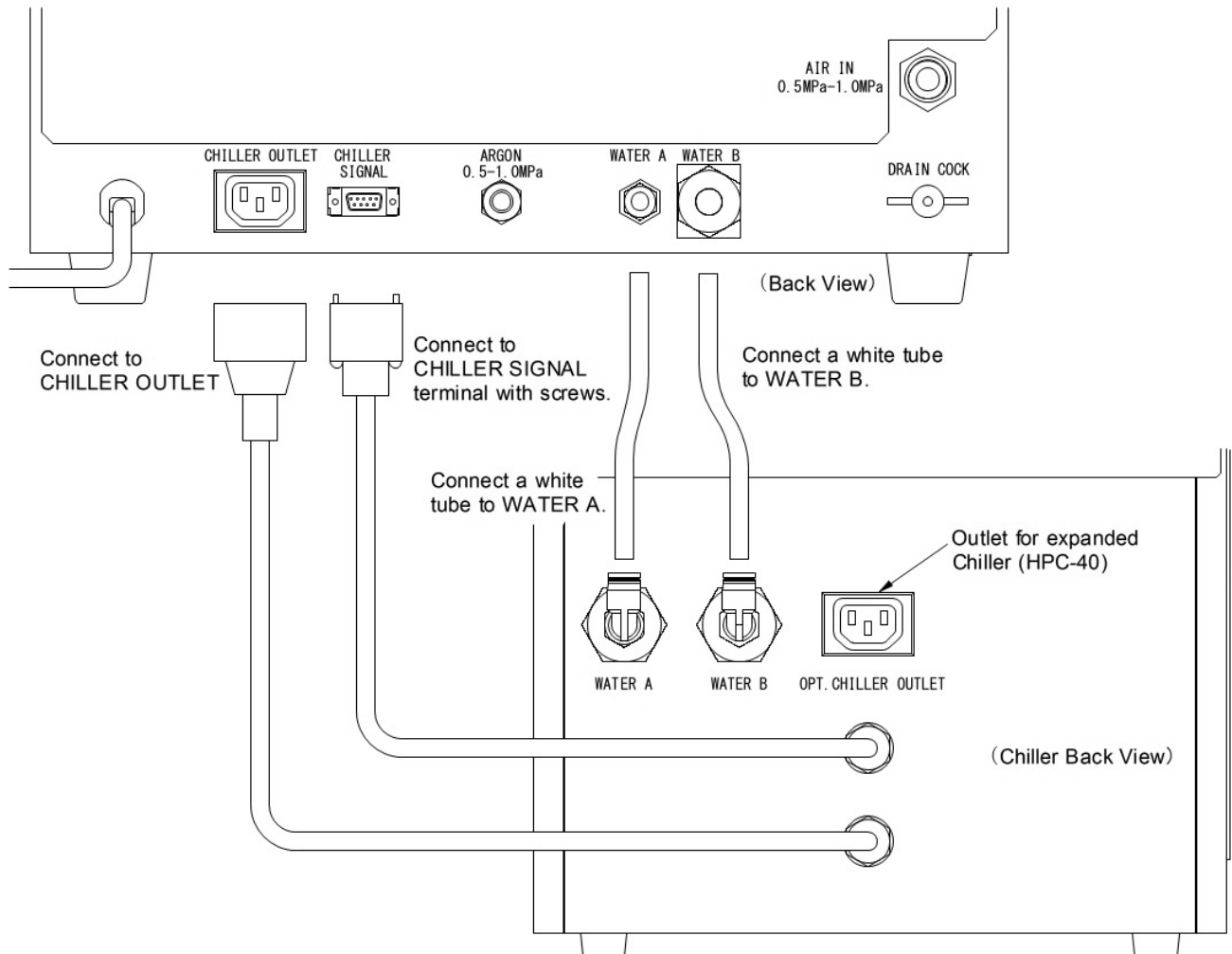
Keep the unit away from walls and other equipment.

Note) Leave minimum of 10cm of space around the unit.

Do not place anything flammable near the unit. If it is impossible, conduct fire prevention.

● Piping of Chiller

Connect chiller to the unit (Ref. drawing).



Note) The unit will not work without the proper connection of WATER A and WATER B.

Note) Connect the white piping tube completely until the red line. Improper piping may cause water leaking.

Note) Connect CHILLER SIGNAL terminal completely with screws.

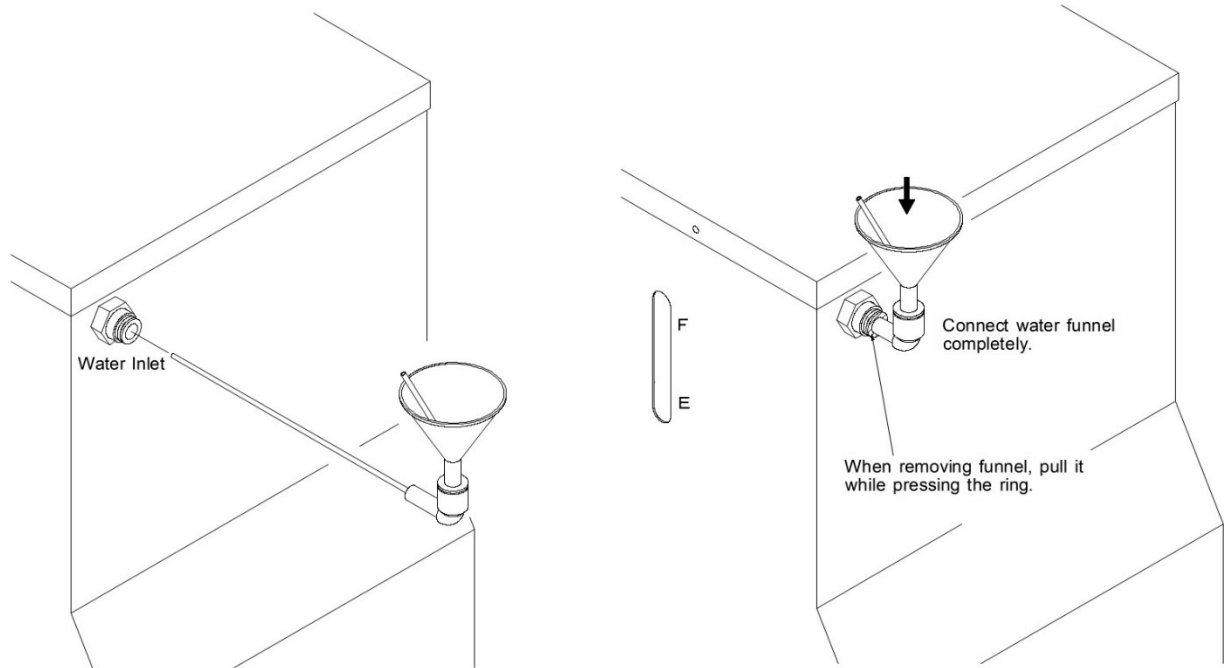
Note) Keep the hose length short to decrease the flow resistance within hose to a minimum.

Note) Place the hose in a secure location where it will not get stepped on or tripped over.

The installation is finished.

● Water Filling for Chiller

Remove the white cap of water inlet and install the water funnel provided.



- (1) Pour every coolant with water funnel.
- (2) Pour water (tap water) until the F line.
- (3) Remove water funnel.
- (4) Put the white cap back on.

Note) Thin tube connected to the water funnel is for air outlet. Do not remove, cut and close.

They may cause improper pouring.

Note) Do not exceed the F line. It may cause water overflow.

Note) Put the cap of water inlet back on completely to prevent water evaporation.


■ Power On

After installation is complete, turn the power on.

When turning on the power for the first time, wait for 10 minutes until water circulates completely.

When warning  "Chiller Water Current Abnormal" is displayed, turn off and on.

In the case of chiller abnormal ERROR due to improper piping of chiller or insufficient amount of water, turn off the unit, check the connection, add water, and turn the unit back on again.

When using direct connection of water and error  is displayed due to uncirculated or low flow, check the water supply status.

■ Periodic Machine Cleaning

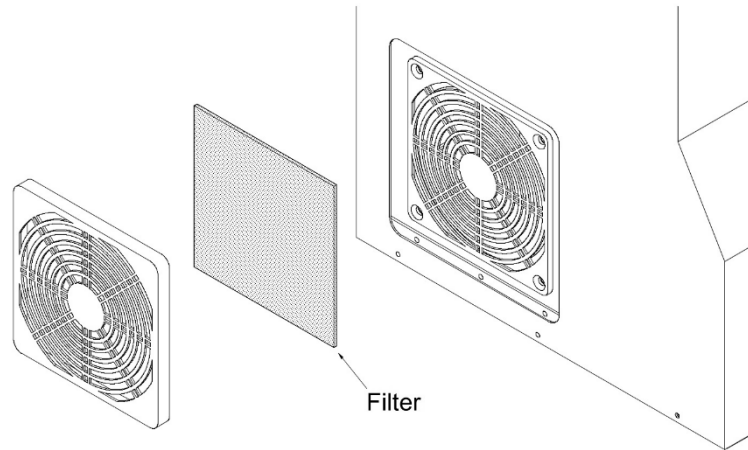
In order to maintain the capacity of this unit further longer the following periodic cleaning prior to use are recommended.

● Dust Proof Filter Cleaning

If you use the unit with the clogged filter, the cooling fan will not work properly and cause overheating of the parts and machine malfunction.

If you use the unit with the clogged filter, the cooling function will not work properly.

Remove the filter cover that is located on the side of the chiller to clean the dust with an air gun.



Note) Remove the filter to clean with an air gun. If an air gun is used without removing the filter, the dust filled in the unit may cause malfunction.

● Chiller Water Volume Check

Make sure water is at the F-Line in order to work properly.

■ Specifications

Power Requirement	AC220-240V \pm 10%	50/60Hz
Power Consumption	100VA Max.	
Overall Dimensions	305W \times 465H \times 365Dmm	
Cooling Method	Air Cooling Radiator	
Weight	19.5kg (do not include coolant water)	
Tank Capacity	2.5~3L	

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