

**Innovation**

**Service**

**Quality**

*To solve thermal deformation  
is caused by thermal drift for you!*

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ISO 9001 : 2008

Printed in June 2012

**wexten®**



## WATER COOLER FOR INDUSTRIAL MACHINERY

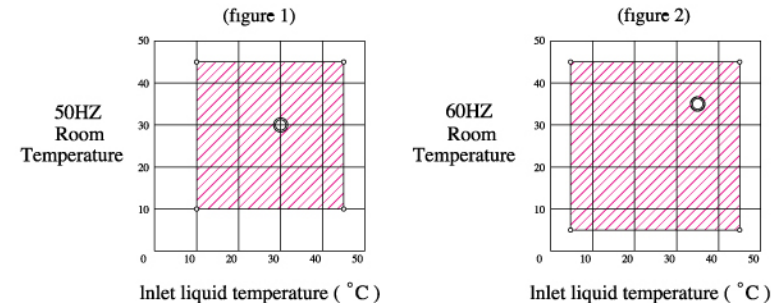
- OPERATIONL MANUAL -



## 1. General attention points:

### 1-1 Application

The water cooler series is designed for many kinds of machine's cooling purpose such as plastic injection machine, laser engraving and cutting machine, high frequency machine,...etc. To ensure the precision and efficiency for machinery, please operate the cooler as per the following temperature range.



### 1-2. Permissible tolerance for the power supply

- 1.The cooler is designed with built in protection for the compressor and electrical parts while the voltage tolerance +/- 10% .
- 2.Frequency tolerance  $\pm 1^\circ$
- 3.Noted that 50HZ and 60HZ are not compatible for single phase power source.

### 1-3. The water filter has to be installed at the water inlet and the filter cartridge needs to be replaced every 3-6 months to keep the cleaning of water and protect the internal circuit in the cooler from clogging.

### 1-4. Please use the hard and durable black pipe instead of soft or cotton coater pipe to avoid the pipe from absorbing flat and deterioration then ensure the water flow rate is smooth and stable.

### 1-5. Applicable waters include 1) Plain water 2) distilled water and the following liquids are prohibited to use.

1. cutting solution, abrasive
2. corrosive
3. chemical liquid, gas, kerosine etc...

### 1.6.Environmental Noises

It is necessary to conform to the regulations of ISO-9001 or ISO-14000.  
The industrial machines must be under 70dB.

- ★ Logo is designed by aesthetics and partial will be changed.  
Pls. keep on supporting us.



## 2. General points for attention while transportation and maintenance

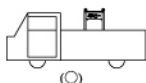
2-1. Keep the cooler from toppling and falling during transportation. (see figure 1)

2-2. using a crane or a hoist machine to move the cooler should consider:

- (1) The weight of cooler and the choice of steel wire.
- (2) Keep balance when lifting, lest the cooler falls off. (see figure 2)

2-3. Put the cooler at the horizontal and keep it away from the direct sunlight and the heat source. (see figure 3)

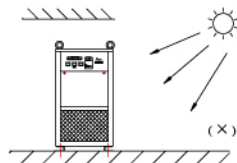
2-4. Locate the cooler at a well-ventilated place and keep it away from the dust one. (see figure 4)



(figure 1)



(figure 2)

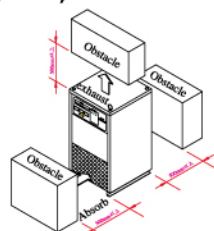


(figure 3)

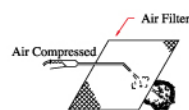
2-5 Wash the cooler surface.

Please wash the cooler surface with the neutral cleaning agent or high quality soapy water not the acidity solvent.

2-6 The air filter shall be washed with soapy water once a week. (see figure 5)



(figure 4)



(figure 5)

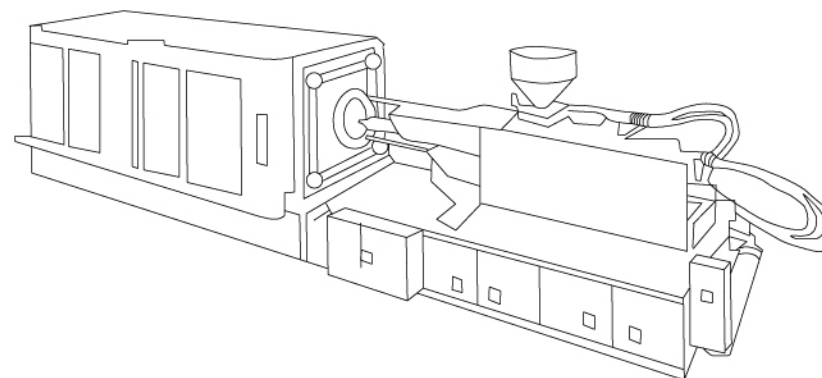


Clean the filter and dry it

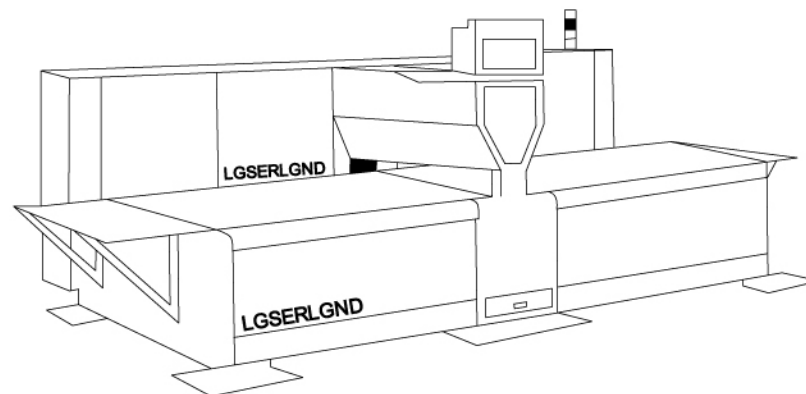
## 3.Applications

3.1. Cool down PU injection molding machine, die casting machine, plastic injection machine, high frequency machine, laser cutting and engraving machine, etc...

PU injection molding machine – chilled water machine



Laser cutting and engraving machine – chilled water machine



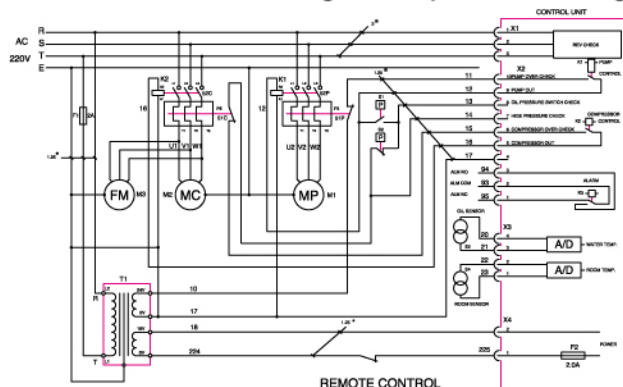
#### 4. Wiring and control circuit diagram:

While wiring, please verify the power supply marked on the aluminum plate of cooler.

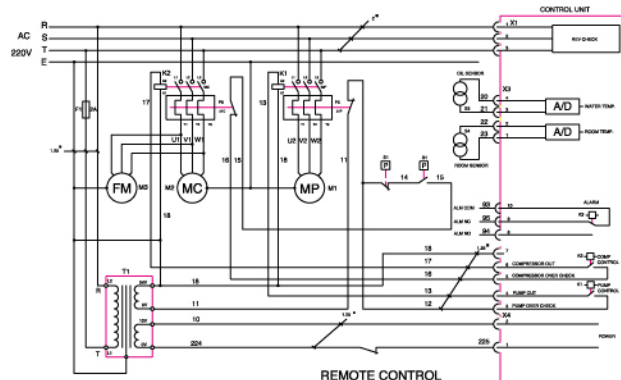
4-1. Electrical power supply includes 220V, 380V, 440V, in 1  $\phi$  ,3  $\phi$  (50HZ/60HZ)

4-2. The grounding wire must be yellow-green wire and the grounding screw with teeth to be screwed tightly the sheet metal that will remove the painting which could get the solution caused by electric leakage.

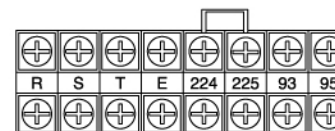
4-3. POINT-S1 Horizontal/Vertical big control panel circuit diagram



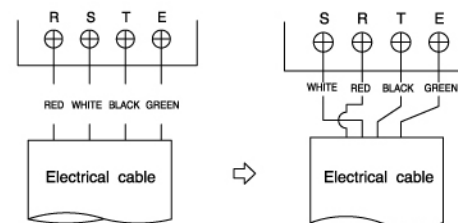
4-4. POINT-S2 Horizontal small control panel circuit diagram



4-5. The diagram of the terminal block to show the contacts of power supply, alarm and remote control.



1. R.S.T are the power source contacts of the cooler. When the phase is in reverse order, the alarm lamp will be shown on the small control panel and the monitor will display RE and big control panel will display REV. An exchange of R wire and S wire can remove the RE/REV alarm.

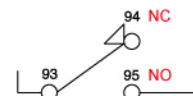


2. E is the grounding wire (yellow -green color)

3. Statements for alarm contacts

93 and 95 are the set of signal b contact. (see following figure) This set of alarm contacts could be connected with the main working m/c to directly get the cooler function (alarm) status.

(Contacts of 93 and 94 are normally close.)  $\Leftrightarrow$  (when the cooler power off)  
(Contacts of 93 and 95 are normally open)



P.S. As usual, 93,95 are alarm connection in the cooler.  
Please change the 94 and 95 when you feel the original connection unsuitable for your machine.  
(94 is in the line box on the electric panel)

4. Statements for remote control

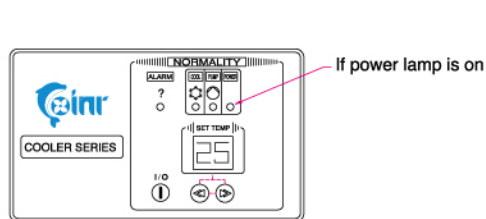
contacts of 224 and 225 are the remote control contacts which can be connected with the main working machine to switch on and switch off the cooler.

Contacts of 224 and 225 are normally in the short circuit condition when the cooler shipped out. If the user requests, the short circuit U slice of 224 and 225 can be dismantled then connected to the b contact of the CNC controller to run and stop the cooler.

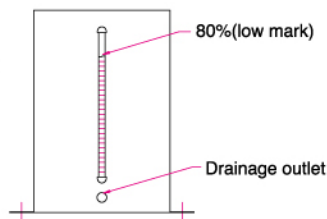


## 5. Check points before cooler start-ups:

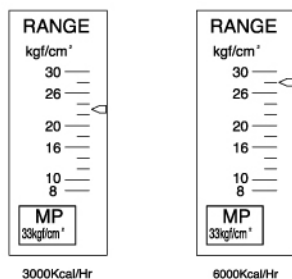
1. If the electricity is connected well and the power is on. (see figure 1)
2. Make sure the electrical resistance of compressor motor and pump motor is above 500 ohms.
3. Make sure cooler has above 80% (low mark) water in the tank. (see figure 2)
4. Make sure the drainage outlet is tightly secured.
5. Make sure the overcurrent relay is on.
6. Make sure that refrigerant pressure switch for the cooler capacity 3000 kcal/hr is adjusted at 23kg/cm<sup>2</sup>, and 28kg/cm<sup>2</sup> for cooler capacity 6000 kcal/hr and above. (see figure 3)
7. Check if the cooler inlet is equipped with the water filter (the optional parts). (see figure 4)
8. Make sure the refrigerant high-low pressure gauge indicates at between 100psi and 150psi.



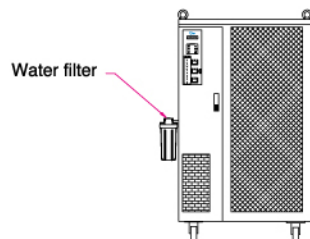
(figure 1)



(figure 2)



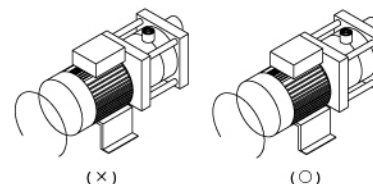
(figure 3)



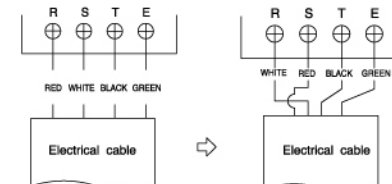
(figure 4)

## 6. Points for attention while the running of a cooler

1. Please make sure the pump motor is running as per the arrow mark while the cooler starting in a very short time. If the power supply is in reverse order, please exchange any two wires of R.S.T. The power has to be off while making a change. When the power supply is in order, the motor will run clockwise. ( see figure 1, 2 )



(figure 1)

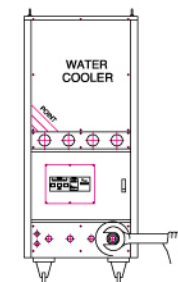


(figure 2)

2. Don't run the pump motor without water.
3. When the pump runs normally, the controller will signal the compressor which then start after 30 seconds.
4. If the air exists in the piping system, it may cause bigger noise, running fast and pump gear running down so the air should be exhausted out of pipe before the cooler operating. The way to exhaust the air is to loose the joint of water pipe at a higher position until there is no bubble come out. (see figure 3)

Horsepower	Max.flow rate	Piping dia.
1HP	60L	1" 1"
1-1/2HP	80L	1" 1"
1-3/4HP	120L	1-1/2" 1-1/2"
2HP	150L	1-1/2" 1-1/2"

(chart 1)

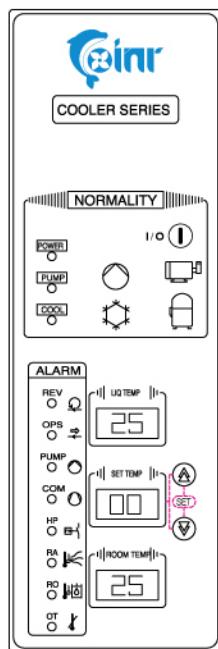


(figure 3)

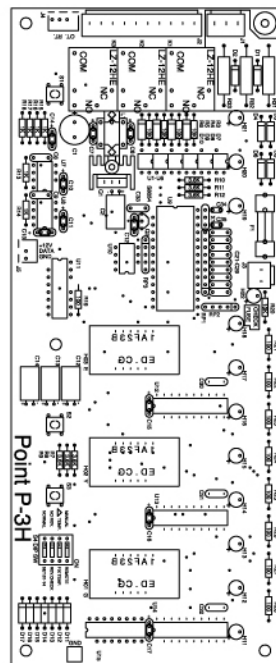
5. If the user repeatedly switch on and switch off the cooler, this may cause the overload switch trips. Please take 2-3 minute break then start the cooler again.
6. Choosing the pipe diameter for the flow rate of water pump : When the CST and the pipe diameter is too small, the motor load will become heavy and the pump will bring the abnormal sound. so please refer to chart 1 to make the correct plumbing.

## 7. Explanation for control panel and P.C board functions

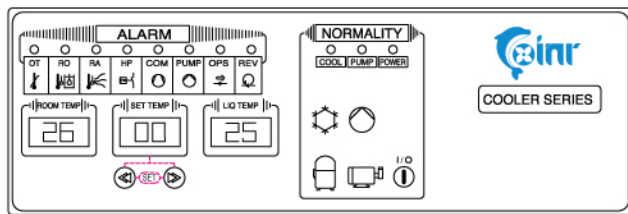
### 7-1. Diagram of control panel



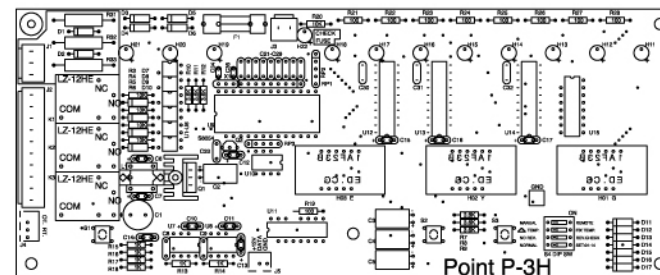
<Vertical big control panel front view>



<Vertical big PC board rear view>



<Horizontal big control panel front view>



<Horizontal big PC board rear view>

### 7-1-1. Operation and function of control panel

NO.	ITEM	OUTLINE	OPERATION&FUNCTION
1	Set keys	ON/OFF SWITCH	Run/Stop Switch.touch type
2		SET TEMPERATURE	◀ Low temp.setting key (touch type) ▶ High temp.setting key (touch type)
3		POWER ----green lamp	Power Source lamp Show the cooler is with electricity
4	Working keys	PUMP ----green lamp	Pump is running normally
5		COOL ----green lamp	Compressor is running normally
6	Alarm signs	REV -----Red lamp	Three phase power unusual
7		OPS -----Red lamp	Water pressure circuit unusual
8		PUMP-----Red lamp	Pump motor unusual
9		COMP -----Red lamp	Compressor is running unusual
10		HP -----Red lamp	Refrigerant's pressure unusual
11		RA-----Red lamp	The room temp. Sensor is not working.
12		RO -----Red lamp	The Water temp. Sensor is not working.
13		OT -----Red lamp	Water temp. is too high

## 7-1-2. Setting function statements for DIP switch program on the vertical/horizontal PC board

1. OFF -> MANUAL CONTROLLED / ON -> REMOTE CONTROLLED
2. OFF -> DIFFERENTIAL ACTION MODE / ON -> CONSTANT TEMPERATURE MODE
3. OFF -> NO DETECTION REV / ON -> DETECTION REV
4. OFF -> NORMAL ACTION MODE / ON -> FUNCTION SETTING

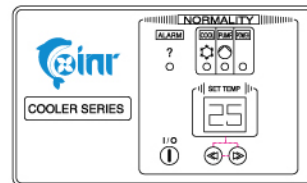
### S4 DIP SW - 4:ON

FUNCTION SETTING :

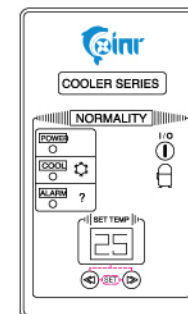
ITEMS FROM 01 TO 14 AND USE THE KEY  $\triangle \nabla$  TO ADJUST THE SETTING VALUE.

- 01 : Alarm Setting For Over Temp. : Setting range from setting protection value for low temp from -40°C . to 99.9°C . The indicate lamp "OT" will light and output the alarm signal when liquid temp. is over the setting value. If you don't need this alarm setting, you can adjust it to 100°C .
- 02 : Setting Protection For Low Temp. : Setting range from -40°C to the alarm setting value for over temp. The compressor will stop running when liquid temp. below the setting value.
- 03 : Setting The Top Of Constant Temp. : Setting range from the bottom of constant temp. to 99.9°C . It is used to limit the operating mode of constant temp. of the cooler, to set the maximum of temp.
- 04 : Setting The Bottom Of Constant Temp. : Setting range from -40°C to the top of constant temp. It is used to limit the operating mode of constant temp. of the cooler, to set the minimum of temp.
- 05 : Setting The Top Of Differential Temp. : Setting range from the bottom of differential temp. to 9.9°C . It is used to limit the operating mode of differential temp. of the cooler, to set the maximum of temp.
- 06 : Setting The Bottom Of Differential Temp. : Setting range from -9.9°C to the top of differential temp. It is used to limit the operating mode of differential temp. of the cooler, to set the minimum of temp.
- 07 : The Action Precision Of Compressor : Setting range from the stop temp. difference to 9.9°C.
- 08 : The Stop Precision Of Compressor : Setting range from -9.9°C to the action temp. difference. \*\*\* Item 07 and 08 are used to adjust the controlling precision of the cooler (ON/OFF RANGE)\*\*\*
- 09 : Postpone Compressor's Starting Time : Setting range from 000 to 250 seconds. It's a protective function for the compressor having more time to restart after stop running.
- 10 : Display Room Temp. When Operating The Constant Temp. : Setting "YES" Or "NO"  
YES : Display the real room temp. NO Display 25°C.
- 11 : Pump Will Stop Running When All ALARM Display : Setting "YES" Or "NO"  
YES : ump will stop when all ALARM. NO : Pump will stop when OFF, pump overload and REV.
- 12 : Pump And Compressor Connecting Motion : Setting "YES" Or "NO"  
YES : Pump will run when compressor runs.  
NO : Pump will run when cooler is at "ON" position.
- 13 : Adjusting The Liquid Temp. : Using this function to adjust when the liquid temp. has an error.
- 14 : Adjusting The Room Temp. : Using this function to adjust when the room temp. has an error.

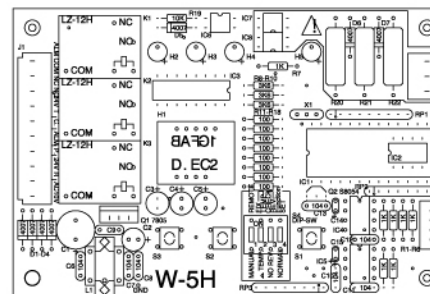
## 7-2. Monitor display control panel



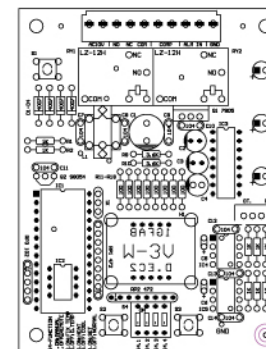
<Horizontal small control panel front view>



<Vertical small control panel front view>



<Horizontal small PC board rear view>



<Vertical small PC board rear view>

### 7-2-1. Operation and function of small control panel

NO.	ITEM	OUTLINE	OPERATION&FUNCTION
1	Set keys	ON/OFF SWITCH	Run/Stop Switch, touch type
2		SET TEMPERATURE	Usually display liquid temp. after pressing the temp setting key, monitor will twinkle and display the setting temp. In the mean time, use setting key to set temp.
3	Working keys	POWER ---green lamp	Power Source lamp Show the cooler is with electricity
4		PUMP ---green lamp	Pump is running normally
5		COOL ---green lamp	Compressor is running normally
6	ALARM	BREAKDOWN ALARM LAMP	Cooler is unusual



Troubleshooting instructions for horizontal/vertical small control panel:

1. When ALARM LED is on, it indicates pump overload switch/Bflow switch/Bpressure switch or compressor overload switch unusual possibly. If any above switch trips, please reset. Meanwhile, we ask you to follow this manual instructions to clean and wash the filter to avoid "ALARM" again.
2. When ALARM LED is on and RE is displayed, it indicates power phase is error or in reverse order. Please check the wiring. If the power supply is in a single phase, please adjust the "3" of S4 DIP-SW to "OFF" on the PC Board.
3. When ALARM LED is on and O.S. is displayed, which means the liquid temperature SENSOR is unusual.
4. When ALARM LED is on and R.S. is displayed, which means the room temperature SENSOR is unusual.

#### 7-2-2 DIP SW FUNCTION :

##### 7-2-2-1 STATEMENTS FOR DIP SWITCH FUNCTION ON THE HORIZONTAL SMALL PC BOARD.

1. OFF -> MANUAL CONTROLLED / ON -> REMOTE CONTROLLED
2. OFF -> DIFFERENTIAL ACTION MODE / ON -> CONSTANT TEMPERATURE MODE
3. OFF -> NO DETECTION REV/ ON -> DETECTION REV
4. OFF -> NORMAL ACTION MODE / ON -> FUNCTION SETTING

##### 7-2-2-2 STATEMENTS FOR DIP SWITCH FUNCTION ON THE VERTICAL SMALL PC BOARD.

1. OFF -> MANUAL CONTROLLED / ON -> REMOTE CONTROLLED
2. OFF -> DIFFERENTIAL ACTION MODE / ON -> CONSTANT TEMPERATURE MODE
3. OFF -> COOLING / ON -> HEATING
4. OFF -> NORMAL ACTION MODE / ON -> FUNCTION SETTING

#### S4 DIP SW - 4 : ON

(The operation way is applicable to the vertical and horizontal PC Board)

FUNCTION SETTING: USING THE KEY ON/OFF TO CHOOSE THE SETTING ITEMS AND THEN USE THE KEY  $\nabla/\Delta$  TO ADJUST THE SETTING VALUE.

Setting items: By ALARM ,COOL , POWER 3 LED is for vertical small PC board and COOL, PUMP, POWER 3 LED twinkling status to show\* is for horizontal small PC board

(COOL) ALARM LED	(PUMP) COOL LED	(POWER) POWER LED	: HORIZONTAL SMALL PC BOARD
			: VERTICAL SMALL PC BOARD
		●	: Alarm setting for over temp.
	●		: Setting protection for low temp. The compressor will stop running when liquid temp. below the setting value.
	●	●	: Setting the top of constant temp. It is used to limit the operating mode of constant temp. of the cooler, to set the maximum of temp.
●			: Setting the bottom of constant temp. It is used to limit the operating mode of constant temp. of the cooler, to set the minimum of temp.
●		●	: The action precision of compressor.
●	●		: Adjusting the liquid temp. Using this function to adjust when the liquid temp. has an error.
●	●	●	: adjusting the room temp. Using this function to adjust when the room temp. has an error.

## 8. Plumbing

- 8-1. For the inlet plumbing, the pipe diameter connected to the cooler should not be smaller than the cooler's pipe size and the vacuum pressure has to be in the range between -230 and 0 mm Hg. (- 0.3Kgf/cm<sup>2</sup>)
- 8-2. Choose the water filter. Recommended mesh size is between 10 mm to 15 mm, otherwise that may cause the water pump breakdown or reduce flow rate then affect the cooling capacity.
- 8-3. The loss of cycle pressure for outlet plumbing is less than 2 Kgf/cm<sup>2</sup>
- 8-4. The formula of plumbing pipe resistance:

$$P=6.07 \times V \times Q \times L / D^4$$

V : CST (Viscosity of water is 1)

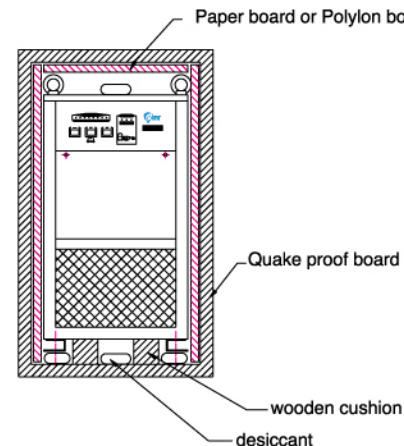
Q : Liquid flow rate (l/min)

L : Length of water pipe (m)

D : Water pipe inner diameter (mm)

## 9. Instructions for packing and transportation:

- 9-1. The cooler with built-in refrigerant copper pipe so please ensure the packing with quake proof against the disruption while transporation and the transportation safety.
- 9-2. Don't place the cooler upside down, or the compressor will get a trouble.
- 9-3. Be sure to strongly fix the cooler base on the wooden case while packing. Any loosening will cause the cooler breakdown. The client is welcome to inquire us more about the packing details.
- 9-4. Put the desiccant into the wooden case which featured with moistureproof processing. Please refer to the following drawing for packing instructions.



## 10. Troubleshooting

For any alarm happened, please refer to the following troubleshooting. If the problem still cannot be solved, please check the cooler model, serial number, date shown on the cooler plate and show me the trouble photo (or send me the written sheet regarding the trouble to call for service request)

Alarm	Trouble	Troubleshooting
<b>Power lamp is off</b>	1. Power LED burnt. 2. PCB fuse broke. 3. Transformer burnt. 4. Wire 18 and 19 disconnect.	1. Replace PC board. 2. Replace fuse. 3. Replace transformer. 4. Reconnect wire 18 & 19.
<b>REV is lighted</b>	1. 3 phase power wrong connection. 2. The rated voltage supply is beyond the permissible tolerance $\pm 10\%$ .	1. Exchange any two of wires R.S.T wires. 2. Please avoid.
<b>OPS is lighted</b>	1. Inlet water pipe is clogging or loosening. 2. Inlet & outlet are reverse. 3. Pump motor runs reversely. 4. Pump can not run. 5. Inlet water pipe is loose. 6. Water filter is clogging. 7. Water pressure switch break. 8. Water in the tank is not enough.	1. Check and clean the water circuit and lock pipe. 2. Correct position of inlet and outlet. 3. Exchange the red wire and the white wire of overload relay 51P. 4. Replace pump. 5. Please tighten the inlet water pipe. 6. Replace new filter. 7. Please check if the water flow rate is enough then replace the water pressure switch. 8. Supply water to above low level.
<b>PUMP is lighted</b>	1. Overload relay (51P) trips. 2. Water pipe of pump is clogging. 3. Inlet pipe is clogged.	1. Reset the relay and raise the current. 2. Clean pipe and replace water filter. 3. Clean pipe and replace oil filter.
<b>COM is lighted</b>	1. Overload relay trips. 2. Cooling fan doesn't run or blades fall off.	1. Reset the relay and raise the current. 2. Lock fan blades tightly or replace the fan motor.
<b>HP is lighted</b>	1. Condenser is too dirty. 2. Air filter is not clean. 3. Cooling fan doesn't run or blades fall off. 4. Refrigerant pressure switch breakdown. 5. Refrigerant leakage.	1. Use the compressed air to clean the aluminum fin then switch on the cooler again. 2. Wash the air filter. 3. Lock fan blades tightly or replace the fan motor. 4. Replace refrigerant pressure switch. 5. Ask the professional technician to recharge the refrigerant.
<b>RA is lighted</b>	1. Room temp. sensor broke and the monitor shows ERR.	1. Replace the room temperature sensor.
<b>RO is lighted</b>	1. Water temp. sensor broke and the monitor shows ERR.	1. Replace the water temperature sensor.
<b>OT is lighted</b>	1. Water temp. is too high. 2. Water temperature sensor broke. 3. Check if the refrigerant is insufficient.	1. Stop cooler running until water temp. returns to normal range and then start the cooler again. 2. Replace the water temperature sensor. 3. If so, please repair the refrigerant leakage and recharge the refrigerant.

### ※ Lack of the refrigerant

The following condition maybe caused by lack of the refrigerant:

No alarm and the motors keep running, but the cooler can not reach to the setting temperature and the main heat source (need to be cooled) temperature has been going up.

For above conditions happened, please call the professional technical staff in your country for service or contact us directly.

### ※ Water tank and filter

1. Water capacity in the tank should be above 80% (low) level mark to protect the pump from air entering and please keep the water cleanness at any time.
2. The water filter must be replaced or cleaned periodically which can accumulating iron powder that will reduce the pump flow rate and bring the noise.

### The following conditions are beyond the warranty

- (1) When the wexten's cooler built with the brazed heat exchanger, please make sure the water flows smoothly before switch on the cooler, or the brazed heat exchanger will be easy to get trouble because of freezing. Our suggestion is to install a check valve at the inlet of cooler which can guard the brazed heat exchanger against above trouble.

Other conditions to cause the brazed heat exchange trouble contain insufficient water supply and no water pass through which includes the water flows not easy and smooth.

- (2) Not to clean or wash the air filter and replace the water filter periodically, The latter will cause the heat exchanger clogging and the cooler breakdown. (please refer to 1-3 of page1 & 2-6 of page2)
- (3) The cotton water pipe connected to the cooler is not applicable. ( please refer to 1-4 of page1)
- (4) Any damage is caused due to not to follow our instructions for packing and transportation. (please refer to 9-1, 9-2, 9-3, and 9-4 of page13)

※ Please be sure to pay much attention and follow our instructions to maintain and operate the cooler. Many thanks for your purchasing again.

## WEXTEN MAIN PRODUCTS SERIES

TYPE	APPLICATION	FEATURE
CO SERIES-OIL COOLER	<ul style="list-style-type: none"> <li>● CNC machine center</li> <li>● CNC grinder, Broach Machine</li> <li>● CNC wood carving machine</li> <li>● Oil pressure machine</li> <li>● CNC lathe, High-speed lathe</li> </ul>	<ul style="list-style-type: none"> <li>● Maintain constant oil temperature.</li> <li>● Prevent oil deterioration. Maintain oil viscosity ensures smooth and stable oil pressure.</li> <li>● Built-in safety protection devices ensure no sudden breakdown.</li> <li>● Computer controlled sensors adjust oil temperature according to ambient temperature ensure precision in machining processes.</li> </ul>
CW SERIES-WATER COOLER	<ul style="list-style-type: none"> <li>● Laser cutting machine</li> <li>● Printing machine</li> <li>● lathe grinder</li> <li>● Ultrasonic machine</li> <li>● Injection Molding Machine</li> </ul>	<ul style="list-style-type: none"> <li>● Condenser unit mounted at top for top heat discharge.</li> <li>● Easy set up. Easy maintenance. No need for cooling tower. Efficient heat exchanger prevent carbon and dirt accumulation.</li> <li>● Pastel colors ensure easy match with most work environments and CNC machines.</li> <li>● Electronic digital temperature control of <math>\pm 1</math> degree C.</li> </ul>
CA SERIES-AIR CONDITIONERS FOR ELECTRICAL CONTROL BOX	<ul style="list-style-type: none"> <li>● CNC lathe</li> <li>● CNC machining center</li> <li>● CNC planomiller</li> <li>● CNC planogrinder</li> <li>● CNC machining center (5 sides)</li> <li>● CNC laser cutting machine</li> <li>● CNC spring machine</li> <li>● CNC wire cutting machine</li> <li>● CNC instrument box</li> </ul>	<ul style="list-style-type: none"> <li>● Maintain steady, air conditioned cooling within the recommended operating temperature for electrical panels.</li> <li>● Prevent ingress of dust, humidity and moisture into electrical control panels.</li> <li>● Tough design. Can withstand high ambient temperature of 38 degrees C and above.</li> <li>● May be internal or external mounted. Enclosed design ensure no mixing of internal and ambient air.</li> <li>● Most suitable for electrical control boxes or panels when the operating temperature must be lower than the ambient temperature.</li> </ul>
CE SERIES-EDM SPECIAL PURPOSE COOLER	<ul style="list-style-type: none"> <li>● EDM machine</li> </ul>	<ul style="list-style-type: none"> <li>● Compact heat exchanger design ensure no clogging due to accumulated carbon particles.</li> <li>● Maintain constant oil temperature ensure quality of the EDM process.</li> <li>● Prevent oil carbonization. Help reduce fouling of the air of the working environment ensure operators' health are protected.</li> <li>● EDM can now operate with higher current discharge to help reduce machining time.</li> <li>● Prevent fire risk from carbon accumulation due to continuous machining.</li> </ul>
EA SERIES-HEAT EXCHANGER	<ul style="list-style-type: none"> <li>● CNC lathe</li> <li>● CNC machine center</li> <li>● CNC press machine</li> <li>● CNC grinder</li> <li>● CNC internal &amp; external diameter grinder</li> <li>● CNC papier loom</li> <li>● CNC milling machine</li> <li>● Laser cutting machine</li> </ul>	<ul style="list-style-type: none"> <li>● Ideal and efficient device. Energy saving.</li> <li>● Simple, handy and efficient heat exchanger. Enclosed design ensure no exchange of internal and ambient air.</li> <li>● Build to IP protection ratings.</li> <li>● Heat conduction efficiency 1600 times of copper.</li> <li>● Choice of Internal or External Mount.</li> </ul>
AW SERIES-WATER COOLING FOR WELDING MACHINE	<ul style="list-style-type: none"> <li>● Various welding machines</li> <li>● Printing</li> <li>● Optical instruments</li> <li>● Medical instruments</li> </ul>	<ul style="list-style-type: none"> <li>● Prevent overheating or burned head of welding gun.</li> <li>● Built in water tank reduces water consumption.</li> <li>● Simple design. Easy maintenance.</li> <li>● Improved welding efficiency. Lower cost.</li> <li>● Ensure test instrument reading stability. Little fluctuation.</li> </ul>

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AO SERIES-HEAT PIPE HEAT EXCHANGER FOR OIL COOLING	<ul style="list-style-type: none"> <li>● CNC oil-pressure system of lathe</li> <li>● Oil-pressure of internal &amp; external diameter grinder</li> <li>● Various oil-pressure tank</li> <li>● Oil-pressure system of CNC machine center</li> </ul>	<ul style="list-style-type: none"> <li>● Reduce oil temperature and maintain oil viscosity.</li> <li>● Simple desing Easy maintenance. Long product life.</li> <li>● Design ensure no mixing of oil and water.</li> <li>● Energy saving. Small power consumption.</li> </ul>
EC SERIES-HEAT PIPE HEAT EXCHANGER	<ul style="list-style-type: none"> <li>● CNC lathe</li> <li>● CNC machining center</li> <li>● CNC pressing machine</li> <li>● CNC grinder</li> <li>● CNC internal &amp; external diameter grinder</li> <li>● CNC papier loom machines</li> <li>● CNC milling machine</li> <li>● Laser cutting machine</li> </ul>	<ul style="list-style-type: none"> <li>● Ideal and efficient device. Energy saving</li> <li>● Simple, handy and efficient heat exchanger. Enclosed design ensure no exchange of internal and ambient air.</li> <li>● Build to IP protection ratings.</li> <li>● Heat conduction efficiency 1600 times of copper.</li> <li>● Top mount type, space saving when installed in control box.</li> </ul>
CR SERIES-SPECIFIC FOR CNC WIRE CUTTING	<ul style="list-style-type: none"> <li>● CNC wire cutting machine</li> </ul>	<ul style="list-style-type: none"> <li>● Top discharge of exhaust heat.</li> <li>● Electronic panel temperature control with tolerance of <math>\pm 1</math> °C.</li> <li>● Maintain constant cooling temperature ensure product precision. Reduce wire consumption.</li> <li>● Stainless steel heat exchanger. Evaporator design of large pipe diameter ensure high flow.</li> <li>● When interlocked to CNC machine, breakdown, if any will be indicated.</li> </ul>
CAD SERIES-COOLING AIR DRYER	<ul style="list-style-type: none"> <li>● Machining pneumatic tool</li> <li>● Medical appliances</li> <li>● Paint · laser cutting machining</li> <li>● High-speed drive axle</li> </ul>	<ul style="list-style-type: none"> <li>● Prevent corrosion, and rust formation</li> <li>● Increased paint color brilliance. No bubbles.</li> <li>● Improved heat exhaustion.</li> <li>● Prevent refraction mirror breakage caused by laser.</li> </ul>
PF SERIES-COOLING EAN	<ul style="list-style-type: none"> <li>● Electric control box</li> </ul>	<ul style="list-style-type: none"> <li>● High wind power. Low noise.</li> <li>● Tough fan blades. Not easily deformed.</li> <li>● Concealed joint. Help reduce corrosion.</li> </ul>
CL SERIES-WATER COOLING FOR CNC LASER CUTTING ENGRAVER MACHINE	<ul style="list-style-type: none"> <li>● Heavy laser machines (1000W~2500W)</li> <li>● Small-type laser machines (50W~300W)</li> </ul>	<ul style="list-style-type: none"> <li>● Cools the laser cutting head.</li> <li>● Uses high pressure pump and water pressure circuit ensure system protection.</li> <li>● Uses 316 stainless steel compact brazed heat exchanger. saves on energy consumption and ensure good heat exchanger.</li> <li>● Has remote control operation and breakdown signal indication when connected to CNC laser cut machine</li> <li>● Cooling the laser head engraving or cutting head compartment</li> </ul>
CK SERIES-CNC CUTTING MACHINE COOLER	<ul style="list-style-type: none"> <li>● CNC lathe</li> <li>● CNC machining center</li> <li>● CNC grinder</li> <li>● CNC internal &amp; external diameter grinder</li> <li>● CNC milling machine</li> </ul>	<ul style="list-style-type: none"> <li>● This CK series is suitable for turning, grinding and cutting machines. No impurities or metal filing interference.</li> <li>● Easy to maintain and clean.</li> <li>● Stainless steel shell heat exchanger ensures no corrosion problem.</li> <li>● Easy to install. Space saving.</li> </ul>
CNT SERIES	<ul style="list-style-type: none"> <li>● Plastic M/C</li> <li>● Injection M/C</li> </ul>	<ul style="list-style-type: none"> <li>● Improve mould function and promote efficiency.</li> </ul>



# MEMO



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