

# WATER CHILLER MINI

## 1. Introduction

**WATER CHILLER MINI** (WATER CHILLER for short) is stand-alone water chilling system for Vapour Phase Soldering Machine. The central control unit of WATER CHILLER senses the temperature of outgoing water and regulates the power of the pump to optimize the chilling process.



## 2. Package content

- 1 pc **WATER CHILLER MINI** (order code S-CHLAPEC)
- 1 pc power cord 230 V<sub>AC</sub> (SCHUKO)
- 2 pcs door key (keys are fixed to water valve during transportation)

Note: The external hoses are not part of delivery. Use the transparent hose to enable check of unwanted air in the water system.

## 3. Installation

1. Set the proper supply voltage by the switch 115 V<sub>AC</sub> / 230 V<sub>AC</sub> inside of the WATER CHILLER. See the chapter 5.1 "Selection of Power Supply 115 V<sub>AC</sub> / 230 V<sub>AC</sub>" for details.



**WARNING!**

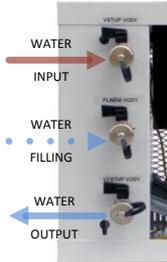
**Disconnect the power cord before opening the WATER CHILLER door!**

**Check the proper position of the 115 V<sub>AC</sub> / 230 V<sub>AC</sub> switch inside of WATER CHILLER, before first connection to power supply**  
(See the chapter 5.1 "Selection of Power supply" for details)

Attention! During filling with water the WATER CHILLER has to be located higher than the Vapour Phase Soldering Machine.

**Any maintenance and installation has to be done by qualified personnel only!**

2. The WATER CHILLER has to be **located higher than the Vapour Phase soldering machine** during the filling procedure. Fix the pipe "WATER INPUT" to the hot water output of the Vapour Phase Soldering Machine (see the picture).
3. Fix the pipe "WATER OUTPUT" to cold water input of the Vapour Phase Soldering Machine.
4. Fix the pipe "WATER FILLING" to any external source with water (drinking water is strictly recommended).
5. Check that the WATER CHILLER is **located higher than the Vapour Phase Soldering Machine**.
6. Free the air-escape cock (the red plastic valve on the upper side of the device) use 6 mm hex key.
7. Open the valves "WATER INPUT" and "WATER OUTPUT" and slowly open the valve "WATER FILLING" (**slowly fill** the chilling system with water until the water level reaches the middle of the expansion tank. Then close the valve "WATER FILLING").
8. Tip: The water level can be better seen when using any light source from rear.
9. Close the air-escape cock.
10. Check that there is no water leakage.
11. Connect the power cord and switch ON the device by the switch on back side of the device.
12. The LED display shows the value corresponding to the room temperature. The fan and pump motors will be running slowly because of the low temperature on the temperature sensor.
13. Wait about 2 minutes and check the water level in the expansion tank. In case the water level is low switch OFF the supply switch and disconnect the power cord. Refill the water (repeat the installation procedure from point 5 until the water level is not OK).
14. Check that the refilling valve and air-escape cock are closed.
15. Locate the device to requested position.
16. Switch ON the Vapour Phase Soldering Machine and the WATER CHILLER at the same time. Check on the LED display that the output water temperature rises and fan and pump revolution rises.
17. Check that the temperature stabilizes below 40°C.
18. The installation is now finished and the WATER CHILLER can be used in standard operational mode.

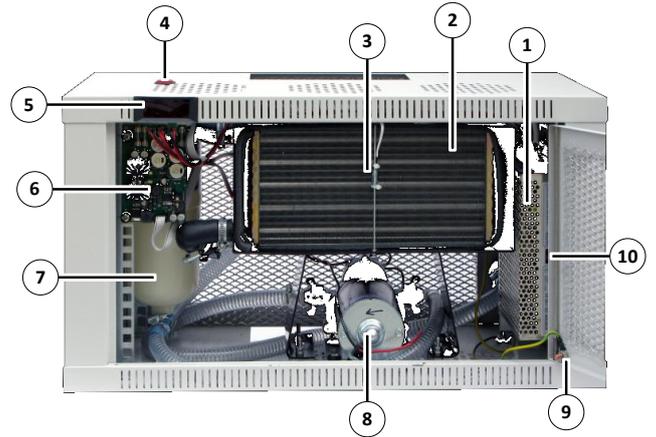


## 4. Technical specifications

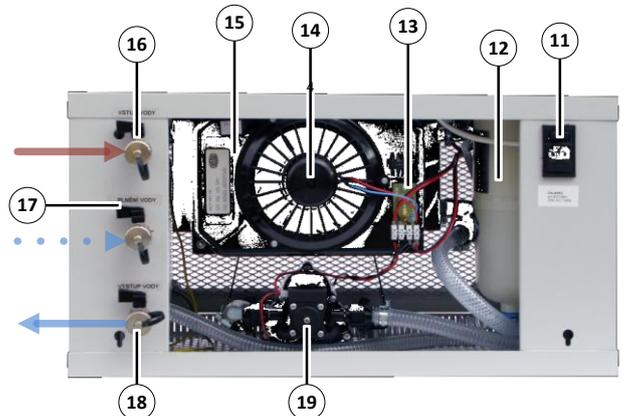
Parameter / Condition	Symbol	MIN.	TYP.	MAX.	Unit
Dimensions	width	w	600		mm
	height	h	320		mm
	depth	d	240		mm
Weight approx.	weight w/o water		12		kg
	weight with packaging		18		kg
Supply	Voltage *1) Selectable by switch!	V <sub>CC</sub>	115 or *1) 230		V <sub>AC</sub>
	Frequency		50/60		Hz
	Power consumption		150		W
	Fuse *2)			1.6 @ 230 V <sub>AC</sub>	A
Cooling medium	Drinking water				
Pressure			1	5	bar
Water tank			1	1.2	l
Chilling power	environment temperature 20°C,				
	temperature of input water 50°C				kW
Water flow			2	5	l/min
Pipe connection			3/4"		inch
Noise	distance 1 meter			75	decibel
	Operational	tA	+5	+25	°C
Temperature	Storage w/o water	tSTG	-40	+85	°C
	Humidity	Relative	RHmax		90

\*2) Fuse T3.2A @ 115 V<sub>AC</sub> or T1.6A @ 230 V<sub>AC</sub>  
Security by PE (Protective Earth)  
The WATER CHILLER can be used inside building only!

## 5. Hardware



- (1) – Power supply 115 V<sub>AC</sub> / 230 V<sub>AC</sub>-24V<sub>DC</sub>
- (2) – Cooler
- (3) – Temperature sensor
- (4) – Air escape cock
- (5) – LED display: cold water temperature
- (6) – Control board PCB (Regulator)
- (7) – Expansion tank
- (8) – Pump
- (9) – PE (Protective Earth)
- (10) – Switch 115 V<sub>AC</sub> / 230 V<sub>AC</sub>



- (11) – Inlet, ON/OFF Switch, Fuse
- (12) – Expansion tank
- (13) – Terminal
- (14) – Fan
- (15) – Cooler
- (16) – Water input (warm)
- (17) – Water filling
- (18) – Water output (cold)
- (19) – Pump

## 5.1 Selection of Power Supply: 115 V<sub>AC</sub> or 230 V<sub>AC</sub>

Open the front box door. The switch (10) 115 V<sub>AC</sub> / 230 V<sub>AC</sub> is located on the power supply (1). Select the proper voltage depending on your power network.



## 5.2 LED Display

The LED displays can show following information

- Output (cold) Water temperature
- Temperature sensor failure "Err"

## 6. Operation

- **During operation the WATER CHILLER door has to be closed.**
- Check the external hose are located so the water can freely flow.
- Switch ON the WATER CHILLER at the same time as the Vapour Phase Soldering Machine to prevent the Vapour Phase Soldering Machine be switched OFF by the internal security circuits due to overheating. Note: The WATER CHILLER does not influent the warming up time of the Vapour Phase Soldering Machine.
- Check that the temperature is below 45°C, otherwise open the room window or switch ON the air conditioner.
- Check the change of the fan and pump revolution with temperature on the display.
- Check that the box does not touch the Vapour Phase Soldering Machine (due to possible vibrations from WATER CHILLER)

## 7. Maintenance

Period	To do
Daily	Check: - the possible water leaking - the hose are located free so the water can flow without problem - there is no air in the chilling system
Once a month	Check: - the water level in the expansion tank
Yearly	Check: - PE connection

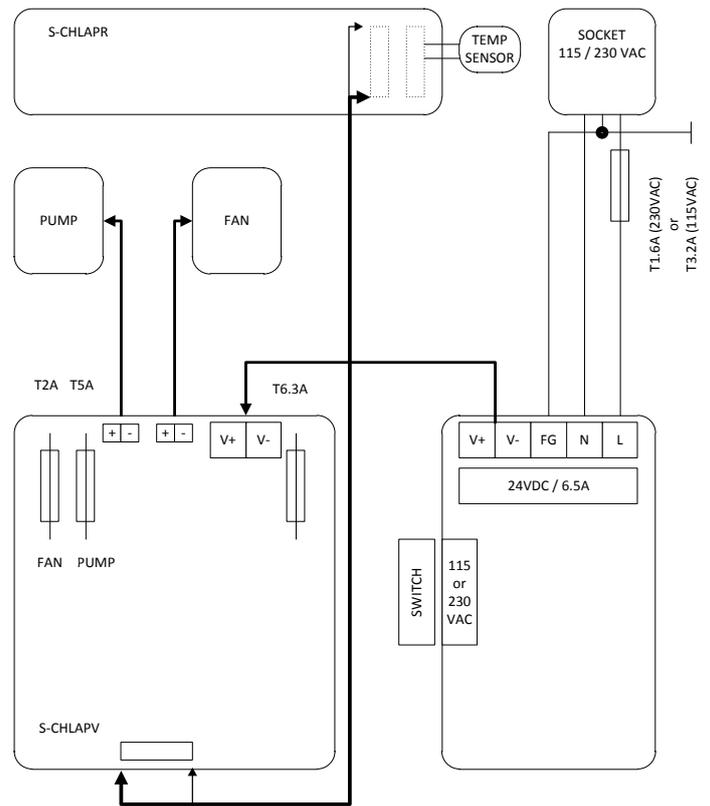
## 8. Safety

- Switch OFF the WATER CHILLER and disconnect 115 V<sub>AC</sub> / 230 V<sub>AC</sub> power cord before opening the door of water chiller!
- Be aware of 115 V<sub>AC</sub> / 230 V<sub>AC</sub> – Do not touch by wet hands!
- Do not refill when air-escape cock is closed. The WATER CHILLER is not designed to withstand water pressure higher than 5 bar!
- Attention when filling with water – check that the water level is below half of the expansion tank!
- Do not switch ON the power in case any water gets into the WATER CHILLER. Call a qualified person in such a case.
- Do not open the WATER CHILLER door during operation!
- Do not cover the WATER CHILLER!
- Do not locate the WATER CHILLER on direct sun.

## 9. Spare parts

Order code	Spare Part
S-CH-VENT24	fen with cooler
S-CH-SHURF12	water pump
S-CH-EXP	water tank
S-CH-POW24	power supply 115V <sub>AC</sub> / 230V <sub>AC</sub> - 24V <sub>DC</sub>
S-CHLAPEC_CHLAPR_1	control PCB with LED display
S-CHLAPEC_CHLAPV_1	power PCB

## 10. Wiring Diagram



## 11. Troubleshooting

- **Any water leakage** – fix the tights
- **LED display is off and no motor is running** – check the power supply
- **LED display shows Err, the fan and the pump are running at maximum speed** – check the shortage or disconnection of temperature sensor
- **The pump motor is not running** – internal pump security circuit activated – check that water input and output valves are open
- **Low water level in the expansion tank** – refill in the water (see the chapter installation)
- **The LED display shows more than 45°C** – High environment temperature. Open the room window or room door or switch on the air conditioner.

## 12. Warranty

General warranty period is **12 months** after purchase, when eventual malfunction device will be repaired free of charge in SEA company while shipping to SEA is paid by customer and SEA pays for shipping back to customer. The address is

**SEA spol. s r.o., Dolnoměcholupská 21,  
102 00 Praha 10, Czech Republic  
phone +420272700058.**

Any apparent problem in the package has to be reported immediately during five days after delivery.

