BEST A/V SYSTEMS
HUMIDIFICATION
HUMIDIFIERS

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Ultra-Steamer Humidifier
ULDI & ULSW

GENERAL DESCRIPTION

The Best A/V Ultra-Steamer Steam Humidifier (ULDI or ULSW) is designed to achieve the outstanding performance with minimal costs and provide the cleanest and chemical-free steam with electric energy source for use. The ULDI is suitable for DI/RO pure water, while ULSW is for softened water. The Best A/V Ultra-Steamer Steam Humidifier is patented.

Both featured with 6" LCD display monitor and 0-100% process proportional controlling system, providing an accurate humidification control (+/-1%RH) and fault indication. Equipped four devices as over-heat protection, 0.001-second-cutoff industrial fuse: ensuring a safety operation and cost saving; stainless steel constructed frame and most fittings for long-term operation; preheat & fixed-temperature functions to speed up humidification process.

Provide minimal or no maintenance and long-life span. And accompanied with a two-year warranty, covering all parts. For ULSW, featured an extra timer-operated solenoid valve automatically drains vapor chamber water in interval of 20 minutes, reducing mineral build-up and concentration.

In short, these unique humidifiers are a modern, state-of-art, and fully automatic self-generated for use in air conditioning and ventilating installations; services as a precise control to accurately maintain the required humidity while operated at minimal cost and trouble-free and lasts for a long time humidification system.

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KEY FEATURES

Material: (for ULDI)

- The frame and most inside fittings is constructed with high quality stainless steel
- Withstands corrosive DI/RO pure water
- No mineral build-up
- Minimal or no maintenance

Material: (for ULSW)

- The frame and most inside fittings is constructed with high quality stainless steel
- Minimal maintenance

Timer-Operated Solenoid Valve auto drainage: (for ULSW only)

- Automatically draining vapor chamber water in intervals, preventing mineral build-up and condensation.
- Incorporated with the PLC Easy-Logic microprocessor for timing of auto drainage.
- Adjustable timing of auto drainage can be set for draining interval from 1 to 999 minutes and draining time from 1 to 999 seconds.

Timer-Operated Solenoid Valve

SCR Controller: (for ULDI & ULSW)

Only the first one is SCR controller, the rest is/are relay/s controller. Major advantages of SCR control are:

- 3-Phases SCR modulation
- No connection points, hence no sparking
- Easy to control
- Quiet operation
- Linear proportional control: modulating humidifier output from 0% to 100% of maximum capacity

This device provides an accurate and easy way in controlling the output of power.

SCR Controller

6" Black & White LCD Touch-Screen monitor: (for ULDI & ULSW)

- Displays Alphanumeric, Graphic, and Library
- Touch-screen menu, user-friendly, easy to use, and easy to view and clear
- Touch panel input, easy to key-in settings
- Screen saver
- Displays set point of humidifying in % linear proportional control (from 0-100%)
- Displays vapor chamber temperature, sensored by PT-100 Thermosensor
- Displays output of humidifier system in kg/hr
- Displays instant power consumption in kw
- Displays accumulated humidifying amount in kg/hr
- Displays accumulated operation time in days
- Displays total power consumed in kw
- System fault read-out constantly running down on the screen, reducing trouble-shooting time - automatically showing the failure of humidifier operation on the lower screen such as low-water, over-heat, unclosed chamber cover, software fault / PLC error, and input or output error.

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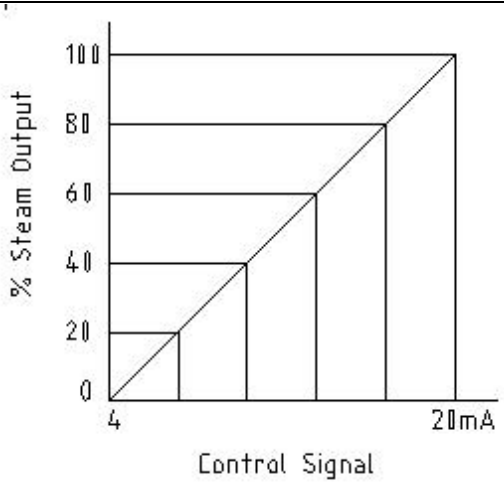
6" Black-White LCD display monitor

PLC Microprocessor-Based Easy-Logic Programmable Control System: (for ULDI & ULSW)

- Housed in the control cabinet and controls all functions of the humidifier
- Programmable to suit varied need from time to time
- Linear proportional output control from 0% to 100%, providing precise control
- Scroll down menu, easy to use and requiring no computing skills
- Accepts all input signals from 0-10VDC, 2-10VDC,0-5VDC or 4-20mA
- Compatible with most building management system
- Compatible with RS232 interface port



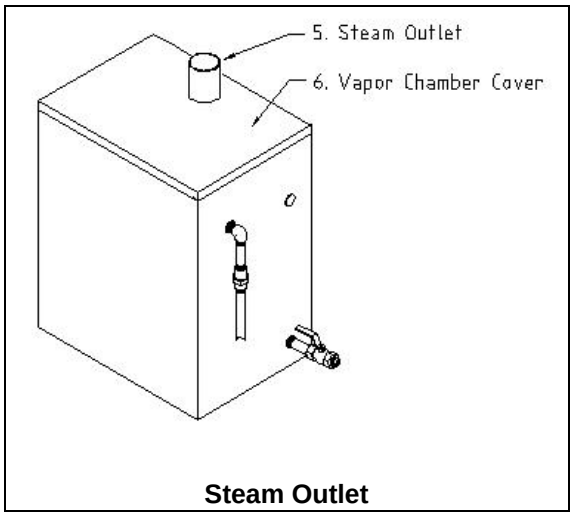
Steam Output Chart

Easy –Logic PLC

Steam Outlet: (for ULDI & ULSW)

Steam generated from the humidifier rises and exits through the steam outlet and travels to the dispersion panel. Features are:

- Made of stainless steel
- With electrolytic protection



Steam Outlet

Supply of Water: (for ULDI)

Reverse Osmosis or de-ionized water, (also adaptable to above 18MΩ pure water), for the best steam output. **If using at city water**, must equipped one Timer-Operated Solenoid Valve for auto drainage preventing mineral build-up and condensation.

Steam Hose (optional): (for ULDI & ULSW)

- 17 bar (250psi) robust steam hose, high tensile steel cords
- Mainly made of EPDM, preventing loss of heat
- Rating: 17 bar / 236°C

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Proven Performance: (for ULDI & ULSW)
Control can be up to ± 1% RH, if sensing location, sensor quality and temperature control are in good condition.

Capacity Range: (for ULD & ULSW)
From 2.68 to 268 LPH (liter per hour) for each unit.

Four Over-Heat Protections:
(for both models)
The unit provides four over-heat protections:

- Make-Up Water Float Valve – control water levels.

Make-Up Water Float Valve

- Ball Float / Low Water Switch – shall de-energize the humidifier when low water occurs and automatically re-energize when water level reaches factory-set level.

Ball Float / Low Water Switch

- PT-100 Thermosensor – displays generated temperature; shall temporarily cutoff power when vapor chamber temperature is over-heated and automatically resume power if chamber temperature is down below set-point temperature.

PT-100 Thermosensor

- **Bimetal Temperature Protection Switch** –This services as the final protection for over-heating. When vapor chamber temperature is higher than factory-set temperature of 110^{O}C, shall shut down the humidifier and require operator to make an inspection. Also need manually turn on the power to re-energize the humidifier.

Bimetal Temperature Protection Switch

In sum, these four protections are designed in a way to minimize the damages caused by overheat and hence to save a lot of money from replacing and downtime for customers.

Make-Up Water float valve:
(for ULDI & ULSW)

- Easy to operate
- Adjustable water level
- Withstand high temperature
- TFE seat, 100% tight-close and leaking - proof
- Auto refill
- Made of stainless steel
- Patented.

Chamber Cover Switch: (for ULDI & ULSW)
Holds the power off temporarily when the cover is not properly closed, preventing from electric shock and burn. Shall automatically resume the power back when cover closed.

Chamber Cover Switch

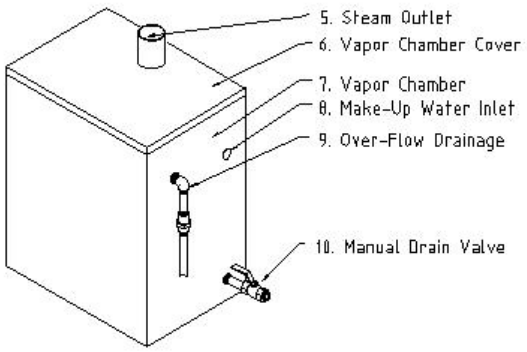
Heating Elements: (for ULDI & ULSW)

- Low watt density ensures heating element life for many seasons.
- In the unlikely event of an element burnout, heating elements can be removed easily with a small wrench.
- The heater is made of INCOLOY, is excellent for DI/RO water (also adaptable to above 18MΩ pure water) heating system and corrosion-proof.
- Can bear high current and voltage.

Heating Elements

Vapor Chamber: (for ULDI & ULSW)

- Inner cabinet is made of stainless steel and seamed with same quality welding.
- Outer cabinet is made of zinc plate and with high temperature sponge insulation, preventing from possible heat loss and condensation.



Vapor Chamber

Earth Leakage Breaker: (for ULDI & ULSW)

This unique breaker is with multiple functions as follows:

- Electric-Leakage breaker
- Over-Current breaker
- Short-Circuit breaker

Earth Leakage Breaker

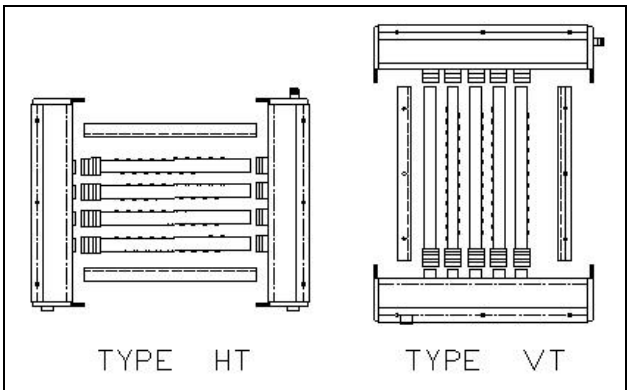
Two-Year Limited Warranty: (for ULDI & ULSW)

Best A/V ULDI or ULSW humidifier warrants to the original user that its products will be free from defects in materials and workmanship for a period of two years after delivery.

Dispersion Panel (optional): (for ULDI & ULSW)

In order to obtain high efficiency in dispersing of steam, equip the unique Best A/V Final-Absorb or Quick-Absorb dispersion tube panel is highly recommended.

- Final-Absorb is a rapid and drip-free, capable of installed within half meter upstream of fans, coils and similar devices, requiring short distance of steam absorption - less than 70cm, and made of stainless steel steam dispersion panel. It's a total solution for all steam absorption problems and especially suitable for tight space humidification applications. See detailed description on Final-Absorb section of this catalog.



Final-Absorb

- Quick-Absorb is an economic and ideal steam dispersion tube panel for limited absorption distance and middle capacity system. It is also made of stainless steel, a rapid and drip-free steam dispersion panel. Refer to the details described in quick-Absorb section of this catalog.

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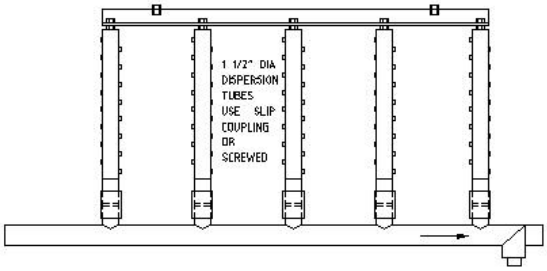
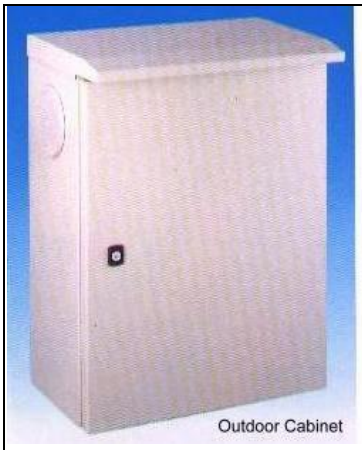
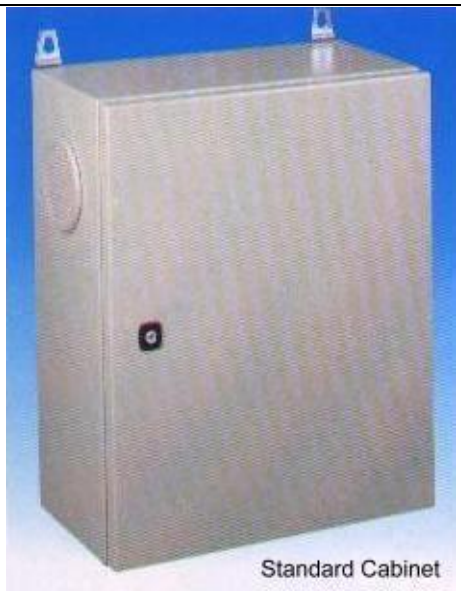


Quick-Absorb



Rain-Resistance Hood
for Outdoor Cabinet



Optional features: (for ULDI & ULSW)

- Weather cover for outdoor mounting
- Nema-4 control cabinet (water-proof & dust-proof)
- 10" black-white LCD display monitor
- 6" TFT, STN color LCD display monitor
- 10"TFT, STN color LCD display monitor
- Air Flow Proving Switch
- Temperature sensor
- ± 2% RH humidity transmitter
- Electric High Limited Duct Humidistat
- Control cabinet door lock with key
- Control cabinet electric door interlock switch
- 304 S.S. Control cabinet
- 316 S.S. Make-Up water Solenoid Valve
- RS 485 or 422 transducer
- Out-door control cabinet
- Volts gauge
- Amps gauge

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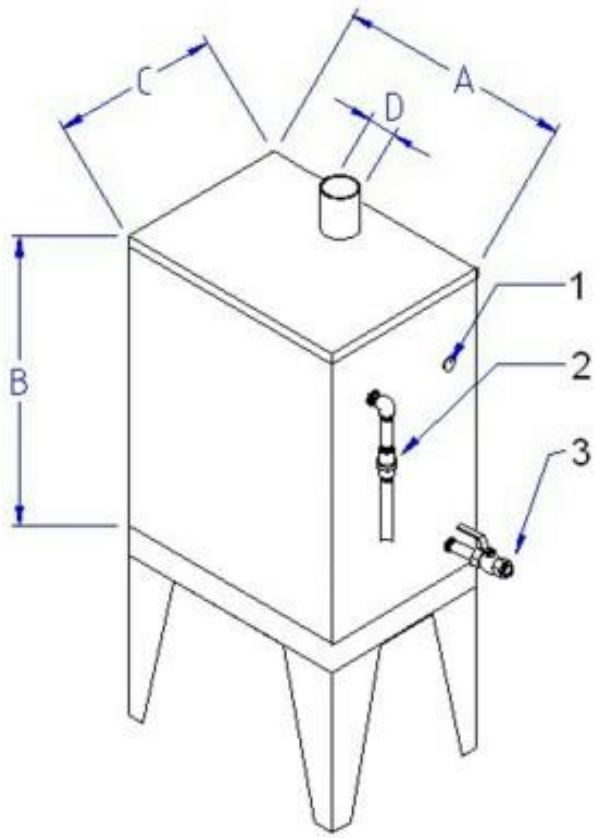
DIMENSIONS for VAPOR CHAMBER



UNIT: mm

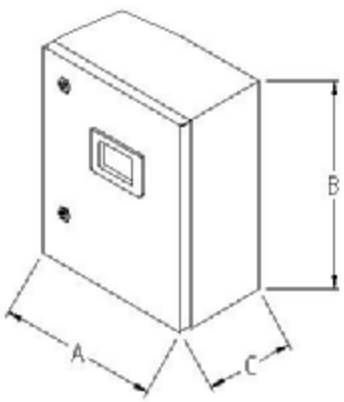
MODEL	A	B	C	D
ULDI / ULSW XXX-1	535	900	435	38
ULDI / ULSW XXX-2	535	900	435	50
ULDI / ULSW XXX-3	535	900	535	76.3
ULDI / ULSW XXX-4	535	900	535	76.3
ULDI / ULSW XXX-5	675	900	535	76.3
ULDI / ULSW XXX-6	675	900	635	76.3x2
ULDI / ULSW XXX-7	675	900	635	76.3x2
ULDI / ULSW XXX-8	675	900	635	76.3x2

1 : make-up water inlet 3/8” FPT

2 : over-flow drain 3/4” FPT

3 : manual drain 3/4” FPT

DIMENSIONS for IP65 / Nema 4 Enclosure CONTROL CABINET



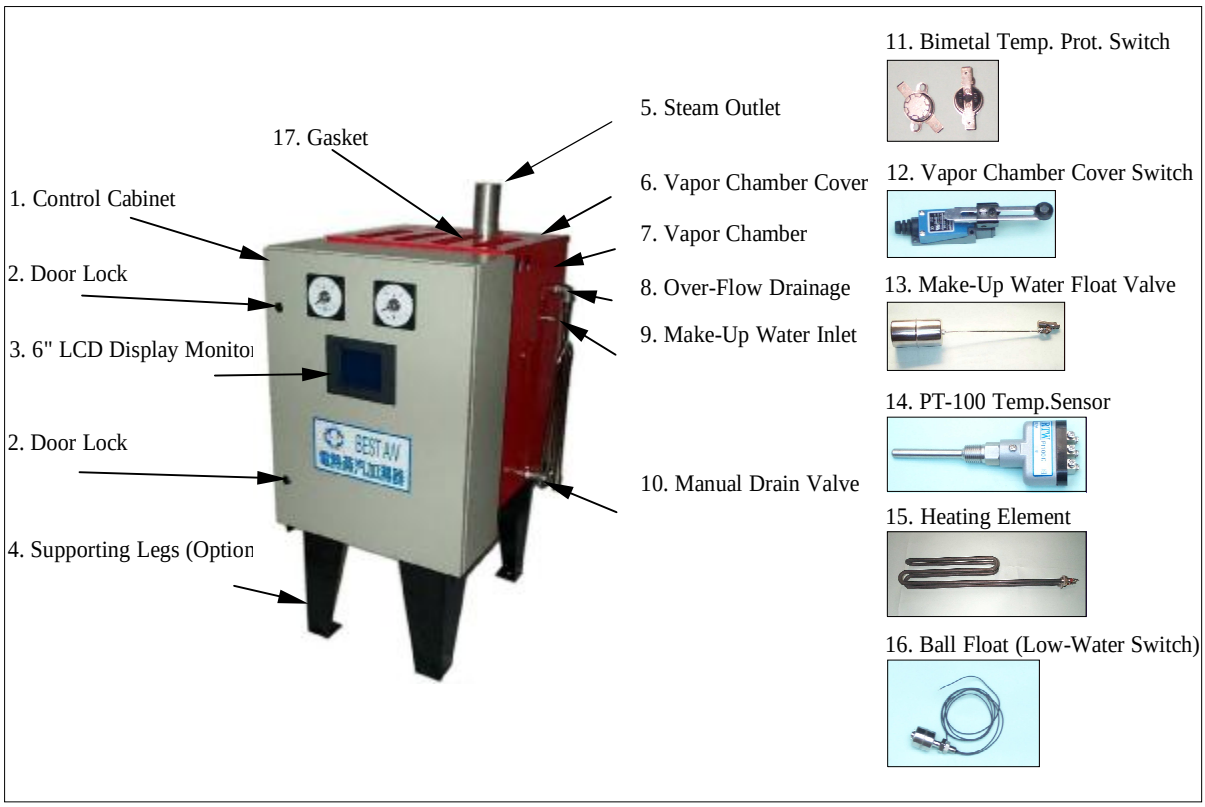
MODEL	A	B	C
ULDI / ULSW XXX-1	500	700	250
ULDI / ULSW XXX-2	600	800	250
ULDI / ULSW XXX-3	600	800	250
ULDI / ULSW XXX-4	800	1000	250
ULDI / ULSW XXX-5	800	1000	250
ULDI / ULSW XXX-6	800	1350	250
ULDI / ULSW XXX-7	1000	1600	500
ULDI / ULSW XXX-8	1000	1600	500
ULDI / ULSW XXX-9 ULDI / ULSW XXX-10	1000	1800	500
ULDI / ULSW XXX-16	1000	2000	600
ULDI / ULSW XXX-17 & UP	Consult Factory		

COMPONENTS AND MATERIALS:

Materials

No.	PART	MATERIAL
1	Control Cabinet	Steel with Powder painting
2	Door Lock	Plastic
3	6" LCD Display Monitor	
4	Supporting Legs (optional)	Iron with black painting
5	Steam Outlet	Stainless Steel 304
6	Vapor Chamber Cover	Inner cover - Stainless Steel 316L Outer cover - Steel with red painting
7	Vapor Chamber	Inner cabinet - Stainless Steel 316L Outer cabinet - Steel with red painting
8	Over-Flow Drainage	Stainless Steel 304
9	Make-Up Water Inlet	Stainless Steel 304
10	Manual Drain Valve	Stainless Steel 304 & Steel & Plastic
11	Bimetal Temperature Protection Switch	Metal And Heat-Proof Plastic
12	Vapor Chamber Cover Switch	AG Metal Alloy & high temperature Plastic
13	Make-Up Water Float Valve	Stainless Steel 304 & high temperature PFE
14	PT-100 Temperature Sensor	Stainless Steel 304 & Steel & Plastic
15	Heating Element	INCOLOY
16	Ball Float / Low-Water Switch	Stainless Steel 304
17	Gasket	Silicon

Components:



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ULDI / ULSW Ultra-Steamer Steam Humidifier

Mechanical Specifications and Capacities Data for each Unit / Chamber

Model Number		Steam Capacity (Kg/Hr)	Heater (Qty)	SCR (Qty)	Unit of Steam Generator	Current Draw (Amps) Three-Phase			KW
						220V	380V	480V	
ULDI or ULSW	**12-1**	16	3	1	1	32	18	14.4	12
	16-1	21.4	3	1	1	42	24	19.2	16
	21-1	28	3	1	1		32	25.3	21
	25-1	33.5	3	1	1		38	30.1	25
ULDI or ULSW	**24-2**	32	6	1	1	63	36	28.9	24
	32-2	43	6	1	1	84	49	38.5	32
	42-2	56	6	1	1		64	50.5	42
	50-2	67	6	1	1		76	60.1	50
ULDI or ULSW	**36-3**	48	9	1	1	94	55	43.3	36
	48-3	64.4	9	1	1	126	73	57.7	48
	63-3	85	9	1	1		96	75.8	63
	75-3	100.6	9	1	1		114	90.2	75
ULDI or ULSW	**64-4**	86	12	1	1	168	97	77.0	64
	84-4	113	12	1	1		128	101.0	84
	100-4	134	12	1	1		152	120.3	100
ULDI or ULSW	**125-5**	167.5	15	1	1		190	150	125
	150-6	201	18	1	1		228	180.5	150
ULDI or ULSW	**175-7**	234.5	21	1	1		266	210	175
	200-8	268	24	1	1		304	241	200
ULDI or ULSW	**300-12**	402	36	1	2		456	361	300
	400-16	536	48	1	2		608	482	400
	600-24	804	72	1	3		912	722	600
	800-32	1072	96	1	4		1216	963	800

- Max. Load: 24 heaters each Chamber, any capacities within the range can be eas ily changed and selected.
- When ordering ULDI-4,5 or ULSW-4,5, need to equip one-Ampere Gauge; and when ordering ULDI-6,7,8 or ULSW-6,7,8, need to equip both Ampere and Voltage Gauge.
- Three-Phase Power Supply Connection. All heater loads are delta wired.
- Kilogram of steam per hour (from 10℃ water to 100℃ saturated steam).
- Water pressure must be between 2.5~3.5 kg/cm^2.

Capacity Notes:

- Approximately 90 kcal are required to raise the temperature of one kilo gram of water from 10 ℃ to 100℃.
  And required an additional 539 kcal to change one kilogram of water to steam vapor.
- Equipped with an addition of 25mm rigid foil faced fiberglass insulation on all exterior surfaces of the vapor chamber (except the upper side), ensuring humidifier's efficiency and saving energy costs from loss of heat.
- To improve condensation steam loss from hoses and tubes, applying following guidelines:
  - Ø Vapor hose: 0.02 kg/m/hr
  - Ø Insulated pipe: 0.0067 kg/m/hr
  - Ø Dispersion tubes: 0.067 kg/m/hr

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OPERATION

Followings are principles of operation:

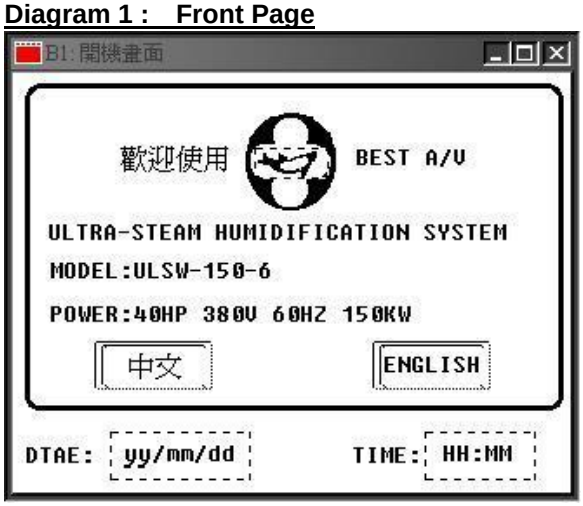
- Make-up water enters the stainless steel vapor chamber via the automatically fill and close make-up water float valve. Notes: the Min. water pressure is 2kg/hr and the Max. is 3.5kg/hr.
- On a call for humidifying, heating up the heater elements to boiling the water and producing vapor for humidification.
- The steam travels through the vapor hose into the dispersion tube panel or air handler or the duct tube and then disperses into the space/air stream.
- The steam condensation cling onto the inside wall of tubes/hose and flow back to humidifier and/or draining system.

Easy-Logic PLC Operation

Following diagrams demonstrate the operating steps of ULDI/ULSW control cabinet:

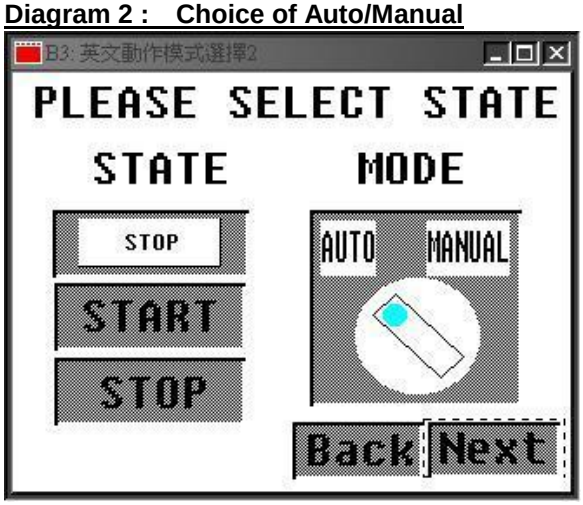
- Choice of using Chinese or English version for operation

Diagram 1 : Front Page



- Choice of Manual or Auto operation

Diagram 2 : Choice of Auto/Manual



- Auto operation: controlled by computer center system and will override sensor's control
- Manual operation: manually setting up the % control (linear proportional control from 0-100%, and with a min. of 1% increasing or decreasing)
- When in auto control: the computer center system automatically sets up the required power output %.
- When in manual control: press directly on the digital figures display area, then shall pop up the keypad panel (see Diagram 4) for manually enter desired power output %.
- When press on the upper-left picture of fan and boiling water (see Diagram 5) shall pop up a screen of present operation status for inspection / reference. (See Diagram 6)

Diagram 3 : Operating Status

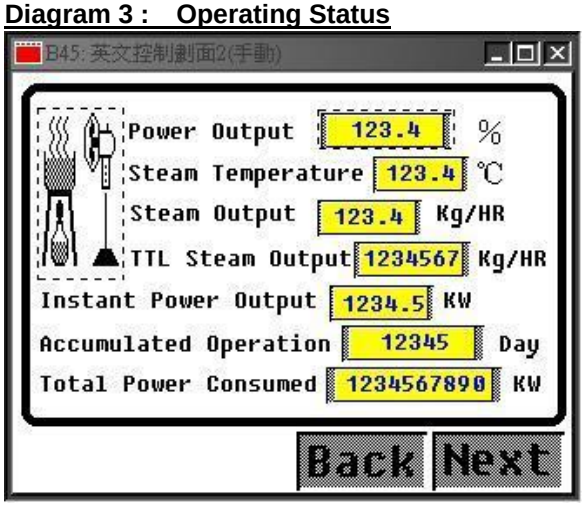


Diagram 4 : Key-Pad

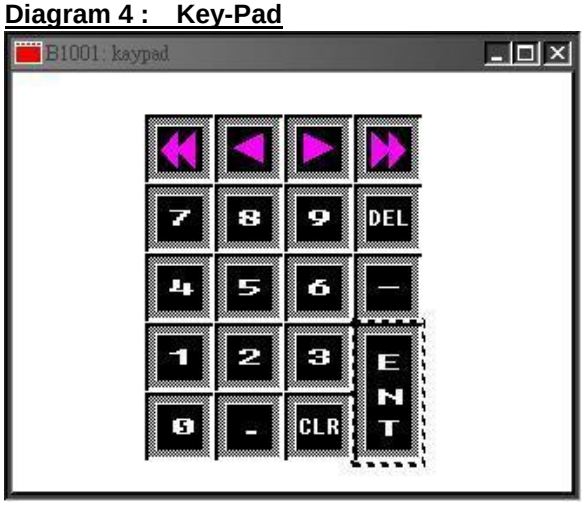


Diagram 5 : Button for Review Equipment Working Status

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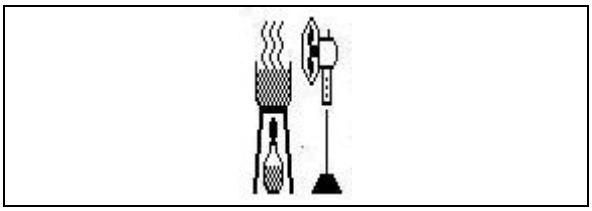
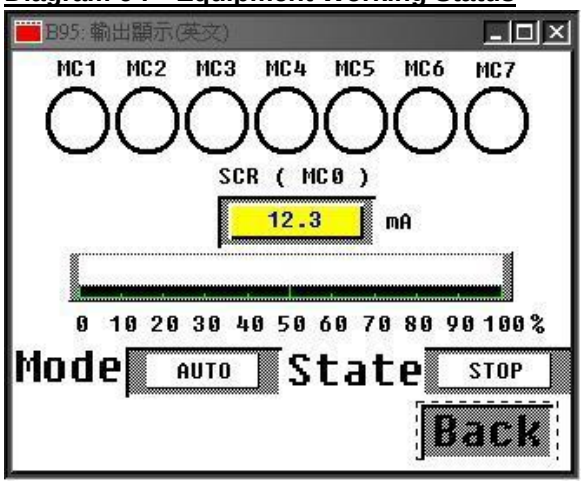


Diagram 6 : Equipment Working Status



- Self-diagnosis system: whenever on-line of service, the upper-right screen automatically showing "Normal" when humidifier is working properly and showing "Error" when have problem/s. In the event of showing "Error", press directly onto "Error" lettering, and a faults read-out screen shall pop up. (see diagram 7)

  When screen showing:

  - Ø Low-Water: need to check on supply water, low water switch, and float valve
  - Ø Cover Unclosed: need to check on the vapor chamber cover and cover switch
  - Ø Over-Heat: need to check on supply water and float valve
  - Ø PLC Error: PLC programming error, need to call local agent for PLC software checking.
  - Ø I/O Error: PLC programming error, need to call local agent for PLC software checking.

Diagram 7 : (for ULDI) Fault Read-out Screen

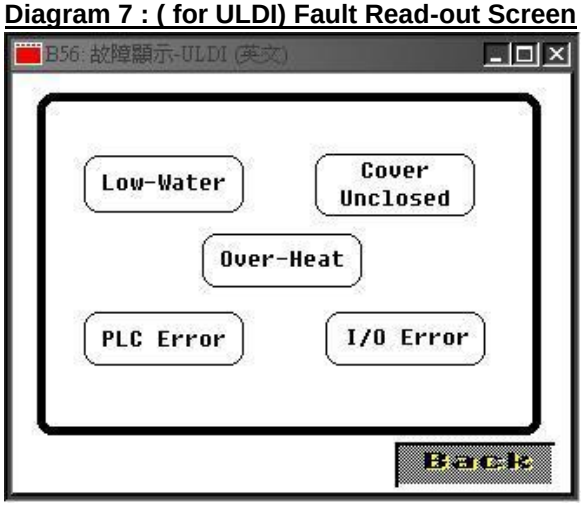
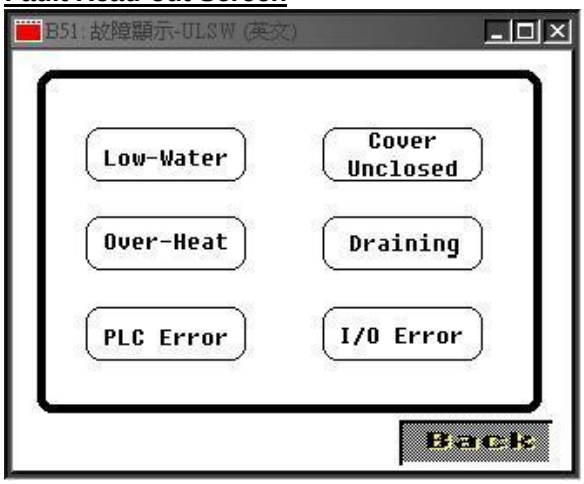


Diagram 7 : (for ULSW)
Fault Read-out Screen



- When “AUTO CHECK” screen show up, (see Diagram 8) if press "Data Reset" button on the lower-right screen, then below listed records/data in Diagram 3 shall be deleted after reconfirmation on the following screen (see Diagram 9), which requires a double-verify on reset process. This is to preventing in the event of mis-pressing "Reset" button and servicing as a safety control process.
  - Ø TTL Steam Output in Kg/Hr
  - Ø Instant Power Output in KW
  - Ø Accumulated Operation in Day
  - Ø Total Power Consumed in KW

Diagram 8 : Auto Checking & Resetting

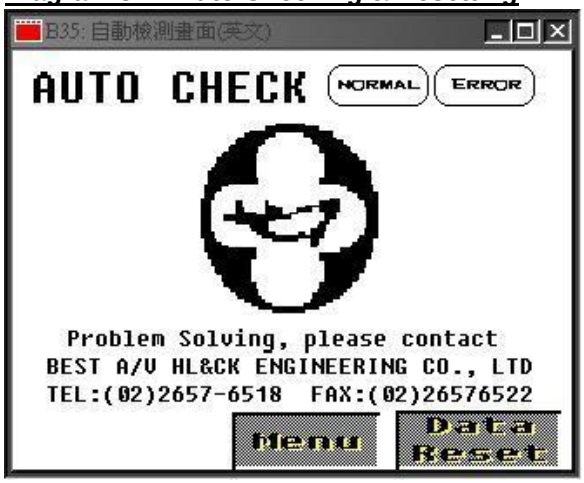


Diagram 9 : Resetting

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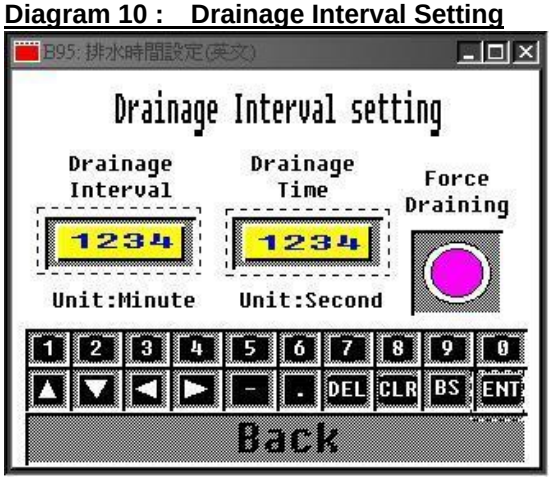
- Auto-Drainage setting, **for ULSW only**. When "Drainage Interval Setting" screen shows up (see Diagram 10).
  - Ø Key in the draining interval time required in minute.
  - Ø Key in the draining time required in second.
  - Ø Whenever draining is needed, just press "Force-Draining" button.

Diagram 10 : Drainage Interval Setting



INSTALLATION

Followings are principles of installation:

- Only qualified personnel should perform all installation procedures.
- Leaving enough space for safety operating, installing, repairing, and maintaining.
- Highly recommend to having a short distance between the unit and the dispersion tube panel.
- When combining different capacity of humidifier should use proper size of draining piping or valves to ensuring a sound draining system.
- Access to electric source, supply water, and sanitary waste for draining system.
- Drainage piping material: must use metal piping to withstand the high temperature of condensate.
- Make-Up water pressure: must between 2.5 ~ 3.5 Kg/cm^2G.
- Make-Up water inlet: must have at least 30cm stainless steel piping or high temperature piping (at least should stand 100^OC) connected into vapor chamber's make-up water inlet. Do not use PVC piping at this section, since the high heat generated from vapor chamber could damage the PVC piping and cause water leakage.

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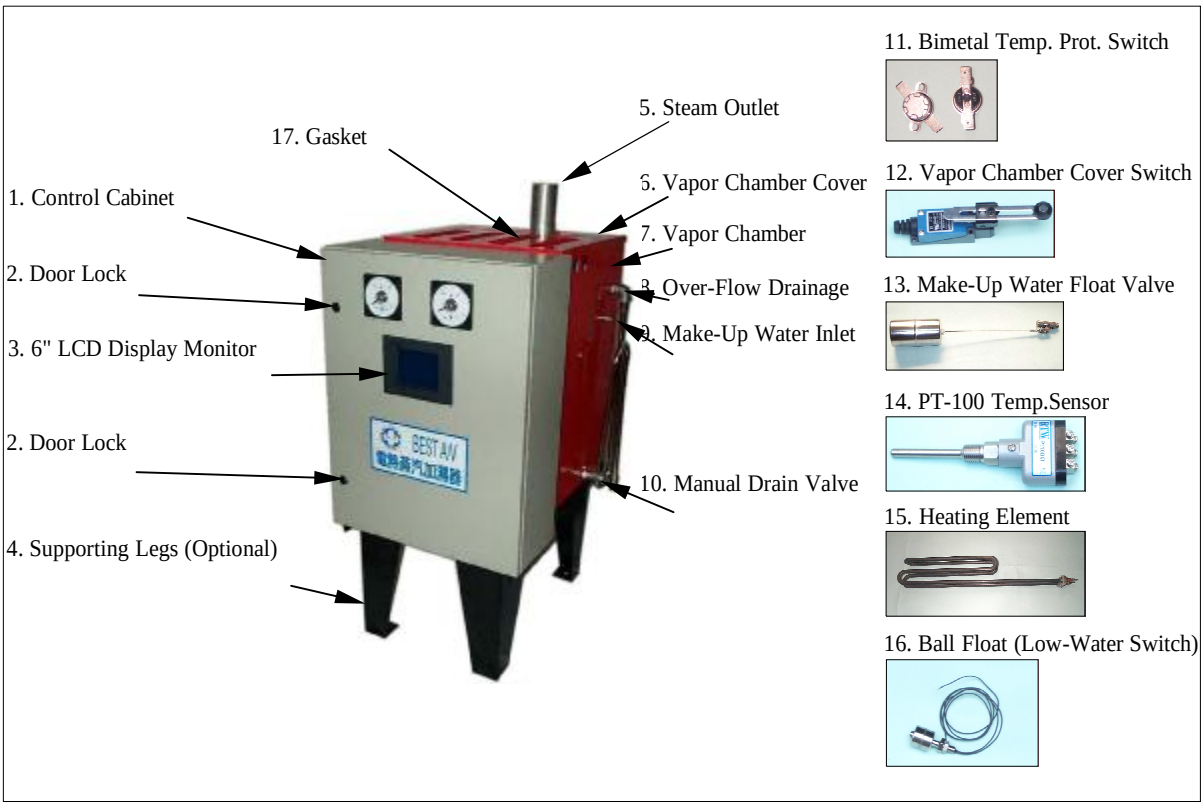
MAINTENANCE:



A. #15 Heating Elements Replacement

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover and use a 6mm Hex-wrench to unscrew #5 the steam outlet.
3. with a short screwdriver (for + shape and less then 10cm height) to unscrew the partition plate (inside of the vapor chamber).
4. use a 8mm wrench or sleeve to remove the damaged terminal/s of heating element/s.
5. use a 23mm wrench or sleeve to remove the damaged heating element/s and replaced with a new & good one/s.

B. #13 Make-Up Water Float Valve Replacement

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover and use a 6mm Hex-wrench to unscrew #5 the steam outlet.
3. use a 21mm wrench to remove and replace the make-up water float valve.

C. #16 Ball Float (Low-Water Switch) Replacement

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover.
3. use a 22mm wrench to replace #16 ball float.

D. #11 Bimetal Temperature Protection Switch

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover.
3. use a + shape screwdriver to unscrew and replace a new one.

E. #12 Vapor Chamber Cover Switch

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover.
3. use a + shape screwdriver to unscrew and replace a new one.

F. #14 PT-100 Temperature Sensor

1. turn off the power; must utilize the voltmeter to make sure the power is shutoff.
2. remove #6 vapor chamber cover.
3. use a 14mm wrench to replace a new one.

TROUBLE SHOOTING

Operation Failure	l Checking main power	l Make sure it is on
	l Checking control cabinet's power	l Make sure it is on also
	l Checking fuse of control cabinet	l Replacing with 0.5A fuse, if not in good condition.
	l Checking #R0 relay	l Replacing a new one, if not functioning.
No images on the screen	l Checking monitor's power	l Make sure it is connected properly.
	l Checking SCR's LED light	l When LED light is on: make sure the wire is fastened. l When LED light is off: replace a new AC/DC converter.
	l Checking monitor's wiring to PLC	l Make sure all wirings are fastened tightly. l Replacing wirings, if not in good condition.
Touch-Screen Failure	l Checking PLC status	l Make sure PLC is set at "RUN" l If already at "RUN" status: program error, call local agent for program renew.
	l Checking monitor's wiring to PLC	l Make sure all wirings are fastened tightly. l Replacing wirings, if not in good condition.
Control Relay Failure	l Checking operating status, refer to Diagram 2.	l Make sure it is at "START" state.
	l When in "AUTO" status	l Make sure the supply signal is correct.
	l When in "MANUAL" status	l Must key in setting figure at "Power Output %" column. Refer to Diagram 3.
Heater Failure	l Checking Control Relay	l Make sure it is functioning.
	l Checking Heater	l Make sure it does function.
Low Water	l Checking Supply Water	l Make sure make-up water pressure is between 2.5~3.5kg/cm^{2}G
	l Checking Low-Water Switch	l Make sure it does function. Replace a new one if it fails.
	l Checking Float Ball	l Make sure it does function. Replace a new ball if it fails.
Cover unclosed	l Checking Cover Switch	l Make sure it functions, replacing a new one when it doesn't.
	l Checking vapor chamber's Cover	l Make sure it is properly closed
Over-Heat	l Checking Make-Up Water	l Make sure make-up water pressure is between 2.5~3.5kg/cm^{2}G
	l Checking Float Valve	l Make sure water level control is functioning well. Replace a new one if float valve fails.
	l Checking Low-Water Switch	l Make sure it does function. Replace a new ball if it fails.
	l Checking Bi-mental Temperature Protection Switch	l Replace a new one, if it doesn't function.
	l Checking PT100 Thermosensor	l Replace a new one, if it doesn't function.
	l Checking PLC Controller	l When PLC in "Error" status, call local agent for program renew.
	l Checking "Steam Temperature", refer to Diagram 3, if over 200^{O}C	l Replace PLC controller.
PLC Error	l Checking the program	l Renew PLC program
I/O Error	l Checking the program	l Renew PLC program

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How to specify ULDI (Ultra-Steamer Steam Humidifiers)

General Description:

Steam humidifiers for electrical modulating control: shall consist of the steam generator and the steam distribution system, suitable for the particular air humidification task; and the involved steam distributor pipe shall be installed in air handling unit uniformly.

1. Humidifier shall be of the self-contained, electronically controlled design. Interface points with plant distributed control system (DCS) shall be provided.
2. Humidifier shall generate steam from de-ionized water, without water treatment.
3. Humidifier shall be modulating proportional control to provide 0 to 100% capacity.
4. The steam dispersion panel shall be 304 stainless steel and with non-metallic nozzle.
5. Vapor chamber shall be 316L stainless steel.
6. Single Point Electrical Connection shall be a cut-off NFB for electric-leakage, over-current, and short-circuit.
7. Display & control shall be one-touch 6” LCD Display Monitor. Can easily view and set-up the operated temperature, output power, and steam capacity.
8. Heater material shall be INCOLOY.
9. Control signal: 4-20mA or 0-10V.
10. High tensile steel cords and EPDM shall cover the steam hose, and rating at about 250psi (17 bar) saturated steam.
11. The manufacturer shall be Best A/V.

Brief Description for BEST A/V Humidification System:

Best A/V Ultra-Steamer steam (ULDI) generators are designed to produce clean steam with clean electric energy source for use. The model ULDI is a long-lasting and trouble-free humidification system and operated at minimum cost. This is an industry-of-the-art product with substantial advantages over other electric humidifiers on the market.

The Best A/V FINAL-ABSORB steam humidifier is designed to achieve a rapid, thorough, and drip-free humidification. It is an ideal and trouble-free steam dispersion tube panel for tight space and sensitive environments. Also is allowing installed within half meter from devices in upstream and less than 700mm from devices in downstream. And with stainless steel construction and most fittings ensure a long-life span and a minimal or no maintenance.

The BEST A/V QUICK-ABSORB steam humidifier is designed to achieve a rapid, thorough, and drip-free humidification. It is an economic and ideal steam dispersion tube panel for limited absorption distance and middle capacity system. Also allowing installed within few inches away from devices in upstream and about 2-4 feet from devices in downstream. And with stainless steel construction and most fittings ensure a long-life span and a minimal or no maintenance.