



**neptronic®**

# Steam Humidifier

SK300 Series

Installation Instructions and User Manual



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# Exploded View and Bill of Material

## Exploded View

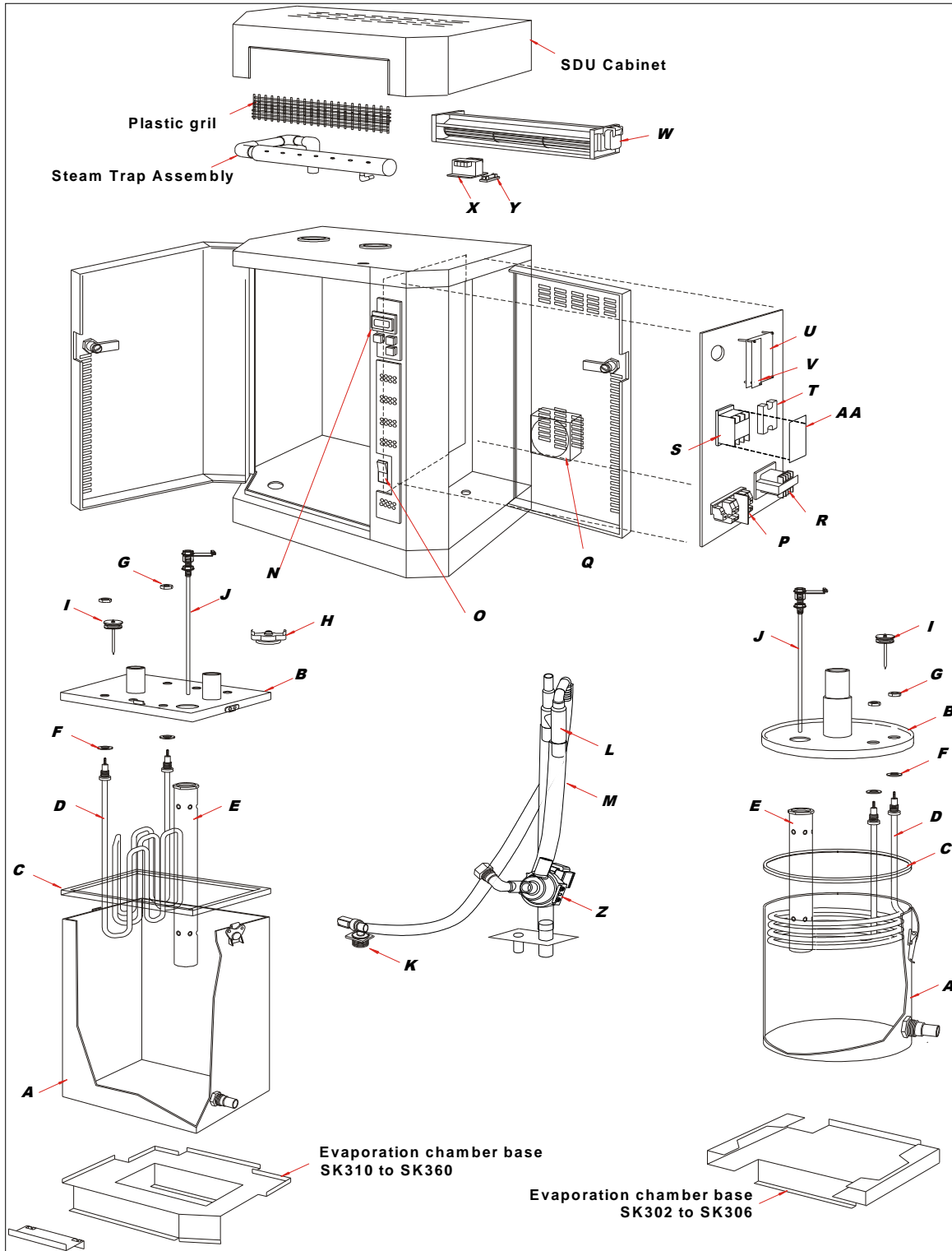


Illustration 43 - Exploded View of Humidifier

## Bill of Material

Table 10 - Model Description and Part Numbers

Item	Description	Model	Part number
A	Container of evaporation chamber	SK302 to 306	SW CONTSMA-ASSY
		SK310 to SK330	SW CONTMED-ASSY
		SK320 L, SK340 to SK360	SW CONTLAR-ASSY
B	Cover of evaporation chamber	SK302 to 306 (1 phase)	SP 4018-M
		SK304 to 306 (3 phases)	SP 4019-M
		SK310 & SK314	SP 4183A
		SK316 to SK330	SP 4183B
		SK320 L & SK340	SP 4186
		SK360	SP 4185A
C	Evaporation chamber gasket	SK302 to 306	SP 1008
		SK310 to SK330	SP 1021
		SK320 L, SK340 to SK360	SP 1022
D	Heater element	See Table 11 - Model, Heater Element, Transformer, and Voltage Description	
E	Level sensor chamber	SK302 to 306	SP 4196-M
		SK310/314/316/320/320 L/340	SP 4197-M
		SK330/350/360	SP 4198-M
F	Washer (elements)	SK302 to SK360	SP 1005
G	S/S hex. Jam nut (elements)	SK302 to SK360	SP 2330
H	High temperature switch (klixon)	SK302 to SK360	SP 3035
I	Foam sensor	SK302 to 306	SW FOAMSM-ASSY
		SK310/314/316/320/320 L/340	SW FOAMMED-ASSY
		SK330/350/360	SW FOAMLG-ASSY
J	Water level sensor	SK302 to 306	SW PROBSMR1
		SK310/314/316/320/320 L/340	SW PROBMDR1
		SK330/350/360	SW PROBLARR1
K	Water supply valve	SK302 to SK360	SP 6007
L	Fill and drain trap assembly	SK302 to 306	SW TRAPSMA-P
		SK310 to SK330	SW TRAPMED-P
		SK340 & SK360	SW TRAPLAR-P
M	Silicone tubing ½"	SK302 to SK360	SP 1023A
	Silicone tubing ¾"		SP 1023B
	PCV tubing ½"		SP 1027
N	Alphanumeric display	SK302 to SK360	SW SK300DISPL-ASSY
O	"AUTO/OFF/DRAIN" Rocker switch	SK302 to SK360	SW SKSWITCH-ASSY
P	Terminal block and high voltage connectors	SK302 to SK360	-
Q	Cooling fan	SK302 to SK360	SP 3007
R	Transformer	Refer to Table 11 - Model, Heater Element, Transformer, and Voltage Description	
S	Contactor	Refer to Table 11 - Model, Heater Element, Transformer, and Voltage Description	
T	Solid State Relay	50 A	SP 3102
		90 A	SP 3103
		125 A	SP 3105
U	Main Printed Circuit Board	SK302 to SK360	NW SK300MAIN-TEST
V	Modulating Printed Circuit Board	SK302 to SK360	NW SK300MODULSS
W	SDU fan	SDU I	SW FANSDU1-RET
		SDU II	SW FANSDU2-RET



Item	Description	Model	Part number
		SDU III	SP 3010
X	Transformer	Refer to Table 11 - Model, Heater Element, Transformer, and Voltage Description	
Y	Fuse inside SDU	SDU I and SDU 2	SP 5105
		SDU 3	SP 5106
Z	Drain pump	SK302 to SK360	SP G4101


Table 11 - Model, Heater Element, Transformer, and Voltage Description

Model	Voltage	D Heater element	R Transformer	S Contactor	X SDU Transformer
SK302	120V/1~	SW 5943	SP 3380	SP 3029	-
	240V/1~	SW 5932	SP 3310	SP 3029	SP 3312
	208V/1~	SW 5933	SP 3308	SP 3029	SP 3305
	480V/1~	SW 5934	SP 3321	SP 3029	SP 3329
	600V/1~	SW 5935	SP 3341	SP 3029	SP 3349
SK304	240V/1~	SW 5937	SP 3310	SP 3029	SP 3312
	208V/1~	SW 5940	SP3308	SP 3029	SP 3305
	208V/3~	SW 5924	SP3308	SP 3080	SP 3305
	480V/1~	SW 5941	SP 3321	SP 3029	SP 3329
	480V/3~	SW 5923	SP 3321	SP 3080	SP 3329
	600V/1~	SW 5942	SP 3341	SP 3029	SP 3349
	600V/3~	SW 5925	SP 3341	SP 3080	SP 3349
SK306	240V/1~	SW 5938	SP 3310	SP 3029	SP 3312
	208V/1~	SW 5943	SP3308	SP 3029	SP 3305
	208V/3~	SW 5933	SP3308	SP 3080	SP 3305
	480V/1~	SW 5944	SP 3321	SP 3029	SP 3329
	480V/3~	SW 5934	SP 3321	SP 3080	SP 3329
	600V/1~	SW 5945	SP 3341	SP 3029	SP 3349
	600V/3~	SW 5935	SP 3341	SP 3080	SP 3349
SK310	208V/3~	SW 5959	SP 3308	SP 3100	SP 3305
	480V/3~	SW 5958	SP 3321	SP 3080	SP 3329
	600V/3~	SW 5957	SP 3341	SP 3080	SP 3349
SK314	208V/3~	SW 5946	SP 3308	SP 3084	SP 3305
	480V/3~	SW 5947	SP 3321	SP 3080	SP 3329
	600V/3~	SW 5948	SP 3341	SP 3080	SP 3349
SK316	208V/3~	SW 5960	SP 3308	SP 3084	SP 3351
	600V/3~	SW 5958	SP 3341	SP 3100	SP 3351
SK320	480V/3~	SW 5950	SP 3321	SP 3100	SP 3352
	600V/3~	SW 5951	SP 3341	SP 3100	SP 3353
SK330	480V/3~	SW 5952	SP 3321	SP 3100	SP 3352
	600V/3~	SW 5939	SP 3341	SP 3100	SP 3353
SK320 L	208V/3~	SW 5959	SP 3381	SP 3084 (2x)	-
SK340	208V/3~	*	*	*	-
	480V/3~	SW 5950	SP 3321	SP 3100 (2x)	-
	600V/3~	SW 5951	SP 3341	SP 3100 (2x)	-
SK350	480V/3~	SW 5950 SW 5952	SP 3321	SP 3100 (2x)	-
	600V/3~	SW 5951 SW 5939	SP 3341	SP 3100 (2x)	-
SK360	480V/3~	SW 5952	SP 3321	SP 3100 (2x)	-
	600V/3~	SW 5939	SP 3341	SP 3100 (2x)	-

\* Available, please consult factory.

# Troubleshooting

## Humidifier does not operate (Power Off)

Indicator	Status	Display (blank)
Power	OFF	
Check	OFF	
Fill	OFF	
Steam	OFF	
Drain	OFF	

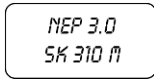
### Cause

- The humidifier is not powered.
- The low voltage fuse is open.
- The high-temperature switch is open.
- Wires harnesses inside the humidifier are not secured properly.

### Corrective Action

- Check for the main power supply and fuses.
- Check the transformer and the low voltage fuse.
- Check the high-temperature switch, the wire harnesses and the main PC board.

## Humidifier does not operate (Power On)

Indicator	Status	Display
Power	ON	
Check	OFF	
Fill	OFF	
Steam	OFF	
Drain	OFF	


### Cause

- The Rocker switch is at the OFF position.
- Wire harness from the LED display panel to the main PC board is not secured properly.

### Corrective Action

- Press the Rocker switch to the AUTO position.
- Check the white color wire harness.
- Press the RESET button on the main PC board.

### Humidifier does not produce steam (No Demand)

Indicator	Status	Display
Power	ON	
Check	OFF	
Fill	OFF	
Steam	OFF	
Drain	OFF	


**Cause**

- Modulating humidifier: no analog signal.
- On/Off humidifier: no demand from humidistat, or air flow is not detected by air pressure switch or high limit humidistat is open.
- Control wires are not properly secured to the terminal blocks.

**Corrective Action**

- Verify the setting of the humidistat.
- Check the fan operation.
- Check the operation of the high limit humidistat.
- Verify the connections of the wires to the control terminal blocks.

### Humidifier does not produce steam (Safety Open) Modulating Humidifiers only

Indicator	Status	Display
Power	ON	
Check	OFF	
Fill	OFF	
Steam	OFF	
Drain	OFF	

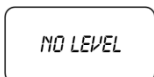
**Cause**

- Air flow is not detected by air pressure switch, or high limit humidistat is open.
- Control wires are not properly secured to the terminal blocks.

**Corrective Action**

- Check the fan operation.
- Check the operation of the high limit humidistat.
- Verify the wires to the control terminal blocks #1 & 2.

### No water inside the evaporation chamber or Humidifier does not stop draining

Indicator	Status	Display
Power	ON	
Check	ON	
Fill	ON	
Steam	OFF	
Drain	OFF	


**Cause**

- The humidifier is filling water but has not reached yet or does not reach the high limit of the water level sensor.
- The humidifier is not filling water.

**Corrective Action**

- Verify if the drain valve is open.
- Check if the shutoff valve on the water supply line is open.
- Verify the operation of the fill valve.
- Check that the fill valve strainer and the external strainer are not blocked.

### Humidifier is always on Foam cycle

Indicator	Status	Display
Power	ON	
Check	OFF	
Fill	ON	
Steam	OFF	
Drain	ON	


#### Cause

- Excessive foaming condition inside the evaporation chamber.
- Foaming sensor is grounded.

#### Corrective Action

- Verify the quality of the supply water.
- Verify if chemical products were used to clean the evaporation chamber during maintenance. Rinse the chamber properly with water.
- Check the setting of the Drain cycle. Reduce the time between Drain cycles.

### Humidifier is operating and the CHECK light is flashing

Indicator	Status	Display
Power	ON	
Check	BLINK	
Fill	OFF	
Steam	ON	
Drain	OFF	


#### Cause

- The running hours have exceeded the Service hours.

#### Corrective Action

- Service the evaporation chamber, see Service section.
- Reset the Running hours to cancel the blinking of the CHECK light.

### Humidifier is not operating and the CHECK light is ON

Indicator	Status	Display
Power	ON	
Check	ON	
Fill	OFF	
Steam	OFF	
Drain	OFF	

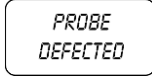
#### Cause

- The electronic temperature sensor inside the water level sensor had sensed abnormal temperature.
- The quick connector to the water level sensor was removed while the humidifier was operating.
- The brown wire connected to the top left corner of the main PC board is not properly secured.

#### Corrective Action

- Verify if the humidifier was operating below the standard water level and then replace the water level sensor, item J.
- If the connector is removed while power is still ON, press the TEST button on the main PC board until the Drain light is turned ON. Then press RESET once.
- Verify the connection of the brown wire to the main PC board.

### Humidifier is not operating and the CHECK light is ON

Indicator	Status	Display
Power	ON	
Check	ON	
Fill	OFF	
Steam	OFF	
Drain	OFF	


**Cause**

- The water level sensor is damaged.

**Corrective Action**

- Replace the water level sensor, item J.

### Humidifier does not drain and the CHECK light is ON

Indicator	Status	Display
Power	ON	
Check	ON	
Fill	OFF	
Steam	OFF	
Drain	OFF	


**Cause**

- During a Drain or Foaming cycle, the water level sensor has sensed that the water level has not decreased.

**Corrective Action**

- Verify that the drain pump, the fill and drain water pipe connection, the water level sensor chamber are not obstructed.

### Humidifier does not operate and display is blank

Indicator	Status	Display (blank)
Power	ON	
Check	OFF	
Fill	OFF	
Steam	OFF	
Drain	OFF	

**Cause**


The following components can be the cause of this problem: water level sensor (item J), main PC board (item U), modulating PC board (item V) or the LCD (item N).

**Corrective Action**

Call factory for troubleshooting instructions.



## Humidifier is producing steam and display is blank

Indicator	Status	Display (blank)
Power	ON	
Check	OFF	
Fill	OFF	
Steam	ON	
Drain	OFF	

**Cause**

- The potentiometer contrast is set at the lowest setting.
- The display ribbon cable is not connected properly.
- The LCD is defective.

**Corrective Action**

- Adjust the contrast of the display.
- Verify that the connections of the ribbon cable are properly secured and are on the right side (red line on cable).
- Replace the LCD, item N.

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