



neptronic®

Gas Fired Humidifier

SKG4-N Series

Installation Instructions and User Manual



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Exploded View and Bill of Material

General

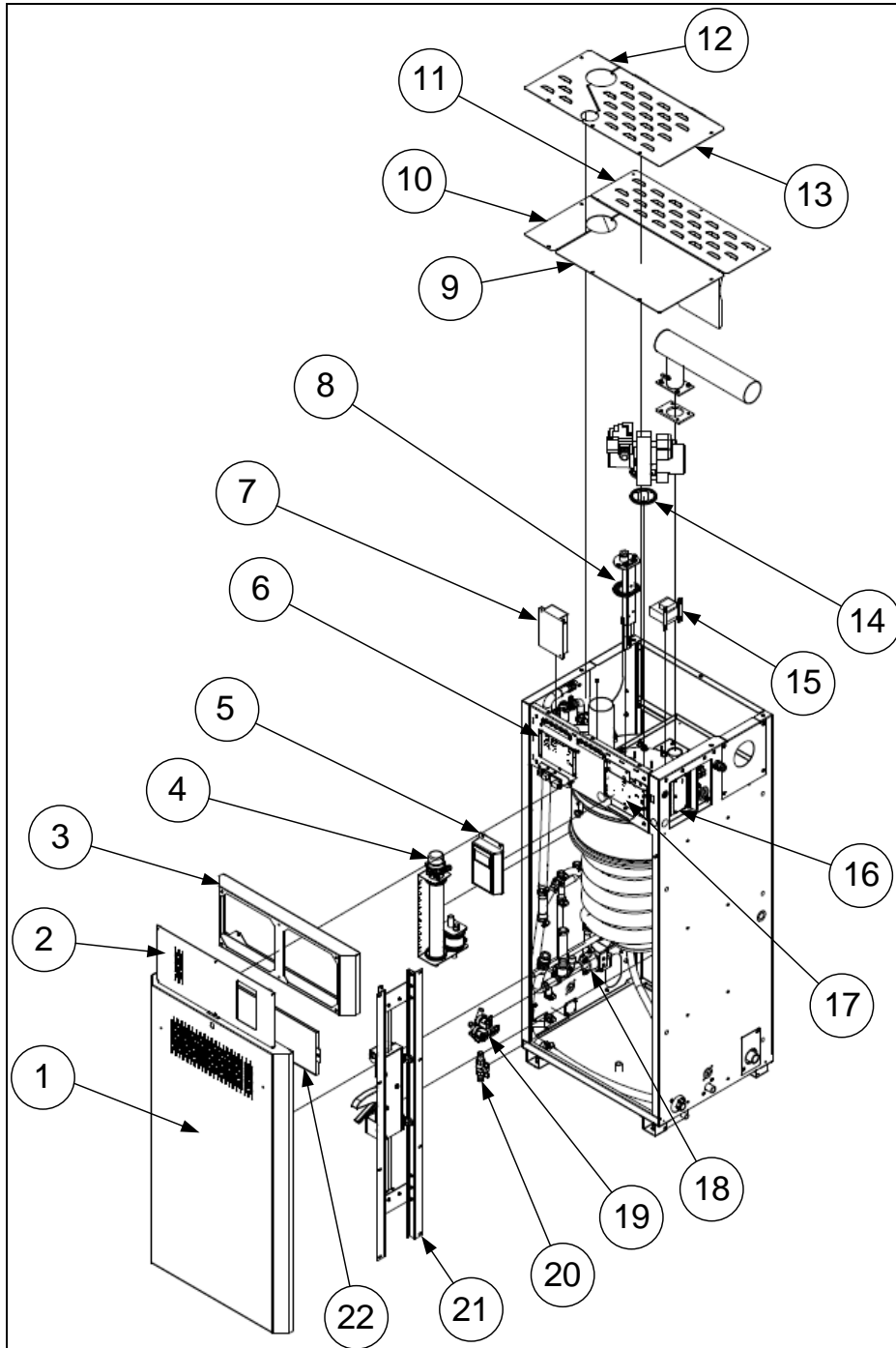


Illustration 53 - General Exploded View



Item	Description	Model	Part Number
1	Front door assembly	All models	SPG6005-1
2	Front panel	Master (1st) module	SPG6005-2
		Slave module(s)	SPG6005-5
3	Front panel box	All models	SPG6005-4
4	Water level sensor assembly	All models	SWSKG4WATLEVSSENS
5	Display	All models	SWSKG4DISPLAY-AS
6	Slave PCB	All indoor models	NWSKG4SLAVESS
		All outdoor models	NWSKG4SLAVEWSS
7	Ignition control	All models	SPG2001
8	Igniter holder gasket	All models	SPG2103
9	Top front right cover	All models	SPG6005-15
10	Top front left cover	All models	SPG6005-9
11	Top back cover	All models	SPG6005-10
12	Top front left cover (direct combustion air option)	All models	SPG6005-14
13	Top front right cover (direct combustion air option)	All models	SPG6005-16
14	Combustion blower gasket	All models	SPG2104
15	Transformer	All models - 120V	SP3380
		All models - 208V	SP3308
		All models - 240V	SP3310
16	Control PCB	All models	NWSKG4CONNECTSS
17	Main PCB	All indoor models	SWSKG4MAINSS
		All outdoor models	NWSKG4MAINWSS
18	Drain pump	All models	SPG4101
19	Fill valve	All models	SP6009
20	Drain valve	All indoor models	SP4233-59
		All outdoor models	SP6016
21	Lifting mechanism	All models	SWGLIFT-ASSY
22	Air filter	All models	SPG4203
	Air pressure switch	All models	SPG2123
	Ambient temperature sensor	All outdoor models	NP242010010

Evaporation Chamber Assembly

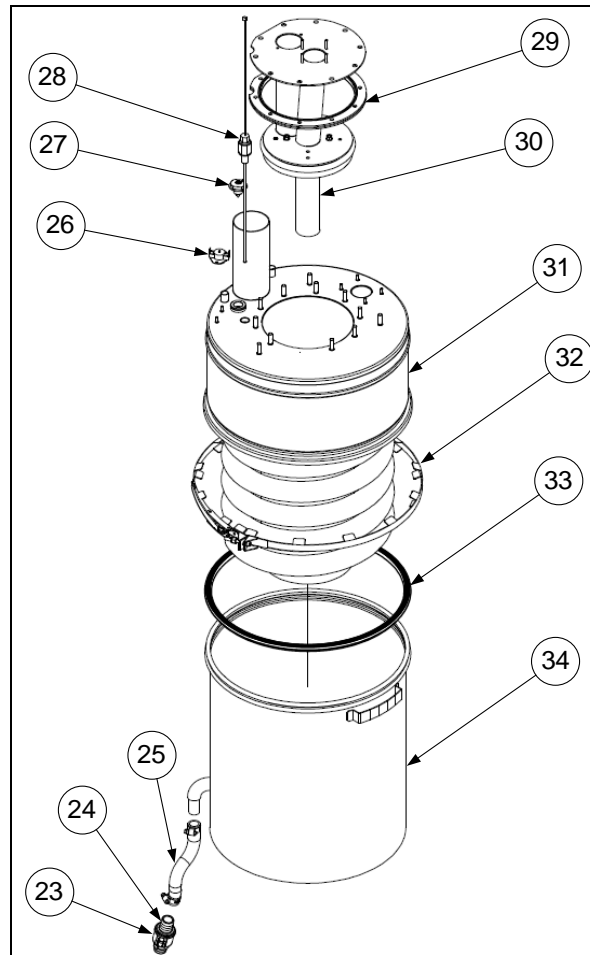


Illustration 54 - Evaporation Chamber Assembly Exploded View

Item	Description	Model	Part Number
23	Quick release drain connector (female)	All models	SP4233-11
24	Quick release drain connector (male)	All models	SP4233-12
25	Silicone hose	All models	SP1023B
26	High temperature limit switch	All models	SP3036
27	Foam sensor (AFEC)	All models	SWGAFECPROBE-ASS
28	Water temperature sensor	All models	SW G4WATTEMP-ASSY
29	Burner assembly gasket	All models	SPG2122
30	Burner assembly*	Module SKG100	SWSKG4BURN100
		Module SKG150/180	SWSKG4BURN150
		Module SKG200	SWSKG4BURN200
31	Heat exchanger*	Module SKG100/150	SWG4TANKCOVER175
		Module SKG180/200	SWG4TANKCOVER200
32	Band clamp	All models	SW GCLAMP-ASSY
33	Evaporation chamber gasket	All models	SWG2101
34	Evaporation chamber	All models	SPG3208



Note (*): Refer to the Multiple Module Composition section in order to obtain the appropriate module number for each SKG4 model.



Combustion Blower and Gas Valve Assembly

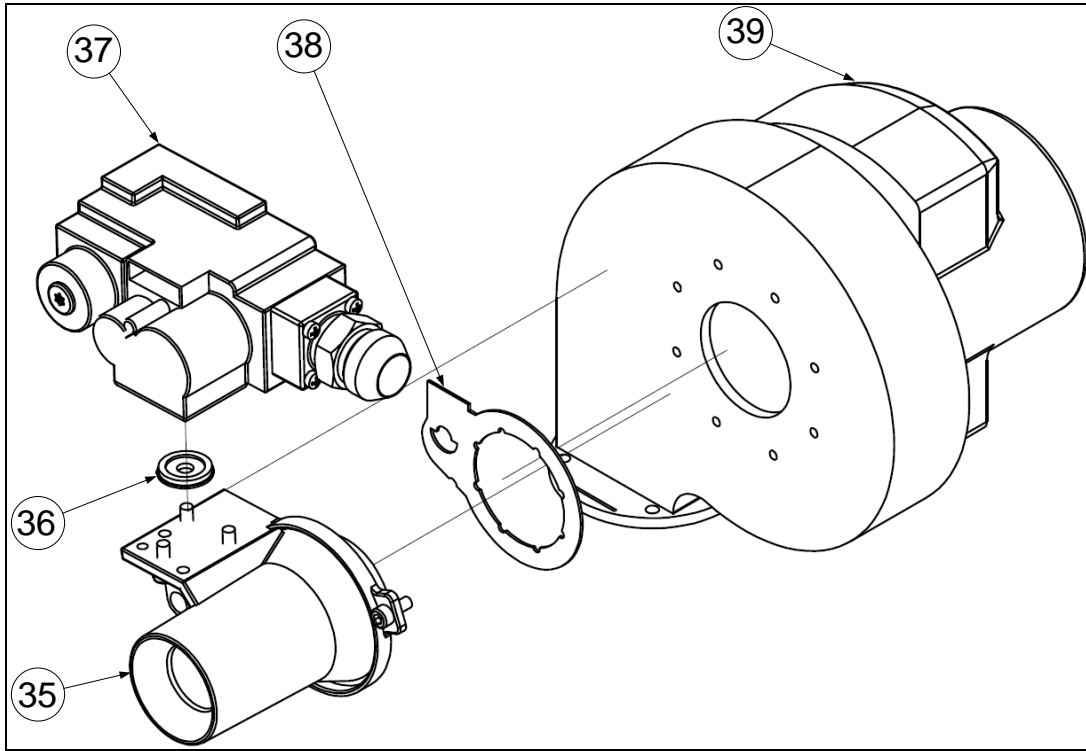


Illustration 55 - Combustion Blower and Gas Valve Assembly Exploded View

Item	Description	Model	Part Number
35	Venturi*	Module SKG100	SPG2011-03
		Module SKG150/180	SPG2011-01
		Module SKG200	SPG2011
36	Gas valve gasket	All models	SPG2008
37	Gas valve	All models	SPG2010
38	Venturi gasket	All models	SPG2116
39	Combustion blower	All models - 120V	SPG2017-120
		All models - 208V/240V	SPG2017-230



Note ()*: Refer to the Multiple Module Composition section in order to obtain the appropriate module number for each SKG4 model.

Igniter Assembly

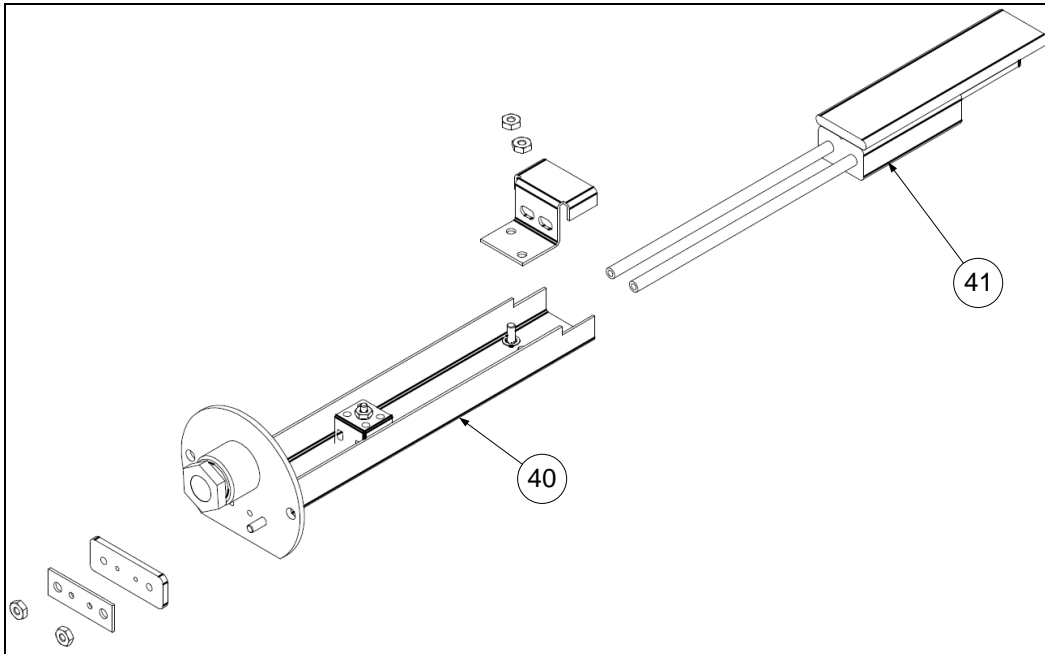


Illustration 56 - Igniter Assembly Exploded View

Item	Description	Model	Part Number
40	Igniter holder	All models	SWGIGNHOLD-H
41	Igniter	All models - 120V	SWGIGNITER-120
		All models - 208V/240V	SWGIGNITER-230

Internal Flue Pipe Assembly

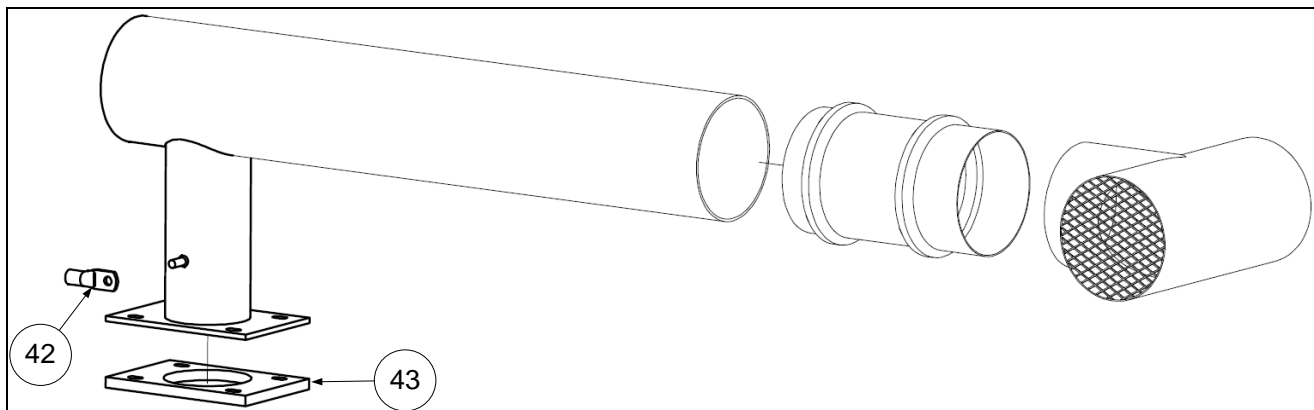


Illustration 57 - Internal Flue Pipe Assembly Exploded View

Item	Description	Model	Part Number
42	Flue temperature sensor	All models	SWG2210-ASSY
43	Flue pipe gasket	All models	SPG6008-5

Water Level Sensor Assembly (Item 4)

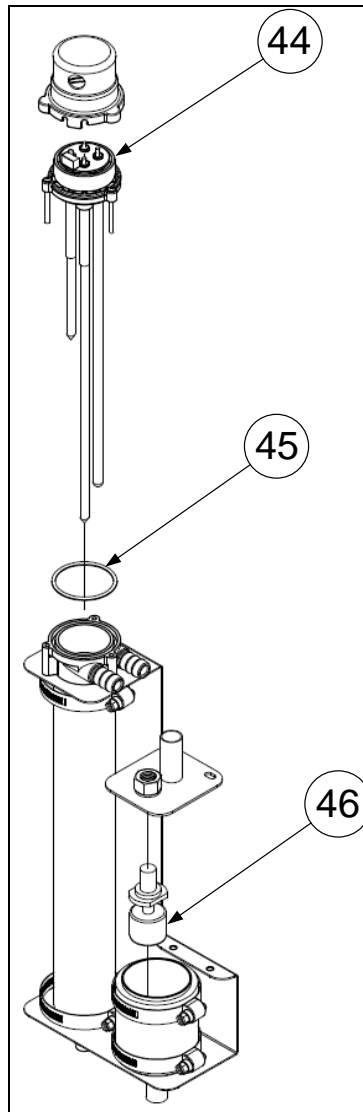


Illustration 58 - Water Level Assembly Exploded View

<i>Item</i>	<i>Description</i>	<i>Model</i>	<i>Part Number</i>
44	Water level sensor head assembly	All models	SWSK4WLTR2-HEAD
45	Water level sensor gasket	All models	SP4235-14
46	Float switch	All models	SP3600

Troubleshooting

Table 18 - Troubleshooting Guide

Problem	Possible Cause	Corrective Action
<i>Humidifier does not operate (Screen turned Off)</i>	Power is not being supplied to the humidifier.	Check the main power supply and fuses. Verify the circuit breaker.
	The low voltage fuse is open.	Check the transformer and the low voltage fuse. Verify that the low voltage circuit is complete.
	Wire harnesses inside the humidifier are not secured properly.	Check the wires harnesses and the main PC board. Verify that all connections have been made properly.
<i>Humidifier does not operate (Screen turned On, Status Display LED: Off)</i>	The humidifier is not powered on.	Verify that the Power button has been pressed and held for 3 seconds for correct activation.
<i>Humidifier does not produce steam (No demand)</i>	No analog signal detected.	Verify the setting of the control input.
	Air flow is not detected by air pressure switch.	Check the fan operation.
	High limit humidistat is open.	Check the operation of the high limit humidistat.
	Interlock contact is open.	Check the interlock contact.
	Control wires are not properly secured to the terminal blocks.	Verify the connections of the wires to the control terminal blocks.
<i>No water inside the evaporation chamber or Humidifier does not stop draining</i>	Humidifier is being filled with water but has not yet reached or does not reach the high limit of the water level sensor.	- Verify that the drain valve is open. - Check if the shutoff valve on the water supply line is open.
	Humidifier is not being filled with water.	- Verify the operation of the fill valve. - Check that the fill valve strainer and the external strainer are not blocked.
<i>Humidifier does not drain</i>	Drain valve is clogged.	Check the drain valve.
	During a drain or foaming cycle, the water level sensor has sensed that the water level has not decreased.	Verify that the drain pump, the fill and drain water pipe connections and the water level sensor chamber are not obstructed.
<i>Humidifier is always on Foam cycle (FoamSensor setting displays Foam)</i>	Excessive foaming condition inside the evaporation chamber.	- 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.
<i>Humidifier is operating and the Status Display LED is Red (ServiceDue setting displays On)</i>	The humidifier is due for servicing.	Service the humidifier (see Service section on page 70). Use Request settings in <i>Service</i> menu to reset counters (see page 56).
<i>Humidifier is not operating and the high temperature switch (klixon) is open</i>	The high temperature switch has sensed abnormal temperature.	Verify if the humidifier was operating below the standard water level. Replace water level sensor if necessary.
<i>Humidifier does not operate (Screen turned Off, Status Display LED: Blue)</i>	The following components can be the cause of this problem: water level sensor, PC board or LCD display.	Call factory for troubleshooting instructions.
<i>Humidifier is producing steam (Screen turned Off, Status Display LED: Blue)</i>	The display FFC cable is not connected properly.	Verify that the connections of the FFC cable are properly secured and are on the correct side.
	The LCD display is defective.	Replace the LCD display.
<i>There is an issue with the flue gas temperature sensor</i>	The PCB is not detecting the signal.	Check the electrical resistance value; it must be between 900Ω and 1100Ω. If the value is outside the range, adjust the value.
	The PCB is detecting an erroneous signal.	Replace the flue gas temperature sensor.

Problem	Possible Cause	Corrective Action
<i>Flue gas temperature is too high</i>	The water level is too low.	<ul style="list-style-type: none"> - Check if the shutoff valve on the water supply line is open. - Verify the connection between the water inlet and the evaporation chamber and ensure that it is secure. - Verify the water supply connection and ensure that it is attached properly. - Verify the operation of the fill valve.
	The water level sensor is defective.	Replace the water level sensor.
	The flue gas temperature sensor needs adjustment.	Check the reading during normal operation. If the temperature is higher than 392°F (200°C), adjust the flue gas temperature sensor.
	The flue gas temperature sensor is defective.	If after adjustment the flue gas temperature is still too high, replace the flue gas temperature sensor.
<i>Three unsuccessful burner ignitions have been made</i>	<u>An ignition lock-out (1 flash fault signal) occurred due to:</u>	
	High temperature switch	<ul style="list-style-type: none"> - Inspect the electrical wires connecting the gas control module and gas valve and ensure proper connection. - Replace the igniter.
	Defective igniter	
	<u>A weak flame (2 flash fault signal) has been detected due to:</u>	
	Incorrect positioning of the igniter	Have the igniter position verified and adjusted by skilled and qualified technical personnel.
	Damaged igniter	Replace the igniter assembly.
	<u>An internal error (3 flash fault signal) has occurred due to:</u>	
	Incorrect connection	Inspect all the electrical wires connecting to the gas control module and ensure proper connection.
Defective gas control module	Replace the gas control module.	
<i>Burner fan is not operating correctly</i>	The combustion air fan motor is not running according to the speed required for humidity demand.	<ul style="list-style-type: none"> - Inspect the venting system and remove any debris or obstructions. <u>For Natural Ventilation system:</u> <ul style="list-style-type: none"> - Replace the combustion air filter. <u>For Ducted Combustion Air option:</u> <ul style="list-style-type: none"> - Inspect the ducted combustion air system and remove any debris or obstructions.



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