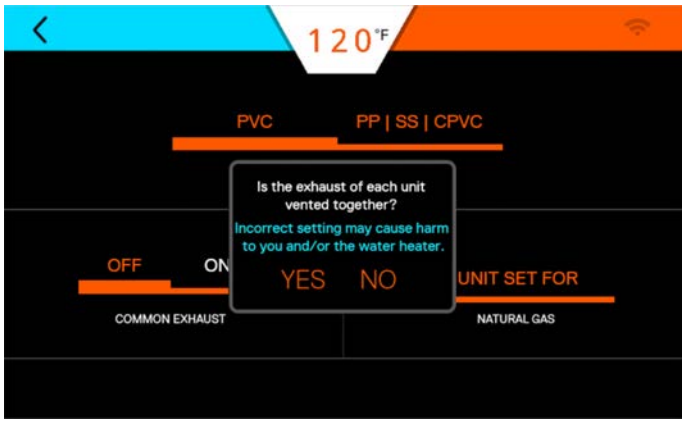
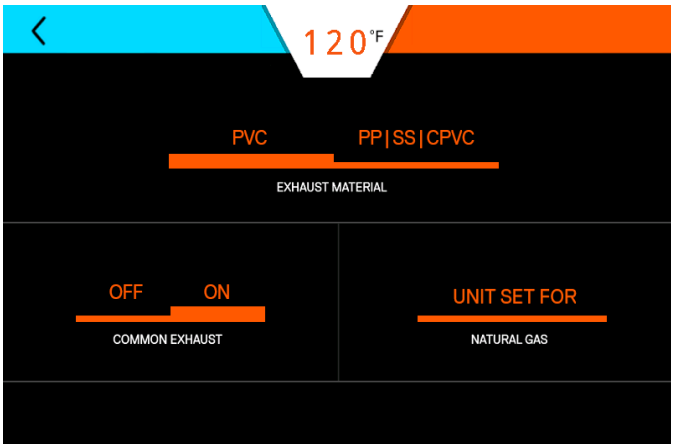
13.3 Venting for multiple units

When venting for multiple units the following screens will appear.

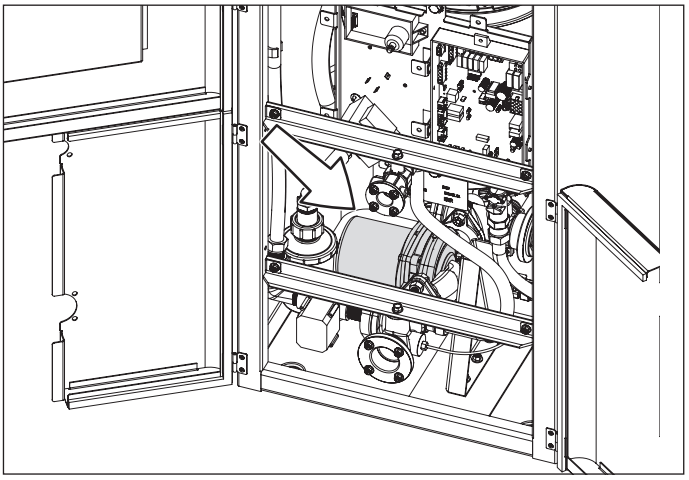




14. Maintenance

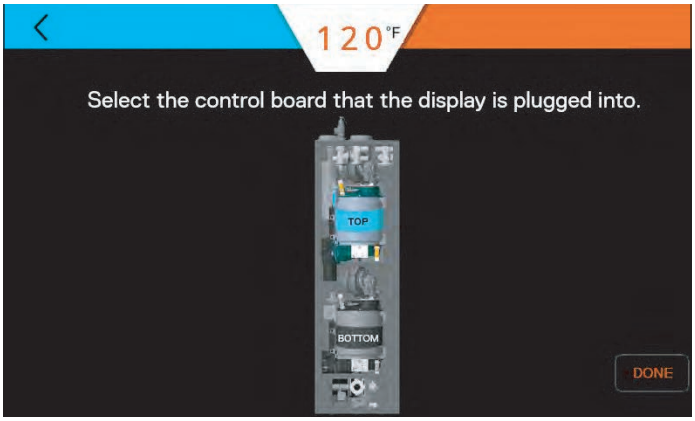
14.1 Maintenance-Free Circulation Pump

The circulation pump is maintenance-free and therefore does not require any servicing. The only adjustment is the speed setting, which must be set to Speed 3 (III).



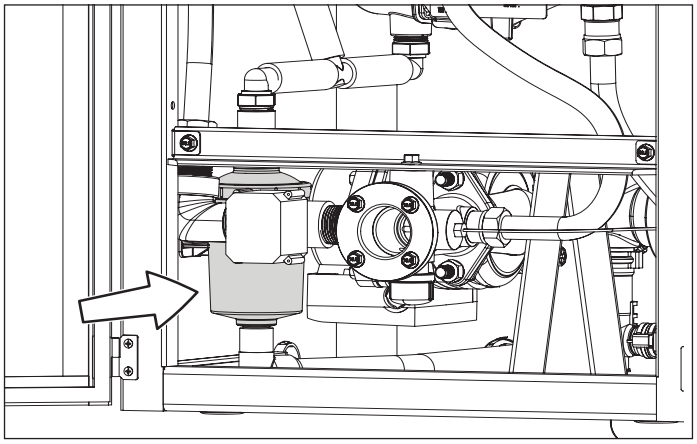
14.2 Heat Engine Locations

Use the following diagrams to identify the location of the heat engines.



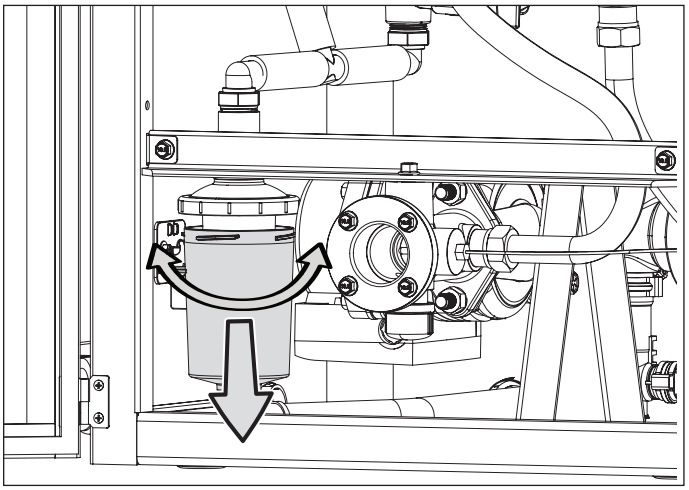
14.3 Condensate Sediment Cup Cleaning

One sediment cup is located inside the water heater cabinet. This cup should be removed and cleaned **every 3 months.**

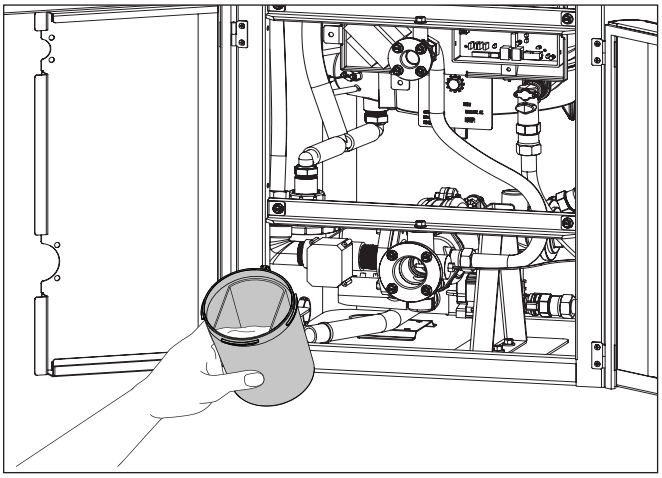


.

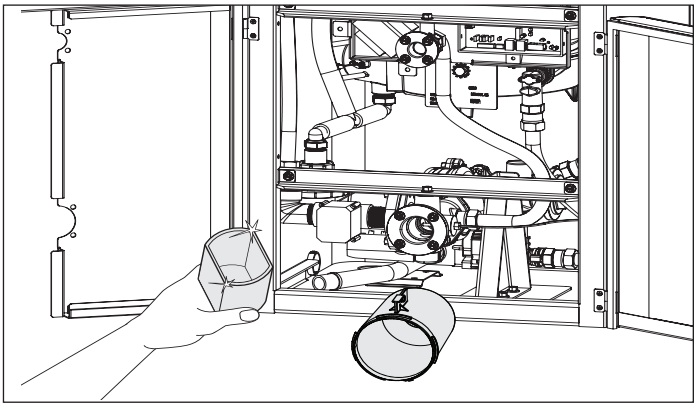
1. Twist the bottom of the sediment cup to release the locking clips.



2. Pull down on the sediment cup and pull it away from the upper portion of the unit. The sediment cup will normally be full of condensate. Carefully, pour the condensate into a container and properly dispose of it.



3. Remove the inner sediment cup from inside the lower portion of the unit.



4. Remove any dirt and debris build-up using soap and warm water.
5. Replace the inner sediment cup and reattach the entire unit.

14.4 Wye Strainer

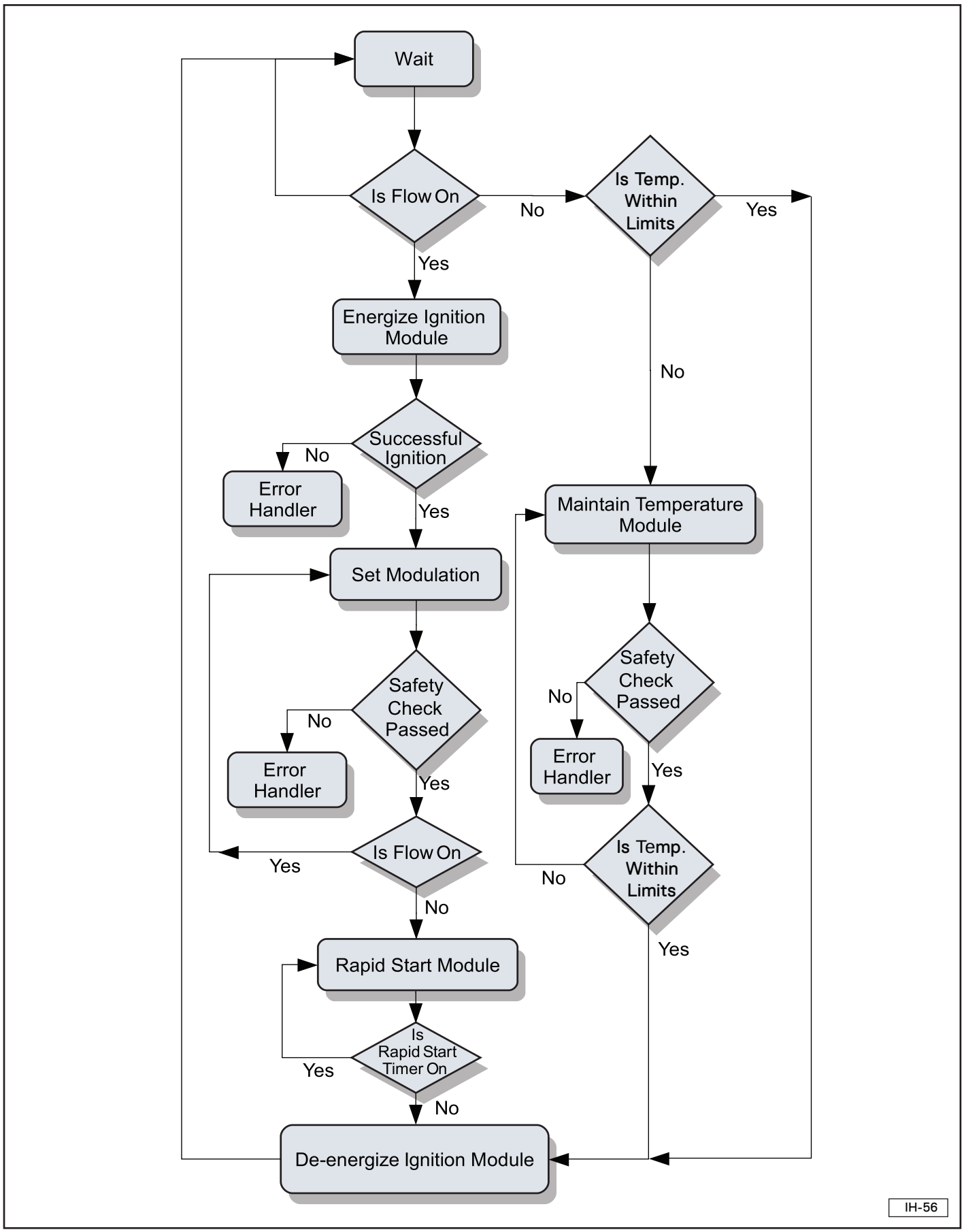
NOTICE

This heater includes an external Wyne strainer. The Wyne strainer must be installed to qualify for unit warranty.

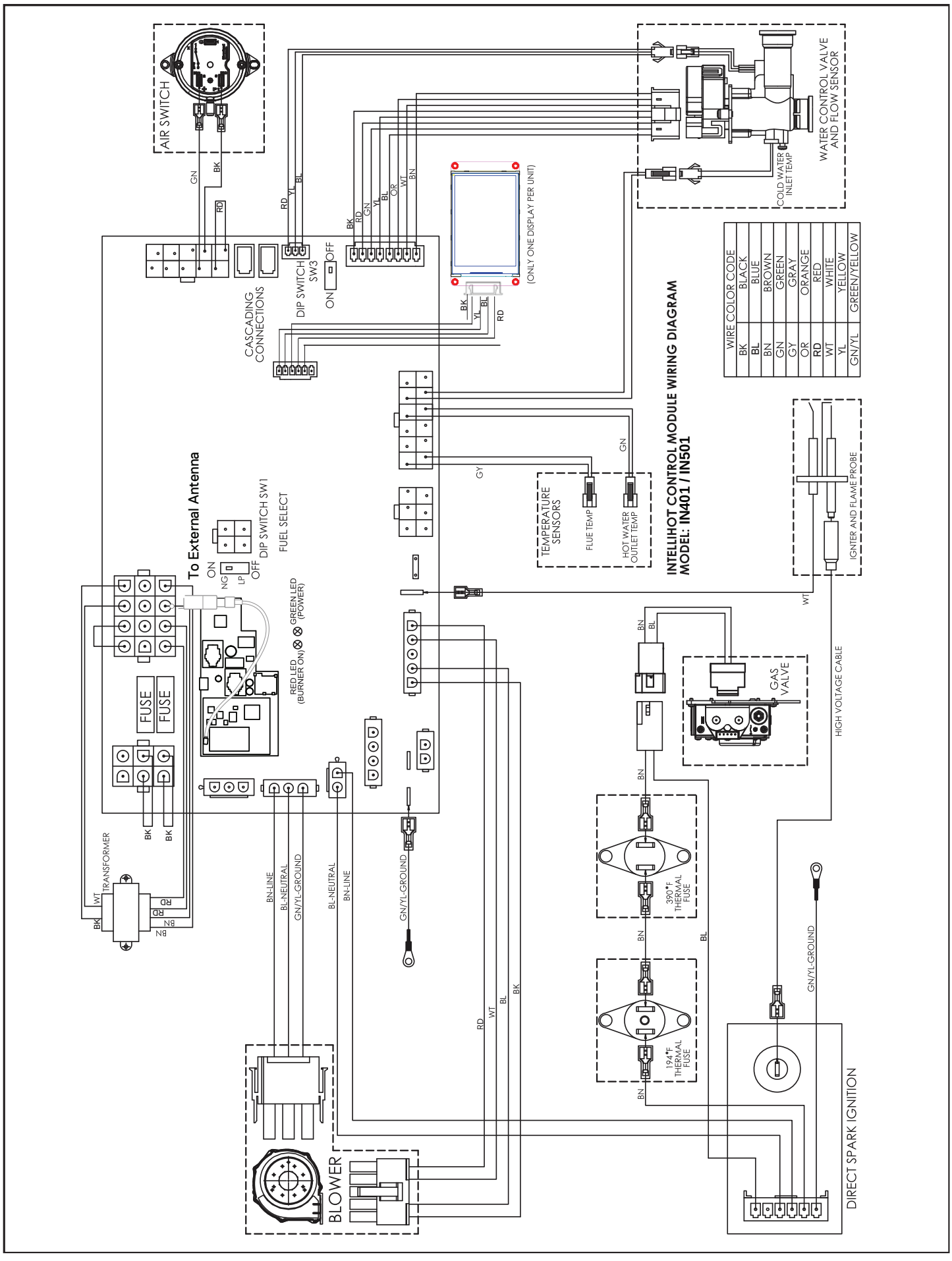
1. Please clean the Wye strainer every **3 months.**

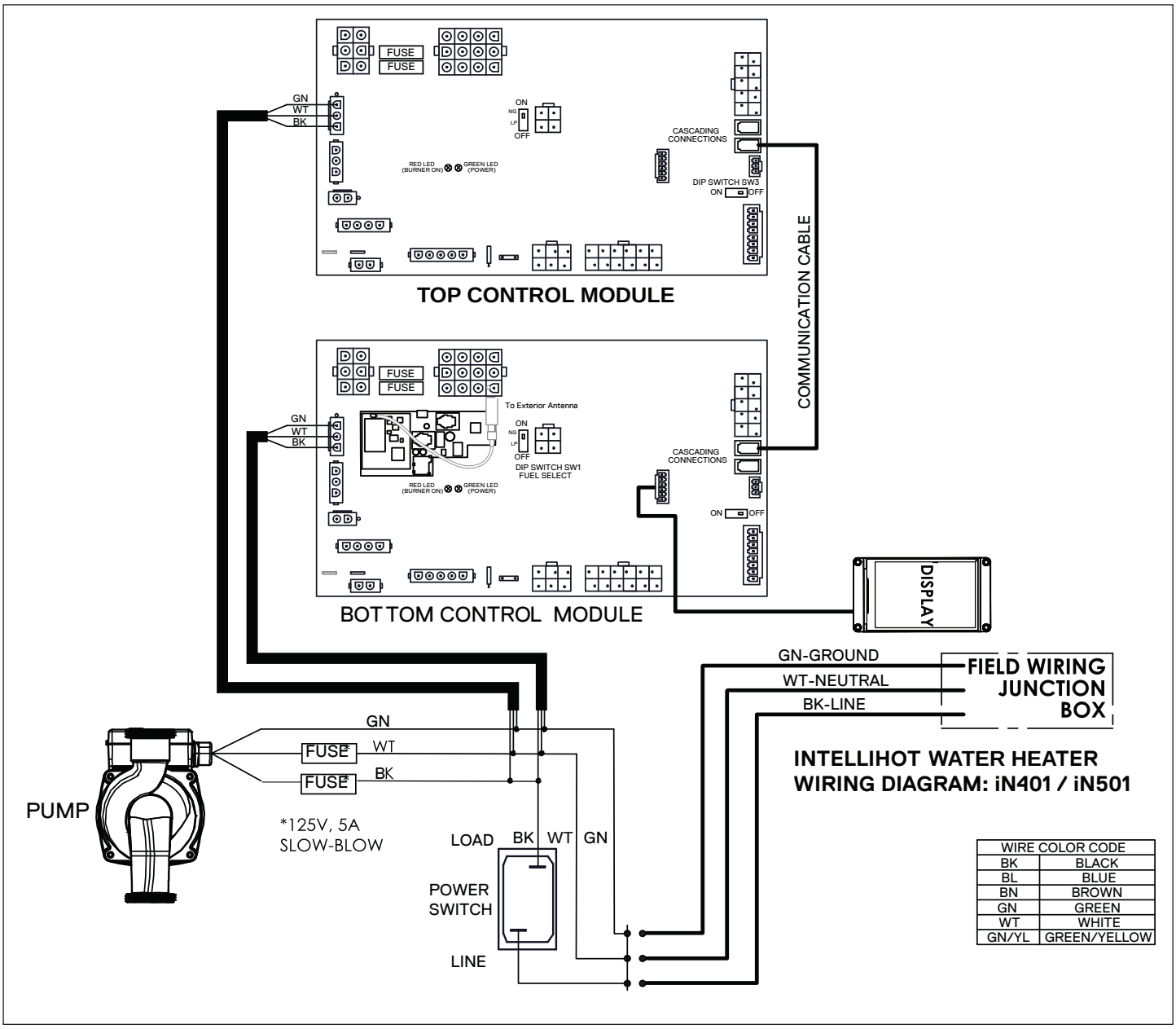
15. Wiring Diagrams and Troubleshooting

15.1 Operational Flow Chart



15.2 Complete Wiring Diagram (all models)



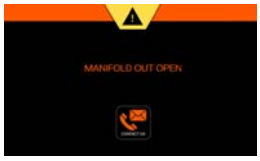
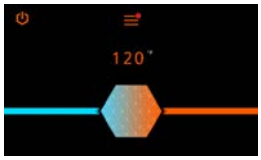

FUSE
FUSE
GN
WT
BK
ON
NG
LP
OFF
RED LED (BURNER ON)
GREEN LED (POWER)
CASCADING CONNECTIONS
DIP SWITCH SW3
ON
OFF
TOP CONTROL MODULE
COMMUNICATION CABLE
To Exterior Antenna
DIP SWITCH SW1 FUEL SELECT
BOTTOM CONTROL MODULE
DISPLAY
GN-GROUND
WT-NEUTRAL
BK-LINE
FIELD WIRING JUNCTION BOX
INTELLIHOT WATER HEATER
WIRING DIAGRAM: iN401 / iN501
PUMP
FUSE*
*125V, 5A
SLOW-BLOW
LOAD
POWER SWITCH
LINE
WIRE COLOR CODE
BK BLACK
BL BLUE
BN BROWN
GN GREEN
WT WHITE
GN/YL GREEN/YELLOW

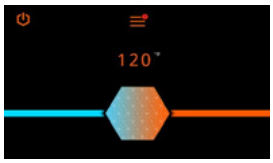
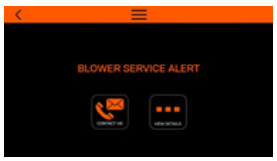
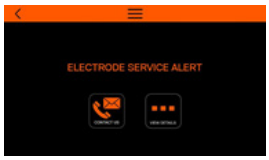
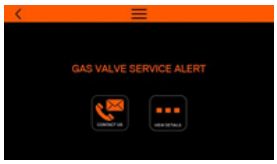
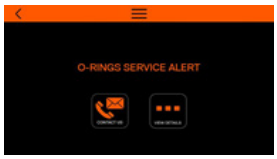
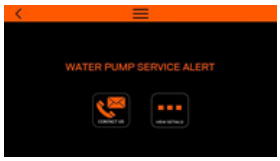
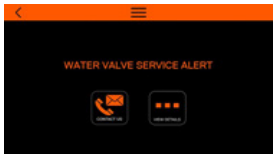
15.3 Troubleshooting Guide

Description	Possible Cause	Remedy
Blower Speed Fault 	· Blower noisy / impeller jammed. · Disconnected signal wire. · Wiring faulty.	· Inspect blower / impeller. Clean and remove any obstructions. · Check PWM signal. Check for loose wires / pins, and repair. · If the problem persists, turn control panel OFF, shut gas valve, disconnect power from unit, and contact an authorized service technician.
Igniter Ignition Fault 	· Water over-heat switch tripped. · Faulty DSI, faulty igniter wire, faulty ignition connection, faulty PCB, bad igniter. · Low gas pressure. · Wiring faulty.	· Check pump, check cross-over solenoid. Electrical noise (DSI). · Replace part. · Adjust gas pressure at regulator, check / increase size of gas line, check for gas line blockage. · If the problem persists, turn control panel OFF, shut gas valve, disconnect power from unit, and contact an authorized service technician.
Open Sensors Inlet / Outlet Sensor  	· Unplugged connectors. · Faulty sensor wiring. · Faulty sensor. · Heat engine water outlet temperature sensor. · Flue temperature sensor. · Inlet water temperature sensor. · Faulty controller.	· Check connectors and ensure they are securely connected · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F) · Replace controller.
Faulty Sensors Inlet / Outlet Sensors  	· Faulty sensor wiring or faulty sensor. · Inlet water temperature sensor. · Heat exchanger water outlet temperature sensor. · Faulty controller.	· Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F) · Replace controller
Heat Exchanger Outlet temperature exceeded set limit 	· Flow rate changes excessive. · Faulty sensor wiring. · Faulty sensor. · Faulty controller.	· Ensure the water flow rate does not change faster than 2 GPM every 5 seconds. · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F). · Replace controller.

Description	Possible Cause	Remedy
Flue		
Temperature Exceeded Set Limit 	· Incorrect vent set up. · High inlet temperature. · Faulty sensor wiring. · Faulty sensor. · Faulty controller.	· If vent pipe material is CPVC or polypropylene, ensure that CPVC is selected in the vent material screen. · Ensure inlet temperature is lower than 150°F if vent pipe material is PVC or lower than 190°F if vent pipe material is CPVC or polypropylene. · Check for nicked or broken sensor wiring and connectors. Also check for corroded or wet connectors. · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F). · Replace controller
Blocked Flue Fault 	· Exhaust blocked (bird, etc). · Backed up condensate. · Wiring loose (switch open).	· Check exhaust termination. Check exhaust connection at water heater. Install screens to prevent blockage. · Check slope of drain. Check for double loops, air locks, or debris in loop. · Check wiring.
Flue sensor  	· Unplugged connectors. · Faulty sensor wiring. · Faulty sensor. · Flue temperature sensor. · Inlet water temperature sensor. · Faulty controller.	· Check connectors and ensure they are securely connected · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F) · Replace controller.
Cascading		
Alert 	· Loss of communication between units.	· Check for broken or nicked communication cable or loose connector. · Ensure that the communication cable is not bundled or tied to any high voltage lines. · Ensure dip switch (SW3) is ON in first and last units and OFF in all other units. · Ensure each unit numbering is unique.

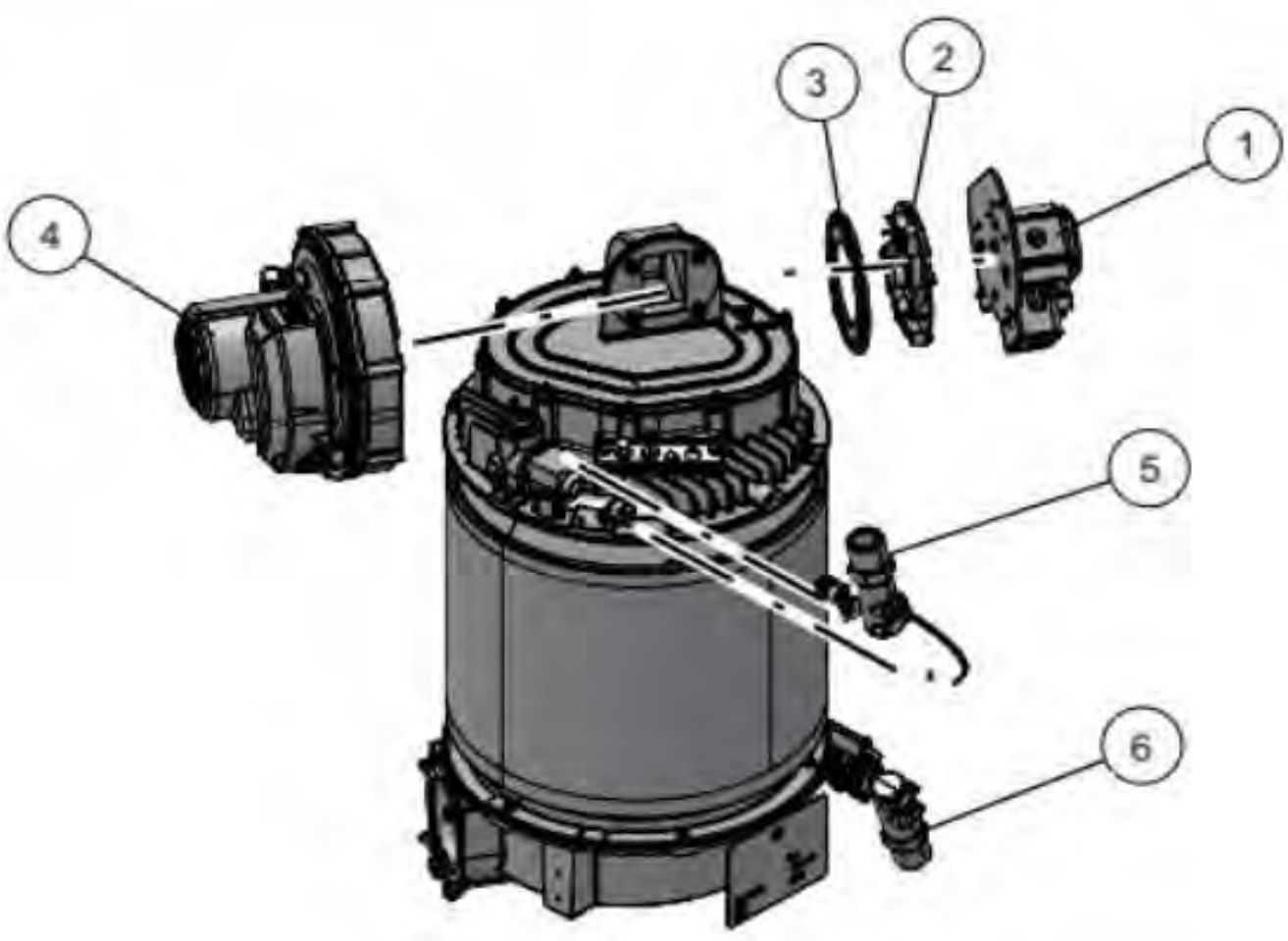
Description	Possible Cause	Remedy
Water Valve    	· Faulty sensor wiring. · Water valve clogged or damaged.	· Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace water valve.
Pump 	· Faulty pump wiring. · Pump fuse blown. · Faulty pump. · Faulty controller.	· Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace fuse (5 Amp) · Replace pump. · Replace controller.
Fuel Type 	· Wrong fuel type being used.	· Use correct fuel type.

Description	Possible Cause	Remedy
Software  	· Incorrect settings. · Incompatible settings. · Incorrect software version. · Faulty wiring.	· Review and correct settings. · Review and correct settings. · Update software version. · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors.
Manifold Sensors      	· Unplugged connectors. · Faulty sensor wiring. · Faulty sensor. · Flue temperature sensor. · Inlet water temperature sensor. · Faulty controller.	· Check connectors and ensure they are securely connected · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors · Measure resistance of sensor at connector (18 kΩ at 50°F, 10 kΩ at 77°F, 3 kΩ at 140°F) · Replace controller.
System Alert / Fault 	· A system alert or fault is present (main menu screen). · Malfunction of monitored part or system.	· Press the Menu bar and refer to the remedy for indicated part or system.

Description	Possible Cause	Remedy
Alive 	· Shows status of water heater. · Sleep mode.	· Touch display screen to awake.
	· Sleep mode passcode protected.	· Refer to the remedy for indicated part or system.
	· Indicates a fault exists within the monitored parts or system.	· Refer to the remedy for indicated part or system.
Service Alert       	· A system alert or fault is present (main menu screen). · Malfunction of monitored part or system.	· Press the Menu bar and refer to the remedy for indicated part or system.

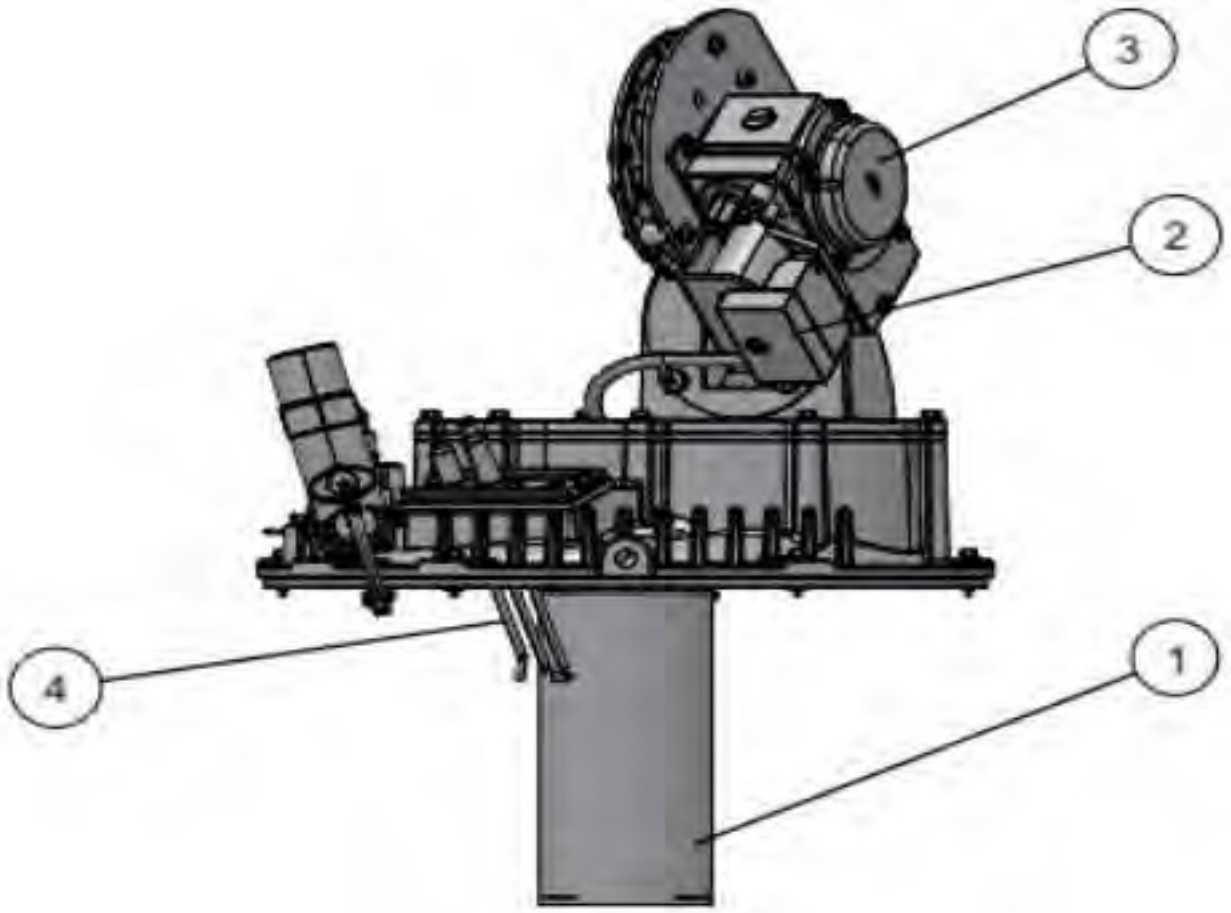
16. Serviceable Parts

16.1. Blower & HEX Parts



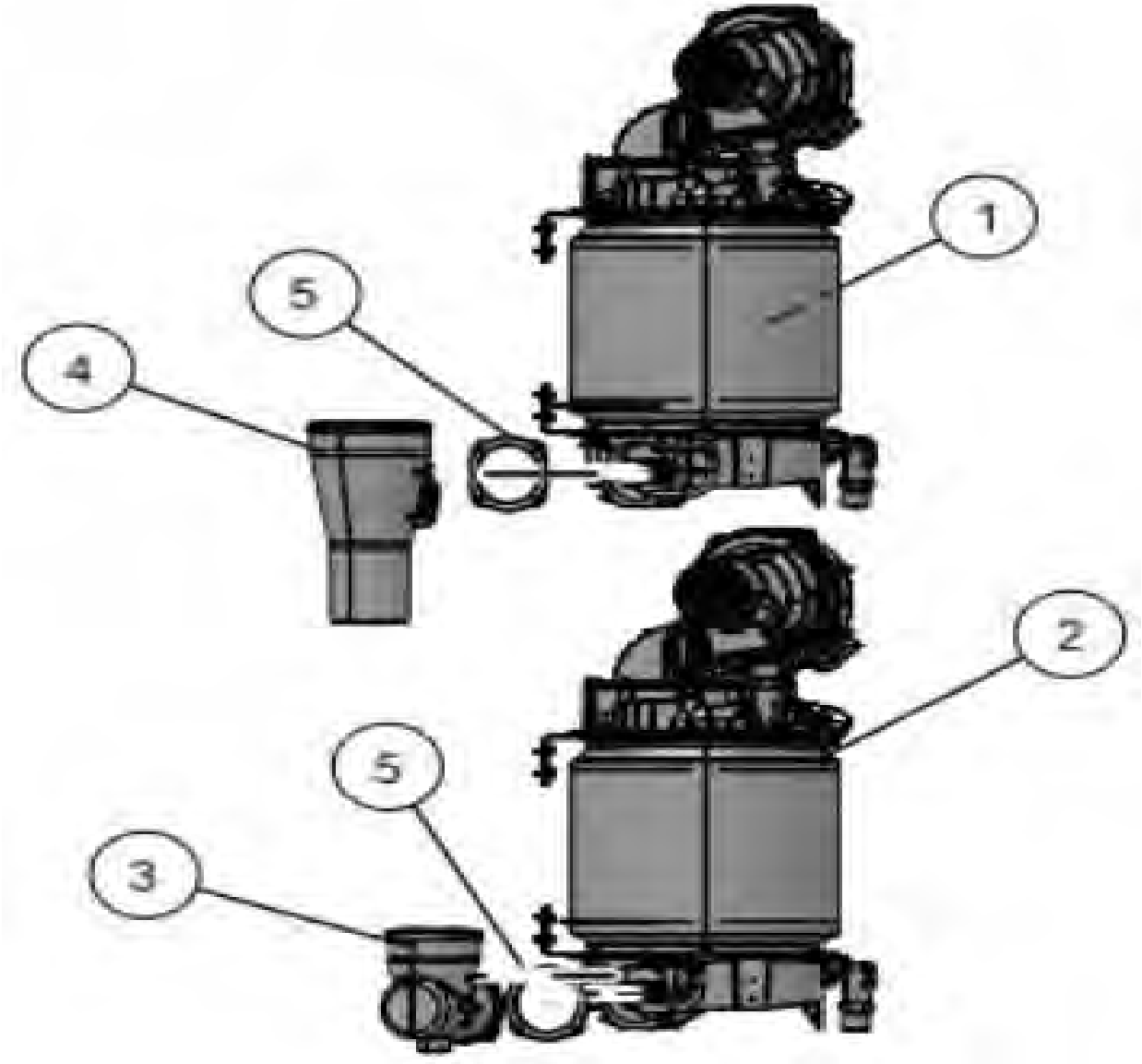
Item	Part Number	Description
1	IGT-SPR0011	Gas Valve Kit
2	IGT-ELC0147	Gray Swirl Plate
3	IGT-ELC0012	Fan Adapter Plate
4	IGT-SPR0008	Blower Kit
5	IGT-CST0011	Outlet Casting Adapter
6	IGT-CST0010	Inlet Casting Adapter

16.2. Burner, Electrode & Gas Valve



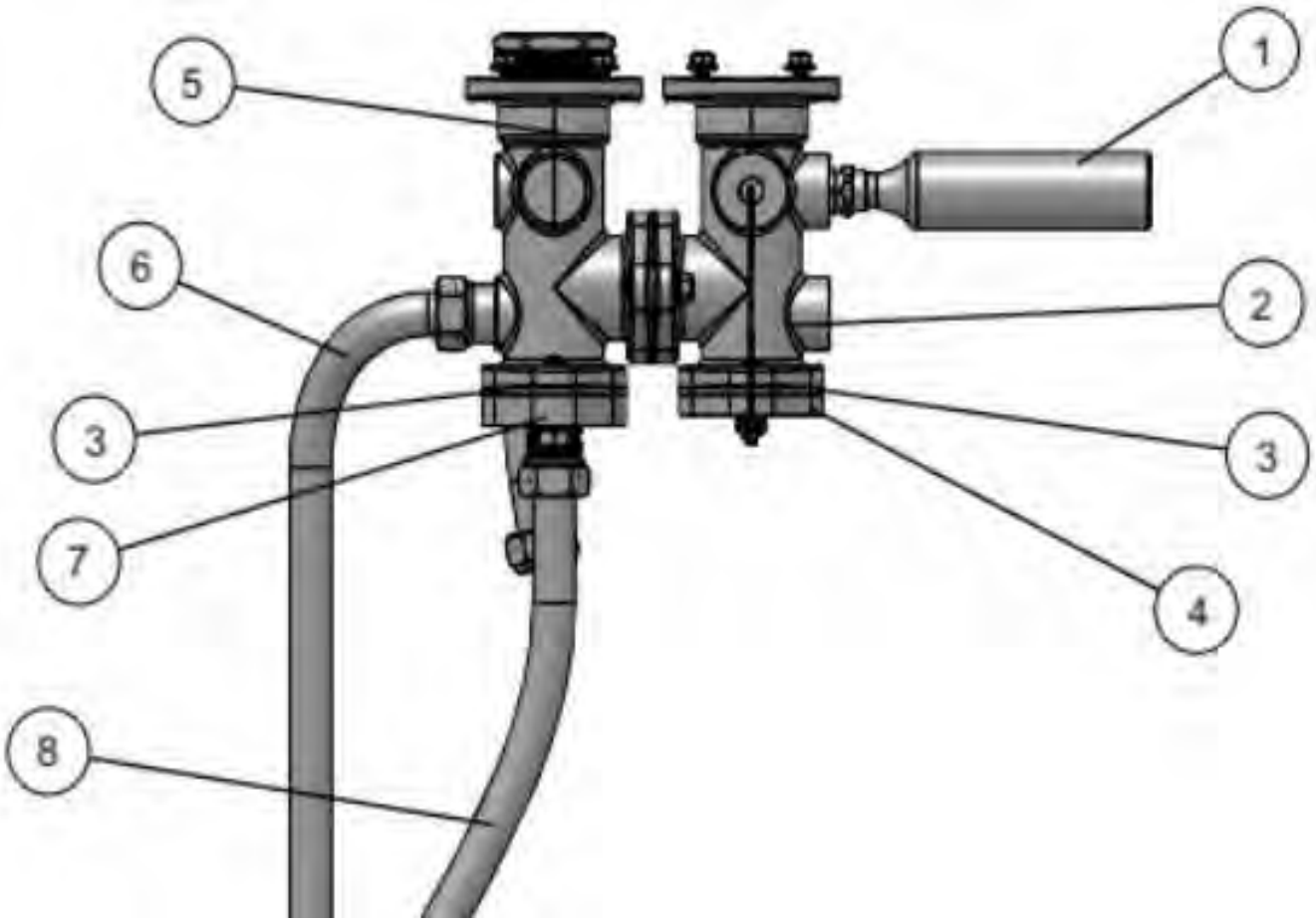
Item	Part Number	Description
1	IGT-SPR0111	Gen II V02 Burner Kit
2	IGT-ELC0020	Gas Valve Harness
3	IGT-SPR0011	Gas Valve Kit
4	IGT-SPR0106	Gen II V02 Electrode Kit

16.3. HEX & Sidecast



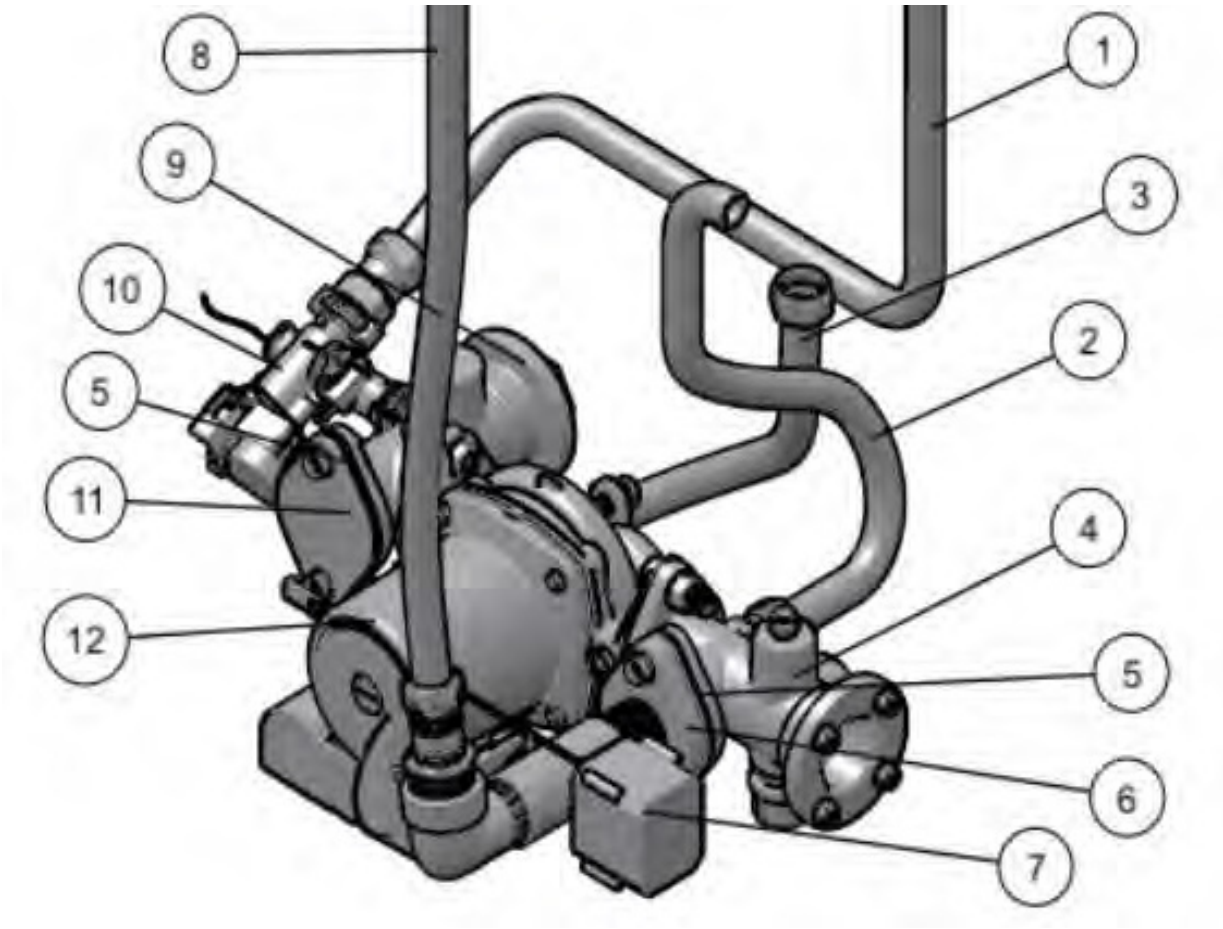
Item	Part Number	Description
1	IGT-SA0511	Top Heat Exchanger
2	IGT-SA0512	Bottom Heat Exchanger
3	IGT-CST0029	Side Cast - Exhaust, 3”
4	IGT-CST0035	Side Cast - Exhaust, 4” to 3”
5	IGT-SLS0083	Side Cast Seal

16.4. Water (hot water side)



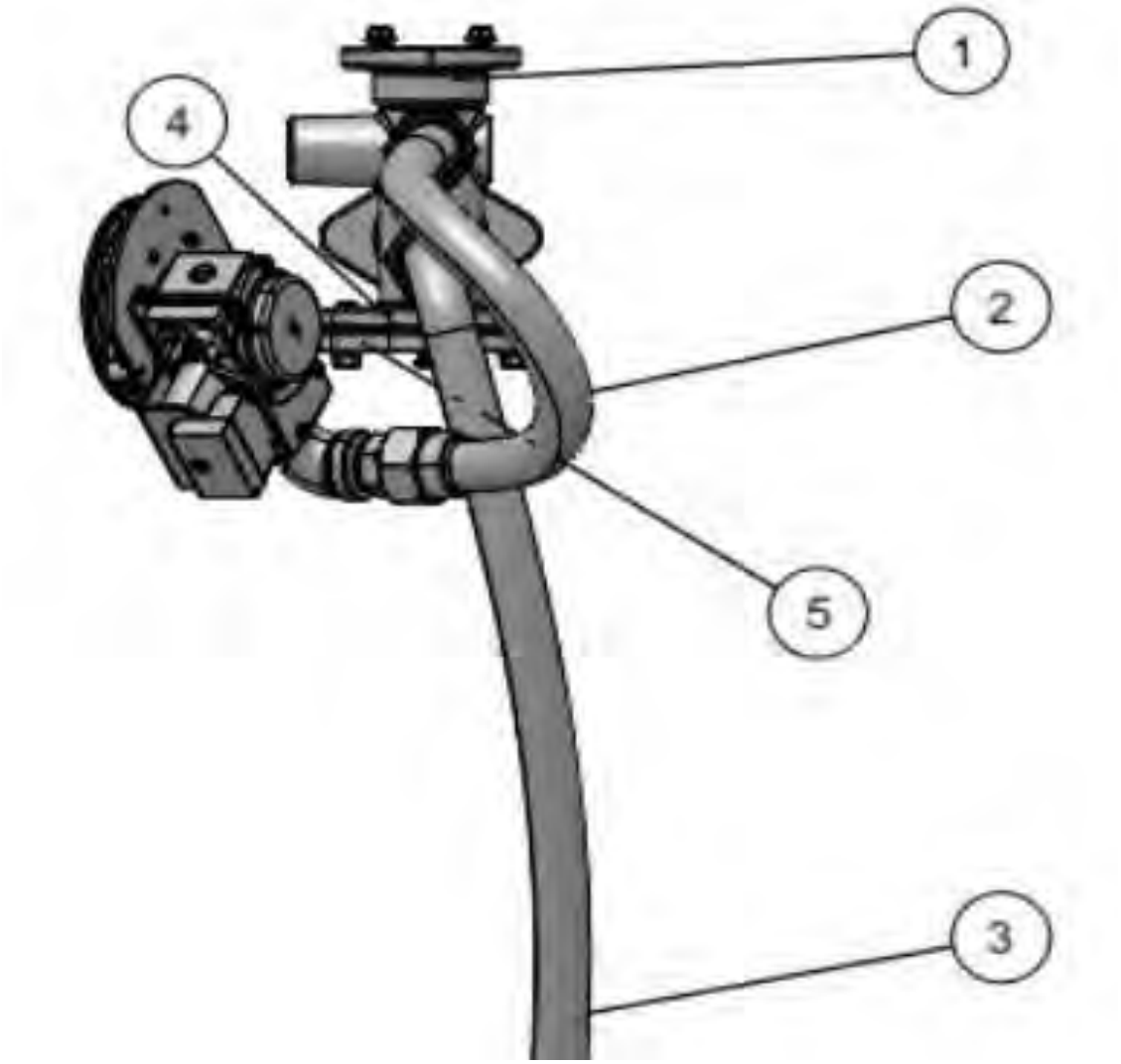
Item	Part Number	Description
1	IGT-PLG0018	Water Hammer Arrestor
2	IGT-FTT0235-3	Water out fitting, hot side
3	IGT-SLS0041	Flange Seal
4	IGT-SM0558	Close-off Plate
5	IGT-FTT0235-4	Water out fitting, T&P side
6	IGT-LNE0063	Corrugated Water line assembly
7	IGT-FTT0243-1	Flange Adapter fitting
8	IGT-LNE0064	Corrugated Water line assembly

16.5. Water (cold water side)



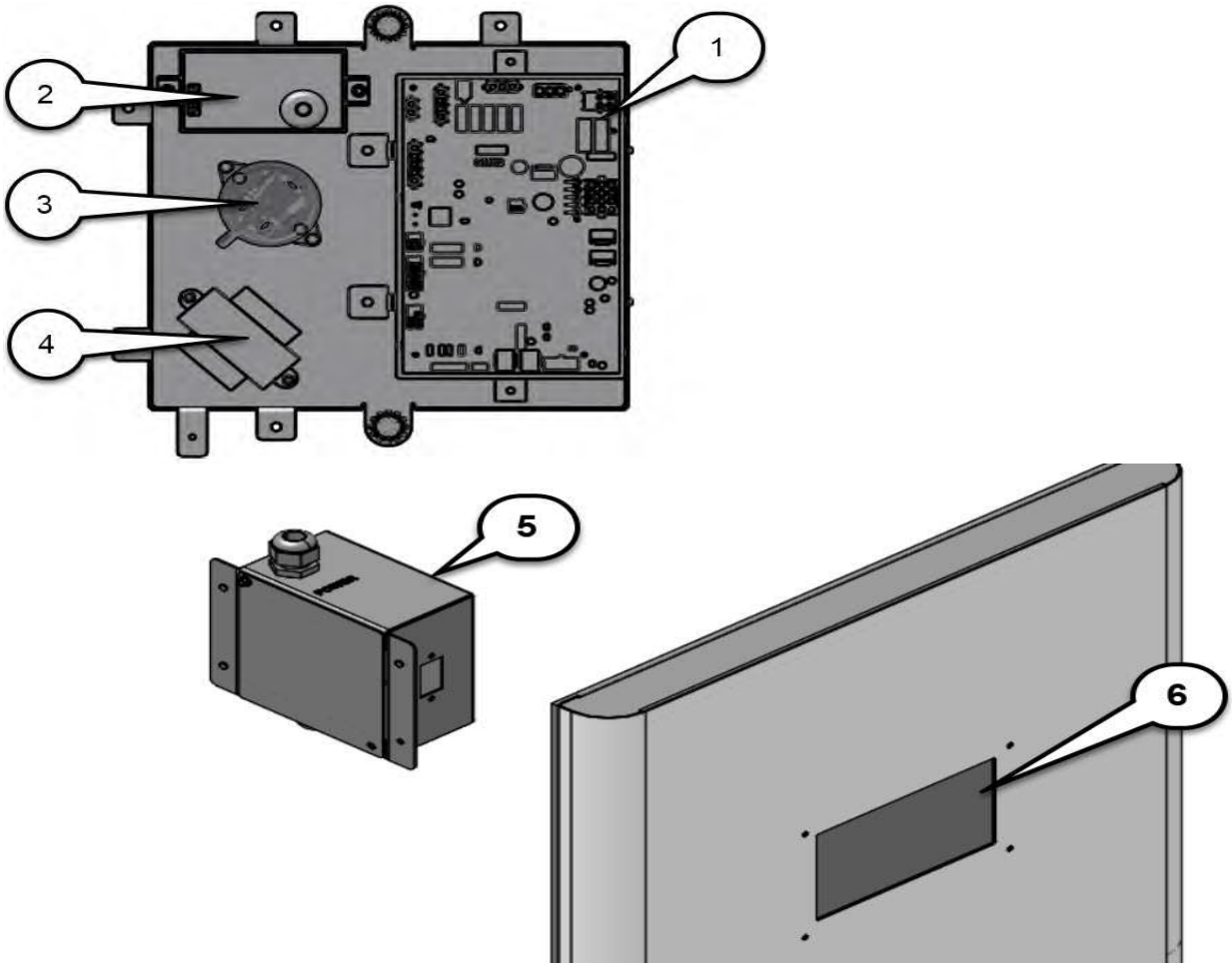
Item	Part Number	Description
1	IGT-LNE0059	Corrugated line assembly
2	IGT-LNE0053	Corrugated line assembly
3	IGT-LNE0061	Corrugated line assembly
4	IGT-FTT0235-1	Water In Fitting, Cold Side
5	IGT-SLS0041	Flange Seal
6	IGT-FTT0244	Flange Adapter Fitting
7	IGT-VL0019	Bypass Valve
8	IGT-LNE0064	Corrugated line assembly
9	IGT-FTT0235-2	Water in Fitting, Strainer
10	IGT-SPR0003	Water Valve kit
11	IGT-SM0558	Close off Plate fitting
12	IGT-SPR0075	Recirculation pump

16.6 Gas Connections



Item	Part Number	Description
1	IGT-FTT0235-5	Gas-in Casting
2	IGT-PLG0014	Gas Corrugated tube
3	IGT-PLG0015	Gas Corrugated tube
4	IGT-SLS0041	Flange Seal
5	IGT-SM0560	Close Off Plate

6.7. Electronics



Item	Part Number	Description
1	IGT-SPR0002	Control Board
2	IGT-SPR0005	Igniter Module (DSI) Kit
3	IGT-ELC0007	Air Switch
4	IGT-SPR0065	Transformer Kit
5	IGT-ELC0138	Rocker Switch
6	IGT-SPR0088	Large Screen Display Kit

16.8 Miscellaneous

Part Number	Description
IGT-ELC0092	25 ft cascading cable
IGT-ELC0232	50 ft cascading cable
IGT-SPR0110	Gen II V 2 Sensors Kit (includes Manifold inlet, Manifold outlet, Flue and Hotwater outlet sensors)
IGT-SPR0109	Gen II V 2 O-Ring kit
IGT-ELC0181	DSI to Electrode HV Cable
IGT-ELC0278	Heat Exchanger to Control board Complete Harness
IGT-ELC0279	Heat Exchanger to Water Valve Wiring Harness Set (top & bottom)
IGT-ELC0280	Mainfold Inlet Sensor Wiring Harness
IGT-ELC0281	Manifold Outlet Sensor Wiring Harness
IGT-ELC0284	Bypass Valve Wiring Harness
IGT-ELC0288	Display Wiring Harness
IGT-SPR0119	Neuron Wye Strainer Kit
IGT-SPR0118	BMS Kit (Factory Installed Option only)