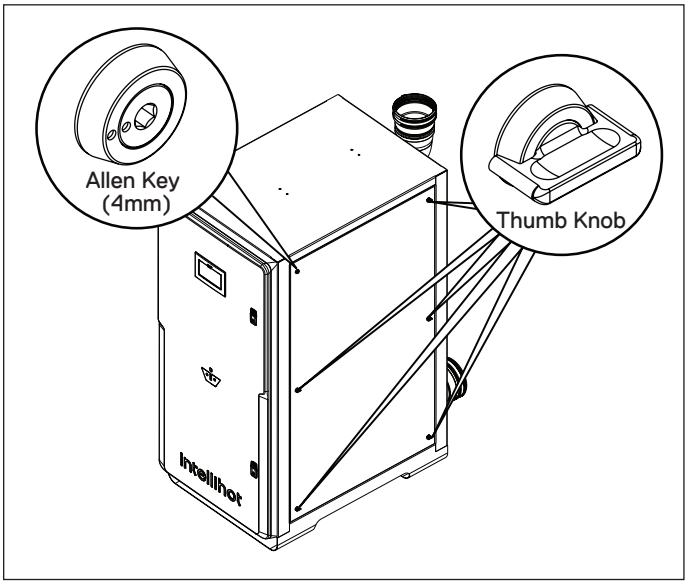
14. Maintenance

14.1 Side Panel Doors

Each side panel door contains one Allen key lock in the upper left hand corner. Turn the key 90º clockwise to unlock. The other locks are a thumb knob style.



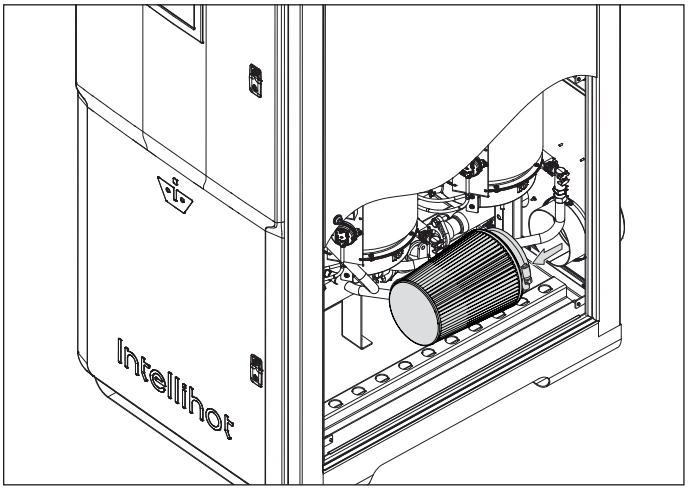
14.2 Air Filter

14.2.1 Inspection

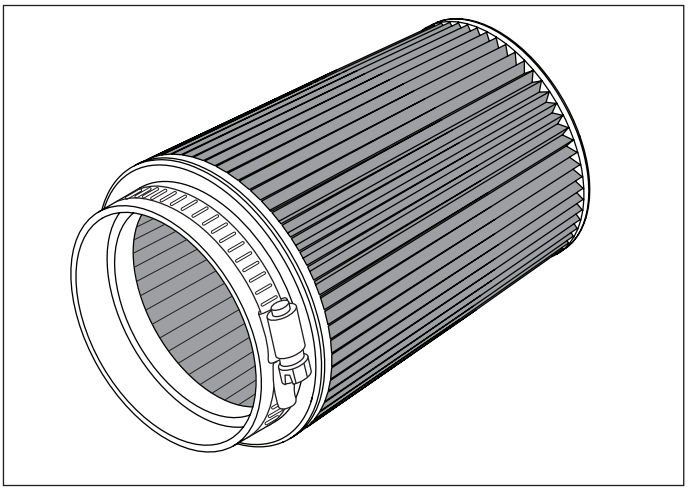
Check the filter **every six months** for dirt and dust build-up. Clean and re-oil the filter annually. If the filter is dirty, follow the cleaning procedure.

Note: The air filter is manufactured by K&N. Contact K&N at 800-858-3333 or online at www.knfilters.com for the necessary supplies to clean the filter.

1. Loosen the band clamp and remove the air filter.



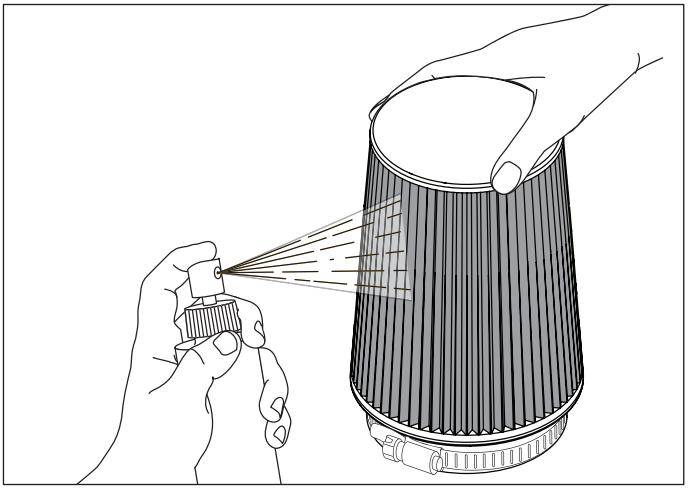
2. Inspect the inside of the filter for dirt and dust build-up. Clean the filter, if needed.



3. After inspection and/or cleaning, replace the air filter and snugly tighten the band clamp.

14.2.2 Cleaning Procedure

1. Liberally spray K&N Air Filter Cleaner and Degreaser (99-0606) onto both sides of filter and allow to soak for 10 minutes to loosen the dirt. Do not allow cleaner to dry on air filter.



NOTICE

K&N Air Filter Cleaner is the only cleaner formulated to safely clean K&N air filters with cotton media. The use of any other cleaning solution could damage the cotton material.

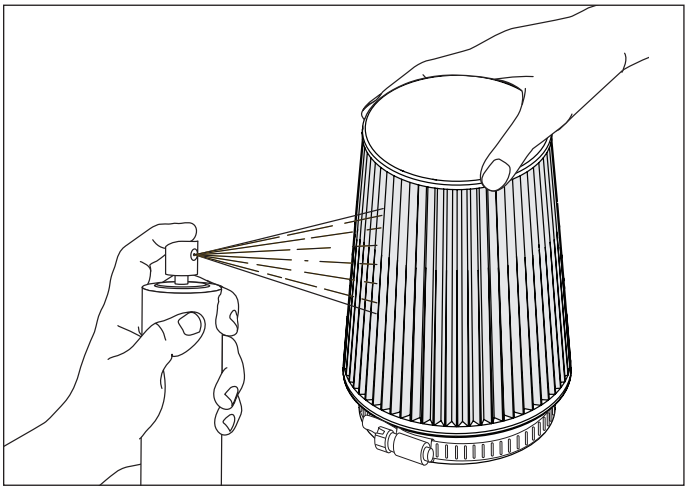
2. Rinse the air filter with cool low-pressure water applied from the outside inward in order to flush the dirt out of the filter. Continue to rinse the filter until all traces of cleaner are gone. It may be necessary to repeat Steps 1 and 2.

3. After rinsing, gently shake off the excess water and air dry the filter.

NOTICE

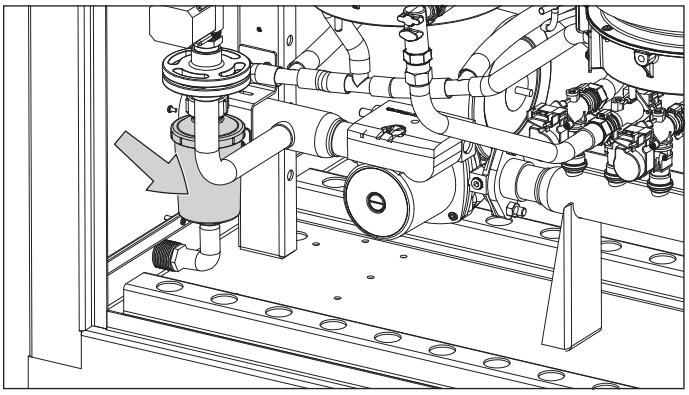
Do not use compressed air to dry the filter. Do not apply oil to the filter until it is completely dry.

4. Spray K&N Aerosol Air Filter Oil (99-0504) evenly along the crown of each pleat holding nozzle about 3" away. Allow oil to wick for approximately 20 minutes. Touch up any light areas on either side of the filter until there is a uniform red color at all areas.

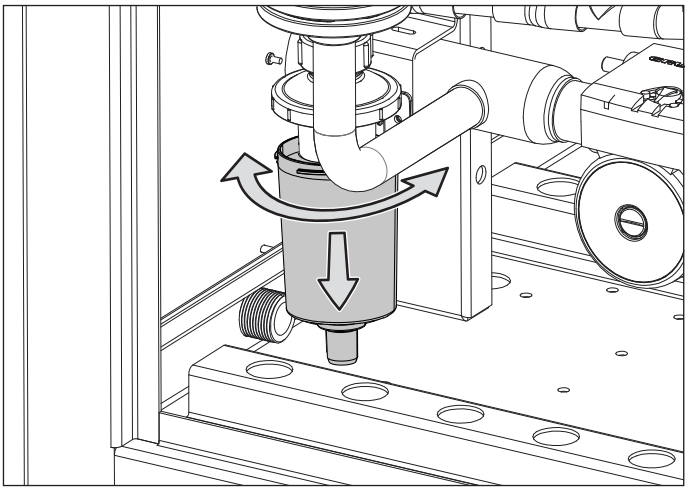


14.3 Condensate Sediment Cup Cleaning

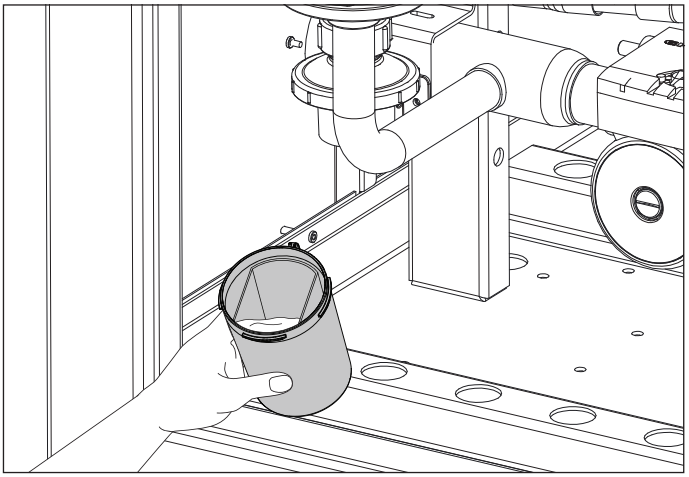
One sediment cup is located inside the water heater cabinet. This cup should be removed and cleaned **every 3 months or as often as necessary**.



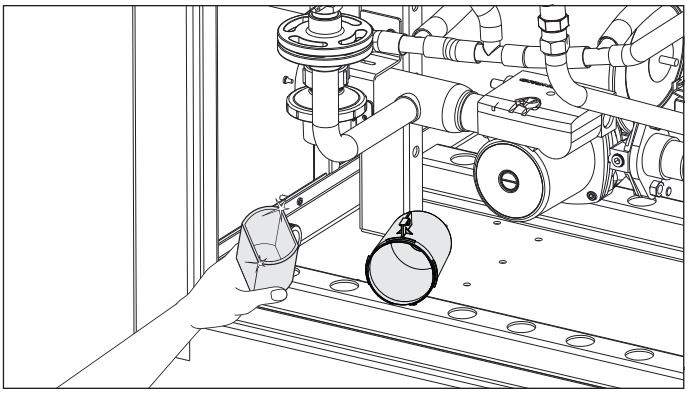
1. Twist the bottom of the sediment cup to release the locking clips.



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.



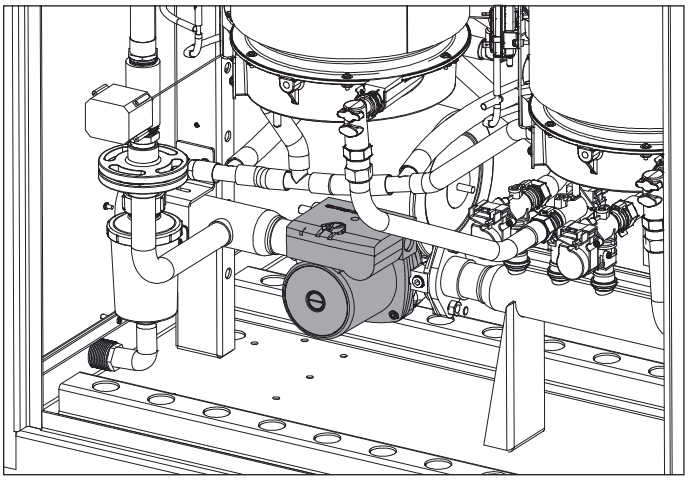
3. Remove the inner sediment cup from inside the lower portion of the unit.



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 Maintenance-Free Circulation Pump

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



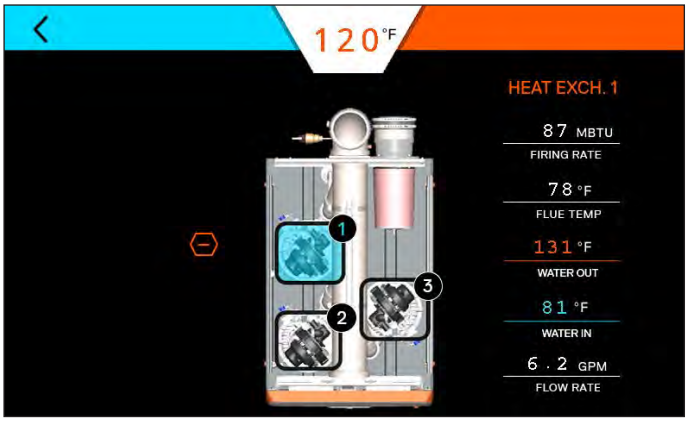
14.5 Wye Strainer

Please Note: This heater includes an external Wye strainer. The Wye strainer must be installed to qualify for unit warranty.

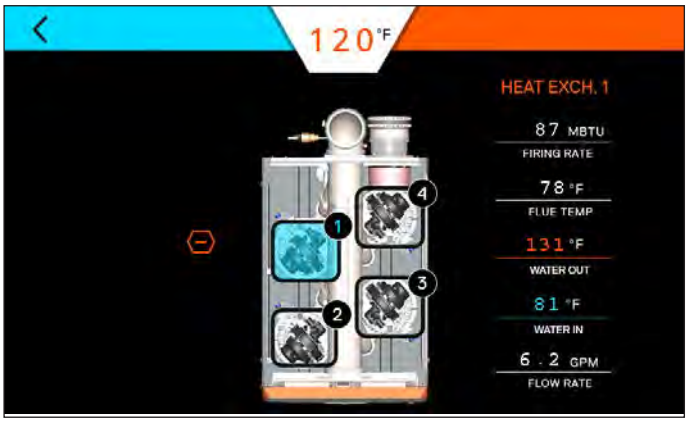
1. Please clean the Wye strainer every 3 months.

14.6 Heat Engine Locations

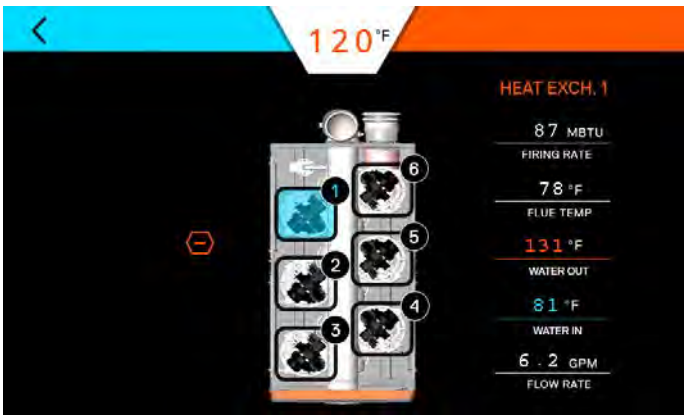
Use the following diagrams to identify the location of the heat engines.



iQ751



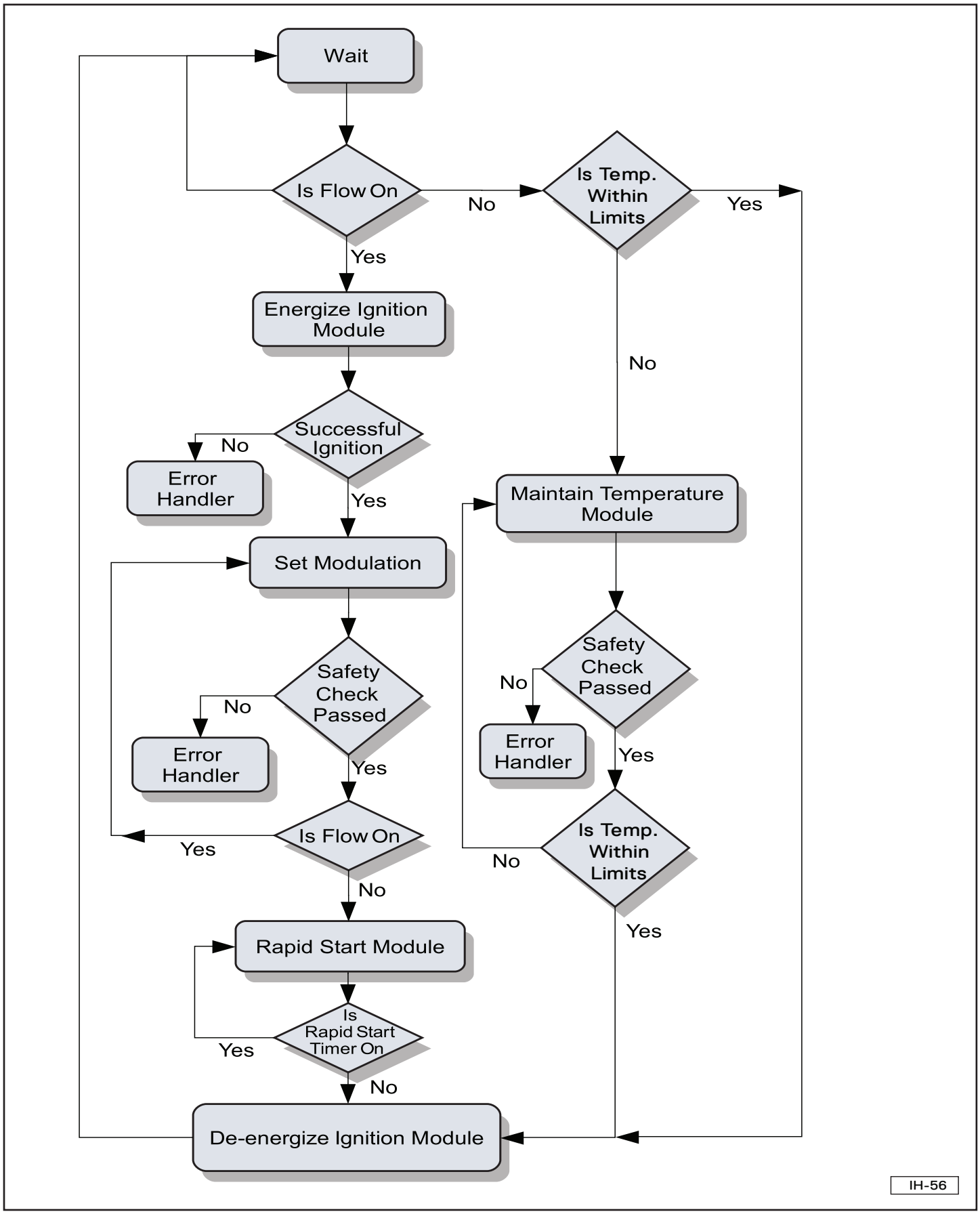
iQ1001



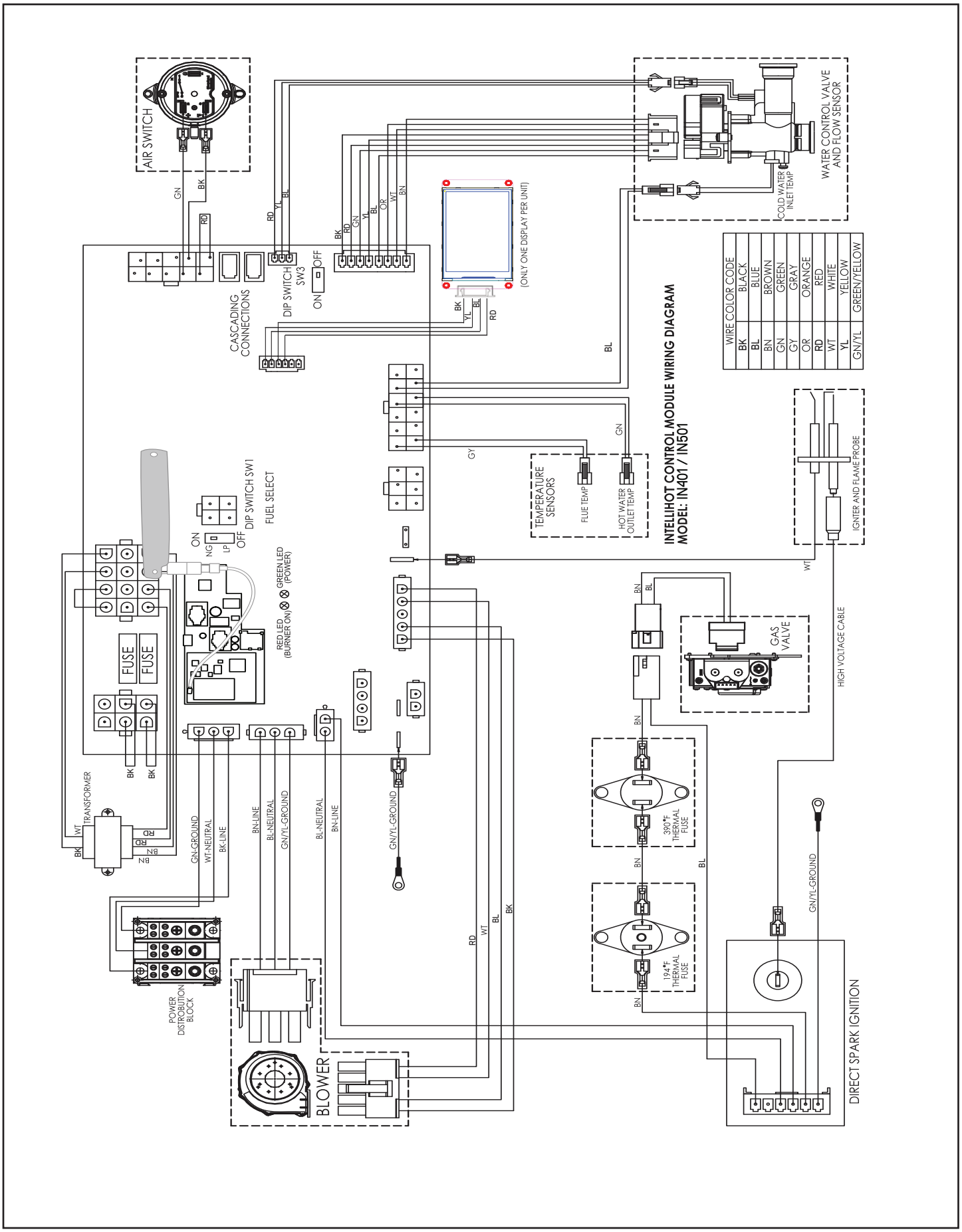
iQ1501

15. Wiring Diagrams and Troubleshooting

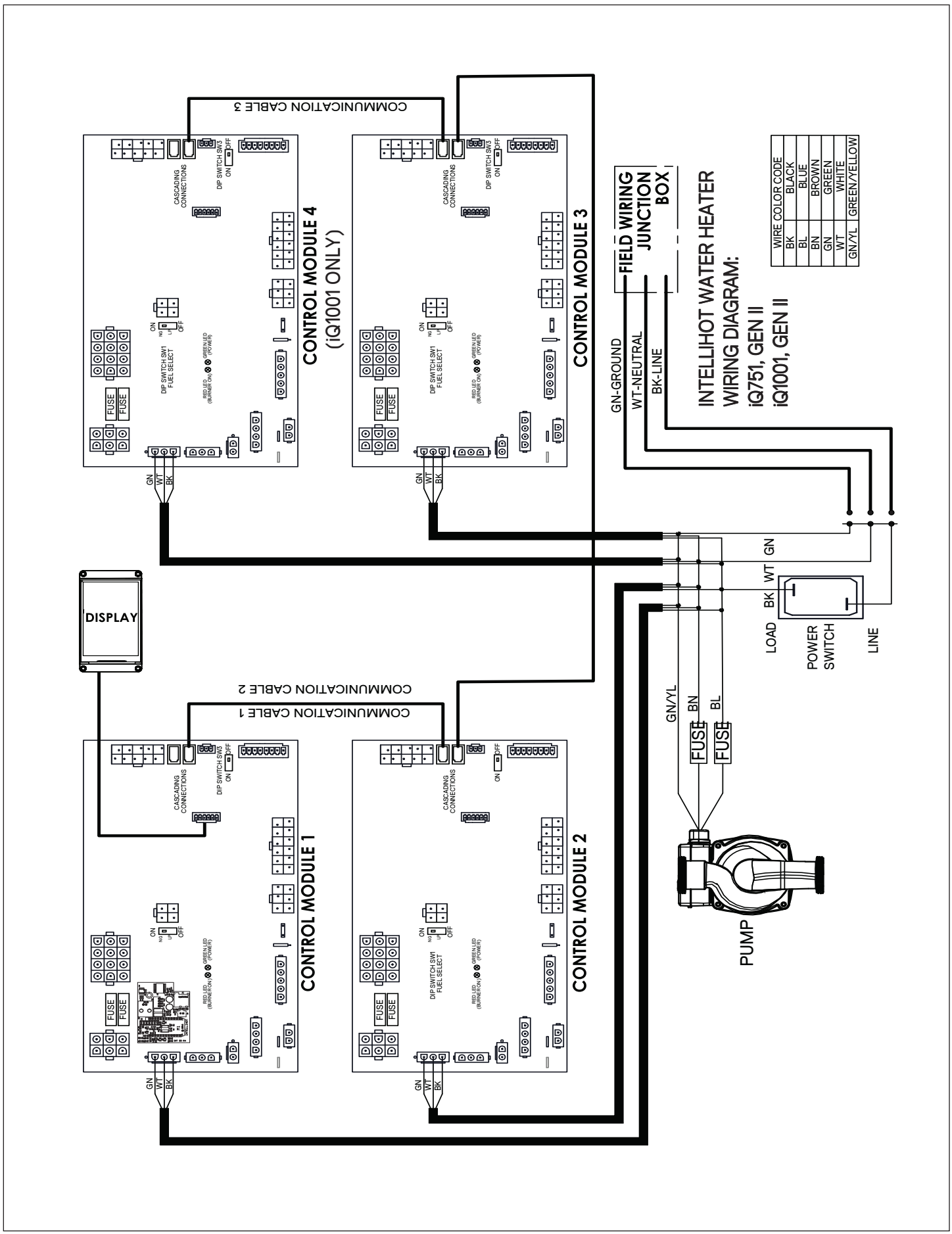
15.1 Operational Flow Chart



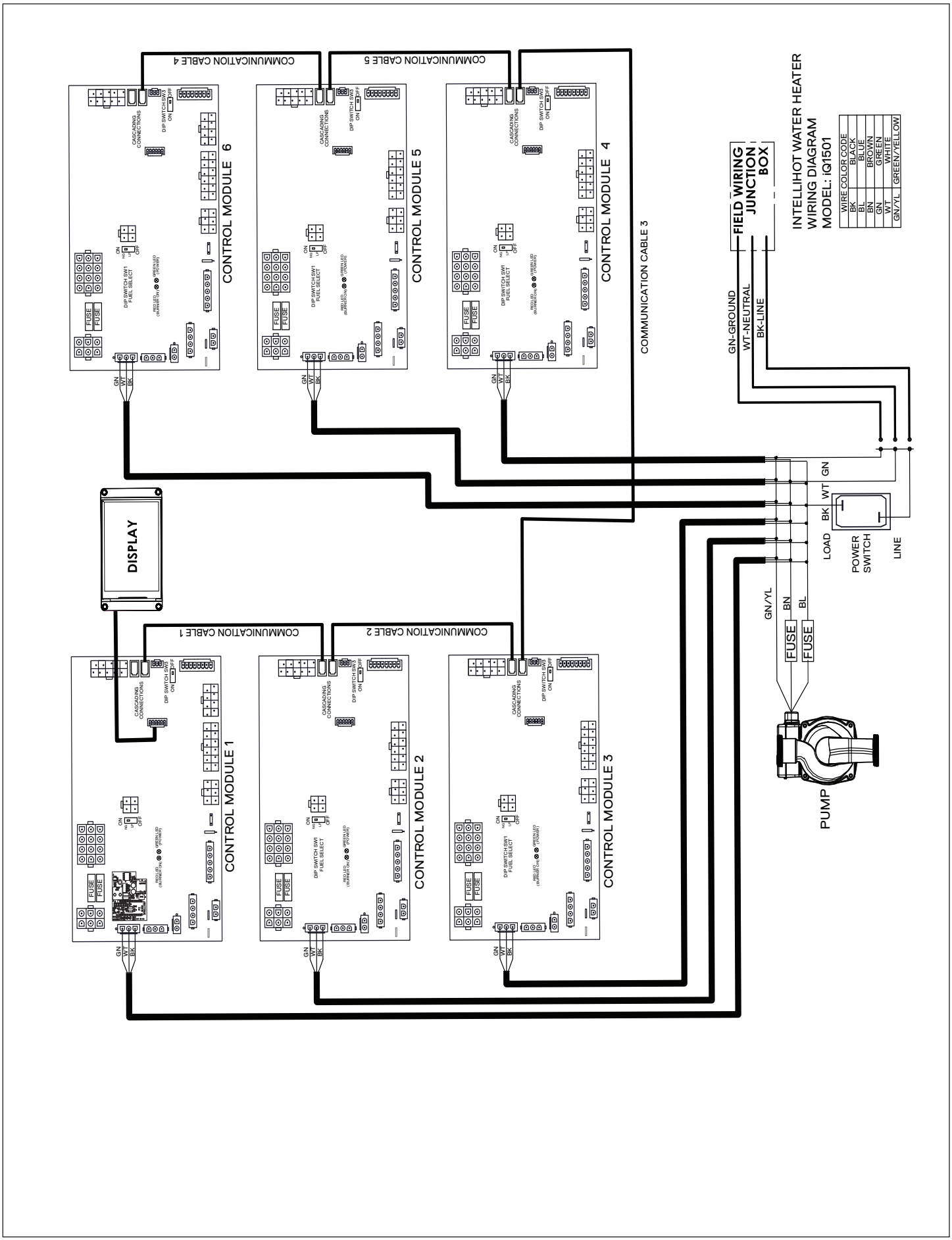
15.2 Complete Wiring Diagram (all models)



15.3 Control Board Wiring Diagram (iQ751 / iQ1001)



15.4 Control Board Wiring Diagram (iQ1501)

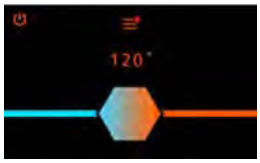
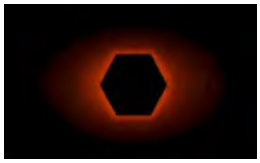
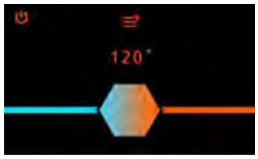


15.5 Troubleshooting Guide

Description	Possible Cause	Remedy
Blower		
Blower Fault 	· Blower noisy / impeller jammed. · Disconnected signal wire. · Wiring faulty.	· Inspect blower / impeller. Clean and remove any obstructions. · Check PWN 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.
Blower Speed Signal Fault 	. Blower signal picking up noise. . Wiring faulty . Blower faulty	· Check Pin 3 & Pin 5 are connected together. If not connected together, please request ELC0305 · Replace blower signal wiring harness · Replace blower
Igniter		
Ignition Failure 	· 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 Sensors  	· 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.
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.

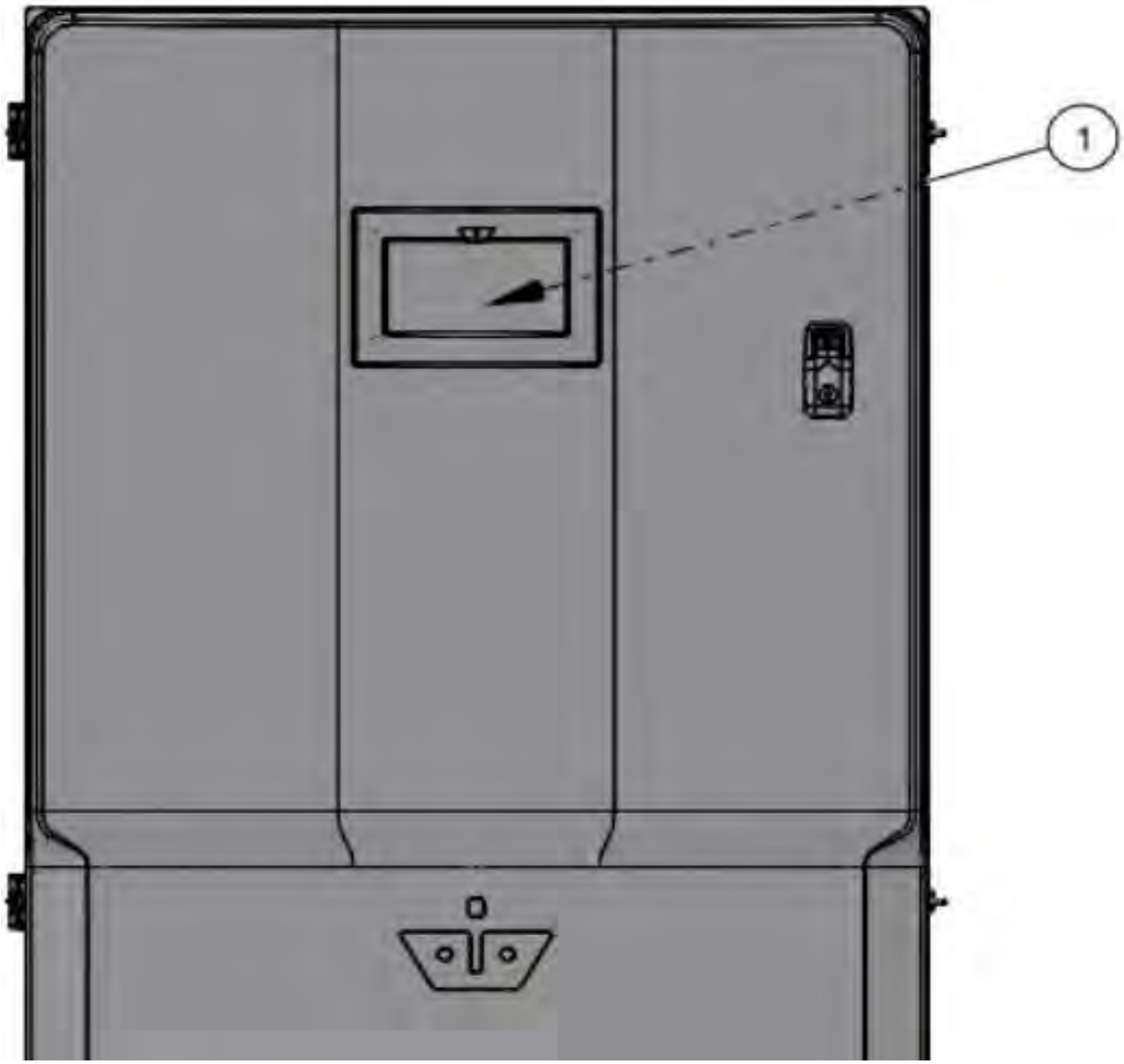
Description	Possible Cause	Remedy
Faulty Sensors Inlet / Outlet Sensors  	· Faulty sensor wiring or faulty sensor. · Inlet water temperature sensor. · Heat engine water outlet temperature sensor. · Faulty controller.	· Check for nicked or broken sensor wiring or connectors. Also check for corroded or 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 engine 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.
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.

Description	Possible Cause	Remedy
Cascading Fault  	· Loss of communication between the units. · Loss of communication between the HEXes.	· 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. · Check the connection between the HEXes · One or more HEX maybe with errors · Check software version on all control boards
Water Valve    	· Faulty flow sensor wiring (3 wires connection). · Water valve clogged or damaged. · Faulty controller board · Faulty water valve wiring (8 wires connection). · Damaged water valve · Faulty controller board · Faulty water valve wiring (8 wires connection). · Damaged water valve · Faulty controller board · Faulty water valve wiring (8 wires connection). · Damaged water valve · Faulty controller board	· Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace water valve. Check & clean Wye Strainer · Replace controller board · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace water valve. Check & clean Wye Strainer · Replace controller board · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace water valve. Check & clean Wye Strainer · Replace controller board · Check for nicked or broken sensor wiring or connectors. Also check for corroded or wet connectors. · Replace water valve. Check & clean Wye Strainer · Replace controller board
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.

Description	Possible Cause	Remedy
Alert 	· An alert is present (active screen). · Malfunction of monitored part or system.	· Refer to the remedy for indicated part or system.
Alive 	· Shows status of water heater. · Sleep mode.	· Touch display screen to awake
	· Sleep mode passcode protected.	· Touch display screen to awake and enter passcode.
	· Indicates an alert exists within the monitored systems.	. 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.
	· Indicates a fault exists within the monitored systems	· Refer to the remedy for indicated part or system.

16. Serviceable Parts

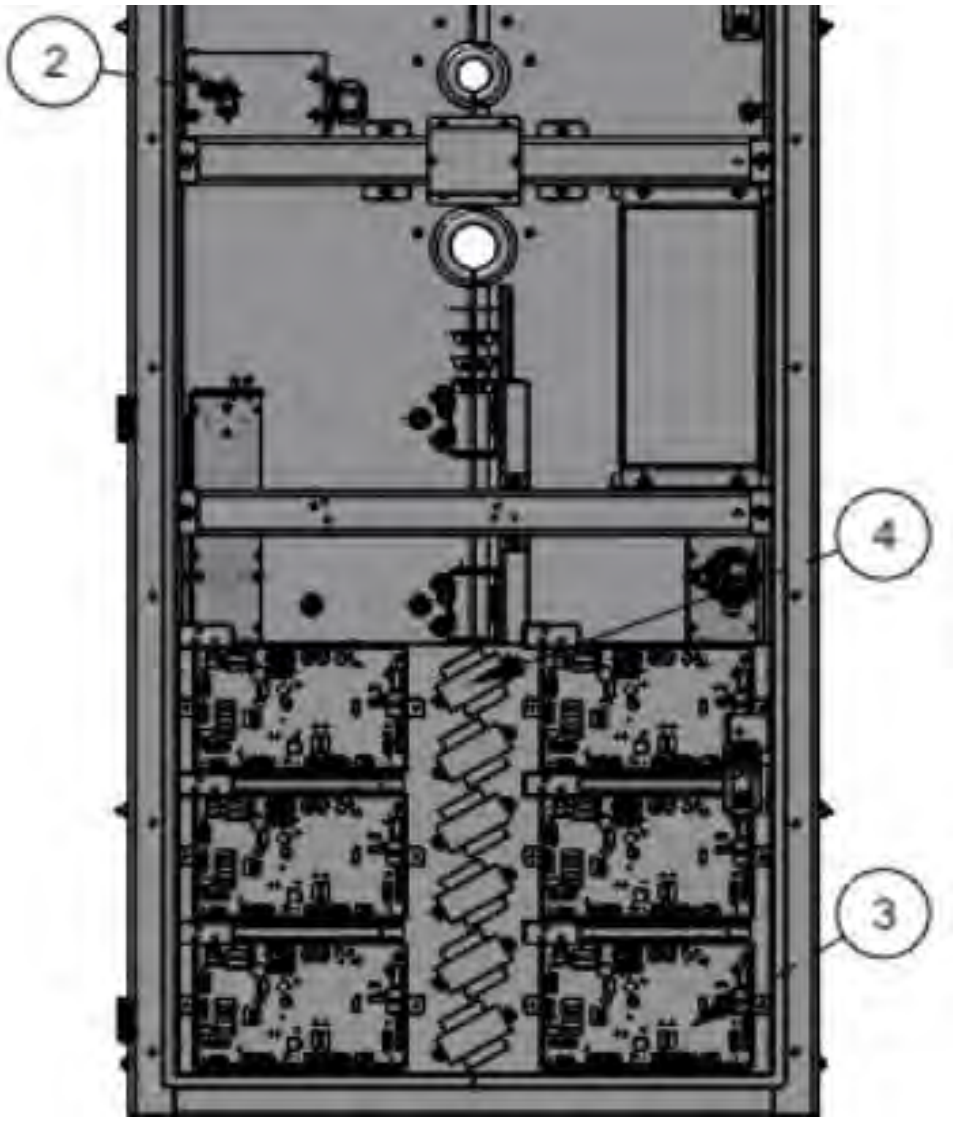
Display



Item	Part Number	Description
1	IGT-SPR0088	Display

16. Serviceable Parts

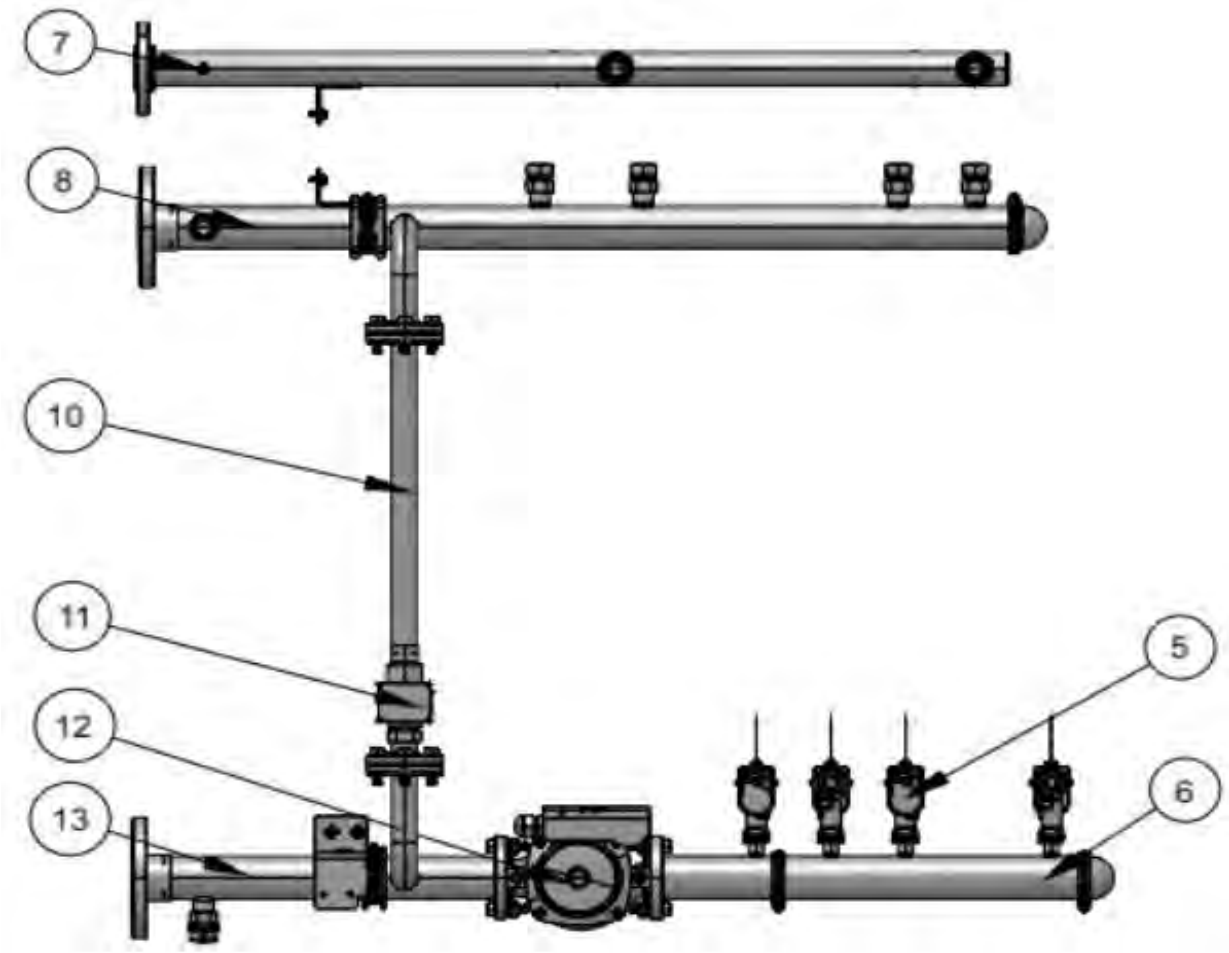
Control board & transformer



Item	Part Number	Description
2	IGT-ELC0138	Rocker Switch
3	IGT-SPR0002	Control Board
4	IGT-SPR0065	Transformer

16. Serviceable Parts

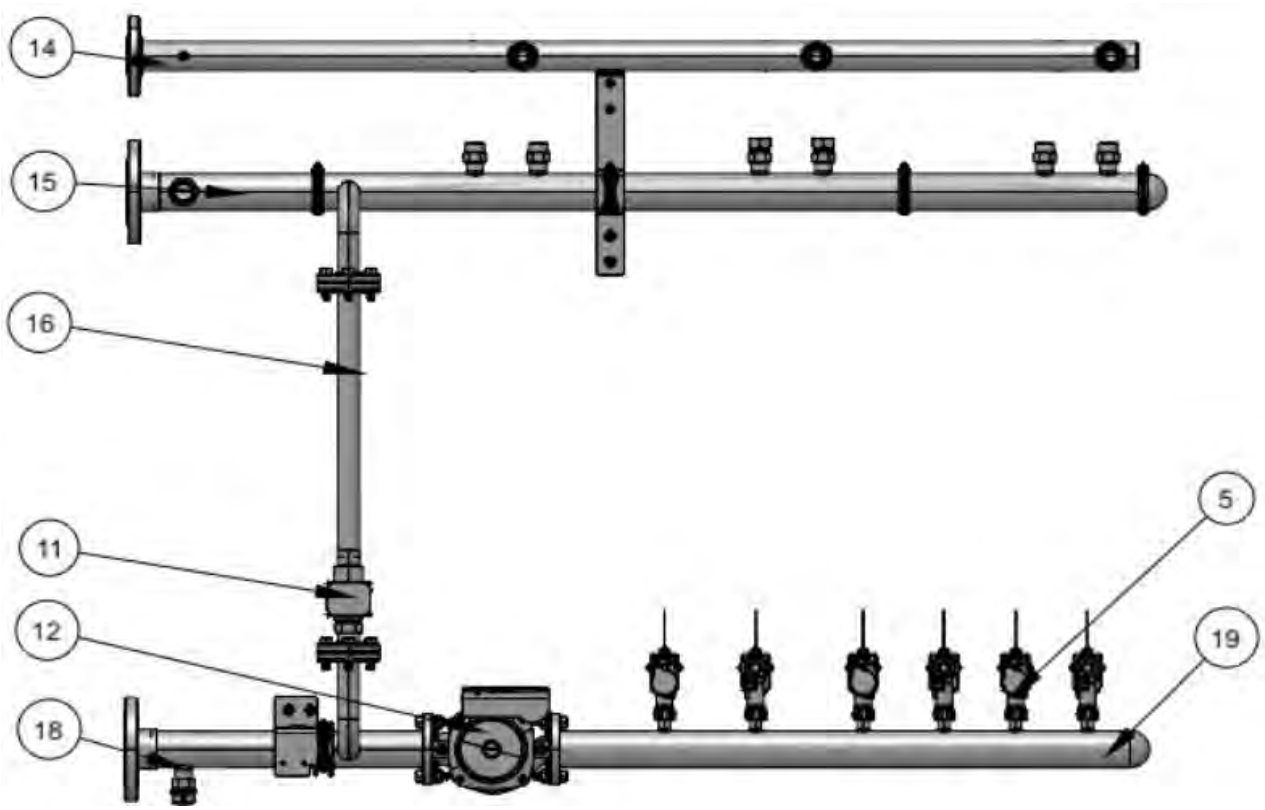
Gas & water circuit (iQ751/iQ1001)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x3 for iQ751, x4 for iQ1001)
6	IGT-MANF0046	Cold side manifold
7	IGT-MANF0052	Gas manifold
8	IGT-MANF0047	Hot side manifold
10	IGT-SA0319	Cross over assembly (incl bypass valve)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
13	IGT-MANF0049	Cold side inlet Header

16. Serviceable Parts

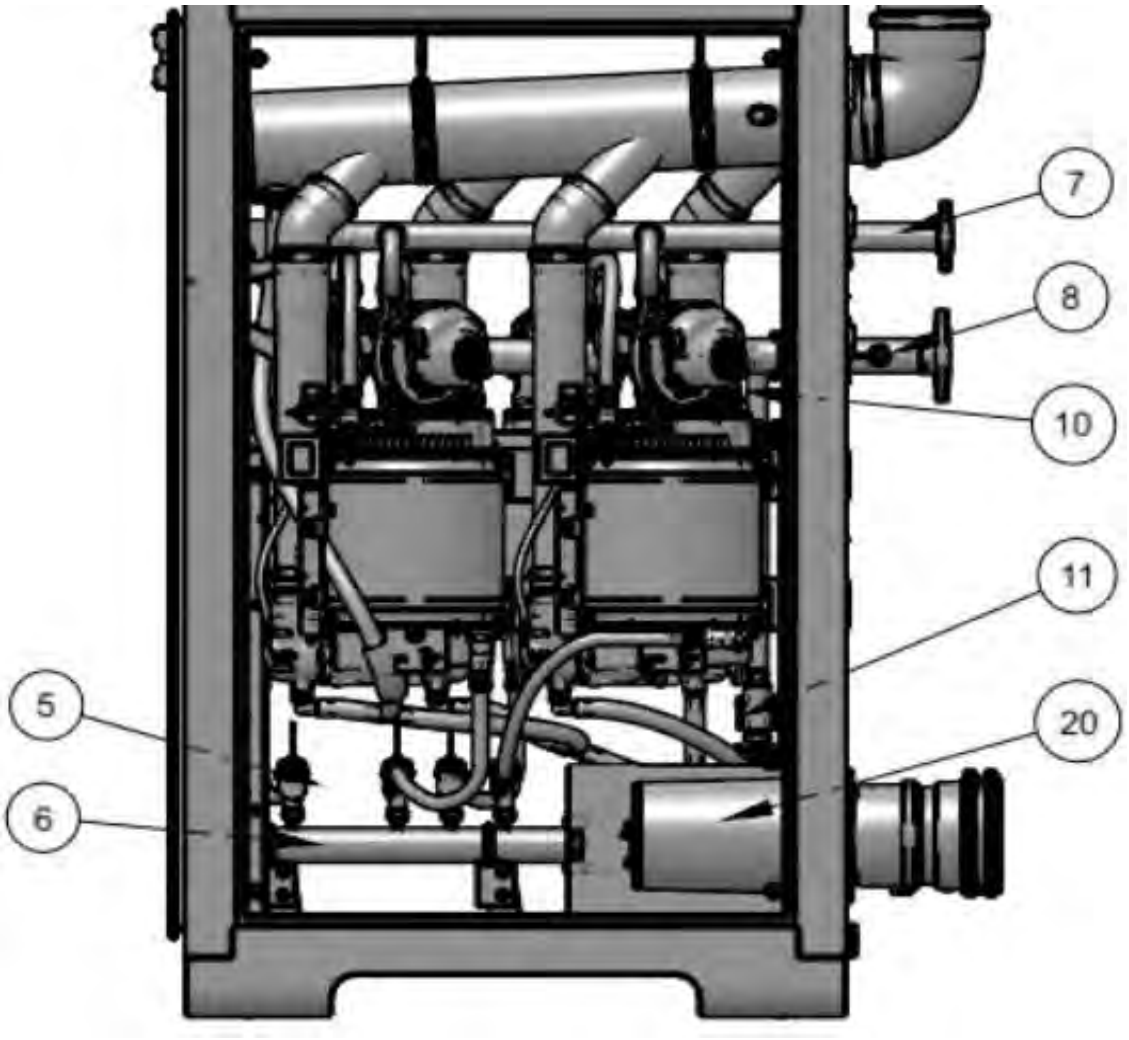
Gas & water circuit (iQ1501)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x6)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
14	IGT-MANF0008	Gas manifold
15	IGT-MANF0048	Hot side manifold
16	IGT-SA0319	Cross over assembly (incl bypass valve)
18	IGT-MANF0049	Cold side inlet Header
19	IGT-MANF0045	Cold side manifold

16. Serviceable Parts

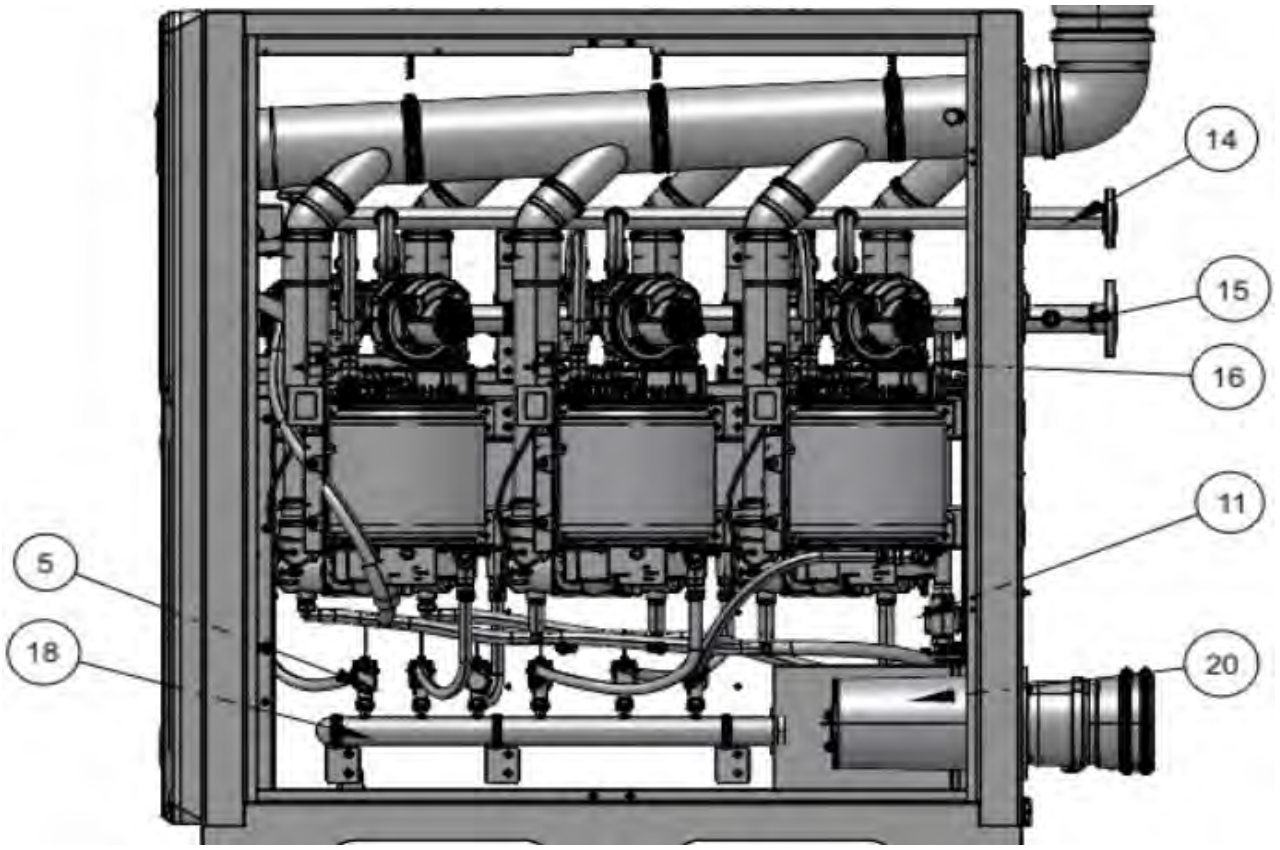
Right side (iQ1001)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x3 for iQ751, x4 for iQ1001)
6	IGT-MANF0046	Cold side manifold
7	IGT-MANF0052	Gas manifold
8	IGT-MANF0047	Hot side manifold
10	IGT-SA0319	Cross over assembly (incl bypass valve)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
13	IGT-MANF0049	Cold side inlet Header
20	IGT-FLTR0001	Air filter

16. Serviceable Parts

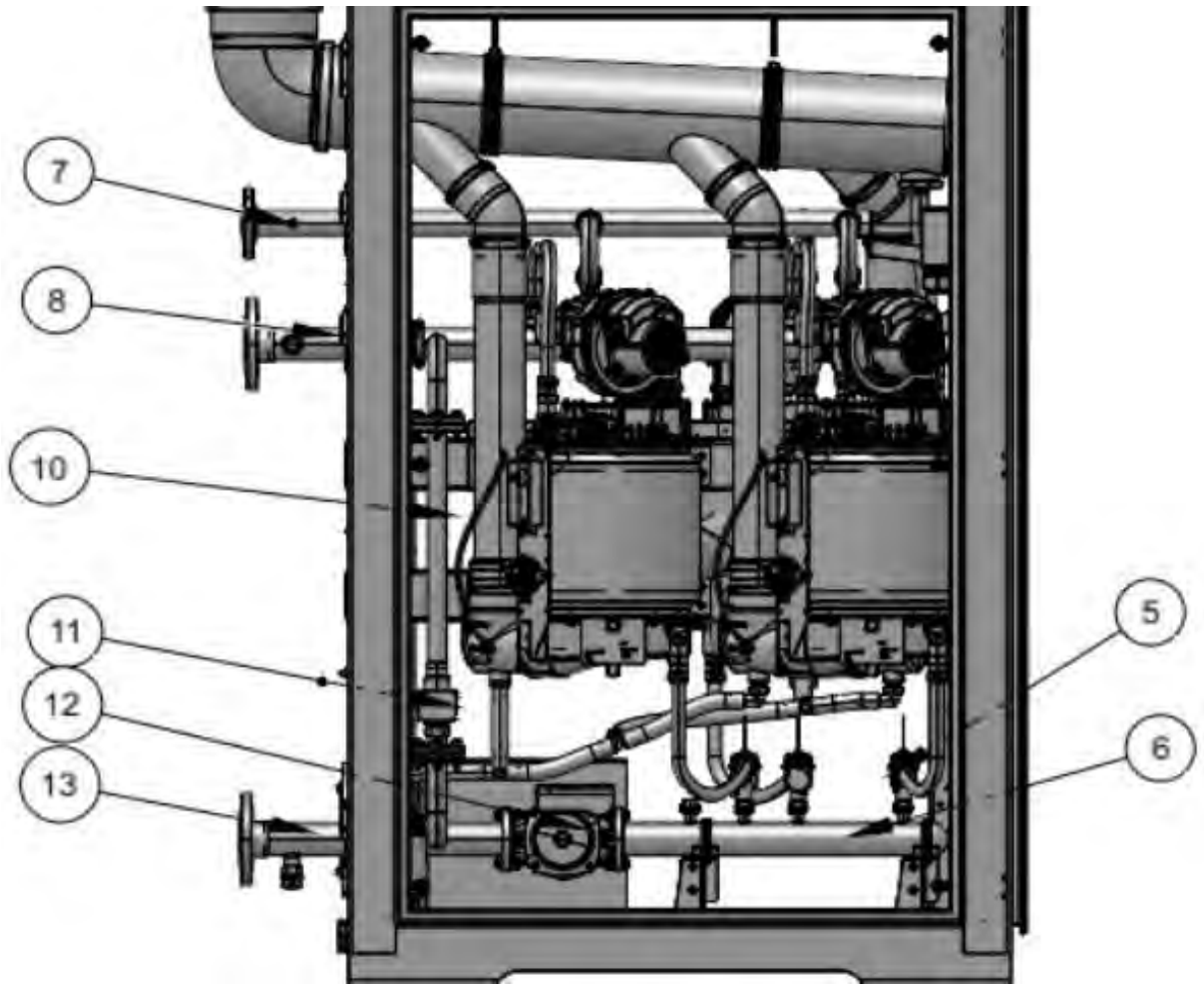
Right side (iQ1501)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x6)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
14	IGT-MANF0008	Gas manifold
15	IGT-MANF0048	Hot side manifold
16	IGT-SA0319	Cross over assembly (incl bypass valve)
18	IGT-MANF0049	Cold side inlet Header
19	IGT-MANF0045	Cold side manifold
20	IGT-FLTR0001	Air filter

16. Serviceable Parts

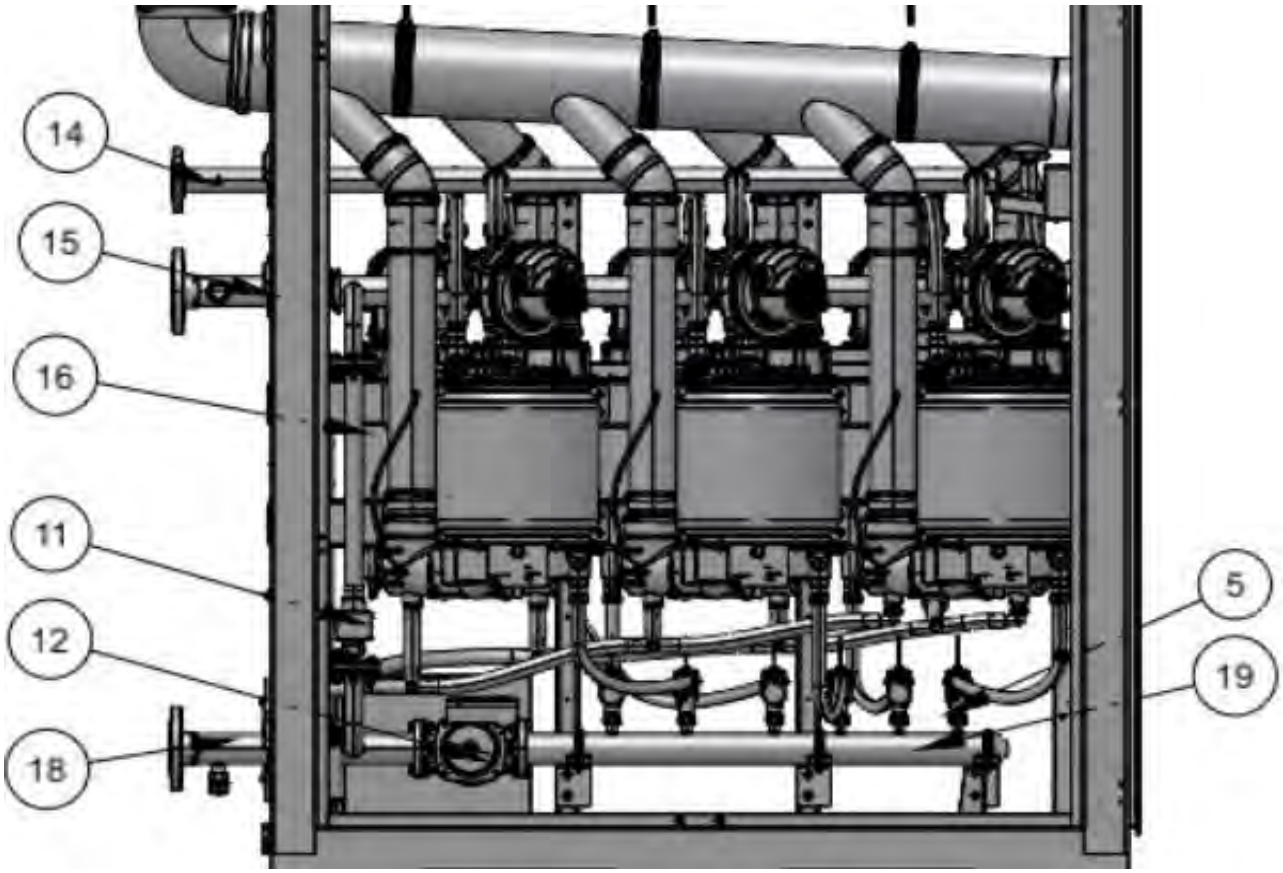
Left side (iQ751)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x3 for iQ751, x4 for iQ1001)
6	IGT-MANF0046	Cold side manifold
7	IGT-MANF0052	Gas manifold
8	IGT-MANF0047	Hot side manifold
10	IGT-SA0319	Cross over assembly (incl bypass valve)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
13	IGT-MANF0049	Cold side inlet Header

16. Serviceable Parts

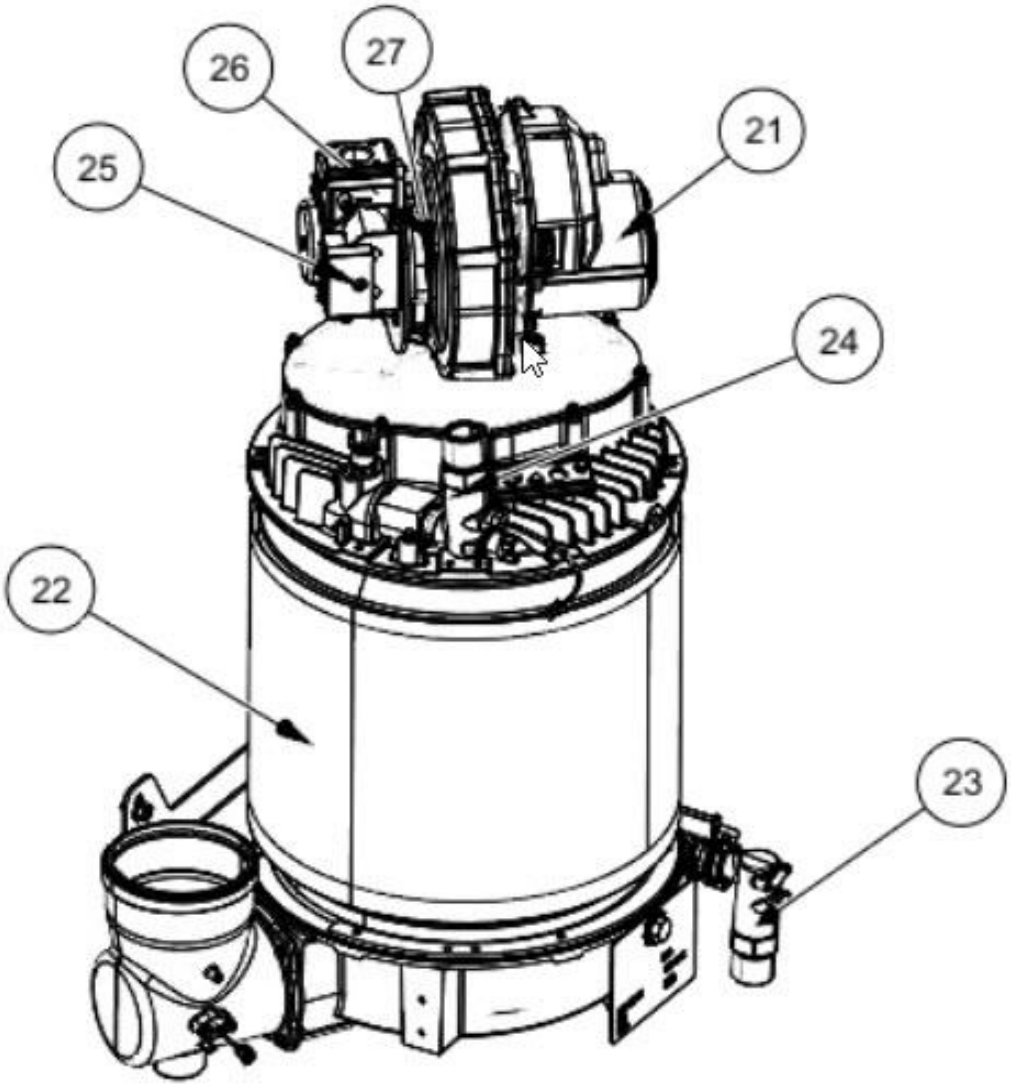
Left side (iQ1501)



Item	Part Number	Description
5	IGT-SPR0003	Water Valve (x6)
11	IGT-VL0019	Bypass valve
12	IGT-SPR0075	Pump Kit
14	IGT-MANF0008	Gas manifold
15	IGT-MANF0048	Hot side manifold
16	IGT-SA0319	Cross over assembly (incl bypass valve)
18	IGT-MANF0049	Cold side inlet Header
19	IGT-MANF0045	Cold side manifold

16. Serviceable Parts

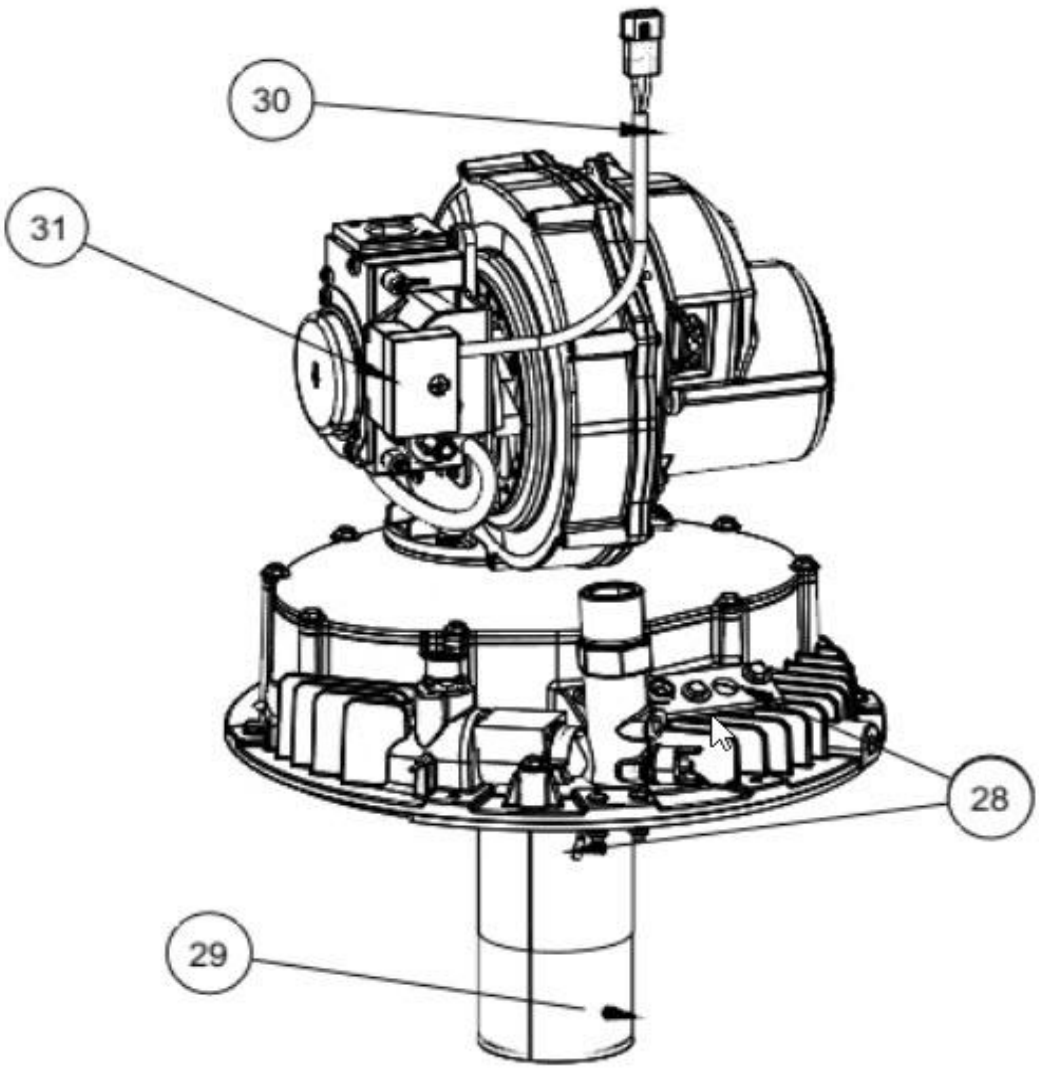
Blower & HEX Parts



Item	Part Number	Description
21	IGT-SPR0008	Blower Kit
22	IGT-SA0552	Complete HEX assembly
23	IGT-CST0010	Inlet Casting Adapter
24	IGT-CST0011	Outlet Casting Adapter
25	IGT-SPR0011	Gas Valve Kit
26	IGT-ELC0147	Gray Swirl Plate
27	IGT-ELC0012	Fan Adapter Plate

16. Serviceable Parts

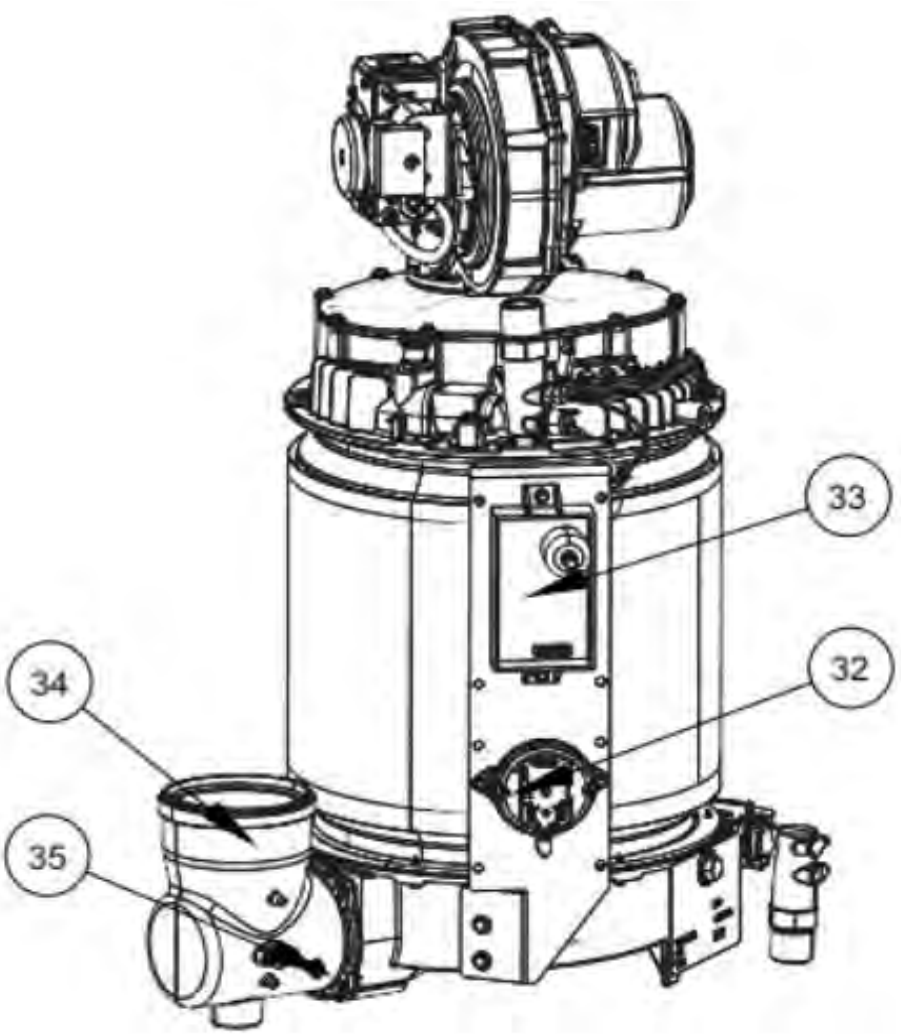
Burner, Electrode & Gas Valve



Item	Part Number	Description
28	IGT-SPR0106	Gen II V02 Electrode Kit
29	IGT-SPR0111	Gen II V02 Burner Kit
30	IGT-ELC0020	Gas Valve Harness
31	IGT-SPR0011	Gas Valve Kit

16. Serviceable Parts

DSI & Air Switch



Item	Part Number	Description
32	IGT-ELC0007	Air Switch
33	IGT-SPR0005	DSI
34	IGT-CST0029	Exhaust Sidecast
35	IGT-ELC0062	Flue Sensor

16. Serviceable Parts

Miscellaneous

Part Number	Description
IGT-ELC0092	25 ft cascading cable
IGT-ELC0232	50 ft cascading cable
IGT-SPR0109	Gen II V 2 O-Ring kit
IGT-SPR0110	Gen II V 2 Sensors Kit (includes Manifold inlet, Manifold outlet, Flue and Hotwater outlet sensors)
IGT-SPR0066	Resettable Overheat Switch
IGT-SPR0097	High temp sensor kit
IGT-SPR0085	iOT Kit
IGT-ELC0181	DSI to Electrode HV Cable
IGT-ELC0153	Display Harness
IGT-ELC0131	Heat Exchanger Harness
IGT-ELC0140	iQ751/iQ1001 Manifold Inlet/outlet and Air switch harness
IGT-ELC0137	iQ1501 Manifold Inlet/outlet and Air switch harness
IGT-ELC0214	Bypass Valve Harness
IGT-ELC0143A	iQ751/iQ1001 Power Harness
IGT-ELC0132A	iQ1501 Power Harness
IGT-FLTR0001	Air Filter
IGT-ELC0007	Air Switch
IGT-CST0031	Flapper