



Start Up Procedure Avenger Series

Pre-Start Checklist

- Flow switch is wired and installed at outlet of boiler. In variable flow applications, the standard paddle style flow switch may not close below 7 GPM. Increase flow through boiler to close paddle style flow switch.
- Low Water Cutoff is wired and installed above highest point of heat exchanger
- System pressure is set to a minimum of 30 PSIG or more up to 160 PSIG
- Condensate trap is primed and filled, neutralizer medium is present
- Horizontal section of vent is properly pitched away from boiler
- Enable/Disable signal is wired to Remote Operator (if required)
- DHW sensor or aquastat is wired to blue wire #81 and #82 contacts (if required)
- System sensor is wired to the System Sensor contacts (if required)
- Outdoor sensor wired to boiler, according to electrical diagram (if required)
- Lead Lag/Cascade wiring is present and polarity is correct (if required)
- BMS wiring is present and polarity is correct (if required)
- 4-20mA/2-10Vdc wiring is present (if required)
- Verify all electrical connections in the boiler are firmly engaged
- Factory test report

Natural Gas

- Inlet gas pressure to appliance is between 14" w.c. (static) to 4.5" w.c. (full fire)

Propane Gas

- Inlet gas pressure is set to 11" w.c.
- Gas line size to the appliance matches Part 3 in I&O for recommended gas pipe size
- Leak test on all gas connections

START UP BY A QUALIFIED CAMUS TECHNICIAN CAN ONLY BE PERFORMED WHEN ALL THE ABOVE IS CONFIRMED

Start Up Procedure

1. Open water valves to appliance. **DO NOT** open the gas valve connection.
2. AR1000 – 4000: Attach first manometer to Air+ and Air- of Siemens actuator to monitor differential air pressure and attach second manometer to Gas- and Gas+ of Siemens actuator.
3. Turn power on to boiler
4. Check manual & automatic air vents, bleed if necessary.
5. Allow pump to run 5-10 minutes to ensure all air is bled from the heat exchanger.
6. Verify that all temperature sensors are operational
7. Set P184 on VFD to 0. This will remove the skip band frequency.
8. Enable boiler by setting Local/Remote switch to Local
 - The boiler will perform pre-purge and initiate ignition sequence.
9. Monitor minimum differential air pressure. This must be between 0.32 – 0.35" w.c. for reliable ignition. Ignition value may be higher
10. Open gas valve connection to appliance.
 - Recycle power to boiler if boiler is on ignition failure condition.
 - **NOTE:** Boiler may require 2-3 tries for successful ignition due to air trapped in the gas line

Honeywell Low End Valve

- a. Allow boiler to operate at low end-low fire (4%) for 5-10 minutes before performing combustion analysis.
- b. It is necessary to initially fire the boiler at water temperatures less than 100°F.
- c. Adjust low end-low fire adjustment screw if necessary to meet combustion values in Part 8 of the I&O manual.
- d. Operate boiler at low end-high fire (refer to factory test report for % to enter into SOLA)
- e. Adjust low end-high fire adjustment screw if necessary to meet combustion values in Part 8 of I&O manual.

Siemens High End Valve

- a. Operate boiler at high end-low fire (refer to factory test report for % to enter into SOLA)
- b. Adjust high end-low fire adjustment screw if necessary to meet combustion values in Part 8 of I&O manual.
- c. Operate boiler at high end-high fire.