Advantus^{TM} Series

Start Up Procedure

Pre-start Checklist

✔	Item
☐	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)
☐	All BMS are set up and have been tested
☐	Verify all electrical connections in the boiler are firmly engaged
☐	Factory test report **(SHIPS WITH BOILERS-MUST BE ON SITE)**
☐	Natural Gas
☐	Inlet gas pressure to appliance is between 14” w.c. (static) to 4.5” w.c. (full fire)
☐	If a gas booster is supporting boiler operation, booster has been started up and proper operation and gas pressures have been verified
N/A	Propane Gas
N/A	Inlet gas pressure is set to 11” w.c. **Propane Only (When Applicable)**
☐	Gas line size to the appliance matches Part 3 in I&O for recommended gas pipe size
☐	Leak test on all gas connections
☐	Water Pressure Gauges and Thermometers installed to check proper operation
☐	Outdoor air temperature sensor has been installed on a Slave Boiler
☐	System sensor is wired to the designated Lead Boiler **(Master)**
☐	All required field wiring is installed, all points have been connected, checked and verified

Print Name:_____ Signature: _____

Tel: _____ Cell: _____ Email:_____

Date: _____

By signing this request form you are guaranteeing and responsible for all items on this sheet. If we are on site and cannot perform start up due to any incomplete items on this sheet, you will be charged a minimum of 4-hours which must be paid in full prior to returning.

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1. Open water valves to appliance. DO NOT open the gas valve connection.
2. AV1000 – 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^{o}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.
    a. Adjust high fire adjustment screw if necessary to meet combustion values in Part 8 of the I&O manual.
d. Ramp boiler down to low end low fire to re-check combustion values.

11. Set P184 on VFD to match value noted on factory test report.

Advantus™ Series

Start Up Procedure

12. Ramp boiler up and down several times across low end/high end switch over point to check for reliable operation.
13. Perform 5 ignition attempts to verify that ignition is quiet and rumble free.
    a. If ignition is rough or unreliable re-start procedure at step 6.
14. Record combustion values at four points in the operating range.
    a. Low end-low fire
    b. Low end-high fire
    c. High end-low fire
    d. High end-high fire
15. Verify that condensate runs out of boiler and is unobstructed
16. Verify that vent is not leaking flue gas into mechanical room
17. Verify operation of safeties on boiler and record on start-up report
18. Confirm operation of Protonode, if equipped

Factory start up report MUST be completed by technician with both the completed start up report and analyzer print out(s) for each boiler on project being returned to MJD Combustion Sales, Inc. for conformance to safe and correct operating conditions and to be kept on file for use in any warranty claim.