



INFORMATIONAL BULLETIN

PARTS & SERVICE DEPARTMENT

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TO: Manufacturers' Representatives, District Sales Managers, Regional Managers, Technical & Customer Service Personnel, Service Agents and Sales & Marketing Personnel

SUBJECT: **Intelli-Fin Sequence of Operation**

1. The power switch is placed in the ON position and the run stop switch is in the RUN position.
2. 120v power is supplied to the control junction box and the integral pump.
3. 120v power is supplied to the control transformer, ignition module and excel 10.
4. Bypass valve will synchronize (on initial start-up)
5. Command Display Set Point (operating Temperature) is set to call for heat.
6. Excel 10 Controller initiates call for heat.
7. Excel 10 enables the Ignition Module.
8. Ignition Module enables the Variable Frequency Drive.
9. Excel 10 sends a 4ma signal to the Variable Frequency Drive.
10. The VFD supplies the Combustion Air Blower with 230v 3ph power at 60 Hz.
11. The combustion fan drives to 100% for pre-purge
12. Low air switch contacts make and enable the ignition module.
13. Pre-purge completes combustion fan drives to 50% (30Hz); ignition module begins warm-up sequence for the Hot Surface Igniter.
14. The HIS proves 1800 degrees (3.1 amps or greater).
15. The ignition module supplies voltage to the variable ratio gas valve and the redundant gas valve.
16. Relay contacts prove operation of the igniter, gas valves and safety switches to the excel 10.
17. Variable ratio gas valve senses pressure for the combustion blower and supplies gas to the orifice and into the pre-mix chamber.
18. Gas is forced into the burner and out of the burner ports under pressure.
19. The HIS ignites the gas/air mixture from the burner and then serves as a flame sensor to prove main flame.
20. Boiler is now firing at 50%.
21. Excel 10 drive the combustion air fan to 100%, gas increases matching air pressure.
22. Unit stays at 100% until set point is reached.
23. Excel 10 will modulate firing rate from 100% to 25% to maintain temperature within nine degrees above set point.
24. Should temperature increase greater than nine degrees above set point unit will shut down and remain in stand by until the next call for heat (nine degrees below set point).