Ryan's Express

Ryan Company, Inc. Newsletter - June 2010

BOILERS • WATER HEATERS • BURNERS • CHIMNEYS • ACCESSORIES

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Interesting Facts

- Superbowl Sunday is the biggest food delivery day of the year. One out of seven Americans order takeout or delivery, 58% of those orders are for pizza.
- On June 19, 1885, the French frigate "Isere" delivered the Statue of Liberty to the United States. For transit, it was broken down into 350 pieces and packed into 214 crates.
- On its first night of operation in 1982, the UPS Worldport facility processed 2000 packages. It now handles that number in under 30 seconds.

Taken from Modern Marvels

July Dates to Remember

July 4 - Independence Day

July 21 - ASPE Golf

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Modern Boiler Control and Piping

Someone once said, "Progress is the exchange of one nuisance for another nuisance". Over the last 50 years, boilers, boiler controls, pumps, and piping systems have progressed at different rates. Some have not changed at all, and others have progressed at the detriment of other components within the hydronic heating system. As one example, the modern boiler is now low-mass, compact, and usually constructed of stainless steel, copper or aluminum. Flow is usually very critical with these boilers. Yet, variable speed pumps, and variable flow systems are very prevalent in the modern heating system which contradict the needs of most modern boilers. Yet, another example, progress has been made in boiler controls. Most boiler manufacturers can provide a boiler controller capable of controlling a number of their boilers. Most of these controllers come with a few proprietary features designed to guarantee the sale of their product, but do little more than basic control of their boiler only. At the same time, building automation contractors are providing better safety, comfort and equipment controls. If directed, building automation with state-of-the-art electronics, and remote monitoring can provide excellent boiler control systems. However, the over-lapping of responsibility between building automation and boiler suppliers sometimes leads to incorrect control of the boilers, a lack of integration with the building automation system, and in general, a lack of ownership of the controls that are provided.

Continued on Page 2

Fulton High Eff. Condensing Boilers

Fulton offers two models of boilers that are able to take advantage of parallel piping systems which allows for trouble free operation when used in conjunction with variable speed system pumps. Both models have these outstanding features:

» Up to 99% Efficiency
» 5:1 Modulating Turndown
» No Minimum Return Water Temp
» No Minimum Flow Rate
» No Maximum Flow Rate

Fulton Vantage

- 2, 3, 4 & 6 Million Btu/Hr
- Linkageless Controls
- Multiple Fuel Options
  - Nat Gas
  - LP
  - Nat & LP
  - #2 Fuel Oil
  - (Nat or LP) & #2 Oil

Click Here for more info

Fulton Pulse

- 300 - 2000 MBH
- No Power Burner
- Runs on less than 0.5 Amps
- Multiple Fuel Options
  - Nat Gas
  - LP
  - Nat & LP

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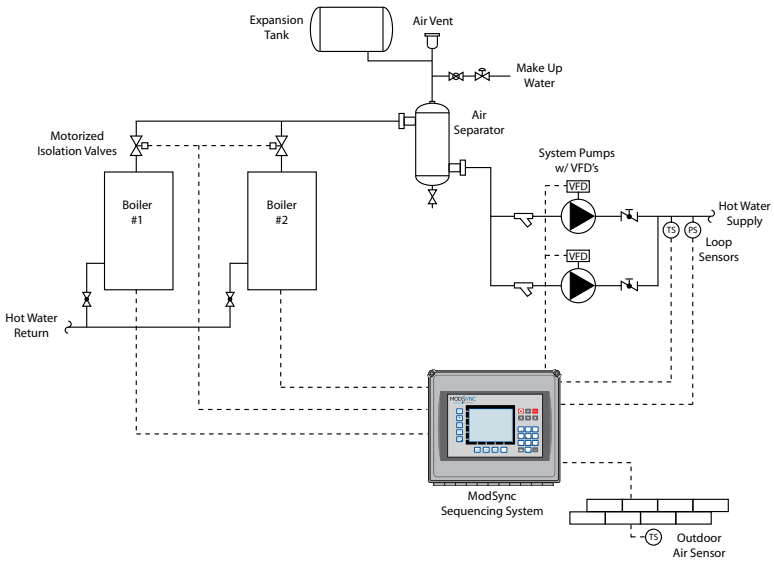
Modern Boiler Control & Piping Continued

Hydronic piping systems have not changed much in 25-years. To meet the flow requirements of modern boilers, the primary-secondary piping design has been used often. The primary (boiler) pumps would provide a proper and constant flow to the boilers and the secondary (system) pumps would provide a relatively constant flow (dependent on two-way valves, three-way valves, pump-bypass) to the system. It was a simple and effective piping system. The boilers could always depend on the secondary pumps to transfer all (most) of the heat of the boilers to the system.

However, using variable flow secondary (system) pumps within a P/S piping system can create problems for some modern boilers. Most modern boilers require a minimum flow to transfer heat from the boiler to the system. Should the flow rate in the secondary side of the system drop below the flow rate of the primary (boiler) pumps, the boiler will over-cycle, resulting in system energy efficiency reduction, and in a worse case scenario damage to the boiler. Most (simple) boiler controllers would be incapable of reducing the firing rate of the boiler to prevent damage, or speed up the secondary pumps to remove the heat from the boilers. Most building automation contractors simply do not understand boilers well enough to plan on this situation with their controls.

An alternative to P/S piping is another common piping system called the parallel piping system. In a parallel arrangement, system flow is divided among each boiler and pressure loss is nearly equal resulting in an equal flow through each boiler. Isolation valves at each boiler inlet can stop flow when individual boilers are not operating to increase system efficiency. To further increase system efficiency, select a boiler control capable of variable speed pumping and capable of maintaining a minimum flow to prevent damage to the boilers, if applicable. (See diagram)
- Dan Soffa



ModSync Sequencing Controller

- Intelligent Lead/Lag
- Easy Touch Screen Interface
- Outdoor Reset
- Setback Scheduling
- BMS Communication
- Alarm Status & History
- Offsite Monitoring
- Customizable
  - Pump Control
  - Valve Control
  - DHW Prioritization

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