

Summer. The Best time to Repair or Replace your Boiler

In late summer to early fall boiler suppliers' and contractors' appointment calendars get swamped with boiler startups and services in preparation for the heating season. Summer is an ideal time to consider boiler repairs, boiler updates, or even replacement to ensure you're ready when the heating season returns.

Evaluate your boiler System

When Spring arrives and you take your boiler off-line, you can take advantage of off-peak service periods and call your boiler service provider for an inspection. A technician can evaluate your boiler system to ensure proper operation and the integrity of your boiler. However, it's not just the boiler you need to consider, supporting components like pumps and piping should be reviewed. Below are some tips for evaluating your boiler when taking your boiler off-line:

- Check all valves and switches for proper operation
- Expansion tanks – check the air-side of the diaphragm-type for proper pressure. The steel compression atmospheric tank-type can become waterlogged from air that can get absorbed through the heating system or leaks
- During dormant months, pumps that sit idle and can bind up due to water quality
- Check for cracks in the boiler casing
- Check safeties in the low water cutoff, the auxiliary low water cut-off and flame scanner
- Update controls for efficiency with outdoor reset (ODR) control and/or update controls to include boiler cascade/sequencing controls where there are multiple boilers but no controls
- Address boiler short cycling issues by adjusting controls, which could include dropping burner maximum input. Consider adding a buffer tank for longer on-and-off cycles
- Inline strainers should be inspected and cleared
- Circulator volutes/impellers can be inspected for black iron oxide (magnetite) and cleared. Circulators should be replaced if too many deposits are built up. Additionally, a dirt separator with magnet can be added for additional system protection
- Review your piping to ensure proper flow and identify areas with heating issues to correct them

Upgrade boiler components

If your boiler is older than just 5 years, it may benefit from component updates that can significantly increase boiler efficiency and reduce emissions. Start by identifying opportunities to minimize system heat loss. Boiler controls are a common upgrade opportunity that can easily be justified by the savings realized on your winter energy bill.



Valves should be checked for proper operation



Pumps that sit idle during the summer months can bind up - check for proper operation



Control upgrades can significantly increase boiler operating efficiency and save energy

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Variable Speed Drive - with the aid of variable speed drives (VSDs), pumps and motors can gain efficiency by enabling them to only operate as needed. The result, electrical consumption is reduced and less wear and tear on components.

Parallel Positioning - if your boiler is using a single modulation motor with jackshafts to the fuel and air damper, your boiler may be operating with higher excess air than required, thus, reducing efficiency. Incorporating a parallel positioning system with dedicated actuators for the fuel and air valves can deliver up to 5% in energy savings.

O2 Trim - Another way to ensure peak efficiency is to use an oxygen sensor/transmitter in the exhaust gas. The sensor/transmitter continuously senses oxygen content and provides a signal to the controller that adjusts the air damper and/or fuel valve, maintaining a consistent oxygen concentration. This minimizes excess air while optimizing the air-to-fuel ratio.

Fewer disruptions for a Boiler Replacement

Boiler replacement takes planning. Engineers and boiler suppliers can review the system as a whole to determine modernization and efficiency opportunities, identify the equipment that is going to be the best fit for your application, and allow time for equipment ordering and installation. Also, don't forget to take advantage of state/local energy rebates.

More often than not, boiler startup in the Fall has bugs that need to be worked out. While issues are typically minor to troubleshoot, you can prevent costly surprises by being proactive. Taking advantage of boiler downtime will not only reduce stress for you and your boiler service company, but if issues are not resolved on time you may have to go through the expense of boiler rental or space heaters in the interim.

Source: Cleaver-Brooks - [Efficiency Benefits of a Boiler System Upgrade](#)



Variable Speed Drives enable a system to operate only as needed