

Maintenance Programs

We offer **Monthly and Quarterly Maintenance Programs** to maintain optimum performance, improve system reliability, extend equipment life, and minimize the risk of a system failure. By participating in our **Annual Maintenance Program**, your equipment will receive the necessary assessments, testing and maintenance to fully support the required annual inspection. At the end of the Annual Maintenance, the boiler will be closed and fitted with new Genuine Cleaver-Brooks gaskets. **Only Genuine Cleaver-Brooks Parts will be used during the term of this contract** to ensure maximum system performance. All findings will be documented and reviewed with you.

On-site maintenance guidelines are subject to customer needs, local jurisdictional authority requirements and may vary at the local level. Please review our proposal for local details.

Combustion and Controls

A	Inspect & clean all burner traps & strainers
A + Q + M	Inspect all actuators & motors for abnormal operation
A + Q	Inspect all lights, indicators, & alarms for functionality
A + Q + M	Inspect atomizing media equipment
A + Q + M	Inspect boiler & burner components for wear
A + Q + M	Inspect burner flame pattern
A + Q + M	Inspect firing rate control
A + Q + M	Inspect flue, vent, stack, & outlet dampers
A	Inspect fuel nozzles & fuel outlet orifices
A + Q	Inspect fuel train(s), regulator(s) & valves
A + Q + M	Inspect gauges, monitors, & indicators
A + Q	Inspect igniter for damage & wear
A + Q + M	Inspect inlet & outlet dampers
A + Q + M	Inspect instruments & equipment settings
A + Q + M	Inspect linkage, drive arms & damper connections for wear
A	Inspect main fuel safety shutoff & vent valves for leakage
A + Q + M	Inspect pilot & main fuel flame signal strength
A + Q + M	Inspect pilot line, regulator & valves
A + Q + M	Inspect the blower motor operations
A	Inspect the diffuser & burner components for wear
A	Inspect the diffuser positioning
A + Q	Perform a pilot turndown test
A + Q	Perform leak test on pilot & fuel train(s)
A + Q + M	Test & reset combustion
A	Test & verify firing rate control set points
A	Test atomizing medium interlocks & set points
A	Test burner position interlocks
A	Test combustion air proving switch
A	Test damper position interlocks

A + Q	Test flame failure detection system for pilot & main fuel(s)
A	Test flame failure safety shutdown timing
A	Test fuel train(s) interlocks
A	Test high & low fuel temperature/pressure interlocks
A	Test operating & high limit control functionality
A	Test trial for ignition & full sequence timing

Fireside

A	Inspect attaching mechanisms & open all access doors
A + Q + M	Inspect boiler for visible signs of hot spots & discoloration
A	Inspect fireside of boiler & clean debris or soot as required
A	Inspect the refractory & insulation for wear

Waterside

A + Q + M	Blow down the gauge glass & assembly
A	Drain boiler, open manholes & hand holes for inspection
A	Inspect & flush pressure control tree as needed
A	Inspect & flush waterside of boiler
A + Q	Inspect blowdown valves & equipment for leakage & wear
A	Inspect PV for cracks, visible corrosion & scale
A + Q + M	Inspect safety relief valves for leakage
A + Q + M	Inspect the feed water valve & controls for operation
A + Q + M	Inspect water column & gauge glass for wear & etching
A	Open & inspect internals of low water cutoff equipment
A + Q	Perform a low drain test on low water cutoff
A	Test safety relief valves for proper operation (as requested)
A + Q + M	Test water column water level ports

- A + Q + M** Annually, Quarterly & Monthly
- A + Q** Annually & Quarterly
- A** Annually

Preventive Maintenance

Routine Boiler and Pressure Vessel inspections are required by local jurisdictions. Typically, these critical inspections are required annually, but in some rare cases, they can be required bi-annually. The inspection frequency is determined by local laws and regulations. As such, Boiler and Pressure Vessel inspections are unavoidable and will result in a boiler and/or boiler system to be temporarily taken offline. The specific details involved to perform an annual inspection can be overwhelming for companies that do not have the resources to stay current with changing compliance regulations. As a result, it is beneficial and very common for companies to engage knowledgeable technical resources who can more easily navigate the inspection process. Outsourcing this responsibility to trained technicians can facilitate an expedient and successful approval by the local jurisdiction while enhancing your preventative maintenance objectives.

Optimization Activities

Whether or not you choose to utilize our Preventive Maintenance Program, we highly recommend that you take steps to insure that your boiler equipment is protected.

Controls

Proper water levels, operating pressures, and control devices are critical to your boiler system's performance. Carefully check gauge glass for cracks or erosion and inspect the float and switches. Check the operation of all limit switches and sequences of operation timing.

Refractory

Check for cracking. Unrepaired, even minor cracks can reduce boiler efficiency and allow warping and damage to occur on vital metal surfaces.

Burners

Remove, check and clean dampers, nozzles, electrodes, scanners, hoses, compressors, filters, diffusers, etc. for blockage and/or damage.

Fireside

Clean out any detectable soot that can reduce the efficiency of your boiler tubes, tube sheets and furnace area. Replace fireside gaskets when closing the boiler.

Waterside

Drain, open and flush entire waterside of the boiler. Remove all low water controls to clean and inspect piping. Flush makeup and/or feed water pump strainers and water column float chambers. Drain expansion tanks and remove all plugs in control piping. Inspect and reinstall controls. Inspect for damage due to waterside leakage around handholes and manholes, gauge glass assemblies and other wet surfaces. Check gaskets for wear and tear.

Top 10 reasons to invest

- Improve operational stability
- Improve burner combustion efficiency
- Improve boiler heat transfer efficiency
- Enhance safety and issue identification
- Reduce long-term repair cost
- Reduce annual inspection difficulties
- Priority access to technical expertise and service support
- Priority access to C-B Genuine Parts inventory
- Single-source responsibility for boiler system support
- Extend equipment life



Cleaver-Brooks Genuine Parts used with the Preventive Maintenance Program will improve performance, maximize efficiency and reduce disruptive downtime. Trust your Cleaver-Brooks authorized representative to provide you with genuine parts and service to optimize your equipment.