

Monthly Maintenance Program



Our **MAXIMUM COVERAGE** offers the best protection against system failure and downtime. It is performed in addition to our Quarterly & Annual Maintenance Programs. On a monthly basis, we will inspect the boiler equipment for irregularities and fine-tune the fuel-to-air combustion curve(s) to maximize burner combustion efficiency. A significant benefit of this program is proactive boiler operational awareness to optimize system performance and minimize operational costs.

As a part of this plan, preventive maintenance will be performed every month. The inspections and tests listed below will be completed eight (8) times a year in addition to the one (1) Annual Maintenance visit and three (3) Quarterly Maintenance visits.

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

- Inspect all actuators & motors for abnormal operation
- Inspect atomizing media equipment
- Inspect boiler & burner components for wear
- Inspect burner flame pattern
- Inspect firing rate control
- Inspect flue, vent, stack, & outlet dampers
- Inspect fuel train(s), regulator(s) & valves
- Inspect gauges, monitors, & indicators
- Inspect inlet & outlet dampers
- Inspect instruments & equipment settings
- Inspect linkage, drive arms & damper connections for wear
- Inspect pilot & main fuel flame signal strength
- Inspect pilot line, regulator & valves
- Inspect the blower motor operations
- Test & reset combustion

Fireside

- Inspect boiler for visible signs of hot spots & discoloration

Waterside

- Blow down the gauge glass assembly
- Inspect safety relief valves for leakage
- Inspect the feed water valve & controls for operation
- Inspect water column & gauge glass for wear & etching
- Test water column water level ports



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.

Quarterly Maintenance Program



Our **PRINCIPAL COVERAGE** includes all of the inspections and tests in our Annual Maintenance Program as well as three (3) additional on-site visits. Your boiler system will receive the necessary technical assessments, testing and fine-tuning of the fuel-to-air combustion curve(s) to maximize burner combustion efficiency. This quarterly program will help extend equipment life.

As a part of this plan, preventive maintenance will be performed on a quarterly basis. The inspections and tests listed below will be completed three (3) times a year in addition to the one (1) Annual Maintenance visit.

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

- Inspect all actuators & motors for abnormal operation
- Inspect all lights, indicators, & alarms for functionality
- Inspect atomizing media equipment
- Inspect boiler & burner components for wear
- Inspect burner flame pattern
- Inspect firing rate control
- Inspect flue, vent, stack, & outlet dampers
- Inspect fuel train(s), regulator(s) & valves
- Inspect gauges, monitors, & indicators
- Inspect igniter for damage & wear
- Inspect inlet & outlet dampers
- Inspect instruments & equipment settings
- Inspect linkage, drive arms & damper connections for wear
- Inspect pilot & main fuel flame signal strength
- Inspect pilot line, regulator & valves
- Inspect the blower motor operations
- Perform a pilot turndown test
- Perform leak test on pilot & fuel train(s)
- Test & reset combustion
- Test flame failure detection system for pilot & main fuel(s)

Fireside

- Inspect boiler for visible signs of hot spots & discoloration

Waterside

- Blow down the gauge glass assembly
- Inspect blowdown valves & equipment for leakage & wear
- Inspect safety relief valves for leakage
- Inspect the feed water valve & controls for operation
- Inspect water column & gauge glass for wear & etching
- Test water column water level ports
- Perform a low drain test on low water cutoff



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Annual Maintenance Program



This **CORE COVERAGE** provides professional technical resources to improve the safety, reliability, and efficiency of your boiler system. We will conduct the necessary assessments, tests and maintenance to fully support your boiler's optimum operation. At the end of the required Annual Inspection, the boiler will be closed and fitted with new Genuine Cleaver-Brooks gaskets. You can be assured that we will replace degraded and/or failed parts with Genuine Cleaver-Brooks Parts 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

- Inspect all actuators & motors for abnormal operation
- Inspect all lights, indicators, & alarms for functionality
- Inspect linkage, drive arms & damper connections for wear
- Inspect & clean all burner traps & strainers
- Inspect atomizing media equipment
- Inspect boiler & burner components for wear
- Inspect firing rate control
- Inspect flue, vent, stack, & outlet dampers
- Inspect fuel nozzles & fuel outlet orifices
- Inspect fuel train(s), regulator(s) & valves
- Inspect the diffuser positioning
- Perform a pilot turndown test
- Perform leak test on pilot & fuel train(s)
- Test & reset combustion
- Test & verify firing rate control set points
- Test flame failure safety shutdown timing
- Test fuel train(s) interlocks
- Test high & low fuel temperature/pressure interlocks
- Inspect burner flame pattern
- Inspect gauges, monitors, & indicators
- Inspect igniter for damage & wear
- Inspect inlet & outlet dampers
- Inspect instruments & equipment settings
- Inspect main fuel safety shutoff & vent valves for leakage
- Inspect pilot & main fuel flame signal strength
- Inspect pilot line, regulator & valves
- Inspect the blower motor operation
- Inspect the diffuser & burner components for wear
- Test atomizing medium interlocks & set points
- Test burner position interlocks
- Test combustion air proving switch
- Test damper position interlocks
- Test flame failure detection system for pilot & main fuel(s)
- Test operating & high limit control functionality
- Test trial for ignition & full sequence timing

Fireside

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

Waterside

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



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