

COMPACT FOOTPRINT, HIGH EFFICIENCY PACKAGED COMMERCIAL WATERTUBE BOILER



Model 5

1.5 - 8MMBTU

CLEAVER-BROOKS MODEL 5 PACKAGED COMMERCIAL WATERTUBE BOILER

REDUCE BOILER FOOTPRINT

Savings of up to 50% in floor space

Size for size, the Model M5 requires as little as half the floor space needed by other boilers of its type. This can result in new construction savings — especially important with today's ever-increasing cost of construction. Every square foot of floor space that can be saved means a direct dollar saving.

Sized for quick replacement of old boilers

Model M5's trim 33" width eliminates costs of knocking out walls and facilitates easy replacement of old, inefficient boilers. This simplified replacement advantage is especially important in emergency breakdown situations.

Weight savings up to 40%

The Model M5 weighs far less than comparable boilers. This results in lower freight and rigging costs. And supporting structural requirements also can be reduced.

Packaged for quick hook-up

This concept originated with Cleaver-Brooks, and for 60 years CB owners saved time and money in reduced installation costs. Each unit is fully assembled, tested, CSA approved and shipped ready for fuel, water, electrical and breaching hook-up.

CONSIDER MODEL 5 AS "STAND-BY"

Running an oversized boiler at low fire or "on/off" means running at low efficiency. And low efficiency means wasted fuel, wasted money.

With the compact Cleaver-Brooks Model 5, you can completely shut down your primary system during periods of low steam demand and maintain peak fuel-to-steam efficiency.

The Model 5 is trim enough (just 33" wide) to fit through doorways, yet it's available in capacities up to 6,000,000 Btu/hr input. Design pressure to 500 PSIG, hot water up to 410°F. It offers multi-fuel versatility, rugged big boiler construction, and quiet operation - less than 79 dBA.

MINIMUM REFRACTORY, LESS MAINTENANCE



With Model M5, membrane waterwalls seal the combustion chamber, eliminating the need for approximately 95% of the refractory normally required by boilers of other design. Thus Model M5 confines the use of refractory to the burner throat and furnace floor. This results in a

substantial savings in maintenance costs normally required for periodic repair and replacement of refractory.

HIGH-PERFORMANCE MEMBRANE WATER WALLS

Take advantage of the design principles used by hundreds of power stations which have proven the superior efficiency of membrane waterwalls. Only Cleaver-Brooks Model M5 makes it available to you in a compact 1.5 to 6 MBTUH input package, and each pressure vessel is subjected to a factory conducted ASME air test to insure combustion by-products will not leak into the boiler room.



FACTORY START-UP AND SERVICE

Complete starting service that assures you of troublefree performance in the field is included with the purchase of every boiler. A factory trained specialist starts up the unit, re-adjusts controls to suit the particular fuel you are using, checks over details of operation, takes CO2 readings under your load and trains your operator in care and maintenance. This service, full evidence of Cleaver-Brooks' complete follow-up responsibility, is available to every owner of CB boilers anywhere in the United States and Canada.



143 HP goes through standard size door!

OFFICE COMPLEX EXPECTS TO CUT ENERGY COSTS BY MORE THAN 50 PERCENT

A half million square foot office complex re-evaluated their energy costs in an effort to reduce operating costs.

The Energy Manager discovered their existing large boilers were inefficient. With rising energy costs, it was determined two (2) 71 horsepower Model 5 Cleaver-Brooks Watertube boilers would achieve higher efficiency and meet their energy savings goal.

As an added benefit, the smaller units allowed more usable space in the boiler room.



HIGH EFFICIENCY FORCED DRAFT FIRING

Cleaver-Brooks' Reverse Firing is the key reason for Model M5's compact design. The hot gases travel the length of the furnace, then reverse back, providing greater heat release per cubic foot of furnace volume and greater heat absorption per square foot of furnace waterwall area than other boilers of its type.

The third and final pass is down the convection zone, where the hot turbulent gases scrub a maximum amount of water-backed surface.

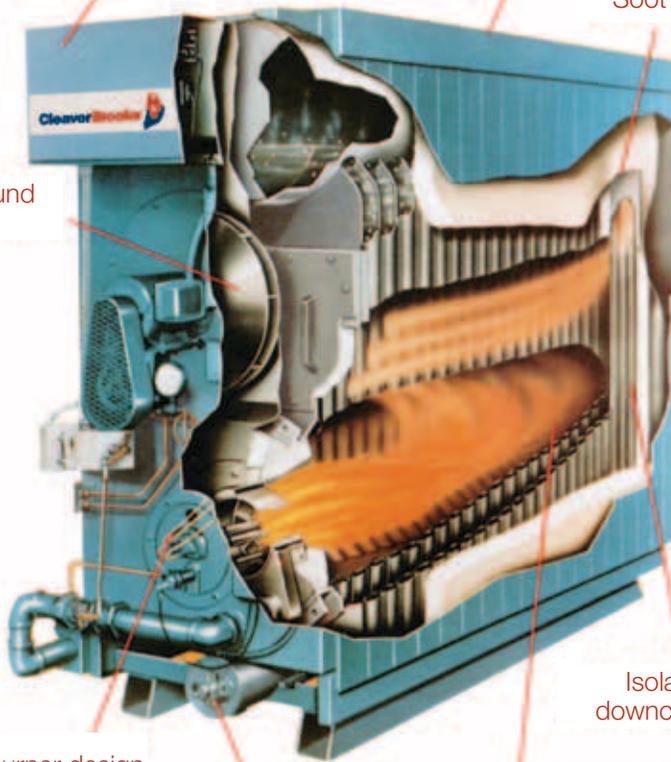
Add Model M5's rapid circulation to this high heat transfer capability and you end up with quicker heat-up characteristics and faster response to load changes than you can expect from other designs.

Positive flame-out protection

Upper drum inspection

Soot washer

Low sound level



Isolated downcomers

Efficient burner design

3-pass gas travel

Lower drum inspection

PROVEN BURNER DESIGN

The Model M5 burner design has been used on thousands of installations. This high-pressure-drop burner has been designed to use No. 2 oil, natural and LP gas, or combination. Thus, when it comes to converting fuel into usable energy, you can take advantage of any fuel availability or fuel cost changes, since Model M5 controls are arranged for speedy changeover from one fuel to another.



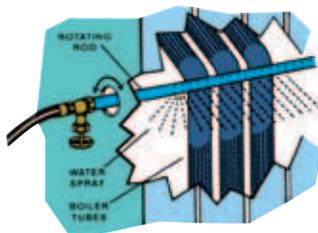
CB120E MICROPROCESSOR BASED FLAME SAFEGUARD

The CB120E provides a two-line LCD display, flame signal display, current operating status and lockout and operational history.



CLEANING WITHOUT SHUTDOWN

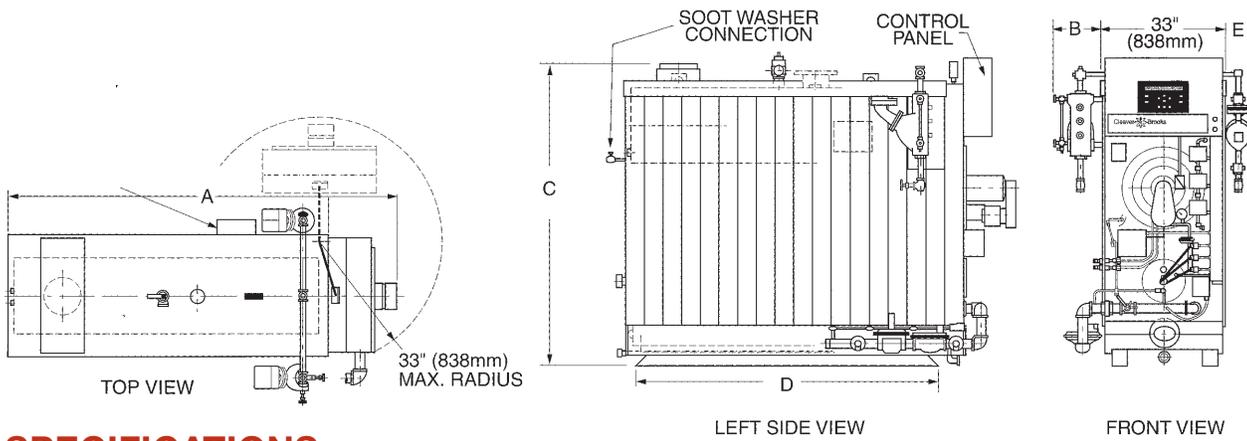
Soot build-up in a boiler reduces heat transfer efficiency and wastes precious fuel. That's why Cleaver-Brooks has made this simple, effective soot cleaning method standard on the Model M5. Because there is no mess, no shutdown required, you can clean as often as necessary to maintain peak boiler performance.



QUIET

Model M5's combustion air source is the Cleaver-Brooks exclusive, direct-driven, vibration-free centrifugal impeller. This is the secret behind Model M5's extremely quiet operation. With the burner at high fire, the Model M5 produces a maximum of only 79 dBA, making it ideal for use in noise-critical areas such as hospitals, nursing homes, schools, churches, apartments, etc.





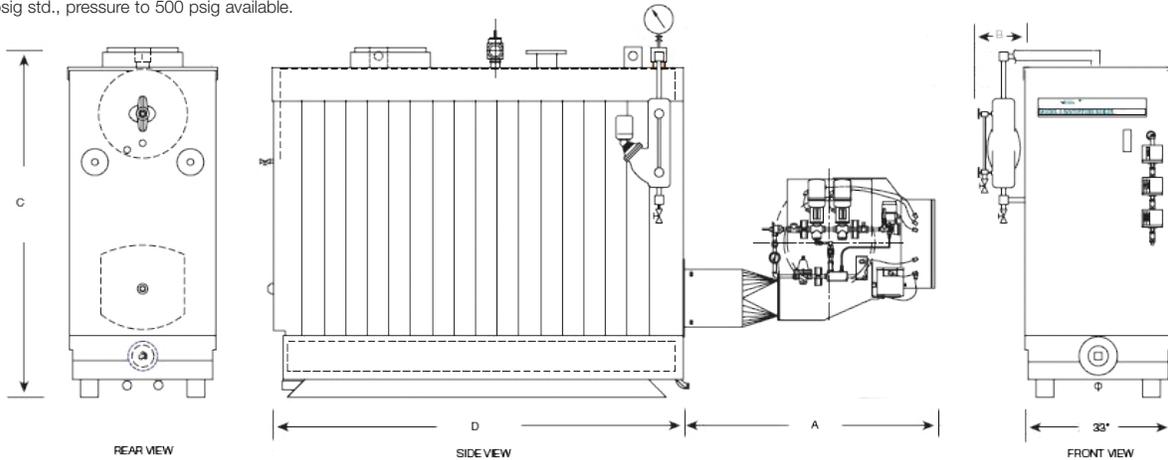
SPECIFICATIONS

| MOD MODEL SIZE EL | INPUT BTU/HR | OUTPUT BTU/HR | EDR Water Gr. Sq. Ft. | EDR Steam 15 psi Gr. Sq. Ft. | OUTPUT* LBS/HR Steam | EQUIV. HP |
|-------------------|------------------|------------------|-----------------------|------------------------------|----------------------|------------|
| 1500 | 1,500,000 | 1,200,000 | 8,000 | 5,000 | 1,237 | 35 |
| 2000 | 2,000,000 | 1,600,000 | 10,667 | 5,667 | 1,649 | 47 |
| 2500 | 2,500,000 | 2,000,000 | 13,333 | 7,083 | 2,062 | 59 |
| 3000 | 3,000,000 | 2,400,000 | 16,000 | 8,500 | 2,474 | 71 |
| 3500 | 3,500,000 | 2,800,000 | 18,667 | 9,917 | 2,887 | 83 |
| 4000 | 4,000,000 | 3,200,000 | 21,333 | 11,333 | 3,299 | 95 |
| 4500 | 4,500,000 | 3,600,000 | 24,000 | 15,000 | 3,711 | 107 |
| 5000 | 5,000,000 | 4,000,000 | 26,667 | 16,667 | 4,124 | 119 |
| 6000 | 6,000,000 | 4,800,000 | 32,000 | 20,000 | 4,949 | 143 |
| 8000 | 8,000,000 | 6,400,000 | - | - | 6,596 | 191 |

- Steam to 150 psig std., pressure to 500 psig available.

*Model 5 8.0 MMBTU/HR Only

Low water volume package for steam applications.



DIMENSIONS ALL DIMENSIONS IN INCHES

| | HOT WATER 140 psi | | | | STEAM 15 psi & 150 psi | | | | |
|--------------|-------------------|-----|-----|---------|------------------------|-----------|-----------|------------|-----|
| | A† | B†† | C** | D | A† | B†† | C** | D | E†† |
| 1500 | 84 | 7 | 79 | 54 | 84 | 13 | 79 | 54 | 7 |
| 2000 | 84 | 7 | 79 | 54 | 84 | 13 | 79 | 54 | 7 |
| 2500 | 100 | 7 | 79 | 69 5/8 | 100 | 13 | 79 | 69 5/8 | 7 |
| 3000 | 100 | 7 | 79 | 69 5/8 | 100 | 13 | 79 | 69 5/8 | 7 |
| 3500 | 115 1/2 | 7 | 79 | 85 1/4 | 117 3/8 | 13 | 79 | 85 1/4 | 7 |
| 4000 | 115 1/2 | 7 | 79 | 85 1/4 | 117 3/8 | 13 | 79 | 85 1/4 | 7 |
| 4500 | 132 | 7 | 79 | 101 | 136 3/4 | 13 | 79 | 101 | 7 |
| 5000 | 132 | 7 | 79 | 101 | 136 3/4 | 13 | 79 | 101 | 7 |
| 6000 | 147 1/2 | 7 | 79 | 116 1/2 | 136 3/4 | 13 | 79 | 116 1/2 | 7 |
| *8000 | - | - | - | - | 37 | 13 | 79 | 130 | - |

† Includes nipple extension for water inlet.

†† Low water cut-off or water column dimension includes union connection for ease of disassembly.

** Height to top of removable control panel is 83 1/4".

Specifications subject to change without notice.



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