



# MODEL 4

Commercial Watertube Boiler  
1.5 – 6.0 MMBTU

# CLEAVER-BROOKS MODEL 4 PACKAGED COMMERCIAL WATERTUBE BOILER

## REDUCE BOILER FOOTPRINT

### Savings of up to 50% in floor space

Size for size, the Model 4 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 4'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 4 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 C-B owners saved time and money in reduced installation costs. Each unit is fully assembled, tested, uL approved and shipped ready for fuel, water, electrical and breaching hook-up.

## CONSIDER MODEL 4 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 4, you can completely shut down your primary system during periods of low steam demand and maintain peak fuel-to-steam efficiency.

The Model 4 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 4, membrane waterwalls seal the combustion chamber, eliminating the need for approximately 95% of the refractory normally required by boilers of other design. Thus Model 4 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 4 makes it available to you in a compact 1.5 to 6 MMBTUH input package, and each pressure vessel is factory conducted ASME air test to insure combustion by-products will not leak into the boiler room.



**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 4 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.

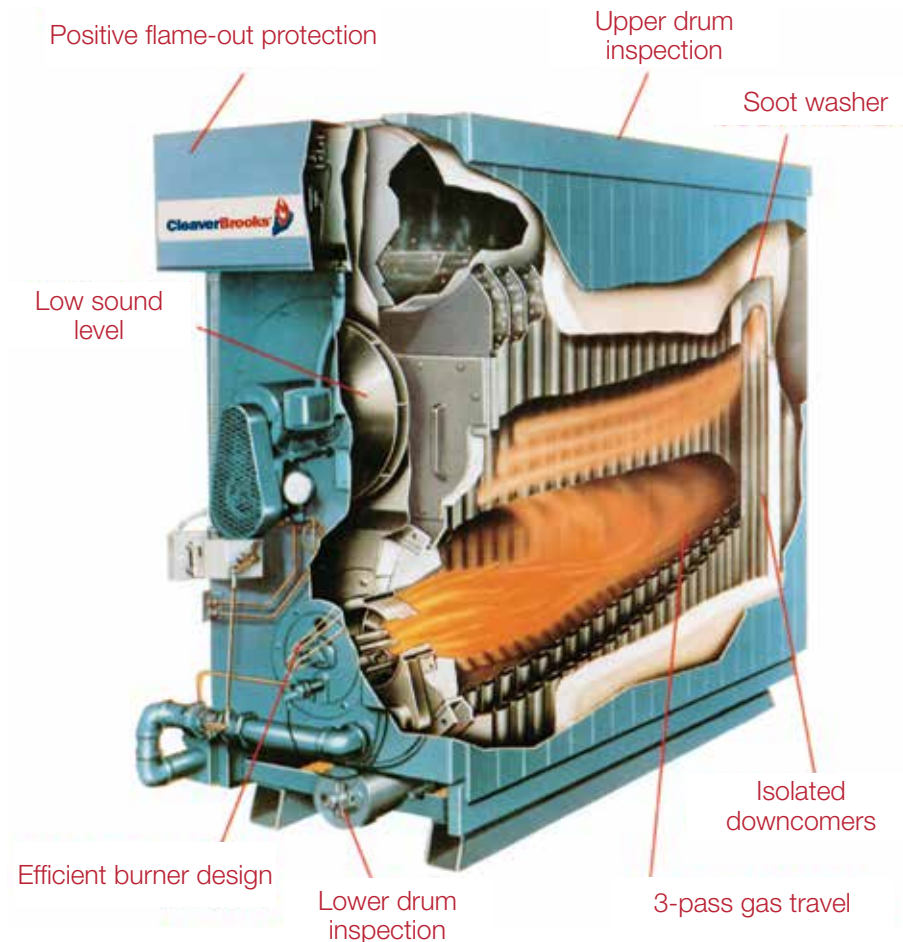


## HIGH EFFICIENCY FORCED DRAFT FIRING

Cleaver-Brooks reverse firing is the key result for Model 4'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 4's rapid circulation to this high heat transfer capability and you achieve quicker heat-up characteristics and faster response to load changes than you can expect from other designs.



## PROVEN BURNER DESIGN

The Model 4 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 4 controls are arranged for speedy changeover from one fuel to another.

## CLEANING WITHOUT SHUTDOWN

Soot build-up in a boiler reduces heat transfer efficiency and wastes precious fuel. That is why Cleaver-Brooks designed a simple, effective soot cleaning method standard on the Model 4. Because there is no mess, no shutdown required, you can clean as often as necessary to maintain peak boiler performance.

## CB120E MICROPROCESSOR BASED FLAME SAFEGUARD

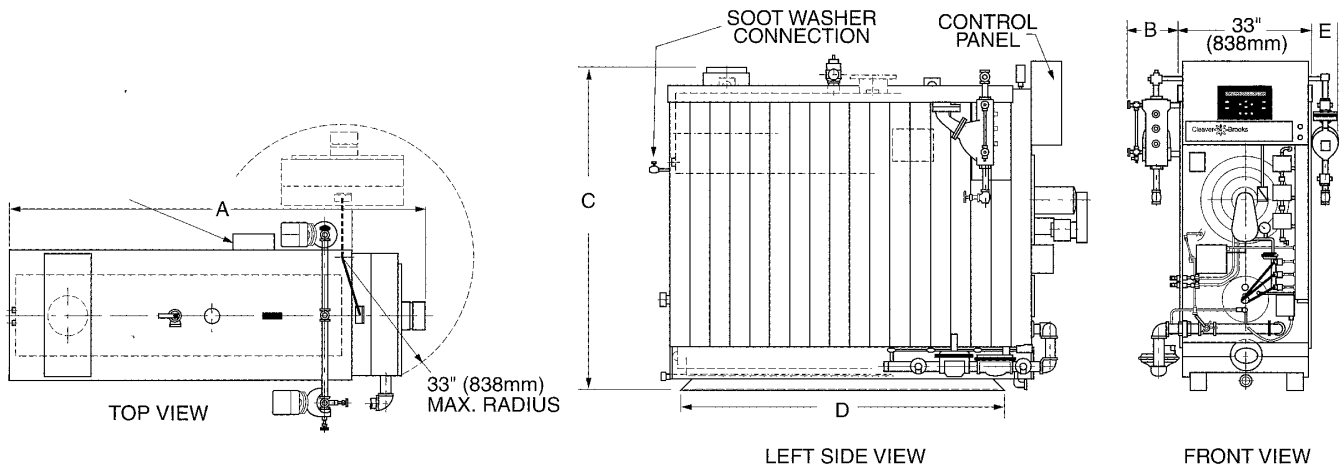
The CB120E provides a two-line LCD display, flame signal display, current operating status and lockout and operational history.

## QUIET

Model 4's combustion air source is the Cleaver-Brooks exclusive, direct-driven, vibration-free centrifugal impeller. This is the secret behind Model 4's extremely quiet operation. With the burner at high fire, the Model 4 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.

## 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 CO<sub>2</sub> 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 C-B boilers anywhere in the United States and Canada.



## 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

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

## 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

† 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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