

technical catalog bullet

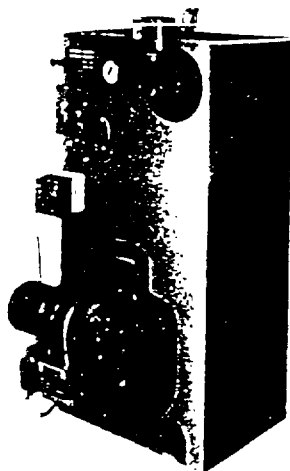
A-3M

oil-fired boilers
hot water or steam

PLAINTIFF'S EXHIBIT

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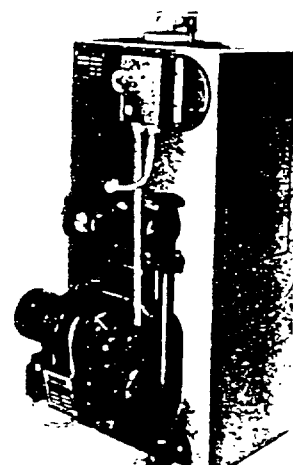




all-purpose boiler-burner unit



all-purpose boiler

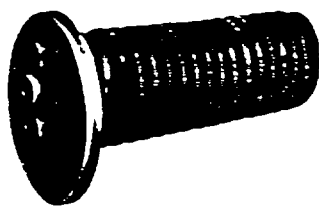


packaged for forced hot water

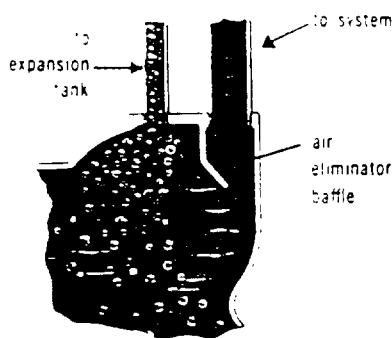
the oil-fired A-3M—versatile cast iron boilers for a variety of applications

The oil-fired A-3M boiler was developed to meet requirements for forced hot water, gravity hot water and steam applications—with provision for domestic hot water on forced water and steam boilers. The all-purpose A-3M—available as boiler-burner unit or boiler only in 5 sizes—is ideal for forced water, gravity and steam applications in new construction, replacement or modernization. The packaged A-3M—available in 3 sizes for forced water only—can be installed quickly

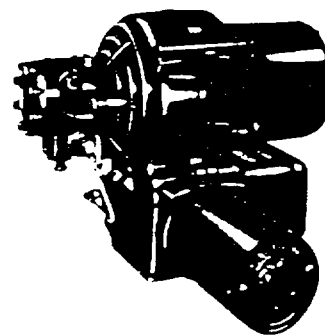
and inexpensively, especially in new homes. All controls are pre-mounted and pre-wired. Whichever A-3M you select—all purpose or packaged—you will find these convenience features included: factory-assembled cast iron sections, factory-installed combustion chamber, I=B=R approved ratings, wet base design and front location of all controls and accessories. Want both versatility and efficiency? Then specify the A-3M!



High Capacity Tankless Water Heater is available in four sizes, factory-installed in all A-3M boilers. High I=B=R ratings are obtained by actual test of the heater in the boiler. The tankless heater coil is inserted into upper nipple port on hot water installations, lower nipple port on steam installations.



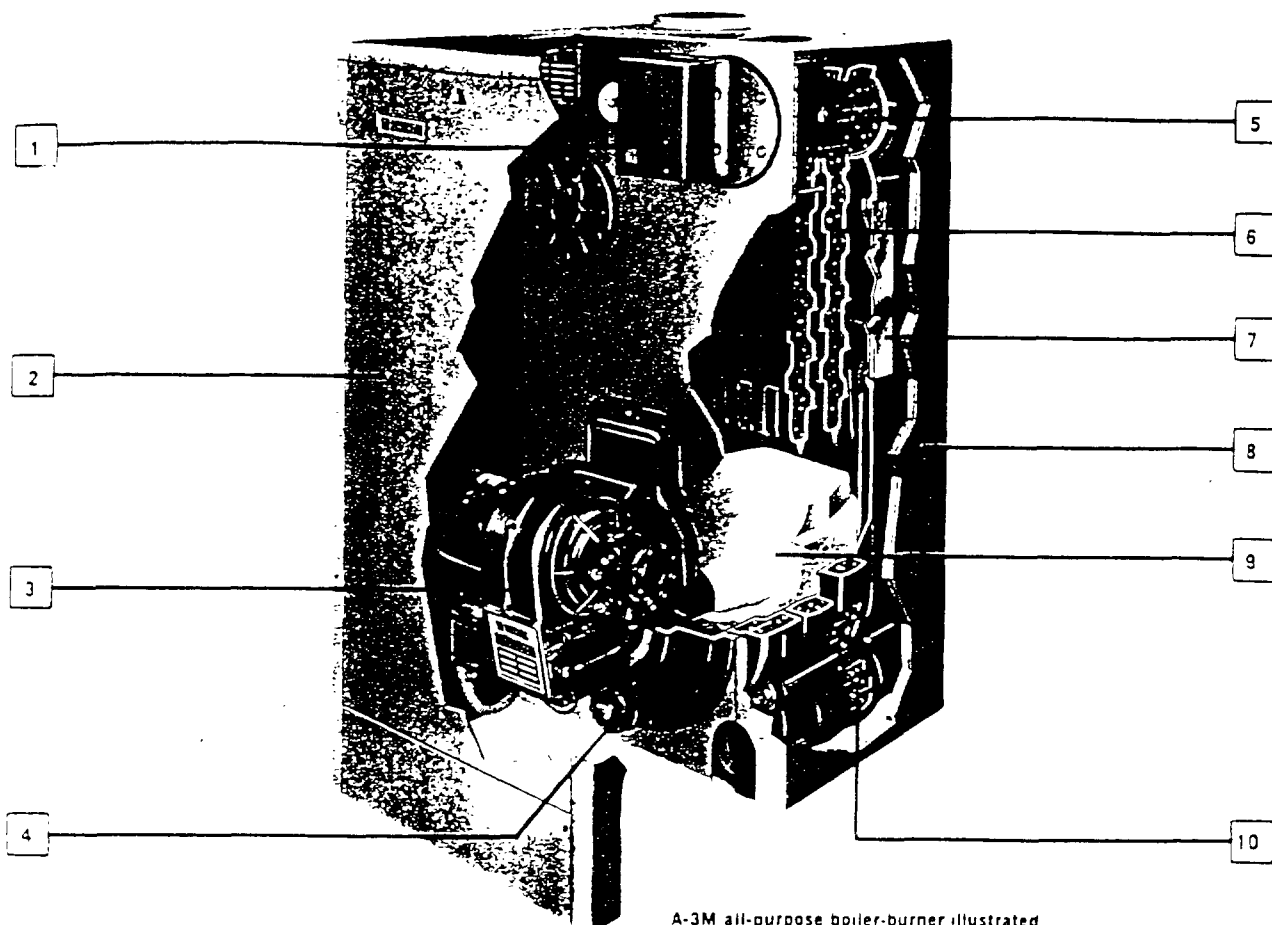
ELIMINAIRE® is an exclusive cost-saving feature on packaged A-3M units only. Integrally cast into the front section, the ELIMINAIRE baffle deflects rising air bubbles directly into the expansion tank through a special tapping in the section. No external device is needed to separate air and water.



Model DH-5 Arcoflame burner—for packaged and all-purpose A-3M units provides efficient firing with an exceptionally clean flame. It's easy to adjust the EXACT-AIRE slide damper for perfect air-oil mixture—the only adjustment needed! Lightweight yet rugged aluminum housing maintains alignment of fan, motor, fuel unit.

A-3M

oil-fired boilers



A-3M all-purpose boiler-burner illustrated

1—controls—including primary control—are mounted on front for easy service and adjustment. Controls are factory-mounted and pre-wired on packaged units. Primary control features light-sensing detector for instant response to ignition and shutdown.

2—matching jacket extension—(optional) has removable panels for ready access to burners and controls.

3—Model DH-5 Arcoflame oil burner—for packaged and all-purpose A-3M—is engineered to provide economical, efficient firing. Sling-mount hanging and EXACTAIRE control simplify installation and adjustment.

4—auxiliary air inlet—allows for adjustment of secondary air whenever it's required.

5—water heater—large, copper coil tankless type, with 4=WH approved ratings, is inserted into upper 5" nipple port on forced water boiler, lower nipple port on steam boiler. A-3M packaged boiler furnished with upper tankless heater opening only.

6—boiler sections—of durable cast iron feature vertical flue design with finned surface area to extract maximum combustion heat. Wet base construction eliminates need for special base. Sections are water tested at 75 psi (2½ times rated capacity of relief valve).

7—one-piece cleanout panel—permits cleaning of all flue surfaces from right side without dismantling jacket or disturbing burner, controls or accessories.

8—smartly-styled jacket—made of sturdy steel in sparkling gray finish has modern radius corners. Packaged models have jacket assembled on boiler at factory.

9—combustion chamber—long-life, efficient, refractory combustion chamber used on all A-3M boilers. It provides even heat distribution to combustion area and is factory-installed.

10—wet base construction—provides an extra heat-absorbing bottom surface. Waterways completely surround combustion area and extend beneath the boiler, making this boiler ideal for first-floor utility room, or for a basement.

Arcoflame, EXACTAIRE and ELIMINAIRE® are trademarks of AMERICAN STANDARD Inc.



A-3M ratings

boiler number		gross I=B=R output (Btu/hr)	net I=B=R ratings			I=B=R unit depth (inches)	height (inches)	weight (lb)	water capacity (gallons)
water	steam		water (Btu/hr)	steam (sq. ft.)	steam (Btu/hr)				

packaged units (forced water only)

A-33M-P(T)	-	108,000	93,900	-	-	1.00	8 x 8	15	25.0
A-34M-P(T)	-	148,000	128,700	-	-	1.35	8 x 8	15	23.8
A-35M-P(T)	-	188,000	163,500	-	-	1.70	8 x 8	15	27.1

boiler-burner units

A-33M-WB(T)	A-33M-SB(T)	108,000	93,900	338	81,000	1.00	8 x 8	15	25.0
A-34M-WB(T)	A-34M-SB(T)	148,000	128,700	463	111,000	1.35	8 x 8	15	23.8
A-35M-WB(T)	A-35M-SB(T)	188,000	163,500	588	141,000	1.70	8 x 8	15	27.1
A-36M-WB(T)	A-36M-SB(T)	228,000	198,300	713	171,000	2.20	8 x 8	15	30.5
A-37M-WB(T)	A-37M-SB(T)	268,000	233,000	838	201,000	2.50	8 x 12	15	33.3

boilers only ▲

A-33M-W(T)	A-33M-S(T)	108,000	93,900	338	81,000	1.00	8 x 8	15	25.0
A-34M-W(T)	A-34M-S(T)	148,000	128,700	463	111,000	1.35	8 x 8	15	23.8
A-35M-W(T)	A-35M-S(T)	188,000	163,500	588	141,000	1.70	8 x 8	15	27.1
A-36M-W(T)	A-36M-S(T)	228,000	198,300	713	171,000	2.20	8 x 8	15	30.5
A-37M-W(T)	A-37M-S(T)	268,000	233,000	838	201,000	2.50	8 x 12	15	33.3

▲ Net I=B=R ratings shown are based on a piping and pick-up allowance of 1.333 for steam and 1.15 for water. American Standard should be consulted before selecting a boiler for installation having unusual piping and pick-up requirements.

● Nozzle sizes, gph, furnished with the above units, 70° solid: A-33M, 1.00; A-34M, 1.35; A-35M, 1.75; A-36M, 2.25; A-37M, 2.50. (Based on oil at 140,000 Btu per gallon.)

▲ Only I=B=R approved oil burners, such as the OH-5 burner, may be used with A-3M oil fired boilers. Other I=B=R approved burners are available. Consult your American Standard District Office for details.

Note: Suffix letters denote the following: P-packaged unit for forced circulation; B-boiler-burner unit; T-with tankless heater; S-for steam; W-for water.

optional controls for A-3M non-packaged units

For forced circulation less tankless heater:

No. 4 control set consisting of T-822-D thermostat, L4062B Aquastat limit and circulator control, plus R8184B light-sensing primary control available instead of R8182C combination control.

operation: Primary control provides for cad cell monitoring of burner flame. A separate combination control provides for constant circulator operation with low limit cut-off and also acts as a high limit.

For forced circulation with tankless heater:

No. 5 control set consisting of T-822-D thermostat, L8024C Aquastat (limit, reverse and operating circulator relay), plus R8184B light-sensing primary control available instead of R8182A combination control.

operation: Primary control provides for cad cell monitoring of burner flame. A separate combination control provides for intermittent operation of circulator, maintenance of domestic water temperature, and also acts as a high limit.

Add-on No. 5-Z control set is available for use with A-3M all-purpose, non-packaged boiler-burner units with tankless heater. This control package provides a separate thermostat and relay for zoning application with circulators.

A-33M	0.95	222	4	3½
A-34M	1.35	230	4	3½
A-35M	1.70	328	4¾	4¾
A-36M	2.00	335	5½	4¾
A-37M	2.30	335	5¾	5¾

▲ Gallons of water per minute heated from 40°F to 140°F with 200°F boiler water temperature.

● Domestic hot water connection size for all heaters is ½" I.P.S.



A-3M oil-fired boilers are designed and built to comply with the American Society of Mechanical Engineer's Code, and bear their approval symbol. Ratings have been approved by the Institute of Boiler and Radiator Manufacturers. Oil burners shown are listed by the Underwriters' Laboratories, Inc. for No. 1 and No. 2 fuel oil; comply with Commercial Standard CS-75; and are approved by the New York City Board of Standards and Appeals, by the State Fire Marshal of the Commonwealth of Massachusetts, and by the Department of State Police, State of Connecticut.

equipment furnished

packaged boiler, forced circulation

standard equipment

Model DH-5 Arcoflame oil burner with sling mounting and factory-installed cad cell, pressure and leads, T-882-D thermostat, Nozzle, Draft regulator, Pre-cast refractory combustion chamber, Pressure and temperature gauge, ASME relief valve, 1 1/4" circulator with flange, wiring harness, Flush jacket, Drain valve.

with tankless heater

Factory-installed built-in tankless heater as shown in heater rating table on opposite page, R8182A combination Aquastat-relay (high limit, low limit and circulator control, light-sensing constant ignition primary control).

operation: Combination primary control provides for cad cell monitoring of burner flame, intermittent circulator operation, maintenance of domestic water temperature, and also acts as a high and low limit.

Note: Packaged units are shipped with flush jacket. All electrical controls, pressure thermostat, circulator and piping, are factory-installed and wired. DH-5 oil burners shipped separately. Draft regulator, relief valve and thermostat are packed inside boiler crate.

optional equipment

Jacket extension: If desired, specify on order. Two-stage fuel unit: Is furnished on order.

less heater

Heater opening cover plate furnished. Aquastat (limit and circulator control, light-sensing constant ignition primary control).

operation: Combination primary control provides for cad cell monitoring of burner flame, intermittent circulator operation with low limit control and also acts as a high limit.

all-purpose boiler-burner units

standard equipment

Model DH-5 Arcoflame oil burner with sling mounting and factory-installed cad cell, pressure and leads, T-882-D thermostat, Nozzle, Draft regulator, Pre-cast refractory combustion chamber, Pressure and temperature gauge, ASME relief valve with water units, ASME safety valve with steam units, Flush jacket, Drain valve.

with tankless heater

Factory-installed built-in tankless heater (as shown in heater rating table on opposite page). Heater is installed in upper nipple port on water boilers and in lower nipple port on steam boilers.

water: R8182A combination Aquastat-relay (high limit, low limit and circulator control, light-sensing constant ignition primary control).

operation: Combination primary control provides for cad cell monitoring of burner flame, intermittent circulator operation, maintenance of domestic water temperature, and also acts as a high and low limit.

steam: PA404A Pressuretrol, L4006A Aquastat operating control and R8184A light-sensing constant ignition primary control.

operation: Primary control provides for cad cell monitoring of burner flame. A separate operating control maintains domestic water temperature. In addition, there is a pressure control which functions as a safety cut-out.

optional equipment

Jacket extension—same for packaged units. External low water cut-off available for steam boilers.

Built-in tankless heaters can be ordered for separate shipment with units less factory-installed tankless heater. Optional control sets are available on order. (See current price book.)

Two-stage fuel unit available on order.

Motors and controls regularly furnished with A-3M packaged and boiler-burner units are for 115 volt, 60 cycle current.

less heater

Note: Heater opening cover plate furnished. water: R8182A combination Aquastat (limit and circulator control, light-sensing constant ignition primary control).

operation: Combination primary control provides for cad cell monitoring of burner flame, intermittent circulator operation with low limit control and also acts as a high limit.

steam: PA404A Pressuretrol and R8184A light-sensing constant ignition primary control.

operation: Primary control provides for cad cell monitoring of burner flame. A separate pressure control functions as a safety cut-out.

all-purpose boiler only

standard equipment

Flush jacket. ASME relief valve with water boilers; ASME safety valve with steam boilers. High temperature steel combustion chamber. Water heater cover plate. Tankless heater, when specified on order.

Note: Only I=B=R approved oil burners, such as the DH-5 burner, may be used with A-3M oil-fired boilers. Other I=B=R approved burners are available. Consult your American Standard District Office for details.

optional equipment

Jacket extension. Built-in tankless heaters are available for separate shipment.

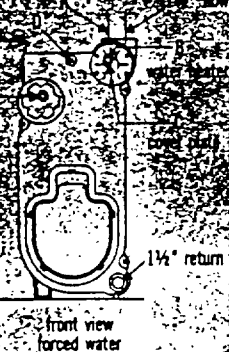
dimensions and appearance packaged A-33M boiler



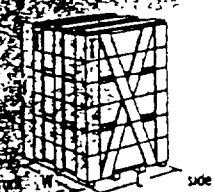
boiler number	nominal inlet/outlet		dimensions (inches)				height		connecting section	section
	inlet	outlet	A	B	C	D	front	back		
A-33M-P	1-1/2	1-1/2	10 3/8	8 1/8	6	6	16 1/8	31 7/8	F, CW, B	F—front connecting section
A-34M-P	1-1/2	1-1/2	11 3/8	8 5/8	7	3 1/2	17 1/8	32 7/8	F, C, C, B	CW—wide center section
A-35M-P	1-1/2	1-1/2	14 7/8	10 3/8	7	3 1/2	20 5/8	36 3/8	F, C, C, C, B	C—center section B—back section



A	1/4"	ball valve
B	3/4"	R8182A combination Aquastat, relay and primary control (for installations with tankless water heater)
C	3/4"	R8182C combination Aquastat and primary control (for installations without tankless water heater)
D	1/4"	pressure and temperature gauge
E	1/4"	auxiliary control tapping



boxed dimensions

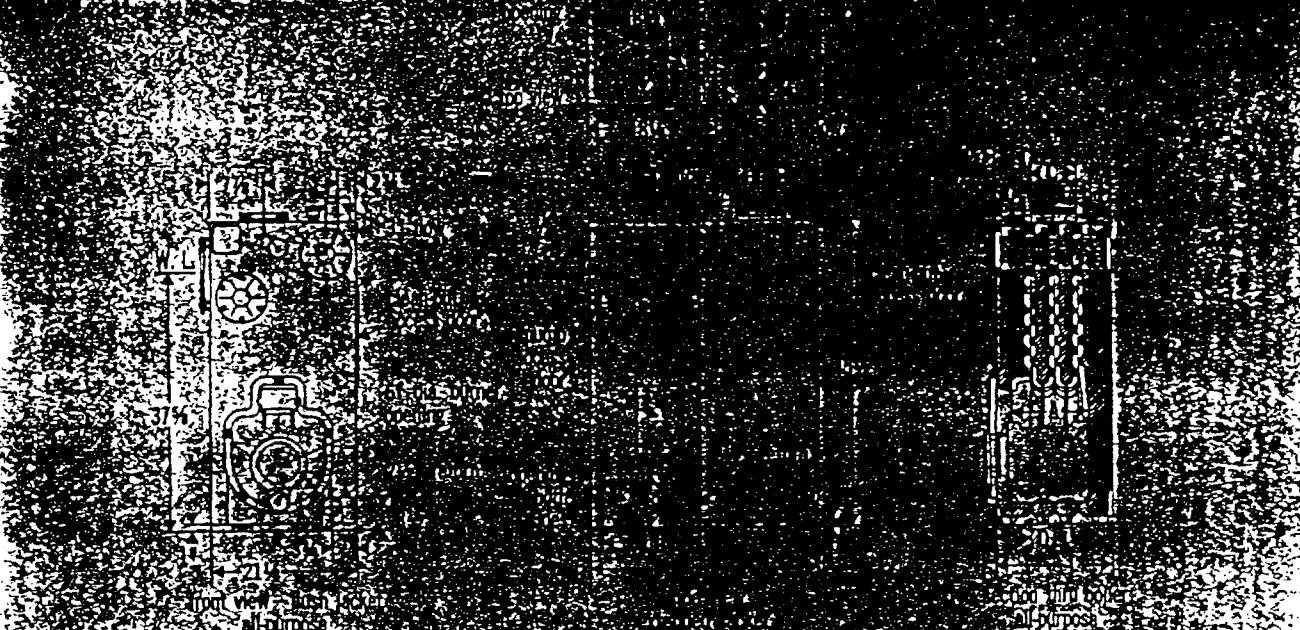


packaged boiler number	dimensions (inches)			approx. shipping weight (pounds)
	H	W	L	
A-33M-P	48 1/4	25 1/4	27 1/4	735
A-34M-P	48 1/4	25 1/4	27 1/4	818
A-35M-P	48 1/4	25 1/4	30 3/4	956

A-3M

oil-fired boilers

Dimensions and Tappings All-purpose A-3M boiler



boiler number	number and size of tappings (inches)		dimensions (inches)						assemblage of sections	legend
	flow	return	A	B	C	D	width back	height front		
A-33M	1-3	1-2½	10¾	8¾	5	6	16¾	31¾	F, CW, B	F—front connecting section
A-34M	1-3	1-2½	11¾	8¾	7	3½	17¾	32¾	F, C, C, B	CW—wide center section
A-35M	1-3	1-2½	14¾	10¾	7	3½	20¾	36¾	F, C, C, C, B	C—center section
A-36M	1-3	1-2½	18¾	12¾	3	3½	24¾	39¾	F, C, C, C, C, B	B—back section
A-37M	1-3	1-2½	21¾	13¾	3	3½	27¾	43¾	F, C, C, C, C, C, B	Sections for all A-3M boilers are shipped factory-assembled.

A			B			C			D			E			F			G		
1/4"	relief valve		1/4"	R8182A combination Aquastat, relay and primary control (for installations with tankless water heater) or optional controls.		1/4"	R8182C combination Aquastat, relay and primary control (for installations without tankless water heater) or optional controls.		1/4"	pressure and temperature gauge		1/4"	auxiliary control tapping		1½"	not used		1/2"	not used	