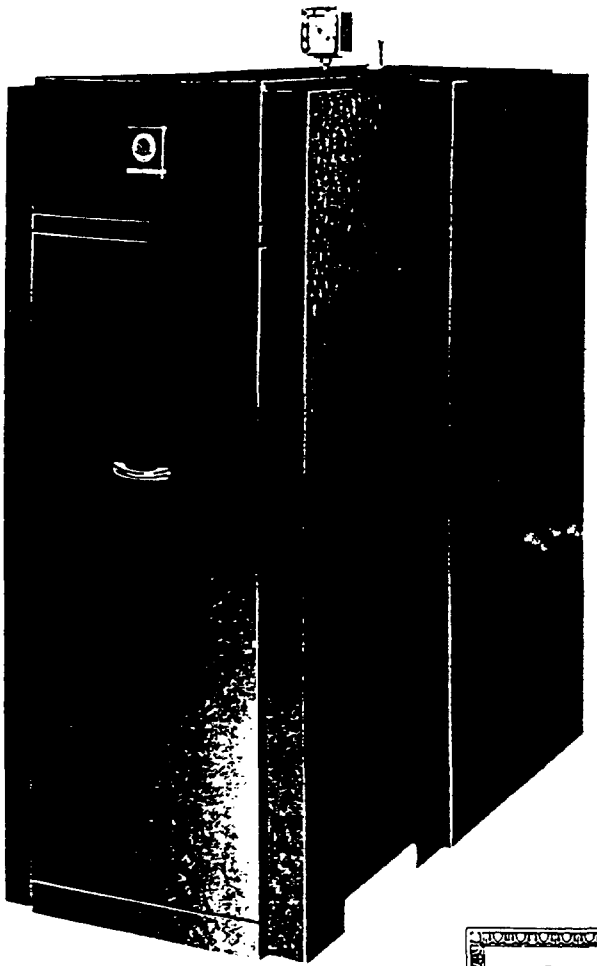
PLAINTIFF'S EXHIBIT

ASI-743



Guaranteed for 25 Years!

The cast iron sections—the working core of this boiler—are guaranteed for 25 years in residences. Note that this guarantee covers the complete sections, not merely the outer "shell." This guarantee applies to the water models of this boiler

boiler-burner models

and boilers

Arcoliner oil-fired heating unit

AMERICAN-Standard

A I A File No. 30 C 1 | September 1958

22591

Arcoleader ratings

packaged oil heating unit number	boiler-burner unit number	boiler number	net I=B=R ratings* (Mbh water)	gross I=B=R output Mbh	I=B=R burner capacity gph	chimney size inches	chimney height feet
A1-3-P	A1-3-B	A1-3	75.0	100	.95	8x8	15
A1-4-P	A1-4-B	A1-4	102.0	136	1.30	8x8	15
A1-5-P	A1-5-B	A1-5	129.8	173	1.65	8x8	15

*The ratings for these boilers represent the net loads that may be connected to the boilers. Allowances have been made for normal piping and pick-up loads.
Note: Suffix "P" denotes packaged unit. Suffix "B"—boiler-burner unit (non-packaged).

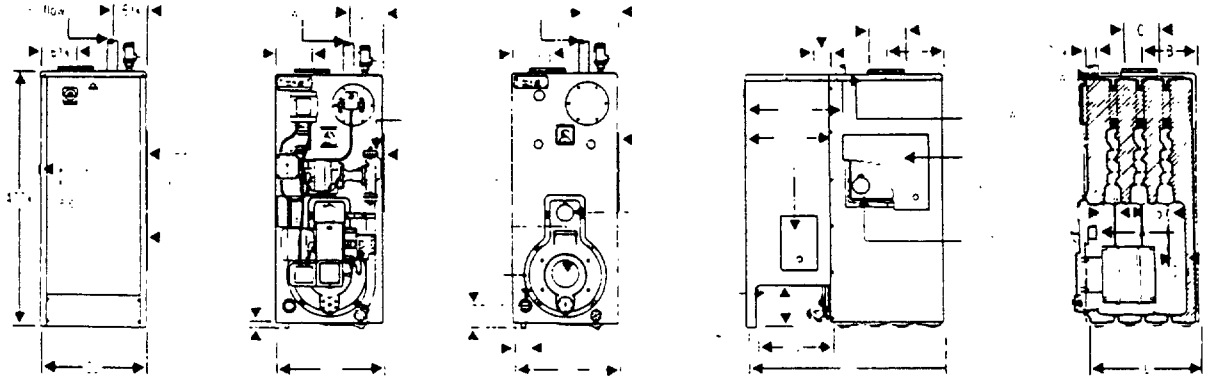
built-in tankless heaters tested with Arcoleader units

● heater number	▼ I=W=H rating	unit number	I=B=R burner capacity gph	● heater number	▼ I=W=H rating	unit number	I=B=R burner capacity gph
723	3¼	A1-3	.95	732	4¼	A1-4	1.30
723	3¼	A1-4	1.30	732	4¼	A1-5	1.65
723	3¼	A1-5	1.65	743	5½	A1-5	1.65
732	3¾	A1-3	.95				

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

● Only heaters Nos. 732 and 743 available factory installed.

dimensions and tappings



oil heating unit number	number and size tappings — inches: flow*	number and size tappings — inches: return	dimensions — inches: A	B	C	L flush jacket	L jacket extension
A1-3	1-1½	2-1½	11½	8⅛	6	16¼	32
A1-4	1-1½	2-1½	16½	10⅜	7	21¼	37
A1-5	1-1½	2-1½	21½	13⅛	7	26¼	42

* special heater opening cover plate with 3" tapping for supply connection available for gravity systems when specified on order (except packaged units.)

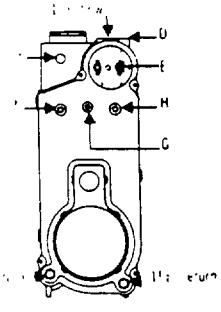
assemblage of sections

oil heating unit number	arrangement of sections
A1-3	F, C, B
A1-4	F, C, C, B
A1-5	F, C, C, C, B

F—Front connecting section
C—Center section
B—Back connecting section

control applications

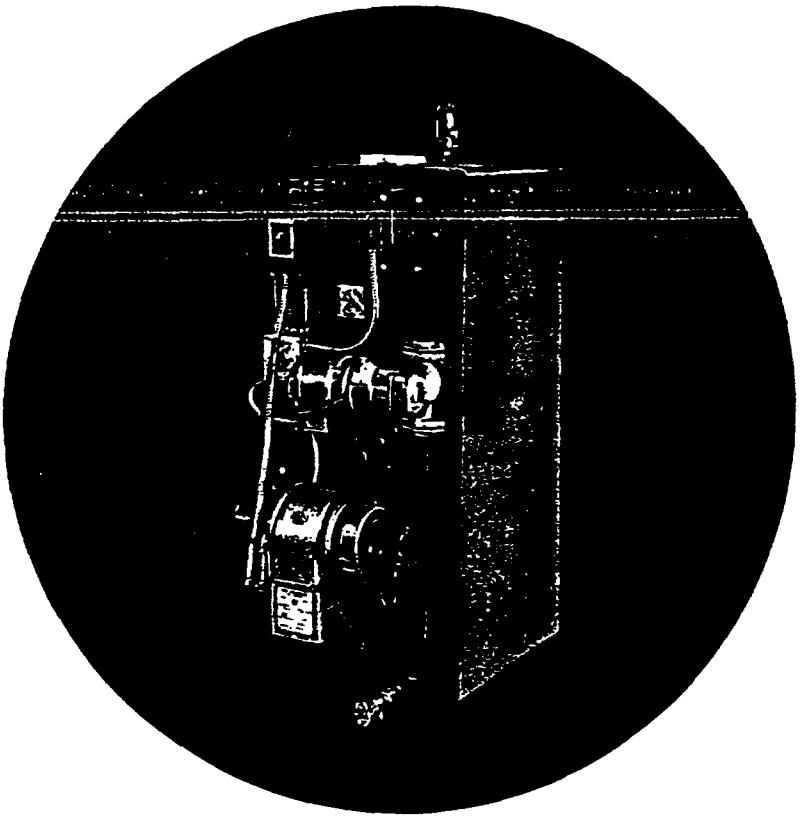
location on boiler	size inches	water control
D	¾	relief valve
E	¾	immersion control double throw switch
F	¾	limit control
G	½	combination altitude gauge and thermometer
H	¾	immersion control, reverse acting (for installations without tankless water heater)



▶ American-Standard Arcoleader Oil-Fired Boilers are another development in hydronics—the science of heating and cooling with water.

AMERICAN-Standard PLUMBING AND HEATING DIVISION
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 WEST 40TH STREET • NEW YORK 18, NEW YORK

22592



▶ the Arcoleader new special design for

- quick installation
- reduced labor
- low maintenance

The Arcoleader Oil Heating Unit is an all-new boiler of evolutionary design by American-Standard. It has been developed for fast, low-cost installation, minimum maintenance, high efficiency and long-range dependability. The Arcoleader is ideal for all residential jobs, especially new construction. Note these outstanding Arcoleader advantages—First, three popular sizes are available factory assembled, packaged and crated. (All sizes also available as boiler-burner units or boilers only.) Second, controls and accessories are factory-installed and pre-wired. Third, a combination of new vertical flue designed cast iron sections and a new research-engineered burner assure high efficiency with dependable operation.

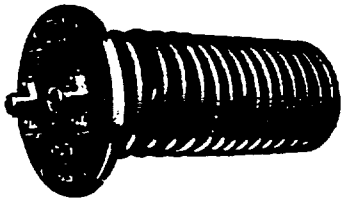
■ **Highest domestic hot water ratings**—One of the most outstanding features of the Arcoleader is its high domestic hot water ratings (I=W=H approved). These top ratings are achieved through the use of an exclusive tankless heater for use only with the new Arcoleader boiler. All units are available with the special heater installed to reduce further time and costs.

■ **Convenient control arrangement**—All accessories and controls are handily located on the front of the unit—even the stack control. This minimizes time and costs by making adjustments easier and simplifying wiring and piping hookups. Controls and accessories are pre-wired to the junction box on packaged models, reducing labor on each job.

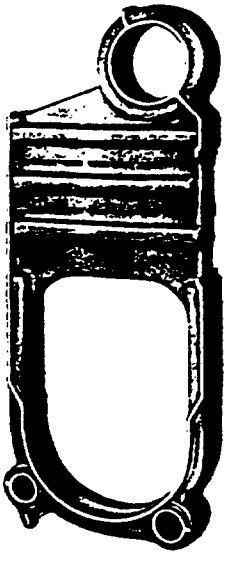
■ **New efficient sections and burner**—The Arcoleader incorporates advanced vertical flue section design with wet base construction. Flow of the flue products is completely updraft for ready adaptability to gas. The off-center location of the 6-inch nipple port, combined with wet base construction, provides excellent boiler water circulation for quick heating and high hot water ratings. The new Model PH Arcoflame Oil Burner also is exclusive with the Arcoleader Oil Heating Unit. Packaged separately to safeguard against shipping damage, it is quickly installed with the unique sling mount.

■ **Easily located anywhere**—Still another outstanding feature of the Arcoleader Packaged Oil Heating Unit is its "floating jacket" design—jacket does not rest on the floor. This design prevents damage in shipment and allows the unit to be moved easily with the jacket in place. A combination of easy mobility, wet base construction and front location of all controls gives the unit close clearance for corner installation—makes the Arcoleader particularly suited for first-floor utility room, as well as basement installation.

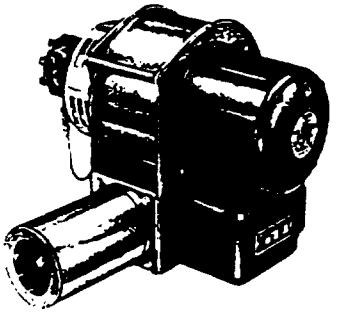
▶examine these outstanding new features



■ **Large, factory-installed, high-capacity, tankless water heater** has been specially designed for the Arcoleader. Its high I=W=H approved ratings are obtained by testing the heater with the boiler. Thus, these top ratings are the result of completely integrated engineering of the vertical flue section, with its quick heat transfer; the over-sized, off-center nipple port, with its unrestricted water circulation; and wet base construction, with its increased water content. The heater itself is submerged in the hottest water at the top of the boiler for fast, efficient heat transfer.



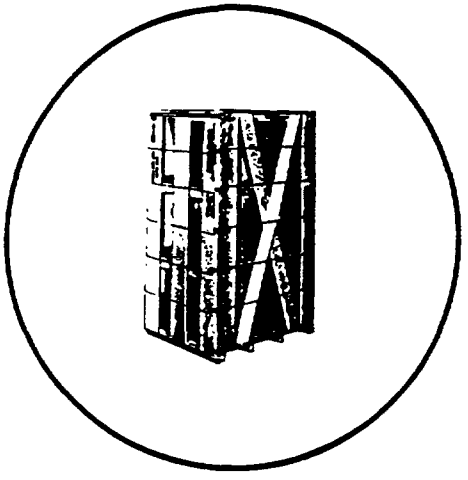
■ **Scientifically engineered cast iron sections** of the Arcoleader incorporate the vertical flue design principle with an extra-large 6-inch nipple port. Each section has wide, rounded, finned surfaces which extract maximum heat from combustion gases. The beveled design helps prevent soot collection. The unusual location of the top nipple port provides excellent circulation to assure quick boiler water recovery. With this new vertical flue section design, the boiler sections are easily cleaned from the right side only. Wet base construction feature eliminates need for special base.



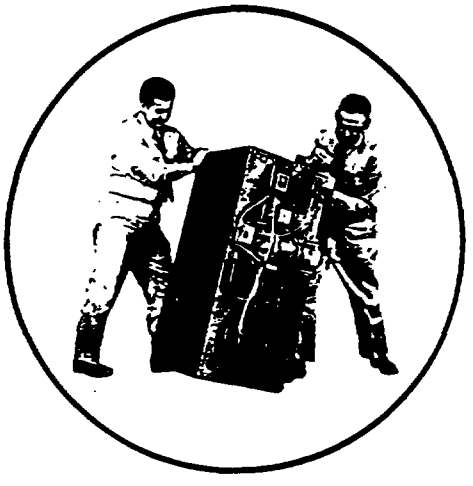
■ **Easiest, most accurate burner to adjust** – new Model PH Arcoflame Oil Burner – is designed specially for the Arcoleader. This high-pressure burner provides highly efficient firing with an exceptionally clean and quiet flame. A distinctive inlet air band permits precise air adjustment for correct firing—it's the only adjustment required! This ingeniously designed air handling device, which results in perfect air-oil mixture, provides a super hot flame with minimum smoke. A steel-reinforced housing, finished to match the Arcoleader, assures positive alignment of Model PH Arcoflame Burner.

▶ Arcoleader Oil Heating Units by American-Standard have ratings approved by the Institute of Boiler and Radiator Manufacturers and are constructed to the specifications of the American Society of Mechanical Engineers. The Model PH Arcoflame Oil Burner is listed by the Underwriters' Laboratories, Inc., for No. 1 and No. 2 fuel oil, complies with Commercial Standard CS-75 and is 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.

▶the Arcoleader packaged oil heating unit for fast, low-cost installation

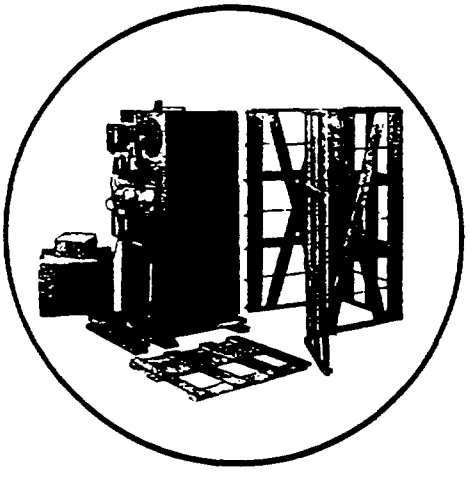


1 – The Arcoleader Packaged Oil Heating Unit is assembled and crated at the factory. All controls, accessories and tankless water heater are mounted and the jacket is installed prior to shipment. A sturdy crate and polyethylene cover protect each boiler.

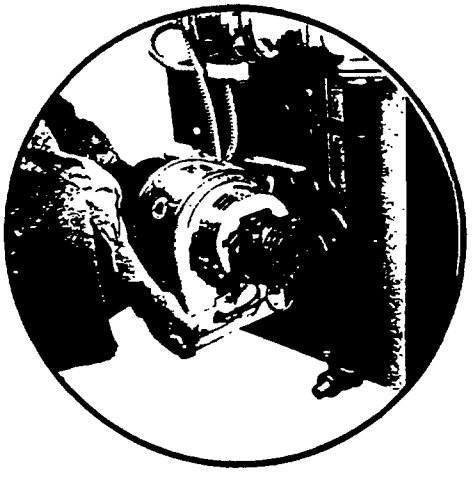


3 – Suspended "off-the-floor" design of the jacket, plus the unusually lightweight, compact construction of the Arcoleader, allows the boiler to be "walked" into position without damaging the jacket. Jacket design and finish help prevent rust and corrosion.

2 – Two men can easily remove the Arcoleader from the shipping crate. Compact design and lightweight construction of boiler permit handling by one man in an emergency. Note how the crate protects the unit, yet simplifies handling and speeds up installation.



4 – Model PH Arcoflame Oil Burner, designed for the Arcoleader, is installed in seconds with the special sling mount. Complete Arcoleader installation, from crate to connection of previously installed piping and thermostat wiring, takes less than an hour.



The all-new Arcoleader is a highly efficient hot water heating plant ideal for new home construction and the replacement-modernization field. It is available as a completely packaged unit in 3, 4 and 5-section sizes with all components factory assembled, also as a boiler-burner unit or boiler in 3, 4 and 5-section assemblages.

1 – observation ports - permit complete viewing of flame from front and right side (not shown) without disturbing combustion or flame characteristics, and without use of mirrors.

2 jacket extension matches jacket; has removable front and side panels for ready access to burner and controls. Arch-type opening in base provides ample air for combustion and ventilation.

3 – controls - all controls (including stack control) mounted on front of boiler for easy maintenance and adjustment. Controls factory mounted and pre-wired on packaged units. Stack control installed in aluminized steel canopy which permits smaller smoke pipe sizes – makes Arcoleader easily adaptable to gas firing. Canopy factory assembled and puttied.

4 – water heater – large, copper coil, tankless type. Features high I=W=H ratings. Special for Arcoleader only. See page 3.

5 – boiler sections - new vertical design; constructed of durable cast iron. Sections are tested at 2½ times normal operating pressure. See page 3.

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

7 – jacket – sturdy 20-gauge steel; smartly styled in new sparkling gray finish and modern radius corners. Interior surfaces finished with corrosion-resistant, high-temperature aluminum paint. Jacket assembled with boiler at factory for packaged models.

8 – new Model PH Preblame Oil Burner designed for Arcoleader to provide top operating efficiency. Equipped with time-saving sling mount.

9 – auxiliary air inlet – built into the front of the boiler, provides adjustment of secondary air.

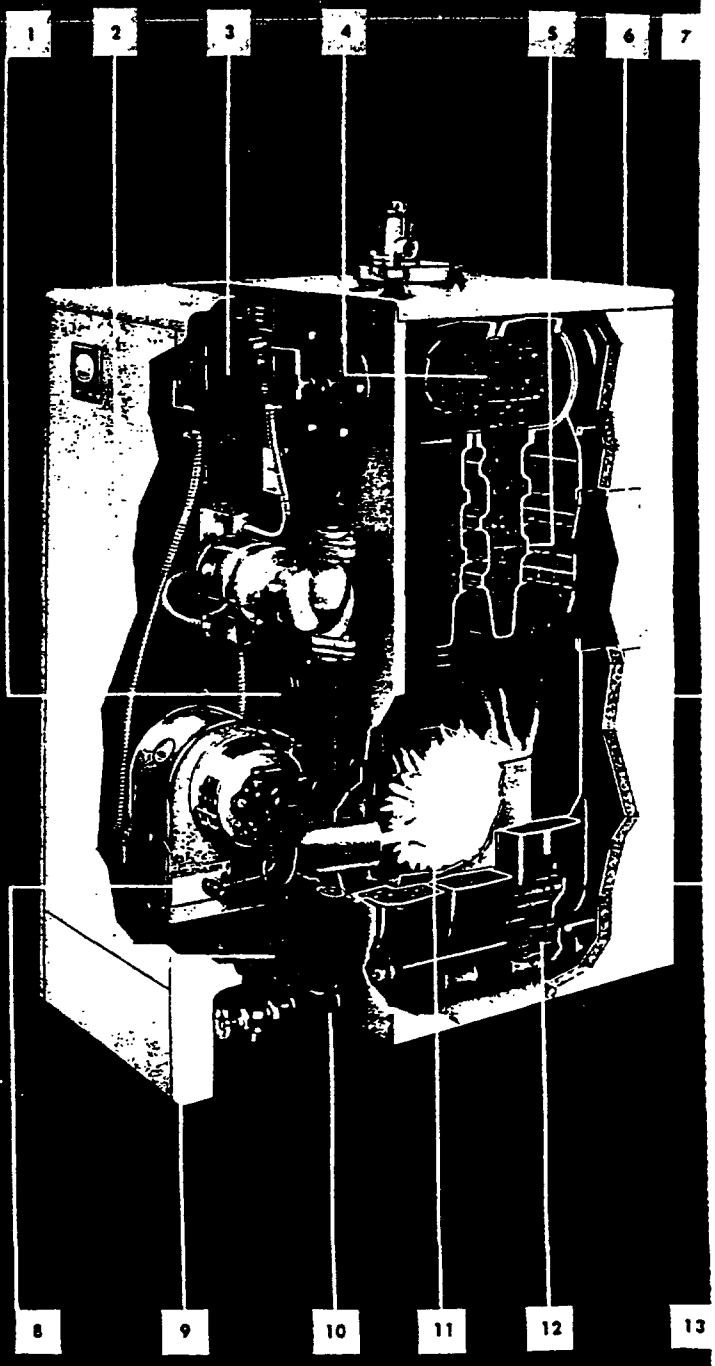
10 – tappings – 1½" supply (top) and return tappings (bottom) located in front section. Reduce bushing expense and labor.

11 – combustion chamber - custom built of high-temperature stainless steel. Even heat distribution to combustion area. Pre-installed at factory in all Arcoleader boilers.

12 – wet base construction – provides extra heat-absorbing bottom surface and increased boiler water content. Waterways completely surround combustion area and extend beneath boiler, keeping floor cool; ideal for first-floor or basement installation.

13 – insulation – heavy Fiberglas insulation prevents excessive heat loss, keeps jacket cool.

■ – gravity model – a special cover plate tapped 3" for supply connection available for covering heater opening when specified – (not shown).



22596