

SERIES 1B-21

JACK

A-O OIL BOILER

by

AMERICAN-Standard

INSTALLATION-OPERATION AND MAINTENANCE MANUAL

FOR PACKAGED
OIL HEATING UNITS

AMERICAN-Standard

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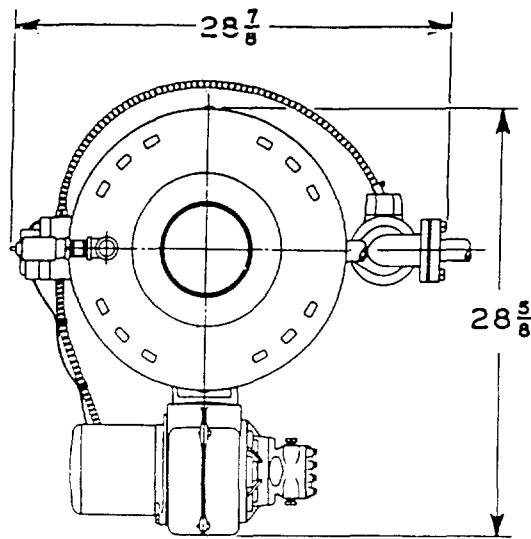
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PLAINTIFF'S
EXHIBIT

ASI-534

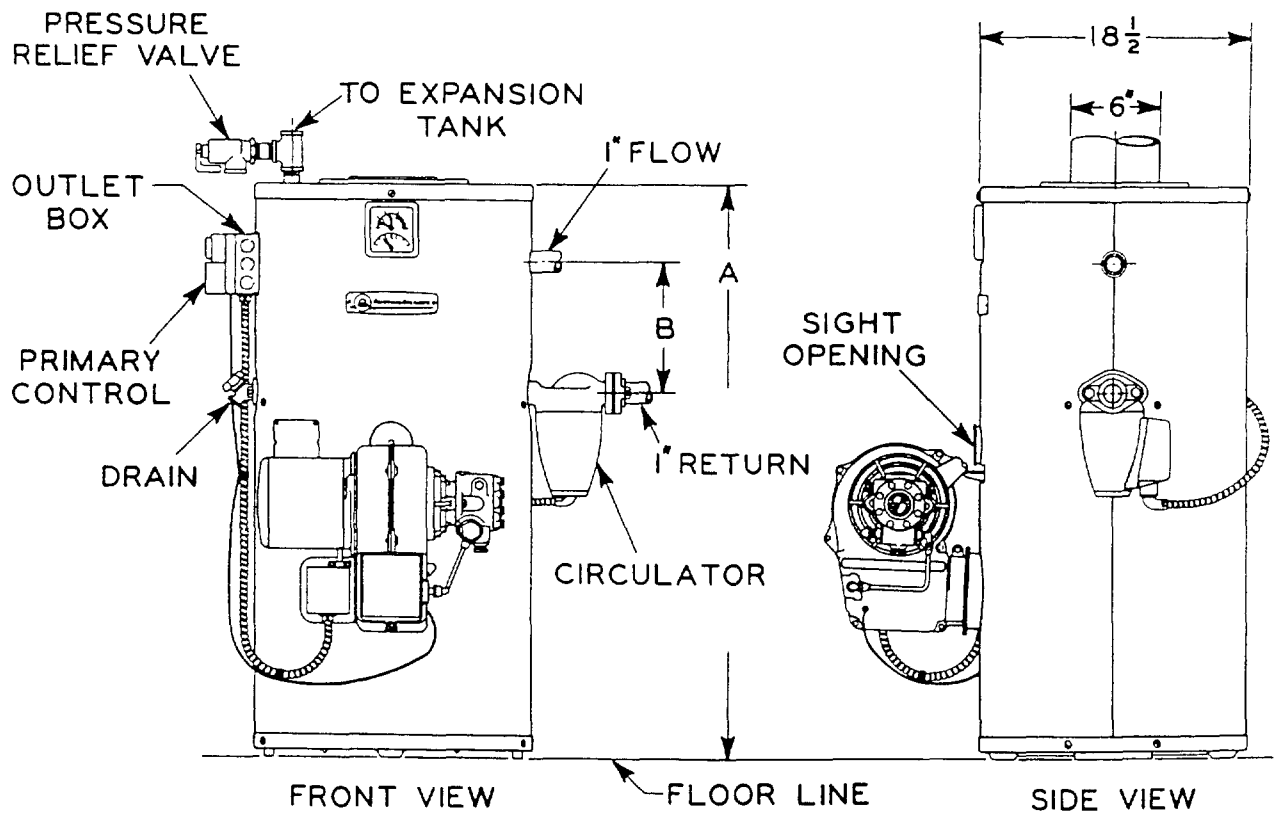
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A-O OIL BOILER



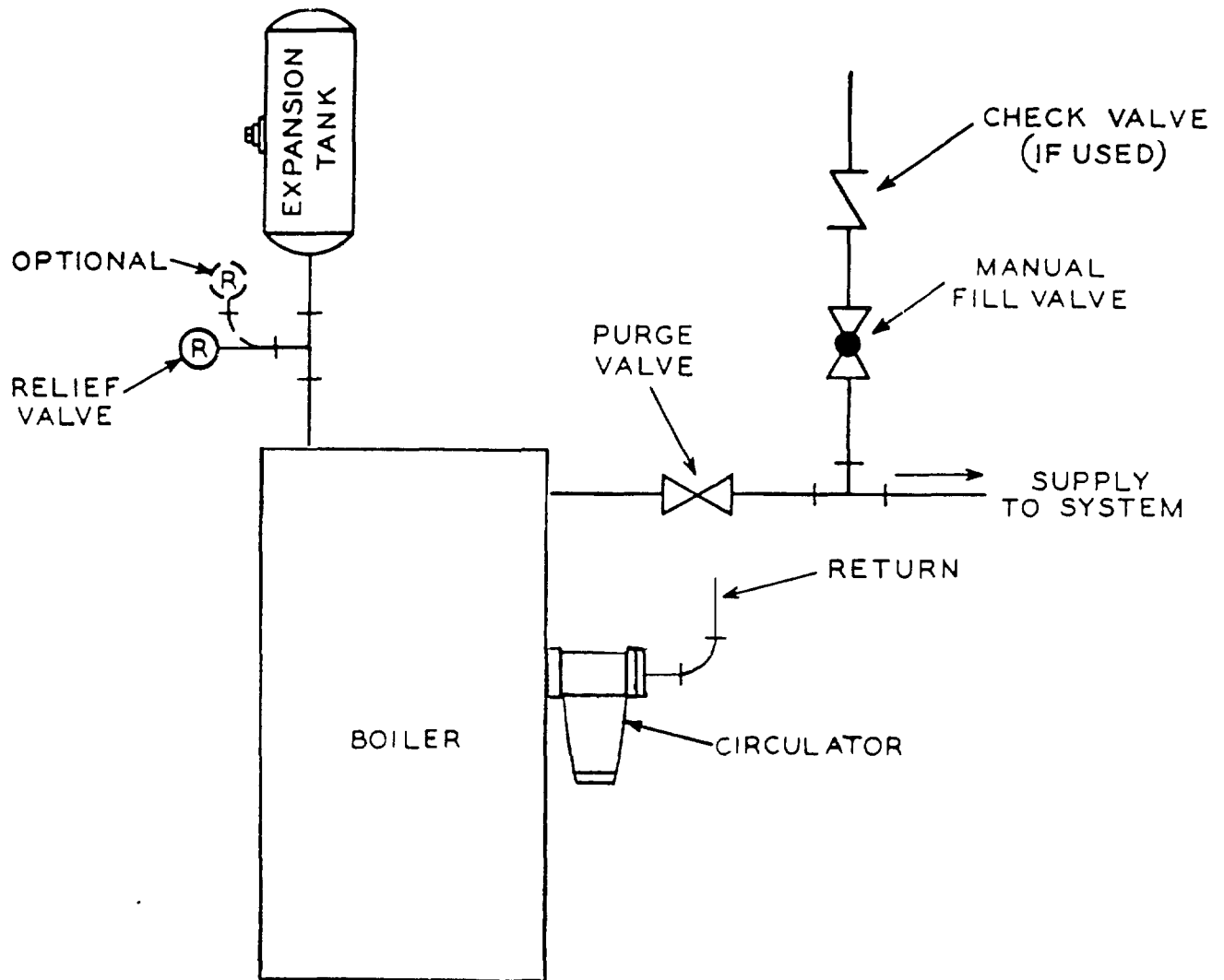
TOP VIEW

BOILER NUMBER	No. OF SECTIONS	A	B
A-O-3	3	$35\frac{1}{4}$	$5\frac{3}{4}$
A-O-4	4	$38\frac{1}{4}$	$8\frac{3}{4}$



BOILER PIPING RECOMMENDATIONS

A-0 BOILER



PROCEDURE FOR FILLING SERIES LOOP HEATRIM SYSTEM

1. Open fill valve.
2. Close purge valve.
3. Vent air from boiler by manually opening relief valve.
4. When water appears at relief valve, release lever and allow to close.
5. Continue filling until pressure gauge reads approximately 12 pounds.
(Close fill valve)
6. Open purge valve.

Note:- For a single loop heatrim system no additional vents, cocks, valves, drains, or other accessories are required.

INSTALLATION - OPERATION
AND
MAINTENANCE INSTRUCTIONS
FOR
PACKAGED A-O OIL HEATING UNITS

Boiler is shipped completely packaged except for the burner which is in a separate container. The sections are arranged in the sequence as listed below:

CODE

Pattern No. 78-B-14362	Top Section
" " 78-B-14361	Intermediate Section
" " 78-B-14366	Bottom Section

SECTION ARRANGEMENT

<u>Unit Number</u>	<u>Assemblage</u>
A-O-3	Top, Intermediate and Bottom
A-O-4	Top, (2) Intermediates and Bottom

Locate the boiler on a level floor as close to the chimney as practical.

Be sure to allow a minimum of 20" clearance for removal of the Combustion Chamber Unit. Also allow sufficient clearance on the right or left side of the boiler for circulator pipe connections.

If a water condition exists in the basement, or where it has been necessary to waterproof the basement floor, the boiler should be mounted on a concrete or hollow tile base, preferably to a height of at least three inches.

CAUTION

The expansion tank should not be set in a cold or an exposed place. If the pipe leading to or from the tank freezes, serious damage may result. If valve of any description is installed in the piping leading to or from the expansion tank BE SURE THAT IT IS OPEN WHILE THE BOILER IS IN OPERATION

Install the relief valve and fittings in top of boiler.

The connecting flange for the circulator should be installed on the return piping, then bolted to the circulator flange. Be sure that the flange gasket is not damaged and that the flange bolts are drawn up equally tight.

Install the flue pipe and draft stabilizer using the instructions provided with the stabilizer. The flue pipe should not extend beyond the inside wall of the chimney flue. Horizontal runs of flue pipe should be kept at a minimum with approximately 1/4" pitch per foot maintained.

Attach the oil burner to the boiler per instructions furnished with the burner.

Run electric service line from switch (not supplied by AR & SS Corp.) to the junction box. Install the room thermostat, then make all electric connections according to the wiring diagram on following page. The boiler is now ready for operation.

CLEANING BOILER SECTIONS

The pictorial diagram on page 4 shows flue travel and access for cleaning a four section boiler. In case of a three section boiler it is necessary to remove the flue baffle plate which is exposed when the canopy is lifted after the removal of the two screws.

WARNING - Do not permit flue brush to project more than ONE INCH below flues of bottom section when cleaning, otherwise the "Pyrolite" combustion chamber may be seriously damaged. When a thorough cleaning is required, it is recommended that the combustion chamber unit be removed from the boiler.

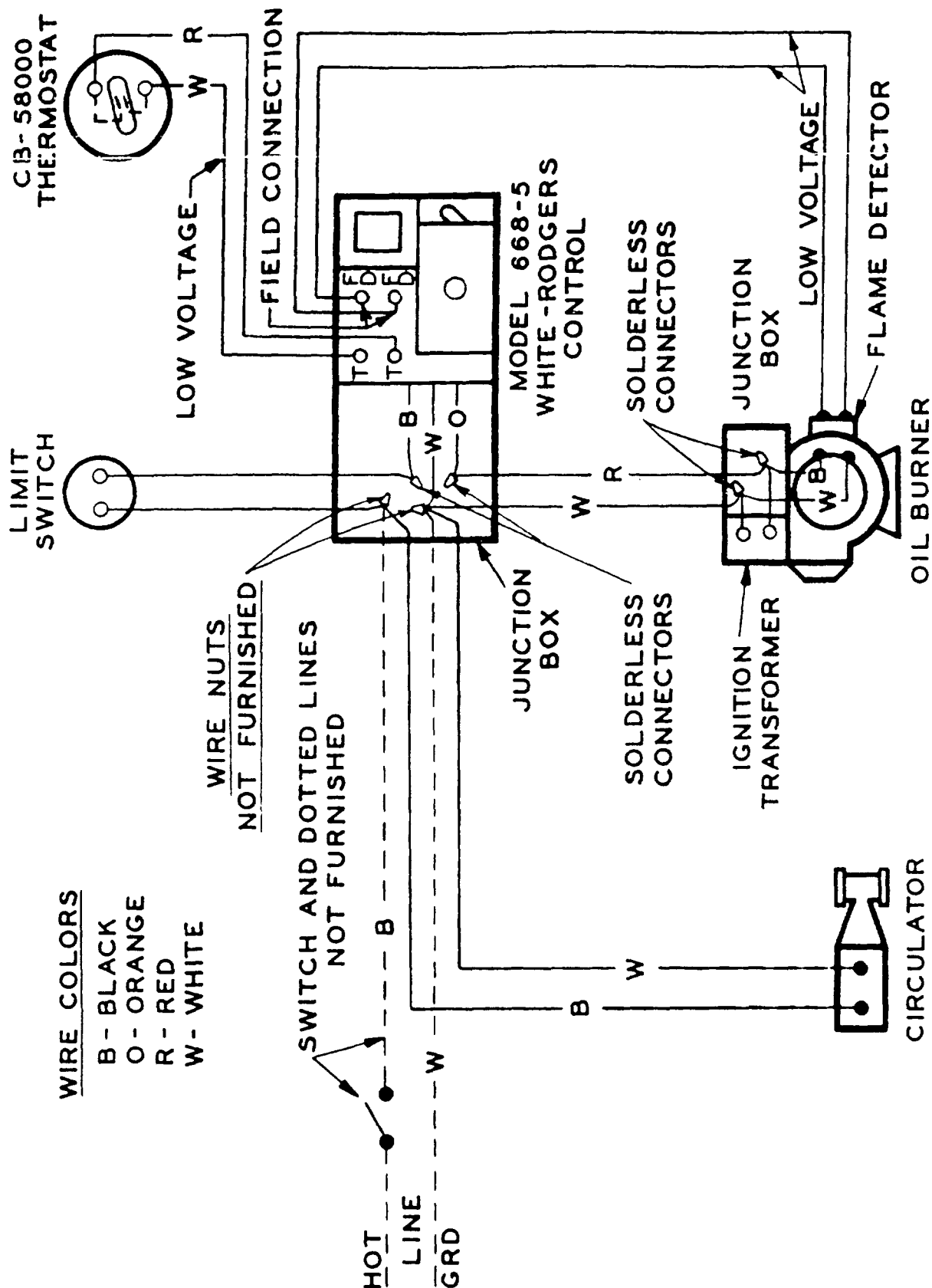
The high temperature "Pyrolite" combustion chamber assembled in this boiler has been especially designed to give the best possible oil burner operation and boiler efficiency. It is, therefore, essential that this combustion chamber be used as installed at the factory.

In case combustion chamber repairs are necessary a complete new factory built unit should be installed. The "Pyrolite" chamber cannot be separately replaced satisfactorily on the job, except with a factory assembled unit.

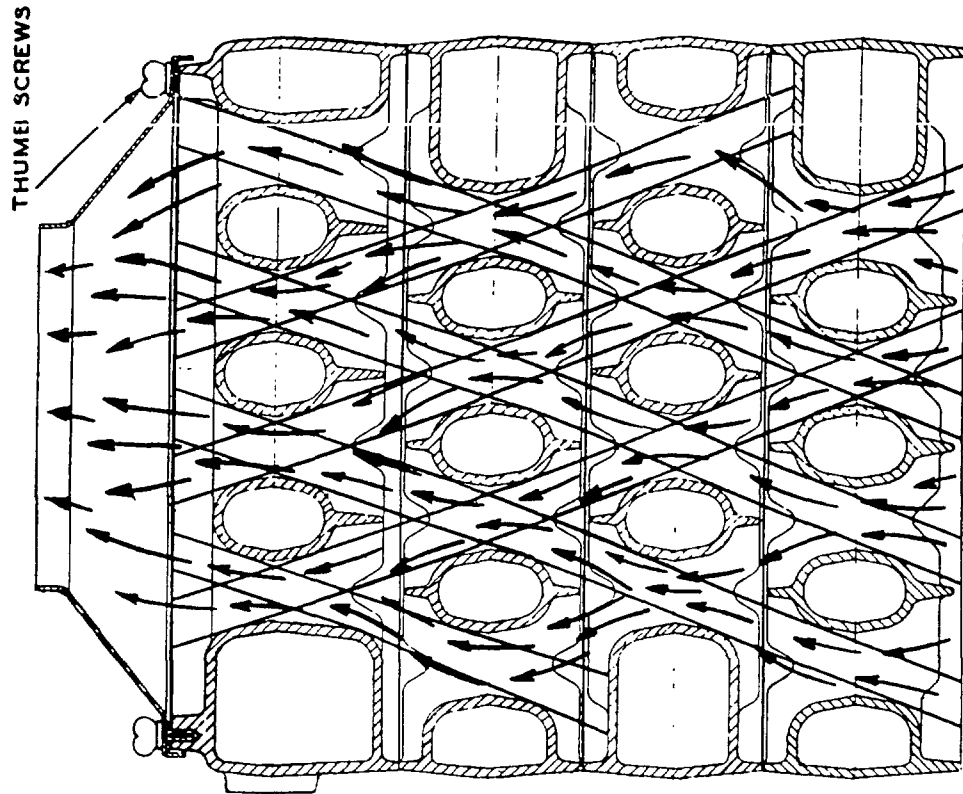
REMOVAL OF COMBUSTION CHAMBER UNIT

To install a new unit the following procedure should be used to remove the combustion chamber assembly. Refer to page 5 for pictorial view.

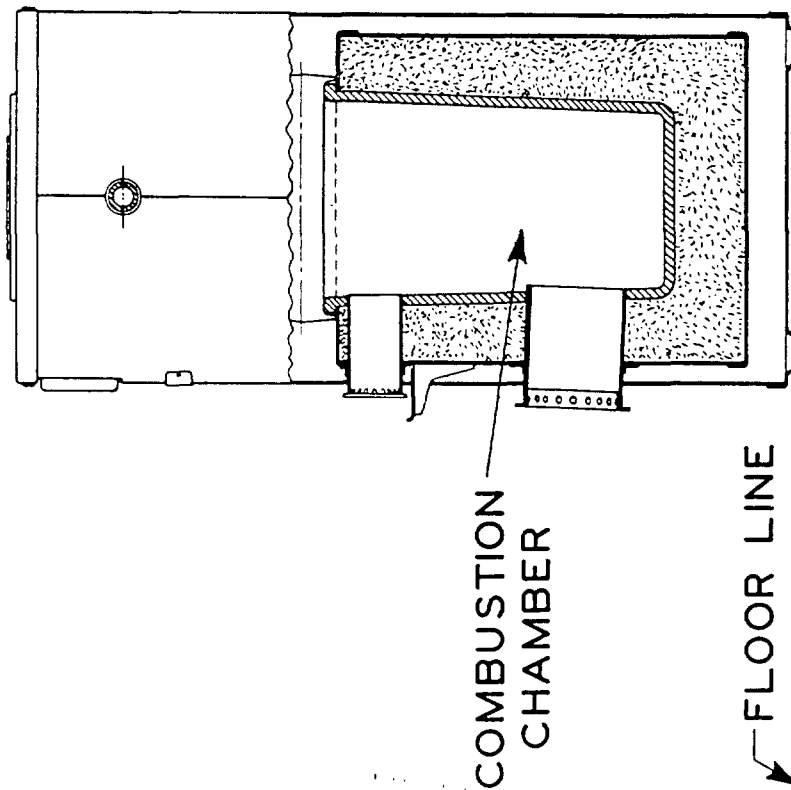
- a. Shut off electric supply.
- b. Close valves in oil lines and disconnect oil lines from burner.
- c. Lift burner from unit and place on floor. (It is not necessary to disconnect any burner wiring).
- d. Remove boiler jacket top panel by first removing the smoke pipe and two screws for holding the cover plate near relief valve and two screws in flange of jacket top.
- e. Remove only two (2) sheet metal screws from front half of jacket. These screws are approximately 23-1/2" above floor and are marked by letter "A" on the pictorial view. **IMPORTANT - DO NOT REMOVE ANY SCREWS IN REAR HALF OF JACKET OR AROUND BOTTOM OF JACKET.** Remove jacket front panel by pulling top of panel forward to disengage Pittsburgh locks and lift panel out of jacket base.
- f. Disengage combustion chamber from sections by removing two bolts marked "B" on the pictorial view.
- g. Remove combustion chamber assembly from boiler.
- h. The reassembly of the boiler is the reverse of the above procedure.



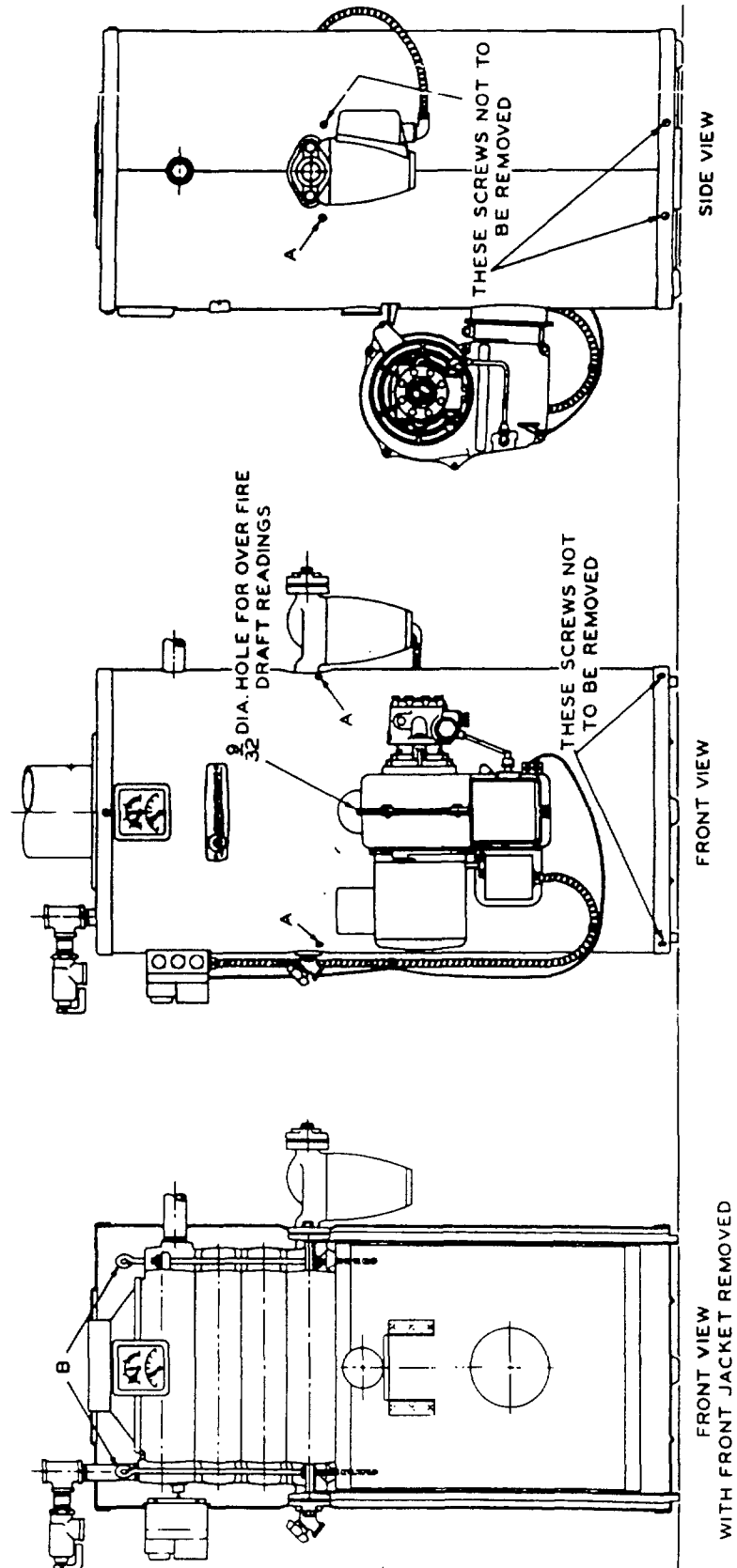
A-O OIL BOILER WIRING DIAGRAM



4 SECTION BOILER
SHOWING FLUE TRAVEL
AND ACCESS FOR CLEANING



SECTION THRU
COMBUSTION CHAMBER



BOILER AND JACKET ASSEMBLY

ATTENTION TO BOILER WHILE IN OPERATION

Keep open type system filled to 1/3 of expansion tank (as indicated when automatic pointer of altitude gauge is even with adjustable pointer). ON A CLOSED HOT WATER SYSTEM, THE PRESSURE MUST NOT EXCEED 30 LBS., IF IT DOES, IT MUST BE RELIEVED IMMEDIATELY AND THE CAUSE OF THE FAILURE OF THE RELIEF VALVE INVESTIGATED AND CORRECTED; OTHERWISE, PRESSURE MAY BUILD UP AND CAUSE DAMAGE TO THE HEATING SYSTEM.

Altitude and temperature gauge on front of boiler serves to indicate the following;

1. Temperature of water at the boiler.
2. Height of water level in feet above the gauge for OPEN SYSTEMS where expansion tank is used.
3. Water pressure in pounds per square inch for CLOSED SYSTEMS.

When system has been filled, remove rim and glass in gauge after loosening two screws or other means of holding rim in place.

It will be found that the automatic pointer on the ALTITUDE SCALE, which indicates HEIGHT IN FEET and PRESSURE IN POUNDS has moved up and indicates height of water level, above the boiler in the expansion tank.

The adjustable pointer (generally finished in color) should then be moved by hand UNTIL DIRECTLY UNDER AUTOMATIC POINTER.

Any loss of water within the system will be indicated by the AUTOMATIC POINTER receding to a smaller figure on the altitude scale at which time the water supply should be opened until the automatic pointer is again directly over the adjustable pointer.

After setting adjustable pointer, replace rim and glass and tighten screws.

Do not draw water from boiler while in use. When adding water while boiler is in operation, do not open supply valve fully, but add water slowly.

ATTENTION TO BOILER WHILE NOT IN OPERATION

At beginning or end of heating season, clean boiler thoroughly. See instructions on Page 2 for cleaning boiler sections.

Clean and remove flue pipe where feasible.

Keep system filled with water; in other words DO NOT DRAIN BOILER.

IF BOILER IS NOT USED DURING WINTER TIME, IT MUST BE FULLY DRAINED TO PREVENT DAMAGE CAUSED BY FREEZING.



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