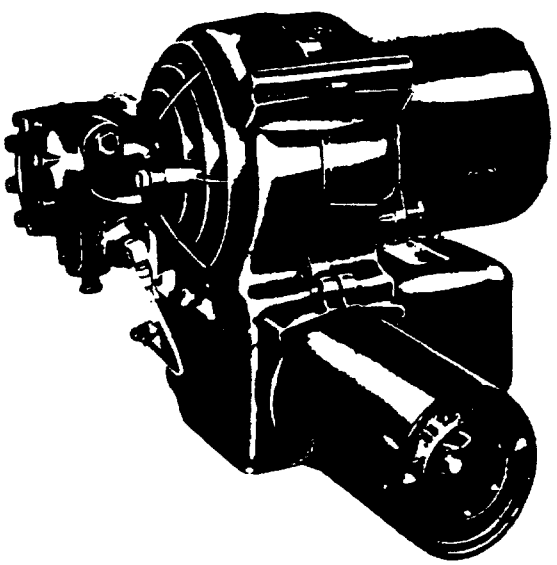
AMERICAN STANDARD

ARCOFLAME OIL BURNERS

INSTALLATION INSTRUCTIONS

FOR MODEL DH



FIRING RATE—0.55 TO 3.00 G.P.H.

AMERICAN STANDARD
PLUMBING & HEATING DIVISION
40 WEST 40TH STREET / NEW YORK, N.Y. 10018

PLAINTIFF'S EXHIBIT
ASI-1181

PART NO 17608 09

OIL BURNER INSTALLATION INSTRUCTIONS

Model DH Oil Burners are listed by the Underwriters' Laboratories, Inc. for use with No. 1 or No. 2 fuel oil as defined by Commercial Standard CS12-48 obtained either by the distillation or the catalytic process (or a blend of both).

Oil Burner Installations must be made to comply with.

(a) National Board of Fire Underwriters' Regulations

(b) Local Regulations or Codes

(c) Commercial Standard CS75

OPERATING INSTRUCTIONS—Detailed instructions pertaining to the operation of the burner are on the back cover of this manual and should be gone over carefully with the owner by the installer at the time of installation. These instructions should then be hung in a prominent place near the burner.

APPROVALS—This burner is listed by the Underwriters' Laboratories Inc., the New York Board of Standards and Appeals, the State Fire Marshall of the Commonwealth of Massachusetts, the Department of State Police in Connecticut, and others. It is manufactured in accordance with National Bureau of Standards, Commercial Standard No. CS75-56.

UNDERWRITERS' REQUIREMENTS—Oil burners, oil storage tanks, piping and electrical work must be installed strictly in accordance with the regulations of the National Board of Fire Underwriters and local ordinances.

UNPACKING BURNERS—When unpacking burner, check for concealed damages, inspect air inlet assembly and housing for breakage or other damage. If any damage is found, notify transportation company and supplier immediately.

GENERAL SPECIFICATIONS

This burner is supplied for one of six firing ranges between 0.55 and 3.00 GPH, depending upon the combustion parts combination provided. See section on combustion parts, page 5. Capacity is based on installation at sea level with 115 volt, 60 cycle current, 1725 RPM motor, commercial No. 2 fuel oil and pump pressure set at 100 Psig.

FUEL UNIT—The fuel unit assembly consists of pump, strainer or filter, and pressure regulating valve in one compact unit. The fuel unit is driven by the motor through a flexible coupling and operates at motor speed. Use proper piping and hookup as specified by the fuel unit manufacturer. On installations where the oil tank is above the burner, a one-pipe system can be used. On installations where the oil tank is below the burner, or where there is a long suction line, a two-pipe system must be used. **Burners come from factory with fuel unit arranged for one pipe system. For two pipe system, see instructions packed with fuel unit.**

TRANSFORMER—Standard equipment includes an ignition transformer with 115 volt, 60 cycle primary and 10,000 volt mid-point grounded secondary circuit.

INSTALLATION POINTERS

OIL TANKS AND PIPING:

Miscellaneous Information—If suction and return lines are under 30 feet in length, ⅜" O.D. copper tubing may be used, but never smaller; however, when the oil line is 30 feet or over, ½" O.D. tubing is recommended. Where basement tanks, or tanks installed above the burner are used, and when the oil flows by gravity to the oil pump, a single-stage fuel unit with a single oil line to the pump may be used. Avoid as many connections as possible in the suction line and make up all connections as tightly as possible, using a good pipe joint compound for oil on all pipe threads. To minimize the possibility of air leaks, tighten packing gland on any valve installed in the suction line. Also, be sure to tighten the cover on oil filter, as filter gaskets often shrink. Check for kinks in the oil lines as well as for possible air pockets and for loose connections.

Underwriters' Laboratories requirements now in effect stipulate a bottom outlet on all 275 gallon tanks. This is to prevent the accumulation of condensate which causes the tank to rust. A water trap can be installed at the tank outlet to prevent the water from entering the burner.

Single Line System—This type of installation is used where the tank is above the burner and gravity oil feed to the burner is permitted. It is not recommended where it is necessary to lift the oil. The bypass plug should not be installed in the fuel unit. The oil outlet should be taken from the bottom of the tank and the line should have a gradual slope downward of approximately ½" per foot or more to a point directly below where it is connected to the burner. Sloping the line will prevent the formation of air pockets and the collection of air bubbles which might interfere with the proper operation of the burner. A shut-off valve should be installed in the line. A two-stage unit may be used on a single line system.

Two Pipe System—If an oil tank is below the burner or if a suction line is long, it is recommended that a two line (suction and return) installation be installed. For this type of installation, **the bypass plug should be installed in the fuel unit.**

Suction Line—It is recommended that extra heavy wall copper tubing be used for this line. If standard wrought iron pipe is used, it should be scale-free and not smaller than ½". A complete loop of ⅜" copper tubing should be installed to connect the pipe to the fuel unit. Where tubing is used, one complete loop should be made in the tubing immediately below the fitting connecting it to the fuel unit in order to reduce transmission of noise and to prevent strain on the burner. When the top of the tank is below the level of the fuel unit, high points or air pockets in the suction line must be avoided between the tank and the fuel unit, and a ⅜" ball check valve should be installed in the basement to prevent the return of the oil to the tank during the off-cycle period of the burner. **Do not run suction or return line overhead** as this greatly increases the possibility of air traps, oil leaks, syphoning and transmission of noise. When the top of the tank is above the fuel unit, and gravity feed to the fuel unit is not permitted, the suction line should be run to a point above the tank where an approved anti-syphon valve and a ⅜" gate valve must be installed. These valves should be installed inside. No ball check valve is required, but a union should be installed between the gate valve and the strainer to facilitate the removal of the strainer for cleaning when necessary.

Return Line—The return line should be the same size as the suction line and run as directly as possible from the return opening in the fuel unit to within 6 inches of the bottom of the tank.

Pressure Test for Buried Oil Lines—It is important that buried oil lines be thoroughly tested for leaks before being covered.

Draft Regulators—Install the automatic draft regulator as outlined in the instructions furnished with the regulator. The draft regulator may be installed in the chimney, above the smoke-pipe connection, and if this is not practical, as a last resort it may be installed below the smoke-pipe.

If one draft regulator does not reduce the draft sufficiently, a second one should be added to insure maximum flame efficiencies. Do not install cross damper.

Chimney—Be sure that the chimney is sufficiently high and large enough to meet specifications of the heating unit installed. It is best that only the burner be connected to the chimney, for other units connected to the same flue can cause trouble. The chimney should be clean.

Filter—All burners should have a good filter in the oil supply line. The filter cartridge should be replaced at least once a year. The filter body should be thoroughly cleaned before installing a new cartridge.

Air For Combustion—Do not install burners in rooms with insufficient air to support combustion. Occasionally, it is necessary to install windows or cut holes in a door to these rooms to obtain sufficient air. An opening at least twice the area of the smoke pipe is necessary.

Wiring—All wiring must be done in accordance with the National Electric Code and local ordinances. In many localities, No. 14 wire run in rigid conduit must be used, but, where permissible, two and three wire BX is suggested, particularly for connections to controls and burner motor. A cut-off switch for the main 115 volt line to the burner should be mounted on a fire proof wall in an accessible place close to the burner.

Burner Installation—Sling (hanger) mounting is standard with Model DH Oil Burners furnished with American Standard boilers. The bracket will be mounted on the unit. Slide burner tube through opening and cradle burner hanger on the mounting bracket. Allow burner to swing forward until air tube rests on cushion or pads attached to pressure plate. Make sure that burner is centered on the bracket.

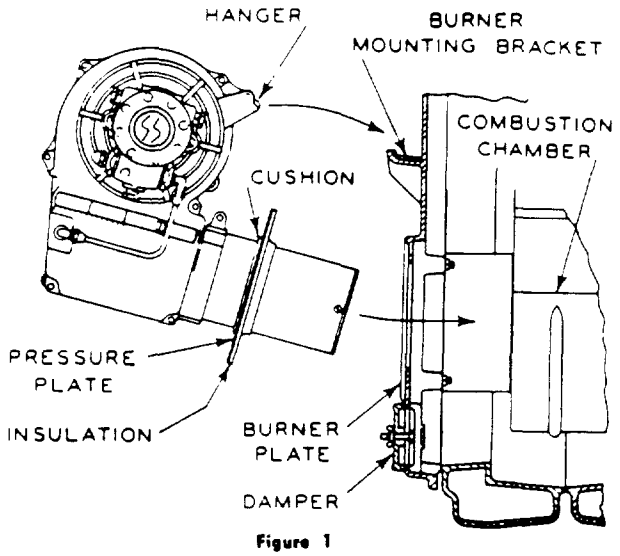


Figure 1

Selection of Nozzle

Firing Rate GPH	Nozzle Spray
.55 to 1.25	60°-70° Hollow or Solid
above 1.25	60°-70° Solid

On installations where burner operation is influenced by such surrounding conditions as shape of room, location in that room, chimney, flue connection, etc., these may warrant the use of a compromise nozzle with respect to noise and performance.

With the air pattern produced by this burner, a *60° solid* cone nozzle will give the cleanest flame with the highest CO_2 reading. However, the noise level may be a little higher than expected. On the other hand, by using a wider spray, say a *70° hollow* cone nozzle, the noise level may be lowered, but the CO_2 reading will be reduced ½ to 1%, depending on the firing rate.

Installing Nozzle—Make sure that the proper size nozzle for the installation has been selected and assembled tightly to the nozzle adaptor. The inner assembly should be removed from the burner before screwing the nozzle in place, see Figure 2. Do not attempt to insert the nozzle through the front end of air tube, as it is almost impossible to get a tight joint between the nozzle and nozzle adaptor unless two wrenches are used. Although electrodes are adjusted at time of manufacture, they should be checked at time of installation to be sure that they are set in accordance with Figure 2 in this manual. The flame detector, when supplied, should also be checked for proper location, see Figure 2.

Rotate Blower Wheel—The blower wheel should be rotated by hand to be sure that the motor and fuel unit turn freely.

Motor—Oil motor in accordance with motor manufacturer's recommendations.

Electrical Work—Install all electrical wiring in accordance with the National Electric Code and local ordinances (if any).

Starting the Burner—Adjust burner to firing rate required by installing proper nozzle.

Open all oil valves and see that observation port or fire door of boiler is open. Make sure proper fuses are in place. Adjust the air setting to its mid-position.

Purge air from the fuel pump in accordance with instructions furnished with pump. Install a pressure gauge and adjust oil pressure to 100 Psig.

COMBUSTION PARTS

NUMBER	FIRING RATE GPH	STATIC DISC MARKING	TURBULATOR MARKING	NOZZLE SPRAY ANGLE
R-1	.55 to 1.10	55 to 1.10	None (Ceramic) 2-1/16" ID	60°-70°
R-2	1.00 to 1.85	.90 to 1.85	None (Ceramic) 2¾" ID	60°-70°
1	.65 to 1.10	.55 to 1.10	.65 to 1.10	60°-70°
2	.90 to 1.75	.90 to 1.85	.90 to 1.75	60°-70°
3	1.80 to 2.50	1.80 to 3.00	1.80 to 2.50	60°-70°
4	2.35 to 3.00	1.80 to 3.00	2.35 to 3.00	60°-70°



Turbulator and Disc Combinations as shown on above table.

The Model DH Burner covers a firing range of .55 to 3.00 GPH in six steps. These steps and the corresponding specifications are given in the table above. The changeable parts include the static disc, turbulator and, of course, nozzle. The static discs may be changed without altering electrodes or nozzle adaptor by removing two screws and sliding over the nozzle adaptor and off. The static discs and cast-iron turbulators are stamped showing the specific range for which each is used.

Electrode Setting—Alloyed metal electrodes that will not burn out or oxidize at high temperatures are furnished. The electrodes for this burner are set as shown in Figure 2. The electrodes shall be 5/8" above the center of nozzle, 1/8" in front, and 1/8" to 5/32" gap. These settings should be checked when installing the burner and at that time make sure that no part of the exposed electrode tips come closer than 1/4" to the nozzle or any other metal part. Also, check that the oil spray does not strike the electrode tips.

Air Adjustment—The amount of air supplied for combustion on all Model DH Burners is regulated by the air damper slide on the outlet side of the blower. The adjustment is located on the right side of the housing. (See Figure 2.) To adjust the air supply loosen thumb screw and slide to increase or decrease air as shown by marking A. When the correct amount of air is obtained, tighten thumb screw which locks the EXACT-AIRE damper in place.

REMOVING AND REPLACING INNER ASSEMBLY

Disconnect the oil supply tube fitting at the end of the oil pipe. Remove the screw holding the rear cover plate in place and remove cover plate. Release ignition bus bars from transformer clips by pulling ends of bus bars to the right. The inner assembly is now free to be pulled out of the rear of the burner housing.

When replacing inner assembly, place support legs inside air tube and make certain to clip bus bars into transformer clips. Replace rear cover plate.

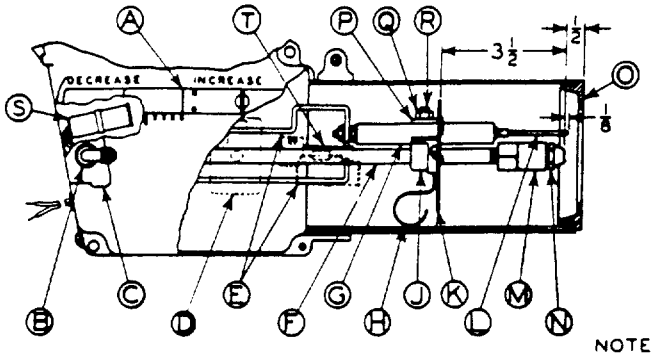
It is very important to have the nozzle centered accurately in the opening of the turbulator for uniform air distribution. This will help give a uniform, clean, efficient flame.

In the event that the alignment block (Figure 3) is loosened on the oil pipe, align nozzle in center of tube by sliding oil pipe through the block and tighten alignment block allen set screw with inner assembly in place.

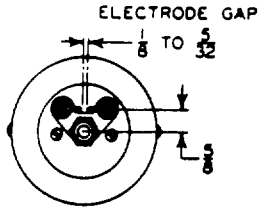
The distance from the tip of the nozzle to the front of the turbulator should be ⅛" as shown in Figure 2. This setting will produce the most desirable flame.

IDENTIFICATION OF PARTS

A - AIR ADJUSTMENT
B - OIL CONNECTION
C - ALIGNMENT BLOCK
D - BUS BAR SUPPORT (15" & 23" GUNS ONLY)
E - BUS BARS
F - OIL PIPE
G - ELECTRODE PORCELAIN
H - POSITIONING SPRING
J - ELECTRODE HOLDER
K - DISK SUPPORT
L - ELECTRODE TIPS
M - NOZZLE ADAPTOR
N - NOZZLE
O - TURBULATOR
P - ELECTRODE CLAMP
Q - ELECTRODE CLAMP NUT
R - SET SCREW
* S - FLAME DETECTOR (FOR 5", 6", & 8" GUNS)
* T - FLAME DETECTOR (FOR 15" & 23" GUNS)
* - WHEN SUPPLIED

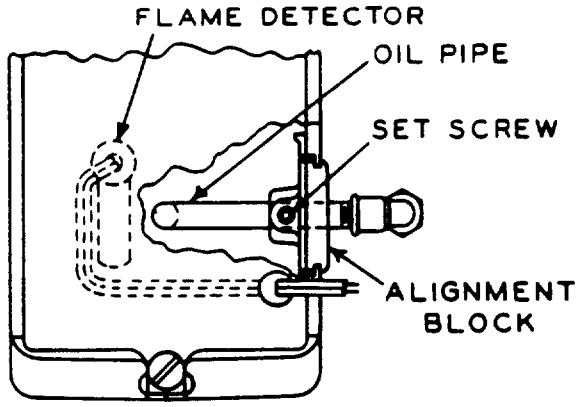


SECTIONAL VIEW - SHOWING INNER ASSEMBLY



NOTE - 1/4" MIN CLEARANCE FROM ELECTRODES TO METAL PARTS

Figure 2



PARTIAL REAR VIEW OF BURNER SHOWING ALIGNMENT BLOCK AND FLAME DETECTOR (FOR 5", 6" & 8" GUNS)

Figure 3

Inspection—After installation of the burner, check to see if there are any loose parts on the burner, controls or on the heating unit which might cause vibration. Check the operation of all electrical controls and inspect the installation carefully for oil leaks and other defects.

COMBUSTION CHAMBER

When a refractory combustion chamber is furnished with unit, install per instructions packed with chamber. When chamber is not furnished, build to shape and dimensions shown in Figure 4, use soft firebrick (high temperature insulating brick).

When a chamber is installed in the ashpit of a dry base boiler, place insulation between the bricks and the floor, also between the bricks and sides of the boiler base. This is especially important in a gravity warm air furnace. For wet base boiler installations, follow instructions furnished with chamber

The height of the chamber as shown is minimum. The brick work should always be carried high enough to cover 2 inches of water back surfaces.

CAUTION: Do not use back fill or cement with steel chamber.

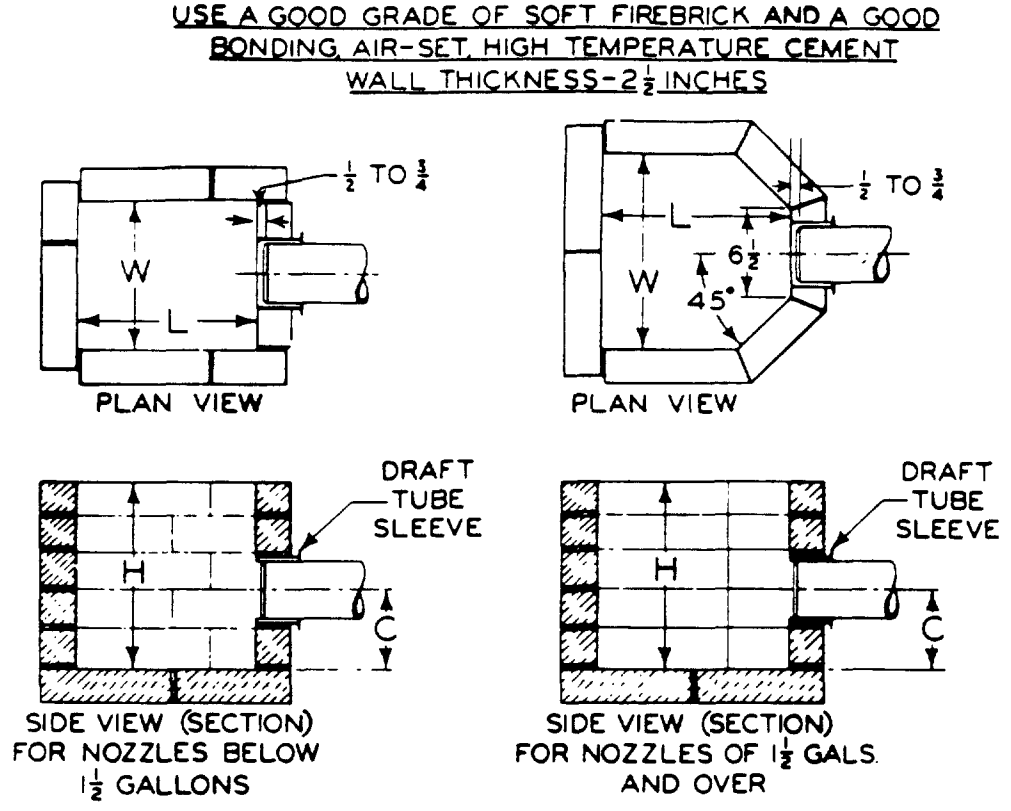


Figure 4

COMBUSTION CHAMBER DIMENSIONS

(Made From High Temperature Insulating Firebrick)

FIRING RATE G.P.H.	COMBUSTION CHAMBER SIZE—INS.			FLOOR OF C.C. TO C.L. OF NOZZLE "C"
	LENGTH	WIDTH	HEIGHT*	
.55 to .65	7	7	14	4
.75	8	8	14	4½
1.00	10	10	14	5
1.25	11	11	14	5
1.35	12	11	14	5
1.50	13	11	14	5
1.65	14	12	14	5½
1.75	15	12	14	5½
2.00	15	12	14	5½
2.25	16	13	14	6
2.50	17	13	14	6
3.00	18	14	14	6 - 6½

*Note: Height chamber as shown is minimum

Final Adjustments—After the unit has warmed up adjust the draft regulator to provide 0.02" WC draft over the fire. Use a draft gauge. Whenever excessive draft is encountered and the readings cannot be lowered to 0.02" over the fire, a second draft regulator should be installed. Do not install a cross damper.

Reset the air adjustment until the flame becomes a trifle smoky. Then increase air slightly to a point where a clean flame is procured with a maximum smoke reading of No. 2. Tighten air adjustment thumb screw.

Check the operation of all controls. Oil the motor at both oilers with a good grade of electric motor oil.

Fill out the Oil Burner Certificate (CS75) and hang it together with the Operating Instructions, in the vicinity of burner. Explain operation of burner to user.

CAUTION: Provide adequate means to furnish air for combustion if the boiler room is all enclosed. Provide ventilation openings totaling a free area equivalent to not less than twice the area of the flue outlet of the heating unit, or 1 square foot of free area for each gallon of oil burned. One opening near the floor and a second opening near the ceiling are required.

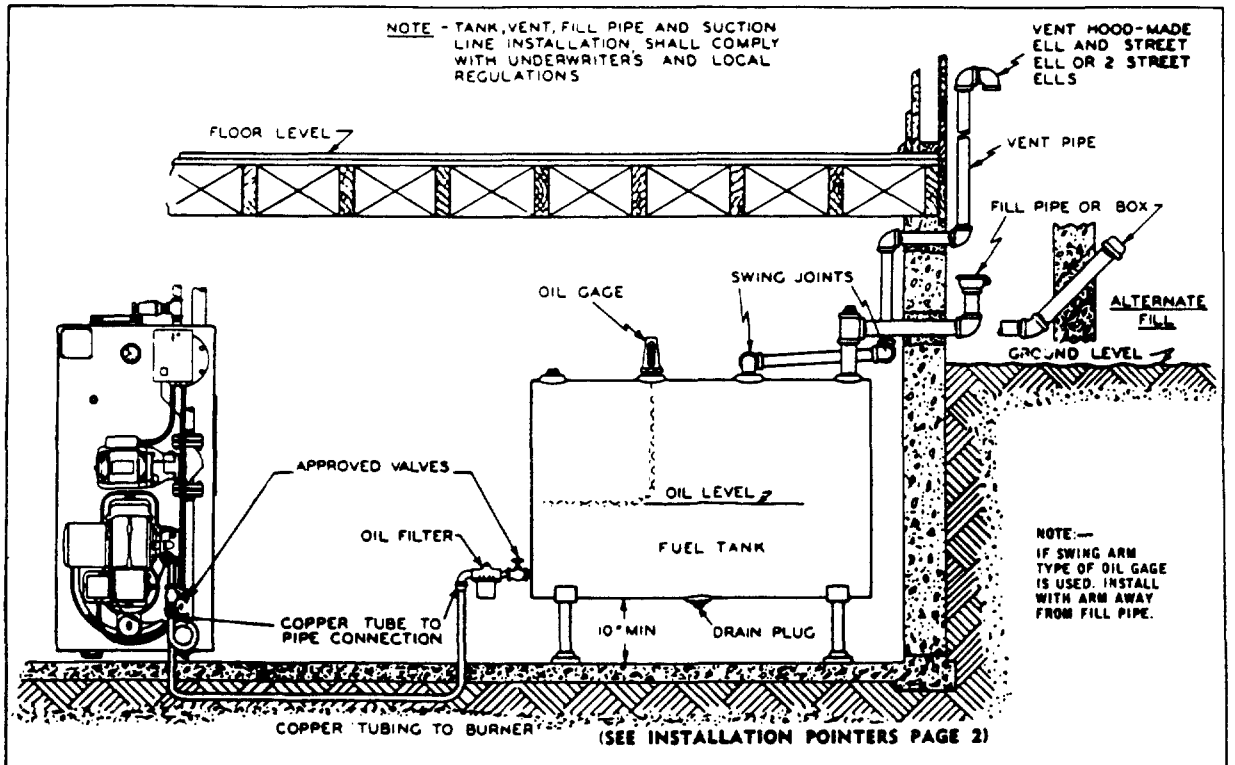
FIRE EXTINGUISHER: If required by local ordinance, install approved type.

FOLLOW-UP SERVICE

Inspect installation two or three weeks after it has been placed in operation and recheck the control system, electrodes, flame, CO_2, stack temperature, draft, as well as oil lines for leaks.

GENERAL MAINTENANCE

For general care of burner see Operating Instructions Clean fuel pump strainer and replace filter cartridge (when oil filter is used) every heating season.

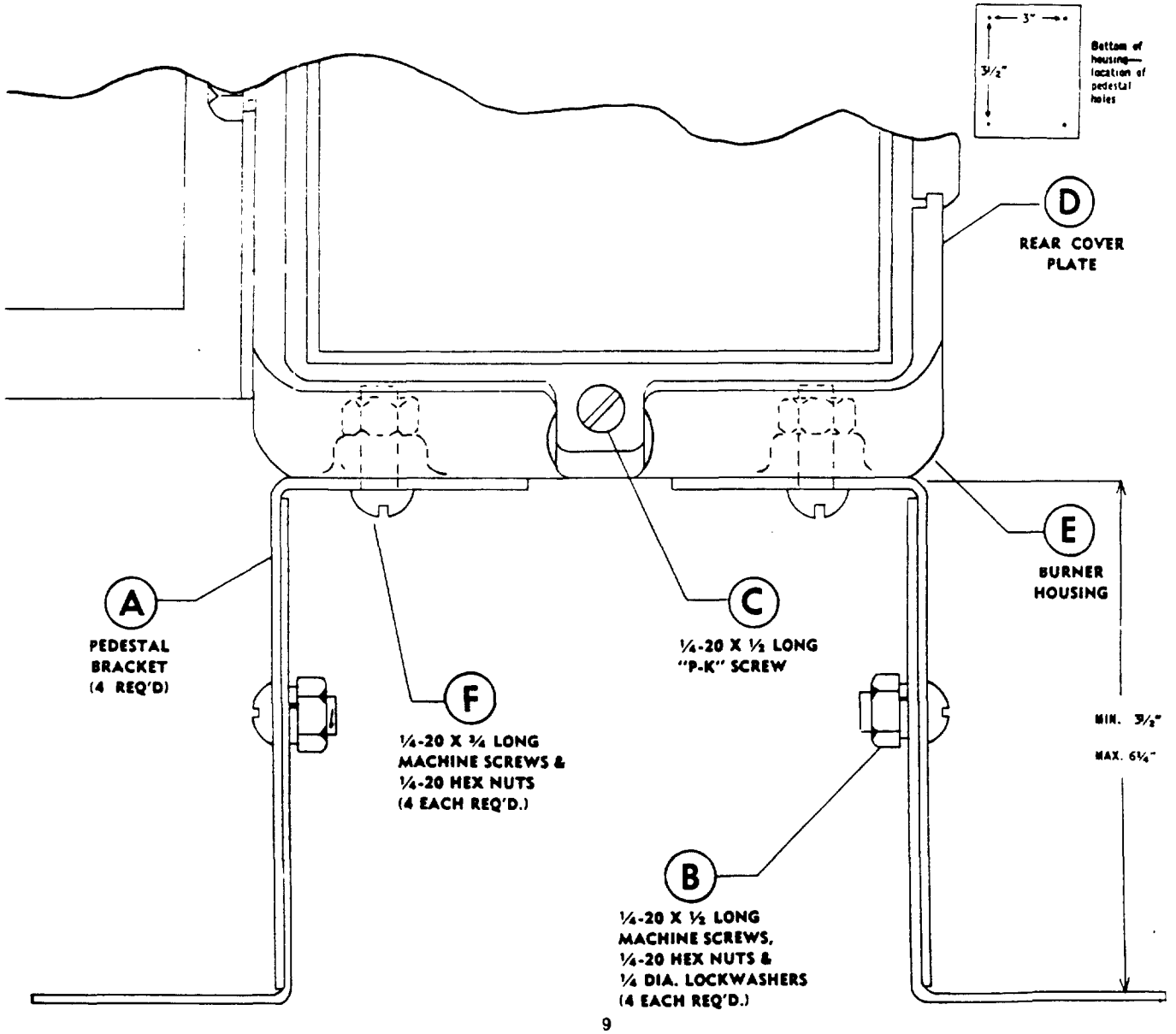


MODEL DH OIL BURNER SINGLE BASEMENT TANK INSTALLATION

Figure 6

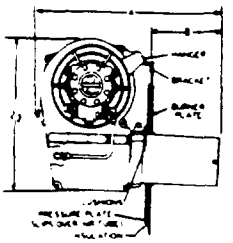
PEDESTAL MOUNTING INSTRUCTION SHEET
MODEL DH ARCOFLAME OIL BURNER

1. ASSEMBLE BOTH HALVES OF PEDESTAL BASE AS SHOWN BELOW USING 4 BRACKETS (A) & 4 MACHINE SCREWS & HEX NUTS WITH LOCKWASHERS (B). DO NOT TIGHTEN (B) YET.
2. REMOVE SCREW (C) AND COVER PLATE (D). REMOVE FLASH FROM 4 BOTTOM HOLES OF BURNER HOUSING (E) AND SECURELY MOUNT PEDESTAL TO HOUSING AS SHOWN USING 4 MACHINE SCREW AND HEX NUTS (F).
3. REPLACE (D) AND SECURE WITH (C). ADJUST PEDESTAL HEIGHT AS REQUIRED AND TIGHTEN (B).

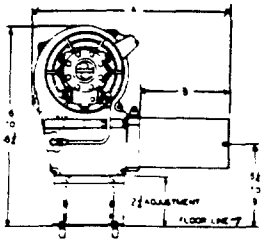


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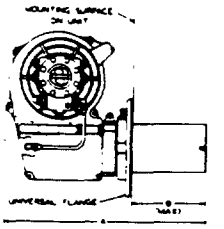
MODEL DH BURNER MOUNTING ARRANGEMENTS (SIDE VIEWS)



side view sling (hanger) mounted
FIGURE 7



side view pedestal mounted
FIGURE 8



side view flange mounted
FIGURE 9

burner model	dimensions—inches			
	A	B (sling)	B (pedestal)	B-max. (flange)
DH- 5	14½	5	—	—
DH- 6	15⅝	6⅛	—	5
DH- 8	17	—	7¾	6½
DH-15	24	—	14⅜	13½
DH-23	32	—	22¾	21½
diameter air tube—4 inches				

FIGURE 10

See Figure 1, page 4, for hanger mounting details of DH burners used with American-Standard boiler-burner units. (Also see Figure 7 above.)

When used as a conversion model, the DH burner can be obtained with a pedestal base, Figure 8, which is packed separately. An instruction sheet which outlines the procedure to follow when installing the DH burner is included with each pedestal.

Also, when used as a conversion model, the DH burner can be obtained with a universal flange, Figure 9, which is packed separately. The flange is slipped over the burner with the insulation toward boiler or furnace. It is provided with slotted mounting holes so arranged that existing tapped holes or studs can be used in most cases. If studs are furnished on the heating unit, these should be utilized by matching the slotted holes or, if necessary, by drilling new holes to suit in the mounting flange.

IMPORTANT NOTE: When installing the Model DH as a conversion burner, either with a pedestal or flange, the burner should be positioned so that the end of the air tube is between ½" and ¾" behind the inside surface of a refractory combustion chamber. If the chamber is heat resistant steel, the air tube should project into the chamber berween ⅛" and ¼".

Place a small level on the top of the housing and make sure the burner is level sidewise. Place the level on the air tube *or on the flat on the fuel unit* and adjust so that air tube pitches into the chamber about one-half bubble on the level.

AMERICAN STANDARD
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HANG NEAR BURNER

Operating Instructions

TO START BURNER

1. Do not start burner when combustion chamber is hot or when oil vapor is present in boiler.
2. See that all valves in the oil lines are open.
3. With main cutout switch in oil burner electrical circuit in "OFF" position set thermostat at a point above room temperature.
4. Set electric switch to "ON" position. If burner fails to start instantly set master switch to "OFF" position and call service man.
5. If burner starts to operate normally leave switch on and RESET thermostat to temperature desired.

TO STOP BURNER

1. Set main cutout switch to "OFF" position.
2. Set thermostat pointer as far below room temperature as possible.
3. Burner should be covered to protect it from dust and dampness.

IF BURNER FAILS TO OPERATE

Call your installer or service man.
The trouble may be due to:

1. Blown fuses in electrical circuit. Fuses of greater capacity than 15 ampere should not be used.
2. Thermostat may be set below room temperature.
3. Primary control may require "re-setting".
4. Oil valve may be closed.
5. Oil supply may be too low.
6. Limit control may be off due to excessive boiler pressure or excessive water or air temperatures.
7. The water line on steam boilers, protected by a low water cutout, may be too low—refill to proper level.
8. If motor is equipped with motor protector, press button on motor.

TO STOP BURNER FOR THE SUMMER

1. The main cutout switch should be set to "OFF" position.
2. All oil valves should be closed.

TO START BURNER IN THE FALL

1. The heating plant should be checked and cleaned if necessary.
2. The strainer in the pump should be cleaned, and if a filter is installed in the oil line, it should be cleaned and the filter cartridge replaced.
3. The fan and the blower housing should be cleaned of all accumulated dust and lint.
4. The ignition points should be checked and the nozzle cleaned or replaced.
5. Oil motor (See LUBRICATION).
6. Start burner by following instructions under paragraph, "TO START BURNER."
7. It is recommended that a competent service man be called to clean the unit and burner and make sure that the burner is operating properly. In an emergency set the master switch to "OFF" position and call your service man. The installer should identify the emergency shut off switch and valve.

WHEN BURNER IS IN OPERATION

1. Check flame periodically, if it becomes out of shape or smoky, call your service man.
2. When cleaning heater room or utility room, always stop the burner to reduce the amout of dust and lint drawn into the burner.
3. Electric ignition system, and all controls should be checked periodically for reliability of operation and adjusted if necessary.
4. Air inlet openings must be kept free of dust and lint.
5. See that a definite air supply for the burner is always present. In tight basements or heater rooms, the window must be partially left open.

LUBRICATION

1. Only the motor requires lubrication.
2. Only a good grade of electric motor oil, SAE 10, should be used.
3. Oil lightly, twice yearly, or as recommended by instructions appearing on motor.

TO CLEAN STRAINER OR FILTER

1. Set main cutout switch to "OFF" position.
2. Oil valves between tank and burner should be shut.
3. Strainer cover should be removed.
4. For Sundstrand pumps:
   Strainer basket should be taken out and washed in kerosene.
   For Webster pumps:
   Wipe out cover only, it is not necessary to remove filter.
5. Strainer baskets and cover should be reassembled with gaskets clean and in good condition.

TO RESET PRIMARY CONTROL

It consists of an automatic electrical relay operating in conjunction with a hermetically sealed detector actuated by the oil burner flame. When for any reason the burner fails to ignite promptly, the control will stop the burner. After being shut off in this manner, the burner cannot be started until the control is "Reset."
The "Reset" button projects through the cover of the control box and should be pushed to reset.
The combustion detector is mounted at the rear of the oil burner housing or in the air tube.

NOTE: For heating units equipped with stack control—
Before pressing reset button, do the following:

1. Set main cutout switch to "OFF" position.
2. Allow accumulated vapor to pass up chimney and cool off combustion chamber. When the vapor has disappeared and combustion chamber has cooled. press button of primary relay.
3. Turn on current at switch. If vapor accumulates in combustion chamber and does not ignite. stop burner by again opening switch and call service man.

CAUTION:

Never burn garbage or refuse in heater.
Do not leave paper or rags around burner or heater.
DO NOT EXPERIMENT WITH YOUR BURNER.

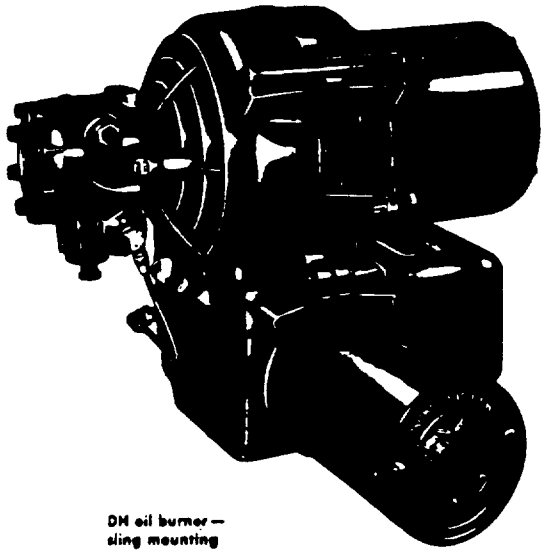
FUEL SPECIFICATIONS: This burner is listed by the Underwriters' Laboratories, Inc., for use with Nos. 1 or 2 fuel oil, National Bureau of Standards, Commercial Standard No. CS12-48. Do not use gasoline, crank-case oil, or any oil containing gasoline.

For Prompt Service, Phone

Dealer's Name _____

Address _____

Telephone No. _____ **Date Installed** _____



DH oil burner—
sling mounting

■ The Model DH oil burner by American-Standard, has a precision die-cast aluminum housing. This assures perfect and lasting alignment of motor, fan and fuel unit, yet makes the burner surprisingly light in weight for ease in handling.

The EXACT-AIRE slide damper on the outlet side of the fan is easily adjusted, without tools, to meter primary air accurately. Good clean combustion is achieved through a superior air handling device of proven performance.

The complete firing range of 0.55 to 3.00 gallons of oil per hour is covered by 6 disk-turbulator combinations. Each combination applies to a part of this range and has a pre-set inner assembly that scientifically proportions air flow for the nozzle size in the particular range.

Fuel unit, motor, transformer and nozzle are all standard components, easily accessible and readily available.

Four convenient air tube lengths of 5, 8, 15 and 23 inches, plus a choice of pedestal, flange or sling (hanger) mountings, make the DH Burner ideal for any installation.

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model DH
Arcoflame oil burner

AMERICAN-STANDARD

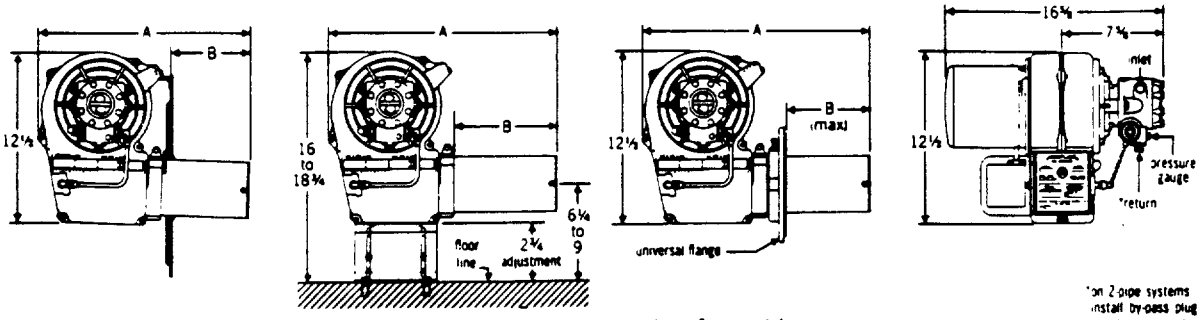
outstanding design features

- **housing** – die-cast aluminum – sturdy, lightweight
- **EXACT-AIRE adjustment** – slide damper measures the air accurately, adjusts without tools
- **air tube** – 4" in diameter, and available in wide range of 5, 8, 15 and 23 inch lengths
- **disk-turbulator assembly** – six combinations cover entire range
- **single-shaft alignment** – for fuel unit, fan and motor – assures minimum mechanical vibration
- **fan** – statically and dynamically balanced
- **ignition** – constant
- **transformer** – mid-point grounded to prevent television or radio interference
- **nozzle** – each nozzle tested at factory
- **controls** – available for all types of hot water, steam or warm air installations
- **mountings** – available for all types: sling (hanger), pedestal or flange

dimensions (inches)

burner model	dimensions – inches A	B (sling)	B (pedestal)	B-max. (flange)
DH- 5	14½	5	–	–
DH- 8	17	–	7¾	6½
DH-15	24	–	14¾	13½
DH-23	32	–	22¾	21½

diameter air tube—4 inches



side view sling (hanger) mounted — side view pedestal mounted — side view flange mounted — rear view

*on 2-pipe systems install by-pass plug in return opening

specifications

Current Characteristics	Oil Rate – gph Minimum	Oil Rate – gph Maximum ■	Motor hp	Motor rpm	Oil Pressure (psig)
115 volt 60 cycle	0.55	3.00	⅛	1,725	100

■ These capacities can be used up to 1,000 feet altitude. Reduce capacities by 4% for each 1,000 feet above sea level.

Disk-turbulator combinations for DH oil burner are as follows:

no.	firing rate (gph)	Selection of nozzle: firing rate (gph)	nozzle spray
R1	0.55-1.10	0.55 to 1.25	60°-70° hollow or solid
R2	1.00-1.85		
1	0.65-1.10		
2	0.90-1.75		
3	1.80-2.50	above 1.25	60°-70° solid
4	2.35-3.00		

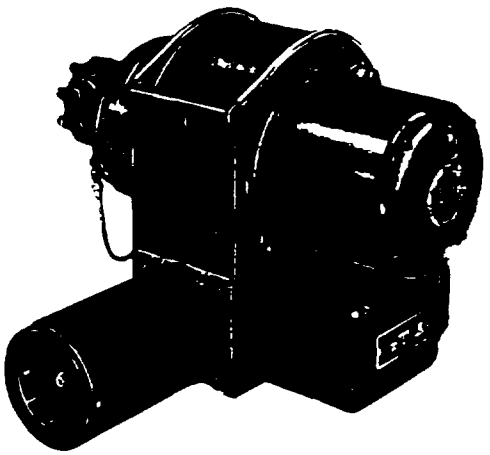
Approval—All Model DH Arcoflame Oil Burners (60-cycle, 115-volt) are listed by Underwriters' Laboratories, Inc. for No. 1 and No. 2 grades of fuel oil, distillate or catalytic cracked, and comply with Commercial Standard CS-75. They are approved by the New York City Board of Standards and Appeals, the State Fire Marshal of the Commonwealth of Massachusetts and the Department of State Police, State of Connecticut.

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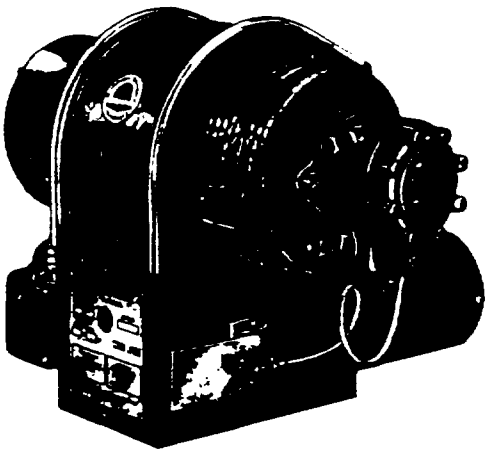
Form No. 60-2 (Rev. 2) (4/71)

Litho in U.S.A.

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front view—PH2 oil burner



rear view—PH2 oil burner

■ The new Model PH2 Arcoflame Oil Burner features a new inner assembly design that results in exceptionally efficient, quiet operation over the entire firing range of 0.65 to 3.00 gallons per hour. This assembly consists of a stamped steel static disk integrated with a vaned cast iron turbulator. The Model PH2 burner is equipped with four differently sized disk-turbulator combinations covering four firing ranges, thereby providing each with a pre-set inner assembly that scientifically proportions air flow for the nozzle sizes in the particular range. Each disk-turbulator combination is clearly identified regarding its gallonage capacities. Disk-turbulator combinations may be changed on the job without removing the nozzle adaptor or altering the electrode setting.

With the new Model PH2 Burner, just one easy, accurate adjustment of the air band is all that's required to obtain a high CO_2 with a clean, quiet flame. Three types of mountings—hanger, pedestal and flange—and convenient 5", 6¾", 8", 15" and 23" tube lengths make this burner ideal for any oil-fired installation. For ease of handling, the Model PH2 is fabricated of sturdy steel and is equipped with standard components throughout.

model PH2

Arcoflame oil burner

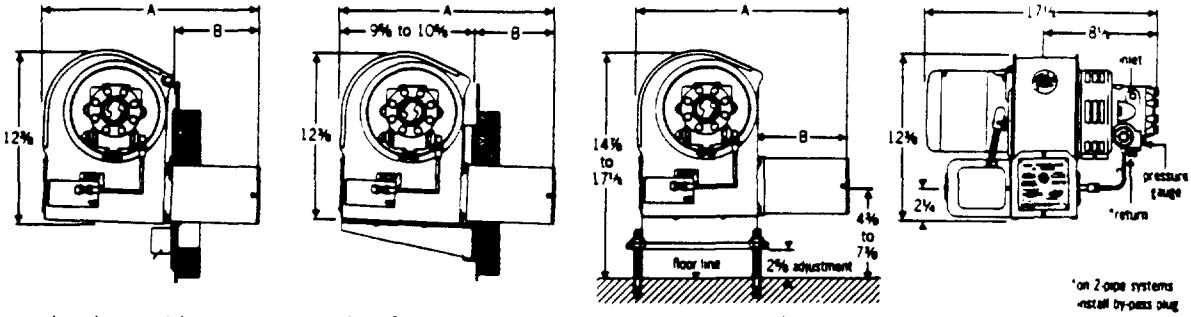
AMERICAN-Standard

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outstanding design features

- **disk-turbulator assembly** – provides four different efficient firing combinations
- **single-shaft design** – for fuel unit, fan and motor for quiet operation
- **fan** – statically and dynamically balanced for quiet performance
- **air band** – simple and precise – only adjustment required
- **mountings** – versatile pedestal flange or hanger types provided
- **electrodes** – rigidly secured – insulated with glazed porcelain
- **ignition** – intermittent or constant spark
- **housing** – heavy-duty steel – easily handled on job
- **transformer** – mid point grounded to prevent television or radio interference
- **air tube** – available in wide range of 5 6¾" 8" 15" and 23" lengths – all 4" in diameter
- **nozzle** – each nozzle tested at factory
- **controls** – available for all types of hot water steam or warm air installations

dimensions (inches)



side view hanger mounted — side view flange mounted — side view pedestal mounted — rear view

*on 2-pipe systems install by-pass plug in return opening

Model	PH2-5	PH2-6	PH2-8	PH2-15	PH2-23
A	14¼	15½	16⅝	23⅜	31⅜
B	5	6¾	8	15	23

diameter air tube—4"

specifications

Current Characteristics	Oil Rate		Motor		Oil Pressure	Capacity Range		
	Minimum	Maximum [a]	hp	rpm	(psig)	Disk-Turbulator Assembly	Nozzle Spray Angle	Type Core
115 volt 60 cycle	0.65	3.00	⅛	1,750	100	0.65-1.10	60° or 70°	Hollow
						0.90-1.25	60° or 70°	Hollow
						1.35-1.75	60° or 70°	Solid
						1.80-2.30	60° or 70°	Solid
						2.35-3.00	60° or 70°	Solid

[a] These capacities can be used up to 1,000 feet altitude. Reduce capacities by 4% for each additional 1,000 feet above sea level.

Approval – All Model PH2 Arcoflame Oil Burners (60-cycle, 115-volt) are listed by Underwriters' Laboratories, Inc. for No. 1 and No. 2 grades of fuel oil, distillate or catalytic cracked, and comply with Commercial Standard CS-75. They are approved by the New York City Board of Standards and Appeals, the State Fire Marshal of the Commonwealth of Massachusetts and the Department of State Police, State of Connecticut.

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

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