MANUAL 23026-12/85-1M

INSTALLATION, SERVICE, AND PARTS MANUAL

"P-PR"

(LOW-FIRE START) GOLDEN CUP SERIES OIL BURNERS

APPROVED FOR NO. 2 FUEL OIL SPEC. CS12-48

These flame retention oil burners are listed and approved by Underwriters' Laboratories, Inc. MP1039, New York City Board of Standards and Appeals 748-48/647-57 SA, State Fire Marshal of Commonwealth of Massachusetts #988, Department of State Police of Connecticut, CSA of Canada and leading Governmental agencies throughout the world.

IN ALL COMMUNICATIONS STATE BURNER MODEL AND SERIAL NUMBERS

AMERICAN BURNER CORPORATION
EXCELLENCE

85 AUSTIN BOULEVARD • COMMACK, NEW YORK 11725 • 516 543-4600

"P" SERIES BURNER SPECIFICATIONS

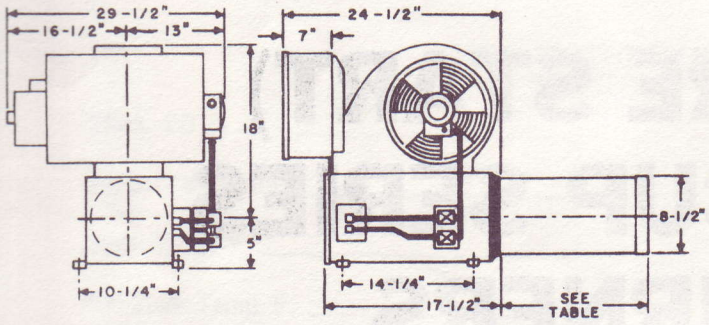
SPECIFICATIONS, REGULAR/INVERTED

LO-FIRE START—HI-FIRE RUN

MODEL	CAPACITY G.P.H.	MOTOR 3450 R.P.M.*	PRIMARY* CONTROL	IGNITION	FUEL UNIT	SOLENOID VALVE	SHIPPING WT.—LBS. APPROX.
PGC-334	2.0-6.0	⅓ HP, 115/230V, 1 PH.	CONTROL PANEL FACTORY WIRED WITH CAD. CELL RELAY AND SENSOR	10,000 VOLT TRANSFORMER, BUSS BARS, & NICHROME ELECTRODES	TWO-STAGE ADJUSTABLE UP TO 300 P.S.I. LO-FIRE PRESSURE REGULATOR	ONE NOZZLE AND ONE BY-PASS	95
PGC-434	5.0-7.0						95
PHC-34	5.0-14.0						115
PR-863	10.0-20.0	¾ HP, 115/230V, 1 PH.					155
PR-585-1	15.0-20.0	2 HP, 115/230V, 1 PH.	CONTROL PANEL FACTORY WIRED WITH "R-4140M" OR "ELECTRONIC PROGRAMMING CONTROL				240
PR-585-2	18.0-30.0	3 HP, 230/460V, 3 PH.					

Due to our continuous development and improvement program these specifications are subject to change.
*Other controls are optional. For other voltages consult factory.

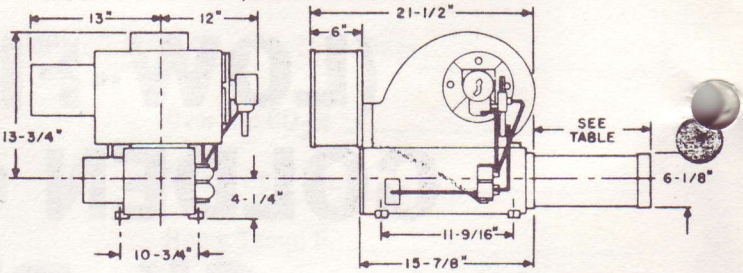
PR 585–1–2 MODELS (OVERALL DIMENSIONS)



DRAFT TUBE DIMENSIONS		
STANDARD, SHORT	STANDARD	STANDARD, LONG
11"	15"	21"

OTHER TUBE LENGHTS AVAILABLE

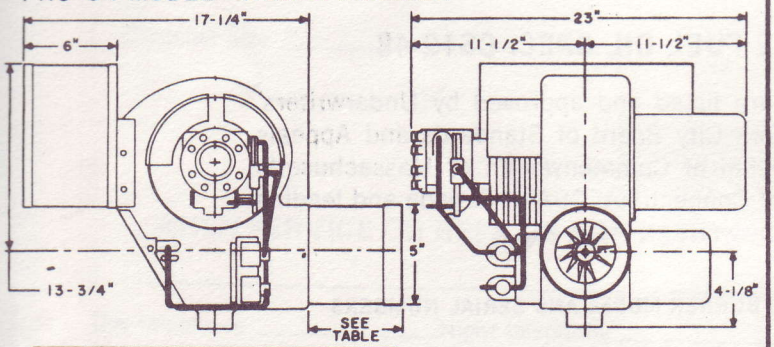
PR 863 MODELS (OVERALL DIMENSIONS)



DRAFT TUBE DIMENSIONS		
STANDARD, SHORT	STANDARD	STANDARD, LONG
11"	15"	21"

OTHER TUBE LENGHTS AVAILABLE

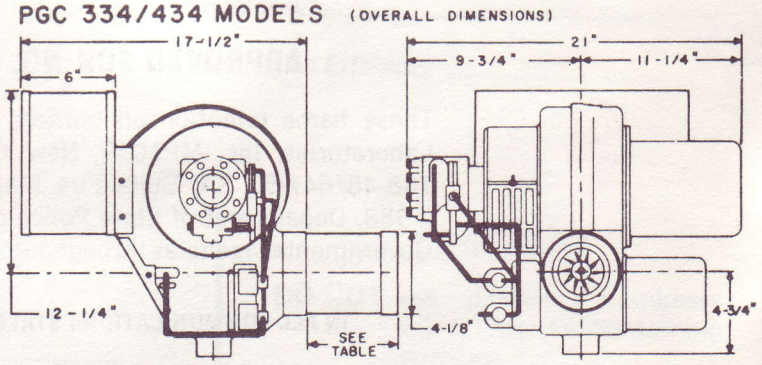
PHC 34 MODEL (OVERALL DIMENSIONS)



DRAFT TUBE DIMENSIONS		
STANDARD, SHORT	STANDARD	STANDARD, LONG
8"	12"	16"

OTHER TUBE LENGHTS AVAILABLE

PGC 334/434 MODELS (OVERALL DIMENSIONS)



DRAFT TUBE DIMENSIONS		
STANDARD, SHORT	STANDARD	STANDARD, LONG
6"	10"	16"

OTHER TUBE LENGHTS AVAILABLE

In All Communications, State Burner Model and Serial Numbers.

INDEX

INSTALLATION INSTRUCTIONS

("P" SERIES LOW-FIRE START, HIGH-FIRE RUN) NO. 2 FUEL OIL BURNERS

1 UNPACKING

1.1. When unpacking burner, be sure that all loose packages are inspected for contents. When burner is equipped with electronic controls, the relay is shipped in a separate box packed with burner. Check packing list and account for all parts, check that line voltage and frequency are correct for installation, and look for concealed damage.

2 TANK

2.1. All oil storage tanks must be U.L. approved and installed according to National Board of Fire Underwriters or local ordinances, whichever has precedence.

2.2. All pipe connections on underground buried tanks must have swing joints except the sounding well (stick well).

2.3. The fill line must pitch toward tank ¼" per foot.

2.4. The vent line should not be less than 1¼" I.P.S. and should be equipped with an approved vent cap. Pitch toward tank should be ¼" per foot.

2.5. The tank gauge should be installed so that the float will not be under the fill line. On underground tanks, protect bulb and gauge line inside tank with rigid iron pipe.

3 OIL LINES

3.A. 275-Gal. Basement Tanks

3.1. Use ½" O.D. copper tubing with flared fittings. Consult enclosed pump manufacturer's specifications for other sizes and iron pipe substitution.

3.2. Install an approved hand valve* in the tank outlet and close to burner pump with a copper tube pigtail. Do not connect rigid pipe directly to pump.

3.3. If more than one burner is connected to suction line, the tank bottom must be above both burner pumps and the size of line must be increased.

*Where required by local regulations, install fire valve instead of hand valve.

In All Communications, State Burner Model and Serial Numbers.

INSTALLATION INSTRUCTIONS (CONT)

4.B. Underground or Vaulted Tanks

4.1. Use ½" O.D. copper tubing with flared fittings for suction and return lines to avoid underground connections. If local regulations require rigid pipe, use black wrought iron and malleable fittings with double swing joints to prevent breakage in case the tank settles. (Consult enclosed pump manufacturers specifications for other sizes and iron pipe substitutions.)

4.2. Both suction and return lines should extend to within 4" of the tank bottom.

4.3. Slip fittings should be used on the tank for copper suction and return lines. Double-tapped bushings can be used with wrought-iron pipe; however, a bushing welded to the dip tube is preferred.

4.4. Install, in suction line at inside wall, an approved hand valve* and spring-loaded ball check. When the tank is vaulted and the bottom of tank is on same level as burner, install a vertical check valve to top of tank as practical.

4.5. If bottom of tank is above the level of the burner, an anti-siphon valve is usually required at the highest point.

4.6. Install an approved hand valve* close to burner pump, and connect to pump with a copper tube pigtail.

4.7. Install a copper tube pigtail between pump and spring-loaded ball check in return line.

4.8. Avoid fastening suction and return lines to floor beams. If necessary to do so, use loose fitting hangers with soft rubber lining to prevent noise transmission.

4.9. A separate suction line must be used for each burner. A common return line may be used, provided a spring-loaded ball check is installed in the return pipe from each fuel unit.

5 FUEL UNIT

5.1. The fuel unit for P series burners is designed for pressure up to 300 p.s.i. operation. It must be set for 2-pipe system and connected to both suction and return lines. In the very rare cases when a return line cannot be connected, a loop of the proper size must be installed between return port of pump and suction line.

6 FILTER

6.1. On low-fire start, high-fire run P Series burners, the use of a filter in the suction line is not recommended. (If a filter is used, it must be of a capacity 40 G.P.H. above the firing rate.) Where the vacuum on the suction line exceeds 15 inches, a transfer pump should be installed.

*Where required by local regulations, install fire valve instead of hand valve.

In All Communications, State Burner Model and Serial Numbers.

INSTALLATION INSTRUCTIONS (CONT)

7 BURNER SETTING

7.1. Use base or flange mounting, whichever is most practical for the installation. Follow heating unit manufacturer's recommendations where applicable.

7.2. Level burner across the top.

7.3. Pitch draft tube down approximately 2° to 4° toward nozzle end.

7.4. End of draft tube should be 0" (flush)—¼" from the inside of chamber wall. Improper insertion will distort fire.

7.5. Insulate around draft tube to prevent overheating of tube, nozzle and components. Make sure all cement is cleaned from inside of tube, drain hole in air cone and firing head. Pieces of insulation or cement in tube or head will distort the flame.

8 NOZZLES

8.1. Use nozzle of the proper size, type and spray pattern as indicated for the model. (See enclosed burner specification for nozzle information.)

8.2. Always remove nozzle assembly to install or replace nozzle.

8.3. Use an "IDEAL" nozzle wrench or two wrenches to tighten nozzle.

8.4. Nozzle must be tight to prevent an oil leak and after fire.

9 ADJUSTING NOZZLE ASSEMBLY

9.1. Set nozzle and electrodes according to burner specifications.

9.2. The electrode points must be set out of the spray, and the spark should contact oil mist.

9.3. Use flame mirror to check the setting.

10 CHIMNEY

10.1. Follow the recommendations of the heating unit manufacturer.

10.2. Chimney should be above the surrounding objects, tile-lined, with no obstructions and be in a good state of repair.

10.3. The smoke pipe should be set flush with inside of tile, and cemented in place.

10.4. All cleanout doors should be sealed.

In All Communications, State Burner Model and Serial Numbers.

INSTALLATION INSTRUCTIONS (CONT)

11 DRAFT REGULATORS

11.1. Draft regulators are recommended for use with natural draft systems only.

11.2. When used, a draft regulator should be mounted in the smoke pipe, with the opening adjusted by a draft gauge. See "draft" below.

11.3. Do not use draft regulators on pressurized fire box boilers unless required by local regulators.

12 AIR FOR COMBUSTION

12.1. A separate fresh air inlet to the boiler room is required for proper combustion.

12.2. An opening of 1½ to 2 times the area of the smoke outlet is necessary.

12.3. If the opening is screened, the area should be increased by as much as 50%.

12.4. Boiler room must be closed off from any area where exhaust fans are installed.

12.5. If pressurized ventilation is required by local regulations, the blower must equate to 35 CFM per gallon of oil fired.

12.6. A 4% increase in fresh air supply is required for each 1000 feet above sea level.

13 COMBUSTION CHAMBERS

Does not apply to packaged units where the chamber is supplied.

13.1. Refer to table 3 on inside rear cover for correct chamber dimensions.

13.2. Chambers may vary slightly but should maintain approximately the same square inches of floor area.

14 CHAMBERLESS FIRING

14.1. Refer to diagram on inside rear cover for through-the-fire-door firing units and adhere to the minimum nozzle centerline specifications as reflected in Table 3.

15 DRAFT

15.1. Check boiler manufacturer's recommendations.

15.2. With natural draft, after boiler and chamber are up to normal operating temperature set draft to −.02 to −.03 W.C. over the fire. Use a draft gauge.

15.3. With pressurized units, follow the boiler manufacturer's recommendations.

16 WIRING

16.1. All wiring must comply with the National Electric Code and local ordinances.

Note

All "P-PR-PMR" burners have pre-wired control panels. They are clean in design and appearance, with terminal boards and color coded wiring, plus permanent wiring diagram inside panel.

16.2. Use 105° thermoplastic wire—Do not use less than 14 AWG wire.

16.3. Do not fasten conduit or BX cable to hot surfaces.

16.4. **Caution**—Hazard of electric shock—More than one disconnect switch may be required to disconnect all power.

In All Communications, State Burner Model and Serial Numbers.

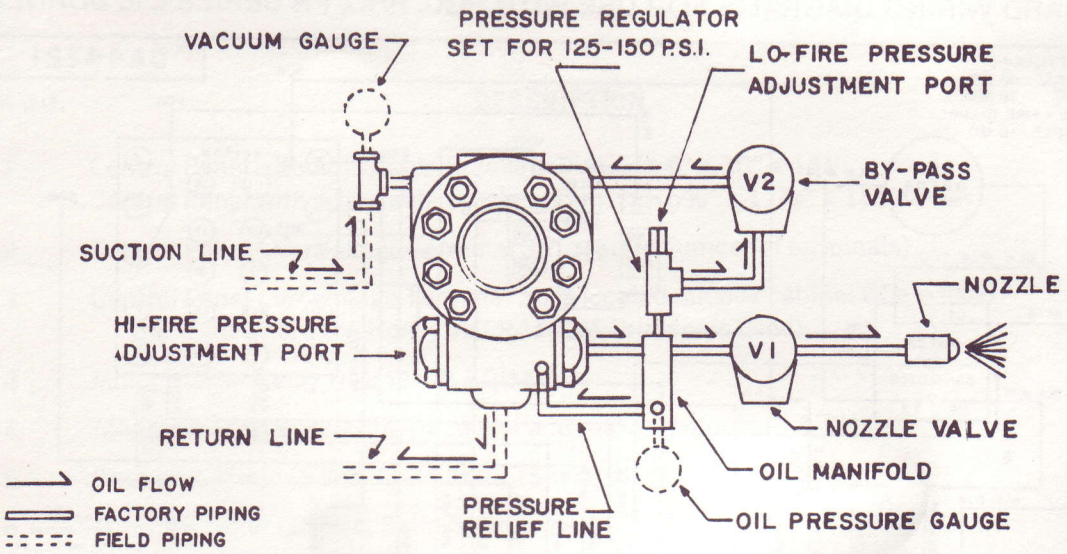
17 SEQUENCE OF OPERATION

PGC, PHC and PR SERIES

17.1. All low-fire start, high-fire run burners use up to 300 P.S.I. fuel oil pressure. The higher pressure not only assures better atomization of the fuel, but allows for a simple arrangement to accomplish low-fire start. On these burner models the air shutter is adjusted and locked for high-fire. It is not necessary to adjust the air for low-fire.

17.2. Upon a call for heat, primary control is powered, motor and ignition transformer are simultaneously energized from the motor contactor. Five and fifteen second timers, by-pass V2 valve are energized by the same power source that controls the motor contactor. After five seconds nozzle valve V1 is energized and flame is established. At the end of ten seconds timed cycle, by-pass V2 valve is de-energized allowing the pressure to increase to fuel unit setting of high-fire. During the time that valve V2 is powered, oil is allowed to by-pass through the external pressure regulator which is set between 125 and 150 P.S.I. thereby reducing pressure at the nozzle.

17.3. See Oil Flow Diagram below.
For Standard Wiring Diagram see Page 6



USE TWO PIPE SYSTEM

K44361 Oil Flow Diagram

Fig. 1

In All Communications, State Burner Model and Serial Numbers.

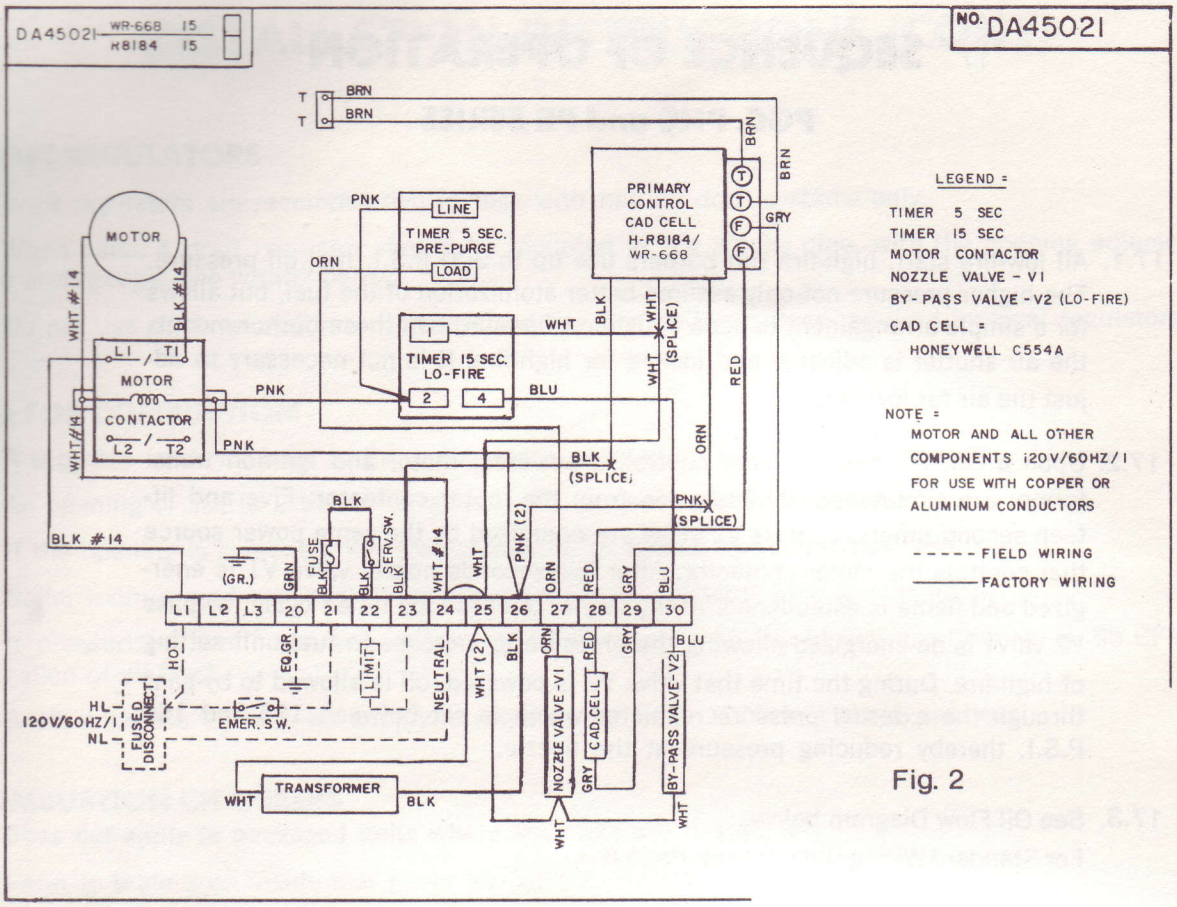


Fig. 2

STANDARD WIRING DIAGRAMS FOR USE WITH PGC, PHC, PR SERIES OIL BURNERS.

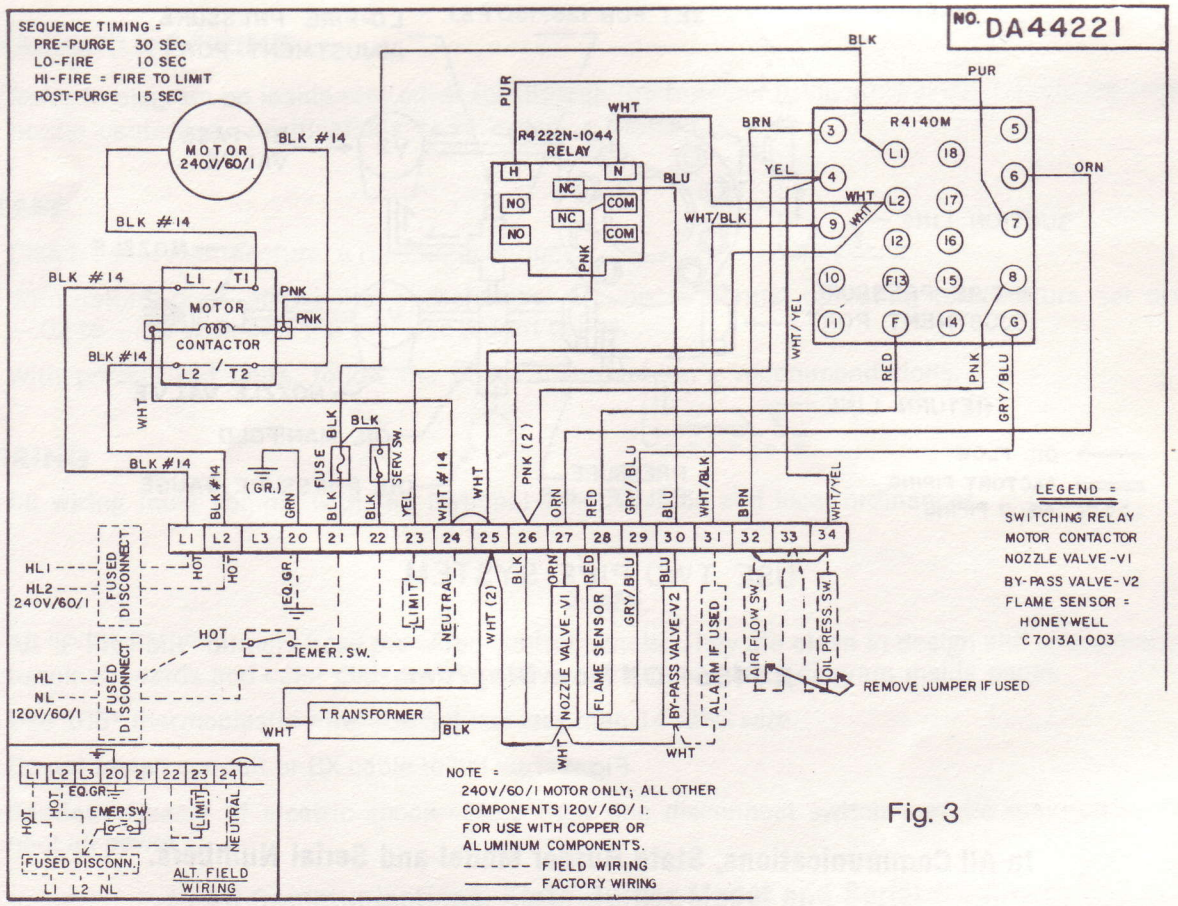
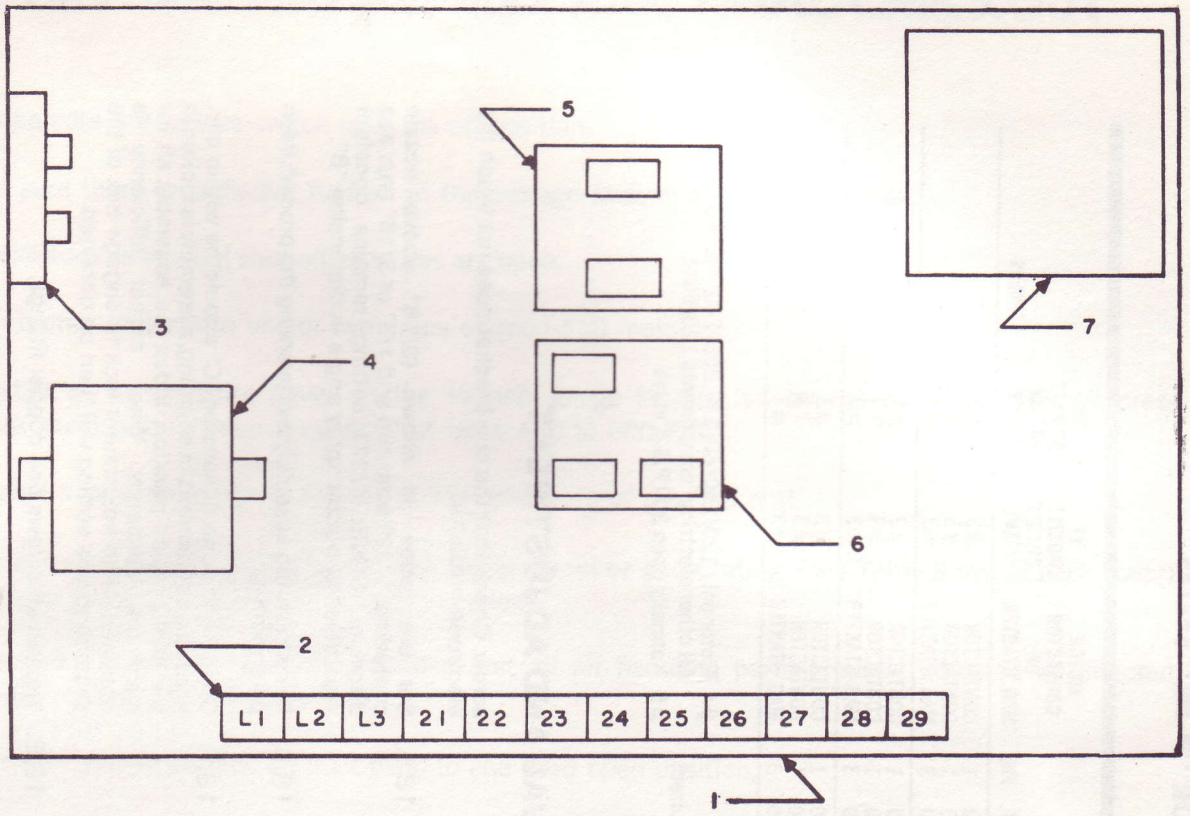


Fig. 3



In All Communications, State Burner Model and Serial Numbers.

ITEM NO.	DESCRIPTION	PART NO.
1	Control Panel with Adjustable Brackets Dim. I.D. 6" x 10" x 14"	A42161
	Control Panel with Adjustable Brackets Dim. I.D. 6⅝" x 11⅞" x 15⅞"	A42371
2	Control Panel Line Voltage Terminal Strip (State number of terminals)	
3	Control Panel Low Voltage Terminal Strip located outside cabinet where used (not used where the Honeywell R4140M Primary is used)	
4	Motor Starter Relay R4242 OR EQUAL	E41042
4	Magnetic Starter Relay (state model and make) motor H.P. & PH.	E41581
5	Pre-purge Timer (5 Sec. Solid-State Timer)	E41471
6	Low-Fire Timer (15 Sec. Solid-State Timer)	E41472
7	Burner Primary Control-H-R8184 or WR-668 Cad Cell Relay (15 Sec. Safety Timing approved for all burners firing up to 20 GPH)	
7	Burner Primary Control-H-RA890 Fireye-TFM Electronic Relay (15 Sec. Safety Timing approved for all burners firing up to 20 GPH)	
7	Burner Primary Control R4140M Electronic Programming Relay (15 Sec. Safety Timing approved for all burners regardless of firing rate)	

CONTROL PANEL SPECIFICATIONS FOR "P-PR" SERIES

SPEC. ORDER NUMBER	PRIMARY CONTROL MFG. NUMBER	SAFETY TIME SEC.	PRE-PURGE TIMED SEC.	LOW FIRE TIMED SEC.	POST PURGE TIMED SEC.	MOTOR #4 SPEC. VOLT	CY.	PH.	MOTOR CONTACTOR OR MAG. STARTER	V1 NOZZLE CUTOFF VALVE	V2 BY-PASS HI-FIRE VALVE	TIMERS
DA45021	H R8184	15	5 #1	10	0	120	60	1	CONTACTOR	#3	#3	2
DA45031	H R8184	15	5 #1	10	0	240	60	1	CONTACTOR	#3	#3	2
DA45041	H R8184	15	5 #1	10	0	208/240/480	60	3	MAG. STARTER	#3	#3	2
DA44841	H RA-890	15	5 #1	10	0	120	60	1	CONTACTOR	#3	#3	2
DA44851	H RA-890	15	5 #1	10	0	240	60	1	CONTACTOR	#3	#3	2
DA44861	H RA-890	15	5 #1	10	0	208/240/480	60	3	MAG. STARTER	#3	#3	2
DA44211	H R4140M	15	30 #2	25	15	120	60	1	CONTACTOR	#3	#3	
DA44221	H R4140M	15	30 #2	25	15	240	60	1	CONTACTOR	#3	#3	
DA44231	H R4140M	15	30 #2	25	15	208/240/480	60	3	MAG. STARTER	#3	#3	

F Fireye
H Honeywell

#1 Timed by Timer
#2 Programming Control (Purge Time may be increased if required)
#3 Normally closed 300 P.S.I. valve
#4 Motor only 120/240/60/1 — 208/240/480/60/3
All other electrical components 120/60/1
#5 Normally open 300 P.S.I. valve

18 FIRING ASSEMBLY—REMOVAL AND ADJUSTMENT

18.1. To install the nozzle, the firing assembly must be removed: Remove copper tubing and screws holding back cover and slide plate. Disengage the buss bars; holding the buss bar and oil pipe, carefully pull out the firing assembly to prevent damage to the cup. NOTE: Spring pressure will cause some resistance. **Do not** force or bend the pipe and/or cup.

18.2. Loosen clamp screw on cup bracket and remove from nozzle adaptor. Examine cup for distortion. A bent cup will alter the firing characteristics of the burner.

18.3. Inspect the nozzle adaptor seat for any defects. A loose or improperly seated nozzle will cause an oil leak and poor oil cut-off. Use an "Ideal"- type nozzle wrench or two wrenches to remove or tighten the nozzle.

18.4. Reinstall the cup on the nozzle adaptor with the leg having the part number centered between the electrodes. Set cup to dimension "B" and tighten clamp screw. Check that the cup bracket does not touch the electrode insulator.

18.5. Set electrodes as shown (3/16" above nozzle centerline, 1/32" from cup and 1/8" or 3/16" gap, see diagram). NOTE: 1/32" setting remains constant regardless of nozzle spray angle in dimension "B".

18.6. Reinstall firing assembly by reversing the procedure in paragraph 1.

18.7. Cup to end cone dimension "C" should be within min. and max. adjustment. In shipping, assembly is locked in the min. or flush position. Index the assembly aft for maximum efficiency. When proper efficiency is obtained, slide adjustment lock to engage hex of the assembly; a fix setting will then be obtained.

18.8. Tighten all screws and copper fittings.

18.9. Check for leaks and oil cut-off before leaving premises.

19 STARTING PROCEDURES AND FINAL CHECKOUT

19.1. Make sure the service switch is in the off position.

19.2. Be sure there is sufficient fuel oil in the storage tank to supply the burner.

19.3. Make sure all manual shut-off oil valves are open.

19.4. Oil burner motor with one or two drops of good #10 motor oil.

19.5. Install an oil pressure gauge in the ⅛-inch gauge tapping on the oil manifold. The oil pressure gauge should have a range of at least 400 to 600 P.S.I.

19.6. Install a vacuum gauge in the tee at the inlet side of the fuel unit.

19.7. Ascertain correct nozzle by boiler size, using steam or water rating, (see Table 3 inside back cover) or refer to boiler manufacturers' specifications.

19.8. Be sure the nozzle has been installed and all air handling parts properly adjusted as directed under model specification sheet.

19.9. With "P" burners adjust air inlet band to one third open position.

19.10. Push the safety reset button on the primary control and release. Adjust the room thermostat or operating controls so there is a call for heat, and be sure the boiler safety controls are properly set.

19.11. Turn the service switch to the on position, and the oil burner should start. While the burner motor is running, check the rotation of the blower wheel, also check that the coupling and pump is rotating. The blower wheel rotation should be clockwise looking at the motor.

19.12. If a three phase burner motor is used, and blower wheel rotation is incorrect, turn off main service switch. Inter-change any two wires on terminal strip L1/L2/L3 for proper rotation.

19.13. With the burner running, priming of the two stage fuel unit on a two pipe system, air is automatically purged from the suction line piping and diverted back through the return line to the storage tank. If the primary control goes off on safety before all the air is purged from the suction line, it will be necessary to push the reset button on the primary control to start the burner again. A burner flame may appear while air is purging from the suction line piping. Check oil pressure gauge (if used) and record pressure. Check vacuum gauge (if used) for abnormally high vacuum. If an abnormally high vacuum is encounted, check for a restriction in suction line such as a kinked copper tubing, closed valve, sticking check valve, undersized oil line, etc. If an abnormally low vacuum is encountered check for air leaks in suction line, copper tubing valve, fittings.

19.14. When all air has been eliminated and flame has been accomplished, turn the service switch to the off position.

19.15. Turn the service switch to the on position, the burner should start. Our P-PR burner will then go into a timed prepurge, timed low-fire then high fire. At this time check and record both low and high oil pressure.

In All Communications, State Burner Model and Serial Numbers.

STARTING PROCEDURES AND FINAL CHECKOUT (CONT)

19.16. If necessary to adjust the low fire oil pressure, turn the service switch off, remove cover screw from adjustment part of oil pressure regulator. Insert a ⅛ inch allen wrench, turn the adjusting screw clockwise to increase low-fire oil pressure or counter-clockwise to decrease the pressure. With the burner running you have 15 seconds to adjust low-fire. Do not run the burner too long without cover screw oil will leak past the adjustment screw. For P-PR oil schematic see K44361 on page 5. Check to be sure the cover screw is secured tight after adjustment.

19.17. With the burner running on high fire, if necessary to adjust the high fire oil pressure. Remove the cap nut on the adjustment part of the fuel unit, using a small screwdriver turn the adjusting screw clockwise to increase high fire oil pressure or counter-clockwise to decrease the pressure. Replace the cap nut and secure tight after adjustment.

19.18. To conform with Underwriter's Laboratories, low-fire input must not exceed 20 G.P.H. for proper nozzle, consult delivery rates of nozzles at various pressures.

19.19. While the "P.G.C., P.H.C. or PR" burner is running on high fire adjust the air inlet band on burner so that a clean bright oil flame with no smokey tips is accomplished.

19.20. To test shut-off while the burner is operating move the limit control below actual boiler water temperature or pressure and the burner should stop. Move the limit control to normal setting and the burner should start, going into pre-purge, low fire and high fire.

19.21. After making all necessary burner adjustment, and boiler water temperatures or pressure has been raised approximately to design conditions, use combustion test instruments for final adjustment of the burner flame. A smoke reading of a trace to a No.1 on the (Bacharach scale) is recommended with 12% to 12½% CO2.

19.22. Turn the service switch to the off position. Remove the oil pressure gauge and replace the gauge plug. Also remove the vacuum gauge from the inlet tee on the fuel unit and replace plug. Check oil copper tubing and fittings for oil leaks.

19.23. Before leaving the job, be sure the room thermostat, operating control limit control and any additional safety controls are properly set.

19.24. All installations should be reinspected after 1 to 2 weeks of normal operation.

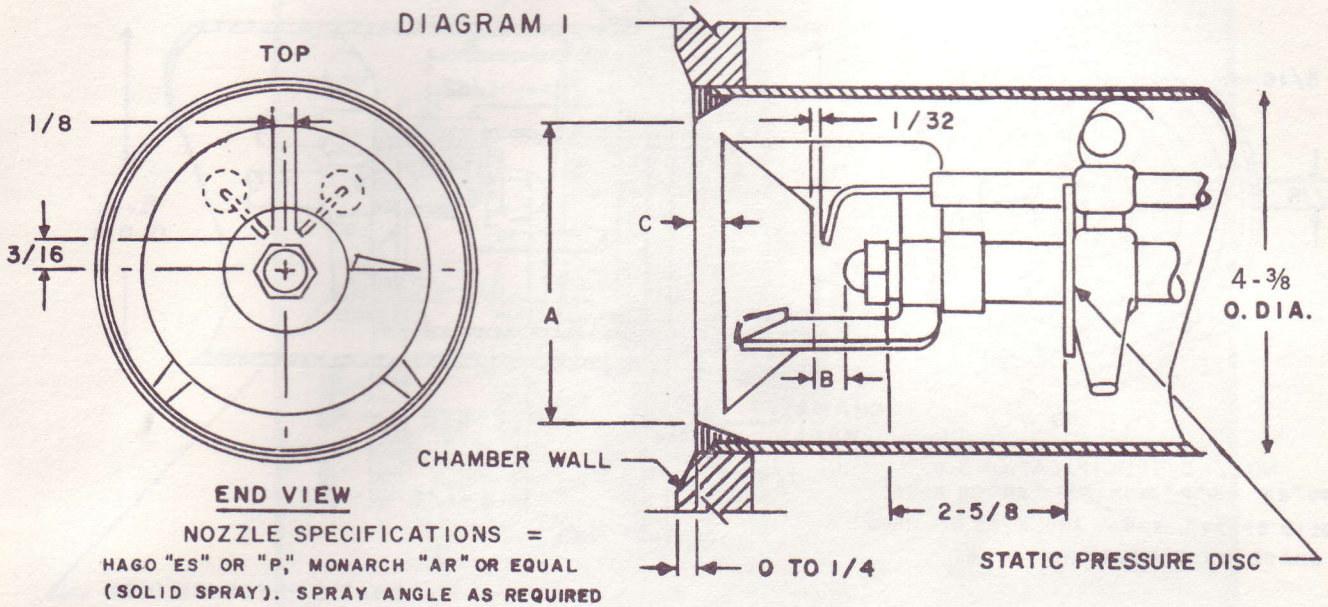
In All Communications, State Burner Model and Serial Numbers.

PGC-434-334 BURNER SPECIFICATIONS

PGC-334 (CAPACITY 2.0 TO 6.0 G.P.H.)
PGC 434 (CAPACITY 5.0 TO 7.0 G.P.H.)

NOTE: THIS OIL BURNER OPERATES UP TO 300 P.S.I. FUEL PUMP DELIVERY PRESSURE

DIAGRAM I



NOZZLE SPECIFICATIONS =
HAGO "ES" OR "P," MONARCH "AR" OR EQUAL (SOLID SPRAY). SPRAY ANGLE AS REQUIRED BY SHAPE OF COMBUSTION AREA.

DIMENSION "A"	DIMENSION "B" * 30° 45° AND 60° = 3/16	DIMENSION "C" MIN. ADJUSTMENT	MAX.
PGC-334=3¼" PGC-434=4⅛"		FLUSH	1/2

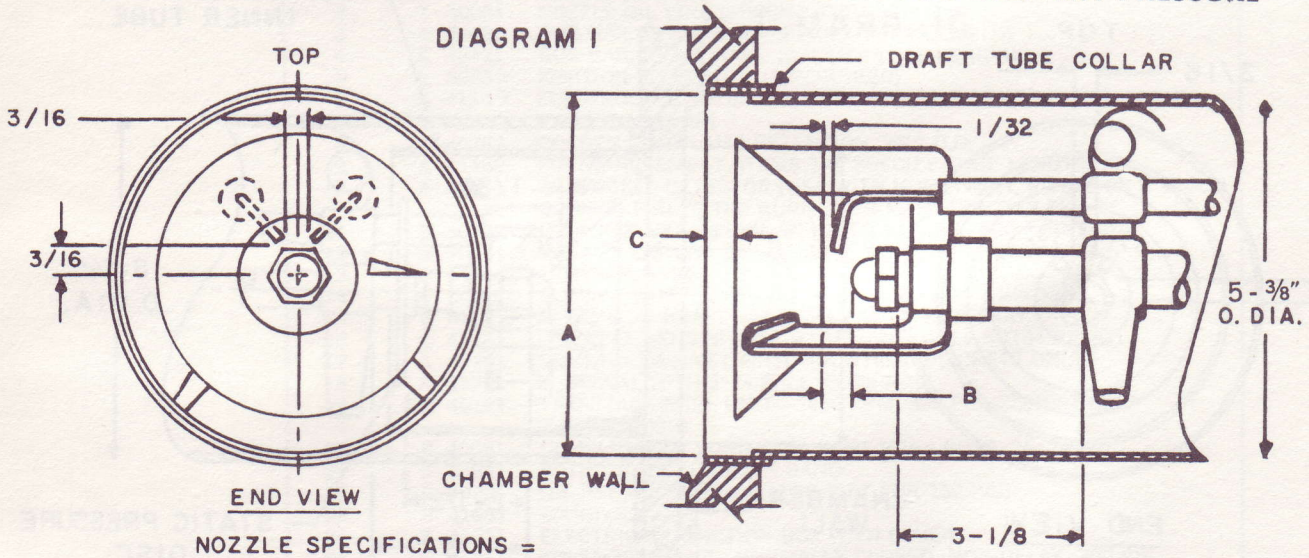
* PART #40071 SETTING GAUGE AVAILABLE ON REQUEST

PHC-34 BURNER SPECIFICATIONS

(CAPACITY = 5.0 TO 14.0 G.P.H.)

NOTE: THIS BURNER OPERATES UP TO 300 P.S.I. FUEL PUMP DELIVERY PRESSURE

DIAGRAM I



NOZZLE SPECIFICATIONS =
HAGO "ES" OR "P," MONARCH "AR" OR EQUAL (SOLID SPRAY). SPRAY ANGLE AS REQUIRED BY SHAPE OF COMBUSTION AREA.

DIMENSION "A"	DIMENSION "B" *	DIMENSION "C" MIN. ADJUSTMENT	MAX.
5"	30° 45°-1/4" 60°-3/16"	1/2"	1"

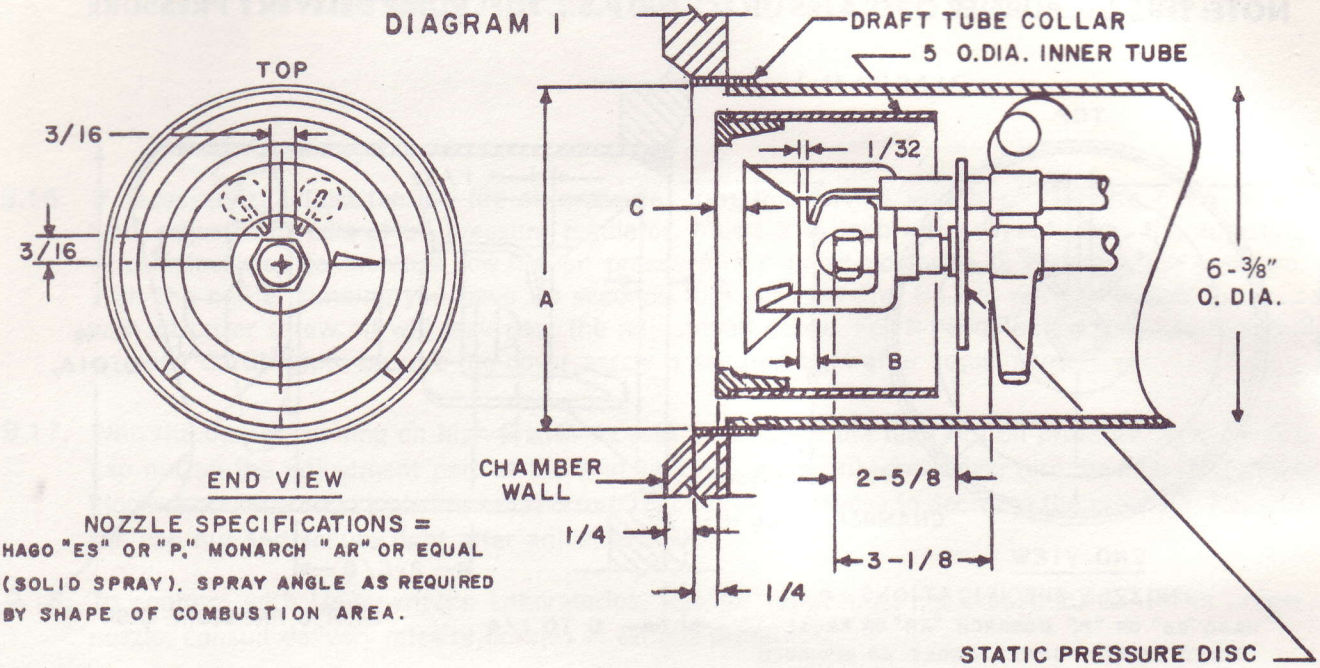
*PART #H40071 SETTING GAUGE AVAILABLE ON REQUEST

PR 863 BURNER SPECIFICATIONS

(CAPACITY = 10.0 TO 20.0 G.P.H.)

NOTE: THIS BURNER OPERATES UP TO 300 P.S.I. FUEL PUMP DELIVERY PRESSURE

DIAGRAM I



NOZZLE SPECIFICATIONS =
HAGO "ES" OR "P," MONARCH "AR" OR EQUAL (SOLID SPRAY). SPRAY ANGLE AS REQUIRED BY SHAPE OF COMBUSTION AREA.

DIMENSION "A"	DIMENSION "B" *	DIMENSION "C"
6"	30°45°-1/4" 60°-3/16"	MIN. 7/16" ADJUSTMENT MAX. 11/16"

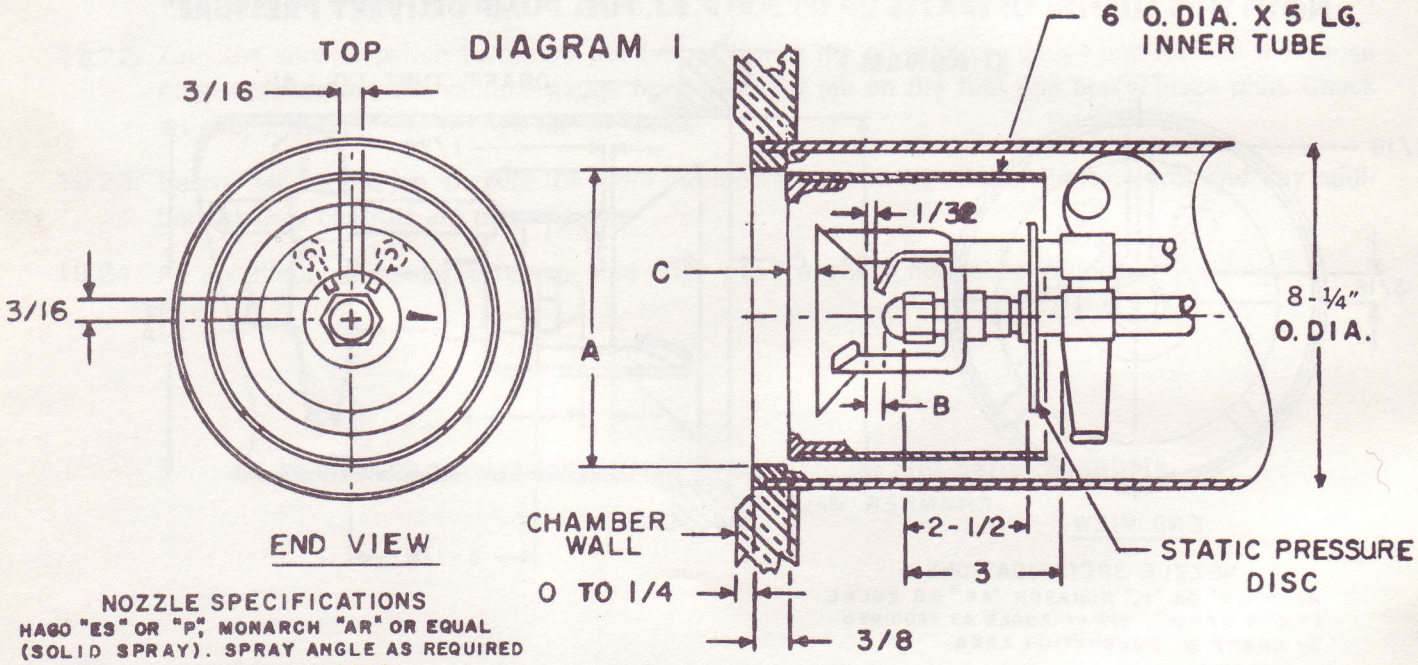
*PART #H40071 SETTING GAUGE AVAILABLE ON REQUEST

PR 585-1-2 BURNER SPECIFICATIONS

(CAPACITY: PR 585-1—15.0 TO 20.0 G.P.H.)
(CAPACITY: PR 585-2—18.0 TO 30.0 G.P.H.)

NOTE: THIS BURNER OPERATES UP TO 300 P.S.I. FUEL PUMP DELIVERY PRESSURE

DIAGRAM I



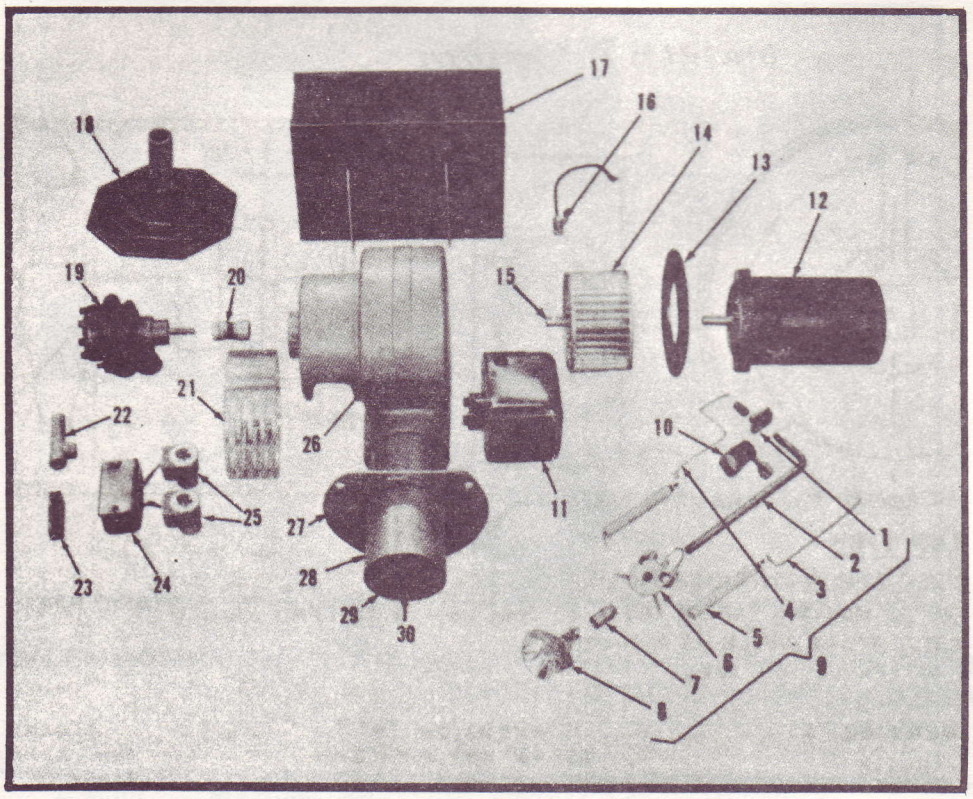
NOZZLE SPECIFICATIONS
HAGO "ES" OR "P", MONARCH "AR" OR EQUAL (SOLID SPRAY). SPRAY ANGLE AS REQUIRED BY SHAPE OF COMBUSTION AREA.

DIMENSION "A"	DIMENSION "B" *	DIMENSION "C"
PR-585-1=7"	30°45°-1/4" 60°-3/16"	MIN. 7/16" ADJUSTMENT MAX. 3/4"
PR-585-2=7¼"		

PART #H40071 SETTING GAUGE AVAILABLE ON REQUEST

PGC-434, PGC-334 GOLDEN CUP SERIES

BURNER PARTS LIST

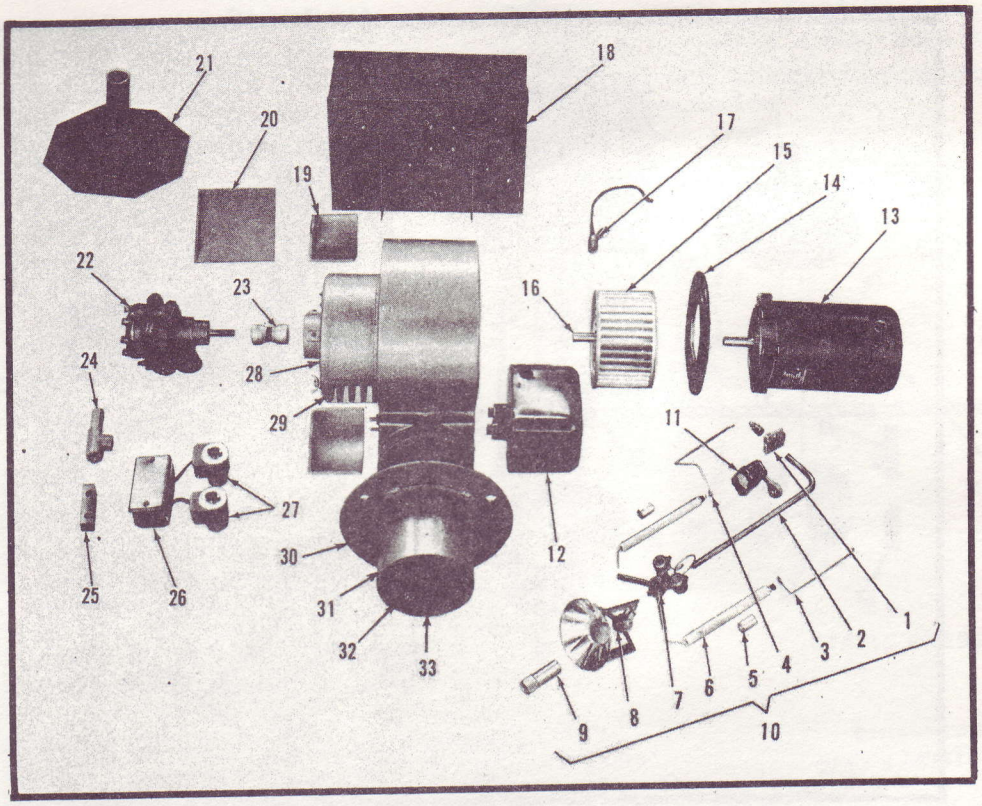


ORDERING INFORMATION: STATE FULL MODEL NUMBER, SERIAL NUMBER, PART NUMBER, DRAFT TUBE LENGTH AND VOLTAGE.

Item No.	Part No.	Description
1	C 41441	SLIDE PLATE
2	T 40201	NOZZLE OIL LINE (SPECIFY TUBE LENGTH)
3	E 40422	BUS BAR, LEFT HAND (SPECIFY TUBE LENGTH)
4	E 40421	BUS BAR, RIGHT HAND (SPECIFY TUBE LENGTH)
5	E 40393	IGNITION ELECTRODE (2 REQUIRED)
6	A 41843	ELECTRODE SUPPORT ASSEMBLY W/2-1/4 STATIC DISC & SPRING
7	S 41850	NOZZLE ADAPTER
8	A 40752	GOLDEN CUP FLAME RETENTION, 2⅝" O.D.
9	A 41162	FIRING ASSEMBLY (ITEMS 1-8, SPECIFY TUBE LENGTH)
10	A 42191	PHOTOCELL DETECTOR (USE WITH HONEYWELL RA-890 OR R 4140M OR WITH FIREYE TFC BURNER PRIMARY CONTROLS)
11	M 40291	TRANSFORMER—115 V, 60 Hz, TO 10,000 V, MID-POINT GND.
12	M 40441	BURNER MOTOR—⅓ HP, 115 V, 60 HZ, 1 PH, 3450 RPM
13	C 41361	MOTOR FLANGE
14	F 40053	BLOWER WHEEL—6⅝ DIA. x 3⅜ HIGH x ⅝ HUB BORE
15	S 41731	EXTENSION SHAFT—4" LONG x ⅝" DIA. KEYWAY
16	E 41251	CAD CELL SENSOR (USE WITH HONEYWELL R8184 RELAY)
17	A 42161	CONTROL CABINET WITH MOUNTING BRACKETS ONLY
18	A 41221	PEDESTAL WITH 5" NIPPLE (OPTIONAL)
19	P 40181	TWO-STAGE FUEL UNIT—3450 RPM, 300 PSI (SUNDSTRAND H3PBNC-200H)
20	R 40051	COUPLING—5" LONG X ⅝" BORE X 7/16" BORE, 2R
21	S 40831	ADJUSTABLE AIR INLET BAND
22	P 40231	OIL PRESSURE REGULATOR (SET FOR 150 PSI)
23	S 41651	MANIFOLD
24	S 41631	ELECTRICAL JUNCTION BOX WITH COVER
25	E 41231	SOLENOID VALVE—NORMALLY CLOSED, NON-DELAY, 300 PSI (2 REQUIRED, SPECIFY MODEL)
26	C 40341	FAN HOUSING
	S 40561	FAN HOUSING COVER PLATE (NOT SHOWN)
27	A 42811	MOUNTING FLANGE (UNIVERSAL WITH WEDGE OPTIONAL)
28	T 40081	AIR TUBE—4⅛" O.D. (SPECIFY TUBE LENGTH)
29	C 40301	END CONE 3¼" I.D.x4½" O.D. FOR PGC 334
	S 41691	STAINLESS STEEL TUBE COLLAR-4⅛" I.D.x1½" LONG FOR PGC-434
30	A 41151	AIR TUBE ASSEMBLY (ITEMS 28-29, SPECIFY TUBE LENGTH)

PHC-34 GOLDEN CUP SERIES

BURNER PARTS LIST

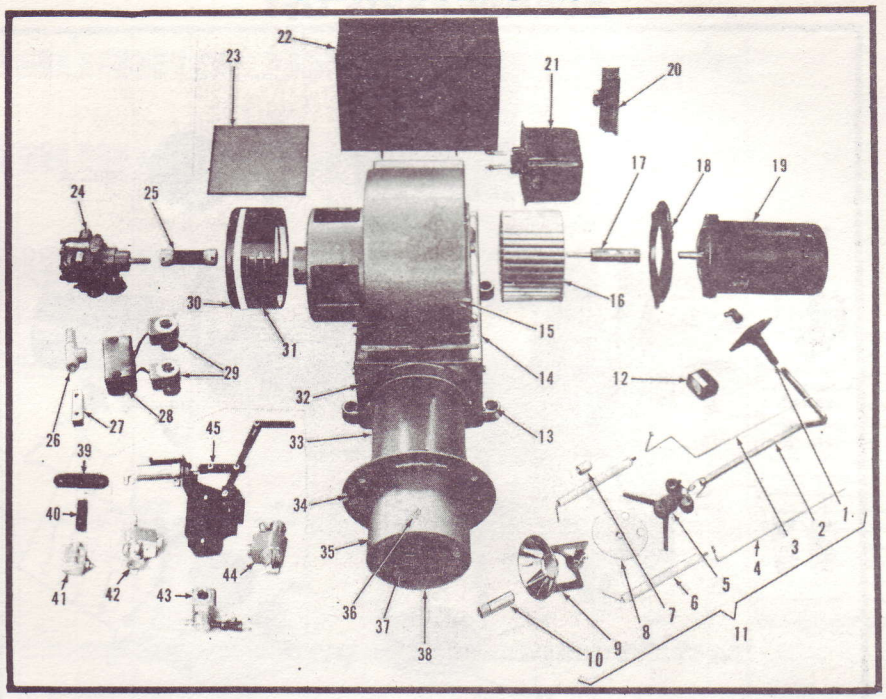


ORDERING INFORMATION: STATE FULL MODEL NUMBER, SERIAL NUMBER, PART NUMBER, DRAFT TUBE LENGTH AND VOLTAGE.

Item No.	Part No.	Description
1	C 41441	SLIDE PLATE
2	T 40211	NOZZLE OIL LINE (SPECIFY TUBE LENGTH)
3	E 40461	BUS BAR, LEFT HAND (SPECIFY TUBE LENGTH)
4	E 40462	BUS BAR, RIGHT HAND (SPECIFY TUBE LENGTH)
5	E 40041	ELECTRODE BUSHING (2 REQUIRED)
6	E 40351	IGNITION ELECTRODE (2 REQUIRED)
7	A 41191	ELECTRODE SUPPORT ASSEMBLY WITH SPRING
8	A 40711	GOLDEN CUP FLAME RETENTION—3¾" O.D.
9	S 41853	NOZZLE ADAPTER
10	A 41171	FIRING ASSEMBLY (ITEMS 1-9, SPECIFY TUBE LENGTH)
11	A 42191	PHOTOCELL DETECTOR WITH MOUNTING BRACKET (USE WITH FIREYE TFC OR WITH HONEYWELL RA-890 OR 4140M BURNER PRIMARY CONTROL
12	M 40291	TRANSFORMER—115 V, 60 Hz, TO 10,000 V, MID-POINT GND.
13	M 40441	BURNER MOTOR—⅓ HP, 115 V, 60 HZ, 1 PH, 3450 RPM
14	C 41361	MOTOR FLANGE
15	F 40055	BLOWER WHEEL—6⅝" DIA. x 4¼" HIGH x ⅝" HUB BORE
16	S 41731	EXTENSION SHAFT—4" LONG x ⅝" DIA. KEYWAY
17	E 41251	CAD CELL SENSOR (USE WITH HONEYWELL R8184 RELAY)
18	A 42161	CONTROL CABINET WITH MOUNTING BRACKETS ONLY
19	C 40551	ADJUSTABLE AIR SHUTTER (2 REQUIRED)
20	S 40611	FAN HOUSING BACK COVER
21	A 41521	PEDESTAL WITH NIPPLE (OPTIONAL)
22	P 40181	TWO-STAGE FUEL UNIT—3450 RPM, 300 PSI, DIRECT DRIVE (SUNDSTRAND H3PBNC-200H)
23	R 40052	COUPLING—6 LONG x⅝" BORE x 7/16" BORE, 2R
24	P 40231	OIL PRESSURE REGULATOR (SET FOR 150 PSI)
25	S 41651	MANIFOLD
26	S 41631	ELECTRICAL JUNCTION BOX WITH COVER
27	E 41231	SOLENOID VALVE—NORMALLY CLOSED, NON-DELAY, 300 PSI (2 REQUIRED, SPECIFY MODEL)
28	C 40351	FAN HOUSING
29	S 40861	AIR INLET GUARD
30	C 40501	BURNER MOUNTING FLANGE (UNIVERSAL WITH WEDGE OPTIONAL)
31	T 40091	AIR TUBE—5" O.D. (SPECIFY TUBE LENGTH)
32	S 41701	STAINLESS STEEL TUBE COLLAR—5" I.D. x 1½" LONG
33	A 41211	AIR TUBE ASSEMBLY (ITEMS 29, 29 SPECIFY TUBE LENGTH)

PR 863 GOLDEN CUP SERIES

BURNER PARTS LIST

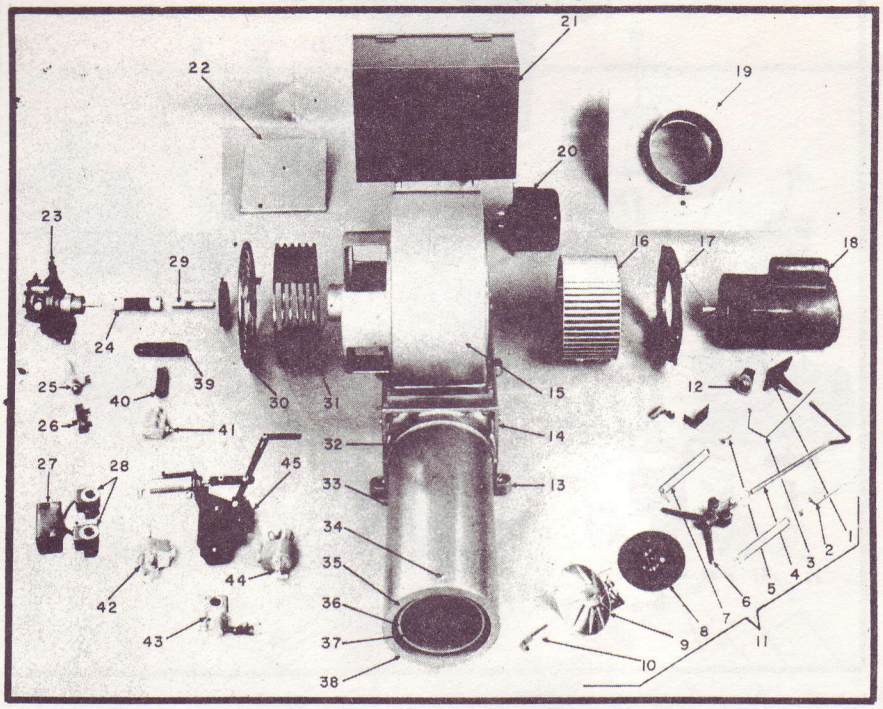


ORDERING INFORMATION: STATE FULL MODEL NUMBER, SERIAL NUMBER, PART NUMBER, DRAFT TUBE LENGTH AND VOLTAGE.

Item No.	Part No.	Description	PR 863
1	C 40101	MOUNTING BRACKET (FOR NOZZLE LINE AND DETECTOR)	x
2	T 40041	NOZZLE OIL LINE (SPECIFY TUBE LENGTH)	x
3	E 40081	BUS BAR, LEFT HAND (SPECIFY TUBE LENGTH)	x
4	E 40071	BUS BAR, RIGHT HAND (SPECIFY TUBE LENGTH)	x
5	A 41281	ELECTRODE SUPPORT ASSEMBLY WITH SPRING	x
6	E 40351	IGNITION ELECTRODE (2 REQUIRED)	x
7	E 40041	ELECTRODE BUSHING (2 REQUIRED)	x
8	A 42771	STATIC PRESSURE DISC—3½" O.D.	x
9	A 40711	GOLDEN CUP FLAME RETENTION—3¾" O.D.	x
10	S 41853	NOZZLE ADAPTER	x
11	A 41801	FIRING ASSEMBLY (ITEMS 1-10 SPECIFY TUBE LENGTH)	x
12	A 42191	PHOTOCELL DETECTOR (USE WITH HONEYWELL RA-890 OR R 4140M AND FIREYE TFC BURNER PRIMARY CONTROL)	x
13	C 40111	BASE SOCKET (4 REQUIRED)	x
14	S 40151	WIND BOX WITH BOTTOM PLATE	x
15	C 40012	FAN HOUSING	x
16	F 40102	BLOWER WHEEL—7" DIA. x 4½" WIDTH x ⅝" DIA. HUB BORE(REINFORCED)	x
17	S 41731	BURNER MOTOR EXTENSION SHAFT—4" LONG x ⅝" DIA. KEYWAY	x
18	C 41131	BURNER MOTOR MOUNTING FLANGE	x
19	M 40451	BURNER MOTOR—¾ H.P., 115V, 60 Hz, 1 PH, 3450 RPM	x
20	E 41251	CAD CELL SENSOR (USE WITH HONEYWELL R8184 RELAY)	x
21	M 40311	IGNITION TRANSFORMER—115 V, 60 Hz, TO 10,000 V MID-POINT GND.	x
22	A 42161	CONTROL CABINET WITH MOUNTING BRACKETS ONLY	x
	A 42371	CONTROL CABINET WITH MOUNTING BRACKETS ONLY	
23	S 41601	WIND BOX COVER PLATE	x
24	P 40211	TWO-STAGE FUEL UNIT—3450 RPM, 300 PSI, DIRECT DRIVE (SUNDSTRAND H4PBNC-200H)	x
25	R 40073	COUPLING—6" LONG x ⅝" BORE x 1⅛" BORE, 3R	x
26	P 40231	OIL PRESSURE REGULATOR (SET FOR 150 PSI)	x
27	S 41651	OIL MANIFOLD	x
28	S 41631	ELECTRICAL JUNCTION BOX WITH COVER	x
29	E 41231	SOLENOID VALVE—NORMALLY CLOSED, NON-DELAY 300 PSI (2 REQUIRED—SPECIFY MODEL)	x
30	S 40012	ADJUSTABLE AIR INLET COVER	x
	A 42341	ADJUSTABLE AIR INLET COVER ASSEMBLY W/RETAINER RING, STOP, LINKAGE BRACKET	
31	S 42091	ADJUSTABLE AIR INLET BAND	x
32	C 40051	AIR TUBE ADAPTER—6" I.D.	x
33	T 40111	AIR TUBE—6" O.D. (SPECIFY LENGTH)	x
34	S 42051-1	BURNER MOUNTING FLANGE WELD TYPE	x
35	S 41711	STAINLESS STEEL TUBE COLLAR—6" I.D. x 1½" WIDE	x
36	Y 40016	INNER AIR TUBE SPACER BUSHING (3 REQUIRED)	x
37	C 40911	INNER END CONE—4½" I.D. x 5" O.D.	x
	T 40092	INNER AIR TUBE—5" DIA. x 4" LONG	x
38	A 42401	AIR TUBE ASSEMBLY (ITEMS 33-37, SPECIFY LENGTH)	x

PR 585-1-2 BURNER SPECIFICATIONS

BURNER PARTS LIST



ORDERING INFORMATION: STATE FULL MODEL NUMBER, SERIAL NUMBER, PART NUMBER, DRAFT TUBE LENGTH AND VOLTAGE.

Item No.	Part No.	Description	PR 585-1	PR 585-2
1	C 40101	MOUNTING BRACKET (FOR NOZZLE LINE AND DETECTOR)	X	X
2	E 41381	BUS BAR—RIGHT HAND (SPECIFY TUBE LENGTH)	X	X
3	E 41386	BUS BAR—LEFT HAND (SPECIFY TUBE LENGTH)	X	X
4	T 40041	NOZZLE OIL LINE (SPECIFY TUBE LENGTH)	X	X
5	E 40041	ELECTRODE BUSHING (2 REQUIRED)	X	X
6	A 41291	ELECTRODE SUPPORT ASSEMBLY WITH SPRING	X	X
7	E 41401	IGNITION ELECTRODE (2 REQUIRED)	X	X
8	A 42411	STATIC PRESSURE DISC—5¼" O.D.	X	X
9	A 40721	GOLDEN CUP FLAME RETENTION 5" O.D.	X	X
10	S 41853	NOZZLE ADAPTER	X	X
11	A 42251	FIRING ASSEMBLY (ITEMS 1-10—SPECIFY TUBE LENGTH)	X	X
12	A 42191	PHOTOCELL DETECTOR (USE WITH HONEYWELL RA-890 OR R4140M AND FIREYE TFM-ID OR TFC-5010)	X	X
13	C 40111	BASE SOCKET (4 REQUIRED)	X	X
14	S 40201	WIND BOX WITH BOTTOM PLATE	X	X
15	C 40021	FAN HOUSING	X	X
16	F 40032	BLOWER WHEEL 9⅛" DIA. X 5" WIDTH X ⅝" DIA. HUB BORE (REINFORCED)		X
	F 40042	BLOWER WHEEL 8⅛" DIA. X 5" WIDTH X ⅝" DIA. HUB BORE (REINFORCED)	X	
17	C 40181	BURNER MOTOR MOUNTING FLANGE	X	X
18	M 40041	BURNER MOTOR—2 HP, 115/230 V, 60 HZ, 1 PH, 3450 RPM	X	
	M 40046	BURNER MOTOR—2 HP, 230/460 V, 60 HZ, 3 PH, 3450 RPM	X	
	M 40071	BURNER MOTOR—3 HP, 230 V, 60 HZ, 1 PH, 3450 RPM		X
	M 40141	BURNER MOTOR—3 HP, 230/460 V, 60 HZ, 3 PH, 3450 RPM		X
19	S 41751-1	BURNER MOUNTING FLANGE—WELD TYPE	X	X
20	M 40311	IGNITION TRANSFORMER 115 V, 60 HZ, TO 10,000 V MID-POINT GROUND	X	X
21	A 42371	CONTROL CABINET WITH MOUNTING BRACKETS ONLY	X	X
22	S 41841	WIND BOX COVER PLATE		
23	P 40221	TWO-STAGE FUEL UNIT—3450 RPM, 300 PSI (SUNDSTRAND H5KBN-200H)		X
	P 40211	TWO-STAGE FUEL UNIT—3450 RPM, 300 PSI (SUNDSTRAND H4PBNC-200H)	X	
24	R 40072	COUPLING—4½" LONG X ⅝" BORE X 7/16" BORE, 3R	X	X
25	P 40231	OIL PRESSURE REGULATOR (SET FOR 150 PSI)	X	X
26	S 41651	OIL MANIFOLD	X	X
27	S 41631	ELECTRICAL JUNCTION BOX WITH COVER	X	X
28	E 41231	SOLENOID VALVE—NORMALLY CLOSED NON-DELAY 300 PSI (2 REQUIRED—SPECIFY MODEL)	X	X
29	S 41731	BURNER MOTOR EXTENSION SHAFT—4" LONG X ⅝" DIA. KEYWAY	X	X
30	S 40022	AIR INLET COVER WITH BLANK OFF PLATE S 40026 (CLOSED)	X	
		ADJUSTABLE AIR INLET COVER		X
31	S 41282	ADJUSTABLE AIR INLET BAND	X	
32	C 40061	AIR TUBE ADAPTER—8" I.D.	X	
33	T 40121	AIR TUBE 8" O.D. (SPECIFY TUBE LENGTH)	X	X
34	Y 40017	INNER AIR TUBE SPACER BUSHING (3 REQUIRED)	X	X
35	C 41192	END CONE 7⅞" O.D. X 7¼" I.D. X 2" LONG OUTER AIR TUBE		X
	C 41193	END CONE—7⅞" O.D. X 7" I.D. X 2" LONG OUTER AIR TUBE	X	X
36	S 41811	END CONE—5⅞" O.D. X 5½" I.D. X 1½" LONG FOR INNER AIR TUBE	X	X
37	T 40112	INNER AIR TUBE—6" DIA. X 5" LONG	X	
38	A 42331	AIR TUBE ASSEMBLY (ITEMS 19, 33, 34, 35, 36, 37)		X
	A 42332	AIR TUBE ASSEMBLY (ITEMS 19, 33, 34, 35, 36, 37)	X	X

DELIVERY RATES OF NOZZLES AT VARIOUS PRESSURES

PUMP PRESSURE IN PSIG

100	125	150	175	200	225	250	275	300	325	350	375	400
1.00	1.11	1.22	1.32	1.41	1.50	1.58	1.65	1.73	1.80	1.86	1.93	2.00
1.10	1.22	1.33	1.45	1.56	1.65	1.74	1.82	1.91	1.98	2.06	2.13	2.20
1.20	1.33	1.46	1.58	1.70	1.80	1.90	1.99	2.08	2.16	2.24	2.32	2.40
1.25	1.39	1.53	1.65	1.76	1.87	1.97	2.06	2.16	2.25	2.34	2.42	2.50
1.35	1.50	1.65	1.75	1.91	2.03	2.14	2.23	2.34	2.43	2.52	2.61	2.70
1.50	1.68	1.84	1.98	2.12	2.25	2.37	2.48	2.59	2.69	2.79	2.89	3.00
1.65	1.84	2.02	2.18	2.32	2.47	2.61	2.73	2.85	2.97	3.09	3.19	3.30
1.75	1.96	2.14	2.32	2.46	2.62	2.76	2.90	3.03	3.15	3.27	3.38	3.50
1.85	2.06	2.26	2.44	2.61	2.77	2.92	3.06	3.20	3.32	3.45	3.57	3.70
2.00	2.24	2.45	2.64	2.83	2.99	3.16	3.31	3.46	3.60	3.74	3.87	4.00
2.25	2.52	2.74	2.98	3.18	3.32	3.56	3.72	3.89	4.13	4.29	4.39	4.50
2.50	2.80	3.06	3.30	3.54	3.74	3.95	4.11	4.33	4.50	4.67	4.83	5.00
2.75	3.08	3.37	3.64	3.89	4.12	4.35	4.55	4.76	4.95	5.14	5.32	5.50
3.00	3.35	3.68	3.97	4.25	4.50	4.74	4.94	5.18	5.39	5.61	5.80	6.00
3.50	3.91	4.29	4.63	4.95	5.25	5.54	5.80	6.06	6.30	6.55	6.77	7.00
4.00	4.47	4.88	5.27	5.64	6.00	6.32	6.62	6.92	7.20	7.48	7.74	8.00
4.50	5.02	5.48	5.92	6.32	6.75	7.10	7.42	7.78	8.10	8.42	8.71	9.00
5.00	5.58	6.10	6.60	7.06	7.50	7.92	8.28	8.65	9.00	9.35	9.67	10.00
5.50	6.15	6.72	7.25	7.80	8.25	8.70	9.11	9.50	9.89	10.29	10.64	11.00
6.00	6.71	7.33	7.94	8.48	9.00	9.49	9.90	10.39	10.81	11.23	11.61	12.00
6.50	7.26	7.96	8.60	9.20	9.74	10.28	10.77	11.26	11.71	12.16	12.58	13.00
7.00	7.82	8.58	9.25	9.90	10.50	11.07	11.56	12.12	12.61	13.09	13.55	14.00
7.50	8.38	9.19	9.91	10.60	11.23	11.86	12.42	12.99	13.51	14.03	14.52	15.00
8.00	8.92	9.76	10.54	11.28	12.00	12.64	13.22	13.84	14.40	14.96	15.48	16.00
9.00	10.04	10.96	11.84	12.64	13.50	14.20	14.84	15.56	16.20	16.84	17.47	18.00
10.00	11.16	12.20	13.20	14.12	15.00	15.84	16.56	17.30	18.00	18.71	19.35	20.00
11.00	12.30	13.44	14.50	15.60	16.50	17.40	18.22	19.00	19.79	20.58	21.29	22.00
12.00	13.36	14.60	15.76	16.92	18.00	18.92	19.80	20.72	21.59	22.45	23.22	24.00
13.00	14.53	15.98	17.20	18.40	19.54	20.60	21.56	22.52	23.42	24.32	25.16	26.00
14.00	15.65	17.15	18.52	19.79	20.96	22.14	23.19	24.25	25.22	26.19	27.10	28.00
15.00	16.77	18.37	19.84	21.21	22.47	23.72	24.85	25.98	27.02	28.06	29.03	30.00
16.00	17.89	19.60	21.17	22.63	23.96	25.30	26.51	27.71	28.82	29.93	30.96	32.00
17.00	19.00	20.82	22.49	24.04	25.46	26.88	28.17	29.44	30.62	31.80	32.90	34.00
18.00	20.12	21.92	23.68	25.28	27.00	28.40	29.68	31.12	32.40	33.67	34.74	36.00
20.00	22.36	24.49	26.46	28.28	29.95	31.62	33.13	34.64	36.03	37.42	38.71	40.00
22.00	24.60	26.94	29.10	31.11	32.94	34.78	36.44	38.10	39.63	41.16	42.58	44.00
24.00	26.80	29.40	31.80	34.00	35.96	37.95	39.76	41.57	43.23	44.89	46.44	48.00
26.00	29.07	31.84	34.39	36.77	38.94	41.11	42.57	45.03	46.84	48.64	50.33	52.00
28.00	31.30	34.30	37.00	39.60	42.27	44.27	46.38	48.49	50.44	52.38	54.29	56.00
30.00	33.60	36.80	39.70	42.50	45.21	47.93	49.95	51.86	53.94	56.12	58.06	60.00

NOTE: Delivery rates are approximate only. Actual rates will vary slightly between different nozzles of same rating. Delivery also varies with viscosity of fuel. Low gravity, low oil temperatures and high viscosity tend to increase delivery. High gravity, high oil temperatures or low viscosity tend to reduce delivery. The above table is based on #2 fuel oil.

IMPORTANT

PUMP MUST BE CONNECTED FOR TWO PIPE SYSTEM ONLY:

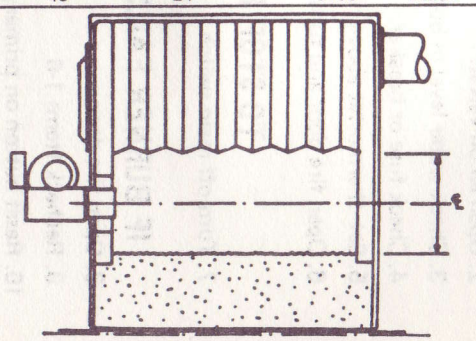
SUCTION AND RETURN.

To conform with Underwriters Laboratories, Low-Fire input must not exceed 20 G.P.H. For proper nozzle, consult nozzle chart above.

TABLE 3

MINIMUM COMBUSTION AREA FOR CONVERSION

FIRING RATE	NOT APPLICABLE FOR I/B/R OR S/B/I RATED BOILER/BURNER UNITS						RADIATION
G.P.H.	LENGTH	WIDTH	HEIGHT	BOILER CROWN SHEET TO CENTER OF NOZZLE & FLOOR TO CENTER OF NOZZLE	FLOOR AREA SQ. IN.	STEAM (SQ. FT.)	WATER SQ. FT.	AIR BTU x 1000
.75	9"	9"	9"	6"	81"	300	480	84
1.00	10	9	9	7	90	400	640	112
1.25	11	10	10	7	110	500	800	140
1.35	11	11	11	7	121	540	864	151
1.50	12	11	11	7	132	600	960	168
1.65	13	12	12	7	156	660	1056	185
1.75	13	13	13	7	169	700	1120	196
2.00	15	13	13	7	195	800	1280	224
2.50	16	14	14	7	224	1000	1600	280
3.00	17	15	15	7½	255	1200	1920	336
3.50	20	15	15	7½	300	1400	2240	392
4.00	21	16	16	8	336	1600	2560	448
4.50	24	16	16	8	384	1800	2880	504
5.00	25	17	17	8½	425	2000	3200	560
5.50	27	17	17	8½	459	2200	3520	616
6.00	27	18	18	9	486	2400	3840	672
6.50	27	19	19	9½	513	2600	4160	728
7.00	29	19	19	9½	651	2800	4480	784
8.00	32	20	20	10	640	3200	5120	896
9.00	34	21	21	10½	714	3600	5760	1008
10.00	34	24	24	12	816	4000	6400	1120
12.00	35	26	26	13	910	4800	7680	1344
14.00	40	26	26	13	1040	5600	8960	1568
16.00	43	28	28	14	1204	6400	10240	1792
18.00	48	28	28	14	1344	7200	11520	2016
20.00	47	30	30	15	1410	8000	12800	2240
22.00	51	30	30	15	1530	8800	14080	2464
24.00	56	30	30	15	1680	9600	15360	2688
26.00	57	32	32	16	1824	10400	16640	2730
28.00	58	34	34	17	1972	11200	17900	2940
30.00	58	36	36	18	2088	12000	19200	3150
32.00	59	38	38	19	2242	12800	20480	3360
34.00	60	40	40	20	2400	13600	21760	3570
36.00	61	42	42	21	2562	14400	23040	3780
38.00	62	42	42	21	2604	15200	24320	3990
40.00	64	43	43	21½	2752	16000	25600	4200
42.00	66	44	44	22	2904	16800	26880	4410
44.00	68	45	45	22½	2980	17600	28160	4620
46.00	70	46	46	23	3220	18400	29440	4830
48.00	72	47	47	23½	3384	19200	30720	5040
50.00	72	48	48	24	3456	20000	32000	5250



Through-the-Fire-Door Firing

OIL BURNER OPERATING INSTRUCTIONS

This Burner is listed by UNDERWRITERS' LABORATORIES, INC., and other agencies for fuel oil not heavier than No. 2 commercial standard CS-12-48.

TO START BURNER:

(with main burner switch off)

1. Check oil level in storage tank.
2. Open all oil valves.
3. Check water level in boiler.
4. Check fuse or breaker.
5. Set thermostat above room temperature.
6. Open fire door and turn on main switch.

TO STOP BURNER:

7. Turn off main switch.

IF BURNER FAILS TO OPERATE:

8. Open fire door.
9. Recheck Items 1-6
10. Reset button on primary safety control.
11. Press manual reset on motor.
12. If burner still does not start, call service.

STARTING BURNER AFTER FLAME FAILURE:

13. Open fire door.
14. Do not attempt to start if chamber is hot or if there are fumes or oil in chamber.
15. If Item 14 is satisfactory, reset primary safety control, BUT DO NOT RESET MORE THAN TWICE.

TO STOP BURNER FOR PROLONGED PERIODS:

Turn off main switch, remove fuse, close oil line valves and fill oil tank to prevent condensation.

MAINTENANCE:

Lubricate burner motor twice yearly with 4 drops of #10 S.A.E. motor oil. The complete heating system should be cleaned, adjusted and checked by a serviceman before the start of each heating season.

INSTRUMENT READING DATA

Date _____

Stack CO_2% _____

Air Shutter Setting _____

Stack Temp. F. _____

Net Stack Temp. F. _____

Overfire Draft H_2O _____

Spray Angle ° _____

Chamber Size _____

Over fire CO_2% _____

Smoke Spot No. _____

Room Temp. F. _____

Stack Draft H_2O _____

Nozzle Installed gal./hr. _____

Boiler Mfg. _____

Combustion Efficiency _____

WHEN SERVICE OR REPAIRS ARE REQUIRED

Call _____

Day telephone _____ Night telephone _____

Always give the following information:

Burner Model _____ Serial No. _____

Date installed _____

CAUTION

DO NOT use gasoline, crankcase oil or any oil containing gasoline.

DO NOT incinerate garbage or refuse in this unit.

DO NOT tamper with burner or controls – CALL YOUR SERVICE MAN.

HANG NEAR BURNER