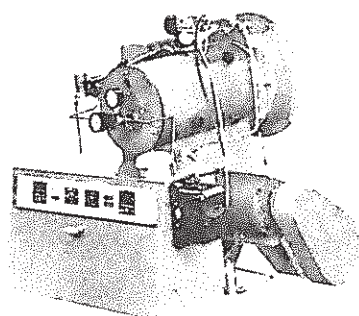
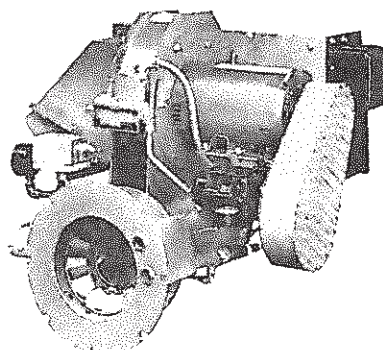


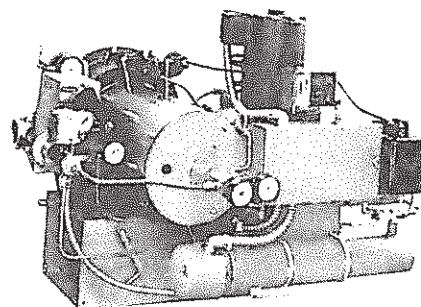
NATURAL GAS, L.P. GAS, PRESSURE ATOMIZING 2 OIL, AIR ATOMIZING  
2, 4, 5, 6 OIL, COMBINATION GAS-OIL, GAS-GAS



UPRIGHT ARRANGEMENT



INVERTED ARRANGEMENT



SIDE ARRANGEMENT

**SCOPE OF THE LINE**

BURNER SIZE	MODEL No	FUELS AVAILABLE							FIRING SEQUENCES AVAILABLE <sup>(d)</sup>				CONFIGURATIONS AVAILABLE		
		NATL. GAS	PROPANE	No 2 P.A. OIL	No 2 A.A. OIL	No 4 A.A. OIL	No 5 A.A. OIL	No 6 A.A. OIL	ON-OFF	ON-OFF WITH L.F.S.	HI-LOW WITH L.F.S.	FULL MODULATION	UPRIGHT	INVERTED	SIDEWINDER
1	KF-0.33-600	X	X	X					X <sup>(a)</sup>	X	X		X		
	KF-0.50-600	X	X	X					X <sup>(b)</sup>	X	X		X		
2	KF-0.33-762	X	X	X					X <sup>(a)</sup>	X	X	X	X	X	
	KF-0.50-762	X	X	X					X <sup>(b)</sup>	X	X	X	X	X	
	KF-0.75-762	X	X	X					X <sup>(b)</sup>	X	X	X	X	X	
3	KFC-1.0-762	X	X	X							X	X	X	X	X
	KFC-1.5-762	X	X	X							X	X	X	X	X
	KFC-2.0-762	X	X	X							X	X	X	X	X
4	KFC-2.0-962	X	X	X	X	X	X	X				X	X	X	X
	KFC-3.0-962	X	X	X	X	X	X	X				X	X	X	X
5	KFC-5.0-1162	X	X	X	X	X	X	X				X	X	X	X
	KFC-7.5-1162	X	X	X	X	X	X	X				X	X	X	X
	KFC-10-1162	X	X	X	X	X	X	X				X	X	X	X
6A	KF-10-1562	X		X	X	X	X	X				X	X		
6B	KF-15-1562	X		X	X	X	X	X				X	X		
6C	KF-20-1562	X		X	X	X	X	X				X	X		
7	KF-25-1800	X		X	X	X	X	X				X	X		
	KF-30-1800	X		X	X	X	X	X				X	X		

(a) Available on gas burners, and oil burners up to 6 GPH.

(b) Available only on gas burners.

(c) Fixed air inlet damper used on all on-off gas burners — movable damper on oil and combination burners.

(d) Standard firing sequence is the least complex sequence listed, i.e. on-off (sizes 1 & 2); high-low (size 3); modulation (sizes 4, 5, 6, 7).

**FEATURES**

- Upright, inverted or sidewinder arrangements. Maximizes adaptability to most boilers.
- Small diameter firing head will fit through most fire door openings in firebox boilers (up to 150 hp).
- Forced draft design minimizes need for induced draft fan or tall stack.
- Air damper on burner resets during off periods minimizing heat loss thru the boiler.
- Exceptionally low operating noise level well below OSHA standards.
- All components are factory checked. Entire unit is then mechanically tested before shipment.
- Modular construction permits conversion from one fuel to another in the field without necessity of returning burner to the factory (Sizes 3, 4, and 5 only).

**RATINGS & PERFORMANCE DATA**

BURNER SIZE	MODEL No.	(1) MAXIMUM FIRING RATE @ COMBUSTION CHAMBER PRESSURE												(2) TURNDOWN RATIO	BURNER GAS PRESS. LOSS (3) - INCHES W.C.	
		0.5 INCHES W.C.				1.0 INCHES W.C.				1.5 INCHES W.C.					NATURAL GAS	PROPANE
		NATURAL GAS - C.F.H.	PROPANE - C.F.H.	LIGHT OIL - G.P.H.	HEAVY OIL - G.P.H.	NATURAL GAS - C.F.H.	PROPANE - C.F.H.	LIGHT OIL - G.P.H.	HEAVY OIL - G.P.H.	NATURAL GAS - C.F.H.	PROPANE - C.F.H.	LIGHT OIL - G.P.H.	HEAVY OIL - G.P.H.			
1	KF-0-33-600	1,450	580	10.4	-	-	-	-	-	-	-	-	-	-	4.2	2.57*
	KF-0-50-600	1,700	680	12.2	-	-	-	-	-	-	-	-	-	-	3.6	1.66*
2	KF-0.33-762	1,450	580	10.4	-	-	-	-	-	-	-	-	-	-	2.6	1.30*
	KF-0.50-762	1,700	680	12.2	-	-	-	-	-	-	-	-	-	-	3.8	1.88*
	KF-0.75-762	2,250	900	16.0	-	2,045	818	14.5	-	-	-	-	-	-	4.0	1.90*
3	KFC-1.0-762	3,138	1255	22.5	-	2,748	1099	19.8	-	2,435	973	17.5	-	2:1	3.7	0.8
	KFC-1.5-762	3,584	1434	25.6	-	3,356	1343	24.0	-	2,973	1190	21.2	-	2:1	4.7	1.2
	KFC-1.5-762	4,200	1680	30.0	-	3,933	1574	28.1	-	3,485	1394	25.0	-	2:1	6.5	1.6
	KFC-2.0-762	4,200	1680	30.0	-	3,933	1574	28.1	-	3,485	1394	25.0	-	3:1	6.5	1.6
4	KFC-2.0-962	4,200	1680	30.0	-	3,933	1574	28.1	-	3,484	1394	25.0	-	3:1	2.6	0.65
	KFC-2.0-962	4,485	1794	32.0	29.9	4,200	1680	30.0	28.0	3,720	1488	26.5	24.8	3:1	3.0	0.74
	KFC-3.0-962	5,800	2240	40.0	-	5,244	2098	37.5	-	5,086	1858	33.2	-	3:1	4.7	1.16
	KFC-3.0-962	6,395	2258	46.5	42.5	5,988	2395	43.6	39.7	5,305	2123	38.6	35.2	3:1	6.1	1.18
5	KFC-5.0-1162	8,876	3551	63.6	59.4	8,695	3478	62.5	58.2	8,369	3348	60.0	56.0	4:1	4.8	1.17
	KFC-7.5-1162	10,920	4368	78.0	72.8	10,618	4251	75.9	70.8	10,289	4115	73.5	68.6	5:1	8.0	2.08
	KFC-10-1162	12,555	5022	90.0	84.0	12,208	4883	87.5	81.7	11,830	4732	84.8	79.1	5:1	10.6	2.63
6A	KF-10-1562	14,645	-	105.0	98.0	14,165	-	101.5	94.8	13,741	-	98.5	92.0	5:1	6.2	-
6B	KF-15-1562	19,500	-	140.0	131.0	18,854	-	135.4	126.7	18,290	-	131.3	122.9	5:1	9.7	-
6C	KF-20-1562	22,250	-	160.0	149.0	21,513	-	154.7	144.1	20,869	-	150.0	139.8	5:1	12.0	-
7	KF-25-1800	27,944	-	200.0	186.7	26,780	-	191.7	178.9	25,150	-	180.0	168.0	5:1	10.0	-
	KF-30-1800	34,730	-	249.0	231.5	34,312	-	246.0	228.8	33,475	-	240.0	223.2	5:1	15.4	-

(1) Firing rates are based on the following criteria:

- Natural gas @ 1000 BTU/Ft<sup>3</sup> HHV
- Propane @ 2500 BTU/Ft<sup>3</sup> HHV
- Light oil @ 140,000 BTU/Gal HHV
- Heavy oil @ 150,000 BTU/Gal HHV
- Altitude 0 - 2,000 Ft above sea level
- Ambient temperature - 80° F - 27° C
- 60 Hz power supply
- For altitudes above 2,000 Ft. consult factory.

(2) Turndown is the recommended ratio:

$$\frac{\text{HIGH FIRE FUEL FLOW RATE}}{\text{LOW FIRE FUEL FLOW RATE}}$$

If higher ratios are required, consult factory.

(3) Burner gas pressure loss is the pressure lost through the gas side of the burner at maximum listed flowrate, on standard burners. **The combustion chamber pressure and gas train pressure loss must be added to this value to obtain minimum gas supply pressure required.** If lower pressures required, consult factory.

\*\* MAX. U.L. CERTIFIED RATINGS FOR THESE BURNERS ARE:

- KFC 1.0-762-2935 cfh NAT GAS @ 0.8 iwc COMB. CH. PRESS.
- KFC 5.0-1162-8369 cfh NAT GAS @ 1.5 iwc COMB. CH. PRESS.
- KF 25-1800-25150 cfh NAT GAS @ 1.5 iwc COMB. CH. PRESS.
- KF 30-1800-34370 cfh NAT GAS @ 2.7 iwc COMB. CH. PRESS.

\*Pressure loss firing propane takes into consideration a change in specific gravity and orifice sizing.



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**RATINGS & PERFORMANCE DATA**

Burner Size	Model No.	Standard Voltage	Burner Blower Motor - H.P. <sup>(4)</sup>	Oil Pump Motor - HP		Air Compr. Motor - HP	Electric Oil Heater - KW <sup>(6)</sup>	Std. Flame Safe-Guard	Approx. Burner Weight - LB. <sup>(7)</sup>						
				Press. Atom. <sup>(5)</sup>	Air Atom.				Gas/Propane	Light Oil	Gas-Lt. Oil Comb.	Heavy Oil	Gas-Heavy Oil Comb.		
1	KF-0.33-600	115V-60-1	1/2	Direct Drive from Blower	-	-	-	Fireye UVM3H	350	300	400	-	-		
	KF-0.50-600		1/2		-	-	-		400	350	450	-	-		
2	KF-0.33-762		1/2	-	-	-	450		450	500	-	-			
	KF-0.50-762		1/2	-	-	-	500		450	550	-	-			
	KF-0.75-762		3/4	-	-	-	500		500	600	-	-			
3	KFC-1.0-762		1-1/2	1/3*	-	-	700		580	700	-	-			
	KFC-1.5-762		1-1/2	-	-	-	750		590	750	-	-			
	KFC-1.5-762		1-1/2	1/2	-	-	750		590	750	-	-			
	KFC-2.0-762		3	-	-	-	-		600	800	-	-			
4	KFC-2.0-962		230V-60-3	3	1/2	1/4 - 1/3	1-1/2		3	Honeywell R4140	-	600	800	-	-
	KFC-2.0-962			3		1/4 - 1/3	2		4		730	650	850	830	750
	KFC-3.0-962	3		1	1/4 - 1/3	2	4	800	680		830	830	865		
	KFC-3.0-962	3		1	1/4 - 1/3	2	4	800	680		830	865	870		
5	KFC-5.0-1162	5		1	1/4 - 1/3	2	6	980	750		980	1045	1100		
	KFC-7.5-1162	7-1/2		3/4	1/3 - 1/2	3	8	1180	800		1180	1255	1250		
	KFC-10-1162	10		3/4	1/3 - 1/2	3	8	1200	1050		1200	1300	1300		
6A 6B 6C	KF-10-1562	10		1	1/2	3	12	1720	1720		1720	1855	1855		
	KF-15-1562	15		1	1/2	5	12	1890	1890		1890	2065	2065		
	KF-20-1562	20		-	3/4	5	16	2000	2000		2000	2140	2140		
7	KF-25-1800	25		-	3/4	5	20	2040	2040		2040	2220	2220		
	KF-30-1800	30	-	3/4	5	24	2160	2160	2160	2360	2360				

**NOTES**

- All blower motors are 3450 rpm
- Unless indicated with a hp rating, oil pump is belt-driven by blower motor. All sidewinder burners are equipped with remote oil pump sets. Oil pump motors marked \* are belt-driven as standard (upright or inverted), motor hp quoted applies to sidewinder burners or burners optionally equipped with remote oil pump.
- Electric oil heaters are sized on the basis of the following design criteria:

FUEL FIRED	REQUIRED OIL SUPPLY TEMP. TO ELECT. HTR. INLET. ° F	RECOMMENDED ATOMIZING TEMP. ° F.
No 4 OIL	40 - 70	90 - 130
No 5 OIL	70 - 130	130 - 190
No 6 OIL	140 - 190	200 - 250

- Burner weights include standard refractory and oil pump weights but do not include gas train weight and air compressor weight.

Based on standard firing sequences, the following ignition systems are provided with the burner:

\*Size 1 and 2—Burners providing on-off operation equipped with gas-electric ignition firing gas and direct spark ignition firing oil. Combination gas-oil burners equipped for on-off operation equipped with both gas-electric and direct spark ignition systems.

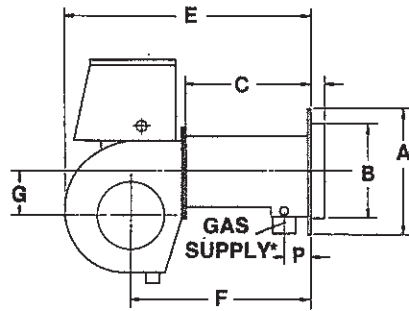
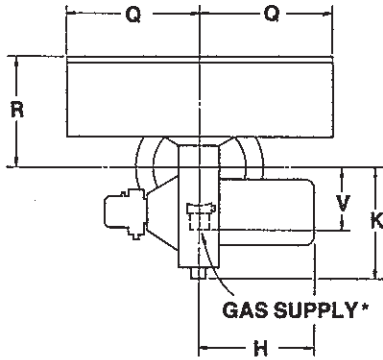
\*Size 2 and 3—Burners providing high-low and full modulation operation equipped with gas-electric ignition.

\*Size 3—Single fuel gas burners and single fuel oil burners provided with gas-electric and direct spark ignition, respectively.

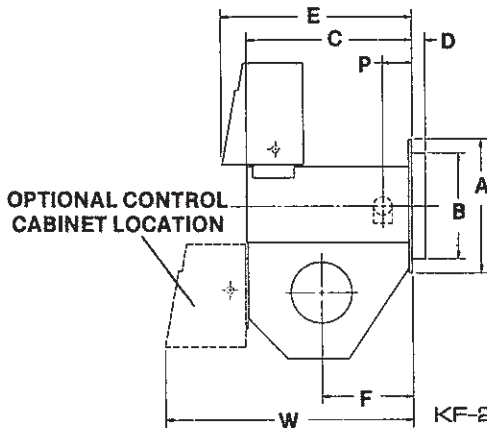
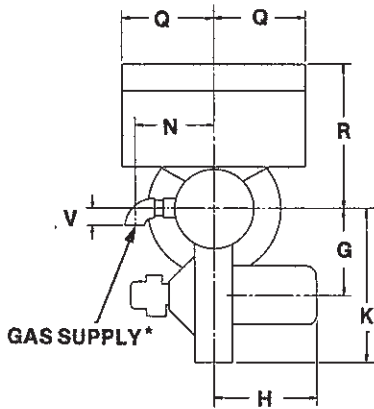
\*Size 4 and Larger —Gas-electric ignition provided as standard firing all fuels in either single or combinations.

\*Note: IRI (FIA) requires Gas-Electric ignition for all fuels.

**GAS & P.A. LIGHT OIL BURNER DIMENSIONS (inches)**



**KF-1 UPRIGHT**

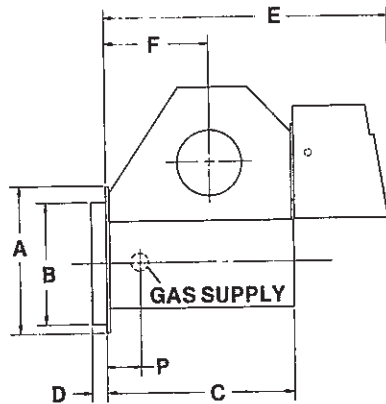


**KF-2 UPRIGHT**

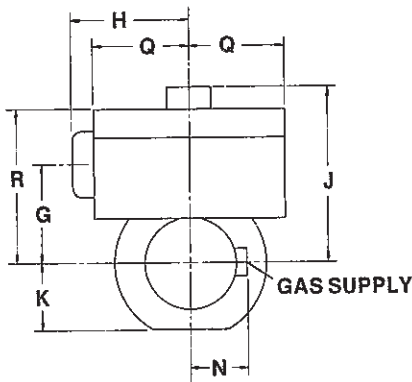
		BURNER TYPE	
		UPRIGHT	
		BURNER SIZE	
		1	2
DIM.	LOCATION		
A	Burner Mtg. Plate Dia.	11	13-1/4
B	Gas Manifold Dia.*	8-1/4	10-1/2
C	Plenum Length	10-3/4	16-1/4
D	Gas Chamber & Head Ass'y Depth *	1-1/4	1-1/4
E	Burner Length From Mtg. Plate	21-5/8	19
F	C <sub>L</sub> Blower Motor From Mtg. Plate	15-1/4	8-7/8
G	C <sub>L</sub> Burner to C <sub>L</sub> Motor	3-3/4	8-1/2
H	C <sub>L</sub> Burner to Motor Or Guard End	10-1/4	10-1/4
J	C <sub>L</sub> Burner to Top of Burner	-	-
K	C <sub>L</sub> Burner to Bottom of Burner	10	15-3/4
N	Gas Supply From Burner C <sub>L</sub> (Vert. C <sub>L</sub> )*	-	8-1/4
P	Gas Supply From Mtg. Plate*	2	2-1/2
Q	C <sub>L</sub> Burner to Side of Cabinet	11-5/8	9-1/4
R	C <sub>L</sub> Burner to Top or Bottom Cabinet	9-7/8	15
S	C <sub>L</sub> Burner to Far Side of Cabinet	-	-
T	C <sub>L</sub> Motor to Bottom Belt Guard	-	-
U	C <sub>L</sub> Burner to Elect. Heater End	-	-
V	C <sub>L</sub> Burner to Gas Entry *	5-3/8	2
W	Burner Length w/ Optional Cabinet	-	25

\*Gas & Combination Burners only.

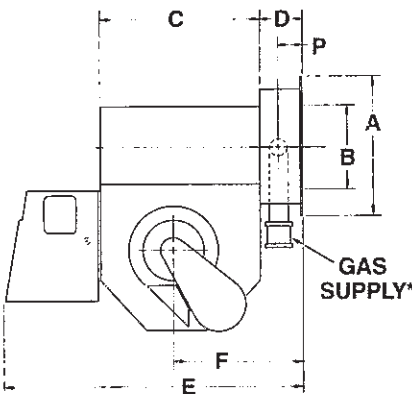
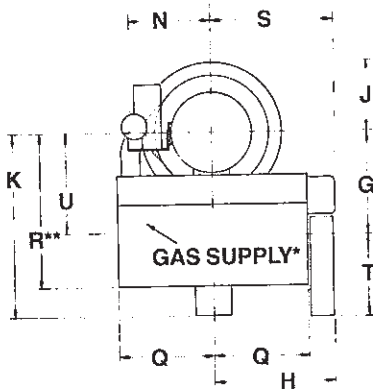
**GAS & AA & PA LIGHT OIL BURNER DIMENSIONS (inches)**



KF-2 INVERTED



BURNER TYPE		INVERTED		UPRIGHT	
BURNER SIZE		2(1)	3(1)	4	5
DIM.	LOCATION				
A	Burner Mtg. Plate Dia.	12-5/8	13-1/4	16-1/8	18-1/2
B	Gas Manifold Dia.*	10-1/2	7-3/4	10-1/8	12-1/8
C	Plenum Length	16-1/4	15-3/8	19-1/2	23-1/8
D	Gas Chamber & Head Ass'y Depth*	1-1/4	4-1/2	4-1/2	5-3/4
E	Burner Length From Mtg. Plate	25	30-7/8	35	39-3/4
F	C <sub>L</sub> Blower Motor From Mtg. Plate	8-7/8	11-1/8	13	15-1/2
G	C <sub>L</sub> Burner to C <sub>L</sub> Motor	8-1/2	11-3/4	12-3/8	15-1/2
H	C <sub>L</sub> Burner to Motor or Guard End	10-1/4	15-3/4	17-5/8	19
J	C <sub>L</sub> Burner to Top of Burner	15	6-5/8	8-1/8	9-1/4
K	C <sub>L</sub> Burner to Bottom of Burner	6	18-7/8	21-1/4	26-3/4
N	Gas Supply From Burner C <sub>L</sub> (Vert. C <sub>L</sub> )	7	7-5/8	9-13/16	10-11/16
P	Gas Supply From Mtg. Plate*	2-3/4	3-3/8	3-1/8	4
Q	C <sub>L</sub> Burner to Side of Cabinet	9-1/8	12	12	12
R**	C <sub>L</sub> Burner to Top or Bottom Cabinet	14-1/2	17	18	19
S	C <sub>L</sub> Burner to Far Side of Cabinet	-	16-1/8	16-1/8	16-1/8
T	C <sub>L</sub> Motor to Bottom Belt Guard	-	9-3/8	11-3/8	-
U	C <sub>L</sub> Burner to Bottom Gas Valve*	-	10-9/16	11-3/8	13-1/8
R**	W/Large 24 x 18 Cabinet	-	22-1/2	23-3/8	24-3/8

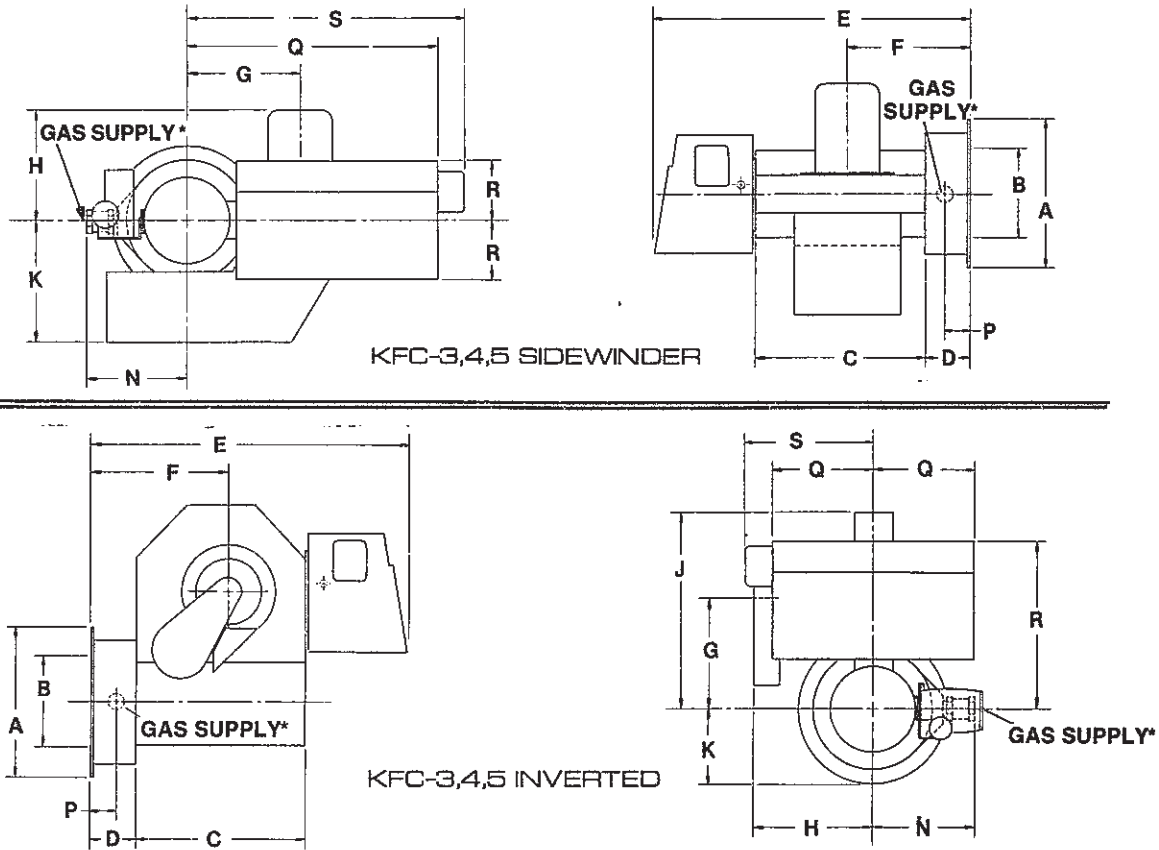


KFC 3, 4, 5 UPRIGHT

(1) PA OIL ONLY

\*Gas & Combination Burners only.

**GAS & AA & PA LIGHT OIL BURNER DIMENSIONS (inches)**

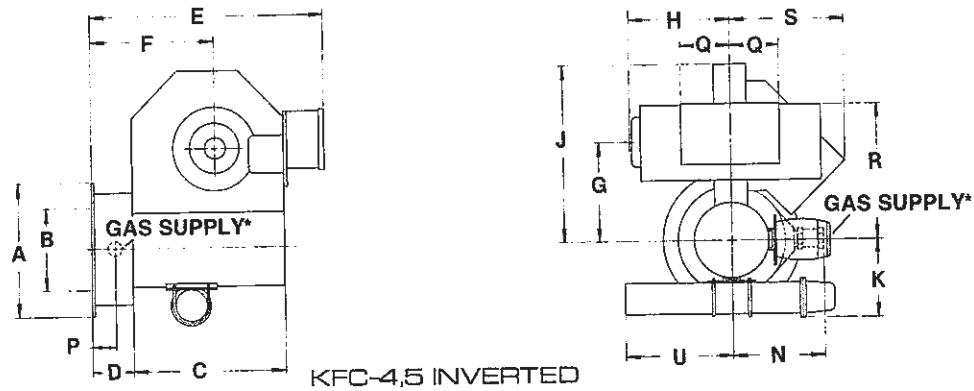


BURNER TYPE		SIDEWINDER			INVERTED		
BURNER SIZE		3(1)	4	5	3	4	5
DIM.	LOCATION						
A	Burner Mtg. Plate Dia.	13-1/4	16-1/8	18-1/2	13-1/4	16-1/8	18-1/2
B	Gas Manifold Dia.*	7-3/4	10-1/8	12-1/8	7-3/4	10-1/8	12-1/8
C	Plenum Length	15-3/8	19-1/2	23-1/8	15-3/8	19-1/2	23-1/8
D	Gas Chamber & Head Ass'y Depth*	4-1/2	4-1/2	5-3/4	4-1/2	4-1/2	5-3/4
E	Burner Length From Mtg. Plate	30-7/8	35	39-3/4	30-7/8	35	39-3/4
F	C <sub>L</sub> Blower Motor From Mtg. Plate	11-1/8	13	15-1/2	11-1/8	13	15-1/2
G	C <sub>L</sub> Burner to C <sub>L</sub> Motor	11-3/4	12-3/8	15-1/2	11-3/4	12-3/8	15-1/2
H	C <sub>L</sub> Burner to Motor or Guard End	15-3/4	17-5/8	19	15-3/4	17-5/8	19
J	C <sub>L</sub> Burner to Top of Burner	-	-	-	18-7/8	21-1/4	26-3/4
K	C <sub>L</sub> Burner to Bottom of Burner	11-1/2	13-5/8	14-5/8	6-5/8	8-1/8	9-1/4
N	Gas Supply From Burner C <sub>L</sub> (Vert. C <sub>L</sub> )*	10	11-1/4	12-1/2	11	12	13-1/2
P	Gas Supply From Mtg. Plate*	3-3/8	3-1/8	4	3-3/8	3-1/8	4
Q	C <sub>L</sub> Burner to Side of Cabinet	28-1/2	29-1/2	30-1/4	12	12	12
R	C <sub>L</sub> Burner to Top or Bottom Cabinet	7-1/2	7-1/2	7-1/2	17	18	19
S	C <sub>L</sub> Burner to Far Side of Cabinet	32-5/8	33-5/8	34-3/8	16-1/8	16-1/8	16-1/8

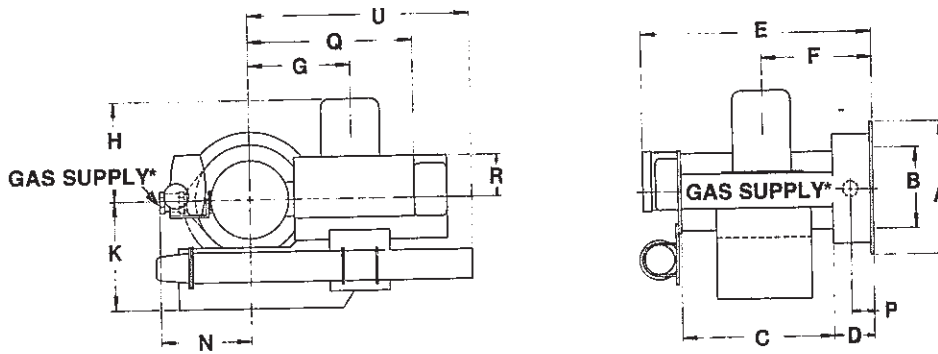
(1) PA OIL ONLY

\*Gas & Combination Burners only.

**GAS & AA HEAVY OIL BURNER DIMENSION** (inches)



KFC-4,5 INVERTED

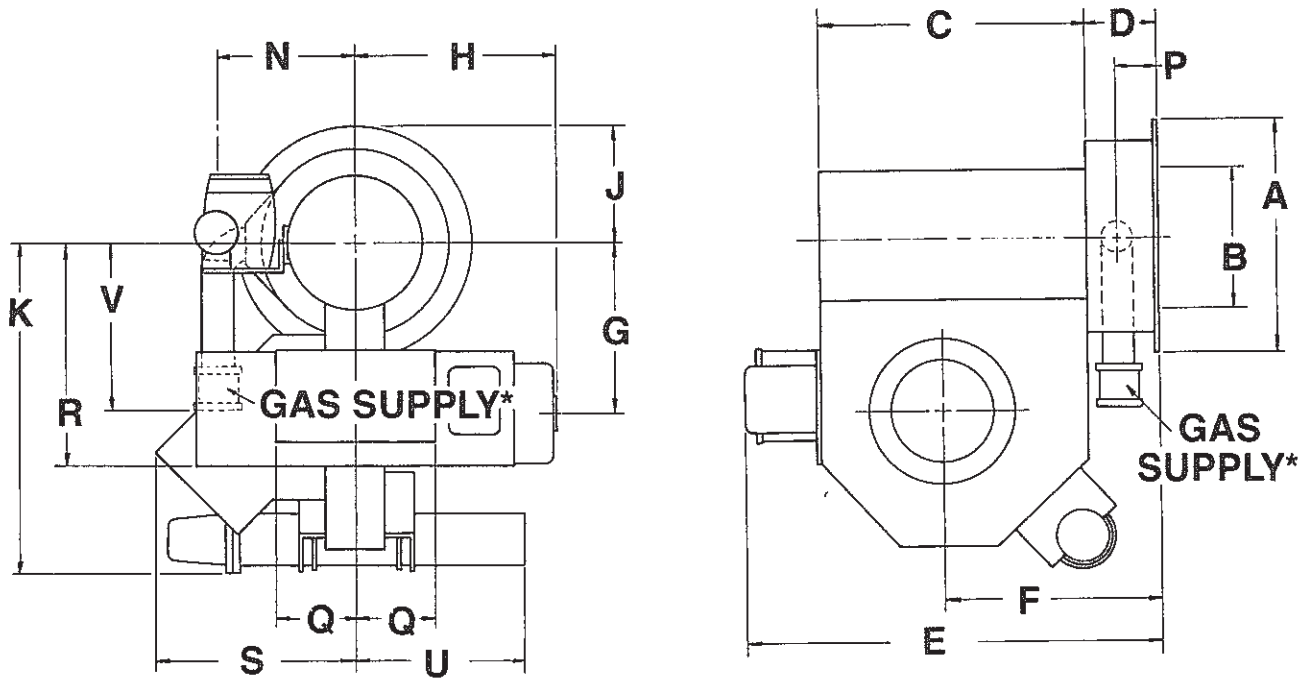


KFC-4,5 SIDEWINDER

BURNER TYPE		SIDEWINDER		INVERTED	
		4	5	4	5
BURNER SIZE					
DIM.	LOCATION				
A	Burner Mtg. Plate Dia.	16-1/8	18-1/2	16-1/8	18-1/2
B	Gas Manifold Dia.*	10-1/8	12-1/8	10-1/8	12-1/8
C	Plenum Length	19-1/2	23-1/8	19-1/2	23-1/8
D	Gas Chamber & Head Ass'y Depth *	4-1/2	5-3/4	4-1/2	5-3/4
E	Burner Length From Mtg. Plate	28-1/2	34-3/4	27-1/2	32-1/2
F	C <sub>L</sub> Blower Motor From Mtg. Plate	13	15-1/2	13	15-1/2
G	C <sub>L</sub> Burner to C <sub>L</sub> Motor	12-3/8	15-1/2	12-3/8	15-1/2
H	C <sub>L</sub> Burner to Motor or Guard End	17-5/8	19	17-5/8	19
J	C <sub>L</sub> Burner to Top of Burner	-	-	21-1/4	26-3/4
K	C <sub>L</sub> Burner to Bottom of Burner	13-5/8	14-5/8	10	12-1/2
N	Gas Supply From Burner C <sub>L</sub> (Vert. C <sub>L</sub> ) *	12	13-1/2	12	13-1/2
P	Gas Supply From Mtg. Plate *	3-1/8	4	3-1/8	4
Q	C <sub>L</sub> Burner to Side of Junction Cabinet	18	19	6	6
R	C <sub>L</sub> Burner to Top or Bottom Junction Cabinet	4	4	16	17
S	C <sub>L</sub> Burner to Far Side of Junction Cabinet	-	-	14-3/4	15-5/8
T	C <sub>L</sub> Motor to Bottom Belt Guard	-	-	-	-
U	C <sub>L</sub> Burner to Elect. Heater End.	23-1/2	26	14	22

\*Gas & Combination Burners only.

**GAS & AA HEAVY OIL BURNER DIMENSIONS (inches)**



**KFC - 4,5 UPRIGHT**

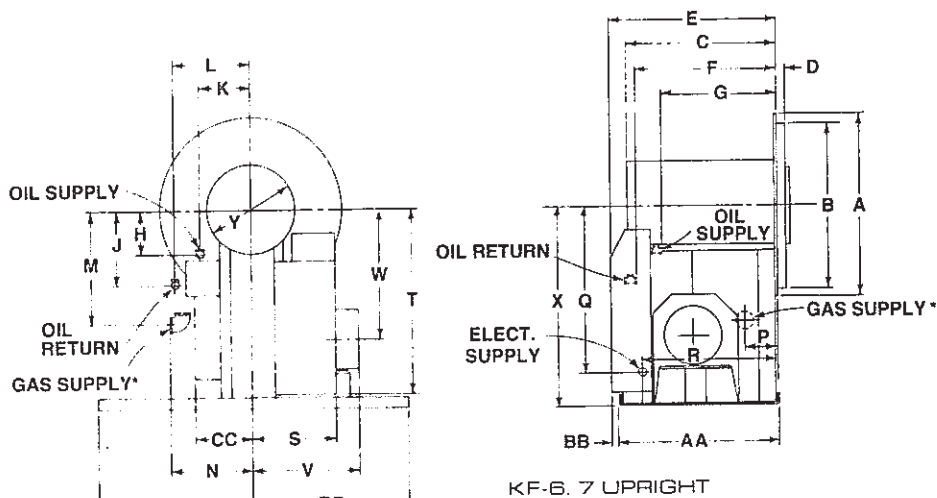
DIM.	LOCATION	UPRIGHT	
		4	5
A	Burner Mtg. Plate Dia.	16-1/8	18-1/2
B	Gas Manifold Dia.*	10-1/8	12-1/8
C	Plenum Length	19-1/2	23-1/8
D	Gas Chamber & Head Ass'y Depth*	4-1/2	5-3/4
E	Burner Length From Mtg. Plate	28-1/2	33-1/2
F	C <sub>L</sub> Blower Motor From Mtg. Plate	13	15-1/2
G	C <sub>L</sub> Burner to C <sub>L</sub> Motor	12-3/8	15-1/2
H	C <sub>L</sub> Burner to Motor or Guard End	17-5/8	19
J	C <sub>L</sub> Burner to Top of Burner	8-1/8	9-1/4
K	C <sub>L</sub> Burner to Bottom of Burner	25	30
N	Gas Supply From Burner C <sub>L</sub> (Vert. C <sub>L</sub> )*	9-13/16	10-11/16
P	Gas Supply From Mtg. Plate *	3-1/8	4
Q	C <sub>L</sub> Burner to Side of Cabinet	6	6
R	C <sub>L</sub> Burner to Top or Bottom Cabinet	16	17
S	C <sub>L</sub> Burner to Far Side of Cabinet	14-3/4	15-5/8
T	C <sub>L</sub> Motor to Bottom Belt Guard	-	-
U	C <sub>L</sub> Burner to Elect. Heater End	14	22
V	C <sub>L</sub> Burner to Bottom Gas Valve	11-3/8	13-1/8

\* Gas & Combination Burners only





**AA HEAVY OIL BURNER DIMENSIONS**

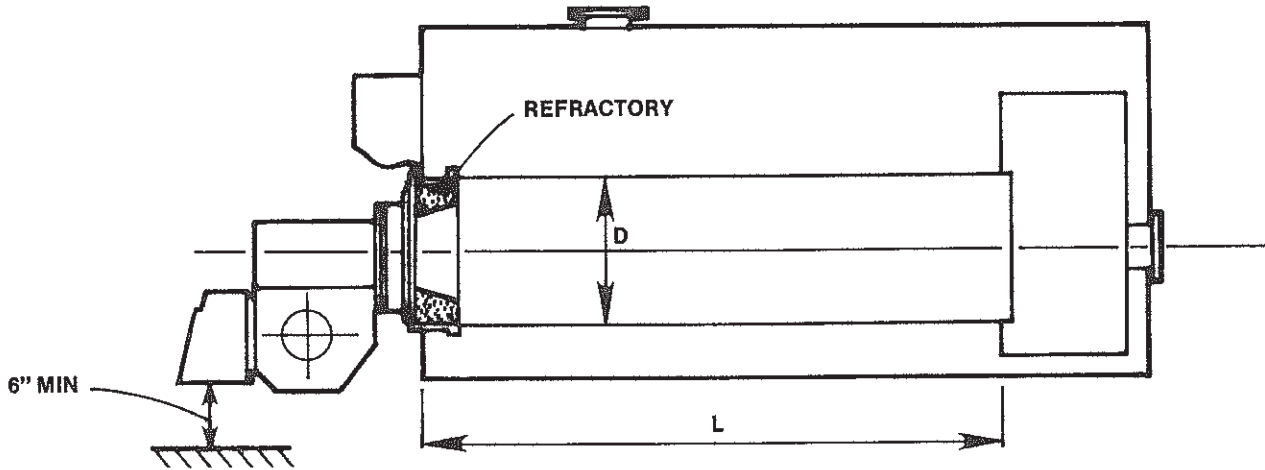


KF-6, 7 UPRIGHT

BURNER SIZE	KF-6				KF-7	
A Burner Mtg. Plate Dia.	32 <sup>5</sup> / <sub>8</sub>	32 <sup>5</sup> / <sub>8</sub>	32 <sup>5</sup> / <sub>8</sub>	33	39 <sup>1</sup> / <sub>8</sub>	39 <sup>1</sup> / <sub>8</sub>
B Gas Manifold Dia.*	29 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	36 <sup>3</sup> / <sub>8</sub>	36 <sup>3</sup> / <sub>8</sub>
C Plenum Length	27	27	27	35 <sup>3</sup> / <sub>4</sub>	40	40
D Gas Manifold Depth*	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>
E Burner Length from Mtg. Plate	30 <sup>3</sup> / <sub>8</sub>	30 <sup>3</sup> / <sub>8</sub>	30 <sup>3</sup> / <sub>8</sub>	42 <sup>7</sup> / <sub>8</sub>	43 <sup>7</sup> / <sub>8</sub>	43 <sup>7</sup> / <sub>8</sub>
F Oil Return from Mtg. Plate	27	27	27	20	24	24
G Oil Supply from Mtg. Plate	20 <sup>3</sup> / <sub>4</sub>	20 <sup>3</sup> / <sub>4</sub>	20 <sup>3</sup> / <sub>4</sub>	22	26 <sup>1</sup> / <sub>2</sub>	26 <sup>1</sup> / <sub>2</sub>
H Oil Supply from Horizontal $\epsilon$	8	8	8	9 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>
J Oil Return from Horizontal $\epsilon$	13 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	13 <sup>1</sup> / <sub>2</sub>	15	17 <sup>7</sup> / <sub>8</sub>	17 <sup>7</sup> / <sub>8</sub>
K Oil Supply from Vertical $\epsilon$	9 <sup>5</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>
L Oil Return from Vertical $\epsilon$	14	14	14	17	17	17
M Gas Supply from Horizontal $\epsilon$ *	20 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	28 <sup>1</sup> / <sub>2</sub>	28 <sup>1</sup> / <sub>2</sub>
N Gas Supply from Vertical $\epsilon$ *	15 <sup>3</sup> / <sub>4</sub>	15 <sup>3</sup> / <sub>4</sub>	15 <sup>3</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>4</sub>	19	19
P Gas Supply from Mtg. Plate*	6	6	6	6	6	6
Q Elec. Supply from Horizontal $\epsilon$	29 <sup>3</sup> / <sub>4</sub>	29 <sup>3</sup> / <sub>4</sub>	29 <sup>3</sup> / <sub>4</sub>	32 <sup>3</sup> / <sub>4</sub>	38	38
R Elec. Supply from Mtg. Plate	25	25	25	35 <sup>1</sup> / <sub>2</sub>	36 <sup>1</sup> / <sub>2</sub>	36 <sup>1</sup> / <sub>2</sub>
S $\epsilon$ Burner to Side of Cabinet	15 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>4</sub>	24 <sup>1</sup> / <sub>4</sub>
T $\epsilon$ Brn. to Top or Bot. of Cabinet	33 <sup>1</sup> / <sub>4</sub>	33 <sup>1</sup> / <sub>4</sub>	33 <sup>1</sup> / <sub>4</sub>	36 <sup>1</sup> / <sub>4</sub>	41 <sup>1</sup> / <sub>2</sub>	41 <sup>1</sup> / <sub>2</sub>
U $\epsilon$ Motor to Bottom of Belt Guard	—	—	—	—	—	—
V Vert. $\epsilon$ to Motor or Guard End	17 <sup>5</sup> / <sub>8</sub>	17 <sup>5</sup> / <sub>8</sub>	18 <sup>5</sup> / <sub>8</sub>	21 <sup>5</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>8</sub>	24 <sup>1</sup> / <sub>4</sub>
W Horiz. $\epsilon$ Burner to $\epsilon$ Motor	23	23	23	22	27 <sup>1</sup> / <sub>2</sub>	25 <sup>5</sup> / <sub>8</sub>
X $\epsilon$ Burner to Bottom of Burner	35 <sup>5</sup> / <sub>8</sub>	35 <sup>5</sup> / <sub>8</sub>	35 <sup>5</sup> / <sub>8</sub>	38 <sup>5</sup> / <sub>8</sub>	44 <sup>1</sup> / <sub>8</sub>	44 <sup>1</sup> / <sub>8</sub>
Y Plenum Dia.	15 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	15 <sup>5</sup> / <sub>8</sub>	18	18
AA Depth of Burner Base	29 <sup>3</sup> / <sub>4</sub>	29 <sup>3</sup> / <sub>4</sub>	29 <sup>3</sup> / <sub>4</sub>	42	42	42
BB Burner Base to Front of Cab.	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>
CC Vert. $\epsilon$ Burner to Air Inlet	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>8</sub>	9	9	8 <sup>1</sup> / <sub>4</sub>
DD Vert. $\epsilon$ Burner to End of Base	28 <sup>1</sup> / <sub>4</sub>	28 <sup>1</sup> / <sub>4</sub>	28 <sup>1</sup> / <sub>4</sub>	30 <sup>1</sup> / <sub>2</sub>	30 <sup>1</sup> / <sub>2</sub>	30 <sup>1</sup> / <sub>2</sub>

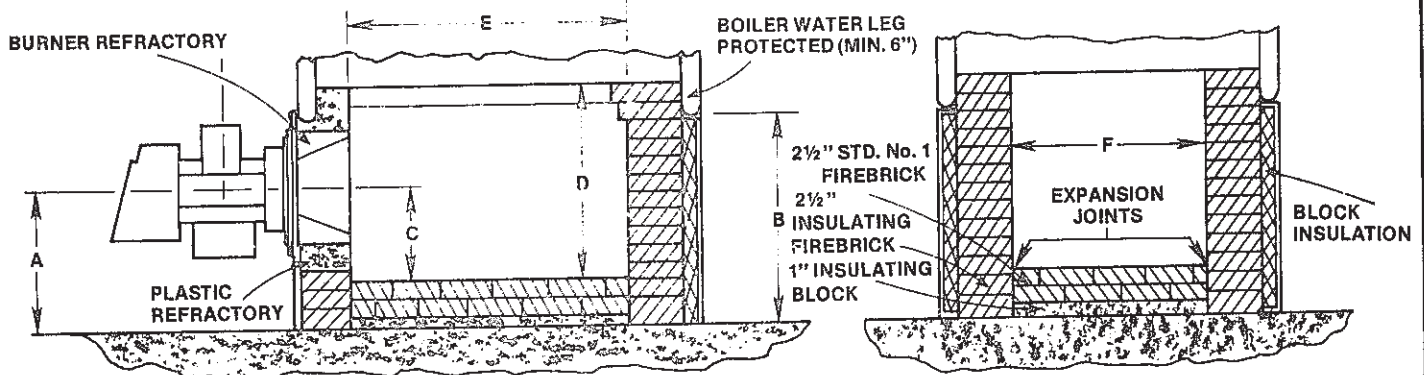
\* Gas & Combination Burners only

**MINIMUM COMBUSTION CHAMBER DIMENSIONS  
 FOR SCOTCH MARINE BOILERS**



BOILER OUTPUT		MINIMUM RECOMMENDED COMBUSTION CHAMBER DIM.		BOILER OUTPUT		MINIMUM RECOMMENDED COMBUSTION CHAMBER DIM.	
BHP	MBH	D(in)	L(in)	BHP	MBH	D(in)	L(in)
10	335	13	30	150	5021	23	93
20	670	13	47	200	6695	23	129
30	1005	13	68	250	8369	25	133
40	1339	15	68	300	10043	30	128
50	1674	15	87	350	11716	30	152
60	2009	17	57	400	13390	34	133
70	2343	17	68	500	16738	34	143
80	2678	17	80	600	20085	37	149
100	3348	20	75	750	25106	37	190
125	4184	20	97				

## RECOMMENDED COMBUSTION CHAMBER DIMENSIONS FOR FIREBOX BOILERS



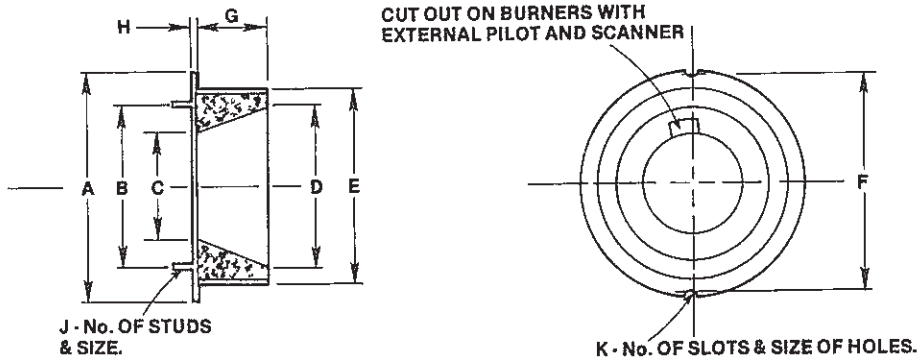
(inches)

FIRING RATE		COMBUSTION CHAMBER				BURNER & HEIGHT (A)			MIN. BASE HEIGHT (B)		
BHP	GPH	C	D	E	F	UPRIGHT	INVERTED	SIDE-WINDER	UPRIGHT	INVERTED	SIDE-WINDER
10	3.0	6	19	22	14	10	-	-	19	-	-
15	4.5	7	20	26	16	10	-	-	19	-	-
20	6.0	8	21	29	19	10	-	-	19	-	-
25	7.5	8	21	32	19	10	-	-	19	-	-
30	9.0	9	22	34	22	10	-	-	19	-	-
35	10.5	9	22	37	22	10	-	-	19	-	-
40	12.0	10	24	39	25	15-3/4	6-1/2	-	25	16	-
45	13.5	10	24	41	25	15-3/4	6-1/2	-	25	16	-
50	15.0	11	25	43	28	15-3/4	6-1/2	-	25	16	-
55	16.5	11	25	45	30	15-3/4	6-1/2	-	25	16	-
60	18.0	12	26	47	32	19-1/2	9-1/2	13-1/2	29	19	23
70	21.0	12	26	51	34	19-1/2	9-1/2	13-1/2	29	19	23
80	24.0	12	26	54	36	19-1/2	9-1/2	13-1/2	29	19	23
90	27.0	14	28	57	33	19-1/2	9-1/2	13-1/2	29	19	23
100	30.0	14	28	60	40	19-1/2	9-1/2	13-1/2	29	19	23
110	33.0	15	31	63	42	22	12	14-3/4	34	24	27
125	37.5	15	31	67	45	22	12	14-3/4	34	24	27
150	45.0	16	32	72	48	22	12	14-3/4	34	24	27
175	52.5	16	33	77	51	28	13	15-3/4	41	26	29
200	60.0	17	34	84	56	28	13	15-3/4	41	26	29
225	67.5	17	34	89	59	28	13	15-3/4	41	26	29
250	75.0	18	35	94	63	28	13	15-3/4	41	26	29
275	82.5	18	35	97	65	28	13	15-3/4	41	26	29
300	90.0	19	36	100	67	28	13	15-3/4	41	26	29
325	97.5	27	42	104	69	39 1/4	-	-	57	-	-
350	105.0	27	48	107	71	39 1/4	-	-	57	-	-
400	120.0	29	50	114	76	39 1/4	-	-	57	-	-
450	135.0	31 1/2	51 1/4	121	81	42 1/4	-	-	60	-	-
500	150.0	31 1/2	52 1/2	129	86	42 1/4	-	-	60	-	-
550	165.0	33	54	133	89	47 1/2	-	-	68 1/2	-	-
600	180.0	33	57	138	92	47 1/2	-	-	68 1/2	-	-
650	195.0	35	57 3/4	144	96	47 1/2	-	-	68 1/2	-	-
700	210.0	35	58 1/2	149	99	47 1/2	-	-	68 1/2	-	-
750	225.0	35	59	153	102	47 1/2	-	-	68 1/2	-	-

**NOTES**

1. Min. base height (B) and min. combustion chamber height dimensions are based on use of standard burner refractory — consult factory if lesser heights required.
2. For shorter and wider combustion chambers, consult factory.
3. In addition to being minimum centerline height of burner above refractory floor, dimension C is also minimum dimension of combustion chamber sidewall to burner centerline.
4. Dimensions 'B' & 'D' are minimums required for satisfactory burner installation, no account is taken of relative heights of combustion chamber and boiler room floors.

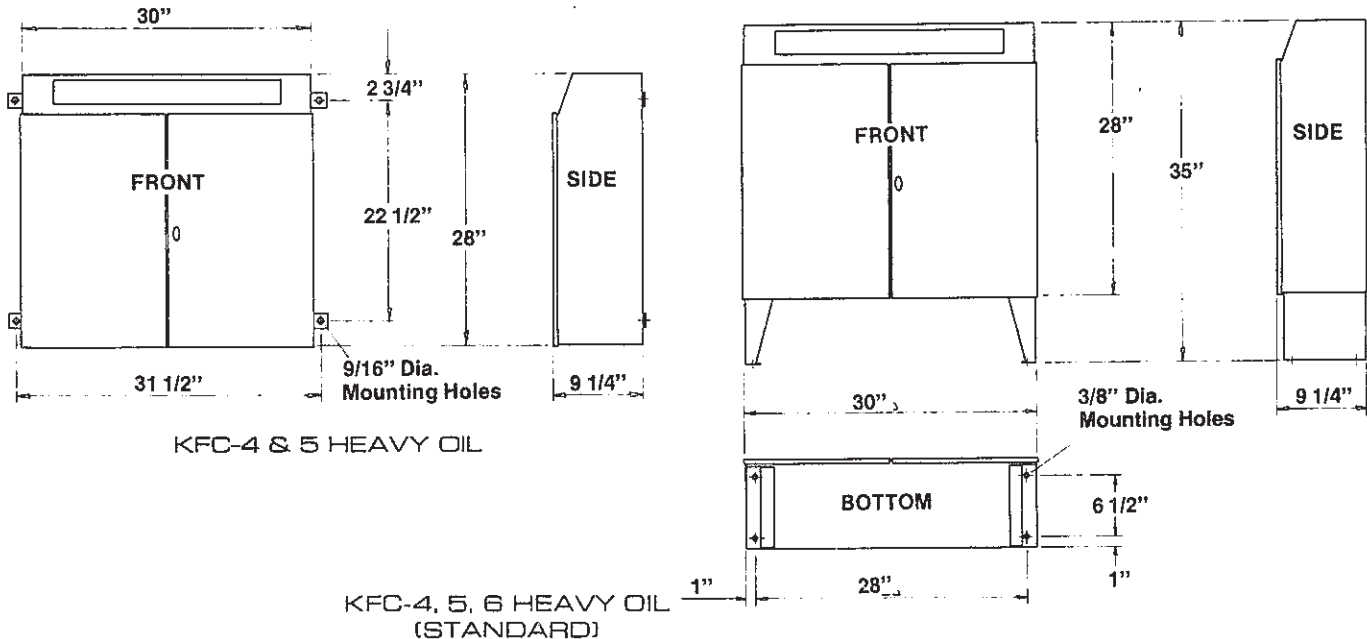
## STANDARD BURNER REFRACTORY DIMENSIONS



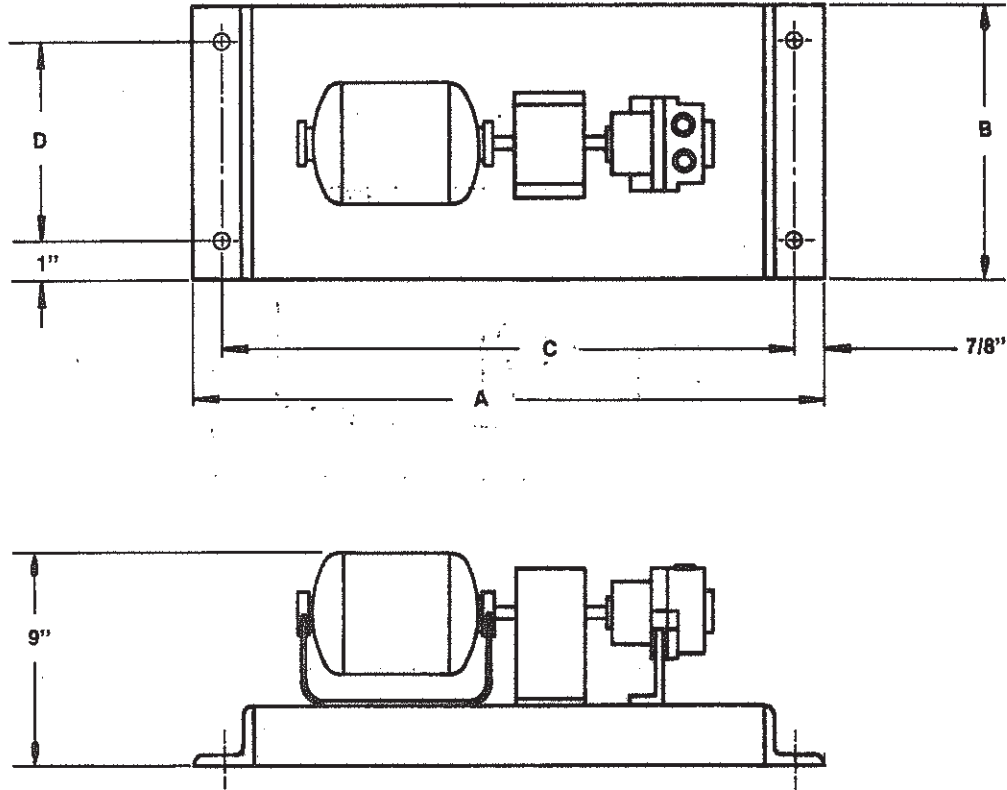
**NOTE: FOR SCOTCH GENERATOR AND NON-STANDARD REFRACTORIES — CONSULT FACTORY**

BURNER MODEL No.	REFRACTORY DIMENSIONS — (inches)											
	A	B	C	D	E	F	G	H	J		K	
									No.	SIZE	No.	SIZE
KF-0.33-600 KF-0.50-500	16-1/4	10-1/4	6	10	12-1/4	14-3/4	6-1/2	3/16	5	3/8 x 1-1/2	4	5/8
KF-0.33-762 KF-0.50-762 KF-0.75-762	18-1/4	12-5/8	8	12	14-1/4	16-3/4	6-1/2	3/16	5	3/8 x 1-1/2	4	5/8
KFC-1.0-762 KFC-1.5-762 KFC-2.0-762	18-1/4	12-5/8	8	12	14-1/4	16-3/4	6-1/2	1/4	8	3/8 x 1-1/2	8	5/8
KFC-2.0-962 KFC-3.0-962	23-1/2	15-1/4	10-1/4	15-1/4	17-1/2	21-1/2	6-1/2	1/4	8	1/2 x 1-1/2	8	5/8
KFC-5.0-1162 KFC-7.5-1162 KFC-10-1162	25-1/2	17-5/8	12-1/4	17-1/4	19-1/2	23-1/2	6-1/2	1/4	8	1/2 x 1-1/2	8	5/8
KF-10-1562 KF-15-1562 KF-20-1562	37	31-15/16	30	18-3/4	33-3/8	35-15/16	9-5/8	3/8	8	1/2 x 1-1/2	8	3/4
KF-25-1800- KF-30-1800-	46	38-1/8	24	38	40	44	10-7/8	3/8	8	1/2 x 1-1/2	8	3/4

## REMOTE CONTROL CABINETS — 4, 5, & 6 OIL BURNERS



**SEPARATE PRIMARY OIL PUMP SET FOR NO. 2 PA OIL**



**No. 2 PA OIL PUMP ASSEMBLIES**

APPLICATION	PUMP CHARACTERISTICS				MOTOR CHARACTERISTICS			PUMP CONNECTIONS (in)		DIMENSIONS (in.)			
	MAX. BURNER FIRING RATE	GPH	PSI	STAGE	MAX. SUCTION	HP	CURRENT	RPM	SUCTION PORT	RETURN PORT	A	B	C
25 GPH	30	300	2	10 in. Hg.	1/3	230-3-60	1725	1/4 N.P.T.	1/4 N.P.T.	20	8	18-1/4	6
45 GPH	55	300	2	10 in. Hg.	1/2	230-3-60	1725	1/4 N.P.T.	1/4 N.P.T.	20	8	18-1/4	6
75 GPH	95	300	1	10 in. Hg.	1	230-3-60	1725	1/2 N.P.T.	3/8 N.P.T.	28	10	26-1/4	8
100 GPH	135	300	1	10 in. Hg.	3/4	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	28	10	26-1/4	8
125 GPH	170	300	1	10 in. Hg.	1	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	28	10	26-1/4	8

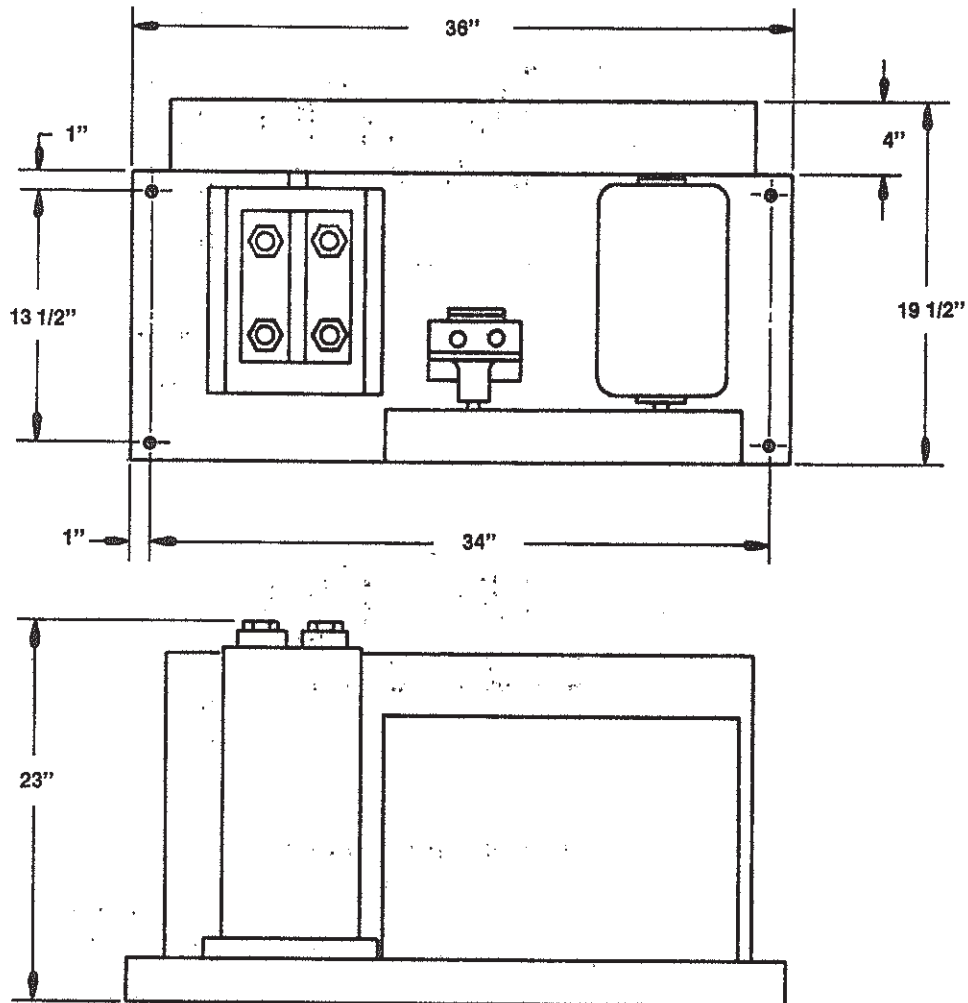
**GENERAL DESCRIPTION**

Oil pump set will consist of steel baseplate, electric motor with standard frame and footmounting, gear type oil pump, flexible coupling with safety guard.

**ACCESSORIES**

Standard accessories include pressure gauge, relief valve, and strainer.

**COMBINATION AIR COMPRESSOR AND OIL PUMP  
 FOR NO. 2 A A OIL**



**No. 2 AA OIL PUMP AND COMPRESSOR ASSEMBLIES**

Application	Oil Pump Characteristics				Compressor Characteristics			Double Shaft Motor Characteristics		
	GPH	PSI	Drive	Max. Suction	Max. Press.	Min. RPM	Max. RPM	HP	Current	RPM
32 GPH	40.0	100	Belt	11 In. Hg.	100	650	830	1-1/2	230-3-60	1725
63.6 GPH	80.0	100	Belt	11 In. Hg.	100	690	840	2	230-3-60	1725
90 GPH	112.5	100	Belt	11 In. Hg.	100	740	900	3	230-3-60	1725

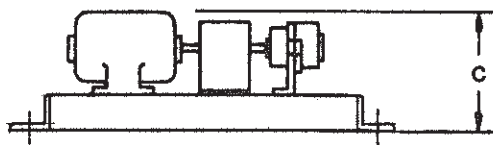
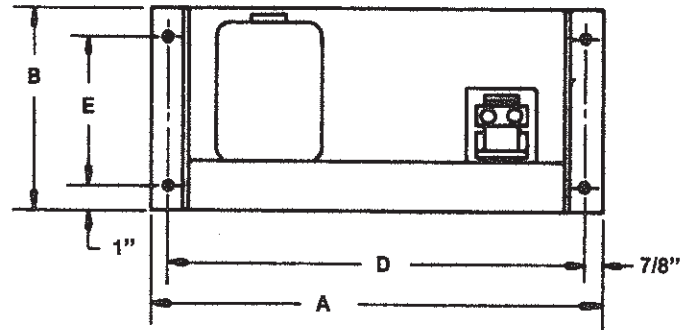
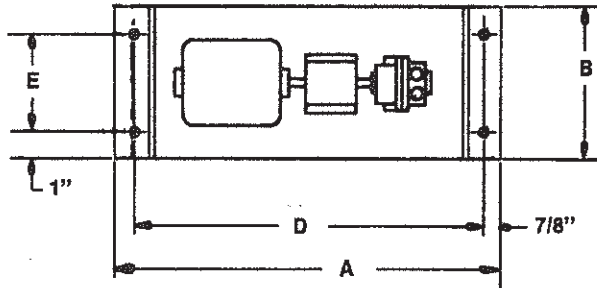
**GENERAL DESCRIPTION**

Oil pump and compressor unit will consist of steel baseplate, electric motor with double shaft extension, standard frame and footmounting, rotary gear type oil pump, necessary sheaves, belt, belt guard, and relief valve on pump; single stage air compressor with necessary sheaves, belts, and belt guard.

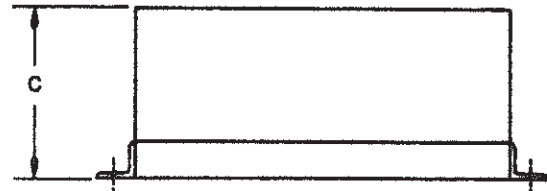
**ACCESSORIES**

Standard accessories for oil pump include pressure gauge and strainer. Standard accessories for air compressor include intake air filter, A.S.M.E. safety relief valve, flexible discharge hose, pressure gauge, and dampening tank.

SEPERATE PRIMARY OIL PUMP SET FOR NO. 2 & 4 AA OIL



DIRECT DRIVE



BELT DRIVE

**No. 2 & 4 AA OIL PUMP ASSEMBLIES**

APPLICATION	PUMP CHARACTERISTICS				MOTOR CHARACTERISTICS			PUMP CONNECTIONS (In.)		DIMENSIONS (In.)				
	MAX. BURNER FIRING RATE	GPH	PSI	DRIVE	MAX. SUCTION	HP	CURRENT	RPM	SUCTION PORT	RETURN PORT	A	B	C	D
72 GPH	90	100	Direct	11 In. Hg.	1/4	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	20	8	9	18-1/4	6
144 GPH	180	100	Direct	11 In. Hg.	1/3	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	20	8	9	18-1/4	6
232 GPH	250	100	Belt	11 In. Hg.	1/2	230-3-60	1725	1 N.P.T.	1 N.P.T.	28	12	15 1/2	26-1/4	10

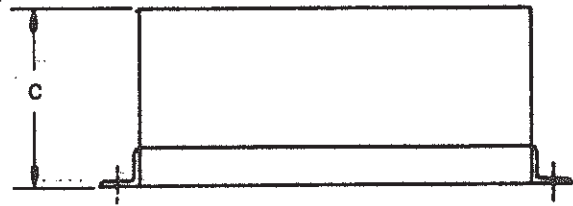
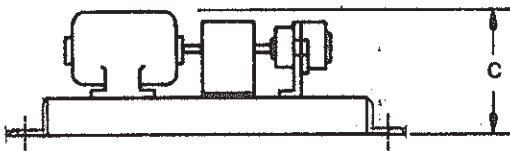
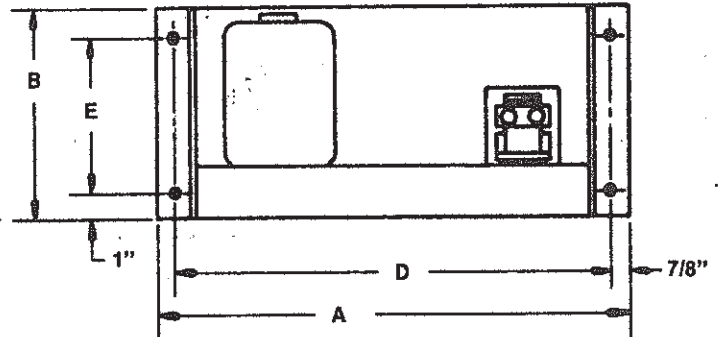
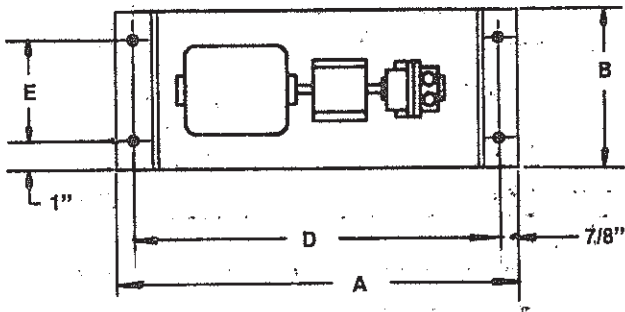
**GENERAL DESCRIPTION**

Oil pump set will consist of steel baseplate, electric motor with standard frame and footmounting, a rotary gear type oil pump, flexible coupling with safety guard on direct drive units, necessary sheaves, belt and belt guard on belt driven units and relief valve on oil pump.

**ACCESSORIES**

Standard accessories include pressure gauge and strainer.

SEPARATE PRIMARY OIL PUMP SET FOR NO. 5 & 6 AA OIL



DIRECT DRIVE

BELT DRIVE

**No. 5 & 6 OIL PUMP ASSEMBLIES**

APPLICATION	PUMP CHARACTERISTICS				MOTOR CHARACTERISTICS			PUMP CONNECTIONS		DIMENSIONS (Inches)				
	MAX. BURNER FIRING RATE	GPH	PSI	DRIVE	MAX. SUCTION	HP	CURRENT	RPM	SUCTION PORT (in)	RETURN PORT (in)	A	B	C	D
70 GPH	108	100	Direct	11 In. Hg.	1/3	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	20	8	9	18-1/4	6
112 GPH	140	100	Belt	11 In. Hg.	1/2	230-3-60	1725	1/2 N.P.T.	1/2 N.P.T.	28	12	15 1/2	26-1/4	10
217 GPH	250	100	Belt	11 In. Hg.	3/4	230-3-60	1725	1 N.P.T.	1 N.P.T.	28	12	15 1/2	26-1/4	10

**GENERAL DESCRIPTION**

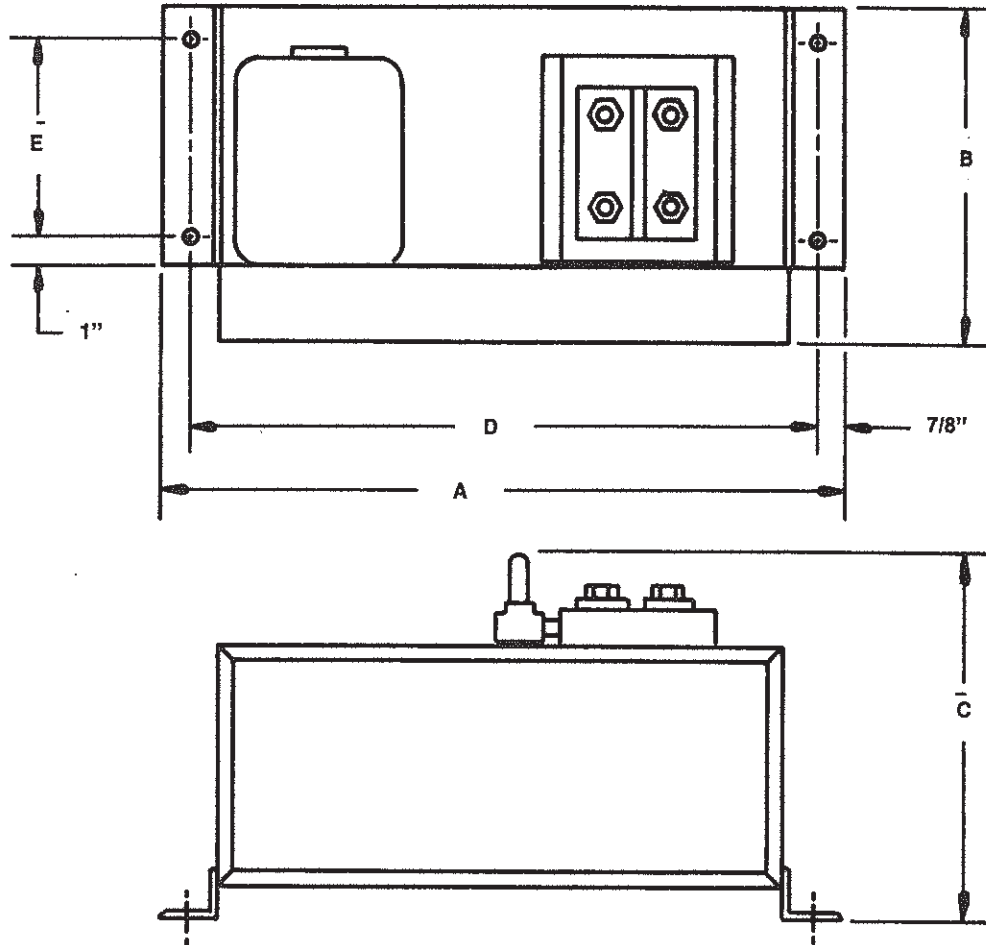
Oil pump set will consist of steel baseplate, electric motor with standard frame and footmounting, rotary gear type oil pump, flexible coupling with safety guard on direct drive units, necessary sheaves, belt and belt guard on belt driven units and relief valve on oil pump.

**ACCESSORIES**

Standard accessories include pressure gauge and strainer.



**AIR COMPRESSOR FOR A A OIL**



**COMPRESSOR ASSEMBLIES**

APPLICATION	COMPRESSOR CHARACTERISTICS			MOTOR CHARACTERISTICS			DIMENSIONS - (inches)				
	Max. Firing Rate	Max. Press.	Min. RPM	Max. RPM	HP	Current	RPM	A	B	C	D
32.0 GPH	100	725	900	1-1/2	230-3-60	1752	28	15-1/2	19-1/2	26-1/4	9-1/2
58.6 GPH	100	615	770	2	230-3-60	1725	30	16-5/8	23	28-1/4	10-5/8
108.6 GPH	100	745	900	3	230-3-60	1725	30	16-5/8	23	28-1/4	10-5/8
162.5 GPH	100	600	735	5	230-3-60	1725	32-1/2	18	26	30-3/4	12
232.0 GPH	100	650	780	5	230-3-60	1725	32-1/2	18	26	30-3/4	12

**GENERAL DESCRIPTION**

Air compressor assembly consists of steel baseplate, electric motor with standard frame and footmounting and single stage air compressor with necessary sheaves, belts and safety type beltguard.

**ACCESSORIES**

Standard accessories include intake air filter, A.S.M.E. safety relief valve, flexible discharge hose, pressure gauge, and dampening tank.

## SELECTION OF GAS TRAINS

### A. INFORMATION REQUIRED

1. Necessary approvals, local and insuring bodies.
2. Available source pressure to inlet of the main shut-off cock of the gas train.
3. The overfire pressure of the boiler.
4. Firing rate of burner for boiler in MBH.

### B. SELECTION AND CALCULATION

1. Select a burner from Kewanee Retrofit Burners, Ratings & Performance Data (Table 1 - below) to satisfy the overfire pressure and flow requirements.
2. Select pressure drop for burner at the desired flow from Chart 8 - page 219.
3. Deduct burner gas pressure loss and boiler overfire pressure loss from the source pressure. The result will be the pressure drop allowable for selecting the gas train.
4. Select gas train from Charts 1 thru 7 (pages 220 thru 226) to satisfy the pressure drop and MBH requirements.

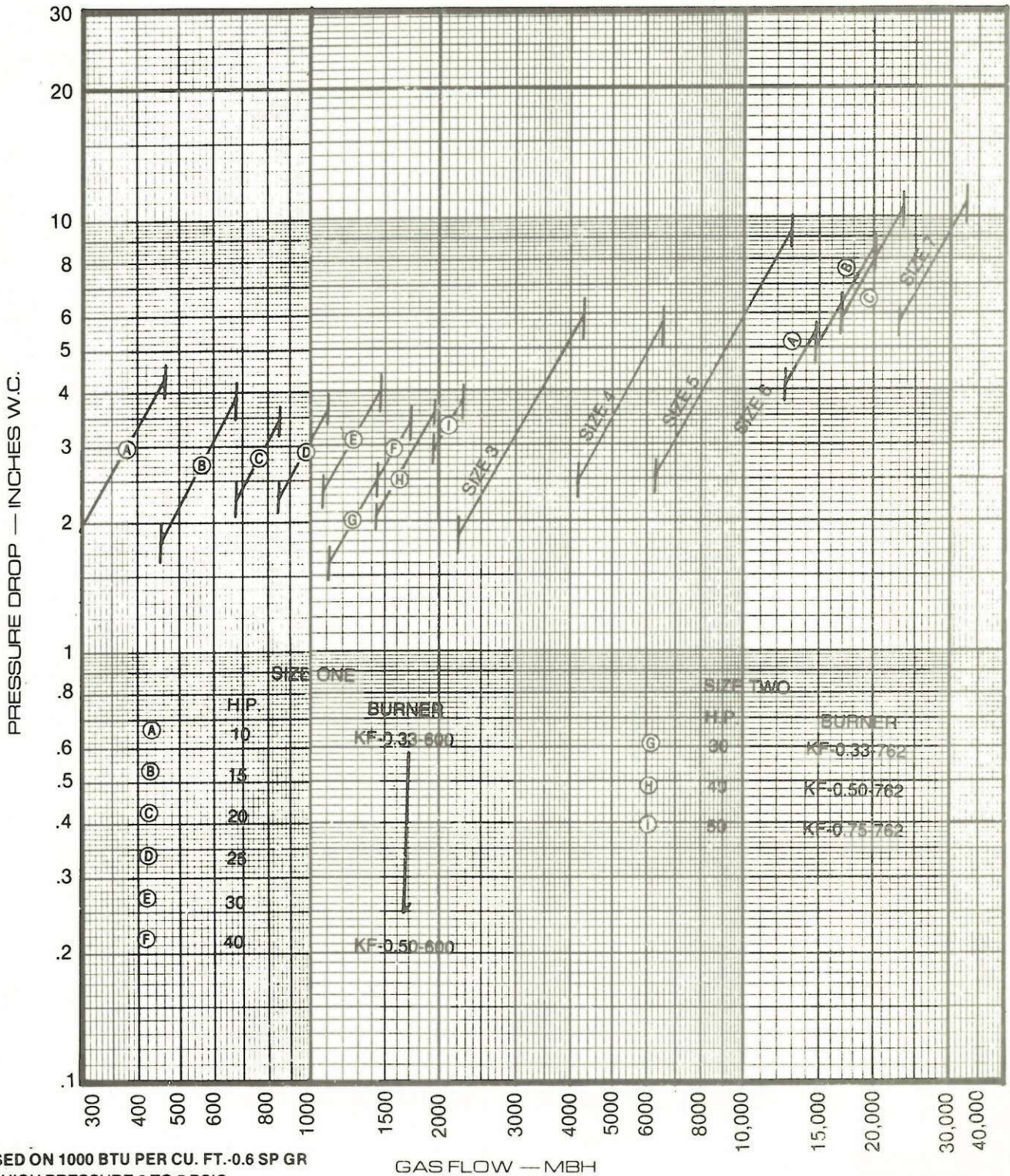
### C. MISCELLANEOUS NOTES

1. Gas train components are not assembled.
2. For other than natural gas, other gas train components, or higher gas source pressures, contact Sales Office.
3. Kewanee Boiler Corporation reserves the right to substitute, without notice, gas valves other than those indicated on charts. In all cases, substitutions by Kewanee Boiler will meet gas requirements indicated on the order to the factory.
4. All above data are based on gas at 1000 Btu/ft<sup>3</sup> and specific gravity of 0.6.

## KEWANEE RETROFIT<sup>®</sup> CONVERSION BURNERS RATINGS AND PERFORMANCE DATA TABLE I

BURNER SIZE	MODEL No.	MAXIMUM FIRING RATE @ COMBUSTION CHAMBER PRESSURE		
		0.5 INCHES W.C. NATURAL GAS CFH	1.0 INCHES W.C. NATURAL GAS CFH	1.5 INCHES W.C. NATURAL GAS CFH
1	KF-O.33-600	1450	-	-
	KF-O.50-600	1700	-	-
2	KF-O.33-762	1450	-	-
	KF-O.50-762	1700	-	-
	KF-O.75-762	2250	2045	-
3	KFC-1.0-762	3138	2748	2435
	KFC-1.5-762	3584	3933	2973
	KFC-1.5-762	4200	3938	3485
	KFC-2.0-762	4200	-	3485
4	KFC-2.0-962	4200	3933	3484
	KFC-2.0-962	4484	4200	3720
	KFC-3.0-962	5600	5244	5086
	KFC-3.0-962	6395	5988	5305
5	KFC-5.0-1162	8876	8695	8369
	KFC-7.5-1162	10920	10618	10289
	KFC-10-1162	12555	12208	11830
6A	KFC-10-1562	14645	14165	13741
6B	KFC-15-1562	19500	18854	18290
6B	KFC-20-1562	22250	21513	20869
7	KFC-25-1800	27944	26780	25150
	KFC-30-1800	34730	34312	33475

**CHART 8 — PRESSURE DROP THRU GAS BURNERS  
 BASED ON 1000 BTU/CU. FT. — 0.6 SP GR**



BASED ON 1000 BTU PER CU. FT. - 0.6 SP GR

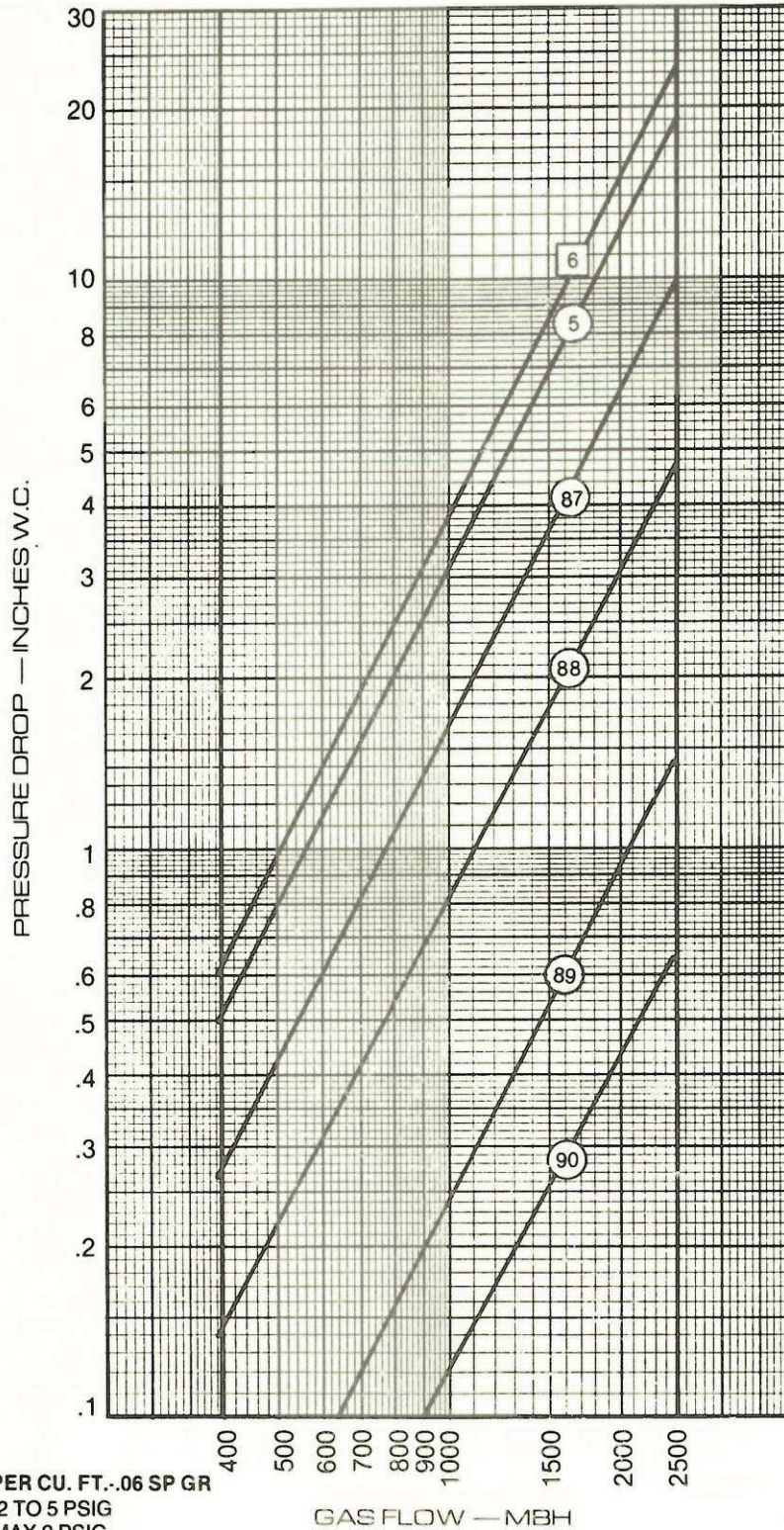
- HIGH PRESSURE 2 TO 5 PSIG
- LOW PRESSURE MAX 2 PSIG

GAS FLOW — MBH

**CHART 1 — KEWANEE U/L TWO VALVE GAS TRAIN**

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.

400,000 — 2,500,000 BTUH INPUT (SEE DIAGRAM "A" — PAGE 227)



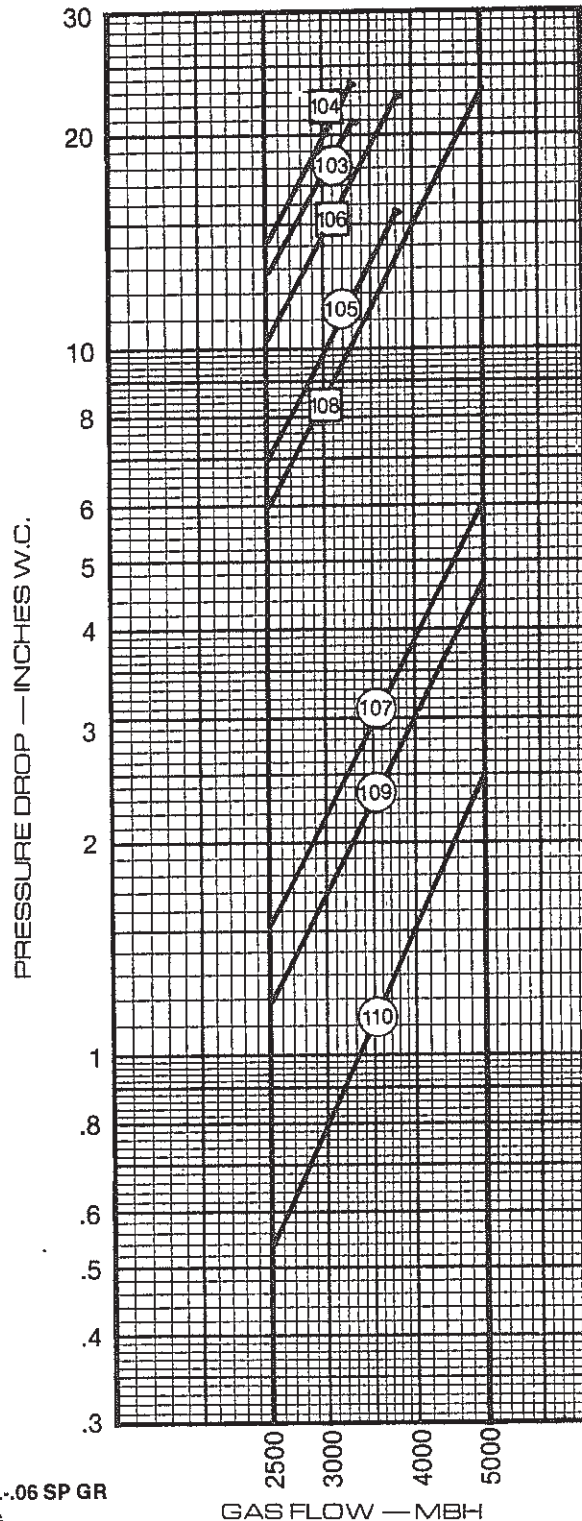
BASED ON 1000 BTU PER CU. FT. - .06 SP GR

- HIGH PRESSURE 2 TO 5 PSIG
- LOW PRESSURE MAX 2 PSIG

GAS FLOW — MBH

**CHART 2 — KEWANEE U/L & FM TWO VALVE GAS TRAIN**

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.  
 2,500,000 — 5,000,000 BTUH INPUT (SEE DIAGRAM "B" — PAGE 227)

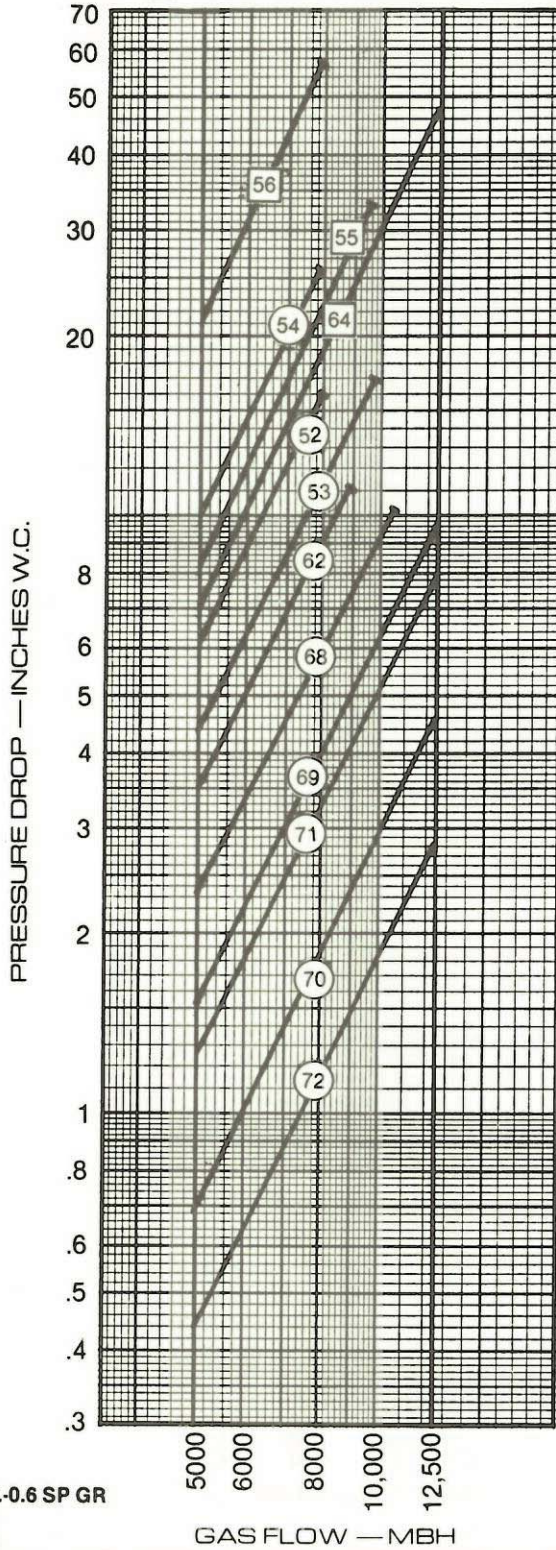


BASED ON 1000 BTU PER CU. FT. .06 SP GR

- HIGH PRESSURE 2 TO 5 PSIG
- LOW PRESSURE MAX 2 PSIG

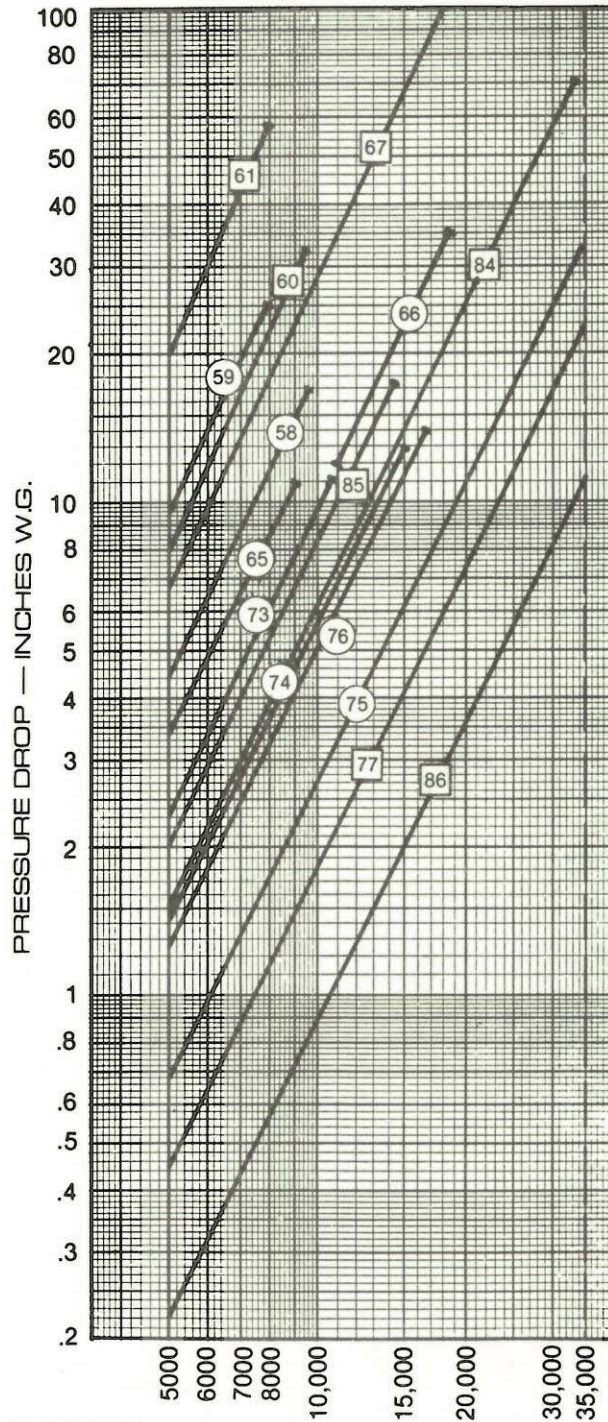
**CHART 3 — KEWANEE U/L & FM TWO VALVE GAS TRAIN**

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.  
 5,000,000 — 12,500 BTUH INPUT (SEE DIAGRAM "C" — PAGE 227)



**CHART 4 — KEWANEE IRI TWO VALVE GAS TRAIN**  
 — 5,000,000 BTU INPUT AND ABOVE  
 — KEWANEE U/L & FM TWO VALVE GAS TRAIN  
 — 12,500,000 BTU INPUT AND ABOVE

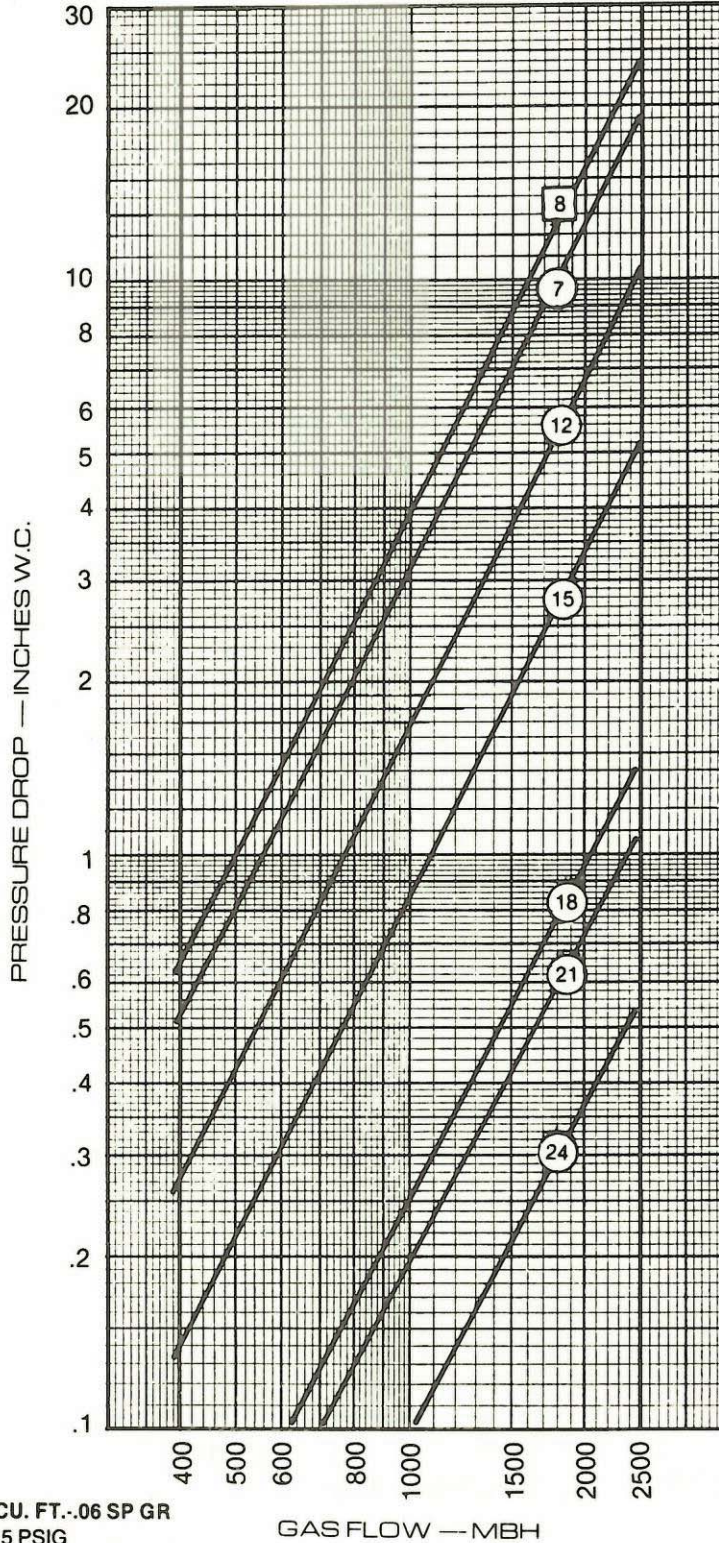
GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.  
 [SEE DIAGRAM "D" — PAGE 228]



BASED ON 1000 BTU PER CU. FT.-0.6 SP GR  
 □ HIGH PRESSURE 2 TO 5 PSIG  
 ○ LOW PRESSURE MAX 2 PSIG

**CHART 5 — KEWANEE FM TWO VALVE GAS TRAIN "LOW RISK"**

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.  
 400,000 — 2,500,000 BTU INPUT [SEE DIAGRAM "E" — PAGE 229]



BASED ON 1000 BTU PER CU. FT. .06 SP GR

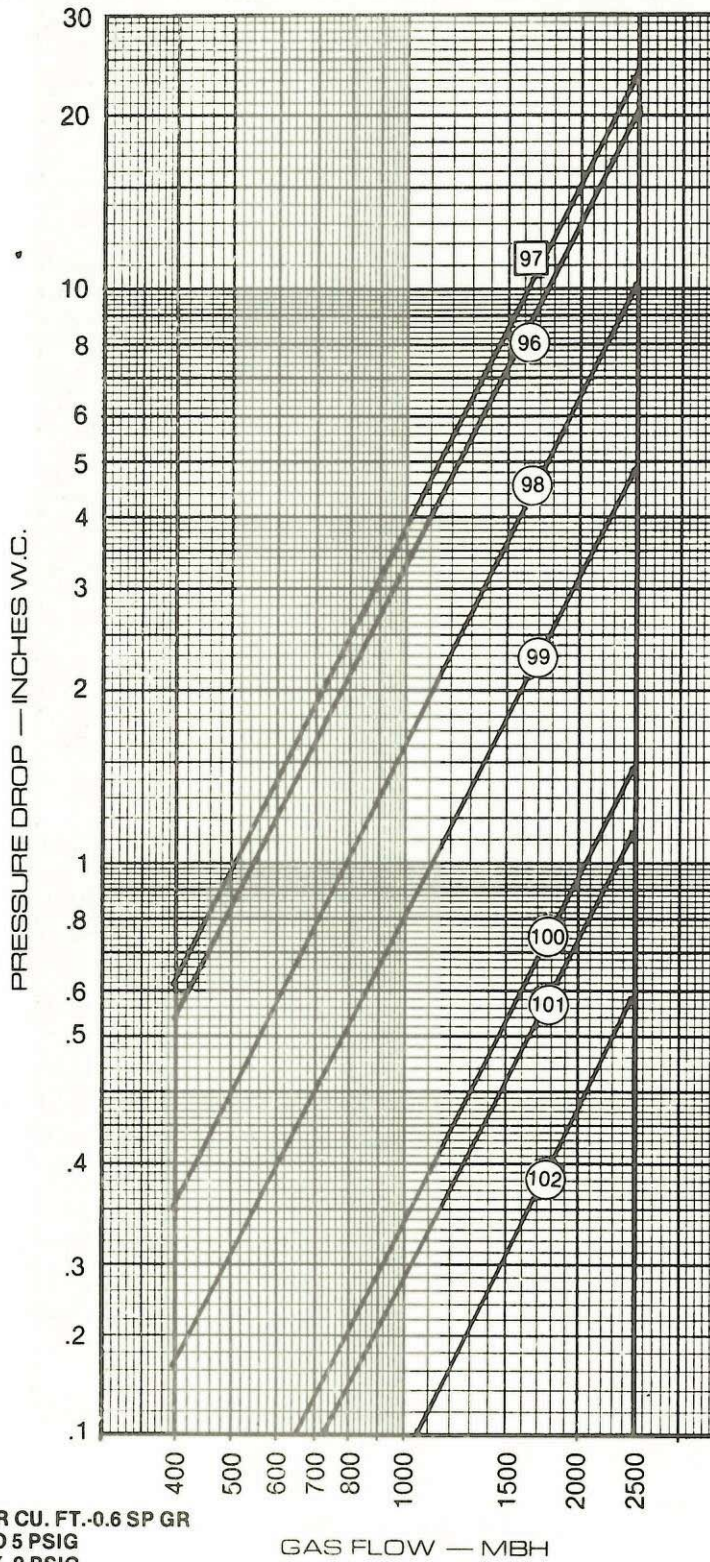
- HIGH PRESSURE 2 TO 5 PSIG
- LOW PRESSURE MAX 2 PSIG

GAS FLOW — MBH



**CHART 6 — KEWANEE FM TWO VALVE GAS TRAIN "HIGH RISK"**

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
 MINUS DROP IN BURNER AND DROP IN BOILER.  
 400,000 — 2,500,000 BTU INPUT [SEE DIAGRAM "F" — PAGE 229]



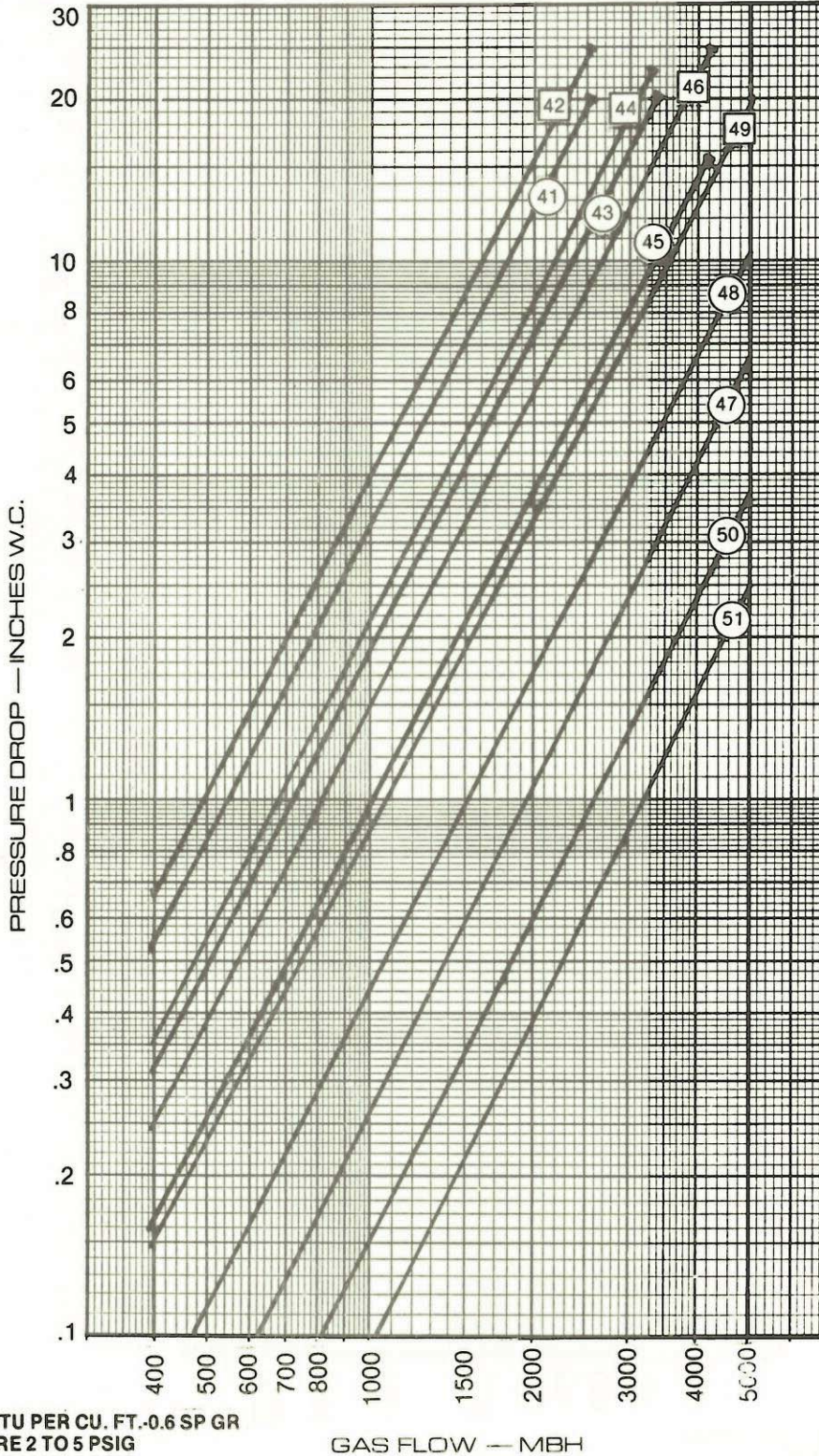
BASED ON 1000 BTU PER CU. FT. 0.6 SP GR  
 □ HIGH PRESSURE 2 TO 5 PSIG  
 ○ LOW PRESSURE MAX 2 PSIG



### CHART 7 — KEWANEE "IRI" TWO VALVE GAS TRAIN

GAS TRAIN PRESSURE DROP EQUALS SOURCE PRESSURE  
MINUS DROP IN BURNER AND DROP IN BOILER.

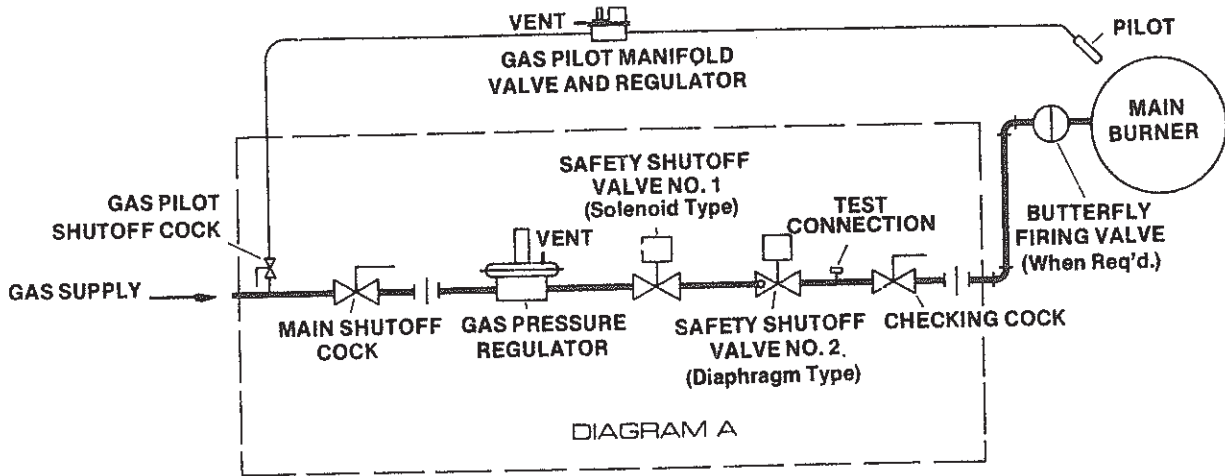
400,000 — 5,000,000 BTU INPUT [SEE DIAGRAM "G" — PAGE 228]



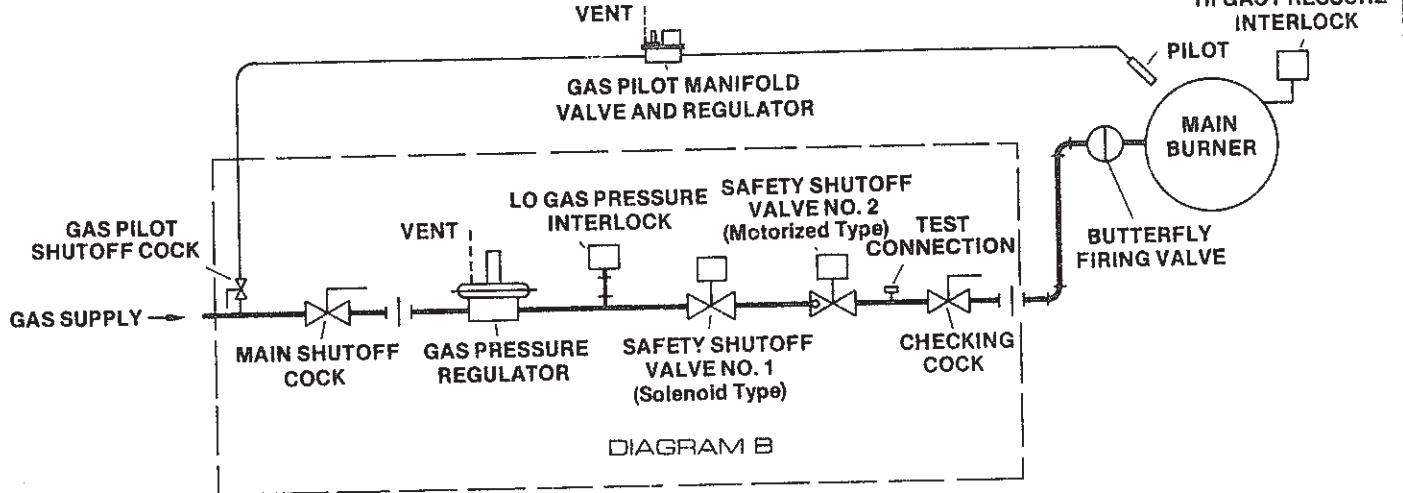
BASED ON 1000 BTU PER CU. FT. - 0.6 SP GR  
□ HIGH PRESSURE 2 TO 5 PSIG  
○ LOW PRESSURE MAX 2 PSIG

GAS FLOW — MBH

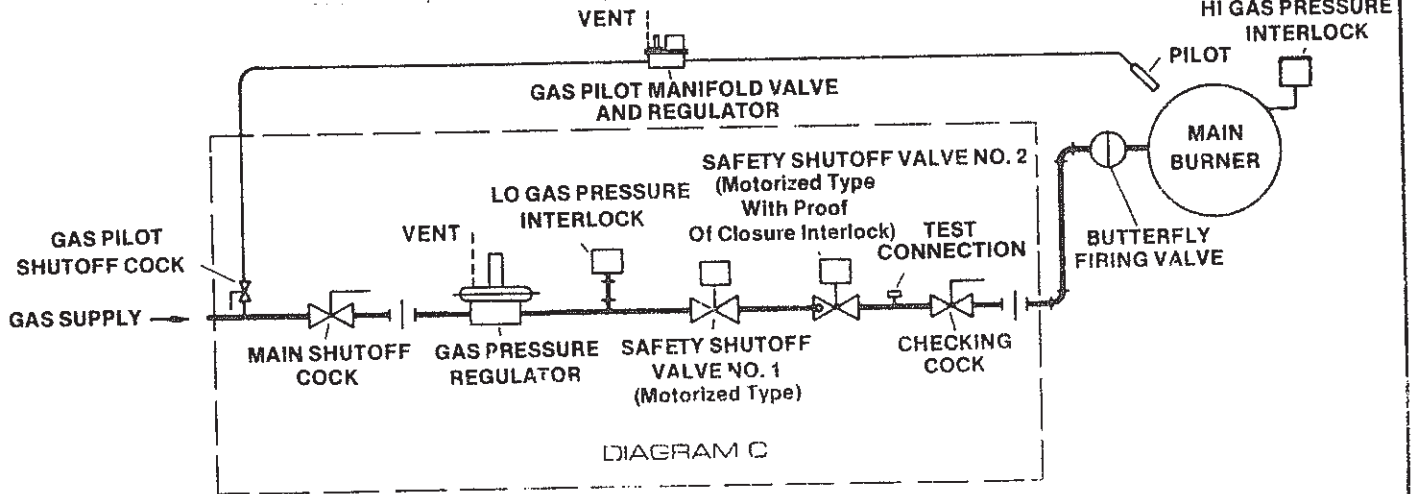
**GAS TRAIN — KEWANEE U/L STANDARD FOR 400-2500 MBH INPUT**



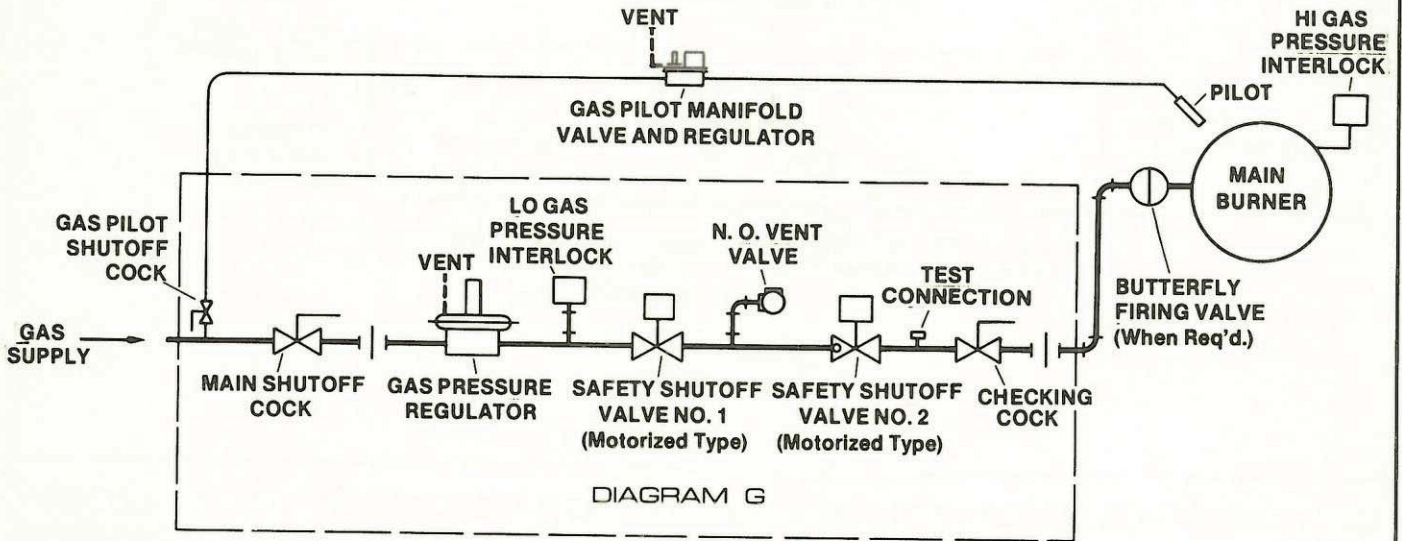
**GAS TRAIN - U/L & FM - BTU/HR INPUT RANGE - 2,500,001 TO 5,000,000**



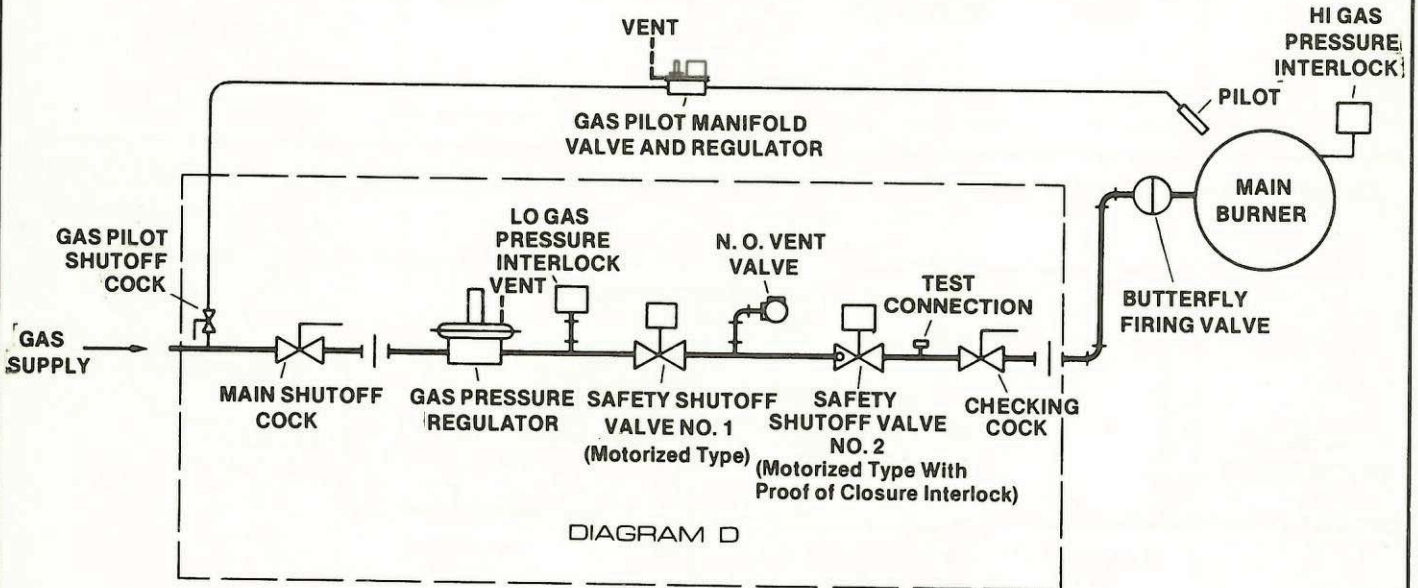
**GAS TRAIN - U/L & FM - BTU/HR INPUT RANGE - 5,000,001 TO 12,500,000**



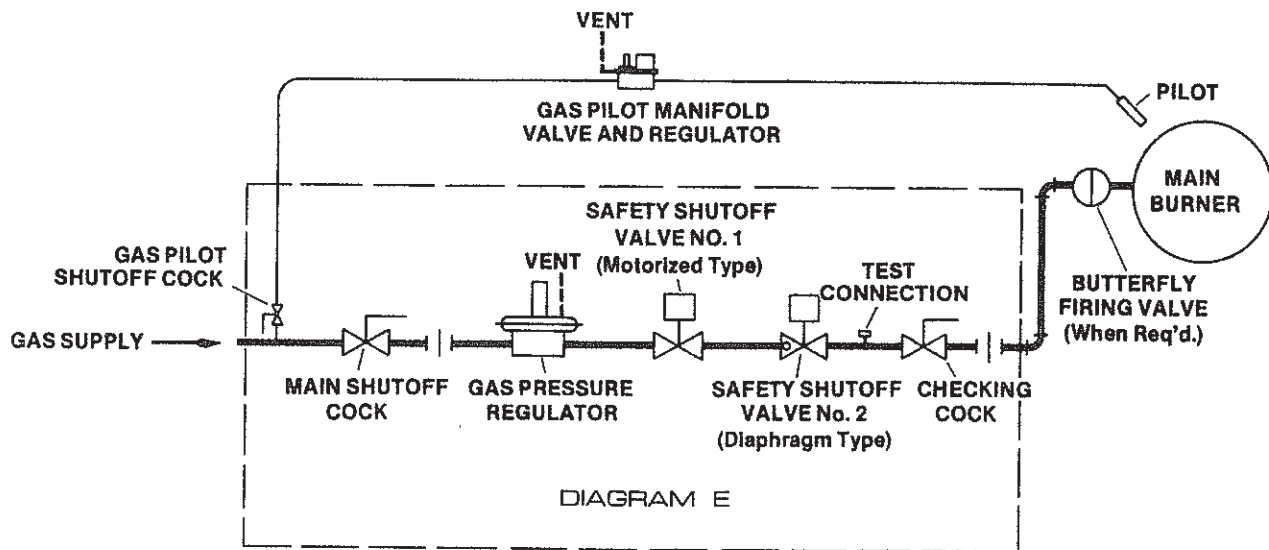
**GAS TRAIN — KEWANEE IRI STANDARD FOR 5,000,000 INPUT & LESS**



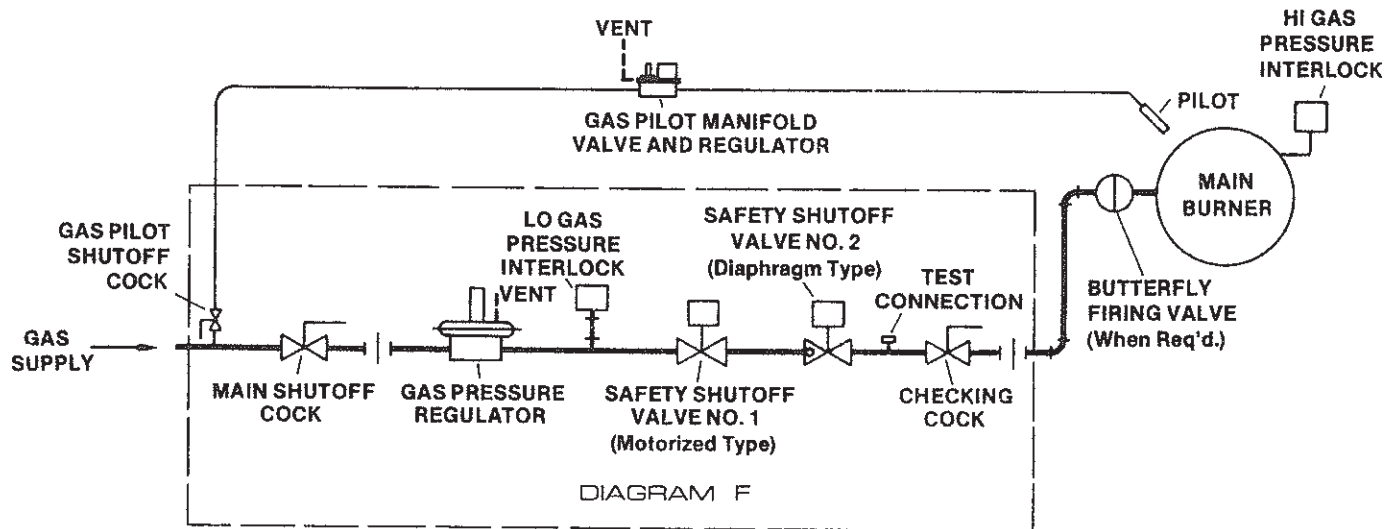
**GAS TRAIN — U/L & FM — BTU/HR INPUT OVER 12,500,000 —  
 IRI-BTU/HR INPUT 5,000,001 AND OVER**



**GAS TRAIN — KEWANEE FM [LO RISK] STANDARD  
 FOR 400-2500 MBH INPUT**



**GAS TRAIN — KEWANEE FM OPTION [HI-RISK]  
 FOR 400-2500 MBH INPUT**



**GAS TRAIN COMPONENTS**

NUMBER	APPROVAL	SIZE (IN.)	MAIN GAS COCK		REGULATOR		LOW PRESS. INTERLOCK HONEYWELL	SAFETY VALVE #1		VENT VALVE		SAFETY VALVE #2		HIGH PRESS. INTERLOCK HONEYWELL	CHECKING COCK	
			DAZURIK MODEL	SIZE (IN.)	MAXITROL MODEL	SIZE (IN.)		MODEL	SIZE (IN.)	ASCO MODEL	SIZE (IN.)	MODEL	SIZE (IN.)			DAZURIK MODEL
(5)	U/L	1	425S	1	RV-60	1	K3A662	1				B50DB162A107	1		425S	1
(6)	U/L	1	425S	1	210D	1	K3A662	1				B50DB162A107	1		425S	1
(7)	U/L-FM	1	425S	1	RV-60	1	V710FES AH2A112A10	1				B50DB162A107	1		425S	1
(8)	U/L-FM	1	425S	1	210D	1	V710FES AH2A112A10	1				B50DB162A107	1		425S	1
(12)	U/L-FM	1-1/4	425S	1-1/4	RV-60	1-1/4	V710GES AH2A112A10	1-1/4				B50DB172A107	1-1/4		425S	1-1/4
(15)	U/L-FM	1-1/2	425S	1-1/2	RV-81	1-1/2	V710HES AH2A112A10	1-1/2				B50DB182A107	1-1/2		425S	1-1/2
(18)	U/L-FM	2	425S	2	RV-91	2	V710JES AH2A112A10	2				B50D59B2AA107	2		425S	2
(21)	U/L-FM	2-1/2	425S	2-1/2	RV-91	2-1/2	V710KES AH2A112A10	2-1/2				B50D51B2AA107	2-1/2		425S	2-1/2
(24)	U/L-FM	3	425S	3	RV-110	3	V710LES AH2A112A10	3				B50D52B2AA107	3		425S	3
(41)	U/L-FM FIA	1	425S	1	RV-60	1	V710FES AH2A112A10	1	8030A83	3/4		V710FES AH2A112A10	1	C645B1013	425S	1
(42)	U/L-FM FIA	1	425S	1	210D	1	V710FES AH2A112A10	1	8030A83	3/4		V710FES AH2A112A10	1	C645B1013	425S	1
(43)	U/L-FM FIA	1-1/4	425S	1-1/4	RV-60	1-1/4	V710GES AH2A112A10	1-1/4	8030A83	3/4		V710GES AH2A112A10	1-1/4	C645B1013	425S	1-1/4
(44)	U/L-FM FIA	1-1/4	425S	1-1/4	210D	1-1/4	V710GES AH2A112A10	1-1/4	8030A83	3/4		V710GES AH2A112A10	1-1/4	C645B1013	425S	1-1/4
(45)	U/L-FM FIA	1-1/2	425S	1-1/2	RV-81	1-1/2	V710HES AH2A112A10	1-1/2	8030A83	3/4		V710HES AH2A112A10	1-1/2	C645B1013	425S	1-1/2
(46)	U/L-FM FIA	1-1/2	425S	1-1/2	210D	1-1/2	V710HES AH2A112A10	1-1/2	8030A83	3/4		V710HES AH2A112A10	1-1/2	C645B1013	425S	1-1/2
(47)	U/L-FM FIA	2	425S	2	RV-91	2	V710JES AH2A112A10	2	8215A53	1		V710JES AH2A112A10	2	C645B1013	425S	2
(48)	U/L-FM FIA	2	425S	1-1/2	RV-81	1-1/2	V710JES AH2A112A10	2	8215A53	1		V710JES AH2A112A10	2	C645B1013	425S	2
(49)	U/L-FM FIA	2	425S	1-1/2	210D	1-1/2	V710JES AH2A112A10	2	8215A53	1		V710JES AH2A112A10	2	C645B1013	425S	2
(50)	U/L-FM FIA	2-1/2	425S	2-1/2	RV-110	2-1/2	V710KES AH2A112A10	2-1/2	8215A63	1-1/4		V710KES AH2A112A10	2-1/2	C645B1013	425S	2-1/2
(51)	U/L-FM FIA	3	425S	3	RV-110	3	V710LES AH2A112A10	3	8215A63	1-1/4		V710LES AH2A112A10	3	C645B1013	425S	3
(52)	U/L-FM	2	425S	2	RV-91	2	V710JES AH2A112A10	2				V710JESV22 AH2A112S10	2	C645B1013	425S	2
(53)	U/L-FM	2	425S	2	RV-91	2	H117AJ112	2				V710JESV22 AH2A112S10	2	C645B1013	425S	2
(54)	U/L-FM	2	425S	1-1/2	RV-81	1-1/2	C645A1030	2				V710JESV22 AH2A112S10	2	C645B1013	425S	2

GAS TRAIN COMPONENTS (CONT'D)

NUMBER	APPROVAL	SIZE (IN.)	MAIN GAS COCK		REGULATOR		LOW PRESS. INTERLOCK HONEYWELL	SAFETY VALVE #1		VENT VALVE		SAFETY VALVE #2		HIGH PRESS. INTERLOCK HONEYWELL	CHECKING COCK DEZURIK MODEL	CHECKING COCK SIZE (IN.)
			DeZURIK MODEL	SIZE (IN.)	MAXITROL MODEL	SIZE (IN.)		MODEL	SIZE (IN.)	ASCO MODEL	SIZE (IN.)	MODEL	SIZE (IN.)			
(55)	U/L-FM	2	425S	2	210E	2	C645A1030	H117AJ112	2			V710JESV22 AH2A112S10	C645B1013	425S	2	
(56)	U/L-FM	2	425S	1-1/2	210D	1-1/2	C645A1030	V710JES AH2A112A10	2			V710JESV22 AH2A112S10	C645B1013	425S	2	
(58)	U/L-FM FIA	2	425S	2	RV-91	2	C645A1030	H117AJ112	2	8215A53	1	V710JESV22 AH2A112S10	C645B1013	425S	2	
(59)	U/L-FM FIA	2	425S	1-1/2	RV-81	1-1/2	C645A1030	V710JES AH2A112A10	2	8215A53	1	V710JESV22 AH2A112S10	C645B1013	425S	2	
(60)	U/L-FM FIA	2	425S	2	210E	2	C645A1030	H117AJ112	2	8215A53	1	V710JESV22 AH2A112S10	C645B1013	425S	2	
(61)	U/L-FM FIA	2	425S	1-1/2	210D	1-1/2	C645A1030	V710JES AH2A112A10	2	8215A53	1	V710JESV22 AH2A112S10	C645B1013	425S	2	
(62)	U/L-FM	2-1/2	425S	2-1/2	RV-110	2-1/2	C645A1030	V710KES AH2A112A10	2-1/2			V710KESV22 AH2A112S10	C645B1013	425S	2-1/2	
(64)	U/L-FM	2-1/2	425S	2	210E	2	C645A1030	H117AK112	2-1/2			H117AK112F26V16	C645B1013	425S	2-1/2	
(65)	U/L-FM FIA	2-1/2	425S	2-1/2	RV-110	2-1/2	C645A1030	V710KES AH2A112A10	2-1/2	8215A63	1-1/4	V710KESV22 AH2A112S10	C645B1013	425S	2-1/2	
(66)	U/L-FM FIA	2-1/2	425S	2-1/2	RV-91	2-1/2	C645A1030	H117AK112	2-1/2	8215A63	1-1/4	H117AK112F26V16	C645B1013	425S	2-1/2	
(67)	U/L-FM FIA	2-1/2	425S	2	210E	2	C645A1030	H117AK112	2-1/2	8215A63	1-1/4	H117AK112F26V16	C645B1013	425S	2-1/2	
(68)	U/L-FM	3	425S	3	RV-110	3	C645A1030	V710LES AH2A112A10	3			V710LESV22 AH2A112S10	C645B1013	425S	3	
(70)	U/L-FM	3	425S	3	RV-110	3	C645A1030	H117AL112	3			H117AL112F26V16	C645B1013	425S	3	
(71)	U/L-FM	3	425S	3	RV-110	3	C645A1030	H117AL112	3			H118AL112F26V16	C645B1013	425S	3	
(72)	U/L-FM	3	425S	3	RV-130	4	C645A1030	H117AL112	3			H117AL112F26V16	C645B1013	425S	3	
(73)	U/L-FM FIA	3	425S	3	RV-110	3	C645A1030	V710LES AH2A112A10	3	8215A63	1-1/4	V710LESV22 AH2A112S10	C645B1013	425S	3	
(74)	U/L-FM FIA	3	425S	3	RV-110	3	C645A1030	H117AL112	3	8215A63	1-1/4	V710LESV22 AH2A112S10	C645B1013	425S	3	
(75)	U/L-FM FIA	3	425S	3	RV-110	3	C645A1030	H117AL112	3	8215A63	1-1/4	H117AL112F26V16	C645B1013	425S	3	
(76)	U/L-FM FIA	3	425S	3	RV-130	3	C645A1030	H117AL112	3	8215A63	1-1/4	H118AL112F26V16	C645B1013	425S	3	
(77)	U/L-FM FIA	3	425S	3	RV-130	4	C645A1030	H117AL112	3	8215A63	1-1/4	H117AL112F26V16	C645B1013	425S	3	
(84)	U/L-FM FIA	3	425S	3	210G	3	C645A1030	H117AL112	3	8215A63	1-1/4	H117AL112F26V16	C645B1013	425S	3	
(85)	U/L-FM FIA	3	425S	3	210G	3	C645A1030	H117AL112	3	8215A63	1-1/4	H118AL112F26V16	C645B1013	425S	3	
(86)	U/L-FM FIA	4	425F	4	RV-130	4	C645A1030	H117AN112	4	8215A83	2	H117AN112F26V16	C645B1013	425F	4	
(87)	U/L	1-1/4	425S	1-1/4	RV-60	1-1/4		K3A672	1-1/4			B50DF172A107		425S	1-1/4	

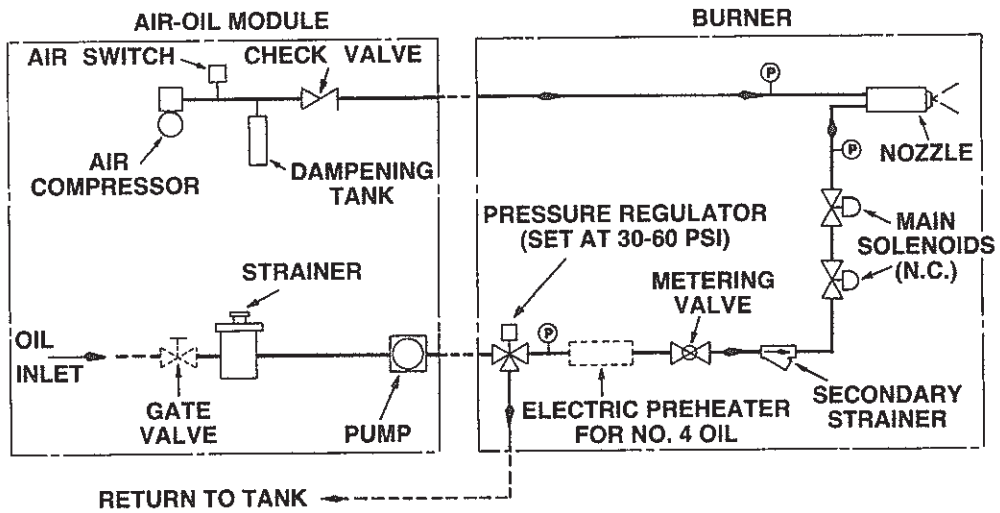
**GAS TRAIN COMPONENTS (CONT'D)**

NUMBER	APPROVAL	SIZE (IN.)	MAIN GAS COCK		REGULATOR		LOW PRESS. INTERLOCK HONEYWELL	SAFETY VALVE #1		VENT VALVE		SAFETY VALVE #2		HIGH PRESS. INTERLOCK HONEYWELL	CHECKING COCK	
			DeZURIK MODEL	SIZE (IN.)	MAXITROL MODEL	SIZE (IN.)		MODEL	SIZE (IN.)	MODEL	SIZE (IN.)	ASC0 MODEL	SIZE (IN.)			MODEL
(88)	U/L	1-1/2	42SS	1-1/2	RV-81	1-1/2	-	K3A682	1-1/2	-	-	B50DF182A107	1-1/2	-	42SS	1-1/2
(89)	U/L	2	42SS	2	RV-91	2	-	K3E59A2	2	-	-	B50D59F2AA107	2	-	42SS	2
(90)	U/L	2-1/2	42SS	2-1/2	RV-91	2-1/2	-	K3E51A2	2-1/2	-	-	B50D51F2AA107	2-1/2	-	42SS	2-1/2
(96)	U/L-FM	1	42SS	1	RV-60	1	C645A1030	V710FES AH2A112A10	1	-	-	B50DF162A107	1	C645B1013	42SS	1
(97)	U/L-FM	1	42SS	1	210D	1	C645A1030	V710FES AH2A112A10	1	-	-	B50DF162A107	1	C645B1013	42SS	1
(98)	U/L-FM	1-1/4	42SS	1-1/4	RV-60	1-1/4	C645A1030	V710GES AH2A112A10	1-1/4	-	-	B50DF172A107	1-1/4	C645B1013	42SS	1-1/4
(99)	U/L-FM	1-1/2	42SS	1-1/2	RV-81	1-1/2	C645A1030	V710HES AH2A112A10	1-1/2	-	-	B50DF182A107	1-1/2	C645B1013	42SS	1-1/2
(100)	U/L-FM	2	42SS	2	RV-91	2	C645A1030	V710JES AH2A112A10	2	-	-	B50D59F2AA107	2	C645B1013	42SS	2
(101)	U/L-FM	2-1/2	42SS	2-1/2	RV-91	2-1/2	C645A1030	V710KES AH2A112A10	2-1/2	-	-	B50D51F2AA107	2-1/2	C645B1013	42SS	2-1/2
(102)	U/L-FM	3	42SS	3	RV-110	3	C645A1030	V710LES AH2A112A10	3	-	-	B50D2F2AA107	3	C645B1013	42SS	3
(103)	U/L-FM	1-1/4	42SS	1-1/4	RV-60	1-1/4	C645A1030	K3A672	1-1/4	-	-	V710GES AH2A112A10	1-1/4	C645B1013	42SS	1-1/4
(104)	U/L-FM	1-1/4	42SS	1-1/4	210D	1-1/4	C645A1030	K3A672	1-1/4	-	-	V710GES AH2A112A10	1-1/4	C645B1013	42SS	1-1/4
(105)	U/L-FM	1-1/2	42SS	1-1/2	RV-81	1-1/2	C645A1030	K3A682	1-1/2	-	-	V710HES AH2A112A10	1-1/2	C645B1013	42SS	1-1/2
(106)	U/L-FM	1-1/2	42SS	1-1/2	210D	1-1/2	C645A1030	K3A682	1-1/2	-	-	V710HES AH2A112A10	1-1/2	C645B1013	42SS	1-1/2
(107)	U/L-FM	2	42SS	2	RV-91	2	C645A1030	K3E59A2	2	-	-	V710JES AH2A112A10	2	C645B1013	42SS	2
(108)	U/L-FM	2	42SS	1-1/2	210D	1-1/2	C645A1030	K3E59A2	2	-	-	V710JES AH2A112A10	2	C645B1013	42SS	2
(109)	U/L-FM	2-1/2	42SS	2-1/2	RV-91	2-1/2	C645A1030	K3E51A2	2-1/2	-	-	V710KES AH2A112A10	2-1/2	C645B1013	42SS	2-1/2
(110)	U/L-FM	3	42SS	3	RV-110	3	C645A1030	K3E52A2	3	-	-	V710LES AH2A112A10	3	C645B1013	42SS	3

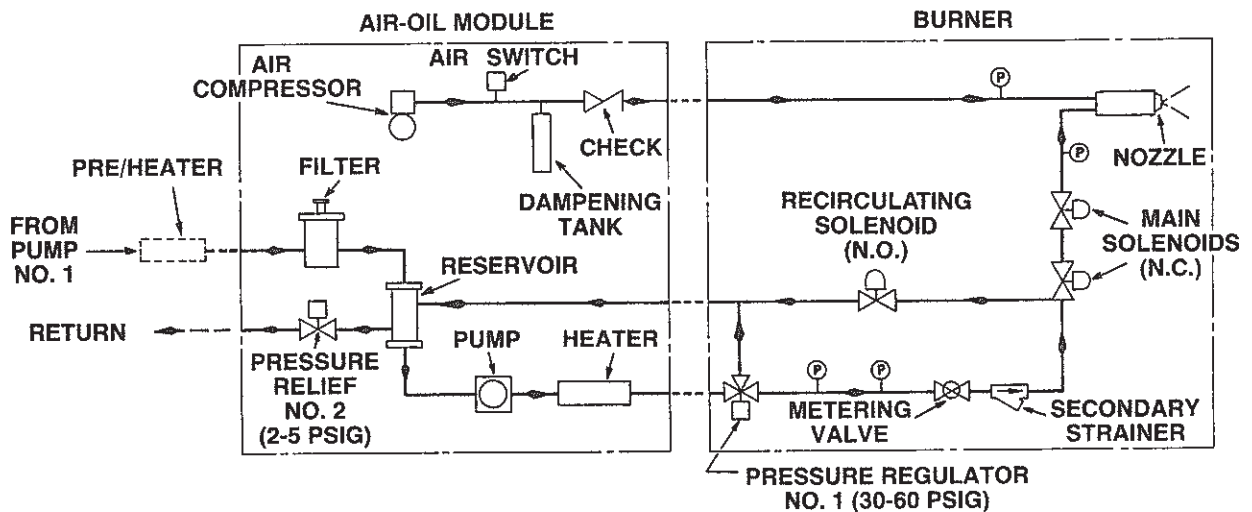




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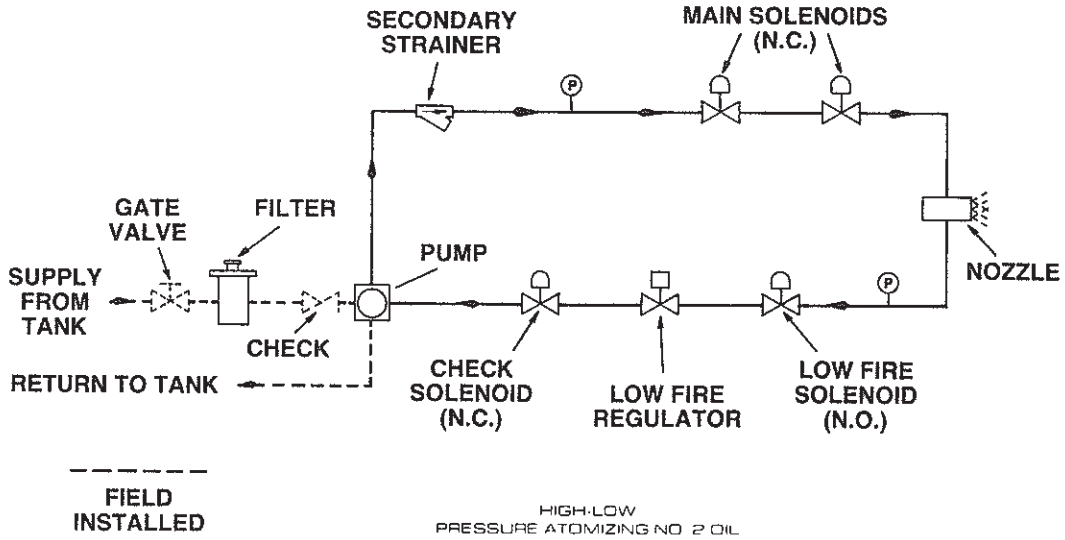


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