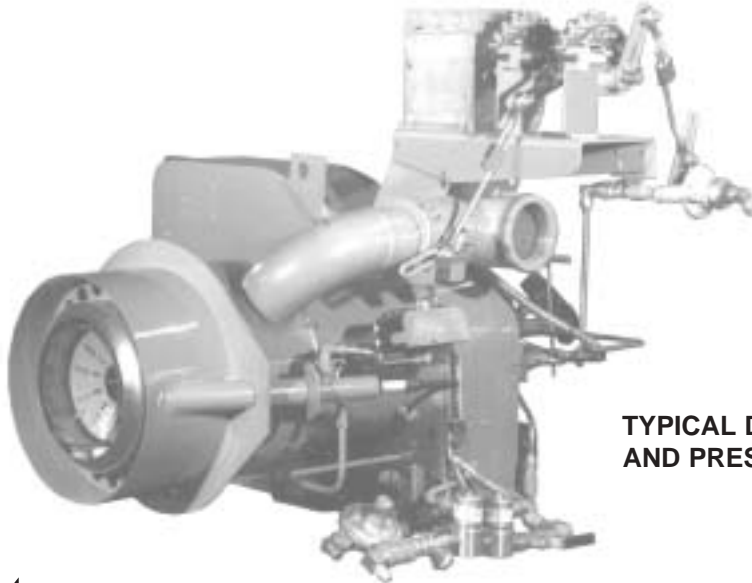


1	F	15.2	Rev. 12
1-03	Replaces	4-97	

TYPE FL *TURBO*RING FORCED DRAFT BURNERS

Patented\*

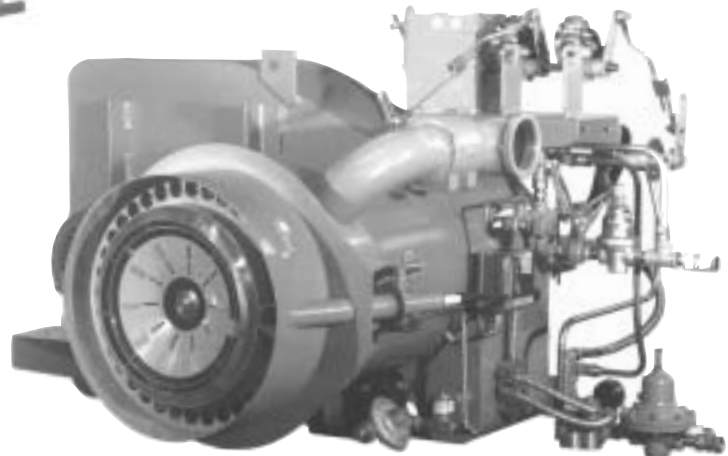
USING GAS AND LIGHT OIL  
MECHANICAL PRESSURE, AIR OR STEAM ATOMIZATION



TYPICAL DUAL-FUEL BURNER WITH GAS AND PRESSURE ATOMIZING OIL SYSTEM



 FOLD OUT

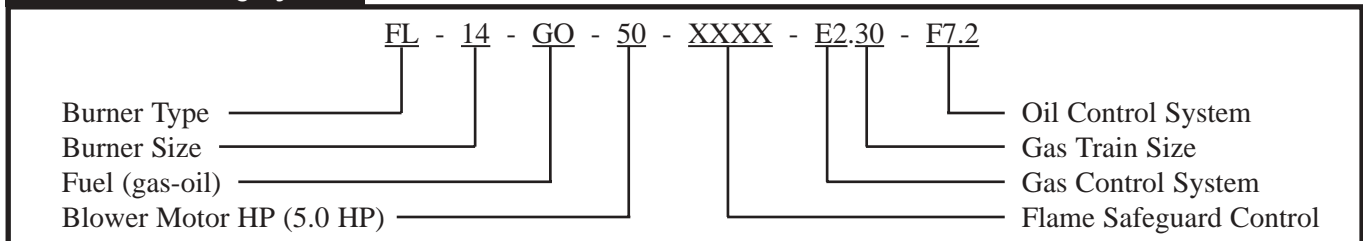


TYPICAL DUAL-FUEL BURNER WITH GAS AND AIR, OR STEAM ATOMIZING OIL SYSTEM

**NOTE**

Air compressor is standard with air atomizing systems only. It is optional (extra cost) for steam atomizing units. Oil, gas and air pressure gauges are optional.

**Burner Numbering System**



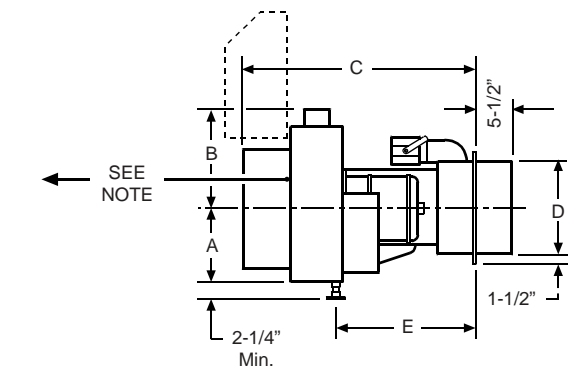
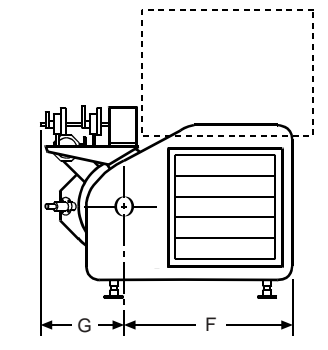
1 See Catalog Sheet 1-Gen-10.1 for burner numbering.

2 Use Order Entry and Equipment Pricing Form 1196 when placing order.

\*Covered by one or more of the following patents:  
U.S. patent numbers 4785680; 4932274; 5441404;  
5722821; 5944506; 5957682. Canadian patent  
number 1279632 and Canadian patents pending.

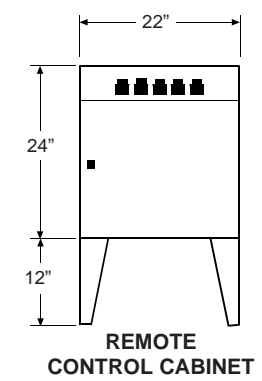
# Specifications, Capacities and Dimensions

BASIC BURNER MODEL NO.	MAXIMUM FIRING RATE COMBUSTION CHAMBER PRESSURE								BURNER BLOWER MOTOR		MECHANICAL PRESS. ATOMIZATION AT 300 PSIG BURNER OIL PUMP SET			AIR ATOMIZATION AT 30 PSIG AIR COMPRESSOR			SHIPPING WEIGHT LBS. APPROX.	OVERALL BURNER DIMENSIONS (INCHES)						
	DRAFT-.05" W.C.		LOW PRESSURE				HIGH PRESSURE																	
	NATURAL GAS	OIL	PRESS.	NATURAL GAS	OIL	PRESS.	NATURAL GAS	OIL	HP	RPM	MODEL NO.	HP	RPM	MODEL NO.	HP	RPM	A	B	C	D	E	F	G	
	BTU/HR 1000s	GPH	INCHES W.C.	BTU/HR 1000s	GPH	INCHES W.C.	BTU/HR 1000s	GPH																
FL10 15	3650	26	0.5	3360	24	-	-	-	1-1/2	3450	HS2D-50	1/2	1725	LE5	2	1725	570							
FL10.1 30	-	-	0.5	4400	31	1.3	4200	30	3	3450	HS2D-50	1/2	1725	LE5	2	1725	600	10-1/4	21	31-7-8	10	22	22	16
FL10 30	4750	34	-	-	-	-	-	-	3	3450	HS2D-60	1/2	1725	LE5	2	1725	600							
FL10.2 50	-	-	0.5	5500	39	-	-	-	5	3450	HS2D-115	1-1/2	1725	LE5	2	1725	620							
FL10.1 50	6050	43	-	-	-	-	-	-	5	3450	HS2D-115	1-1/2	1725	LE5	2	1725	620							
FL12.3 20.4	-	-	0.5	5000	36	-	-	-	2	1725	HS2D-60	1/2	1725	LE5	2	1725	625	10-1/4	21	32-7/8	12	21	26-1/4	16
FL12.2 20.4	5500	39	-	-	-	-	-	-	2	1725	HS2D-115	1-1/2	1725	LE5	2	1725	625							
FL12 30	-	-	0.5	6300	45	1.5	5600	40	3	3450	HS2D-115	1-1/2	1725	LE5	2	1725	650	10-1/4	21	30	12	20	22	16
FL12.9 30	7000	50	-	-	-	-	-	-	3	3450	HS2D-115	1-1/2	1725	LE5	2	1725	650							
FL12.4-G-30.4	-	-	0.5	7100	-	-	-	-	3	1725	GAS ONLY						700	10-1/4	21	32-7/8	12	21	26-1/4	16
FL12.3-G-30.4	7600	-	-	-	-	-	-	-	3	1725							700							
FL12.1 50	-	-	0.5	7700	55	2.0	6700	48	5	3450	HS2D-115	1-1/2	1725	LE5	2	1725	700	10-1/4	21	30	12	20	22	16
FL12 50	8400	60	-	-	-	-	-	-	5	3450	HS2D-115	1-1/2	1725	LE5	2	1725	700							
FL12.4 50	-	-	-	-	-	1.5	8400	60	5	3450	HS2D-115	1-1/2	1725	LE5	2	1725	800	11	17	36-1/2	12	20-1/2	29-7/8	16
FL12.5 75	-	-	-	-	-	3.0	8400	60	7-1/2	3450	HS2D-115	1-1/2	1725	LE5	2	1725	850							
FL14 30.4	-	-	0.5	9100	65	-	-	-	3	1725	HS2D-115	1-1/2	1725	LE6	3	1725	900							
FL14.9 30.4	8400	60	-	-	-	-	-	-	3	1725	HS2D-115	1-1/2	1725	LE5	2	1725	900							
FL14.1 50.4	-	-	0.5	9800	70	-	-	-	5	1725	HS2D-115	1-1/2	1725	LE6	3	1725	1000							
FL14 50.4	11200	80	-	-	-	-	-	-	5	1725	HS2D-180	1-1/2	1725	LE6	3	1725	1000	12-3/8	18-1/2	33-1/2	14	21-1/2	28-1/4	16
FL14.9 30	9800	70	0.5	9700	69	2.0	9000	64	3	3450	HS2D-115	1-1/2	1725	LE6	3	1725	1000							
FL14 50	12300	88	0.5	11200	80	-	-	-	5	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1000							
FL14.1 75	-	-	-	-	-	2.0	10500	75	7-1/2	3450	HS2D-115	1-1/2	1725	LE6	3	1725	1100							
FL16 50.4	-	-	0.5	12600	90	-	-	-	5	1725	HS2D-180	1-1/2	1725	LE6	3	1725	1200							
FL16.9 50.4	14000	100	-	-	-	-	-	-	5	1725	HS2D-180	1-1/2	1725	LE6	3	1725	1200							
FL16.1 75.4	-	-	0.5	14000	100	-	-	-	7-1/2	1725	HS2D-180	1-1/2	1725	LE6	3	1725	1300							
FL16 75.4	15400	110	-	-	-	-	-	-	7-1/2	1725	HS2D-180	1-1/2	1725	LE6	3	1725	1300							
FL16.9 50	-	-	-	-	-	0.7	12600	90	5	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1300	12-1/2	18-7/8	37-1/2	16	21-1/2	30-1/4	16
FL16 75	-	-	0.5	15400	110	1.6	12600	90	7-1/2	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1300							
FL16.9 75	16800	120	-	-	-	-	-	-	7-1/2	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1300							
FL16.1 100	-	-	0.5	16800	120	2.3	14700	105	10	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1400							
FL16 100	18480	132	-	-	-	-	-	-	10	3450	HS2D-320	2	1725	LE7	3	1140	1400							
FL16.1 150	-	-	-	-	-	2.5	16800	120	15	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1400							
FL18.9 75	-	-	-	-	-	0.9	16800	120	7-1/2	3450	HS2D-180	1-1/2	1725	LE6	3	1725	1400							
FL18 75.4	-	-	0.5	17500	125	-	-	-	7-1/2	1725	HS2D-320	2	1725	LE6	3	1725	1400							
FL18.9 75.4	19200	137	-	-	-	-	-	-	7-1/2	1725	HS2D-320	2	1725	LE7	3	1140	1400							
FL18.9 100	-	-	0.5	19200	137	-	-	-	10	3450	HS2D-320	2	1725	LE7	3	1140	1500	12-1/2	18-7/8	37-1/2	18	21-1/2	30-1/4	16
FL18.8 100	18200	130	-	-	-	-	-	-	10	3450	HS2D-320	2	1725	LE6	3	1725	1500							
FL18 150	-	-	0.5	19200	137	2.5	16800	120	15	3450	HS2D-320	2	1725	LE7	3	1140	1600							
FL18.9 150	23100	165	-	-	-	-	-	-	15	3450	HS2D-320	2	1725	LE7	3	1140	1600							
FL18.1 200	-	-	0.5	23100	165	3.0	21000	150	20	3450	HS2D-320	2	1725	LE7	3	1140	1700							
F18 200	24600	176	-	-	-	-	-	-	20	3450	HS2D-320	2	1725	LE7	3	1140	1700							
FL18.2 250	-	-	0.5	27300	175	4.0	25200	180	25	3450	HS2D-320	2	1725	LE7	3	1140	1800	14-7/8	21	43	18	25-1/2	37-3/8	16
FL18.2 300	-	-	0.5	29400	210	-	-	-	30	3450	HS2D-320	2	1725	LE7	7-1/2	1725	1900							
FL18.1 300	30500	218	-	-	-	-	-	-	30	3450	HS2D-320	2	1725	LE7	7-1/2	1725	1900							



**NOTE**

Dimension C plus burner nose length (5-1/2" standard) is required behind the burner to remove the drawer assembly.



Fuel	
Gas	= G
Oil	= O
Gas/Oil	= GO
See 1-F-15.25 for Heavy Oil	

- Capacity based upon an approximation of 80% combustion efficiency using higher heating value (HHV) of the fuel and maximum burner capacity at an elevation of 2,000 feet. Capacity will be reduced 4% for each additional 1,000 feet of elevation. Pressurized furnace rating will apply to most 2-pass boilers with pressurized construction. Consult factory for 3 and 4-pass boilers and higher firebox pressures. Refer to catalog sheet 1-GEN-10.53 to determine gas control train size and to 1-F-15.3 for orifice size for the specific job conditions.
- Oil burners - No. 2 oil, GPH based upon 140,000 BTU/U. S. gallon. Maximum viscosity 38 SSU at 100° F average 31 Redwood seconds. Mechanical pressure, air or steam atomizing, gas pilot ignition standard. Spark ignition of No. 2 oil optional on burners under 60 GPH.
- Standard motor voltage 240/480-60-3.
- Weight will vary by burner depending on size and type of gas train, type of fuel control system, etc. The figure shown represents a burner with standard controls including gas train.
- Dimensions shown cover the most commonly used burners within each size. These dimensions are typical and subject to change without notice. Request a certified print for specific dimensions.

# Standard Equipment

DESCRIPTION		FUEL CONTROL SYSTEMS						
		MODULATING PROVEN LOW FIRE START						
		GAS SYSTEM	OIL SYSTEMS			GAS-OIL SYSTEMS		
			E2	Pressure Atomizing F7.2	Air Atomizing F8.2	Steam Atomizing F9.2	E2F7.2	E2F8.2
GEN'L	Burner Motor and Fan Air Inlet Register Air Flow Safety Switch Proven Low Fire Start, Modulating Motor Air-Fuel Control Flame Detector (Scanner Type) Characterized Linkage	X	X	X	X	X	X	X
CONTROL CABINET	Control Cabinet, 22" x 24", 4 Indicator Lights & Control Switch Combustion Flame Safeguard Control Motor Contactor and O. L. Protection Modulating Sub-Panel with Manual-Auto Switch & Manual Potentiometer	X	X	X	X	X	X	X
	Air Compressor Motor Contactor & O. L. Protection			X			X	
	Oil Pump Motor Contactor w/O.L. Protection		X			X		
	Fuel Transfer Switch (Gas-Oil)					X	X	X
GAS PILOT SYSTEM	Safety Pilot Burner Gas Pilot Ignition Transformer, 6000V. Pilot Solenoid Valve Pilot Gas Pressure Regulator (Low Pressure Type) Pilot Shutoff Cock	X	X	X	X	X	X	X
GAS CONTROL	Butterfly Gas Valve Safety Leak Test Cock Gas Pressure Gauge U. L. Gas Control Train (Not Included in Price of Burner)	X				X	X	X
OIL CONTROL	Oil Drawer Assembly with Air Diffuser Main Oil Solenoid Valve Safety Oil Solenoid Valve Low Oil Pressure Switch (When Required) Manual Valve Oil Pressure Gauges Oil Metering Valve		X	X	X	X	X	X
	Oil Strainer Burner Oil Pump Set Bypassing Oil Nozzle Check Valve (Return Line) Check Valve (Supply Line)		X			X		
	Air or Steam Atomizing Oil Nozzle Oil Pressure Regulator (except size 18 burner) Flexible Metal Hose Oil Supply Line			X	X		X	X
AIR CONTROL	Air Compressor Low Air Pressure Switch Back Pressure Regulating & Relief Valve Flexible Air Supply Line Air Pressure Regulating Valve Air Pressure Gauges Air Metering Valve Air Check Valve			X			X	
STEAM CONTROL	Manual Valve Low Atomizing Steam Pressure Switch Steam Strainer Steam Regulator Steam Metering Valve Steam Trap Steam Solenoid Valve Steam Check Valve Condensate Manual Valve Flexible Metal Hose Steam Supply Line				X			X