

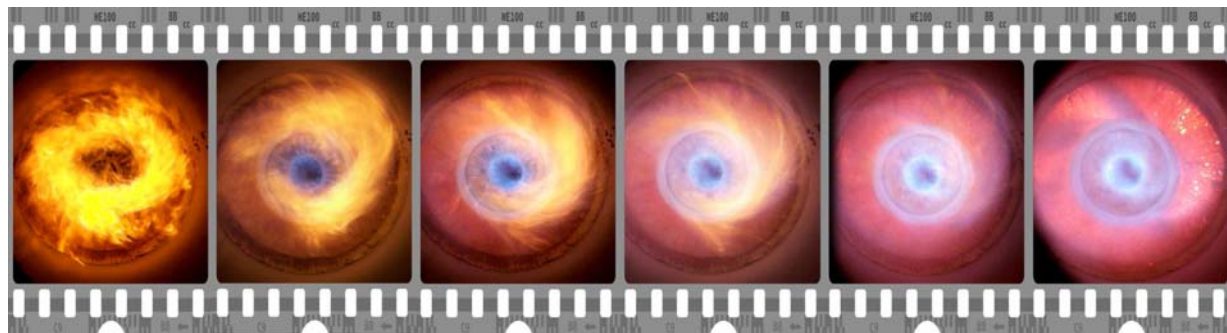
FD68 Axial Flow Burner

Since 1903



The Power of Axial Flow

Proven Reliability • Superior Performance
Heavy Duty Construction • Quiet Operation
Easy to Maintain





Reliability & Performance

Efficient Axial Flow Technology
Compact Package, Easy Installation
New Installations, Plant Retrofits

Commercial Heating, Industrial Steam
Scotch Marine, Water Tube, Firebox Boilers
Water Heaters, Process Furnaces

Superior Performance

Efficient axial flow arrangement, high performance firing head provide superior stability, excess air and turndown.

Heavy Duty Construction

Industrial grade welded steel housing, steel air fan wheel, stainless flame diffuser for an industrial-grade burner and long service life.

Quiet Operation

Backward-inclined air blower, heavy-duty burner housing and integral fan silencer for the lowest noise levels in the industry.

Ease of Service

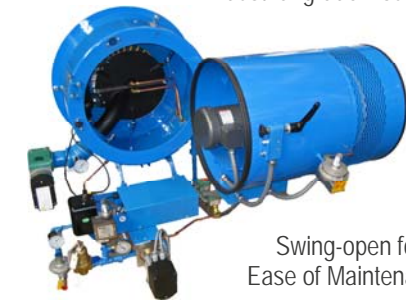
Burner housing opens for easy access to firing head, pilot, flame scanner, oil nozzle. No need to disconnect fuel piping or linkage.

System Specs

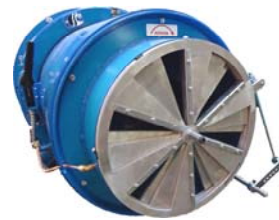
Capacities: 50 to 1200 boiler HP
Fuels: Natural Gas, LPG, Biogas • #2 / #6 Fuel Oil, Combination Gas & Oil with fuel switchover
Excess Air: 15% standard
Emissions: Low NOx available on FD68-LN model
Motor power: 460 V, 3 Ph, 60 Hz standard
230, 380, 575 V, 50 Hz optional
Control power: 120 V, 60 Hz standard
220 V, 50 Hz optional
Approvals: UL listed for US and Canada, NYC DEP
Standards: UL standard
CSD-1, IRI, FM, NFPA or NYC-DEP optional

Powerful Features

Industrial-grade Housing



Swing-open for Ease of Maintenance



Triple-disk Damper for Precise Air Control



High Performance Firing Head Removes Easily for Maintenance



Triple-pass Oil Heater for Reliable Cold Start Up

Complete System



Standard Equipment - All Units

- Heavy duty, steel welded burner housing
- Integral air fan with premium efficiency motor
- Integral fan silencer on all units
- Precise triple disk air control damper (vortex damper on sizes 800 and up)
- Firing head/diffuser assembly
- Refractory throat, pre-cast with stainless flange
- Gas-electric ignition system



Integral Fan Silencer
for Quiet Operation



US, Canada

State of the Art Controls

- Full modulation fuel-air control with linkage
- NEMA 1 control panel
- Flame Safeguard system with status indication
- UV flame scanner
- Manual-Auto firing rate selector
- Firing rate potentiometer
- Annunciating lights for system status
- Motor starter for air fan
- Motor starters for atomizing air compressor and oil pump on oil-fired units



Gas-fired Units

All standard equipment, plus the following:

- Butterfly gas control valve
- Gas shutoff valves and safety interlocks

Light Oil-fired Units

All standard equipment, plus the following:

- Oil metering control valve
- Oil shutoff, return valves and safety interlocks
- Oil pump, motor and oil strainer
- Oil pressure regulator
- Atomizing air compressor on air atomized units

Heavy Oil-fired Units

All equipment for light oil units, plus the following:

- Electric oil trim heaters
- Oil nozzle triple-pass line heater
- Oil nozzle line purge

Optional Equipment

- Linkage-less parallel positioning fuel-air modulation control for higher efficiency and wider turndown
- Variable Frequency Drive on air fan motor
- Oxygen trim
- NEMA 4 control panel
- IR flame scanner
- Characterized gas fuel control valve



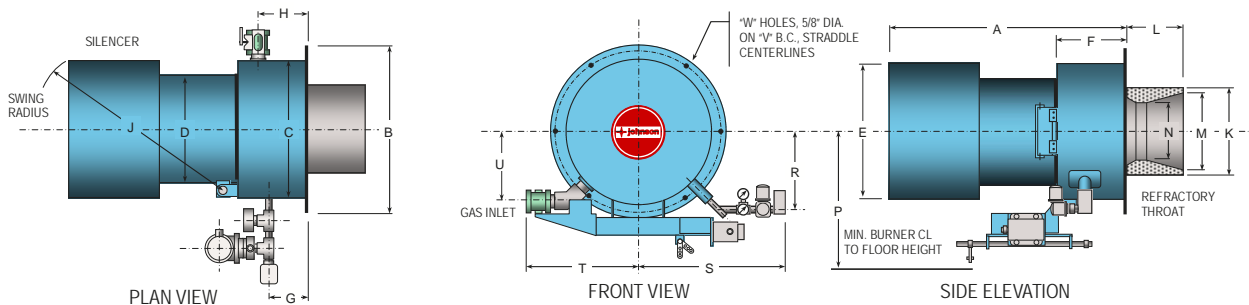
Capacities and Specifications

Burner Size	Burner Capacity ⁽¹⁾				Air Blower HP	Pump HP-RPM ⁽²⁾⁽³⁾			Air Compr. HP	Gas Train Size	Oil Heater kW ⁽⁴⁾	
	MBH Gas	GPH #2 Oil	GPH #6 Oil	Boiler HP		Press. Atom. #2	Air Atom. #2	Air Atom. #6			#4-5 oil (-MM)	#6 oil (-HM)
50	2,100	15	14	50	1/2	3/4-1725	1/3-1725	3/4-307	2	1 1/2	3	3
75	3,570	25	23	85	3/4	3/4-1725	1/3-1725	3/4-307	2	2	3	4
100	4,620	33	31	110	1 1/2	3/4-1725	1/3-1725	3/4-307	2	2	3	5
125	5,600	40	37	140	2	3/4-1725	1/3-1725	3/4-307	2	2 1/2	3	5
150	7,350	52	48	175	2	3/4-1725	1/3-1725	3/4-307	2	2 1/2	5	8
200	10,050	72	67	240	5	1-1725	1/3-1725	3/4-307	2	3	5	10
250	11,200	80	75	265	7 1/2	1-1725	1/2-1725	3/4-307	2	3	5	10
300	14,280	102	95	340	7 1/2	1 1/2-3450	1/2-1725	3/4-601	3	3	7	14
400	20,160	144	134	480	15	n/a	3/4-1725	3/4-601	3	4	10	20
500	24,150	172	160	575	20	n/a	3/4-1725	3/4-601	3	4	10	20
625	31,500	224	210	750	25	n/a	3/4-1725	1 1/2-601	5	4	10	20
800	33,600	240	224	800	30	n/a	1-1725	2-800	7 1/2	4	10	20
1000	42,000	282	300	1000	40	n/a	1-1725	2-800	7 1/2	4	10	20
1200	50,400	360	336	1200	75	n/a	1 1/2-1725	2-800	10	4	12	24

Notes:

- Burner capacity firing gas based on natural gas with 1000 Btu/SCF HHV and 0.64 specific gravity. Burner capacity firing oil based on #2 CSG with 140,000 Btu/Gal HHV. Boiler capacity based on 80% combustion efficiency, +0.75 inch WC furnace pressure, 60 Hz motor voltage and sea level.
- Oil pump and atomizing air compressor are direct drive and are shipped loose to be installed in the field by others.
- Optional NYC DEP-approved Electronic Metering System (EMS) for #6 oil uses a 1/3 HP 90 VDC motor (1/2 HP size 800 and up). The EMS fuel oil supply pump is priced separately.
- Electric oil trim heater capacity in combined kW. Most #6 fuel oil burners include two trim heaters.

Dimensions (Inches)



Burner Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W
50-125	36 5/8	22 1/2	20	15 1/4	15 1/4	9 3/8	5 1/2	5 5/8	27 1/8	16	12	13 1/2	9 13/16	19	14	22 3/4	13 5/8	8 5/8	21 1/4	6
150-250	44 1/2	26 1/2	24	19 3/8	19 1/4	10 1/4	5 3/4	6 5/8	35 3/8	19 1/8	12 3/4	15 3/4	12 3/4	26	15 1/2	24 3/8	17 3/4	10 1/2	25 1/4	6
300	52 1/4	31 1/2	29	24 3/8	28 3/4	13	6 3/4	8	44 1/2	20	13 1/2	16 1/2	13 3/4	28	17 5/8	26 7/16	19 3/4	12 1/2	30 1/4	6
400	52 1/4	31 1/2	29	24 3/8	28 3/4	13	6 3/4	8	44 1/2	22	13 1/2	18 1/2	15 3/4	28	17 5/8	26 7/16	19 3/4	12 1/2	30 1/4	6
500	56 1/4	36 1/2	34	28 7/8	35	13	6 1/4	8	51 3/4	22 3/4	13 1/2	19 1/4	16 1/2	30	19 5/8	28 5/8	24	14 5/8	35 1/4	6
625	56 1/4	36 1/2	34	28 7/8	35	13	6 1/4	8	51 3/4	23 3/4	13 1/2	20 1/4	17 1/2	30	19 5/8	28 5/8	24	14 5/8	35 1/4	6
800-1000	67 1/2	41	38	32 7/8	39	17 1/2	10 1/2	10	59 7/8	28	15	24	20 1/2	30	21	30 3/4	26	18	39 1/2	12
1200	77	41	38	36 1/2	45	17 1/2	10 1/2	10	71 5/8	32	15	26	22	30	21	30 3/4	26	18	39 1/2	12

Note: All dimensions subject to change without notice. Consult factory for the most current information.

S.T. Johnson Company

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Your authorized S.T. Johnson distributor