

3 – 1 Standard Modulating Forced Draft Gas Fired Furnace on McQuay Applied Rooftop Systems

Group: **Applied Systems**Part Number: **IM 343-5**Date: **October 2007**

FC**A* with RM7897A Flame Safeguard LP Gas (Propane) Supplement to IM 684-4**

McQuay Applied Rooftop natural gas furnaces can also be used with LP gas with minor factory modifications. These modifications must be made at the factory by McQuay personnel. IM 684-4 “Forced Draft Gas Fired Furnace” is also applicable for LP gas and should be referred to with the following exceptions noted:

1. The CO₂ reading (check CO₂, CO, and stack temperature on page 14 of IM 684-4) when properly adjusted:
 - a. High fire = 10.5 through 12%
 - b. Low fire = 10 through 11.5%
2. The main pressure regulator has adjustable output of 5.5 to 12" w.c. and it is factory set for 9" w.c. (for proper gas orifice pressure, see the back page of this supplement). The maximum LP gas inlet pressure is 0.5 psi.
3. The “Capacities and Adjustments” table from page 26 of IM 684-4 has been converted for LP gas and is reproduced on the back page of this supplement. The new orifice sizes indicated are factory provided for LP gas applications.
4. The differences between a natural gas and LP furnace:
 - a. The burner air slide plate located at the discharge of the fan box is changed.
 - b. The modulating gas valve linkage adjustments and some components are changed.
 - c. The main gas orifice and the pilot gas orifice is changed.
 - d. Models 020 – 032 use a different combination gas control.
 - e. The main gas pressure regulators use different springs.
 - f. Models 032 – 050 require detuning baffles for LP application.
 - g. Models 032 – 064 must be modulating for LP application.

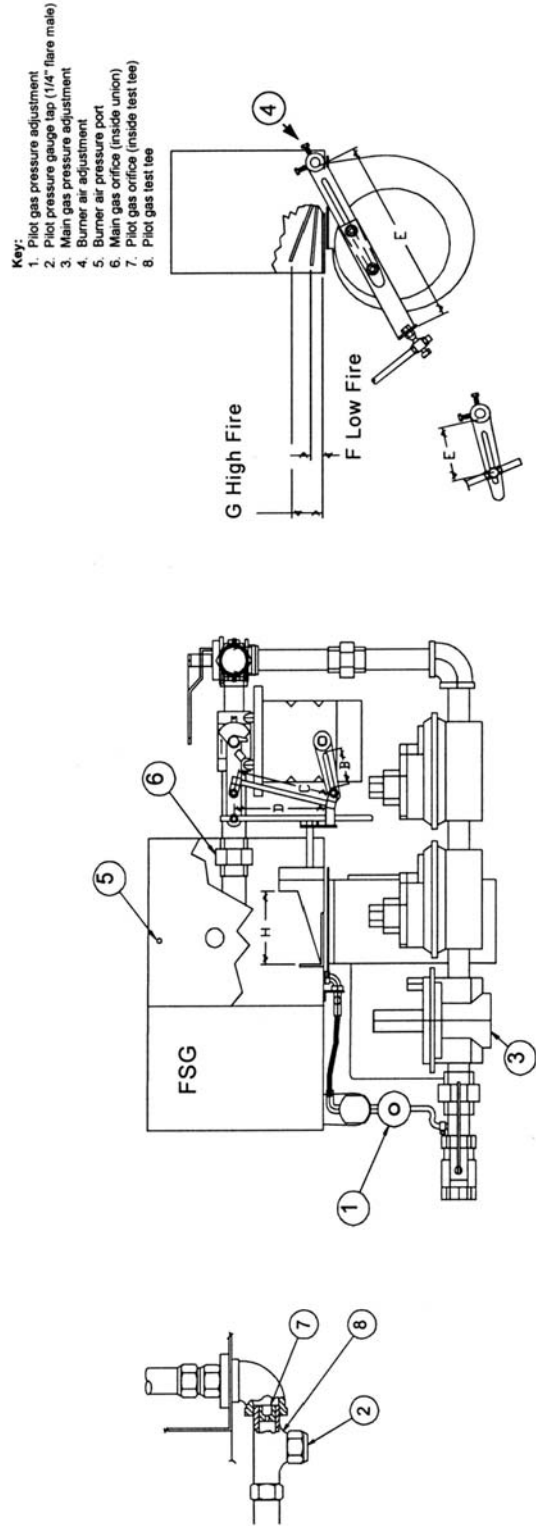
Capacities and Adjustments – 60 Hz

Model No.	Input			Furnace			LP Gas @ 2500 Btu/Cubic Feet				Running Current Amps	Dimensions						Gas Conn. Size IPS							
	@ Max Rate		(5) @ Min. Rate	Min CFM	Max TR °F	FLC Limit °F	(4) Pilot Orifice #62 Drill		Main Burner			(1) Min. Gas Inlet Press. in. w.c.	A	B	C	D	E		F	G	H				
	MBH	CFH (2)	MBH	CFH (2)	CFM	TR °F	FLC °F	(3) Air Press. in. w.c.	Gas Press. Adj. in. w.c.	(5) Air Box Press. in. w.c.												Std. Orif. Drill in.	Gas Manifold Orifice Press. for % of Max. Input in. w.c.	100%	90%
FC 020	250	100	83	33	2300	80	215	2.00	3.60	2.13	.177	7.98	6.46	2.00	.86	11.0	.44	.18	2.93	5.50	6.75	.38	1.62	.31	.75
FC 025	312	125	104	42	3800	61	160	2.05	3.70	2.76	.199	6.45	6.84	2.11	.98	11.0	.38	.25	3.04	5.50	6.75	.40	1.70	.62	.75
FC 032	400	160	133	53	2950	100	196	1.80	2.80	2.76	.234	7.88	6.38	1.97	.90	11.0	.38	.36	3.36	6.00	7.06	.46	2.03	.75	.75
FC 040	500	200	167	67	6000	61	154	1.90	2.70	2.77	.261	8.58	7.03	2.17	.95	11.0	.25	.32	3.70	6.00	6.00	.66	2.30	.00	1.00
FC 050	625	250	208	83	4600	100	229	1.80	3.00	2.14	.290	8.20	6.64	2.05	.87	11.0	.25	.35	3.84	6.00	5.00	.70	2.42	.00	1.00
FC 064	800	320	267	107	9600	61	185	1.70	3.10	2.80	.316	8.92	7.23	2.23	1.01	11.0	.25	.30	3.72	6.00	3.35	.48	2.75	1.62	1.25
FC 065	812	325	271	108	5970	100	232	1.55	3.80	2.55	.316	9.06	7.34	2.27	1.00	11.0	.25	.16	3.57	6.75	3.06	.90	2.84	.88	1.25
FC 079	1000	400	333	133	12000	61	181	1.40	3.89	2.63	.348	8.75	7.09	2.19	1.00	11.0	.35	.30	3.80	7.25	3.92	.87	2.90	1.25	1.25
FC 080	1000	400	333	133	7340	100	229	1.60	3.00	2.50	.348	8.75	7.09	2.19	.93	11.0	.35	.30	3.84	7.00	4.00	.85	2.65	1.25	1.25
FC 100	1250	500	417	167	15000	61	170	1.45	2.60	2.67	.413	7.98	6.46	2.00	.81	11.0	.12	.52	4.09	6.00	7.81	.93	2.78	1.62	1.25
FC 110	1375	550	495	196	10100	100	222																		
FC 140	1750	700	583	233	21000	61	168																		
FC 150	1875	750	788	315	13700	100	194																		
FC 200	2500	1000	833	333	30000	61	151																		

Models FC 110 – 200 not available for LP gas

Notes: (1) Pressure is for modulating burner with standard gas train. for On/Off burners, deduct 0.50". Gas inlet pressures over 0.50 psis (13.9 in. w.c., 8 oz/sq. in.) require an additional high pressure regulator.

- (2) CFH of LP gas @ 2500 Btu/cu. ft.
- (3) Reading is with air damper at low fire position on modulating burners, cold heat exchanger.
- (4) Pilot gas orifice No. 62 drill (0.038 in. dia.)
- (5) Minimum fire on modulating burner
- (6) Reading at high fire



Valves, Dampers & Operators shown in Low Fire Position