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APPENDIX 7.3. DETERMINATION OF BASIC FURNACE MODELS

To determine basic furnace models, DOE selected 26 airflow/capacity bins. The Department selected the bins by looking at "common" (popular) sizes of input capacity in the Gas Appliances Manufacturers Association (GAMA) certified efficiency ratings database for the period April 2002 to October 2002.[1] The Department assumed that the frequency of models of a particular size indicated how common or popular the size was. Product literature and furnace manufacturer web sites helped in further determining series of furnaces considered to be "basic models."

To determine the characteristics of basic furnace models of non-condensing non-weatherized gas furnaces, the Department examined single-stage, natural gas furnaces that are not intended for mobile homes. In addition, DOE selected upflow and horizontal models since they represent the majority of models and often have similar or identical specifications and efficiency values to downflow models from the same manufacturer. (Of the 8,342 models in the GAMA directory, 77 percent were either horizontal or upflow.) Similarly, only non-condensing furnaces at or above 80 percent AFUE were picked since they represent the majority of non-weatherized gas furnaces. To further refine the basic model selection criteria, DOE used product literature to select models without variable speed blower motors. Manufacturer web sites provided information describing their furnaces. This information further helped distinguish between the different series of models.

The Department used a similar process to select basic models for condensing non-weatherized gas furnaces. Model characteristics included single-stage furnaces not intended for mobile homes. Since many condensing gas furnaces series are multi-position (upflow, horizontal, and downflow), DOE included upflow, horizontal, and downflow models. The Department gleaned this information from the GAMA database. To further refine the selection criteria, DOE used product literature to select models without variable speed blower motors.

The Department selected similar models that had the same capacity and nominal airflow (cfm). Most of the furnaces fit into four maximum nominal airflow sizes: 800 cfm (two-ton), 1200 cfm (three-ton), 1600 cfm (four-ton), and 2000 cfm (five-ton).

In terms of input capacity, most models fit into 12 input capacity bins. Some models did not exactly match the bins, but had similar enough values to be considered in the same bin. For example, 40 KBtu/h and 45 KBtu/h models are grouped together into a single 45 KBtu/h bin. The 4 nominal airflow sizes and 12 input capacities were combined into bins. Only 26 of these bins are used in the analysis. Some combinations of nominal airflow size and input capacity are not manufactured.

Each of the 26 bins has at least two models, with the exception of two-ton, 50 KBtu/h non-condensing bin, 45 KBtu/h, two-ton condensing bin, and four-ton 115, 120, and 125 KBtu/h condensing bins. Finally, the 150 KBtu/h, five-ton bin was not selected, since there are very few condensing models are over 125 KBtu/h and none that are close to 150 KBtu/h.

The 12 different input capacities from 45 KBtu/h to 140 KBtu/h give a good range to match different home sizes.

Figure 7.3.1 shows the number of models by input capacity for non-weatherized gas furnaces.

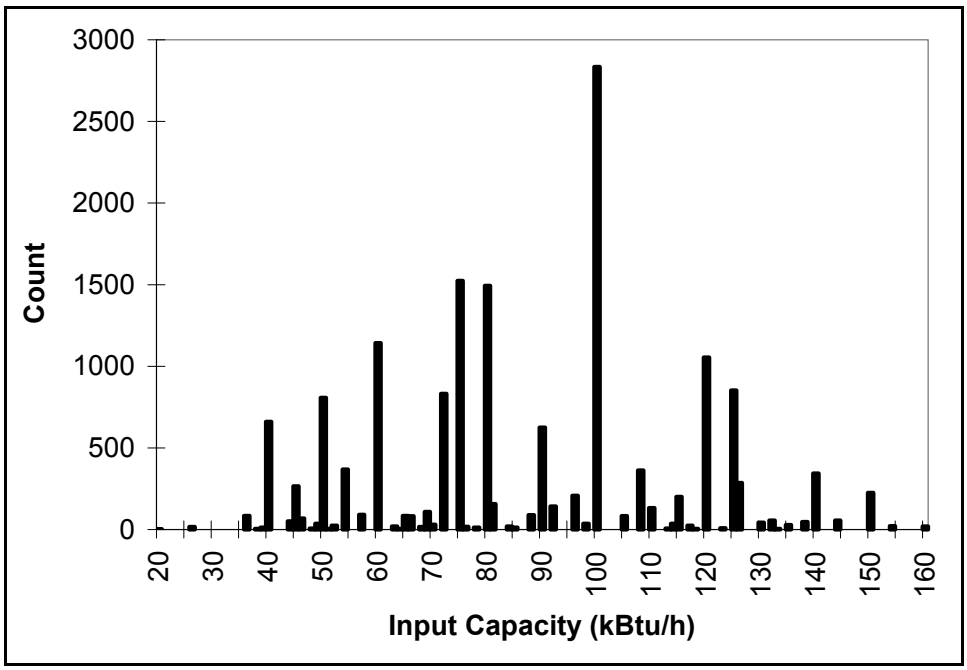

Figure 7.3.1 Number of Non-Weatherized Furnace Models by Input Capacity

Tables 7.3A.1 through 7.3B.16 contain tables of model numbers and specifications for the non-condensing and condensing basic model non-weatherized gas furnaces the Department used for the LCC analysis.

Table 7.3A.1 Models and Manufacturers of Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	C - 58RAV050-08 C - 58WAV045-08 L - 80UHG2-45A-** L - G40UH-24A-045-* N - G6RA045*-08A N - L1RA045*08A TR - TUD040C924K* TX - ABA040NH2R	L - G23Q2-50-**	L - 80UHG2-60A-** TR - TUD060C924K* TX - ABA060NH2R									
1200 CFM (3 tons)	AM - GUID045**30 C - 58RAV050-12 C - 58WAV045-12 G - GMP050-3 G - GMT045-3 TR - TUD040C930K* TX - ABA040NH3R Y - P4HUA12N03201	AR - G1N80AT050D12A C - 58EFB050-12 D - MPGA050B3* I - NTG3050FB*** L - G23Q3-50-** N - L1RA054*12A R - RGPJ-05NAUER Y - G8C05012MUB11*	L - 80UHG3-60A-** N - G6RA060*-12A TR - TUD060C936K* TX - ABA060NH3R Y - P4HUA12N04801	AM - GUID070**30 C - 58RAV070-12 C - 58WAV070-12 G - GMT070-3 L - G40UH-36A-070-* N - G6RA072*-12A N - L1RA072*12A	AR - G1N80AT075D12A C - 58EFB075-12 D - MPGA075B3* G - GMP075-3 I - NTG3075FB*** L - 80UHG3-75A-** L - G23Q2/3-75-** R - RGPJ-07NAUER Y - G8C07512MUB11*	TR - TUD080C936K* TX - ABA080NH3R Y - P4HUA12N06401	AM - GUID090**30 C - 58RAV095-12 G - GMT090-3 L - G40UH-36B-090-* N - L1RA090*12B	L - G23Q3-100-** G - GMP100-3 R - RGPJ-10NAMER TR - TUD100C936K* TX - ABA100NH3R Y - P4HUB12N08001				
1600 CFM (4 tons)				AM - GUID070**40 G - GMT070-4 N - G6RA072*-16B N - L1RA072*16B	AR - G1N80AT075D16B C - 58EFB075-16 D - MPGA075B4* G - GMP075-4 I - NTG3075HF*** L - 80UHG4-75A-** R - RGPJ-07NAMGR Y - G8C07516MUC11*	TR - TUD080C948K* TX - ABA080NH4R Y - P4HUB16N06401	C - 58RAV095-16 C - 58WAV091-16 G - GMT090-4 L - G40UH-48B-090-* N - L1RA090*16B	C - 58EFB100-16 D - MPGA100B4* G - GMP100-4 I - NTG3100GF*** L - 80UHG3/4-100A-** L - G23Q3/4-100-** R - RGPJ-10NBRGR TR - TUD100C948K* TX - ABA100NH4R Y - G8C10016MUC11* Y - P4HUB16N08001	Y - P4HUC16N09201 C - 58RAV115-16 C - 58WAV111-16 L - G40UH-48C-110-* N - L1RA108*16B	L - 80UHG3/4-120A-** N - G6RA120*-16B TX - ABA120NH4R	L - G23Q3/4-125-** C - 58WAV136-16 G - GMP125-4 L - G40UH-48C-135-* R - RGPJ-12NARGR	
2000 CFM (5 tons)							AM - GUID090**50 G - GMT090-5	AR - G1N80AT100D20C C - 58EFB100-20 D - MPGA100B5* G - GMP100-5 I - NTG3100KF*** L - 80UHG4/5-100A-** L - G23Q4/5-100-** N - G6RA096*-20C R - RGPJ-10NBRJR TR - TUD100C960K* TX - ABA100NH5R Y - G8C10020MUD11* Y - P4HUC20N08001	AM - GUIC115**50 C - 58RAV115-20 C - 58WAV111-20 G - GMT115-5 L - G40UH-60C-110-* N - L1RA108*20C Y - P4HUC20N09201	L - 80UHG4/5-120A-** N - G6RA120*-20C TR - TUD120C960K* TX - ABA120NH5R	AR - G1N80AT125D20D C - 58EFB125-20 C - 58WAV136-20 D - MPGA125B5* G - GMP125-5 I - NTG3125KJ*** L - G40UH-60D-135-* N - L1RA126*20C R - RGPJ-12NARJR Y - G8C12520MUD11* Y - P4HUD20N10401	AM - GUIC140**50 C - 58RAV135-20 G - GMP150-5 G - GMT140-5 N - G6RA144*-20C TR - TUD140C960K* TR - TUD140C960K* TX - ABA140NH5R

sizes not used as virtual models

Manufacturer Key:

AM = Amana
AR = Armstrong
C = Carrier Corporation
D = Ducane
G = Goodman
I = International Comfort Products
L = Lennox Industries
N = Nordyne
R = Rheem
TR = Trane
TX = Texas Furnace
Y = York

Table 7.3A.2 Values of Input Capacity (kBtu/h) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	46	50	60									
	44		60									
	45		60									
	44											
	45											
	45											
	40											
	40											
1200 CFM (3 tons)	46	50	60	69	75	80	92	100				
	46	50	60	69	75	80	92	100				
	44	50	60	66	75	80	90	100				
	45	50	60	70	75		88	100				
	45	50	57	66	75		90	100				
	40	54		72	75			100				
	40	50		72	75							
	40	50			75							
					75							
1600 CFM (4 tons)				69	75	80	92	100	115	120	125	
				70	75	80	88	100	115	120	132	
				72	75.1	80	90	100	110	120	125	
				72	75		88	100	110		132	
					75		90	100	108		125	
					75			100				
					75			100				
					75			100				
								100				
								100				
								100				
2000 CFM (5 tons)							92	100	115	120	125	138
							90	100	115	120	125	135
								100	110	120	132	140
								100	115	120	125	135
								100	110		125	144
								100	108		125	140
								100	115		132	140
								96			126	140
								100			125	
								100			125	
								100			130	
								100				
								100				

sizes not used as virtual models

Table 7.3A.3 Values of Output Capacity (kBtu/h) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	37	40	48									
	35		47									
	36		49									
	35											
	36											
	36											
	32											
	33											
1200 CFM (3 tons)	37	40	48	55	60	63	74	80				
	37	40	48	56	61	65	74	80				
	35	40	47	53	61	64	72	80				
	36	40	49	56	60		71	79				
	36	40	46	53	59		72	81				
	32	42		58	60			80				
	33	40		57	61							
	32	40			61							
					60							
1600 CFM (4 tons)				55	60	64	75	81	92	96	100	
				56	61	65	71	81	93	98	107	
				59	61	64	72	80	89	98	100	
				58	60		71	80	87		106	
					60		72	80	86		101	
					60			80				
					61			81				
					60			79				
								81				
								80				
								80				
2000 CFM (5 tons)							74	80	92	96	100	111
							72	81	93	97	101	110
								81	89	96	107	112
								80	92	98	101	108
								80	88		100	116
								80	86		99	111
								81	92		107	111
								78			101	114
								81			101	
								79			100	
								81			105	
								80				
								80				

sizes not used as virtual models

Table 7.3A.4 Values of Maximum CFM @ 0.5 in.w.c. for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	895	1030	990									
	880		901									
	990		850									
	910											
	870											
	870											
	910											
	805											
1200 CFM (3 tons)	1200	1165	1210	1290	1143	1296	1380	1330				
	1160	1200	1210	1195	1280	1230	1255	1450				
	1250	1235	1236	1195	1235	1330	1400	1255				
	1260	1163	1260	1165	1350		1300	1363				
	1438	1320	1330	1215	1163		1280	1250				
	1092	1110		1210	1210			1465				
	1265	1165		1210	1300							
	1330	1211, 1220			1140							
					1211, 1220							
1600 CFM (4 tons)				1450	1540	1710	1580	1615	1780	1600	1605	
				1518	1625	1645	1740	1845	1595	1580	1620	
				1660	1845	1795	1532	1650	1575	1655	1700	
				1610	1600		1600	1502	1665		1640	
					1599		1600	1600	1600		1885	
					1600			1635				
					1585			1845				
					1608, 1569			1669				
								1580				
								1608, 1569				
								1770				
2000 CFM (5 tons)							1975	2042	1985	2260	1971	2050
							1875	1990	1950	2090	2015	2055
								2270	2225, 2170, 2365	2005	2025, 1980, 2195	2380
								2020	1988	1965	2270	2121
								2005	1980, 2115		2120	2020
								2260	1930		1991	2216
								2195	2130, 2200		1930, 2120	2216
								2150			1930	2235
								2060			2115	
								2001			2013, 1733	
								1950			2120, 2195	
								2013, 1733				
								2130, 2200				

sizes not used as virtual models

Table 7.3A.5 Values of Low CFM @ 0.5 in.w.c. for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	560 605 540 610 570 690 507 550	645	540 505 560									
1200 CFM (3 tons)	575 870 875 785 669 789 615 620	713 805 750 608 775 720 585 811, 845	720 730 848 600 620	700 890 905 605 705 730 730	677 1040 750 785 608 720 735 880 811, 845	869 620 620	690 830 628 830 930	910 920 960 864 650 920				
1600 CFM (4 tons)				975 1006 1140 1410	986 1320 1315 1250 1318 840 1135 1052, 1111	758 990 1205	1075 1210 1113 1195 1340	1220 1315 1350 704 840 1100 1195 1164 990 1052, 1111 1285	1265 1150 1180 1120 1340	840 1120 1040	1065 1180 1350 1050 1215	
2000 CFM (5 tons)							1140 1338	892 1330 1270 960 1167 1410 1390 1300 1510 1367 1135 1407, 1224 1585, 1630	1210 1400 1495 1258 1605, 1610 1580 1585, 1630	1410 1260 1375 1110	907 1395 1450 1270 1000 1168 1645, 1665 1580 1560 1407, 1224 1575, 1630	1340 1430 1850 1429 1250 1411 1411 1200

sizes not used as virtual models

Table 7.3A.6 Values of Blower Size (diam X width) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	10 x 6	10 x 7	9 x 7									
	10 x 6		10 x 6									
	9 x 7		10 x 4									
	10 x 7											
	10 x 6											
	10 x 6											
	10 x 6											
	10 x 4											
1200 CFM (3 tons)	9 x 8	10 x 6	10 x 7	9 x 8	10 x 6	10 x 7	10 x 8	10 x 8				
	10 x 6	10 x 8	10 x 6	10 x 6	10 x 8	10 x 6	10 x 7	10 x 8				
	10 x 6	10 x 6	10 x 7	10 x 6	10 x 6	10 x 7	10 x 8	11 x 7				
	10 x 6	10 x 8	10 x 6	10 x 6	10 x 6		10 x 8	10 x 7				
	10 x 6	10 x 8	10 x 7	10 x 8	10 x 8		9 x 9	10 x 6				
	10 x 6	10 x 6		10 x 6	10 x 7			10 x 8				
	10 x 6	11 x 6		10 x 6	10 x 8							
	10 x 7	10 x 8			11 x 6							
					10 x 8							
1600 CFM (4 tons)				10 x 6	10 x 8	10 x 8	10 x 8	10 x 9	10 x 10	12 x 8	10 x 10	
				10 x 8	12 x 8	10 x 8	10 x 8	12 x 9	10 x 8	10 x 10	10 x 8	
				10 x 10	12 x 9	11 x 8	10 x 8	10 x 8	10 x 8	10 x 8	10 x 10	
				10 x 10	10 x 8		10 x 10	10 x 10	10 x 10		10 x 10	
					10 x 10		10 x 10	12 x 8	11 x 10		11 x 10	
					12 x 8			10 x 8				
					11 x 7			11 x 10				
					10 x 10			10 x 8				
								10 x 8				
								10 x 10				
								10 x 10				
2000 CFM (5 tons)							10 x 8	12 x 10	10 x 9	12 x 9	12 x 10	10 x 9
							10 x 10	12 x 9	11 x 10	11 x 10	12 x 12	11 x 10
								12 x 12	11 x 10	11 x 10	11 x 10	10 x 6 (Dual)
								11 x 10	10 x 10	10 x 4 (Dual)	12 x 12	11 x 10
								11 x 10	11-1/2 x 10		11 x 10	11 x 10
								12 x 9	11 x 10		11 x 10	11 x 10
								11.5 x 9	11 x 10		11-1/2 x 10	11 x 10
								11 x 10			11 x 10	10 x 6 (Dual)
								11 x 10			11 x 10	
								11 x 10			10 x 6 (Dual)	
								10 x 4 (Dual)			11 x 10	
								10 x 6 (Dual)				
								11 x 10				

sizes not used as virtual models

Table 7.3A.7 Values of Motor Size (hp) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	1/5	1/5	1/4									
	1/5		1/5									
	1/4		1/4									
	1/5											
	1/5											
	1/5											
	1/5											
	1/4											
1200 CFM (3 tons)	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/3				
	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3				
	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2				
	1/3	1/3	1/3	1/3	1/3		1/3	1/3				
	1/3	1/3	1/3	1/3	1/3		1/4	1/3				
	1/3	1/3		1/3	1/3			1/2				
	1/3	1/2		1/3	1/3							
	1/3	1/3			1/2							
					1/3							
1600 CFM (4 tons)				1/2	1/2	1/3	1/2	1/3	1/2	1/2	1/2	
				1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	
				1/2	1/2	3/4	1/2	1/2	1/2	1/2	1/2	
				1/2	1/2		1/2	1/3	1/2		1/2	
					1/2		1/2	1/2	1/2		1/2	
					1/2			1/2				
					1/2			1/2				
					1/2			1/2				
								1/2				
								1/2				
								1/2				
2000 CFM (5 tons)							1/2	3/4	3/4	3/4	3/4	3/4
							1/2	3/4	3/4	3/4	1/2	3/4
								1/2	3/4	1/2	3/4	3/4
								3/4	1/2	3/4	1/2	3/4
								3/4	3/4		3/4	3/4
								3/4	1/2		3/4	3/4
								3/4	1		3/4	3/4
								3/4			1/2	3/4
								3/4			3/4	
								1/2			3/4	
								3/4			1	
								3/4				
								1				

sizes not used as virtual models

Table 7.3A.8 Number of Speed Taps for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	3	3	4									
	3		4									
	4		4									
	3											
	3											
	2											
	4											
	4											
1200 CFM (3 tons)	4	4	4	4	4	4	4	3				
	4	3	3	4	3	4	4	4				
	4	3	4	4	3	4	3	3				
	4	4	4	3	4		4	4				
	3	4	4	4	4		3	4				
	4	3		3	4			3				
	4	4		3	4							
	4	3			3							
					3							
1600 CFM (4 tons)				4	4	4	4	3	3	5	4	
				3	3	4	4	3	4	4	4	
				4	3	3	3	3	4	4	3	
				2	3		4	4	4		4	
					3		2	5	2		3	
					5			4				
					3			3				
					4			4				
								4				
								4				
								3				
2000 CFM (5 tons)							4	5	4	5	5	4
							3	3	4	4	3	4
								3	4	4	4	3
								3	3	4	3	3
								4	4		3	4
								5	2		4	4
								5	3		4	4
								4			2	4
								3			3	
								4			4	
								4			3	
								4				
								3				

sizes not used as virtual models

Table 7.3A.9 Values of Supply Air Outlet Area (sq.ft.) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	1.67	1.84	2.03									
	1.66		1.80									
	2.03		1.70									
	1.81											
	1.75											
	1.75											
	1.80											
	1.70											
1200 CFM (3 tons)	2.10	NA	2.03	2.10	NA	2.21	2.66	2.51				
	1.67	1.73	1.75	1.67	1.73	1.70	2.11	1.90				
	1.66	1.63	1.80	1.66	1.63	1.84	2.38	2.45				
	1.49	1.80	1.70	1.91	1.49		2.21	2.21				
	1.91	1.85	1.84	1.81	1.80		2.50	2.10				
	1.80	1.75		1.75	2.03			2.26				
	1.70	1.88		1.75	1.85							
	1.84	2.22			2.45							
					2.22							
1600 CFM (4 tons)				2.10	NA	2.21	2.11	2.25	2.74	2.51	2.51	
				2.38	1.73	2.10	2.56	2.12	2.11	2.50	2.56	
				2.50	2.12	2.26	2.38	1.90	2.56	2.49	2.32	
				2.50	1.90		2.21	2.26	3.18		3.18	
					2.26		2.50	2.51	2.50		3.60	
					2.03			2.51				
					2.45			3.02				
					2.71			2.69				
								2.10				
								2.71				
								2.26				
2000 CFM (5 tons)							2.66	NA	3.21	2.51	NA	3.21
							2.86	2.25	2.57	2.88	2.76	3.03
								2.62	3.02	3.16	3.02	2.38
								2.32	2.86	2.49	2.62	3.34
								2.26	3.18		2.32	2.88
								2.51	2.88		2.73	3.16
								2.51	2.74		3.27	3.16
								2.88			2.88	2.89
								3.02			3.60	
								2.69			3.19	
								2.49			3.23	
								3.19				
								2.74				

sizes not used as virtual models

Table 7.3A.10 Values of AFUE for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	80	80	80									
	80		80									
	80		80.2									
	80											
	80.5											
	80											
	80											
	80.2											
1200 CFM (3 tons)	80	80	80	80	80	80	80	80				
	80	80	81	80	80	80.2	80	80				
	80	80	80	80	80	80	80	80				
	80	80	80.2	80	80		80	80				
	80	80	80	80	80		80	80.2				
	80	80		80	80			80				
	80.2	80		80	80							
	80	80			80							
					80							
1600 CFM (4 tons)				80	80	80	80	80	80	80	80	
				80	80	80.2	80	80	80	81	80	
				81	80	80	80	80	80	80.2	80	
				80	80		80	80	80		80	
					80		80	80	80		80	
					80			80				
					80			80				
					80			80				
								80.2				
								80				
								80				
2000 CFM (5 tons)							80	80	80	80	80	80
							80	80	80	80.5	80	80
								80	80	80	80	80
								80	80	80.2	80	80
								80	80		80	80
								80	80		80	80
								80	80		80	80
								81			80	80.2
								80			80	
								80			80	
								80.2			80	
								80				
								80				

sizes not used as virtual models

Table 7.3A.11 Values of Eae (kWh/yr) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	425	361	546									
	554		523									
	413		475									
	471											
	365											
	341											
	349											
	322											
1200 CFM (3 tons)	466	390	610	533	570	957	724	686				
	639	304	482	712	635	858	679	684				
	659	308	719	687	578	854	494	941				
	449	478	573	449	718		894	855				
	335	390	847	607	777		715	862				
	509	421		425	573			1136				
	506	456		642	534							
	510	451			934							
					665							
1600 CFM (4 tons)				585	575	934	845	760	1217	1068	603	
				559	940	1075	948	1052	747	882	987	
				500	1106	1137	595	814	876	1335	950	
				637	814		864	730	1079		979	
					842		855	801	1018		1520	
					659			660				
					934			1165				
					828			1135				
								1288				
								830				
								1139				
2000 CFM (5 tons)							701	745	1015	1234	986	1126
							600	1143	1160	790	1082	1195
								1116	1611	1267	1314	1065
								1006	701	1226	1082	850
								924	1121		974	1389
								664	1069		1393	1448
								947	1579		1179	1448
								845			1390	1294
								1165			1520	
								963			1015	
								1111			1811	
								937				
								1488				

sizes not used as virtual models

Table 7.3A.12 Values of PE (W) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	88	95	60									
	93		77									
	60		57									
	108											
	75											
	68											
	76											
	48											
1200 CFM (3 tons)	78	88	60	72	93	77	80	100				
	90	87	75	94	87	56	93	80				
	94	87	71	91	87	73	75	68				
	80	82	61	75	80		118	79				
	75	95	73	103	96		75	79				
	72	72		75	60			72				
	57	96		74	95							
	75	65			74							
					70							
1600 CFM (4 tons)				77	89	78	105	87	80	60	100	
				75	87	55	90	87	99	75	90	
				75	87	72	75	80	100	82	80	
				75	80		115	80	116		121	
					92		76	60	75		79	
					60			95				
					73			65				
					70			81				
								77				
								70				
								73				
2000 CFM (5 tons)							80	72	75	60	92	82
							75	87	98	75	87	97
								87	100	75	98	80
								80	75	88	87	75
								76	107		80	75
								60	76		96	85
								100	79		119	85
								75			78	88
								65			79	
								50			75	
								83			78	
								70				
								75				

sizes not used as virtual models

Table 7.3A.13 Values of On-Delay Time (secs) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	45	45	45									
	45		45									
	48		30									
	45											
	30											
	30											
	45											
	30											
1200 CFM (3 tons)	30	NA	45	30	NA	45	30	45				
	45	30	30	45	30	30	45	30				
	45	30	45	45	30	30	30	30				
	30	30	30	30	30		45	45				
	30	45	30	45	30		30	30				
	45	30		30	45			30				
	30	30		30	45							
	30	30			30							
					30							
1600 CFM (4 tons)				30	NA	45	45	30	30	45	45	
				30	30	30	45	30	45	30	45	
				30	30	30	30	30	45	30	30	
				30	30		45	30	45		45	
					30		30	45	30		30	
					45			45				
					30			30				
					30			45				
								30				
								30				
								30				
2000 CFM (5 tons)							30	NA	45	45	NA	30
							30	30	45	30	45	45
								30	45	45	45	30
								30	30	30	30	30
								30	45		30	30
								45	30		30	45
								45	30		45	45
								30			30	30
								30			30	
								45			30	
								30			30	
								30				
								30				

sizes not used as virtual models

Table 7.3A.14 Values of Off-Delay Time (secs) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	135	90	180									
	135		100									
	180		140									
	90											
	120											
	120											
	100											
	140											
1200 CFM (3 tons)	90	NA	180	90	NA	100	90	90				
	135	60	120	135	60	140	135	150				
	135	120	100	135	120	60	NA	120				
	150	140	140	NA	150		90	100				
	NA	90	60	90	140		120	140				
	100	120		120	180			60				
	140	120		120	90							
	60	180			120							
					180							
1600 CFM (4 tons)				90	NA	100	135	60	60	180	90	
				NA	60	140	135	120	135	120	135	
				120	120	60	NA	150	135	140	150	
				120	150		90	140	90		90	
					140		120	180	120		120	
					180			90				
					120			120				
					180			100				
								140				
								180				
								60				
2000 CFM (5 tons)							90	NA	135	180	NA	90
							NA	60	135	120	90	135
								120	135	100	135	150
								150	60	140	120	0
								140	90		150	120
								180	120		140	100
								90	60		90	100
								120			120	140
								120			120	
								100			180	
								140			60	
								180				
								60				

sizes not used as virtual models

Table 7.3A.15 Values of Pre-Purge Time (secs) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	15	15	15									
	15		NA									
	15		NA									
	15											
	30											
	30											
	NA											
	NA											
1200 CFM (3 tons)	NA	NA	15	NA	NA	NA	NA	15				
	15	NA	30	15	NA	NA	15	NA				
	15	15	NA	15	15	NA	NA	20				
	NA	NA	NA	NA	NA		15	NA				
	NA	15	NA	15	NA		30	NA				
	NA	30		30	15			NA				
	NA	20		30	15							
	NA	NA			20							
					NA							
1600 CFM (4 tons)				NA	NA	NA	15	NA	NA	15	15	
				NA	NA	NA	15	15	15	30	15	
				30	15	NA	NA	NA	15	NA	NA	
				30	NA		15	NA	15		15	
					NA		30	15	30		20	
					15			15				
					20			20				
					NA			NA				
								NA				
								NA				
								NA				
2000 CFM (5 tons)							NA	NA	15	15	NA	NA
							NA	NA	15	30	15	15
								15	15	NA	15	NA
								NA	NA	NA	15	NA
								NA	15		NA	30
								15	30		NA	NA
								15	NA		15	NA
								30			30	NA
								20			20	
								NA			NA	
								NA			NA	
								NA				
								NA				

sizes not used as virtual models

Table 7.3A.16 Values of Post-Purge Time (secs) for Non-Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	5 5 5 5 30 30 NA 5	5	5 NA 5									
1200 CFM (3 tons)	15 5 5 NA NA NA 5 NA	NA 5 NA NA 5 30 5 NA	5 30 NA 5 NA	15 5 5 NA 5 30 30	NA 5 NA NA NA 5 5 5 NA	NA 5 NA	15 5 NA 5 30	5 NA 5 NA 5 NA				
1600 CFM (4 tons)				15 NA 30 30	NA 5 NA NA NA 5 5 NA	NA 5 NA	5 5 NA 5 30	5 NA NA NA 5 5 5 NA 5 NA NA	NA 5 5 5 30	5 30 5	5 5 NA 5 5	
2000 CFM (5 tons)							15 NA	NA 5 NA NA NA 5 5 30 5 NA 5 NA NA	5 5 5 NA 5 30 NA	5 30 NA 5	NA 5 5 NA NA NA NA 5 30 5 NA NA	15 5 NA NA 30 NA NA 5

sizes not used as virtual models

Table 7.3B.1 Models and Manufacturers of Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	C - 58MCA040-08 N - FG6RC040*-08A TR - TDC040C924B* TR - TUC040C924B*	D - CMPB050U2* L - 90UGFA2-50-** L - G26Q2-50-**	C - 58MCA060-08									
1200 CFM (3 tons)	AM - GCCA045*X30 AM - GUCA045*X30 AR - G1D93AC045D12B AR - G1D93AU045D12B C - 58MCA040-12 G - GMNT040-3 G - GMPN040-3 N - FG6RC040*-12A R - RGRJ-04(E,N)MAES R - RGTJ-04(E,N)MAES	AR - G1D90AH050D12A AR - G1D91AU050D12B D - CMPB050U3* I - N9MP1050B12** L - 90UGFA3-50-** L - G26Q3-50-** L - GHR26Q2/3-50-** TX - CSA054NH3R TX - VSA054NH3R	N - FG6RC060*-12A C - 58MCA060-12 G - GMNT060-3 G - GMPN060-3 R - RGRJ-06(E,N)MAES R - RGTJ-06(E,N)MAES TR - TDC060C936B* TR - TUC060C936B* Y - P3DHB12N05501 Y - P3DHB12N05501	AM - GCCA070*X30 AM - GUCA070*X30 AR - G1D93AC067D12B AR - G1D93AU067D12B TX - CSA072NH3R TX - VSA072NH3R	AR - G1D90AH075D14A AR - G1D91AU075D12B D - CMPB075U3* I - N9MP1075B12** L - 90UGFA3-75-** L - G26Q3-75-** L - GHR26Q3-75-** R - RGRJ-07(E,N)MAES R - RGRJ-07(E,N)YBES R - RGTJ-07(E,N)MAES R - RGTJ-07(E,N)YBES	C - 58MCA080-12 N - FG6RC080*-12B Y - P3DHB12N07501 Y - P3URB12N07501	TX - CSA090NH3R TX - VSA090NH3R	AR - G1D90AH100D14B D - CMPB100U3*				
1600 CFM (4 tons)				AM - GCCA070*X40 AM - GUCA070*X40 AR - G1D93AC067D16C AR - G1D93AU067D16C TX - CSA072NH4R TX - VSA072NH4R	AR - G1D91AU075D16C L - G26Q4/5-75-** R - RGRJ-07(E,N)YBGS R - RGTJ-07(E,N)YBGS	C - 58MCA080-16 G - GMNT080-4 G - GMPN080-4 I - N9MP1080F16** N - FG6RC080*-16B Y - P3DHC16N07501 Y - P3URC16N07501	AR - G1D93AC090D16C AR - G1D93AU090D16C G - GCCA090*X40 G - GUCA090*X40 R - RGRJ-09(E,N)ZAGS R - RGTJ-09(E,N)ZAGS TX - CSA090NH4R TX - VSA090NH4R	AR - G1D91AU100D16C C - 58MCA100-16 D - CMPB100U4* G - GMNT100-4 G - GMPN100-4 I - N9MP1100F14** L - 90UGFA3/4-100-** L - G26Q3/4-100-** L - GHR26Q3/4-100-** N - FG6RC100*-16B R - RGRJ-10(E,N)ZAGS R - RGRJ-10(E,N)ZAJS R - RGTJ-10(E,N)ZAGS R - RGTJ-10(E,N)ZAJS TR - TDC100C948B* TR - TUC100C948B* Y - P3URC14N09501		N - FG6RC120*-16C R - RGTJ-12(E,N)RAGS	L - G26Q3/4-125-**	
2000 CFM (5 tons)							AR - G1D93AU090D20C AR - G1D93AC090D20C G - GCCA090*X50 G - GUCA090*X50 R - RGRJ-09(E,N)ZAJS R - RGTJ-09(E,N)ZAJS	AR - G1D90AH100D20B AR - G1D91AU100D20C C - 58MCA100-20 I - N9MP1100J20** L - G26Q4/5-100-** L - GHR26Q4/5-100-** TR - TUC100C960B* TR - TUX100C960C* TX - CSA108NH5R TX - VSA108NH5R Y - P3DHC20N09501 Y - P3URC20N09501	AM - GCCA115*X50 AM - GUCA115*X50 AR - G1D93AC112D20D AR - G1D93AU112D20D	C - 58MCA120-20 G - GMNT120-5 G - GMPN120-5 L - GHR26Q4/5-120-** N - FG6RC120*-20C R - RGRJ-12(E,N)RAJS R - RGTJ-12(E,N)RAJS TR - TDC120C960B* TR - TUC120C960B* Y - P3DHD20N11201 Y - P3URD20N11201	AR - G1D90AH126D20C AR - G1D91AU125D20D D - CMPB125U5* I - N9MP1125J20** L - 90UGFA4/5-125-** L - G26Q4/5-125-** TX - CSA126NH5R TX - VSA126NH5R	C - 58MCA140-20 Y - P3URD20N13001

sizes not used as virtual models

Manufacturer Key:

AM = Amana
AR = Armstrong
C = Carrier Corporation
D = Ducane
G = Goodman
I = International Comfort Products
L = Lennox Industries
N = Nordyne
R = Rheem
TR = Trane
TX = Texas Furnace
Y = York

Table 7.3B.2 Values of Input Capacity (kBtu/h) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	40	50	60									
	40	50										
	40	50										
	40											
1200 CFM (3 tons)	46	50	60	69	75	80	90	100				
	46	50	60	69	75	80	90	100				
	45	50	60	68	75	80						
	45	50	60	68	75	80						
	40	50	60	72	75							
	40	50	60	72	75							
	40	50	60		75							
	40	54	60		75							
	45	54	60		75							
	45		60		75							
					75							
1600 CFM (4 tons)				69	75	80	90	100		120	125	
				69	75	80	90	100		120		
				68	75	80	92	100				
				68	75	81	92	100				
				72		80	90	100				
				72		80	90	100				
						80	90	100				
							90	100				
								100				
								100				
								105				
								105				
								105				
								100				
								100				
								100				
2000 CFM (5 tons)							90	100	115	120	125	138
							90	100	115	120	125	140
							92	100	112.5	120	125	
							92	100	112.5	120	125	
							90	100		120	125	
							90	100		120	125	
								100		120	126	
								100		120	126	
								108		120		
								108		120		
								100		120		
								100				

sizes not used as virtual models

Table 7.3B.3 Values of Output Capacity (kBtu/h) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	37	46	56									
	37	46										
	38	46										
	37											
1200 CFM (3 tons)	43	45	55	65	67	74	81	90				
	43	45	56	64	68	74	82	93				
	41	46	55	62	70	73						
	41	44	54	62	69	74						
	37	47	56	65	69							
	36	47	56	66	70							
	36	47	56		70							
	37	48	56		70							
	42	49	55		70							
	41		55		69							
					70							
1600 CFM (4 tons)				63	68	74	83	91		110	117	
				63	71	74	83	93		112		
				62	70	72	87	93				
				62	70	73	86	92				
				65		74	84	92				
				66		75	84	91				
						76	81	91				
							82	93				
								92				
								93				
								97				
								97				
								97				
								97				
								93				
								94				
								93				
2000 CFM (5 tons)							83	90	108	112	112	127
							83	91	106	111	113	130
							85	93	104	108	116	
							85	91	104	111	116	
							84	93		110	115	
							84	93		113	118	
								93		112	114	
								93		112	115	
								97		113		
								99		111		
								93		111		
								94				

sizes not used as virtual models

Table 7.3B.4 Values of Maximum CFM @ 0.5 in.w.c. for Condensing Basic Model NonWeatherized Gas furnaces

		Input Capacity (kBTU/h)											
		45	50	60	70	75	80	90	100	115	120	125	140
Maximum Airflow (at 0.5" Static Pressure)	800 CFM (2 tons)	895 800 807 812	900 950 950	900									
	1200 CFM (3 tons)	1195 1196 1170 1297 1215 1140 950 1120 1195 1220	1120 1297 1205 1183 1225 1225 1200 1140 1140	1100 1200 1135 1050 1100 1180 1082 1196 1484 1484	1366 1407 1164 1207 1299 1299	1260 1207 1205 1148 1200 1200 1300 1110 1440 1150 1370	1245 1210 1485 1263	1316 1316	1315 1450				
	1600 CFM (4 tons)				1590 1643 1599 1759 1507 1507	1759 2075 1625 1540	1525 1590 1400 1575 1550 1780 1688	1815 1806 1581 1544 1580 1570 1683 1683	1806 1570 1795 1715 1550 1317 1650 1650 1590 1620 1540 1810 1560 1820 1614 1746 1433		1570 1700	1700	
	2000 CFM (5 tons)							1943 1821 1987 2017 1910 1850	1885 1943 1930, 2130 1978 2105 2180 2165 2165 1807 1807 1984 2026	1903 1976 1821 1980	1965, 2000, 2130 2125 1910 2080 1990 1900 2040 1939 2261 2002 2065	1970 1980 2115 2029 2050 2050 1827 1827	2130, 1780, 1835 2047

sizes not used as virtual models

Table 7.3B.5 Values of Low CFM @ 0.5 in.w.c. for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	470	540	565									
	565	625										
	NA	625										
	NA											
1200 CFM (3 tons)	621	1120	710	859	1045	910	917	1055				
	584	1297	840	745	800	630	917	1080				
	653	1205	835	816	965	845						
	868	1183	800	800	546	794						
	830	1225	715	902	770							
	825	1225	770	902	770							
	810	1200	NA		1040							
	720	1140	NA		750							
	685	1140	842		1095							
	690		715		750							
					1030							
1600 CFM (4 tons)				1047	952	995	956	892		1090	1090	
				1012	1310	1325	892	1100		1260		
				775	1270	1250	1056	1290				
				952	1195	617	1014	1285				
				1126		900	1120	1330				
				1126		1198	1060	528				
						1181	1120	1110				
							1120	1110				
								1110				
								1090				
								1130				
								1350				
								1080				
								1360				
								NA				
								NA				
								1035				
2000 CFM (5 tons)							1504	1230	1288	1365	1240	1370
							1304	1504	1188	1110	1475	1477
							1284	1380	1304	1660	1320	
							1115	1498	1475	1460	1533	
							1375	1415		1250	1460	
							1350	1480		1475	1460	
								NA		1475	1333	
								NA		NA	1333	
								1342		NA		
								1342		1398		
								1464		1492		
								1461				

sizes not used as virtual models

Table 7.3B.6 Values of Blower Size (diam X width) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	10 x 6 10 x 6 10 x 7 9 x 7	10 x 6 10 x 7 10 x 7	10 x 6									
1200 CFM (3 tons)	11 x 6 11 x 6 10 x 8 10 x 8 10 x 7 10 x 6 10 x 6 10 x 6 11 x 7 11 x 7	12 x 6 10 x 8 10 x 6 11 x 8 10 x 8 10 x 8 10 x 8 10 x 6 10 x 6	10 x 6 10 x 7 10 x 6 10 x 6 11 x 7 11 x 7 10 x 8 10 x 7 11 x 8 11 x 8	11 x 7 11 x 7 10 x 8 10 x 8 10 x 8 10 x 8	12 x 6 10 x 8 10 x 6 11 x 8 10 x 8 10 x 8 10 x 8 11 x 7 12 x 7 11 x 7 12 x 7	10 x 7 10 x 8 11 x 8 11 x 8	10 x 8 10 x 8	12 x 6 10 x 9				
1600 CFM (4 tons)				11 x 9 11 x 9 12 X 10 12 X 10 10 x 4 (Dual) 10 x 4 (Dual)	12 X 10 11.5 x 9 12 x 7 12 x 7	11 x 8 10 x 8 10 x 8 11 x 10 10 x 10 11 x 8 10 x 10	12 X 10 12 X 10 11 x 9 11 x 9 12 x 11 12 x 11 10 x 4 (Dual) 10 x 4 (Dual)	12 X 10 11 x 8 12 x 9 10 x 10 10 x 10 11 x 10 10 x 10 10 x 10 10 x 10 10 x 10 12 x 11 12 x 11 12 x 11 12 x 11 11 x 10 10 x 10 11 x 8		10 x 10 11 x 10	10 x 10	
2000 CFM (5 tons)							12 X 10 12 X 10 11 x 9 11 x 9 12 x 11 12 x 11	12 x 9 12 X 10 11 x 10 11 x 10 11.5 x 9 11.5 x 9 11 x 10 11 x 10 10 x 6 (Dual) 10 x 6 (Dual) 11 x 10 11 x 10	11 x 10 11 x 10 12 X 10 12 X 10	11 x 10 11 x 10 10 x 6 (Dual) 11.5 x 9 11 x 10 11 x 10 11 x 10 11 x 10 11 x 10 11 x 10	12 x 9 12 X 10 12 x 12 11 x 10 11.5 x 9 11.5 x 9 10 x 6 (Dual) 10 x 6 (Dual)	11 x 10 11 x 10

sizes not used as virtual models

Table 7.3B.7 Values of Motor Size (hp) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	1/5	1/4	1/5									
	1/5	1/5										
	1/5	1/5										
	1/5											
1200 CFM (3 tons)	1/3	1/3	1/3	1/2	1/2	1/3	1/2	1/2				
	1/3	1/3	1/3	1/2	1/3	1/3	1/2	1/3				
	1/3	1/3	1/3	1/3	1/3	1/2						
	1/3	1/2	1/3	1/3	1/2	1/2						
	1/3	1/3	1/2	1/2	1/3							
	1/3	1/3	1/2	1/2	1/3							
	1/3	1/3	1/3		1/2							
	1/3	1/3	1/3		1/2							
	1/2	1/3	1/2		1/2							
	1/2		1/2		1/2							
					1/2							
1600 CFM (4 tons)				1/2	3/4	1/2	3/4	3/4		1/2	1/2	
				1/2	3/4	1/2	3/4	1/2		1/2		
				3/4	3/4	1/2	1/2	1/2				
				3/4	3/4	1/2	1/2	1/2				
				3/4		1/2	1/2	1/2				
				3/4		3/4	1/2	1/2				
						1/2	3/4	1/2				
							3/4	1/2				
								1/2				
								1/2				
								1/2				
								3/4				
								1/2				
								3/4				
								1/2				
								1/2				
								3/4				
2000 CFM (5 tons)							9/10	3/4	1/3	3/4	3/4	3/4
							9/10	9/10	1/2	3/4	9/10	1
							1/3	3/4	9/10	3/4	3/4	
							3/4	3/4	9/10	3/4	3/4	
							3/4	3/4		3/4	3/4	
							3/4	3/4		3/4	3/4	
								1/2		3/4	3/4	
								1/2		1/2	3/4	
								3/4		1/2		
								3/4		1		
								1		1		
								1				

sizes not used as virtual models

Table 7.3B.8 Number of Speed Taps for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	3 3 4 3	3 3 3	3									
1200 CFM (3 tons)	4 4 4 4 4 3 4 3 4 4	3 4 3 4 4 4 4 4 4	3 4 3 4 3 3 4 4 3 3	4 4 4 4 4 4	3 4 3 4 4 4 4 3 3 3 3	4 3 3 3	4 4	3 3				
1600 CFM (4 tons)				4 4 5 5 4 4	5 5 3 3	4 3 3 4 4 3 3	5 5 4 4 3 3 4 4	5 4 3 3 3 4 4 4 4 3 3 3 3 3 4 3		4 3	4	
2000 CFM (5 tons)							5 5 4 4 3 3	3 5 3 4 5 5 4 4 4 4 3 3	4 4 5 5	3 3 3 4 4 3 3 4 3 3	3 5 3 4 4 5 4 4	3 3

sizes not used as virtual models

Table 7.3B.9 Values of Supply Air Outlet Area (sq.ft.) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	2.09 1.75 2.11 2.21	1.51 1.85 1.85	2.09									
1200 CFM (3 tons)	1.75 2.10 2.06 2.24 2.09 1.70 1.50 1.75 2.27 2.29	1.92 2.24 1.51 1.80 1.85 1.85 1.58 2.10 2.10	1.75 2.09 1.70 1.50 2.27 2.29 2.11 2.21 1.97 1.97	1.75 2.10 2.06 2.24 2.10 2.10	1.92 2.24 1.51 1.80 1.85 1.85 1.58 2.27 2.27 2.29 2.78	2.09 2.50 1.97 2.26	2.10 2.10	2.37 1.97				
1600 CFM (4 tons)				2.26 2.66 2.53 2.72 2.49 2.49	2.72 2.51 2.76 2.78	2.09 2.18 1.92 2.26 2.50 2.44 2.74	2.53 2.72 2.26 2.66 2.76 2.78 2.49 2.49	2.72 2.56 1.97 2.66 2.34 2.26 2.51 2.51 2.19 2.50 2.76 2.76 2.78 2.78 2.57 2.69 2.74		2.88 3.26	3.16	
2000 CFM (5 tons)							3.19 2.53 2.78 3.22 2.76 2.78	2.37 2.72 2.56 2.73 2.51 2.19 3.16 3.16 2.89 2.89 2.44 2.74	2.78 3.22 2.95 3.19	3.02 3.13 2.76 2.19 2.88 3.24 3.26 3.03 3.14 2.84 3.23	2.97 3.19 2.43 2.73 3.16 3.16 2.89 2.89	3.02 3.23

sizes not used as virtual models

Table 7.3B.10 Values of AFUE for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	92	92	92									
	92	90										
	91	92										
	92											
1200 CFM (3 tons)	92	90	92.1	92	90	92	90	90				
	92	91	92	92	91	92	91	92				
	93	92	93	93	92	91						
	93	90	93	93	90	92						
	92	90	93	90	90							
	93	92	92	91	92							
	93	92	91		92							
	92	90	92		93							
	94	91	91		92							
	92		91		92							
					92							
1600 CFM (4 tons)				92	91	92	93	91		92	92	
				92	92	93	93	92		92		
				93	92	93	92	92				
				93	92	90	92	93				
				90		92	94	93				
				91		91	92	90				
						94	90	90				
							91	92				
								90				
								92				
								92				
								92				
								92				
								92				
								91				
								92				
								92				
2000 CFM (5 tons)							93	90	92	92	90	92
							93	91	92	93	91	92
							92	92	93	93	92	
							92	90	93	90	90	
							94	92		92	90	
							92	92		94	92	
								92		92	90	
								92		91	91	
								90		92		
								91		91		
								91		92		
								93				

sizes not used as virtual models

Table 7.3B.11 Values of Eae (kWh/yr) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	325 339 326 327	384 480 464	419									
1200 CFM (3 tons)	512 592 660 660 474 331 438 442 412 436	828 680 615 710 528 499 510 625 695	835 483 467 581 490 484 534 520 674 674	690 743 850 850 920 930	755 750 701 954 537 583 748 512 788 588 750	525 656 822 729	985 910	804 616				
1600 CFM (4 tons)				370 627 850 850 812 780	750 933 788 750	869 623 609 927 774 978 795	900 900 883 837 848 832 916 839	903 794 920 686 872 996 671 695 652 987 862 862 885 885 772 900 565		967 961	975	
2000 CFM (5 tons)							900 900 909 761 848 832	1006 920 1045 1036 870 949 870 874 909 1089 1037 1073	418 897 1150 1150	1241 1130 1079 1136 967 961 961 1107 1209 1635 1124	1247 1100 1130 1280 977 1095 962 1262	1039 1278

sizes not used as virtual models

Table 7.3B.12 Values of PE (W) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	70 90 79 78	87 100 78	80									
1200 CFM (3 tons)	133 132 123 123 71 90 75 90 109 89	82 123 87 112 100 100 100 74 77	90 76 90 75 92 110 80 84 76 76	117 123 123 123 77 79	77 131 87 127 100 76 100 100 93 110 81	78 90 82 71	89 91	81 87				
1600 CFM (4 tons)				115 123 143 143 77 80	127 79 93 81	80 90 75 125 75 81 79	133 133 128 129 99 98 87 94	133 82 87 90 75 126 100 79 100 90 97 97 101 101 78 48 74		69 118	79	
2000 CFM (5 tons)							146 146 125 124 99 98	79 143 80 13 79 100 53 55 103 103 73 86	133 144 147 147	88 90 75 100 69 99 118 80 70 78 73	86 142 87 90 100 79 102 102	100 78

sizes not used as virtual models

Table 7.3B.13 Values of Pre-Purge Time (secs) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	15	NA	15									
	30	NA										
	NA	15										
	NA											
1200 CFM (3 tons)	NA	NA	30	NA	NA	15	NA	NA				
	NA	NA	15	NA	NA	30	NA	NA				
	NA	NA	15	NA	NA	NA						
	NA	3	15	NA	3	NA						
	15	NA	30	NA	NA							
	15	15	30	NA	15							
	15	15	NA		15							
	30	NA	NA		30							
	30	NA	NA		30							
	30		NA		30							
					30							
1600 CFM (4 tons)				NA	NA	15	NA	NA		30	15	
				NA	15	15	NA	15		30		
				NA	30	15	NA	NA				
				NA	30	3	NA	15				
				NA		30	30	15				
				NA		NA	30	3				
						NA	NA	NA				
							NA	15				
								15				
								30				
								30				
								30				
								30				
								30				
								NA				
								NA				
								NA				
2000 CFM (5 tons)							NA	NA	NA	15	NA	15
							NA	NA	NA	15	NA	NA
							NA	15	NA	15	NA	
							NA	3	NA	15	3	
							30	15		30	NA	
							30	15		30	15	
								NA		30	NA	
								NA		NA	NA	
								NA		NA		
								NA		NA		
								NA		NA		

sizes not used as virtual models

Table 7.3B.14 Values of Post-Purge Time (secs) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	15 30 NA NA	NA NA 5	15									
1200 CFM (3 tons)	15 15 NA NA 15 NA NA 30 5 5	NA NA NA 30 NA 5 5 5 5	30 15 NA NA 5 5 NA NA NA NA	15 15 NA NA 5 5	NA NA NA 30 NA 5 5 5 5 5	15 30 NA NA	5 5	NA NA				
1600 CFM (4 tons)				15 15 NA NA 5 5	NA 5 5 5	15 NA NA 30 30 NA NA	NA NA 15 15 5 5 5 5	NA 15 NA NA NA 30 NA 5 5 30 5 5 5 5 NA NA NA		30 5	5	
2000 CFM (5 tons)							NA NA 15 15 5 5	NA NA 15 30 5 5 NA NA 5 5 NA NA	15 15 NA NA	15 NA NA 5 30 5 5 NA NA NA	NA NA NA 30 NA 5 5 5	15 NA

sizes not used as virtual models

Table 7.3B.15 Values of On-Delay Time (secs) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	60 30 NA NA	NA 45 45	60									
1200 CFM (3 tons)	30 30 NA NA 60 30 30 30 20 20	NA NA NA 30 45 45 45 30 30	30 60 30 30 20 20 NA NA 30 30	30 30 NA NA 30 30	NA NA NA 30 45 45 45 20 20 20 20	60 30 30 30	30 30	NA NA				
1600 CFM (4 tons)				30 30 NA NA 30 30	NA 45 20 20	60 30 30 30 30 30 30	NA NA 30 30 20 20 30 30	NA 60 NA 30 30 30 45 45 45 30 20 20 20 20 NA NA 30		30 20	45	
2000 CFM (5 tons)							NA NA 30 30 20 20	NA NA 60 30 45 45 NA NA 30 30 30 30	30 30 NA NA	60 30 30 45 30 20 20 NA NA 30 30	NA NA NA 30 45 45 30 30	60 30

sizes not used as virtual models

Table 7.3B.16 Values of Off-Delay Time (secs) for Condensing Basic Model NonWeatherized Gas furnaces

Maximum Airflow (at 0.5" Static Pressure)	Input Capacity (kBTU/h)											
	45	50	60	70	75	80	90	100	115	120	125	140
800 CFM (2 tons)	135 120 NA NA	NA 60 90	135									
1200 CFM (3 tons)	90 90 NA NA 135 150 150 120 120 120	NA NA NA 140 60 90 90 140 140	120 135 150 150 120 120 NA NA 60 60	90 90 NA NA 140 140	NA NA NA 140 60 90 90 120 120 120 120	135 120 60 60	140 140	NA NA				
1600 CFM (4 tons)				90 90 NA NA 140 140	NA 90 120 120	135 150 150 140 120 60 60	NA NA 90 90 120 120 140 140	NA 135 NA 150 150 140 60 90 90 120 120 120 120 120 NA NA 60		120 120	90	
2000 CFM (5 tons)							NA NA 90 90 120 120	NA NA 135 140 90 90 NA NA 140 140 60 60	90 90 NA NA	135 150 150 90 120 120 120 NA NA 60 60	NA NA NA 140 60 90 140 140	135 60

sizes not used as virtual models

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1. Gas Appliance Manufacturers Association, *Consumer Directory of Certified Efficiency Ratings for Heating and Water Heating Equipment Database,* April 2002. <http://www.gamanet.org/consumer/certification/wd042002/install/Gama_web.EXE>