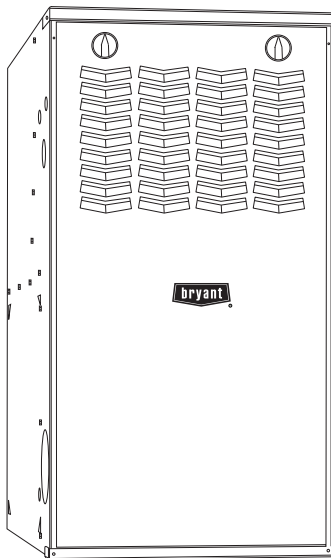


880TA/881TA

Evolution[®] 80 Two-Stage, 80% AFUE, Variable Speed, 4-Way Multipoise, Gas Furnace



Product Data



A180220

The Evolution 80 Two-stage, Variable-speed, 4-way Multipoise Gas Furnace offers outstanding comfort in an 80% AFUE furnace.

You get the benefits of Perfect Heat[®]: reduced drafts, reduced sound levels, longer cycles, less temperature swings between cycles, less temperature differences between rooms, and improved indoor air quality. Plus, it features a dehumidify mode and the ability to change continuous fan speeds from the thermostat. The 880TA/881TA furnaces are approved for use with natural or propane gas. 881TA models can be installed in California air quality management districts with a 40 ng/J NOx emissions limit.

Bryant Evolution[®] System When the Evolution 80 variable-speed gas furnace is matched with the Evolution 80 Control and Evolution 80 air conditioner or heat pump, you will experience the ultimate in Perfect Heat and Perfect Humidity through unparalleled control of temperature, humidity, indoor air quality, and zoning. The Bryant Evolution System also provides unprecedented ease of use through on-screen, text-based service reminders and equipment malfunction alerts.

PERFORMANCE

- Variable-speed, constant airflow ECM blower motor
Increased SEER ratings for AC and HP systems when paired with select Bryant evaporator coil as compared to standard coil-only ratings.
- Perfect Heat[®] operation
Two-stage heating even with a single-stage thermostat through patented Adaptive Control Technology.
Reduced operating sound through low-stage operation and sound elimination QuieTech[™] combustion system.
- SmartEvap[™] feature for lower humidity levels during cooling season
- Perfect Light[™] Igniter
- Microprocessor based control center
Enhanced diagnostics with LED and reflective sight glass
Stores fault codes during power outages
Adjustable heating air temperature rise
Adjustable cooling airflow
- Draft Safeguard switch designed to ensure proper furnace venting
- Insulated blower compartment
- Inner blower door for tighter sealing

INSTALLATION FLEXIBILITY

- 4-way Multipoise furnace, 13 vent applications
- Compact design - only 33-1/3 in. (847 mm) tall

APPLICATIONS

- HYBRID HEAT[®] Dual Fuel System compatible
- All models are chimney friendly when used with accessory vent kit

CERTIFICATION

- Cabinet air leakage less than 2.0% at 1.0 in. W.C. and cabinet air leakage less than 1.4% at 0.5 in. W.C. when tested in accordance with ASHRAE standard 193



A210060

SPECIFICATIONS

Unit Size			36045C17	36070C14	48070C17	60070C21
RATINGS AND PERFORMANCE						
Input Btuh* Nonweatherized ICS	All Standard, Low NOx Upflow	High	44,000	66,000	66,000	66,000
		Low	29,000	43,500	43,500	43,500
Input Btuh* Nonweatherized ICS	All Low NOx Downflow/ Horizontal	High	42,000	63,000	63,000	63,000
		Low	29,000	43,500	43,500	43,500
Output Capacity (Btuh) Nonweatherized ICS†	All Standard, Low NOx Upflow	High	35,000	54,000	53,000	53,000
		Low	23,000	35,000	35,000	35,000
Output Capacity (Btuh) Nonweatherized ICS†	All Low NOx Downflow/ Horizontal	High	34,000	51,000	51,000	51,000
		Low	23,000	35,000	35,000	35,000
AFUE			80%			
Certified Temperature Rise Range - °F (°C)		High	30-60 (17-33)	30-60 (17-33)	25-55 (14-30)	25-55 (14-30)
		Low	20-50 (11-28)	30-60 (17-33)	15-45 (8-25)	15-45 (8-25)
Certified External Static Pressure	Heat/Cool		0.10/0.50	0.12/0.50	0.12/0.50	0.12/0.50
Airflow CFM ‡	Heating High/Low		730/605	1160/735	1245/1040	1195/1085
	Max Cooling		1345	1395	1380	2150
ELECTRICAL						
Unit Volts-Hertz-Phase			115-60-1			
Operating Voltage Range	Min/Max		104/127			
Maximum Unit Amps			9.00	9.00	9.80	14.10
Maximum Wire Length (Measure 1 Way in Ft. (M))			30 (9.4)	30 (9.4)	28 (8.7)	31 (9.5)
Minimum Wire Size			14	14	14	12
Maximum Fuse or Ckt Bkr Size (Amps)**			15	15	15	20
Transformer (24v)			40va			
External Control	Heating		12va			
Power Available	Cooling		35va			
Air Conditioning Blower Relay			Standard			
CONTROLS						
Limit Control			SPST			
Heating Blower Control			Solid State Time Operation			
Burners (Monoport)			2	3	3	3
Gas Connection Size			½-in. NPT			
GAS CONTROLS						
Gas Valve (Redundant)	Mfr.		WhiteRodgers			
	Min. inlet pressure (In. W.C.)		4.5 (Natural Gas)			
	Max. inlet pressure (In. W.C.)		13.6 (Natural Gas)			
Ignition Device			Hot Surface			
Factory installed orifice			Size 43			
BLOWER DATA						
Direct-Drive Motor HP (ECM)			1/2	1/2	1/2	1
Motor Full Load Amps			7.7	7.7	8.5	12.8
RPM (Nominal)			1200	1200	1200	1200
Blower Wheel Diameter x Width - In. (mm)			11 x 8 (279x203)	10 x 6 (254x152)	11 x 8 (279x203)	11 x 10 (254x279)

*. Gas input ratings are certified for elevations to 2000 ft. (610 M) In USA for elevations above 2000 ft (610 M), reduce ratings 4 percent for each 1000 ft (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 or furnace installation instructions

†. Capacity in accordance with U.S. Government DOE test procedures.

‡. Airflow shown is for bottom only return air supply for Max Cooling Airflow and heating airflows (efficiency setting) at certified external static pressure. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return air supply. An airflow reduction of up to 7 percent may occur.

** Time-delay type is recommended.

ICS Isolated Combustion System

SPECIFICATIONS (continued)

Unit Size			48090C17	60090C21	60110C21	66135C24
RATINGS AND PERFORMANCE						
Input Btuh* Nonweatherized ICS	All Standard, Low NOx Upflow	High	88,000	88,000	110,000	132,000
		Low	58,000	58,000	72,500	87,000
Input Btuh* Nonweatherized ICS	All Low NOx Downflow/ Horizontal	High	84,000	84,000	105,000	126,000
		Low	58,000	58,000	72,500	87,000
Output Capacity (Btuh) Nonweatherized ICS†	All Standard, Low NOx Upflow	High	71,000	71,000	89,000	107,000
		Low	47,000	47,000	59,000	70,000
Output Capacity (Btuh) Nonweatherized ICS†	All Low NOx Downflow/ Horizontal	High	68,000	68,000	85,000	102,000
		Low	47,000	47,000	59,000	70,000
AFUE			80%			
Certified Temperature Rise Range - °F (°C)		High	40-70 (22-39)	25-55 (14-30)	40-70 (22-39)	40-70 (22-39)
		Low	30-60 (17-33)	15-45 (8-25)	25-55 (14-31)	25-55 (14-31)
Certified External Static Pressure		Heat/Cool	0.15/0.50	0.15/0.50	0.20/0.50	0.20/0.50
Airflow CFM ‡		Heating High/Low	1195/960	1600/1435	1465/1295	1835/1660
		Max Cooling	1595	2330	2155	2265
ELECTRICAL						
Unit Volts-Hertz-Phase			115-60-1			
Operating Voltage Range		Min/Max	104/127			
Maximum Unit Amps			9.60	14.70	15.00	15.00
Maximum Wire Length (Measure 1 Way in Ft. (M))			29 (9.0)	30 (9.2)	29 (9.1)	29 (9.1)
Minimum Wire Size			14	12	12	12
Maximum Fuse or Ckt Bkr Size (Amps)**			15	20	20	20
Transformer (24v)			40va			
External Control		Heating	12va			
Power Available		Cooling	35va			
Air Conditioning Blower Relay			Standard			
CONTROLS						
Limit Control			SPST			
Heating Blower Control			Solid State Time Operation			
Burners (Monoport)			4	4	5	6
Gas Connection Size			½-in. NPT			
GAS CONTROLS						
Gas Valve (Redundant)		Mfr.	WhiteRodgers			
		Min. inlet pressure (In. W.C.)	4.5 (Natural Gas)			
		Max. inlet pressure (In. W.C.)	13.6 (Natural Gas)			
Ignition Device			Hot Surface			
Factory installed orifice			Size 43			
BLOWER DATA						
Direct-Drive Motor HP (ECM)			1/2	1	1	1
Motor Full Load Amps			7.7	12.8	12.8	12.8
RPM (Nominal)			1200	1200	1200	1200
Blower Wheel Diameter x Width - In. (mm)			10 x 8 (254x203)	11 x 11 (279x279)	11 x 10 (254x279)	11 x 11 (279x279)

*. Gas input ratings are certified for elevations to 2000 ft. (610 M) In USA for elevations above 2000 ft (610 M), reduce ratings 4 percent for each 1000 ft (305 M) above sea level. Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 or furnace installation instructions.

†. Capacity in accordance with U.S. Government DOE test procedures.

‡. Airflow shown is for bottom only return air supply for Max Cooling Airflow and heating airflows (efficiency setting) at certified external static pressure. For air delivery above 1800 CFM, see Air Delivery table for other options. A filter is required for each return air supply. An airflow reduction of up to 7 percent may occur.

** Time-delay type is recommended.

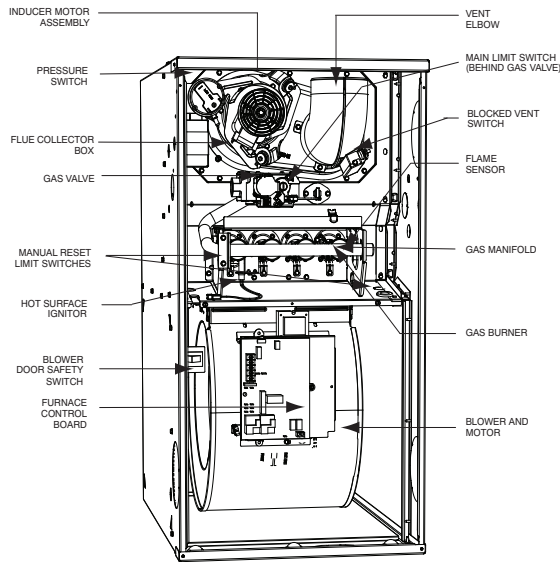
ICS Isolated Combustion System

MODEL NUMBER NOMENCLATURE

1 Heat Exchanger 9	2 Tier/NOx 8	3 AFUE/NOx 7	4 Heating Stages M	5 Major Series B	6, 7 Cooling Capacity (CFM) 42	8 - 10 Heat Input 060	11 Motor Type C	12 - 13 Width 17	14 Voltage (1-phase) A	15 Un-used -	16 Minor Series A
8 = 80% 9 = 90+%	0 = Base 1 = Legacy Line 2 = Preferred 3 = Ultra Low Nox 8 = Evolution	0 = 80% 1 = 80% Low Nox ---- 2 = 92% 5 = 95% 6 = 96% 7 = 97% 8 = 98%	M = Modulating S = Single Stage T = Two-Stage	A B C D ---	24 = 800 CFM 30 = 1000 CFM 36 = 1200 CFM 42 = 1400 CFM 48 = 1600 CFM 60 = 2000 CFM 66 = 2200 CFM	026 = 26,000 BTU/h 040 = 40,000 BTU/h 060 = 60,000 BTU/h ---	C = Comm. Variable-Speed Constant Airflow (VCA) ECM E = Fixed-Speeds Constant Torque (FCT) ECM V = Variable-Speed Constant Torque (VCT) ECM	14 = 14.2" 17 = 17.5" 21 = 21.0" 24 = 24.5"	A = 110V/60Hz B = 230V/50Hz	-	A B C ---

A19040

FURNACE COMPONENTS



A190086

NOTE: The furnaces are factory shipped for use with natural gas. These furnaces can be field-converted for propane gas with a factory-authorized and listed accessory conversion kit.

WARNING
FIRE, EXPLOSION, ASPHYXIATION HAZARD

Improper adjustment, alteration, service, maintenance, or installation can cause serious injury or death.

Read and follow instructions and precautions in User's Information Manual provided with this furnace. Installation and service must be performed by a qualified service agency or the gas supplier.

CAUTION

Check entire gas assembly for leaks after lighting this appliance.

INSTALLATION

- This furnace must be installed in accordance with the manufacturer's instructions and local codes. In the absence of local codes, follow the National Fuel Gas Code ANSI Z223.1/NFPA54 or CSA B-149, 1 Gas Installation Code.
- This furnace must be installed so there are provisions for combustion and ventilation air. See manufacturer's installation information provided with this appliance.

OPERATION

This furnace is equipped with manual reset limit switch(es) in burner compartment to protect against overheating conditions that can result from inadequate combustion air supply or blocked vent conditions.

- Do not bypass limit switches.
- If a limit opens, call a qualified serviceman to correct the condition and reset limit switch.

INSTALLATION
MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

This forced air furnace is equipped for use with natural gas at altitudes 0 - 10,000 ft (0 - 3,050m). An accessory kit, supplied by the manufacturer, shall be used to convert to propane gas use or may be required for some natural gas applications. This furnace is for indoor installation in a building constructed on site. This furnace may be installed on combustible flooring in alcove or closet at minimum clearance as indicated by the diagram from combustible material. This furnace may be used with a Type B-1 Vent and may be vented in common with other gas fired appliances.

This furnace is approved for UPFLOW, DOWNFLOW, and HORIZONTAL installations. Clearance arrows do not change with furnace orientation.

Vent Clearance to combustibles:
For Single Wall vents 6 inches (6 in).
For Type B-1 vent type 1 inch (1 in).

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

DOWNFLOW POSITIONS:

↑ Installation on non-combustible floors only.
For Installation on combustible flooring only when installed on special base, Part No. KGASB0201ALL or NAHA01101SB, Coil Assembly, Part No. CAR, CAP, CNPV, CNRV, END4X, ENW4X, WENC, WTNC, WENW OR WTNW.
Ø 18 inches front clearance required for alcove.

* Indicates supply or return sides when furnace is in the horizontal position. Line contact only permissible between lines formed by intersections of the Top and two Sides of the furnace jacket, and building joists, studs or framing.

33896-101 REV. C

A10269

ACCESSORIES

DESCRIPTION	PART NO.	36045C17	36070C14	48070C17	60070C21
Filter - Washable, Unframed 16 x 25 x 3/4-in. (406 x 635 x 19 mm)*	325531-402	X	X	X	-
Filter - Washable, Unframed 21 x 25 x 3/4-in. (508 x 635 x 19 mm)*	325531-403	-	-	-	X
Bottom Filter Rack - 14 inches (355 mm)*	FHG1425-2	-	X	-	-
Bottom Filter Rack - 16 inches (406 mm)*	FHG1625-2	X	-	X	-
Bottom Filter Rack - 21 inches (533 mm)*	FHG2025-2	-	X	-	X
Flue Extension	KGAFE0112UPH	X	X	X	X
Combustible Floor Base	KGASB0201ALL	X	X	X	X
Downflow Vent Guard	KGBVG0101DFG	X	X	X	X
Vent Extension Kit	KGAVE0101DNH	X	X	X	X
Chimney Adapter Kit	KGACA02014FC	X	X	X	X
	KGACA02015FC	-	-	-	-
Natural-to-Propane Conversion Kit†	AGAGC8NPS01A	X	X	X	X
Propane-to-Natural Conversion Kit†	AGAGC8PNS01A	X	X	X	X
High Altitude Pressure Switch Kit	KGAHA5801PSW	X	X	X	X

* Purchased through Replacement Components.

† Factory-authorized and field installed. Fuel conversion kits are CSA (Formerly AGA/CGA) recognized.

X = Accessory

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

4

DESCRIPTION	PART NO.	48090C17	60090C21	60110C21	66135C24
Filter - Washable, Unframed 16 x 25 x 3/4-in. (406 x 635 x 19 mm)*	325531-402	X	-	-	-
Filter - Washable, Unframed 21 x 25 x 3/4-in. (508 x 635 x 19 mm)*	325531-403	-	X	X	-
Filter - Washable, Unframed 24 x 25 x 3/4-in. (607 x 635 x 19 mm)*	325531-404	-	-	-	X
Bottom Filter Rack - 16 inches (406 mm)*	FHG1625-2	X	-	-	-
Bottom Filter Rack - 21 inches (533 mm)*	FHG2025-2	-	X	X	-
Bottom Filter Rack - 24 inches (607 mm)*	FHG2424-2	-	-	-	X
Flue Extension	KGAFE0112UPH	X	X	X	X
Combustible Floor Base	KGASB0201ALL	X	X	X	X
Downflow Vent Guard	KGBVG0101DFG	X	X	X	X
Vent Extension Kit	KGAVE0101DNH	X	X	X	X
Chimney Adapter Kit	KGACA02014FC	X	X	X	X
	KGACA02015FC	-	-	X	X
Natural-to-Propane Conversion Kit†	AGAGC8NPS01A	X	X	X	X
Propane-to-Natural Conversion Kit†	AGAGC8PNS01A	X	X	X	X
High Altitude Pressure Switch Kit	KGAHA5801PSW	X	X	X	X

*. Purchased through Replacement Components.

†. Factory-authorized and field installed. Fuel conversion kits are CSA (Formerly AGA/CGA) recognized.

X = Accessory

DESCRIPTION	
Gas Orifice Kit - #42 (Nat Gas)	LH32DB207
Gas Orifice Kit - #43 (Nat Gas)	LH32DB202
Gas Orifice Kit - #44 (Nat Gas)	LH32DB200
Gas Orifice Kit - #45 (Nat Gas)	LH32DB205
Gas Orifice Kit - #46 (Nat Gas)	LH32DB208
Gas Orifice Kit - #47 (Nat Gas)	LH32DB078
Gas Orifice Kit - #48 (Nat Gas)	LH32DB076
Gas Orifice Kit - #54 (LP)	LH32DB203
Gas Orifice Kit - #55 (LP)	LH32DB201
Gas Orifice Kit - #56 (LP)	LH32DB206
Gas Orifice Kit - 1.25mm (LP)	LH32DB209
Gas Orifice Kit - 1.30mm (LP)	LH32DB210

See Installation Instructions for model, altitude, and heat value usages.

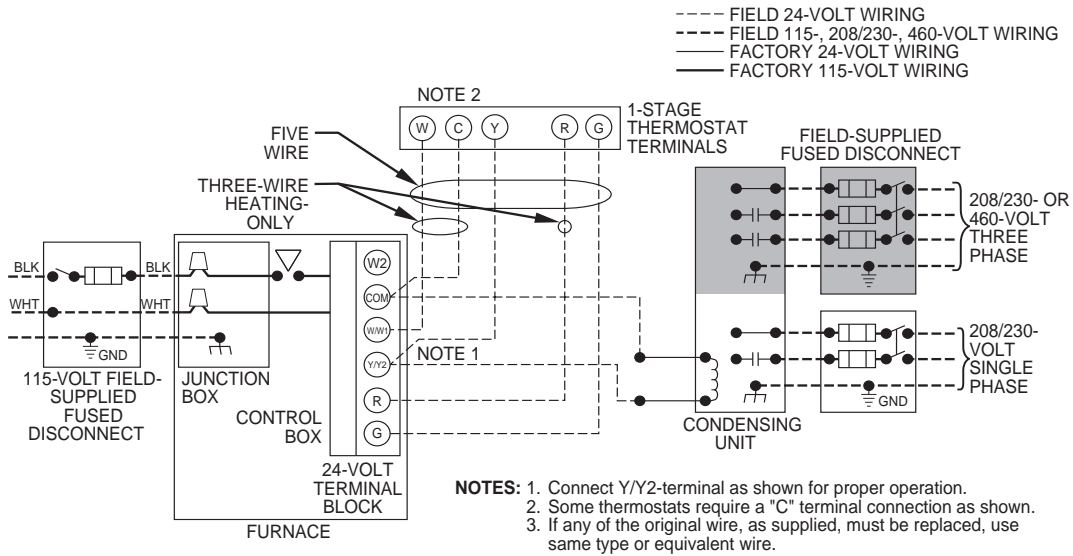
DESCRIPTION	ACCESSORY
HUMIDIFIER	Model HUM
HEAT RECOVERY VENTILATOR	Model HRV
ENERGY RECOVERY VENTILATOR	Model ERV
UV LIGHTS	Model UVL

Bryant has a wide variety of thermostats for your system, please visit www.Bryant.com to see all thermostat and IAQ products.

DESCRIPTION	ACCESSORY	14"	17"	21"	24"
Bryant Carbon Monoxide Alarm (10 pack)	COALMBNBR02-A10	X	X	X	X
Bryant Evolution Air Purifier - 16x25 (407x635 mm)	DGAPAXX1625	X	X	-	-
Bryant Evolution Air Purifier - 20x25 (508x635 mm)	DGAPAXX2025	-	-	X	X
Bryant Evolution Air Purifier Repl. Filter- 16x25 (407x635 mm)	GAPBBCAR1625-A05	X	X	-	-
Bryant Evolution Air Purifier Repl. Filter- 20x25 (508x635 mm)	GAPBBCAR2025-A05	-	-	X	X
Cartridge Media Filter - 16" (407 mm) (MERV 11)	FILXXCAR0116	X	X	-	-
Cartridge Media Filter - 16" (407 mm) (MERV 8)	FILXXCAR0016	X	X	-	-
Cartridge Media Filter - 20" (508 mm) (MERV 8)	FILXXCAR0020	-	-	X	-
Cartridge Media Filter - 20" (508 mm) (MERV11)	FILXXCAR0120	-	-	X	-
Cartridge Media Filter - 24" (610 mm) (MERV 8)	FILXXCAR0024	-	-	-	X
Cartridge Media Filter - 24" (610 mm) (MERV11)	FILXXCAR0124	-	-	-	X
EZ Flex Cabinet Side or Bottom - 16"	EZXCAB--0016	X	X	-	-
EZ Flex Cabinet Side or Bottom - 20"	EZXCAB--0020	-	-	X	X
EZ Flex Replacement Filters 16" MERV 10	EXPXXFIL0016	X	X	-	-
EZ Flex Replacement Filters 16" MERV 13	EXPXXFIL0316	X	X	-	-
EZ Flex Replacement Filters 20" MERV 10	EXPXXFIL0020	-	-	X	-
EZ Flex Replacement Filters 20" MERV 13	EXPXXFIL0320	-	-	X	-
EZ Flex Replacement Filters 24" MERV 10	EXPXXFIL0024	-	-	-	X
EZ Flex Replacement Filters 24" MERV 13	EXPXXFIL0324	-	-	-	X
EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 10)	EXPXXUNV0016	X	X	-	-
EZ-Flex Filter with End Caps - 16" (407 mm) (MERV 13)	EXPXXUNV0316	X	X	-	-
EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 10)	EXPXXUNV0020	-	-	X	-
EZ-Flex Filter with End Caps - 20" (508 mm) (MERV 13)	EXPXXUNV0320	-	-	X	-
EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 10)	EXPXXUNV0024	-	-	-	X
EZ-Flex Filter with End Caps - 24" (610 mm) (MERV 13)	EXPXXUNV0324	-	-	-	X
Media Filter Cabinet - 20"	FILCABXL0020	-	-	X	-
Media Filter Cabinet - 24"	FILCABXL0024	-	-	-	X
Media Filter Cabinet - 16"	FILCABXL0016	X	X	-	-

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TYPICAL WIRING SCHEMATIC



A95236

AIR DELIVERY - CFM (With Filter)*

(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2.)													
Unit Size: 36045C17	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	525	540	540	550	550	See note 4				
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	525	540	540	550	550	See note 4				
	OFF	ON	OFF	700	720	715	730	735	745	745	745	735	725
	OFF	ON	ON	885	905	920	925	920	910	905	900	895	885
	ON	OFF	OFF	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
	ON	OFF	ON	1250	1265	1275	1280	1275	1265	1255	1240	1205	1170
	ON	ON	OFF	1425	1425	1410	1380	1340	1305	1270	1235	1200	1165
	ON	ON	ON	1425	1425	1410	1380	1340	1305	1270	1235	1200	1165
Maximum Clg Airflow ²				1480	1445	1415	1380	1345	1310	1275	1235	1200	1165
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	525	540	540	550	550	See note 4				
Continuous Fan Airflow (SW3)	OFF	OFF	ON	525	540	540	550	550	See note 4				
	OFF	ON	OFF	700	720	715	730	735	745	745	745	735	725
	OFF	ON	ON	885	905	920	925	920	910	905	900	895	885
	ON	OFF	OFF	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
	ON	OFF	ON	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
	ON	ON	OFF	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
	ON	ON	ON	1070	1080	1085	1095	1095	1100	1095	1090	1080	1070
Heating (SW1)	High Heat Airflow ³			730	730	735	750	765	770	770	770	760	750
	Low Heat Airflow ³			605	625	635	630	635	635	630	625	615	605

AIR DELIVERY - CFM (with Filter)* (continued)

(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2.)													
Unit Size: 36070C14	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1050	1050	1050	1050	1050	1050	1045	1035	1020	1000
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	515	500	500	490	485	See note 4				
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	515	500	500	490	485	See note 4				
	OFF	ON	OFF	690	680	675	680	675	See note 4				
	OFF	ON	ON	875	875	875	870	865	855	850	835	825	820
	ON	OFF	OFF	1050	1050	1050	1050	1050	1050	1045	1035	1020	1000
	ON	OFF	ON	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
	ON	ON	OFF	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
	ON	ON	ON	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
Maximum Clg Airflow ²				1395	1400	1400	1400	1395	1385	1370	1340	1300	1245
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	515	500	500	490	485	See note 4				
Continuous Fan Airflow (SW3)	OFF	OFF	ON	515	500	500	490	485	See note 4				
	OFF	ON	OFF	690	680	675	680	675	See note 4				
	OFF	ON	ON	875	875	875	870	865	855	850	835	825	820
	ON	OFF	OFF	1050	1050	1050	1050	1050	1050	1045	1035	1020	1000
	ON	OFF	ON	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
	ON	ON	OFF	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
	ON	ON	ON	1220	1225	1225	1225	1225	1220	1205	1190	1185	1170
Heating (SW1)	High Heat Airflow ³			1160	1165	1175	1180	1180	1180	1180	1180	1180	1175
	Low Heat Airflow ³			735	735	735	735	725	See note 4				
Unit Size: 48070C17	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1435	1435	1435	1420	1380	1345	1310	1270	1235	1200
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	705	715	720	720	715	705	700	690	680	665
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	530	535	530	520	505	See note 4				
	OFF	ON	OFF	705	715	720	720	715	705	700	690	680	665
	OFF	ON	ON	870	885	890	895	895	895	890	885	875	865
	ON	OFF	OFF	1110	1110	1110	1105	1100	1090	1085	1075	1065	1050
	ON	OFF	ON	1240	1240	1245	1245	1240	1235	1230	1225	1215	1210
	ON	ON	OFF	1435	1435	1435	1420	1380	1345	1310	1270	1235	1200
	ON	ON	ON	1435	1435	1435	1420	1380	1345	1310	1270	1235	1200
Maximum Clg Airflow ²				1510	1480	1445	1410	1375	1340	1305	1270	1235	1200
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	805	800	795	790	775	765	750	735	715	700
Continuous Fan Airflow (SW3)	OFF	OFF	ON	520	520	515	510	495	See note 4				
	OFF	ON	OFF	635	630	625	620	605	595	580	565	550	535
	OFF	ON	ON	805	800	795	790	775	765	750	735	715	700
	ON	OFF	OFF	805	800	795	790	775	765	750	735	715	700
	ON	OFF	ON	805	800	795	790	775	765	750	735	715	700
	ON	ON	OFF	805	800	795	790	775	765	750	735	715	700
	ON	ON	ON	805	800	795	790	775	765	750	735	715	700
Heating (SW1)	High Heat Airflow ³			1245	1250	1250	1240	1235	1230	1225	1215	1205	1200
	Low Heat Airflow ³			1040	1040	1035	1030	1030	1020	1010	1000	990	980

AIR DELIVERY - CFM (with Filter)* (continued)

(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2.)													
Unit Size: 48090C17	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1350	1370	1390	1390	1400	1390	1380	1380	1360	1340
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	680	680	680	675	670	See note 4				
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	525	520	525	495	475	See note 4				
	OFF	ON	OFF	680	680	680	675	670	See note 4				
	OFF	ON	ON	815	845	845	855	850	850	845	835	820	805
	ON	OFF	OFF	1005	1005	1015	1035	1040	1040	1035	1030	1025	1010
	ON	OFF	ON	1190	1200	1200	1205	1205	1215	1205	1200	1185	1170
	ON	ON	OFF	1350	1370	1390	1390	1400	1390	1380	1380	1360	1340
	ON	ON	ON	1350	1370	1390	1390	1400	1390	1380	1380	1360	1340
Maximum Clg Airflow ²				1595	1600	1600	1600	1595	1555	1505	1465	1430	1390
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	680	680	680	675	670	See note 4				
Continuous Fan Airflow (SW3)	OFF	OFF	ON	525	520	525	495	475	See note 4				
	OFF	ON	OFF	680	680	680	675	670	See note 4				
	OFF	ON	ON	815	845	845	855	850	850	845	835	820	805
	ON	OFF	OFF	1005	1005	1015	1035	1040	1040	1035	1030	1025	1010
	ON	OFF	ON	1190	1200	1200	1205	1205	1215	1205	1200	1185	1170
	ON	ON	OFF	1190	1200	1200	1205	1205	1215	1205	1200	1185	1170
	ON	ON	ON	1190	1200	1200	1205	1205	1215	1205	1200	1185	1170
Heating (SW1)	High Heat Airflow ³			1190	1205	1210	1210	1210	1210	1210	1210	1210	1200
	Low Heat Airflow ³			950	970	985	985	985	985	985	985	985	980
Unit Size: 60090C21	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1785	1805	1815	1835	1840	1855	1860	1850	1845	1835
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	925	935	945	960	980	965	940	925	920	900
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	715	715	735	730	730	See note 4				
	OFF	ON	OFF	925	935	945	960	980	965	940	925	920	900
	OFF	ON	ON	1040	1045	1030	1055	1060	1045	1060	1045	1030	1005
	ON	OFF	OFF	1295	1320	1285	1335	1350	1340	1350	1335	1310	1300
	ON	OFF	ON	1505	1525	1480	1480	1490	1475	1465	1455	1450	1445
	ON	ON	OFF	1785	1805	1815	1835	1840	1855	1860	1850	1845	1835
	ON	ON	ON	2250	2265	2270	2265	2255	2245	2220	2175	2120	2060
Maximum Clg Airflow ²				2375	2375	2375	2365	2330	2285	2235	2185	2140	2075
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	925	935	945	960	980	965	940	925	920	900
Continuous Fan Airflow (SW3)	OFF	OFF	ON	715	715	735	730	730	See note 4				
	OFF	ON	OFF	925	935	945	960	980	965	940	925	920	900
	OFF	ON	ON	1040	1045	1030	1055	1060	1045	1060	1045	1030	1005
	ON	OFF	OFF	1295	1320	1285	1335	1350	1340	1350	1335	1310	1300
	ON	OFF	ON	1505	1525	1480	1480	1490	1475	1465	1455	1450	1445
	ON	ON	OFF	1505	1525	1480	1480	1490	1475	1465	1455	1450	1445
	ON	ON	ON	1505	1525	1480	1480	1490	1475	1465	1455	1450	1445
Heating (SW1)	High Heat Airflow ³			1590	1610	1605	1605	1600	1605	1610	1610	1615	1620
	Low Heat Airflow ³			1425	1450	1440	1465	1470	1455	1450	1440	1435	1430

AIR DELIVERY - CFM (with Filter)* (continued)

(SW1-5 and SW4-3 set to OFF, except as indicated. See notes 1 and 2.)													
Unit Size: 60110C21	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1750	1750	1750	1750	1750	1750	1750	1750	1740	1725
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	875	875	875	875	875	See note 4				
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	700	700	700	700	700	See note 4				
	OFF	ON	OFF	875	875	875	875	875	See note 4				
	OFF	ON	ON	1050	1050	1050	1050	1050	See note 4				
	ON	OFF	OFF	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
	ON	OFF	ON	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
	ON	ON	OFF	1750	1750	1750	1750	1750	1750	1750	1750	1740	1725
	ON	ON	ON	2100	2100	2100	2100	2090	2075	2055	2040	2005	1970
Maximum Clg Airflow ²				2200	2190	2190	2180	2155	2145	2125	2100	2080	2020
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	875	875	875	875	875	See note 4				
Continuous Fan Airflow (SW3)	OFF	OFF	ON	700	700	700	700	700	See note 4				
	OFF	ON	OFF	875	875	875	875	875	See note 4				
	OFF	ON	ON	1050	1050	1050	1050	1050	See note 4				
	ON	OFF	OFF	1225	1225	1225	1225	1225	1225	1225	1225	1225	1225
	ON	OFF	ON	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
	ON	ON	OFF	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
	ON	ON	ON	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
Heating (SW1)	High Heat Airflow ³			1460	1465	1475	1475	1475	1475	1475	1475	1465	1465
	Low Heat Airflow ³			1275	1295	1315	1320	1320	1320	1320	1320	1320	1315
Unit Size: 66135C24	Clg/CF Switch settings			External Static Pressure (ESP)									
Clg Switches	SW2-3	SW2-2	SW2-1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Clg Default:	OFF	OFF	OFF	1750	1765	1765	1775	1780	1785	1785	1775	1770	1765
CF Switches	SW3-3	SW3-2	SW3-1										
Low-Clg Default:	OFF	OFF	OFF	860	880	895	900	905	900	890	865	845	825
Cooling Airflow (SW2) Low-Cooling Airflow (SW3)	OFF	OFF	ON	690	710	715	710	690	See note 4				
	OFF	ON	OFF	860	880	895	900	905	900	890	865	845	825
	OFF	ON	ON	1015	1050	1070	1080	1085	1095	1095	1090	1085	1075
	ON	OFF	OFF	1185	1220	1245	1260	1270	1275	1280	1280	1285	1280
	ON	OFF	ON	1400	1415	1420	1425	1425	1420	1415	1410	1400	1390
	ON	ON	OFF	1750	1765	1765	1775	1780	1785	1785	1775	1770	1765
	ON	ON	ON	2080	2095	2100	2110	2105	2115	2125	2115	2120	2090
Maximum Clg Airflow ²				2240	2255	2265	2270	2265	2255	2220	2175	2135	2085
CF Switches	SW3-3	SW3-2	SW3-1										
Cont. Fan Default:	OFF	OFF	OFF	860	880	895	900	905	900	890	865	845	825
Continuous Fan Airflow (SW3)	OFF	OFF	ON	690	710	715	710	690	See note 4				
	OFF	ON	OFF	860	880	895	900	905	900	890	865	845	825
	OFF	ON	ON	1015	1050	1070	1080	1085	1095	1095	1090	1085	1075
	ON	OFF	OFF	1185	1220	1245	1260	1270	1275	1280	1280	1285	1280
	ON	OFF	ON	1400	1415	1420	1425	1425	1420	1415	1410	1400	1390
	ON	ON	OFF	1400	1415	1420	1425	1425	1420	1415	1410	1400	1390
	ON	ON	ON	1400	1415	1420	1425	1425	1420	1415	1410	1400	1390
Heating (SW1)	High Heat Airflow ³			1825	1835	1850	1855	1860	1860	1855	1850	1845	1840
	Low Heat Airflow ³			1645	1660	1670	1675	1675	1675	1675	1670	1665	1660

1. Nominal 350 CFM/ton cooling airflow is delivered with SW1-5 and SW4-3 set to OFF.

Set SW1-5 to ON for nominal 400 CFM/ton (+15% airflow).

Set SW4-3 to ON for nominal 325 CFM/ton (-7% airflow).

Set both SW1-5 and SW4-3 on ON for nominal 370 CFM/ton (+7% airflow).

This applies to Cooling and Low-Cooling airflow, but does not affect continuous fan airflow.

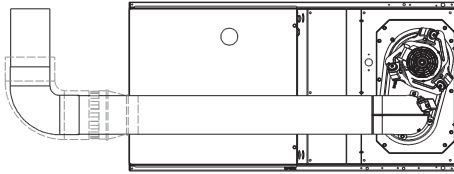
The above adjustments in airflow are subject to motor horsepower range/capacity.

2. Maximum cooling airflow is achieved when switches SW2-1, SW2-2, SW2-3 and SW1-5 are set to ON, and SW4-3 is set to OFF.

3. All heating CFM's are when comfort/efficiency adjustment switch (SW1-4) is set to OFF

4. Ductwork must be sized for high-heating CFM within the operational range of ESP. Operation within the blank areas of the chart is not recommended because high-heat operation will be above 1.0 ESP.

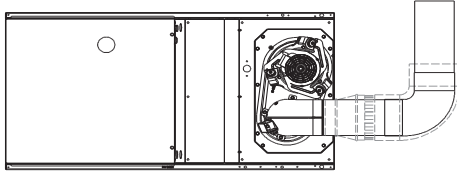
5. All airflows on 21" casing size furnaces are 5% less on side return only installations.



SEE NOTES: 1,2,4,5,7,8,9

HORIZONTAL RIGHT

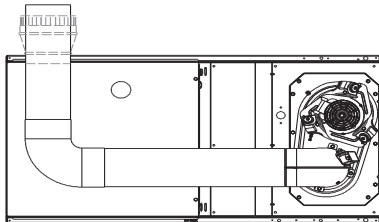
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SEE NOTES: 1,2,4,7,8,9

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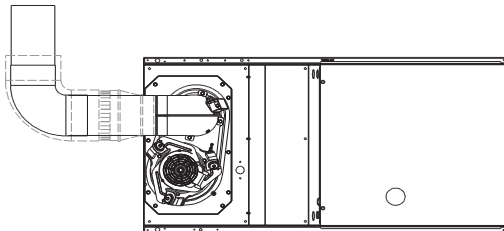
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SEE NOTES: 1,2,4,5,7,8,9

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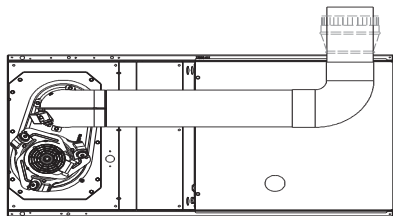
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SEE NOTES: 1,2,4,7,8,9

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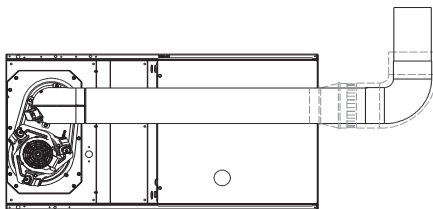
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SEE NOTES: 1,2,4,5,7,8,9

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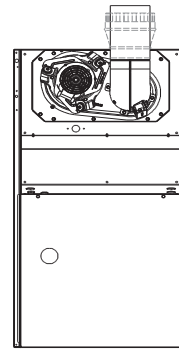
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SEE NOTES: 1,2,4,5,7,8,9

HORIZONTAL LEFT

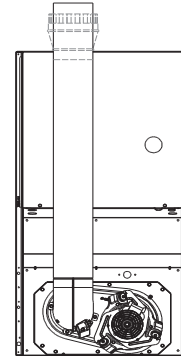
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SEE NOTES: 1,2,4,7,8,9

UPFLOW

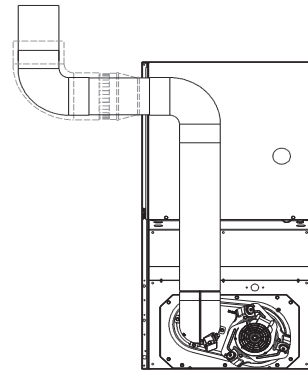
A02058



SEE NOTES: 1,2,4,5,7,8,9

DOWNFLOW

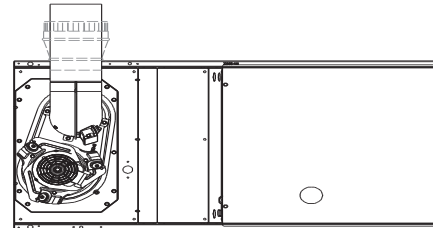
A02061



SEE NOTES:1,2,3,4,5,7,8,9

DOWNFLOW

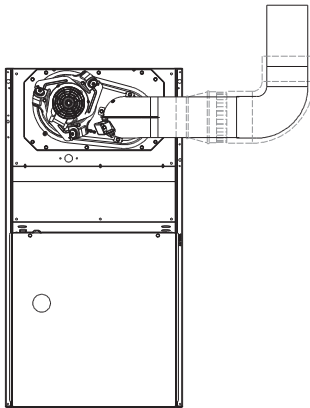
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SEE NOTES: 1,2,4,5,7,8,9

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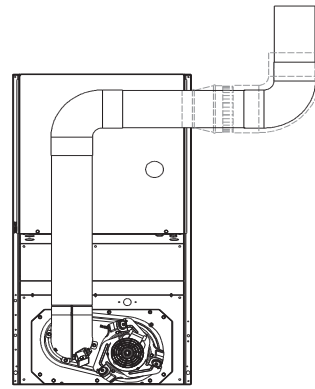
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SEE NOTES: 1,2,3,4,7,8,9

UPFLOW

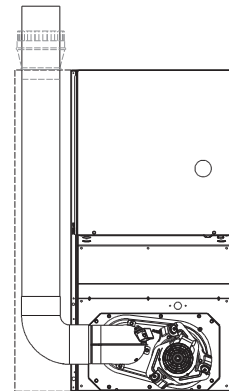
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SEE NOTES: 1,2,3,4,7,8,9

DOWNFLOW

A02063



SEE NOTES: 1,2,4,5,6,7,8,9

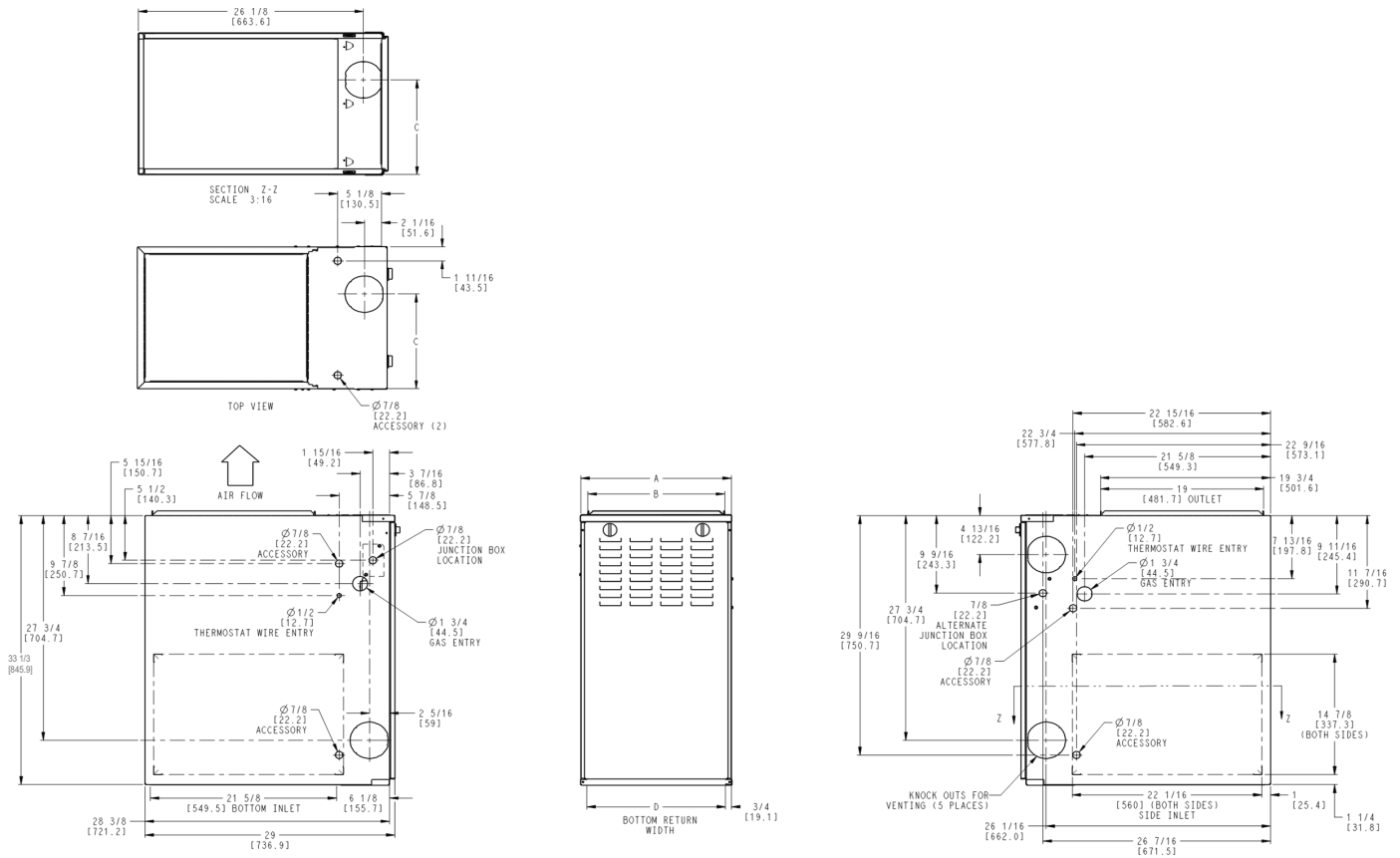
DOWNFLOW

A02062

VENTING NOTES

1. For common vent, vent connector sizing and vent material: United States, latest edition of the National Fuel Gas Code (NFGC), ANSI Z223.1/NFPA 54.
2. Immediately increase to 5-in. (127 mm) vent connector outside furnace casing when 5-in. (127 mm) vent connector required, refer to Note 1.
3. Side outlet vent for upflow and downflow installations must use Type B vent immediately after exiting the furnace, except when Downflow Vent Guard is used in downflow position.
4. Type B vent where required, refer to Note 1.
5. 4-in. (102 mm) single wall vent must be used inside furnace casing and the Downflow Vent Guard Kit.
6. Accessory Downflow Vent Guard Kit required in downflow installations with bottom vent configuration.
7. Chimney Adapter Kit required for exterior masonry chimney applications. Refer to Chimney Adapter Kits for sizing and complete application details.
8. Secure vent connector to furnace elbow with (2) corrosion-resistant sheet metal screws, space approximately 180 apart.
9. Secure all other single wall vent connector joints with (3) corrosion-resistant screws spaced approximately 120 apart. Secure Type B vent connectors per vent connector manufacturer's recommendations.

DIMENSIONS



A190084

FURNACE SIZE	A CABINET WIDTH	B OUTLET WIDTH	C TOP AND BOTTOM FLUE COLLAR	D BOTTOM INLET WIDTH	VENT CONNECTION SIZE	SHIP WT. LB (KG)
36045C17	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	118 (53.5)
36070C14	14-3/16 (360)	12-9/16 (319)	9-5/16 (237)	12-11/16 (322)	4 (102)	118 (53.5)
48070C17	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	126 (57.1)
60070C21	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	147 (66.7)
48090C17	17-1/2 (445)	15-7/8 (403)	11-9/16 (294)	16 (406)	4 (102)	134 (60.8)
60090C21	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	153 (69.4)
60110C21	21 (533)	19-3/8 (492)	13-5/16 (338)	19-1/2 (495)	4 (102)	156 (70.7)
66135C24	24-1/2 (622)	22-7/8 (581)	15-1/16 (383)	23 (584)	4 (102)*	169 (76.6)

*. 135 size furnace require a 5 or 6-in. (127 or 152 mm) vent. Use a vent adapter between furnace and vent stack. See Installation Instructions for complete installation requirements.

GUIDE SPECIFICATIONS

Gas Furnace

General

SYSTEM DESCRIPTION

Furnish a _____ Variable speed gas-fired furnace for use with natural gas or propane (factory authorized conversion kit required for propane); furnish cold air return plenum.

QUALITY ASSURANCE

Unit will be designed, tested and constructed to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces. Unit will be 3rd party certified by CSA to the current ANSI Z 21.47/CSA 2.3 design standard for gas-fired central furnaces.

Unit will carry the CSA Blue Star® label.

Unit efficiency testing will be performed per the current DOE test procedure as listed in the Federal Register.

Unit will be certified for capacity and efficiency and listed in the latest AHRI Consumer's Directory of Certified Efficiency Ratings.

Unit shall carry the current Federal Trade Commission Energy Guide efficiency label.

DELIVERY, STORAGE AND HANDLING

Unit shall be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

WARRANTY (for inclusion by specifying engineer)

U.S. only. Warranty certificate available upon request.

Products

EQUIPMENT

Components shall include: slow-opening two-stage dual fuel gas valve to reduce ignition noise, regulate gas flow, with electric switch gas shut-off; flame proving sensor, hot surface igniter, dual pressure switch assembly, flame rollout switch, ICM blower and two speed inducer assembly, 40va transformer; low-voltage (heating) (heating/cooling) thermostat.

Blower Wheel and ECM Blower Motor

Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of variable speed ECM type shall be permanently lubricated with sealed ball bearings, of _____ hp, and supplies delivers requested airflow CFM as defined by signals received from furnace control. Blower motor shall be direct drive and soft mounted to the blower scroll to reduce variation transmission.

Filters

Furnace may have reusable-type filters. Filter shall be _____ in. (mm) (x) _____ in. (mm) An accessory high efficiency Media Filter is available as an option. _____ Media Filter.

Casing

Casing shall be of .030 in. (.76 mm) thickness minimum, pre-painted steel.

Two Speed Inducer Motor

Two Speed Inducer motor shall be soft mounted to reduce vibration transmission.

Flame Rollout Switch

Flame Rollout Switch shall be factory installed near burner area to further reduce the possibility of a stuck gas valve or failed inducer motor.

Heat Exchangers

Heat exchangers shall be a 4-Pass 20 gage corrosion resistant aluminized steel of fold-and-crimp sectional design when applied operating under negative pressure.

Controls

Control shall include a micro-processor based integrated electronic control board with at least 11 service troubleshooting codes displayed via enhanced flashing LED diagnostic light on the control, a self-test feature that checks all major functions of the furnace within one minute, and a replaceable automotive-type circuit protection fuse. Multiple operational settings available including separate blower speeds for low heat, high heat, low cooling, high cooling and continuous fan. Continuous fan speed may be adjusted from the thermostat. Cooling airflow will be selectable between 350 or 400 CFM per ton of air conditioning. Features will also include temporary reduced airflow in the cooling mode for improved dehumidification when an Evolution® Control or Thermidistat™ is selected as the thermostat.

OPERATING CHARACTERISTICS

Heating Capacity shall be _____ Btuh input; _____ Btuh output capacity.

Fuel Gas Efficiency shall be 80% AFUE.

Air delivery shall be _____ CFM minimum at 0.50 In. W.C. external static pressure.

Dimensions shall be: depth _____ in. (mm); width _____ in.; height _____ in. (mm) (casing only). Height shall be _____ in. (mm) with A/C coil and _____ in. (mm) overall with plenum.

ELECTRICAL REQUIREMENTS

Electrical supply shall be 115 volts, 60 Hz, single-phase (nominal). Minimum wire size shall be _____ AWG; maximum fuse size or circuit breaker shall be _____ Amps.

SPECIAL FEATURES

Refer to section of the product data sheet identifying accessories and descriptions for specific features and available enhancements.

