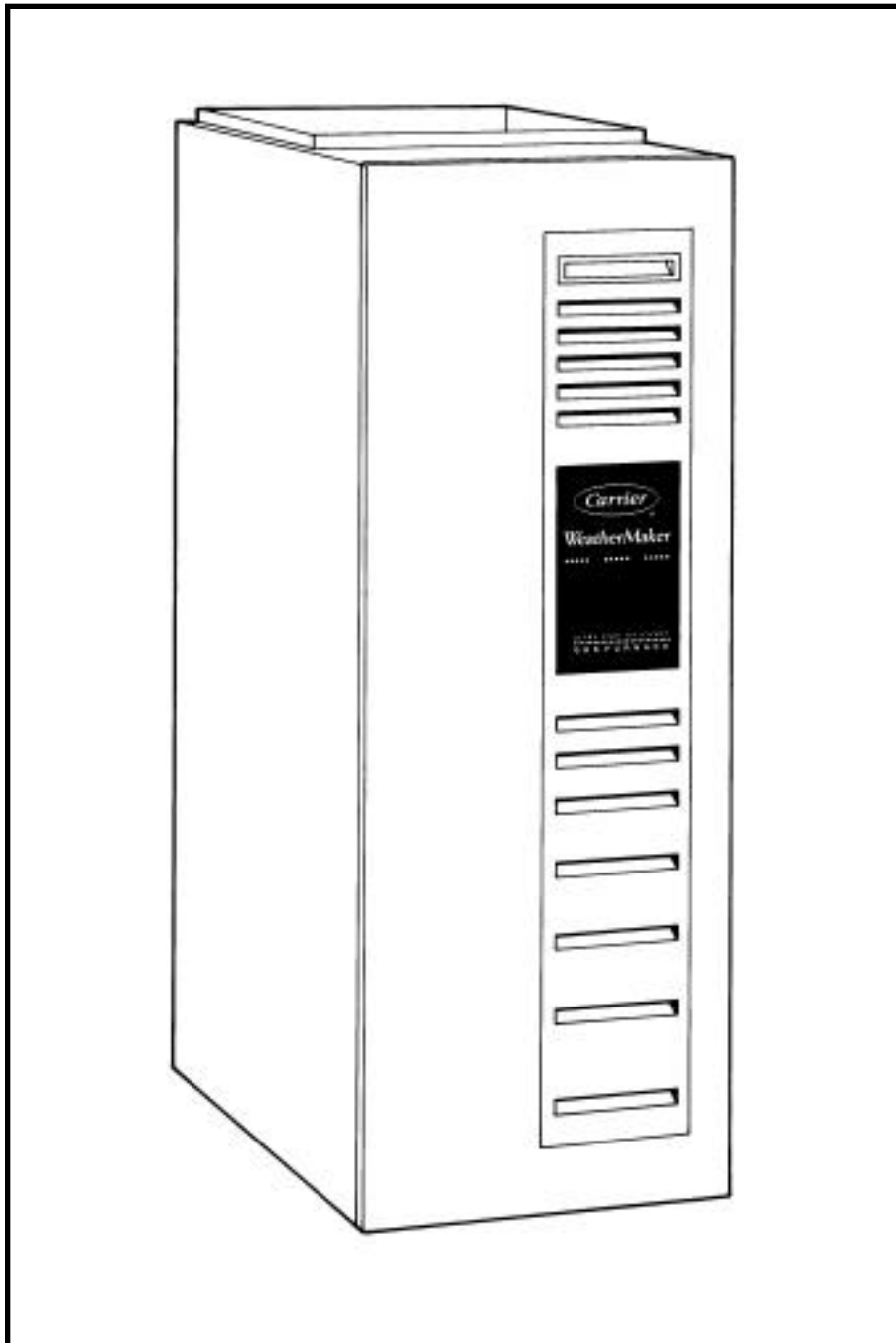




Product Data

58MXA Deluxe 4-Way Multipoise Fixed-Capacity Condensing Gas Furnace

Series 111
Input Capacities: 40,000 thru 120,000 Btuh



4-way Multipoise Design Allows More Applications . . .

The model 58MXA is a must for your product line. This high-efficiency furnace allows more applications with its reliable 4-way multipoise design. The model 58MXA is available in 10 heat/airflow combinations and with the 4-way multipoise design can be installed in upflow, downflow, or horizontal positions covering up to 40 different applications. The furnace is factory configured for upflow application.

This versatile unit utilizes hot surface ignition (HSI) which ignites the burners directly. HSI eliminates gas waste that typical continuous-pilot designs can bring. Hot surface ignition provides reliable start-up and operation.

Take a look at the control center on the model 58MXA. Control of the ignition, inducer, and blower operation is all handled in 1 central printed circuit board. The status indicator on the control signals when a fault has occurred and identifies where the problem is. This, along with the component test feature, makes the 58MXA one of the easiest gas furnaces to troubleshoot.

High efficiency is achieved by maximizing heat transfer. The model 58MXA uses 100% outdoor air for combustion in a sealed combustion system. The result is energy-saving efficiency, 92% Annual Fuel Utilization Efficiency (AFUE), and reduced operational noise. The model 58MXA is 1 of the quietest furnaces in the industry.

A unique feature of this unit is the patented polypropylene-laminated heat exchanger. This secondary heat exchanger ensures that all available heat is properly transferred to the airstream

and throughout the home. Using the exclusive flow-through design, the secondary heat exchanger reduces the pressure drop in the furnace which leads to lower electrical usage, an important part of this unit's efficiency. Carrier heat exchangers are backed by a Lifetime Limited Warranty.*

When we put it all together, the model 58MXA combines quality and design to bring high efficiency and comfort. You will enjoy the versatility and ease of installation of this unit. The model 58MXA is equipped for either left- or right-side connections. Blower speeds are easily adjustable with speed-taps easily located on the control center. An updated, more efficient inducer allows for more use of 2-in. vent and combustion-air piping, keeping installation costs low.

As with other Carrier furnaces, this model is designed to work as a part of the total home comfort system which includes elements for cooling, air cleaning, humidification, ventilation, and zoning.

58MXA FEATURES/ BENEFITS

Casing—One piece, seamless wrap-around construction of heavy, galvanized steel resists corrosion.

Insulated Blower Compartment—The acoustical insulation reduces air and

motor noise to promote quiet operation.

*See warranty details.

Certifications—The 58MXA units are A.G.A. and C.G.A. design certified for use with natural and propane gases. The efficiency is GAMA efficiency rating certified. The 58MXA meets the oxides of nitrogen (NO_x) emission levels set by South Coast and Bay Area Air Quality Management Districts in California.

Warranties—Limited Lifetime Warranty on the heat exchangers for the lifetime of original owner in single family residence; 20 years in other residential and commercial applications. Three-year Warranty on microprocessor control, HSI, and inducer motor. Contact your dealer for details.

Combustion Products Venting—The combustion-air and vent pipes can terminate through a side wall or through the roof when used with a factory-authorized vent termination kit.

Blower Access Panel Switch—Shuts off all 24-v power to furnace whenever blower access panel is opened.

Hot Surface Ignitor—No pilot flame to waste gas or cause problems.

Slow Opening Redundant Gas Valve—Shuts off gas to burners if one of the valves fails to close completely for any reason. The slow opening feature reduces start-up noise from rapid ignition.

Insulation—Foil-faced insulation in heat exchanger section of the casing minimizes heat loss.

Control Center—Microprocessor controls sequencing and furnace operation. Equipped with a component test feature and status indicator light to assist in troubleshooting. Microprocessor blower control timed blowers start after main burners ignite to eliminate cold air blowing into rooms.

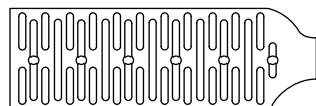
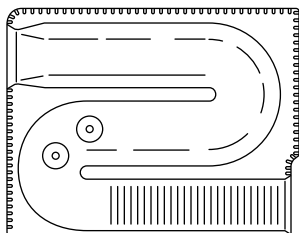
Adjustable Blower Speed—For precise airflow selection of heating or cooling operation.

Direct Vent Sealed Combustion System—Model 58MXA uses 100% outdoor air, which results in especially quiet operation. Direct venting also minimizes the possibility of chloride contamination which can result in heat exchanger corrosion. Also reduces air infiltration into the home.

Monoport Burners—The burners are finely tuned for smooth, quiet combustion plus economical gas usage.

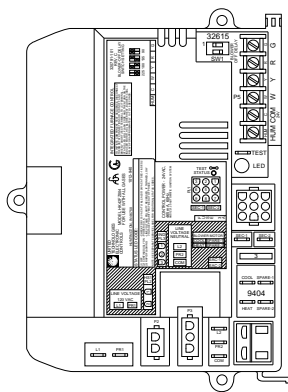
Serpentuff™—Exclusive Serpentuff coating, a patented Polypropylene laminate is used on the secondary heat exchanger.

Bottom Closure—Factory-installed for side return; easily removable for bottom return.



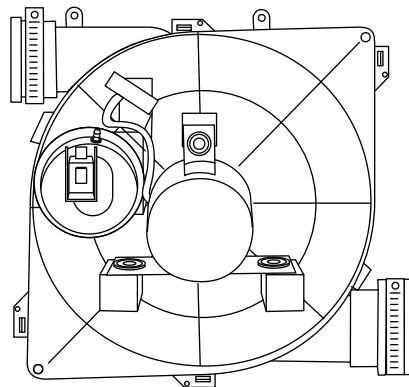
A92505

HEAT EXCHANGERS



A94151

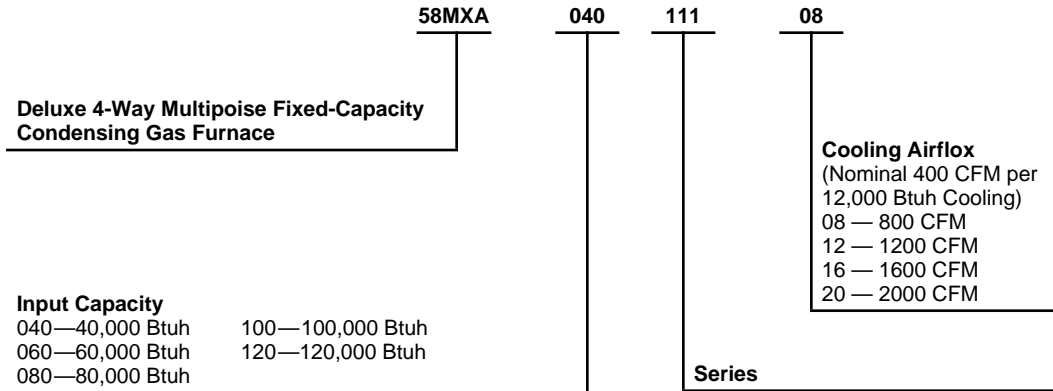
CONTROL CENTER



A94152

INDUCER ASSEMBLY

Model number nomenclature



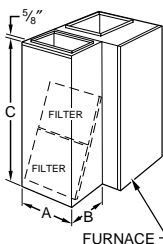
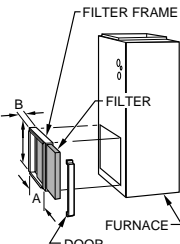
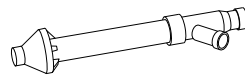
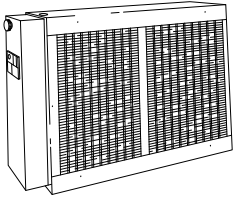
Carrier accessories*

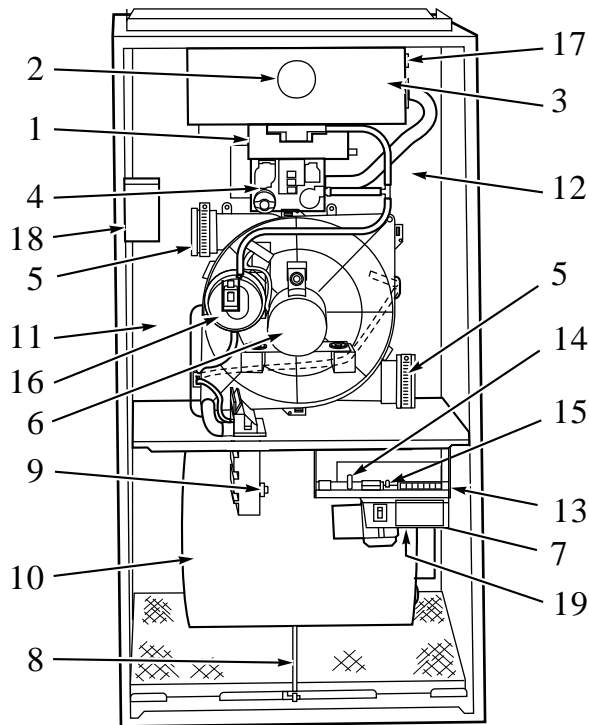
UNIT SIZE	040	060	080	100	120
ELECTRONIC AIR CLEANER (EAC)	Model 31KAX				
HUMIDIFIER	Models 49BF, 49BG, 49BP, 49FH, 49FP, and 49WS				
2 TWINNING KIT (Upflow Only)	N/A	KGATW0301HSI†			
2 RETURN-AIR PLENUM (With Washable Filters) Upflow Only	KGARP0201ALL				
SIDE FILTER RACK (Without Filter) Upflow Only	KGAFR0206ALL				
GAS CONVERSION KIT— NATURAL-TO-PROPANE	KGANP2001ALL				
GAS CONVERSION KIT— PROPANE-TO-NATURAL	KGAPN1601ALL				
DOWNFLOW BASE (For Combustible Floors, with or without A/C Coil)	KGASB0201ALL				
VENT TERMINATION KIT (Bracket Only for 2 Pipes)	2-in.—KGAVT0101BRA				3-in.—KGAVT0201BRA
CONCENTRIC TERMINATION KIT (Single Exit)	2-in.—KGAVT0501CVT				3-in.—KGAVT0601CVT
SIDE-WALL VENT TERMINAL COVER	2-in.—KGAVT0301COV				3-in.—KGAVT0401COV

* Factory authorized and field installed. Gas conversion kits are A.G.A. recognized.

† For 16 and 20 sizes only and in upflow application ONLY. See kit Installation Instructions for details.

N/A—Not Applicable

 <p>A93067 RETURN-AIR PLENUM</p> <p>Custom-made return-air plenum can be mounted on either side of the furnace. Two framed washable filters included.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">A</td><td style="text-align: center;">25 in.</td></tr> <tr><td style="text-align: center;">B</td><td style="text-align: center;">16 in.</td></tr> <tr><td style="text-align: center;">C</td><td style="text-align: center;">38-7/8 in.</td></tr> </table>	A	25 in.	B	16 in.	C	38-7/8 in.	 <p>A93068 SIDE FILTER RACK</p> <p>Custom made filter rack for easy connection when a return plenum already exists. Provides easy access for cleaning filter. Accepts one 16 x 25 x 1 in. filter.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">A</td><td style="text-align: center;">23-1/8 in.</td></tr> <tr><td style="text-align: center;">B</td><td style="text-align: center;">2-3/8 in.</td></tr> <tr><td style="text-align: center;">C</td><td style="text-align: center;">14-1/2 in.</td></tr> </table>	A	23-1/8 in.	B	2-3/8 in.	C	14-1/2 in.	 <p>A93086 CONCENTRIC VENT</p> <p>A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or sidewall.</p> <p>One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn through the outer pipe.</p>	 <p>A91465 INDOOR AIR QUALITY</p> <p>EAC (shown) cleans the air of smoke, dirt, and many pollens.</p> <p>A Carrier humidifier will add moisture to winter-dry air to improve comfort and help keep household items in better condition. Moisturizing household air also helps to retain body heat and provide comfort at lower temperature.</p>
A	25 in.														
B	16 in.														
C	38-7/8 in.														
A	23-1/8 in.														
B	2-3/8 in.														
C	14-1/2 in.														



A93202

NOTES:

1. The 58MXA Furnaces are for use with natural gas, but can be field-converted for propane gas with a factory-authorized and listed accessory conversion kit.
2. Component location and configuration may be different than shown above.

- | | |
|---|--|
| <p>❶ Combustion-air intake connection to ensure contaminant-free air (right or left side).</p> <p>❷ Burner sight glass for viewing burner flame.</p> <p>❸ Burner assembly (inside). Operates with energy-saving, inshot burners and hot surface ignitor for safe, dependable heating.</p> <p>❹ Redundant gas valve. Safe, efficient. Features 1 gas control with 2 internal shut-off valves.</p> <p>❺ Vent outlet. Uses PVC pipe to carry vent gases from the furnace's combustion system (right or left side).</p> <p>❻ Inducer motor. Pulls hot flue gases through the heat exchangers, maintaining negative pressure for added safety.</p> <p>❼ Blower access panel safety interlock switch.</p> <p>❽ Air filter and retainer. May be used for side return application.</p> <p>❾ Condensate drain connection. Collects moisture condensed during the combustion process.</p> <p>❿ Heavy-duty blower. Circulates air across the heat exchangers to transfer heat into the home.</p> | <p>⓫ Secondary condensing heat exchanger (inside). Wrings out more heat through condensation. Constructed with Polypropylene-laminated steel to ensure durability.</p> <p>⓬ Primary serpentine heat exchanger (inside). Stretches fuel dollars with the S-shaped heat-flow design. Solid construction of corrosion-resistant aluminized steel means reliability.</p> <p>⓭ Control center.</p> <p>⓮ 3-amp fuse provides electrical and component protection.</p> <p>⓯ Light emitting diode (LED) on control center. Code lights are for diagnosing furnace operation and service requirements.</p> <p>⓰ Pressure switch ensures adequate flow of flue products through furnace and out vent system.</p> <p>⓱ Rollout switch (manual reset) to prevent overtemperature.</p> <p>⓲ Junction box for 115-v electrical power supply.</p> <p>⓳ Transformer (24v) behind control center provides low-voltage power to furnace control center and thermostat.</p> |
|---|--|

Physical data

UNIT SIZE		040-08	040-12	060-12	060-16	080-12	080-16	080-20	100-16	100-20	120-20
OUTPUT CAPACITY BTUH† (Nonweatherized ICS)		37,200	37,200	55,800	55,800	74,400	74,400	74,400	93,000	93,000	111,600
INPUT BTUH*		40,000	40,000	60,000	60,000	80,000	80,000	80,000	100,000	100,000	120,000
SHIPPING WEIGHT (Lb)		149	152	163	166	172	175	197	193	196	228
CERTIFIED TEMP RISE RANGE (°F)		30—60	15—45	30—60	20—50	40—70	30—60	20—50	45—75	30—60	40—70
CERTIFIED EXT STATIC PRESSURE (In. wc)	Heating	0.10	0.10	0.12	0.12	0.15	0.15	0.15	0.20	0.20	0.20
	Cooling	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
AIRFLOW CFM‡	Heating	740	1205	1260	1300	1160	1285	1785	1315	1690	1650
	Cooling	895	1230	1250	1545	1255	1525	1925/ 2035	1570	1930/ 2130	2040/ 2130
LIMIT CONTROL		SPST									
HEATING BLOWER CONTROL (Off Delay)		Selectable 90, 135, 180, or 225 Sec									
BURNERS (Monoport)		2	2	3	3	4	4	4	5	5	6
GAS CONNECTION SIZE		1/2-in. NPT									
GAS VALVE (Redundant) Manufacturer		White-Rodgers									
Minimum Inlet Pressure (In. wc)		4.5 (Natural Gas)									
Maximum Inlet Pressure (In. wc)		13.6 (Natural Gas)									
IGNITION DEVICE		Hot Surface									

* Gas input ratings are certified for elevations to 2000 ft. For elevations above 2000 ft, reduce ratings 4% for each 1000 ft above sea level. In Canada, derate the unit 10% for elevations 2000 to 4500 ft above sea level.

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

‡ Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only of the furnace be used for return air. Where 2 sets of data are listed, the first set is for bottom only return-air supply. The second set is for both sides, or 1 side and bottom return-air supply. A filter is required for each return-air supply.

ICS—Isolated Combustion System

Clearance to combustibles

This unit complies with CAN/CGA 2.3 M86, CAN/CSA C22.2 No. 0-M91, CSA C22.2 No.3-1988 standards.

This appliance is equipped only for altitudes 0 - 2,000 ft (0-610 m) for use with natural gas and propane. A conversion kit, supplied by the manufacturer, shall be used to convert to the alternate fuel or elevation.

This direct-vent, forced-air furnace is for indoor installation in a building constructed on site. For installation in alcove or closet at minimum clearances from combustible material as shown below, minimum front clearance for service is 30 inches (762 mm).

This furnace is for use with schedule-40 PVC, PVC-DWV, or ABS-DWV pipe, and must not be vented in common with other gas-fired appliances. Construction through which vent/air intake pipes may be installed is maximum 24 inches (600 mm), minimum 3/4 inches (19 mm) thickness (including roofing materials).

Special venting system required. In Canada use certified venting system specified by furnace manufacturer. See Installation Instructions provided with furnace. Flue gas temperature 131°F (55°C) vent pressure positive.

MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL

INCHES	TOP	BOTTOM	SIDES	BACK	FRONT	VENT	
	1	0	0	0	3	0	
1	++	0	0	3	0	DOWNFLOW	
1	0+	1*	0	3	0	HORIZONTAL	

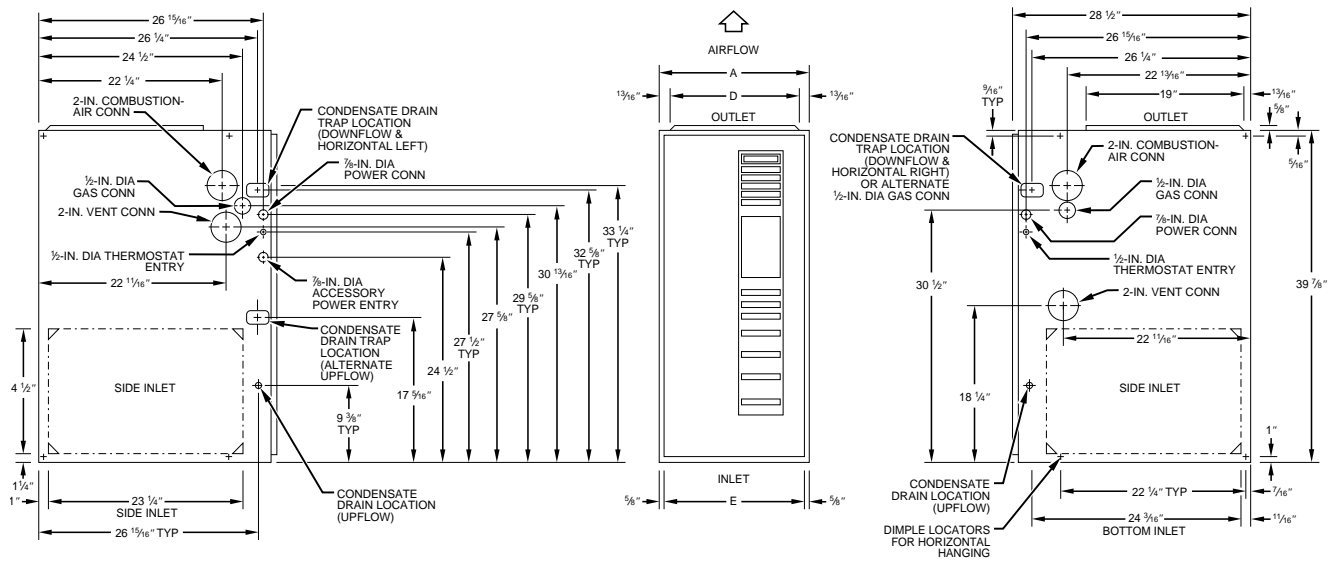
++ For installation on combustible floors only when installed on special base No. KGASB0201ALL.

* Clearance shown is for air inlet and air outlet end.

Horizontal position: Line contact is permissible only between lines formed by intersections of top and two sides of furnace jacket, and building joists, studs, or framing.

+ 120,000 BTU Input Furnaces require 1 inch bottom clearance to combustible materials.

Dimensions



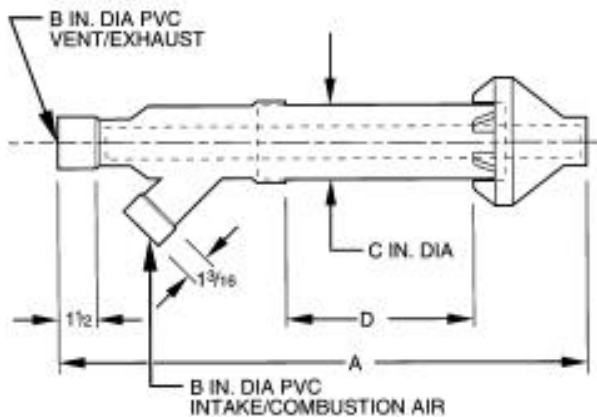
- NOTES:** Minimum return-air opening at furnace:
1. For 800 CFM--16-in. round or 14 1/2 x 12-in. rectangle.
 2. For 1200 CFM--20-in. round or 14 1/2 x 19 1/2-in. rectangle.
 3. For 1600 CFM--22-in. round or 14 1/2 x 23 1/4-in. rectangle.
 4. For airflow requirements above 1800 CFM, use both side inlets, a combination of 1 side inlet and the bottom, or the bottom only.

A93024

DIMENSIONS (In.)

UNIT SIZE	A	D	E
040-08	17-1/2	15-7/8	16
040-12	17-1/2	15-7/8	16
060-12	17-1/2	15-7/8	16
060-16	17-1/2	15-7/8	16
080-12	17-1/2	15-7/8	16
080-16	17-1/2	15-7/8	16
080-20	21	19-3/8	19-1/2
100-16	21	19-3/8	19-1/2
100-20	21	19-3/8	19-1/2
120-20	24-1/2	22-7/8	23

CONCENTRIC VENT



A93294

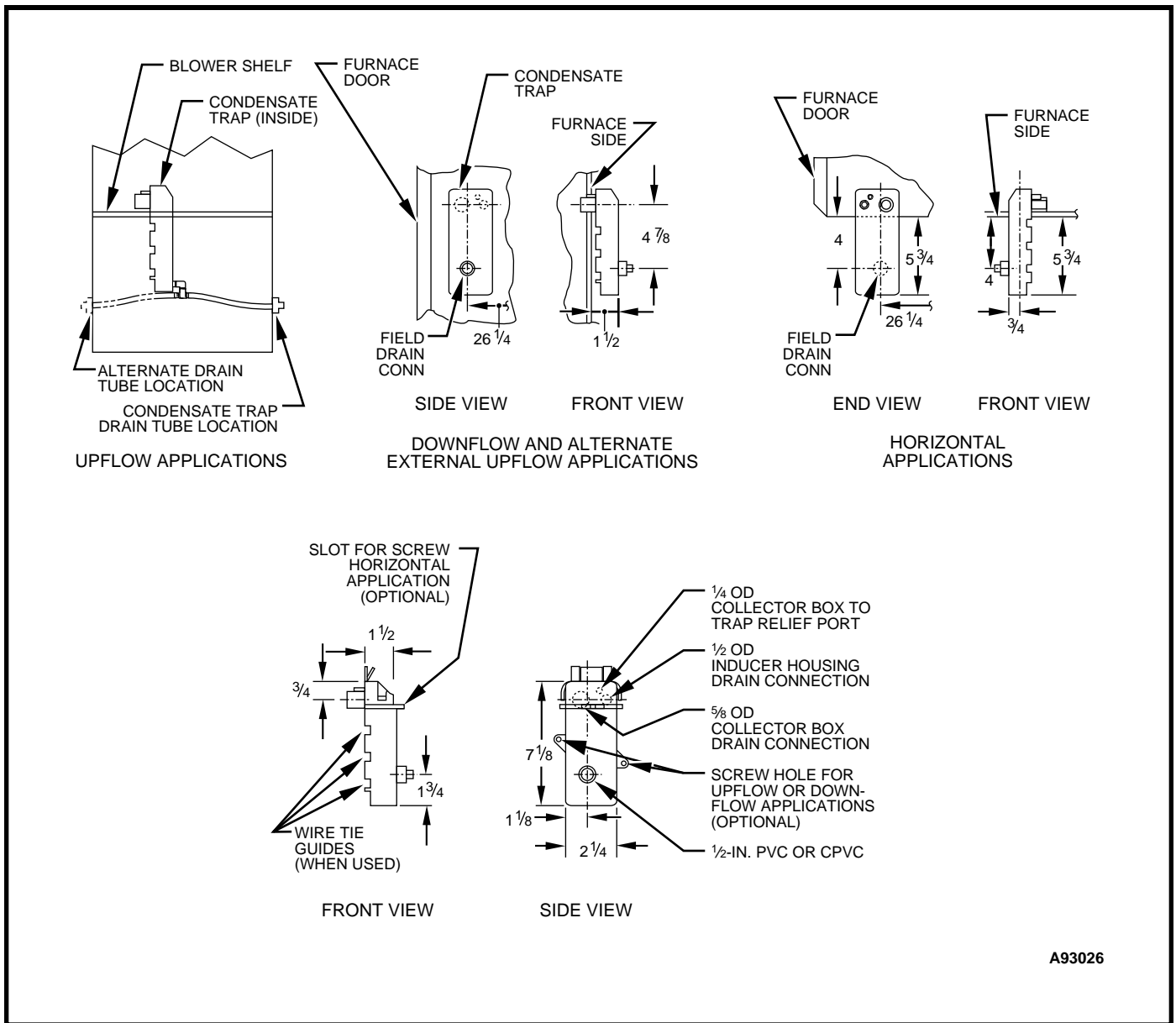
DIMENSIONS (In.)

PART NO.	A*	B	C	D†
KGAVT0501CVT	41-1/8	2	3-1/2	27-1/4
KGAVT0601CVT	46-3/4	3	4-1/2	31-7/8

* Dimension A will change accordingly as dimension D is lengthened or shortened.

† Dimension D may be lengthened to 60 in. maximum. Dimension D may also be shortened by cutting the pipes provided in the kit to 12 in. minimum.

CONDENSATE TRAP



A93026

MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.



Performance data

UNIT SIZE	040-08	040-12	060-12	060-16	080-12	080-16	080-20	100-16	100-20	120-20
DIRECT-DRIVE MOTOR Hp (PSC)	1/5	1/3	1/3	1/2	1/3	1/2	3/4	1/2	3/4	3/4
MOTOR FULL LOAD AMPS	4.9	5.8	5.8	7.9	5.8	7.9	11.1	7.9	11.1	11.1
RPM (Nominal)—SPEEDS	1075—3	1075—4								
BLOWER WHEEL DIAMETER X WIDTH (In.)	10 x 6	10 x 7	10 x 7	11 x 8	10 x 7	11 x 8	11 x 10	11 x 8	11 x 10	11 x 10
FILTER SIZE (In.)—(Washable)	(1) 16 x 25 x 1						(1) 20 x 25 x 1			(2) 16 x 25 x 1

PSC—Permanent Split Capacitor

EFFICIENCY

UNIT SIZE	040-08	040-12	060-120	060-16	080-12	080-16	080-20	100-16	100-20	120-20	
CAPACITY*	Nonweatherized ICS	37,200	37,200	55,800	55,800	74,400	74,400	74,400	93,000	93,000	111,600
AFUE%*	Nonweatherized ICS	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	

* Capacity and AFUE in accordance with U.S. Government DOE test procedures.

ICS—Isolated Combustion System

AIR DELIVERY—CFM (With Filter)*

UNIT SIZE	RETURN-AIR SUPPLY	SPEED	EXTERNAL STATIC PRESSURE (In. wc)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
040-08	1 side or bottom	High	1075	1040	995	945	895	840	760	670
		Med-High	850	825	780	740	685	635	560	480
		Med-Low	740	700	650	620	565	515	455	385
040-12	1 side or bottom	High	1500	1445	1370	1300	1230	1145	1030	1500
		Med-High	1370	1310	1255	1195	1130	1040	950	840
		Med-Low	1205	1160	1125	1070	1020	940	855	760
		Low	1035	1005	970	930	885	825	745	675
060-12	1 side or bottom	High	1505	1445	1385	1320	1250	1170	1505	1445
		Med-High	1415	1360	1295	1235	1170	1100	1010	920
		Med-Low	1270	1230	1170	1120	1050	985	905	810
		Low	1080	1045	1005	965	915	855	785	705
060-16	1 side or bottom	High	1700	1695	1640	1580	1545	1450	1380	1310
		Med-High	1500	1465	1435	1385	1355	1300	1250	1185
		Med-Low	1325	1295	1265	1230	1190	1150	1105	1050
		Low	1205	1170	1145	1110	1080	1035	990	950
080-12	1 side or bottom	High	1525	1465	1400	1335	1255	1175	1070	960
		Med-High	1385	1330	1280	1220	1155	1075	985	880
		Med-Low	1165	1150	1115	1060	1005	940	865	780
		Low	1000	985	950	905	860	790	725	655
080-16	1 side or bottom	High	1750	1685	1635	1575	1525	1445	1380	1310
		Med-High	1495	1455	1405	1355	1305	1250	1185	1120
		Med-Low	1310	1260	1225	1170	1125	1095	1040	980
		Low	1135	1105	1075	1040	995	955	910	860
080-20	bottom only	High	2200	2175	2085	2025	1925	1820	1735	1635
		Med-High	2100	2025	1945	1865	1785	1700	1620	1540
		Med-Low	1815	1760	1720	1670	1620	1550	1480	1405
		Low	1560	1555	1515	1460	1435	1390	1340	1270
	both sides or 1 side and bottom	High	2360	2280	2210	2130	2035	1960	1875	1790
Med-High	1965	1925	1870	1830	1760	1710	1670	1670	1575	
100-16	1 side or bottom	High	1740	1705	1660	1615	1570	1500	1425	1355
		Med-High	1500	1470	1445	1410	1375	1330	1280	1210
		Med-Low	1340	1315	1300	1270	1235	1200	1140	1095
		Low	1195	1175	1165	1130	1100	1070	1030	975
100-20	bottom only	High	2250	2175	2090	2020	1930	1855	1760	1670
		Med-High	2020	1950	1900	1840	1790	1710	1640	1545
		Med-Low	1725	1690	1660	1630	1575	1520	1460	1370
		Low	1490	1480	1460	1440	1380	1340	1295	1230
	both sides or 1 side and bottom	High	2360	2315	2265	2200	2130	2055	1965	1890
Med-High	1960	1940	1930	1900	1850	1800	1740	1740	1660	
120-20	bottom only	High	2350	2250	2160	2070	2000	1885	1790	1635
		Med-High	2100	2015	1955	1875	1810	1710	1650	1540
		Med-Low	1770	1720	1675	1620	1575	1515	1450	1365
		Low	1545	1520	1465	1415	1365	1325	1265	1185
	both sides or 1 side and bottom	High	2435	2360	2285	2220	2130	2050	1965	1875
Med-High	2040	2000	1950	1905	1835	1790	1725	1725	1650	

* Air delivery above 1800 CFM requires that both sides, a combination of 1 side and bottom, or bottom only of the furnace be used for return air.

A filter is required for each return-air supply.

Electrical data

UNIT SIZE	040-08	040-12	060-12	060-16	080-12	080-16	080-20	100-16	100-20	120-20
UNIT VOLTS—HERTZ—PHASE	115—60—1									
OPERATING VOLTAGE RANGE (Min—Max)†	104—127									
MAXIMUM UNIT AMPS	6.1	7.3	7.1	9.5	7.6	10.0	14.1	10.2	14.8	14.6
UNIT AMPACITY**	8.4	10.0	9.8	12.8	10.4	13.4	18.4	13.5	19.3	19.1
MINIMUM WIRE SIZE	14	14	14	14	14	14	12	14	12	12
MAXIMUM WIRE LENGTH (Ft)*	44	37	38	29	36	28	31	27	30	30
MAXIMUM FUSE SIZE OR CKT BKR (Amps)‡	15	15	15	15	15	15	20	15	20	20
TRANSFORMER (24v)	40VA									
EXTERNAL CONTROL POWER AVAILABLE	Heating					13VA				
	Cooling					21VA				
AIR CONDITIONING BLOWER RELAY	Standard									

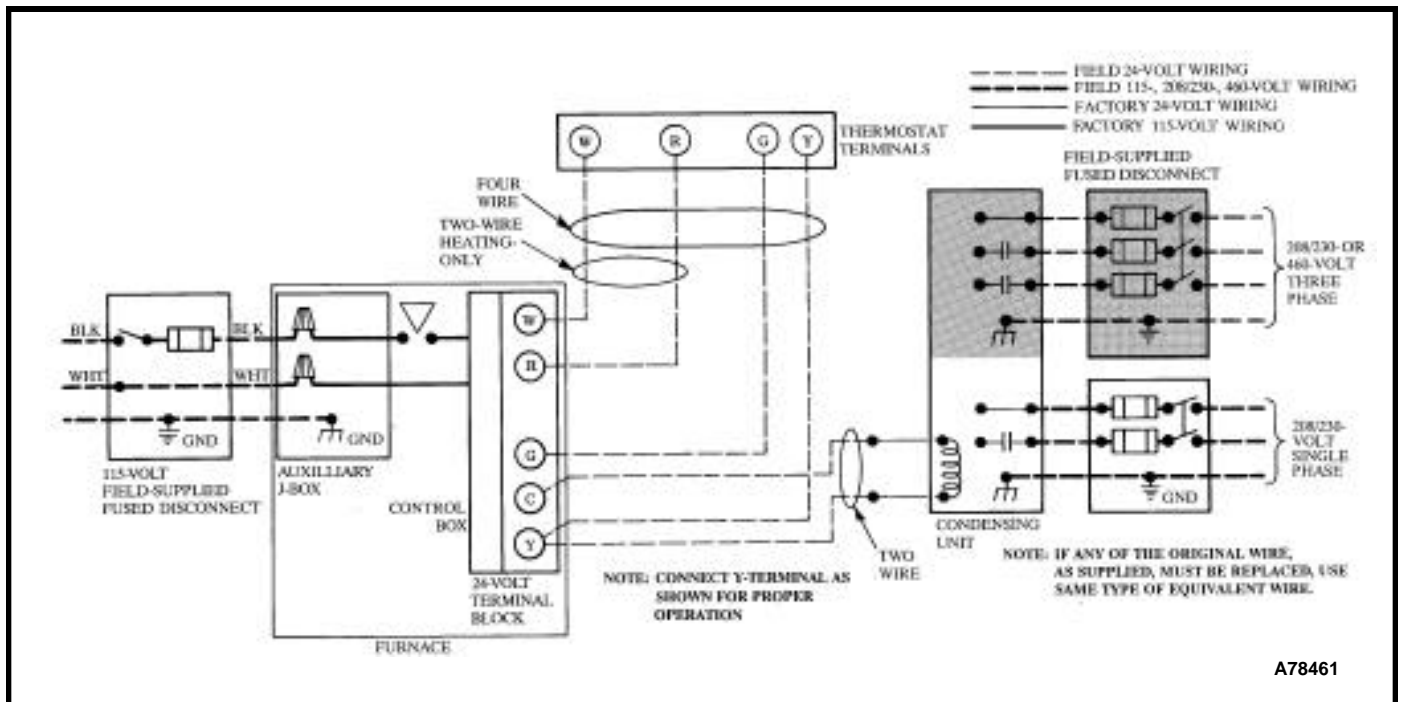
* Length shown is as measured 1 way along wire path between unit and service panel for maximum 2% voltage drop.

† Permissible limits of the voltage range at which the unit will operate satisfactorily.

‡ Time-delay fuse is recommended.

** Unit ampacity = 125 percent of largest operating component's full load amps plus, 100 percent of all other potential operating component's (EAC, humidifier, etc.) full load amps.

Typical wiring schematic



Combustion-air and vent piping

MAXIMUM ALLOWABLE PIPE LENGTH (FT)

ALTITUDE ABOVE SEA LEVEL (FT)	UNIT SIZE	TERMINATION TYPE	PIPE DIA (IN.)*	NUMBER OF 90° ELBOWS						
				1	2	3	4	5	6	
0 to 2000	040-08 040-12	2 Pipe or 2-In. Concentric	1	5	NA	NA	NA	NA	NA	
			1-1/2	70	70	65	60	60	55	
			2	70	70	70	70	70	70	
	060-12 060-16	2 Pipe or 2-In. Concentric	1-1/2	20	15	10	5	NA	NA	
			2	70	70	70	70	70	70	
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	1-1/2	10	NA	NA	NA	NA	NA	
			2	55	50	35	30	30	20	
			2-1/2	70	70	70	70	70	70	
	100-16 100-20	2 Pipe or 3-In. Concentric	2	5	NA	NA	NA	NA	NA	
			2-1/2	40	30	20	20	10	NA	
	120-20	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70	
			2-1/2 one disk	10	NA	NA	NA	NA	NA	
3 one disk			35	30	15	NA	NA	NA		
3† one disk			35	35	35	30	30	30		
			3† no disk	70	70	70	70	70	70	
2001 to 3000	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	67	62	57	52	52	47	
			2	70	70	70	70	70	70	
	060-12 060-16	2 Pipe or 2 In. Concentric	1-1/2	17	12	7	NAS	NA	NA	
			2	70	67	66	61	61	61	
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	2	49	44	30	25	25	15	
			2-1/2	70	70	70	70	70	70	
	100-16 100-20	2 Pipe or 3-In. Concentric	2-1/2	35	26	16	16	6	NA	
			3	70	70	70	70	66	61	
	120-20	2 Pipe or 3-In. Concentric	3 one disk	31	26	12	NA	NA	NA	
			3† one disk	31	30	30	25	25	24	
			3† no disk	63	62	62	61	61	61	
	3001 to 4000	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	64	59	54	49	48	43
2				70	70	70	70	70	70	
060-12 060-16		2 Pipe or 2-In. Concentric	1-1/2	16	11	6	NA	NA	NA	
			2	68	63	62	57	57	56	
080-12 080-16 080-20		2 Pipe or 2-In. Concentric	2	46	41	28	23	22	13	
			2-1/2	70	70	70	70	70	70	
100-16 100-20		2 Pipe or 3-In. Concentric	2-1/2	33	24	15	14	5	NA	
			3	70	70	70	66	61	56	
120-20		2 Pipe or 3-In. Concentric	3 one disk	29	24	10	NA	NA	NA	
			3† one disk	29	28	28	23	22	21	
			3† no disk	59	59	58	57	57	56	
4001 to 5000†		040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	60	55	50	45	44	39
	2			70	70	70	70	70	70	
	060-12 060-16	2 Pipe or 2-In. Concentric	1-1/2	15	10	5	NA	NA	NA	
			2	64	59	58	53	52	52	
	080-12 080-16 080-20	2 Pipe or 2-in Concentric	2	44	39	26	21	20	11	
			2-1/2	70	70	70	70	70	70	
	100-16 100-20	2 Pipe or 3-In. Concentric	2-1/2	31	22	13	12	NA	NA	
			3	70	70	67	62	57	52	
	120-20	2 Pipe or 3-In. Concentric	3† one disk	27	26	26	21	20	19	
			3† no disk	56	55	54	53	52	52	
	5001 to 6000†	040-08 040-12	2 Pipe 2-In. Concentric	1-1/2	57	52	47	42	40	35
				2	70	70	70	70	70	70
060-12 060-16		2 Pipe or 2-In. Concentric	1-1/2	14	9	NA	NA	NA	NA	
			2	60	55	54	49	48	47	
080-12 080-16 080-20		2 Pipe or 2-In. Concentric	2	41	36	23	18	17	8	
			2-1/2	70	70	70	70	70	70	
100-16 100-20		2 Pipe or 3-in Concentric	2-1/2	29	21	12	11	NA	NA	
			3	70	67	62	57	52	47	
120-20		2 Pipe or 3-In. Concentric	3† one disk	26	24	23	18	17	16	
			3† no disk	53	52	50	49	48	47	

See notes on pg. 11.

MAXIMUM ALLOWABLE PIPE LENGTH (FT) Continued

ALTITUDE ABOVE SEA LEVEL (FT)	UNIT SIZE	TERMINATION TYPE	PIPE DIA (IN.)*	NUMBER OF 90° ELBOWS					
				1	2	3	4	5	6
6001 to 7000‡	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	53	48	43	38	37	32
			2	70	70	68	67	66	64
	060-12 060-16	2 Pipe or 2-In. Concentric	1-1/2	13	8	NA	NA	NA	NA
			2	57	52	50	45	44	43
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	2	38	33	21	16	15	6
			2-1/2	70	70	68	67	66	64
	100-16 100-20	2 Pipe or 3-In. Concentric †	2-1/2	27	19	10	9	NA	NA
			3	68	63	58	53	48	43
	120-20	2 Pipe or 3-In. Concentric	3† one disk	24	22	21	16	15	13
			3† no disk	49	48	47	45	44	43
7001 to 8000‡	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	49	44	39	34	33	28
			2	66	65	63	62	60	59
	060-12 060-16	2 Pipe or 2-In. Concentric	1-1/2	12	7	NA	NA	NA	NA
			2	53	48	46	41	40	2
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	2	36	31	19	14	12	NA
			2 1/2	66	65	63	62	60	59
	100-16 100-20	2 Pipe or 3-In. Concentric	2-1/2	25	17	8	7	NA	NA
			3	63	58	53	48	43	38
	120-20	2 Pipe or 3-In. Concentric	3† one disk	22	20	19	14	12	11
			3† no disk	46	44	43	41	40	38
8001 to 9000‡	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	46	41	36	31	29	24
			2	62	60	58	56	55	53
	060-12 060-16	2 Pipe or 2-In. Concentric	1-1/2	11	6	NA	NA	NA	NA
			2	49	44	42	37	35	34
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	2	33	28	17	12	10	NA
			2-1/2	62	60	58	56	55	53
	100-16 100-20	2 Pipe or 3-In. Concentric	2-1/2	23	15	7	5	NA	NA
			3	59	54	49	44	39	34
	120-20	2 Pipe or 3-In. Concentric	3† one disk	20	18	17	12	10	8
			3† no disk	43	41	39	37	35	34
9001 to 10,000‡	040-08 040-12	2 Pipe or 2-In. Concentric	1-1/2	42	37	32	27	25	20
			2	57	55	53	51	49	47
	060-12 060-16	2 Pipe or 2-In. Concentric	2	45	40	38	33	31	29
			2	30	25	14	9	7	NA
	080-12 080-16 080-20	2 Pipe or 2-In. Concentric	2-1/2	57	55	53	51	49	47
			2-1/2	21	13	5	NA	NA	NA
	100-16 100-20	2 Pipe or 3-In. Concentric	3	54	49	44	39	34	29
			3† one disk	18	16	14	9	7	5
	120-20	2 Pipe or 3-In. Concentric	3† no disk	39	37	35	33	31	29

* Disk usage—Unless otherwise specified, use perforated disk assembly (factory supplied in loose parts bag). If stated, unsnap 1/2 perforated disk assembly and use shouldered disk half or no disk assembly.
 † Wide radius elbow.
 ‡ Vent sizing for Canadian installations above 4500 ft (1370m) above sea level are subject to acceptance by the local authorities having jurisdiction.

NOTES:

1. Do not use pipe size greater than those specified in table or incomplete combustion, flame disturbance, or flame sense lockout may occur.
2. Size both the combustion-air and vent pipe independently, then use the larger diameter for both pipes.
3. Assume two 45° elbows equal one 90° elbow. Long radius elbows are desirable and may be required in some cases.
4. Elbows and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
5. The minimum pipe length is 5 ft for all applications.

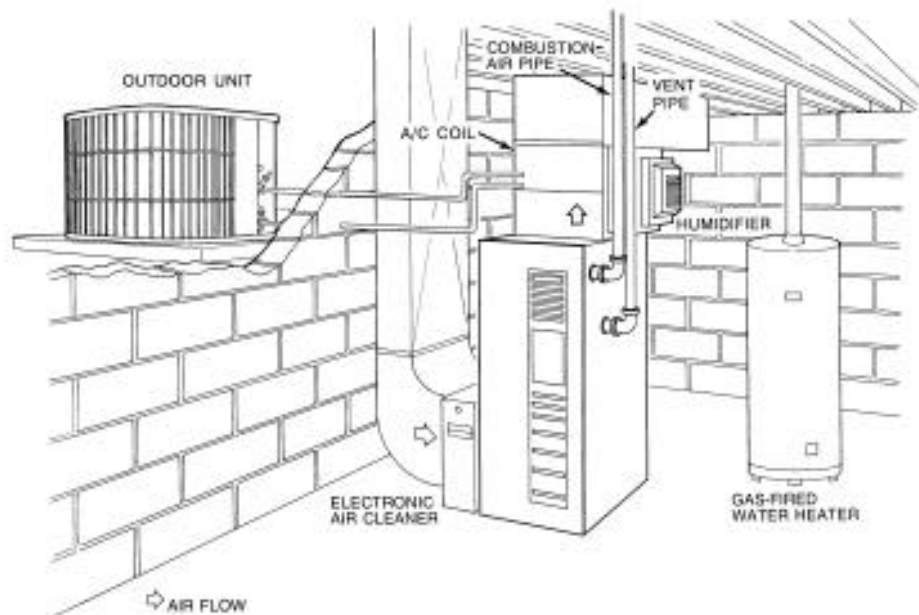
**MAXIMUM ALLOWABLE EXPOSED VENT PIPE LENGTH (FT) WITH INSULATION
IN WINTER DESIGN TEMPERATURE AMBIENT***

UNIT SIZE	WINTER DESIGN TEMP °F	MAXIMUM PIPE DIA	INSULATION THICKNESS (IN.)†				
			0	3/8	1/2	3/4	1
040-08 040-12	20	1-1/2	31	56	63	70	70
	0	1-1/2	16	34	39	47	54
	-20	1-1/2	9	23	27	34	39
060-12 060-16	20	2	45	70	70	70	70
	0	2	25	51	58	70	70
	-20	2	16	36	42	51	60
080-12 080-16 080-20	20	2-1/2	55	70	70	70	70
	0	2-1/2	31	61	69	70	70
	-20	2-1/2	20	43	49	61	70
100-16 100-20	20	3	61	70	70	70	70
	0	3	33	65	70	70	70
	-20	3	20	45	52	65	70
120-20	20	3	70	70	70	70	70
	0	3	40	70	70	70	70
	-20	3	26	55	64	70	70

* Pipe length (ft) specified for maximum vent pipe lengths located in unconditioned spaces. Vent pipes located in unconditioned space cannot exceed the total allowable pipe length as specified in maximum allowable pipe length table.

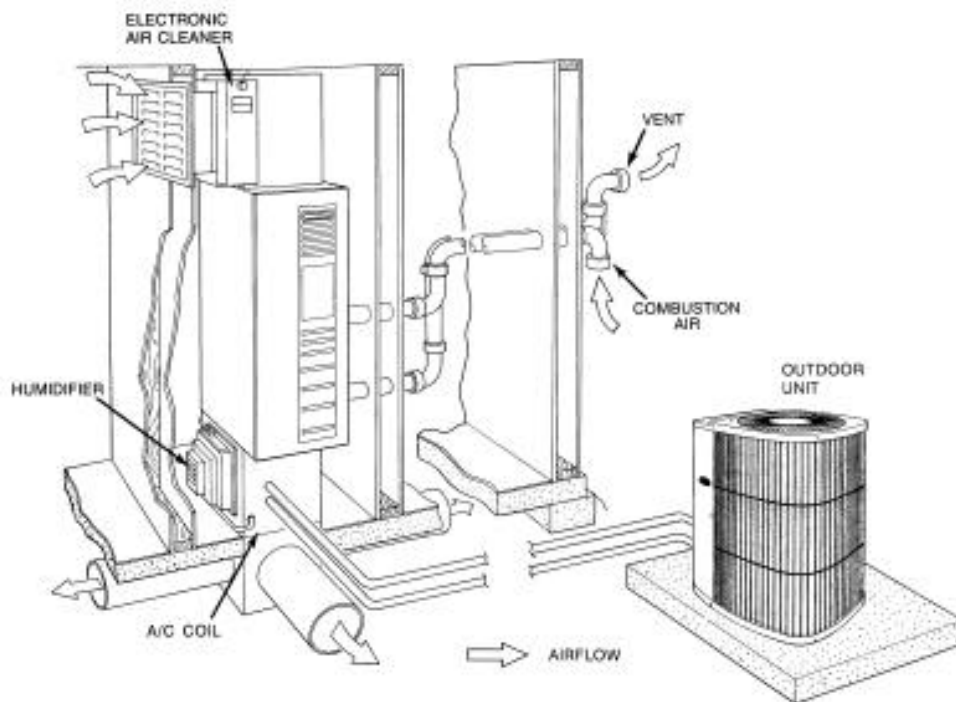
† Insulation thickness based on R value of 3.5 per in.

Typical installations



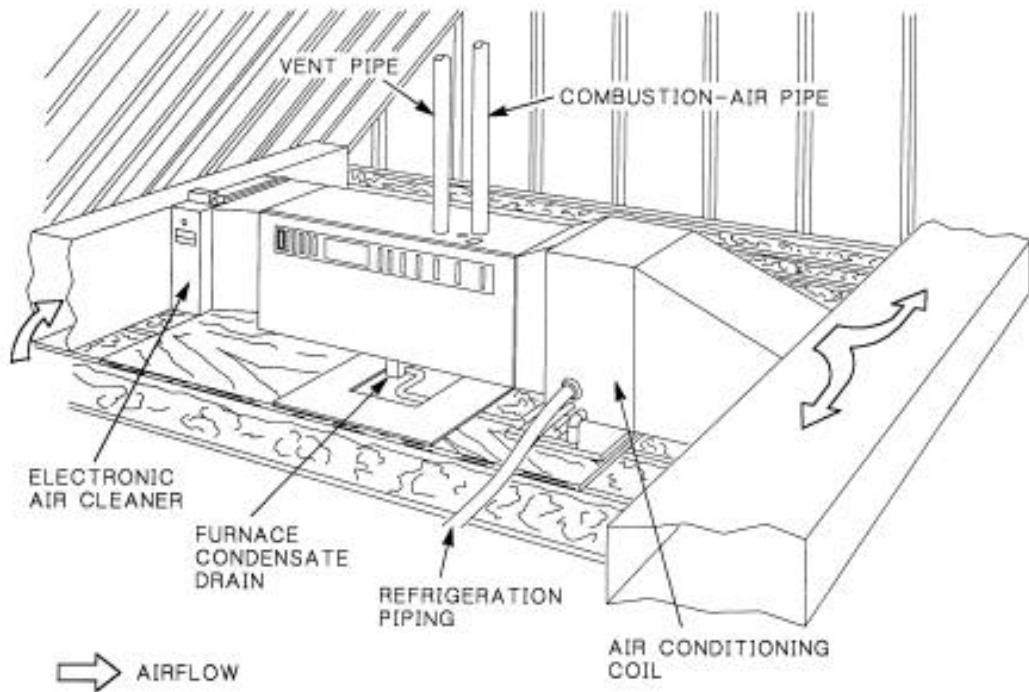
Basement — Upflow Application

A93063



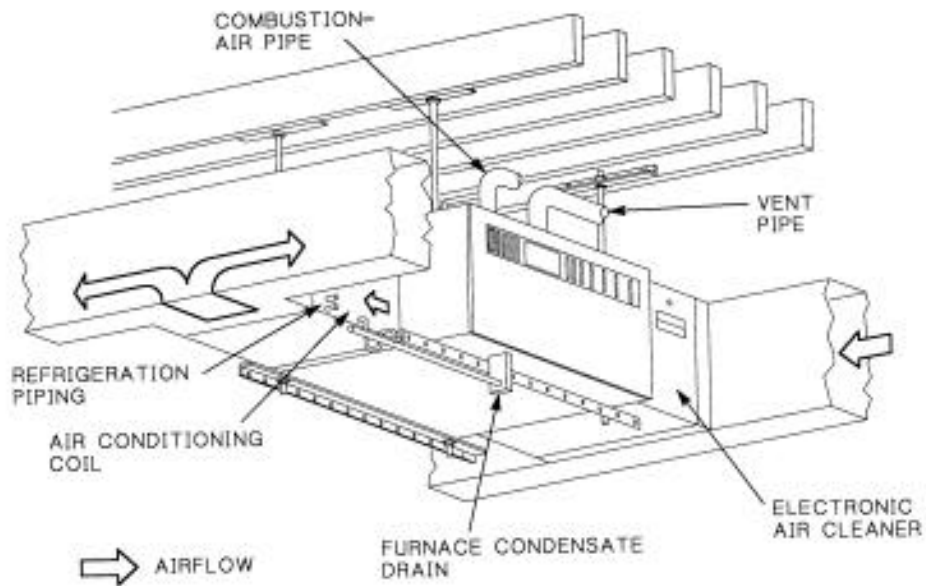
Closet — Downflow Application

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Attic — Horizontal Application

A93065



Crawlspace — Horizontal Application

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