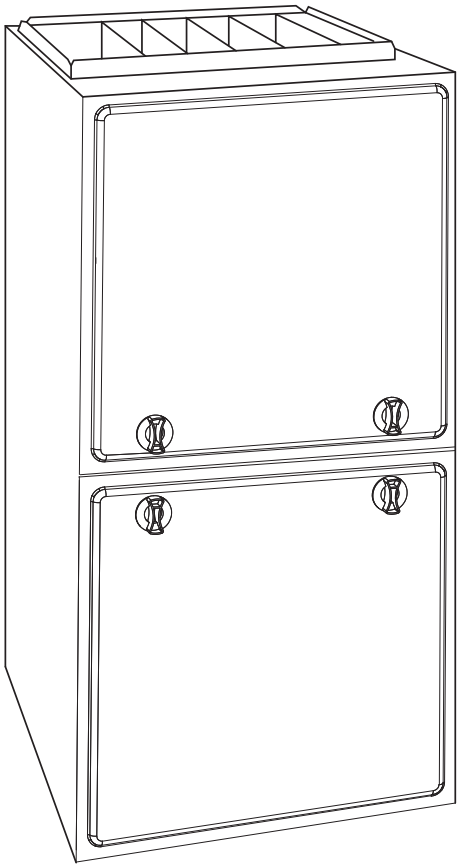
PG92SBS
CONDENSING GAS FURNACE
SERIES B

Product Data



A11300

The model PG92SBS is an efficient and robust 4-way multipoise condensing furnace with features including single-stage heating and a rugged PSC Blower Motor. The PG92SBS builds on the many Payne successes in the furnace industry and establishes a new standard for all high-efficiency gas furnaces.

STANDARD FEATURES

- Heating efficiency of 92.1% AFUE.
- Direct-vent/sealed combustion, single-pipe venting or ventilated combustion air.
- PSC blower motor.
- 4-way multipoise furnace.
- Hot surface ignition.
- LED diagnostics and self test feature.
- Stores fault codes during power outages.
- Adjustable heating air temperature rise.
- Adjustable cooling airflow.
- Approved for Manufactured Housing/Mobile Home applications with MH accessory kit.
- Approved for Twinning applications (48060 through 66120 sizes, only).
- Certified to leak 2% or less of nominal air conditioning CFM delivered when pressurized to 1-inch water column with all present air inlets, air outlets, and condensate drain port(s) are sealed.

Certified System ISO 9001 QMI-SAI Global

AHRI CERTIFIED www.ahridirectory.org

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

DESIGN CERTIFIED

CERTIFIED

SAP ORDERING NO.	CASING DIMENSIONS (IN.)			RATED HEATING OUTPUT†		HEATING AIRFLOW		COOLING CFM @ 0.5 ESP (in. W.C.)	MOTOR HP - SPEED TAPS
	H	D	W	(BTUH)	AFUE	CFM‡	Heating ESP (in. W.C.)		
PG92SBS30040A	35	29.5	14.2	37,000	92.1%	920	0.10	580 - 965	1/3 - 4
PG92SBS48060B	35	29.5	17.5	56,000	92.1%	1005	0.12	685 -1505	1/2 - 5
PG92SBS48080B	35	29.5	17.5	75,000	92.1%	1085	0.15	780 - 1630	1/2 - 5
PG92SBS60080C	35	29.5	21.0	75,000	92.1%	1140	0.15	835 - 1960	3/4 - 5
PG92SBS48100C	35	29.5	21.0	93,000	92.1%	1475	0.20	875 - 1570	1/2 - 4
PG92SBS66100C	35	29.5	21.0	93,000	92.1%	1640	0.20	1330 - 2280	1 - 5
PG92SBS66120D	35	29.5	24.5	112,000	92.1%	2355	0.20	1350 - 2230	1 - 5

† Capacity in accordance with DOE test procedures. Ratings are position dependent. See rating plate.
‡ Heating CFM at factory default blower motor heating tap settings.
ESP – External Static Pressure

FEATURES AND BENEFITS

HYBRID HEAT® Dual Fuel system compatible — This system can provide more control over your monthly energy bills by automatically selecting the most economical method of heating. With HYBRID HEAT components, our system automatically switches between the gas furnace and the electric heat pump as outside temperatures change to maintain greater efficiency and comfort than with any traditional single-source heating system. The heat pump also delivers high-efficiency cooling in the summer.

Robust Igniter — Payne's unique SiN igniter is not only physically robust but it is also electrically robust. It is capable of running at line voltage and does not require complex voltage regulators as do other brands. This unique feature further enhances the gas furnace reliability and continues Payne's tradition of technology leadership and innovation in providing a reliable and durable product.

Reliable Heat Exchanger Design — The aluminized steel, clam shell primary heat exchanger was re-engineered to achieve greater efficiency out of a smaller size. The first two passes of the heat exchanger are based on the current 80% product, a design with more than ten years of field-proven performance and success. These innovations, paired with the continuation of a crimped, no-weld seam create an efficient, robust design for this essential component.

The condensing heat exchanger, a stainless steel fin and tube design, is positioned in the furnace to extract additional heat. Stainless steel coupling box componentry between heat exchangers has exceptional corrosion resistance in both natural gas and propane applications.

4-Way Multipoise Design — One model for all applications – there is no need to stock special downflow or horizontal models when one unit will do it all. The new heat exchanger design allows these units to achieve the certified AFUE in all positions.

Direct or Single-pipe Venting, or Optional Ventilated Combustion Air — This furnace can be installed as a 2-pipe (Direct Vent) furnace, in an optional ventilated combustion air application, or in single-pipe, non-direct vent applications. This provides added flexibility to meet diverse installation needs.

Sealed Combustion System — This furnace brings in combustion air from outside the furnace, which results in especially quiet operation. By sealing the entire combustion vestibule, the entire furnace can be made quieter, not just the burners.

Monoport Burners — The burners are specially designed and finely tuned for smooth, quiet combustion and economical operation.

Bottom Closure — Factory-installed for side return; easily removable for bottom return. The multi-use bottom closure can also serve for roll-out protection in horizontal applications, and act as the bottom closure for the optional return air base accessory.

Blower Access Panel Switch — Automatically shuts off 115-v power to furnace whenever blower access panel is opened.

Quality Registration — Our furnaces are engineered and manufactured under an ISO 9001 registered quality system.

Certifications — This furnace is CSA (AGA and CGA) design certified for use with natural and propane gases. The furnace is factory-shipped for use with natural gas. A CSA listed gas conversion kit is required to convert furnace for use with propane gas. The efficiency is AHRI efficiency rating certified. This furnace meets California Air Quality Management District emission requirements.

SPECIFICATIONS

Heating Capacity and Efficiency			30040	48060	48080	60080	48100	66100	66120
Input	High Heat	(BTUH)	40,000	60,000	80,000	80,000	100,000	100,000	120,000
Output	High Heat	(BTUH)	37,000	56,000	75,000	75,000	93,000	93,000	112,000
Certified Temperature Rise Range °F (°C)		High Heat	35 - 65 (19 - 36)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	35 - 65 (19 - 36)	40 - 70 (22 - 39)	40 - 70 (22 - 39)	45 - 75 (25 - 42)

Airflow Capacity and Blower Data		30040	48060	48080	60080	48100	66100	66120
Rated External Static Pressure (in. W.C.)	Heating	0.10	0.12	0.15	0.15	0.20	0.20	0.20
	Cooling	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Airflow Delivery @ Rated ESP (CFM)	High Heat	920	1005	1085	1140	1475	1640	2355
	Cooling	965	1505	1630	1960	1570	2280	2230
Cooling Capacity (tons)	CFM/ton	2.5	3.5	4	5.0	4	5.5	5.5
	CFM/ton	3	4	4.5	5.5	4.5	6.5	6
Direct-Drive Motor Type		Permanent Split Capacitor (PSC)						
Direct-Drive Motor HP		0.3	.5	0.5	0.75	0.5	1	1
Motor Full Load Amps		4.6	6.8	7.4	8.2	6.5	13.8	14.1
RPM Range		500 - 1150						
Speed Selections		4	5	5	5	4	5	5
Blower Wheel Dia x Width	in.	11 x 7	11 x 8	11 x 8	11 x 10	11 x 10	11 x 10	11 x 11
Air Filtration System		Field Supplied						
Filter Used for Certified Watt Data*		KGAWF**06UFR						

Electrical Data		30040	48060	48080	60080	48100	66100	66120
Input Voltage	Volts-Hertz-Phase	115-60-1						
Operating Voltage Range	Min-Max	104-127						
Maximum Input Amps	Amps	5.2	7.6	8.2	9	7.3	14.6	14.9
Unit Ampacity	Amps	7.5	10.4	11.1	12.1	10.1	19.2	19.6
Minimum Wire Size	AWG	14	14	14	12	14	12	12
Maximum Wire Length @ Minimum Wire Size	Feet	49	35	33	30	36	29	29
	(M)	(14.9)	(10.7)	(10.1)	(9.1)	(11.0)	(8.8)	(8.8)
Maximum Fuse/Ckt Bkr (Time-Delay Type Recommended)	Amps	15	15	15	20	15	20	20
Transformer Capacity (24vac output)		40 VA						
External Control Power Available	Heating	27.9 VA						
	Cooling	34.6 VA						

Controls		30040	48060	48080	60080	48100	66100	66120
Gas Connection Size		1/2" - NPT						
Burners (Monoport)		2	3	4	4	5	5	6
Gas Valve (Redundant)	Manufacturer	White Rodgers						
Minimum Inlet Gas pressure (in. W.C.)		4.5						
Maximum Inlet Gas pressure (in. W.C.)		13.6						
Ignition Device		Silicon Nitride						
Limit Control		205	205	210**	215	215	215	195
Heating Blower Control (Heating Off-Delay)		Adjustable: 90, 120, 150, 180 seconds						
Cooling Blower Control (Time Delay Relay)		90 seconds						
Communication System		*none*						
Thermostat Connections		Com 24V, R, W, G, Y						
Accessory Connections		EAC (115vac); HUM (24vac)						

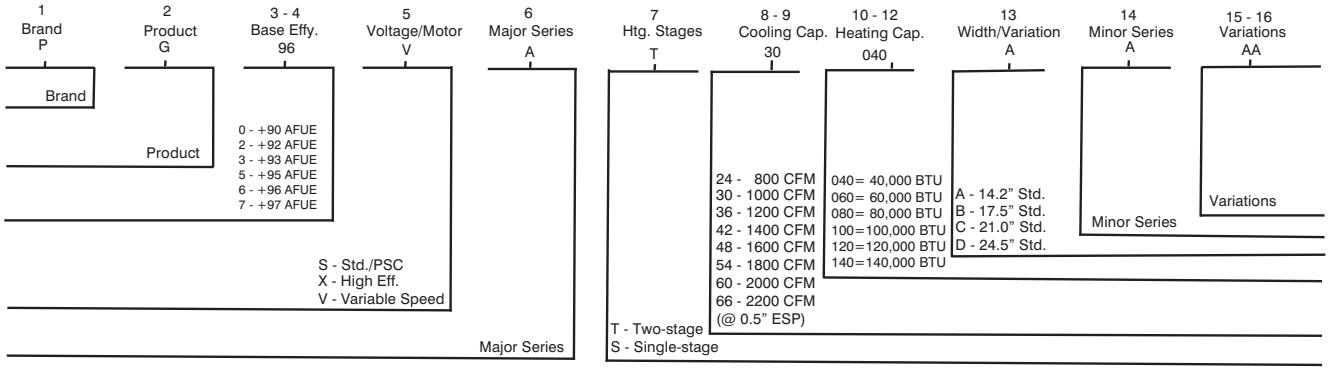
* See Accessory List for part numbers available.

** Limit does not use a gasket.

PG92SBS

MODEL NUMBER NOMENCLATURE

Example of a Model Number



Not all familes have these models.

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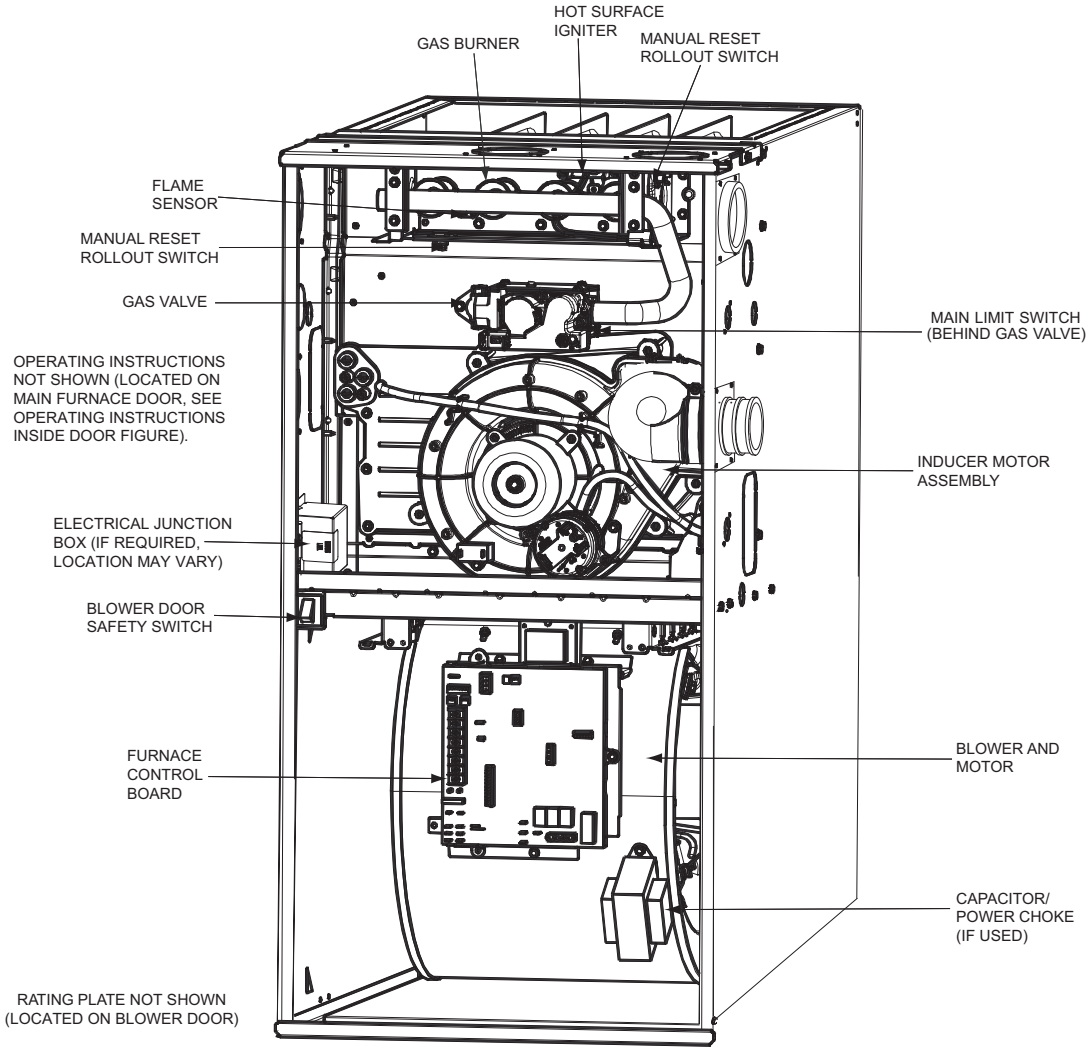
PG92SBS

FURNACE COMPONENTS



REPRESENTATIVE DRAWING ONLY, SOME MODELS MAY VARY IN APPEARANCE.

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ACCESSORIES

DESCRIPTION	PART NUMBER	30040	48060	48080	60080	48100	66100	66120
Venting Accessories								
Vent Kit - Through the Cabinet	KGADC0101BVC	●	●	●	●	●	●	●
Vent Terminal - Concentric - 2” (51 mm)	KGAVT0701CVT	See Venting Tables						
Vent Terminal - Concentric - 3” (76 mm)	KGAVT0801CVT							
Vent Terminal Bracket - 2” (51 mm)	KGAVT0101BRA							
Vent Terminal Bracket - 3” (76 mm)	KGAVT0201BRA							
Vent Kit – Rubber Coupling	KGAAC0101RVC	See Venting Tables						
Condensate Drainage Accessories								
Freeze Protect Kit - Trap Heater	KGAHT0201CFP	●	●	●	●	●	●	●
CPVC to PVC Drain Adapters - 1/2” CPVC to 3/4” PVC	KGAAD0110PVC	●	●	●	●	●	●	●
Horizontal Trap Grommet - Direct Vent	KGACK0101HCK	All DV Horizontal						
Condensate Neutralizer Kit	P908–0001	●	●	●	●	●	●	●
External Trap Kit	KGAET0201ETK	●	●	●	●	●	●	●
Ductwork Adapter Accessories								
Furnace Base Kit for Combustible Floors	KGASB0201ALL	●	●	●	●	●	●	●
Coil Adapter Kits – No Offset	KGADA0101ALL	●	●	●	●	●	●	●
Coil Adapter Kits – Single Offset	KGADA0201ALL	●	●	●	●	●	●	●
Coil Adapter Kits – Double Offset	KGADA0301ALL	●	●	●	●	●	●	●
Return Air Base (Upflow Applications) 14.0–in. wide	KGARP0301B14	●						
Return Air Base (Upflow Applications) 17.5–in. wide	KGARP0301B17		●	●				
Return Air Base (Upflow Applications) 21.0–in. wide	KGARP0301B21				●	●	●	
Return Air Base (Upflow Applications) 24.5–in. wide	KGARP0301B24							●
IAQ Device Duct Adapters 20.0–in. IAQ to 16 in. Side Return	KGAAD0101MEC	20”x25” IAQ Devices						
IAQ Device Duct Adapters 24.0–in. IAQ to 16 in. Side Return	KGAAD0201MEC	24”x25” IAQ Devices						
Gas Conversion Accessories								
Mobile Home Kit	KGBMH0601KIT	●	●	●	●	●	●	●
Gas Conversion Kit - Nat to LP	KGBNP50011SP	●	●	●	●	●	●	●
Gas Conversion Kit - LP to Nat	KGBPN42011SP	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●
Control Accessories								
Twinning Kit	KGATW0701HSI		●	●	●	●	●	●
IAQ Accessories								
Filter Rack – Side Return for 1” Filters	KGAFR0201ALL	●	●	●	●	●	●	●
Filter Rack – Bottom Return for 1” Filters – 14.2” wide	KGBFR0401B14	●						
Filter Rack – Bottom Return for 1” Filters – 17.5” wide	KGBFR0501B17		●	●				
Filter Rack – Bottom Return for 1” Filters – 21.0” wide	KGBFR0601B21				●	●	●	
Filter Rack – Bottom Return for 1” Filters – 24.5” wide	KGBFR0701B24							●
Filter Pack (6 pack) – Washable - 16x25x1	KGAWF1306UFR	●	●	●	●	●	●	●
Filter Pack (6 pack) – Washable - 24x25x1	KGAWF1506UFR	●	●	●	●	●	●	●
EZ-Flex Filter - 16” (406 mm)	EXPXXFIL0016	Use with EZXCAB–1016						
EZ-Flex Filter - 20” (508 mm)	EXPXXFIL0020	Use with EZXCAB–1020						
EZ-Flex Filter - 24” (610 mm)	EXPXXFIL0024	Use with EZXCAB–1024						
EZ-Flex Filter with End Caps - 16” (406 mm)	EXPXXUNV0016	Use with EZXCAB–1016						
EZ-Flex Filter with End Caps - 20” (508 mm)	EXPXXUNV0020	Use with EZXCAB–1020						
EZ-Flex Filter with End Caps - 24” (610 mm)	EXPXXUNV0024	Use with EZXCAB–1024						
Cartridge Media Filter - 16” (406 mm)	FILXXCAR0016	Use with FILCABXL–1016						
Cartridge Media Filter - 20” (508 mm)	FILXXCAR0020	Use with FILCABXL–1020						
Cartridge Media Filter - 24” (610 mm)	FILXXCAR0024	Use with FILCABXL–1024						

● = Used with the model furnace

AIR DELIVERY - CFM (BOTTOM RETURN WITH FILTER)

UNIT SIZE	RETURN-AIR CONNECTION	SPEED TAPS [2]	EXTERNAL STATIC PRESSURE (IN. W.C.) [6]									
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
030040	SIDE or BOTTOM	Black	1160	1120	1070	1020	965	905	835	765	**695**	**630**
		Blue	970	940	905	865	825	770	715	655	585	**515**
		Yellow	920	890	855	820	770	720	665	600	545	**465**
		Red	730	705	670	630	580	535	495	445	**380**	**335**
048060	SIDE or BOTTOM	Black	1760	1705	1635	1575	1505	1430	1355	1270	1180	**1090**
		Yellow	1415	1400	1365	1335	1290	1240	1180	1115	1040	965
		Orange	1065	1060	1050	1035	1010	975	940	890	835	770
		Blue	1010	1000	990	975	955	925	885	845	785	720
		Red	770	745	730	710	685	660	625	585	545	**500**
048080	SIDE or BOTTOM	Black	1800	1770	1735	1685	1630	1570	1495	1415	1330	1230
		Yellow	1445	1430	1410	1385	1350	1305	1255	1195	1120	1045
		Orange	1250	1240	1225	1200	1170	1130	1090	1040	975	910
		Blue	1090	1080	1060	1035	1010	970	930	885	835	765
		Red [5]	880	860	835	810	780	750	710	665	615	560
060080	BOTTOM or TWO-SIDES [3,4]	Black	2310	2235	2140	2050	1960	1860	1755	1650	1535	1430
		Yellow	1720	1700	1670	1625	1570	1505	1435	1360	1275	1185
		Orange	1515	1500	1480	1445	1405	1350	1290	1225	1155	1075
		Blue	1150	1135	1105	1080	1050	1020	980	935	880	815
		Red	945	915	885	860	835	805	770	720	670	610
048100	SIDE or BOTTOM	Black	1725	1700	1665	1620	1570	1510	1445	1365	1265	1160
		Blue	1500	1475	1450	1410	1370	1330	1260	1180	1095	1010
		Yellow [5]	1235	1215	1190	1160	1120	1075	1020	950	880	805
		Red [5]	1035	1005	955	915	875	825	770	715	650	575
066100	BOTTOM or TWO-SIDES [3,4]	Black	2690	2595	2490	2390	**2280**	**2170**	**2050**	**1930**	**1810**	**1675**
		Yellow	2180	2145	2095	2045	1980	1905	1820	1725	1615	1490
		Orange	1790	1795	1785	1765	1735	1690	1630	1555	1460	1350
		Blue	1640	1640	1635	1620	1595	1565	1510	1450	1365	1270
		Red	1365	1360	1360	1345	1330	1300	1265	1215	1155	1080
066120	BOTTOM or TWO-SIDES [3,4]	Black	2645	2545	2445	2340	2230	**2110**	**1990**	**1810**	**1685**	**1580**
		Blue	2430	2355	2275	2185	2090	1980	1850	1700	1600	1500
		Yellow	1850	1825	1795	1760	1705	1625	1540	1465	1380	1280
		Orange	1610	1595	1575	1550	1500	1455	1405	1345	1270	1185
		Red [5]	1445	1430	1405	1380	1350	1315	1265	1215	1150	1075

NOTE:

1. A filter is required for each return−air inlet. Airflow performance includes a 3/4−in. (19 mm) washable filter media such as contained in a factory−authorized accessory filter rack. See accessory list. To determine airflow performance without this filter, assume an additional 0.1 in. W.C.. available external static pressure.
2. Blower speed taps are not always in the same order. Factory default blower connections are as follows:
   a. Heating airflow − BLUE (also used for Continuous Fan)
   b. Cooling airflow − BLACK (enabled when the Y terminal is energized)
   ADJUST THE BLOWER SPEED TAPS AS NECESSARY FOR THE PROPER AIR TEMPERATURE RISE FOR EACH INSTALLATION.
3. Airflows over 1800 CFM require bottom return, two−side return, or bottom and side return. A minimum filter size of 20" x 25" (508 x 635 mm) is required.
4. For upflow applications, air entering from one side into both the side of the furnace and a return air base counts as a side and bottom return.
5. Highlighted areas indicate that this airflow range is beyond the range allowed for heating. **THESE AIRFLOW RANGES MAY ONLY BE USED FOR COOLING.**
6. All airflows that are shown in **BOLD** exceed 0.58 watts per CFM at the given external static pressure.

MAXIMUM EQUIVALENT VENT LENGTH - FT. (M)

Table 1 – Maximum Equivalent Vent Length - Ft. (M)
0 to 4500 Ft. (0 to 1370 M) Altitude

NOTE: Maximum Equivalent Vent Length (MEVL) includes standard and concentric vent termination and does NOT include elbows. Use Table 2 - Deductions from Maximum Equivalent Vent Length to determine allowable vent length for each application.

Altitude FT (M)	Unit Size BTU/Hr	DIRECT VENT (2-PIPE) AND NON-DIRECT VENT (1-PIPE)									
		Vent Pipe Diameter (in.)									
		1-1/2		2		2-1/2		3		4	
0 to 2000 (0 to 610)	40,000*[1]	25	(7.6)	115	(35.1)	250	(76.2)	NA		NA	
	60,000	30	(9.1)	135	(41.1)	235	(71.6)	265	(80.8)	NA	
	80,000	20	(6.1)	70	(21.3)	175	(53.3)	235	(71.6)	265	(80.8)
	100,000	NA		25	(7.6)	110	(33.5)	235	(71.6)	265	(80.8)
	120,000	NA		NA		15	(4.6)	100	(30.5)	250	(76.2)
	140,000*	NA		NA		10	(3.0)	90	(27.4)	210	(64.0)
2001 to 3000 (610 to 914)	40,000*	22	(6.7)	105	(32.0)	232	(70.7)	NA		NA	
	60,000	27	(8.2)	127	(38.7)	222	(67.7)	250	(76.2)	NA	
	80,000	17	(5.2)	64	(19.5)	165	(50.3)	222	(67.7)	249	(75.9)
	100,000	NA		22	(6.7)	104	(31.7)	223	(68.0)	250	(76.2)
	120,000	NA		NA		11	(3.4)	93	(28.3)	237	(72.2)
	140,000*	NA		NA		NA		80	(24.4)	185	(56.4)
3001 to 4000 (914 to 1219)	40,000*	18	(5.5)	94	(28.7)	214	(65.2)	NA		NA	
	60,000	23	(7.0)	119	(36.3)	210	(64.0)	235	(71.6)	NA	
	80,000	15	(4.6)	59	(18.0)	155	(47.2)	210	(64.0)	232	(70.7)
	100,000	NA		19	(5.8)	98	(29.9)	211	(64.3)	236	(71.9)
	120,000	NA		NA		8	(2.4)	86	(26.2)	224	(68.3)
	140,000*	NA		NA		NA		79	(24.1)	158	(48.2)
4001 to 4500 (1219 to 1370)	40,000*	16	(4.9)	88	(26.8)	205	(62.5)	NA		NA	
	60,000	21	(6.4)	115	(35.1)	204	(62.2)	228	(69.5)	NA	
	80,000	14	(4.3)	56	(17.1)	150	(45.7)	202	(61.6)	224	(68.3)
	100,000	NA		17	(5.2)	94	(28.7)	205	(62.5)	229	(69.8)
	120,000	NA		NA		NA		83	(25.3)	217	(66.1)
	140,000*	NA		NA		NA		69	(21.0)	146	(44.5)

* Not all families have these models.
NOTES: See notes at end of venting tables.
See Table 3 for altitudes over 4500 ft. (1370 M)

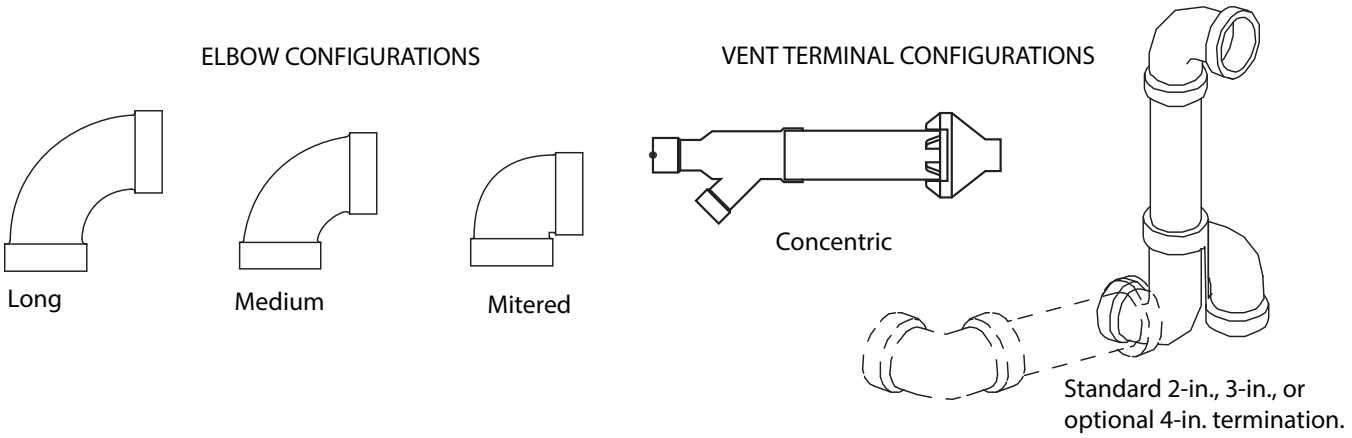


Table 2 – Deductions from Maximum Equivalent Vent Length - Ft. (M)

Pipe Diameter (in):	1-1/2		2		2-1/2		3		4	
Mitered 90° Elbow	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)	8	(2.4)
Medium Radius 90° Elbow	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)	5	(1.5)
Long Radius 90° Elbow	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)	3	(0.9)
Mitered 45° Elbow	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)	4	(1.2)
Medium Radius 45° Elbow	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)	2.5	(0.8)
Long Radius 45° Elbow	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)
Tee	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)	16	(4.9)
Concentric Vent Termination	NA		0	(0.0)	NA		0	(0.0)	NA	
Standard Vent Termination	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

Venting System Length Calculations

The Total Equivalent Vent Length (TEVL) for **EACH** combustion air or vent pipe equals the length of the venting system, plus the equivalent length of elbows used in the venting system from Table 2.

Standard vent terminations or factory accessory concentric vent terminations count for zero deduction.

See vent system manufacturer's data for equivalent lengths of flexible vent pipe or other termination systems. **DO NOT ASSUME** that one foot of flexible vent pipe equals one foot of straight PVC/ABS DWV vent pipe.

Compare the Total Equivalent Vent Length to the Maximum Equivalent Vent Lengths in Tables 1 and 3.

Example 1

A direct-vent 60,000 Btuh furnace installed at 2100 ft. (640 M). Venting system includes, **FOR EACH PIPE**, 100 feet (30 M) of vent pipe, 95 feet (28 M) of combustion air inlet pipe, (3) 90° long radius elbows, (2) 45° long radius elbows and a factory accessory concentric vent kit.

Can this application use 2-in. (50 mm ND) PVC/ABS DWV vent piping?

Measure the required linear length of air inlet and vent pipe; insert the longest of the two here:					100 ft	Use length of the longer of the vent or air inlet piping system
Add equiv length of (3) 90º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	3	x	3 ft	=	9 ft.	From Table 2
Add equiv length of (2) 45º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	2	x	1.5 ft	=	3 ft.	From Table 2
Add equiv length of vent termination					0 ft.	From Table 2
Add correction for flexible vent pipe, if any					0 ft.	From Vent Manufacturer's instructions; zero for PVC/ABS DWV
Total Equivalent Vent Length (TEVL)					112 ft.	Add all of the above lines
Maximum Equivalent Vent Length (MEVL)					127 ft.	For 2" pipe from Table 1
Is TEVL less than MEVL?					**YES**	**Therefore, 2" pipe may be used**

Example 2

A direct-vent 60,000 Btuh furnace installed at 2100 ft. (640 M) Venting system includes, **FOR EACH PIPE**, 100 feet (30 M) of vent pipe, 95 feet (28 M) of combustion air inlet pipe, (3) 90° long radius elbows, and a polypropylene concentric vent kit. Also includes 20 feet (6 M) of flexible polypropylene vent pipe, included within the 100 feet (30 M) of vent pipe.

Assume that one meter of flexible 60 mm or 80 mm polypropylene pipe equals 2 Meters of PVC/ABS pipe. **VERIFY FROM VENT MANUFACTURER'S INSTRUCTIONS.**

Can this application use 60 mm (O.D.) polypropylene vent piping? If not what size piping can be used?

Measure the required linear length of air inlet and vent pipe; insert the longest of the two here:					100 ft	Use length of the longer of the vent or air inlet piping system
Add equiv length of (3) 90º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	3	x	3 ft	=	9 ft.	From Vent Manufacturer's instructions
Add equiv length of (2) 45º long-radius elbows (use the highest number of elbows for either the vent or inlet pipe)	0	x		=	0 ft.	From Vent Manufacturer's instructions
Add equiv length of vent termination	9 M	x	3 ft/M	=	18 ft.	From Vent Manufacturer's instructions
Add correction for flexible vent pipe, if any	1.8	x	20 ft	=	36 ft.	From Vent Manufacturer's instructions
Total Equivalent Vent Length (TEVL)					163 ft.	Add all of the above lines
Maximum Equivalent Vent Length (MEVL)					127 ft.	For 2" pipe from Table 1
Is TEVL less than MEVL?					**NO**	**Therefore, 60mm pipe may NOT be used; try 80 mm**
Maximum Equivalent Vent Length (MEVL)					250 ft.	For 3" pipe from Table 1
Is TEVL less than MEVL?					**YES**	**Therefore, 80 mm pipe may be used**

MAXIMUM EQUIVALENT VENT LENGTH - FT. (M) (CONTINUED)

Table 3 – Maximum Equivalent Vent Length - Ft. (M)
4501 to 10,000 Ft. (0 to 1370 M) Altitude

NOTE: Maximum Equivalent Vent Length (MEVL) includes standard and concentric vent termination and does NOT include elbows. Use Table 2 - Deductions from Maximum Equivalent Vent Length to determine allowable vent length for each application.

Altitude FT (M)	Unit Size	DIRECT VENT (2-PIPE) AND NON-DIRECT VENT (1-PIPE)									
		Vent Pipe Diameter									
		1-1/2		2		2-1/2		3		4	
4501 to 5000 (1370 to 1524)	40,000*	15	(4.6)	83	(25.3)	196	(59.7)	NA		NA	
	60000*	20	(6.1)	111	(33.8)	198	(60.4)	221	(67.4)	NA	
	80,000	13	(4.0)	54	(16.5)	146	(44.5)	195	(59.4)	216	(65.8)
	100,000	NA		16	(4.9)	91	(27.7)	200	(61.0)	222	(67.7)
	120,000	NA		NA		NA		80	(24.4)	211	(64.3)
	140,000*	NA		NA		NA		60	(18.3)	134	(40.8)
5001 to 6000 (1524 to 1829)	40,000*	12	(3.7)	73	(22.3)	179	(54.6)	NA		NA	
	60,000	16	(4.9)	103	(31.4)	186	(56.7)	207	(63.1)	NA	
	80,000	11	(3.4)	49	(14.9)	137	(41.8)	183	(55.8)	200	(61.0)
	100,000	NA		12	(3.7)	85	(25.9)	188	(57.3)	208	(63.4)
	120,000	NA		NA		NA		74	(22.6)	199	(60.7)
	140,000*	NA		NA		NA		50	(15.2)	109	(33.2)
6001 to 7000 (1829 to 2134)	40,000*	9	(2.7)	63	(19.2)	162	(49.4)	NA		NA	
	60,000	13	(4.0)	96	(29.3)	174	(53.0)	194	(59.1)	NA	
	80,000	NA		44	(13.4)	120	(36.6)	171	(52.1)	185	(56.4)
	100,000	NA		10	(3.0)	79	(24.1)	178	(54.3)	195	(59.4)
	120,000	NA		NA		NA		68	(20.7)	187	(57.0)
	140,000*	NA		NA		NA		41	(12.5)	87	(26.5)
7001 to 8000 (2134 to 2438)	40,000*	6	(1.8)	54	(16.5)	146	(44.5)	NA		NA	
	60,000	10	(3.0)	89	(27.1)	163	(49.7)	181	(55.2)	NA	
	80,000	NA		40	(12.2)	120	(36.6)	159	(48.5)	170	(51.8)
	100,000	NA		NA		73	(22.3)	167	(50.9)	182	(55.5)
	120,000	NA		NA		NA		62	(18.9)	175	(53.3)
	140,000*	NA		NA		NA		32	(9.8)	63	(19.2)
8001 to 9000 (2438 to 2743)	40,000*	NA		44	(13.4)	130	(39.6)	NA		NA	
	60,000	7	(2.1)	82	(25.0)	152	(46.3)	168	(51.2)	NA	
	80,000	NA		35	(10.7)	111	(33.8)	148	(45.1)	156	(47.5)
	100,000	NA		NA		67	(20.4)	157	(47.9)	170	(51.8)
	120,000	NA		NA		NA		56	(17.1)	164	(50.0)
	140,000*	NA		NA		NA		23	(7.0)	42	(12.8)
9001 to 10,000 (2743 to 3048)	40,000*	NA		35	(10.7)	115	(35.1)	NA		NA	
	60,000	NA		76	(23.2)	142	(43.3)	156	(47.5)	NA	
	80,000	NA		31	(9.4)	103	(31.4)	137	(41.8)	142	(43.3)
	100,000	NA		NA		62	(18.9)	147	(44.8)	157	(47.9)
	120,000	NA		NA		NA		51	(15.5)	153	(46.6)
	140,000*	NA		NA		NA		16	(4.9)	20	(6.1)

* Not all families have these models.

NOTES:

1. Use only the vent pipe sizes shown for each furnace. It is NOT necessary to choose the smallest diameter pipe possible for venting.
2. NA – Not allowed. Pressure switch will not close, or flame disturbance may result.
3. Total equivalent vent lengths under 10' for 40,000 BTUH furnaces from 0 to 2000 ft. (0 to 610 M) above sea level require use of an outlet choke plate . **Failure to use an outlet choke when required may result in flame disturbance or flame sense lockout.**
4. Not all furnace families include 140,000 BTUH input models.
5. Vent sizing for Canadian installations over 4500 ft (1370 M) above sea level are subject to acceptance by local authorities having jurisdiction.
6. Size both the combustion air and vent pipe independently, then use the larger size for both pipes.
7. Assume the two 45° elbows equal one 90° elbow. Wide radius elbows are desirable and may be required in some cases.
8. Elbow and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
9. The minimum pipe length is 5 ft. (2 M) linear feet (meters) for all applications.
10. Use 3–in. (76 mm) diameter vent termination kit for installations requiring 4–in. (102 mm) diameter pipe.

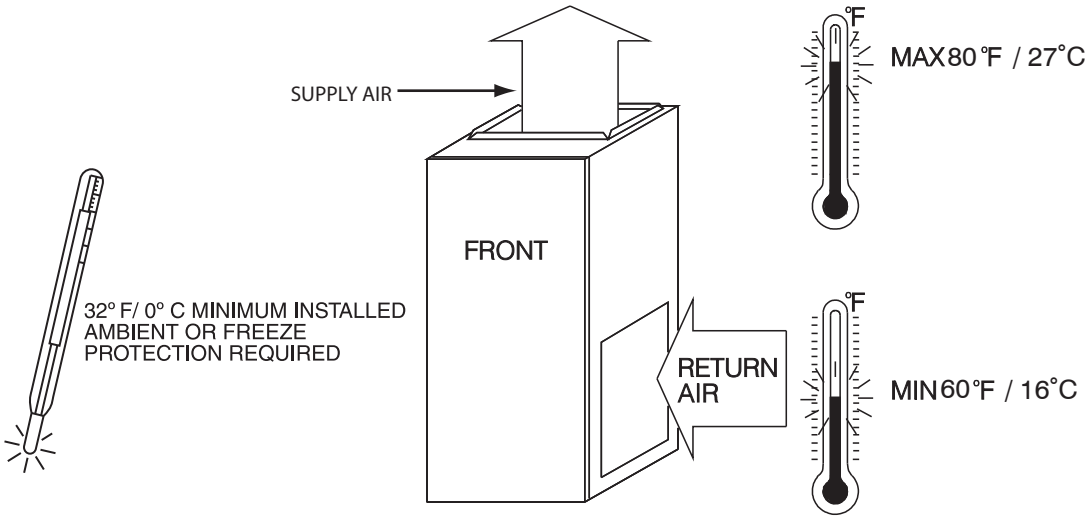
MAXIMUM ALLOWABLE EXPOSED VENT LENGTHS INSULATION TABLE - FT. (M)

Maximum Length of Uninsulated and Insulated Vent Pipe-Ft (M)																	
Single Stage Furnace Input	Winter Design Temp °F (°C)	Pipe Length in Ft. & M	No Insulation					3/8-in. (9.5 mm) Insulation					1/2-in. (12.7 mm) Insulation				
			Pipe Diameter – in. (mm)					Pipe Diameter – in. (mm)					Pipe Diameter – in. (mm)				
			1 1/2 (38)	2 (51)	2 1/2 (64)	3 (76)	4 (102)	1 1/2 (38)	2 (51)	2 1/2 (64)	3 (76)	4 (102)	1 1/2 (38)	2 (51)	2 1/2 (64)	3 (76)	4 (102)
40,000*	20 (-10)	FT	25	42	42	N/A	N/A	25	115	111	N/A	N/A	25	115	130	N/A	N/A
		M	7.6	12.8	12.8	N/A	N/A	7.6	35.1	33.8	N/A	N/A	7.6	35.1	39.6	N/A	N/A
	0 (-20)	FT	25	19	17	N/A	N/A	25	75	66	N/A	N/A	25	90	79	N/A	N/A
		M	7.6	5.8	5.2	N/A	N/A	7.6	22.9	20.1	N/A	N/A	7.6	27.4	24.1	N/A	N/A
	20 (-30)	FT	14	7	5	N/A	N/A	65	52	45	N/A	N/A	25	64	55	N/A	N/A
		M	4.3	2.1	1.5	N/A	N/A	19.8	15.8	13.7	N/A	N/A	7.6	19.5	16.8	N/A	N/A
	-40 (-40)	FT	7	0	0	N/A	N/A	49	38	31	N/A	N/A	25	48	40	N/A	N/A
		M	2.1	0.0	0.0	N/A	N/A	14.9	11.6	9.4	N/A	N/A	7.6	14.6	12.2	N/A	N/A
60,000	20 (-10)	Ft.	30	61	61	54	N/A	30	135	163	142	N/A	30	135	191	166	N/A
		M	9.1	18.6	18.6	16.5	N/A	9.1	41.1	49.7	43.3	N/A	9.1	41.1	58.2	50.6	N/A
	0 (-20)	Ft.	30	31	30	23	N/A	30	113	100	85	N/A	30	135	120	101	N/A
		M	9.1	9.4	9.1	7.0	N/A	9.1	34.4	30.5	25.9	N/A	9.1	41.1	36.6	30.8	N/A
	-20 (-30)	Ft.	24	17	15	7	N/A	30	81	70	57	N/A	30	98	85	70	N/A
		M	7.3	5.2	4.6	2.1	N/A	9.1	24.7	21.3	17.4	N/A	9.1	29.9	25.9	21.3	N/A
	-40 (-40)	Ft.	15	8	5	0	N/A	30	61	52	40	N/A	30	75	64	51	N/A
		M	4.6	2.4	1.5	0.0	N/A	9.1	18.6	15.8	12.2	N/A	9.1	22.9	19.5	15.5	N/A
80,000	20 (-10)	Ft.	20	70	78	70	60	20	70	175	183	154	20	70	175	215	181
		M	6.1	21.3	23.8	21.3	18.3	6.1	21.3	53.3	55.8	46.9	6.1	21.3	53.3	65.5	55.2
	0 (-20)	Ft.	20	42	41	33	21	20	70	132	111	89	20	70	157	133	107
		M	6.1	12.8	12.5	10.1	6.4	6.1	21.3	40.2	33.8	27.1	6.1	21.3	47.9	40.5	32.6
	-20 (-30)	Ft.	20	25	23	14	1	20	70	94	77	57	20	70	113	94	71
		M	6.1	7.6	7.0	4.3	0.3	6.1	21.3	28.7	23.5	17.4	6.1	21.3	34.4	28.7	21.6
	-40 (-40)	Ft.	20	14	12	3	0	20	70	71	56	38	20	70	86	70	50
		M	6.1	4.3	3.7	0.9	0.0	6.1	21.3	21.6	17.1	11.6	6.1	21.3	26.2	21.3	15.2
100,000	20 (-10)	Ft.	N/A	25	99	89	78	N/A	25	110	233	265	N/A	25	110	235	229
		M	N/A	7.6	30.2	27.1	23.8	N/A	7.6	33.5	71.0	80.8	N/A	7.6	33.5	71.6	69.8
	0 (-20)	Ft.	N/A	25	55	46	33	N/A	25	110	145	117	N/A	25	110	173	140
		M	N/A	7.6	16.8	14.0	10.1	N/A	7.6	33.5	44.2	35.7	N/A	7.6	33.5	52.7	42.7
	-20 (-30)	Ft.	N/A	25	34	24	11	N/A	25	110	103	79	N/A	25	110	124	97
		M	N/A	7.6	10.4	7.3	3.4	N/A	7.6	33.5	31.4	24.1	N/A	7.6	33.5	37.8	29.6
	-40 (-40)	Ft.	N/A	23	20	11	0	N/A	25	95	77	55	N/A	25	110	94	70
		M	N/A	7.0	6.1	3.4	0.0	N/A	7.6	29.0	23.5	16.8	N/A	7.6	33.5	28.7	21.3
120,000	20 (-10)	Ft.	N/A	N/A	15	99	86	N/A	N/A	15	100	219	N/A	N/A	15	100	250
		M	N/A	N/A	4.6	30.2	26.2	N/A	N/A	4.6	30.5	66.8	N/A	N/A	4.6	30.5	76.2
	0 (-20)	Ft.	N/A	N/A	15	51	38	N/A	N/A	15	100	130	N/A	N/A	15	100	156
		M	N/A	N/A	4.6	15.5	11.6	N/A	N/A	4.6	30.5	39.6	N/A	N/A	4.6	30.5	47.5
	-20 (-30)	Ft.	N/A	N/A	15	28	14	N/A	N/A	15	100	88	N/A	N/A	15	100	108
		M	N/A	N/A	4.6	8.5	4.3	N/A	N/A	4.6	30.5	26.8	N/A	N/A	4.6	30.5	32.9
	-40 (-40)	Ft.	N/A	N/A	15	14	0	N/A	N/A	15	85	62	N/A	N/A	15	100	79
		M	N/A	N/A	4.6	4.3	0.0	N/A	N/A	4.6	25.9	18.9	N/A	N/A	4.6	30.5	24.1
140,000*	20 (-10)	Ft.	N/A	N/A	10	90	99	N/A	N/A	10	90	210	N/A	N/A	10	90	210
		M	N/A	N/A	3.0	27.4	30.2	N/A	N/A	3.0	27.4	64.0	N/A	N/A	3.0	27.4	64.0
	0 (-20)	Ft.	N/A	N/A	10	61	47	N/A	N/A	10	90	153	N/A	N/A	10	90	183
		M	N/A	N/A	3.0	18.6	14.3	N/A	N/A	3.0	27.4	46.6	N/A	N/A	3.0	27.4	55.8
	-20 (-30)	Ft.	N/A	N/A	10	35	21	N/A	N/A	10	90	104	N/A	N/A	10	90	128
		M	N/A	N/A	3.0	10.7	6.4	N/A	N/A	3.0	27.4	31.7	N/A	N/A	3.0	27.4	39.0
	-40 (-40)	Ft.	N/A	N/A	10	20	NA	N/A	N/A	10	90	75	N/A	N/A	10	90	94
		M	N/A	N/A	3.0	6.1	NA	N/A	N/A	3.0	27.4	22.9	N/A	N/A	3.0	27.4	28.7

Not all families have these models.

RETURN AIR TEMPERATURE

This furnace is designed for continuous return-air minimum temperature of 60°F (15°C) db or intermittent operation down to 55°F (13°C) db such as when used with a night setback thermometer. Return-air temperature must not exceed 80°F (27°C) db. Failure to follow these return air limits may affect reliability of heat exchangers, motors and controls.



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PG92SBS

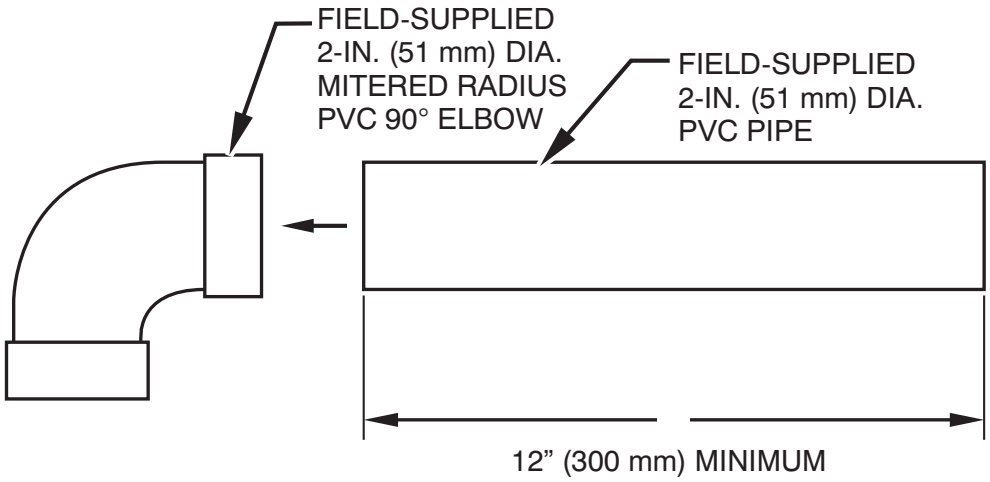
MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	CLEARANCE
Rear	0 (0 mm)
Front (Combustion air openings in furnace and in structure)	1 in. (25 mm)
Required for service**	24 in. (610 mm)*
All Sides of Supply Plenum**	1 in. (25 mm)
Sides	0 (0 mm)
Vent	0 (0 mm)
Top of Furnace	1 in. (25 mm)

* Recommended

**Consult your local building codes

COMBUSTION-AIR PIPE FOR NON-DIRECT (1-PIPE) VENT APPLICATION



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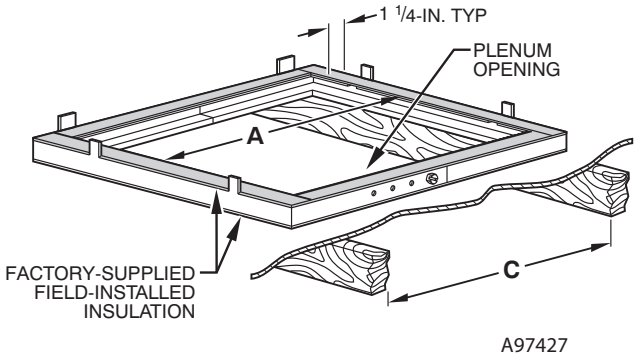
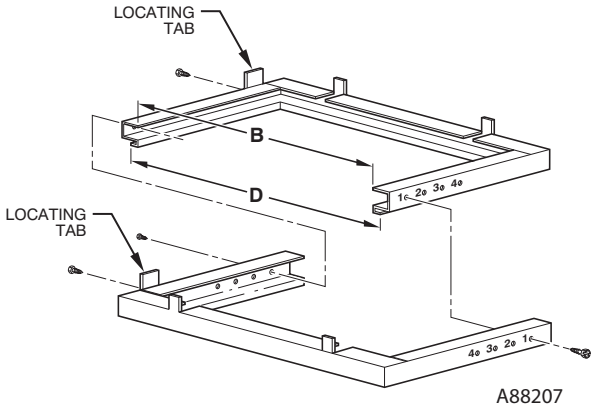
NOTE: See Installation Instructions for specific venting configurations.

DOWNFLOW SUBBASE



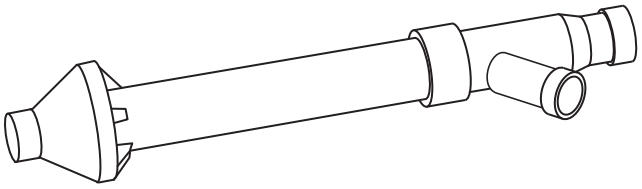
Assembled



Disassembled

DIMENSIONS (IN. / MM)						
FURNACE CASING WIDTH	FURNACE IN DOWNFLOW APPLICATION	PLENUM OPENING*		FLOOR OPENING		HOLE NO. FOR WIDTH ADJUSTMENT
		A	B	C	D	
14–3/16 (360)	Furnace with or without Cased Coil Assembly or Coil Box	11–3/16 (322)	19 (483)	13–7/16 (341)	20–5/8 (600)	4
17–1/2 (445)	Furnace with or without Cased Coil Assembly or Coil Box	15–1/8 (384)	19 (483)	16–3/4 (426)	20–5/8 (600)	3
21 (533)	Furnace with or without Cased Coil Assembly or Coil Box	18–5/8 (396)	19 (483)	20–1/4 (514)	20–5/8 (600)	2
24–1/2 (622)	Furnace with or without Cased Coil Assembly or Coil Box	22–1/8 (562)	19 (483)	23–3/4 (603)	20–5/8 (600)	1

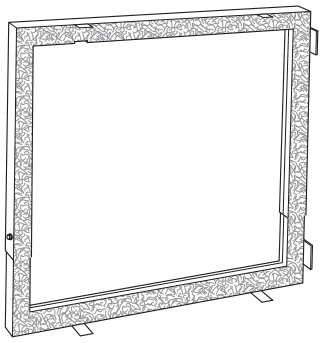
*The plenum should be constructed 1/4–in. (6 mm) smaller in width and depth than the plenum dimensions shown above.



Concentric Vent Kit

A93086

A concentric vent kit allows vent and combustion-air pipes to terminate through a single exit in a roof or side wall. One pipe runs inside the other allowing venting through the inner pipe and combustion air to be drawn in through the outer pipe.

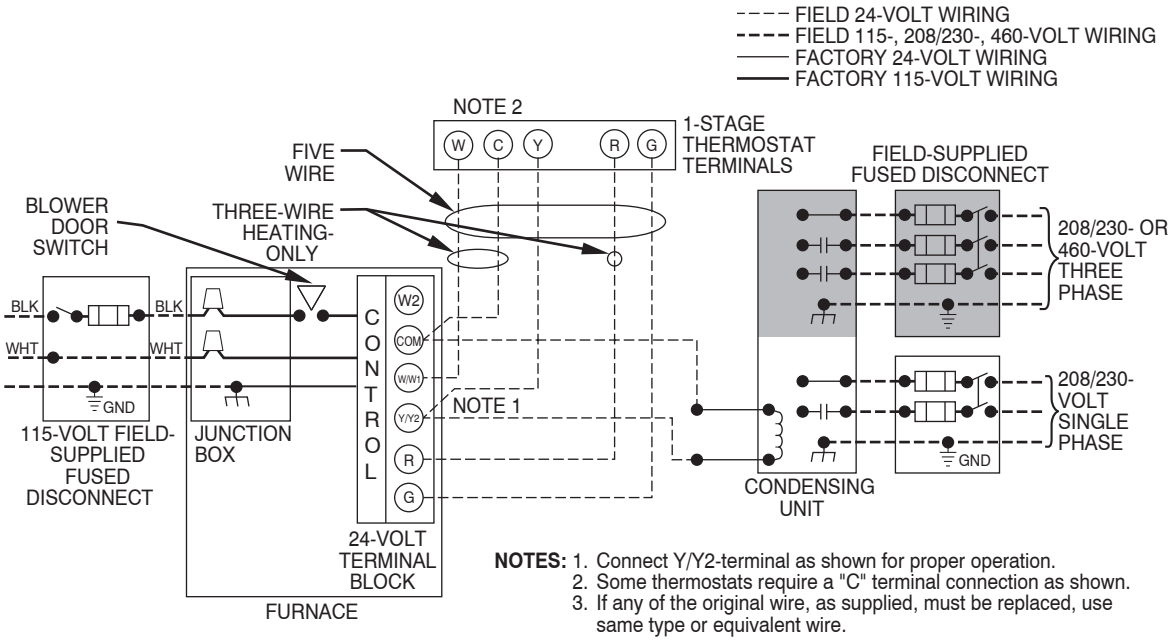


Downflow Subbase

A88202

One base fits all furnace sizes. The base is designed to be installed between the furnace and a combustible floor when no coil box is used or when a coil box other than a Payne cased coil is used. It is CSA design certified for use with Payne branded furnaces when installed in downflow applications.

TYPICAL WIRING SCHEMATIC



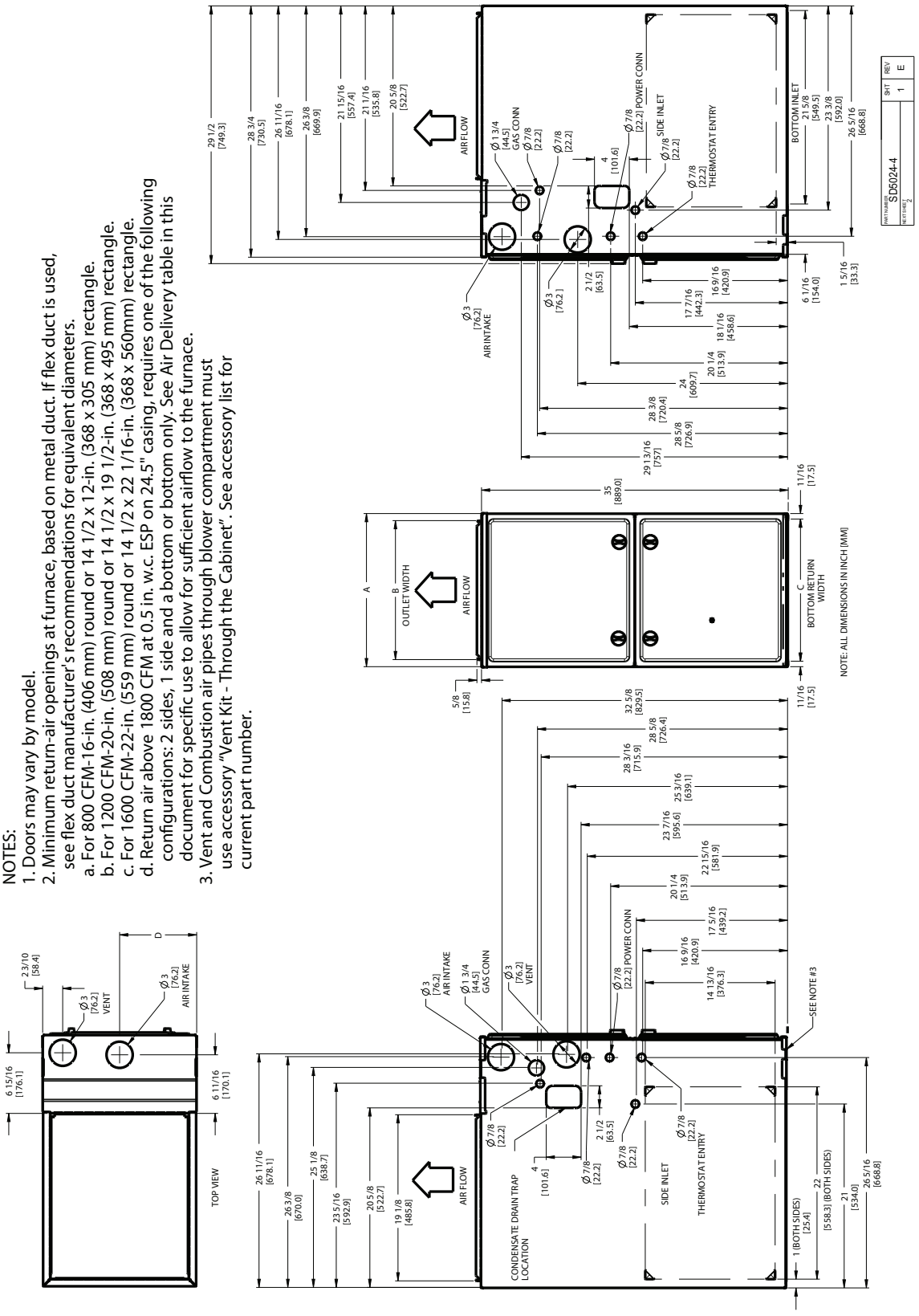
NOTES: 1. Connect Y/Y2-terminal as shown for proper operation.
2. Some thermostats require a "C" terminal connection as shown.
3. If any of the original wire, as supplied, must be replaced, use same type or equivalent wire.

A11401

PG92SBS

DIMENSIONAL DRAWING

NOTES:
1. Doors may vary by model.
2. Minimum return-air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations for equivalent diameters.
   a. For 800 CFM-16-in. (406 mm) round or 14 1/2 x 12-in. (368 x 305 mm) rectangle.
   b. For 1200 CFM-20-in. (508 mm) round or 14 1/2 x 19 1/2-in. (368 x 495 mm) rectangle.
   c. For 1600 CFM-22-in. (559 mm) round or 14 1/2 x 22 1/16-in. (368 x 560mm) rectangle.
   d. Return air above 1800 CFM at 0.5 in. w.c. ESP on 24.5" casing, requires one of the following configurations: 2 sides, 1 side and a bottom or bottom only. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace.
3. Vent and Combustion air pipes through blower compartment must use accessory "Vent Kit - Through the Cabinet". See accessory list for current part number.



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PG92SBS FURNACE SIZE	A CABINET WIDTH	B OUTLET WIDTH	C BOTTOM INLET WIDTH	D AIR INTAKE	SHIP WT. LB (KG)
30040	14–3/16 (361)	12–1/2 (319)	12–9/16 (322)	7–1/8 (181)	121.0 (55.0)
48060	17–1/2 (445)	15–7/8 (403)	16 (406)	8–3/4 (222)	142.0 (64.5)
48080					151.0 (68.6)
60080	21 (533)	19–3/8 (492)	19–1/2 (495)	10–1/2 (267)	158.5 (72.0)
48100					166.5 (75.7)
66100					166.5 (75.7)
66120	24–1/2 (622)	22–7/8 (581)	23 (584)	12–1/4 (311)	184.0 (83.6)

GUIDE SPECIFICATIONS

General

System Description

Furnish a _____ 4-way multipoise gas-fired condensing furnace for use with natural gas or propane (factory-authorized conversion kit required for propane).

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 third 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® and Blue Flame® labels. 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 will carry the current Federal Trade Commission Energy Guide efficiency label.

Delivery, Storage, and Handling

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

Warranty (for inclusion by specifying engineer)

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

Equipment

Blower Wheel and PSC Blower Motor

Galvanized blower wheel shall be centrifugal type, statically and dynamically balanced. Blower motor of PSC type shall be permanently lubricated with sleeve bearings, of _____hp, and have multiple speeds from 600-1200 RPM operating only when motor inputs are provided. Blower motor shall be direct drive and soft mounted to the blower scroll to reduce vibration transmission.

Filters

Furnace shall have reusable-type filters. Filter shall be _____ in. (mm) X _____ in. (mm). An accessory highly efficient Media Filter is available as an option. _____ Media Filter.

Casing

Casing shall be of .030 in. thickness minimum, pre-painted steel.

Draft Inducer Motor

Draft inducer motor shall be single-speed PSC design.

Primary Heat Exchangers

Primary heat exchangers shall be 3-Pass corrosion-resistant aluminized steel of fold-and-crimp sectional design and applied operating under negative pressure.

Secondary Heat Exchangers

Secondary heat exchangers shall be of a stainless steel flow-through of fin-and-tube design and applied operating under negative pressure.

Controls

Controls shall include a micro-processor-based integrated electronic control board with at least 16 service troubleshooting codes displayed via diagnostic flashing LED light on the control, a self-test feature that checks all major functions of the furnace, and a replaceable automotive-type circuit protection fuse. Multiple operational settings available, including blower speeds for heating and cooling.

Operating Characteristics

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

Fuel Gas Efficiency shall be _____ AFUE.

Air delivery shall be _____ cfm minimum at 0.50 in. W.C. external static pressure.

Dimensions shall be: depth_____in. (mm); width _____in. (mm); 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 of HACR-type designated circuit breaker shall be _____ amps.

Special Features

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

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