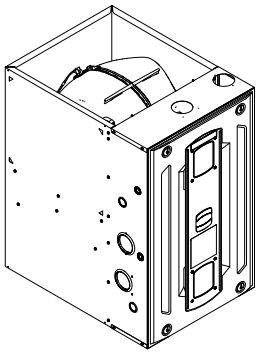
Submittal

Dedicated Downflow
Two Stage Condensing
Gas Fired Furnace
80,000 BTUH

Downflow Only
S9V2B080D4VSBB



Note: *Graphics in this document are for representation only. Actual model may differ in appearance.*

⚠ WARNING

FIRE HAZARD!

Failure to follow this Warning could result in property damage, severe personal injury, or death.
This Warning applies to installations with a flammable refrigeration system. The furnace must be powered except for service. The furnace shall be installed and connected according to installation instructions and wiring diagrams that are provided with the evaporator coil.

⚠ CAUTION

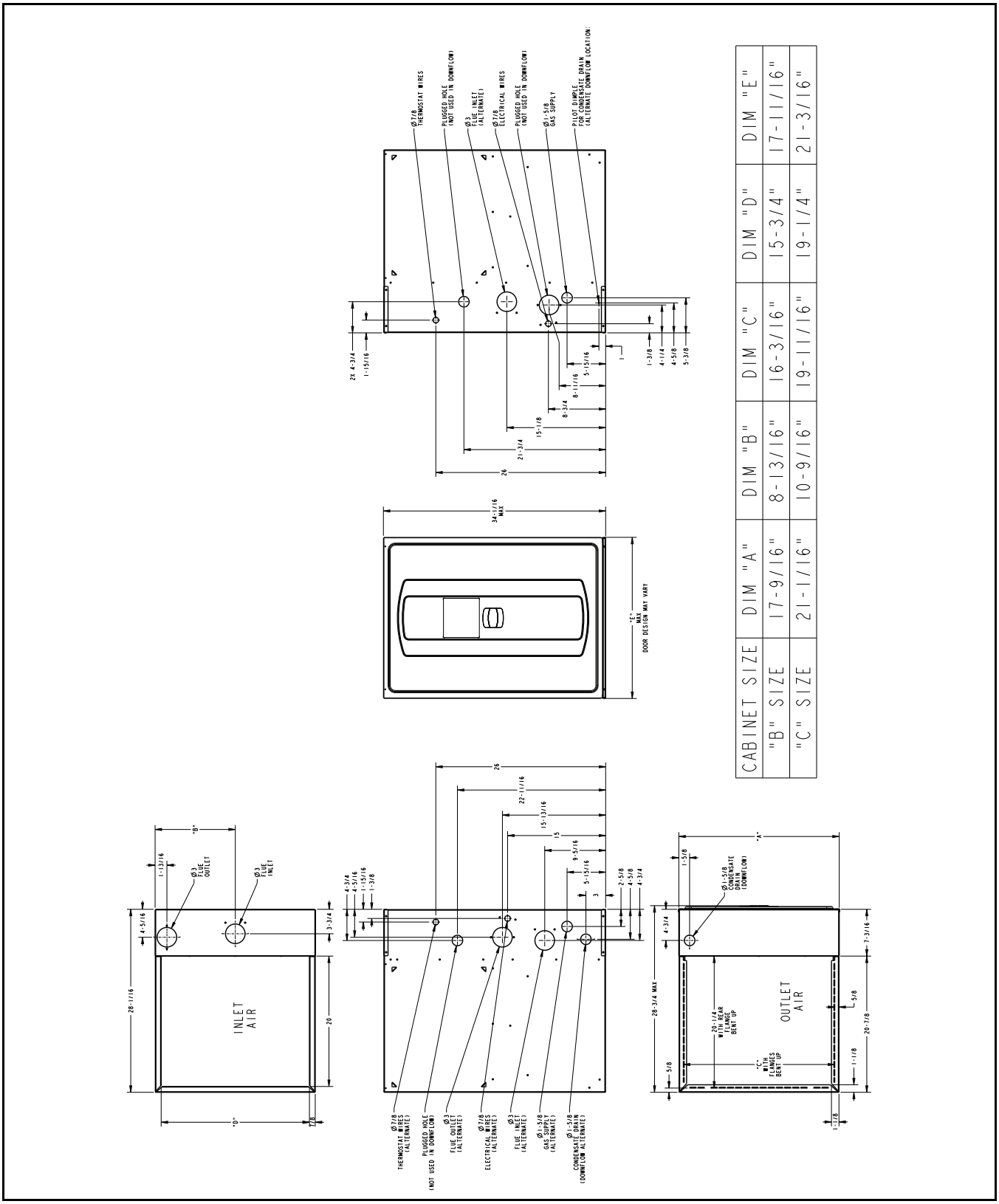
COIL REQUIREMENT!

Failure to follow this Caution could result in property damage or personal injury. *GXC* and *MXC* coils installed on upflow furnaces in vertical, horizontal left, or horizontal right orientations without a factory installed metal drain pan shield must use a MAY*FERCOLKITAA kit. Coils installed on upflow furnaces must have drain pans that are suitable for 400° F (205°C) or have a metal drain pan shield. Downflow furnaces do not require a metal drain pan shield or the use of the MAY*FERCOLKITAA kit. See Installer's Guide for more information.

September 2024 **S9V2B080D4V-SUB-2C-EN**

Outline Drawings

Table 1. 17.5″ and 21″ Downflow Cabinets



CABINET SIZE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
"B" SIZE	17-9/16"	8-13/16"	16-3/16"	15-3/4"	17-11/16"
"C" SIZE	21-1/16"	10-9/16"	19-11/16"	19-1/4"	21-3/16"

Product Specification

Model	S9V2B080D4VSBB [a], [b]
Type	Downflow
RATINGS [c]	
1st Stage Input BTUH	52,000
1st Stage Capacity BTUH (ICS)	51,150
2nd Stage Input BTUH	80,000
2nd Stage Capacity BTUH (ICS) [d]	76,900
1st Stage Temp. Rise (Min. - Max.) °F	30 - 60
2nd Stage Temp. Rise (Min. - Max.) °F	35 - 65
AFUE (%)	97.0
Return Air Temp. (Min. - Max.) °F	45°F - 80°F
BLOWER DRIVE	DIRECT
Diameter - Width (in.)	11 X 8
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	3/4
R.P.M.	Variable
Volts / Ph / Hz	120 / 1 / 60
FLA	9.6
COMBUSTION FAN - Type	Variable Speed
Drive - No. Speeds	Direct - Variable
Motor RPM	1/50 - 5000
Volts/Ph/Hz	33 - 110 / 3 / 60 - 180
FLA	0.77
Inducer Orifice	0.96
FILTER - Furnished?	No
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	1 - 16 X 25 - 1 in.

Model	S9V2B080D4VSBB [a], [b]
VENT OUTLET DIAMETER - MIN. (in.) [e]	2 Round
INLET AIR DIAMETER -MIN. (in.)	2 Round
HEAT EXCHANGER – Type	
Fired	409 Stainless Steel
Unfired	29-4C Stainless Steel
Gauge (Fired)	20
ORIFICES - Main	
Nat. Gas (Qty. - Drill Size)	4 - 45
Propane Gas (Qty. - Drill Size)	4 - 56
GAS VALVE	Redundant - Two Stage
PILOT SAFETY DEVICE – TYPE	120 V SiNi Igniter
BURNERS - TYPE - QTY	Inshot - 4
POWER CONN. - V/Ph/HZ [f]	120 / 1 / 60
Ampacity (Amps)	12.9
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Uncrated (in.)	34 x 17-1/2 x 28-3/4
Crated (in.)	35-1/2 x 19-1/2 x 30-7/8
WEIGHT	
Shipping (Lbs.)/Net (Lbs.)	135/127

[a] Meets Energy Star
[b] Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 - latest edition.
[c] For U.S. Applications, above input ratings (BTUH) are up to 2,000 feet, derate 4% per 1,000 feet for elevations above 2,000 feet above sea level. For Canadian applications, above input ratings (BTUH) are up to 4,500 feet, derate 4% per 1,000 feet for elevations above 4,500 feet above sea level.
[d] Based on U.S. government standard tests.
[e] Refer to Vent Length Table in the Installer's Guide.
[f] The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Heating and Cooling Airflow Tables

Table 2. S9V2B080D4VS Heating Airflow

S9V2B080D4VS Furnace Heating Airflow (CFM), Temp. Rise (°F), and Power (Watts) vs. External Static Pressure with Filter (iwc)								
				1st Stage Capacity = 51,150 2nd Stage Capacity = 76,900				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	864	CFM	780	776	772	768	764
			Temp. Rise	60	60	61	61	61
			Watts	94	135	176	216	257
	Medium Low	907	CFM	807	811	814	818	822
			Temp. Rise	57	57	58	58	58
			Watts	101	151	201	252	302
	Medium [a]	958	CFM	862	862	862	861	861
			Temp. Rise	54	54	54	54	54
			Watts	117	168	219	271	322
	High	1066	CFM	977	963	949	934	920
			Temp. Rise	48	49	50	51	52
			Watts	128	179	230	281	332
Heating 2nd Stage	Low	1200	CFM	1111	1104	1096	1088	1081
			Temp. Rise	66	66	66	66	66
			Watts	204	260	317	373	429
	Medium Low	1260	CFM	1193	1201	1209	1217	1225
			Temp. Rise	59	59	59	59	59
			Watts	232	296	360	424	488
	Medium [a]	1330	CFM	1217	1217	1216	1215	1215
			Temp. Rise	58	58	58	58	59
			Watts	273	335	396	457	518
	High	1480	CFM	1342	1328	1313	1299	1284
			Temp. Rise	53	54	55	56	56
			Watts	329	389	448	508	567

[a] Factory Setting.

Table 3. S9V2B080D4VS Cooling Airflow

S9V2B080D4VS Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter (iwc)							
Outdoor Tonnage - "Odt" (tons)	Airflow Setting - (CFM/ton)		EXTERNAL STATIC PRESSURE (IN. W. C.)				
			0.1	0.3	0.5	0.7	0.9
2.0	450	CFM / WATTS	892 / 91	899 / 136	893 / 180	872 / 222	838 / 265
	420	CFM / WATTS	834 / 77	841 / 120	834 / 161	813 / 202	777 / 243
	400	CFM / WATTS	785 / 67	785 / 106	781 / 146	754 / 183	737 / 229
	370	CFM / WATTS	738 / 58	744 / 97	736 / 134	714 / 172	677 / 210
	350	CFM / WATTS	700 / 52	705 / 89	697 / 125	675 / 161	638 / 198
	330	CFM / WATTS	662 / 46	666 / 81	658 / 116	635 / 151	598 / 187
	310	CFM / WATTS	624 / 40	627 / 74	619 / 107	596 / 142	558 / 177
	290	CFM / WATTS	585 / 35	588 / 67	580 / 100	557 / 133	518 / 168
2.5	450	CFM / WATTS	1108 / 159	1120 / 213	1116 / 265	1098 / 315	1065 / 365
	420	CFM / WATTS	1035 / 133	1046 / 184	1041 / 233	1022 / 281	989 / 328
	400	CFM / WATTS	988 / 118	997 / 167	992 / 214	972 / 260	938 / 306
	370	CFM / WATTS	916 / 97	924 / 143	918 / 188	897 / 231	863 / 275
	350	CFM / WATTS	868 / 85	875 / 129	868 / 172	848 / 213	813 / 255
	330	CFM / WATTS	820 / 74	826 / 116	819 / 157	798 / 197	762 / 237
	310	CFM / WATTS	772 / 64	778 / 104	770 / 143	749 / 182	712 / 221
	290	CFM / WATTS	724 / 56	729 / 94	721 / 131	699 / 168	663 / 205
3.0	450	CFM / WATTS	1326 / 257	1341 / 320	1341 / 380	1325 / 439	1296 / 497
	420	CFM / WATTS	1239 / 214	1252 / 273	1250 / 330	1234 / 385	1203 / 440
	400	CFM / WATTS	1181 / 188	1193 / 245	1191 / 299	1173 / 353	1142 / 405
	370	CFM / WATTS	1094 / 153	1105 / 207	1101 / 258	1083 / 308	1050 / 358
	350	CFM / WATTS	1036 / 133	1046 / 184	1041 / 233	1022 / 281	989 / 329
	330	CFM / WATTS	978 / 115	987 / 164	982 / 210	962 / 256	928 / 302
	310	CFM / WATTS	920 / 99	929 / 145	923 / 189	902 / 233	868 / 277
	290	CFM / WATTS	863 / 84	870 / 128	863 / 170	843 / 212	807 / 253

Table 3. S9V2B080D4VS Cooling Airflow (continued)

S9V2B080D4VS Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter (iwc)							
Outdoor Tonnage - "Odt" (tons)	**Airflow Setting - (CFM/ton)**		**EXTERNAL STATIC PRESSURE (IN. W. C.)**				
			0.1	**0.3**	**0.5**	**0.7**	**0.9**
4.0 [a]	450	CFM / WATTS	1769 / 570	1791 / 648	1797 / 725	1789 / 799	1766 / 873
	420	CFM / WATTS	1650 / 469	1670 / 544	1675 / 616	1664 / 686	1639 / 756
	400	CFM / WATTS	1571 / 410	1590 / 481	1593 / 550	1582 / 618	1555 / 685
	370	CFM / WATTS	1453 / 330	1470 / 397	1472 / 462	1458 / 526	1430 / 588
	350[a]	CFM / WATTS	1375 / 284	1391 / 348	1391 / 410	1376 / 471	1347 / 530
	330	CFM / WATTS	1297 / 242	1312 / 303	1311 / 363	1295 / 420	1265 / 477
	310	CFM / WATTS	1219 / 205	1233 / 263	1230 / 319	1214 / 374	1183 / 428
	290	CFM / WATTS	1142 / 172	1154 / 227	1151 / 280	1133 / 332	1101 / 384

[a] Factory Setting.

General Features

NATURAL GAS MODELS

Central Heating furnace designs are certified by the Intertek/ETL for both natural and propane gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

SAFE OPERATION

The Integrated Furnace Control is a solid state device which continuously monitors for presence of flame when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide additional safety.

QUICK HEATING

Durable, cycle tested, heavy gauge **tubular stainless steel primary heat exchanger** quickly transfers heat to provide warm conditioned air to the structure. **Low energy power vent blower,** to increase efficiency and provide a positive discharge of gas fumes to the outside.

BURNERS

Multiport Inshot burners will give years of quiet and efficient service. All models can be converted to **Propane** with propane conversion kit.

INTEGRATED FURNACE CONTROL

Exclusively designed operational program provides total control of furnace limit sensors, blowers, gas valve, flame control and includes self diagnostics for ease of service. Also contains dry contacts for EAC and HUM.

ENERGY EFFICIENT OPERATION

Furnace is certified by the manufacturer to leak 1% or less of nominal air conditioning CFM delivered when pressurized to 0.5 inch water column with all inlets, outlets, and drains sealed.

AIR DELIVERY

The variable speed blower motor has sufficient airflow for most heating and cooling requirements and will switch from heating to cooling speeds on demand from room thermostat.

SECONDARY HEAT EXCHANGER

The S-Series furnace has a special type 29- 4C™ stainless steel secondary heat exchanger to reclaim heat from flue gases which would normally be lost.

STYLING

Heavy gauge steel and "wrap-around" cabinet construction is used in the cabinet with baked-on enamel finish for strength and beauty. Every orientation has at least two venting options. There are no knockouts on cabinet.

FEATURES AND GENERAL OPERATION

The S-Series furnace utilizes a Silicon Nitride Hot Surface Ignition system, which eliminates the waste of a constant burning pilot. The integrated furnace control lights the main burners upon a demand for heat from the room thermostat. Complete front service access.

a. Low energy power venter

b. Vent proving pressure switches.

Features and Benefits

97.0% AFUE ACROSS ALL MODELS

Meets utility rebates

Lowers utility bills

ELECTRICALLY EFFICIENT

Efficient airflow design reduces electrical energy use

34 INCH TALL

Lighter, easier to move and fit into tight spaces like short basements or tight closets

Works great with larger, high-efficiency coils

No knockouts

3–WAY MULTI-POISE / DEDICATED DOWNFLOW

6 SKU's — Upflow / Horizontal Left / Horizontal Right

5 SKU's — Downflow

Added application flexibility and reduction in specification errors

AIRFLOW

At least 400 CFM/ton at 0.5 inch water column external static pressure; setup airflow options down to 290 CFM/ton

REGULATORY

All models are air tight; 1% or less air leakage as per ASHRAE 193

Open vestibule design provides a full 34" high open vestibule

VARIABLE SPEED DRAFT INDUCER MOTOR

Increased efficiency

DIMENSIONS

Width is industry standard: 17.5"

Depth remains approximately 28"

Cabinet will be compatible with industry standard coils, as well as, other accessories

INTEGRATED FURNACE CONTROL

Setup / Status / Diagnostics / Digital Display

No dip switches

Last six errors stored

Dry contact EAC and HUM connections

All multi-pin polarized terminals connections; no spade terminals

Low voltage labeled above and below

TUBULAR STAINLESS STEEL PRIMARY HEAT EXCHANGER
29–4C STAINLESS STEEL SECONDARY HEAT EXCHANGER

Stainless steel is a more durable, corrosive-resistant material than aluminumized steel

Integrated rail system for easy access if required

Reduces or eliminates need for baffles

VORTICA BLOWER, DESIGNED EXCLUSIVELY FOR THE S-SERIES FURNACE

Improved airflow efficiency

Durable, easy to clean, two piece housing

Single piece belly band/ motor arm assembly

Blower deck has full-length rails for easy removal and replacement, regardless of poise

THREE–WAY MULTI-POISE (UPFLOW, HORIZONTAL LEFT AND RIGHT) PLUS DEDICATED DOWNFLOW

Easier to specify

Shipped ready to install (no kits required)

Every model has at least two venting options

Barbed fitting on trap at hose connection and on cabinet transition for hose has barbed fitting and clamps at both ends for leak resistance.

Vent table improvements including longer vent lengths; 2" pipe can be used up to 100K.

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

S9V2B080D4V-SUB-2C-EN 30 Sep 2024
Supersedes S9V2B080D4V-SUB-2B-EN (February 2022)