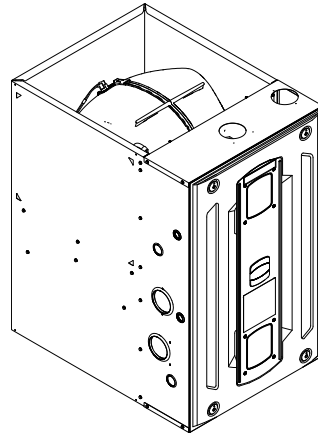


# Submittal

## Dedicated Downflow Two Stage Condensing Gas Fired Furnace 40,000 BTUH

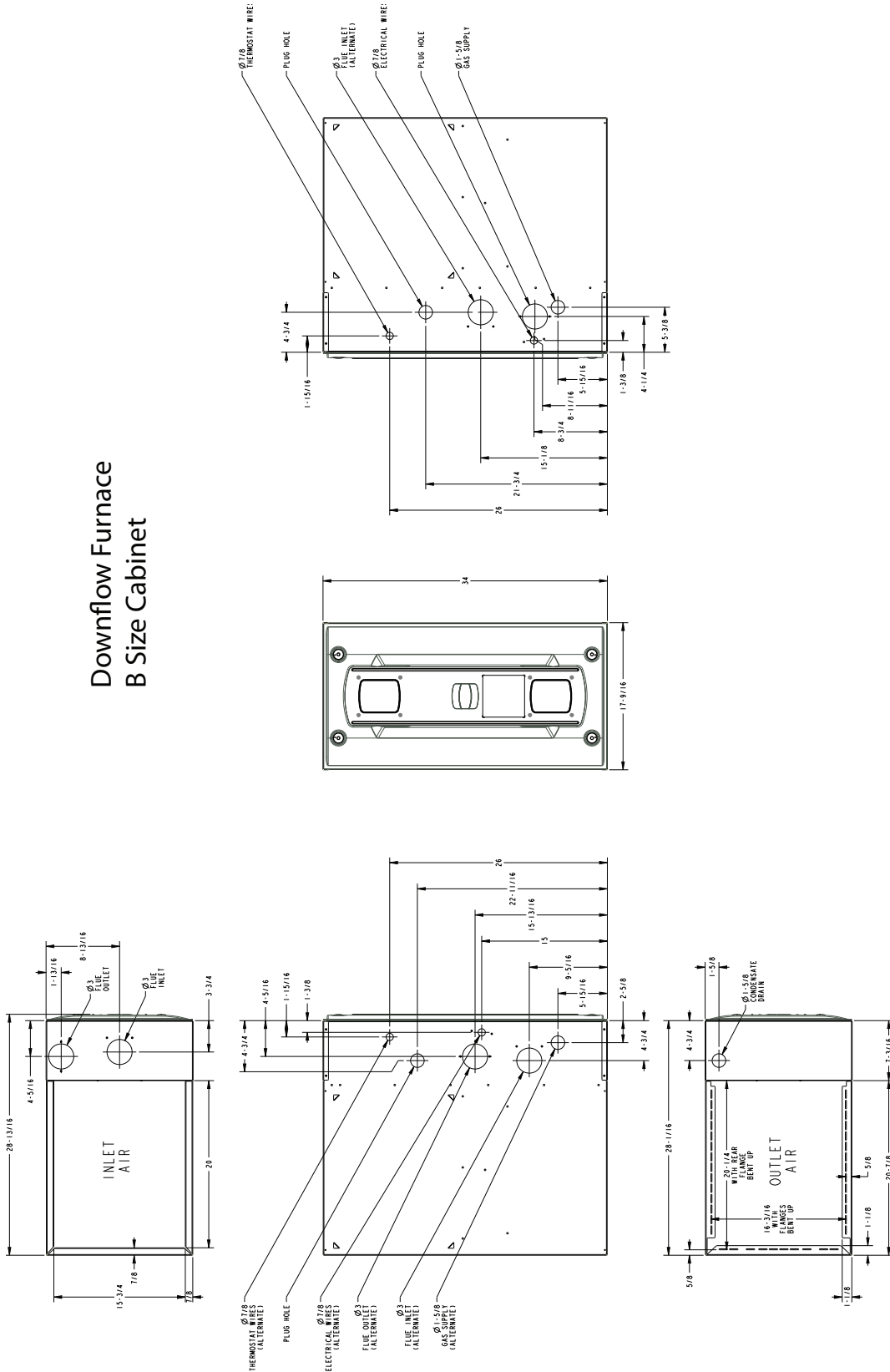
Downflow Only  
S9V2B040D3PSBB



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

# Outline Drawings

## Downflow Furnace B Size Cabinet



# Product Specification

MODEL	S9V2B040D3PSBB (a)
<b>TYPE</b>	Downflow
<b>RATINGS (b)</b>	
1st Stage Input BTUH (ICS)	26,000
1st Stage Capacity BTUH	25,220
2nd Stage Input BTUH	40,000
2nd Stage Capacity BTUH (ICS) (c) (d)	38,800
1st Stage Temp. Rise (Min.-Max.)	25 - 55
2nd Stage Temp. Rise (Min.-Max.)	30 - 60
AFUE (%) (d)	96.0
<b>BLOWER DRIVE</b>	DIRECT
Diameter — Width (In.)	11 X 8
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1/2
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	5.7
<b>COMBUSTION FAN — Type</b>	Centrifugal
Drive — No. Speeds	Direct - 2
Motor HP — RPM	3300/2600
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
<b>FILTER — Furnished?</b>	No
Type recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	2 — 14x20 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> (e) (f)	2 Round
<b>HEAT EXCHANGER</b>	

MODEL	S9V2B040D3PSBB (a)
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	2- 45
LP Gas Qty. — Drill Size	2- 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>	
Type	120 V SiNi Igniter
<b>BURNERS — Type</b>	Multiport Inshot
Number	2
<b>POWER CONN. — V/Ph/Hz (g)</b>	120 / 1 / 60
Ampacity (In Amps)	7.9
Max. Overcurrent Protection (Amps)	15
<b>PIPE CONN. SIZE (in.)</b>	1/2
<b>DIMENSIONS</b>	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
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs.)	122/114

(a) Meets Energy Star

(b) 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.

(c) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.

(d) Based on U.S. government standard tests.

(e) Refer to the Vent Length Table in the Installer's Guide.

(f) All S9V2 furnace models have a vent outlet diameter that equals 2 in.

(g) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

# Heating and Cooling Airflow Tables

Table 1. S9V2B040D3PSBB Heating Airflow

S9V2B040D3PSBB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 25,220				
				2nd Stage Capacity = 38,800				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	468	CFM	464	453	442	431	420
			Temp. Rise	51	52	53	54	55
			Watts	26	55	84	113	142
	Medium Low <sup>(a)</sup>	634	CFM	616	607	599	591	583
			Temp. Rise	38	38	39	40	40
			Watts	40	78	115	152	190
	Medium	684	CFM	635	643	650	658	666
			Temp. Rise	37	37	36	36	35
			Watts	47	106	165	224	283
	High	900	CFM	824	843	861	880	898
			Temp. Rise	28	28	27	26	26
			Watts	82	130	178	226	274
Heating 2nd Stage	Low	650	CFM	662	655	649	642	635
			Temp. Rise	54	55	55	56	56
			Watts	37	79	120	162	203
	Medium Low <sup>(a)</sup>	880	CFM	811	818	826	834	841
			Temp. Rise	45	44	44	43	42
			Watts	67	121	176	230	284
	Medium	950	CFM	859	865	871	877	884
			Temp. Rise	42	41	41	41	41
			Watts	88	144	200	256	312
	High	1250	CFM	1082	1092	1102	1111	1121
			Temp. Rise	33	33	33	33	33
			Watts	192	253	314	375	436

<sup>(a)</sup> Factory Setting.

Table 2. S9V2B040U3PSBB / S9V2B040D3PSBB Cooling Airflow

S9V2B040U3PSBB / S9V2B040D3PSBB Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Cooling	1.5 Ton	Cooling 450	CFM	675	675	675	675	675
		CFM/Ton	Watts	47	81	121	166	215
		Cooling 420	CFM	630	630	630	630	630
		CFM/Ton	Watts	40	72	111	154	202
		Cooling 400	CFM	600	600	600	600	600
		CFM/Ton	Watts	36	67	105	147	193
		Cooling 370	CFM	555	555	555	555	555
		CFM/Ton	Watts	30	60	96	136	181
		Cooling 350	CFM	525	525	525	525	525
		CFM/Ton	Watts	27	56	90	130	174
		Cooling 330	CFM	495	495	495	495	495
		CFM/Ton	Watts	24	51	85	124	167
Cooling 310	CFM	465	465	465	465	465		
CFM/Ton	Watts	21	48	80	118	161		
Cooling 290	CFM	435	435	435	435	435		
CFM/Ton	Watts	19	44	76	113	155		
Cooling	2.0 Ton	Cooling 450	CFM	900	900	900	900	900
		CFM/Ton	Watts	94	137	186	240	298
		Cooling 420	CFM	840	840	840	840	840
		CFM/Ton	Watts	79	120	166	218	273
		Cooling 400	CFM	800	800	800	800	800
		CFM/Ton	Watts	70	109	154	204	258
		Cooling 370	CFM	740	740	740	740	740
		CFM/Ton	Watts	58	95	138	185	236
		Cooling 350	CFM	700	700	700	700	700
		CFM/Ton	Watts	51	86	127	173	223
		Cooling 330	CFM	660	660	660	660	660
		CFM/Ton	Watts	44	78	118	162	211
Cooling 310	CFM	620	620	620	620	620		
CFM/Ton	Watts	38	71	109	152	199		
Cooling 290	CFM	580	580	580	580	580		
CFM/Ton	Watts	33	64	101	142	188		
Cooling	2.5 Ton	Cooling 450	CFM	1125	1125	1125	1125	1125
		CFM/Ton	Watts	167	219	278	341	408
		Cooling 420	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	139	188	244	304	368
		Cooling 400	CFM	1000	1000	1000	1000	1000
		CFM/Ton	Watts	123	170	223	281	343
		Cooling 370	CFM	925	925	925	925	925
		CFM/Ton	Watts	100	145	195	250	308
		Cooling 350	CFM	875	875	875	875	875
		CFM/Ton	Watts	87	129	178	230	287
		Cooling 330	CFM	825	825	825	825	825
		CFM/Ton	Watts	121	160	205	254	308
Cooling 310	CFM	775	775	775	775	775		
CFM/Ton	Watts	101	139	182	229	281		
Cooling 290	CFM	725	725	725	725	725		
CFM/Ton	Watts	88	123	164	210	260		
Cooling	3.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1350	1350	1350	1298	1198
		CFM/Ton	Watts	272	334	402	440	450
		Cooling 420	CFM	1260	1260	1260	1260	1198
		CFM/Ton	Watts	226	284	348	417	450
		Cooling 400	CFM	1200	1200	1200	1200	1198
		CFM/Ton	Watts	198	254	315	381	450
		Cooling 370	CFM	1110	1110	1110	1110	1110
		CFM/Ton	Watts	161	213	271	333	399
		Cooling 350	CFM	1050	1050	1050	1050	1050
		CFM/Ton <sup>(a)</sup>	Watts	139	188	244	304	368
		Cooling 330	CFM	990	990	990	990	990
		CFM/Ton	Watts	119	166	219	277	338
Cooling 310	CFM	930	930	930	930	930		
CFM/Ton	Watts	102	146	197	252	311		
Cooling 290	CFM	870	870	870	870	870		
CFM/Ton	Watts	86	128	176	229	285		

<sup>(a)</sup> Factory Setting

# General Features

## NATURAL GAS MODELS

Central Heating furnace designs are certified by the American Gas Association for both natural and L.P. gas. Limit setting and rating data were established and approved under standard rating conditions using American National Standards Institute standards.

## SAFE OPERATION

The Integrated System 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 **L.P. gas** with LP conversion kit.

## INTEGRATED SYSTEM 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 .5" 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 system 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

## **96.0% 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**

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

6 SKU's — Downflow

Added application flexibility and reduction in specification errors

## **AIRFLOW**

At least 400 CFM/ton at 0.5 in. H<sub>2</sub>O 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

## **DIMENSIONS**

Widths are industry standard: 17.5", 21", and 24.5"

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 Molex connections; no spade terminals

Low voltage labeled above and below

Rain shield over IFC keeps condensate off the control

## **TUBULAR STAINLESS STEEL PRIMARY HEAT EXCHANGER**

## **29-4C STAINLESS STEEL SECONDARY HEAT EXCHANGER**

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

Integrated rail system for easy access if required

Reduces or eliminates need for baffles

## **VORTICA II 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

When in horizontal, trap extends only about 2"

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](http://www.trane.com) or [www.americanstandardair.com](http://www.americanstandardair.com).



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