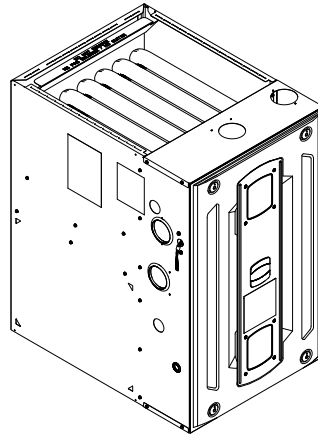


# Submittal

## Upflow/ Horizontal Left/Right Two Stage Condensing Gas Fired Furnace 100,000 BTUH

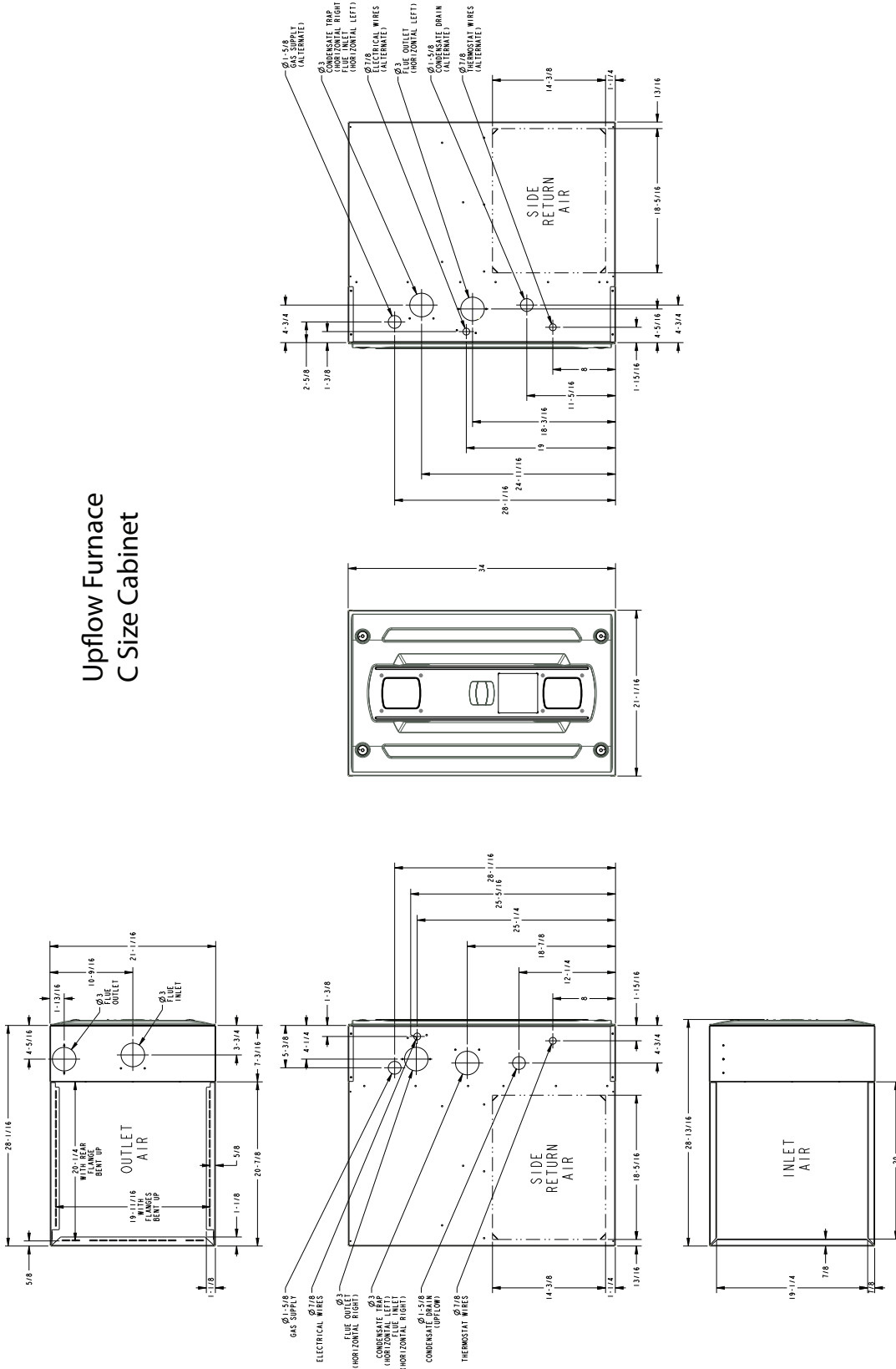
Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9V2C100U5PSBB



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

# Outline Drawings

## Upflow Furnace C Size Cabinet



# Product Specification

MODEL	S9V2C100U5PSBB (a)
<b>TYPE</b>	Upflow / Horizontal
<b>RATINGS (b)</b>	
1st Stage Input BTUH (ICS)	65,000
1st Stage Capacity BTUH	63,050
2nd Stage Input BTUH	100,000
2nd Stage Capacity BTUH (ICS) (c) (d)	97,000
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 10
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	10.5
<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.)	1 — 20x25 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> (e) (f)	2 Round
<b>HEAT EXCHANGER</b>	

MODEL	S9V2C100U5PSBB (a)
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	5 - 45
LP Gas Qty. — Drill Size	5- 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	5
<b>POWER CONN. — V/Ph/Hz (g)</b>	120 / 1 / 60
Ampacity (In Amps)	13.9
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 21 x 28-3/4
Crated (In.)	35-1/2 x 23 x 30-7/8
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs.)	155/145

(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 — latest edition.

(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. S9V2C100U5PSBB Heating Airflow

S9V2C100U5PSBB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 63,050				
				2nd Stage Capacity = 97,000				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	1145	CFM	1111	1097	1083	1068	1054
			Temp. Rise	52	52	52	52	53
			Watts	135	184	234	283	333
	Medium Low	1426	CFM	1393	1383	1372	1362	1352
			Temp. Rise	41	41	42	42	42
			Watts	232	286	340	394	447
	Medium (a)	1483	CFM	1451	1447	1443	1438	1434
			Temp. Rise	39	40	40	40	40
			Watts	260	310	360	410	460
	High	1548	CFM	1495	1477	1458	1439	1421
			Temp. Rise	38	39	39	40	40
			Watts	285	352	419	486	553
Heating 2nd Stage	Low	1590	CFM	1564	1550	1536	1522	1508
			Temp. Rise	58	58	58	58	59
			Watts	323	397	470	544	618
	Medium Low	1980	CFM	1959	1936	1913	1891	1868
			Temp. Rise	46	46	47	47	47
			Watts	597	681	764	847	930
	Medium (a)	2060	CFM	2047	2034	2021	2008	1995
			Temp. Rise	44	44	44	45	45
			Watts	655	737	818	900	982
	High	2150	CFM	2102	2087	2073	2058	2044
			Temp. Rise	43	43	43	44	44
			Watts	745	801	857	913	969

(a) Factory Setting.

Table 2. S9V2C100U5PSBB / S9V2C100D5PSBB Cooling Airflow

S9V2C100U5PSBB / S9V2C100D5PSBB 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	3.5 Ton	Cooling 450 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	263	333	406	481	558
		Cooling 420 CFM/Ton	CFM	1470	1470	1470	1470	1470
			Watts	218	283	352	423	496
		Cooling 400 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	191	254	319	388	458
		Cooling 370 CFM/Ton	CFM	1295	1295	1295	1295	1295
			Watts	155	214	275	340	406
		Cooling 350 CFM/Ton	CFM	1225	1225	1225	1225	1225
			Watts	134	190	249	311	375
		Cooling 330 CFM/Ton	CFM	1155	1155	1155	1155	1155
			Watts	115	168	225	284	346
		Cooling 310 CFM/Ton	CFM	1085	1085	1085	1085	1085
			Watts	98	148	202	259	319
Cooling 290 CFM/Ton	CFM	1015	1015	1015	1015	1015		
	Watts	83	131	182	237	294		
Cooling	4.0 Ton	Cooling 450 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	381	460	542	627	713
		Cooling 420 CFM/Ton	CFM	1680	1680	1680	1680	1680
			Watts	314	388	466	545	627
		Cooling 400 CFM/Ton	CFM	1600	1600	1600	1600	1600
			Watts	275	345	419	496	574
		Cooling 370 CFM/Ton	CFM	1480	1480	1480	1480	1480
			Watts	222	288	357	428	502
		Cooling 350 CFM/Ton	CFM	1400	1400	1400	1400	1400
			Watts	191	254	319	388	458
		Cooling 330 CFM/Ton	CFM	1320	1320	1320	1320	1320
			Watts	163	223	285	351	418
		Cooling 310 CFM/Ton	CFM	1240	1240	1240	1240	1240
			Watts	139	195	254	317	381
Cooling 290 CFM/Ton	CFM	1160	1160	1160	1160	1160		
	Watts	117	170	226	286	348		
Cooling	4.5 Ton	Cooling 450 CFM/Ton	CFM	2025	2025	2025	2025	2025
			Watts	531	620	711	805	901
		Cooling 420 CFM/Ton	CFM	1890	1890	1890	1890	1890
			Watts	437	520	606	694	784
		Cooling 400 CFM/Ton	CFM	1800	1800	1800	1800	1800
			Watts	381	460	542	627	713
		Cooling 370 CFM/Ton	CFM	1665	1665	1665	1665	1665
			Watts	307	380	457	536	616
		Cooling 350 CFM/Ton	CFM	1575	1575	1575	1575	1575
			Watts	263	333	406	481	558
		Cooling 330 CFM/Ton	CFM	1485	1485	1485	1485	1485
			Watts	224	290	359	431	505
		Cooling 310 CFM/Ton	CFM	1395	1395	1395	1395	1395
			Watts	189	252	317	386	456
Cooling 290 CFM/Ton	CFM	1305	1305	1305	1305	1305		
	Watts	158	217	279	344	411		
Cooling	5.0 Ton <sup>(a)</sup>	Cooling 450 CFM/Ton	CFM	2250	2250	2242	2137	2029
			Watts	717	816	909	908	905
		Cooling 420 CFM/Ton	CFM	2100	2100	2100	2100	2029
			Watts	589	681	776	873	905
		Cooling 400 CFM/Ton	CFM	2000	2000	2000	2000	2000
			Watts	512	600	691	784	878
		Cooling 370 CFM/Ton	CFM	1850	1850	1850	1850	1850
			Watts	411	492	577	663	752
		Cooling 350 CFM/Ton <sup>(a)</sup>	CFM	1750	1750	1750	1750	1750
			Watts	352	429	509	592	676
		Cooling 330 CFM/Ton	CFM	1650	1650	1650	1650	1650
			Watts	299	372	448	526	606
		Cooling 310 CFM/Ton	CFM	1550	1550	1550	1550	1550
			Watts	252	320	392	467	543
Cooling 290 CFM/Ton	CFM	1450	1450	1450	1450	1450		
	Watts	210	275	342	413	485		

<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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