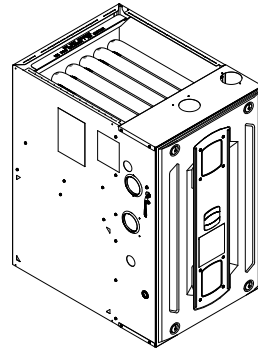


# Submittal

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

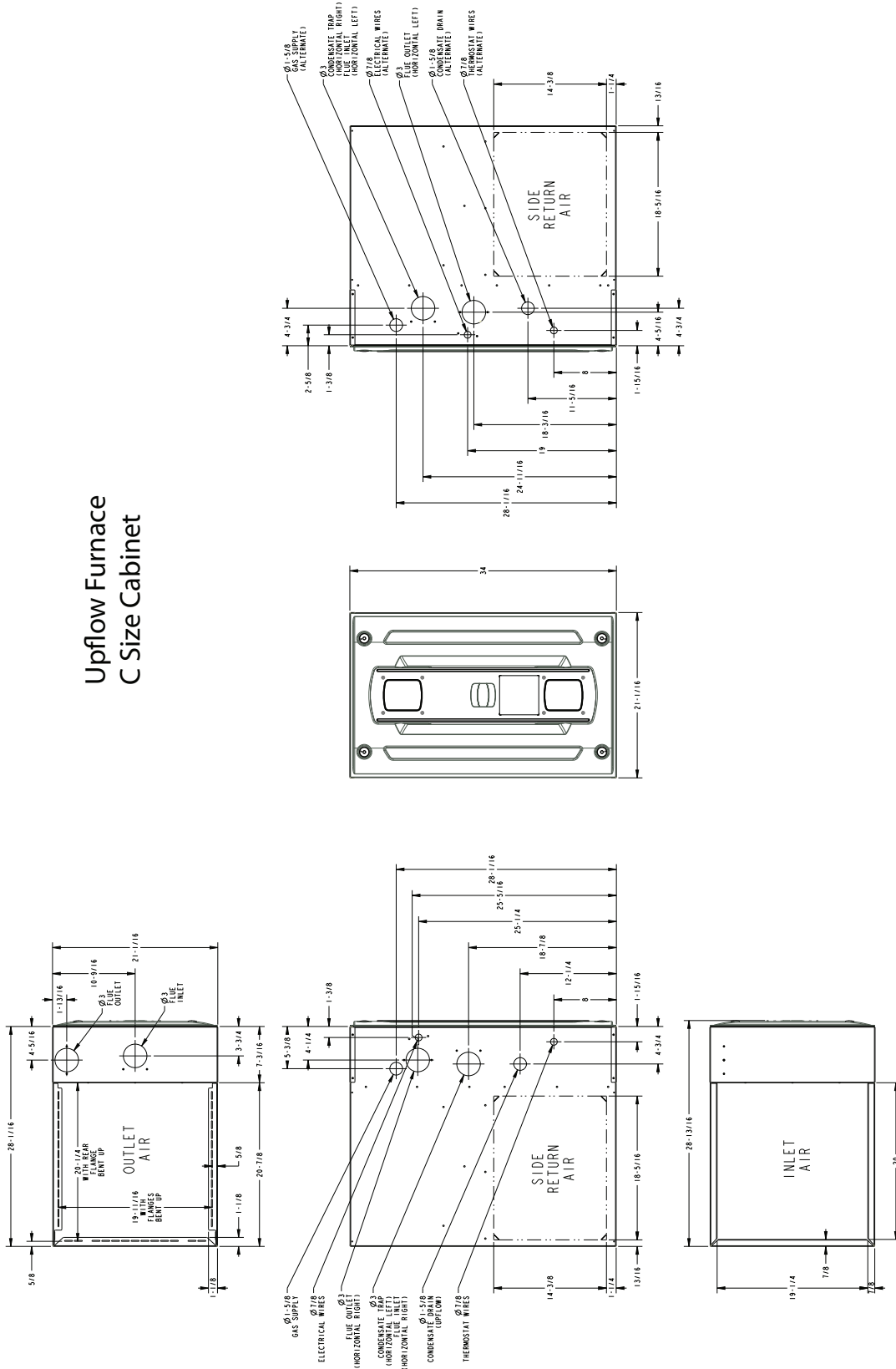
Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9V2C100U4VSAB



*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	S9V2C100U4VSAB (a)
<b>TYPE</b>	Upflow/Horizontal
<b>RATINGS (b)</b>	
1st Stage Input BTUH (ICS)	65,000
1st Stage Capacity BTUH	64,036
2nd Stage Input BTUH	100,000
2nd Stage Capacity BTUH (ICS) (c) (d)	96,362
1st Stage Temp. Rise (Min.-Max.)	25 - 55
2nd Stage Temp. Rise (Min.-Max.)	35 - 65
AFUE (%)	97.0
<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	3/4
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	8.0
<b>COMBUSTION FAN — Type</b>	Centrifugal
Drive — No. Speeds	Direct - VS
Motor HP — RPM	1/50 - 5000
Volts/Ph/Hz	33-110 / 3 / 60-180
FLA	1.0
<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>	
Type — Fired	409 Stainless Steel

MODEL	S9V2C100U4VSAB (a)
— 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)	10.8
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.)	154/144

- (a) Meets Energy Star
- (b) Use high altitude pressure switch kits above 4000'. 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-VS 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. S9V2C100U4VSAB Heating Airflow

S9V2C100U4VSAB Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 63,700				
				2nd Stage Capacity = 98,000				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	1146	CFM	1191	1199	1208	1216	1224
			Temp. Rise	50	49	49	49	49
			Watts	133	192	251	310	369
	Medium Low	1280	CFM	1314	1304	1294	1284	1274
			Temp. Rise	45	45	45	46	46
			Watts	173	235	297	359	421
	Medium	1359	CFM	1478	1466	1453	1441	1428
			Temp. Rise	40	40	40	40	40
			Watts	243	304	364	425	485
	High <sup>(a)</sup>	1446	CFM	1498	1511	1524	1537	1550
			Temp. Rise	39	39	39	39	38
			Watts	264	330	397	464	531
Heating 2nd Stage	Low	1450	CFM	1480	1488	1496	1503	1511
			Temp. Rise	60	60	60	60	60
			Watts	244	312	380	449	517
	Medium Low	1620	CFM	1658	1656	1654	1652	1650
			Temp. Rise	54	54	54	54	55
			Watts	330	408	486	564	642
	Medium	1720	CFM	1869	1857	1846	1811	1714
			Temp. Rise	48	48	49	49	52
			Watts	471	549	628	677	695
	High <sup>(a)</sup>	1830	CFM	1959	1919	1879	1811	1714
			Temp. Rise	46	47	48	49	52
			Watts	540	600	660	677	695

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

Table 2. S9V2C100U4VSAB / S9V2C100D4VSAB Cooling Airflow

S9V2C100U4VSAB / S9V2C100D4VSAB 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	2.5 Ton	Cooling 450	CFM	1125	1125	1125	1125	1125
		CFM/Ton	Watts	123	178	236	296	360
		Cooling 420	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	104	156	210	268	329
		Cooling 400	CFM	1000	1000	1000	1000	1000
		CFM/Ton	Watts	93	142	195	251	309
		Cooling 370	CFM	925	925	925	925	925
		CFM/Ton	Watts	77	123	173	226	282
		Cooling 350	CFM	875	875	875	875	875
		CFM/Ton	Watts	68	112	160	211	265
		Cooling 330	CFM	825	825	825	825	825
		CFM/Ton	Watts	60	102	147	196	249
		Cooling 310	CFM	775	775	775	775	775
		CFM/Ton	Watts	52	92	135	183	234
Cooling 290	CFM	725	725	725	725	725		
CFM/Ton	Watts	45	83	125	170	220		
Cooling	3.0 Ton	Cooling 450	CFM	1350	1350	1350	1350	1350
		CFM/Ton	Watts	194	259	326	396	468
		Cooling 420	CFM	1260	1260	1260	1260	1260
		CFM/Ton	Watts	163	224	287	353	422
		Cooling 400	CFM	1200	1200	1200	1200	1200
		CFM/Ton	Watts	144	202	263	327	393
		Cooling 370	CFM	1110	1110	1110	1110	1110
		CFM/Ton	Watts	119	173	231	291	354
		Cooling 350	CFM	1050	1050	1050	1050	1050
		CFM/Ton	Watts	104	156	210	268	329
		Cooling 330	CFM	990	990	990	990	990
		CFM/Ton	Watts	91	140	192	247	306
		Cooling 310	CFM	930	930	930	930	930
		CFM/Ton	Watts	78	125	174	228	284
Cooling 290	CFM	870	870	870	870	870		
CFM/Ton	Watts	67	111	158	209	264		
Cooling	3.5 Ton	Cooling 450	CFM	1575	1575	1575	1575	1575
		CFM/Ton	Watts	289	363	440	519	600
		Cooling 420	CFM	1470	1470	1470	1470	1470
		CFM/Ton	Watts	241	311	383	458	535
		Cooling 400	CFM	1400	1400	1400	1400	1400
		CFM/Ton	Watts	213	280	349	421	495
		Cooling 370	CFM	1295	1295	1295	1295	1295
		CFM/Ton	Watts	175	237	302	369	439
		Cooling 350	CFM	1225	1225	1225	1225	1225
		CFM/Ton	Watts	152	211	273	338	405
		Cooling 330	CFM	1155	1155	1155	1155	1155
		CFM/Ton	Watts	131	187	247	308	373
		Cooling 310	CFM	1085	1085	1085	1085	1085
		CFM/Ton	Watts	113	166	222	281	343
Cooling 290	CFM	1015	1015	1015	1015	1015		
CFM/Ton	Watts	96	146	199	256	315		
Cooling	4.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1800	1800	1800	1800	1714
		CFM/Ton	Watts	410	494	580	669	695
		Cooling 420	CFM	1680	1680	1680	1680	1680
		CFM/Ton	Watts	342	420	502	585	671
		Cooling 400	CFM	1600	1600	1600	1600	1600
		CFM/Ton	Watts	301	376	454	534	617
		Cooling 370	CFM	1480	1480	1480	1480	1480
		CFM/Ton	Watts	246	316	388	464	541
		Cooling 350	CFM	1400	1400	1400	1400	1400
		CFM/Ton <sup>(a)</sup>	Watts	213	280	349	421	495
		Cooling 330	CFM	1320	1320	1320	1320	1320
		CFM/Ton	Watts	183	247	313	381	452
		Cooling 310	CFM	1240	1240	1240	1240	1240
		CFM/Ton	Watts	157	216	279	344	412
Cooling 290	CFM	1160	1160	1160	1160	1160		
CFM/Ton	Watts	133	189	248	310	375		

<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

## **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**

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

2 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

## **VARIABLE SPEED DRAFT INDUCER MOTOR**

Increased efficiency

## **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 aluminumized 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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