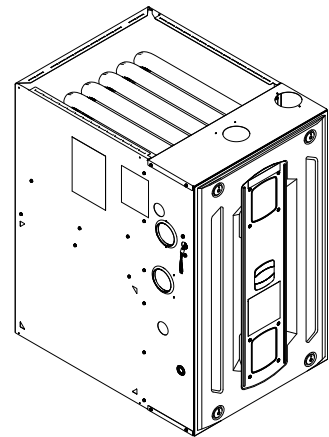


# Submittal

## Upflow/ Horizontal Left/Right Two Stage Condensing Gas Fired Furnace 80,000 BTUH

Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9V2B080U3PSAA



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

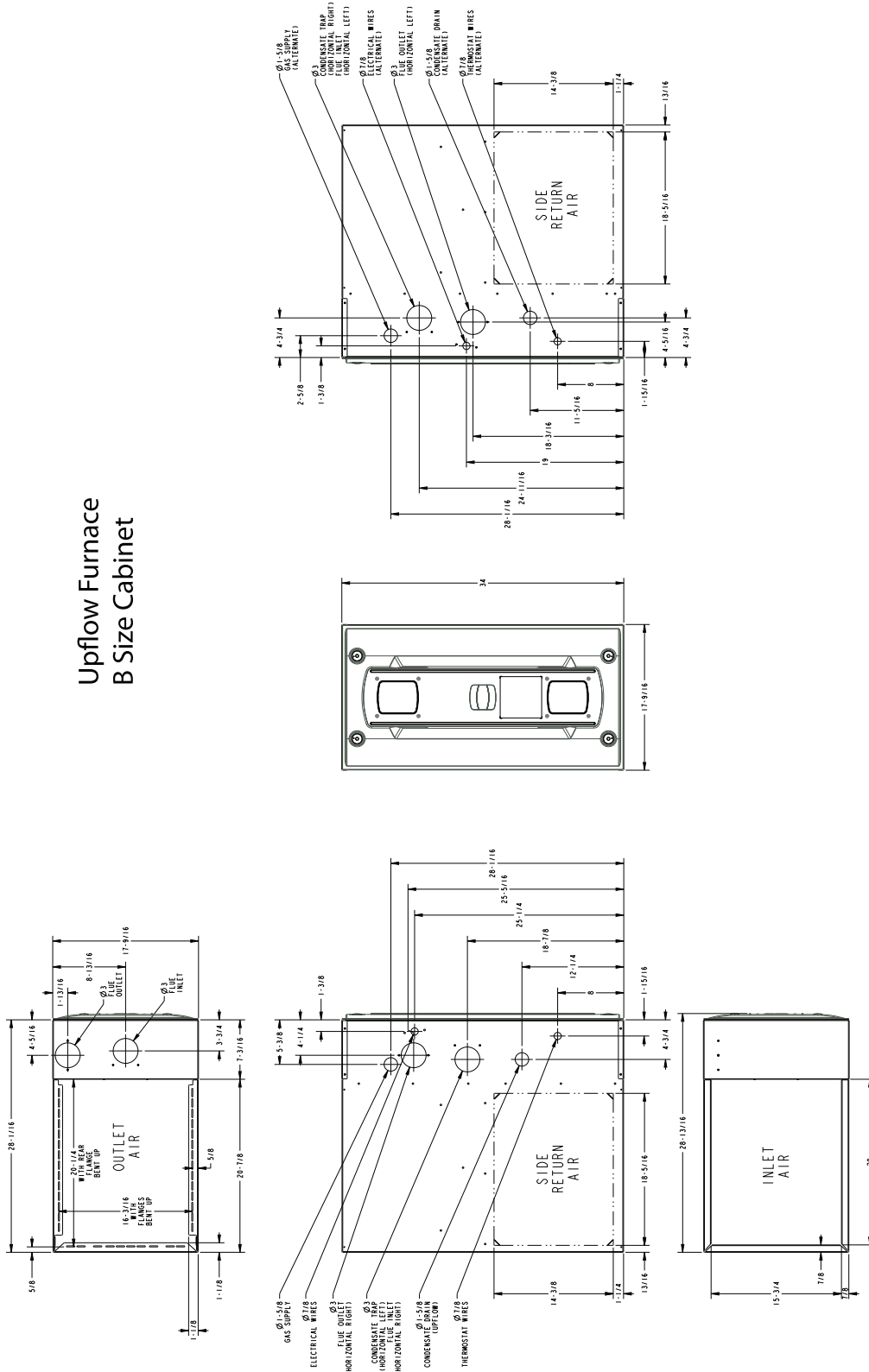
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### **▲ SAFETY WARNING**

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

# Outline Drawings

## Upflow Furnace B Size Cabinet



# Product Specification

MODEL	S9V2B080U3PSAA
<b>TYPE</b>	Upflow / Horizontal
<b>RATINGS</b> (a)	
1st Stage Input BTUH (ICS)	52,000
1st Stage Capacity BTUH	50,440
2nd Stage Input BTUH	80,000
2nd Stage Capacity BTUH (ICS) (b)(c)	77,600
1st Stage Temp. Rise (Min.-Max.)	30 - 60
2nd Stage Temp. Rise (Min.-Max.)	40 - 70
AFUE (%)	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.)	1 — 16x25 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> (d) (e)	2 Round
<b>HEAT EXCHANGER</b>	

MODEL	S9V2B080U3PSAA
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	4 - 45
LP Gas Qty. — Drill Size	4 - 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	4
<b>POWER CONN. — V/Ph/Hz</b> (f)	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.)	132/124

(a) 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.

(b) Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3 — latest edition.

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

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

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

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

# Heating and Cooling Airflow Tables

S9V2B080U3PSAA

Table 1. S9V2B080U3PSAA Heating Airflow

S9V2B080U3PSAA Furnace Heating Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter								
				1st Stage Capacity = 50,440 2nd Stage Capacity = 77,600				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	948	CFM	1070	1030	990	950	910
			Temp. Rise	45	45	46	46	46
			Watts	120	162	203	245	286
	Medium Low	1051	CFM	1109	1061	1013	965	917
			Temp. Rise	42	44	46	47	49
			Watts	143	197	252	307	361
	Medium <sup>(a)</sup>	1090	CFM	1188	1125	1062	998	935
			Temp. Rise	40	42	43	45	47
			Watts	154	215	276	336	397
	High	1168	CFM	1230	1212	1193	1174	1156
			Temp. Rise	38	39	39	40	41
			Watts	194	246	297	349	401
Heating 2nd Stage	Low	1200	CFM	1331	1293	1256	1218	1172
			Temp. Rise	55	56	57	58	61
			Watts	221	277	333	388	436
	Medium Low	1330	CFM	1436	1388	1340	1263	1172
			Temp. Rise	50	52	54	56	61
			Watts	287	347	407	421	436
	Medium <sup>(a)</sup>	1380	CFM	1380	1380	1338	1263	1172
			Temp. Rise	52	52	53	56	61
			Watts	283	351	396	421	436
	High	1480	CFM	1460	1400	1338	1263	1172
			Temp. Rise	49	51	53	56	61
			Watts	329	363	396	421	436

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

S9V2B080U3PSAA / S9V2B080D3PSAA

Table 2. S9V2B080U3PSAA / S9V2B080D3PSAA Cooling Airflow

S9V2B080U3PSAA / 9V2B080D3PSAA 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	2.0 Ton	Cooling 450 CFM/Ton	CFM	900	900	900	900	900		
			Watts	95	141	191	245	301		
		Cooling 420 CFM/Ton	CFM	840	840	840	840	840		
			Watts	80	124	172	223	277		
		Cooling 400 CFM/Ton	CFM	800	800	800	800	800		
			Watts	71	114	160	210	262		
		Cooling 370 CFM/Ton	CFM	740	740	740	740	740		
			Watts	59	99	143	191	242		
		Cooling 350 CFM/Ton	CFM	700	700	700	700	700		
			Watts	52	91	133	180	229		
		Cooling 330 CFM/Ton	CFM	660	660	660	660	660		
			Watts	46	83	124	169	218		
		Cooling 310 CFM/Ton	CFM	620	620	620	620	620		
			Watts	40	75	115	159	207		
		Cooling 290 CFM/Ton	CFM	580	580	580	580	580		
			Watts	35	68	107	150	197		
		Cooling	2.5 Ton	Cooling 450 CFM/Ton	CFM	1125	1125	1125	1125	1125
					Watts	166	222	282	345	410
Cooling 420 CFM/Ton	CFM			1050	1050	1050	1050	1050		
	Watts			139	192	248	308	370		
Cooling 400 CFM/Ton	CFM			1000	1000	1000	1000	1000		
	Watts			123	173	228	286	346		
Cooling 370 CFM/Ton	CFM			925	925	925	925	925		
	Watts			101	149	200	255	312		
Cooling 350 CFM/Ton	CFM			875	875	875	875	875		
	Watts			88	134	183	236	291		
Cooling 330 CFM/Ton	CFM			825	825	825	825	825		
	Watts			77	120	167	218	272		
Cooling 310 CFM/Ton	CFM			775	775	775	775	775		
	Watts			66	107	153	202	254		
Cooling 290 CFM/Ton	CFM			725	725	725	725	725		
	Watts			57	96	139	187	237		

# Heating and Cooling Airflow Tables

**Table 2. S9V2B080U3PSAA / S9V2B080D3PSAA Cooling Airflow (continued)**

S9V2B080U3PSAA / 9V2B080D3PSAA 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	3.0 Ton <sup>(a)</sup>	Cooling 450 CFM/Ton	CFM	1350	1350	1338	1263	1172
			Watts	267	333	396	421	436
		Cooling 420 CFM/Ton	CFM	1260	1260	1260	1260	1172
			Watts	223	285	350	419	436
		Cooling 400 CFM/Ton	CFM	1200	1200	1200	1200	1172
			Watts	196	255	318	385	436
		Cooling 370 CFM/Ton	CFM	1110	1110	1110	1110	1110
			Watts	160	216	275	337	402
		Cooling 350 CFM/Ton <sup>(a)</sup>	CFM	1050	1050	1050	1050	1050
			Watts	139	192	248	308	370
		Cooling 330 CFM/Ton	CFM	990	990	990	990	990
			Watts	120	170	224	281	341
		Cooling 310 CFM/Ton	CFM	930	930	930	930	930
			Watts	103	150	202	257	314
		Cooling 290 CFM/Ton	CFM	870	870	870	870	870
			Watts	87	132	181	234	289
Cooling	3.5 Ton	Cooling 450 CFM/Ton	CFM	1460	1400	1338	1263	1172
			Watts	329	363	396	421	436
		Cooling 420 CFM/Ton	CFM	1460	1400	1338	1263	1172
			Watts	329	363	396	421	436
		Cooling 400 CFM/Ton	CFM	1400	1400	1338	1263	1172
			Watts	294	363	396	421	436
		Cooling 370 CFM/Ton	CFM	1295	1295	1295	1263	1172
			Watts	239	303	370	421	436
		Cooling 350 CFM/Ton	CFM	1225	1225	1225	1225	1172
			Watts	207	267	332	399	436
		Cooling 330 CFM/Ton	CFM	1155	1155	1155	1155	1155
			Watts	177	235	296	360	427
		Cooling 310 CFM/Ton	CFM	1085	1085	1085	1085	1085
			Watts	151	205	264	325	388
		Cooling 290 CFM/Ton	CFM	1015	1015	1015	1015	1015
			Watts	128	179	234	292	353

<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**

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

7 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





The manufacturer optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, the manufacturer offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit [www.IRCO.com](http://www.IRCO.com).

The manufacturer has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice.

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Supersedes (New)

