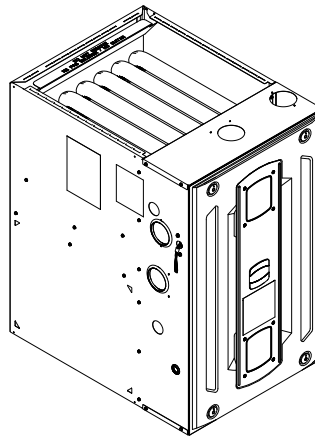


# Submittal

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

Upflow, Convertible to  
Horizontal Right or  
Horizontal Left  
S9V2C080U5PSBC/D



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

2 S9V2C080U5-SUB-2B-EN

2 S9V2C080U5-SUB-2B-EN



# Product Specification

Model	S9V2C080U5PSBC/D (a), (b)
Type	Upflow / Horizontal
<b>RATINGS</b> (c)	
1st Stage Input BTUH	52,000
1st Stage Capacity BTUH (ICS)	50,600
2nd Stage Input BTUH	80,000
2nd Stage Capacity BTUH (ICS) (d)	77,750
1st Stage Temp. Rise (Min. - Max.) °F	30 - 60
2nd Stage Temp. Rise (Min. - Max.) °F	35 - 65
AFUE (%) (d)	96.0
Return Air Temp. (Min. - Max.) °F	45°F - 80°F
<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
R.P.M.	Variable
Volts / Ph / Hz	120 / 1 / 60
FLA	10.5 / 10
<b>COMBUSTION FAN - Type</b>	PSC
Drive - No. Speeds	Direct - 2
Motor RPM	3300/2600
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
Inducer Orifice	0.88
<b>FILTER - Furnished?</b>	No
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	1 - 20 X 25 - 1 in.
<b>VENT OUTLET DIAMETER - MIN. (in.)</b> (e)	2 Round

Model	S9V2C080U5PSBC/D (a), (b)
<b>INLET AIR DIAMETER - MIN. (in.)</b> (e)	2 Round
<b>HEAT EXCHANGER - Type</b>	
Fired	409 Stainless Steel
Unfired	29-4C Stainless Steel
Gauge (Fired)	20
<b>ORIFICES - Main</b>	
Nat. Gas (Qty. - Drill Size)	4 - 45
Propane Gas (Qty. - Drill Size)	4 - 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE - Type</b>	120 V SiNi Igniter
<b>BURNERS - TYPE - QTY</b>	Inshot - 4
<b>POWER CONN. - V/Ph/HZ</b> (f)	120 / 1 / 60
Ampacity (Amps)	13.9 / 13.3
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.)	149/139

(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 1. S9V2C080U5PSBC Heating Airflow**

S9V2C080U5PSBC Furnace Heating Airflow (CFM), Temp. Rise (°F), and Power (Watts) vs. External Static Pressure with Filter (iwc)								
				1st Stage Capacity = 50,600 2nd Stage Capacity = 77,750				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	857	CFM	837	870	902	934	967
			Temp. Rise	55	53	51	50	48
			Watts	65	112	160	208	256
	Medium Low <sup>(a)</sup>	1044	CFM	997	1015	1033	1050	1068
			Temp. Rise	46	45	45	44	43
			Watts	102	155	209	263	316
	Medium	1123	CFM	1067	1094	1121	1148	1175
			Temp. Rise	43	42	41	40	39
			Watts	123	180	236	293	350
	High	1498	CFM	1420	1416	1411	1407	1402
			Temp. Rise	32	33	33	33	34
			Watts	238	320	402	485	567
Heating 2nd Stage	Low	1190	CFM	1129	1148	1168	1188	1208
			Temp. Rise	63	62	61	60	59
			Watts	127	195	263	331	399
	Medium Low <sup>(a)</sup>	1450	CFM	1387	1395	1404	1412	1420
			Temp. Rise	52	51	51	51	51
			Watts	248	310	372	434	496
	Medium	1560	CFM	1484	1498	1512	1525	1539
			Temp. Rise	48	48	47	47	47
			Watts	281	358	435	512	589
	High	2080	CFM	1954	1956	1959	1961	1964
			Temp. Rise	37	37	37	37	37
			Watts	597	732	866	1001	1135

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

**Table 2. S9V2C080U5PSBD Heating Airflow**

S9V2C080U5PSBD Furnace Heating Airflow (CFM), Temp. Rise (°F), and Power (Watts) vs. External Static Pressure with Filter (iwc)								
				1st Stage Capacity = 50,600 2nd Stage Capacity = 77,750				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	857	CFM	838	821	804	788	771
			Temp. Rise	56	57	57	58	59
			Watts	68	109	151	192	234
	Medium Low <sup>(a)</sup>	1044	CFM	967	993	1019	1045	1070
			Temp. Rise	48	47	46	45	44
			Watts	91	145	198	252	306
	Medium	1123	CFM	1060	1058	1056	1053	1051
			Temp. Rise	44	44	44	43	43
			Watts	108	165	222	279	335
	High	1224	CFM	1266	1171	1075	980	884
			Temp. Rise	36	40	43	46	50
			Watts	134	194	253	313	373
Heating 2nd Stage	Low	1190	CFM	1114	1127	1141	1154	1167
			Temp. Rise	64	63	62	62	61
			Watts	127	188	250	312	373
	Medium Low <sup>(a)</sup>	1450	CFM	1359	1378	1396	1414	1432
			Temp. Rise	52	52	51	50	49
			Watts	216	291	365	439	514
	Medium	1560	CFM	1466	1474	1482	1490	1497
			Temp. Rise	48	48	48	48	48
			Watts	263	344	426	507	588
	High	1700	CFM	1774	1731	1689	1647	1605
			Temp. Rise	40	41	42	43	44
			Watts	356	437	518	600	681

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

Table 3. S9V2C080U5PSBC/D Cooling Airflow

S9V2C080U5PSBC/D Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter (iwc)								
Cooling	Unit Outdoor	Airflow Setting (CFM/ton)		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Cooling	3.0 Ton	Cooling 450 CFM/Ton	CFM	1335	1347	1356	1362	1366
			Watts	182	241	303	366	431
		Cooling 420 CFM/Ton	CFM	1246	1259	1267	1273	1277
			Watts	152	208	266	326	387
		Cooling 400 CFM/Ton	CFM	1188	1200	1208	1214	1217
			Watts	134	188	243	301	360
		Cooling 370 CFM/Ton	CFM	1100	1111	1118	1123	1125
			Watts	110	160	212	266	322
		Cooling 350 CFM/Ton	CFM	1041	1052	1058	1061	1063
			Watts	96	143	193	245	299
		Cooling 330 CFM/Ton	CFM	983	993	997	999	1000
			Watts	83	128	176	225	277
Cooling	3.5 Ton	Cooling 310 CFM/Ton	CFM	925	938	936	937	936
			Watts	72	114	159	207	257
		Cooling 290 CFM/Ton	CFM	867	873	874	873	871
			Watts	61	101	144	190	239
		Cooling 450 CFM/Ton	CFM	1557	1568	1576	1581	1585
			Watts	273	342	413	486	559
		Cooling 420 CFM/Ton	CFM	1453	1465	1473	1480	1483
			Watts	228	292	359	427	496
		Cooling 400 CFM/Ton	CFM	1384	1396	1405	1411	1415
			Watts	200	262	325	391	457
		Cooling 370 CFM/Ton	CFM	1281	1293	1302	1308	1312
			Watts	163	221	280	341	404
Cooling	4.0 Ton	Cooling 350 CFM/Ton	CFM	1212	1224	1233	1239	1242
			Watts	142	196	253	311	371
		Cooling 330 CFM/Ton	CFM	1144	1155	1163	1168	1171
			Watts	122	173	227	283	341
		Cooling 310 CFM/Ton	CFM	1076	1086	1093	1097	1099
			Watts	104	153	204	257	312
		Cooling 290 CFM/Ton	CFM	1007	1017	1023	1025	1026
			Watts	88	134	183	233	286
		Cooling 450 CFM/Ton	CFM	1782	1789	1794	1797	1798
			Watts	392	471	551	632	715
		Cooling 420 CFM/Ton	CFM	1662	1671	1678	1682	1685
			Watts	325	399	474	550	628
Cooling	4.5 Ton	Cooling 400 CFM/Ton	CFM	1582	1592	1600	1606	1609
			Watts	285	355	427	500	575
		Cooling 370 CFM/Ton	CFM	1463	1474	1483	1489	1493
			Watts	232	297	364	432	502
		Cooling 350 CFM/Ton	CFM	1384	1396	1405	1411	1415
			Watts	200	262	325	391	457
		Cooling 330 CFM/Ton	CFM	1305	1317	1327	1333	1337
			Watts	172	230	290	352	416
		Cooling 310 CFM/Ton	CFM	1227	1239	1248	1254	1257
			Watts	146	201	258	317	378
		Cooling 290 CFM/Ton	CFM	1149	1160	1168	1173	1176
			Watts	123	175	229	285	343
Cooling	4.5 Ton	Cooling 450 CFM/Ton	CFM	2008	2011	2012	2011	2008
			Watts	542	630	719	811	903
		Cooling 420 CFM/Ton	CFM	1872	1878	1881	1883	1882
			Watts	448	530	614	700	786
		Cooling 400 CFM/Ton	CFM	1782	1789	1794	1797	1798
			Watts	392	471	551	632	715
		Cooling 370 CFM/Ton	CFM	1647	1656	1663	1668	1670
			Watts	318	390	465	541	618
		Cooling 350 CFM/Ton	CFM	1557	1568	1576	1581	1585
			Watts	273	342	413	486	559
		Cooling 330 CFM/Ton	CFM	1468	1479	1488	1494	1498
			Watts	234	299	366	435	505
Cooling	4.5 Ton	Cooling 310 CFM/Ton	CFM	1379	1391	1400	1407	1410
			Watts	198	260	323	388	455
Cooling	4.5 Ton	Cooling 290 CFM/Ton	CFM	1291	1303	1312	1318	1322
			Watts	167	224	284	346	409

## Heating and Cooling Airflow Tables

**Table 3. S9V2C080U5PSBC/D Cooling Airflow (continued)**

<b>S9V2C080U5PSBC/D Furnace Cooling Airflow (CFM) and Power (Watts) vs. External Static Pressure with Filter (iwc)</b>								
<b>Cooling</b>	<b>Unit Outdoor</b>	<b>Airflow Setting (CFM/ton)</b>		<b>External Static Pressure</b>				
				<b>0.1</b>	<b>0.3</b>	<b>0.5</b>	<b>0.7</b>	<b>0.9</b>
Cooling	5.0 Ton <sup>(a)</sup>	Cooling 450 CFM/Ton	CFM	2235	2233	2230	2224	2216
			Watts	726	824	923	1023	1125
		Cooling 420 CFM/Ton	CFM	2084	2085	2084	2082	2078
			Watts	599	690	783	877	973
		Cooling 400 CFM/Ton	CFM	1983	1986	1988	1988	1985
			Watts	524	611	699	789	880
		Cooling 370 CFM/Ton	CFM	1832	1838	1843	1845	1845
			Watts	423	503	586	669	754
		Cooling 350 CFM/Ton <sup>(a)</sup>	CFM	1732	1740	1746	1749	1751
			Watts	363	440	518	597	678
		Cooling 330 CFM/Ton	CFM	1632	1641	1649	1654	1656
			Watts	310	382	456	531	608
		Cooling 310 CFM/Ton	CFM	1533	1543	1551	1557	1561
			Watts	262	330	400	471	544
		Cooling 290 CFM/Ton	CFM	1434	1445	1454	1460	1464
			Watts	219	283	349	416	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**

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 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**

Width is industry standard: 21"

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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