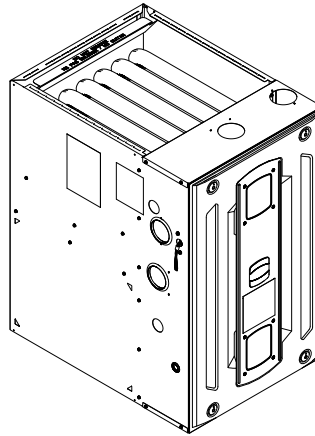


Submittal

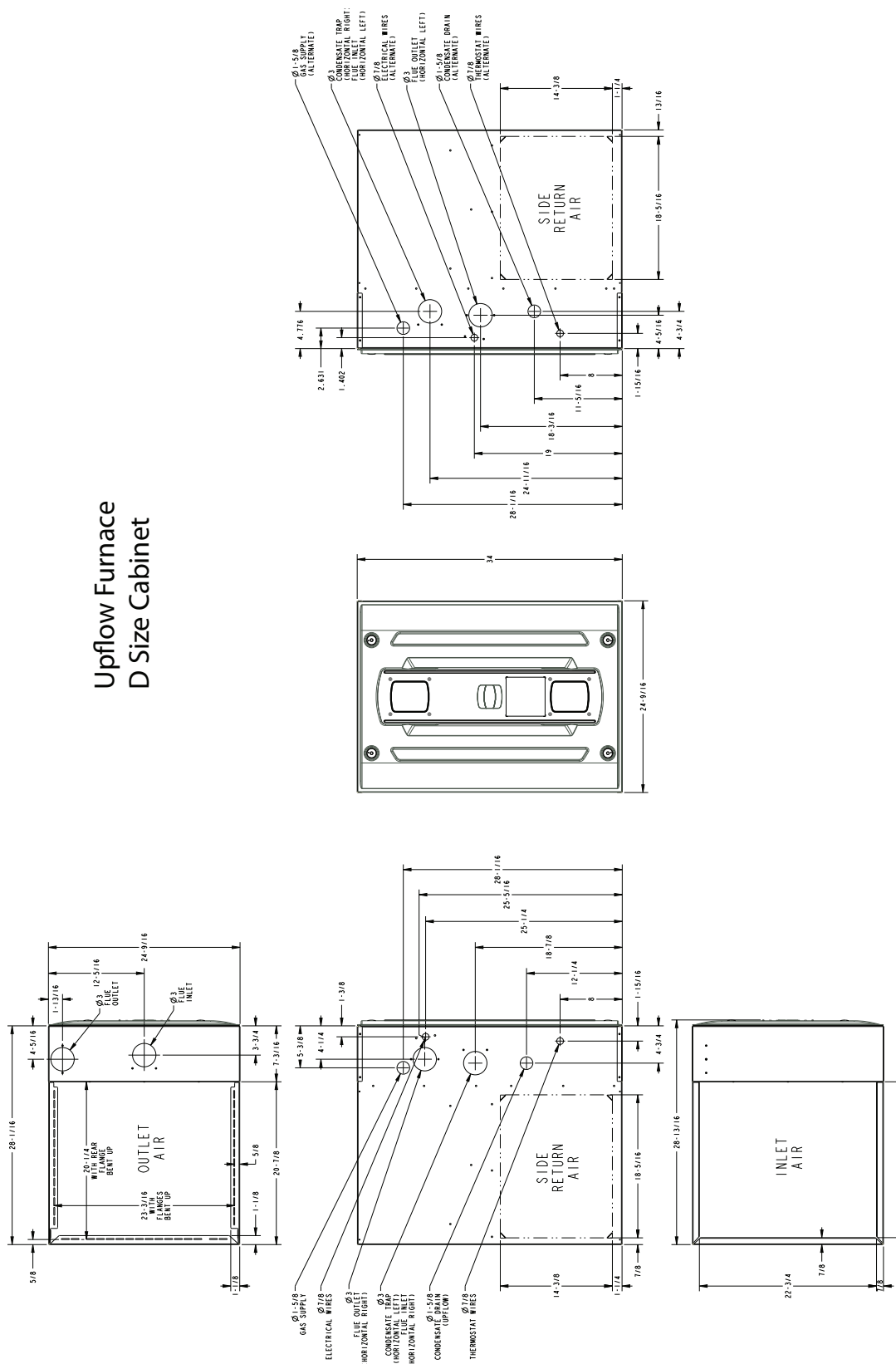
Upflow/Horizontal Left/Right Two Stage Condensing Gas Fired Furnace 120,000 BTUH

Upflow, Convertible to
Horizontal Right or
Horizontal Left
S9V2D120U5PSBC/D



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

2



Product Specification

Model	S9V2D120U5PSBC/D (a), (b)
Type	Upflow / Horizontal
RATINGS (c)	
1st Stage Input BTUH	78,000
1st Stage Capacity BTUH (ICS)	75,500
2nd Stage Input BTUH	120,000
2nd Stage Capacity BTUH (ICS) (d)	115,700
1st Stage Temp. Rise (Min. - Max.) °F	35 - 65
2nd Stage Temp. Rise (Min. - Max.) °F	40 - 70
AFUE (%) (d)	96.0
Return Air Temp. (Min. - Max.) °F	45°F - 80°F
BLOWER DRIVE	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
COMBUSTION FAN - Type	PSC
Drive - No. Speeds	Direct - 2
Motor RPM	3300/2600
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
Inducer Orifice	1.19
FILTER - Furnished?	No
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	1 - 24 X 25 - 1 in.
VENT OUTLET DIAMETER - MIN. (in.) (e)	3 Round

Model	S9V2D120U5PSBC/D (a), (b)
INLET AIR DIAMETER - MIN. (in.) (e)	3 Round
HEAT EXCHANGER - Type	
Fired	409 Stainless Steel
Unfired	29-4C Stainless Steel
Gauge (Fired)	20
ORIFICES - Main	
Nat. Gas (Qty. - Drill Size)	6 - 45
Propane Gas (Qty. - Drill Size)	6 - 56
GAS VALVE	Redundant - Two Stage
PILOT SAFETY DEVICE - Type	120 V SiNi Igniter
BURNERS - TYPE - QTY	Inshot - 6
POWER CONN. - V/Ph/HZ (f)	120 / 1 / 60
Ampacity (Amps)	13.9 / 13.3
Max. Overcurrent Protection (Amps)	15
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Uncrated (in.)	34 x 24-1/2 x 28-3/4
Crated (in.)	35-1/2 x 26-1/2 x 30-7/8
WEIGHT	
Shipping (Lbs.)/Net (Lbs.)	167/156

(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. S9V2D120U5PSBC/D Heating Airflow

S9V2D120U5PSBC/D Furnace Heating Airflow (CFM), Temp. Rise (°F), and Power (Watts) vs. External Static Pressure with Filter (iwc)								
				1st Stage Capacity = 75,500 2nd Stage Capacity = 115,700				
Heating	Airflow Setting	Target Airflow		External Static Pressure				
				0.1	0.3	0.5	0.7	0.9
Heating 1st Stage	Low	1123	CFM	1138	1158	1178	1198	1218
			Temp. Rise	61	60	59	58	57
			Watts	115	176	236	297	358
	Medium Low	1332	CFM	1371	1383	1394	1406	1417
			Temp. Rise	51	50	50	49	49
			Watts	182	251	320	389	457
	Medium (a)	1404	CFM	1440	1450	1461	1471	1482
			Temp. Rise	48	48	48	47	47
			Watts	208	283	357	431	505
	High	1620	CFM	1669	1674	1680	1685	1691
			Temp. Rise	42	42	41	41	41
			Watts	315	388	460	533	605
Heating 2nd Stage	Low	1560	CFM	1654	1637	1621	1604	1587
			Temp. Rise	65	66	67	67	68
			Watts	291	360	430	499	568
	Medium Low	1850	CFM	1980	1951	1922	1893	1864
			Temp. Rise	55	56	57	58	58
			Watts	456	539	621	704	787
	Medium (a)	1950	CFM	2075	2037	1999	1961	1923
			Temp. Rise	52	53	54	55	56
			Watts	527	611	696	781	865
	High	2250	CFM	2280	2197	2114	2032	1949
			Temp. Rise	48	50	52	54	56
			Watts	795	819	842	865	888

(a) Factory Setting.

Table 2. S9V2D120U5PSBC/D / S9V2D120D5PSBC/D Cooling Airflow

S9V2D120U5PSBC/D / S9V2D120D5PSBC/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	1336	1346	1354	1360	1363
			Watts	163	221	281	341	402
		Cooling 420 CFM/Ton	CFM	1248	1258	1265	1271	1274
			Watts	137	191	247	304	361
		Cooling 400 CFM/Ton	CFM	1189	1199	1206	1211	1214
			Watts	121	173	227	281	336
		Cooling 370 CFM/Ton	CFM	1102	1110	1116	1121	1123
			Watts	100	148	198	249	301
		Cooling 350 CFM/Ton	CFM	1043	1051	1057	1060	1062
			Watts	87	133	181	230	279
		Cooling 330 CFM/Ton	CFM	985	991	996	999	1000
			Watts	76	119	165	211	259
		Cooling 310 CFM/Ton	CFM	927	932	936	937	938
			Watts	65	107	150	195	241
Cooling	3.5 Ton	Cooling 290 CFM/Ton	CFM	869	872	874	875	875
			Watts	56	95	136	179	223
		Cooling 450 CFM/Ton	CFM	1559	1567	1574	1579	1583
			Watts	244	312	381	450	519
		Cooling 420 CFM/Ton	CFM	1455	1464	1472	1477	1481
			Watts	204	267	331	396	462
		Cooling 400 CFM/Ton	CFM	1386	1395	1403	1409	1413
			Watts	179	240	301	363	426
		Cooling 370 CFM/Ton	CFM	1282	1292	1300	1305	1309
			Watts	147	203	260	318	376
		Cooling 350 CFM/Ton	CFM	1214	1223	1231	1236	1239
			Watts	127	181	235	290	346
		Cooling 330 CFM/Ton	CFM	1145	1154	1161	1166	1169
			Watts	110	160	212	265	318
Cooling	4.0 Ton	Cooling 310 CFM/Ton	CFM	1077	1085	1092	1096	1098
			Watts	94	142	191	241	292
		Cooling 290 CFM/Ton	CFM	1009	1016	1021	1025	1026
			Watts	80	125	171	219	267
		Cooling 450 CFM/Ton	CFM	1783	1789	1793	1796	1798
			Watts	350	427	505	584	663
		Cooling 420 CFM/Ton	CFM	1663	1671	1677	1681	1683
			Watts	290	362	436	509	583
		Cooling 400 CFM/Ton	CFM	1584	1592	1599	1603	1607
			Watts	255	324	393	464	534
		Cooling 370 CFM/Ton	CFM	1465	1474	1481	1487	1491
			Watts	207	271	336	401	467
		Cooling 350 CFM/Ton	CFM	1386	1395	1403	1409	1413
			Watts	179	240	301	363	426
Cooling	4.5 Ton	Cooling 330 CFM/Ton	CFM	1307	1317	1324	1330	1334
			Watts	154	211	269	328	388
		Cooling 310 CFM/Ton	CFM	1228	1238	1246	1251	1254
			Watts	131	185	240	296	352
		Cooling 290 CFM/Ton	CFM	1150	1159	1166	1171	1174
			Watts	111	162	214	266	320
		Cooling 450 CFM/Ton	CFM	2010	2011	2012	2011	2010
			Watts	482	569	657	745	834
		Cooling 420 CFM/Ton	CFM	1874	1878	1881	1882	1883
			Watts	399	480	562	645	727
		Cooling 400 CFM/Ton	CFM	1783	1789	1793	1796	1798
			Watts	350	427	505	584	663
		Cooling 370 CFM/Ton	CFM	1648	1656	1662	1666	1669
			Watts	283	355	427	500	574
		Cooling 350 CFM/Ton	CFM	1559	1567	1574	1579	1583
			Watts	244	312	381	450	519
Cooling	4.5 Ton	Cooling 330 CFM/Ton	CFM	1470	1479	1486	1492	1495
			Watts	209	273	338	404	469
		Cooling 310 CFM/Ton	CFM	1381	1390	1398	1404	1408
			Watts	178	238	299	361	423
		Cooling 290 CFM/Ton	CFM	1292	1302	1310	1315	1319
			Watts	149	206	264	322	381

Heating and Cooling Airflow Tables

Table 2. S9V2D120U5PSBC/D / S9V2D120D5PSBC/D Cooling Airflow (continued)

S9V2D120U5PSBC/D / S9V2D120D5PSBC/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	5.0 Ton ^(a)	Cooling 450	CFM	2238	2235	2230	2226	2220
		CFM/Ton	Watts	646	742	840	938	1036
		Cooling 420	CFM	2086	2086	2085	2083	2080
		CFM/Ton	Watts	533	623	714	806	897
		Cooling 400	CFM	1985	1987	1988	1988	1986
		CFM/Ton	Watts	466	552	639	726	813
		Cooling 370	CFM	1834	1838	1842	1844	1845
		CFM/Ton	Watts	377	456	536	617	698
		Cooling 350	CFM	1733	1740	1745	1748	1750
		CFM/Ton ^(a)	Watts	324	399	475	552	628
		Cooling 330	CFM	1633	1641	1647	1652	1655
		CFM/Ton	Watts	277	347	419	492	564
		Cooling 310	CFM	1534	1543	1550	1555	1558
		CFM/Ton	Watts	234	301	369	437	505
		Cooling 290	CFM	1435	1444	1452	1458	1461
		CFM/Ton	Watts	196	259	322	387	451

^(a) 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. H₂O 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: 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 or www.americanstandardair.com.



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