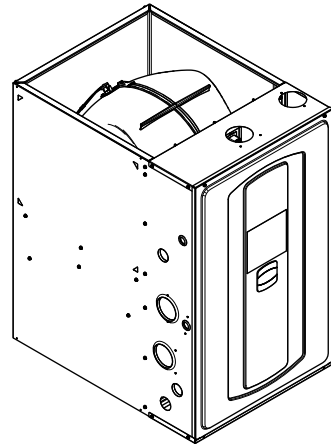


Submittal

Dedicated Downflow Single Stage Condensing Gas Fired Furnace 120,000 BTUH

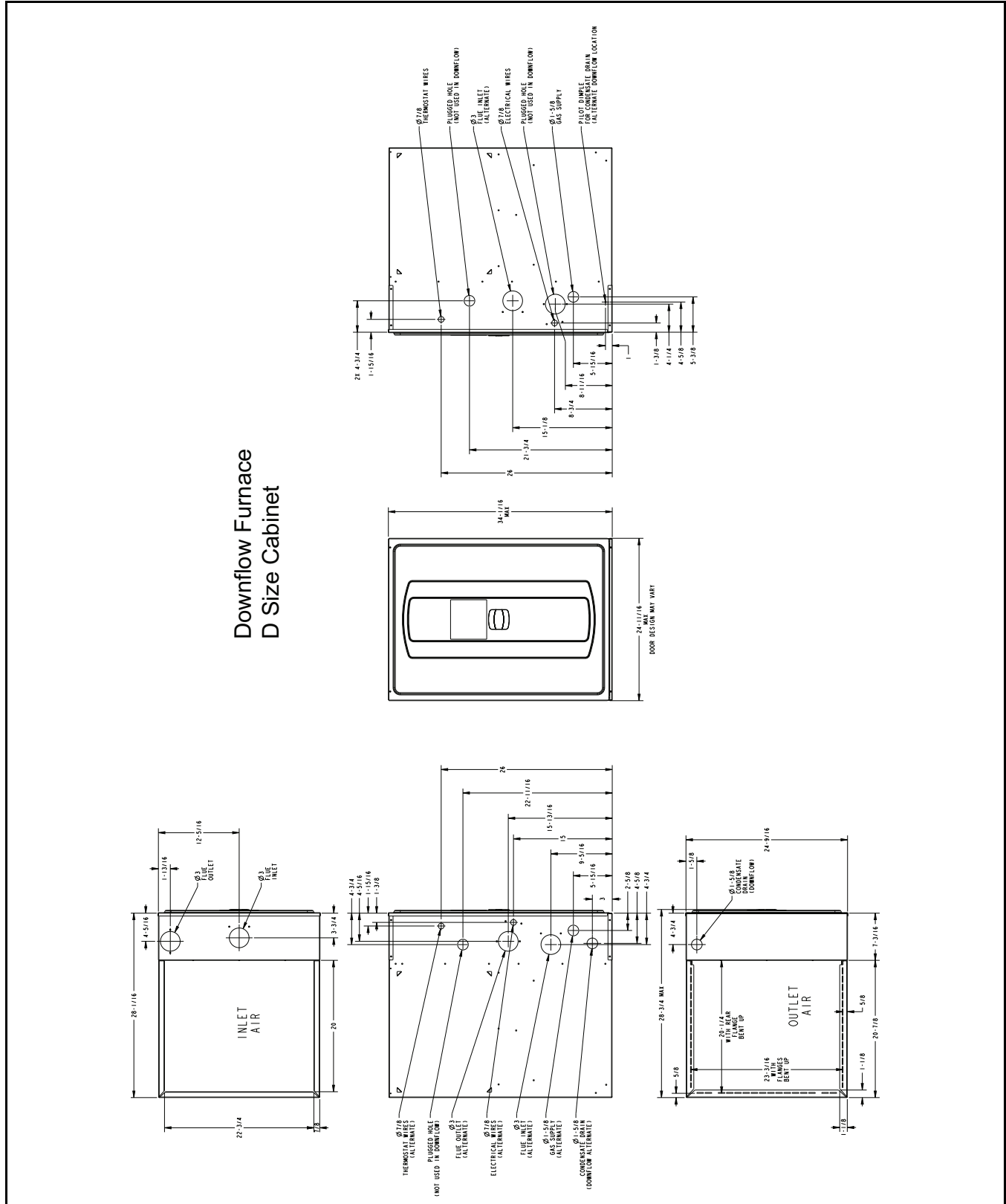
Downflow Only
S9X1D120D5PSBA
S9B1D120D5PSAA



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

Outline Drawings

Table 1. 24.5" Downflow Cabinet



Product Specifications

MODEL	S9X1D120D5PSBA ^(a) S9B1D120D5PSAA
TYPE	Downflow
RATINGS ^(b)	
Input BTUH	120,000
Capacity BTUH (ICS) ^(c) ^(d)	115,500
Temp. Rise (Min.-Max.)	45-75
AFUE (%) S9X1 / S9B1 ^(d)	95.0 / 92.1
Return Air Temp. (Min. - Max.)	45°F - 80°F
BLOWER DRIVE	DIRECT
Diameter — Width (In.)	11 X 10
No. Used	1
Speeds (No.) ^(e)	9
CFM vs. in. w.g.	See Fan Performance Table
Motor HP	1
RPM	1075
Volts/Ph/Hz	120 / 1 / 60
FLA	10.6
COMBUSTION FAN — Type	Centrifugal
Drive — No. Speeds	Direct - 1
Motor HP — RPM	3300
Volts/Ph/Hz	120 / 1 / 60
FLA	0.66
FILTER — Furnished?	No
Type recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	2 — 16x20 — 1 in.
VENT PIPE DIAMETER — Min (in.) ^(f) ^(g)	3 Round
HEAT EXCHANGER	
Type — Fired	409 Stainless Steel
— Unfired	29-4C Stainless Steel

MODEL	S9X1D120D5PSBA ^(a) S9B1D120D5PSAA
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas Qty. — Drill Size	6 - 45
LP Gas Qty. — Drill Size	6- 56
GAS VALVE	Redundant - One Stage
PILOT SAFETY DEVICE	
Type	120 V SiNi Igniter
BURNERS — Type	Multiport Inshot
Number	6
POWER CONN. — V/Ph/Hz ^(h)	120 / 1 / 60
Ampacity (In Amps)	14.1
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) 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.
- ^(d) Based on U.S. government standard tests.
- ^(e) 9 Speed constant torque ECM blower motor
- ^(f) Refer to the Vent Length Table in the Installer's Guide.
- ^(g) All furnace models have a vent outlet diameter that equals 2 in.
- ^(h) The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

Airflow tables

Furnace Airflow (CFM) Vs. External Static Pressure (in. W.C.)							
Model	Tap		0.1	0.3	0.5	0.7	0.9
S9X1D120D5PSBA S9B1D120D5PSAA	1	SCFM	680	419	159	-	-
		Watts	47	56	66	-	-
	2	SCFM	1025	1063	1101	1139	1177
		Watts	237	259	282	304	327
	3	SCFM	1566	1461	1357	1253	1149
		Watts	268	292	316	340	363
	4	SCFM	1803	1711	1619	1527	1435
		Watts	393	420	446	472	498
	5	SCFM	1891	1801	1711	1621	1532
		Watts	445	472	500	527	555
	6	SCFM	2132	2025	1919	1812	1705
		Watts	568	601	633	666	698
	7	SCFM	2154	2068	1982	1896	1810
		Watts	644	675	705	736	766
	8	SCFM	2344	2267	2190	2113	2035
		Watts	837	870	902	934	967
	9	SCFM	2414	2333	2251	2170	2088
		Watts	896	928	961	993	1026

CFM Versus Temperature Rise

Table 2. Heating Table – Downflow

CFM VS. TEMPERATURE RISE																			
MODEL	CFM (CUBIC FEET PER MINUTE)																		
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
S9X1D120D5PSBA S9B1D120D5PSAA												66	64	58	56	53	52	49	44

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. S9X1 also contains dry contacts for EAC and HUM.

ENERGY EFFICIENT OPERATION

S9X1 Furnace is certified by the manufacturer to leak 1% (1.4% for S9B1) or less of nominal air conditioning CFM delivered when pressurized to .5" water column with all inlets, outlets, and drains sealed.

AIR DELIVERY

The 9 tap constant torque ECM 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

UP TO 96.0% AFUE ON S9X1 FURNACE 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 (1.4% for S9B1)

Open vestibule design provides a full 34" high open vestibule

DIMENSIONS

Width is industry standard: 24.5"

Depth remains approximately 28"

Cabinet is 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 on S9X1 models

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 conversion 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

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.



The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

S9X1D120D-SUB-1C-EN 08 May 2020

Supersedes S9X1D120D-SUB-1B-EN (November 2019)

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