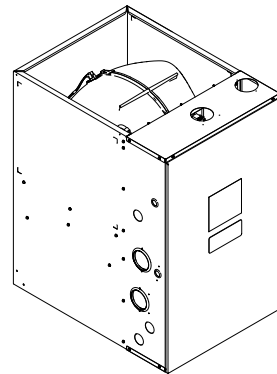


# Submittal

## Downflow Two Stage Condensing Gas Fired Furnace 80,000 BTUH

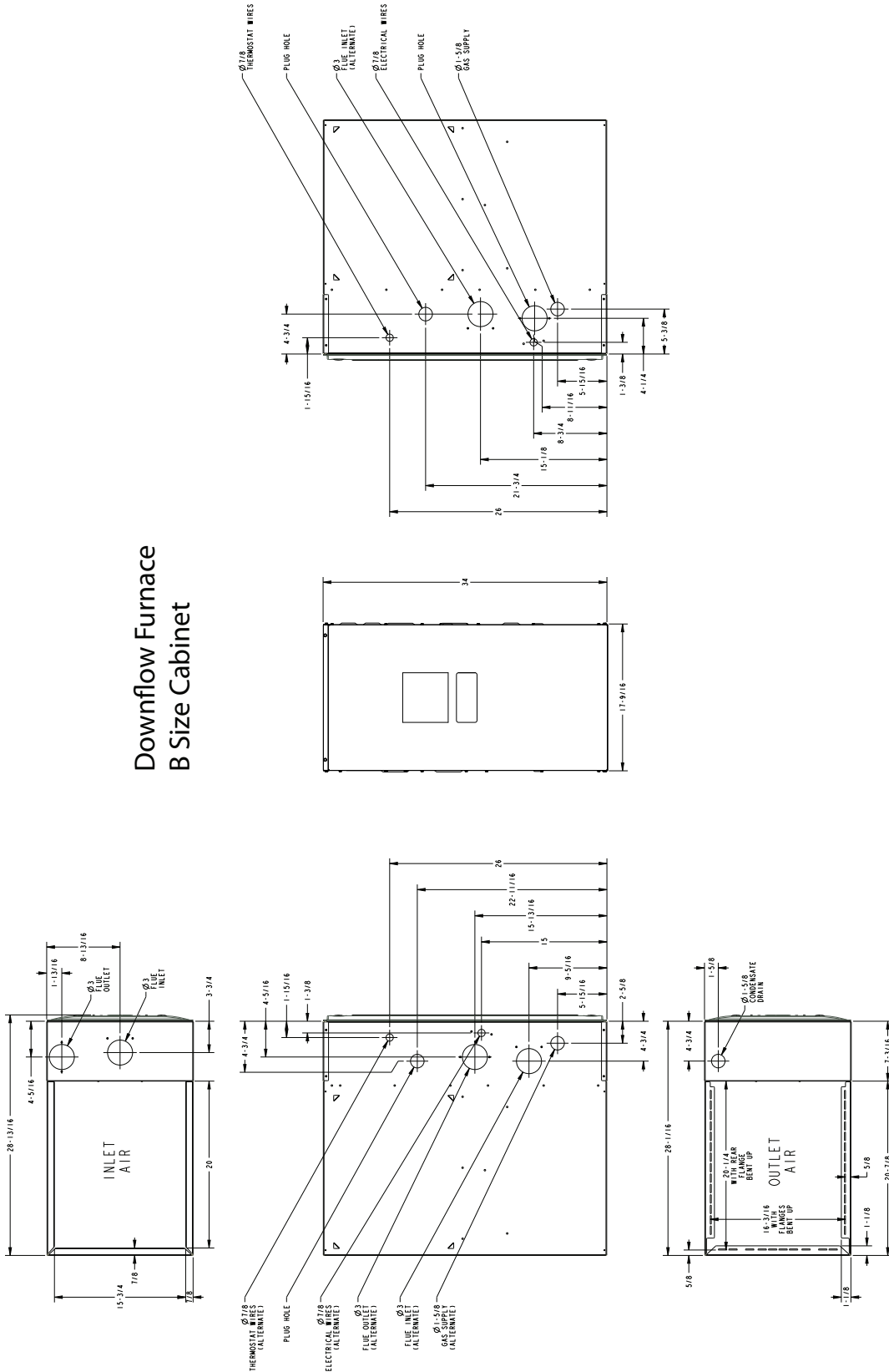
Downflow Only  
A952V080BD4SAB



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

# Outline Drawings

## Downflow Furnace B Size Cabinet



# Product Specification

MODEL	A952V080BD4SAB <sup>(a)</sup>
<b>TYPE</b>	Downflow
<b>RATINGS</b> <sup>(b)</sup>	
1st Stage Input BTUH (ICS)	52,000
1st Stage Capacity BTUH	50,440
2nd Stage Input BTUH	80,000
2nd Stage Capacity BTUH (ICS) <sup>(c) (d)</sup>	77,600
1st Stage Temp. Rise (Min.-Max.)	30 - 60
2nd Stage Temp. Rise (Min.-Max.)	35 - 65
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	3/4
RPM	Variable
Volts/Ph/Hz	120 / 1 / 60
FLA	8.0
<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.)	2 — 14x20 — 1 in.
<b>VENT PIPE DIAMETER — Min (in.)</b> <sup>(e) (f)</sup>	2 Round
<b>HEAT EXCHANGER</b>	
Type — Fired	409 Stainless Steel

MODEL	A952V080BD4SAB <sup>(a)</sup>
— 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> <sup>(g)</sup>	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 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.)	135/127

- <sup>(a)</sup> Meets Energy Star
- <sup>(b)</sup> 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.
- <sup>(c)</sup> Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3.
- <sup>(d)</sup> Based on U.S. government standard tests.
- <sup>(e)</sup> Refer to the Vent Length Table in the Installer's Guide.
- <sup>(f)</sup> All A952V furnace models have a vent outlet diameter that equals 2 in.
- <sup>(g)</sup> 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. A952V080BD4SAB Heating Airflow

A952V080BD4SAB 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	864	CFM	770	770	770	770	770
			Temp. Rise	61	61	61	61	61
			Watts	72	118	164	210	256
	Medium Low <sup>(a)</sup>	907	CFM	809	809	809	809	809
			Temp. Rise	58	58	58	58	58
			Watts	88	134	180	227	273
	Medium	958	CFM	854	854	854	854	854
			Temp. Rise	54	54	54	54	54
			Watts	101	150	198	247	296
	High	1051	CFM	993	993	993	993	993
			Temp. Rise	47	47	47	47	47
			Watts	133	186	239	292	346
Heating 2nd Stage	Low	1200	CFM	1082	1082	1082	1082	1082
			Temp. Rise	66	66	66	66	66
			Watts	181	239	298	357	416
	Medium Low <sup>(a)</sup>	1260	CFM	1190	1190	1190	1190	1190
			Temp. Rise	59	59	59	59	59
			Watts	206	268	329	390	451
	Medium	1330	CFM	1225	1225	1225	1225	1225
			Temp. Rise	58	58	58	58	58
			Watts	239	303	367	431	495
	High	1480	CFM	1227	1227	1227	1227	1227
			Temp. Rise	57	57	57	57	57
			Watts	320	390	460	530	600

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

Table 2. A952V080BU4SAB / A952V080BD4SAB Cooling Airflow

A952V080BU4SAB / A952V080BD4SAB 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	155	205	259	316
		Cooling 420	CFM	1050	1050	1050	1050	1050
			CFM/Ton	Watts	130	177	228	282
		Cooling 400	CFM	1000	1000	1000	1000	1000
			CFM/Ton	Watts	115	160	209	262
		Cooling 370	CFM	925	925	925	925	925
			CFM/Ton	Watts	94	136	183	233
		Cooling 350	CFM	875	875	875	875	875
			CFM/Ton	Watts	82	122	167	216
		Cooling 330	CFM	825	825	825	825	825
			CFM/Ton	Watts	71	110	153	199
		Cooling 310	CFM	775	775	775	775	775
			CFM/Ton	Watts	61	98	139	184
Cooling 290	CFM	725	725	725	725	725		
	CFM/Ton	Watts	52	87	127	171	218	
Cooling	3.0 Ton	Cooling 450	CFM	1350	1350	1350	1350	1350
			CFM/Ton	Watts	252	311	374	440
		Cooling 420	CFM	1260	1260	1260	1260	1260
			CFM/Ton	Watts	209	265	324	386
		Cooling 400	CFM	1200	1200	1200	1200	1200
			CFM/Ton	Watts	184	237	294	354
		Cooling 370	CFM	1110	1110	1110	1110	1110
			CFM/Ton	Watts	150	199	253	309
		Cooling 350	CFM	1050	1050	1050	1050	1050
			CFM/Ton	Watts	130	177	228	282
		Cooling 330	CFM	990	990	990	990	990
			CFM/Ton	Watts	112	156	205	258
		Cooling 310	CFM	930	930	930	930	930
			CFM/Ton	Watts	95	138	185	235
Cooling 290	CFM	870	870	870	870	870		
	CFM/Ton	Watts	81	121	166	214	265	
Cooling	3.5 Ton	Cooling 450	CFM	1575	1575	1575	1575	1575
			CFM/Ton	Watts	383	452	524	599
		Cooling 420	CFM	1470	1470	1470	1470	1470
			CFM/Ton	Watts	317	382	449	520
		Cooling 400	CFM	1400	1400	1400	1400	1400
			CFM/Ton	Watts	278	339	404	472
		Cooling 370	CFM	1295	1295	1295	1295	1295
			CFM/Ton	Watts	225	282	343	407
		Cooling 350	CFM	1225	1225	1225	1225	1225
			CFM/Ton	Watts	194	248	306	367
		Cooling 330	CFM	1155	1155	1155	1155	1155
			CFM/Ton	Watts	166	218	273	331
		Cooling 310	CFM	1085	1085	1085	1085	1085
			CFM/Ton	Watts	141	190	242	298
Cooling 290	CFM	1015	1015	1015	1015	1015		
	CFM/Ton	Watts	119	165	215	268	324	
Cooling	4.0 Ton <sup>(a)</sup>	Cooling 450	CFM	1800	1784	1746	1665	1581
			CFM/Ton	Watts	555	619	665	674
		Cooling 420	CFM	1680	1680	1680	1665	1581
			CFM/Ton	Watts	458	531	608	674
		Cooling 400	CFM	1600	1600	1600	1600	1600
			CFM/Ton	Watts	400	470	543	619
		Cooling 370	CFM	1480	1480	1480	1480	1480
			CFM/Ton	Watts	323	388	456	527
		Cooling 350	CFM	1400	1400	1400	1400	1400
			CFM/Ton	Watts	278	339	404	472
		Cooling 330	CFM	1320	1320	1320	1320	1320
			CFM/Ton	Watts	237	295	357	421
		Cooling 310	CFM	1240	1240	1240	1240	1240
			CFM/Ton	Watts	201	255	314	375
Cooling 290	CFM	1160	1160	1160	1160	1160		
	CFM/Ton	Watts	168	220	275	334	395	

<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

Multipoint 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 1.4% 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 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 for strength. Every orientation has at least two venting options. There are no knockouts on cabinet.

## FEATURES AND GENERAL OPERATION

The 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**

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

6 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; 1.4% 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 aluminumized steel

Integrated rail system for easy access if required

Reduces or eliminates need for baffles

## **VARIABLE SPEED BLOWER MOTOR**

Increased efficiency

Improved home comfort

## **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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