

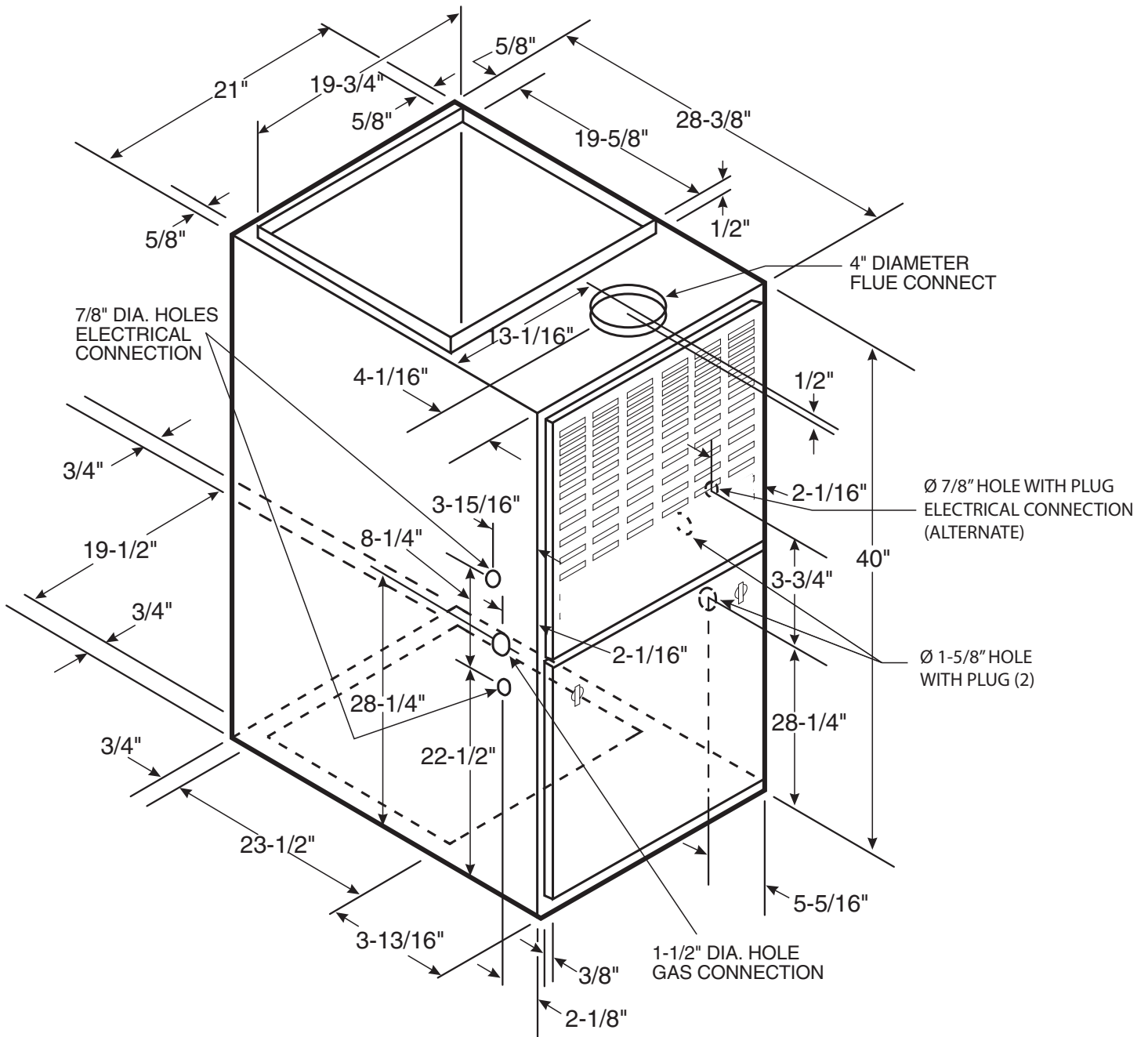
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# SUBMITTAL

**Upflow/Horizontal  
Gas Furnace - Variable  
Speed - 2 Stage Heat**

**TUD2C080A9V4VB**

**AUD2C080A9V4VB**



*UD2C080A9V4VB FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER									
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW 7	SW 8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	782 49 75	762 51 110	751 51 145	748 51 185	737 52 225
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	870 44 90	865 45 125	861 45 175	848 45 215	831 46 255
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	962 40 110	974 40 155	963 40 200	938 41 245	914 42 290
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1091 54 145	1092 54 190	1087 55 245	1092 54 305	1077 55 355
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1211 49 190	1243 48 255	1243 48 310	1244 48 370	1235 48 430
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1371 43 255	1388 43 325	1392 43 395	1385 43 455	1377 43 515

*UD2C080A9V4VB FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW 1	SW 2	SW 3	SW 4		0.1	0.3	0.5	0.7	0.9
2.5	LOW (350 CFM/TON)	ON	ON	OFF	ON	CFM WATTS	863 90	865 130	858 175	843 220	831 255
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	995 115	1005 170	989 210	973 260	956 305
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1101 150	1112 200	1111 255	1107 305	1101 360
3.0	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1031 125	1031 175	1026 215	1013 270	1003 320
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1163 170	1178 230	1188 285	1183 345	1178 405
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1319 240	1337 305	1344 365	1340 420	1336 485
3.5	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1182 200	1206 240	1211 295	1211 350	1211 420
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1380 255	1401 325	1402 390	1402 460	1399 515
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1553 350	1566 425	1557 500	1558 560	1559 645
4 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1386 255	1401 330	1408 395	1402 460	1390 520
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1590 360	1593 440	1591 515	1588 575	1576 650
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1791 360	1808 615	1810 615	1808 775	1726 800

NOTES:

- \* First Letter may be "A" or "T"
- \*\* Factory setting
- Continuous Fan Setting: Heating or Cooling airflow is approximately 50% of selected Cooling value.
- LOW 350 cfm/ton is recommended for Variable Speed application for COMFORT & HUMID CLIMATE setting; NORMAL is 400 cfm/ton; HIGH 450 cfm/ton is for DRY CLIMATE setting

## INDOOR BLOWER TIMING

**Heating:** The ECM Fan Control controls the variable speed indoor blower. The blower "on" time is fixed at 45 seconds after ignition. The FAN-OFF period is field selectable by dip switches #2 and #3 on the Integrated Furnace Control at 60, 100, 140, or 180 seconds. The factory setting is 100 seconds, (See unit wiring diagram).

**Cooling:** The fan delay-off period is set by dip switches on the ECM Fan Control board connected to the Integrated Furnace Control. The options for cooling delay off is field selectable by dip switches #5 and #6. However, dip switch #1 on the Integrated Furnace Control must be set to "ON" for cooling mode to function properly.

The following table and graph explain the delay-off settings:

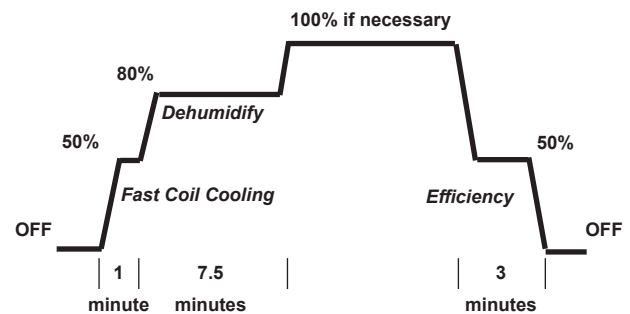
\*\* - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

## COOLING OFF - DELAY OPTIONS

SWITCH SETTINGS		SELECTION	NOMINAL AIRFLOW
5 - OFF	6 - OFF	NONE	SAME
5 - ON	6 - OFF	1.5 MINUTES	100% *
5 - OFF	6 - ON	3 MINUTES	50%
5 - ON	6 - ON	**	50 - 100%

\* - This setting is equivalent to BAY24X045 relay benefit

\*\* - This selection provides **ENHANCED MODE**, which is a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. See Wiring Diagram notes on the unit or in the Service Facts for complete wiring setup for **ENHANCED MODE**. The graph which follows, shows the ramping process.



## General Data ①

<b>TYPE</b>	Upflow/Horizontal
<b>RATINGS ②</b>	
1st Stage Input BTUH	52,000
1st Stage Capacity BTUH (ICS) ③	41,600
2nd Stage Input BTUH	80,000
2nd Stage Capacity BTUH (ICS) ③	64,000
Temp. rise (Min.-Max.) °F.	30 - 60
<b>BLOWER DRIVE</b>	DIRECT
Diameter-Width (In.)	10 x 10
No. Used	1
Speeds (No.)	VARIABLE SPEED
CFM vs. in. w.g.	See Fan Performance
Motor HP	3/4
R.P.M.	VARIABLE
Volts/Ph/Hz	115/1/60
FLA	9.6
<b>COMBUSTION FAN - Type</b>	Centrifugal
Drive - No. Speeds	Direct - 2
Motor HP - RPM	1/100 - 2543 / 1727
Volts/Ph/Hz	115/1/60
F.L. Amps	0.70 / 0.40
<b>FILTER — Furnished?</b>	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.) Shipped	1 - 20 x 25 - 1in.

<b>VENT COLLAR — Size (in.)</b>	4 Round
<b>HEAT EXCHANGER</b>	
Type-Fired	Alum. Steel
-Unfired	
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat.Gas. Qty. — Drill Size	4 — 45
L.P. Gas Qty. — Drill Size	4 — 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>	
Type	Hot Surface Ignition
<b>BURNERS — Type</b>	Multiport Inshot
Number	4
<b>POWER CONN. — V/Ph/Hz ④</b>	115/1/60
Ampacity (In Amps)	12.9
Max. Overcurrent Protection (amps)	15
<b>PIPE CONN. SIZE (IN.)</b>	1/2
<b>DIMENSIONS</b>	H x W x D
Crated (In.)	41-3/4 x 23 x 30-1/2
Uncrated (In.)	40 x 21 x 28-1/2
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs)	166 / 155

① Central Furnace heating designs are certified to ANSI Z21.47 / CSA 2.3

② 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.

③ Based on U.S. government standard tests.

④ The above wiring specifications are in accordance with National Electrical Code; however, installations must comply with local codes.

# Mechanical Specifications

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**NATURAL GAS MODELS** — Central heating furnace designs are certified to ANSI Z21.47 / CSA 2.3 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 has solid state devices, which continuously monitor for presence of flame, when the system is in the heating mode of operation. Dual solenoid combination gas valve and regulator provide extra safety.

**QUICK HEATING** — Durable, cycle tested, heavy gauge **aluminized steel heat exchanger** quickly transfers heat to provide warm conditioned air to the structure. **Low energy power vent blower**, to increase efficiency and provide discharge of gas fumes to the outside, allows common venting with hot water heater.

**BURNERS** — Multi-port, in-shot burners will give years of quiet and efficient service. All models can be converted to **L.P. gas** without changing burners.

**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.

**AIR DELIVERY** — The variable speed, direct-drive blower motor, with sufficient airflow range for most heating and cooling requirements, will switch from heating to cooling speeds on demand from room thermostat. The blower door safety switch will prevent or terminate furnace operation when the blower door is removed. (Fan relay and 35VA control transformer is standard).

**STYLING** — Heavy gauge steel and "wrap-around" cabinet construction is used in the cabinet with baked-on enamel finish for strength and beauty. The heat exchanger section of the cabinet is completely lined with foil-faced fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating qualities of fiberglass.

**FEATURES AND GENERAL OPERATION** — These High Efficiency Gas Furnaces employ a Hot Surface Ignition system, which eliminates the waste of a constantly 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 differential switch.

## 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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