

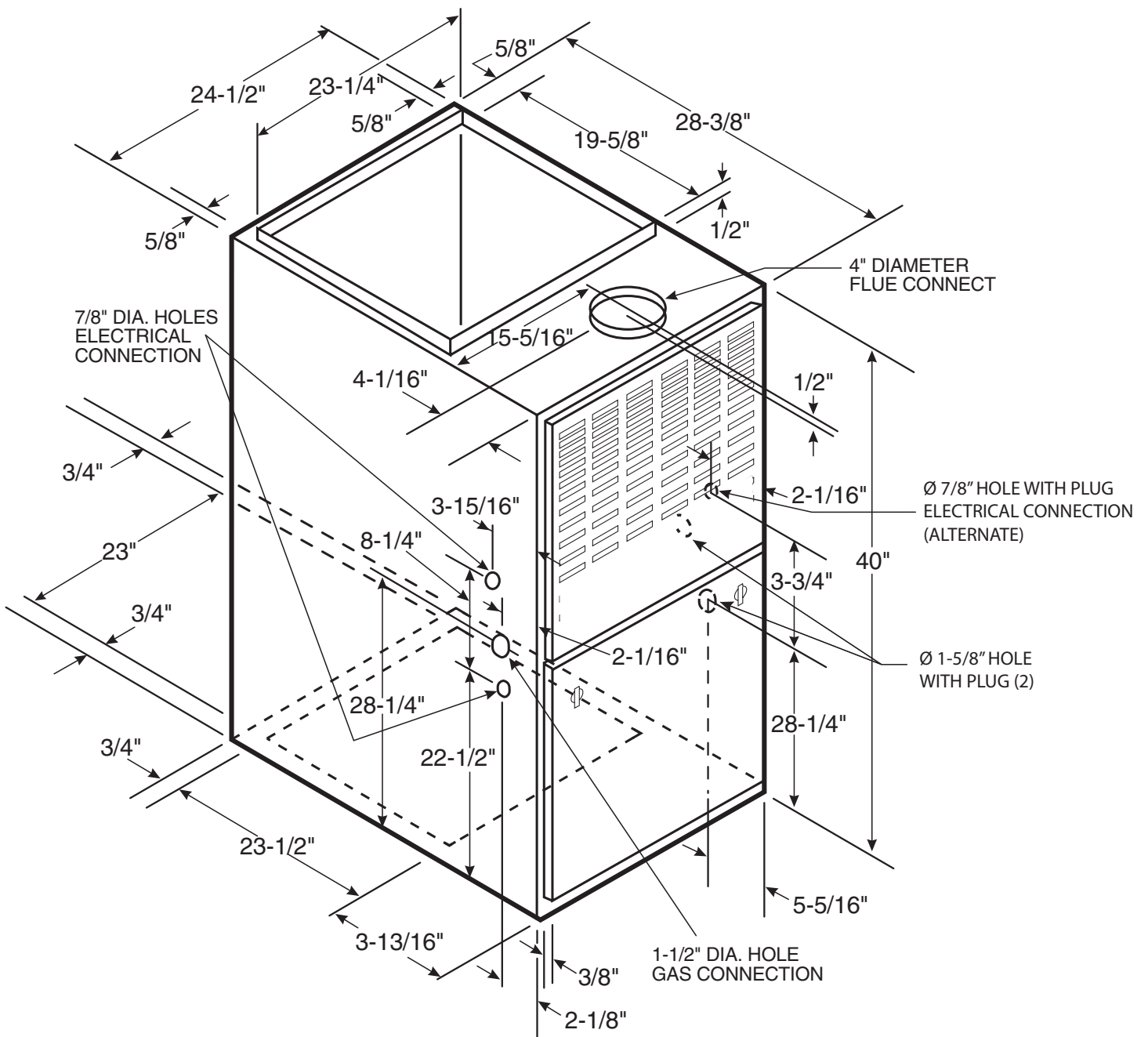
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SUBMITTAL

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

TUD2D120B9V5VB

AUD2D120B9V5VB



*UD2D120B9V5VB FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER									
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		S4-3	S4-4		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1050 45 99	1044 46 146	1035 46 208	1005 47 252	980 48 310
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1214 39 129	1216 39 188	1217 39 262	1192 40 252	1169 41 310
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1288 37 147	1293 37 212	1298 37 293	1275 37 309	1254 38 373
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1429 48 191	1440 48 267	1453 47 363	1435 48 340	1416 48 406
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1672 41 310	1695 40 402	1722 40 528	1711 40 409	1697 40 480
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1782 39 385	1809 38 480	1890 36 623	1835 37 565	1871 37 644

*UD2D120B9V5VB FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING (See Notes)	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		S3-1	S3-2	S3-3	S3-4		0.1	0.3	0.5	0.7	0.9
3.5	LOW (350 CFM/ TON)	OFF	ON	OFF	ON	CFM WATTS	1208 128	1209 186	1210 260	1185 306	1162 370
	NORMAL (400 CFM/ TON)	OFF	ON	OFF	OFF	CFM WATTS	1343 162	1350 232	1358 318	1337 365	1317 433
	HIGH (450 CFM/ TON)	OFF	ON	ON	OFF	CFM WATTS	1477 210	1491 290	1507 391	1490 436	1472 508
4.0	LOW (350 CFM/ TON)	ON	OFF	OFF	ON	CFM WATTS	1343 162	1350 232	1358 318	1337 365	1317 433
	NORMAL (400 CFM/ TON)	ON	OFF	OFF	OFF	CFM WATTS	1496 218	1511 300	1528 403	1511 447	1494 520
	HIGH (450 CFM/ TON)	ON	OFF	ON	OFF	CFM WATTS	1650 296	1671 387	1698 511	1686 548	1671 626
5.0 **	LOW (350 CFM/ TON)	OFF	OFF	OFF	ON	CFM WATTS	1612 274	1631 363	1655 482	1642 521	1627 598
	NORMAL ** (400 CFM/ TON)	OFF	OFF	OFF	OFF	CFM WATTS	1858 403	1902 533	1907 624	1906 714	1871 755
	HIGH (450 CFM/ TON)	OFF	OFF	ON	OFF	CFM WATTS	1871 585	2126 711	2110 797	2098 888	2001 953

NOTES: "CONTINUOUS FAN SETTING" IS THERMOSTAT FAN SWITCH "ON" AND DIP SWITCHS 5 AND 6 "ON".

1. *FIRST LETTER MAY BE "A" OR "T"

2. **FACTORY SETTING.

3. CONTINUOUS FAN SETTING: HEATING OR COOLING AIRFLOW IS APPROXIMATELY 50% OF SELECTED COOLING VALUE.

4. 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:

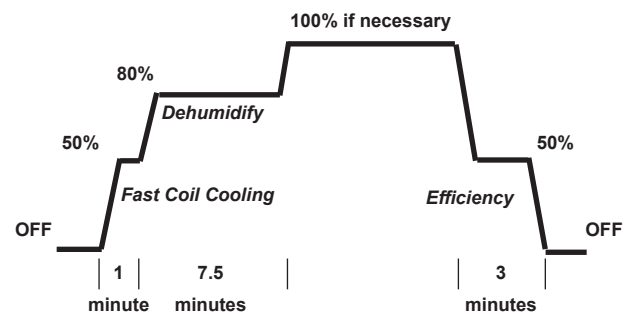
** - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

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

TYPE	Upflow/Horizontal
RATINGS ②	
1st Stage Input BTUH	78,000
1st Stage Capacity BTUH (ICS) ③	62,400
2nd Stage Input BTUH	120,000
2nd Stage Capacity BTUH (ICS) ③	97,000
Temp. rise (Min.-Max.) °F.	35 - 65
BLOWER DRIVE	DIRECT
Diameter-Width (In.)	10 x 10
No. Used	1
Speeds (No.)	VARIABLE SPEED
CFM vs. in. w.g.	See Fan Performance
Motor HP	1
R.P.M.	VARIABLE
Volts/Ph/Hz	115/1/60
FLA	12.8
COMBUSTION FAN - Type	Centrifugal
Drive - No. Speeds	Direct - 2
Motor HP - RPM	1/60 - 3090 / 2225
Volts/Ph/Hz	115/1/60
F.L. Amps	1.14 / 0.51
FILTER — Furnished?	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.) Shipped	1 - 24 x 25 - 1in.

VENT COLLAR — Size (in.)	4 Round
HEAT EXCHANGER	
Type-Fired	Alum. Steel
-Unfired	
Gauge (Fired)	20
ORIFICES — Main	
Nat.Gas. Qty. — Drill Size	6 — 45
L.P. Gas Qty. — Drill Size	6 — 56
GAS VALVE	Redundant-Two Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Ignition
BURNERS — Type	Multipoint Inshot
Number	6
POWER CONN. — V/Ph/Hz ④	115/1/60
Ampacity (In Amps)	16.4
Max. Overcurrent Protection (amps)	20
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	H x W x D
Crated (In.)	41- 3/4 x 26-1/2 x 30-1/2
Uncrated (In.)	40 x 24-1/2 x 28-1/2
WEIGHT	
Shipping (Lbs.)/Net (Lbs)	193 / 181

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

② Ratings shown are for elevations up to 2000 feet. For elevations above 2000 feet; Ratings should be reduced at the rate of 4% for each 1000 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

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

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