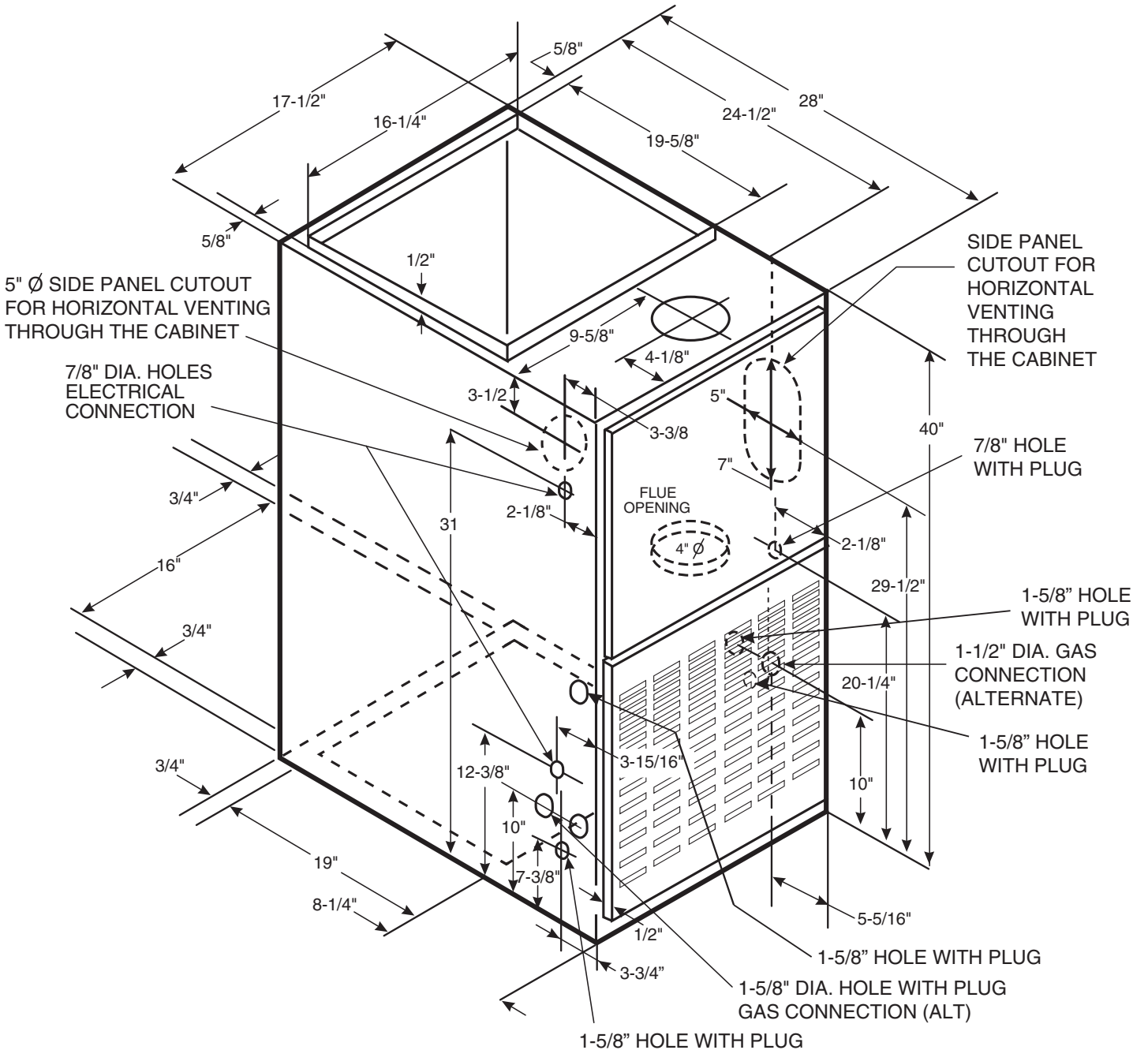


TAG: _____

SUBMITTAL

TDD2B080A9V3VA
ADD2B080A9V3VA

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



*DD2B080A9V3VA 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	775 50 85	750 51 110	700 55 140	685 56 170	680 57 185
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	865 45 110	840 46 140	820 47 175	795 48 210	770 50 235
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1010 38 160	980 39 190	970 40 230	940 41 260	915 42 285
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1080 55 180	1060 56 220	1035 57 255	1010 59 285	995 60 325
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1190 50 245	1190 50 290	1170 51 330	1155 51 370	1140 52 410
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1345 44 330	1335 44 380	1320 45 425	1310 45 475	1275 46 505

*DD2B080A9V3VA 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				
		S3-1	S3-2	S3-3	S3-4		0.1	0.3	0.5	0.7	0.9
2.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	840 105	830 135	830 160	815 220	750 225
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	970 140	950 170	940 210	925 245	900 270
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1085 185	1060 220	1045 260	1015 300	1000 325
3.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1015 155	995 190	990 230	970 260	920 285
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1150 215	1140 250	1120 305	1100 335	1085 370
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1290 300	1290 340	1270 390	1260 425	1235 475
3.5 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1160 220	1150 265	1140 320	1115 345	1100 385
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1355 330	1340 380	1330 425	1320 470	1280 510
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1360 330	1360 380	1315 425	1320 470	1280 510

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:

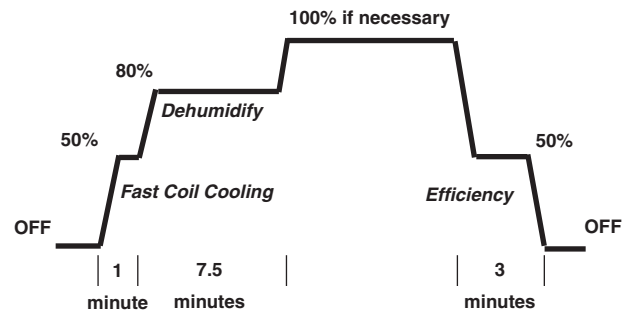
** - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

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

TYPE	Downflow/Horizontal
RATINGS 2	
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	63,000
Temp. rise (Min.-Max.) °F.	35 - 65
BLOWER DRIVE	
	DIRECT
Diameter-Width (In.)	10 x 7
No. Used	1
Speeds (No.)	VARIABLE SPEED
CFM vs. in. w.g.	See Fan Performance
Motor HP	1/2
R.P.M.	VARIABLE
Volts/Ph/Hz	115/1/60
FLA	7.7
COMBUSTION FAN - Type	
	Centrifugal
Drive - No. Speeds	Direct - 2
Motor HP PSC [Shaded Pole] - RPM	1/100 / [1/145] - 2543/1727
Volts/Ph/Hz	115/1/60
FLA PSC [Shaded pole]	0.70/0.40 / [0.23/0.20]
FILTER — Furnished?	
	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.) Shipped	2 - 14 x 20 - 1in.

VENT COLLAR — Size (in.)	4 Round
HEAT EXCHANGER	
Type-Fired	Alum. Steel
-Unfired	
Gauge (Fired)	20
ORIFICES — Main	
Nat. Gas Qty. — Drill Size	3 — 45
L.P. Gas Qty. — Drill Size	3 — 56
GAS VALVE	
	Redundant - Two Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Ignition
BURNERS — Type	
	Multiport Inshot
Number	3
POWER CONN. — V/Ph/Hz ④	
	115/1/60
Ampacity (In Amps)	10.5
Max. Overcurrent Protection (amps)	15
PIPE CONN. SIZE (IN.)	
	1/2
DIMENSIONS	
	H x W x D
Crated (In.)	41- 3/4 x 19-1/2 x 30-1/2
Uncrated (In.)	40 x 17-1/2 x 28-1/2
WEIGHT	
Shipping (Lbs.)/Net (Lbs)	146 / 135

① Central Furnace heating designs are certified by the American Gas Association Inc. Laboratories.

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 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 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.

Since Ingersoll Rand has a policy of continuous product and product data improvement, it reserves the right to change specifications and design without notice.

Technical Literature - Printed in U.S.A.

Ingersoll Rand
6200 Troup Highway
Tyler, TX 75707



Library	-
Product Section	Furnaces
Product	Furnace
Model	TDD2-A9V
Literature Type	Submittal
Sequence	-
Date	04/15
File No.	TDD2B080A9V-SUB-1B
Supersedes	TDD2B080A9V-SUB-1A