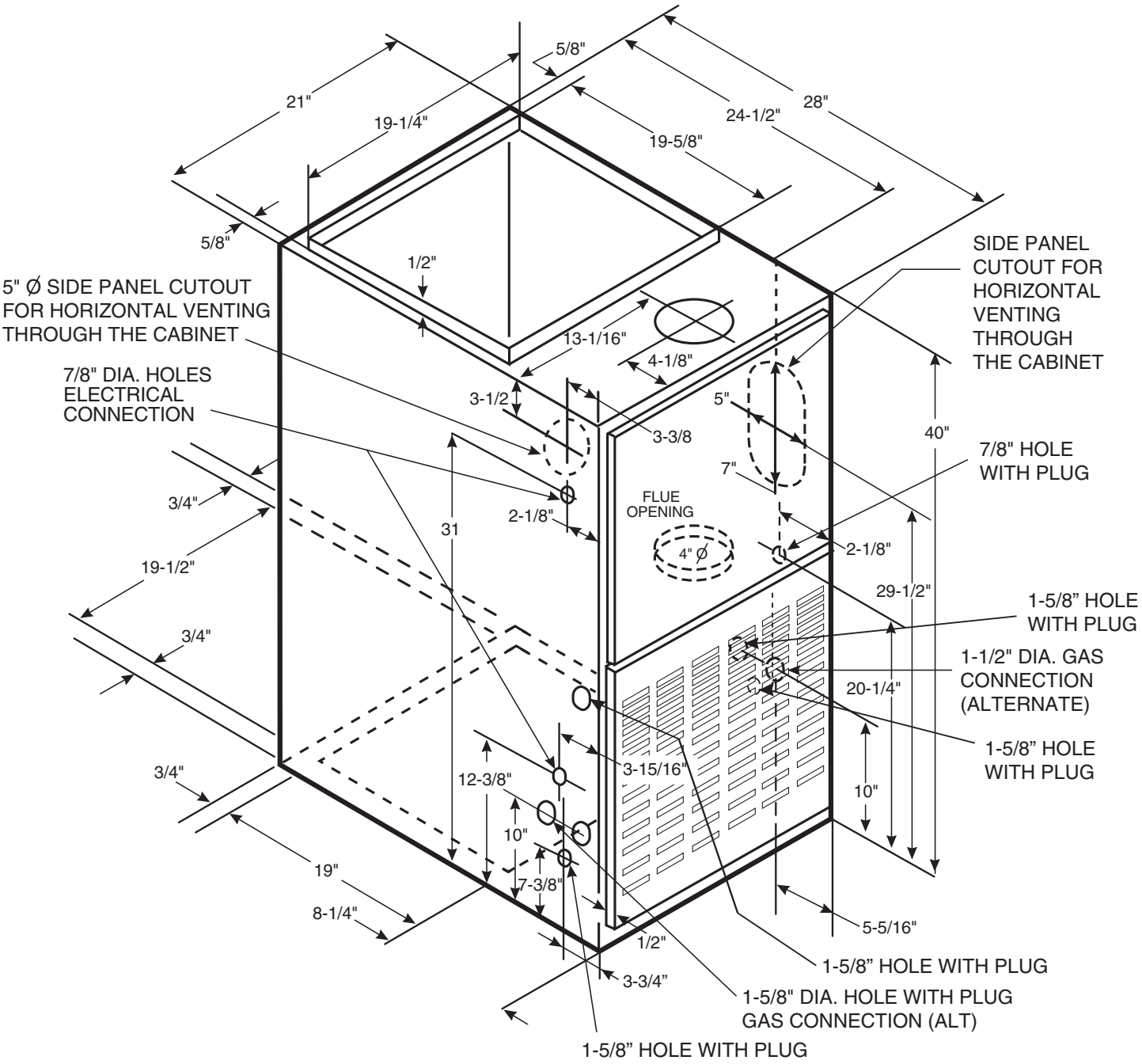
TAG: _____

SUBMITTAL

TDD2C100A9V5VA
ADD2C100A9V5VA

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



*DD2C100A9V5VA 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	890 54 87	870 55 120	855 56 160	850 57 200	825 58 250
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1100 44 135	1090 44 175	1080 45 225	1070 45 260	1070 45 320
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1270 38 195	1290 37 260	1295 37 315	1300 37 365	1300 37 425
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1230 60 180	1220 61 220	1250 59 290	1255 59 345	1275 58 410
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1520 49 295	1550 48 385	1560 47 460	1555 48 525	1530 48 565
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1820 41 475	1825 41 570	1825 41 625	1800 41 685	1740 43 695

*DD2C100A9V5VA 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
3.0	LOW (350 CFM/TON)	ON	ON	OFF	ON	CFM WATTS	1025 125	1050 165	1035 195	1030 250	1005 285
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	1185 165	1180 210	1180 250	1190 315	1190 365
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1300 200	1345 280	1355 325	1375 405	1370 450
3.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1195 165	1185 215	1200 270	1200 320	1190 370
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1360 230	1390 315	1425 380	1420 430	1420 495
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1560 320	1595 425	1595 460	1595 540	1570 585
4.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1350 235	1385 300	1410 375	1420 425	1410 495
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1575 340	1615 420	1625 495	1610 545	1585 595
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1800 480	1795 555	1790 620	1760 670	1690 675
5.0 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1745 440	1760 515	1755 595	1735 640	1670 660
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	2010 630	2000 700	1940 745	1865 740	1760 725
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	2205 830	2130 835	2015 800	1890 760	1740 720

NOTES:
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:

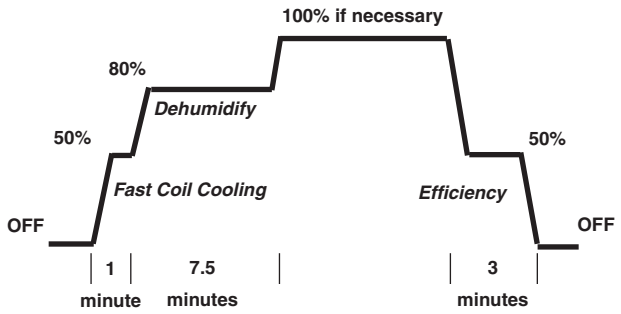
** - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

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	Downflow / Horizontal
RATINGS 2	
1st Stage Input BTUH	65,000
1st Stage Capacity BTUH (ICS) **3**	52,000
2nd Stage Input BTUH	100,000
2nd Stage Capacity BTUH (ICS) **3**	81,000
Temp. rise (Min.-Max.) °F.	35 - 65
BLOWER DRIVE	DIRECT
Diameter-Width (In.)	11 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 PSC [Shaded Pole] - RPM	1/75 / [1/145] - 2708/1868
Volts / Ph / Hz	115/1/60
FLA PSC [Shaded pole]	0.87/0.49 / [0.22/0.20]
FILTER — Furnished?	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.) Shipped	2 - 16 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	5 — 45
L.P. Gas Qty. — Drill Size	5 — 56
GAS VALVE	Redundant - Two Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Ignition
BURNERS — Type	Multiport Inshot
Number	5
POWER CONN. — V/Ph/Hz ④	115/1/60
Ampacity (In Amps)	14.9
Max. Overcurrent Protection (amps)	20
PIPE CONN. SIZE (IN.)	1/2
DIMENSIONS	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
WEIGHT	
Shipping (Lbs.) / Net (Lbs)	166 / 155

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.

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.	TDD2C100A9V-SUB-1B
Supersedes	TDD2C100A9V-SUB-1A