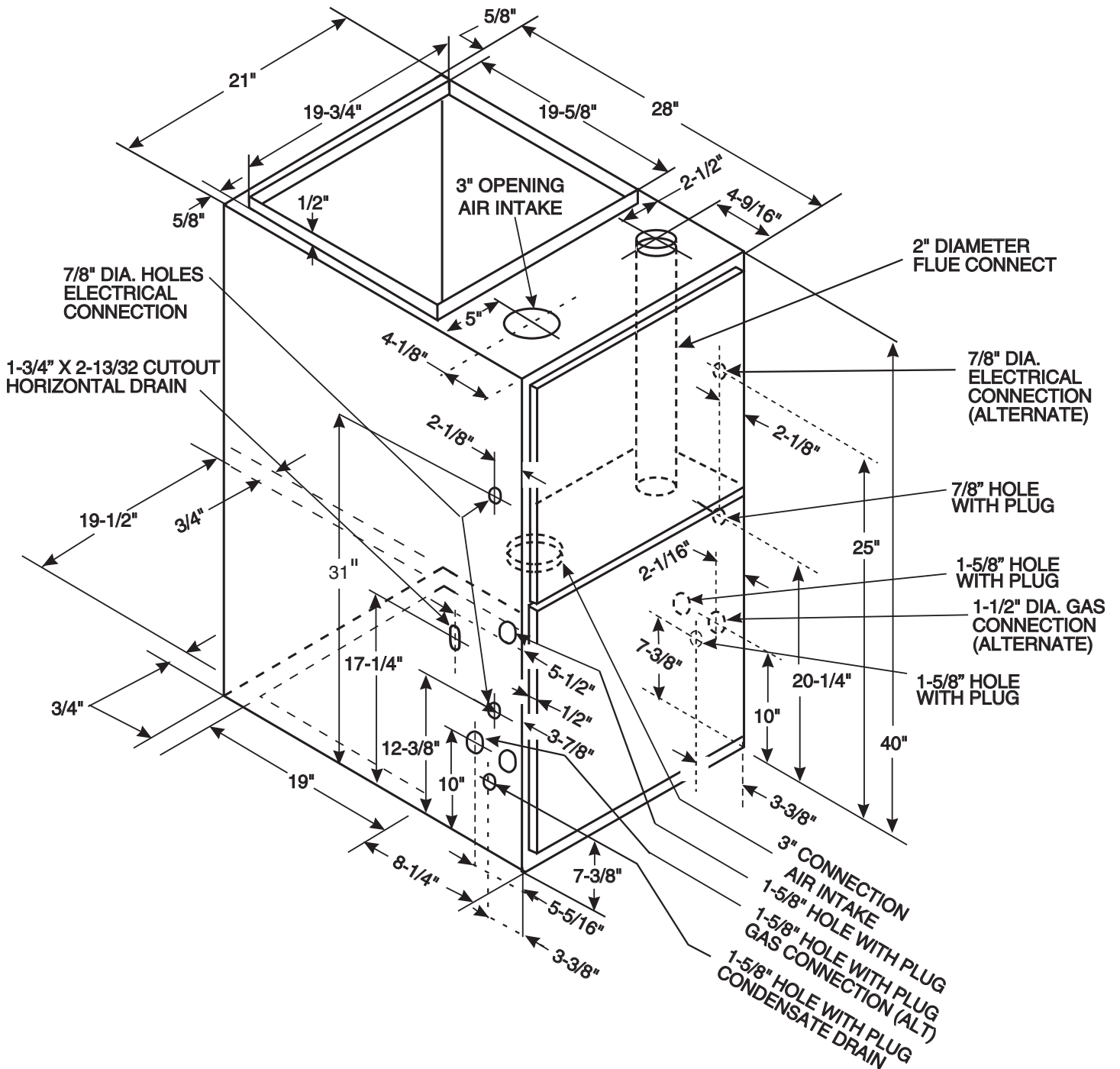


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# SUBMITTAL

**TDH2C100A9V4VB**  
**ADH2C100A9V4VB**

**Downflow/Horizontal  
 Direct Vent Gas Furnace  
 Variable Speed Inducer  
 2 Stage Heat**



<b>*DH2C100A9V4V - FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER</b>									
1st STAGE CAPACITY = 62,400 2nd STAGE CAPACITY = 96,000									
	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	923 61 110	955 59 165	960 58 210	958 58 265	947 59 310
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1020 55 145	1047 53 190	1053 53 250	1042 54 295	1029 54 350
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1156 48 185	1166 48 240	1172 48 300	1177 48 350	1178 48 420
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1275 44 225	1305 43 290	1328 42 365	1328 42 445	1328 42 510
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1298 66 235	1320 65 305	1335 65 380	1343 64 445	1343 64 520
	MEDIUM LOW	OFF	ON	CFM TEMP. RISE WATTS	1439 60 310	1459 59 390	1482 58 470	1483 58 550	1470 59 610
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1639 53 430	1650 52 525	1650 52 600	1644 52 680	1496 58 640
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1790 18 570	1818 47 670	1813 47 770	1708 50 750	1535 56 675

NOTES: \* - First letter may be "A" or "T"  
 \*\* Factory setting  
 \*\*\* Above MAX temperature change

<b>*DH2C100A9V4V - FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER</b>											
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	870 100	885 140	887 185	881 230	876 270
	NORMAL (400 CFM/TON)	ON	ON	OFF	OFF	CFM WATTS	989 120	1018 180	1016 230	1012 285	999 325
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1124 175	1139 225	1130 275	1135 335	1135 390
3.0	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1053 145	1075 200	1070 245	1070 295	1049 350
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1186 195	1205 255	1220 310	1220 370	1216 440
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM WATTS	1336 255	1366 340	1383 405	1385 470	1381 545
3.5	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1216 190	1225 255	1235 320	1240 385	1243 445
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1394 270	1422 360	1436 430	1437 505	1430 580
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1579 395	1604 475	1610 555	1599 645	1517 640
4.0	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1377 270	1412 355	1426 430	1433 510	1428 575
	NORMAL (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1599 425	1624 510	1636 585	1618 670	1512 635
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1801 580	1818 690	1815 775	1694 735	1525 660

NOTES: \* - First letter may be "A" or "T"  
 1. At continuous fan setting: Heating or Cooling airflows are approximately 50% of selected cooling value.  
 2. LOW airflow (350 cfm/ton) is COMFORT & HUMID CLIMATE setting;  
 NORMAL airflow (400 cfm/ton) is typical setting;  
 HIGH airflow (450 cfm/ton) is DRY CLIMATE setting.

## INDOOR BLOWER TIMING

**Heating:** The ICM 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 ICM 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:

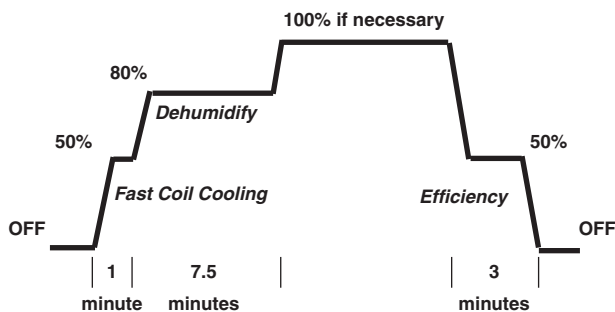
\*\* - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

### 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 <sup>①</sup>

<b>MODEL</b>	TDH2C100A9V4VB ADH2C100A9V4VB
<b>TYPE</b>	Downflow / Horizontal
<b>RATINGS <sup>②</sup></b>	
1st Stage Input BTUH	65,000
1st Stage Capacity BTUH (ICS) <sup>③</sup>	62,400
2nd Stage Input BTUH	100,000
2nd Stage Capacity BTUH (ICS) <sup>③</sup>	96,000
AFUE	96.0
Temp. rise (Min.-Max.) °F.	35 - 65
<b>BLOWER DRIVE</b>	DIRECT
Diameter - Width (In.)	10 x 10
No. Used	1
Speeds (No.)	Variable
CFM vs. in. w.g.	See Fan Performance Table
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 - Variable
Motor HP - RPM	1/50 - 5000
Volts/Ph/Hz	33 - 110/3/60 - 180
FLA	1.0
<b>FILTER — Furnished?</b>	Yes
Type Recommended	High Velocity
Hi Vel. (No.-Size-Thk.)	2 - 16x20 - 1 in.
<b>VENT — Size (in.)</b>	3 Round
<b>HEAT EXCHANGER</b>	
Type - Fired	Aluminized Steel - Type I
-Unfired	
Gauge (Fired)	20
<b>ORIFICES — Main</b>	
Nat. Gas Qty. — Drill Size	5 — 45
L.P. Gas Qty. — Drill Size	5 — 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>	
Type	Hot Surface Igniter
<b>BURNERS — Type</b>	Multiport Inshot
Number	5
<b>POWER CONN. — V/Ph/Hz <sup>④</sup></b>	115/1/60
Ampacity (In Amps)	13.2
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
<b>WEIGHT</b>	
Shipping (Lbs.)/Net (Lbs)	185 / 175

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

## 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 additional 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 a positive discharge of gas fumes to the outside.

## BURNERS

Multiport Inshot 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. Also contains connection points for E.A.C./Humidifier.

## ENERGY EFFICIENT OPERATION

Furnace is certified to leak 2% 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. The blower door safety switch will prevent or terminate furnace operation when the blower door is removed.

## 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 instead.

## 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. Built-in bottom pan and alternate bottom, left or right side return air connection provision.

## FEATURES AND GENERAL OPERATION

The High Efficiency Gas Furnaces utilize an Adaptive Heat Up 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 switch.

The manufacturer has a policy of continuous product and product data improvement and reserves the right to change specifications and design without notice.

**Ingersoll Rand**  
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Tyler, TX 75707-9010

