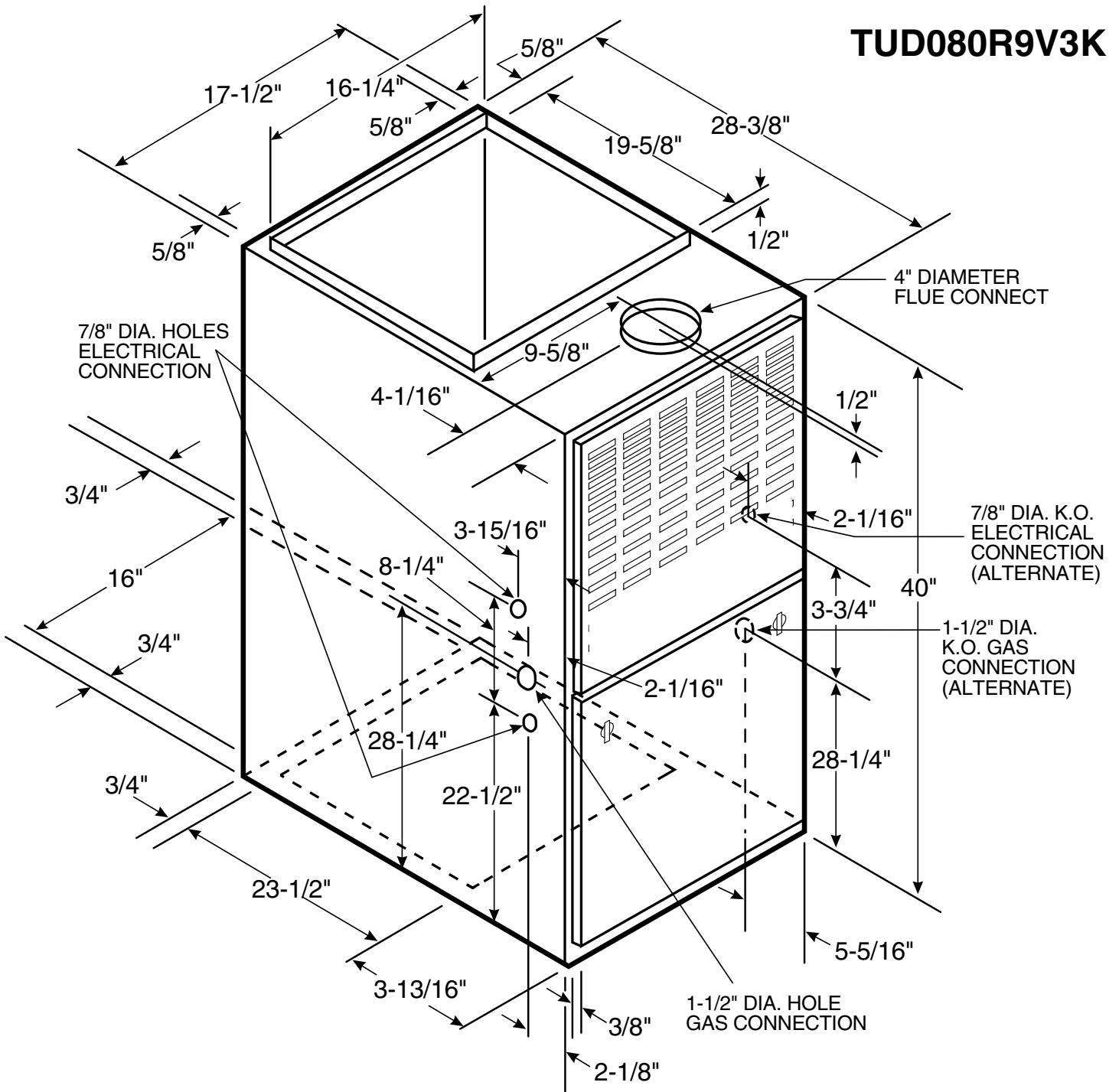


TAG: \_\_\_\_\_

# SUBMITTAL

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

**TUD080R9V3K**


*UD080R9V3K 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	800 48 100	790 49 135	765 50 155	750 52 200	730 53 230
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	910 43 130	890 44 170	875 44 210	860 45 240	820 47 280
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1060 37 188	1020 38 220	1010 39 265	1010 39 310	1000 39 350
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1110 54 210	1090 55 260	1090 55 310	1080 55 350	1065 56 400
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1245 48 300	1240 48 355	1240 48 410	1230 48 460	1215 49 500
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1415 42 410	1400 42 470	1400 42 530	1375 43 580	1320 45 590

*UD080R9V3K 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)	OFF	ON	OFF	ON	CFM WATTS	880 120	875 155	860 190	845 225	840 245
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1020 170	1000 205	990 240	980 280	960 320
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1110 210	110 260	1110 320	1100 350	1100 385
3.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1040 190	1010 220	1000 260	1000 310	990 340
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1200 250	1200 320	1190 370	1190 415	1175 450
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1340 355	1340 425	1330 475	1320 530	1300 570
3.5 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1215 265	1210 330	1210 375	1200 430	1185 465
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1430 415	1415 457	1410 520	1385 575	1330 580
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	1430 415	1415 475	1410 520	1385 575	1330 580

NOTES:

- \*\* Factory setting
- Continuous Fan Setting: Heating or Cooling airflow is approximately 50% of selected Cooling value.
- For Variable Speed: low speed airflows are approximately 30% of listed values.
- 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:

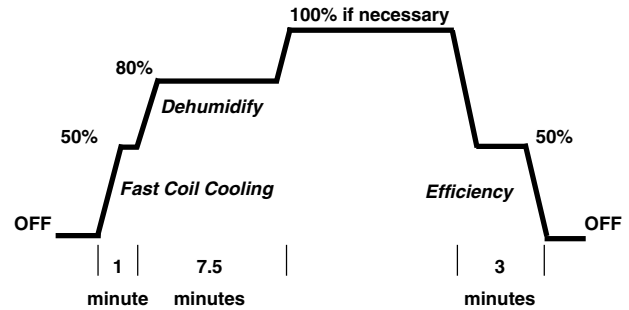
\*\* - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

## 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
<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 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
<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 - 17 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)	10.5
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 19-1/2 x 30-1/2
Uncrated (In.)	40 x 17-1/2 x 28-1/2
<b>WEIGHT</b>	
Shipping (Lbs.) / Net (Lbs)	142 / 132

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 Trane 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.

Trane  
6200 Troup Highway  
Tyler, TX 75707  
www.trane.com



Library	-
Product Section	Furnaces
Product	Furnace
Model	TUD-R9V
Literature Type	Submittal
Sequence	-
Date	02/08
File No.	TUD080R9V-SUB-1
Supersedes	TUD080R9V3K