

*UD140R9V5K 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	1090 62 130	1100 61 175	1070 63 215	1080 62 255	1060 63 290
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1230 55 180	1265 53 235	1280 53 315	1300 52 380	1300 52 455
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	1380 49 235	1405 48 290	1425 47 375	1430 47 415	1450 47 520
HEATING 2ND STAGE	LOW	ON	ON	CFM TEMP. RISE WATTS	1545 67 320	1550 67 385	1560 67 475	1560 67 540	1575 66 605
	MEDIUM **	ON	OFF	CFM TEMP. RISE WATTS	1760 59 435	1790 58 545	1810 58 620	1800 58 695	1725 60 725
	HIGH	OFF	OFF	CFM TEMP. RISE WATTS	2000 52 615	2010 52 715	2000 52 790	1950 54 820	1800 58 775

*UD140R9V5K 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
3.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM WATTS	1175 165	1165 200	1180 265	1170 320	1150 400
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM WATTS	1345 225	1370 285	1400 360	1405 440	1380 490
	HIGH (450 CFM/TON)	ON	ON	ON	OFF	CFM WATTS	1525 295	1565 390	1585 470	1575 515	1530 585
4.0	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM WATTS	1320 220	1330 275	1335 355	1300 435	1240 490
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM WATTS	1550 310	1580 400	1590 475	1555 540	1460 610
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM WATTS	1735 430	1735 510	1710 600	1670 675	1590 710
5.0 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM WATTS	1700 415	1725 470	1730 560	1725 640	1690 700
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM WATTS	1980 616	1980 710	1950 770	1885 780	1735 735
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM WATTS	2190 835	2150 870	2075 890	1905 800	1735 735

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:

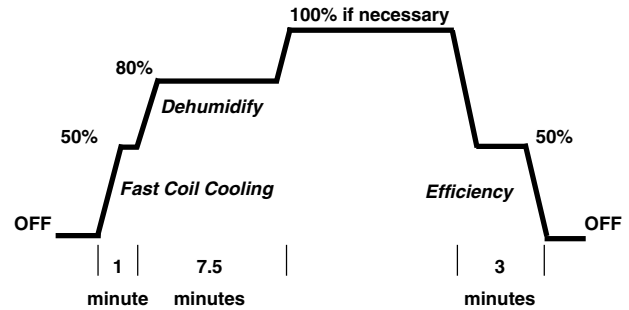
** - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

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
RATINGS 2	
1st Stage Input BTUH	91,000
1st Stage Capacity BTUH (ICS) 3	72,800
2nd Stage Input BTUH	140,000
2nd Stage Capacity BTUH (ICS) 3	111,000
Temp. rise (Min.-Max.) °F.	40 - 70
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
COMBUSTION FAN - Type	
	Centrifugal
Drive - No. Speeds	Direct - 2
Motor HP - RPM	1/60 - 3100 / 2350
Volts/Ph/Hz	115/1/60
F.L. Amps	1.16 / 0.54
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	7 — 45
L.P. Gas Qty. — Drill Size	7 — 56
GAS VALVE	Redundant - Two Stage
PILOT SAFETY DEVICE	
Type	Hot Surface Ignition
BURNERS — Type	
	Multiport Inshot
Number	7
POWER CONN. — V/Ph/Hz ④	
	115/1/60
Ampacity (In Amps)	15.3
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)	197 / 185

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
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Library	-
Product Section	Furnaces
Product	Furnace
Model	TUD-R9V
Literature Type	Submittal
Sequence	-
Date	02/08
File No.	TUD140R9V-SUB-1
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