



<b>*UD120R9V5K FURNACE HEATING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER</b>									
	AIRFLOW SETTING	DIP SWITCH SETTING			EXTERNAL STATIC PRESSURE				
		SW7	SW8		0.1	0.3	0.5	0.7	0.9
HEATING 1ST STAGE	LOW	ON	ON	CFM	1007	1062	1084	1063	1063
				TEMP. RISE	57	54	53	54	54
				WATTS	114	177	285	303	350
	MEDIUM **	ON	OFF	CFM	1154	1211	1211	1221	1212
				TEMP. RISE	50	48	48	47	48
				WATTS	167	230	277	344	417
	HIGH	OFF	OFF	CFM	1288	1319	1310	1349	1358
				TEMP. RISE	45	44	44	43	43
				WATTS	208	273	330	410	460
HEATING 2ND STAGE	LOW	ON	ON	CFM	1387	1421	1455	1488	1495
				TEMP. RISE	64	63	61	60	59
				WATTS	250	320	400	460	540
	MEDIUM **	ON	OFF	CFM	1589	1637	1666	1678	1541
				TEMP. RISE	56	54	53	53	58
				WATTS	350	440	535	600	575
	HIGH	OFF	OFF	CFM	1771	1788	1804	1751	1554
				TEMP. RISE	50	50	49	51	57
				WATTS	475	560	650	675	590

<b>*UD120R9V5K FURNACE COOLING AIRFLOW (CFM) AND POWER (WATTS) VS. EXTERNAL STATIC PRESSURE WITH FILTER</b>											
OUTDOOR UNIT SIZE (TONS)	AIRFLOW SETTING (See Notes)	DIP SWITCH SETTING					EXTERNAL STATIC PRESSURE				
		SW1	SW2	SW3	SW4		0.1	0.3	0.5	0.7	0.9
3.5	LOW (350 CFM/TON)	OFF	ON	OFF	ON	CFM	1195	1243	1235	1251	1251
						WATTS	150	225	275	325	410
	NORMAL (400 CFM/TON)	OFF	ON	OFF	OFF	CFM	1353	1403	1417	1437	1458
						WATTS	210	290	370	425	485
	HIGH (450 CFM/TON)	OFF	ON	ON	OFF	CFM	1554	1572	1615	1634	1567
						WATTS	315	410	480	570	575
4	LOW (350 CFM/TON)	ON	OFF	OFF	ON	CFM	1356	1391	1399	1433	1454
						WATTS	200	280	370	420	510
	NORMAL (400 CFM/TON)	ON	OFF	OFF	OFF	CFM	1565	1584	1633	1639	1554
						WATTS	320	410	475	560	575
	HIGH (450 CFM/TON)	ON	OFF	ON	OFF	CFM	1766	1799	1810	1784	1590
						WATTS	450	550	650	685	600
5 **	LOW (350 CFM/TON)	OFF	OFF	OFF	ON	CFM	1708	1758	1759	1775	1575
						WATTS	420	530	585	675	585
	NORMAL ** (400 CFM/TON)	OFF	OFF	OFF	OFF	CFM	1994	2018	1971	1814	1618
						WATTS	665	775	785	725	625
	HIGH (450 CFM/TON)	OFF	OFF	ON	OFF	CFM	2247	2152	2019	1861	1693
						WATTS	975	925	860	765	680

- NOTES: "CONTINUOUS FAN SETTING" IS THERMOSTAT FAN SWITCH "ON" AND DIP SWITCHES 5 AND 6 "ON".
- \*FIRST LETTER MAY BE "A" OR "T"
  - \*\*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:

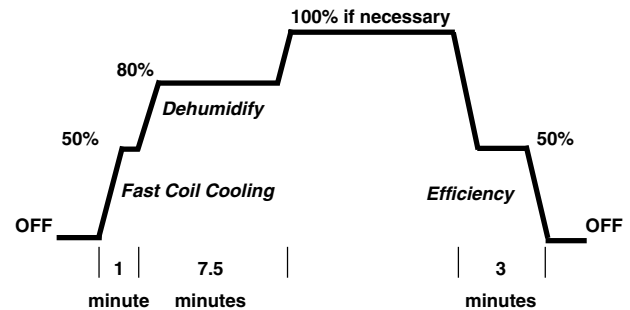
\*\* - This selection provides a ramping up and ramping down of the blower speed to provide improved comfort, quietness, and potential energy savings. The graph below shows the ramping process.

## 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	78,000
1st Stage Capacity BTUH (ICS) 3	62,400
2nd Stage Input BTUH	120,000
2nd Stage Capacity BTUH (ICS) 3	97,000
Temp. rise (Min.-Max.) °F.	35 - 65
<b>BLOWER DRIVE</b>	
Diameter-Width (In.)	DIRECT 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
<b>COMBUSTION FAN - Type</b>	
Drive - No. Speeds	Centrifugal Direct - 2
Motor HP - RPM	1/60 - 3090 / 2225
Volts/Ph/Hz	115/1/60
F.L. Amps	1.14 / 0.51
<b>FILTER — Furnished?</b>	
Type Recommended	Yes High Velocity
Hi Vel. (No.-Size-Thk.) Shipped	1 - 24 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	6 — 45
L.P. Gas Qty. — Drill Size	6 — 56
<b>GAS VALVE</b>	Redundant - Two Stage
<b>PILOT SAFETY DEVICE</b>	
Type	Hot Surface Ignition
<b>BURNERS — Type</b>	
	Multiport Inshot
Number	6
<b>POWER CONN. — V/Ph/Hz ④</b>	
	115/1/60
Ampacity (In Amps)	15.3
Max. Overcurrent Protection (amps)	20
<b>PIPE CONN. SIZE (IN.)</b>	
	1/2
<b>DIMENSIONS</b>	
	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
<b>WEIGHT</b>	
Shipping (Lbs.) / Net (Lbs)	193 / 181

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.

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Tyler, TX 75707  
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Library	-
Product Section	Furnaces
Product	Furnace
Model	TUD-R9V
Literature Type	Submittal
Sequence	-
Date	02/08
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