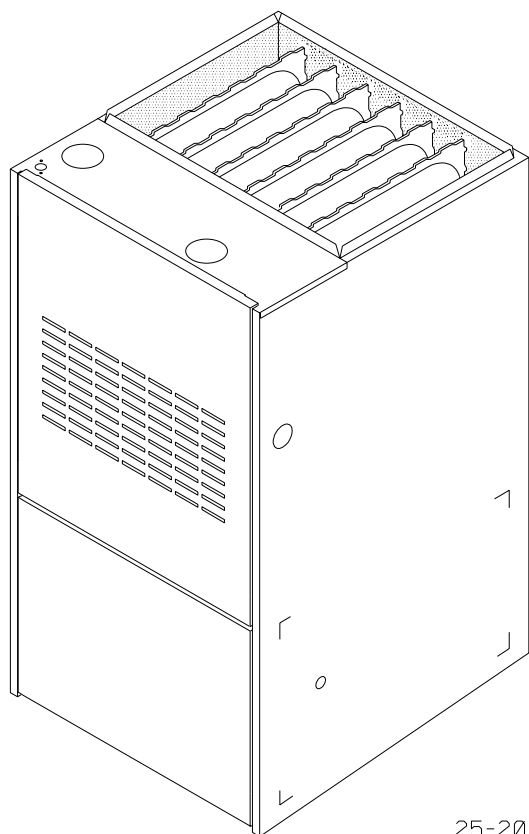


Technical Support Manual



25-20-66

Models

NTVM050FFA1
NTVM075GFA1
NTVM100HJA1
NTVM125KNA1

VNK050F12A1
VNK075F14A1
VNK100J16A1
VNK125N20A1

Manufactured by:

International Comfort Products Corporation (USA)
Lewisburg, TN USA 37091

Condensing Gas Furnaces



Save This Manual For Future Reference

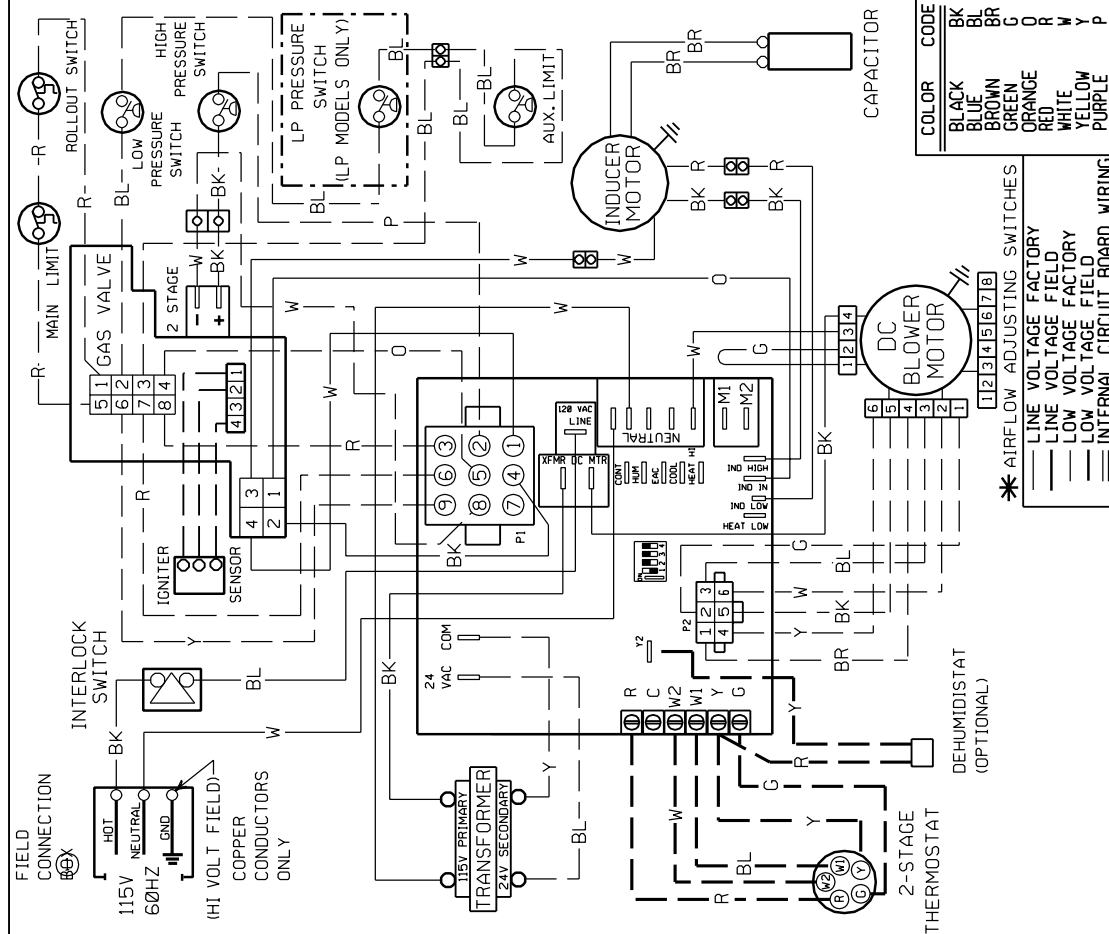
Manufacturers Number (Mfr No -See Rating Plate)							NTVM050FFA1/VNK050F12A				
Specifications							Circulation Air Blower Data				
GENERAL	Gas Type	Nat		LP		Hi Fire	Lo Fire	Type & Size Motor Amps/RPM Motor Type/ H.P.	10-8 4 6/1050 DC ¹ /2	Filt Type Filt Size (") Min. Cool Cap. (Tons) Max. Cool Cap. (Tons)	Washable 16x25x1 1.5 3
	Input (Btuh) Std/Alt.	Hi Fire 50,000	Lo Fire 35,000	Hi Fire 50,000	Lo Fire 35,000						
	Output (Btuh) Std/Alt.	47,000	33,000	47,000	33,000						
	Temp. Rise (°F)	40-70	40-70	40-70	30-60						
GAS & IGNITION	Electrical (Volts/Hz/FLA)	115/60/5.3		115/60/5.3							
	Transformer Size (VA)	40		40							
	T'stat Heat Anticipator	.10		.10							
	Gas Valve Regulation Type	HW SV9540 SNAP		HW SV9540 SNAP							
COMBUSTION	Manifold Press. (" WC)	3.5	1.7	10.0	4.9						
	Std. Main Orifices (No/Size)	2/#42		2/#54							
	Pilot Orifice Size	.018		.011							
	Ignition Type/Series	HW HSP		HW HSP							
LIMITS & CONTROLS	Lock-Out Time	---		---							
	Flue Outlet Size (")	2		2							
	Std. Outlet Temp (°F)	<140		<140							
	Comb. Blower (MFD/Volts)	4/370		4/370							
LIMITS & CONTROLS	Std. Pressures (" of WC)	@Blower	@Transition	@Burner Box	Differential						
	5' No Elbows	-2.30	-1.56	-1.10	-.04	-2.2	-1.52				
	40' +5-90° DWV Elbows	-2.20	-1.52	-2.20	-.14	-2.0	-1.38				
	Rollout Switch	250		250							
LIMITS & CONTROLS	Limit Control Setting (°F)	160		160							
	Auxiliary Limit (°F)	130		130							
	Fan Control (Type)	HW ST9162A		HW ST9162A							
	Fan Control (On/Off)	30/60		30/60							
LIMITS & CONTROLS	(Timed-Secs)	60,100,140,180		60,100,140,180							
	Std. Pressure Sw. (Part No)	1010895	1011778	1010895	1011778						
	Press Differential (Close)	1.62	1.08	1.62	1.08						
	Press Differential (Open)	1.38	.90	1.38	.90						
LIMITS & CONTROLS	High Alt. Pressure Sw. (Part No)	1008817	1011777	1008817	1011777						
	Press Differential (Close)	1.40	.86	1.40	.86						
	Press Differential (Open)	1.18	.70	1.18	.70						

Manufacturers Number (Mfr No -See Rating Plate)								NTVM075GFA1/VNK075F14A					
Specifications								Circulation Air Blower Data					
GENERAL	Gas Type	Nat		LP		Hi Fire	Lo Fire	Type & Size Motor Amps/RPM Motor Type/ H.P.	10-8 6.8/1050 DC/1/2	Filt Type Filt Size (") Min. Cool Cap. (Tons) Max. Cool Cap. (Tons)	Washable 16x25x1 2 3.5		
	Input (Btuh) Std/Alt.	Hi Fire 75,000	Lo Fire 53,000	Hi Fire 75,000	Lo Fire 53,000								
	Output (Btuh) Std/Alt.	70,500	49,800	70,500	49,800								
	Temp. Rise (°F)	40-70	40-70	40-70	40-70								
GAS & IGNITION	Electrical (Volts/Hz/FLA)	115/60/7.5		115/60/7.5									
	Transformer Size (VA)	40		40									
	T'stat Heat Anticipator	.10		.10									
	Gas Valve	HW SV9540		HW SV9540									
COMBUSTION <td>Regulation Type</td> <td colspan="2">SNAP</td> <td colspan="2">SNAP</td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td>	Regulation Type	SNAP		SNAP									
	Manifold Press. (" WC)	3.5	1.7	10.0	4.9								
	Std. Main Orifices (No/Size)	2/#42		2/#54									
	Pilot Orifice Size	.018		.011									
LIMITS & CONTROLS	Ignition Type/Series	HW HSP		HW HSP									
	Lock-Out Time	---		---									
	Flue Outlet Size (")	2,2 1/2,3		2,2 1/2,3									
	Std. Outlet Temp (°F)	<140		<140									
LIMITS & CONTROLS <td>Comb. Blower (MFD/Volts)</td> <td colspan="2">4/370</td> <td colspan="2">4/370</td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td> <td rowspan="4"></td>	Comb. Blower (MFD/Volts)	4/370		4/370									
	Std. Pressures (" of WC)	@Blower	@Transition	@Burner Box	Differential								
	5' No Elbows	-2.30	-.98	-.10	-.08							-2.2	-.90
	40' +5-90° DWV Elbows	-2.05	-.95	-.15	-.15							-1.9	-.80
LIMITS & CONTROLS	Rollout Switch	200		200									
	Limit Control Setting (°F)	190		190									
	Auxiliary Limit (°F)	130		130									
	Fan Control (Type)	HW ST9162A		HW ST9162A									
LIMITS & CONTROLS	Fan Control	30/60		30/60									
	(Timed-Secs)	60,100,140,180		60,100,140,180									
	Std. Pressure Sw. (Part No)	1010895	1011776	1010895	1011776								
	Press Differential (Close)	1.62	.65	1.62	.65								
LIMITS & CONTROLS	Press Differential (Open)	1.38	.50	1.38	.50								
	High Alt. Pressure Sw. (Part No)	1008817	1010943	1008817	1010943								
	Press Differential (Close)	1.40	.52	1.40	.52								
	Press Differential (Open)	1.18	.37	1.18	.37								

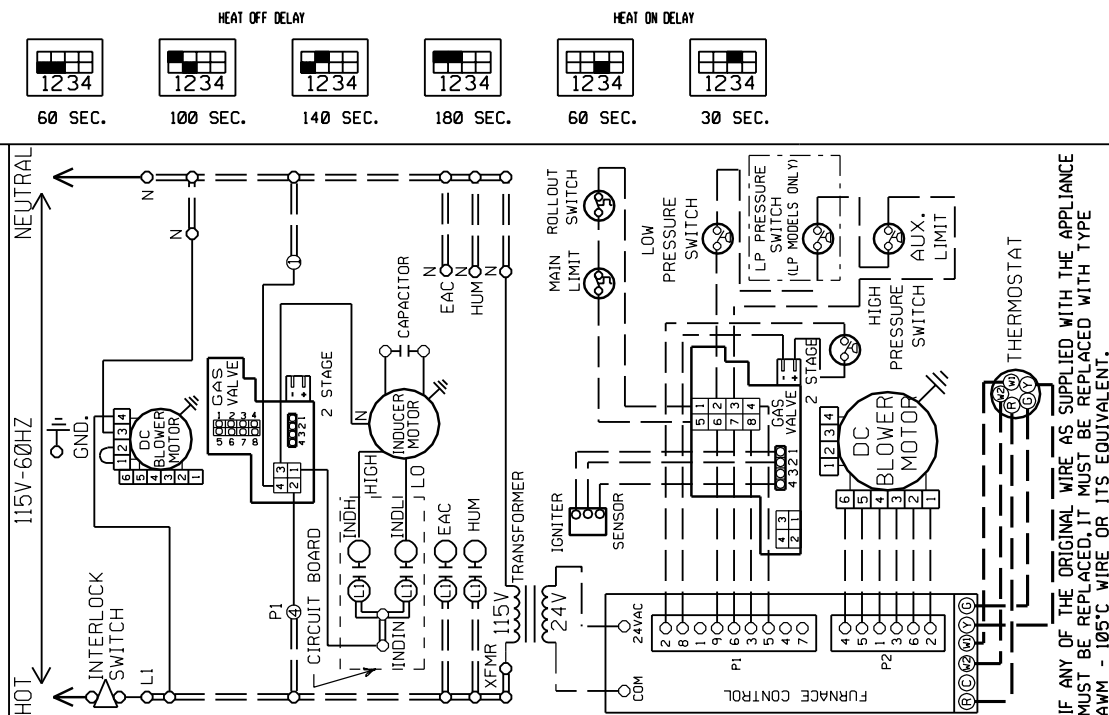
Manufacturers Number (Mfr No -See Rating Plate)								NTVM100HJA1/VNK100J16A			
Specifications								Circulation Air Blower Data			
GENERAL	Gas Type	Nat		LP		Hi Fire	Lo Fire	Type & Size Motor Amps/RPM Motor Type/ H.P.	10-10 8.5/1050 DC/1	Filt Type Filt Size ("") Min. Cool Cap. (Tons) Max. Cool Cap. (Tons)	Washable 16x25x1 2 4
		Hi Fire	Lo Fire	Hi Fire	Lo Fire						
	Input (Btuh) Std/Alt.	100,000	70,000	100,000	70,000						
	Output (Btuh) Std/Alt.	94,000	68,800	94,000	68,800						
	Temp. Rise (°F)	40-70	40-70	40-70	40-70						
	Electrical (Volts/Hz/FLA)	115/60/9.2		115/60/9.2							
	Transformer Size (VA)	40		40							
	T'stat Heat Anticipator	.10		.10							
GAS & IGNITION	Gas Valve	HW SV9540		HW SV9540							
	Regulation Type	SNAP		SNAP							
	Manifold Press. (" WC)	3.5	1.7	10.0	4.9						
	Std. Main Orifices (No/Size)	2/#42		2/#54							
	Pilot Orifice Size	.018		.011							
COMBUSTION	Ignition Type/Series	HW HSP		HW HSP							
	Lock-Out Time	---		---							
	Flue Outlet Size ("")	2,2 ¹ / ₂ ,3		2,2 ¹ / ₂ ,3							
	Std. Outlet Temp (°F)	<140		<140							
	Comb. Blower (MFD/Volts)	4/370		4/370							
	Std. Pressures (" of WC)	@Blower @Transition		@Burner Box		Differential					
	5' No Elbows	-2.40	-1.36	-1.10	-.06	-2.3	-1.30				
	40' +5-90° DWV Elbows	-1.98	-1.22	-2.20	-.18	-1.78	-1.22				
LIMITS & CONTROLS	Rollout Switch	200		200							
	Limit Control Setting (°F)	170		170							
	Auxiliary Limit (°F)	130		130							
	Fan Control (Type)	HW ST9162A		HW ST9162A							
	Fan Control	30/60		30/60							
	(Timed-Secs)	60,100,140,180		60,100,140,180							
	Std. Pressure Sw. (Part No)	1010895	1011777	1010895	1011777						
	Press Differential (Close)	1.62	.86	1.62	.86						
	Press Differential (Open)	1.38	.70	1.38	.70						
	High Alt. Pressure Sw. (Part No)	1008817	1011776	1008817	1011776						
	Press Differential (Close)	1.40	.65	1.40	.65						
	Press Differential (Open)	1.18	.50	1.18	.50						

Manufacturers Number (Mfr No -See Rating Plate)								NTVM125KNA1/VNK125N20A			
Specifications								Circulation Air Blower Data			
GENERAL	Gas Type	Nat		LP		Hi Fire	Lo Fire	Type & Size Motor Amps/RPM Motor Type/ H.P.	11.8-10.6 9.8/900 DC/1	Filt Type Filt Size ("") Min. Cool Cap. (Tons) Max. Cool Cap. (Tons)	Washable (2)16x25x1 2 5
		Hi Fire	Lo Fire	Hi Fire	Lo Fire						
	Input (Btuh) Std/Alt.	125,000	87,500	125,000	87,500						
	Output (Btuh) Std/Alt.	119,300	80,500	119,300	80,500						
	Temp. Rise (°F)	45-75	45-75	45-75	45-75						
	Electrical (Volts/Hz/FLA)	115/60/10.5		115/60/10.5							
	Transformer Size (VA)	40		40							
	T'stat Heat Anticipator	.10		.10							
GAS & IGNITION	Gas Valve	HW SV9540		HW SV9540							
	Regulation Type	SNAP		SNAP							
	Manifold Press. (" WC)	3.5	1.7	10.0	4.9						
	Std. Main Orifices (No/Size)	5/#42		5/#54							
	Pilot Orifice Size	.018		.011							
COMBUSTION	Ignition Type/Series	HW HSP		HW HSP							
	Lock-Out Time	---		---							
	Flue Outlet Size ("")	3		3							
	Std. Outlet Temp (°F)	<140		<140							
	Comb. Blower (MFD/Volts)	4/370		4/370							
	Std. Pressures (" of WC)	@Blower @Transition		@Burner Box		Differential					
	5' No Elbows	-2.40	-1.76	-1.10	..08	-2.3	-1.68				
	40' +5-90° DWV Elbows	-1.98	-1.64	-2.20	-.12	-1.78	-1.52				
LIMITS & CONTROLS	Rollout Switch	200		200							
	Limit Control Setting (°F)	180		180							
	Auxiliary Limit (°F)	130		130							
	Fan Control (Type)	HW ST9162A		HW ST9162A							
	Fan Control	30/60		30/60							
	(Timed-Secs)	60,100,140,180		60,100,140,180							
	Std. Pressure Sw. (Part No)	1010895	1011778	1010895	1011778						
	Press Differential (Close)	1.62	1.08	1.62	1.08						
	Press Differential (Open)	1.38	.90	1.38	.90						
	High Alt. Pressure Sw. (Part No)	1008817	1011777	1008817	1011777						
	Press Differential (Close)	1.40	.86	1.40	.86						
	Press Differential (Open)	1.18	.70	1.18	.70						

DANGER: ELECTRICAL SHOCK HAZARD
DISCONNECT BEFORE SERVICING



1001



IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE AWM - 105°C WIRE OR ITS EQUIVALENT.

S1

COOL ON DELAY: 5 SEC
COOL OFF DELAY: 60 SEC

EAC + HUM: 0.8 A MAX. COMBINED

1011884-A

Circulation Air Blower Data - NTVM/VNK

Heating, Cooling & Continuous Airflow Settings

Continuous Blower (CFM) @ 0.10" Static

Switch Settings		Furnace Model			
#1	#2	50K	75K	100K	125K
0*	0*	600	540	700	1000
0	1	730	660	860	1260
1	0	870	780	1020	1500
1	1	1000	900	1180	1725

*Factory Setting

Heating Air Temperature Adjustment (° F)*

Switch Settings			Furnace Model			
#3	#4	#5	50K	75K	100K	125K
0**	0**	0**	0	0	0	0
0	0	1	2	3	2	3
0	1	0	4	7	4	7
0	1	1	6	12	7	11
1	0	0	9	14	11	14
1	0	1	-4	-4	-4	-5
1	1	0	-7	-9	-8	-8
1	1	1	-6	-13	-12	-13

*Approximate air temperature change from factory setting @ 0.20" static on high heat (low heat speed changes with change of high heat speed on most settings)

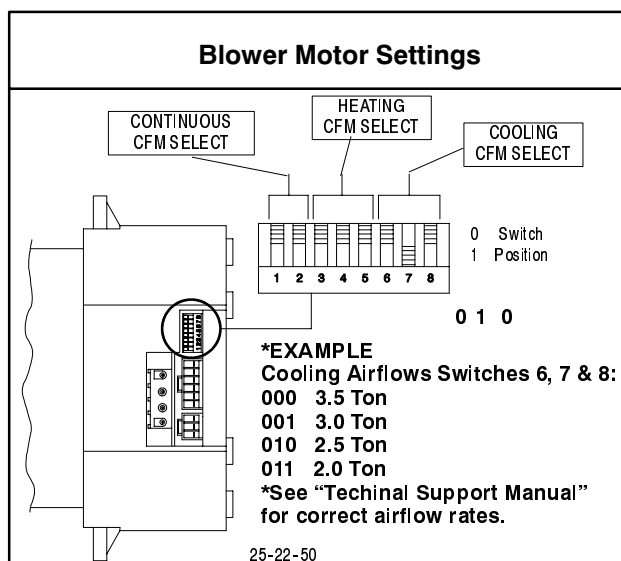
**Factory setting

Cooling (CFM) @ 0.50" Static

(See Figure 1 - 4 for complete Airflow Range)

Switch Settings			Furnace Model			
#6	#7	#8	50K	75K	100K	125K
0*	0*	0*	1200	1350	1700	2100
0	0	1	1100	1200	1650	2000
0	1	0	1000	1100	1500	1800
0	1	1	900	1000	1400	1600
1	0	0	800	900	1200	1400
1	0	1	700	800	1000	1200
1	1	0	650	600	800	1000
1	1	1	550	550	700	800

*Factory setting



Circulation Air Blower Data - NTVM/VNK

Heating, Cooling & Continuous Airflow Settings

Figure 1

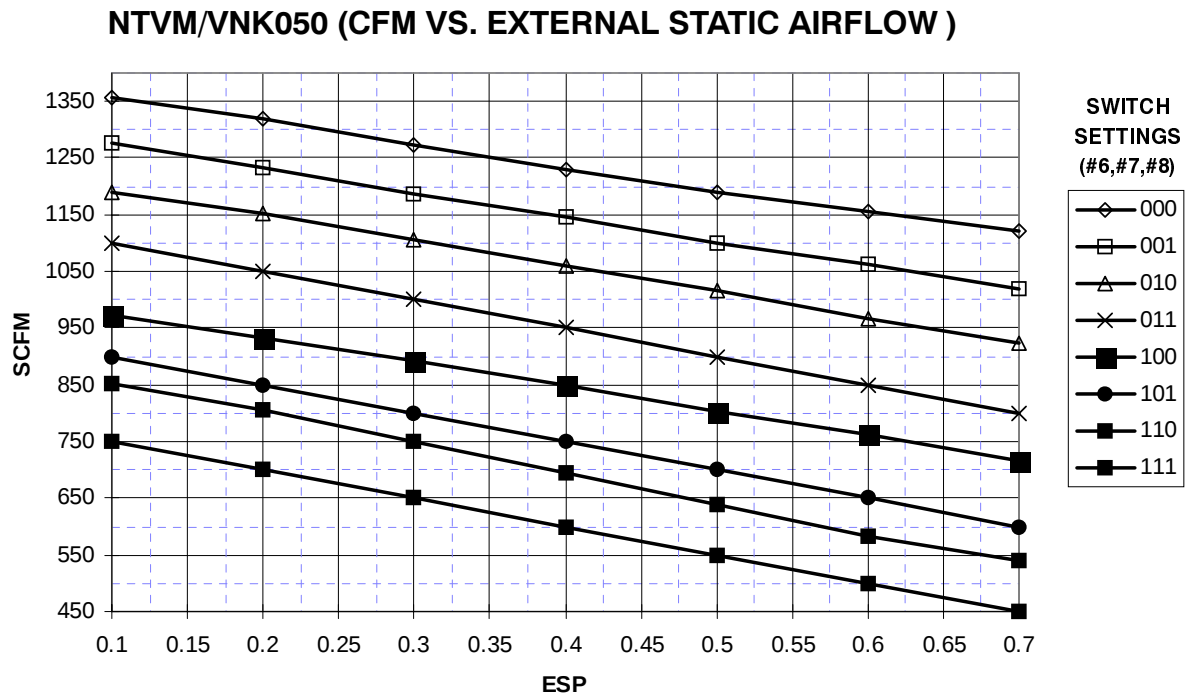
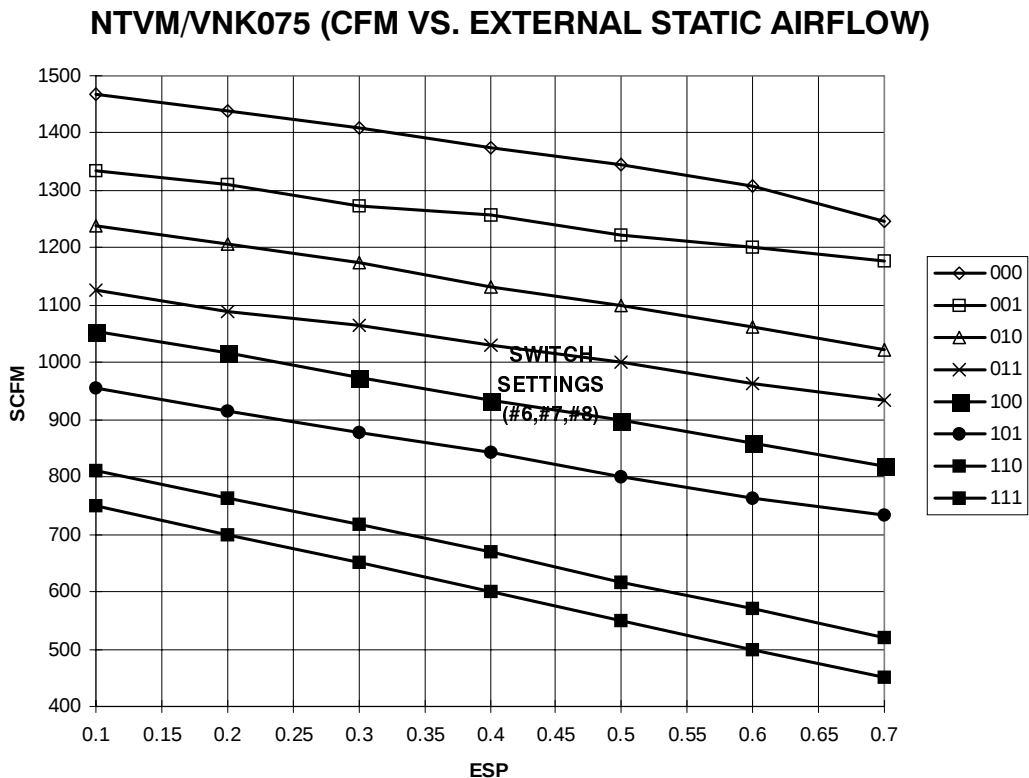


Figure 2



Circulation Air Blower Data - NTVM/VNK

Heating, Cooling & Continuous Airflow Settings

Figure 3

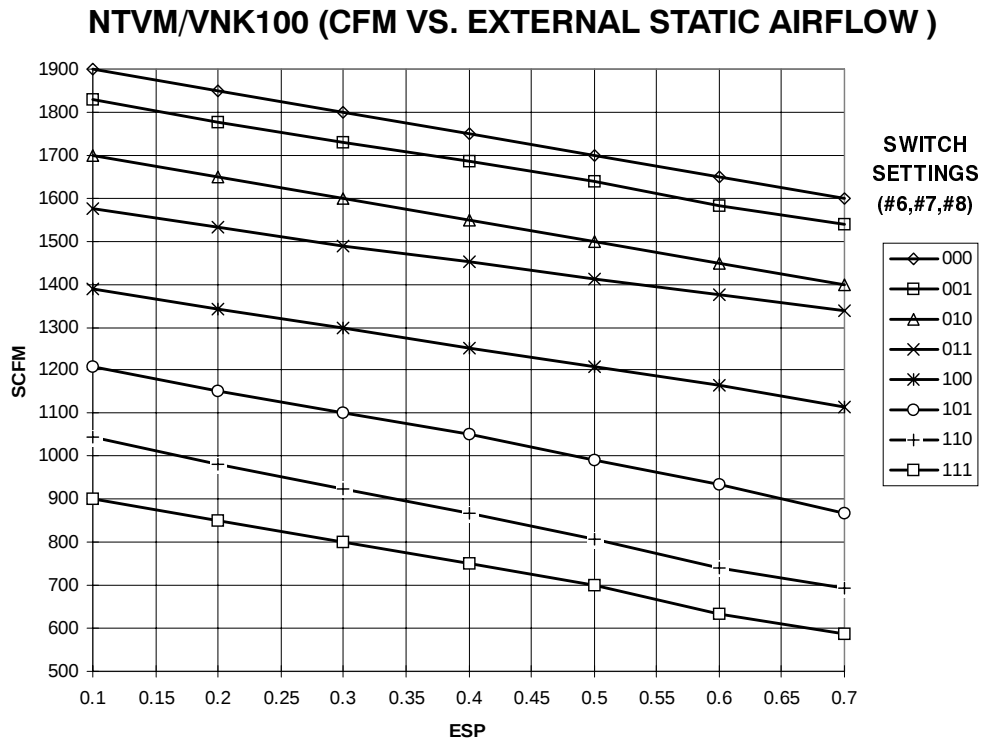
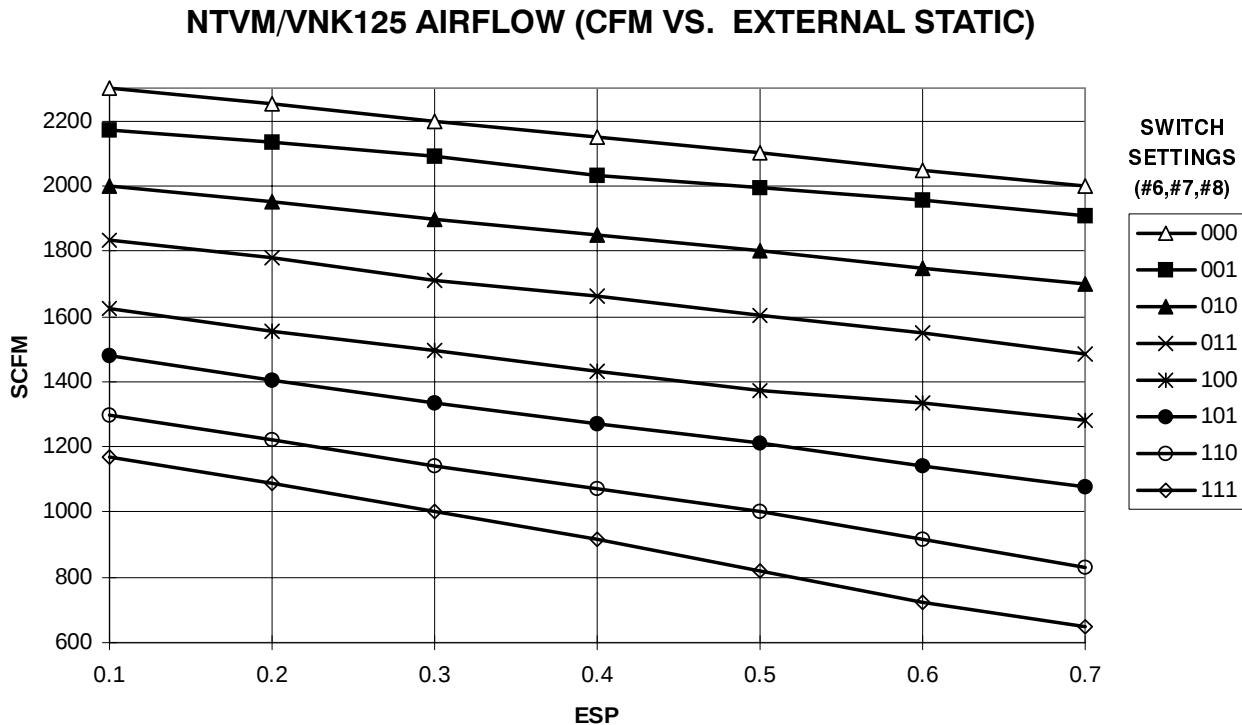


Figure 4



Replacement Parts - NTVM/VNK

Models - NTVM050FFA1, NTVM075GFA1, NTVM100HJA1, NTVM125KNA1 (Natural Gas)
 VNK050F12A, VNK075F14A, VNK100J16A, VNK125N20A (Natural Gas)

Replacement part supplied will be current active part. For parts not listed, consult place of purchase.

Key No.	Description Functional	Part Number	050	075	100	125
1	Heat Exchanger	1008876	1	-	-	-
		1008877	-	1	-	-
		1008878	-	-	1	-
		1008879	-	-	-	1
2	Coil Condenser	1011869	1	1	-	-
		1011870	-	-	1	-
		1011871	-	-	-	1
3	Wheel Blower 10-8DD	600587	1	1	-	-
	10-10DD	601210	-	-	1	-
	11-10DD	1011420	-	-	-	1
4	Motor Blower 115V 1/2 HP	1011607	1	-	-	-
	115V 1/2 HP	1011608	-	1	-	-
	115V 1 HP	1011609	-	-	1	-
	115V 1 HP	1011610	-	-	-	1
5	Mount Motor Kit	1066700	1	1	-	-
		1057955	-	-	1	-
		522020024	-	-	-	1
7	Control, Fan Timer	1011882	1	1	1	1
8	Transformer	1011626	1	1	1	1
9	Switch Door Interlock	1010886	1	1	1	1
10	Switch Pressure High Fire (right)	1010895	1	1	1	1
11	Blower Exhaust	1011631	1	1	-	-
		1012088	-	-	1	1
12	Restrictor Exh Blwr	1008696	1	-	-	-
		1011757	-	-	1	-
		1008699	-	-	-	1
		1011756	-	1	-	-
13	O Ring (Exh Blwr)	1009035	1	1	1	1
14	Washer Exh Blwr	1009037	2	2	2	2
15	Transition Asy	1011850	1	1	1	1
16	O Ring (Header Box)	1009036	1	1	1	1
17	Pressure Tap	1005606	1	1	1	1
18	Switch Limit Rollout	1005549	1	-	-	-
		1010575	-	1	1	1
19	Valve Gas Nat & LP	1011615	1	1	1	1
20	Manifold Gas	1011645	1	-	-	-
		1011646	-	1	-	-
		1011647	-	-	1	-
		1011648	-	-	-	1
21	Tube Pilot	64930	1	1	1	1
22	Orifice Burner Nat #42	1011351	2	3	4	5
	LP #54	*1011376	2	3	4	5
	High Altitude Orifice Nat #45	1011353	2	3	4	5
	LP #55	*1011354	2	3	4	5
	LP #56	*1011355	2	3	4	5
23	Igniter/Sensor with Clip	1009524	1	1	1	1
24	Pilot Burner Assembly Nat & LP	10008731	1	1	1	1
25	Orifice Pilot Nat .018	503211	1	1	1	1
	LP .011	1009136	-	-	-	-
26	Burner Asy	1008723	1	-	-	-
		1008724	-	1	-	-
		1008725	-	-	1	-
		1008726	-	-	-	1
27	Switch Limit (Main)	1010647	1	-	-	-
		34332903	-	1	-	-
		1010652	-	-	1	-
		1320547	-	-	-	1

* Only used when furnace has been converted to LP Gas

Key No.	Description Non-Functional	Part Number	050	075	100	125
A	Panel Top	1010607	1	1	-	-
		1010608	-	-	1	-
		1010609	-	-	-	1
B	Box Field Connect	1011941	1	1	1	1
C	Cover Field Connect	1010360	1	1	1	1
D	Casing	1011649	1	1	-	-
		1011650	-	-	1	-
		1011651	-	-	-	1
E	Baffle Circ Air	707010031	2	2	2	2
F	Bracket Coil	1008743	1	1	-	-
		1008745	-	-	1	-
		1008747	-	-	-	1
G	Bracket Mount Coil(RH)	1011446	1	1	1	1
H	Bracket Mount Coil(LH)	1011445	1	1	1	1
J	Rail Blower Slide	57059	2	2	2	2
K	Casing Base	1010113	1	1	-	-
		1010114	-	-	1	-
		1010115	-	-	-	1
L	Blower Partition	1010815	1	1	-	-
		1010816	-	-	1	-
		1010817	-	-	-	1
M	Panel Cutoff Blwr	721020013	1	1	-	-
		721020008	-	-	1	1
N	Housing Blower	1011680	1	1	-	-
		1011681	-	-	1	-
		1010481	-	-	-	1
O	Bracket Ctrl Board	1011819	1	1	1	1
Q	Hanger Blower	1010690	2	2	2	2
R	Partition Frt Bot	1011060	1	-	-	-
		1011061	-	1	-	-
		1011062	-	-	1	-
		1011063	-	-	-	1
S	Partition Frt Top	1011595	1	-	-	-
		1011596	-	1	-	-
		1011597	-	-	1	-
		1011598	-	-	-	1
T	Gasket Collector Box	1008676	1	1	-	-
		1008677	-	-	1	-
		1008678	-	-	-	1
U	Collector Box	1008670	1	1	-	-
		1008671	-	-	1	-
		1008672	-	-	-	1
V	Board Insul Coll Box	1008682	1	1	-	-
		1008683	-	-	1	-
		1008684	-	-	-	1
W	Cover Diaphragm	1068036	1	1	1	1
X	Diaphragm Silicone	1008763	1	1	1	1
Y	Bracket Pilot	1010901	1	1	1	1
Z	Gasket Limit Switch	1008778	1	1	1	1
AA	Door Louvered	1010184	1	1	-	-
		1010185	-	-	1	-
		1010186	-	-	-	1
BB	Door Blower	1010190	1	1	-	-
		1010192	-	-	1	-
		1011848	-	-	-	1
CC	Viewport Cover Lexan	2480678	1	1	1	1
DD	Gasket Viewport	1093666	1	1	1	1

Replacement Parts - NTVM/VNK

Models - NTVM050FFA1, NTVM075GFA1, NTVM100HJA1, NTVM125KNA1 (Natural Gas)
 VNK050F12A, VNK075F14A, VNK100J16A, VNK125N20A (Natural Gas)

Replacement part supplied will be current active part. For parts not listed, consult place of purchase.

Key No.	Description Functional	Part Number	050	075	100	125
28	Tube Sensor	1006298	1	1	1	1
29	Switch, Limit (Aux.)	1000735	1	1	1	1
30	Filter 16" x 25" x 1/2"	1010365	1	1	1	2
31	Switch Pressure Low Fire (left)	1011778	1	-	-	-
		1011776	-	1	-	-
		1011777	-	-	1	-
		1011778	-	-	-	1
32	Pressure Tap Tee	1006230	1	1	1	1
* Only used when furnace has been converted to LP Gas						

Key No.	Description Non-Functional	Part Number	050	075	100	125
EE	Cover Burner Box	1008748	1	1	-	-
		1008749	-	-	1	-
		1008750	-	-	-	1
FF	Bracket Burner Box	1008722	2	2	2	2
GG	Baffle Burner Box	1008709	1	1	-	-
		1008710	-	-	1	-
		1008711	-	-	-	1
HH	Burner Box Asy	1010381	1	1	-	-
		1010382	-	-	1	-
		1010383	-	-	-	1
JJ	Gasket Air Intake	1008746	1	1	1	1
KK	Coupling Air Intake	1008744	1	1	1	1
LL	Gasket Burner Box	1008759	1	1	-	-
		1008760	-	-	1	-
		1008761	-	-	-	1
MM	Door Handle	1010073	1	1	1	1
NN	Gasket, Heat Exchanger	2480904	2	-	-	-
		2480905	-	2	-	-
		2480906	-	-	2	-
		2480907	-	-	-	2
OO	Seal, Burner Box Sides	1008755	2	2	2	2
PP	Seal, Burner Box	1008762	2	2	-	-
		1009243	-	-	2	-
		1009244	-	-	-	2
QQ	Gasket, Header Box	1010510	1	1	1	1
RR	Support, Heat Exchanger	1010092	1	-	-	-
		1010093	-	1	-	-
		1010098	-	-	1	-
		1010099	-	-	-	1
TT	Wrapper Filter Rack	741010039	1	1	1	2
UU	Front Filter Rack	741020001	1	1	1	2
VV	Cover Filter Plastic	2791043	1	1	1	2
WW	Clip Filter	1008482	3	3	3	3
)	PART NOT ILLUSTRATED					
)	Wire Harness	1011859	1	1	1	1
)	Harness, Hi Volt Motor	1011703	1	1	1	1
)	Harness, Lo Volt Motor	1011702	1	1	1	1
)	Pin Plastic Clip	2344276	3	3	3	3
)	Flexible Neoprene Coupling	1002522	1	1	1	1
)	Clamp Hose	1002793	2	2	2	2
)	Screen 2"	1007339	2	2	2	2
)	Screen 3"	1007340	2	2	2	2
)	Elbow Union	1012099	1	1	1	1
)	Manual Tech	440 03 2002 04	1	1	1	1
)	Manual Install	440 01 2002 04	1	1	1	1
)	Manual Homeowners	441 02 1001 05	1	1	1	1
)	Grommet, Vinyl	1009535	1	1	1	1
)	Bushing, Strn Rif	1945287	1	1	1	1
)	Drain Assy	1011434	1	1	1	1

Gas Conversion Kits - All models

Nat to LP *1011789

LP to Nat *1011787

*Must be ordered from Service Parts