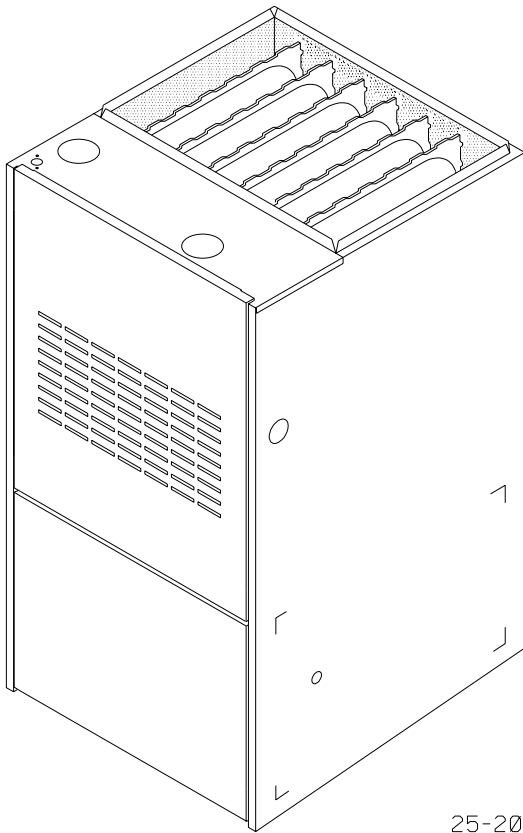


# Technical Support Manual



25-20-66

## Models

NTVM050FFB2  
NTVM075GFB2  
NTVM100HJB2  
NTVM125KNB2

VNK050F12B2  
VNK075F14B2  
VNK100J16B2  
VNK125N20B2

Manufactured by:  
**International Comfort Products Corporation (USA)**  
Lewisburg, TN USA 37091

# Condensing Gas Furnaces



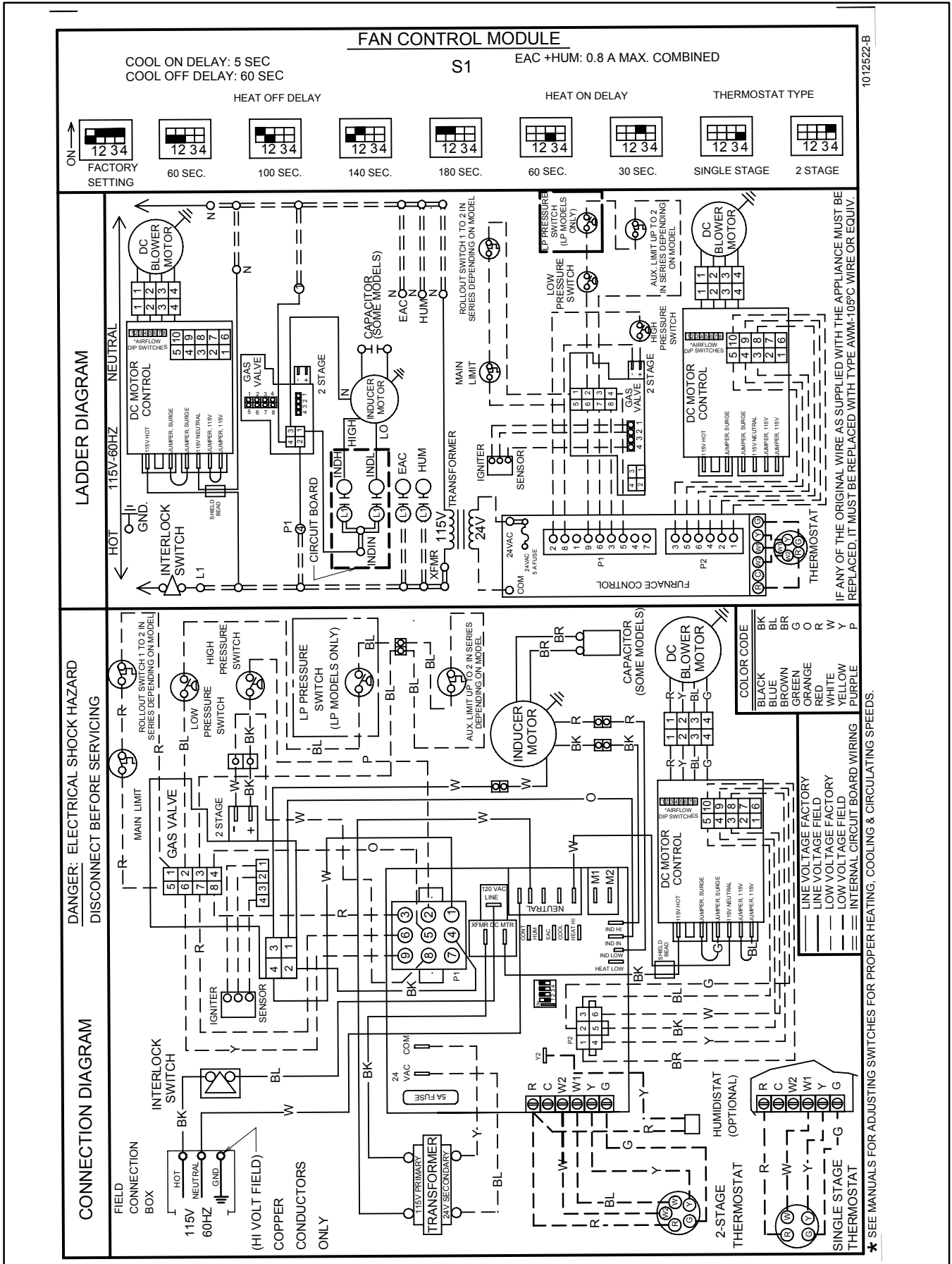
**Save This Manual For Future Reference**

Manufacturers Number (Mfr No -See Rating Plate) ALL Models			
Specifications			
General	Gas Type	Nat	LP
	Transformer Size (VA) T'stat Heat Anticipator	40 .10	
Gas & Ignition	Gas Valve Regulation Type	HW SV 9540 SNAP	HW SV 9540 SNAP
	Manifold Press. Hi Fire (" WC) Lo Fire (" WC)	3.5 1.7	10.0 4.9
	Pilot Orifice Size	.018	.011
	Ignition Type/Series	HW HSP	
Combustion	Standard Outlet Temp. (°) Comb. Blower (MFD/Volts)	<140 4/370	
Limits & Controls	Fan Control (Type) Fan Control On (Timed-secs) Off	HW ST9162A 30/60 60,100,140,180	
Horizontal Condensate Switch Kit All Models	NAHL001HK		
Gas Conversion Kits All Models	Nat to LP *1011789 LP to Nat *1011787 *Order from Service Parts		

Specifications									
	NTVM050FFB2/ VNK050F12B2				NTVM075FB2/ VNK075F14B2				
General	Hi Fire		Lo Fire		Hi Fire		Lo Fire		
Input (Btuh) Std/Alt.	50,000		35,000		75,000		53,000		
Output (Btuh) Std/Alt.	47,000		33,000		70,000		49,800		
Temp. Rise (°F)	40-70		30-60		40-70		30-60		
Electrical (Volts/Hz/FLA)	115/60/5.3				115/60/7.5				
Gas & Ignition	Nat		LP		Nat		LP		
Gas Type	2/#42		2/#54		3/#42		3/#54		
Std. Main Orifices (No/Size)	2/#42		2/#54		3/#42		3/#54		
Combustion	2				2,2 <sup>1</sup> / <sub>2</sub> ,3				
Flue Outlet Size (" PVC)	2				2,2 <sup>1</sup> / <sub>2</sub> ,3				
	Nat @		LP @		Nat @		LP @		
	Blower	Transition	Blower	Transition	Blower	Transition	Blower	Transition	
Stand. Press.	Hi Fire	Lo Fire	Hi Fire	Lo Fire	Hi Fire	Lo Fire	Hi Fire	Lo Fire	
5' No Elbows	-2.30	-1.56	-.10	-.04	-2.30	-.98	-.10	-.08	
40' +5 -90° DWV Elbows	-2.20	-1.52	-.20	-.14	-2.05	-.95	-.15	-.15	
	Differential				Differential				
Stand. Press.	Hi Fire		Lo Fire		Hi Fire		Lo Fire		
5' No Elbows	-2.2		-1.52		-2.2		-.90		
40' +5 -90° DWV Elbows	-2.0		-1.38		-2.0		-.80		
Limits & Controls	300				200				
Rollout Switch (°F)	300				200				
Limit Control Setting (°F)	160				190				
Auxiliary Limit (°F)	130				130				
Std. Pressure Sw. Nat. & LP (Part #)	1010895		1011778		1010895		1011778		
Press (Close)	1.62		1.08		1.62		.65		
Press (Open)	1.38		.90		1.38		.50		
High Alt. Pressure Sw. Nat & LP (Part #)	1008817		1011777		1008817		1010943		
Press Differential (Close)	1.40		.86		1.40		.52		
Press Differential (Open)	1.18		.70		1.18		.37		
Blower Data	10-8				10-8				
Type & Size	10-8				10-8				
Motor Amps/Rpm	4.6/1050				6.8/1050				
Motor Type/H.p.	DC <sup>1</sup> / <sub>2</sub>				DC <sup>1</sup> / <sub>2</sub>				
Filter Type	Washable				Washable				
Filter Size (")	16x25x1 <sup>1</sup> / <sub>2</sub>				16x25x1 <sup>1</sup> / <sub>2</sub>				
Min. Cool Cap. (Tons)	1.5				2				
Max. Cool Cap. (Tons)	3				3.5				

Specifications	Specifications							
	NTVM100HJB2/ VNK100J16B2				NTVM125KNB2/ VNK125N20B2			
<b>General</b>	Hi Fire		Lo Fire		Hi Fire		Lo Fire	
Input (Btuh) Std/Alt.	100,000		70,000		125,000		87,500	
Output (Btuh) Std/Alt.	94,000		64,400		119,300		80,500	
Temp. Rise (°F)	40-70		30-60		45-75		45-75	
Electrical (Volts/Hz/FLA)	115/60/9.2				115/60/10.5			
<b>Gas &amp; Ignition</b>	Nat		LP		Nat		LP	
Gas Type	4/#42		4/#54		5/#42		5/#54	
Std. Main Orifices (No/Size)	4/#42		4/#54		5/#42		5/#54	
<b>Combustion</b>	2,2 <sup>1</sup> / <sub>2</sub> ,3				3			
Flue Outlet Size (" PVC)	2,2 <sup>1</sup> / <sub>2</sub> ,3				3			
	Nat @		LP @		Nat @		LP @	
	Blower	Transition	Burner Box		Blower	Transition	Burner Box	
Stand. Press.	Hi Fire	Lo Fire	Hi Fire	Lo Fire	Hi Fire	Lo Fire	Hi Fire	Lo Fire
5' No Elbows	-2.40	-1.36	-.10	-.06	-2.40	-1.76	-.10	-.06
40' +5 -90° DWV Elbows	-1.98	-1.22	-.20	-.18	-1.98	-1.64	-.20	-.12
	Differential				Differential			
Stand. Press.	Hi Fire		Lo Fire		Hi Fire		Lo Fire	
5' No Elbows	-2.3		-1.30		-2.3		-1.68	
40' +5 -90° DWV Elbows	-1.78		-1.22		-1.78		-1.52	
<b>Limits &amp; Controls</b>	200				200			
Rollout Switch (°F)	170				180			
Limit Control Setting (°F)	130				130			
Auxiliary Limit (°F)	130				130			
Std. Pressure Sw. Nat. & LP (Part #)	1010895		1011777		1010895		1011778	
Press (Close)	1.62		.86		1.62		1.08	
Press (Open)	1.38		.70		1.38		.90	
High Alt. Pressure Sw. Nat & LP (Part #)	1008817		1011776		1008817		1011777	
Press Differential (Close)	1.40		.65		1.40		.86	
Press Differential (Open)	1.18		.50		1.18		.70	
<b>Blower Data</b>	10-10				11-10			
Type & Size	8.5/1050				9.8/900			
Motor Amps/Rpm	DC/1				DC/1			
Motor Type/H.p.	Washable				Washable			
Filter Type	16x25x1 <sup>1</sup> / <sub>2</sub>				16x25x1 <sup>1</sup> / <sub>2</sub> (2)			
Filter Size (")	2				2			
Min. Cool Cap. (Tons)	4				5			
Max. Cool Cap. (Tons)	4				5			

# 1. Wiring Diagram (1/2 HP DC Blower Motor)





# 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)

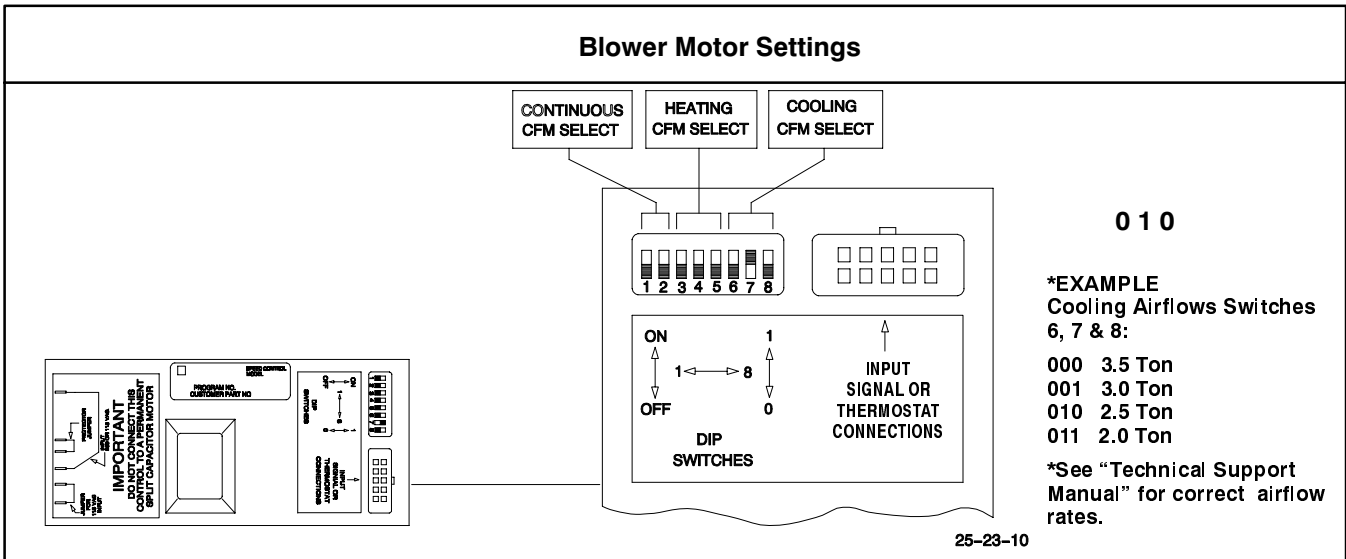
\*\*Factory setting

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

### Blower Motor Settings



# Circulation Air Blower Data - NTVM/VNK

## Heating, Cooling & Continuous Airflow Settings

Figure 1

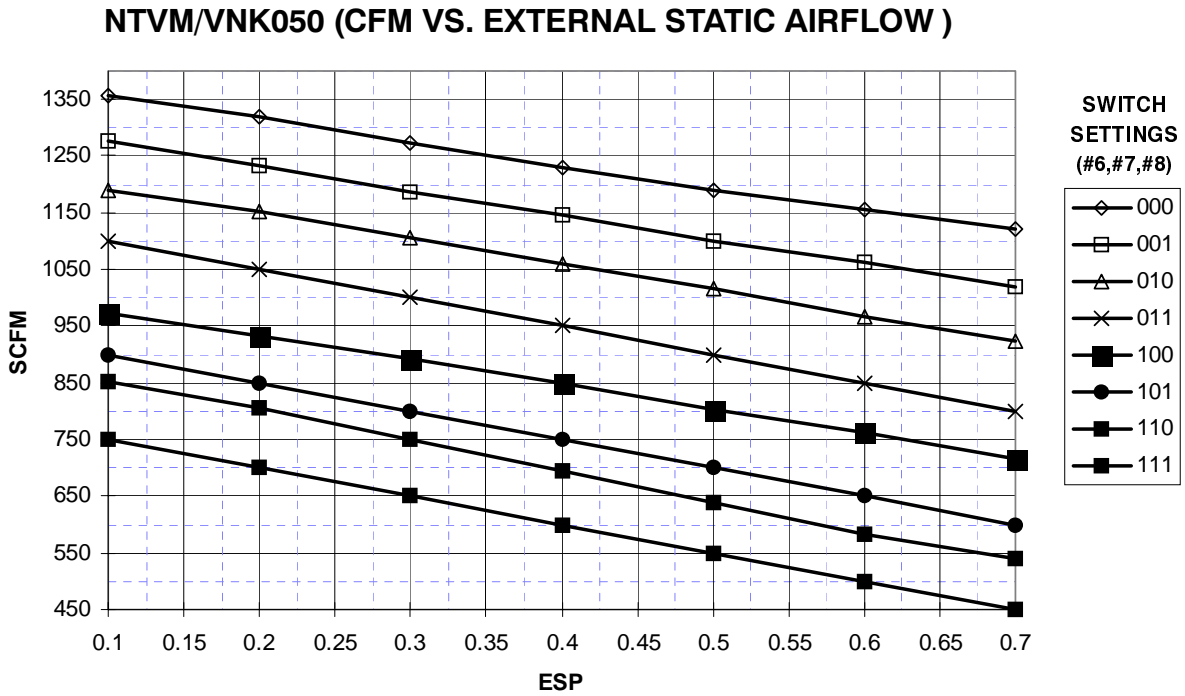
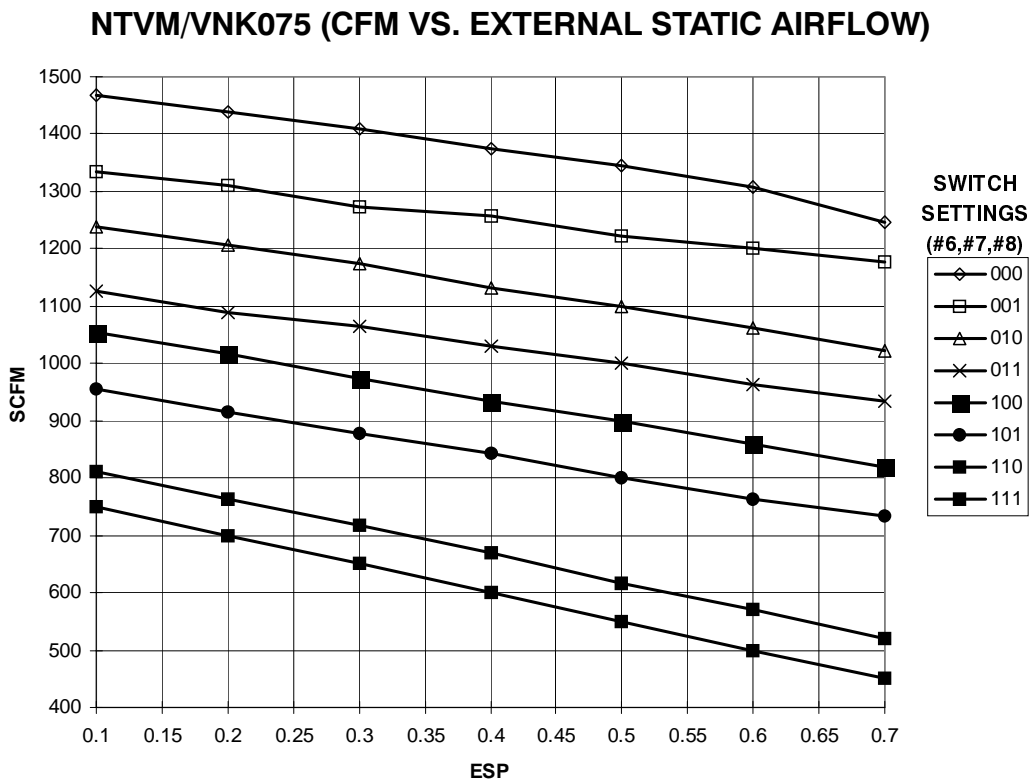


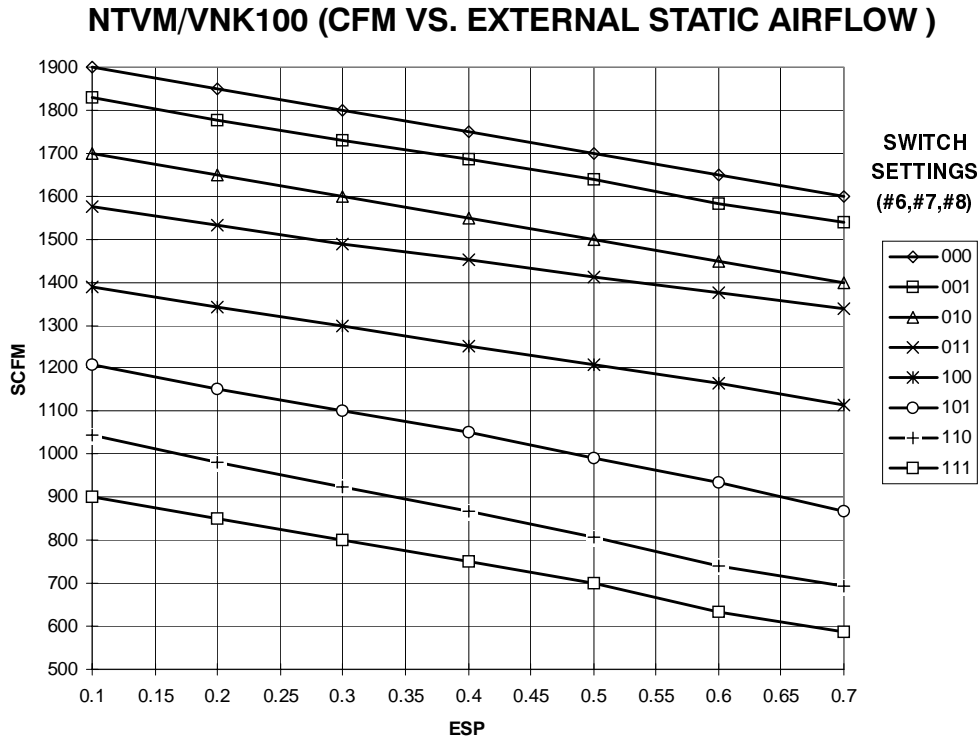
Figure 2



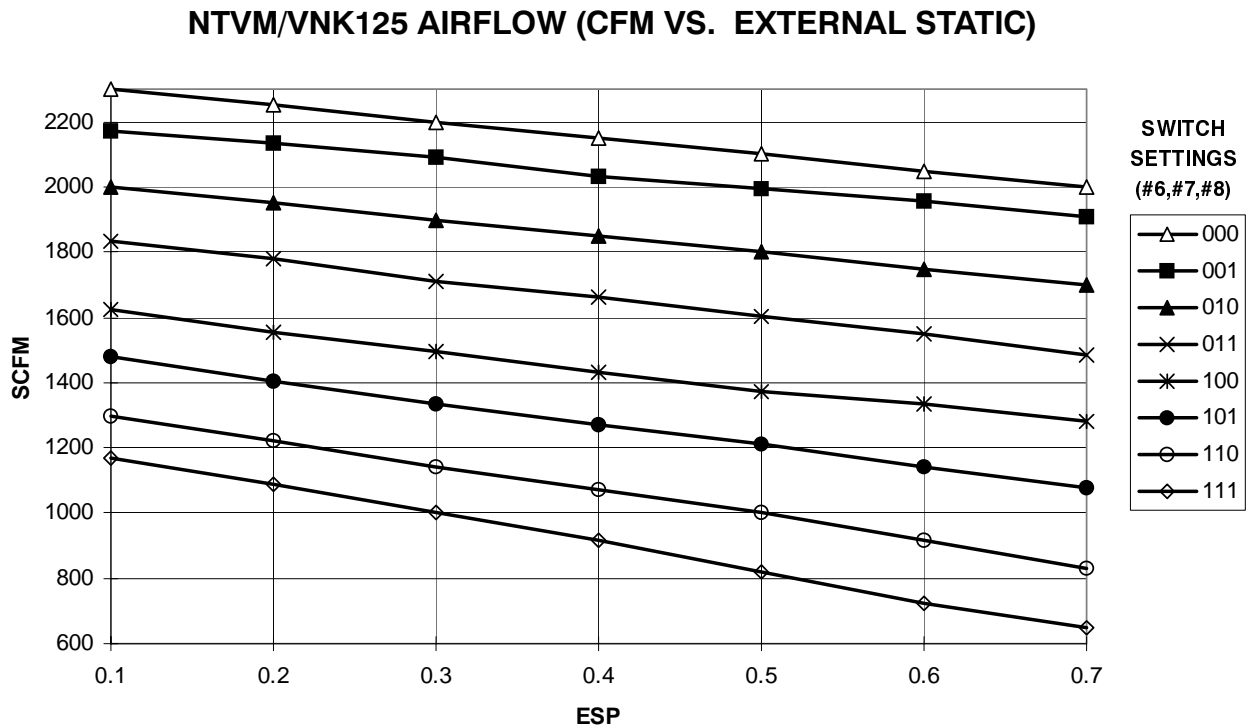
# Circulation Air Blower Data - NTVM/VNK

## Heating, Cooling & Continuous Airflow Settings

**Figure 3**

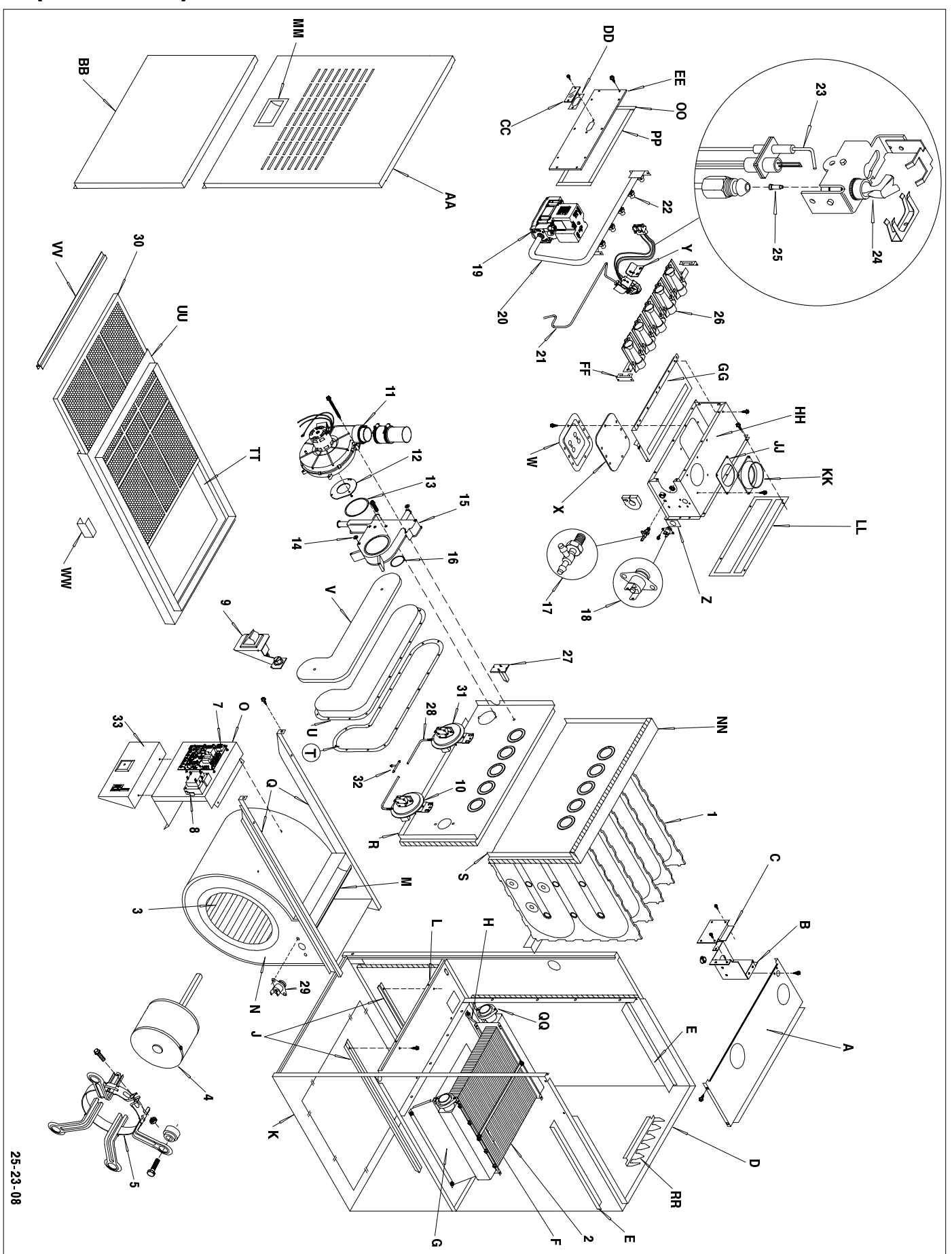


**Figure 4**





# 2. (NTVM/VNK)



25-23-08

# Replacement Parts - NTVM/VNK

**Models** - NTVM050FFB2, NTVM075GFB2, NTVM100HJB2, NTVM125KNB2 (Natural Gas)  
 VNK050F12B2, VNK075F14B2, VNK100J16B2, VNK125N20B2 (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	1011603	1	-	-	-
		1011604	-	1	-	-
		1011605	-	-	1	-
		1011606	-	-	-	1
2	Coil Condenser	1011714	1	1	-	-
		1011715	-	-	1	-
		1011716	-	-	-	1
3	Wheel Blower	600587	1	1	-	-
		601210	-	-	1	-
		1011420	-	-	-	1
4	Motor Blower	1012478	1	1	-	-
		1012429	-	-	1	1
5	Mount Motor Kit	1066700	1	1	-	-
		1057955	-	-	1	-
		522020024	-	-	-	1
7	Control, Fan Timer	1012084	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) Hi. Alt. Pressure Switch	1010895	1	1	1	1
		1008817	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	1012187	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
23	Igniter/Sensor with Clip	1009524	1	1	1	1
24	Pilot/Igniter	1008731	1	1	1	1
25	Orifice Pilot Nat .018	503211	1	1	1	1
26	Burner Bracket Asy	1008723	1	-	-	-
		1008724	-	1	-	-
		1008725	-	-	1	-
		1008726	-	-	-	1
27	Switch Limit (Main)	1010647	1	-	-	-
		34332903	-	1	-	-
		1010652	-	-	1	-
		1320547	-	-	-	1
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

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	1012462	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	1012139	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** - NTVM050FFB2, NTVM075GFB2, NTVM100HJB2, NTVM125KNB2 (Natural Gas)  
 VNK050F12B2, VNK075F14B2, VNK100J16B2, VNK125N20B2 (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
31	Switch Press. Lo Fire (Left)	1011778	1	-	-	-
		1011776	-	1	-	-
		1011777	-	-	1	-
		1011778	-	-	-	1
	Hi. Alt. Switcch Pressure Lo	1011777	1	-	-	1
		1010943	-	1	-	-
		1011776	-	-	1	-
32	Pressure Tap Tee	1006230	1	1	1	1
33	Control, Motor	1012472	1	-	-	-
		1012473	-	1	-	-
		1012474	-	-	1	-
		1012475	-	-	-	1
)	<b>PART NOT ILLUSTRATED</b>					
)	Wire Harness	1011859	1	1	1	1
)	Harness, Hi Volt Motor	1012521	1	1	1	1
)	Harness, Lo Volt Motor	1012520	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
)	Elbow Union	1012099	1	1	1	1
)	Manual Tech	440 03 2014 00	1	1	1	1
)	Manual Install	440 01 2014 00	1	1	1	1
)	Manual Homeowners	441 02 1001 06	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
)	Fuse (5-Amp.)	1083348	1	1	1	1

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

**Gas Conversion Kits - All models**

Nat to LP           \*1011789

LP to Nat           \*1011787

\*Must be ordered from Service Parts