INSTALLATION INSTRUCTIONS

For Variable Speed Motor & Control

90+ Kit Numbers: NAHL050VBB NAHL075VBB, NAHL100VBB, NAHL125VBB

80+ Kit Numbers: NAHA050VBE, NAHA075VBE, NAHA100VBE, NAHA125VBE

This kit is designed to do the following:

— Convert ***8MPT series B and *9MPT series C** (excluding the *8MPT100F14B model) PSC motor to a two-stage cooling compatible variable speed motor.

— Convert ***8MPV series B and *9MPV series C** single-speed cooling variable speed motor to a two-stage cooling compatible variable speed motor.

This literature is an addendum to the Installation Instructions provided with the furnace. Keep the conversion kit installation instruction with the furnace literature.

* Denoted Brand (T, H or C)

Please read these instructions completely before attempting installation.

SAFETY REQUIREMENTS

Recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the furnace and in instructions manuals be alert to the potential for personal injury.

Understand the signal words *DANGER, WARNING,* or *CAUTION.* These words are used with the safety-alert symbol. *DANGER* identifies the most serious hazards, those that **will** result in severe personal injury or death. *WARNING* signifies a hazard that **could** result in personal injury or death. *CAUTION* is used to identify unsafe practices that **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions that will result in enhanced installation, reliability, or operation.

Installing and servicing heating equipment can be hazardous due to gas and electrical components. Only trained and qualified personnel should install, repair, or service heating equipment.

Untrained service personnel can perform basic maintenance functions such as cleaning and replacing air filters. All other operations must be performed by trained service personnel. When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to or shipped with the unit and other safety precautions that may apply.

Follow all safety codes. In the United States, follow all safety codes including the current edition National Fuel Gas Code (NFGC) ANSI Z223.1-2006/NFPA No. 54-2006. In Canada, refer to the current edition of the National Standard of Canada Natural Gas and Propane Installation Code (NSCNGPIC) CSA B149.1-05. Wear safety glasses and work gloves. Have fire extinguisher available during start-up and adjustment procedures and service calls.

These instructions cover minimum requirements and conform to existing national standards and safety codes. In some instances, these instructions exceed certain local codes and ordinances, especially those that may not have kept up with changing residential construction practices. We require these instructions as a minimum for a safe installation.

Examine Kit to determine that the following parts are present. If any parts are missing, immediately contact your parts supplier.

See **Backward Compatibility Section** for cooling off-delay operation update for these series models:

Example showing series letter: *8MPT050B12**B**1

- All *8MPT **series B** and *9MPT **series C** models
- All *8MPV **series B** and *9MPV **series C** models
- Furnace controls with Y/Y2 terminal identified on the furnace control board have no need for correction.

*This kit is **NOT** set up to work with *8MPT/V series A or *9MPT/V series B models. (Smartvalve ignition/Megellan, different kit required.)*

See **Changing Blower Speed Section**, Circulation Air Blower Data Tables and Charts for setting and adjusting desired blower speeds for continuous fan, heating and cooling operation.

All parts in kit must be installed according to specifications provided for correct operation. On MPV conversion models – **DO NOT** reuse old VS motor harness with new Tap Select Interface Board (TSIB) and motor.

Variable Speed Motor Conversion Parts List

(Parts included in kit)

For *8MPT/*8MPV series B Models

Description	8MPT/V050B12	8MPT/V075F14	8MPT/V100J20	8MPT/V125J20
VS KIT NUMBER	NAHA050VBE	NAHA075VBE	NAHA100VBE	NAHA125VBE
Tap Select Interface Board	1	1	1	1
Motor Harness	1	1	1	1
VS Motor	1	1	1	1
Power Choke	N/A	N/A	1	1
Screw	N/A	N/A	2	2
Band	1	N/A	N/A	N/A
Nut	1	N/A	N/A	N/A
Bolt	1	N/A	N/A	N/A
Leg	4	N/A	4	4
Grommet	4	N/A	4	4
Screw	4	N/A	4	4
Wire Tie	1	1	1	1
Wiring Label	1	1	1	1
Installation Instructions	44106202000	44106202000	44106202000	44106202000

For *9MPT/*9MPV series C Models

Description	9MPT/V050F12	9MPT/V075F12	9MPT/V100J20	9MPT/V125L20
VS KIT NUMBER	NAHL050VBB	NAHL075VBB	NAHL100VBB	NAHL125VBB
Tap Select Interface Board	1	1	1	1
Motor Harness	1	1	1	1
VS Motor	1	1	1	1
Power Choke	N/A	N/A	1	1
Screw	N/A	N/A	2	2
Band	1	N/A	N/A	N/A
Nut	1	N/A	N/A	N/A
Bolt	1	N/A	N/A	N/A
Leg	4	4	4	4
Grommet	4	4	4	4
Screw	4	4	4	4
Wire Tie	1	1	1	1
Wiring Label	1	1	1	1
Installation Instructions	44106202001	44106202001	44106202001	44106202001

⚠ WARNING

ELECTRIC SHOCK HAZARD, FIRE AND/OR EXPLOSION HAZARD.

Failure to follow this warning could result in death, personal injury, property damage, and/or property damage.

Turn OFF gas supply at manual gas valve before turning OFF electric power supply and starting installations.

Turn OFF electric power supply at disconnect switch or service panel before starting installations.

⚠ WARNING

FIRE, EXPLOSION, CARBON MONOXIDE POISONING HAZARD.

Failure to follow these instructions could result in death, personal injury and/or property damage.

This conversion kit shall be installed by a qualified service technician in accordance with the Manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. The qualified service agency performing this work assumes responsibility for the proper conversion of this furnace with this kit.

TOOLS LIST

TOOL	USE
$^1/_4$ ″ nutdriver	Sheet metal screw removal/installation
Needle nose pliers	Removing/installing wires, TSIB standoffs
Lineman or slip joint pliers	Removing/installing hose clamps (*9MPT/V models)
$^3/_8$″ wrench	Removing/installing four (4) blower screws
^{7}/16″ wrench	Loosen/tighten belly band
8 – 10” Adjustable wrench	Loosen/tighten belly band, blower wheel set screw
Gloves	Use when handling blower assembly
Safety glasses	Use during complete procedure
Tape measure or ruler	Belly band installation

Disassembly

NOTE 1: Wear gloves when handling sheet metal parts.

NOTE 2: Retain all $^1/_4$“ sheet metal screws during disassembly.

NOTE 3: Use of safety glasses is recommended during the complete kit installation.

1. Turn OFF gas supply at manual gas valve.
2. Turn OFF the electrical power supply to the furnace.
3. Remove both furnace access doors.
4. *9MPT/V models only. Remove the trap, trap may contain water.

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in equipment damage.

Water can damage controls if powered when wet. Ensure controls are completely dry before powering up.

- Disconnect the corrugated drain tube and the $^5/_{16}$″ relief tube from the collector box.
- Remove the $^3/_4$” OD drain tube from the vent tee.
- Loosen the two (2) mounting screws securing the trap to the blower shelf, then move trap out of the way.

5. Disconnect transformer RED wire from furnace control board *24VAC*. On MPV models, disconnect transformer RED wire from TSIB, disconnect RED wire of TSIB from *24VAC* furnace control board, disconnect 6 pin connector from P3 of furnace control board.
6. Remove the thermostat wires on the left side of the furnace control board noting the location of each wire removed.
7. On MPV models remove TSIB from control bracket.
8. Remove the two (2) mounting screws securing the blower. Slide out the blower assembly.
9. Loosen the setscrew on the blower hub then set blower assembly on its side, motor side up.
10. Remove PSC motor wiring from furnace control board. On MPV models, remove variable speed motor harness from furnace control board, TSIB and power choke (if one is installed). The harness will be discarded and replaced with a new one supplied in the kit.
11. On MPT models, remove capacitor bracket and capacitor from blower housing. On MPV models, remove power choke from blower housing.
12. Remove the screws securing the motor arms to the blower housing. Also remove ground screw securing the green ground wire to blower housing. Remove motor assembly from housing.
13. This step can be skipped for *8MPT/V050 and *9MPT/V050 models. Loosen lock nut on belly band and remove legs and band.

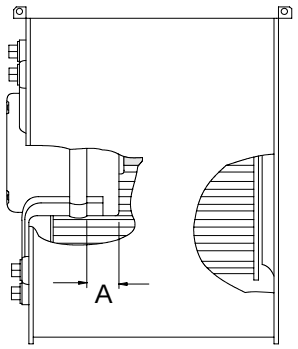
Assembly

NOTE 1: Use all parts supplied in kit for both MPT and MPV conversions. When there are old/new duplicate parts, be sure to use the new parts supplied in kit.

NOTE 2: Italics identify board connections.

1. Install the existing or new belly band and legs onto the new motor ensuring proper belly band placement (see **Figure 1** and **Figure 2a & b)**. Ensure nut and bolt for belly band are on opposite side of motor harness sockets (see **Figure 2a & b**). Tighten belly band until there is no loose leg movement. Improper belly band location can cause harmonic noise. Install new grommets into legs. Install grommets in same fashion as original grommets.
2. Mount the motor assembly to the blower housing using the four (4) screws ($^3/_8$“ hex). The motor harness sockets should be facing down in an upflow configuration (see **Figure 2a & b**).

Figure 1	Bellyband Location			
Bellyband Location on Motor			Bellyband Location on Motor	
Model *8MPV	A(in.)		Model *9MPV	A(in.)
050B12	$1^3/_8$″		050F12	$1^3/_8$″
075J12	$2^7/_8$″		075F12	$2^7/_8$″
100J20	$2^7/_8$″		100J20	$2^7/_8$″
125J20	$2^7/_8$″		125L20	$2^7/_8$″



3. Install the motor ground (green/yellow stripe) wire to blower housing using existing screw ($^1/_4$" hex).
4. Fasten the blower wheel to the motor:
   - Rotate blower assembly so the outlet is facing up.
   - Line up motor shaft flat spot with setscrew. Center blower wheel in housing
   - Tighten setscrew on the blower hub ensuring the blower is centered in the housing.
   - Check blower wheel turns freely before continuing.
5. Mount the new TSIB so the motor connector is facing towards the motor (See **Figure 3**).
6. Install choke (see **Figure 2a & b**) using two (2) new screws supplied in the kit. **Only used on *8MPT100/125 and * 9MPT100/125 model conversions.** Install in same location as capacitor bracket.
7. Connect transformer RED wire to TSIB (see **Figure 4 & 5)**
   - RED wire from transformer to *24V TRANS RED* on TSIB.
8. Connect TSIB wiring to furnace control board (see **Figure 4 & 5**).
   - Red wire *TO FURNACE CONTROL 24VAC* from TSIB to furnace control *24VAC*.
   - Connect the 6 pin connector from the TSIB to the furnace control board (P3).
9. Connect new motor harness (gray wires identify new harness) to furnace control board and TSIB.
   - Plug 16 pin connector (gray wires) to TSIB.
   - Black wire to *DC MTR* on furnace control board.
   - White wire to one (1) of the available *NEUTRAL* terminals.
   - Green/Yellow striped wire should already be connected to blower housing (step 3).
   - Connect two (2) black wires (male and female single polarized connectors) in new motor harness together or to choke, if installed. (This connection is for a choke only used with *8MPT/V100 &125 and *9MPT/V100 & 125 conversions)

Figure 2a	Motor Orientation (Upflow configuration)

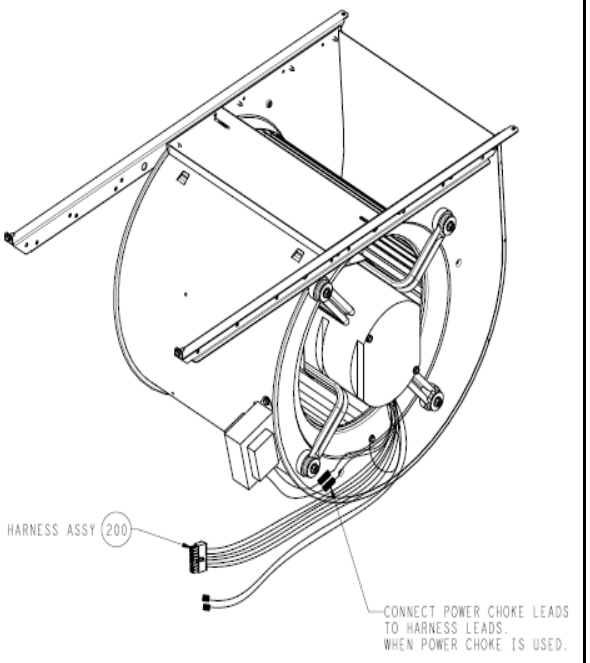


Figure 2b	Motor Orientation (Upflow configuration)

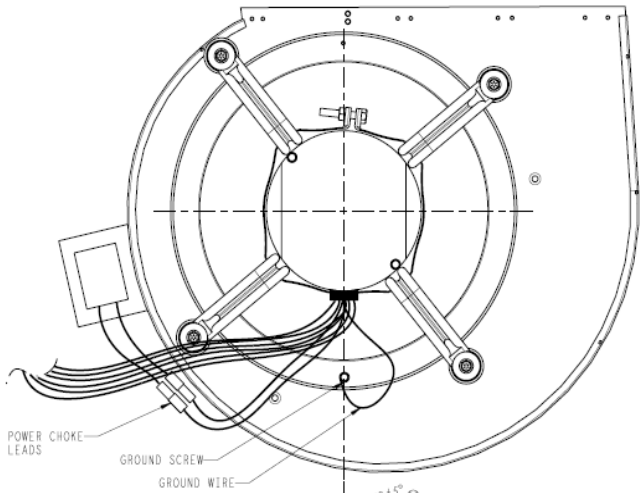
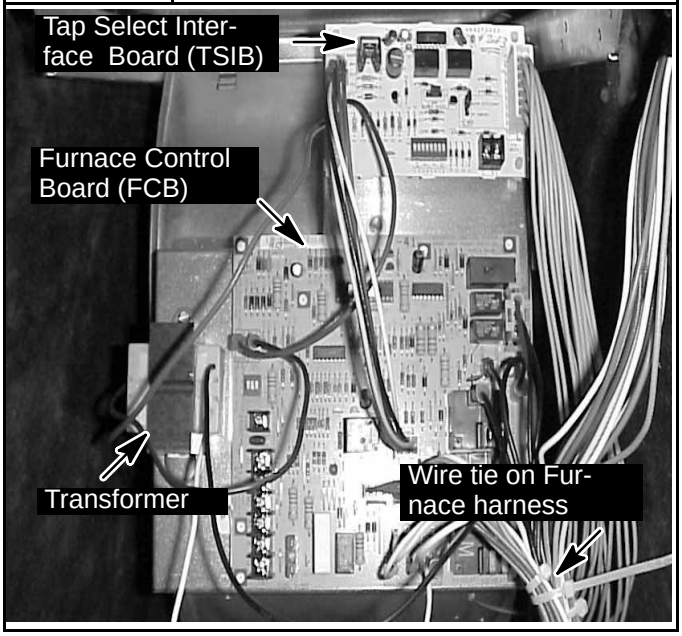


Figure 3	Two-Stage Furnace Control Board and Tap Select Interface Board



10. Connect the new motor harness to the motor (two polarized connectors).
11. Install blower assembly into furnace. Ensure blower assembly is correctly installed onto the support tracks. Install two (2) existing blower assembly retaining screws ($^1/_4$" hex).
12. Ensure main furnace harness is wired to furnace control. See wiring label supplied in kit for reference. Double check wiring to ensure correct wire placement and routing.

⚠ CAUTION

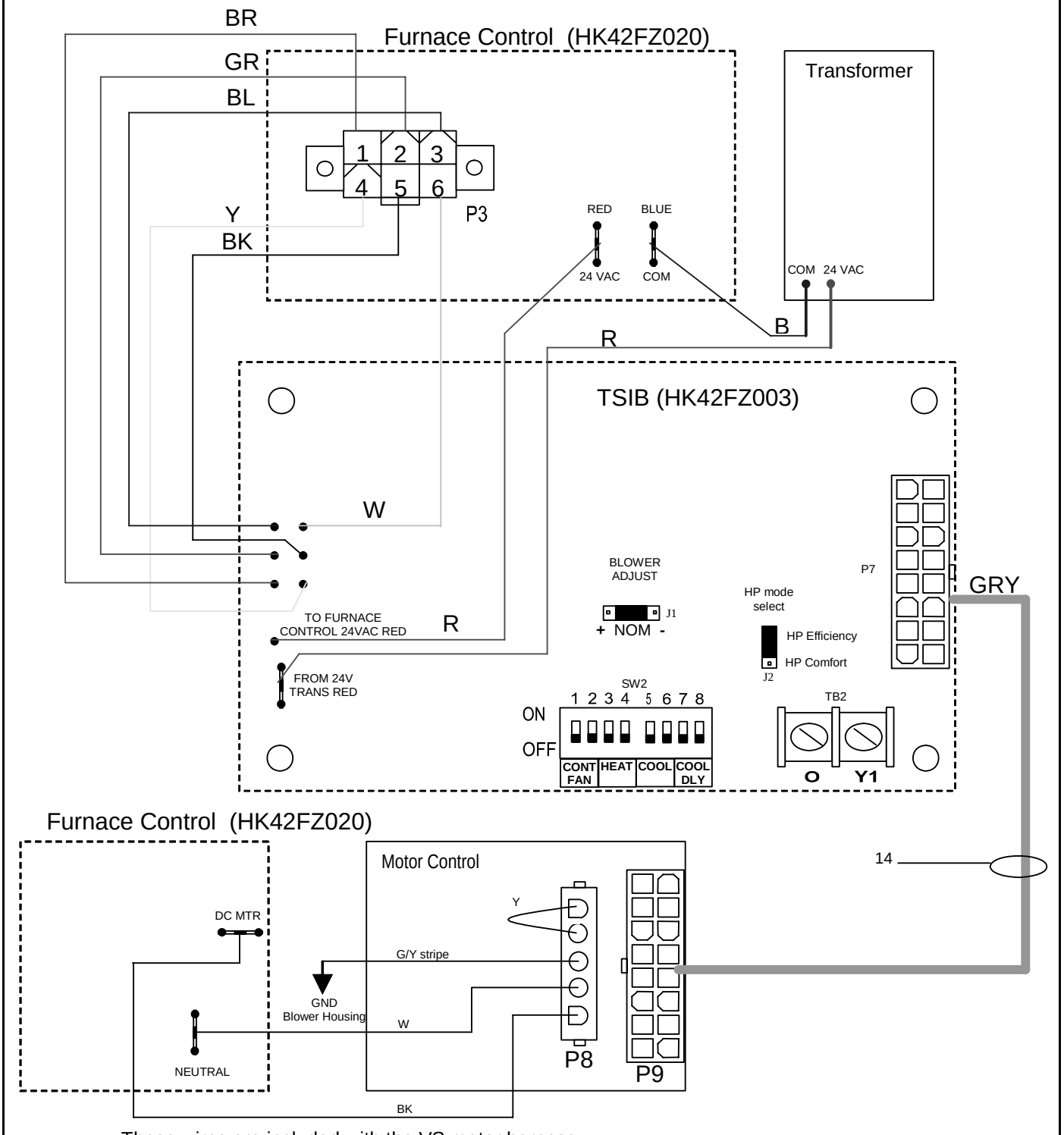
UNIT OPERATION HAZARD

Failure to follow this caution may result in equipment damage.

Water can damage controls if powered when wet. Ensure controls are completely dry before powering up.

13. *9MPT/V models only. Install trap (trap may contain water).
    - Connect the corrugated drain tube and the $^5/_{16}$" relief tube from the collector box.
    - Prime trap if empty then connect the $^3/_4$" OD drain tube from the vent tee.
    - Install the two existing mounting screws ($^1/_4$" hex) securing the trap to the blower shelf.
14. Ensure wire tie is still in place securing extra furnace harness length. If not, install new wire tie included in kit (see **Figure 3**).
15. Affix new wiring label (schematic) supplied in kit over old wiring label located on the blower door.
16. Refer to **Backward Compatibility, Tap Select Interface Board and Blower Adjustments** sections for setting up SW2 DIPs, J1 and J2 jumpers for desired blower airflow and cooling on/off delays.
17. Refer to **Circulation Air Blower Data** tables and **Circulation Air Blower Charts** for airflow delivery options.
18. Install both furnace access doors.

Figure 4	Connection Diagram



These wires are included with the VS motor harness

Figure 5a	Two-Stage Furnace Control Board

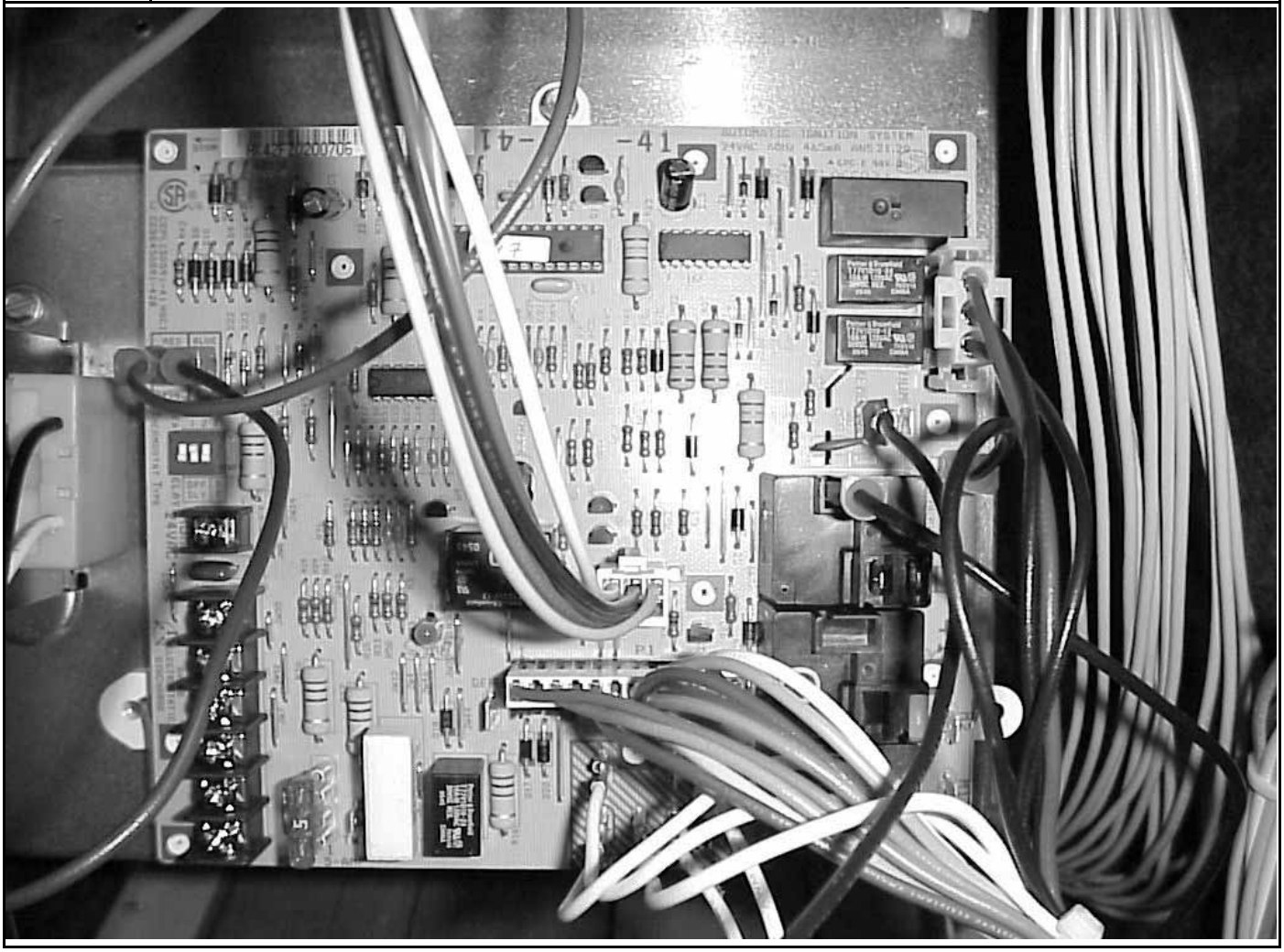
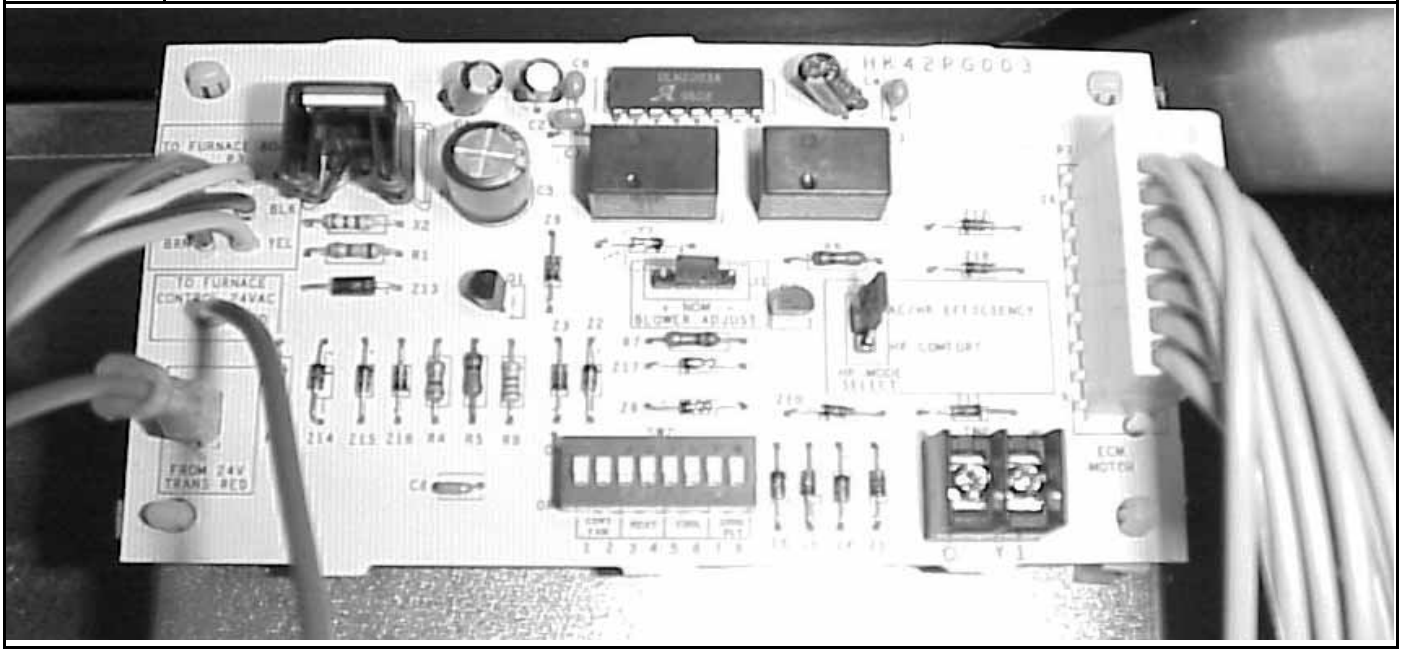


Figure 5b	Tap Select Interface Board



Start-Up

1. Set thermostat settings to OFF.
2. Turn ON power to the furnace. There should be a "Heartbeat" (bright-dim) from furnace control board diagnostic LED. If diagnostic code is flashing (ON-OFF), refer to blower door for diagnostic codes.
3. Turn manual gas valve ON.
4. Check blower operation in all normal operating modes (heat, cool, continuous fan). Make airflow adjustments as necessary for desired temperature results.

NOTE: Be sure to stay within the furnace temperature rise range when making heating airflow adjustments. See furnace rating plate for temperature rise range.

⚠ CAUTION

UNIT OPERATION HAZARD

Failure to follow this caution may result in equipment damage.

If any sparks, odors or unusual noises occur, immediately shut OFF power to the furnace.

Check for wiring errors to the motor or furnace control board and/or obstructions to the blower.

Backward Compatibility

This VS kit is backward compatible for the following models with a TSIB SW2 DIP adjustment: *8MPT series B, *8MPV series B, *9MPT series C and *9MPV series C.

This kit is **NOT** set up to work with *8MPT/V series A or *9MPT/V series B models. (Smartvalve ignition/Megellan, different kit required.)

* On *8MPT/V series B and *9MPT/V series C models SW2 DIP Switch #7 to OFF and SW2 DIP Switch #8 to ON to provide a 90 second cooling off delay. Any other selection would provide a cooling off delay greater than 90 seconds

Later series MPT/V models (furnace control terminal block has **Y/Y2** label), operate as specified in Table 4 of the **Circulation Air Blower Data**. A 0 second cooling off delay occurs for SW2 DIP Switch #7 OFF and SW2 DIP Switch #8 ON with these later controls.

* **NOTE:** There were a few early furnace controls from approximately June 2006 to August 2006 (**Y** labeled) that require no special adjustment. These controls operate just like the later (**Y/Y2**) models.

Tap Select Interface Board (MPV)

The Tap Select Interface Board is used with the Variable Speed motor (see **Figure 6**). There are DIP switches **(SW2)** for continuous blower adjust, heating blower adjust, cooling blower adjust and cooling on/off delay profiles. There is a jumper **(J1)** for slight blower adjustment, increase (+)/no change (NOM)/decrease (-). There is a jumper **(J2)** for airflow selection of Heat Pump **EFFICIENCY** or **COMFORT**. (**EFFICIENCY** provides no airflow reduction in airflow whether **O** is energized or not. **COMFORT** provides a 10% reduction in airflow when **O** is not energized with a cooling call).

The **O** terminal is available for use for Heat Pump applications, if desired.

The **Y1** terminal (if a two-stage Air Conditioner or Heat Pump is used) will provide low cooling blower speed when energized. (Only **Y/Y2** on the furnace control board is used if a single-speed Air Conditioner or Heat Pump is installed).

Blower Adjustments (MPV)

Changing Blower Speed

⚠ WARNING

ELECTRICAL SHOCK HAZARD.

Failure to disconnect power could result in death or personal injury.

Turn OFF power to furnace before changing blower speed.

NOTE: The blower speeds that the manufacturer sets from the factory for this product are based on a nominal 400 CFM per ton cooling and the mid range on the temperature rise for heating.

Since the manufacturer cannot predict the static pressure that will be applied to the furnace, it is the responsibility of the installer dealer/contractor to select the proper speeds for the application when the furnace is installed.

If it is necessary to change speeds, refer to steps below.

1. The 115 VAC power supply to the furnace must be turned OFF before making adjustments to the motor.

   NOTE: Allow at least one (1) minute before restoring power to the furnace after making Blower Control changes.

2. The heating, cooling and continuous blower speeds can be adjusted by changing the SW2 DIP switch settings that are located on the Tap Select Interface Board (see **Figure 6**).

   * Switches #1 and #2 adjust the continuous blower speeds.
   Switches #3 and #4 adjust the heating speed.
   Switches #5 and #6 adjust the cooling speed.
   Switches #7 and #8 adjust the cooling speed on/off delay profiles. See the **Circulation Air Blower Data** for the switch settings for the desired airflow rates for the installation.
   The jumper **J1** is used to slightly increase **(+)** or decrease **(-)** or not change **(NOM)** the blower speed selected from SW2. J1 effects **BOTH** cooling and heating airflow.

   * Continuous blower selection DIP 10 and 11 will cause the blower to run in high cooling speed for all low cooling **(Y1)** calls. Continuous blower DIP settings of 00 and 01 will allow low cooling **(Y1)** calls to operate normally.

Continuous-Fan using “G”

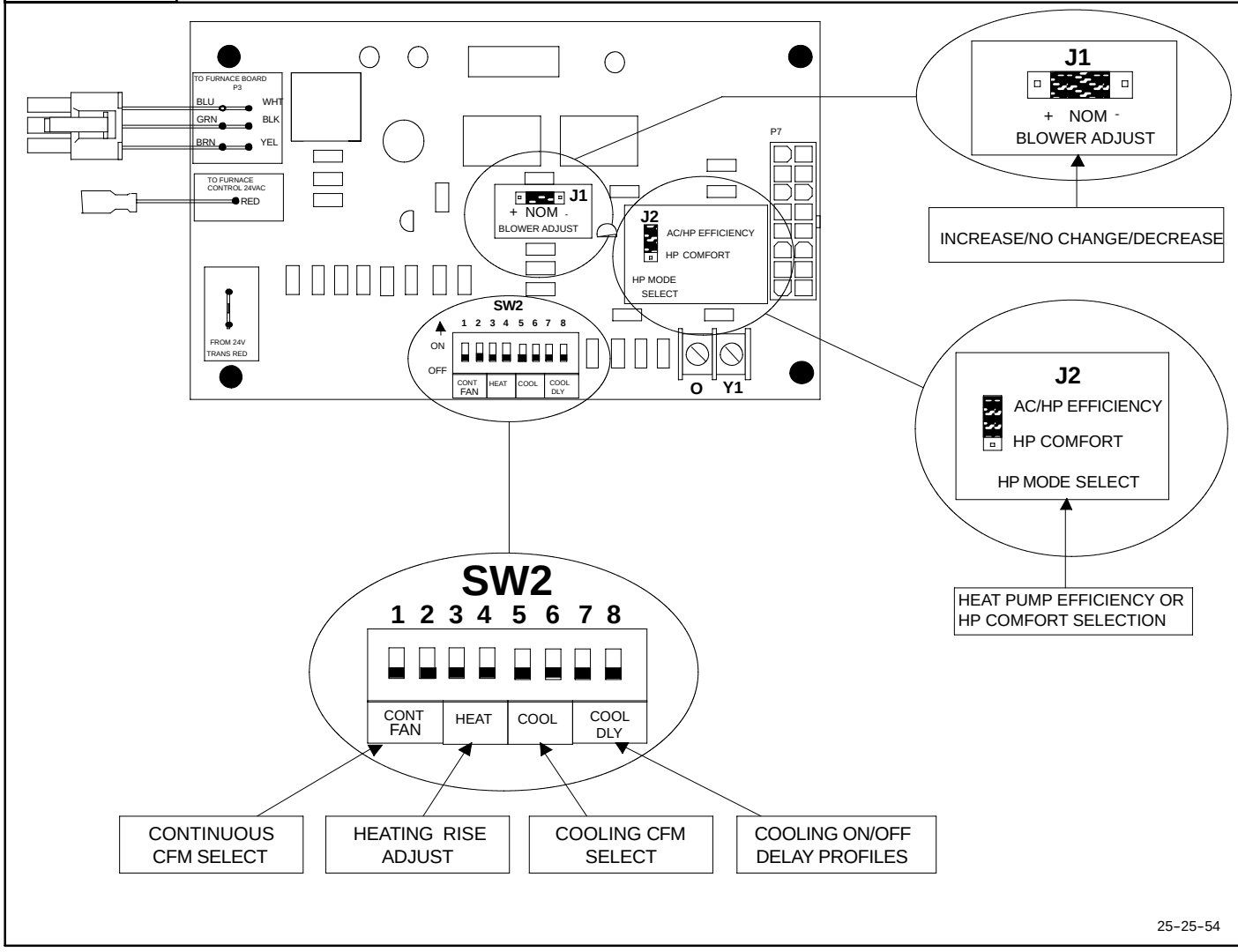
Energizing the ”G” terminal on the furnace control board provides continuous fan operation. This is done by connecting the G terminal of the thermostat to the G terminal on the furnace control board. When the FAN switch is turned from auto to ON the fan will operate continuously at airflow selected by SW2 DIP Switch #1 and SW2 DIP Switch #2. EAC will be energized in this mode.

NOTE: In heating, the fan will not turn off during furnace ignition and warm up then restart at heating speed.

Hard Wired Continuous Fan Operation

Not available for variable speed models.

Figure 6 **Variable Motor (MPV) Tap Select Interface Board (TSIB)**



Thermostat Wiring Guide

1. These diagrams are for reference. See thermostat wiring instructions for specific terminal assignments, connections or operation.
2. Humidifier/humidistat is optional and not included with the furnace.
3. Dehumidify feature (MPV models only) requires thermostat with **DEHUM** feature or a separate dehumidistat to get the dehumidification operation. Dehumidistat is optional and not included with the furnace.
4. Underlined terminal indicates intended use for multiple function terminals.
5. TSIB terminals only available on MPV models.
6. Two–stage Air Conditioning or two–stage Heat Pump capability only available with MPV models.
7. **W2** furnace operation is from furnace control algorithm SW1 DIP switch #3 (TT) set to OFF. Furnace runs in Low Heat for 12 minutes then switches to High Heat if heating call still exists.
8. **24V HUM** terminal on furnace control is used to power a humidifier (on call for heat and pressure switch closed) if no **HUM** thermostat option is available.
9. **DEHUM** provides a 20% reduction in airflow (when **Y1** or **Y1** + **Y2** is energized) when the furnace control **DEHUM** terminal is energized with 24V.
10. If no **DEHUM** thermostat option is available, a dehumidistat that has closed contacts on a call for dehumidify may be used
11. **O** provides a 10% reduction in airflow when **Y1** or **Y1** + **Y2** is energized and **O** is NOT energized. (J2 jumper on TSIB must be in HP COMFORT position to get this function. AC/HP EFFICIENCY position results in no reduction of airflow for **Y1** or **Y1** + **Y2** calls regardless of **O** being energized or not.)
12. For Heat Pump/Furnace systems, refer to Fossil Fuel Kit or Dual Fuel Thermostat Installation Instructions for wiring.

Figure 7 **HUM and DEHUM Terminal available from Thermostat. Humidifier Wiring (*MPT/MPV) Models and Dehumidify Wiring (*MPV Models only)**

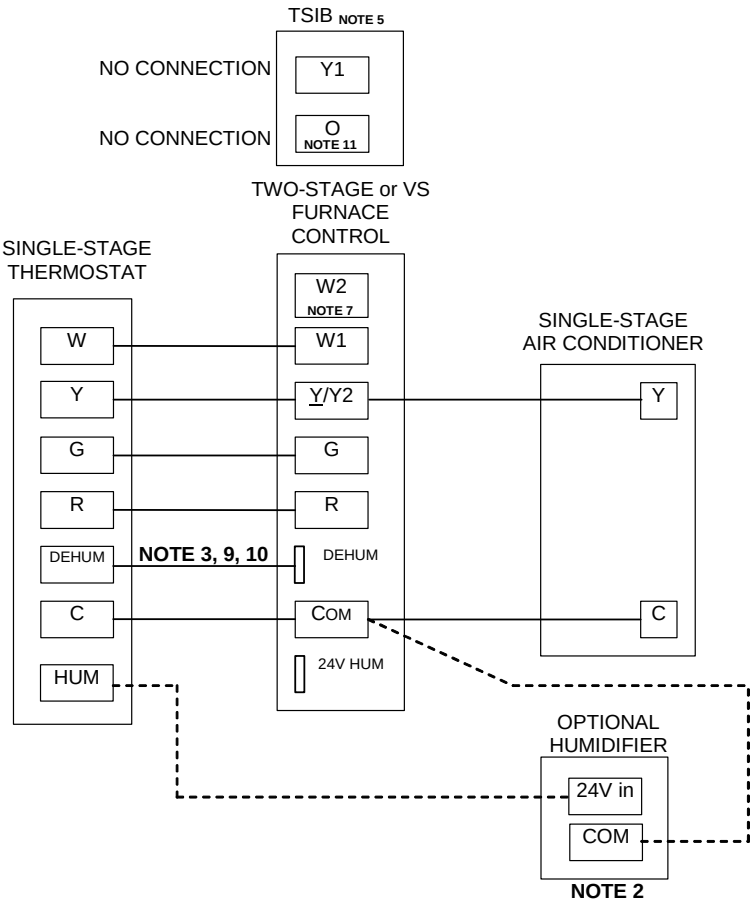


Figure 8 **No HUM and/or DEHUM Terminal available from thermostat. Humidifier Wiring (*MPT/MPV models) Dehumidify wiring (*MPV models only)**

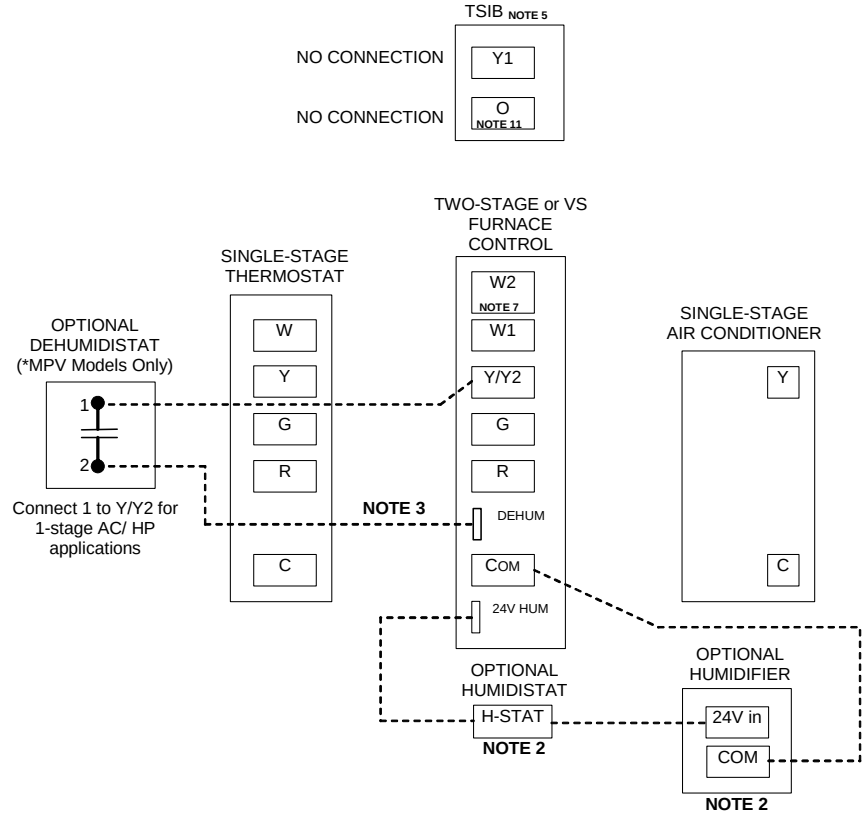


Figure 9 **Single-Stage Thermostat with Two-Stage or Variable Speed Furnace (*MPT/MPV Models) and Single-Stage Air Conditioner**

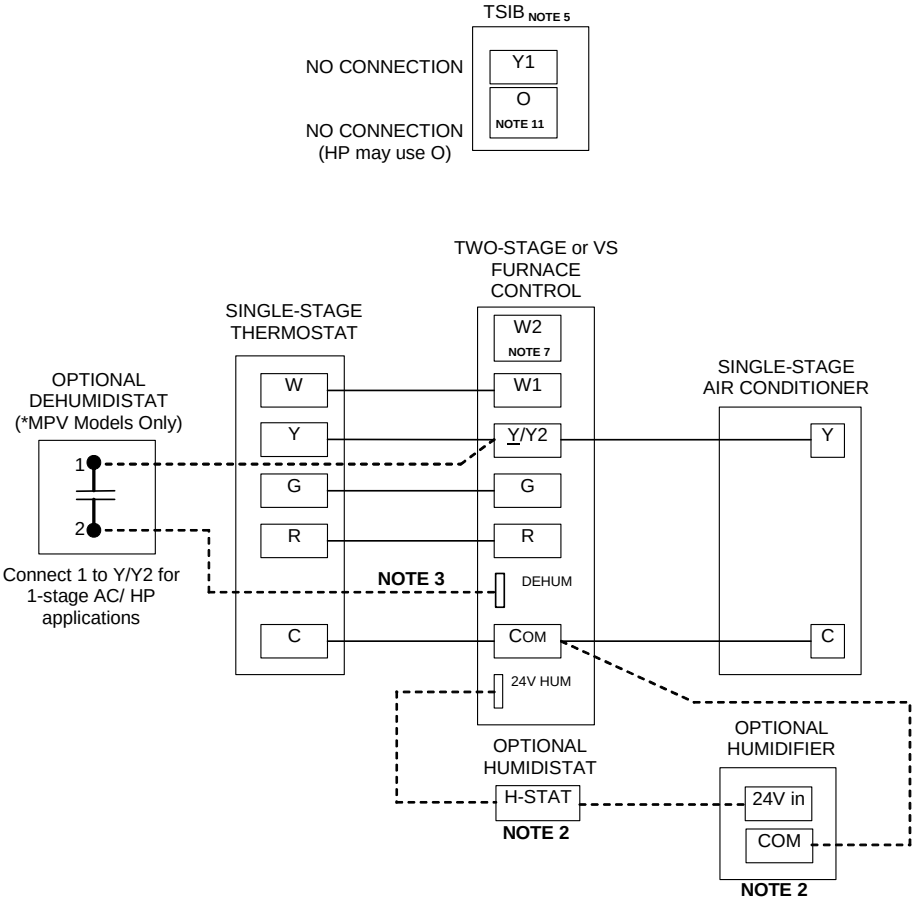


Figure 10 **Two-Stage Thermostat with Two-Stage Furnace or Variable Speed Furnace (*MPT/MPV Models) and Single-Stage Air Conditioner**

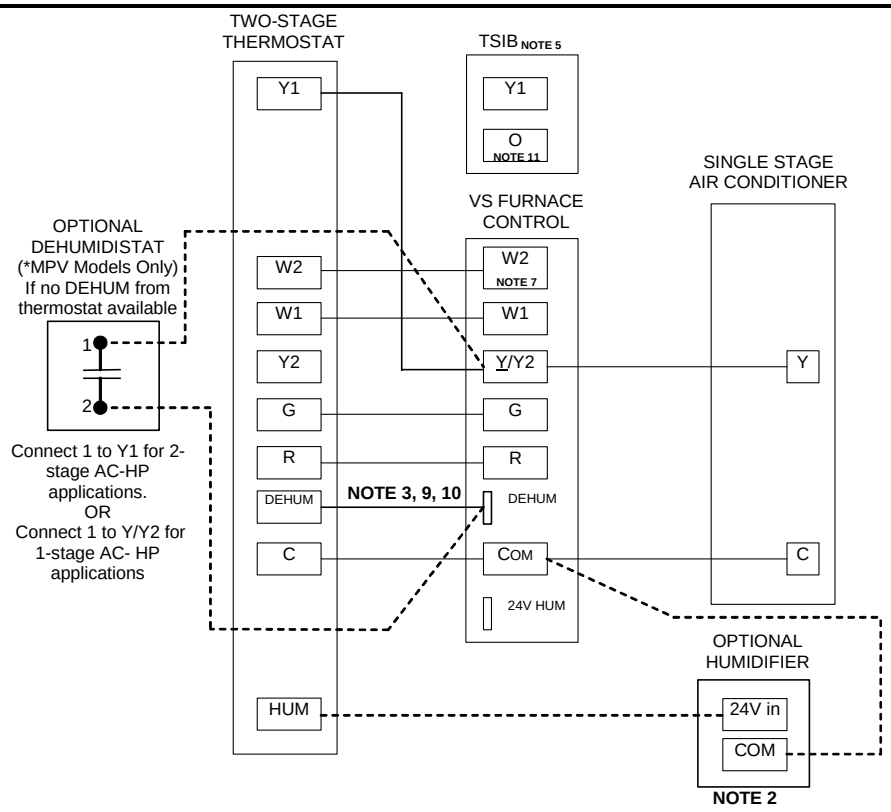
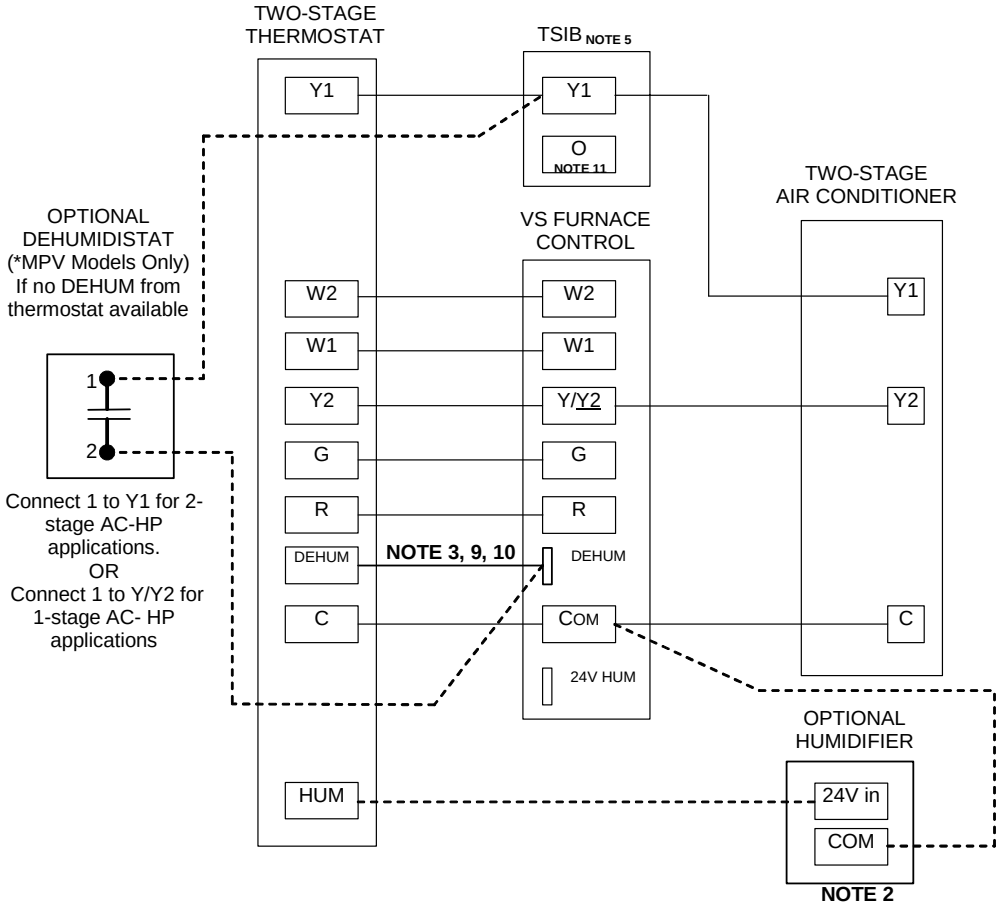


Figure 11 **Two-Stage Thermostat with Variable Speed Furnace (*MPV Models only) and Two-Stage Air Conditioner**



Circulation Air Blower Data - *8MPV050

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	1235	988	+	00	-3	-3
*00	1206	965	*NOM	*00	0	0
00	1114	891	-	00	5	4
01	1092	874	+	01	0	0
01	1021	817	NOM	01	3	4
01	949	759	-	01	8	6
10	884	707	+	10	-2	-1
10	826	661	NOM	10	2	2
10	740	592	-	10	6	5
11	650	520	+	11	-7	-5
11	591	473	NOM	11	-4	-3
11	530	424	-	11	0	0

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise)

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	620
01	1060
10	1333
11	1333

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

* Factory Setting

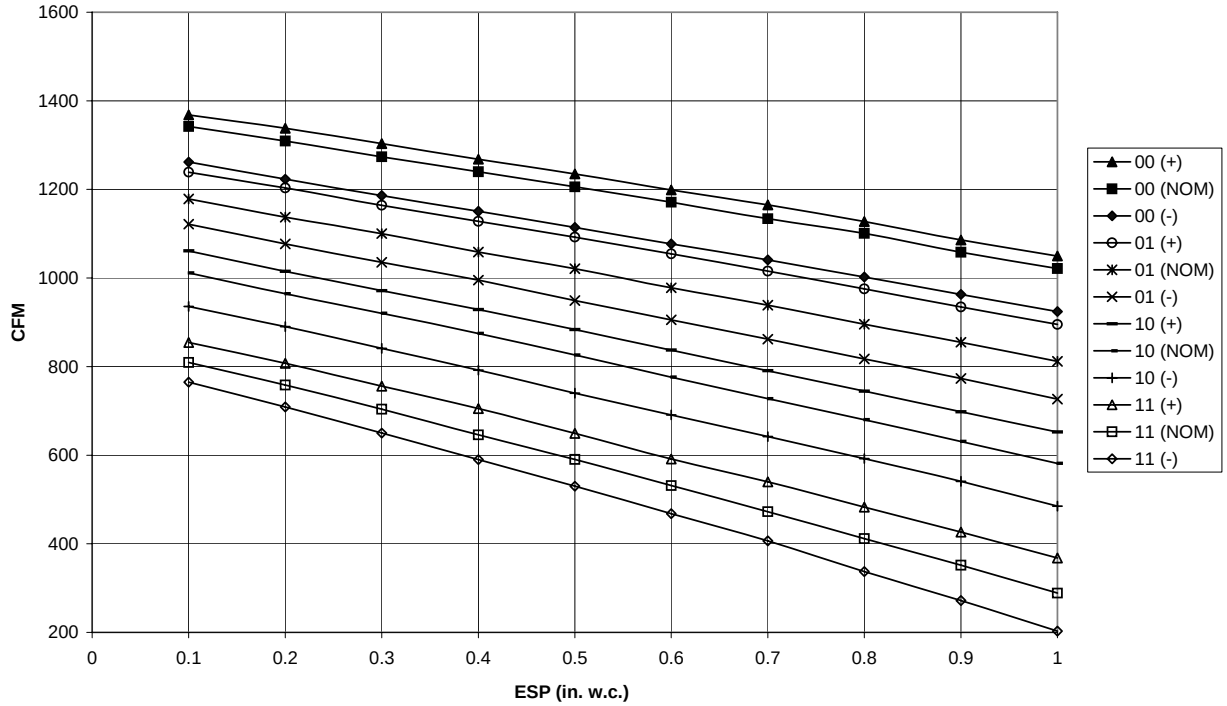
MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

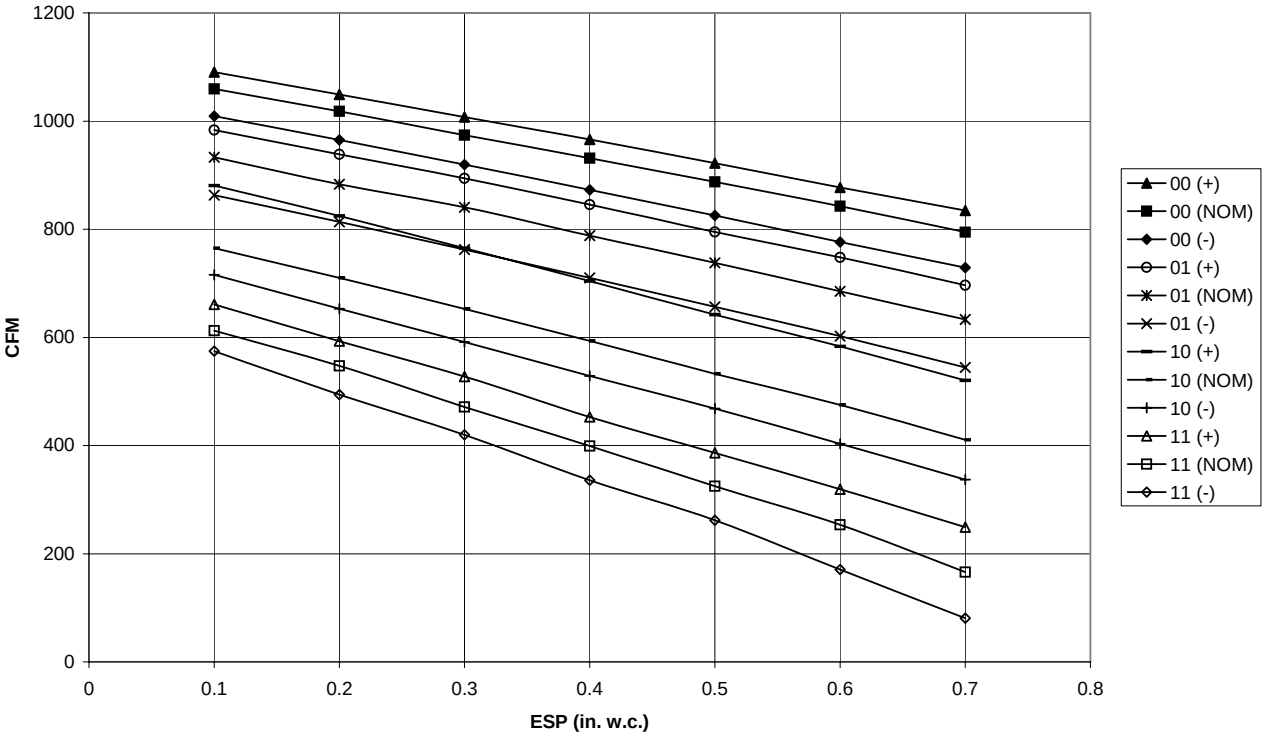
*Circulation Air Blower Data - *8MPV050*

Cooling Airflow Settings

High Cooling Airflows
***8MPV050B12**



Low Cooling Airflows
***8MPV050B12**



Circulation Air Blower Data - *8MPV075

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	1550	1240	+	00	-3	-2
*00	1423	1138	*NOM	*00	0	0
00	1240	992	-	00	3	3
01	1524	1219	+	01	0	0
01	1209	967	NOM	01	2	3
01	1038	830	-	01	7	6
10	1131	905	+	10	-3	-3
10	1005	804	NOM	10	0	1
10	851	681	-	10	3	4
11	908	726	+	11	-8	-7
11	777	622	NOM	11	-7	-6
11	651	521	-	11	-4	-2

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	700
01	1244
10	1597
11	1597

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

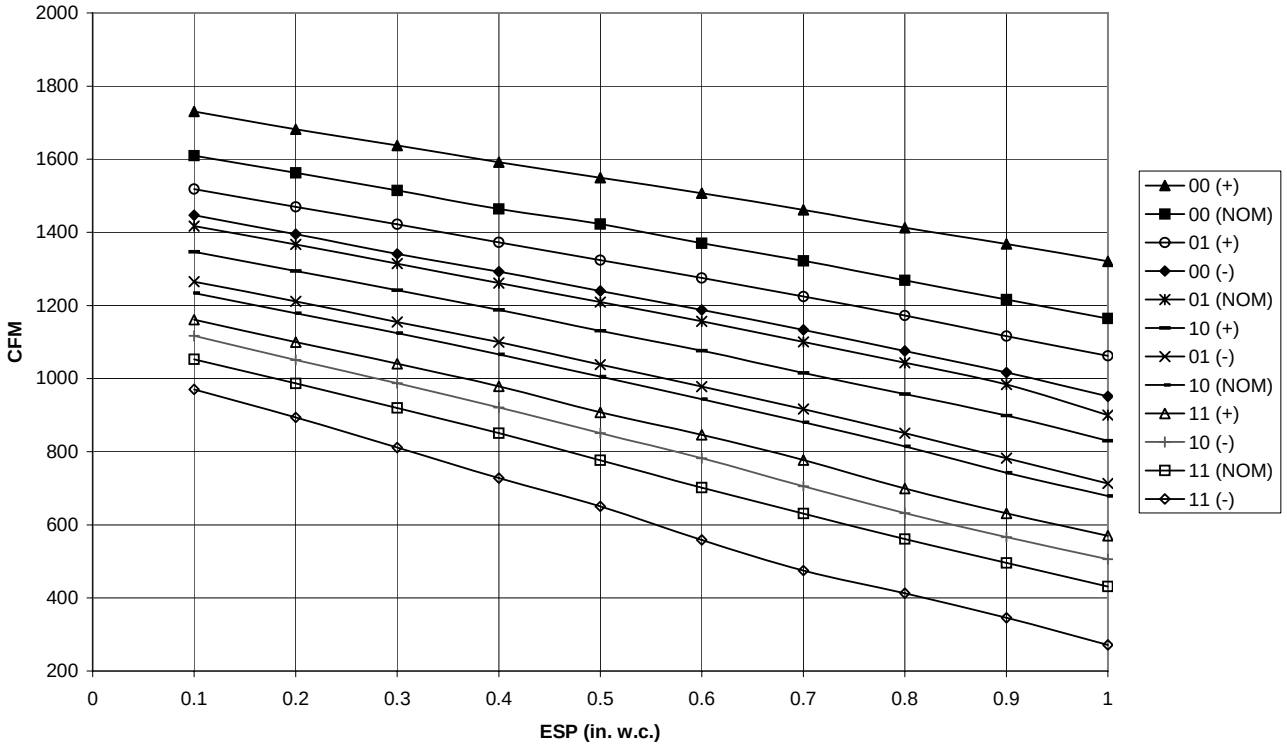
* Factory Setting

MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

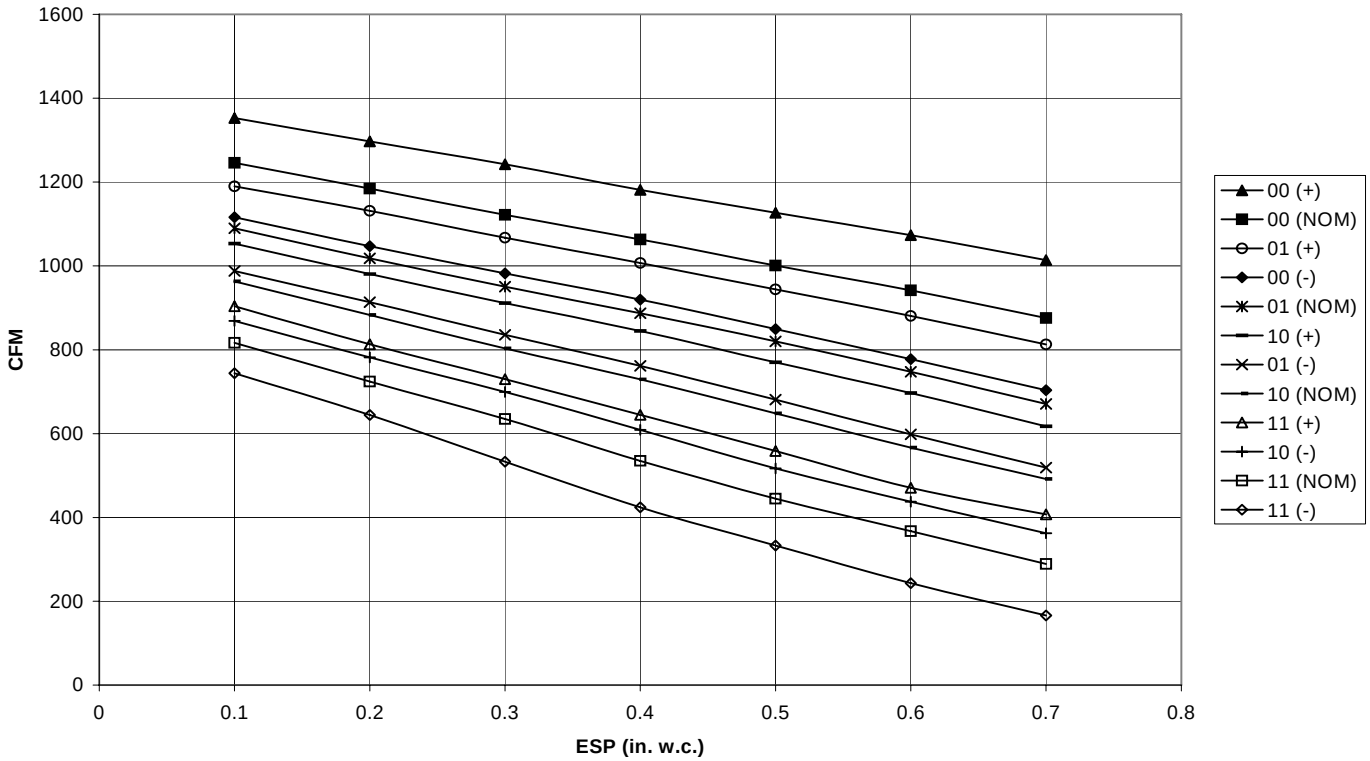
Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

Circulation Air Blower Data - *8MPV075

High Cooling Airflows
***8MPV075F14**



Low Cooling Airflows
***8MPV075F14**



Circulation Air Blower Data - *8MPV100

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	2101	1681	+	00	-3	-3
*00	2016	1613	*NOM	*00	0	0
00	1847	1478	-	00	4	4
01	1721	1377	+	01	5	6
01	1600	1280	NOM	01	9	9
01	1470	1176	-	01	15	16
10	1334	1067	+	10	2	2
10	1228	982	NOM	10	7	6
10	1114	891	-	10	11	11
11	920	736	+	11	-9	-9
11	809	647	NOM	11	-7	-6
11	698	558	-	11	-3	-3

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	1006
01	1764
10	2205
11	2205

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

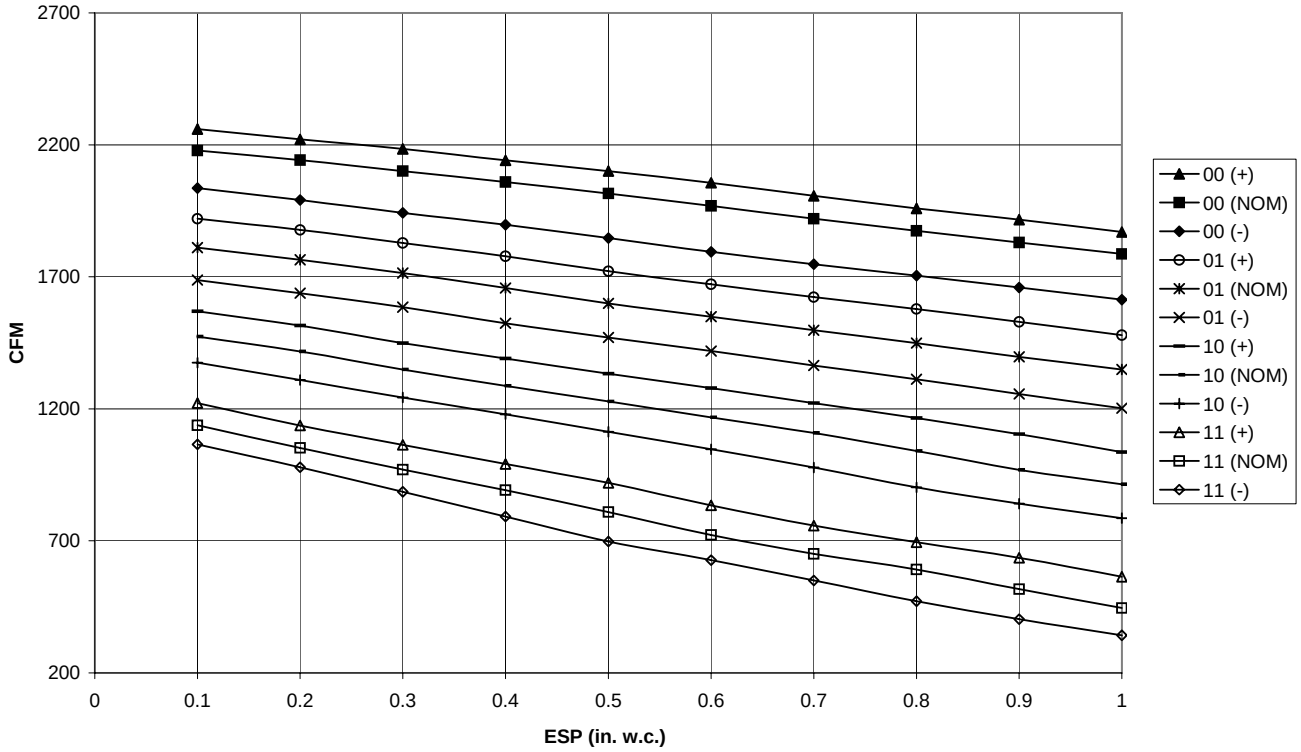
* Factory Setting

MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

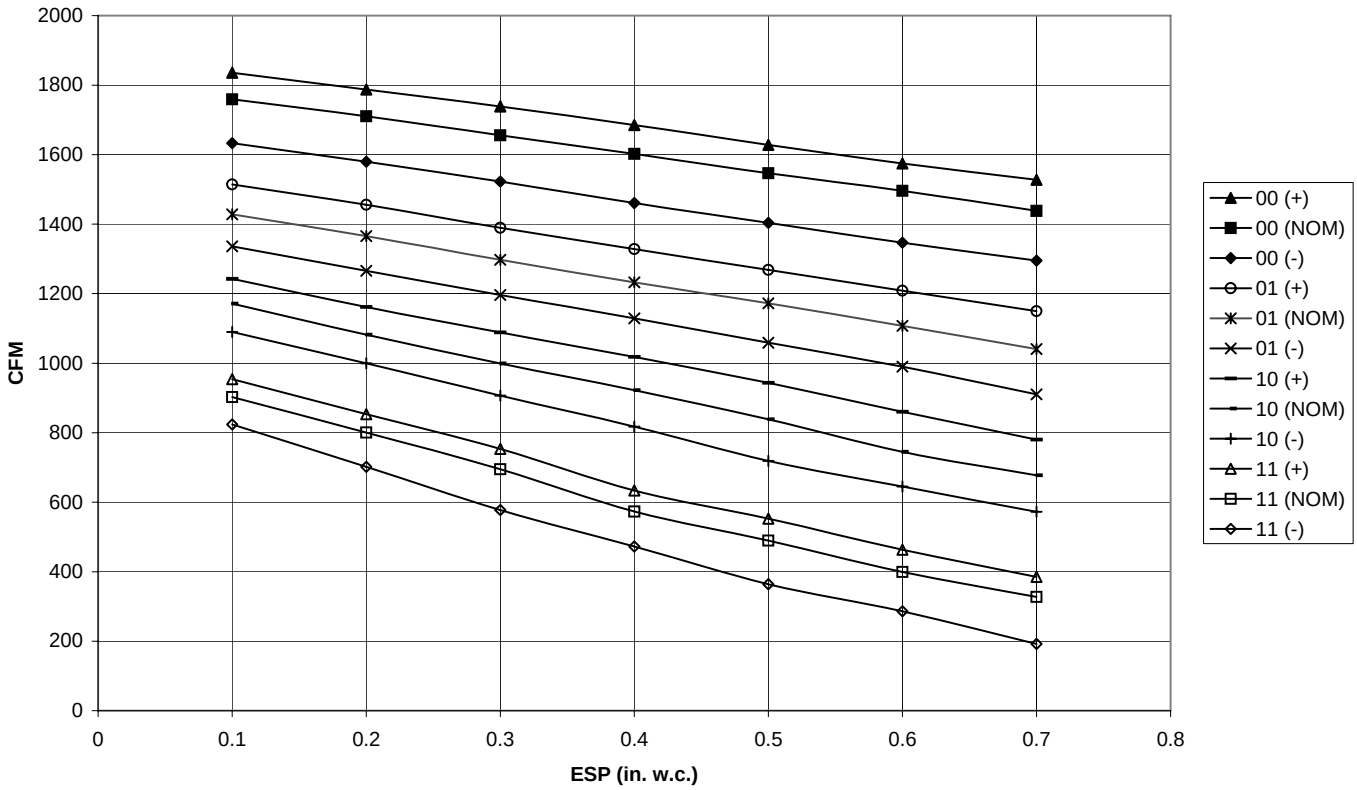
Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

Circulation Air Blower Data - *8MPV100

High Cooling Airflows
***8MPV100J20**



Low Cooling Airflows
***8MPV100J20**



Circulation Air Blower Data - *8MPV125

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	2153	1722	+	00	-3	-3
*00	2001	1601	*NOM	*00	0	0
00	1808	1446	-	00	4	4
01	1761	1409	+	01	-1	0
01	1621	1297	NOM	01	4	3
01	1458	1166	-	01	8	8
10	1345	1076	+	10	-2	-1
10	1216	973	NOM	10	2	2
10	1074	859	-	10	7	5
11	933	746	+	11	-6	-4
11	802	642	NOM	11	-3	-2
11	692	554	-	11	1	1

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 3

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	1013
01	1674
10	2193
11	2193

* Factory Setting

Table 2

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

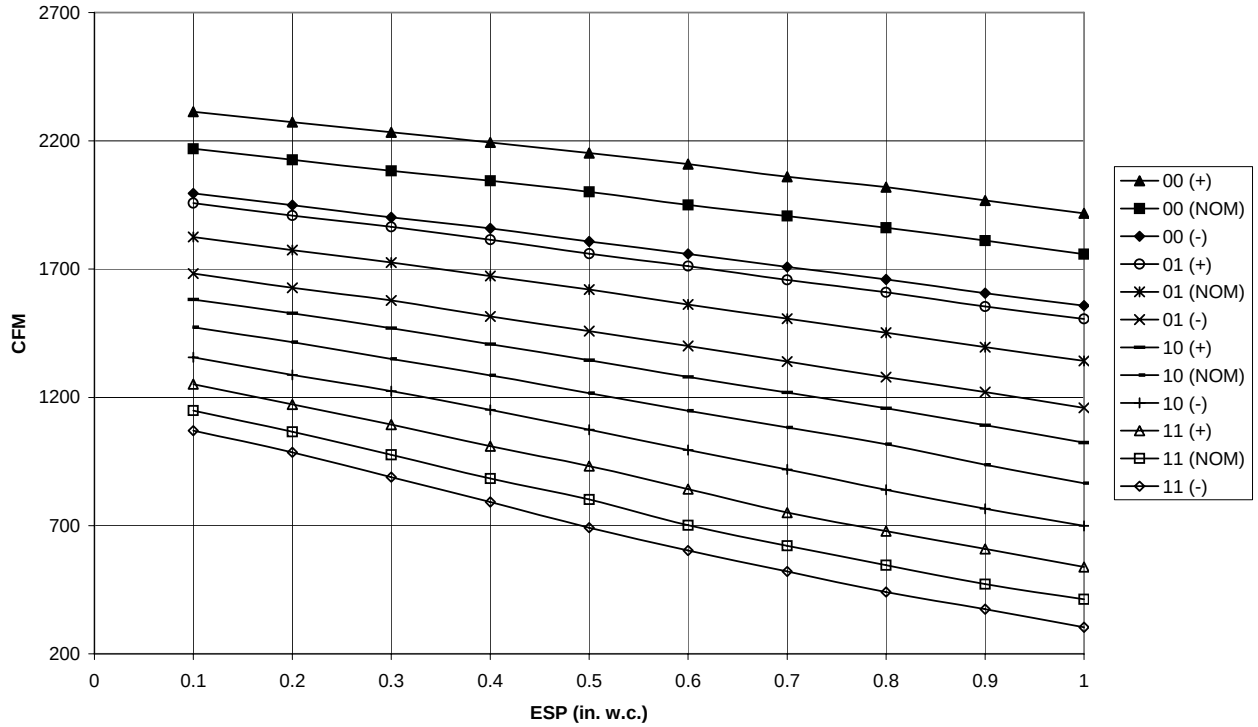
* Factory Setting

MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

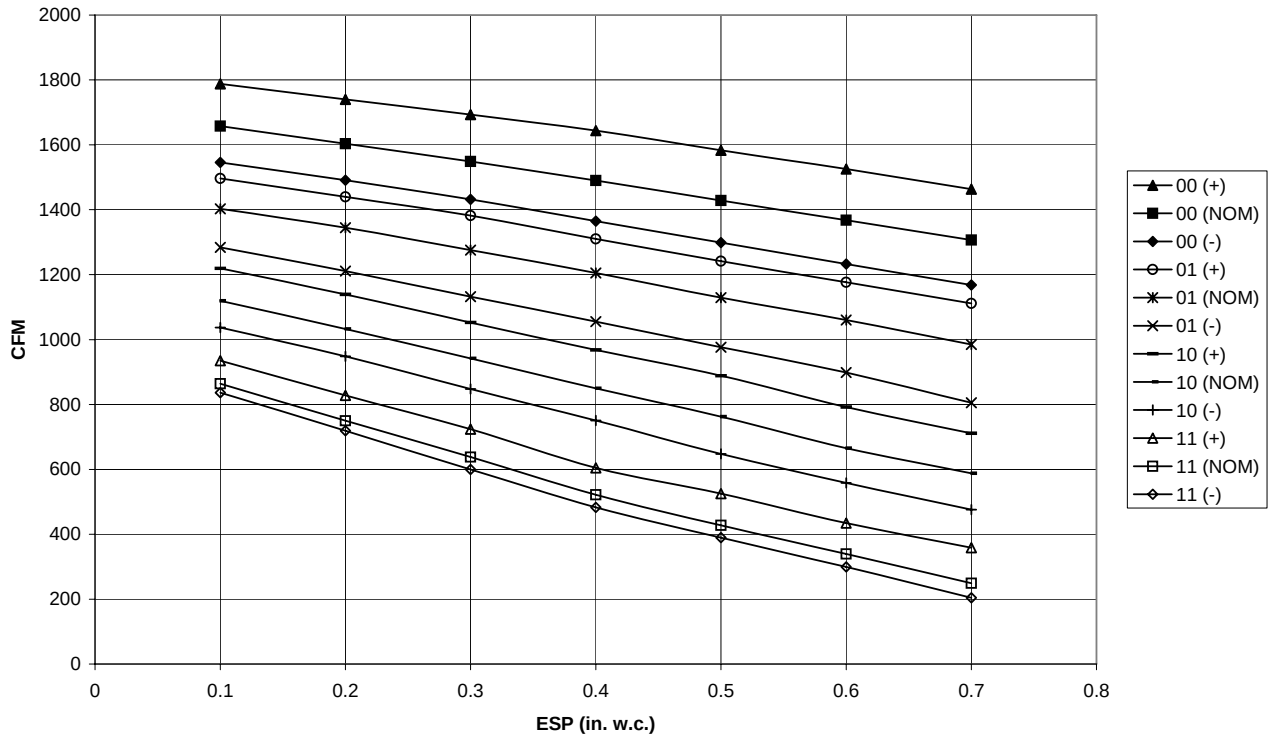
Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

Circulation Air Blower Data - *8MPV125

High Cooling Airflows
***8MPV125J20**



Low Cooling Airflows
***8MPV125J20**



Circulation Air Blower Data - *9MPV050

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	1246	997	+	00	-4	-3
*00	1211	969	*NOM	*00	0	0
00	1122	898	-	00	5	5
01	1105	884	+	01	3	4
01	1027	822	NOM	01	7	7
01	945	756	-	01	13	14
10	892	714	+	10	-1	0
10	820	656	NOM	10	4	5
10	745	596	-	10	9	9
11	688	550	+	11	-15	-15
11	609	487	NOM	11	-13	-12
11	541	433	-	11	-9	-9

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 3

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	592
01	1021
10	1346
11	1346

* Factory Setting

Table 2

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

* Factory Setting

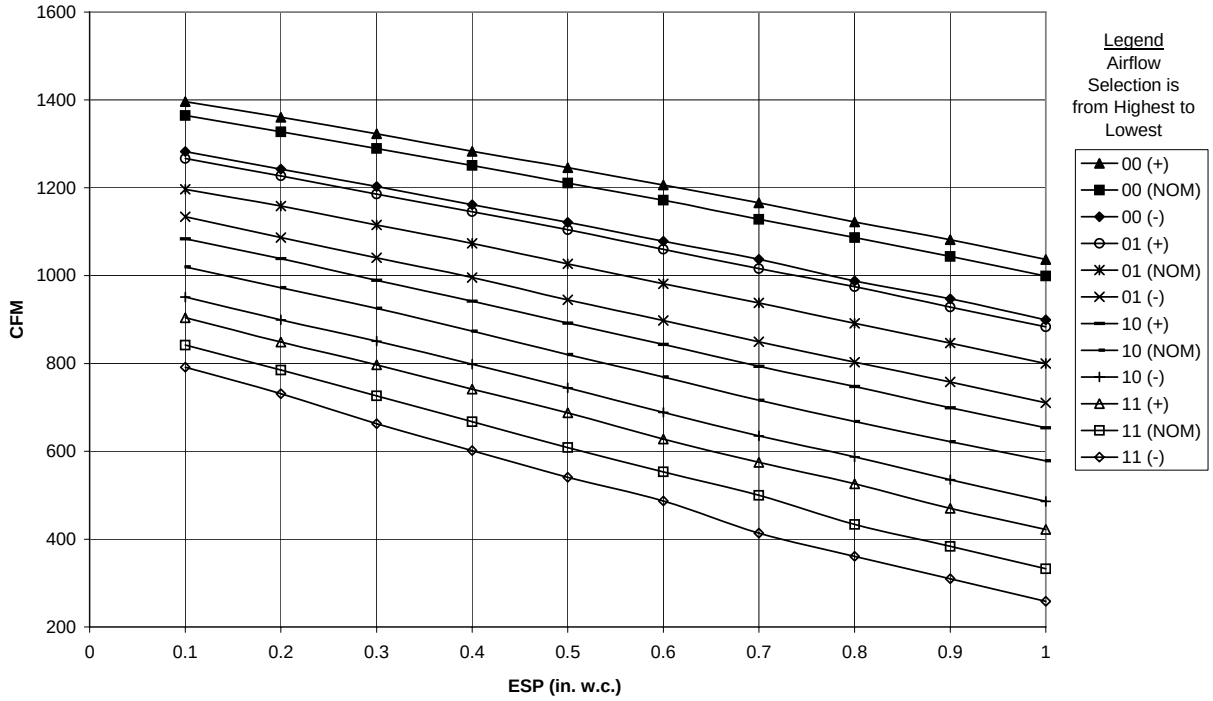
MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

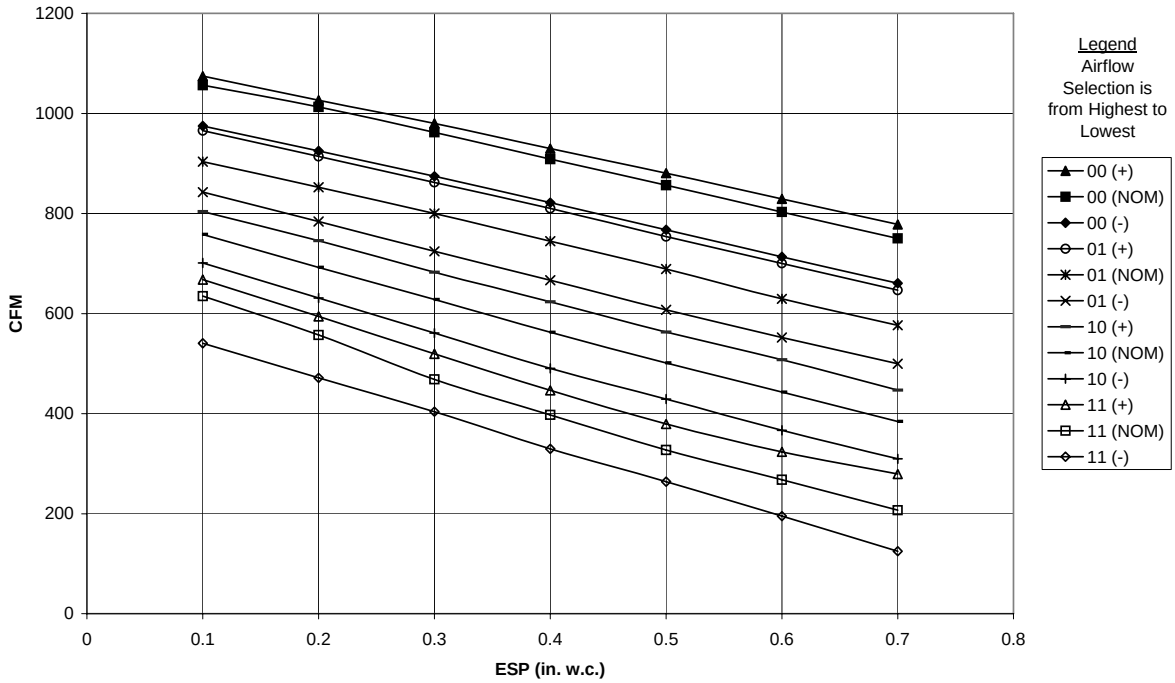
*Circulation Air Blower Data - *9MPV050*

Cooling Airflow Settings

High Cooling Airflows
***9MPV050F12**



Low Cooling Airflows
***9MPV050F12**



Circulation Air Blower Data - *9MPV075

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	1342	1074	+	00	-4	-4
*00	1210	968	*NOM	*00	0	0
00	1053	842	-	00	5	4
01	1135	908	+	01	1	1
01	1020	816	NOM	01	6	5
01	872	698	-	01	12	10
10	965	772	+	10	-1	-1
10	840	672	NOM	10	3	3
10	680	544	-	10	9	8
11	708	566	+	11	-6	-6
11	590	472	NOM	11	-2	-3
11	488	390	-	11	3	2

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	612
01	1096
10	1403
11	1403

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

* Factory Setting

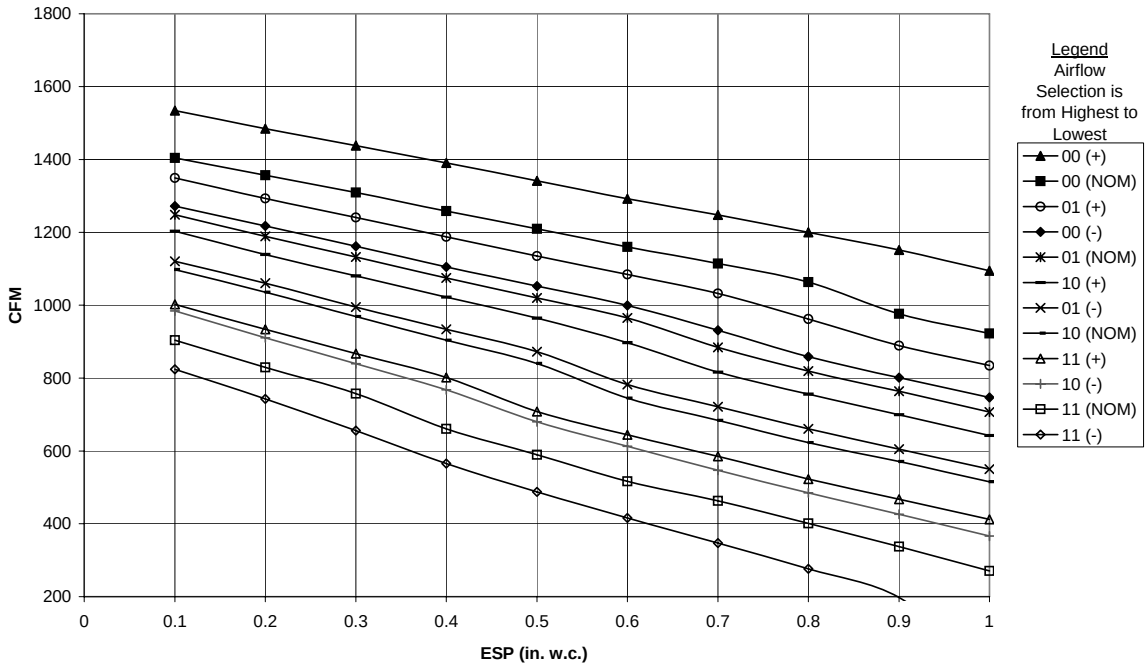
MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

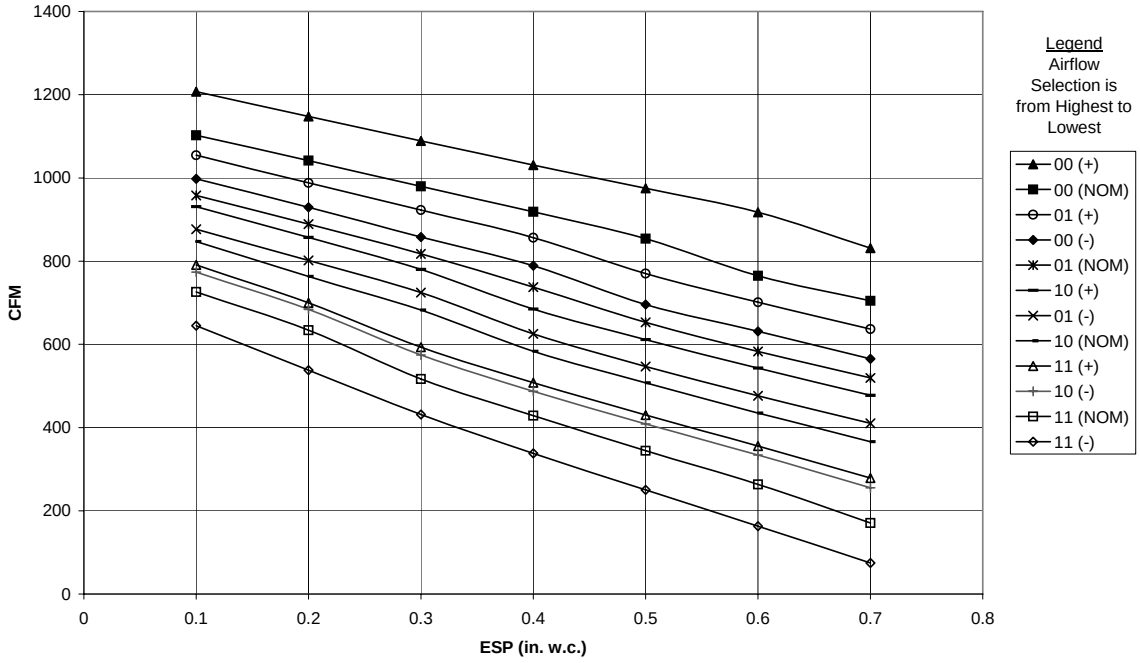
*Circulation Air Blower Data - *9MPV075*

Cooling Airflow Settings

High Cooling Airflows
***9MPV075F12**



Low Cooling Airflows
***9MPV075F12**



Circulation Air Blower Data - *9MPV100

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	2144	1715	+	00	-4	-4
*00	2013	1610	*NOM	*00	0	0
00	1842	1474	-	00	5	5
01	1772	1418	+	01	2	1
01	1624	1299	NOM	01	8	7
01	1471	1177	-	01	14	14
10	1367	1094	+	10	0	-1
10	1227	982	NOM	10	6	5
10	1077	862	-	10	13	11
11	930	744	+	11	-6	-7
11	808	646	NOM	11	-2	-2
11	634	507	-	11	3	3

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	1007
01	1742
10	2204
11	2204

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

* Factory Setting

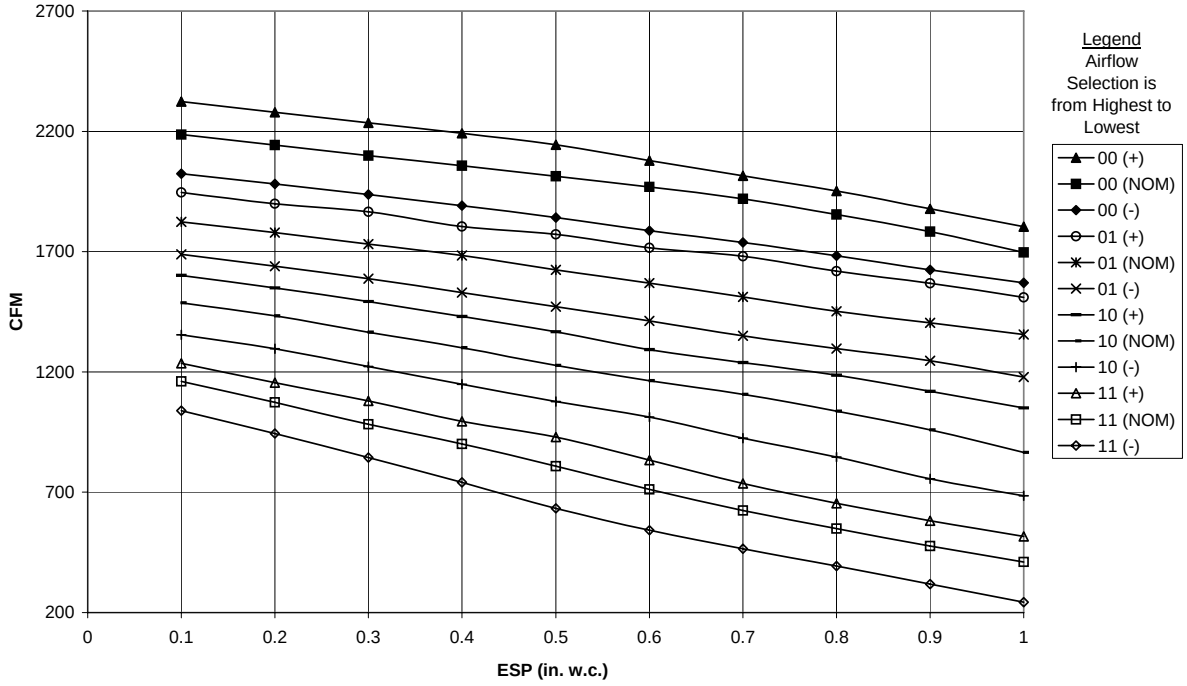
MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

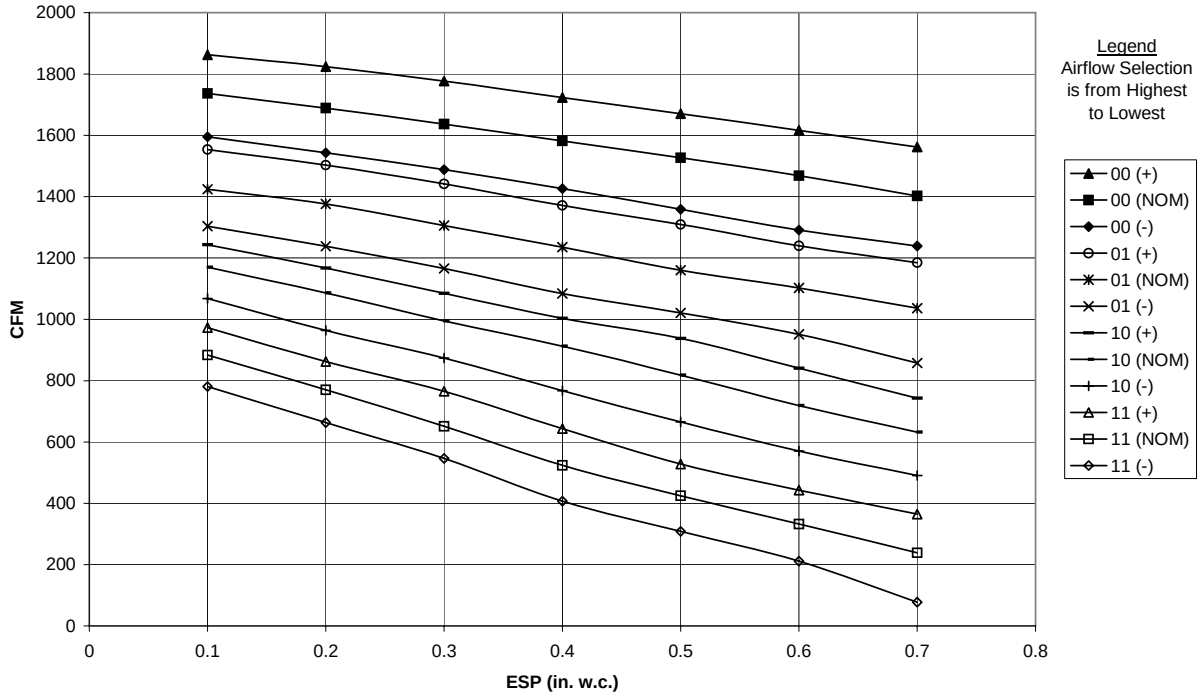
Circulation Air Blower Data - *9MPV100

Cooling Airflow Settings

High Cooling Airflows
***9MPV100J20**



Low Cooling Airflows
***9MPV100J20**



Circulation Air Blower Data - *9MPV125

Heating, Cooling & Continuous Airflow Settings

Table 1

Cooling CFM Adjustment				Heating Rise Adjustment		
DIP Switch 5 & 6	High Cool @ 0.50" wc	Low Cool (80% of High Cool)	**Adjust Jumper Setting	DIP Switch 3 & 4	High Heat Rise Change @ 0.20" wc	Low Heat Rise Change at Resultant Static
00	2150	1720	+	00	-4	-4
*00	2025	1620	*NOM	*00	0	0
00	1856	1485	-	00	4	5
01	1755	1404	+	01	1	2
01	1615	1292	NOM	01	6	7
01	1452	1162	-	01	12	13
10	1338	1070	+	10	-1	0
10	1201	961	NOM	10	3	4
10	1069	855	-	10	9	10
11	909	727	+	11	-6	-6
11	800	640	NOM	11	-3	-3
11	627	502	-	11	3	3

Airflow performance includes 1" washable filter media.

*Factory Setting

**Adjust Jumper Setting (+, NOM, -) is applied to both Cooling and Heating

Note 1: HP Mode Jumper provides a 10% reduction in airflow when in Comfort position and a call for low or high cooling is present with the "O" line off. This feature is to provide lower airflow for running in HP Heating Mode if desirable.

Note 2: DEHUM mode (24VAC on DEHUM terminal) provides a 20% airflow reduction during cooling calls.

Note 3: Low Heat ESP is a result of High Heat ESP (- is decrease in rise).

Note 4: High and low heat rise values are approximate air temperature change from return air temperature when at factory default settings.

Table 2

Continuous Fan @ .10" ESP

DIP Switch 1 & 2	Airflow (CFM)
*00	1032
01	1778
10	2178
11	2178

* Factory Setting

Table 3

SW2 DIP assignments

DIP Switch	Blower Parameter
1 & 2	Cont Fan Adj
3 & 4	Heat Speed Adj
5 & 6	Cool Speed Adj
7 & 8	Cool On/Off Delay

Table 4

	Cooling Delay Options (SW2 - 7, 8)			
	On Delay		Off Delay	
DIP SW2-7/8	Timed ON (sec)	Airflow during on delay	Timed OFF (sec)	Airflow during off delay
*00	5	-	90	100%
01	5	-	0	-
10	30	50%	30	100%
11	30	50%	180	50%

Airflow % is of High Cool airflow demand determined from SW2-5/6 Table 1

Airflow resumes to 100% after on delay time is completed

Airflow stops (or switches to continuous fan speed) after off delay time is completed

* Factory Setting

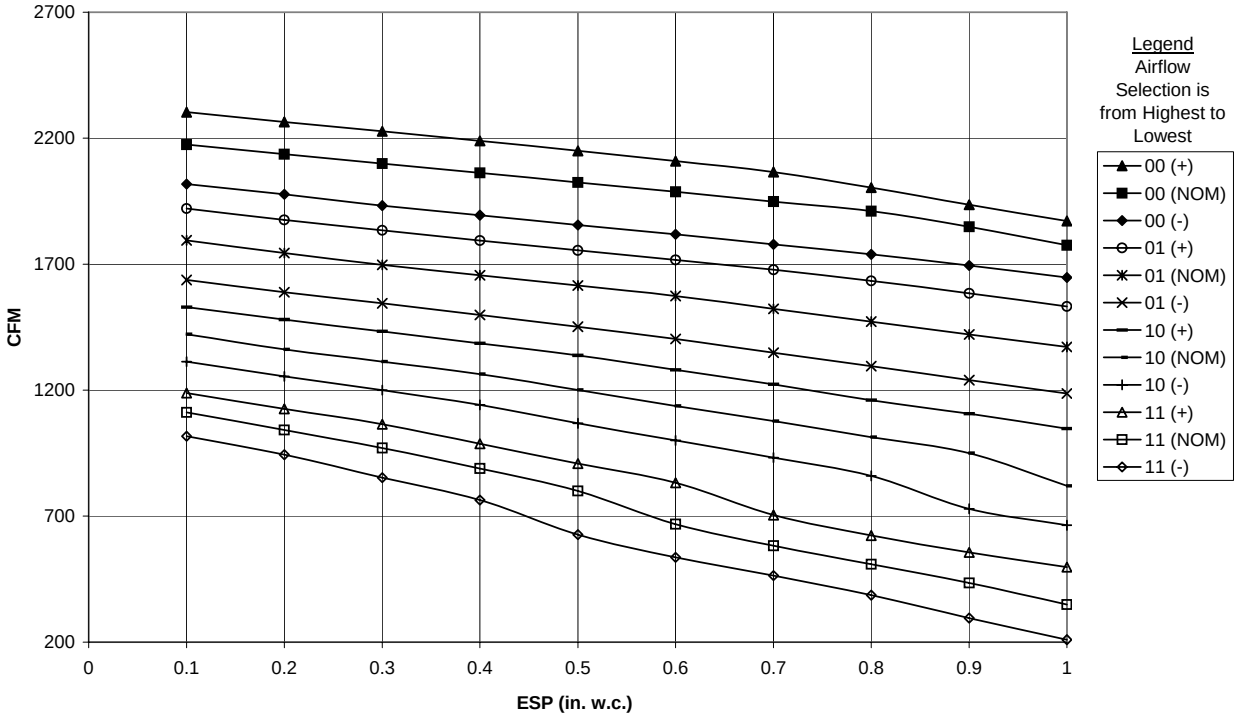
MAX CFM's for Factory Washable Filters	
14" X 25"	1400
16" X 25"	1600
20" X 25"	2000
24" X 25"	2500
MAX CFM based on 600FPM	

Note 1: Disposable filters are typically rated at 300 FPM. These filters only allow half the airflow when compared to 600 FPM filters. (example, 20 x 25 @ 600 FPM = 2000CFM, @ 300 FPM = 1000 CFM)

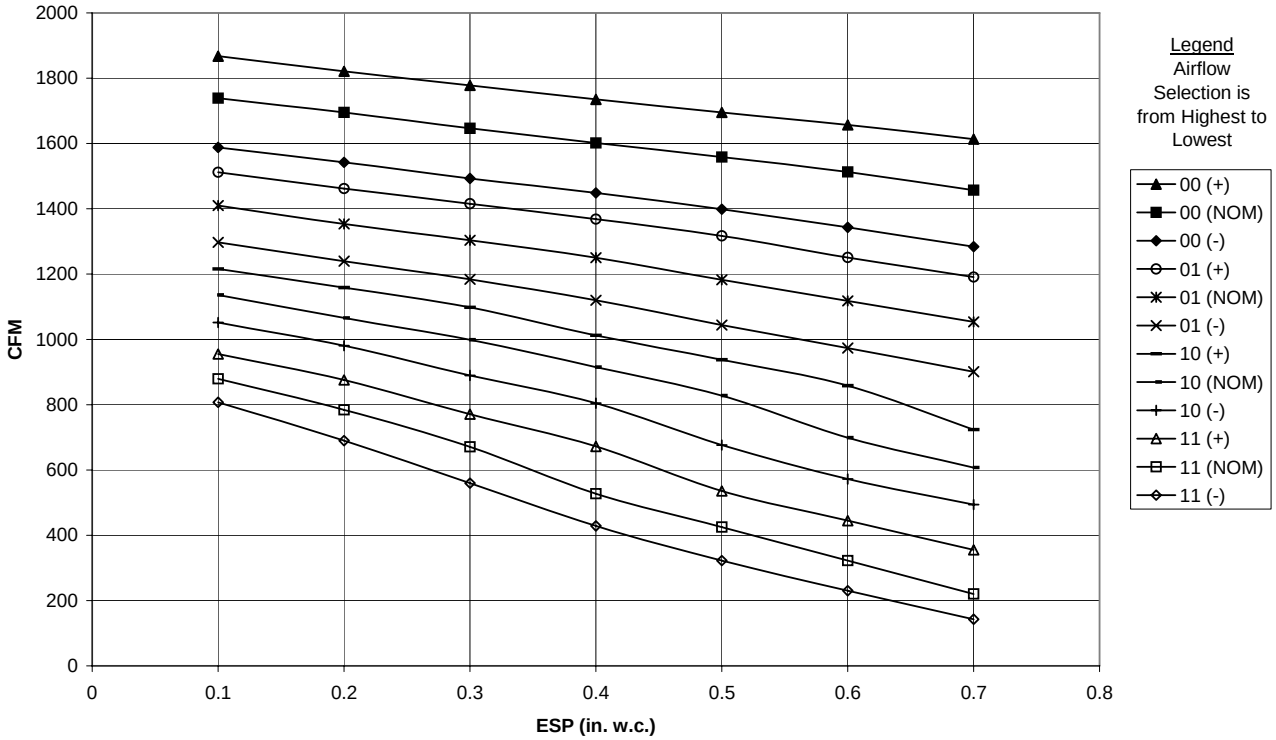
*Circulation Air Blower Data - *9MPV125*

Cooling Airflow Settings

High Cooling Airflows
***9MPV125L20**



Low Cooling Airflows
***9MPV125L20**



1 . Wiring Diagram (Variable Speed Blower Motor)