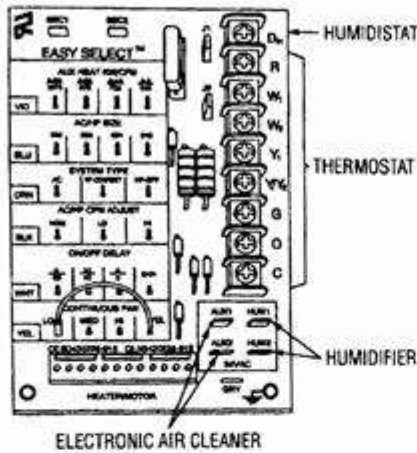


Figure 9-28.
Accessory Wiring Terminals on a Typical Fan Coil Unit Control Board



BDC3 Variable Speed Control Board Selections

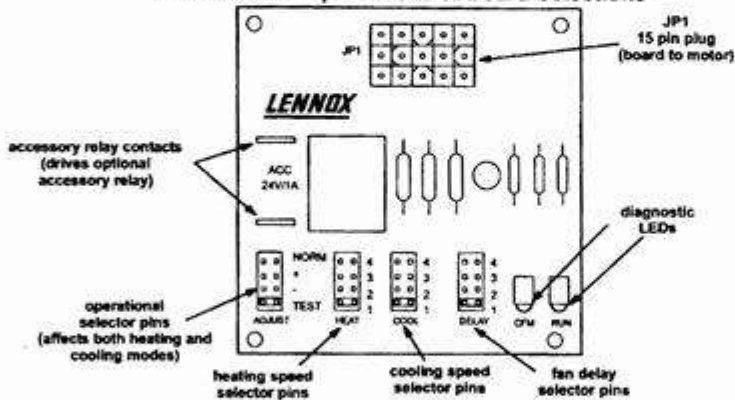
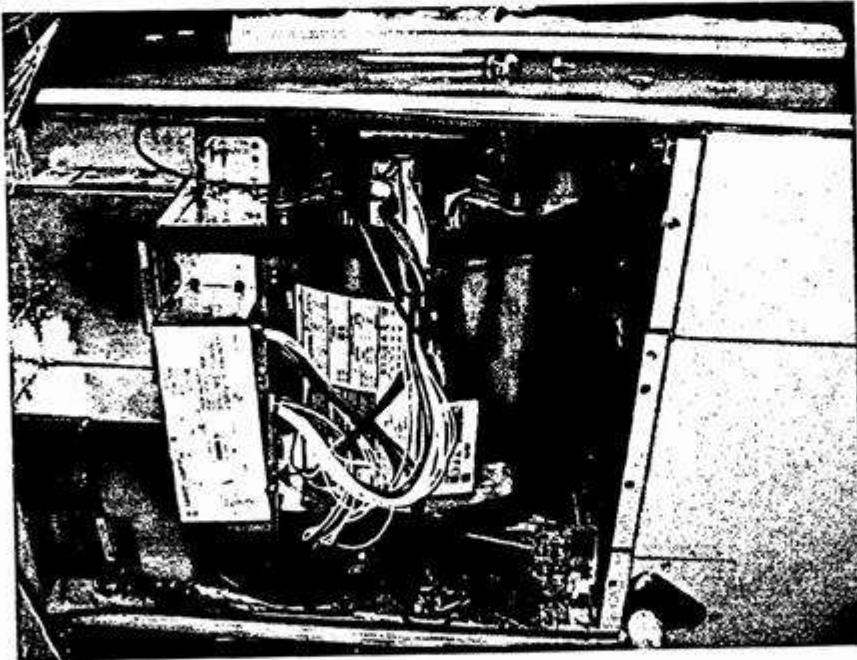


Table 6
CBX32MV-024/030 Blower Performance
0 through 0.80 in. w.g. (0 Through 200 Pa) External Static Pressure Range
BDC3 Jumper Speed Positions

ADJUST Jumper Setting	HEAT Speed												COOL Speed*							
	1		2		3		4		1		2		3		4					
	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s				
+	800	380	935	440	1070	505	1210	570	880	310	880	415	1100	520	1320	625				
NORM	725	340	850	400	975	460	1100	520	800	285	800	380	1000	470	1200	565				
—	655	310	765	360	880	415	990	470	540	255	720	340	900	425	1080	510				

*First Stage (two-speed units only) cooling is approximately 70% of the COOL speed rating.
Continuous fan speed is approximately 50% of COOL speed rating.
Lennox Harmony II® Zone Control Applications - Minimum blower speed is approximately 300 cfm (145 L/s).
NOTE - The effect of static pressure, filter and electric heater resistance is included in the air volumes listed.

You will find variable speed (ECM) motors on many of the newer models. You will be able to tell the system uses an ECM by taking a look at the wires going into the fan housing. Rather than only a few colored wires, you will see many white wires (see picture). This is because the ECM uses DC current that has passed through a rectifier. Control of the speed is done by a printed circuit board; the board uses a combination of jumper and/or DIP switch settings to determine flow. Manufacturers use different schemes to determine flow, so you must look at the literature supplied with the unit to get a sense of what flow to expect. First, make sure to set the "size" pin to the right capacity for the outdoor unit. Next, note many manufacturers start with a factory default of 400 CFM/ton for the cooling setting. The "high" and "low" adjustment pins go about 10% above/below the nominal flow. If the fan has to work against excessive external static pressure (generally above 0.8" of water), it can probably get the desired flow, but it will use more electricity to get it. Above 1" of water, the fan energy will be at least twice that specified by the manufacturer. Schematics for two commonly used control boards are shown on the next page.

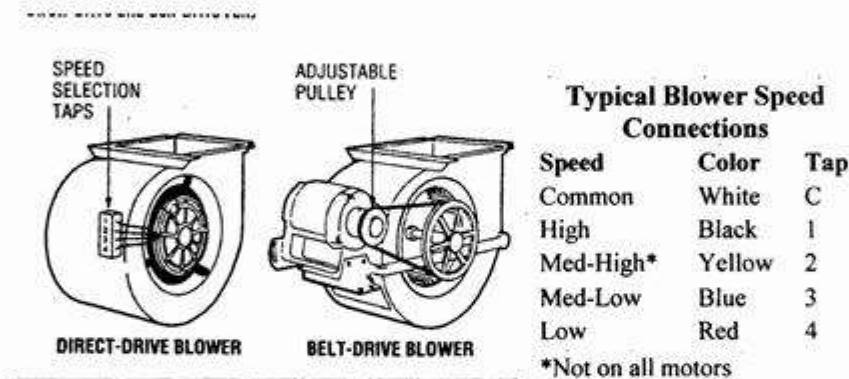


Determining Air Handler Speed

Heat pump manufacturers recommend the air handler move at least 350 CFM/ton of outdoor unit capacity. This amount of flow across the indoor coil is needed for proper heat transfer and occupant comfort.

Undersized ducts, closed ducts, and dirty coils/filters are the primary reason for reduced airflow. However, it is important to know whether the air handler is set to deliver the proper flow. In many cases, the system is set to a low or medium airflow when it is shipped and the speed setting is not changed when the unit is installed.

Standard (permanent split capacitor) blowers typically use a motor that can deliver different flows depending on which speed tap or taps are wired. The schematics show this detail.



Typical Schematic Representation of Direct-Drive Motor Speed Tap Connections

