POWER SUPPLIES

Voltages that power motors are either alternating current (AC) or direct current (DC). Direct current provides a current flow in only one direction. It is derived from the alternating current. The alternating current simply is electronically routed to pass through a load in only one direction. Direct current is commonly used in applications that require adjustable speed as in production line conveyors. The properties of DC motors combined with the ease at which direct current voltage can be created and adjusted makes this type of drive system very popular. Alternating current on the other hand provides current that flows in a forward and reverse action. It does this 60 times per second in the case of 60 hertz power. This power is either single phase or 3 phase. Some common voltages used for motors are shown below.

Single Phase Voltages	3 Phase Voltages
115	208
208	230
230	460
240	480
460	
480	

The flow of electric current can be compared to water flowing through a hose. Voltage is the measure of electric force in the power supply as the water pressure is the hydraulic force in the hose.

The replacement and original motor voltages must be identical. That is, 115 volts to 115 volts, 230 volts to 230 volts, etc. There is a voltage tolerance of +/- 10%, so a 230 volt motor will operate satisfactorily on a 208 volt application and vice versa.

- Some older motors will be stamped 220 volts. In this instance, either a 208 or 230 volt motor can be substituted.
- Oil and gas furnace direct drive blower motors are usually 115 volts.
- Electric furnace direct drive blower motors are usually 230 volts.
- Condenser fan motors for residential air conditioning units can be 208, 230, 277, or 460 volts.