

# MOTOR INFORMATION

## TIPS TO IDENTIFY A MOTOR WITHOUT A NAMEPLATE

**Motor Diameter:** Measure diameter to confirm NEMA (National Electrical Manufacturers Association) frame size.

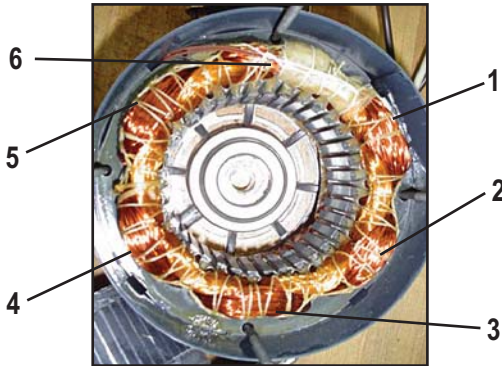
Frame size: 4.9"= 42, 5.6"= 48, 6.5"= 56

**Motor Type:** Shaded Pole (SP), Permanent Split Capacitor (PSC), Split Phase, Capacitor Start/Capacitor Run, Three Phase, and DC.

**Speed:** RPM = 120 x Hz / # Poles

@ 60Hz # Poles	Full Load Speed			
	Syn	SP	PSC	General Purpose
2	3600	3000	-	3450
4	1800	1500	1625	1725
6	1200	1050	1075	1140
8	900	-	825	850

**Count # of Poles**



**Horsepower & Stack Lengths:**

**4 & 6 Pole Open Motors**

HP	Approx. Stack Length
1/4	1.25"
1/3	1.50"
1/2	2.25"
3/4	2.50"

**8 Pole Open Motors**

HP	Approx. Stack Length
1/8	1.13"
1/6	1.25"
1/4	1.62"
1/3	2.25"

**4 & 6 Pole Closed Motors**

HP	Approx. Stack Length
1/4	1.25"
1/3	1.75"
1/2	2.50"
3/4	3.00"

**8 Pole Closed Motors**

HP	Approx. Stack Length
1/8	1.25"
1/6	1.38"
1/4	1.75"
1/3	2.50"



**Measure Stack Height For HP**

**Number Of Speeds:**

- Number Speeds = number of power leads minus 1.
- For SP - **Do not count** the ground (green) lead.
- For PSC - **Do not count** the ground (green) lead or the capacitor (brown) lead.

**Mechanical Features:**

- Mounting Definition - Base, Belly band, Lugs, Studs, Face mount, etc.
- Enclosure - ODP (Open Drip Proof), TE (Totally Enclosed), etc.
- Shaft - Number, Length, Diameter, Flat-Keyway, etc.
- Unique Features - Leads, Conduit Box, Bearings, Brake, Rotation Arrow, Capacitor Cover, Slings, etc.

**Rotation:**

- Most standard motors (except Single Phase and Threaded Shaft) are reversible from standstill by electrical re-connection.
- Three phase motors reversed by interchanging any two of the three power leads.

**Note:** Rotation of an unknown motor is often found by noting attached fan, blower or other device. Dirt accumulates on the side towards which the motor rotates.

**Voltage:** Common Voltage

	115	230	Dual	277	460	575
SP	X	X	-	X	-	-
PSC	X	X	-	X	X	-
Split Ph	X	X	-	-	-	-
Cap Start	X	X	115/230	-	-	-
3 Phase	-	X	230/460	-	X	X

Note: Voltage may be difficult to determine. **Ask the customer!**

**Typical Color Schemes (Not a standard):**

- White - Common lead (115 volt)
- Yellow or Purple - Common lead (230 volt)
- Brown - Capacitor leads (1 or 2)(PSC Only)
- Black - High
- Blue - Medium
- Red - Low
- When replacing PSC a good practice is to replace the capacitor, too.
- Replace based on horsepower not AMP rating.
- Do not replace manual overload with automatic overload motor.
- Motors with similar stator dimensions will have output (other features being equal). I.e. It takes a similar amount of iron and copper (D2L) for torque.

**Some rules of thumb:**

Generally if this is... (the original)	This can be used as a replacement
Shaded Pole	Permanent Split Capacitor Ball Bearing
Sleeve Bearings	Sleeve Bearing Totally
Open or DP	Enclosed
1 Speed	1, 2 or 3 Speed
2 Speed	2 or 3 Speed
370 Volt Capacitor	370 or 460 Volt Capacitor

