

Pump Selection Moyno® Mag Drive 500 Pumps

There are several factors that need to be identified when selecting the best pump for an application. This guide is designed to help you with an initial selection of a Mag Drive 500 pump. Please remember that our Moyno Applications Engineers are here to assist you with any application questions you may have. The more application data you know will help in making a more informed selection.

- 1.) Basic application data you need to know:
 - What are the fluid(s) being pumped?
 - Suction and discharge pressures.
 - Flow rate needed.
 - Are the fluid(s) viscous or abrasive?
 - Fluid temperature.

- 2.) What pump materials of construction are compatible? The Mag Drive pumps are supplied with:
 - Titanium rotors.
 - PVC housings.
 - Other component materials are PVDF casing, alumina shaft and washers, silicon carbide thrust bushing and carbon graphite bushing.
 - Check one or more of the various material compatibility data files to determine if the fluid being pumped is chemically compatible with the pump's construction.

- 3.) Key Application Notes:
 - Do not apply a Mag Drive to pump fluids that have solids.
 - Maximum 700 CP viscosity.
 - Temperature range -- 10°F to 140°F.
 - For application conditions outside these guidelines, consult our Applications Engineering Department.

Selection Steps

- 1.) Your first step is to determine available models as a function of the maximum differential pressure listed in Chart 1 below:

Chart 1

<u>Model</u>	<u>Maximum Pressure Capability</u>
MAG331	100 PSI
MAG332	80 PSI
MAG333	50 PSI
MAG344	40 PSI

Example: If your differential pressure is 80 PSIG, you have two models from which to select ... MAG331 or MAG332.

- 2.) The second step is determining the specific model and approximate pump speed to achieve the required flow. From Chart 2, determine which pump model will achieve the required flow rate as a function of differential pressure. You can interpolate between the data.

Chart 2

Models	GPM @ 1750 RPM @		
	20 PSIG	40 PSIG	80 PSIG
MAG331	1.40	1.30	1.15
MAG332	3.90	3.40	2.20
MAG333	5.50	3.90	
MAG344	10.00	8.30	

Example: Required flow rate is 5.0 GPM
Differential pressure is 40 PSIG

From Chart 2, a MAG344 can displace 8.30 GPM at 1750 RPM against 40 PSIG. To determine what speed is required to achieve 5.0 GPM, use the following formula:

$$\text{Required RPM} = \frac{\text{Required GPM (1750 RPM)}}{8.3 \text{ GPM}}$$

$$\text{Required RPM} = \frac{5.0 (1750 \text{ RPM})}{8.3 \text{ GPM}}$$

$$= 1055 \text{ RPM}$$

- 3.) The final step ... determining drive horse power.

For the application guidelines outlined above, always use a **1 horse power drive**.

Example: use model MAG344

Operated at 1055 RPM to achieve 5.0 GPM against 40 PSIG differential pressure.

1HP, 1750 RPM motor.

Use a VFD to vary the speed.