

Pump Design Pros & Cons

There are many things to consider when making the decision of which pump to use for your application. Of course you will need adequate volume and pressure to not only operate the booms or spray guns, but also to agitate the mixture. *Generally, pump manufacturers will recommend excess flow in gpm should be 5% of the spray tank's capacity for proper agitation.* We hope explaining the different pump characteristic's proves to be helpful.

Diaphragm Pumps - Rated "Most Versatile" and our first choice for a variety of applications.

Pros:

- Can handle a wide range of chemicals
- Works well with powders
- Available in a wide range of pressure & volumes
- Can be run dry without damage occurring
- Easy to service
- If serviced properly has a very long life expectancy



Cons:

- Requires more frequent inspections and service to insure long life.
- Many moving parts

Roller Pumps - Known for years as a "Throw-away" pump due to the low cost.

Pros:

- Moderate to high volumes
- Economical, *cast iron versions*
- Simple design very few internal moving parts
- Compact



Cons:

- Damage occurs quickly if allowed to run dry
- Limited pressures
- Short lifespan when used with powders or other dry concentrates
- Not easily serviced if tools or mechanical skills are in short supply

Centrifugal Pumps - Rated "Best" for large boom operations.

Pros:

- High volume
- Simple design very few internal moving parts
- Easy to service

Cons:

- Damage occurs quickly if allowed to run dry



- Limited pressures
- Requires Flooded Suction (Tank outlet must be higher than the pump inlet.)

Piston Pumps - Popular for higher pressure applications, but diaphragm pumps are preferred.

Pros:

- Moderate to high pressure
- Reliable
- If serviced properly has a very long life expectancy

Cons:

- Damage occurs if allowed to run dry
- Short lifespan when used with powders or other dry concentrates
- Limited volumes
- Not easily serviced if tools or mechanical skills are in short supply



Preferences refer to *our* preferences and opinions may vary.

Consider how you operate when selecting a pump. Some people do their own spraying so perhaps concerns about the pump running dry may not be an issue. It also may be deemed cost effective by some to simply throw away a cast iron roller pump every year instead of rebuilding a diaphragm pump.

If you have any questions, concerns or would like to share something that you have found helpful in your spraying practices e-mail to: pbm@pbmsprayers.com.

Spray tips offered by PBM are from our experiences, some are from input we have received from our customers and other spray equipment operators who wish to share successes they have had. We hope these tips help you, but cannot accept liability for any damage to property or individuals should you choose to use them in your spraying practices.