

Direct drive dispersers

01. DISPERSION OR HIGH VISCOSITY MIXING

02. PRESSURE, VACUUM, VAPOR-TIGHT OR OPEN TANKS

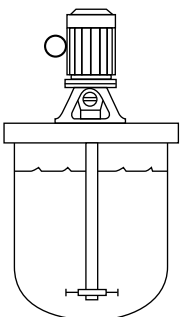
03. SINGLE, DUAL OR OFFSET CONFIGURATIONS

MorehouseCowles is a world leader in the design and manufacturing of high-speed dispersion equipment and the most efficient impellers. Our machines are currently used in hundreds of processes – no matter what your high-speed dispersion or high-viscosity mixing needs are, MorehouseCowles has the solution.

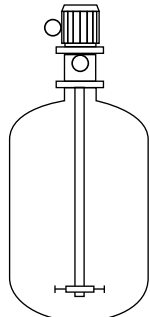
The Model D direct drive dispersers provide a low-cost way to incorporate MorehouseCowles efficiency and reliability into your existing process. These versatile units have the longest life and lowest maintenance system due to their simple, reliable design. This simple design also translates into the lowest price-per-horsepower ratio available.

Model D dispersers range from 5 to 125 hp. They can be ordered with single-speed or variable speed capability (via inverter drives). A selection of MorehouseCowles impellers are available for additional process versatility.

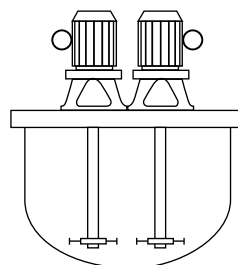
Optional advanced sealing systems provide long, reliable dispersion in processes requiring vacuum, pressure, temperature or environmental control. If your process demands more from your mixing and dispersion equipment, make it MorehouseCowles.



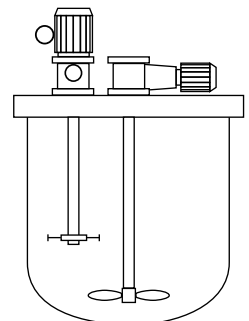
Unsealed tank installation



Pressure / vacuum tank installation



Dual installation (low profile tanks)



Offset installation (complements slow-speed mixer)

To custom configure your own MorehouseCowles direct drive disperser, use the guidelines provided in this brochure. Start by determining the volume and dimensions of your tank. Then select an impeller with a diameter and shaft length to match. Add the right motor and you'll be set with an economical system that will meet your exact requirements.

1 Determine Tank Size:

Volume in US gallons can be estimated by multiplying the area of a cylindrical tank and the height, then dividing that number by 231. Batch size is a function of tank volume that leaves freeboard between the rim of the tank and the level of the product.

Q

$$Q \cong \left[\frac{\pi D^2}{4} \times (L + h) \right] / 231$$

$$B \cong 0.8 Q$$

2 Select Impeller Diameter:

Impeller diameter is 1/3 of the tank diameter.

$$d = 0.33 D$$

3 Select Impeller Height:

Length of shaft must allow for impeller height, within the range based on impeller diameter.

$$h_{\min} \cong 0.5 d$$

$$h_{\max} \cong 1.0 d$$

4 Select Peripheral Speed:

Proper peripheral speed for dispersion should be in the 4800-5500 fpm range. For tinting or viscous mixing, peripheral speed should be in the 2000-3500 fpm range.

*Peripheral speed in feet-per-minute at 60 Hz

Impeller Diameter	Motor rpm		
	1800	1200	900
8"	3772	2515	-
10"	4716	3144	2356
12"	5659	3772	2830
14"	-	4401	3301
16"	-	5030	3772
18"	-	5659	4224

5 Select rpm:

- A. Must be synchronous motor speed.
- B. Must provide appropriate peripheral speed.

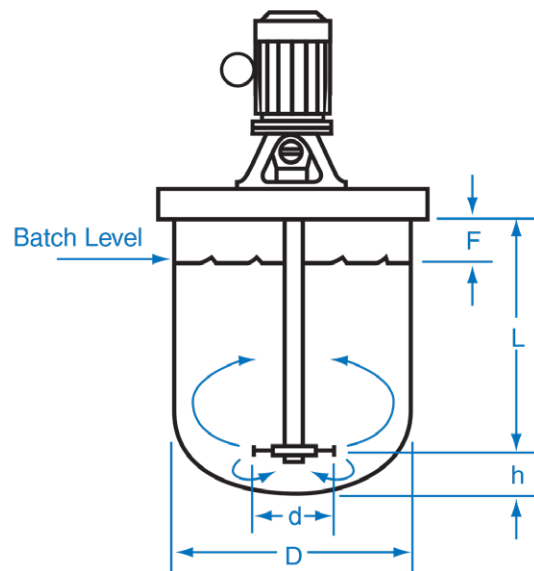
$$V = \frac{(rpm) d \pi}{12}$$

6 Select Motor:

Available synchronous, 60 Hz motor speeds are 1800, 1200, and 900 rpm. Specify single-speed, dual-speed, frequency inverter or DC drive. Also specify motor enclosure (e.g., Class 1, Div 1, Group D, TEFC), voltage and other electrical characteristics.

7 Contact Us

Once calculations have been completed to determine tank and batch sizes, contact a MorehouseCowles technical sales representative at sales@morehousecowles.com for HP calculations and sizing of the direct drive units for a custom model.



Typical direct drive disperser installation for unsealed tanks.

DEFINITIONS:

- d = Impeller diameter (inches)
- D = Tank diameter (inches)
- L = Shaft length (inches)
- h = Impeller height off tank bottom
- V = Peripheral speed (feet per minute)
- Q = Gross tank volume (US gallons)
- B = Batch size (US gallons)
- HP = Horsepower
- F = Freeboard (inches)

For more information, visit morehousecowles.com or contact MorehouseCowles experts today at sales@morehousecowles.com or +1 (909) 627 7222.