

Introduction / Mixer Selection

Portable Mixers from Neptune Mixer Company

A Division of Neptune Chemical Pump Company

Neptune mixers have been designed, engineered and built to provide long life and trouble-free service in a wide variety of blending/mixing operations. These mixers are popularly used to:

1. Blend liquids.
2. Suspend or dissolve solids
3. Disperse immiscible liquids
4. Disperse small amounts of gases in liquids

Neptune portable mixers can be clamp- or base-mounted on beams, tank walls or other supports. Angle of entry may be adjusted to meet specific mixing requirements.

Neptune portable mixers find use in a variety of different industrial applications...waste treatment, water treatment and batch chemical preparation. These portables are also ideal for mixing paints, varnishes, polymers, textile sizes and dyes, pharmaceuticals, soaps and countless other materials from 1 to over 25,000 CPS viscosity.

In the following pages, we present specifications, dimensions and dimensional drawings and other information to help you select the proper Neptune mixer for your application, depending on

the size of the batch, the viscosity of the components and final product, and other parameters. Our portables are available at either 350 or 420 RPM (gear-driven) or 1750 RPM (direct-drive).

If you have any questions or wish to discuss your mixing/blending application with us, please feel free to call one of our sales engineers.

Neptune Mixer Selection Chart

The chart below is intended to provide some basic guidelines for selecting the proper Neptune mixer(s) to provide mild blending of various viscosity liquids in different size tanks.

This chart is based on an approximate mix/blend time for two liquids of 30 minutes, with both liquids already in the tank. Mixing times will be shortened if one liquid is added to a second liquid while the mixer is operating. Powders should always be added while the mixer is running.

This chart also applies to the suspension of solids with settling velocities of less than one foot per minute.

For more rapid or vigorous mixing, use a mixer one or two sizes larger.

Dual propellers are recommended for tanks 1000 gallons and larger at viscosities of 1000 CPS and higher.

VISCOSITY CPS	UP TO 50 Gallons	UP TO 100 Gallons	UP TO 200 Gallons	UP TO 500 Gallons	UP TO 1000 Gallons	UP TO 2000 Gallons	UP TO 3000 Gallons	UP TO 5000 Gallons
≤1	BN-3.0	BN-3.0	JD-2.0	JD-2.0	JG-2.0	JG-2.0	JG-2.0	JG-4.0
≤100	BN-3.0	BN-3.0	JD-2.0	JG-2.0	JG-2.0	JG-2.0	JG-3.0	JG-5.0
≤300	BN-3.0	BN-3.0	JG-2.0	JG-2.0	JG-2.0	JG-4.0	JG-5.0	JG-5.0
≤500	BN-3.0	JG-2.0	JG-2.0	JG-2.0	JG-3.0	JG-5.0	JG-6.0	JG-7.0
≤1000	JD-2.0	JG-2.0	JG-2.0	JG-2.0	JG-4.0	JG-6.0	JG-7.0	JG-8.0
≤2000	JG-2.0	JG-2.0	JG-3.0	JG-3.0	JG-5.0	JG-6.0	JG-8.0	JG-9.0
≤3000	JG-2.0	JG-2.0	JG-4.0	JG-4.0	JG-6.0	JG-8.0	JG-9.0	
≤5000	JG-2.0	JG-2.0	JG-5.0	JG-5.0	JG-7.0	JG-8.0		
≤15000	JG-3.0	JG-3.0	JG-5.0	JG-8.0	JG-9.0	JG-9.0		
≤25000	JG-6.0	JG-7.0	JG-8.0	JG-9.0				

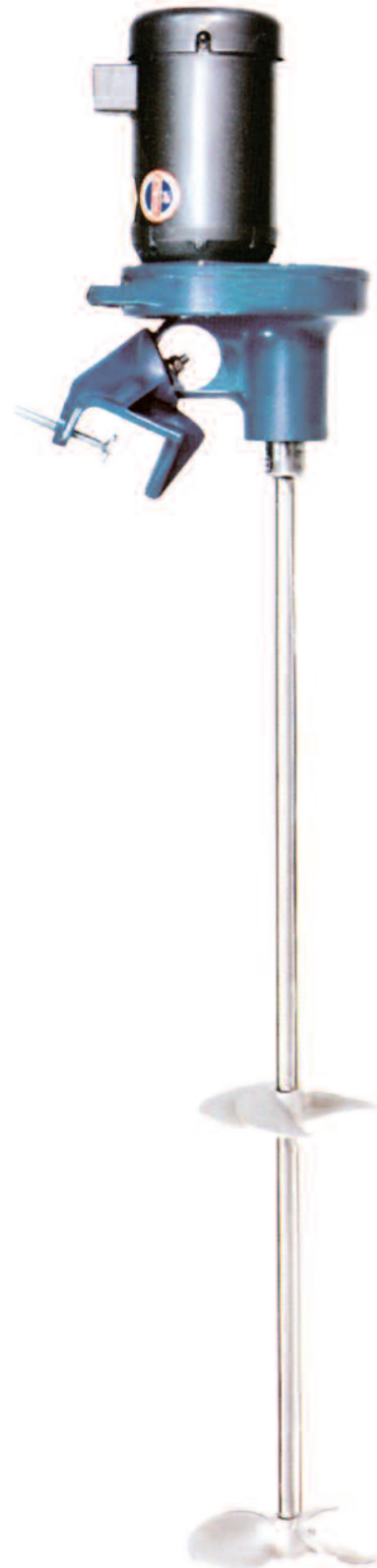
For full specifications and information on the above mixers:

Series JG – see page 4

Series JD – see page 6

Series BN – see page 7

The Neptune Guarantee: If the mixer we select does not produce the desired process results, we will replace it with a mixer that will.



Proper Mixer Mounting and Positioning

In most applications involving small mixing tanks of 1000 gallons or less, the mixer is clamped to the side of the tank. Optimum mixing will be achieved when the mixer is angled from the tank wall, either off center (figure 1) or on center (figure 2). Improperly mounting a portable mixer will greatly lessen mixing efficiency, cause vibration and could possibly damage the mixer.

Angling off center is preferred when good material turnover is required, as in mixing a slurry. Angling on center is desired for more gentle mixing and when vortexing must be minimized.

Larger size tanks may require that a mixer be mounted directly in the center of the tank with the shaft vertical (figure 3). When a mixer is used in this arrangement, baffles are recommended to prevent the contents of the tank from turning in the direction of the mix. If this occurs, mixing action will be poor.

Such baffling will avoid vortexing and allow mixing to be as thorough as possible. Neptune suggests that four baffles be used, located 90° apart and sized approximately 1/12 of the tank diameter. The baffle should not fully extend to the bottom of the tank and a gap should be provided between the baffle and the tank wall.

For assistance in choosing a mixer or to help solve your mixing problems, please call or Fax one of our sales engineers: 215-699-8700, Fax 800-255-4017.

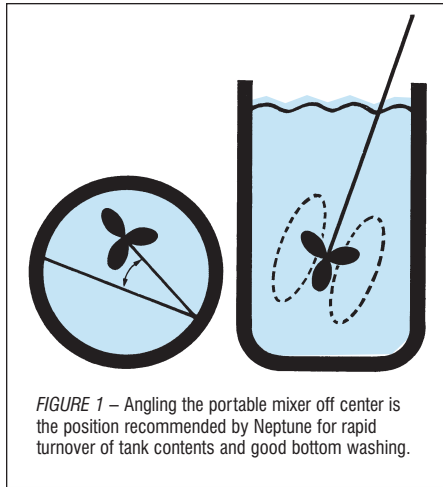


FIGURE 1 – Angling the portable mixer off center is the position recommended by Neptune for rapid turnover of tank contents and good bottom washing.

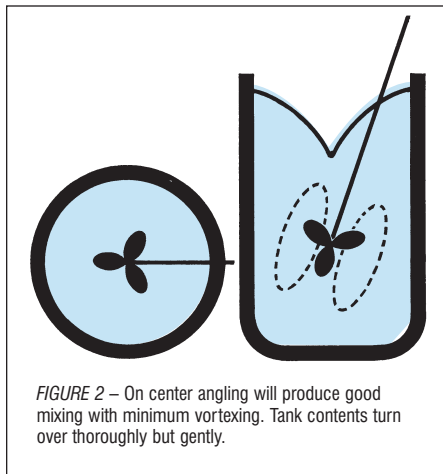


FIGURE 2 – On center angling will produce good mixing with minimum vortexing. Tank contents turn over thoroughly but gently.

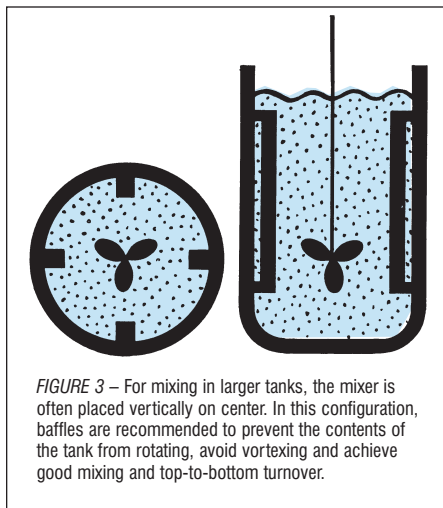


FIGURE 3 – For mixing in larger tanks, the mixer is often placed vertically on center. In this configuration, baffles are recommended to prevent the contents of the tank from rotating, avoid vortexing and achieve good mixing and top-to-bottom turnover.

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