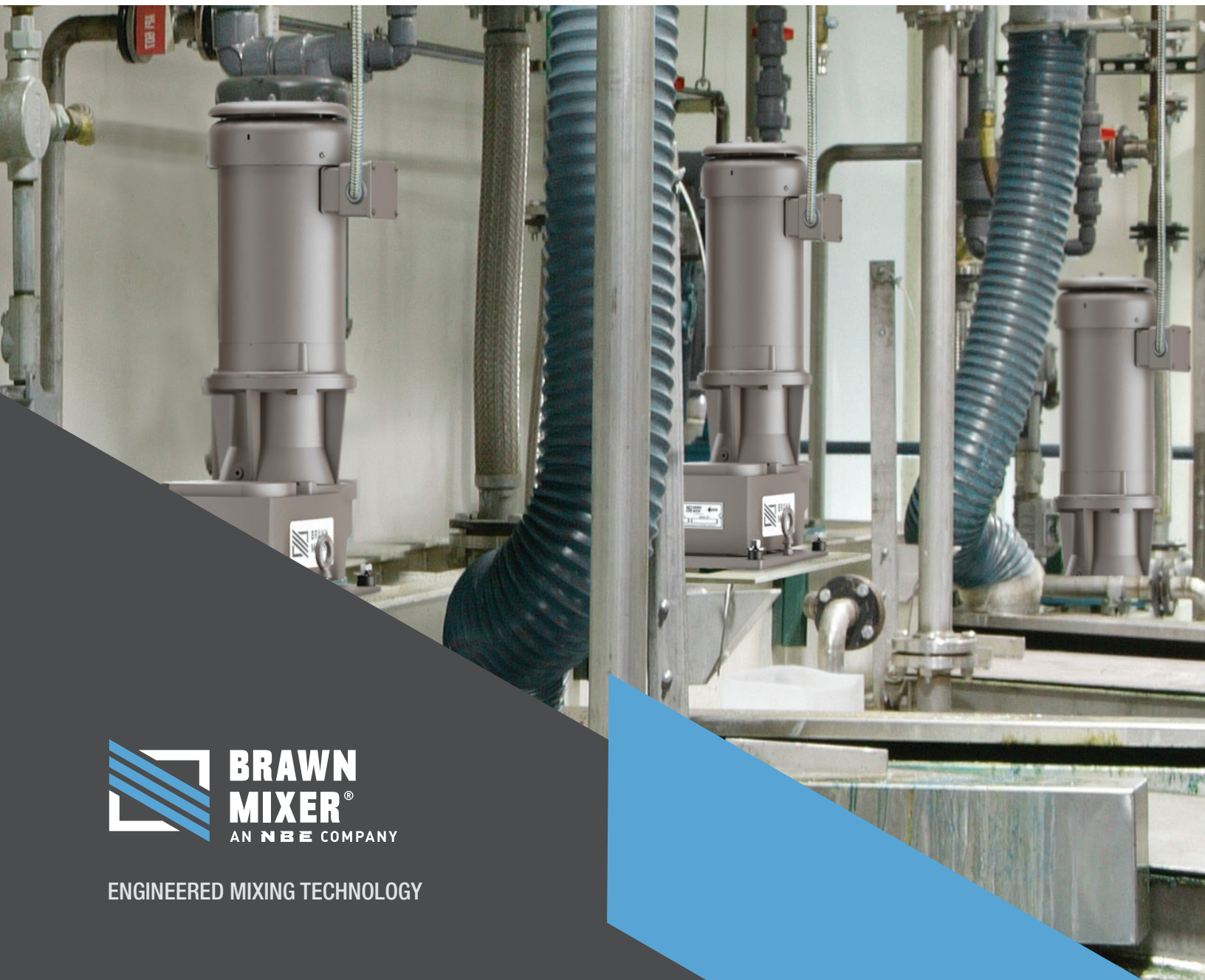


# LARGE CAPACITY MIXERS HIGH PERFORMANCE BTO/BTR SERIES



ENGINEERED MIXING TECHNOLOGY

# MIX WITH CONFIDENCE

## High-performance Mixers

Brawn Mixer products are engineered to meet the most demanding applications, from lab-scale to large-scale integrated systems. Brawn Mixer's experience provides solutions that are effective, reliable, and cost-competitive.

Built for any environment, Brawn Mixers can handle large volumes with complex process requirements. Whether it's blending, solids suspension, gas dispersion, heat transfer, or high viscosity, Brawn Mixer can meet the challenge.

We're ready to help you select the ideal products, provide technical expertise, and ensure smooth start-up, all to improve your productivity and process performance.

- Large-scale volumes up through 300,000-plus gallon tanks
- Drives through 200-plus HP available
- Multiple mounting options
- Impellers specifically designed for your unique application with a wide selection of metal alloys and corrosion/abrasion-resistant coatings to withstand a broad spectrum of chemical compounds and slurries
- Custom mixing systems, including tanks, support structures, pumps, piping and control packages are also available, along with installation supervision, startup assistance, and commissioning support.

## Our Experience Runs Deep

Our collaborative approach to solving your mixing challenges is based on a proven track record of experience in delivering highly engineered, reliable products and technical expertise.

Our reputation is built on a rock-solid pursuit for continuous improvement and we will help you succeed with your mixing solution with passion and reliability.

Every mixer we manufacture represents thousands of applications in a variety of industries, including:

- **Chemical Processing**
- **Food, Beverage, and Nutraceuticals**
- **Pharmaceutical and Life Science**
- **Health, Beauty, and Cosmetics**
- **Industrial Water and Wastewater Treatment**
- **Paint and Coatings**
- **Fermentation/Distillation**



# BTO/BTR SERIES MIXERS

- Typical bearing life 100,000 hours or per customer specifications
- Can be mounted angular off-center and achieve effective mixing without baffles
- A variety of mounting flanges are available including ANSI, DIN or special
- Right-angle mount for low headroom or tight space requirements

## BTO/BTR FEATURES

### Gear Drive

- Parallel or right-angle input/output shaft
- 1 to 200 HP standard
- Output speeds: 30 to 100 RPM standard
- Overall Service Factor: 1.5 (min) based on motor nameplate HP

### Gear Case

- High-strength Class 35 cast iron

### Bearings

- Ball and tapered roller configured for mixer service

### Gearing

- Helical, spiral bevel
- Gear quality: AGMA Class 11-13

### Lubrication

- Oil bath, splash

### Output Shaft

- Oversized and hardened
- Solid or hollow quill
- 42CrMo4 / ANSI 4140
- Rigid, flanged coupling standard
- Shaft sealing system: Double-stacked with dust lip protection

### Motor Mount

- NEMA or IEC

## PLATE MOUNT

- For open tank configurations



## LPSB MOUNT

- For low-pressure sealed tank applications

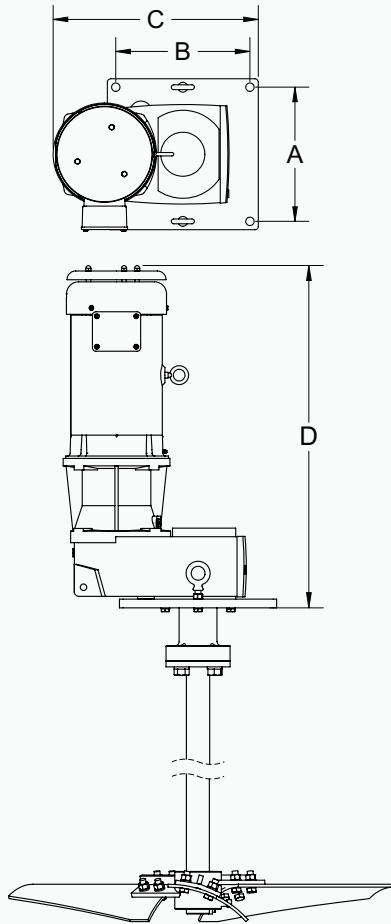


# OPEN TANK CONFIGURATIONS

## Plate Mount

- For maximum utility across all industries
- Suitable for tank-mounted or free-standing support structures

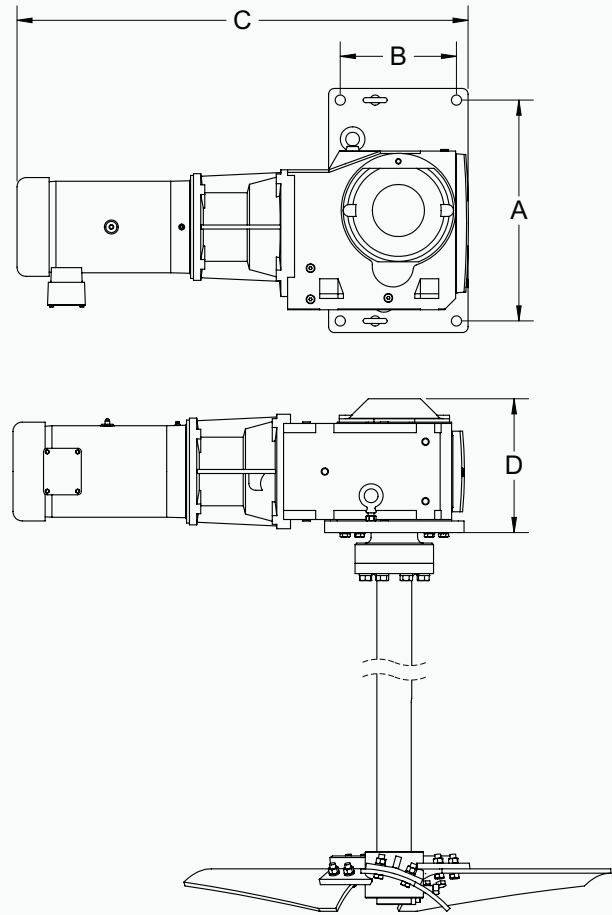
### BTO parallel shaft speed reducer



Dimensions (inches)

CASE SIZE	A	B	C	D
2	12.0	12.0	16.5	23.6
3	12.0	12.0	17.8	24.6
4	16.5	10.0	19.1	29.5
5	16.5	10.0	21.2	33.0
6	22.5	15.0	28.2	51.0
7	22.5	15.0	29.5	51.5
8	25.0	22.0	32.0	57.3
9	32.0	28.0	42.9	58.5

### BTR right-angle speed reducer



Dimensions (inches)

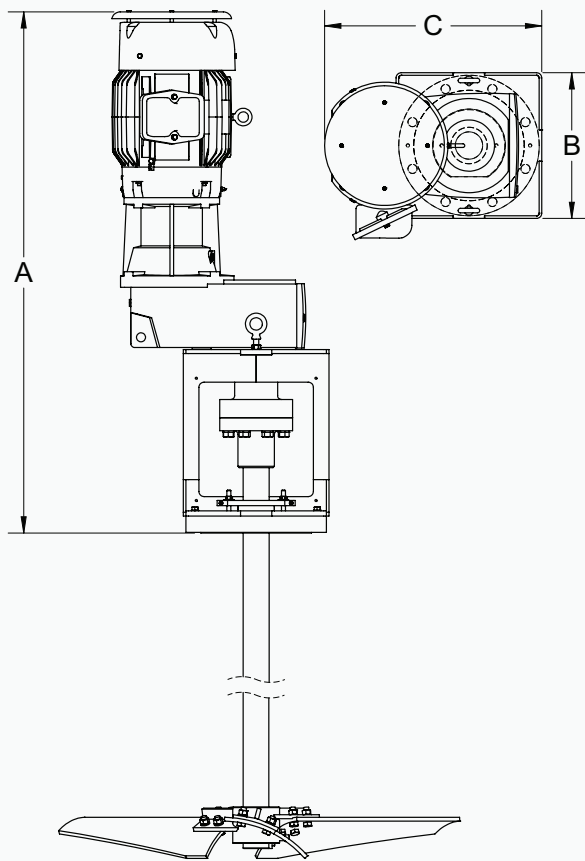
CASE SIZE	A	B	C	D
2	14.0	10.0	37.6	8.8
3	16.0	10.0	43.8	10.2
4	19.0	10.0	48.7	11.7
5	23.0	13.0	56.0	14.7
7	28.0	16.0	68.2	16.7
8	34.0	20.0	83.1	19.5
9	43.0	26.0	91.1	27.6

# CLOSED TANK CONFIGURATIONS

## Low Pressure Stuffing Box (LPSB)

- Cost effective configuration for low-pressure sealed tank applications
- 15 psi standard. Higher pressures available
- Packing material options: food-grade, pharmaceutical, chemically resistant, high-temperature

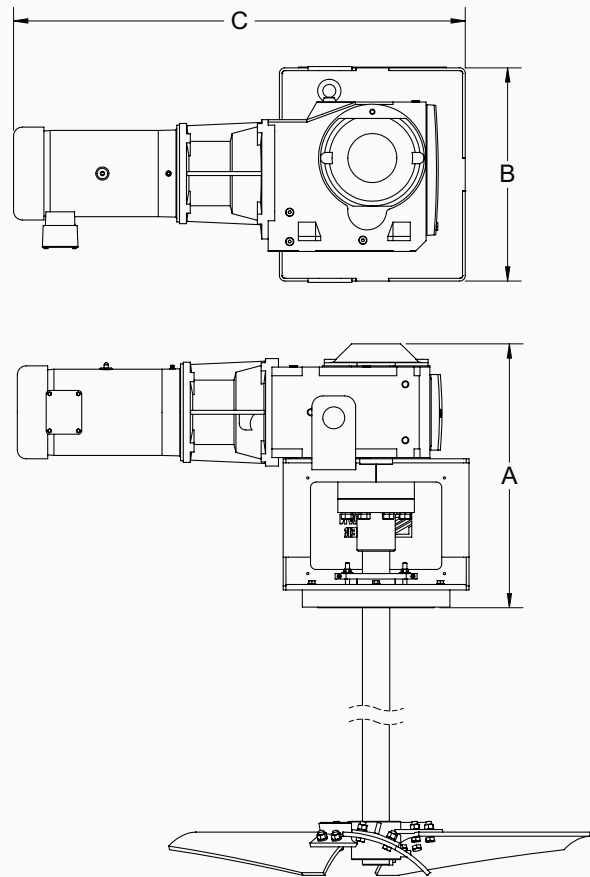
### BTO parallel shaft speed reducer



Dimensions (inches)

CASE SIZE	A	B	C	STD. ANSI FLANGE
2	43.5	14.0	18.9	8" - 150#
3	45.5	14.0	20.1	8" - 150#
4	51.5	14.0	21.6	8" - 150#
5	56.2	14.0	23.8	8" - 150#
6	76.3	16.5	29.6	10" - 150#
7	78.5	16.5	31.5	10" - 150#
8	87.2	20.0	35.6	12" - 150#
9	89.1	22.0	43.9	14" - 150#

### BTR right-angle speed reducer



Dimensions (inches)

CASE SIZE	A	B	C	STD. ANSI FLANGE
2	25.8	16.5	42.6	8" - 150#
3	27.2	16.5	48.8	8" - 150#
4	29.7	17.0	54.7	8" - 150#
5	32.7	21.5	62.0	10" - 150#
7	38.7	24.5	78.2	12" - 150#
8	42.5	32.0	95.1	14" - 150#
9	50.6	40.0	105.1	16" - 150#

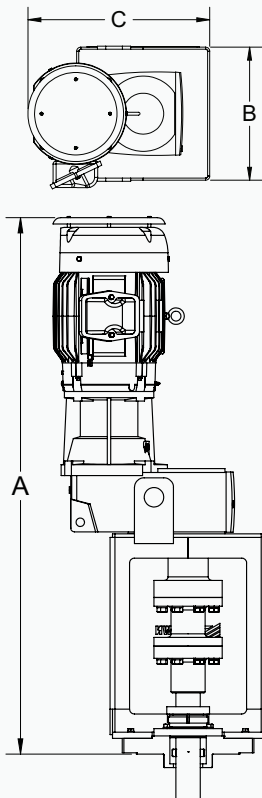
# CLOSED TANK CONFIGURATIONS



## Mechanical Seals

- Single or double mechanical seals to meet demanding temperature and pressure requirements
- Suitable for strict emission regulation areas
- High temperature (500F+) available
- Pressure: Full-vacuum to 425psi +
- Lubrication systems available
- Seal Maintenance: Design allows convenient change-out while keeping the gear drive assembly intact

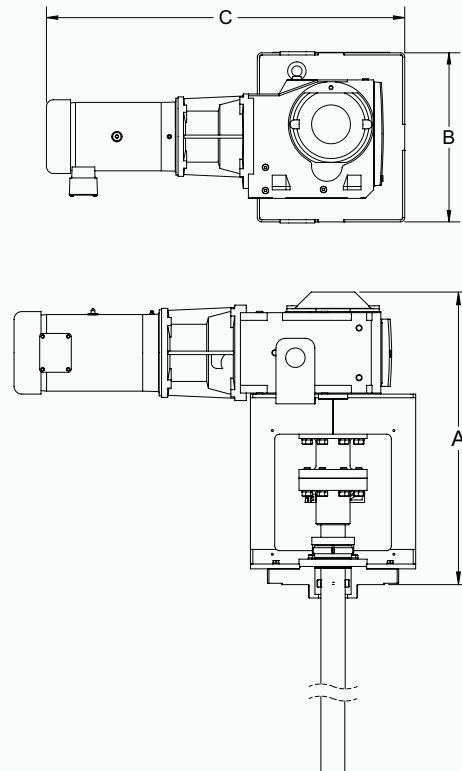
**BTO Mechanical Seal**



Dimensions (inches)

CASE SIZE	A	B	C	STD. ANSI FLANGE
2	47.5	14.0	18.9	8" - 150#
3	49.5	14.0	20.1	8" - 150#
4	56.5	14.0	21.6	8" - 150#
5	61.2	14.0	23.8	8" - 150#
6	82.3	16.5	29.6	10" - 150#
7	84.5	16.5	31.5	10" - 150#
8	95.2	20.0	35.6	12" - 150#
9	97.1	22.0	43.9	14" - 150#

**BTR Mechanical Seal**



Dimensions (inches)

CASE SIZE	A	B	C	STD. ANSI FLANGE
2	29.8	16.5	42.6	8" - 150#
3	31.2	16.5	48.8	8" - 150#
4	34.7	19.5	54.7	8" - 150#
5	37.7	21.5	62.0	10" - 150#
7	43.7	24.5	78.2	12" - 150#
8	49.5	32.0	95.1	14" - 150#
9	57.6	40.0	105.1	16" - 150#

# WE GO BEYOND MIXERS

Many applications require more than just a mixer; they require big-picture thinking and support. Here's how we can help you achieve your goals:

## Applications Engineering Support

The Brawn Mixer Applications Support Group can offer a fresh perspective on your application using sophisticated analytical tools to help you solve any mixing challenge, from routine to next generation.

### ● Lab Testing

We have an integrated wet and dry lab facility that allows us to test viscosity, analyze particle distribution and conduct mixing studies. National Bulk Equipment (NBE), a renowned leader in industrial material handling, shares the facility enabling an effective integration of wet and dry systems testing.

### ● Scale-up Designs

For pilot and bench systems, our application engineers can provide designs needed to incorporate whole-line process operations for scale-up.

### ● Computational Fluid Dynamics

Brawn Mixer uses computational fluid dynamics (CFD) technology to effectively model agitation in a wide variety of impeller and vessel configurations. Tank and mixer geometry are defined through solid modeling, and rotating frame (steady-state) or sliding mesh (transient) analysis is used to evaluate mixing performance based on fluid properties. Typical deliverables are velocity vector mapping (figure 1), mass fraction analysis (figure 2), and/or mixing simulation videos.

## Project Management

For custom-engineered projects, you'll work with a single point of contact from the Brawn Mixer Project Management Group who will work closely with you to ensure optimum product selection, and on-time and on-budget delivery.

We're committed to working with you to reduce costly and time-consuming slow start-ups and production inefficiencies.

### ● Integration and Control Services

For organizations with a high degree of process automation, we offer system integration including mixers, tanks, mounting structures, pumps, and comprehensive controls packages based on your entire process upstream and downstream.

### ● Compliance Documentation Support

Our best-in-class technical writing team can work with you to document performance, quality, and compliance. Brawn Mixer has experienced technical writers on staff to meet the stringent documentation requirements for FDA and other compliance-regulated industries.

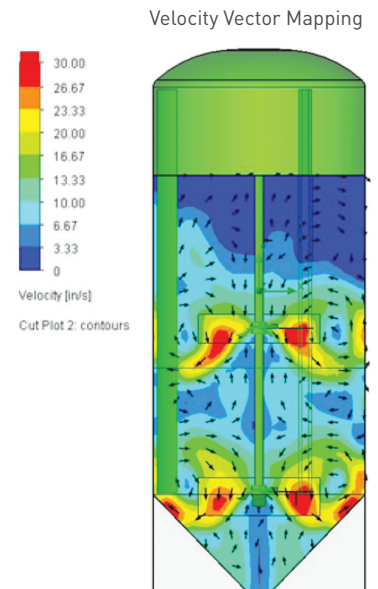


Figure 1

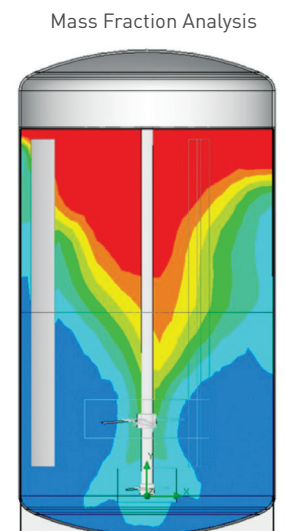


Figure 2

## ABOUT BRAWN MIXER

With performance-driven expertise in process engineering and mechanical design, Brawn Mixer has been manufacturing high-quality industrial mixers and mixing systems for liquids since 1993. Located in Holland, Michigan, we bring the advanced products, technical knowledge, and operational support in industrial liquid mixing you need to succeed.



### We Are an NBE Company

With the additional support of our of our sister company, National Bulk Equipment, you can also take advantage of extended services for maximizing total line throughput from installations with engineered structural design to automation for process control, communication, sensing, monitoring, and reporting.

**[nbe-inc.com](http://nbe-inc.com)**



ENGINEERED MIXING TECHNOLOGY

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