

**Nima Machine<sup>®</sup>**



**High Shear,  
High Speed Mixers**  
for Industrial Mixing applications

[www.nimamachineasia.ir](http://www.nimamachineasia.ir)

## High Shear, High Speed Mixers for Industrial Mixing applications

### What is a High Shear Mixer?

In a high shear mixer the combination of high speed and close rotor / stator tolerance creates a high energy zone where liquid / liquid and liquid / powder mixtures are rapidly homogenised.

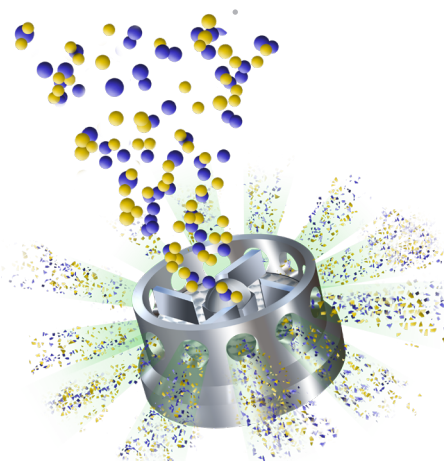
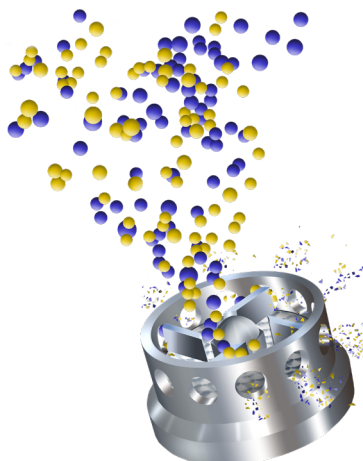
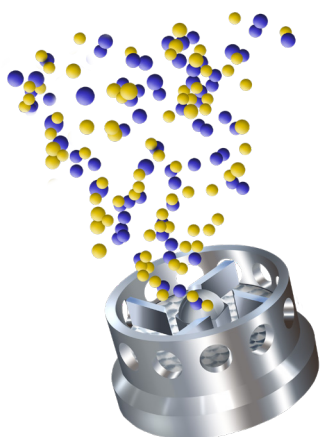
Mixer head design is matched to process requirements in order to achieve optimum particle size and maximise mixing efficiency, whilst minimising aeration.

High Shear Mixers are commonly used to emulsify oils in water and in the creation of ultra-smooth powder-in-liquid mixes.



### What are the features & benefits of high shear mixers?

- Scalable from Laboratory to Bulk, delivering consistent results regardless of batch size
- Sector leading rotor / stator gap tolerances, maximising shear rate and minimising batch times
- Alternate head /baffle/impeller options to optimise flow and shear
- Class leading safety features and lifting systems, CE Certificate of Conformity
- ATEX variants to Zone 0 & Zone 20 IIC T4
- De-aeration capability
- Abrasive and corrosive resistant options
- Alternative stator options for particle size down to 3 microns
- In-line and bottom entry variants
- High Pressure & Vacuum shaft sealing options

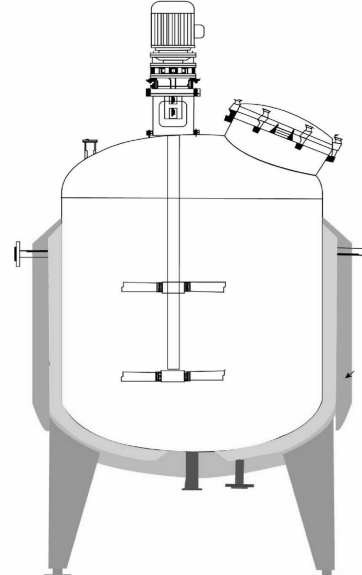


# High Shear, High Speed Mixers for Industrial Mixing applications

## Top Entry Mixers

There are two main types of top entry mixer:

1. **Stand Mounted Mixer** - used with mobile vessels, drums and IBCs. Manual, pneumatic or electrohydraulic lift options.
2. **Fixed Mounted Mixer** - mounted directly to the mixing vessel or support bridge.



| Top Entry Model | kW   | Speed (RPM) | Overall stator diameter | Weight* (Kg) | Capacity** (Litres) |
|-----------------|------|-------------|-------------------------|--------------|---------------------|
| GM-D            | 0.75 | 6000        | 90                      | 30           | 5-75                |
| GM-E            | 2.2  | 4500        | 123                     | 32           | 30-200              |
| GM-3            | 3    | 3000        | 162                     | 48           | 80-500              |
| GM-5            | 5.5  | 3000        | 162                     | 70           | 100-1000            |
| GM-10           | 11   | 3000        | 232                     | 175          | 300-1500            |
| GM-15           | 15   | 3000        | 232                     | 225          | 500-2000            |
| GM-25           | 22   | 1500        | 345                     | 430          | 2000-5000           |
| GM50            | 37   | 1000        | 500                     | 1050         | 4000-10000          |
| GM-60           | 45   | 1000        | 500                     | 1120         | 5000-15000          |

\*The Weights should be checked before making a counter-weight / lift.

\*\*The Capacities shown indicate the maximum batch quantity at the maximum viscosity (30,000cps) and minimum viscosities.



### Benefits

- Flexible, high energy processing of “difficult to mix” formulations
- Creates stable liquid/liquid and liquid/powder mixtures
- Flexible & cost effective
- Easy cleaning, hygienic construction
- Low wear, low maintenance
- Adjustable flow / shear ratio with low aeration
- High Viscosity Capability

### Options

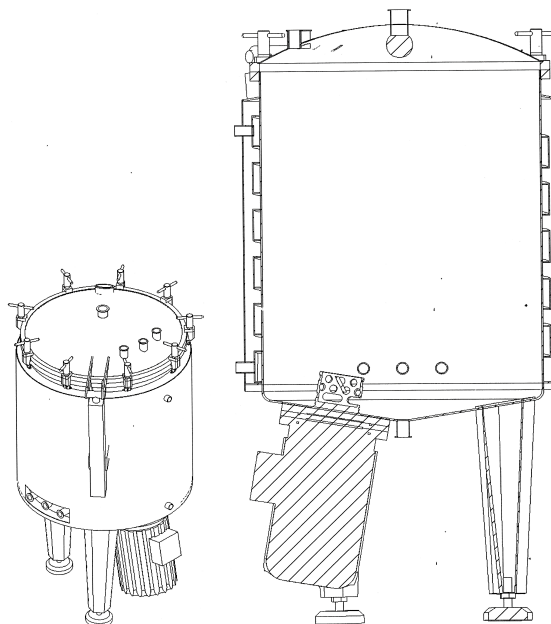
- Variable Speed with digital display
- Automated lift system (Electric / Pneumatic)
- Full Vacuum de-gassing / Pressure processing
- Product temperature display
- Heated fixed and mobile vessels
- High abrasive variant
- Full PLC process control
- ATEX variants to Zone 0 & Zone 20 IIC T4

# High Shear, High Speed Mixers for Industrial Mixing applications

## Bottom Entry Mixers

Commonly located at the base of the mixing vessel, bottom entry mixers are often used in combination with other mixing tools, e.g. anchor ribbon mixer. This category of mixers offer the most compact solution where homogenisation or emulsification is required.

The opportunity for hygienic design and limited contact part intrusion, makes this solution particularly suitable for pharmaceutical and food applications.



| In-line Model | kW  | Speed (RPM) | Mechanical Shaft Seal | Fitting Options (mm)<br>DIN, RJT, BSP, SMS,<br>Flanged, IDF or Tri-Clamp | Flowrate (H2O)<br>Litres per min.* |
|---------------|-----|-------------|-----------------------|--------------------------------------------------------------------------|------------------------------------|
| PLMS 1.5 x 2  | 1.5 | 3000        | Single                | 38                                                                       | 270                                |
| PLMD 1.5 x 2  | 1.5 | 3000        | Double                | 38                                                                       | 270                                |
| PLMS 2 x 5    | 5.5 | 3000        | Single                | 50                                                                       | 559                                |
| PLMD 2 x 5    | 5.5 | 3000        | Double                | 50                                                                       | 559                                |
| PLMS 3 x 15   | 15  | 3000        | Single                | 76                                                                       | 1083                               |
| PLMD 3 x 15   | 15  | 3000        | Double                | 76                                                                       | 1083                               |
| PLMS 4 x 30   | 22  | 1500        | Single                | 102                                                                      | 1652                               |
| PLMD 4 x 30   | 22  | 1500        | Double                | 102                                                                      | 1652                               |

\*Note: as the viscosity increases, the flowrate will decrease. Medium to high viscosities will require a suitably sized pump to charge feed the mixer



### Benefits

- Compact, high energy processing of “difficult to mix” formulations
- Creates stable liquid/liquid and liquid/powder mixtures
- Ease of integration with existing equipment
- Single or multi-pass processing
- Low wear, low maintenance
- High flow with low aeration
- Accurate control of flowrate and volume

### Options

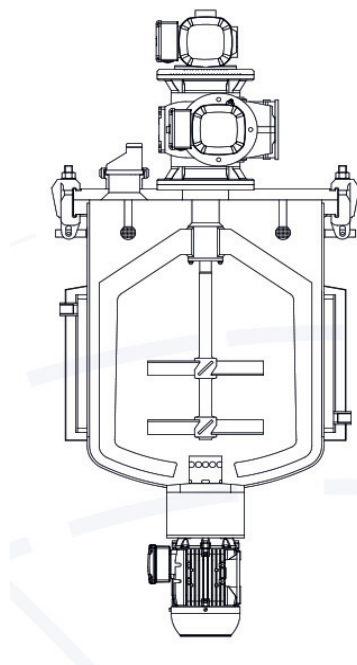
- High abrasive variant
- Thermal head jacket—heating/cooling
- Shaft seal monitoring systems
- High Viscosity Capability
- In-line dosing
- ATEX variants to Zone 0 & Zone 20 IIC T4



## High Shear, High Speed Mixers for Industrial Mixing applications

### Top & Bottom Entry Scraper Mixer

These high shear mixers are typically used in conjunction with a slow speed anchor stirrer and or scraper unit for high viscosity products.



| Bottom Entry Mixer | kW  | Speed (RPM) | Mechanical Shaft Seal | Overall stator diameter | Capacity** (Litres) |
|--------------------|-----|-------------|-----------------------|-------------------------|---------------------|
| BES-E              | 2.2 | 4500        | Single                | 123                     | 30-200              |
| BED-E              | 2.2 | 4500        | Double                | 123                     | 30-200              |
| BES-5              | 5.5 | 3000        | Single                | 162                     | 100-1000            |
| BED-5              | 5.5 | 3000        | Double                | 162                     | 100-1000            |
| BES-15             | 15  | 3000        | Single                | 232                     | 500-2000            |
| BED-15             | 15  | 3000        | Double                | 232                     | 500-2000            |
| BES-25             | 22  | 1500        | Single                | 345                     | 2000-5000           |
| BED-25             | 22  | 1500        | Double                | 345                     | 2000-5000           |
| BED-50             | 37  | 1000        | Single                | 500                     | 4000-10000          |
| BED-50             | 37  | 1000        | Double                | 500                     | 4000-10000          |

\*\*The Capacities shown indicate the maximum batch quantity at the maximum viscosity (30,000cps) and minimum viscosities.



#### Benefits

- Compact and effective with batch size flexibility
- Most hygienic high shear mixing solution
- Easy to clean
- Creates stable liquid/liquid and liquid/powder mixtures
- Low wear, low maintenance

#### Options

- High abrasive variant
- Thermal head jacket—heating/cooling
- Shaft seal monitoring systems
- High Viscosity Capability
- In-line dosing
- ATEX variants to Zone 0 & Zone 20 IIC T4



# **Nima Machine<sup>®</sup>**

NIMA MACHINE ASIA Ltd.

No. 60/40 Zagros  
Industrial Complex,  
Qods, Tehran. Iran

☎+98 (21) 46818597-9

✉info@nimamachineasia.ir

[www.nimamachineasia.ir](http://www.nimamachineasia.ir)