

Multimix™ DSM Lab Vacuum Mixer

The Multimix DSM Lab Vacuum Mixer Series is a lab scale vacuum mixing vessel with dual counter-rotating mixing impeller systems in concentric shaft design.

It consists of two impellers:

- Outer anchor mixer with multiple Teflon scrapers
- An inner Paddle Mixer /High Speed Dispenser / High Shear Mixer.

The anchor mixer is equipped with Teflon scrapers in order to remove materials from inner side of vessel and at the same time pushes the mixture back into the center where high speed dispersing or high shearing action takes place.

Model	DSM Lab Vacuum Mixer
Mixing capacity	5 litres, 10 litres, 25 litres
Wetted Parts Material	Food and medical grade stainless steel 316L
Vacuum range	-600 mmHg (0.8 bar)
Vessel	Double wall (jacketed) for heating/cooling

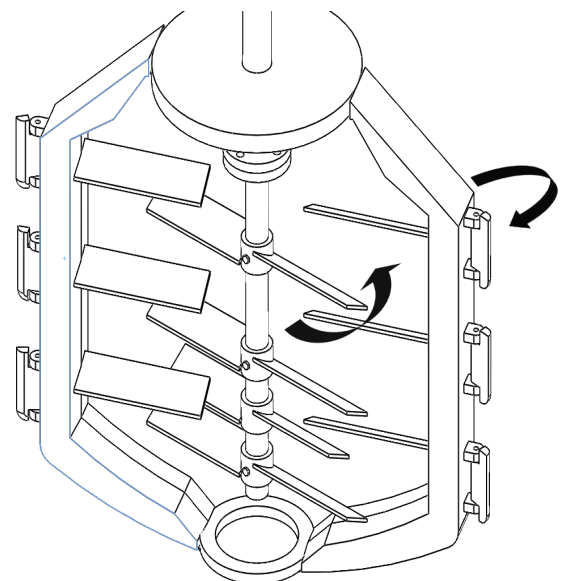
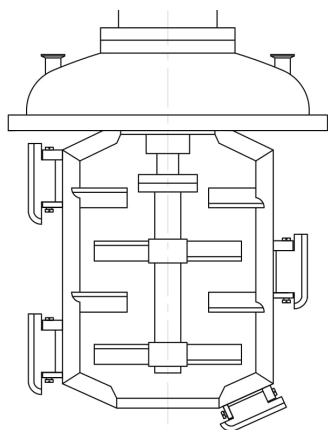


Figure 1 : The outer anchor and inner paddle mixers are counter rotating at opposite direction promoting an even more uniformed mix resulting in unparallelled homogenous product.

VACUUM MIXER

Depending on the product's viscosity and process requirements, there are 3 DSM models to choose from :

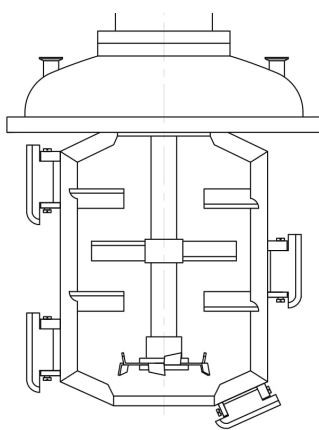


DSM Paddle Mixer

Anchor Mixer with Teflon scraper + Paddle Mixer

For process requiring high torque mixing.

Mixing viscosity: high, up to 1million cps.

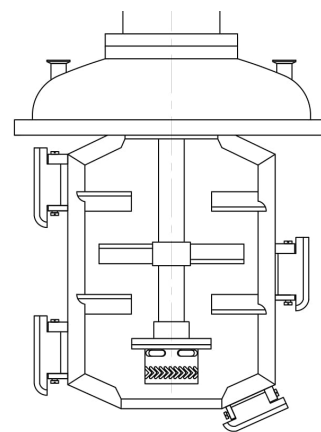


DSM High Speed Dispenser

Anchor Mixer with Teflon scraper + High Speed Dispenser

For process requiring fine dispersion involving powder incorporation into liquids or vice versa.

Mixing viscosity: low to medium, up to 250,000 cps.



DSM High Shear Mixer

Anchor Mixer with Teflon scraper + High Shear Mixer with patented "V" rotor/stator design

For process requiring fine emulsion (less than 1 micron particle size) consisting of oil and water phases and super fine dispersion without 'fish-eye' and agglomerates problem

Mixing viscosity: low to medium, up to 50,000 cps.



Figure 2 : Multimix DSM Lab Vacuum High Shear Mixer (5L) with pneumatic lifting.

1. Ease of use

The mixers' speed can be easily adjusted and monitored via touch screen on panel control. Additional timer can also be requested to control mixing duration.

2. Ergonomically designed

The vessel lid can be effortlessly raised and lowered via pneumatic hand lever valve/push button/touch screen (optional as add-ons).

3. Improved product quality

Vacuum mixing is necessary to eliminate any kind of air bubbles which will affect the texture of product's output and helps to maintain consistency of product's net weight.

4. Safe, durable and long-lasting

All wetted parts are in grade 316 stainless steel (GMP compliant).

5. Fine dispersion, emulsion and stable suspension

As the rotor turns at a high speed within the stationary stator, materials are drawn from below and sheared through the precision-engineered clearance between the ends of the rotor blades and inner wall of stator, producing very fine droplets which are important in keeping an emulsion stable.

6. Convenience and time saving

Jacketed vessel allows indirect heating of product via steam for example which accelerates the mixing process for especially high viscous materials. Hence no need to move mixing tank in and out the heating/cooling room.

DSM Vacuum Mixer



Figure 1 : DSM (fixed tank version).



Figure 2 : DSM (Lifting version).

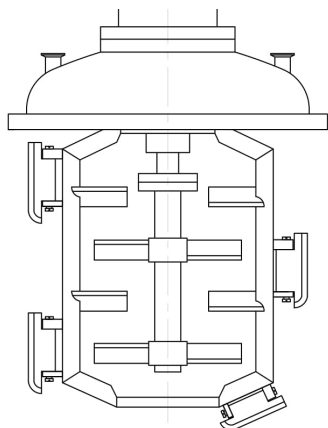
The new Multimix DSM Series is a versatile vacuum mixing tank with dual counter-rotating mixing system, consisting always of an anchor mixer for the outer part and either a paddle/high speed disperser/high shear mixer for the inner part. The anchor mixer is equipped with Teflon scrapers in order to remove materials from inner side of vessel and at the same time pushes the mixture back into the center where high speed dispersing or high shearing action takes place. The combination of two mixers in such design results in the best from both mixing technologies. It can be used for a great variety of applications in almost all industries from processing of mayonnaise in food industry to cough syrup in pharmaceutical industries.

Main Advantages

- Elimination of air bubbles in the product with vacuum mixing
- High flexibility and configurability
 - Available with lid lifting system or fixed tank version
 - Selection of three DSM models (Paddle, High speed disperser, High shear mixer)
 - Additional inline high shear mixer (see DSM Inline)
 - All in one vacuum mixing with heating / cooling
- Homogenous and uniformed mixing through dual counter rotating motion
- Low to very high (~1 million cps) mixing viscosities
- Handles low level liquid mixing requirement well
- Low raw material losses with no dead mixing spots
- GMP and hygienic (CIP) compliant design
- Low noise level

VACUUM MIXER

The DSM (both fixed tank and lid lifting versions) can be delivered in the following three models

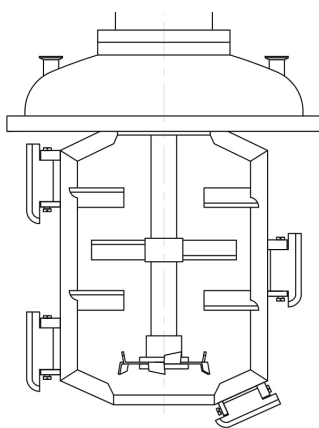


DSM Paddle Mixer

Anchor Mixer with Teflon scrapers + Paddle Mixer

For process requiring high torque mixing.

Mixing viscosity: high, up to 1million cps.

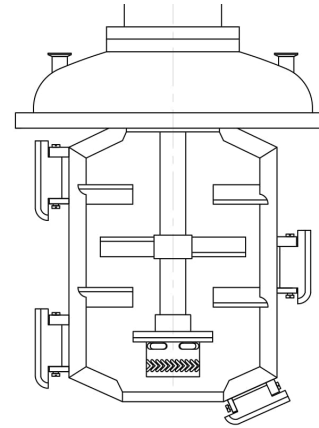


DSM High Speed Dispenser

Anchor Mixer with Teflon scrapers + High Speed Dispenser

For process requiring fine dispersion involving powder incorporation into liquids or vice versa.

Mixing viscosity: low to medium, up to 250,000 cps.



DSM High Shear Mixer

Anchor Mixer with Teflon scrapers + High Shear Mixer with patented "V" rotor/stator

For process requiring fine emulsion (less than 1 micron particle size) consisting of oil and water phases and super fine dispersion without 'fish-eye' and agglomerates problem

Mixing viscosity: low to medium, up to 50,000 cps.

Model	DSM Vacuum Mixer
Mixing capacity	25 up to 20,000 Litres
Power supply	Three phase, 380V/415V, 50/60Hz
Wetted Parts Material	Food and medical grade stainless steel 316L
Vessel	Single / Double wall (jacketed) for heating/cooling
Lid lifting system	Pneumatic / Hydraulic
Insulation material	25 to 50mm mineral wool
Heating medium	Hot water/steam/thermal oil
Vacuum pressure	±600mmHg (0.8bar)
Machine base	Static / Mobile vessel with castor wheels and safety locking mechanism

Add-Ons (optional)

- Vacuum/pressure mixing
- Jacketed vessel for heating or cooling
- Support system and lid lifting system
- Explosion proof motors with remote control station
- Weighing system
- CIP/SIP cleaning system e.g. spray balls
- Special seals, valves, pipings and fittings
- Touch screen panel control
- PLC control
- Inline High Shear Mixer with multi-stages "slotted" stator design (either side / bottom entry)
- Timer



Figure 3 : Vacuum gauge for vacuum mixing



Figure 4 : Adjustable touch screen panel



Figure 5 : LED light for observation glass/manhole



Figure 6 : Spray ball for CIP cleaning

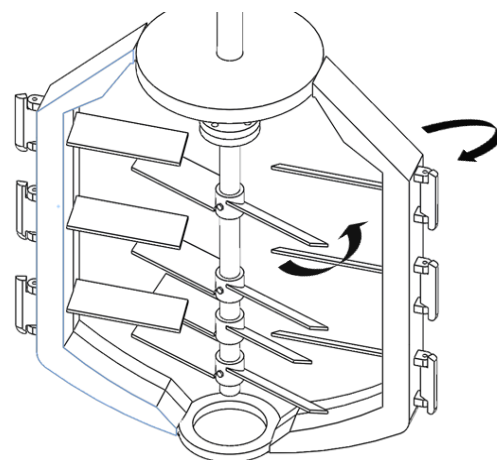


Figure 7 : The outer anchor and inner paddle mixers are counter rotating at opposite direction promoting an even more uniform mix resulting in unparalleled homogenous product.

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