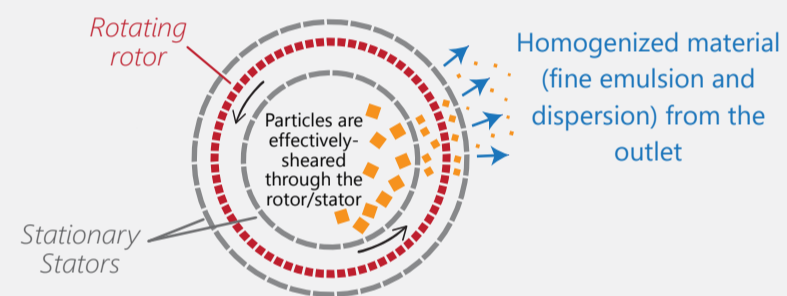


Production of fine emulsion/dispersion

Customized circulation inlets for high shear mixing with Multimix Inline High Shear Mixer at low to high volume mixing.

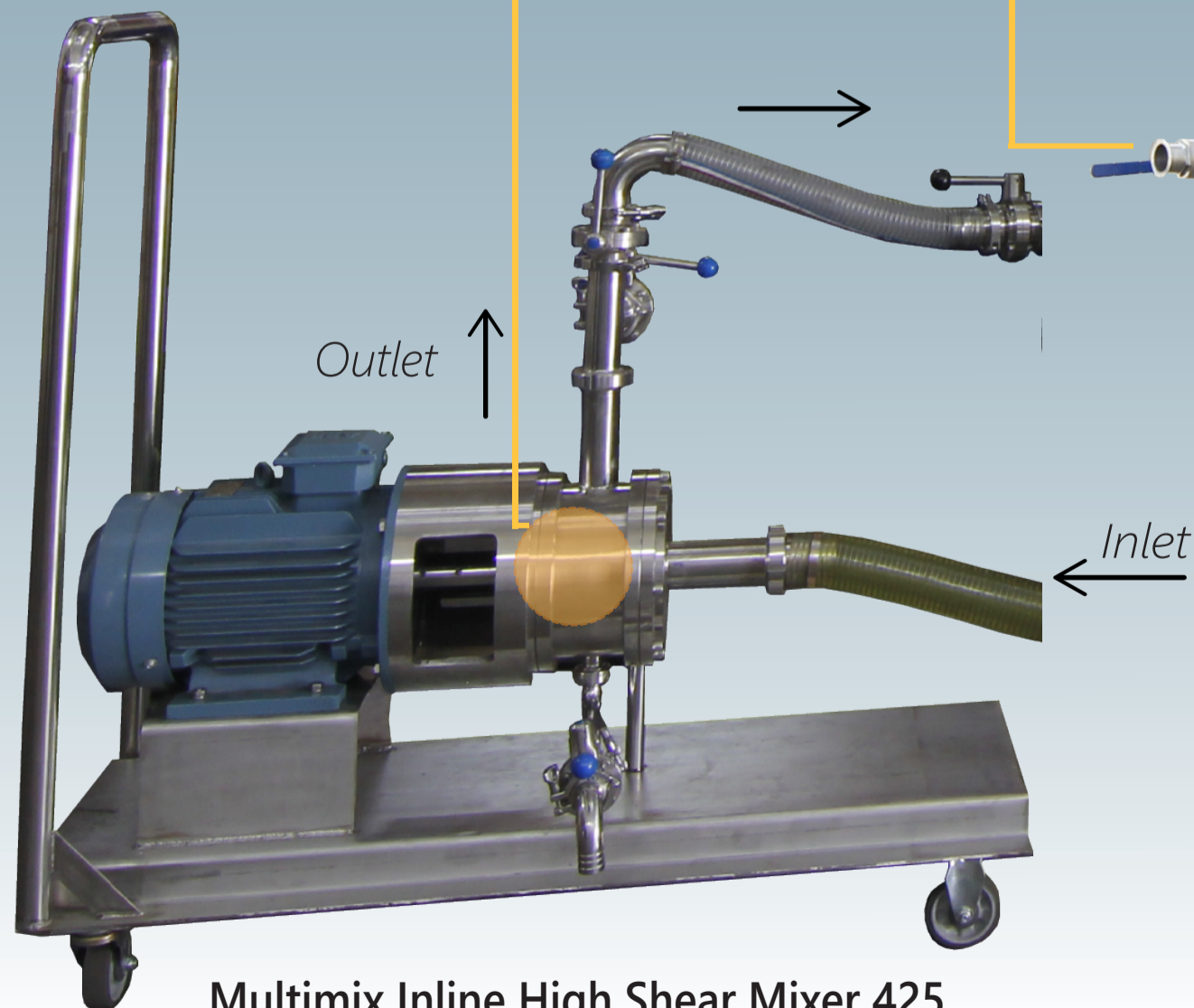
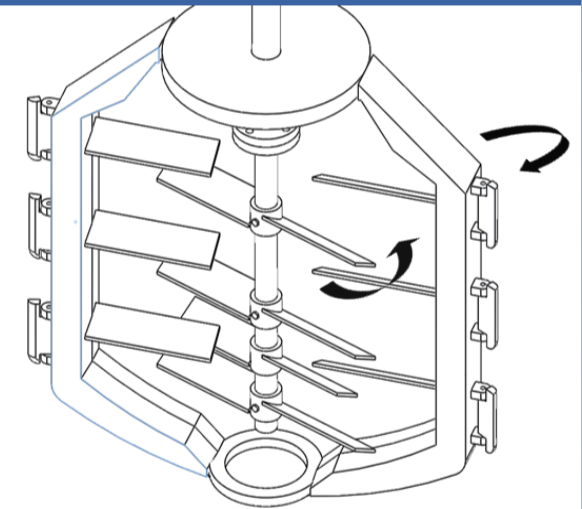
Multi Stages High Shear Mixing (up to 4 stages)



Elimination of air bubbles

Vacuum mixing tank with counter-rotating anchor and paddle mixers ensure homogenous mix and emulsion without air bubbles problem. Furthermore, Teflon scrapers ensures no wastage of raw materials at the inner side of tank.

Outstanding homogeneity



Multimix Inline High Shear Mixer 425



Multimix DSM5000 Vacuum Mixer

DSM Vacuum Inline High Shear Mixing System



Figure 1 : DSM vacuum mixer (lid lifting system) combined with Inline High Shear Mixer for all-in-one mixing system.

Combined with the versatility brought by the DSM mixing tank with dual counter-rotating mixing systems and the superior shearing performance of Inline HSM, the DSM Vacuum Inline Series is the best performing high shearing vacuum mixing system which you can get in the market. This system is optimized for mixing under vacuum condition where "air bubbles" are undesirable leading to unsatisfactory product texture.

At the core of each IHSM lies a precision engineered "slotted" stator, designed in three stage up to a maximum four stages. Coupled with the vortex generated by the rotor inside, such design allows maximum shearing of particles as they are sucked and pushed through the sharp edges of the slots.

Such vacuum mixing system is perfect for a great variety of emulsion & dispersion applications in almost all industries from processing of mayonnaise, cream, lotion, chemical dispersion, detergents in food industry to cough syrup in pharmaceutical industries.

Main Advantages

- Complete vacuum mixing system with heating/cooling (all-in-one)
- Fine dispersion, emulsion and stable suspension
- Elimination of air bubbles, "fish-eye" and agglomerates problem
- Elimination of "dust" pollution with vacuum material transfer
- Homogenous mix with dual counter-rotating mixing impellers
- Outstanding shearing performance with multi-stages inline high shear mixer
- Low raw material losses with no dead mixing spots
- Easy for cleaning and GMP compliant

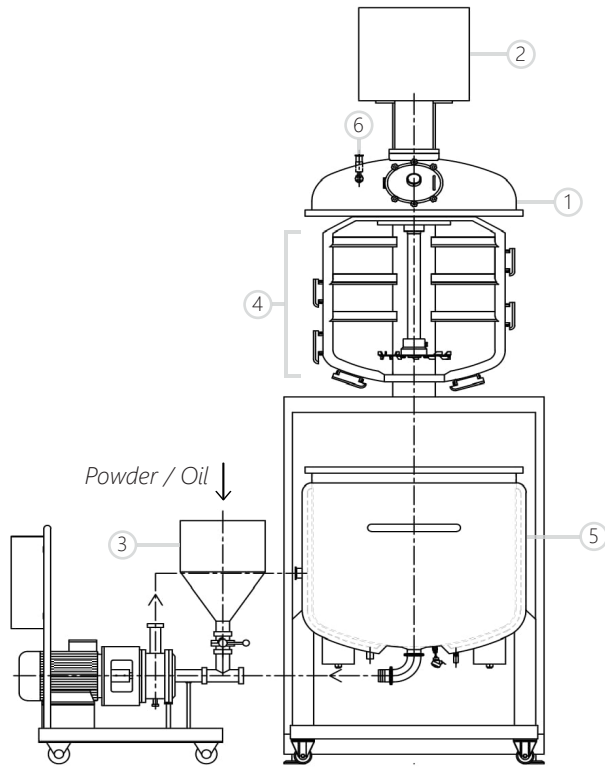


Figure 2 : DSM Vacuum High Speed Disperser model with lid lifting system and Inline High Shear Mixer (side circulation)

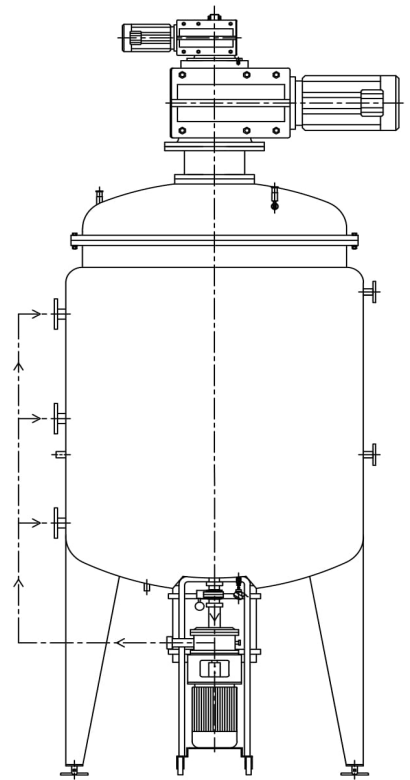


Figure 3 : DSM Vacuum (fixed tank top version) with Inline High Shear Mixer (bottom circulation).

1. All-in-one vacuum mixing system

Vacuum condition is necessary to eliminate any kind of air during mixing which will affect the texture of product output and at the same time helps to maintain the consistency of product's net weight. Powdered materials can be transferred using vacuum mechanism thus eliminating "dust" pollution.

2. Ergonomically designed

The DSM mixing tank lid can be lifted and lowered effortlessly via hydraulic/pneumatic mechanism with just a touch on control panel.

3. Homogenous, flexible and quality mixing

Powder/oil mixing is done at the Inline High Shear Mixer to produce fine emulsion/dispersion before transferring to the larger DSM mixing tank. The DSM impellers are counter-rotating at opposite direction to ensure homogenous mixing and consistency of product texture. The Teflon scrapers are strategically angled to each other making sure all edges of the tank are covered thus preventing any dead mixing spots.

4. GMP compliant

All parts in contact with mixing liquids/solids are in grade 316 stainless steel (food and medical grade)

5. Convenience and time saving

No need to move mixing tank in and out the heating/cooling room. With the load cell integrated underneath the tank, one can easily measure the weight of input material for better quality control.

6. Easy for cleaning and maintenance

The clean-in-place (CIP) system enables the interior surfaces of pipes, fittings and valves can be cleaned without disassembly.

DSM Vacuum Inline

| | |
|---------------------------------|---|
| Dual counter-rotating impellers | Anchor mixer with Teflon scrapers + Paddle Mixer / High Speed Disperser |
| Mixing capacity | 25 up to 20,000 Litres |
| Power supply | Three phase, 380V/415V, 50/60Hz |
| H2O Flow Rate | 500 – 3000 litre/min |
| Clearance | 0.25 - 0.5 mm |
| Seal | Single/double mechanical seal with Viton tungsten carbide |
| Wetted Parts Material | Food and medical grade stainless steel 316L |
| Vessel | Double wall (jacketed) for heating/cooling |
| Lid lifting system | Hydraulic / pneumatic |
| Insulation material | 25 to 50mm mineral wool |
| Heating medium | Hot water/steam/thermal oil |
| Vacuum pressure | ±750mmHg (0.8bar) |
| Machine base | Fitted with stainless steel mobile trolley and safety locking mechanism |



Figure 4 : Observation glass at manhole (left) comes with wiper to ensure clear view of inner tank condition while the pressure relief valve (right) is designed with safety cap.



Figure 5 : Such pneumatic control valve can be opened and closed with just a touch on control panel.

Add-Ons (optional)

- A. Touch screen panel control
- B. PLC for automation
- C. Stainless steel hopper (available in 25, 50 or 100 litres)
- D. Special pipings, valves and fittings e.g. pneumatic control valve
- E. CIP/SIP design e.g. spray balls
- F. Digital countdown timer
- G. Explosion proof motor and remote control station
- H. Weighing system e.g. load cell