INTERPUMP PROCESS TECHNOLOGY

# IN-LINE HIGH SHEAR MIXER-TECHNICAL DATA

## SHEARING EFFICIENCY

The combination of an ultra-high peripheral speed (up to 3,000 rpm) and an advanced rotor/stator design guarantee a drastic reduction in particle size (down to less than 100 µm) during a single, continuous in-line passage. This makes the system ideal for producing stable emulsions, achieving perfect homogenization, and ensuring rapid, lump-free inline dispersions.

## WEAR RESISTANCE

The rotor and stator are manufactured entirely from precipitation-hardened special steel. This exceptional structural hardness effectively counteracts the erosive and abrasive action of suspended solids, powders, and crystals, preserving the sharpness of the mechanical profiles and keeping shearing channel tolerances unaltered even under intense operational stress.

## HYGIENIC PROCESSING

The mixing chamber surfaces are engineered from AISI 316L stainless steel combined with certified EPDM elastomers. The complete absence of dead zones and crevices inside the chamber ensures rapid, effective Cleaning-in-Place (CIP) and Sterilization-in-Place (SIP) cycles.

## TARGET APPLICATIONS

Engineered to meet the strictest sanitary requirements, making it the ideal solution for:

- Pharmaceutical & Biotech
- Food & Beverage
- Cosmetics & Personal Care



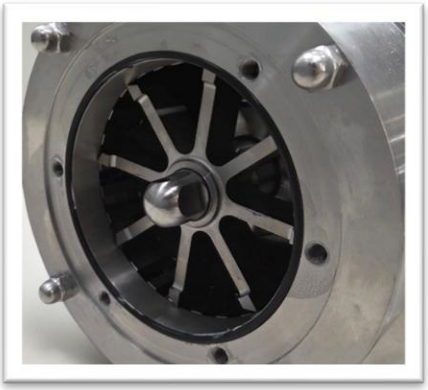
- **Ultra-High Shear Micro-Emulsification (Precision Rotor/Stator Geometry)**
- **Heavy-Duty Wear Resistance for Rotor & Stator Profiles.**
- **Sanitary Design & Superior Cleanability (CIP/SIP Ready)**
- **Advanced Flushed Double Barrier (Ultimate Wear Resistance)**

### Technical & Process Performance Data

- **Maximum Flow Rate**: Up to 12 m³/h
- **Nominal Operational Speed**: 2900 rpm (2 poles 50Hz)
- **Dynamic Viscosity Threshold**: Recommended up to 1000 mPa·s
- **Max Differential Pressure**: Peak limit 6 bar (87 PSI)
- **Suction Pre-pressure**: Safety threshold 4 bar (58 PSI)
- **Thermal Tolerance Range**: -10 °C to +140 °C with standard EPDM elastomers FDA approved
- **Workplace Noise Emissions**: Average estimated level 60-80 dB(A)
- **Line Connection Standard**: Tri-Clamp DIN32676 hygienic fittings (DIN 11850 pipe)

### Construction & Mechanical Seals Material

- **Wetted Parts**: AISI 316L Stainless Steel (Standard version Ra 0.8µ) & AISI630(Rotor & Stator)
- **Painted Carbon Steel Frame**
- **Flushed double mechanical seal**: Product Side: TC / TC / EPDM Atmosphere Side: C / TC / EPDM Pressurized barrier operates at 1-1.5 bar over internal mixer pressure (up to a maximum of 10bar)
- **Stationary Seal Face**: Tungsten Carbide
- **Rotary Seal Face**: Tungsten Carbide



Brand of **INTERPUMP GROUP S.p.A.**
Via G.B. Vico, 2 42124 - Reggio Emilia – Italy - Tel. +39 0522 948011 – Fax +39 0522 948080
E-mail: info@bertoli-homogenizers.com - Web: www.bertoli-homogenizers.com

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## BARRIER PROTECTION

The flushed double cartridge seal system—featuring a TC/TC coupling on the product side and a continuous barrier fluid flow—prevents viscous or sugary fluids from building up or crystallizing on the seal faces, successfully eliminating unscheduled machine downtime.

## EASY MAINTENANCE

Engineered with a smart front-pullout architecture that allows direct, quick access to the rotor, stator, and double mechanical seal from the front end of the unit.

## FLUSHING CONTROL

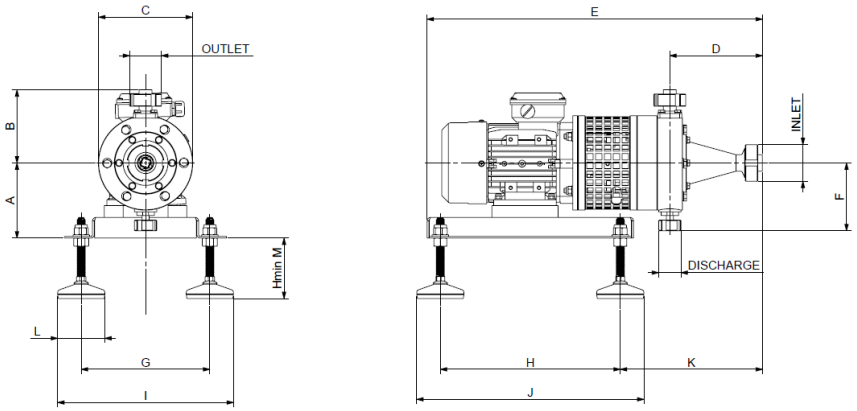
Equipped with an integrated flow switch and solenoid valve for automatic cooling water management, ensuring precise barrier fluid regulation and reliable dry-run prevention.

## EXTRA FEATURES

- Alternative materials available for rotors and stators
- High-end surface finish on all wetted parts (Ra < 0.6 µm available upon request)
- Explosion-proof (ATEX) design

# Performance Data & Overall Dimension

| Model | Motor Power (kW) | Nominal Speed (rpm) | Max Flow Rate (m³/h) | Work Pressure (bar) |
|---|---|---|---|---|
| **HSM 0055** | 0.55 | 2900 | 0.5 | 6 |
| **HSM 006** | 5.5 | 2900 | 3 | 6 |
| **HSM 015** | 15 | 2900 | 6 | 6 |
| **HSM 037** | 37 | 2900 | 12 | 6 |




| MACCHINA | INLET | OUTLET | DISCHARGE | A | B | ØC | D | E | F | G | H | I | J | K | ØL | Hmin M | WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HSM0055 | DN25 | DN15 | DN10 | 130 | 125 | 160 | 160 | 570 | 115 | 220 | 305 | 300 | 385 | 240 | 80 | 90 | 32 kg |
| HSM006 | DN50 | DN40 | DN10 | 150 | 155 | 250 | 125 | 710 | 130 | 360 | 432 | 410 | 482 | 245 | 50 | 110 | 106 kg |
| HSM015 | DN65 | DN40 | DN25 | 240 | 175 | 390 | 240 | 1100 | 165 | 550 | 695 | 630 | 775 | 360 | 80 | 110 | 215 kg |
| HSM037 | DN80 | DN65 | DN32 | 250 | 240 | 400 | 250 | 1270 | 205 | 570 | 810 | 650 | 890 | 420 | 80 | 110 | 385 kg |

*The information provided in this document is for guidance only. We reserve the right to modify any material or technical feature without prior notice. Photos and drawings are non-binding.*

Design according to MACHINE DIRECTIVES and the HARMONIZED EUROPEAN STANDARD in force.


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