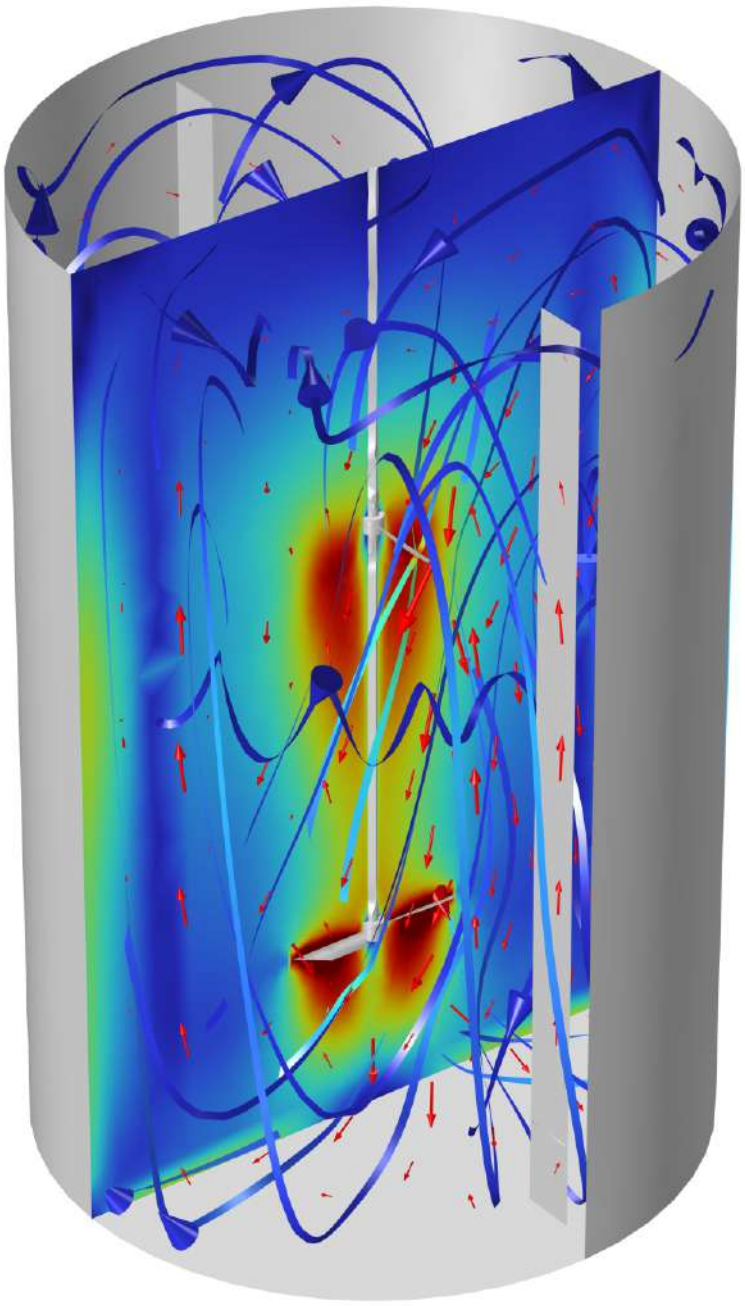
MSRM Series Slow-Speed Mixers



Power Transmission Solutions

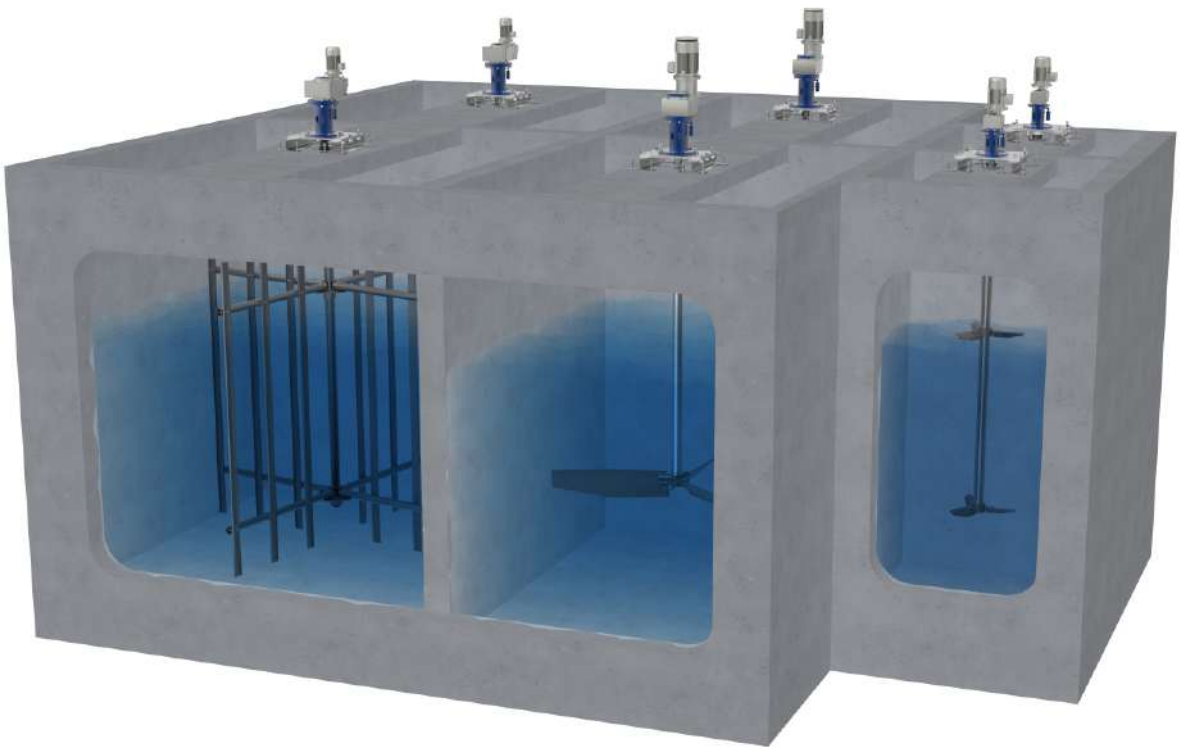
PTS Process Engineering Co

MSRM Series Slow-Speed Mixers

These mixers are designed and built to be suitable for medium to large tanks in terms of volume, and for mild to vigorous mixing in terms of intensity. They are suitable for installation on concrete and metal reactors and tanks. These mixers are designed for 24/7 operation and can continue normal operation for a long time without the need for repair and maintenance.

The MSRM series mixers are classified into three sizes: small, medium, and large.

Mixer Model	Max Shaft Diameter	Max Installable Power	Rotational Speed	Max Tank Capacity	Max Shaft Length
MSRMS	90 mm	4 KW	5-150 RPM	40,000 L	5,000 mm
MSRMM	170 mm	15 KW		80,000 L	6,000 mm
MSRML	355 mm	45 KW		200,000 L	12,000 mm



MSRM Mixer Features

Technical Data

- Suitable for tank capacities up to 200 m^3
- Equipped with parallel-shaft gearboxes featuring a Service Factor greater than 2
- Utilization of hollow shafts instead of solid shafts to reduce overall equipment weight

Design Features

- Double bearing system engineered for an operating life exceeding 100,000 hours (L_{10}) .
- Protection of the gearbox against axial and radial loads.
- Use of split hubs for easier installation and maintenance.
- Optional foot bearing arrangement for increasing critical speed and suppressing shaft-end vibrations.

Operational & Economic Features

- Low capital investment cost
- Designed for stable long-term operation with minimal maintenance requirements



Advanced Radial Load Management

The mechanical design of these mixers ensures that all radial loads generated by the hydrodynamic forces of the impeller are fully absorbed and managed by the independent bearing system of the equipment. The use of reinforced bearing assemblies within a dedicated housing enhances overall dynamic stability and effectively prevents the transmission of destructive stresses and loads to the gearbox. This configuration significantly contributes to improved reliability, reduced vibration levels, and extended equipment service life.



Bi-Directional Axial Load Management

In vertical mixers, the weight of rotating components—including the shaft, impeller, and coupling—generates a downward gravitational axial load. Simultaneously, in down-pumping configurations, the hydrodynamic action of the impeller produces an opposing upward axial thrust.

The advanced axial load management system in MSRM mixers is engineered to fully absorb and neutralize both opposing axial forces. This feature eliminates the transmission of harmful loads to the gearbox, thereby extending the service life of the power transmission system, improving operational stability, and ensuring high reliability under continuous-duty operation.

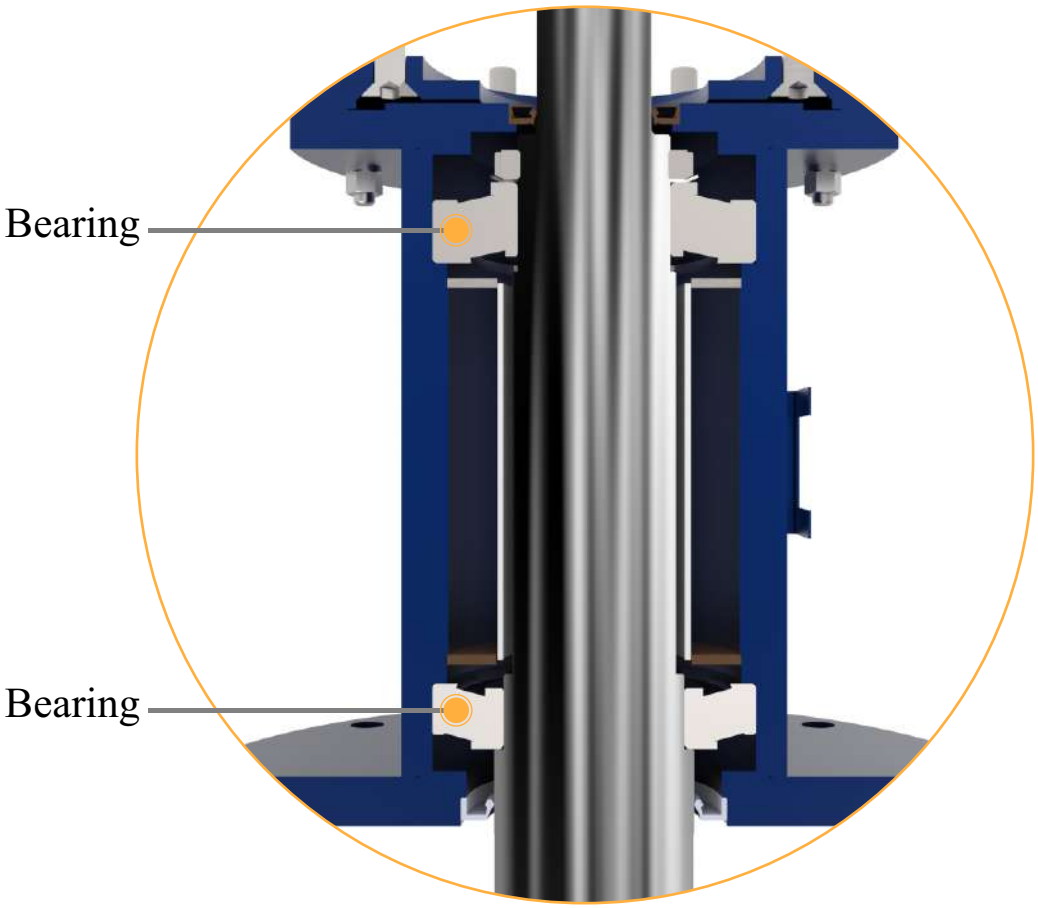
MSRM Lubrication System

The lubrication system in MSRM series mixers is designed to ensure stable bearing performance under continuous operation without the need to stop the equipment.

The grease inlet and discharge system is engineered to provide uniform and effective lubrication across all bearing points, preventing performance degradation or accumulation of spent grease.

The bearings used in this equipment are selected for a wide range of industrial operating conditions and are suitable for various process applications.

These mixers are designed for power ratings up to 45 kW, and all mechanical and hydrodynamic components are optimized based on advanced CFD and FEA analyses.



MSRM Series Mixer Selection Guidelines

Mixer Selection

MSRM Medium Range Slow Rotating Mixers

Mixer Version Indicator

S Small
M Medium
L Large

Impeller Type Selection

1 Axial Flow Impeller
2 Radial Flow Impeller

Wet Parts Material

S4 SS 304
S6 SS 316L
S7 Duplex SS
S8 Super Duplex SS

Powder Coating

0 N/A
P Polyethylene
T ETFE

Electric Motor Selection

A IP 55 (STANDARD)
B EX db IIB zone1
C EX db IIC zone1
D EX eb IIC zone1
E EX ec zone2

Motor Supply

1 Single PHASE 220/230 VAC
3 Three PHASE 230/400 VAC

Shaft Connection Type

DC Direct Coupling
FC Flange Coupling

Housing Coupling Type

1 Flange Type
2 Clamp Type

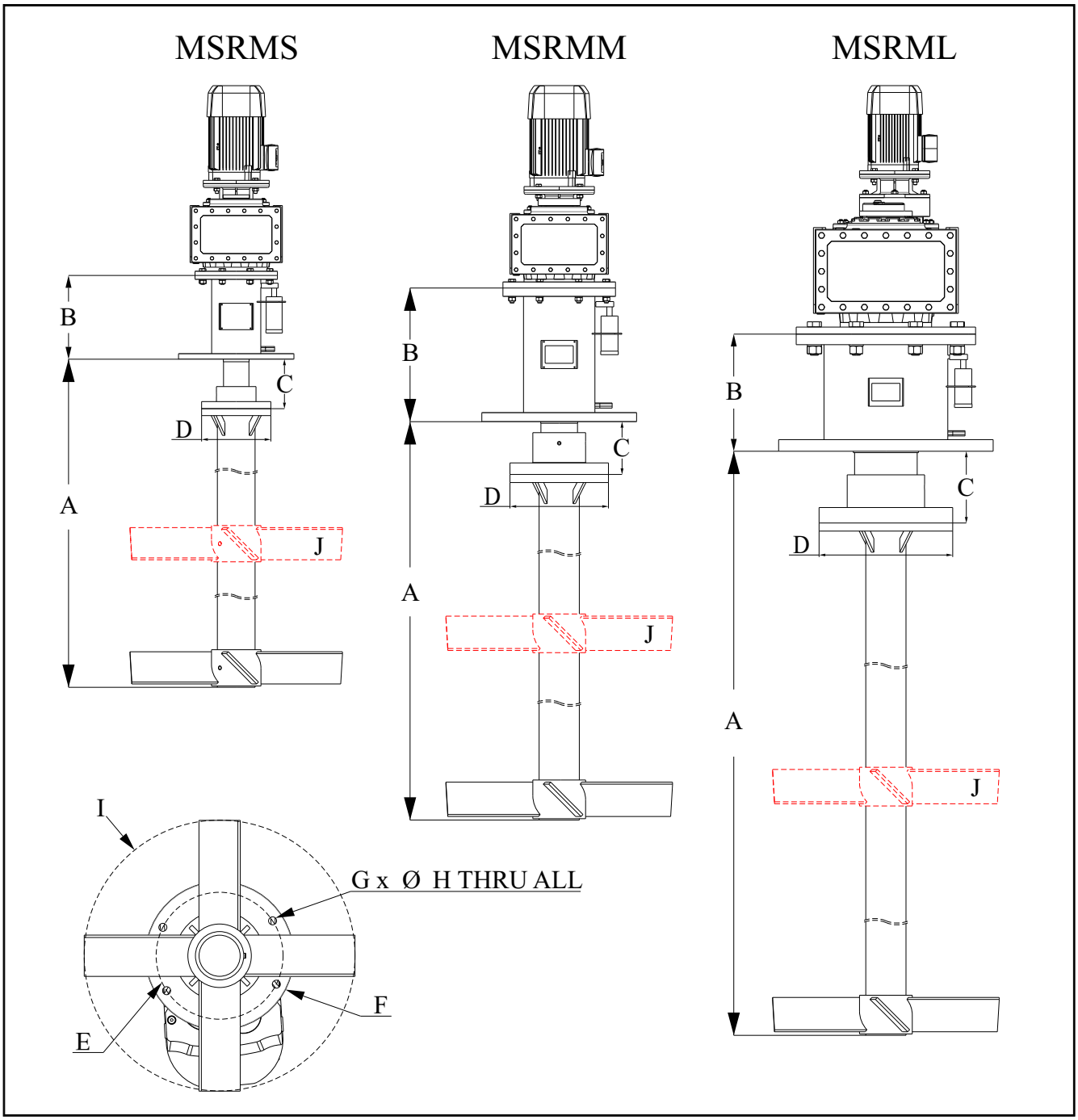
Housing Coating

C1 Polyester
C2 Epoxy
C3 3 Layer Coating

Gearbox Selection

U SIEMENS
V NORD
W BREVINI
X SEW
Y BONFIGLIOLI
Z YILMAZ

MSRM Series Mixer Dimensional Drawing



Mixer Model	Speed Range	A	B	C	D	E	F	G	H	I	J
	RPM	mm	mm	mm	mm	mm	mm	mm	mm	mm	Number Of Impellers
MSRMS	5 ~ 150	1000~5000	100~800	150	210	300	350	6	19(M16)	500~5000	1~6
MSRMM		1000~6000		150	280	400	440	8	21(M20)		
MSRML		1000~12000		204	380	540	610	8	23(M30)		