



Mechanimix

Side Entry Agitator | HMG Series

Professional Mixing Technologies

INTRODUCTION TO SIDE ENTRY AGITATORS

The Side Entry Agitator is one of the most widely used pieces of equipment in various industries, including oil and gas, petrochemical, chemical processing, and liquid handling industries. Due to its unique side-mounted design, it serves as an effective solution for homogenization, preventing sedimentation, and improving heat transfer in large storage tanks. Additionally, they are highly regarded for their ease of maintenance, quick installation, and durability under challenging operational conditions.

HMG



Mounting Type	Side Entry
Impeller	HWM Series
Mechanical seal	Special mechanical seal designed for side-entry agitators
Shaft diameter	50 – 200 [mm]
Shut-off device	Seal replacement while the tank is filled, shaft remains supported during removal of mechanical seal
Motor power	1.1 – 75 [kW]
Shaft Material	Stainless Steel 316L - 304, Carbon Steel
Models	HMG Series
Industries	Petroleum, Chemical, Food&Beverages, Mining, Polymer

Reliable Mixing Solutions

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Advantages

Energy Efficiency

Consumes less energy compared to top-entry agitators due to optimized hydrodynamic blade design and efficient flow generation.

Cost-Effectiveness

Lower initial investment and operational costs for large tank applications compared to other mixing solutions.

Easy Maintenance

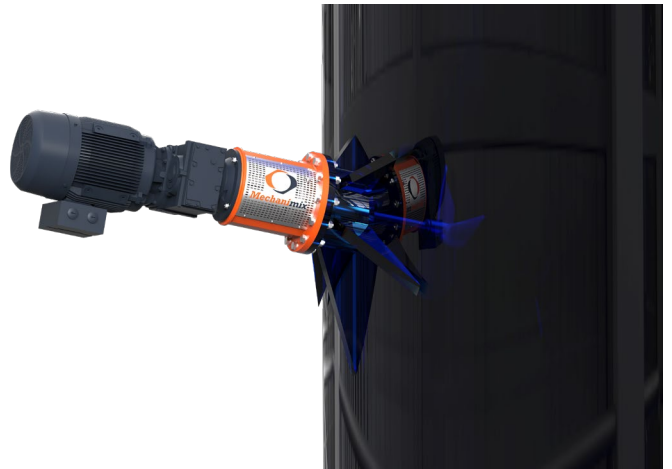
HMG side-entry agitators offer quick and practical maintenance thanks to their accessible design, minimizing downtime and ensuring long-lasting operation.

High Mixing Efficiency

Suitable for heavy-duty applications. Agitator performance can be adjusted through different drive combinations.

Customizable Design

Agitators can be tailored to specific process needs, including blade type, material selection, and motor power.



HMB Series Mounted on Tank

Ease of Maintenance and Durability

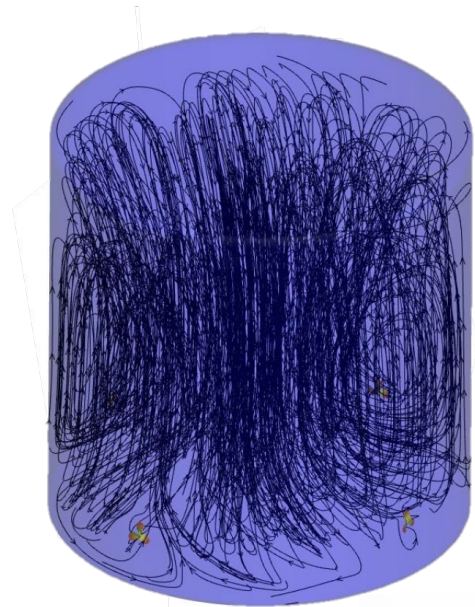
These agitators are made of robust materials resistant to high temperatures and pressure. Their accessible design allows quick maintenance, reduces downtime, and ensures long-term reliability.

Energy Efficiency and Mixing Performance

Side-entry agitators are designed for high efficiency with low energy consumption. The hydrodynamic blade design generates strong flow, ensuring homogeneous mixing, preventing sedimentation, and reducing costs.

Flow Performance with CFD Analysis

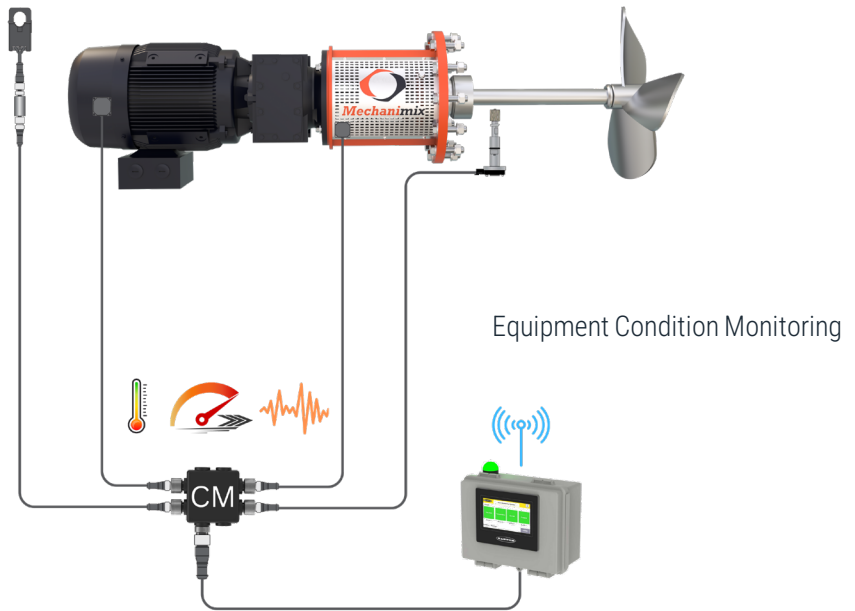
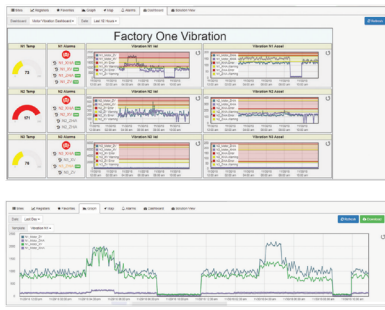
As seen in the CFD Post A visualization, HMG side-entry agitators create strong and balanced flow patterns within the tank. This ensures homogeneous mixing, prevents sedimentation, and enhances heat transfer efficiency. This CFD-based design maximizes process reliability and delivers high-performance mixing solutions.



CFD Post A

Smart Monitoring Solutions for Industrial Agitators

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Predictive Maintenance

By analyzing collected data, the system predicts potential issues before they occur. This minimizes downtime, reduces maintenance costs, and ensures uninterrupted process operation.

Real-Time Monitoring

The condition monitoring system continuously tracks key parameters such as vibration, temperature, and pressure. This real-time data provides early warning signals to prevent unexpected failures.

Improved Reliability

Equipment condition monitoring increases overall plant reliability by extending equipment lifetime, improving safety, and ensuring consistent performance under demanding industrial conditions.



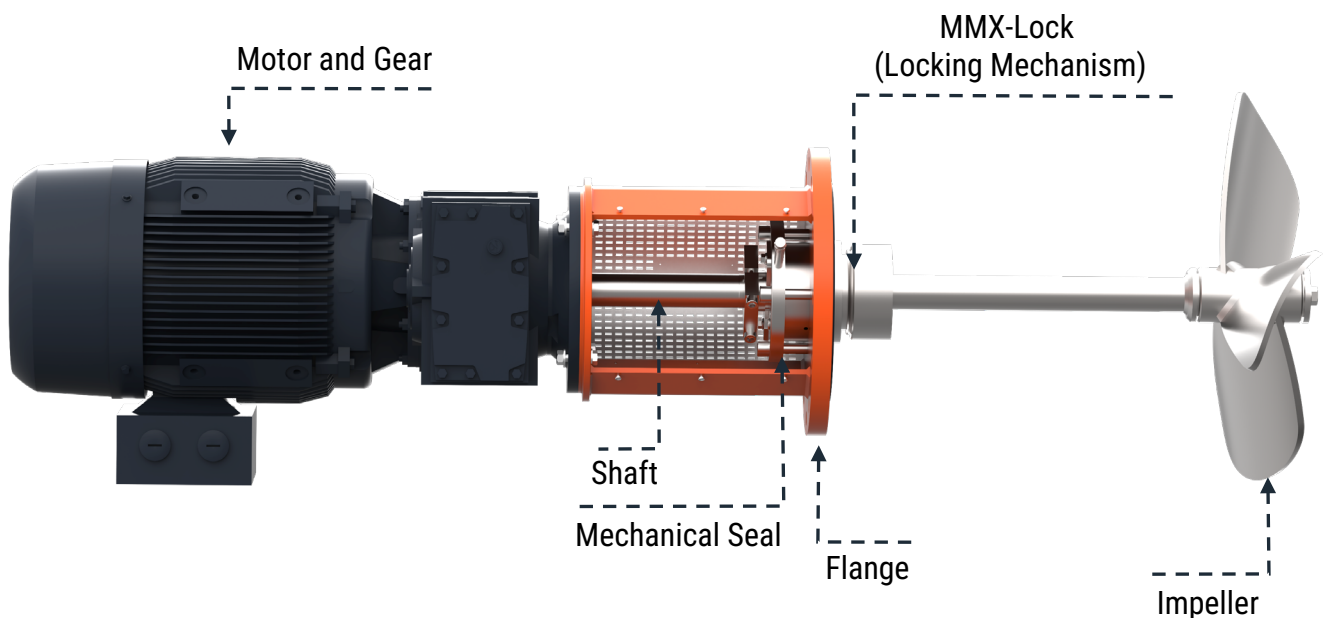
Mechanical Structure and Key Components

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Mechanical Structure and System Components

The HMG Series Side Entry Agitators are equipped with the following key components. This configuration ensures reliable operation, simple maintenance, and high mixing efficiency in horizontal motor gear applications. Units are available in materials such as stainless steel, carbon steel, or duplex steel.

- Horizontally mounted motor with gear reducer (provides robust power transmission and stable speed control for demanding applications)
- Heavy-duty gear drive (ensures high torque capacity, smooth operation, and long service life)
- Mechanical seal (available in single, double, or cartridge designs for reliable sealing in harsh conditions)
- Welded or modular shaft (customized for tank geometry and process requirements)
- MMX-Lock, Locking Mechanism (prevents shaft rotation during maintenance)
- Flange connection (ensures secure and efficient tank mounting)



Component Breakdown of HMB Series

Focus on Reliability and Serviceability

The HMG Series is engineered with durability in mind, ensuring reliable operation under demanding process conditions and simplified maintenance in the field. Key components—such as shafts, seals, and motors—can be serviced or replaced without draining the tank or requiring full disassembly of the unit. The robust gear-driven design minimizes downtime and supports cost-effective maintenance, even in remote or high-demand production environments.

Advanced Mechanical Seal Solutions for Side Entry Agitators

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Seal Reliability in Demanding Environments

Mechanical seals are critical components that prevent fluid leakage along the rotating shaft. In HMG side-entry agitators, they ensure reliable operation under high pressure and temperature conditions, extending equipment life and minimizing maintenance needs.

Mechanical Seal Features

- Designed for easy replacement without draining the tank
- Balanced design for high-pressure resistance
- Materials: Silicon Carbide, Tungsten Carbide, Carbon, Stainless Steel
- Optional elastomers: Viton, EPDM, FFKM

Advantages of Mechanical Seal in HMG Series

- Minimum leakage, maximum efficiency
- Reduced downtime during maintenance
- Durable seal faces with minimal wear
- Compatible with a wide range of chemicals

Seal Replacement Without Draining

HMG side entry agitators are equipped with mechanical seals that can be replaced while the tank remains full. This feature minimizes production downtime and ensures maximum process continuity.

Custom Sealing Solutions

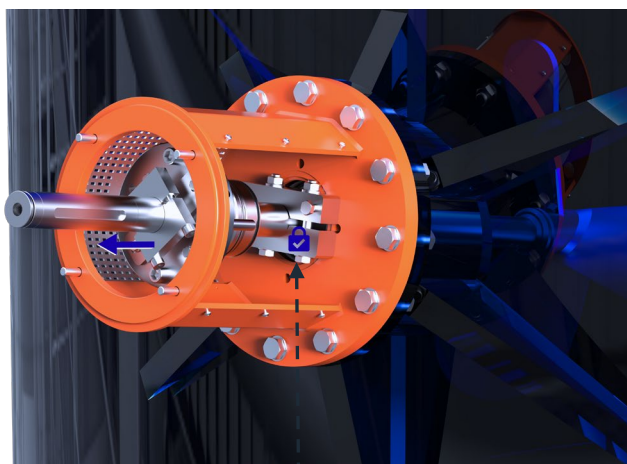
Mechanimix offers customized sealing systems tailored to your process requirements, including dry-running configurations, external flushing plans, and pressure-balanced seal designs. Our engineering team works closely with clients to ensure optimal sealing performance for every application.

Expert Engineering Support

Our engineering team develops customized solutions tailored to customer needs, providing consultancy and technical support to ensure optimal sealing performance for every application.

Reliable Seal Maintenance

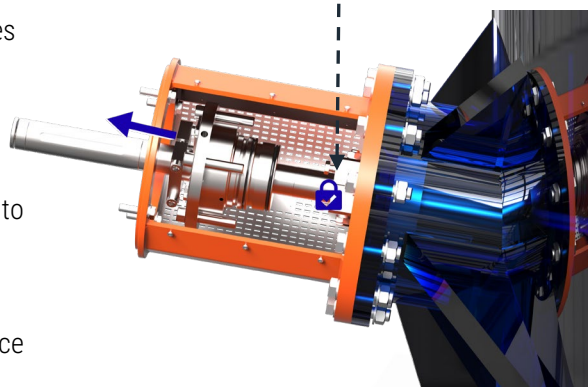
In HMG Series side entry agitators, seal replacement requires removal of the motor-gearbox assembly. This robust design, however, ensures maximum reliability under demanding process conditions, extending equipment lifetime and reducing the frequency of maintenance interventions.



Shaft Locking Clamp

Seal Replacement A

Shaft Locking Clamp



Seal Replacement B



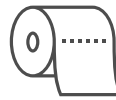
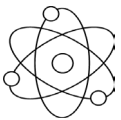
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Side Entry Agitator Dimensions

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Suitable for use in tanks with capacities ranging from 2 m³ to 20,000 m³, the HMG Series agitators are engineered to deliver reliable performance across a wide variety of applications. Designed to accommodate different fluid properties and a broad range of viscosities, they ensure uniform mixing, prevent sedimentation, and maintain process stability. This versatility makes the HMG Series ideal for industries such as petrochemical, chemical, mineral processing, water treatment, pulp and paper, and many other demanding production environments.



Mechanimix offers a wide range of industrial mixers tailored to the needs of various industries. With different model options, it provides the most suitable solutions for diverse applications.

