Impellers | GDM Series

Professional Mixing Technologies

Next-Generation Efficiency in Gas–Liquid Mixing Technologies

The GDM impeller is engineered to deliver high-efficiency gas dispersion and separation in gas–liquid reaction systems. Its advanced radial-flow geometry provides uniform gas distribution, stable operation under high gas flow, and consistent mass transfer without power drop under gassing conditions. Designed for applications such as hydrogenation, fermentation, and oxidation, the GDM impeller ensures reliable mixing, efficient gas handling, and exceptional performance in both laboratory and full-scale bioreactor environments.

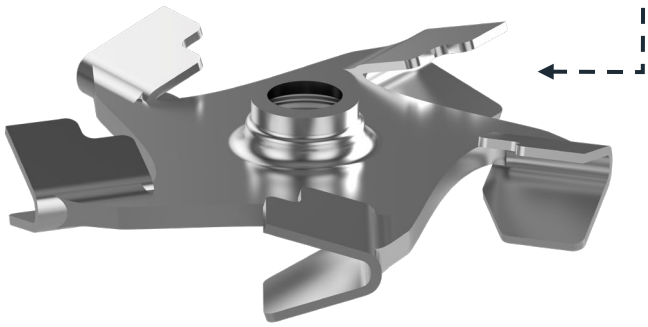
INDUSTRIES

- Chemicals
- Food & Beverages
- Pharmaceuticals
- Hydrometallurgy

APPLICATIONS

- Fermentation
- Hydrogenation
- Oxidation
- Alkoxylation
- Hydroformulation
- Carboxylation

GDM



ADVANTAGES

- Constant speed during throttle
- Gas-free conditions
- Optimized mass transfer
- Gas separator ring eliminates clogging risk
- High volume limit

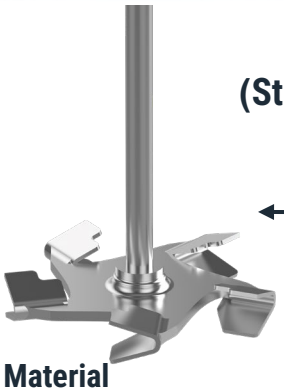
FEATURES

- Radial-flow high-efficiency impeller
- Leading gas-distributor blade design
- Compatible with perforated & non-perforated sparger rings
- High suspension performance even at elevated gas flow
- No power-loss behavior under gassing conditions

Material Variants and Application Range

Professional Mixing Technologies

GDM (Stainless Steel)



Material

- High-grade stainless steel

Features

- Excellent corrosion resistance in gas–liquid systems
- Smooth, hygienic surface suitable for bioreactors
- Stable radial-flow distribution for efficient gas separation
- Easy to clean and CIP-compatible

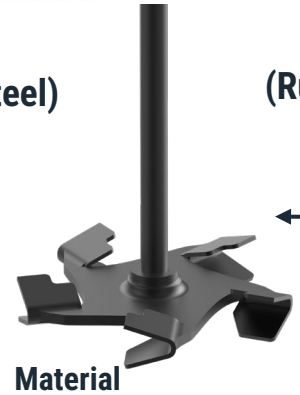
Typical Applications

- Fermentation
- Food & beverage aeration
- API and biochemical processes
- Oxidation and hydrogenation reactions

Advantages

- Reliable gas dispersion
- No clogging during high-gas operation
- Consistent mass-transfer performance

GDM (Rubber Lining)



Material

- Carbon-steel impeller body with rubber lining

Features

- Superior resistance to abrasive gas–liquid slurries
- Rubber surface reduces mechanical wear
- Stable performance under high gas loading
- Suitable for particle-rich aerated systems

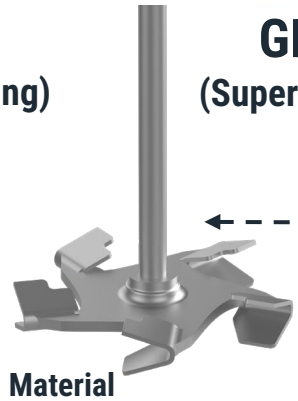
Typical Applications

- Hydrometallurgical gas-injection processes
- Abrasive oxidation slurries
- Gas–solid–liquid suspension mixing
- Leaching & bio-oxidation reactors

Advantages

- Extended service life in abrasive media
- Reduced blade wear
- Lower maintenance frequency
- Stable gas–liquid dispersion

GDM (Super Duplex)



Material

- Super Duplex Stainless Steel

Features

- Exceptional mechanical strength for high-pressure gas systems
- Outstanding resistance to pitting & stress corrosion
- High stability in chloride-rich or acidic gas–liquid environments
- Optimized for aggressive oxygenation or oxidation conditions

Typical Applications

- High-pressure hydrogenation
- Chloride-rich oxidation reactors
- Offshore/harsh-environment bioreactors
- Gas–liquid–solid multiphase reaction tanks

Advantages

- Maximum corrosion & erosion resistance
- Long operational lifespan
- Reliable performance under extreme gassing conditions