



MN and MF Immersible Solids Handling Pumps



Experience In Motion



Dependable wastewater handling when you need it most

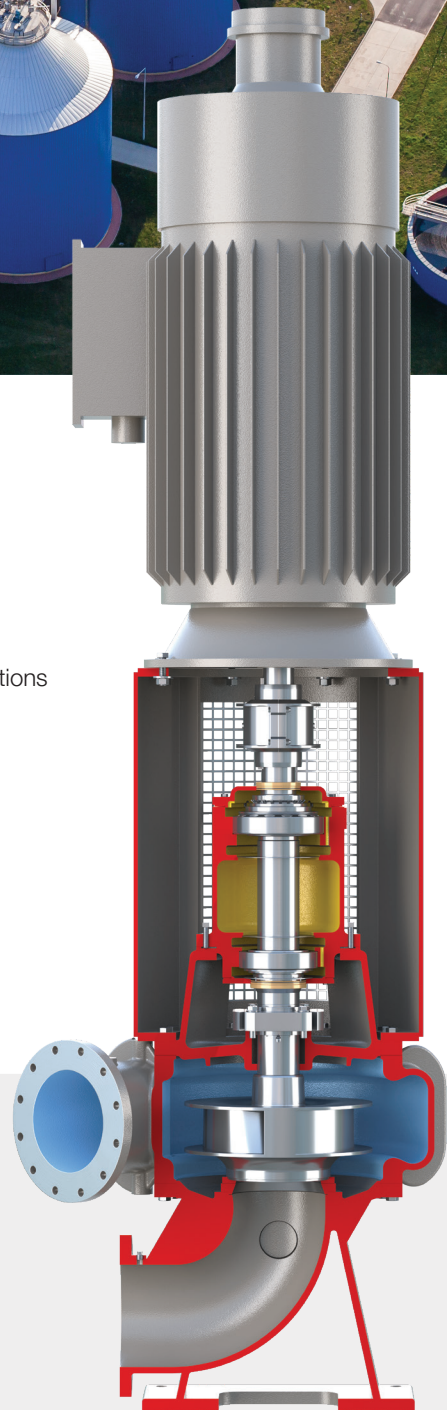
Critical wastewater plant processes demand reliable solids handling pumps. Flowserve MN and MF Immersible pumps build upon our proven Worthington® legacy MN and MF solids handling pump technologies to provide the ideal solutions for vertical dry-pit applications that may be subjected to flooding.

They are specifically engineered with a non-clogging impeller for long life in demanding sewage-handling services or where solids in suspension are of particular concern. As a result, these rugged pumps offer extraordinary flexibility and cost efficiency.

In addition, MN and MF Immersible pumps are available in more sizes and hydraulic options than any other on the market. This enables plant operators to specify the pump that's a perfect match for their process requirements. Capital, operating and total lifecycle costs can be minimized as a result.

Benefits

- Capable of operating under 9 m (30 ft) of water for 14 days
- Advanced seal design maximizes uptime
- Non-clogging impeller minimizes unplanned downtime
- Higher efficiency than traditional submersible units
- Low installation and maintenance costs



Designed to reduce total costs

Plant operators can minimize equipment, installation and maintenance costs as a result of the designs of MN and MF Immersible pumps. Motors can be mounted close to the pumps, eliminating costly mezzanine-style configurations. And maintenance costs are lower than submersible units because the motor and bearing housing are easier to access and repair. Many tasks, including servicing the mechanical seal or packing, can be performed on-site.

Costs to repair the blower motor after flooding also are significantly reduced with an optional reusable motor.

Typical applications

- Sewage treatment
- Storm water collection
- Industrial wastes

Operating parameters

- **Flows** to 17,000 m³/h (75,000 gpm)
- **Heads** to 75 m (250 ft)
- **Power** to 1,120 kW (1,500 hp)
- **Sizes** from 3 to 42 in.



Key design advantages

- The bearing housings utilize magnetic **bearing isolators** with precision face topography. This technology ensures non-contacting, lift-off performance that extends pump life and provides superior protection in a flooding event.
- A standard **blower** provides adequate drive motor cooling during normal operation.
 - When the unit is submerged, the blower motor shuts down and the flood water cools the drive motor.
 - Sacrificial blower motor design helps to control unit costs.
- An optional **reusable blower motor** virtually eliminates maintenance or replacement after a flooding event.
 - True submersible motor design allows for immediate operation after the flooding event.
 - High-efficiency performance for impressive energy savings
 - Watertight cable entry protects motor from moisture and contamination, thus extending its operating life.
- Standard **roller bearings** are designed for an L10 life of 100,000 hours to extend mean time between repair (MTBR).
- The **pump motor** is a totally enclosed, blower cooled (TEBC) design that is IP67 rated.

Optimized solutions and single-source accountability

As a leading manufacturer of pumps, seals, valves and automation, Flowserve understands how to engineer these products to work together in an optimized system. Our comprehensive expertise helps us to deliver innovative fluid motion and control solutions that deliver world-class performance in the toughest fluid management challenges.

We also provide dedicated resources for expert engineering, project management, technical support and service throughout the lifecycle of your project. This approach increases uptime, minimizes costs, and ensures you're prepared for emergencies.





Retrofit to capture savings

The unique immersible pump design can be used to upgrade existing pump stations. Flowserve can retrofit installed MN, MF and MSX pumps through our manufacturing and QRC network.

- Cost-effectively convert dry-pit or wet-pit submersible pumps to an immersible design, reusing the existing hydraulics.
- Achieve higher-efficiency operation compared to intermediate shafting installations.
- Maintain existing touch points in most cases.

Improve uptime and lower costs with predictive maintenance

MN and MF Immersible pumps are RedRaven ready. That means they're designed and built to accept RedRaven wired or wireless sensors. Using cloud architecture, they can connect to RedRaven, a predictive maintenance service from Flowserve that improves plant performance by enabling operators to identify and analyze equipment issues so you can take preventative action.



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