

SERO™

PumpSystems

M4Equipment

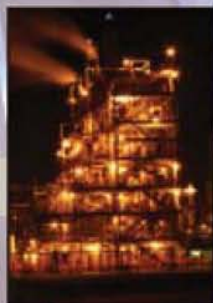
Quality Pumping Systems

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*Sealless Multi-Stage Pumps
Designed for Zero Emission Services*

SEMA™



SEMA™ (Magnetically Driven Side Channel Pump)

Engineered to meet demanding process conditions.

The SERO Advantage

Headquartered in Germany, SERO PumpSystems is the world's only exclusive manufacturer of side channel pumps. Since the issuance of their first side channel pump patent in 1929, SERO has continued to revolutionize the industrial pump industry. Specializing in individually configured pumping systems, SERO has consistently been on the leading edge of side channel pump design and technology.

Side Channel Pump Technology

Side channel designs fill the hydraulic performance void between positive displacement pumps and centrifugal pumps. Fully open "star" impellers interact with the side channel casing creating an intense transfer of energy to the pumped liquid or liquid / gas mixture. The corresponding pressure increase (pump head) equals 5 to 10 times the amount generated by a similar size centrifugal pump at the same RPM. Additionally, the centrifugal effect of the impeller combined with the unique SERO internal flow patterns, allow our pumps to effectively handle fluids with gas entrainment of up to 50% and also be self-priming. All this in one compact package!

SERO Model SEMA Sealless Pumps Engineered for a Wide Range of Industrial Services

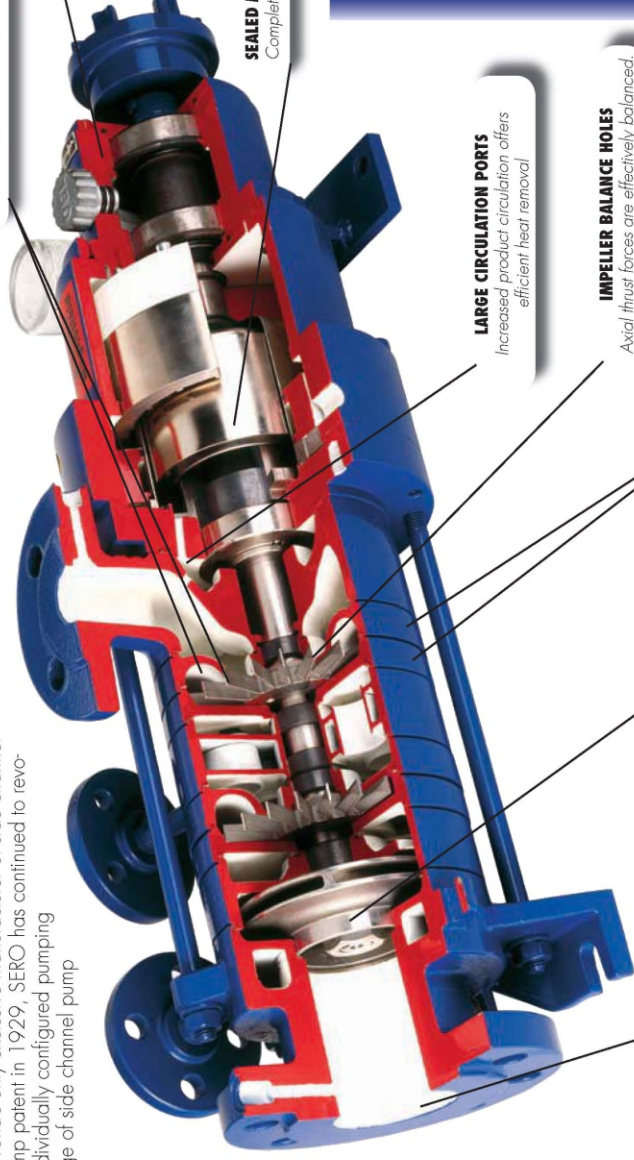
Model SEMA is a proven state-of-the-art multi-stage, radially split segmented pump that combines the functionality of a low NPSH first stage impeller with the performance of a side channel design. The SEMA features include:

- Hydraulic Flexibility - Low Flows with High Head
- Exceptional Differential Pressures Developed at 1750 RPM
- Steep Performance Curves for Precise System Control
- Ability to Pump Process Fluids with Entrained Gas
- Low NPSH Requirements to Prevent Cavitation
- Self-priming
- Sealless, Zero Emission Mag Drive Design
- Modular Construction with Standardized Parts
- "Crafted In Germany" for Increased Reliability and Lowest Cost of Ownership

OPEN "STAR" IMPELLER AND SIDE CHANNEL CASING
Provides high differential pressures with effective gas separation.

OUTBOARD RADIAL BEARINGS
Support drive magnet system and absorbs radial forces

SEALED MAGNETS IN THE INNER ROTOR
Complete protection from chemical attack



LARGE CIRCULATION PORTS
Increased product circulation offers efficient heat removal

IMPELLER BALANCE HOLES
Axial thrust forces are effectively balanced.

MULTI-STAGE MODULAR DESIGN
Allows for easy maintenance and standardized spare parts inventory.

RADIAL VANE IMPELLER
First stage suction impeller provides low NPSH requirements.

SUCTION CASING
Large cross section enhances fluid flow to large "eye" suction impeller.

Services

- "Zero Leakage" Mandates
- Hard to Seal Process Fluids
- Refrigerants (Freon)
- Reactor Feed (Ammonia)
- Volatile Organic Compounds (VOC's)
- Light Hydrocarbons
- Liquid Gases
- Heat Transfer Fluids
- Irritants
- Batch Chemical Process
- Storage/Transfer/Loading

SERO Side Channel Pumps

Engineering Expertise - German Quality - Reliability

Designed for the Future



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