

Introduction to LEWIS® Products

Weir Minerals U.S - LEWIS® Pumps





Weir Minerals LEWIS® Pumps | Saint Louis, Missouri USA

GENERAL - Access limited to Weir Personnel or by NDA

~Established 1891 ~



LEWIS® Sulphuric Acid Pumps

Main Characteristics

- First pump manufactured in 1914
- Robust Construction to handle sulphuric acid
- LEWIS® Alloyed Irons
- Hardenable LEWMET® Alloys
- Dual volute casings and balanced impellers
- Zero stuffing box operating pressure
- Optional mechanical seal
- Suitable for high temperature 240°C and high concentration up to 99.5%
- Both submerged and External designs



Nickel-Based Alloys

Introduction to LEWIS®

Introduction to LEWMET®

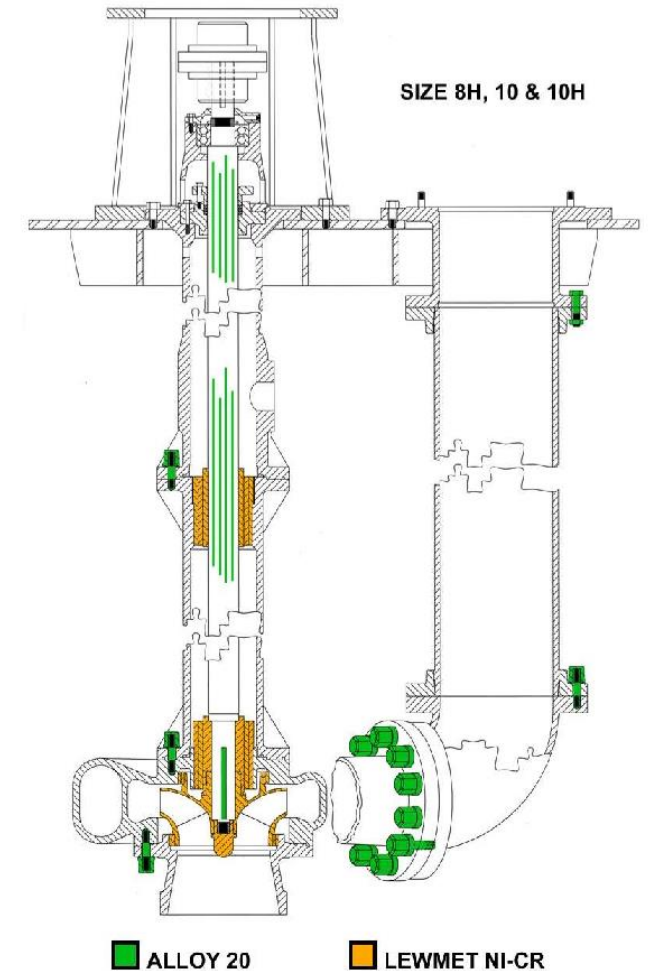
- Nickel based alloys is in use at LEWIS® Pumps since 1925
- LEWMET® developed in 1973
- LEWMET® alloys provide superior corrosion and erosion resistance
- High mechanical strength even at elevated temperatures
- Can be hardened to 500 BHN / Wear resistance

	Cr	Cu	Mo	Si	Ni
Sulphuric Acid Alloys					
L33	31.0%	3.0%	3.5%	3.5%	35.0%
L44	31.0%	3.0%	2.0%	3.0%	37.0%
L66	31.0%	3.0%	0.3%	3.0%	39.0%
Phosphoric Acid Alloys					
L15	28.0%	3.0%	2.0%	0.5%	8.0%
L25	29.0%	3.0%	5.0%	0.5%	39.0%

Sulphuric Acid Pump Cross Section

Features

- High velocity/high wear area = LEWMET®
- Alloy 20 or equivalent in shafts
- L-14 in volute & boots
- Best cost / value for customer
- Longer service life than any other material available in the market



LEWIS® Sulphur Pumps

Clean Sulphur Pumps

- Submerged bearings
- Adjustable lengths per customer requirement
- Longest Pump Manufactured – 8 meters
- Intermediate bearings to avoid exceeding critical shaft speed
- For burner & transfer applications
- Steam Jackets to avoid solidification



Dirty Sulphur Pumps

- Cantilever shafted model
- Designed to handle dirty sulphur
- Lengths up to 2150 mm
- Head up to 150 m
- Semi open impeller
- For filter feed & precoat applications
- Steam Jackets to avoid solidification



LEWIS® Valves

Butterfly Valves

- Drilled to ANSI, BS, DIN, or, JIS standards
- Temperature up to 140°C (280°F)
Heat recovery up to 240°C (460°F)
- All LEWMET® alloy
- Sizes 100-600mm (4"-24")



Globe Valves

- Drilled to ANSI, BS, DIN, or, JIS standards
- Temperature up to 140°C (280°F)
Heat recovery up to 240°C (460°F)
- All LEWMET® alloy
- 15-150mm (1/2"- 6")



Gate Valves

- Drilled to ANSI, BS, DIN, or, JIS standards
- Temperature up to 140°C (280°F)
Heat recovery up to 240°C (460°F)
- All LEWMET® alloy
- 15-750 mm (1/2"- 30")



Axial Flow Pumps

Main Characteristics

- Phosphoric Acid
- High Capacity
- Low Head
- Adjusted blade angles to achieve high efficiency, Smooth Run & Low Vibration
- Suitable for reverse flow

Features

- Flexible Design, Heavy Duty Construction
- Wide Range of Materials
- Various Sealing Options
- Cast and Fabricated Elbow versions



Axial Flow Pumps

Applications

- Phosphates (evaporator circulator)
- Salt and potash (crystallizer circulation)
- Chemicals (evaporator and crystallizer circulation)
- Pulp and Paper (evaporator and concentrator)
- Metals and mining (crystallisation)
- Brine (evaporator)

Capacity

- Up to 32,000 m³/h (140,892 US gpm)

Head

- Up to 6m (19.5 ft)

Pressure

- Up to 6 bars (87 psi) depending on material and size

Temperature

- Up to 200 °C (392 °F)

Discharges sizes

- 300 mm – 1600* mm (12 in – 63 in)

Maximum speed of rotation

- 1475 rpm

**In development stage*

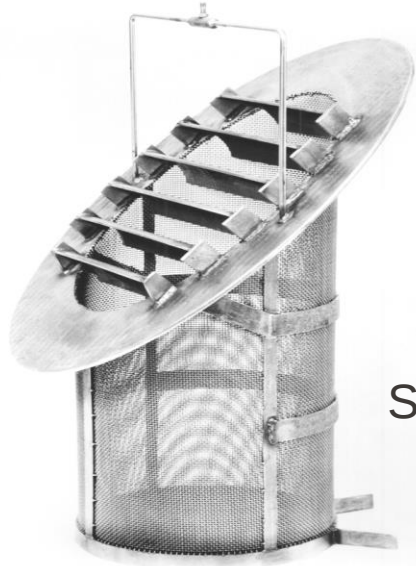
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LEWIS® LEWMET® Specialty Items

LEWMET® Accessories

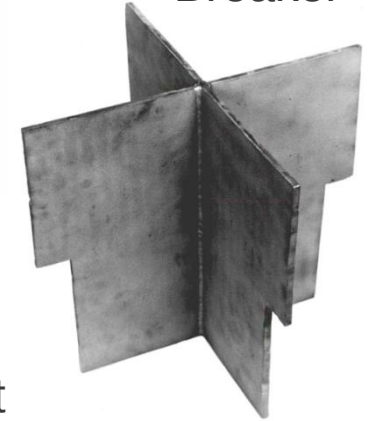
- Strainers
- Dilution Pipes
- Orifice Plates
- Vortex Breakers
- Tower Outlet Thimbles



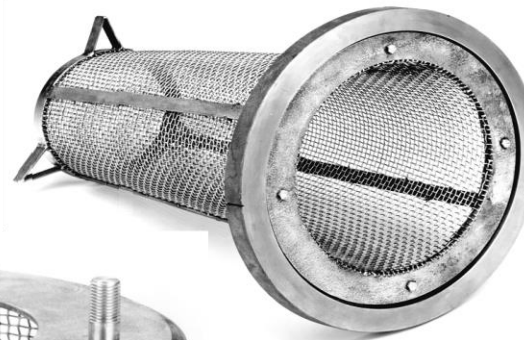
Acid Strainers



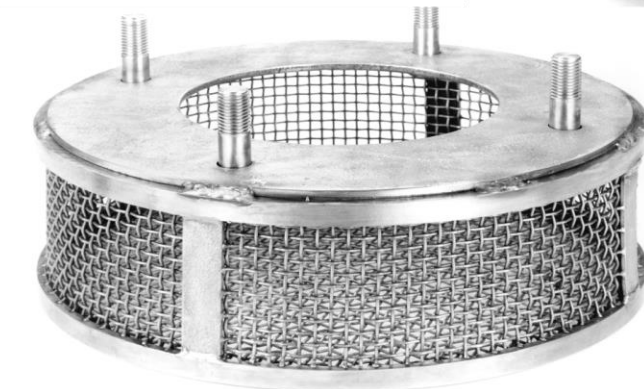
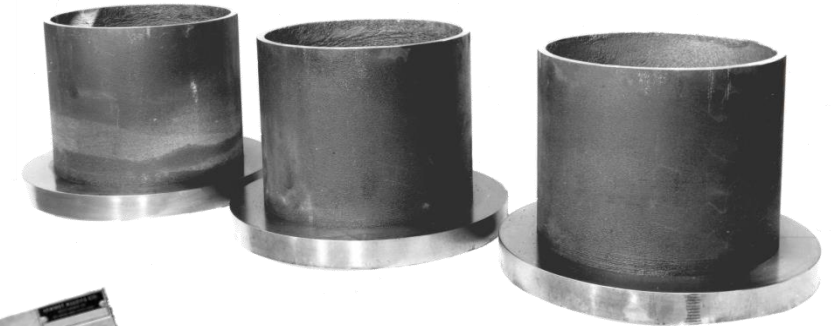
Water Dilution Pipes



Vortex Breaker



Tower Outlet Thimbles



Orifice Plate

Service & Support

Available Services

- Installation & Commissioning
- Maintenance & Repairs
- Standard part inventory availability
- Upgrades and Retrofits
- Maintenance seminars and workshops
- Training & Consultation
- Field Service & Troubleshooting



Global Footprint



Major LEWIS® Installations – Over 120 Countries Worldwide



Mining technology for a sustainable future