

System Solutions for Mining



Electrolyte Filtration • Wastewater Treatment & Pumping



Smith & Loveless Inc

Advancing Electrolyte Filtration with DI-SEP® SX-DAF

DI-SEP® SX Filters for Electrolyte

Pioneered in 1980 by fluid separation and handling expert Smith & Loveless, DI-SEP® SX Filters are high volume pressure filters designed exclusively to purify electrolyte fluids in copper mining/electrowinning facilities. DI-SEP® SX Filters install prior to the electrowinning stage to remove organic materials present in the electrolyte. Because the commercial success of copper is dependent on its final quality, DI-SEP® SX Filters serve as an important step in yielding the finest copper product at numerous SX-EW mines all over the globe, including Chile, Peru, Australia, Mexico, Canada, the United States and Spain.



DI-SEP® SX-DAF: Making Copper Purer, More Efficiently

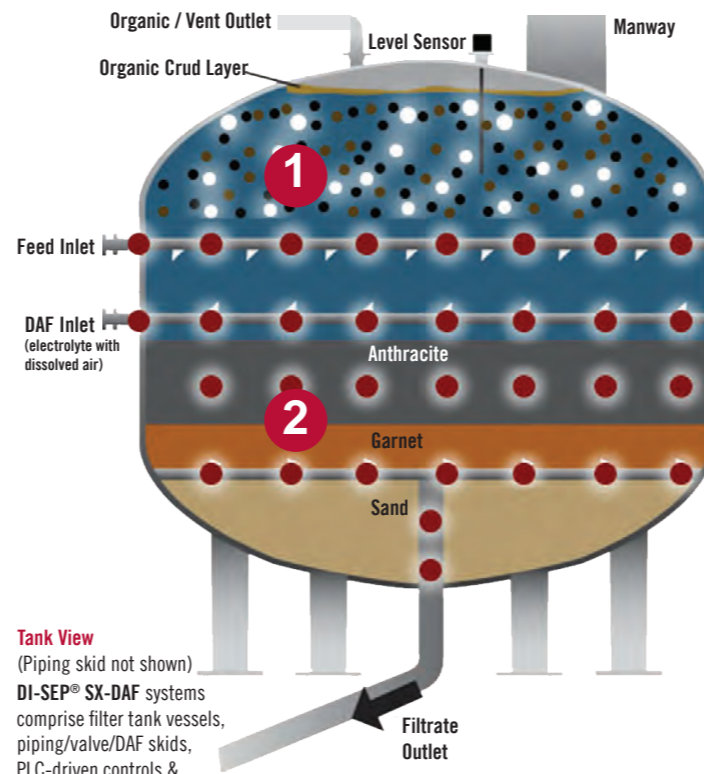
Smith & Loveless proudly offers the newest innovation to the Solvent Extraction (SX) Filter market with the introduction of DI-SEP® SX-DAF technology. SX-EW copper facilities throughout the world that upgrade with the DI-SEP® SX-DAF Package will significantly increase filter performance over conventional filters — with removal efficiencies up to 99% — while at minimum doubling the throughput. Additional benefits include no concern for wearing or clogging internals, and simple retrofitting into existing tankage. SX Filter market leader Smith & Loveless assists every step of the way.



The DI-SEP® SX-DAF Difference: Two-Stage Organic / Solids Removal with Dissolved Air Flotation & Dual Media Filtration

Fully tested in the field, the key development of DI-SEP® SX-DAF centers on the inclusion of robust dissolved air flotation (DAF) incorporated into the filtration process. The addition of this step not only improves the filtration of organic material, but allows for less backwashing, no concern for wearing or clogging internals, and simple retrofitting into existing tankage. SX Filter market leader Smith & Loveless assists every step of the way.

- 1 Electrolyte fluid enters the DI-SEP® SX-DAF tank, initiating the dissolved air flotation (DAF) process. DAF causes organic particles and solids to be lifted to the top of the tank, where they are collected and subsequently removed.
- 2 Dual Media Filtration polishes the electrolyte fluid by passing through the dual media bed of anthracite and garnet. The result is greater than 99% removal of organic particles and ultimately, purer copper.



Tank View
(Piping skid not shown)
DI-SEP® SX-DAF systems comprise filter tank vessels, piping/valve/DAF skids, PLC-driven controls & instrumentation.

99% Removal Achieved with 2x-6x Greater Throughput

DI-SEP® SX-DAF Benefits

- Superior filtration efficiency (up to 99%)
- Significantly increased throughput (2x-6x)*
- Less frequent backwash cycle
- SX-DAF can be retrofitted into existing SX Filters (any brand)
- No increases to tank side wall required for retrofits
- Durable, robust design that will last
- Available for all tank sizes
- Single and multi-tank arrangements available
- Flexible shipping options

**results may vary as throughput substantially increases*

Product Data

| | |
|-----------------|--|
| Capacity | Up to 1,900 gpm per tank vessel (430 m ³ / hr. / m ²) |
| Filtration Rate | 10-15 gpm / sq. ft. (24-36 m ³ / hr. / m ²) |
| Backwash Rate | 6 gpm / sq. ft. (9.8 m ³ / hr. / m ²) |
| Tank Size Range | 5' - 15.5' (1.5 m - 4.7 m) |
| Organic Removal | 99% and greater removal |
| Solids Removal | 10 microns and larger |



DI-SEP® System Features



User-Friendly Design

Components that may require maintenance are located at the front of the system for easier access. Open galleries can be included for easier and safer passage to the filter components.



Flexible Shipping

Systems deliver in standard and container configurations, enabling the fastest and most economical shipment and installation possible. Smith & Loveless assists every step of the way.



Smart Controls

The custom-designed control panel typically features an operator interface terminal, data highway and modem communications.

Advancing Wastewater Treatment & Pumping at Mines

Smith & Loveless maintains leadership in the manufacture of pre-engineered water and wastewater treatment systems and pumping equipment. For more than 65 years, industries around the United States and the world have relied on cost-saving S&L equipment to meet their water handling needs. Our systems offer distinct advantages and long-term cost-saving benefits brought forth from some of the industry's most unique systems concepts. Smith & Loveless maintains an extensive list of clients in the industrial sector, serving a variety of markets. Below is a sampling of our featured water/wastewater systems.

Wastewater Treatment Systems

- TITAN MBR™ Membrane Systems for Water Reuse
- ADDIGEST® & Container Packaged Systems for Man-Camps
- FAST® Systems for Variable Flow Conditions
- OXIGEST® Systems Large Flow / High BOD Applications

Flow capacities from 5,000 GPD - 3 MGD+ (18.9 - 11,400 m³/d+),
effluent quality of <3 mg/l BOD and <1 mg/l TSS



TITAN
MBR

Non-Clog S&L Pumps & Packaged, Above-Grade Pumping Systems

- Superior S&L Pump Design Results in 3x Longer Life
- Eliminate Confined Space Issues for Inspection
- Designed for Superior Wire-to-Water Efficiency

Sizing from 4" - 12" (100 - 300 mm), from 10 - 300 Hp (7.5 - 225 kW),
and capacity up to 5,000 GPM (316 lps) per pump



EVERLAST
Wet Well Mounted Pump Station

At Grade Access


Solids Separation & Water Filtration

- Complete Range of Solids Separation Systems -
Including Heavy Particle Separation Systems, Clarifiers, Filters, & DAF
- Proven, Reliable Technology and Process Expertise by S&L
- Designed to Minimize Space Concerns and Operator Requirements

Consult S&L for system requirements and capacities for each application



PISTA
GRIT REMOVAL SYSTEM

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