Metal Pretreatment Filtration and Paint Sludge Removal Systems
Since 2002, Air and Liquid Systems has served the finishing industry with quality liquid separation and filtration equipment. We design and fabricate our products in our Rochester Hills, MI facility. We understand that the end result of our efforts is to improve your process performance. Our experience and expertise in metal cleaning pretreatment filtration and paint sludge removal systems from water wash paint booths allows us to best serve you.

We focus on your process and then offer the best filtration solution to solve your specific problem. Our product mix allows us to offer several filtration selections that would work well. We then spend the time to give the advantages and disadvantages of each filtration option, such as maintenance, operating costs and initial cost.

Our pretreatment system filtration products include
• Pressure filters, filter presses and vacuum filters for phosphate stage sludge removal
• Hydrocyclones with automatic dewatering filter for phosphate sludge removal
• Gravity media filters for metal cleaner stage filtration
• Hydrocyclones for weld ball and dirt removal from cleaner stages
• Oil separators for cleaner stages
• Reverse Osmosis (RO) systems for rinse stages

Our Paint Sludge Removal Systems products include
• Auto weirs for effective paint sludge collection from individual paint booths or central pits
• Paint sludge consolidators for effective sludge removal from water
• Paint sludge dewatering filters and dewatering bags

Design Assistance
We provide all the items you will need to ensure a successful project from start to finish:
• Piping and system flow review
• Equilibrium solids loading calculation
• Filter index rate calculations
• Detailed CAD system installation drawings specific to your site

Designing Innovative Solutions
ALSI has complete in-house design and fabrication capabilities. Our team of experienced engineers uses extensive process knowledge to offer design assistance and customization of our standard products to fulfill your needs. Our focus is to meet your specific process, equipment and budget while addressing corporate initiatives, such as payback and green technology.

We know you need to keep your plant running. Our designs are well planned to deliver equipment requiring minimum attention with clear instruction manuals and access to knowledgeable service support via phone and on-site.

A proven and trusted partner
Over the years, we have earned many repeat customers by offering the right product for the application. Based on the performance of our equipment, we have become the preferred provider for many customers. Our longstanding customers have come to rely on us for our cost-effective solutions, meeting expected deadlines and standing by our product. We work with you to deliver the best solution with after the sale support that is second-to-none.
ALSI Pressure Filter
The ALSI Pressure Filter is designed specifically for the phosphate stage of a metal pretreatment system to remove sludge without operator intervention. It operates similar to a filter press but operation is completely automatic.

ALSI Pressure Filters are simple in design and high in performance. Engineered for optimal performance with minimal maintenance, they are designed to function without the troublesome complexities of carrier belts, pulleys or moving filter chambers.

It is common to replace bag filters with our Pressure Filter to reduce man hours needed to change bags. Flexibility of media selection allows the phosphate bath to maintain both PPM limits that directly relates to quality.

Benefits
- Automatic, unattended operation
- Labor savings over bag filters
- Quality improvement by maintaining phosphate bath concentration

Construction
- 304, 316 stainless steel, carbon steel

Optional Accessories
- Sludge collection carts
- Media reuse-rewind assembly
- On line cleaning manifold

ALSI Filter Press
The ALSI Filter Press is a traditional filtration product used in the phosphate stage of a metal pretreatment system to remove sludge. We have tailored our design for phosphate sludge removal. The ALSI Recessed Chamber Filter Press is designed and built to be a highly efficient and very effective device for liquid/solid filtration to produce clear filtrate.

The ALSI Filter Press is unique in its construction and operation. The stainless steel header assembly with flanged connection points minimizes any possibility of leakage common in plastic header assemblies. A flow meter and pressure switch with a VFD control system monitors filter operation.

Benefits
- Specifically designed for phosphate sludge removal
- Media selection to meet specific application
- Quality improvement by maintaining phosphate bath concentration

Construction
- 304, 316 stainless steel, carbon steel

Optional Accessories
- Stainless steel drip tray
- Automatic plate shaker
- Safety light curtain
ALSI Metal Pretreatment Filtration Systems

ALSI Hydrocyclones
ALSI Hydrocyclones remove unwanted material such as weld balls from the deluge and alkaline cleaner stages of the metal pretreatment system. Effective dirt removal in the cleaner stages will significantly improve overall paint quality and reduce manual repair requirements.

ALSI Hydrocyclones are passive devices that separate solids from liquid solutions. Centrifugal force separates solid particles and allows for automatic, consistent solid particle removal in the system. A variety of materials and cone constructions enable a wide range of micron separation.

Benefits
• Automatic, unattended operation
• Labor savings over bag filters
• Effective removal of weld balls and solids from cleaner stages

Construction
• 304, 316 stainless steel, carbon steel

Optional Accessories
• Debris collection carts
• Debris collection/dewatering bags
• Operational feedback of pressure and flow

ALSI U-Band Filter
The U-Band Filter is the perfect replacement of maintenance intensive bag filters common in the deluge and alkaline cleaner stages of pretreatment systems. The ALSI U-Band Filter is simple in design and high in performance. The U-Band filter is engineered to function with few moving parts. Stainless steel construction ensures compatibility with caustic and acid solutions. Unique side seals made of chemical-resistant materials ensures filtration integrity and solids retention.

Benefits
• Automatic, unattended operation
• Labor savings over bag filters
• Completely chemical resistant to solution and cleaning agents

Construction
• 304, 316 stainless steel, carbon steel

Optional Accessories
• Integrated clean tank with pump and controls
• Collection tank for dirty solution
• Solids collection hoppers
ALSI Reverse Osmosis (RO) Systems
ALSI RO Systems produce high purity water for the critical rinse stages of the metal pretreatment system. High reliability and water quality is critical to maintain downstream quality and process integrity. Complete design assistance from raw water analysis to equipment selection, fabrication and installation support are included for customer specific application.

ALSI RO Systems are designed with user friendly PLC controls designed specifically for pretreatment system rinses. Membrane life is significantly improved with our effective clean in place chemicals and procedure.

Benefits
System design ensures critical water quality
Maintenance and operating costs are minimized
Improved downstream process quality

Construction
304, 316 stainless steel, carbon steel

Optional Accessories
Site specific drawing package
Multimedia filters
Softeners

ALSI Oil Removal Systems
ALSI Oil Removal Systems are specifically designed for removal of oil from the cleaner stages of any pretreatment system. It is critical to remove the excess oils left over from the stamping process which leads to contamination of the downstream phosphate stage.

Our systems uses a patented separation process and the principle of heavy phase water and lighter phase oil for the most effective oil removal. There is no clogging issue common to coalescing pack type separators. Oil can be collected for easy disposal and the solution returned to cleaner stage.

Benefits
Automatic, unattended operation
Avoid contamination of critical phosphate stage
Easily integrated into existing system

Construction
304, 316 stainless steel, carbon steel

Optional Accessories
Spent oil collection tanks
ALSI Paint Sludge Removal Systems

ALSI/Palin™ Consolidation System
The ALSI/Palin™ Consolidation System provides high-efficiency, cost-effective handling and removal of paint sludge. The system will collect, consolidate and remove paint sludge from any water wash type paint booth.

Effective paint sludge removal from your paint booth will help reduce booth maintenance costs while improving overall quality. Our design approach takes into account such critical areas as scrubber efficiency and how improvements in one area can greatly improve overall paint operations and quality. The ALSI/Palin System is the result of over thirty years of continuous improvements that makes it an industry leader worldwide. The ALSI/Palin System can be designed to fit any water wash paint booth, from large central collection pits to small standalone booths.

The ALSI/Palin™ System has enabled hundreds of customers to significantly reduce operating costs, improve quality and effectively deal with a difficult applications.

Benefits
• Cleaner paint booth recirculating water
• Reduced booth cleaning time and cost
• Extremely effective sludge removal method

Construction
• 304 stainless steel, carbon steel

Optional Accessories
• Site specific design and installation drawing packages
• Sludge dewatering bags/filters
• Skimming auto weirs

ALSI Autoweir
A common problem in paint sludge removal is the effective collection of floating solids from the central sludge pit or water wash booth. The ALSI Autoweir is designed to maximize floating solids pick up in a tank or pit. The Autoweir can automatically adjust to liquid level variances of up to 2 feet. The Autoweir can be fitted to any pit or tank design. ALSI design assistance ensures collection of floating solids in the pit/tank and pump well.

Benefits
• Effective removal of floating paint sludge from pit/tank
• Automatic adjustment to operating liquid level changes
• Maintains the cleanest pit/tank

Construction
• 304 stainless steel, carbon steel

Optional Accessories
• Custom design to match specific pit/tank
• Top, bottom and side suction connections
**ALSI Paint Sludge Dewatering Dryer**
The ALSI Paint Sludge Dewatering Dryer is designed to removal excess liquid from paint sludge processed with ALSI/Palin Paint Sludge Consolidation System. Operation is automatic to achieve sludge dryness of over 60% by weight. Disposal costs are reduced due to the significant reduction of liquid in the paint sludge prior to transportation.

Paint sludge is safely and continuously handled from its source to disposal with one system integrated into your water wash paint booths. The system works automatically to collect, secure and dry paint sludge and prepares the sludge for safe, economical disposal.

**Benefits**
- Reduction in disposal costs
- Easier disposal approval
- Potential paint sludge usage as fuel

**Optional Accessories**
- Media/sludge separation rewind assembly
- Hybrid Heat Recovery for additional sludge dryness
- Customer specified controls

**Construction**
- 304, 316 stainless steel, carbon steel
ALS1 Full Line of Products and Systems

General Products
• Road Speed Modulated (RSM) Fans
• Body Leak Testers
• Water Test Booths
• Stainless Steel and PVC Spray Manifolds
• Pump Skids
• Reverse Osmosis
• Non-Chemical Water Treatment
• Vehicle and Parts Blow Off
• VOC and Odor Control

Compressed Air Treatment Systems
• Heatless, Heat Reactivated, Blower Purge and Heat of Compression Dryers
• Coalescing and Particulate Filters
• Condensate Drains
• Breathing Air Systems

Metal Pretreatment Filtration
• Gravity Filters
• Hydrocyclones
• Pressure Filters

Phosphate Filtration Systems
• Hydrocyclones with Sludge Dewatering
• Pressure Filters
• Filter Presses

Reverse Osmosis Water Treatment Systems
• Reverse Osmosis
• Multi Media Filters
• Water Softeners

Paint Sludge Removal Systems
• Palin Paint Sludge Removal Systems
• Adjustable Auto Weirs (Patented)
• Aeration System (Patented) Mascon
• Paint Sludge Dewatering Bags
• Paint Sludge Dryer Systems Checkmark™