ALSI CheckMark™ Consolidation Dewatering System

The ALSI Consolidation Dewatering System offers cost effective and continuous paint sludge collection, consolidation, dewatering and removal. ALSI equipment designs are compatible with all suspension/flotation chemical programs.

ALSI design objectives are to optimize scrubber efficiency, reduce disposal costs, and minimize booth downtime for cleaning.

ALSI systems have been online since the early 1980's. Our track record includes hundreds of installations of all sizes and complexity.

From central systems to satellite booths, ALSI's high performance sludge processing systems are suitable for any type of wet booth design, single or multiple. Paint booth recirculating water is kept clean and make up water is minimized.

ALSI Performance:

- **Removal efficiency to 85%**
- **Dewatering to 60% by Weight**
- **Minimal Operator Intervention**

System Design Review

ALSI examines the entire system, whether totally new or retrofit. We analyze the chemical program, solids loading, and hydraulics to provide the engineered solution for sludge removal.

(1) Hydraulics Review: In-depth study of system flow characteristics and their impact on equipment sizing.

(2) Roughing Screen: Simple, cleanable, large debris removal.

(3) Flotation Zone: Solids loading and mass balance are compared to flotation chemical efficiency.

(4) Autoweir: Patented, self-adjusting, solids concentrator is utilized to maximize tank/pit efficiency and minimize consolidator sizing.

(5) Consolidator: Palin™ vertical separation module assists chemical flotation programs. Automatic, self-cleaning design incorporates durable, reliable components.

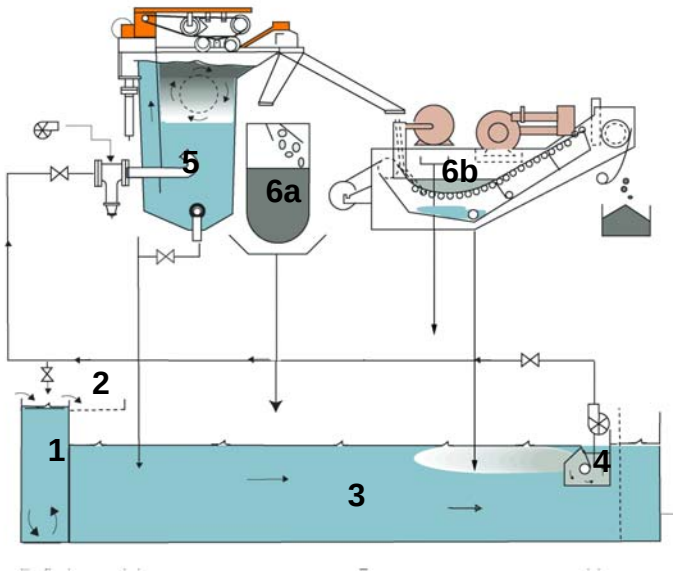
(6) Sludge Dewatering:

(a) Bag Systems (b) CheckMark™ Dryers: gravity, vacuum and heat of compression systems increase dewatering efficiency, facilitating solids removal and minimizing volume.

ALSI Consolidation Dewatering System

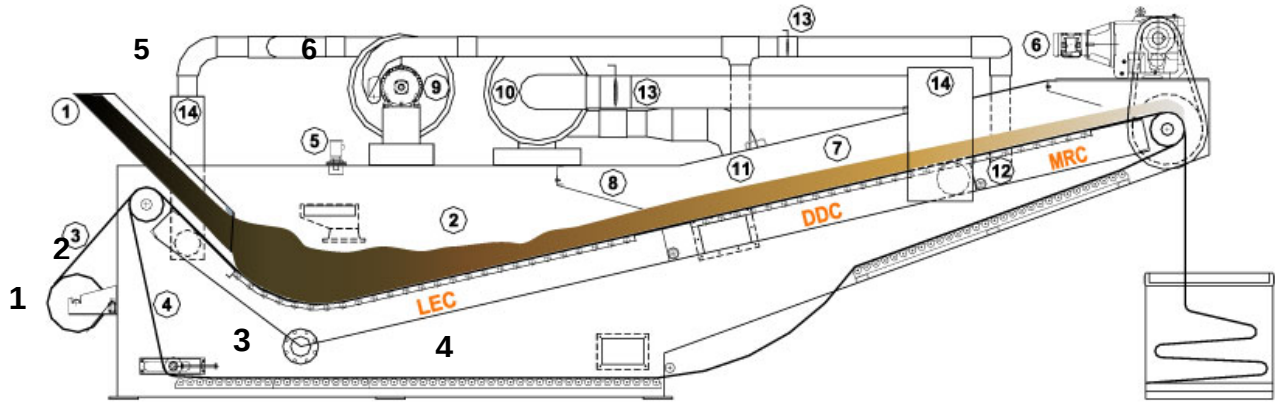
ALSI Capabilities:

- **Total System Design**
- **Equipment Selection**
- **Design and Build Turnkey Systems**
- **Customized for Your Application**
- **Startup, Training, and Service**



ALSI's Complete System Design Capability

ALSI CheckMark™ Dewatering Vacuum Filter



Drawing Not to Scale

ALSI's ✓ **Dewatering Vacuum Filters** three chamber, Check Mark™ design optimizes a wide operating range of chemical treatment programs to produce dry paint sludge.

✓ **Liquid Extraction Chamber's (LEC)** deep pool provides substantial buffer for variable sludge feed rates and adequate residence time for solids coagulation and the wicking away of free water.

✓ **Dry Down Chamber (DDC)** enhances water removal utilizing warm air flow down and across the sludge cake producing dewatering efficiencies as high as 50% by weight.

✓ **Media Release Chamber (MRC)** aerates the filter media from below, drying the sludge and allowing release and separate disposal of sludge and media.

✓ Dewatering Vacuum Filter Operation

Wet paint sludge enters the **LEC (1)** and begins to form a cake **(2)** on top of the filter media **(3)** that is supported by the permanent flat wire belt **(4).**

As the sludge cake builds to optimum depth and density, the **Ultrasonic Level Detector (5)** initiates the automatic media index cycle.

The media drive motor **(6)** is energized, and as fresh media takes its place, the spent media with drying sludge cake rides up the sloped **Drying Ramp (7)** into the **DDC**.

The adjustable **Doctor Blade (8)** sets the depth and density of the sludge cake assuring even drying airflow.

✓ Sludge Drying Operation

Two ALSI Vacuum Producers combine to dry the sludge cake. The **V2 Vacuum Producer's (9)** low volume, and high differential pressure extracts free water in the **LEC.**
The **V1 Vacuum Producer's (10)** high volume, low differential pressure, warm airflow accelerates dry down as the paint sludge moves through the **DDC.**

The combined warm air output **(11)** from both Vacuum Producers flows over and through the sludge cake to maximize sludge dry down efficiency.

A split stream of the Vacuum Producers' warm exhaust is directed under **(12)** the sludge cake in the **MRC** to provide additional drying and then to separate the cake for release from the media.

ALSI's ✓ **Dewatering Vacuum Filters** are designed and manufactured for long-term performance and maintainability.

All wetted friction surfaces are stainless steel construction. Built in air volume/drying control dampers **(13)** allow one time setting to optimize ALSI Vacuum Producer performance.

Cleanable **Mist Eliminators,** oversized vacuum inlet plenums **(14)** with stainless steel, protect ALSI Vacuum Producers from airborne contaminants.

Sludge level, media usage, and mechanical media drive operation are continuously monitored assuring minimal operator intervention. No interruption in filter operation is necessary for media addition.

An adjustable interval timer provides automatic indexing for system redundancy. The high strength, chemical resistant, media belt **Edge Seal Protection System** keeps tacky sludge from reaching friction surfaces.

Each chamber has easy access, hinged inspection covers. Chamber service cleanouts are provided.

✓ Options

Owner Specified Control System
Motor Disconnects, Media Rewinder
Stainless Steel Wetted Surfaces Construction
Auxiliary Heat: Infrared, Steam, Hot Water Coil
Gravity and Single Vacuum Designs Available

1680 S. Livernois, Suite 200
Rochester Hills, MI 48307
Telephone: (248) 656-3610
Fax: (248) 656-3620
E-mail:info@airliquidsystems.biz
Website: www.alsys.biz

ALSI Liquids Division Products

- **Automatic Backflush Filter**
- **Consolidator**
- **Gravity Filter**
- **Vacuum Filter**
- **Phosphate Pressure Filter**
- **Membrane Filtration**
- **Dewatering Bags & Media**
- **Autoweir (Patented)**
- **Heat of Compression**
- **Hydrocyclone**
- **Paint Sludge**
- **Reverse Osmosis**
- **Watertest Booth**