

# AproCHIM



**MacDermid**  
ENVIO SOLUTIONS

## AproCHIM Pressure Filter Systems



An Element Solutions Inc. company

# MES **AproCHIM** Pressure Filter Systems



## I **MES AproCHIM Pressure Filter Systems**

Our **AproCHIM** range of products includes solid/liquid separation technology and pressure filter systems for electroplating, phosphating, and metalworking.

For about forty years we have been designing, manufacturing, and selling different-sized filter systems for separating suspended solids from liquids all over the world. Our objectives are to increase filtration efficiency, achieve a higher degree of automation, reduce costs, minimize waste and pollutants, and thus help protect the environment.

We pride ourselves on great design expertise and flexibility. This allows us to meet special needs by offering tailor-made filters and installations which are

designed and developed in close cooperation with our customers, ensuring that their final specifications are met. The main advantage of MacDermid **AproCHIM** systems, compared to traditional filters, is the possibility of achieving excellent filter efficiency with the average flow rate at extremely high levels.

To date, more than 1,500 units have been installed globally, effectively filtering half a million liters per minute. Our core business is the filtration of coolant liquids (emulsions, neat oils) in the metal working industry.

## I **Features & Benefits**

- Available in different sizes for different flow rates
- High filtering quality for improved product quality and better surface finishing results
- Filtration of all particles extends the lifetime of the filtered liquids
- Reduction of disposal costs for grinding sludge, lower cost for coolant waste
- Fabric filter belt life (FFT-MEC sectors only) > 1 year: Reduction of fabric purchasing costs and disposal costs

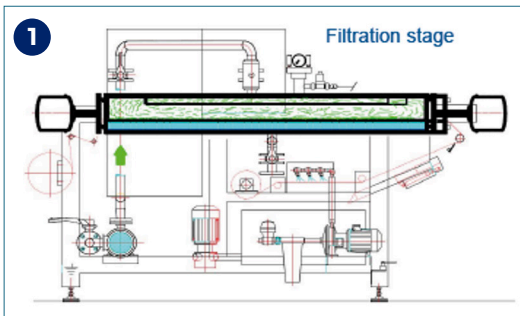
### **An AproCHIM filter system features three basic parts:**

- 1)** A delivery device (usually a centrifugal pump)
- 2)** A pressurized filter chamber containing the filter medium
- 3)** A self-cleaning system (except GLV where the filter belt is disposable)

# MES **AproCHIM** Pressure Filter Systems

## I Process

Watch the **AproCHIM** Filter Systems video in our video library

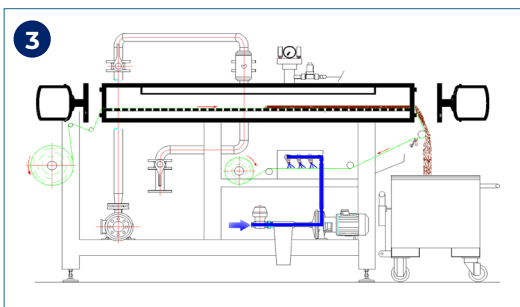
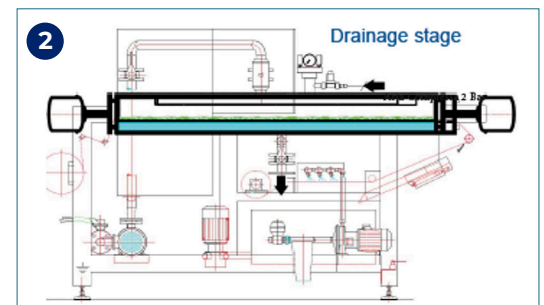


### 1) Filtration:

The dirty liquid is pumped into the filter chamber and impurities / suspended solids are retained by the filter medium

### 2) Sludge Drying:

Compressed air is introduced into the filtering chamber to force the remaining liquid through the filter belt, and to displace any residual liquid from the filter cake and to dry the deposited sludge.



### 3) Sludge Discharge, Self-Cleaning & New Cycle:

The cleaning system, controlled by a geared motor, automatically replaces the filter element, and consequently discharges the separated solids. A self-cleaning system will carry out a backwash of the dirty belt. Then a new section of filter belt is introduced for the next cycle in the filtration process.

## I Overview

Application	Filtered Media	Customer Categories	Suitable System Page
<b>Electroplating (GLV)</b>	Nickel Acid & alkaline Zinc Chromium Acid & Alkaline Copper	Taps Fittings Chrome Plating Galvanic Industries	IndexMatic "A" line: A3 / A6 / A10/ A14 / A20
<b>Phosphating (FFT)</b>	Zinc Manganese Iron Degreasing Solutions	Washing Baths Automotive Industry Degreasing Baths	IndexMatic "A" line: A3 / A6 / A10/ A14 / A20
<b>Metalworking (MEC)</b>	Machine Tool Coolants Synthetic Coolants Neat Oil	Ball & Roller Bearings Hard Metals Tool Manufacturing Blade & Knife Manufacturers Grinding Works Aeronautics Industry	MICRO 4000 / 6000 / 10000/20000 IndexMatic A20 / A30 / A40 / A50

# MES Product Lines

## I IndexMatic - GLV - FFT

Our IndexMatic product line consists of versatile, revolutionary filter units suitable for different applications, which can solve various filtration problems and eliminate labor costs for cleaning or disposal of filter media. Our models range from 30 up to 200 dm<sup>2</sup> filtering surface with nominal flow rates from 10,000 up to 80,000 liters/hour. Filter media and pumps can be customized depending on customer requirements.

## I Benefits

The basic concept is to provide a machine which eliminates labor maintenance costs, ensures high filtered liquid quality and performance, avoids

the need to batch-treat with activated carbon and eliminates or drastically reduces the collection of sludge at the bottom of the vat, waste disposal problems, losses of electrolyte and addition agents.

- Reduced management cost
- Elimination of labor cost for filter cleaning
- Less trouble with waste disposal, dirt filtered from solution is collected as a cake
- Continuous filtration at a constant flow rate
- No liquid losses when changing the filter media
- Variable filtration to match the degree of contamination
- Wide range of filter media in different porosities and fibres

## I MICRO - MEC

Our MICRO product line consists of extremely reliable and technologically advanced pressure filter systems for the mechanical industry. Developed to meet all the primary needs of the mechanical industry, the MICRO series allows complete customization. It is suitable for combination with other machines, starting from only one operating machine, and, depending on the relevant flow rate values, it ensures maximum flexibility for creating solutions with different machining centers or grinding machines. Our current range of MICRO filter systems is even more compact and effective.

## I Optional features

- Automatic mixing control proportional replenishment
- Screw compactor and "wedge-wire" septum
- PK-5 metering device for precoat addition
- Coolant return tank
- Centrifugal self-priming pump
- Coalescing oil separators

## I Features & Benefits

Customer Requirements	Features	Benefits
Improved quality of the finished product	High filtering quality	Improved quality of final product; Better surface finishing
Reduction in process costs	Filtration of all particles < 20 microns	Longer coolant life
Minimum quantity of liquid in sludge	Reduction in the disposal cost for grinding sludge	Lower costs for coolant waste
Reduction in coolant maintenance & medical cost	High-level coolant filtration	Removal of even the finest particles to prevent the formation of any bacteria or fungi, less skin irritation.
Reduction of filter maintenance cost	Maximum operating pressure for belt washing and discharge - Filtration belt lasts longer than 1 year	Extremely low general maintenance cost, automated control of all processing stages

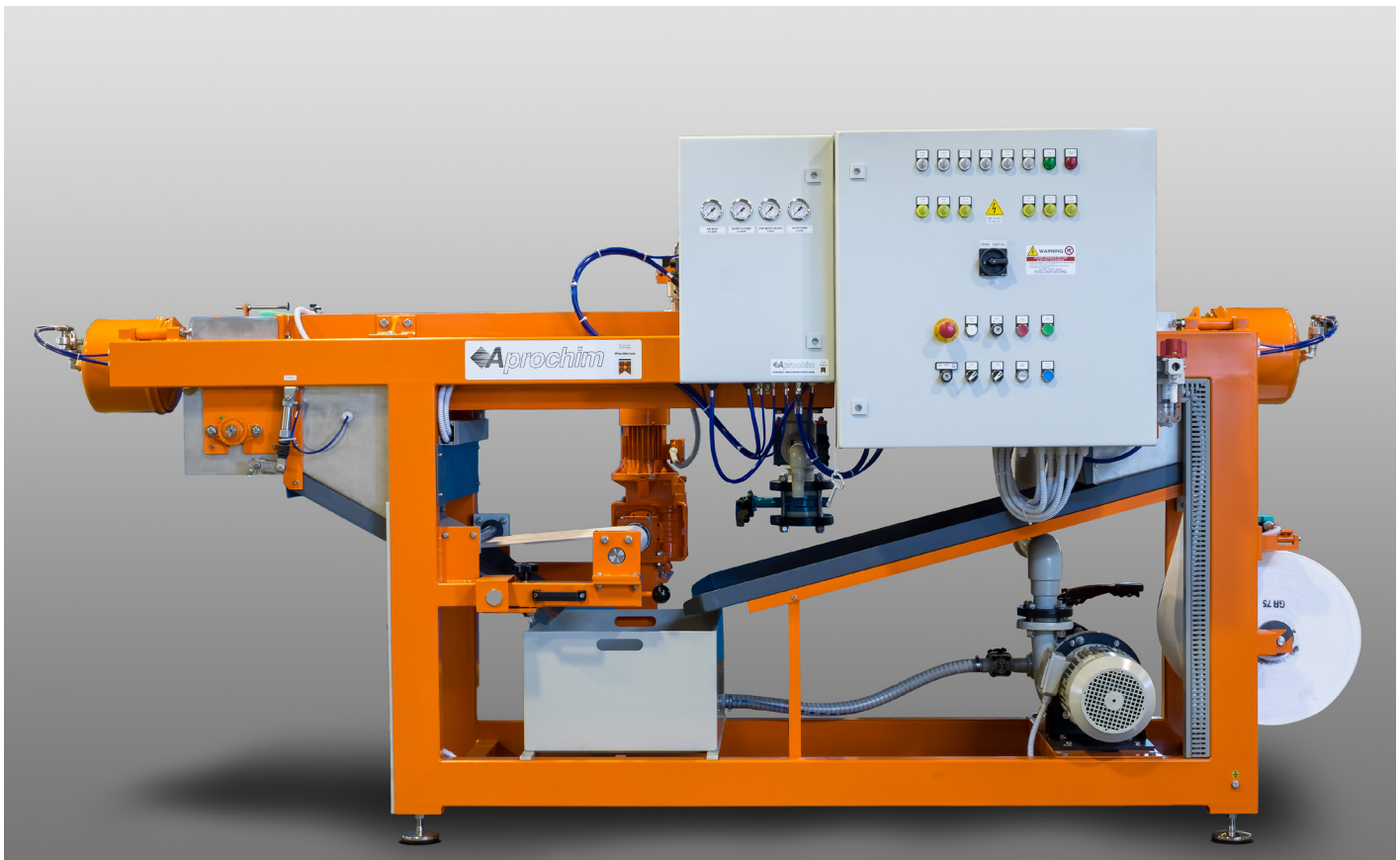
# Electroplating – GLV

## Electroplating - GLV

Fully Automatic Filter Systems for electroplating processes:  
The Indexmatic “A” Series - Dimensions and Technical Data

Model	Filter Surface Area dm <sup>2</sup>	Filter Surface Area ft <sup>2</sup>	Flow rate m <sup>3</sup> /h	Flow rate GPM	Dimensions in mm (l-w-h)	Belt washing system
<b>A3/GLV</b>	30	3.23	22	96.8	2,500-1,400-1,800	not applicable
<b>A6/GLV</b>	60	6.45	32	140.8	3,400-1,400-1,800	not applicable
<b>A10/GLV</b>	100	10.76	42	184.4	3,550-1,500-1,800	not applicable
<b>A14/GLV</b>	140	15.07	47	206.8	3,650-1,600-1,950	not applicable
<b>A20/GLV</b>	200	21.52	60	264	4,650-1,600-2,150	not applicable

The values above are for indication only. Aprochim reserves the right to change size values according to customer specifications.



# Phosphating - FFT

## Phosphating - FFT

Equipment suitable for phosphating processes: Dimensions and Technical Data

Model	Filter Surface Area dm <sup>2</sup>	Filter Surface Area ft <sup>2</sup>	Flow rate m <sup>3</sup> /h	Flow rate GPM	Dimensions in mm (l-w-h)	Belt washing system
<b>A3/FFT</b>	30	3.23	22	96.8	2,500-1,400-1,800	not applicable
<b>A6/FFT</b>	60	6.45	35	154	3,400-1,400-1,800	this is applicable
<b>A10/FFT</b>	100	10.76	62	272.8	3,550-1,500-1,800	this is applicable
<b>A14/FFT</b>	140	15.07	73	321.2	3,650-1,600-1,950	this is applicable
<b>A20/FFT</b>	200	21.52	80	352	4,650-1,600-2,150	this is applicable

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# Metalworking - MEC



**Model MICRO**



**Model INDEXMATIC**

## Metalworking - MEC

Equipment suitable for lubricant processes: Dimensions and Technical Data

Model	Filter Surface Area dm <sup>2</sup>	Filter Surface Area ft <sup>2</sup>	Flow rate l/min (emulsion)	Flow rate GPM (emulsion)	Flow rate l/min (Neat Oil)	Flow rate GPM (Neat Oil)	Dimensions in mm (l-w-h)
<b>MICRO 4000</b>	40	3.23	400	105.54	200	52.77	3,200-3,800-2,370
<b>MICRO 6000</b>	60	6.45	600	158.31	300	79.15	3,300-4,500-2,650
<b>MICRO 10000</b>	100	10.76	1,000	263.85	500	131.92	3,050-7,000-3,560
<b>MICRO 20000</b>	200	21.52	2,000	527.70	1,000	263.85	4,400-8,300-4,100
<b>INDEXMATIC A20</b>	200	21.52	2,000	527.70	1,000	263.85	4,450-10,800-4,850
<b>INDEXMATIC A30</b>	300	32.28	3,000	791.55	1,500	395.77	4,300-12,250-5,300
<b>INDEXMATIC A40</b>	400	43.04	4,000	1055.40	2,000	527.70	4,950-12,250-5,300
<b>INDEXMATIC A50</b>	500	53.80	5,000	1319.25	2,500	659.62	5,500-13,250-5,970

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# MacDermid Envio Solutions **Global Presence**



**MacDermid Envio Solutions (MES)** is a business unit of Element Solutions Inc (NYSE: ESI). With over 5,000 people in operating facilities across more than 50 countries, Element Solutions has established a growing legacy of creating technological advances for customers around the globe. Our people and technical sales teams are located close to our key markets, allowing us to maintain strong customer relationships and accelerate our product innovation process.



**MacDermid Envio Solutions** has three manufacturing facilities located on three continents. Our Aprochim range of products is manufactured in our European facility in Italy.

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**Taking bigger steps...  
to leave a smaller footprint**

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