

# METERS & CONTROLS, INC

## METAL FINISHING WASTE WATER TREATMENT

**Control. Manage. Optimize.**

May 2016

Metal finishing is yet another industry that **uses filter presses to treat the wastewater** produced by its processes. Wastewater from metal finishing contains contaminants like heavy metals, organic substances, and cyanides. If released untreated, the wastewater can be hazardous to the environment and pose potential health risks to humans.

As a result, metal finishing wastewater is heavily [regulated by government](#) under policies like, **the Clean Air Act, Clean Water Act and RCRA** (Resource Conservation And Recovery Act). Wastewater must be treated to meet standards outlined in these policies, and filter presses play a role in doing that.

### WHAT CONSTITUTES METAL FINISHING?

**Metal finishing is the process where a metal is treated (or is used to treat) a substrate and a thin metallic or non-metallic coating is applied.** The coating is meant to enhance the appearance, function or performance of a product.

[According to the EPA](#), the following processes are considered metal finishing, and as a result fall under its regulations:

- Electroplating
- Electroless plating
- Anodizing
- Coating (phosphating, chromating, and coloring)
- Chemical etching and milling
- Printed circuit board manufacturing
- Electropolishing

All of these processes **produce large amounts of wastewater** that must be treated.

---

*“Meters & Controls has been in business since 1920... This is our 96th year of taking care of customers”*

---

- Gas Meters
- Flow Meters - Liquid –Gas - Steam
- Control Valves
- Heat Exchangers
- Thermal Economizers
- Filtration - Tubular, Bags Filters, and Cartridges
- Pressure Leaf Filters
- Filter Presses
- Agitators - Mixers

---

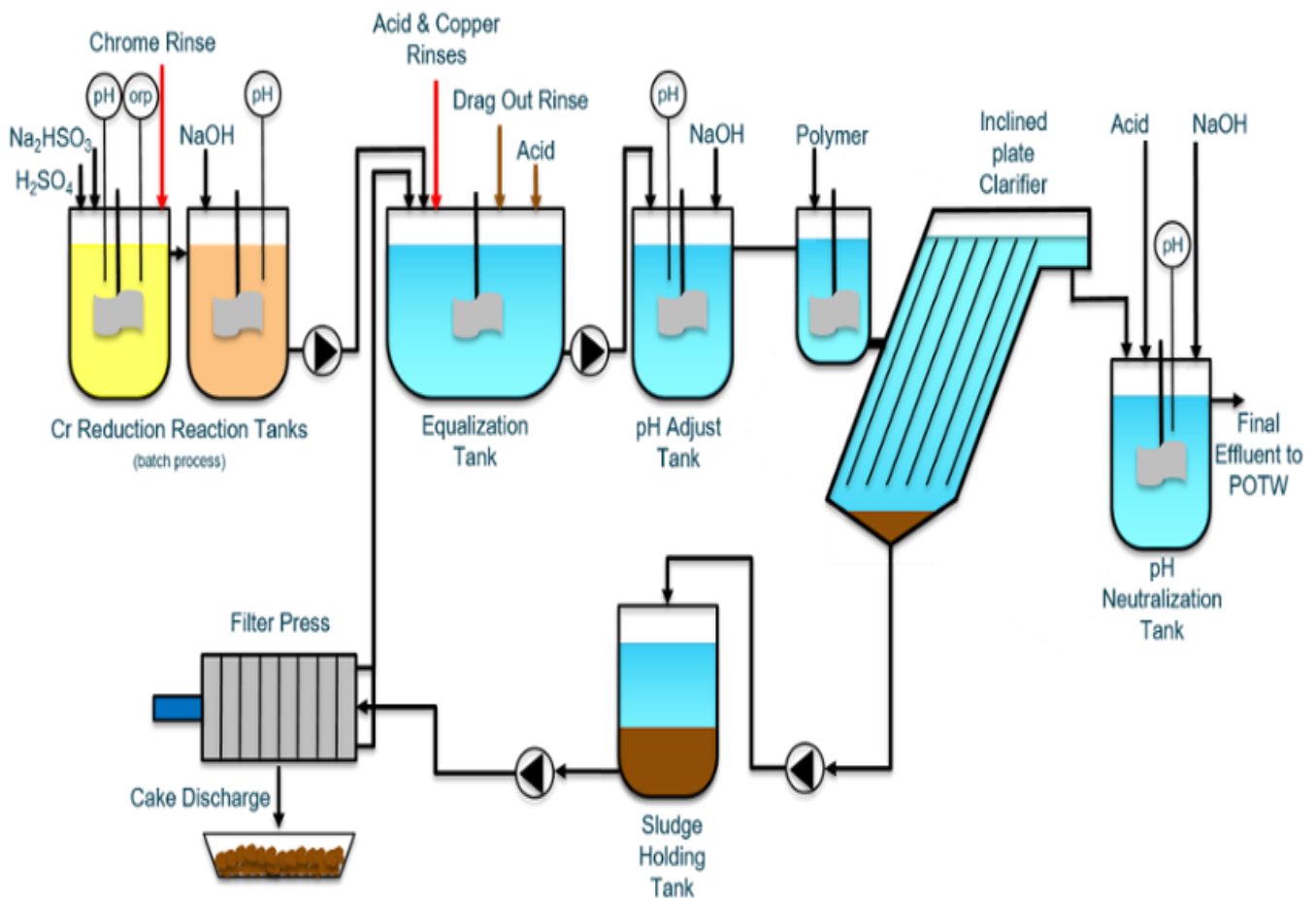
Visit our website for more Information -  
[www.meterscontrols.com](http://www.meterscontrols.com)

# HOW IS WASTEWATER TREATED?

Most of the waste produced by metal finishing is a **slurry of metals dissolved in liquid**, and the two must be separated. Typically the [separation](#) is done with a **pH adjustment and a precipitation procedure** where chemicals such as sodium hydroxide, calcium oxide and magnesium hydroxide are added.

During the metal finishing process there are **two means of treating wastewater**:

1. **Point source** - Also called point of use. In this method, wastewater is **treated at the source of generation** rather than at the final collection point.
2. **End of pipe** - In this method, all wastewater is collected in a **centralized location** and treated.



# J-Press®

## Filter Press The Industry Leader

In 1978, JWI revolutionized the industry with the introduction of the J-Press® filter press. The J-Press® filter press was the first to feature, in a single design: a self compensating air/hydraulic closure system for ease of maintenance, gasketed filter plates for virtually leak free dewatering; semi-automatic plate shifting, for labor savings and safety; automatic pump controls for unattended operation; and a superior paint system, that provides the highest level of protection from corrosion.

The J-Press® filter press quickly set the benchmark for filter press performance. In the ensuing years, the J-Press® filter press evolved, offering options for fully automatic plate shifting, automatic cloth washing, PLC controls; and a full complement of ancillary slurry processing and cake handling systems. Being the industry standard, the J-Press® line of filter presses is now the most versatile on the market today, from a manual 250mm pilot press that processes less than 2 lbs of dry solids per batch, to the monster 2.0m fully automatic press that can produce over 10,000 lbs of dry solids per cycle.



Side Bar J-Press® With Semi-Automatic Plate Shifter—Fitted with Non Gasketed Cloths

## HOW ARE FILTER PRESSES USED?

Filter presses are typically used at the **end of the "end of pipe" method** (as shown in the illustration on previous page). Once the wastewater has been collected in a sludge holding tank and thickened, it is pumped to the filter press for dewatering.

For [filter presses](#) used in dewatering a slurry produced by metal finishing processes, we recommend using [filter plates](#) that are made of **polypropylene**, because this material will hold up best against the corrosive metallic slurry. We also recommend using **membrane (diaphragm) or recessed chamber filter plates**. When it comes to filter cloths, gasketed cloths are the best type to use in this process. **Gasketed filter cloths** are less likely to leak the potentially hazardous metallic slurry.

Once the slurry has gone through the filter press it is either recycled back to the equalization tank or discharged as filter cakes (as shown in the illustration). These filter cakes are generally **25-35% TSS (total suspended solids)** by weight.

**Need help choosing the best dewatering system for your metal finishing facility? Give us a call!**

# Staying in touch with our customers comes naturally....

Wow its hard to keep track of time when your having fun! We just looked over our shoulder and noticed we have been *taking care of customers for 96 years*. Now that's something these days. We are closing in on a century of service to the industrial community.

## We have seen a lot of changes...

Meters & Controls has experienced a lot of changes. The 19<sup>th</sup> amendment granting women the right to vote to the constitution was just one year old when we first opened our doors in Chicago. Prohibition has come and gone. Al Capone is now long past. Hats styles and skirts hems have changed many times. But Meters & Controls has continued. We have always based our business on taking care of our customers. Delivering quality products and working with you to make sure it's right is the foundation of our success. We not only have meters, we have filters, strainers, heat transfer, burner controls, and pressure measurement tools for you to use to solve a wide variety of demanding applications.

*Helping Control Your Process Since 1920*

**Meters & Controls**  
499 W. Wrightwood Ave.  
Elmhurst, IL 60126

## Contact Us

Give us a call for more information about our services and products

**Meters & Controls**  
499 West Wrightwood  
Elmhurst, IL 60126

(630) 279-3800

[info@meterscontrols.com](mailto:info@meterscontrols.com)

Visit us on the web at  
[www.meterscontrols.com](http://www.meterscontrols.com)

PLACE  
STAMP  
HERE