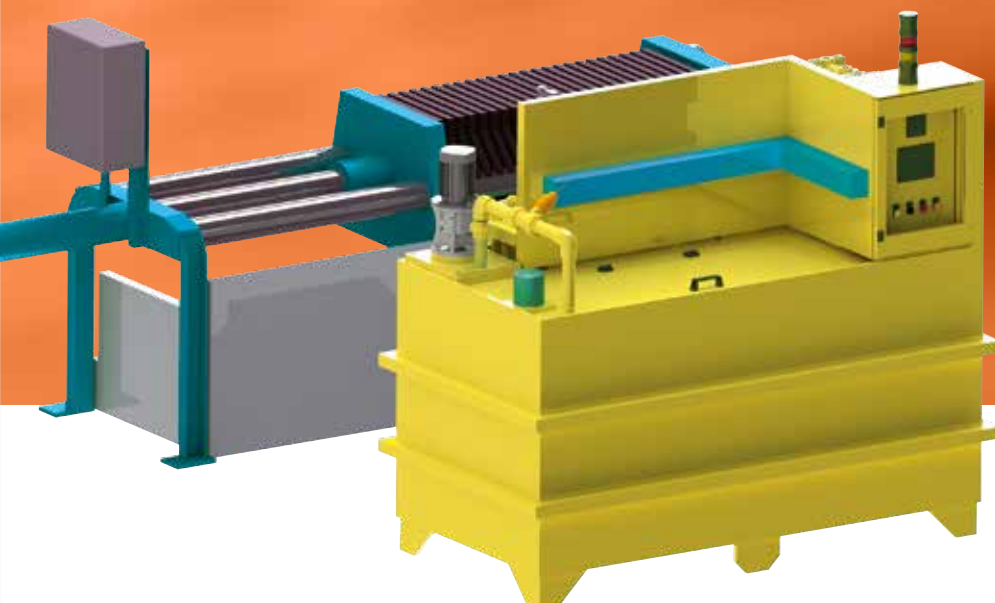


PREFLUX TREATMENT

TOWARDS ZERO
LIQUID DISCHARGE
HOT DIP GALVANIZING



PREFLUX TREATMENT

The plant is composed by a single unit (ISO BOX DRY CONTAINER 20') specially designed for the cleaning of flux, rinsing and stripping solutions.

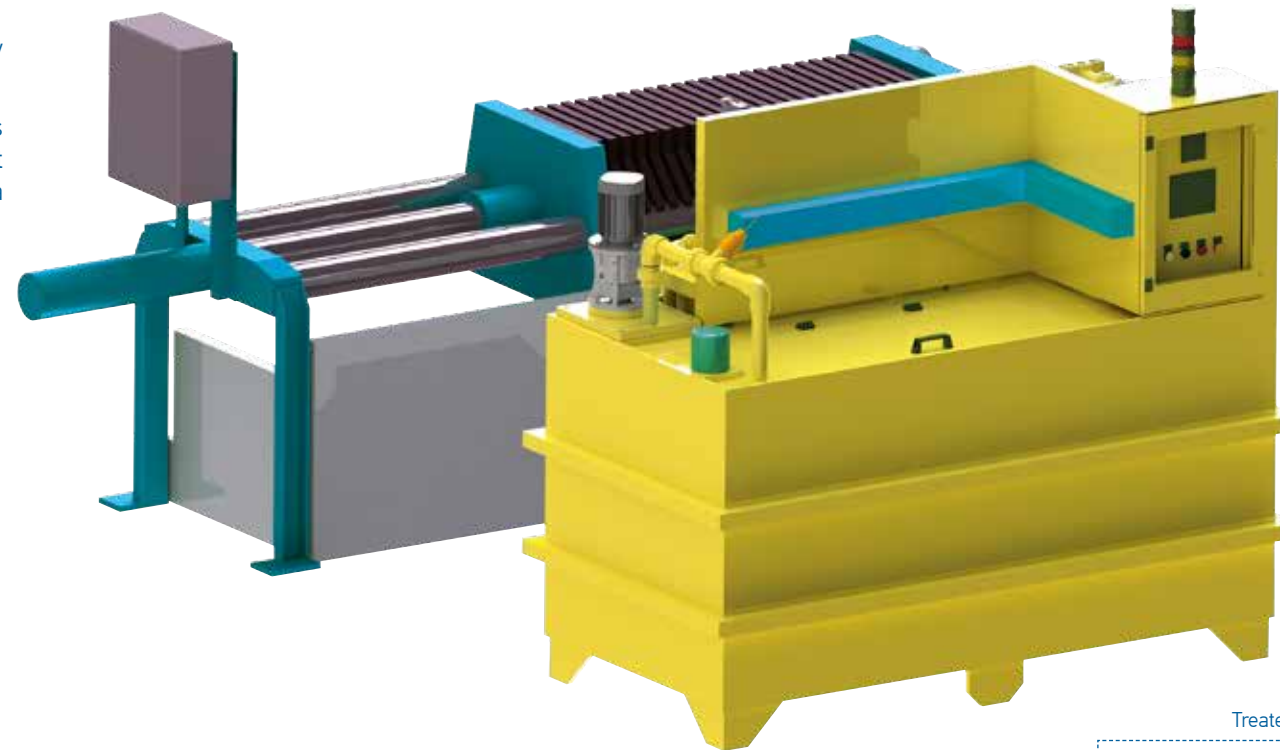
It selectively removes iron from a flux solution. In this way, the iron and organics content in the flux solution is dramatically reduced. For the modification of the salt concentration of the flux solution, ZnCl_2 from the stripping solution can be used in a fully automatic way.

THE ADVANTAGES

- Strong reduction of zinc ash and dross production
- Reduction of disposal volume of stripping acid and flux solution
- Reduction in chemicals and zinc consumption
- Reduction of fume production during galvanizing
- Increase in quality of the galvanized material
- Pay back is < 1.5 years

PERFORMANCE GUARANTEES

- Duration of a cycle: less than 12 hours
- Fe removed / cycle: > 80 kg
- Flow of flux liquid: 3,0 m³/hour max
- pH of filtrate: > 2,5



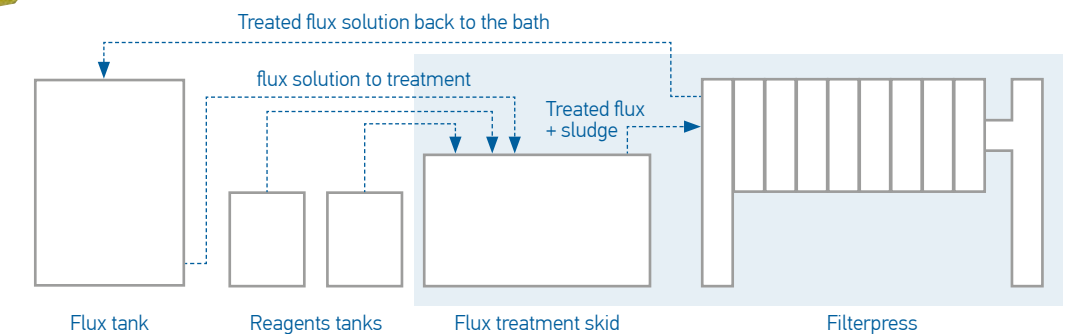
PROCESS DESCRIPTION

1. The plant is linked to the flux bath by means of mechanically and chemically suitable
2. Oxidation/neutralization: flux solution is pumped into the reaction tank by means of a connected to the flux bath by piping.
3. Hydrogen peroxide is added to the flux solution in order to oxidize Fe^{2+} to Fe^{3+}
4. Ammonia is added to the flux solution when the pH falls below 3.0, as iron (III) hydroxide precipitates at pH = 2.9 .
5. At the same time it is possible to add strip acid solution, ZnCl_2 , to the flux solution.
6. Sludge: from the reaction tank, the neutralized solution flows into the sludge tank. The flux solution, including a considerable amount of iron (III) hydroxide precipitated, is pumped through the filter press. The iron (III) hydroxide precipitated is filtered off by the filter press. The filtered off iron (III) hydroxide is collected as filter cake into storage bins.
7. Filtrate: the filtrate returns via the connected piping to the flux bath.

COMPACT EASY AND SAFE

- The skid concept permits an easy positioning in any area of the HDG plant
- The unit doesn't need extra building works for the positioning
- The compact design of the unit reduce the space required for the installation
- The positioning of the pumps is optimized for easy and fast controls and maintenance
- Minimized metal materials use
- No corrosion risk
- Safe conditions for the operators

These pictures refer to a recent realization that includes the base (total 5.80 x 2.20 x 2.0 meters) ready for transportation into a container 20' ISO BOX DRY. This kind of configuration permits a speedy "plug and play" installation.



ECONOMIC CONSIDERATIONS

- No flux solution disposal costs, excluding the sludge disposal costs
- The use of the stripping solutions permits to reduce to ZERO the consumption of double salts
- Reduction of the stripping solution volumes disposed
- The removal of iron and organics reduces the defects of galvanizing
- Reduction of dross and ashes production

TECHNICAL SPECIFICATIONS

Pre-flux volume [m³]	10-30	30-100
Installed power [kW]	3	5
Voltage	400 V / 50 Hz	400 V / 50 Hz
Compressed air requirement [NL/min]	1200	2000
Compressed air min.pressure [bar/psi]	6 / 87	6 / 87
Dimensions [m² / ft²]	10 / 107	20 / 215
Empty weight [kg/lbs]	700 / 1543	1000 / 2204
Full load weight [kg/lbs]	950 / 2094	1.500 / 3307
Connections	DN25	DN32
Max Temperature [°C / °F]	65 / 149	65 / 149

Notes (technical specifications may vary):

- US standard voltage available on request



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products and services for the galvanising industry

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