



# Dross Engineering

## LINE OF DROSS BREAKERS



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Since 2003, the year of manufacture of our first breaker, we have constantly improved the breaking process in order to obtain an innovative, economical and efficient device equipped with a simple and economical desulfurization process without recovery of sulphate of sodium and incorporating acid neutralization equipment. We offer an installation according to the standards in force to respect the environment, **whether atmospheric or hydrological.**

## **0.1mg/l lead in water going to sewer**

The latest model is the only one currently on the market to achieve 4 marketable products

**1/ Metal-free paste with very little antimony, tin, copper**

**2/Fine metallics**

**3- Metallic with or without polyethylene**

**4-Polypropylene**

We recommend melting large metals with PE

This material is composed of 18% carbon-rich oil, by using it you will recover energy and avoid landfill

The line can be delivered with a hydro separator if you do not want to mix the polyethylene with the large metals

**We build 5 models** 2.5t/h / 5t/h / 10t/h / 15t/h / 20t/h



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## Composition of a breaking line

- Loading hopper
- Pre breaker feed conveyor
- Pre breaker
- Battery drill
- Breaker feed belt
- Breaker with its frame
- Separator for metallic fines
- Oxide mixing tank
- Washing Archimedes screw
- Vibrating feeder
- Metallic/PP/PE hydraulic separator
- **Optional: PP/PE hydraulic separator**
- Oxide pump
- Washing pump
- Pump filter press
- Retention tank pump
- Washing tank
- Retention tank with pump
- Filter press feed tank
- Filter press
- Complete acid treatment
- Desulfurization unit
- Tube and Cable Support set
- Electrical panel
- 304l--316l stainless steel and HDPE construction
- Chassis of the breaker and frame in S235
- Supervision, assembly and commissioning





## Description of operation:

Our facilities are designed only for the processing of starter batteries (cars or trucks)

Our breakers can process 160/180 batteries per hour for the B37, and up to 1200 batteries for the B200

After breaking, the products fall on a vibrating screen, the metal fines and oxides fall into a hydraulic separator

The oxides are directed into a mixing tank which receives continuous soda ash to desulphurize the paste which enters the filter press (protected process Dross Engineering)

The system allows to reduce the temperature of the rotary furnace, the iron and the soda ash from the slag, also reduce the cycle time and the release of  $\text{SO}_2$  in the fumes

The fines are extracted by the Archimedes screw, the oxides are directed into the mixing tank, then a pump will direct them to a decanter

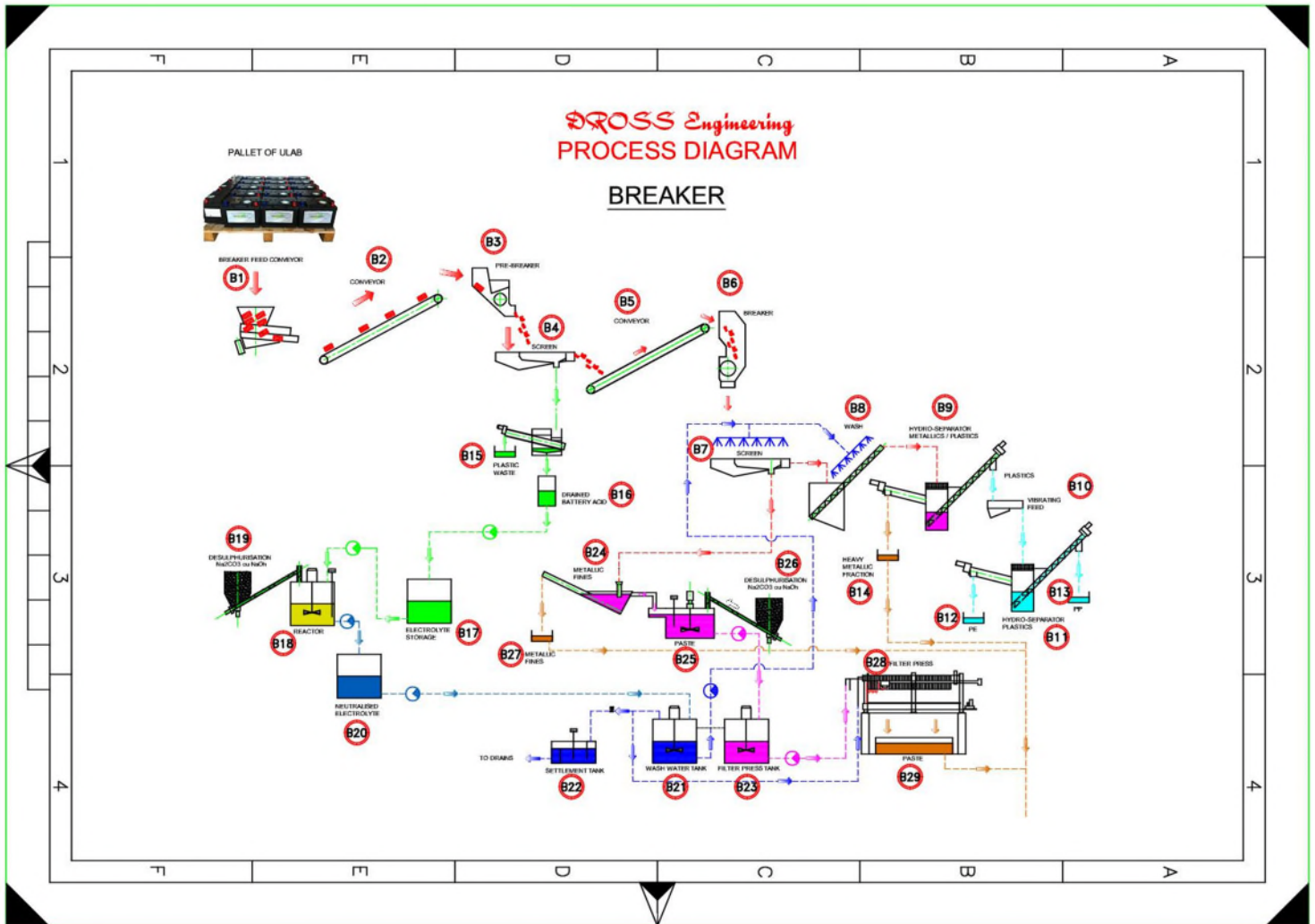
Heavy lead particles, PE and PP. are directed to a second hydraulic separator which will recover the PP using paddle wheels

The metallic lead with the PE are taken by a screw to be deposited on a vibrator feeding the last hydraulic separator. The metal lead will be picked up by a screw, the PE by a washing screw

The oxides which have been deposited in the cylindrical tank, stirred and pumped, are deposited in the settling silo. Once decanted, the oxides are recovered either in drying tanks or sent to the filter press(es).







## Desulfurization with neutralization of effluents

Desulphurization-neutralization by soda ash allows effluents to be discharged to sewers, to reduce  $\text{SO}_2$  in the fumes of rotary furnaces, to reduce the consumption of iron, coal and soda ash, to reduce slag dumped, improved metal yield and reduce Pb in the slag and their volume

### Desulfurization

Composition of several homogenization tanks with mixer, pH regulator and pH probe per tank

A soda ash dispenser with storage silo





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## Neutralization

The installation consists of a tank to receive the electrolyte, a reactor tank equipped with a stirrer, a Ph regulator, Ph probe and basic distributor

The system needs several pumps, all of which is managed by the PLC which manages the entire grinding installation

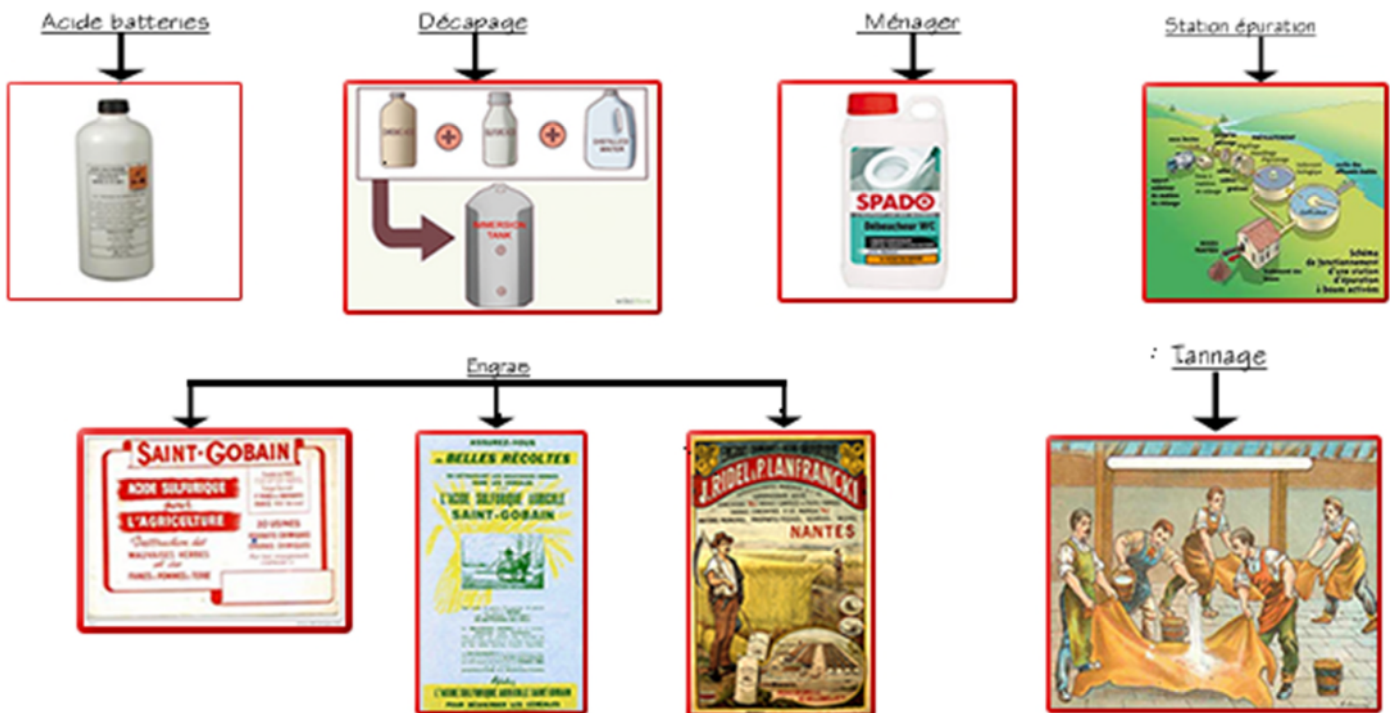
## Recycling

We offer a system to recycle the acid which can be economically attractive in some countries

The acid is stored in two tanks. The acid is filtered, deposited in a set of tanks where it is measured, weighed and continuously adjusted

The acid recycling system consists of several tanks equipped with an agitator, a filter press, two preparation tanks (a tank containing pure acid and a treated acid tank)

The system includes the necessary instruments: flow meter, density meter, pumps and cabinet with PLC





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## **Buyer services:**

Carry out the civil engineering according to the drawings provided by DROSS  
Ensure the arrival and connection of fluids and energy  
Provide the necessary gear for the assembly of the entire unit  
Provide the necessary personnel for the assembly  
Premises for Dross Engineering technicians

## **Dross Engineering services:**

Supervise assembly  
Start installation  
Oversee production trials  
Provide one set of operator and maintenance manual on CD  
Provide a set of drawings and electrical manual  
Training of production, maintenance and technical personnel during commissioning.  
Civil engineering guide  
Electrical diagrams  
Piping diagram  
General assembly and sub-assembly drawings of the entire installation

## **Construction :**

**Materials:** breaker – hammers-grids: stainless steel except flywheel and bearings which are made of steel or cast iron  
Chassis – frames-ladders or stairs and walkways: steel  
All stainless steel Archimedes hydro separators and screws  
Vibrating chute and screen: stainless steel  
Washing and neutralization mixing tank: HDPE  
Pumps: stainless steel  
Pipes, fittings, valves: PVC/PEHD/Stainless steel/Rubber (Dross reserves the choice of the best product)

***Our breaking lines are protected by several European patents***



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