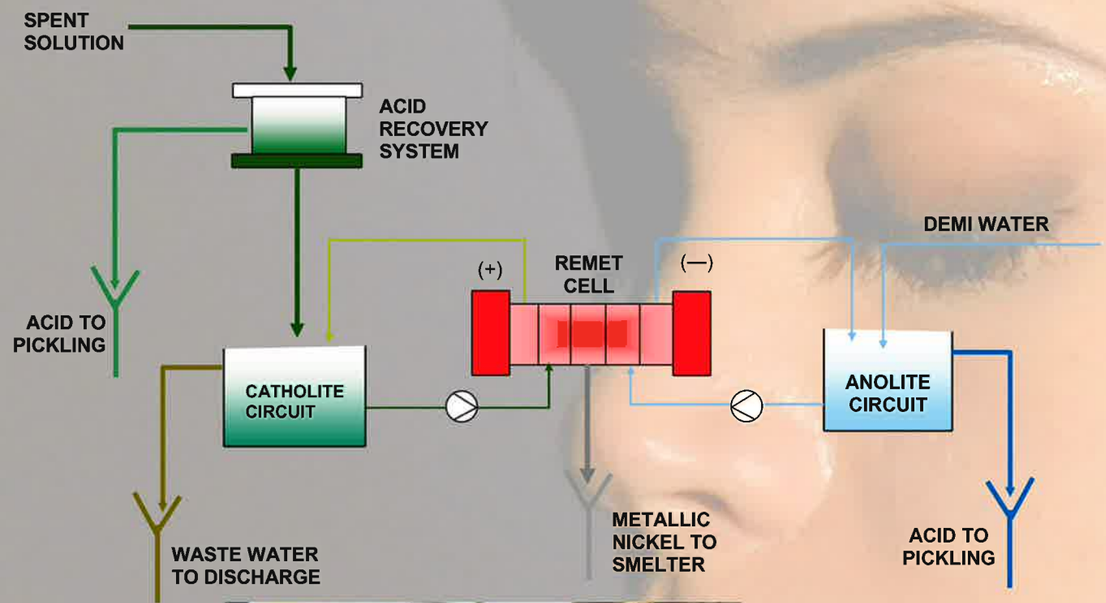
REMET UNIT
ELECTRODYALISIS

To face the latest record price increase of raw materials, Condoroil studied and developed a New treatment process of spent stainless steel pickling solutions.
This new process, covered by patent and traded under the name of REMET, allows to recover, from spent baths, Nickel, Chrome, Silver, Copper ect. in its metallic form and, simultaneously, to regenerate the pickling acids.
A virtuous circle is thus created environmentally friendly and economically advantageous.



REMET PROCESS

Bath is considered as spent when concentration of total metals dissolved in the bath reaches a limit concentration which depends on kind of process.
In order to face the problem of the spent wastes management Condoroil proposes an integrated system that sees on the top the REMET process.
This process is extremely advantageous above all from the economic point of view since it recovers dissolved metals in a metallic form and simultaneously regenerates the acids.
The spent pickling wastes become therefore an important resource in view of the higher and higher costs of metals and mineral acids.
Process consists in a first step of free acids recovery that are recycled to the pickling tanks, followed by the REMET process application on the residual solution contamining the metallic salts.
The metals recovery system is similar to a galvanic application where, inside a series of low tension electrolytic cells (3-5 volts), metal ions in solution (properly pretreated) are reduced on cathodes to the metallic form. Then it is collected on the bottom of the cells in form of flakes which are recovered to the smelters after drying.

PLANT DESCRIPTION

The plant has a modular structure an d is made by a series of equivalent cells. It can simply be dimensioned according to the customer needs.
Each cell is defined with

Volume	400 l
Length	1.000 mm
Width	1.000 mm
Height from the ground	3.150 mm
Max current for each cell	1000 A/h
Working tension	3-5 V
Recovery capacity	**30Kg Ni** **30 Kg Cu** **18 Kg Cr** **100 Kg Ag**

There are two separate areas: the area outside the cells is formed by membranes in which flows the solution to be treated **(catholyte)** and the area inside the cells where flows the acid which is recovered **(anolyte).**
During the process the metal deposits on the cathode in a dendritic form and it is mechanically removed and delivered inside the draining bags through an automatic system.
The plant is managed totally automatic by a PLC; all moving operations of the wastes both in the feeding step as well in the production step of nickel and the recovered acids, are automatically managed through set up points inside the process.

APPLICATION FIELD

WASTES FROM PICKLING BATHS FOR:

STAINLESS STEEL

COPPER and alloys

NICKEL and alloys

Wastes from galvanic baths

Wastes from chemical nickel plating

Wastes from refining processes

Waste from printed circuits

Wastes from electriconic material recovery