

PROPERZI AND THE PB/ACID BATTERIES EXPANDED NARROW STRIP

Since the very beginning, in the late 1940s, when Continuus-Properti began experimenting with lead and lead alloys to transform them through continuous casting and rolling into wire and very narrow strip, we have accumulated a tremendous amount of experience.

This helped us during the 1980s when Properti collaborated with Magneti Marelli to build the first expanded lead metal strip line for the production of automotive battery grids.

Properti worked with the Fiat group to refine the equipment and the first commercial line was bought by Exide in the early 1990s.

After more than four decades, we have more than 40 lines in operation around the world and, thanks to continuous development, the Properti CRS Casting and Rolling lines provide the following benefits and features that are unmatched in the market:

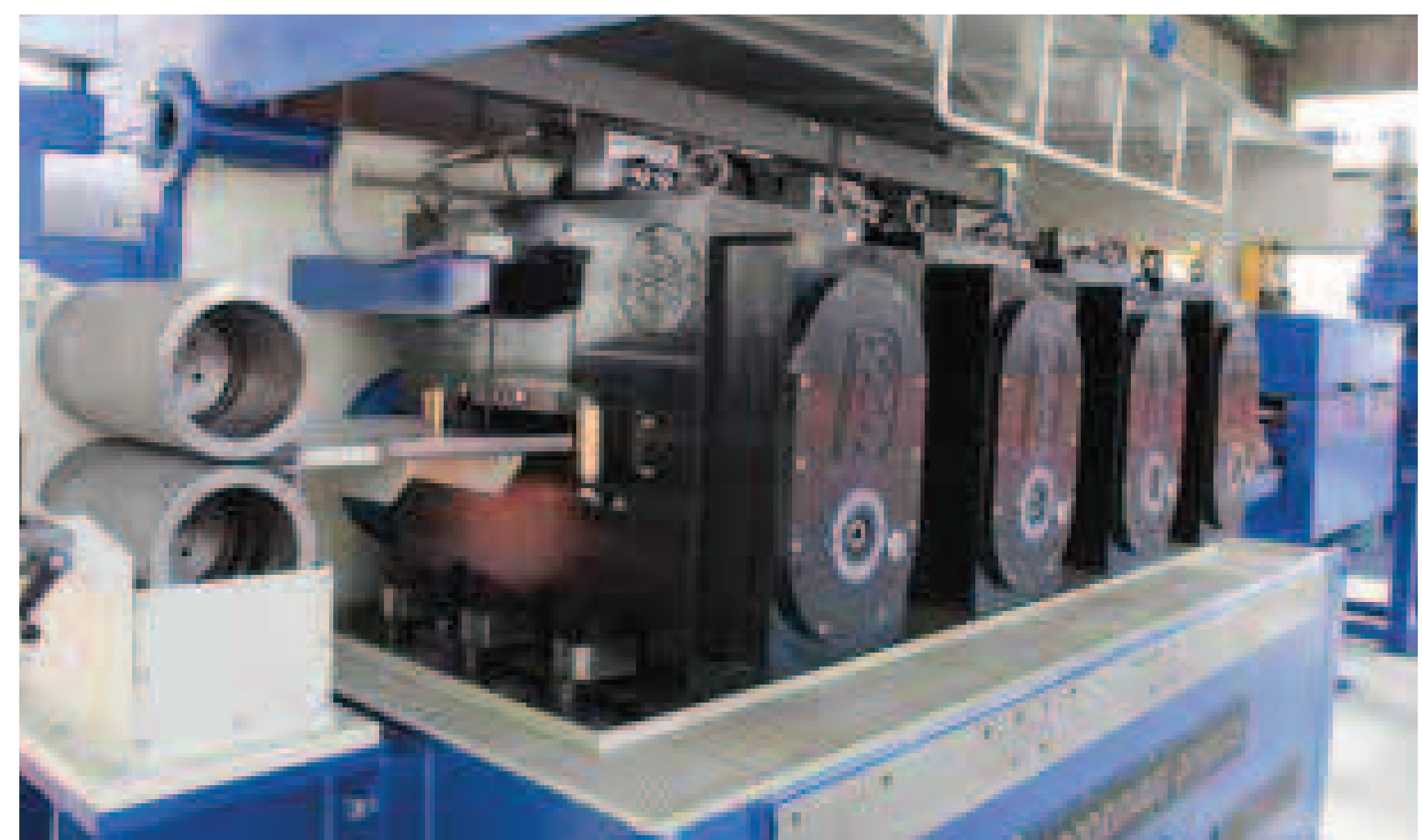
- Nominal capacity range of 60 to 110 mm wide strip from 1 tph (Corresponding battery output of ~ 500'000 batteries/year) to 9 tph (Corresponding battery output of ~ 5'000'000 batteries/year), or even higher
- High reliability equipment resulting in numerous cases of OEE values of 92% or higher
- Userfriendly equipment fully adjustable according to the specific customer's needs either in terms of configuration and/or production capabilities
- Dross free casting machine: the casting machine has been designed to reduce the amount of dross and easily eliminate it from the liquid to avoid any contamination after solidification
- Casting machine cooling system designed to operate with water from a cooling tower (max. temperature 35 °C); there is no need for a chiller as strictly required by other systems
- High flexibility of the rolling train
- Coiling Section automatically changes collection of the strip from one mandrel to the other. Coiler can be configured to work in fully automatic mode for discharge of the lead coils and/or spools
- Furnace Set is available in various configurations to melt lead ingots, either standard 48 kg and or large blocks weighing 1 ton. The furnace set includes holding furnaces for the necessary stabilization of the temperature and alloy.
- Wheel & Belt type Continuous Casting Machine to cast the molten lead continuously coming

from the holding furnace. The cooling system is completely adjustable (chiller not required).

- Conveyor/Sensor to synchronize the casting and rolling speeds
- Cast Bar Shear to cut the cast bar
- Rolling Mill to roll the strip to the desired thickness
- Drying Tunnel to eliminate any trace of emulsion from the strip
- Trimming Unit to cut the strip to the desired width
- Twin Reel Coiler to continuously collect the strip and provide the desired length per coil
- One single process for the production of positive and negative grids
- The lines are easily upgradable
- Environmentally-friendly with no waste as all the circuits are closed-loop type
- Our customers have recorded exceptional OEE in good working conditions

Continuus-Properti also provides CES Lead Strip Expanders with the following main features:

- Nominal continuous working speed up to 30 m/min
- Triple or quadruple step expander
- Capable of expanding both negative and positive lead strip alloy
- Absence of tooling lubrication: emulsion is not necessary thereby providing remarkable advantages to the quality of the final product
- Absence of vibration: the machine is perfectly balanced and can be installed simply and easily with expansion bolts. Anti-vibration floor is not required
- 100% complementary to the Properti CRS lead strip lines
- The best grid dimensional tolerances on the market (independent from the speed of the expander)



Properti Rolling Mill for Pb Strip.