Soap finishing line (semi-automatic version)

1) The project

It's the creation of a soap finishing line using semifinished products (noodles), perfume, creams and others.
The line capacity will be between 80 to 100 kgs/h and soaps will have a mass between 15 to 200 grams.
To realize this project, you will need:

- A building able to house machineries (10m * 5m * 4 à 5m), a storage area for feedstocks (6m * 3m * 3m), a storage area for finished products, an office and a store to sell the products (if you want to).
- One or two workers according to the quantity of soap.
- An electric consumption of 50 kVa, 380 V, 50 Hz.
- An average water flow of 2 to 3m^3/h to cool the plodder, that's why we advice the use of a closed circuit cooler because it allows to cool the machinery without loss of water. To make soap with a noodle base, you just have to make some adjustments of water of 3% maximum; so water consumption is derisory.
- An air compressor with a capacity of 20 or 30m^3/h under 7 to 8 bars.

At least, it's important to precise that this way of production isn't dangerous for environment. In fact, as we saw previously, cooling water is coming from a closed system. And, if you don't use a cooler the water comes and goes by cooling channel steel which is not dangerous for nature even if the water is rejected. There is no smoke or emanation because the process is cold and, finally, there aren't any saponification reactions using steam or dangerous products.

2) Our proposal

Given the line capacity, our proposal is a semi-automatic soap finishing line using our machine MONOBLOC (3 machines in 1 : mixer, rolling mill, plodder).

MONOBLOC

According to the use of noodles in bags (Be careful : 1 kg of noodles makes 1 kg of finished soap), this solution is very consistent.
There are many steps in soap manufacture if you use noodles:
First, dosing of ingredients is done manually; then, mixing of noodles and products will be done in a mixer.

Mixer

The homogenization of all is assured by a three roll mill which will laminate noodles to turn them in a homogeneous soap film.

Three roll mill

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The extrusion of the soap is made in the final screw of the duplex plodder, it will go out as a bar with a shape that could change with some eye-plates adapted on the cone of the plodder.

Duplex vacuum plodder

Cooler

To cool the cooling jacket of the plodder, a cooler is necessary.
The soap bar coming from the plodder is cut manually at a length of one meter with a knife. Then, this bar is cut at the desired length by the worker who uses a pedal controlling an air cylinder. The gantry, equipped of a piano rope, goes down and cuts the bar which was pushed against an adjustable stop.

Semi-automatic cutter

When the soap is cut, it goes in a stamper where it will be formed and be given its final shape with a dieset. The soap may have various shapes and interchangeable inserts allow to modify the engraving. Diesets are interchangeable too, permitting to answer many demands and satisfy lots of customers. There are two type of diesets: « bandless » which doesn't let any side bande (soap flash are collected and used again in the process) and « banded » which let a side band on the soap. With the first, any shape is possible whereas the others are for parallelepipedic shapes. An air compressor is necessary to make the semi-automatic stamper work.

Semi-automatic stamper

Bandless = soap without a side band
Banded= soap with a side band

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