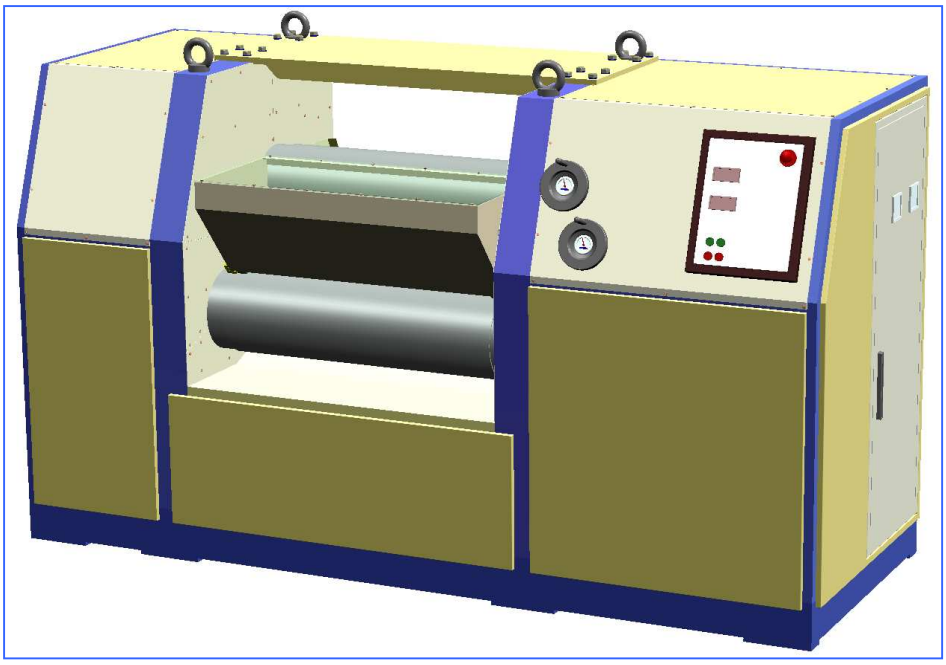
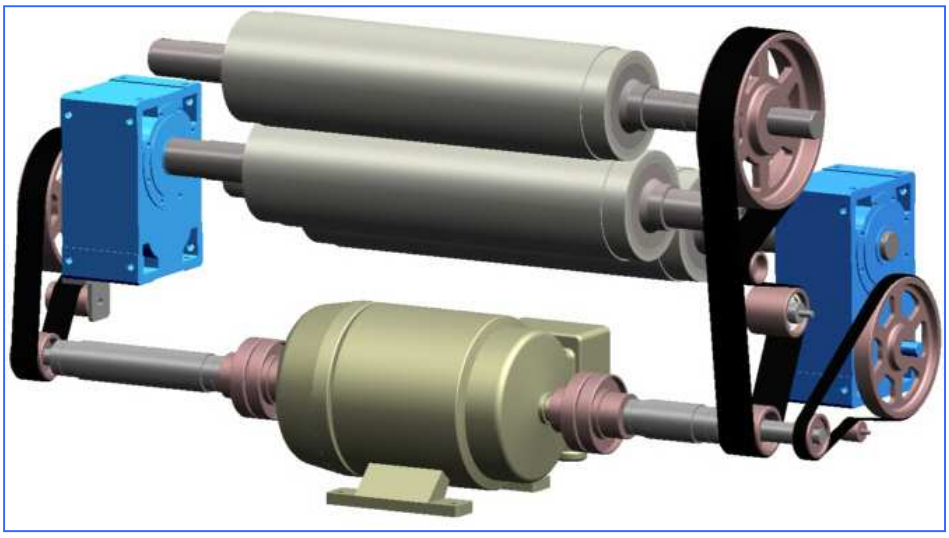
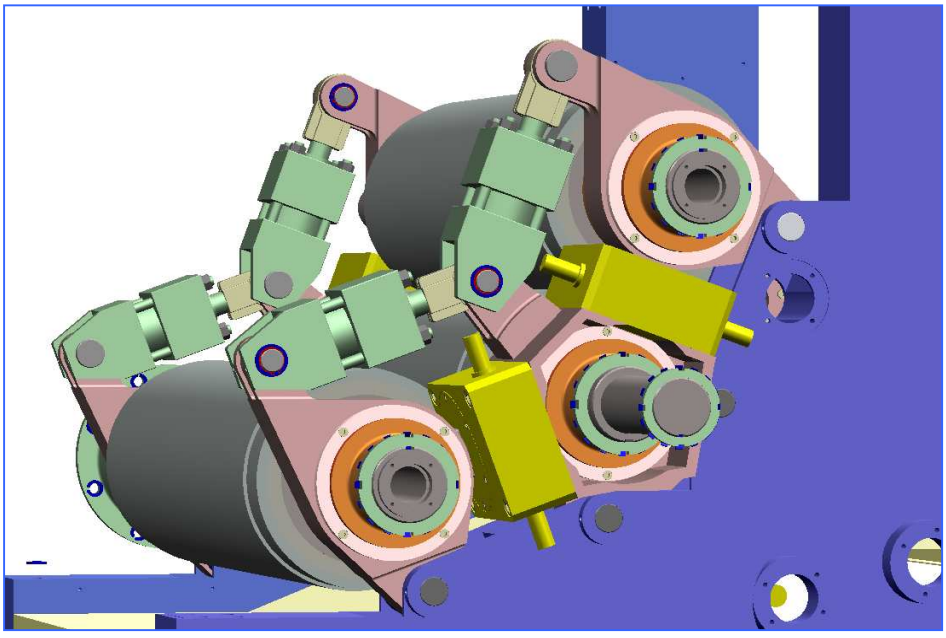
THREE ROLL MILL







Three Roll Mill

Primary task of a Roll Mill is to refine the soap.
Our new generation of Roll Mills overcomes the key defects of previously utilized designs, namely, cumbersome maintenance, traditional gear transmissions and poor power distribution of independently driven rolls.
We use the latest in rolls metallurgy and manufacturing technique and new very efficient cooling, easy gap setting and strong structural strength design.

Rolls

We use instead of traditional 2.5 roll length to roll diameter ratio longer 3.5 L/D ratio rolls which provide much better heat transfer due to the larger heat exchange surface area.
Longer rolls require higher structural strength and additional rigidity. This is achieved through special roll design.
The core of the roll is made out of a solid shaft of high strength carbon steel. Cooling channels and bearing seats are machined directly into the main material. Then, a pre-machined steel cylinder is shrunk on the core. Both pieces are then welded together. External surface of the roll is then coated with a thick (5 mm minimum) layer of martensitic stainless steel hardened to 50 HRC and grinded to required 0.4 surface roughness. Hard material applied on to hard underlying surface guarantees long and trouble free operation even with rolls in contact. Final result is an extremely strong and rigid roll.

Structural Strength & Rigidity

Rolls are supported by a series of hinged flanges connected together by hydraulics on one side and frame on the other. Operational forces are contained within this "ring" and are discharged on the product. This particular technique guarantees the maximum structural rigidity of the machine.

Hydraulics

Rolls are closed onto each other by a pair of hydraulic cylinders for each pair of rolls, resulting in total of four (4) hydraulic cylinders for closing of the rolls. This allows for the differentiation in closing force for each pair of rolls and for use of relatively small cylinders. Apart from closing of the rolls, hydraulics is also actuating the Side Retaining Seals, Scraper and Flaking Rolls (if present).

Cooling

Pressurized coolant is pumped in and out of each roll through Rotary Joints (mechanical seal type) into spiralling cooling channels machined into the core material.
This set up allows the use of a closed circuit cooling system instead of atmospheric one, eliminating the need for buffer tanks and booster pumps which would be required to return of the coolant to main Chiller. Temperature is controlled by a series of self-regulating valves. On request machine can be supplied with "Turboflow" temperature control systems composed of booster pump and control valves for additional accuracy.

Power Distribution

Power developed by a single motor, is distributed to the different rolls with timing belts ("in-speed" power transmission). This way each roll can draw enough power from the motor to overcome occasional peaks required when for example a lump of soap enters between the rolls and still remain maintenance friendly and flexible. Each roll has its own reducer and is therefore it is independent from the others. The size and reduction ratio can be changed.

Control Panel

The unit is equipped with a PLC for controlling of all automatic sequences and monitoring the different functions.
A Touch Screen type graphic panel provides for an operator interface. The main motor is driven by a Frequency Inverter that provides for a soft start and variable speed of the machine.

Maintenance

"In-speed" power transmission facilitates overall maintenance. All internal gearboxes are separately lubricated.
Major maintenance jobs, are facilitated since every roll is supported separately and can be removed with little or no disturbance to the rest of the machine.

SAS MARIANI TOMMASO
VIA TOSCANINI 46
20038 SEREGNO, ITALY

Phone: 39/0362-239988
Fax: 39/0362-328413
E-mail: sales@sasoap.com
www.sasoap.com