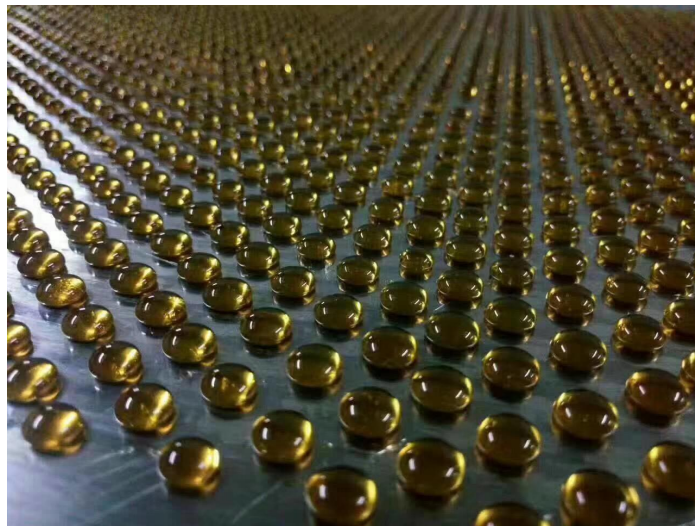


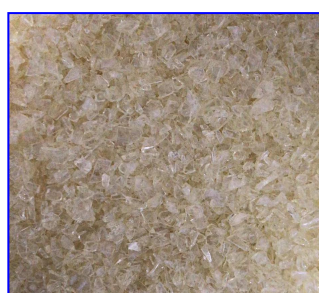


Steel belt drives your innovation!



Consol steelbelt systems

Steelbelt cooler for chemistry industry



Steel belts for applications in Chemical/food industry

Chemical processing

- Granulation systems for sulphur, wax, resin etc.
- Single belt and double belts flaking systems for resin, powder coat, sulphur, aluminum sulfate, etc.
- Strip former for hot melt adhesive.

Food processing

- Steel belt coolers for chocolate
- Steel belt dryers for fruit and vegetables
- Steel belt sheet casting for chewing gum base.

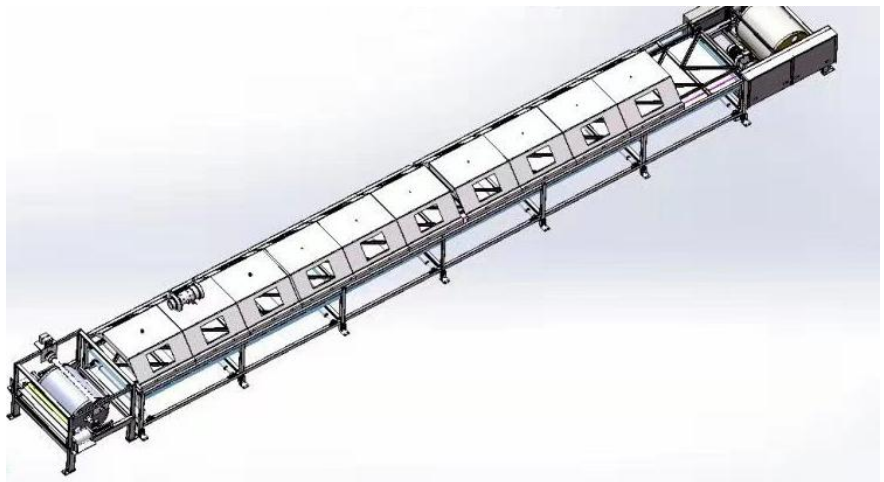


Chemical granulation system

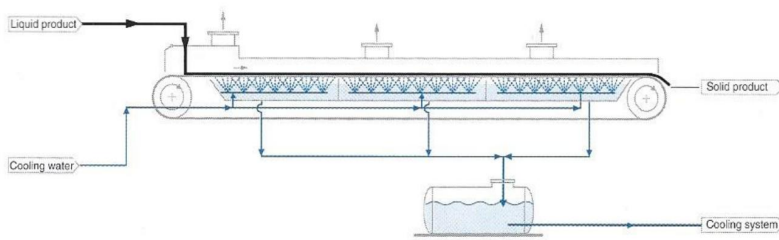
CONSOL MACHINERY, we can design, supply and install a complete cooling and solidification system. appropriate to your particular product and process requirements, encompassing everything from upstream feeding equipment and downstream handling and packaging to process control.

Alongside this ability to engineer and manufacture a complete equipment, we offer all the essential service and support necessary to ensure maximum productivity throughout the lifetime of your equipment, wherever in the world your facility may be installed.

- Installation & start-up
- Maintenance & service
- Operator training
- Spare parts



The single belt cooling system



The CONSOL steel belt cooler is designed for in-line production of food and chemical products in shape of flakes, pastilles, strips or sheets, all of which can be formed and cooled without additional process requirements. In other words, it is far more than just a belt cooler, enabling products to be solidified, crystallized and formed as they are being conveyed.

Based on the CONSOL steel belt, the system is versatile and can be adapted to meet the needs of specific applications such as product thickness, temperature profile or processing times.

How the CONSOL belt cooler works

The molten product is loaded onto the steel belt via a suitable feeding device such as a pastillator, overflow weir or strip former. The heat released during cooling and solidification is eliminated through the steel belt with its excellent thermal conductivity. The steel belt is cooled by spraying cooling water from bottom of steel belt. The cooling water is collected in tanks and drained through an integral collecting pipe.

Perfect cooling method

The process is simple and performance proven. There is no contact between the cooling medium and product. The product would not be polluted and the cooling medium can be re-used without expensive treatment.

Where the cooling medium is not re-used (e.g., river water) the system provides the major economic advantage that the water can be drained without risk of environmental pollution. Compared with direct air cooling methods, the CONSOL steel belt cooler also has the benefit of no air pollution by dust, fumes or vapors.



Single belt granulator

Advantages at a glance

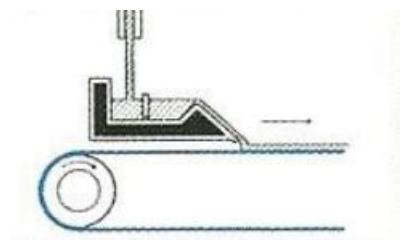
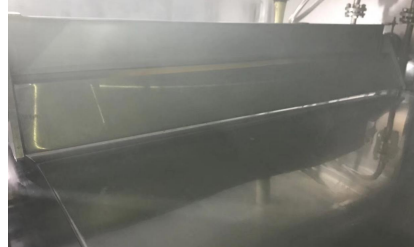
- Good operability/accessibility
- Economical operation with low maintenance costs
- Versatility produce pastilles, strips, strip granulate, flakes, plates, sheets, etc.
- Variable product thickness
- Zoned cooling allows product-specific temperature profiles Non-polluting

Feeding device

We are able to offer four standard feed systems to suit the requirements of different products, feed temperatures, viscosity, consistencies and desired shape at discharge.

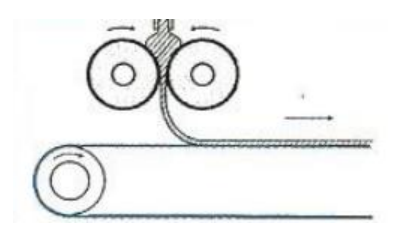
Overflow weir feeder flakes

A heated overflow weir feeder is used to produce flakes and is suitable for products with viscosities up to 1000 mPas approx. Layer thicknesses of 15 mm can be formed.



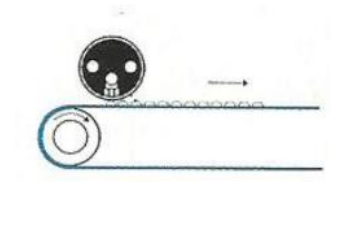
Double roll feeder - flakes

The product is squeezed between two rollers to the required thickness and deposited on the steel belt. Cooling of the rollers means that the product is already in a pre-cooled condition when it reaches the steel belt, so this method is particularly suitable for melts with a high viscosity.



Granulator (1-30 mm diam.)

A Granulation unit is ideal when the product must be with a precise shape and size, and must also be free flowing with minimal dust. No special is necessary at the discharge end. The outstanding advantages of solidification system make it the ideal feed unit for 70% of all applications.



Stripformer - strips

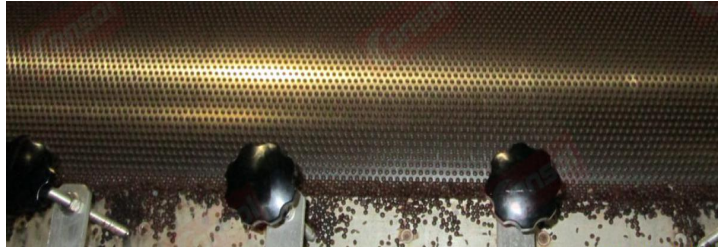
A heated strip former deposits the product on the steel belt in a row of -strips, the width depending on the product and its viscosity. By means of a granulator arranged at the end of the steel belt the strips are cut into uniformly sized granules.

Discharge devices

After feeding devices, we have developed a range of practical and economical discharge solutions to cope with the different requirements of a whole range of product types.

Scrapers

Scrapers are usually used for products which tend to stick to the steel belt. They consist usually of a blade, which scrapes the product off the steel belt at the end pulley.



Breakers

Breaker rolls with 'pins' or 'fingers' are used for products which are solid or brittle at the discharge end. The rotating roll crushes the product to irregular pieces on a grate and is suitable for products in layers of 1-20 mm thickness.

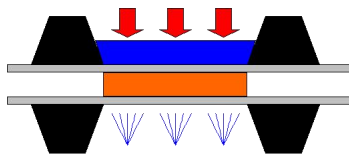
Cutter

Strip forming and cutting granulators are used mainly for the production of hot melts where granules of a regular shape and length are required.

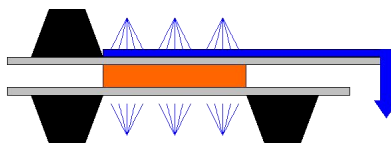
Double belt cooler



Cooling water return
via suction assembly



Cooling water return
by gravity



For certain applications, the double belt cooling system offers significant advantages than a single belt cooler, particularly in terms of increased capacity, as the product is in contact with two cooling belts.

The efficiency of this operation is further enhanced by the system's relatively compact dimensions, enabling more to be produced from less floor space.

Products such as waxes and resins, which tend to curl away from a single belt, can be processed with complete confidence. It is possible to cool thicker products with a uniform discharge temperature over the whole cross section.



Double belt cooler for polymer rubber



Double belt cooler for resin

The double belt system also helps to eliminate vapors and fumes between the belts and keep them from the operating area.

The product is fed onto the upper surface of the lower belt which carries it to the central cooling zone, where the pressure of the upper belt ensures constant contact with both cooling surfaces.

Double Belt Cooler Specification

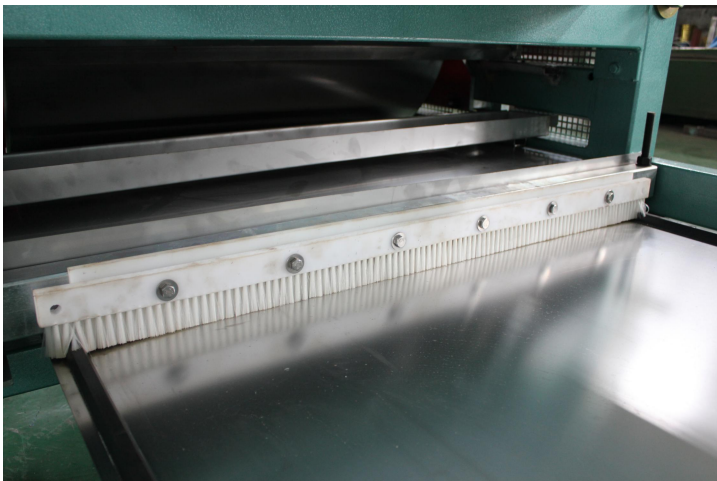
Feeding: Weir or Casting Box (depending on viscosity of product)

Lower Belt Cooler: Tension terminal with closed drum

Intermediate cooling section with spraying zone
(8m³/h per 5m section)

Drive terminal with closed drum and slip-on gear drive
(5-15kW)

Water Lay-Down



Upper Belt Cooler

Tension terminal with sheave assembly

Intermediate cooling section with cooling water feed

and suction pipes including suction pumps
(5m³/h per 5m section, one pump, approx. 1kW)

Drive terminal with sheave assembly

(Drive of upper belt cooler by friction only)

Crusher

finger or pin type, drive power approx 5kW

Typical elements mounted into the base of a Consol double belt cooler



Element:
Support rollers



Element:
Roller wheel





The heart of our systems is always a steel belt

Steel belt introduction:

CONSOL AS-1200 steel belt is A high strength austenitic stainless steel with high temperature resistance, corrosion resistance, high strength and so on characteristics. After secondary straightening and leveling process, the belt can keep flat in the extreme case of sustained fluctuations of temperature and high load operation of the keep stable transmission. CONSOL belt has been in numerous industrial practice gave excellent verification, effectively ensure the long-lived, run flat and no deviation.