



- SCHOKO-POLAR Centrifuges
- Gear pumps
- Rotary piston pumps

# CHOCOLATE TECHNOLOGY



For more than 40 years, Gebr. Steimel has been established in the chocolate branch as a supplier of reliable and sturdy pumps for chocolate.

Besides applications for pumps this is also to show you the operation possibilities of the SCHOKO-POLAR-centrifuge for the rework-processing.

For the sweets industry we offer:

**Pumps** for the transport of e.g.:

- cocoa masses
- cocoa butter
- chocolate masses
- sugar masses
- fats

and **Centrifuges**

- for the separation of solids, e.g. nuts, biscuits, raisins etc., and chocolate masses



## SCHOKO-POLAR Centrifuge

In chocolate processing, it happens many times that large quantities of valuable products are not suitable for sale to the consumer due to breakage or manufacturing defects, the so-called rework product. These integral residual amounts of chocolate and other ingredients such as cookies, nuts, raisins, cereals and much more, previously could only be disposed of as waste in general.

The solution for the recovery of chocolate from rework products is the industrial centrifuge of the Schoko-Polar type. This machine separates liquid chocolate from the solid rework components by centrifugal force. So the chocolate can be reused in the next process.

More than a hundred years of experience in design and construction of centrifuges, milk centrifuges, deoiling centrifuges for metal swarf and bulk materials and coating centrifuges form the technical basis for the new chocolate centrifuge. Because of this experience solutions have already been found for the mechanical and safety problems of the centrifuge technology and have been integrated in this chocolate centrifuge.

All parts of the centrifuges for processing the rework products coming into contact with the product are made of stainless steel and processed in accordance with the hygiene requirements for the processing of foods.

The centrifuge can be used for a variety of products which combine chocolate with cookies, nuts, raisins,

cereals or other ingredients.

For the liquefaction of chocolate filtered warm air is guided to the centrifuging material in the centrifuge drum. The liquid chocolate is then separated by centrifugal force from the rest of the product. To ensure the drainage of chocolate from the centrifuge, the spinning-off area is provided with a water heating jacket. The centrifuge is available as a manually operated machine, and can also be integrated in a fully automatic system for large quantities to be processed.

The industrial centrifuge of the Schoko-Polar type is available in three sizes. The centrifuge drums can be delivered in many different versions, precisely adapted to the chocolate product.

The control of the centrifuge is optionally available as a contactor control or PLC control system. All centrifuge parameters such as temperatures, speeds and centrifugal times are freely adjustable.

Each customer interested, by appointment with the centrifuge sales department, can use Gebr. Steimel GmbH & Co's pilot plant for tests with their own products. Here, the customer is able to see the capacity of the Schoko-Polar centrifuge and can discuss in detail with trained personnel.

Many experiments with different products by well-known manufacturers have shown that it is perfectly possible to recover up to 90% of the chocolate used in the rework. Raw

material use and waste can thus be reduced significantly. These values are the guarantee for a short pay-back period of the chocolate centrifuge.



SCHOKO-POLAR 8 with opened cover and put-in drum

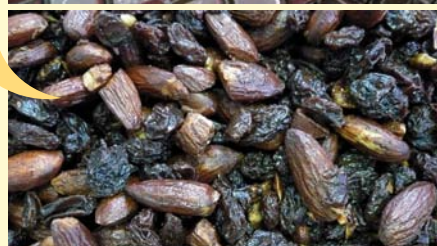
### Technical Data

	SCHOKO-POLAR 4	SCHOKO-POLAR 6	SCHOKO-POLAR 8
Centrifuge motor	ZG12	ZG25	ZG45
max. rotational speed	980 min <sup>-1</sup>	980 min <sup>-1</sup>	735 min <sup>-1</sup>
Jacket heating	3 kW	4,5 kW	6 kW
Venting tank for jacket heating	nein	ja	ja
Heating	4 kW	6 kW	6 kW
Drainage (rectangular, W x H)	150 mm x 55 mm	150 mm x 55 mm	150 mm x 55 mm
Shape of the drum	cylindrical	cylindrical	cylindrical
Drum diameter	400 mm	600 mm	800 mm
Drum height	260 mm	385 mm	540 mm
max. filling volume	18 dm <sup>3</sup>	65 dm <sup>3</sup>	190 dm <sup>3</sup>
max. loading weight	50 kg	150 kg	150 kg



## Examples

Here are some examples of rework products which were processed in the SCHOKO POLAR centrifuge.



Chocolate bars with almonds and raisins



Brazil nuts coated with chocolate



Biscuit rings coated with chocolate

## Gear pumps

The gear pumps of the type TM and SF are industrial pumps with/without heatable jacket for the transport e.g. of cocoa mass, cocoa butter, chocolate mass, sugar mass, fat, licorice, food oil, syrup and many more.

### Advantages

- pulsation-free pumping delivery
- independent from the the sense of rotation
- sturdy construction
- easy assembly
- completely closed heater jacket
- heatable with water, steam or electrically
  - heating temperature depending on agent
- DIN-flanged, milk pipe, SAE or threaded connection

### Materials

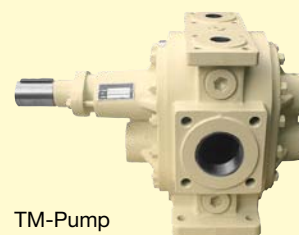
- grey cast iron
- bronze
- stainless steels

### Basic data

- flow volume  
2 - 1,800 cm<sup>3</sup> / rotation
- permitted overpressure up to 16 bar (higher pressures on request)
- viscosity range up to 80,000 cP

### Seal types

- packing
- mechanical seal with simple effect and with double effect (with retaining pressure)
- radial shaft seal
- magnetic coupling (depending on agent, hermetically closed)



TM-Pump



SF-Pump

## Rotary piston pumps

The rotary piston pumps of the SKK type are industrial pumps with/without heatable jacket for the transport e.g. of cocoa mass, cocoa butter, chocolate mass, sugar mass, fat, licorice, food oil, syrup, honey, jam, dough mass, puree and many more.

### Advantages

- independent from the the sense of rotation
- safe to run dry (no metal contact)
- sturdy construction with one-sided bearing
- easy assembly
- DIN-flanged, milk pipe, SAE or threaded connection
- casing with cover heating
- entirely closed heater jacket
- heatable with water, steam or electrically
  - heating temperature depending on agent
  - maximum 200 °C
  - higher temperatures on request

### Basic data

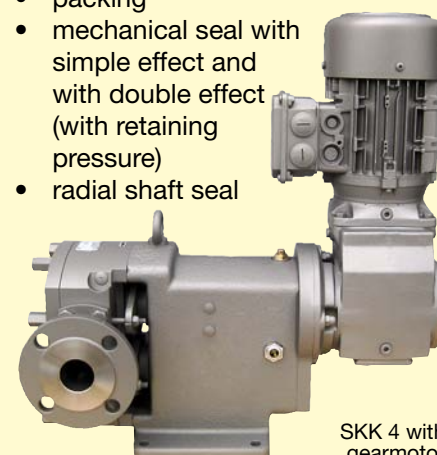
- flow volume  
60 - 3,200 cm<sup>3</sup> / rotation
- permissible overpressure depending on application up to max. 20 bar
- viscosity range depending on application up to 100,000 cP

### Materials

- grey cast iron
- bronze
- stainless steels

### Seal types

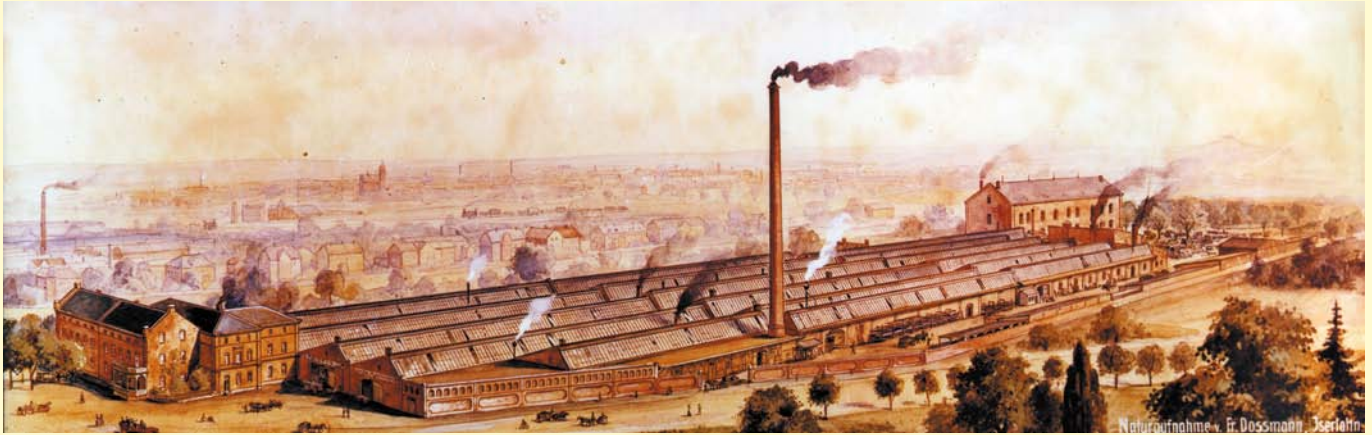
- packing
- mechanical seal with simple effect and with double effect (with retaining pressure)
- radial shaft seal



SKK 4 with gearmotor



## STEIMEL - Chocolate Technology



Painting of the company by about 1908

In 1878, Johann Steimel founded a production company for the construction of agricultural machinery. He produced threshing machines, hay makers, sowing machines, slurry pumps and similar devices.

Very early, around the mid-eighties of the 19th century, the production program was expanded by hand-operated cream separators. These very soon became the most important source of sales.

Until 1925, the cast blanks needed for the production were produced in an own iron foundry. Even before World War I blood separators and de-oiling centrifuges for metal swarf processing were added to the production range.

In order to compensate the reduced sales of private cream separators caused by the milk and fat law, the pump production was greatly extended from about 1928 on. An extensive gear and centrifugal pumps program soon sold well and pulled the company from the depths of the worldwide Economic Depression.

In the case of centrifugal pumps, the company specialized in seawater-resistant, self-priming centrifugal pumps as cooling water and bilge pumps for water-cooled marine diesel engines.

After the 2nd World War, Steimel gave up the milk centrifuge business and developed the industrial centrifuge program with further de-oiling

and drying machines.

In addition to the ever-growing range of machines for the metalworking industry, heated pumps were developed for the food industry and in particular for the transport of cocoa, chocolate and sugar compounds. By the mid-nineties, rotary pumps were added to the product range of gear pumps already existing for a long time.

In 2009, the SCHOKO-POLAR centrifuge has been developed in the industrial centrifuge program, specifically for the needs of the sweets industry. This machine now is the first clean, efficient and cost effective method for separating solids and chocolate masses.



Current picture of the company

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