

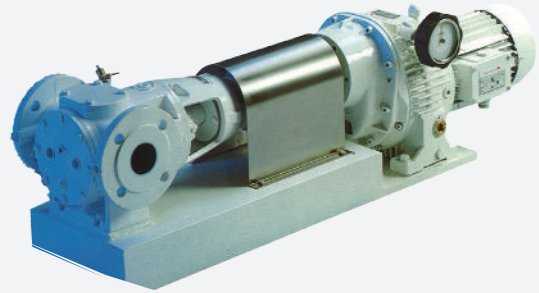
# Chocolate

Technically Advanced Solutions - for the Chocolate Industry

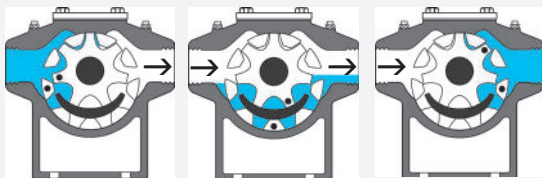
ROTAN® can offer a complete series of internally toothed gear pumps in cast iron, carbon steel and stainless steel.

Are you one of those people for whom chocolate is much more than sheer enjoyment?

- Maybe you are regularly greased in chocolate fighting with pumps, spare parts and a time pressure which cannot be avoided!
- Maybe you are responsible for the daily-production and recognise the feeling of powerlessness in connection with quality problems and meeting delivery times!
- Maybe subjects such as budgets and capacity costs are more relevant to you, especially when it comes to a disproportionately large item for maintenance!



Irrespective of which interest you may have in chocolate production or the manufacture of production plants for this industry, this introduction will provide you with answers to many of the questions you may have.



As shown in the illustration above, the gear pump with internal toothings results in almost no change in the flow direction through the pump, making this type of pump particularly well suited for pumping chocolate.

In addition to the obvious advantages offered by the internally toothed gear pump for pumping chocolate, DESMI ROTAN® focuses on the problems often encountered with pumping.

We guarantee that the ROTAN® chocolate pump will remove the taste that is somewhat bitter at times!

Well over 50 years of experience in the production of pumps for the chocolate industry in close collaboration with some of the leading producers of plants have resulted in a unique pump which meets the high requirements for the careful treatment of chocolate both in mechanical and temperature terms.

# Chocolate

## The problems of pumping chocolate

The internal parts of pumps often block when pumping chocolate. This is due to a temperature increase in the pump, which caramelises the chocolate so that it congeals.

As more and more chocolate congeals, the internal friction in the pump is increased, and a vicious circle starts, which ends ultimately when the pump blocks completely. This is particularly true when pumping chocolate under relatively high pressure.

**ROTAN® has solved the problem. Here's how:** We have designed the internal tolerances in the pump in such a way that "new" chocolate is always added to the areas around the rotating parts of the pump and in particular around the pivot of the star wheel and bushings.

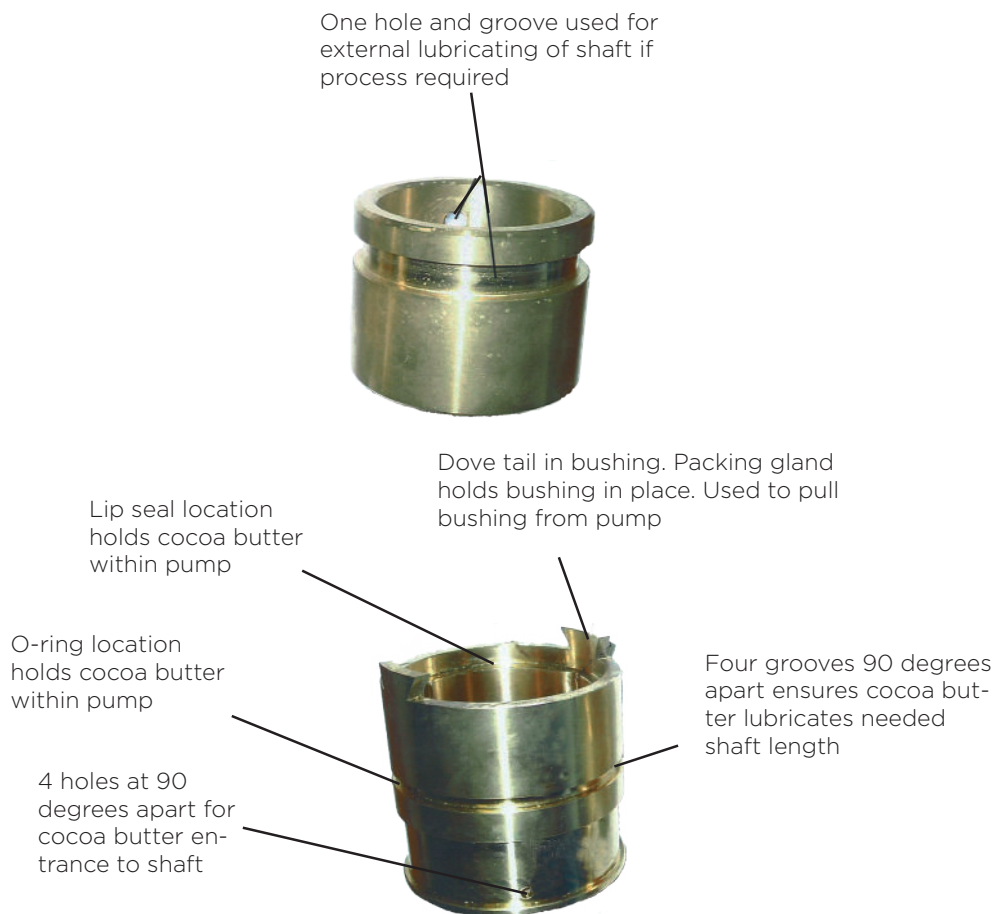
This reduces or eliminates the tendency for the chocolate to caramelise on the back of the rotor and at the bearing of the star wheel, therefore preventing the pump from blocking.

In addition, ROTAN® has developed a combination of sealing and main bearing, which is unique to this type of pump.

A packing cord mounted between the pump casing and main bearing greased externally with e.g. cocoa butter prevents heating and therefore also caramelising in this area.

This is particularly true when pumping chocolate under relatively high pressure.

## Chocolate vs. Standard Main Bushing



## In brief, ROTAN® focuses on the following issues:

A special main bearing with a lip seal keeps the lubricant within the pump. The added lubricant lubricates both the main bearing and the packing cord. This reduces friction and thereby the temperature of the bearing and packing cord.

CHD pumps have heating jackets fitted to the front and rear end as standard.

Special tolerances entail "rinsing" around the rotating parts and the bearing area and thereby prevent blocking of the pump.

The characteristic "back pull-out" system allows inspection/repairs without dismantling the pump, and in this way down time is reduced considerably.

The chocolate pump is available as both a straight-flow and angle pump.

## Pump Performance Chart

Pump Size	Bar	Units	RPM								
			50	75	100	125	150	175	200	225	250
41	3	m³/h	0.12	0.21	0.31	0.40	0.50	0.59	0.67	0.78	0.87
		kW	0.18	0.25	0.25	0.37	0.37	0.55	0.55	0.75	0.75
	6	m³/h	0.06	0.16	0.25	0.35	0.44	0.53	0.63	0.72	0.82
		kW	0.18	0.25	0.37	0.37	0.55	0.55	0.75	0.75	0.75
51	3	m³/h	0.26	0.47	0.67	0.88	1.09	1.30	1.51	1.71	1.92
		kW	0.37	0.55	0.75	0.75	1.10	1.10	1.50	1.50	1.50
	6	m³/h	0.14	0.34	0.55	0.76	0.97	1.17	1.38	1.59	1.80
		kW	0.37	0.55	0.75	1.10	1.10	1.10	1.50	1.50	2.20
66	3	m³/h	0.50	0.83	1.17	1.50	1.83	2.16	2.49	2.82	3.16
		kW	0.55	0.75	0.75	1.10	1.50	1.50	2.20	2.20	2.20
	6	m³/h	0.37	0.70	1.03	1.36	1.70	2.03	2.36	2.69	3.02
		kW	0.55	0.75	1.10	1.10	1.50	2.20	2.20	2.20	2.20
81	3	m³/h	0.96	1.62	2.27	2.93	3.59	4.25	4.91		
		kW	0.55	1.10	1.50	1.50	2.20	2.20	3.00		
	6	m³/h	0.67	1.33	1.99	2.65	3.31	3.97	4.62		
		kW	0.75	1.10	1.50	2.20	2.20	3.00	3.00		
101	3	m³/h	2.12	3.46	4.81	6.15	7.49				
		kW	1.10	1.50	2.20	2.20	3.00				
	6	m³/h	1.76	3.11	4.45	5.79	7.13				
		kW	1.10	2.20	2.20	3.00	4.00				
126	3	m³/h	3.61	5.79	7.97	10.15	12.33				
		kW	1.50	2.20	3.00	4.00	4.00				
	6	m³/h	3.03	5.21	7.39	9.57	11.75				
		kW	2.20	3.00	4.00	4.00	5.50				
151	3	m³/h	6.55	10.33	14.11	17.89	21.68				
		kW	2.20	3.0	5.50	5.50	7.50				
	6	m³/h	5.73	9.51	13.29	17.07	20.84				
		kW	3.0	4.00	5.50	7.50	9.20				
152	3	m³/h	11.88	18.23	24.58						
		kW	4.0	7.50	9.20						
	6	m³/h	11.26	17.60	23.95						
		kW	5.50	7.50	11.00						

## Pump Materials Chart

Pump Construction	Casing	Front Cover	Bracket	Rotor	Idler	Shaft	Idler Pin	Shaft Seal	Idler Bushing	Rear Bushing
Cast Iron	GG25	GG25	GG25	GG25	GG25	16MnCr5	Carbon Steel	Packing	Bronze	Bronze
Stainless Steel	AISI 316	AISI 316	GG25	AISI 329	AISI 329	AISI 329	AISI 329	Packing	Bronze	Bronze

Additional bushing options available.

