

Chocolate

Technically Advanced Solutions - for the Chocolate Industry

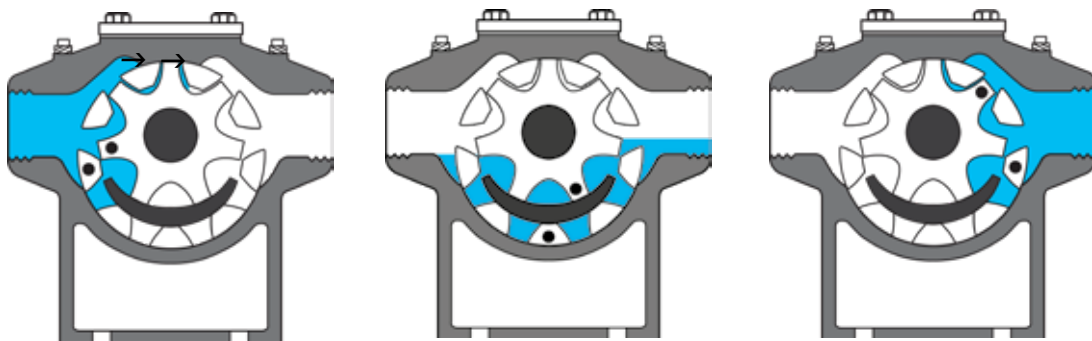


Behind every smooth chocolate experience lies precision engineering.

DESMI ROTAN® Internal Gear Pumps offer a complete range of durable, high-performance pumps - designed for demanding applications where reliability matters most.

Whether your focus is on process quality, maintenance efficiency, or production cost control, ROTAN® pumps help you keep things flowing.

- **Cast iron**
- **Carbon Steel**
- **Stainless steel**



Irrespective of your role in chocolate production — or in the manufacture of processing equipment for the industry — this introduction will help answer many of the questions you may have.

As shown in the illustration above, the internal gear design of the ROTAN® pump ensures an almost constant flow direction through the pump. This makes it particularly well suited for handling chocolate, where gentle and consistent transfer is essential.

In addition to the inherent advantages of the internal gear principle, DESMI ROTAN® focuses on addressing the

common challenges often encountered in chocolate pumping — such as viscosity, temperature control, and product shear.

With more than 50 years of experience supplying pumps to the chocolate industry, and through close collaboration with leading equipment manufacturers, we have developed a unique pump solution that meets the highest standards for the careful handling of chocolate — both mechanically and thermally.

And while we can't promise to remove all the bitterness from your day, we can guarantee a smoother, more reliable chocolate flow.

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.

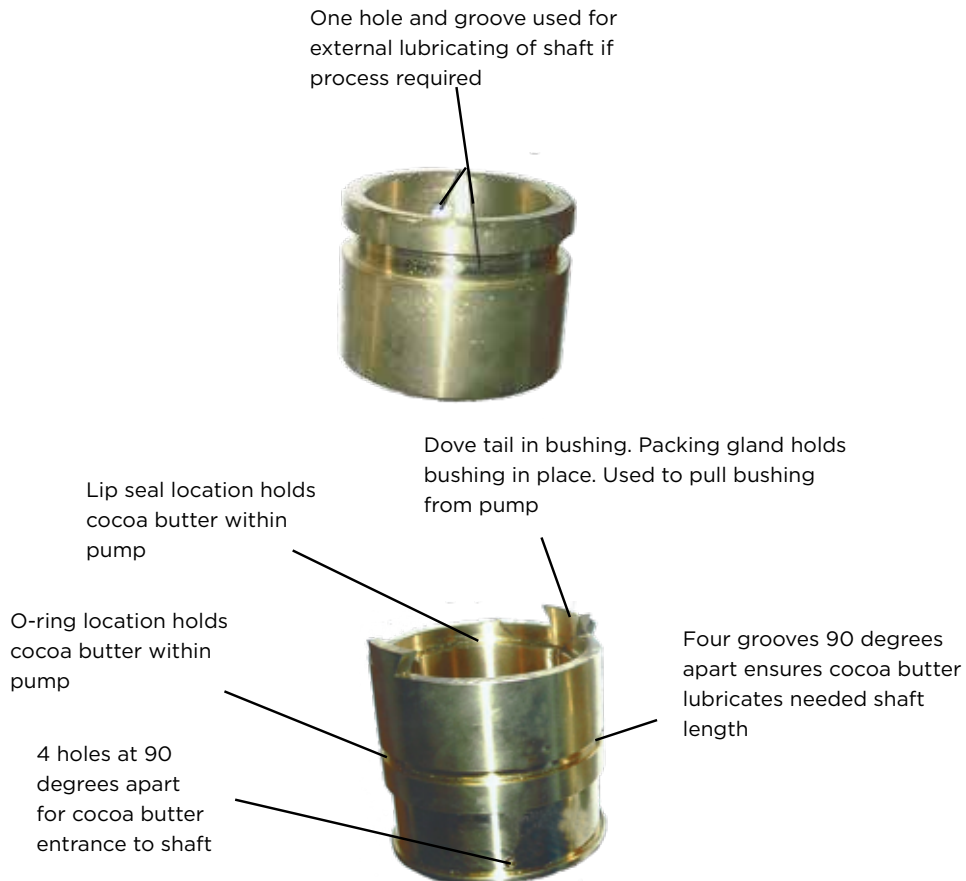
This reduces or eliminates the tendency for the chocolate to caramelise on the back of the rotor and at the bearing of the star wheel, therefore preventing the pump from blocking. In addition, ROTAN® has developed a combination of sealing and main bearing, which is unique to this type of pump.

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.

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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	m ³ /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	m ³ /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	m ³ /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	m ³ /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	m ³ /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	m ³ /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	3.00
81	3	m ³ /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	m ³ /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	m ³ /h	2.12	3.46	4.81	6.15	7.49				
		kW	1.10	1.50	2.20	2.20	3.00				
	6	m ³ /h	1.76	3.11	4.45	5.79	7.13				
		kW	1.10	2.20	2.20	3.00	4.00				
126	3	m ³ /h	3.61	5.79	7.97	10.15	12.33				
		kW	1.50	2.20	3.00	4.00	4.00				
	6	m ³ /h	3.03	5.21	7.39	9.57	11.75				
		kW	2.20	3.00	4.00	4.00	5.50				
151	3	m ³ /h	6.55	10.33	14.11	17.89	21.68				
		kW	2.20	3.0	5.50	5.50	7.50				
	6	m ³ /h	5.73	9.51	13.29	17.07	20.84				
		kW	3.0	4.00	5.50	7.50	9.20				
152	3	m ³ /h	11.88	18.23	24.58						
		kW	4.0	7.50	9.20						
	6	m ³ /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.

