



MAGMO MASSECUITE PUMPS

PLENTY®



MAGMO MASSECUITE PUMPS

The Magmo pump is a positive displacement pump which uses the 'ellipse and scraper' pumping principle. The basic design was originally conceived by the Sugar Industry itself, and Plenty Mirrlees Pumps have been manufacturing this type of pump for over 30 years.

Magmo pumps are designed principally to handle high viscosity abrasive sugar products that contain sugar crystals, such as Massecuite, Magma and Molasses. The design ensures that the Sugar crystals contained within the liquids are not damaged by the pumping action, and that the pump is subjected to minimum wear.

Magmo pumps are available in three sizes, No. 6, No. 8 and No. 10. The pump size indicates the discharge flange bore in inches.



Magmo No. 10 unitised with a Gearmotor and Shear-pin Coupling

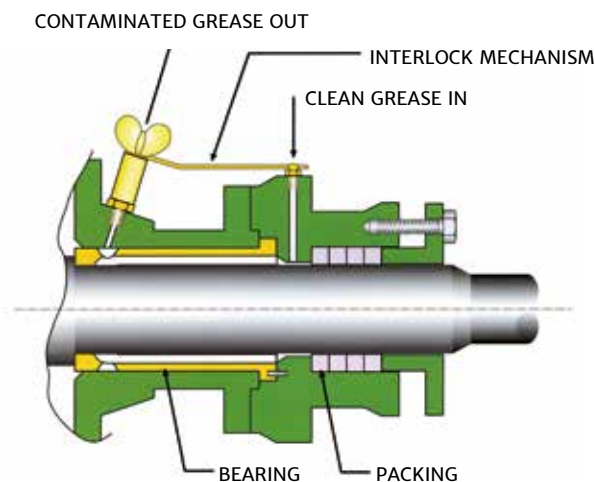
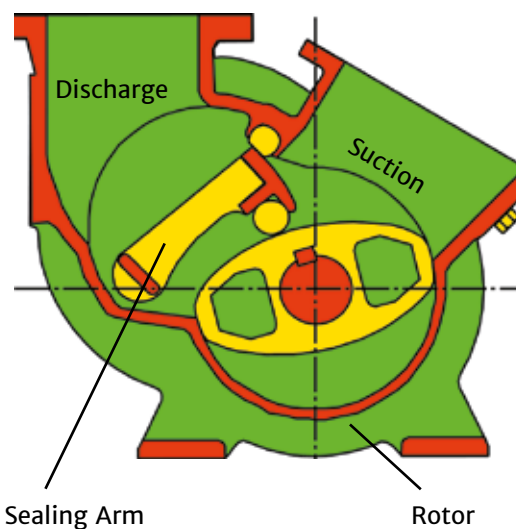
PRINCIPLE OF OPERATION

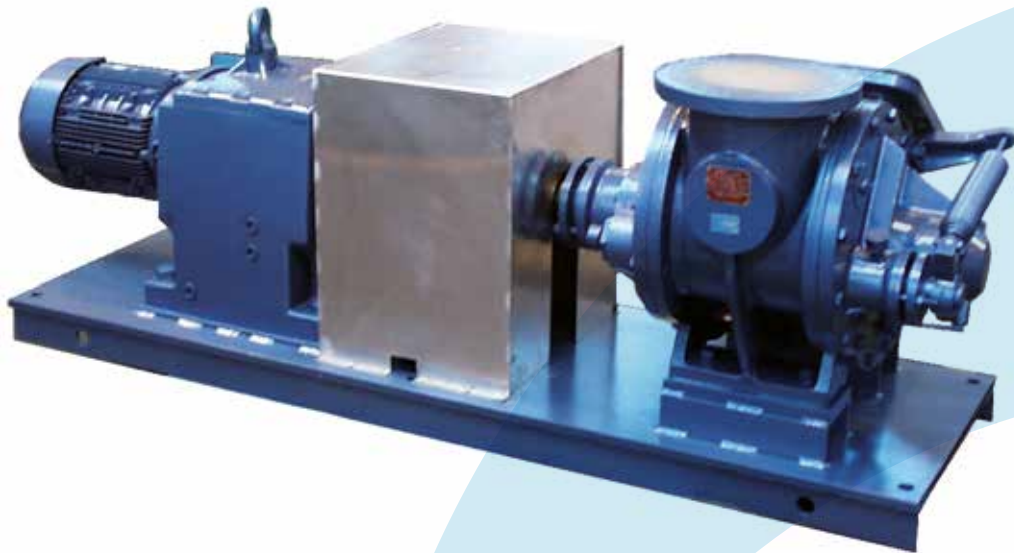
The pumping principle is very simple. An elliptical shaped rotor rotates in a cylindrical housing. The pumped medium is trapped in the cavities formed between the rotor and the housing, and is carried round from suction to discharge. A hinged sealing arm, which follows the surface of the rotor, scrapes off the pumped medium and directs it up into the discharge. The sealing arm is spring loaded to maintain contact with the rotor, however, above 2 bar g it is assisted by the discharge pressure, so the spring force is unnecessary.

Special care has been taken in designing the suction branch to ease the flow into the pump. This avoids starvation, and allows the pump to run at higher speeds.

BEARING & SEALING ARRANGEMENT

The bearing and sealing arrangement has been designed to deal with the wear and leakage problems associated with high viscosity abrasive duties. The bearing bushes are divided into an inner and outer section. The inner section divides the liquid in the pump and the grease in the bearing. The outer portion, which has longitudinal grooves, forms the bearing.





Magmo pump for the purpose of recirculating Massecuite to a Vertical Crystallizer.

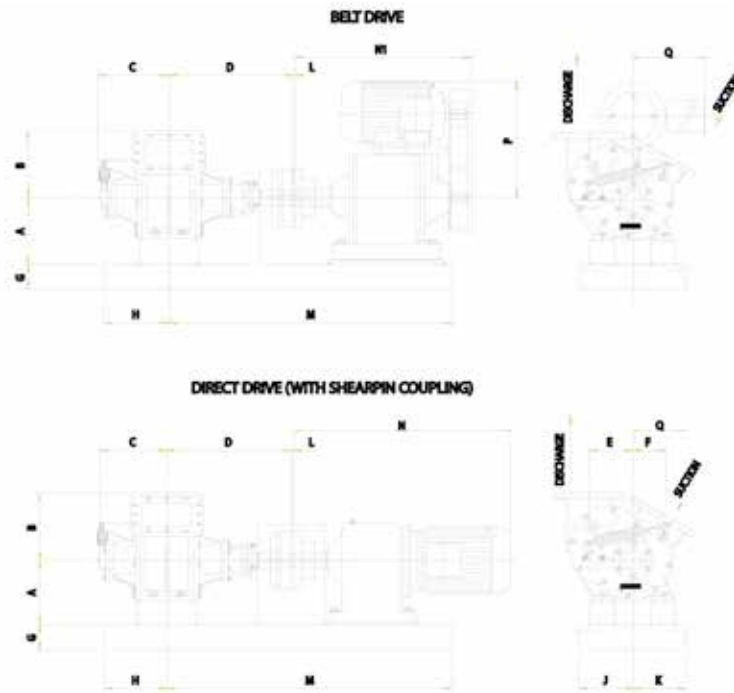
The grease in the bearing will slowly become contaminated over time by the pumped medium. This contaminated grease must be replaced by fresh grease to avoid premature bearing wear.

Re-greasing the bearing is a flushing operation. Fresh grease is introduced through a grease nipple at the outer end of the bearing, displacing the old contaminated grease along the grooves and through a drain valve at the inner end. The drain valve is simply interlocked to the grease nipple to ensure that both are open during greasing. This prevents grease being forced into the main puming chamber and contaminating the pumped liquid.

This configuration of bearing ensures minimum contamination of the bearing, and that the packing is sealing clean grease and not abrasive liquid.



APPROXIMATE DIMENSIONS



Pumps can be constructed with suction right (as shown) or suction left, to suit installation

Approximate dimensions (mm.) DO NOT use for installation purposes																			
PUMP SIZE	PUMP ONLY						UNIT					FLANGES		*GEARBOX/MOTOR					
	*A	B	C	D	E	F	G	H	J	K	L	SUCTION	DISCHARGE	M	N	N1	P	Q	
6	250	271	270	500	180	122	102	250	216	216	12	200x200	150	1150	860	611	441	196	
	315													1300	1006	761	488	196	
8	250	356	367	724	254	159	160	346	300	300	12	290x290	200	1150	860	611	441	196	
	315													1300	1157	761	547	250	
10	250	460	527	868	283	201	200	406	457	305	12	390x450	250	1300	1006	761	488	196	
	315													1800	1397	852	643	341	

PUMP FEATURE

Gentle pumping action

Large suction port

Good tolerance to large particles

Grease packed bearings with flushing arrangement

Replaceable sealing strip and sealing arm wear strip

Heavy duty sealing arm spring

Shear pin coupling

Belt Drive Unit

USER BENEFIT

- Minimum sugar crystal damage.
- Eliminates cavitation problems, and allows higher running speeds.
- Prevents pump seizure
- Extended bearing and pump life.
- Zero leakage of pumped liquid.
- Low cost wearing parts that are easily replaced to extend the overall pump life through a number of campaigns.
- Ensures operation through many millions of cycles.
- Dis-engages drive if an obstruction enters the pump, or the discharge pressure exceeds 15 bar g, ensuring there is no damage to the pump drive train.
- Belts will slip if an obstruction enters the pump, or the discharge pressure exceeds 15 barg, ensuring there is no damage to the pump drive train.
- Pump speed can be easily changed on site by changing the pulley diameters.

OPERATING PARAMETERS

Magmo pumps are designed to operate primarily on Massecuite, Magma and Molasses.

Flow range	1.2m ³ /hr to 56m ³ /hr
Speed	10 rpm to 50rpm
Discharge Pressure	7.0 bar g
Viscosity	Unlimited



Bareshaft Magmo No. 10

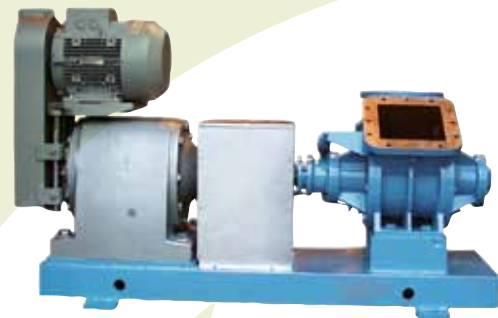
MATERIALS OF CONSTRUCTION

Standard construction

Casing	Cast Iron
Rotor	Cast Iron
Sealing Arm	Ductile Iron (with Hardened edge)
Shaft	Ductile Iron
Bearing Bushes	Bronze
Sealing	Mechanical Seal

Options

Shaft	Stainless Steel
Rotor	Bronze
Sealing	Mechanical Seal
Drive options	Direct Drive from geared motor through a shear-pin coupling. Direct Drive from belt driven gear



Magmo No. 6 belt driven unit

All Magmo pumps are supplied with steaming out connections as standard





MAGMO MASSECUITE PUMPS

SPEED
EXCELLENCE
PARTNERSHIP



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