



Franklin Electric

INTRODUCTION

The Rotorflo is a series of positive displacement pumps utilising a rotary action to transfer a wide variety of products ranging from water-like to semi-solids.

The pumps are designed and manufactured to a high standard, in stainless steel, to meet the requirements of both food and industrial processes.

This book is compiled as a guide to the usage and selection of the pumps together with data relating to installation.

NOTE

Every effort has been made with the accuracy of the information contained within this guidebook at the time of publication, but due to a policy of continuing development, you should confirm critical data with the manufacturer.

BASIC PUMP RANGE

Model	Port Size	Max Capacity			Max Pressure		Max Speed	Displacement
		L/Min	l G/M	USGPM	Bar	PSI		
	Inch						RPM	L/100 Revs
R21	1	90	19.8	24.0	12	175	1000	9.0
R22	1/1.5	130	28.6	34.0	10	150	1000	13.0
R23	1.5	180	39.6	47.5	7	100	1000	18.0
R31	1.5	300	66.0	79.0	15	220	1000	29.0
R32	2.0	400	88.0	105.0	10	150	1000	41.0
R33	2.5/3.0	580	128.0	153.0	7	100	1000	57.0
R41	2.5/3.0	760	167.0	200.0	15	220	1000	76.0
R42	3.0	1140	250.0	300.0	10	150	1000	114.0
R43	4.0	1600	350.0	420.0	6	88	1000	160.0

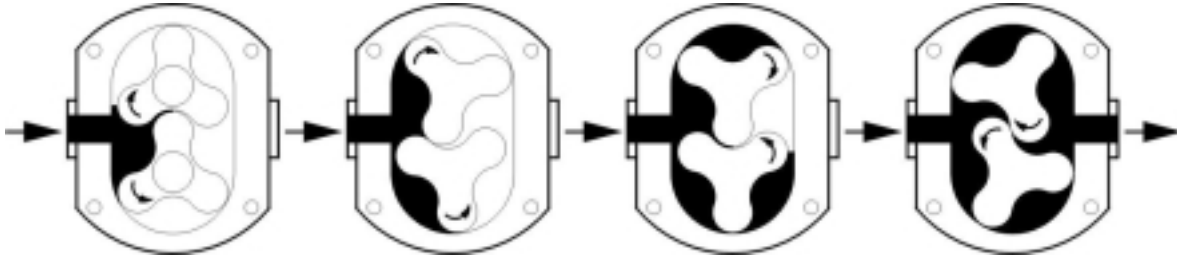
Higher values can be obtained dependent on operating condition. Refer to manufacturer.



Franklin Electric

OPERATING PRINCIPLE

MODELS R2 / R3 / R4 (CYCLOGRAM)



The separation of two counter rotating elements (rotors) creates a partial vacuum reducing the pressure at the inlet to the pump assisting product into the void created.

Product is carried around the casing between the rotor lobes in a controlled volume.

At the discharge of the pump the mesh of the rotor lobes creates a positive pressure causing the product to pass smoothly out of the casing port.

With tri-lobe rotors this action occurs 6 times each revolution.

The rotors create a seal between pump inlet and outlet without contact with each other or the casing by accurately maintained clearances on all surfaces.

MODEL NOMENCLATURE - MODELS R2 / R3 / R4



MODEL	R				
SIZE		2			
		3			
		4			
ROTOR SIZE			1		
			2		
			3		
BEARING HOUSING				S	NOT MODEL 4
				L	
SEAL ARRANGEMENT					PG
					MS



FEATURES & CONSTRUCTION

- Hygienically designed with crevice free casing fully swept by pumping member.
- Product contact parts in 316 stainless steel, surfaces finished to a high standard (1.6 microns).
- No contact of components occurs within pumping chamber.
- Timing chamber isolated to avoid any possibility of contamination.
- Constructed for ease of cleaning either manually or C.I.P. processes.
- Maintenance simplified by full diametrical location of all major components.
- Rotation in either direction giving full reversal of flow.
- Various mounting configurations to suit installation requirements.
- FRONT COVER with flush product face (all recesses being eliminated). Joint adjacent to housing inner profile leaving no mating surface exposed to product.
- PUMP HOUSING in addition to high internal finish are fully machined externally.
- Gland area accepts the fitment of a wide range of shaft seals.
- A full range of port connections are available as optional extras.
- The housing, positively positioned to the timing/bearing assembly by accurately machined spigots, eliminates the use of dowelling.
- TIMING AND BEARING HOUSINGS of high grade cast iron.
- SHAFTS of large section for minimum deflection, maximum rigidity being made from high performance duplex stainless steel as a standard.
- MAIN BEARINGS are of the taper roller form, all having a high load rating for extended life.
- GEARS - timing of the two counter rotating shafts is maintained by precision machined helical gears, which allows for simple adjustment on assembly. Access is by removal of the gear cover. No further dismantling is required.
- ROTORS - the positively driven and located by involute splines of full length. Retained with nut on a fine locking thread. Whole system sealed from product ingress.



ROTOR FORMS	CAPACITY		COMMENTS
	MODEL	DISPLACEMENT LT/100 REV	
 TRI-LOBE	R21	9	Temp Ranges Std to : 70 ° C : 71 to 120 ° C : 121 to 180 ° C Materials 316 Stainless Steel
	R22	13	
	R23	18	
	R31	29	
	R32	41	
	R33	57	
	R41	76	
	R42	114	
	R43	160	
 BI-LOBE	DISPLACEMENTS AS TRI-LOBE		Temp and Materials as Tri-Lobe Applications: Solid in suspension of a delicate nature and shear sensitive products.
	Max Solids	Size	
	R2	12mm	
	R3	15mm	
	R4	22mm	