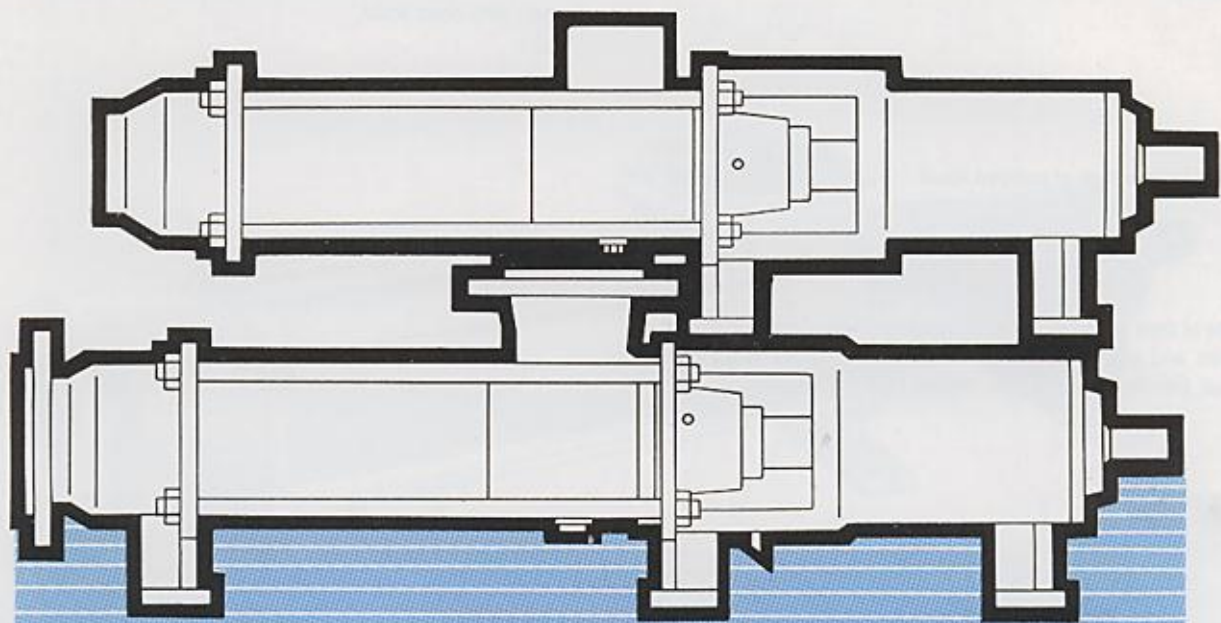


Helical rotor pumps

EPR



Application

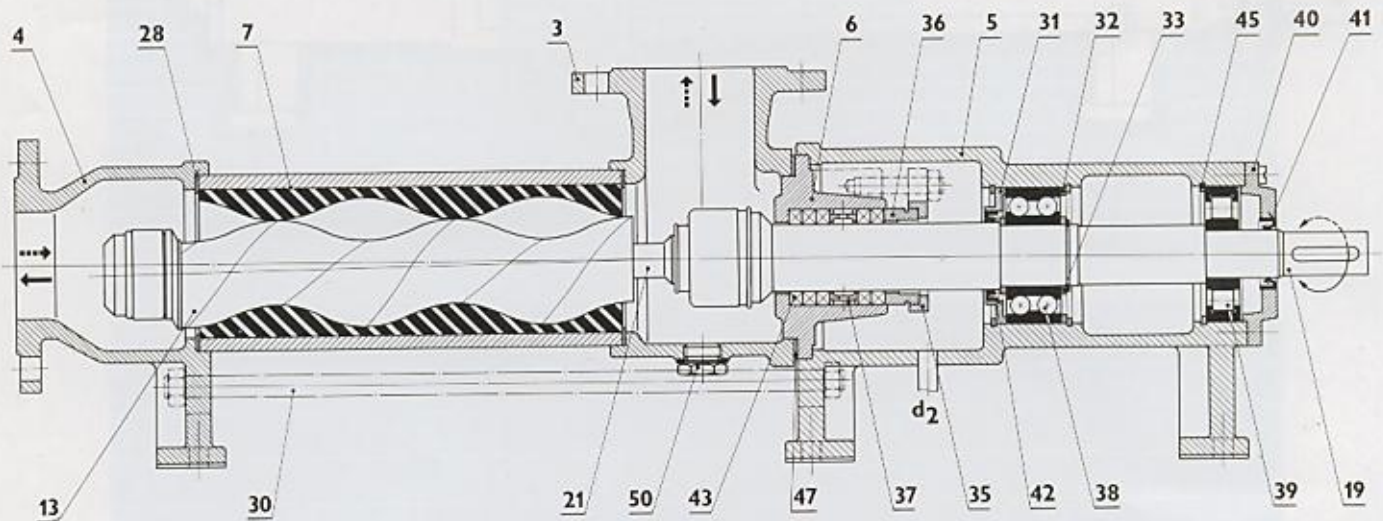
The EPR. series of helical gear pumps are single spindle, progressive cavity pumps and are used for a wide variety of liquids — from clean and thin through viscous, dirty and thick, up to pulp-like suspensions (all providing there is not any abrasive matter present) . . . They can, in fact, be used if a **small** amount of hard impurities or short fibrous matter is present, but sedimentation and/or solidification must be avoided and the pump must be run at low speed. Even at low speeds the presence of abrasive matter will reduce the service life of the pump. These pumps may be used for liquids which are subject to foaming or coagulation.

Construction

The EPR is a horizontal helical rotor pump. The stator, between the suction and discharge casings, has a special rubber liner. A single helical spindle rotates inside the stator with the torque from the driving shaft being transmitted to the spindle via a connecting rod of special design. The driving shaft is supported on a bearing bracket by two roller bearings, lubricated by a long term grease filling. Leakage is avoided by means of a lip seal (radial „Gufero” type). The driving shaft seal has a soft cord packing with a lantern ring. Depending on the liquid being pumped, any leakage from the stuffing box can be taken direct to drain, or the closed stuffing box can be washed down with clean liquid.

Maximum temperature of pumped liquid 70 °C.

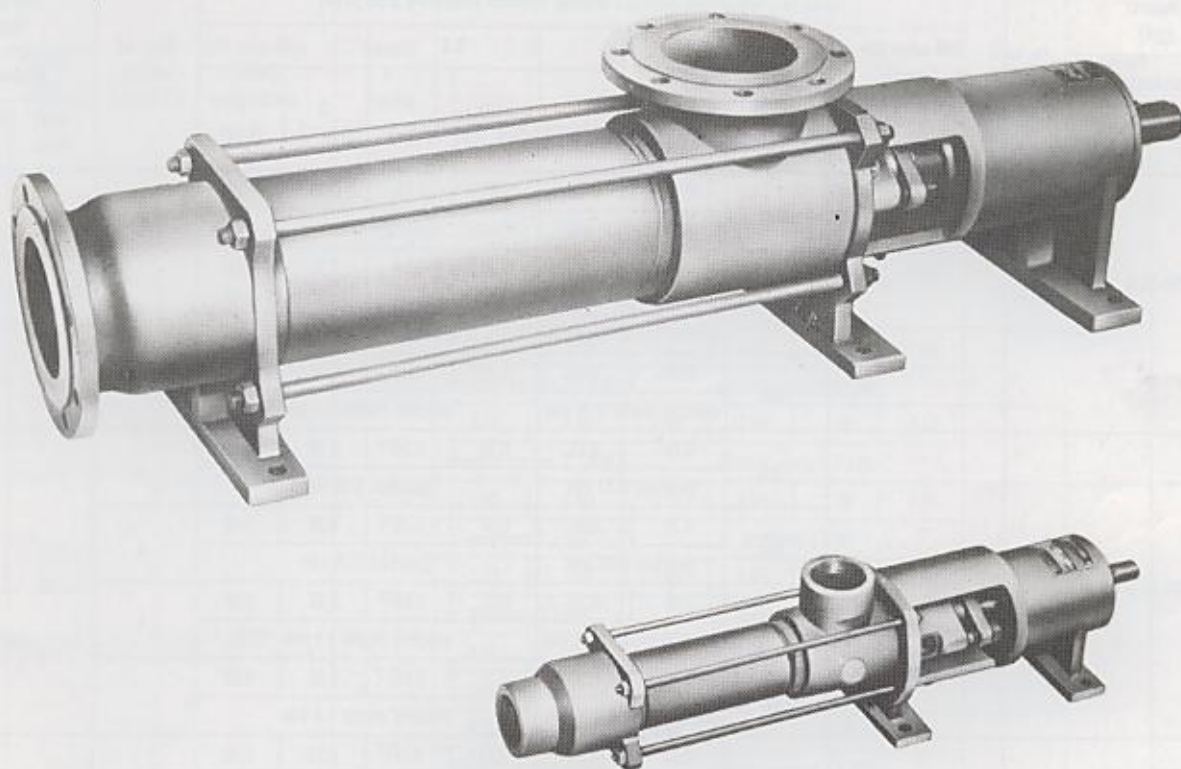
Because of their versatility these pumps have been applied in almost all industries and processes. In particular they are used in agriculture, chemical, building, paper & pulp, mining etc.



- | | |
|------------------------------|---|
| 3 Suction casing. | 35 Stuffing box flange. |
| 4 Discharge casing. | 36 Follower. |
| 5 Bearing bracket. | 37 Lantern ring. |
| 6 Stuffing box housing. | 38 Front bearing. |
| 7 Stator. | 39 Rear bearing. |
| 13 Helical rotor (Spindle). | 40 Bearing cover. |
| 19 Driving shaft. | 41 Radial lip seal „Gufero”. |
| 21 Connecting rod. | 42 Radial lip seal „Gufero”. |
| 30 Connection unit. | 43 Gland packing. |
| 31 Radial lip seal „Gufero”. | 45 Circlip. |
| 32 Bearing bracket ring. | 47 Wearing ring. |
| 33 Shaft ring. | 50 Drainage plug. |
| | d ₂ Drain from stuffing box. |

Helical rotor pumps

EPR



Material

The standard pump for common neutral liquids is the cast iron version „GO“ with the main parts in the following materials:

- suction and discharge casings — grey cast iron
- working spindle — stainless and carbon steel
- connecting rod — carbon steel
- special rubber.

The Stainless Steel „GY“ version is used for partially corrosive liquid and the main parts are in the following materials:

- suction and discharge casings, working spindle and connecting rod — stainless steel
- stator lining — special rubber or specially modified hygienic rubber. The latter can never be used for pumping water.

Helical rotor pumps

EPR

Survey of types and basic technical data

Pump type	DN nom dia (mm) suct/disch	Speed n (rpm)	Pump service pressure pdo (bar)						Size of solids \varnothing (mm)	Weight (kg)	
			2		3.5		6			Material	
			Q (l.s ⁻¹)	P (kW)	Q (l.s ⁻¹)	P (kW)	Q (l.s ⁻¹)	P (kW)		cast iron	stainless steel
			gearbox 0.37 kW		gearbox 0.55 kW		gearbox 0.75 kW				
1 1/2"-EPR-25-6	1 1/4"/1 1/4"	500	0.23	0.18	0.24	0.17	0.18	0.28	5	12	12.5
			gearbox 0.37 kW		gearbox 0.55 kW		gearbox 0.75 kW				
		960	0.35	0.20	0.34	0.24	0.30	0.30	—		
			0.48	0.32	0.45	0.38	0.40	0.46			
		1450	electric motor 0.55 kW		electric motor 0.75 kW		electric motor 1.1 kW		—		
			0.65	0.52	0.63	0.60	0.60	0.70			
1 1/2"-EPR-40-6	1 1/4"/1 1/4"	300	0.20	0.25	0.15	0.24	0.10	0.25	6	16	16.5
			gearbox 0.37 kW		gearbox 0.55 kW		gearbox 0.75 kW				
		500	0.36	0.25	0.34	0.36	0.28	0.40	6		
			gearbox 0.55 kW		gearbox 0.75 kW		gearbox 1.1 kW				
		720	0.55	0.38	0.52	0.52	0.48	0.60	6		
			electric motor 0.55 kW		electric motor 1.1 kW		electric motor 1.5 kW				
		960	0.73	0.50	0.70	0.65	0.68	0.82	—		
			electric motor 0.75 kW		electric motor 1.1 kW		electric motor 1.5 kW				
50-EPR-100-6	50/50	300	0.37	0.25	0.33	0.31	0.22	0.35	8	32	33
			gearbox 0.55 kW		gearbox 0.75 kW		gearbox 1.5 kW				
		500	0.70	0.48	0.64	0.60	0.55	0.75	8		
			gearbox 0.75 kW		gearbox 1.5 kW		gearbox 2.2 kW				
		720	1.10	0.60	1.02	0.90	0.96	1.15	—		
			electric motor 1.1 kW		electric motor 1.5 kW		electric motor 2.2 kW				
		960	1.50	1.00	1.45	1.20	1.33	1.50	—		
			electric motor 1.5 kW		electric motor 2.2 kW		electric motor 3.0 kW				

Advantages

The EPR pumps feature:

- continuous flow of the pumped liquid without pulsation or shocks
- high efficiency
- low weight
- simple design leading to
 - easy disassembly
 - easy cleaning
 - undemanding maintenance.

Helical rotor pumps

EPR

Survey of types and basic technical data

Pump type	DN nom dia (mm) suct/disch	Speed n (rpm)	Pump service pressure p _{do} (bar)						Size of solids Ø (mm)	Weight (kg)	
			2		3.5		6			Material	
			Q (l.s ⁻¹)	P (kW)	Q (l.s ⁻¹)	P (kW)	Q (l.s ⁻¹)	P (kW)		cast iron	stainless steel
65-EPR-160-6	65/65	300	0.85	0.35	0.75	0.52	0.65	0.65	10		
			gearbox 0.75 kW		gearbox 1.1 kW						
		500	1.35	0.80	1.25	1.00	1.16	1.25	10		
			gearbox 1.1 kW		gearbox 2.2 kW						
		720	2.00	1.25	1.90	1.50	1.65	1.95	—		
			electric motor 2.2 kW		electric motor 3 kW						
		960	2.74	1.70	2.60	2.00	2.40	2.50	—		
			electric motor 2.2 kW		electric motor 3 kW						
80-EPR-400-6	80/80	240	1.50	1.60	1.35	1.80	1.20	2.20	12	70	73
			gearbox 2.2 kW		gearbox 3 kW						
		360	2.10	1.80	1.95	1.95	1.60	2.55	12		
			gearbox 2.2 kW		gearbox 4 kW						
		500	3.25	1.95	3.10	2.05	2.70	3.30	—		
			gearbox 3 kW		gearbox 4 kW						
		720	5.10	2.80	4.90	3.90	4.65	4.90	—		
			electric motor 4 kW		electric motor 7.5 kW						
125-EPR-1000-6	125/125	240	4.00	1.80	3.45	2.60	2.10	3.80	18	110	114
			gearbox 3 kW		gearbox 5.5 kW						
		360	6.50	2.80	5.80	3.75	4.00	5.30	18		
			gearbox 4 kW		gearbox 7.5 kW						
		500	9.50	4.00	9.10	5.80	8.00	7.90	—		
			gearbox 5.5 kW		gearbox 11 kW						
		720	13.30	6.50	12.80	8.00	11.70	11.30	—		
			electric motor 7.5 kW		electric motor 15 kW						

Q pump capacity (flow rate litres/second)

P pump power

p_{do} delivery pressure of pump.

The given values of Q and P are valid with a manometric pressure at the pump inlet P_{s,max} = -0.2 bar and with clean water at a temperature up to 20 °C.

After prior consultation it may be possible to deliver pumps for speeds other than those given in the table.

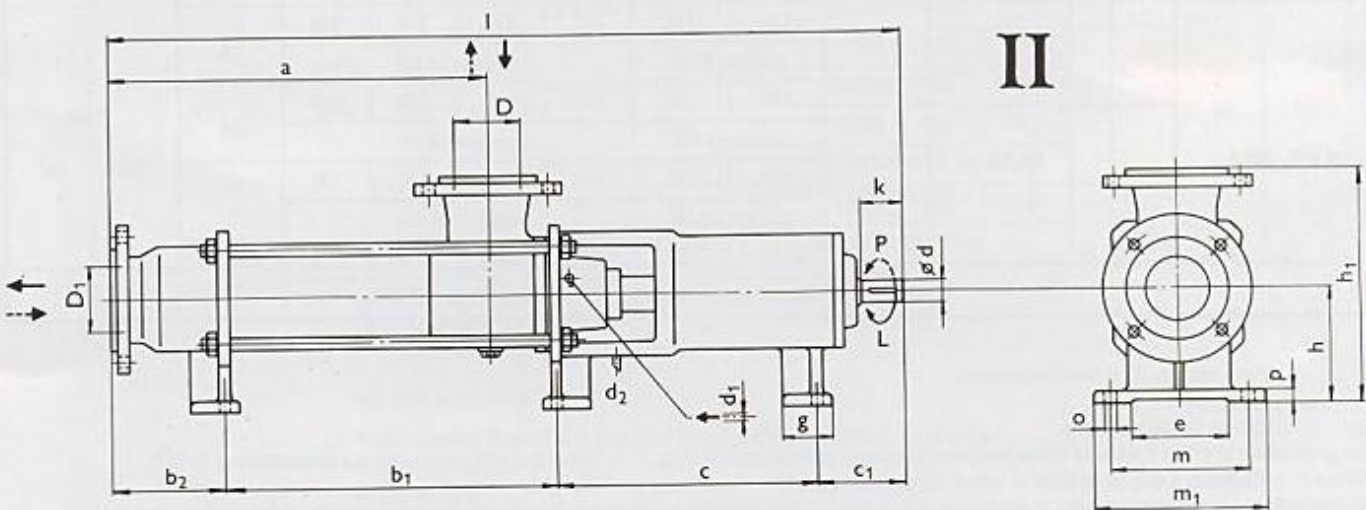
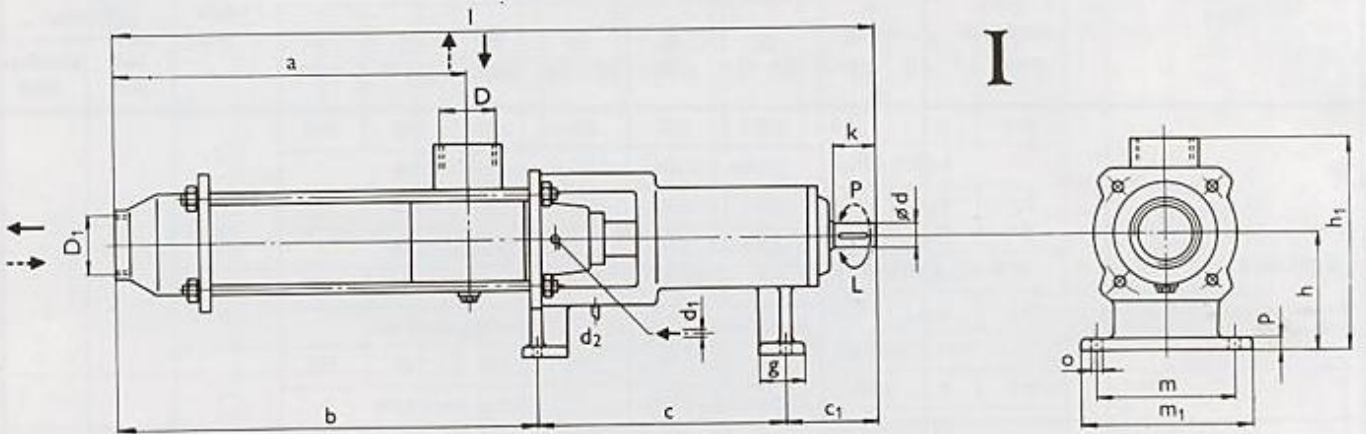
Prior consultation is also recommended to ensure that a drive is select with sufficient power reserve to cope with the actual viscosity of the liquid being pumped.

The weight is given for a standard pump without drive.

Helical rotor pumps

EPR

Dimensions of standard pumps



Helical rotor pumps

EPR

Dimensions of standard pumps

Pump type	Mod	a	b	b ₁	b ₂	c	c ₁	∅ d	∅ d ₁	e	g	h	h ₁	k	l	m	m ₁	o	p	branch		
																				D	D ₁	
1 1/4"-EPR-25-6	I	235	275	—	—	190	80	18	G 1 1/2"	—	35	80	135	40	545	104	128	4 × ∅ 12	10	G 1 1/4"	G 1 1/4"	
1 1/2"-EPR-40-6		300	350	—	104	128	4 × ∅ 12	10		G 1 1/2"												
50-EPR-100-6		333	391	—	—	260	94	28			100	50	125	220	45	745	145	180	4 × ∅ 14	13	DN 50	DN 50
65-EPR-160-6	II	385	—	350	103	260	92	28	G 1 1/4"	100	50	125	235	45	805	145	180	6 × ∅ 14	13	DN 65	DN 65	
80-EPR-400-6		500	—	450	135	295	110	32			110	50	150	290	62	990	165	200	6 × ∅ 14	15	DN 80	DN 80
125-EPR-1000-6		652	—	595	165	305	137	40			140	60	160	310	82	1200	215	260	6 × ∅ 18	18	DN 125	DN 125

Dimensions are given in millimetres.

Modification I: Suction and discharge branches have internal pipe thread with the exception of the 50-EPR-100-6 which has PN 6 flange branches. Pumps are designed without a support foot below the discharge casing; the hydraulic part of the pump-set is overhung on the bearing bracket.

Modification II: Flanges on the suction and discharge branches are designed for PN 6. Pumps are designed with a support foot below the discharge casing.

d₁..... two holes — supply washing liquid/drain stuffing box.

d₂..... drain for stuffing box.

Drive and sense of rotation

If the pump is to be used under normal, standard working conditions, it is delivered with a standard electric motor mounted with the pump on a common base.

If the pump is required for heavy duty which viscous liquids, necessitating reduced speed, it should have a geared electric motor and gearbox (or speed control) also mounted on a common base.

The EPR pump can operate, without modification, with either right hand or left hand rotation (viewed from the drive) depending on the lay-out of suction and/or discharge pipelines. However, if the sense of rotation is changed, the direction of flow of the liquid through the pump is also changed.