

Empire's range of Vertical Sealless Pumps are manufactured for the use with many solution transfer and recirculation applications. The unique design of the pump gives the ability for the pump technology to be used with aggressive chemical applications, such as sulphuric, hydrochloric, nitric acids. Alongside these aggressive acid and alkaline based applications the Vertical Sealless Pumps are used with dilute liquids and are commonly installed on fume scrubber towers, effluent treatment pits and neutralisation pits. The Vertical Sealless Pump technology is widely recognised within the aerospace and automotive industries for the recirculation of hydrofluoric and nitric acid etch tanks.

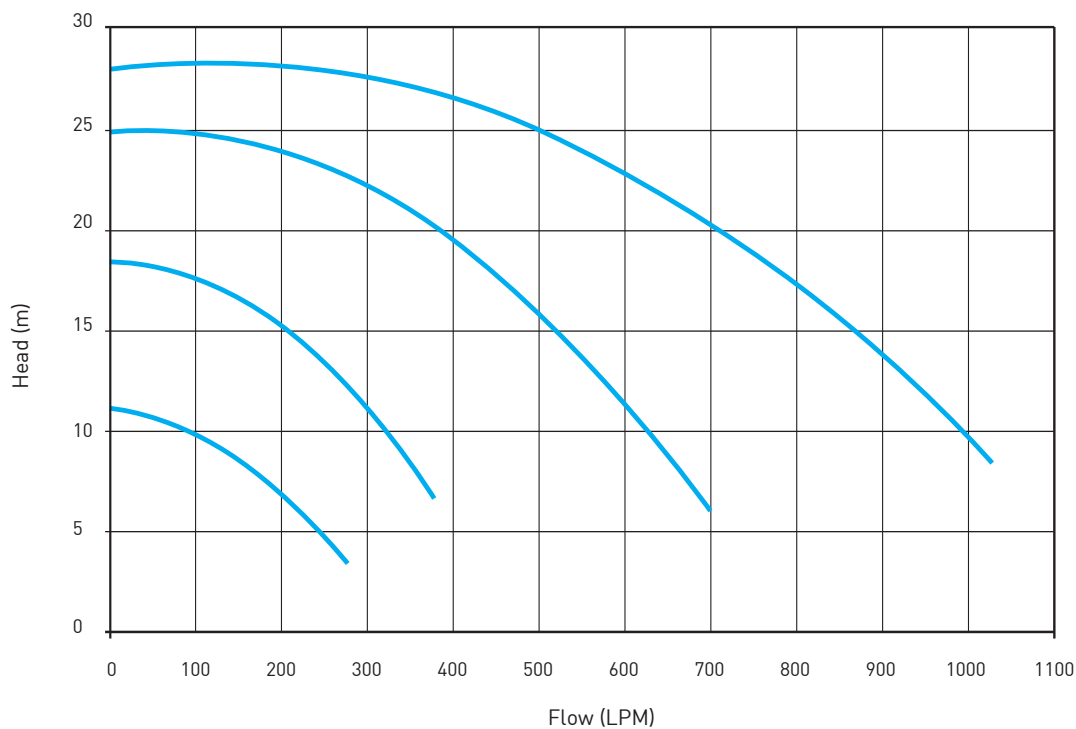
The Vertical Sealless Pump technology is recognised as a real alternative to the horizontal style pumps, giving many design advantages. The pump shaft is concealed with an impeller shaft sleeve which is extended to the base of the pump impeller. The electric drive motor is purposefully designed with an oversized bearing which supports the extended pump shaft. The special design of the pump manufacture ensures no mechanical seals or bearings are used, this gives the capability for the pump to run dry without solution.

The pump is manufactured from stainless steel or thermoplastics materials, CPVC, Polypropylene or PVDF. The plastic pumps give the option of supplying the equipment for use with low temperature solutions or alternatively liquid temperatures rated up to 120°C. The pump can be mounted in tank or out of tank, which removes the complications of external suction and discharge pipe-work.

FEATURES AND BENEFITS

- Materials of construction: Polypropylene, PVDF, Stainless Steel
- Vertical Sealless Pump design
- No mechanical seals or bearings
- Large tolerances between moving plastic parts
- Run dry capability
- Specially manufactured electric motor drive
- In tank or out of tank mounting
- Flow rate 0 to 3000 l/min
- Discharge pressure 0 to 4 bar
- Suitable for high specific gravity solutions
- Nitrile or viton elastomers
- 240v 1ph or 400v 3ph supply
- Flange connections

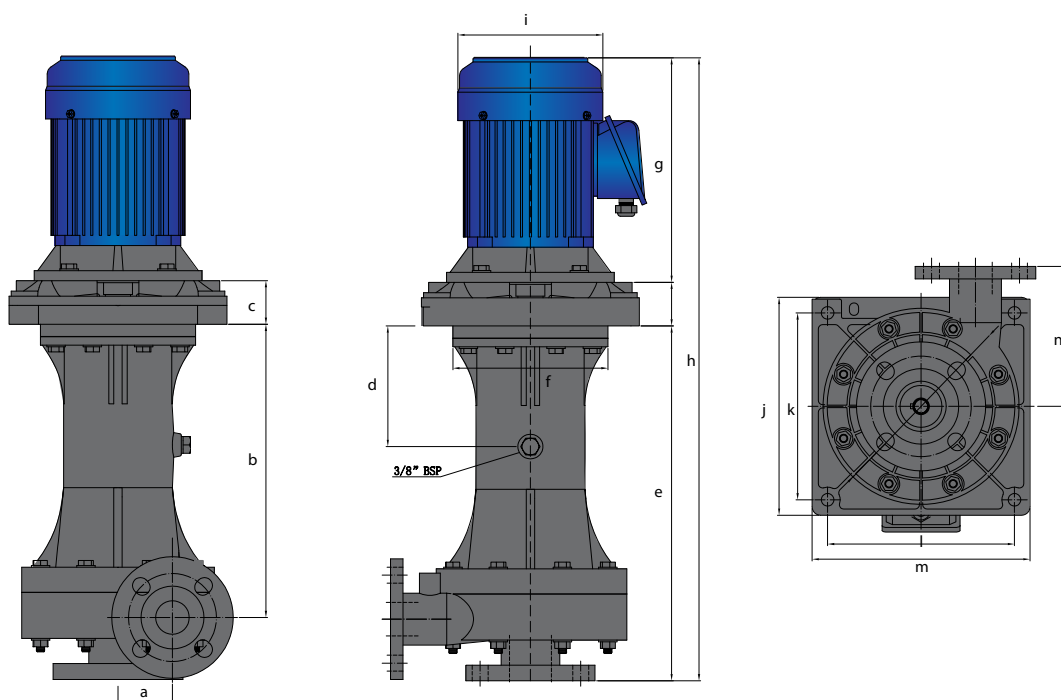




Pump Curve	Model		Inlet (Flange)	Outlet (Flange)	Max Flow (l/min)	Max Head (m)	Power (kw)
	Polypropylene	PVDF					
1	EPV1PPN	EPV1KV	2"	1-1/2"	285	11	0.75
2	EPV2PPN	EPV2KV	2"	1-1/2"	385	19	2.2
3	EPV3PPN	EPV3KV	2-1/2"	2"	600	25	3.7
4	EPV4PPN	EPV4KV	3"	2-1/2"	1000	28	7.5

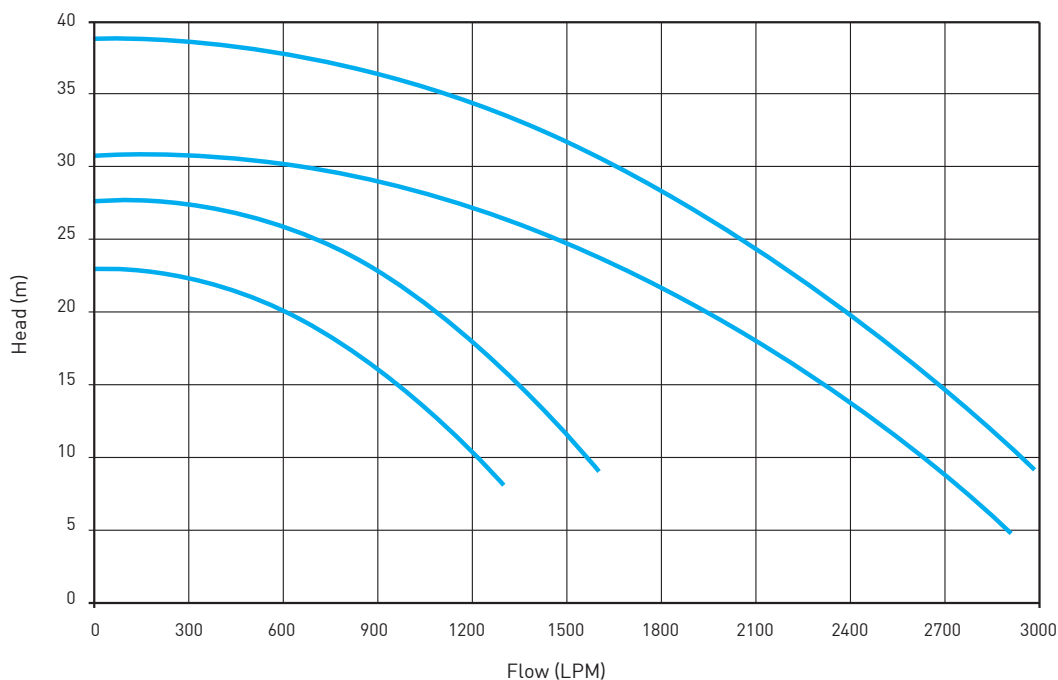


Item No	Description	Materials	
		Polypropylene	PVDF
1	Electric Motor	Cast iron	Cast iron
2	Mounting Plate	Polypropylene	Polypropylene
3	Vapour Seal Seat with O-ring	PP/Nitrile	PVDF/Viton
4	Vapour Seal	Nitrile	Viton
5	Shaft Sleeve	Polypropylene	PVDF
6	Pump Body	Polypropylene	PVDF
7	Impeller Shaft	Polypropylene	PVDF
8	Impeller	Polypropylene	PVDF
9	Impeller Screw O-ring	Nitrile	Viton
10	Impeller Screw	Polypropylene	PVDF
11	O-ring	Nitrile	Viton
12	Front Casing	Polypropylene	PVDF



DIMENSIONS

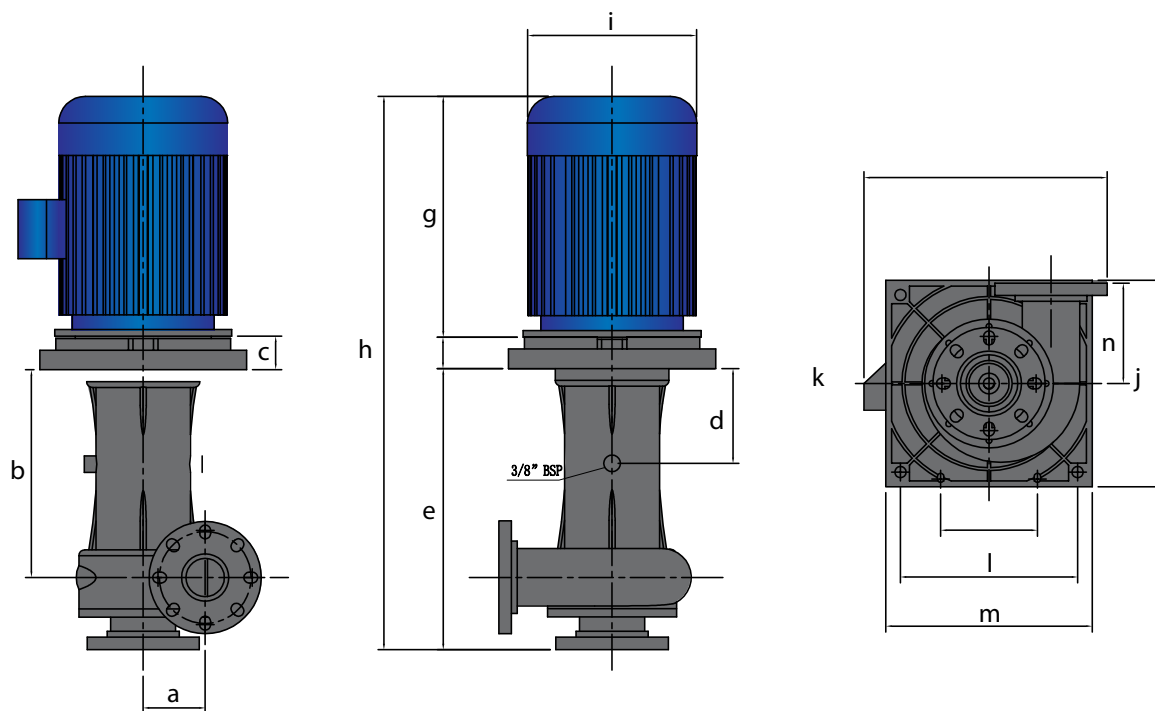
Model	a	b	c	d	e	f	g	h	i	j	k	l	m	n
EPV1	65	350	52	144	426	185	240	718	173	260	222	222	260	167
EPV2	65	350	52	144	426	185	285	763	195	260	222	222	260	167
EPV3	65	352	52	142	426.5	187	327	805.5	220	260	222	222	260	194
EPV4	65	353	52	142	422	185	400	874	260	350	300	300	350	200



Pump Curve	Model	Inlet (Flange)	Outlet (Flange)	Max Flow (l/min)	Max Head (m)	Power (kw)
1	EPVF1PPN	3"	3"	1300	23	5.5
2	EPVF2PPN	3"	3"	1500	28	7.5
3	EPVF3PPN	5"	5"	2866	32	17.5
4	EPVF4PPN	5"	5"	3000	40	18.75

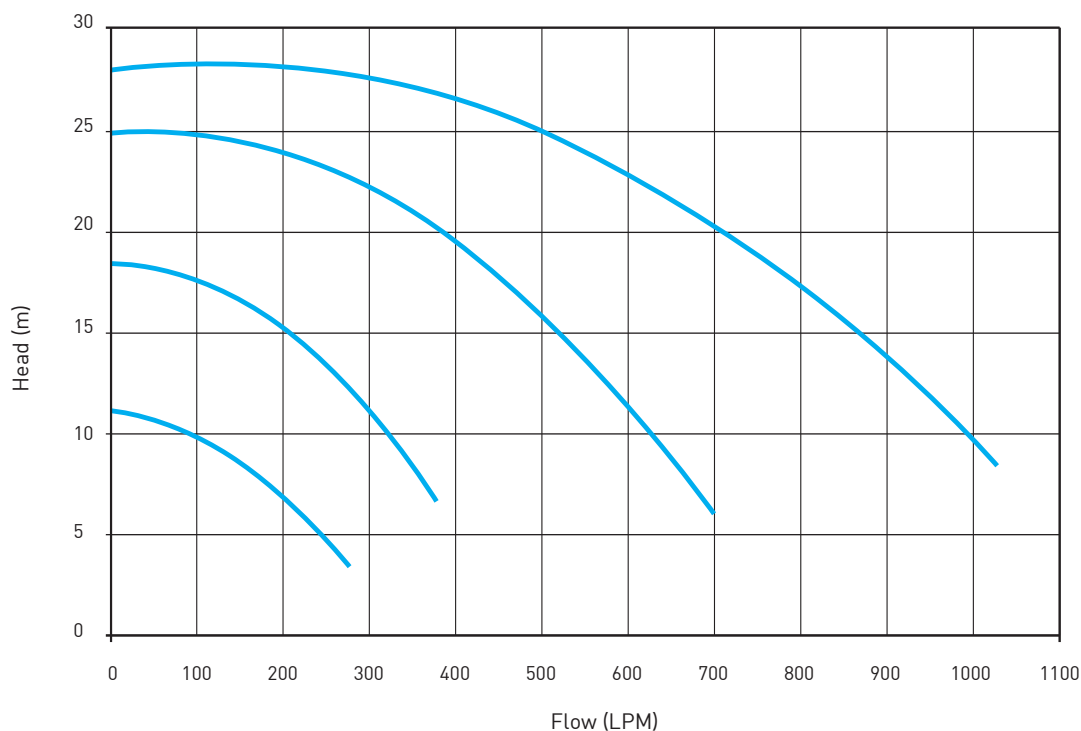


Item No	Description	Material	
		Polypropylene	PVDF
1	Electric Motor	Cast Iron	Cast Iron
2	Mounting Plate	Polypropylene	Polypropylene
3	Vapour Seal Seat with O-ring	PP/Nitrile	PVDF/Viton
4	Vapour Seal	Nitrile	Viton
5	Shaft Sleeve	Polypropylene	PVDF
6	Pump Body	Polypropylene	PVDF
7	Impeller Shaft	Polypropylene	PVDF
8	Impeller	Polypropylene	PVDF
9	Impeller Screw O-ring	Nitrile	Viton
10	Impeller Screw	Polypropylene	PVDF
11	O-ring	Nitrile	Viton
12	Front Casing	Polypropylene	PVDF



DIMENSIONS

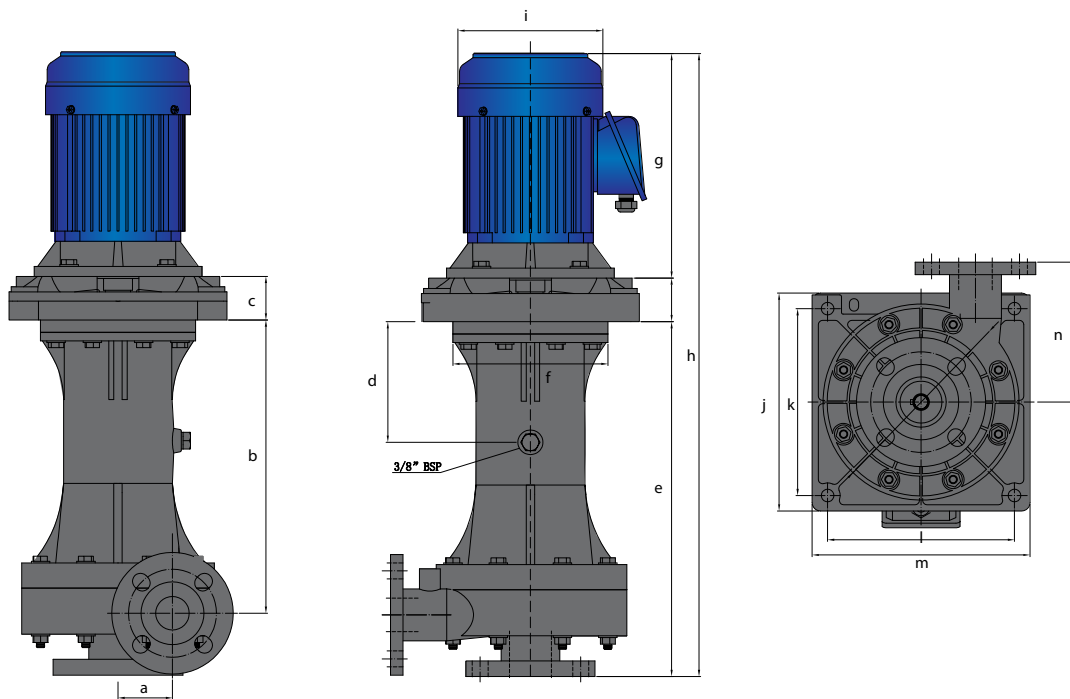
Model	a	b	c	d	e	f	g	h	i	j	k	l	m	n
EPVF1	105	347	52	165	486.5	188	400	938.5	286	350	300	300	350	179.5
EPVF2	105	347	52	165	486.5	188	400	938.5	286	350	300	300	350	179.5
EPVF3	125	509	52	142	361	187	498	1050	310	350	300	300	350	230
EPVF4	125	509	52	142	361	187	498	1050	310	350	300	300	350	230



Pump Curve	Model	Inlet (Flange)	Outlet (Flange)	Max Flow (l/min)	Max Head (m)	Power (kw)
1	EPV1SSV	2"	1-1/2"	285	11	0.75
2	EPV2SSV	2"	1-1/2"	385	19	2.2
3	EPV3SSV	2-1/2"	2"	600	25	3.7
4	EPV4SSV	3"	2-1/2"	1000	28	7.5



Item No	Description	Material
1	Electric Motor	Cast Iron
2	Mounting Plate	Polypropylene
3	Vapour Seal Seat with O-ring	PVDF/Viton
4	Vapour Seal	Viton
5	Shaft Sleeve	PVDF
6	Shaft O-ring	Viton
7	Pump Body	Stainless Steel
8	O-ring	Viton
9	Impeller	Stainless Steel
10	Impeller Screw	Stainless Steel
11	Front Casing	Stainless Steel



DIMENSIONS

Model	a	b	c	d	e	f	g	h	i	j	k	l	m	n
EPVSS1	65	350	52	144	426	185	240	718	173	260	222	222	260	167
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