



SINCE 1976

SHOWFOU CHEMICAL PUMP

PD (PD-F) PL (PL-F) Self-Priming Chemical Pump
PE (PE-F) PEB Dry Free Vertical Sealless Pump
CF Chemical Liquid Filter

修附電機



標檢局
ISO-9001/CNS12681



CF

PD

PE-F

PD • PD-F TYPE SELF-PRIMING CHEMICAL PUMPS

Tough Construction against High Corrosive and High Temperature Chemical Liquids by adopting self-cooling design **"TEFLON BELLOW SEAL"** .

PD Type (FRPP)



PD-F Type (PVDF)



Material:

Showfou provides FRPP and PVDF pump body to meet customer's requirement.

FRPP : Fiber Reinforced Polypropylene.

Operating temperature range	FRPP	0°C~90°C
	PVDF	-20°C~95°C

FEATURES

Special main shaft

The sus304 main shaft are covered with Teflon to resist high corrosive chemical liquids.



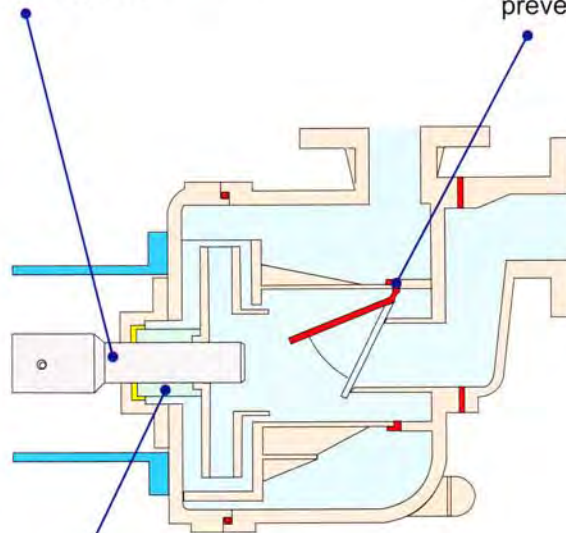
Teflon

Self-priming ability

Excellent self-priming ability can suck the liquid up to 6 meter, and the flap valve design can prevent liquid back flow to maintain the flow rate



flap valve



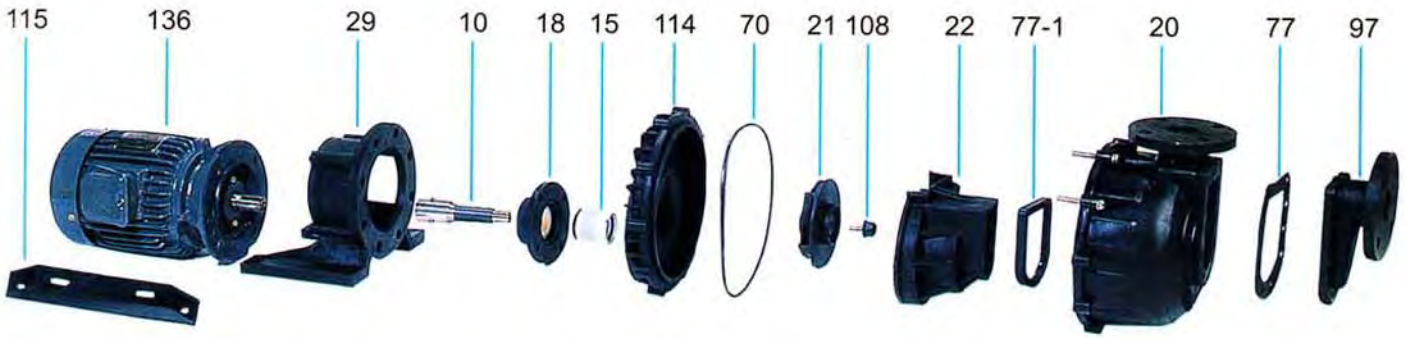
Teflon Bellow Seal

Adopting "Teflon Bellow Seal" and Superior anti-corrosive construction to correspond most of chemical liquids such as strong acid and alkali. and the "pump lower cover" adopting with self-cooling design to prevent the "Teflon below seal" from damage.



Teflon Bellow Seal

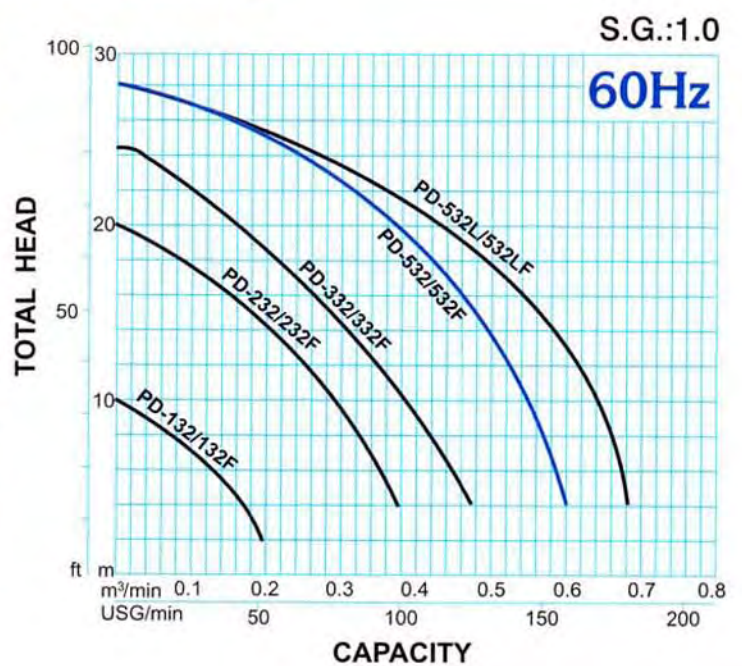
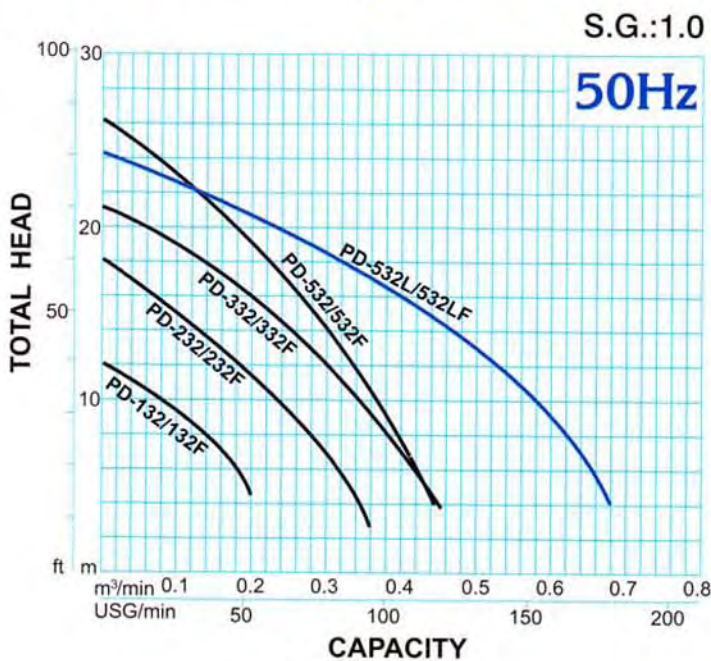




● PD · PD-F Type SPECIFICATIONS

Hz	Type		S.G.	Motor			Pump			Weight kg	Height mm	Pump Dia mm	
	FRPP	PVDF		Power	Phase	Volt	Bore size		Max. Head				Max. Flow
	PD	PD-F		KW(HP)	PH	V	Inlet inch(mm)	Outlet inch(mm)	m				m ³ /min
50	PD-132	PD-132F	1.0	0.75(1)	3	220~480	1 1/2"(40)	1 1/2"(40)	12	0.20	26	374	625
	PD-232	PD-232F	1.0	1.5(2)	3	220~480	1 1/2"(40)	1 1/2"(40)	18	0.36	34	374	704
	PD-332	PD-332F	1.0	2.2(3)	3	220~480	2"(50)	2"(50)	21	0.44	42	374	704
	PD-532	PD-532F	1.0	3.7(5)	3	220~480	2"(50)	2"(50)	26	0.44	56	420	780
	PD-532L	PD-532LF	1.0	3.7(5)	3	220~480	3"(80)	3"(80)	24	0.68	86	425	830
60	PD-132	PD-132F	1.0	0.75(1)	3	220~480	1 1/2"(40)	1 1/2"(40)	10	0.19	26	374	625
	PD-232	PD-232F	1.0	1.5(2)	3	220~480	1 1/2"(40)	1 1/2"(40)	20	0.38	34	374	704
	PD-332	PD-332F	1.0	2.2(3)	3	220~480	2"(50)	2"(50)	24	0.48	42	374	704
	PD-532	PD-532F	1.0	3.7(5)	3	220~480	2"(50)	2"(50)	28	0.60	56	420	780
	PD-532L	PD-532LF	1.0	3.7(5)	3	220~480	3"(80)	3"(80)	28	0.68	86	425	830

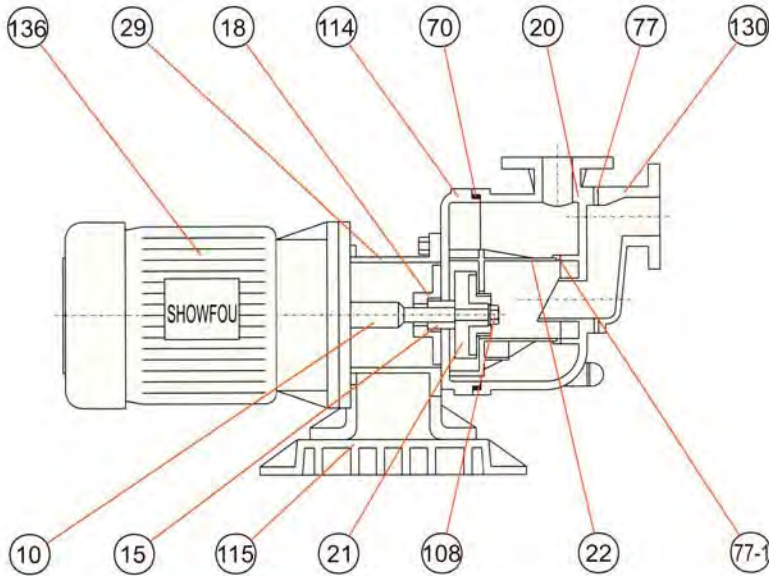
● PD · PD-F Type PERFORMANCE CURVE



STRUCTURE DIMENSIONS

● STRUCTURE

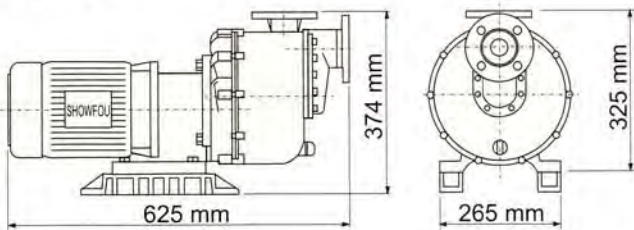
PD • PD-F Type



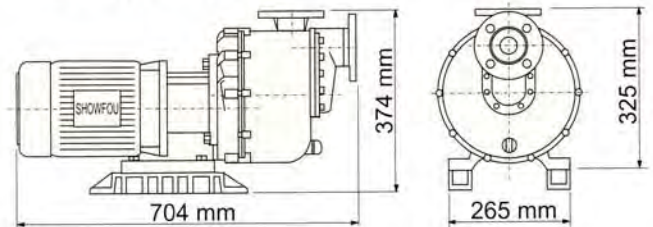
No.	Name	Material		Q'TY
		PD	PD-F	
10	Shaft	SUS304 + TEFLON		1
15	Mechanical seal	(TEFLON) Ceramic+Carbon	(TEFLON) SiC+SiC	1
18	Seal cover	FRPP	PVDF	1
20	Pump casing	FRPP	PVDF	1
21	Impeller	FRPP	PVDF	1
22	Suction cove	FRPP	PVDF	1
29	Pump bracket	FRPP(1HP,2HP,3HP) Cast iron(5HP)		1
70	O-Ring	EPDM	VITON	1
77	Packing	EPDM	VITON	1
77-1	Flap valve	EPDM	VITON	1
108	Nut	FRPP	PVDF	1
114	Pump lower cover	FRPP	PVDF	1
115	Frame	FRPP		2
136	Motor	Cast iron		1
130	Diffuser	FRPP	PVDF	1

● DIMENSIONS

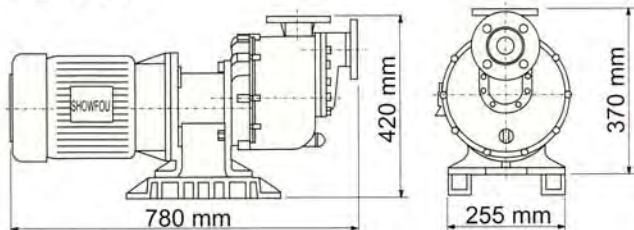
PD-132
PD-132F



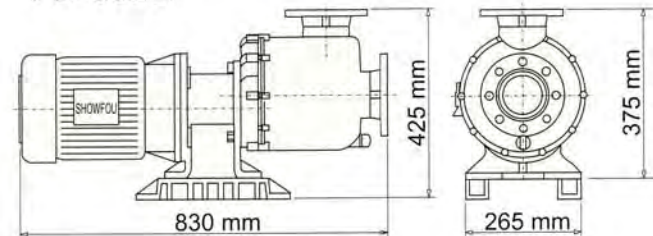
PD-232/332
PD-232F/332F



PD-532
PD-532F



PD-532L
PD-532LF



PD-532



PD-532L

PL • PL-F TYPE SELF-PRIMING CHEMICAL PUMPS

PL Type (FRPP)



PL-F Type (PVDF)

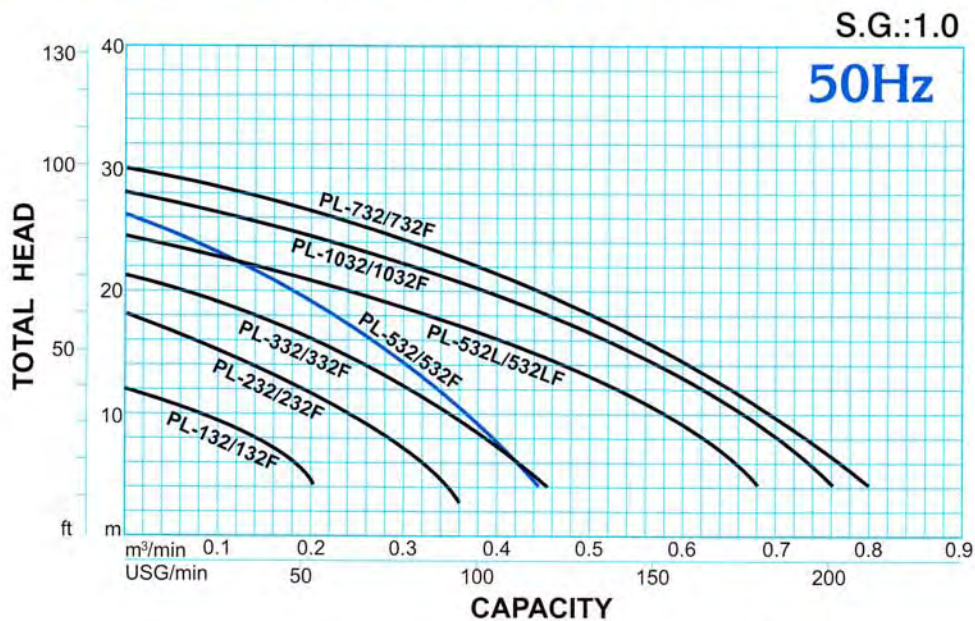


PL • PL-F Type SPECIFICATIONS (Without motor)

Hz	Type		Motor			Pump				※ Weight	Height	Pump Dia	
	FRPP	PVDF	S.G	Power	Phase	Volt	Bore size		Max. Head				Max. Flow
	PL	PL-F		KW(HP)	PH	V	Inlet inch(mm)	Outlet inch(mm)	m				m ³ /min
50	PL-132	PL-132F	1.0	0.75(1)	3	220~480	1 1/2"(40)	1 1/2"(40)	12	0.20	44	413	1140
	PL-232	PL-232F	1.0	1.5(2)	3	220~480	1 1/2"(40)	1 1/2"(40)	18	0.36	44	413	1140
	PL-332	PL-332F	1.0	2.2(3)	3	220~480	2"(50)	2"(50)	21	0.44	45	413	1140
	PL-532	PL-532F	1.0	3.7(5)	3	220~480	2"(50)	2"(50)	26	0.44	48	413	1140
	PL-532L	PL-532LF	1.0	3.7(5)	3	220~480	3"(80)	3"(80)	24	0.68	49	413	1140
	PL-732	PL-732F	1.0	5.5(7 1/2)	3	220~480	3"(80)	3"(80)	28	0.75	53	413	1140
	PL-1032	PL-1032F	1.0	7.5(10)	3	220~480	3"(80)	3"(80)	30	0.80	53	413	1140
60	PL-132	PL-132F	1.0	0.75(1)	3	220~480	1 1/2"(40)	1 1/2"(40)	10	0.19	44	413	1140
	PL-232	PL-232F	1.0	1.5(2)	3	220~480	1 1/2"(40)	1 1/2"(40)	20	0.38	44	413	1140
	PL-332	PL-332F	1.0	2.2(3)	3	220~480	2"(50)	2"(50)	24	0.48	45	413	1140
	PL-532	PL-532F	1.0	3.7(5)	3	220~480	2"(50)	2"(50)	28	0.6	48	413	1140
	PL-532L	PL-532LF	1.0	3.7(5)	3	220~480	3"(80)	3"(80)	28	0.68	49	413	1140
	PL-732	PL-732F	1.0	5.5(7 1/2)	3	220~480	3"(80)	3"(80)	35	0.73	53	413	1140
	PL-1032	PL-1032F	1.0	7.5(10)	3	220~480	3"(80)	3"(80)	40	0.92	53	413	1140

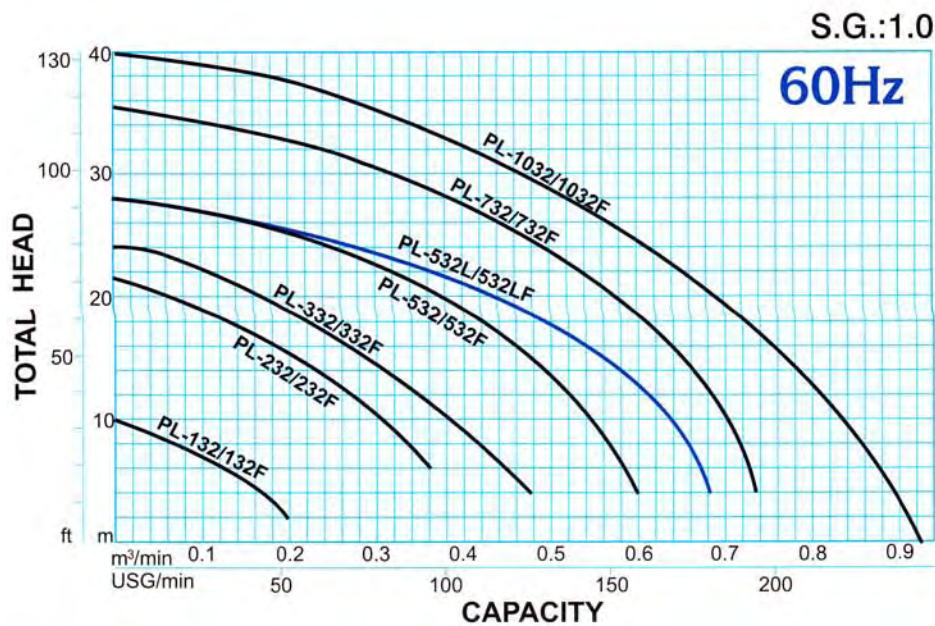
※The weight of motor are not included.

PL • PL-F Type PERFORMANCE CURVE



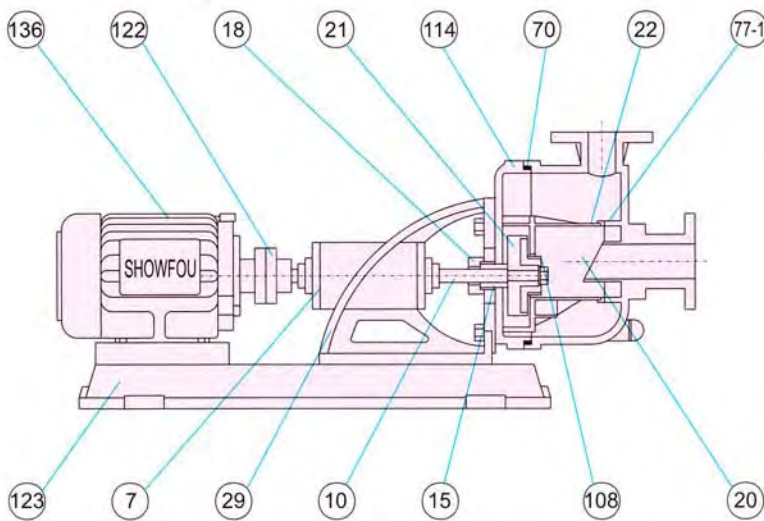
STRUCTURE DIMENSIONS

● PL • PL-F Type PERFORMANCE CURVE



● STRUCTURE

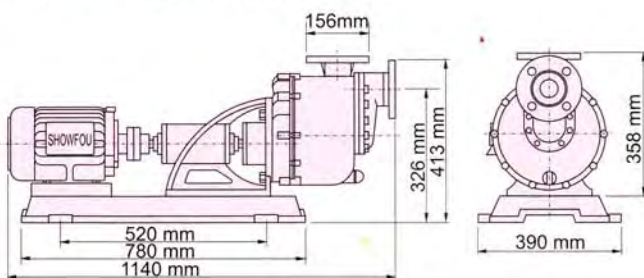
PL • PL-F Type



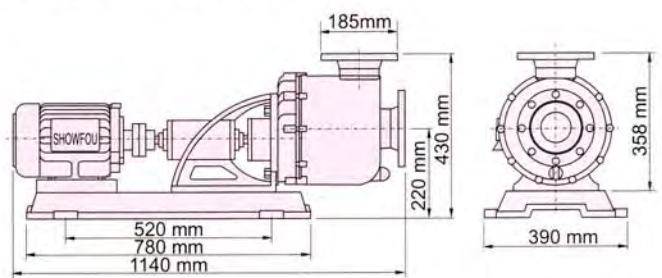
No.	Name	Material		Q'TY
		PL	PL-F	
7	Bearing			2
10	Shaft	SUS304 + TEFLON		1
15	Mechanical seal	(TEFLON) Ceramic+Carbon	(TEFLON) SiC+SiC	1
18	Seal cover	FRPP	PVDF	1
20	Pump casing	FRPP	PVDF	1
21	Impeller	FRPP	PVDF	1
22	Suction cover	FRPP	PVDF	1
29	Pump bracket	Cast iron		1
70	O-Ring	EPDM	VITON	1
77	Racking	EPDM	VITON	1
77-1	Flap valve	EPDM	VITON	1
108	Nut	FRPP	PVDF	1
114	Pump lower cover	FRPP	PVDF	1
122	Coupling	FC + Rubber		2
123	Base	Cast iron Casing		1
136	Motor	Cast iron Casing		1

● DIMENSIONS

PL-132/232/332/532
PL-132F/232F/332F/532F



PL-532L/732L/1032L
PL-532LF/732F/1032F

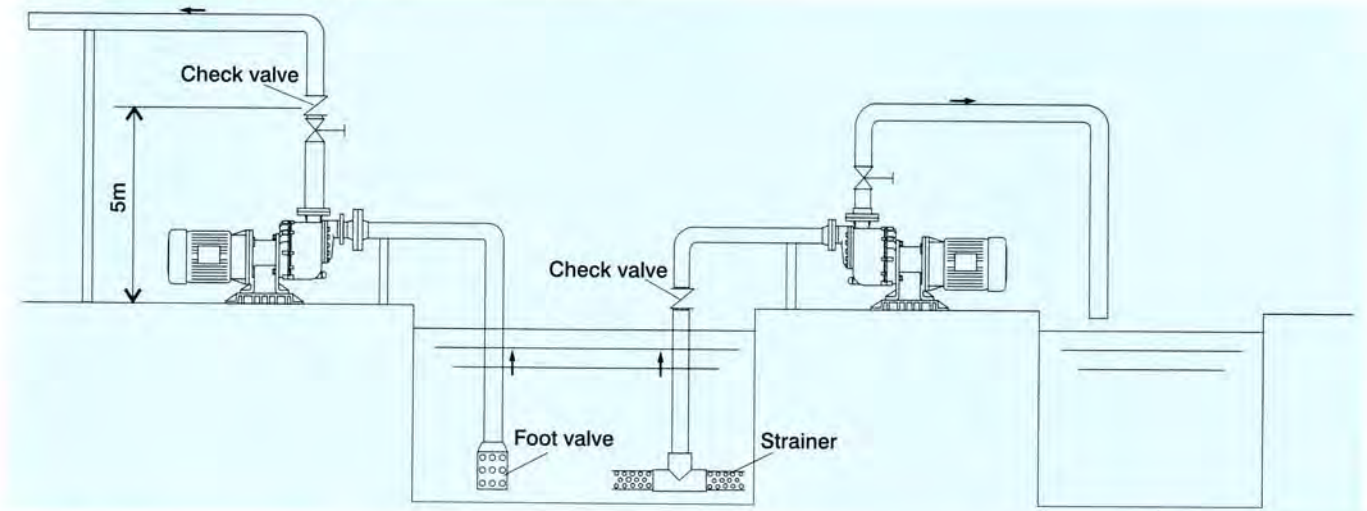


● APPLICATIONS

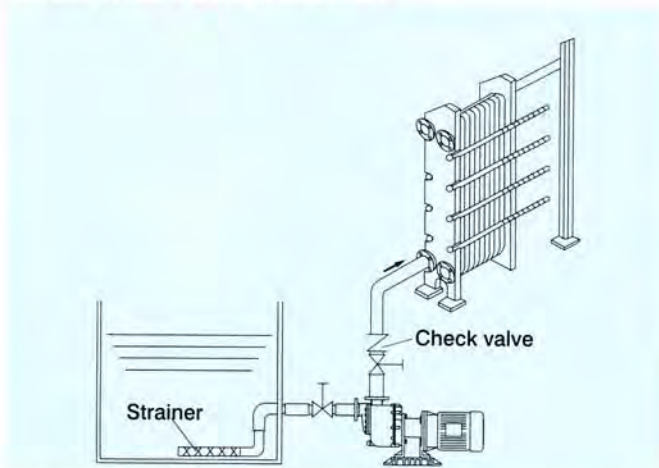
- Wasted and polluted water treatment.
- PCB electronic industry brick kiln industry.
- Paper industry, leather industry, dyeing and textile.
- Surface electric plated industry.
- Chemical engineering industry.
- Medical and pharmaceutical industry and food industry.

● INSTALLATION NOTICE

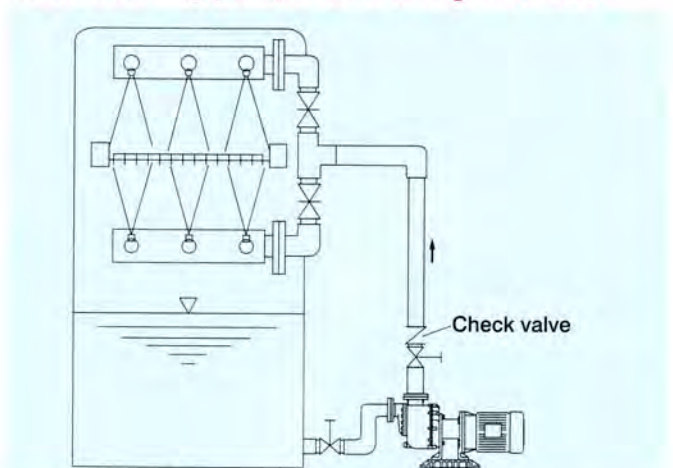
Transfer for tank to tank



Heat exchanger circulation



PCB washing pumps for etching machine



1. For the first installation, please fill the pump with the liquid to prevent the mechanical seal damage.
2. Lay down a strainer at the suction inlet of pipe to avoid incoming rubbish and foreign matter, and we also recommend you to use a foot valve at the suction inlet of pipe to get even better performance.
3. Place a check valve at discharge pipe line and air bypass under the check valve in order to avoid breakage by water hammer.
4. In case of high temperature liquid over 40°C, place flexible joints and bending in pipe line to avoid piping load to pump by pipe's expansion.
Avoid deformation of pump by over-tightening when using a flexible joint, a loose flange made of metal or an inner packing on the piping line.
5. Place each flange surface of pipe and pump in parallel and do not over-tightening by bolts.
6. Use resin pipe, avoid metal pipe as much as possible.

Do not run dry !

Pumps with New Sealless Structure Design and Adopting Unique Lip Seal Feature to give Pump Dry Running Ability

PE Type
(FRPP)



PE-F Type
(PVDF)



PEB Type
(FRPP)



Material

Showfou provide FRPP and PVDF pump body to meet customer's requirement.

FRPP : Fiber Reinforced Polypropylene.

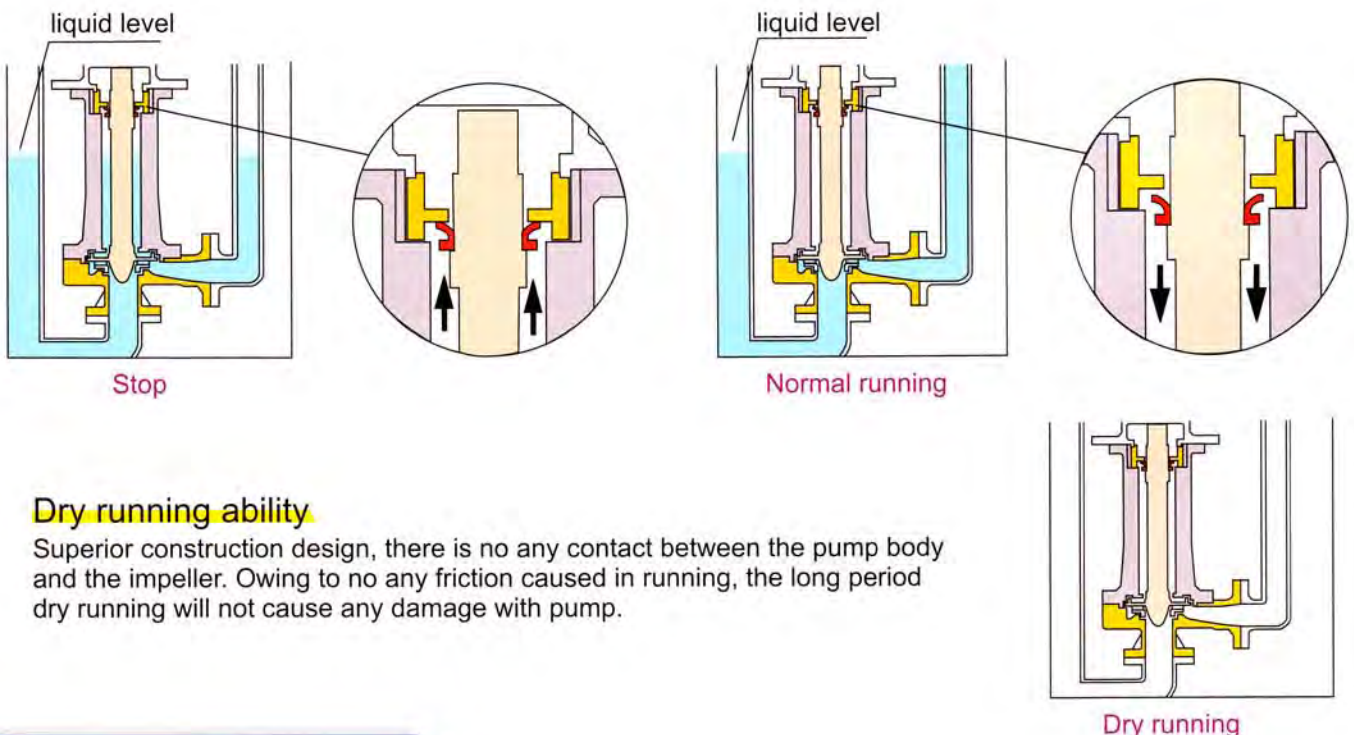
Operating temperature range	FRPP	0°C~90°C
	PVDF	-20°C~95°C

FEATURES

Sealless structure

The sealless principal of fluid in our Showfou vertical sealless pump is to utilize the pressure, viscosity, and friction of the fluid.

During running, the fluid flowing to shaft caused by inner pressure, but the specially designed two-layered impeller enables to seal up the fluid successfully and reduce the suction air to enter the pump; thus, the inner will keep high vacuum situation.



Dry running ability

Superior construction design, there is no any contact between the pump body and the impeller. Owing to no any friction caused in running, the long period dry running will not cause any damage with pump.

SPECIFICATIONS PERFORMANCE CURVE

Lip seal structure and PP sleeve

To prevent chemical gas entering to motor shaft, Our Showfou solution is to equip PEB type with a lip seal, so when the pump is in operation, the lip seal is forced to open by centrifugal force in order to stop the gas leakage. When stop, the lip seal will close up to seal up the chemical gas due to reactive force of its rubber. Moreover, an additional part of oil seal on motor will protect the shaft as well. However, for our PE type, the main shaft and motor are protected by the PP sleeve and oil seal, so the leaked gas will be perished immediately due to the special upper bracket design which can also solve the liquid overflow problem.



Lip seal (PEB Type)



PP sleeve (PE Type)

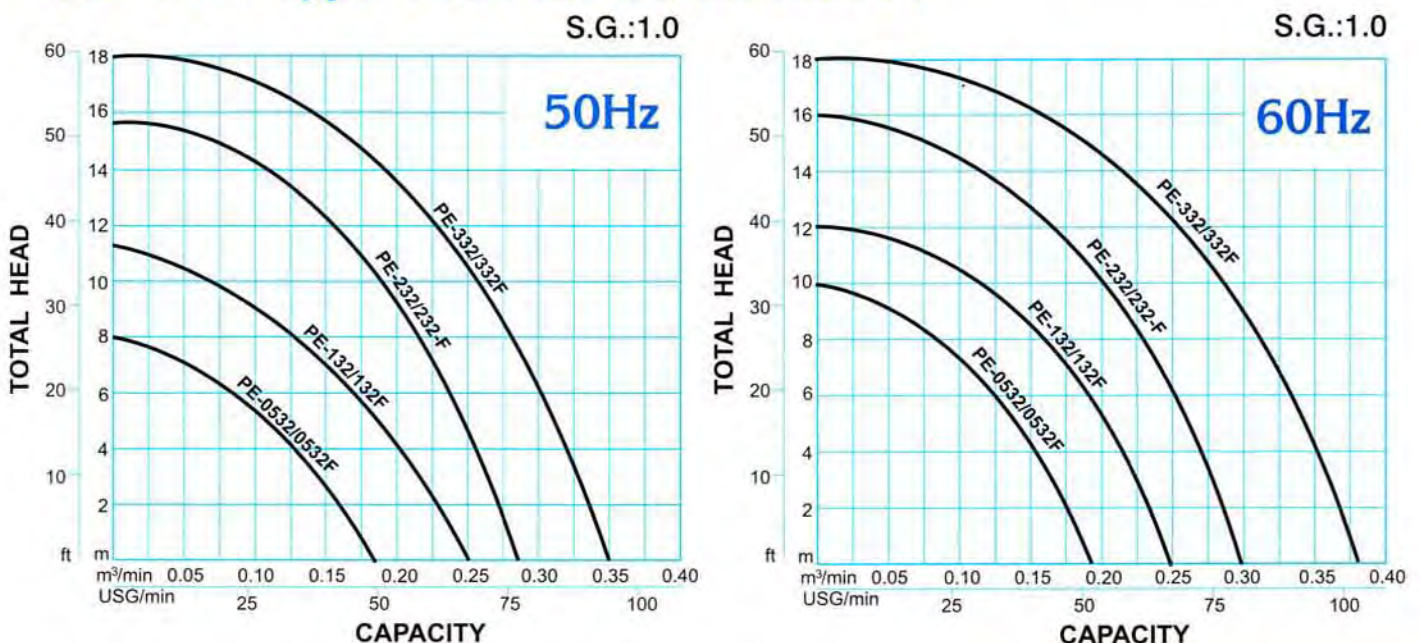


upper bracket (PE Type)

PE • PE-F Type SPECIFICATIONS

Hz	Type		S.G	Motor			Pump				Weight kg	Height mm	Pump Dia mm
	FRPP	PVDF		Power	Phase	Volt	Bore size		Max. Head	Max. Flow			
	PE	PE-F		KW(HP)	PH	V	Inlet inch(mm)	Outlet inch(mm)	m	m ³ /min			
50	PE-0532	PE-0532F	1.0	0.4(1/2)	3	220~480	2"(50)	1"(25)	7	0.18	19.4	536	221
	PE-132	PE-132F	1.0	0.75(1)	3	220~480	2"(50)	1 1/2"(40)	10	0.25	20	530	221
	PE-232	PE-232F	1.0	1.5(2)	3	220~480	2"(50)	1 1/2"(40)	14	0.28	23	610	221
	PE-332	PE-332F	1.0	2.2(3)	3	220~480	2"(50)	1 1/2"(40)	16	0.35	35	610	221
60	PE-0532	PE-0532F	1.0	0.4(1/2)	3	220~480	2"(50)	1"(25)	10	0.19	19.4	536	221
	PE-132	PE-132F	1.0	0.75(1)	3	220~480	2"(50)	1 1/2"(40)	12	0.25	20	530	221
	PE-232	PE-232F	1.0	1.5(2)	3	220~480	2"(50)	1 1/2"(40)	16	0.30	23	610	221
	PE-332	PE-332F	1.0	2.2(3)	3	220~480	2"(50)	1 1/2"(40)	18	0.38	35	610	221

PE • PE-F Type PERFORMANCE CURVE

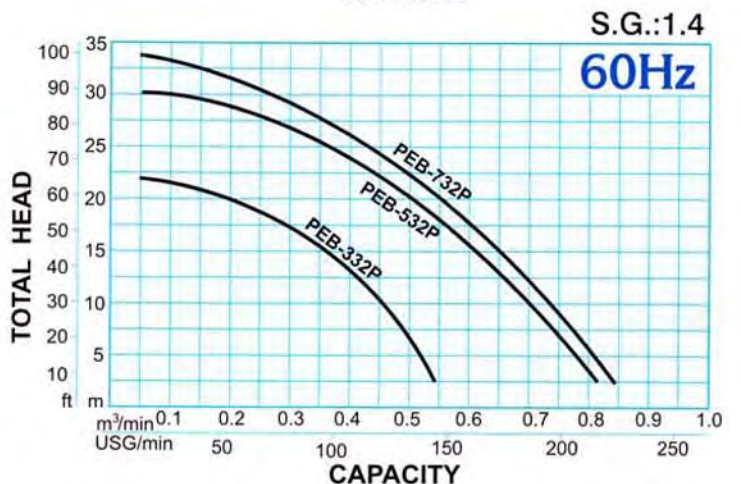
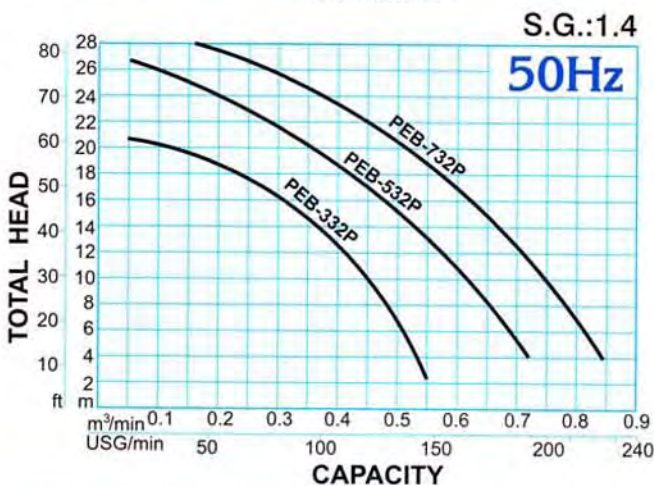
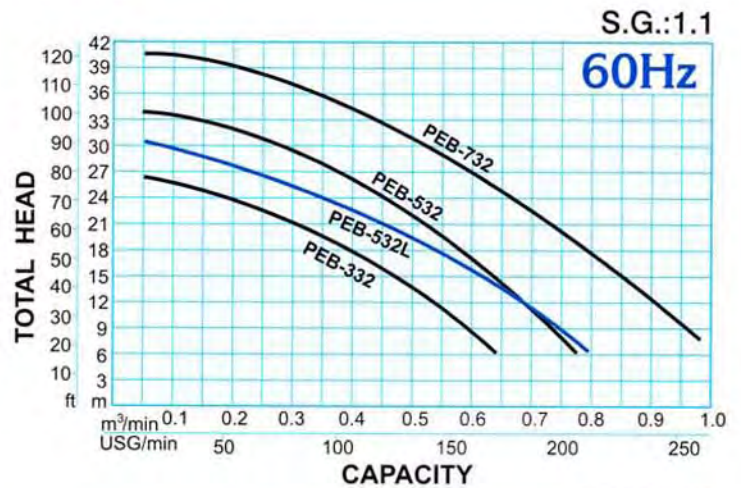
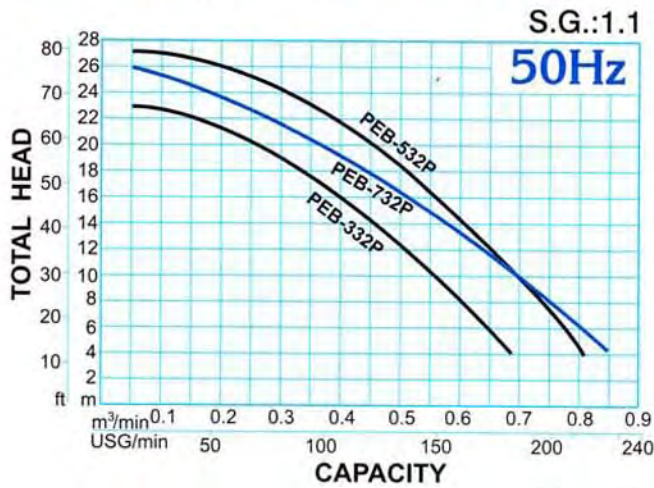


SPECIFICATIONS PERFORMANCE CURVE

PEB Type SPECIFICATIONS

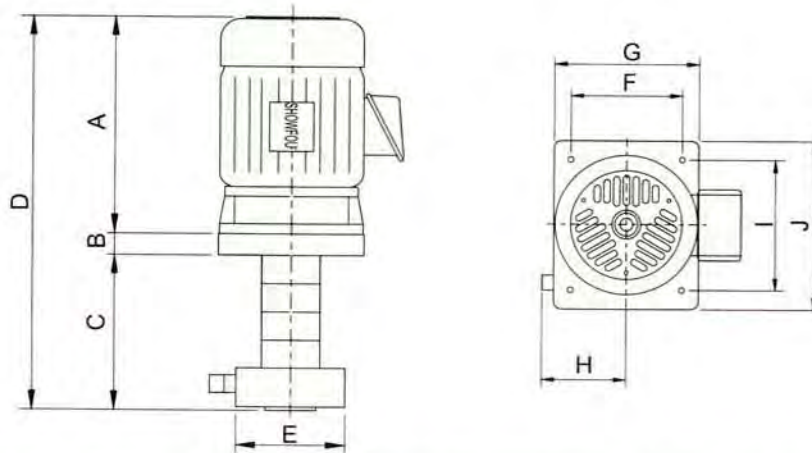
Hz	Type	S.G	Motor			Pump				Weight kg	Height mm	Pump Dia mm
	FRPP		Power	Phase	Volt	Bore size		Max. Head	Max. Flow			
	PEB		KW(HP)	PH	V	Inlet inch(mm)	Outlet inch(mm)	m	m ³ /min			
50	PEB-332	1.1	2.2(3)	3	220~480	2"(50)	1 1/2"(40)	23	0.70	41	762	340
	PEB-532	1.1	3.7(5)	3	220~480	2 1/2"(65)	2"(50)	27	0.80	55	811	340
	PEB-532L	1.1	3.7(5)	3	220~480	3"(80)	3"(80)	26	0.85	55	811	340
	PEB-332P	1.4	2.2(3)	3	220~480	2 1/2"(65)	2"(50)	21	0.55	41	762	340
	PEB-532P	1.4	3.7(5)	3	220~480	3"(80)	3"(80)	27	0.71	55	811	340
	PEB-732P	1.4	5.5(7 1/2)	3	220~480	3"(80)	3"(80)	28	0.84	95	825	340
60	PEB-332	1.1	2.2(3)	3	220~480	2"(50)	1 1/2"(40)	26	0.64	41	762	340
	PEB-532	1.1	3.7(5)	3	220~480	2 1/2"(65)	2"(50)	33	0.76	55	811	340
	PEB-532L	1.1	3.7(5)	3	220~480	3"(80)	3"(80)	30	0.80	55	811	340
	PEB-732	1.1	5.5(7 1/2)	3	220~480	3"(80)	3"(80)	40	1.00	95	825	340
	PEB-332P	1.4	2.2(3)	3	220~480	2 1/2"(65)	2"(50)	22	0.54	41	762	340
	PEB-532P	1.4	3.7(5)	3	220~480	3"(80)	3"(80)	30	0.80	55	811	340
	PEB-732P	1.4	5.5(7 1/2)	3	220~480	3"(80)	3"(80)	33	0.84	95	825	340

PEB Type PERFORMANCE CURVE



DIMENSIONS

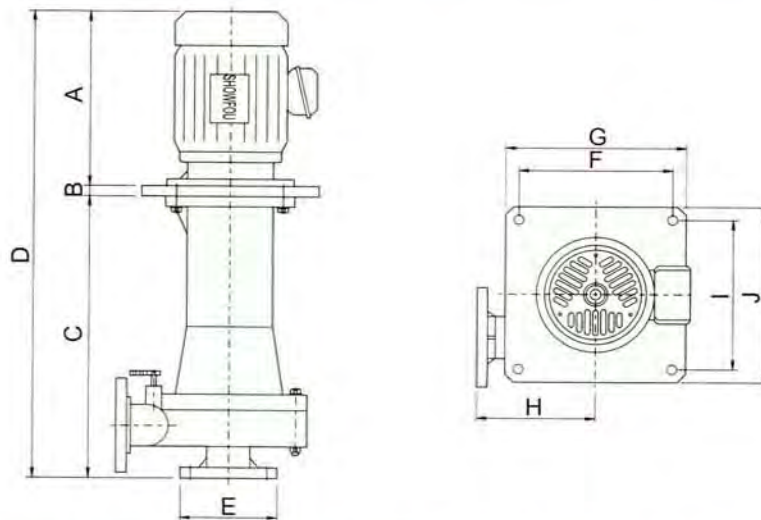
PE · PE-F Type



UNIT : mm

Type		Bore size		A	B	C	D	E	F	G	H	I	J
FRPP	PVDF	Inlet	Outlet										
PE-0532	PE-0532F	50	25	240	30	266	536	143	147	195	118	179	233
PE-132	PE-132F	50	40	234	30	266	530	143	147	195	118	179	233
PE-232	PE-232F	50	40	313.5	30	266	609.5	143	147	195	118	179	233
PE-332	PE-332F	50	40	313.5	30	266	609.5	143	147	195	118	179	233

PEB Type

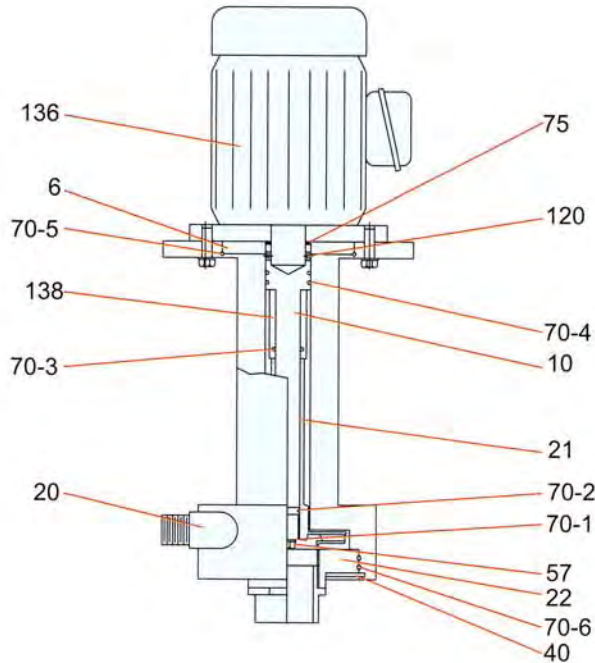


UNIT : mm

Type		Bore size		A	B	C	D	E	F	G	H	I	J
FRPP		Inlet	Outlet										
PEB-332		50	40	313	23	426	762	340	222	268	200	222	268
PEB-532		65	50	362	23	426	811	340	222	268	200	222	268
PEB-532L		80	80	362	23	426	811	340	222	268	200	222	268
PEB-732		80	80	376	23	426	825	340	300	350	200	300	350
PEB-332P		80	50	362	23	426	762	340	222	268	200	222	268
PEB-532P		80	80	362	23	426	811	340	222	268	200	222	268
PEB-732P		80	80	376	23	426	825	340	300	350	200	300	350

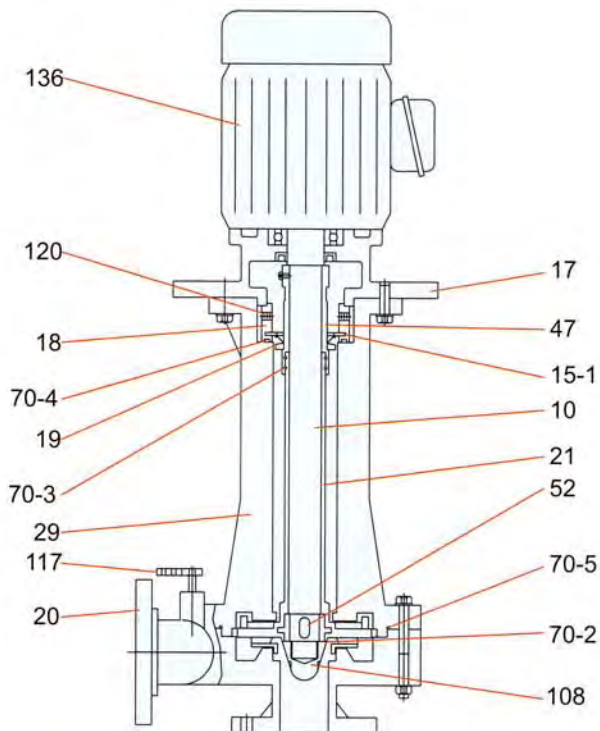
FEATURES

PE · PE-F Type



No.	Name	Material		Q'TY
		PE	PE-F	
6	Upper Bracket	FRPP	PVDF	1
10	Shaft	SUS 304		1
20	Pump Casing	FRPP	PVDF	1
21	Impeller	FRPP	PVDF	1
22	Suction Cove	FRPP	PVDF	1
40	Spring	FRPP	PVDF	1
57	Bolt	FRPP	PVDF	1
70-1	O-ring	EPDM	VITON	1
70-2	O-ring	EPDM	VITON	1
70-3	O-ring	EPDM	VITON	1
70-4	O-ring	EPDM	VITON	2
70-5	O-ring	EPDM	VITON	1
70-6	O-ring	EPDM	VITON	2
75	Shaft Rubber	EPDM	VITON	1
120	Bolt	SUS 304		1
136	Motor	Cast iron casing		1
138	Sleeve	PP	PP	1

PEB Type



No.	Name	Material	Q'TY
		PEB	
10	Shaft	SUS 304	1
15-1	Seal case ring	Ceramic	1
17	Motor lower cover	FRPP (3HP, 5HP) Cast iron (7 1/2HP)	1
18	Seal cover	FRPP	1
19	Vapor seal	VITON	1
20	Pump casing	FRPP	1
21	Impeller	FRPP	1
29	Pump Bracket	FRPP	1
47	Band-cable-fixed	FRPP	1
52	Key	SUS 304	1
57-2	Bolt	SUS 304	8
57-3	Bolt	SUS 304	8
67	Nut	SUS 304	8
70-2	O-ring	VITON	1
70-3	O-ring	VITON	2
70-4	O-ring	VITON	1
70-5	O-ring	VITON	1
77	Packing	VITON	1
108	Nut	FRPP	1
117	Air valve	FRPP	1
120	Bolt	SUS 304	2
136	Motor	Cast iron casing	1

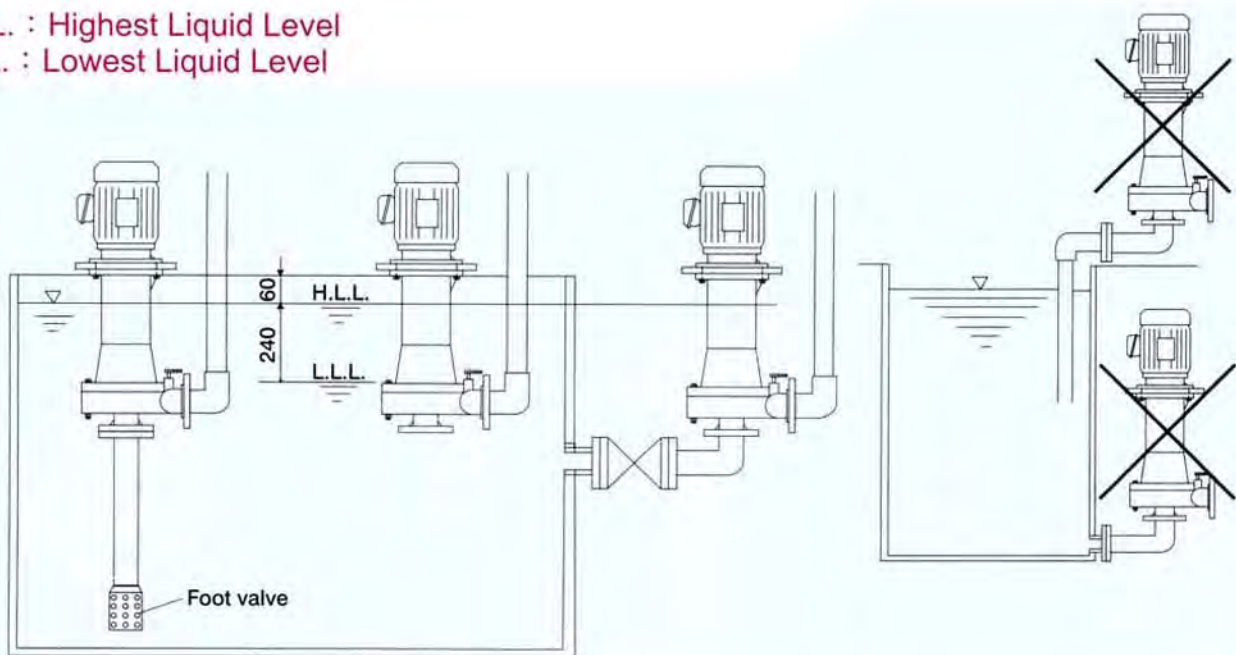
APPLICATIONS

- Transferring and circulating for plating solvents of filter.
- Heat exchanger circulation.
- Press and reaction tank transfer.
- Reaction mixing tank circulation.
- Nickel plating liquid.
- Transfer for tank to tank.
- For etching spray pump.
- Out of tank use for Filter.
- High temperature and chemical liquid with particles can be used limitedly, such as : chemical cuprem, potassium manganate, plating gold liquid and non-electrolytic-nickel plating solvents etc..

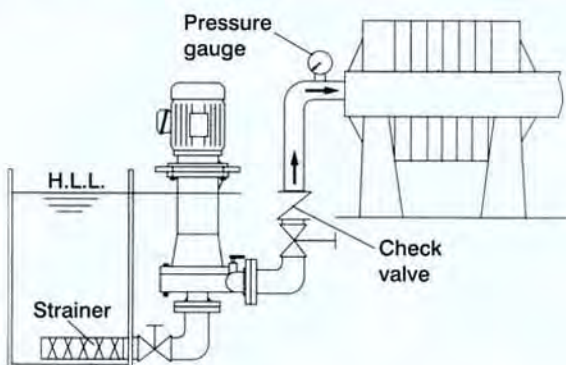
INSTALLATION NOTICE

H.L.L. : Highest Liquid Level

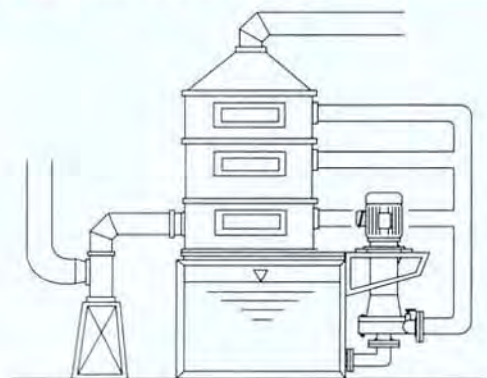
L.L.L. : Lowest Liquid Level



Transferring pumps for reactor and filtering press



Chemical waste gas cleaning tower



1. When starting, The liquid level must above L.L.L.
Please notice the liquid level do not over H.L.L.
2. To use PEB pump inside the tank, please use Titanium, PPS or HTPVC bolts and nuts for the pump body.
3. Lay down a strainer at the suction inlet of pipe to avoid incoming rubbish and foreign matter.
Place a check valve at discharge pipe line and air bypass pipe under the check valve in order to avoid breakage by water hammer.

They can run dry !

Chemical liquid filter

Material : PP (Polypropylene)



Micro range : 0.5,1.5,10,20,50,100 μ
Operating range : 15° C~80° C

FEATURES

1. All PP filter casing are made by plastic injection molding machine, so they have rugged and durable construction.
2. Superior construction to correspond strong acid and alkali liquid with high temperature or high pressure.
3. The specification of main parts are standardized, so they are easily maintained.
4. Standard accessories : motor protecting cover and circuit overload relay.
5. Equipped with pressure switch for using filter in safety condition.
6. When adding "activated charcoal", the filter self-backflow equipment can help to balance surface pressure of filter core.



Filter core



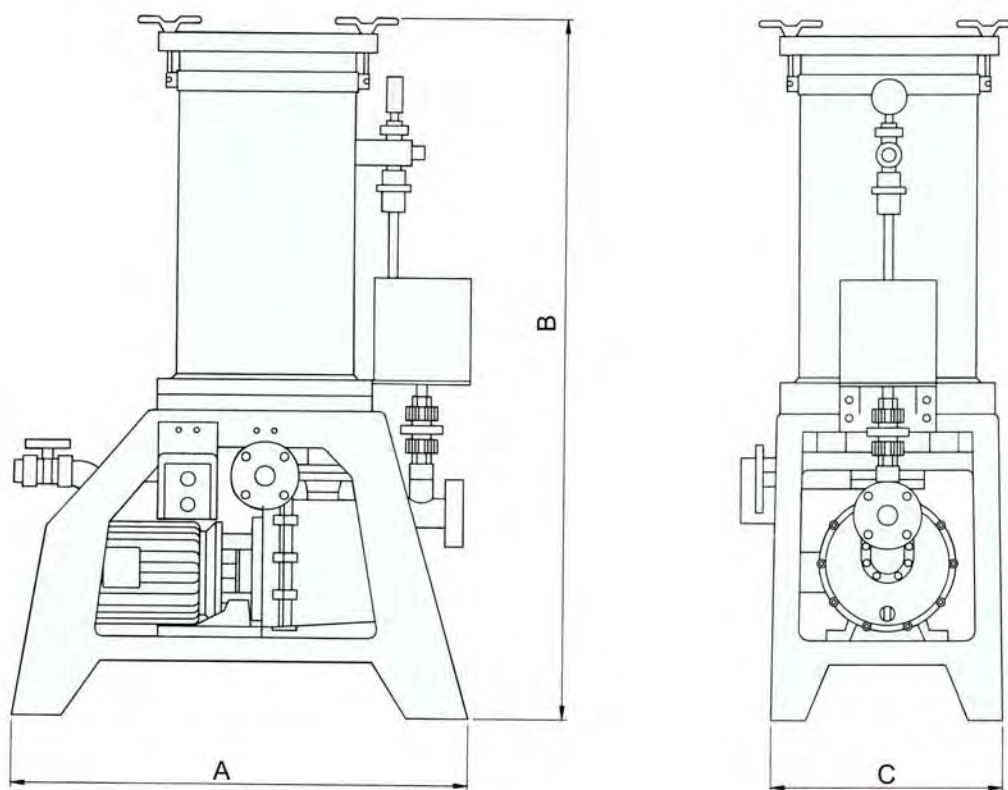
Packing

SPECIFICATIONS DIMENSIONS

● SPECIFICATIONS

Type	Flow rate	Filter				Motor			Weight	Dimensions		
		Cartridge NO.	Surface Area	Max. Pressure	Bore size	Power	Phase	Voltage		A	B	C
	l/min		m ²	PSI	inch(mm)	KW(HP)	PH	V	kg	mm	mm	mm
CF-80	80	4 x 20"	1	16	1"(25)	0.25(1/3)	3	220~480	35	445	1150	335
CF-180	180	10 x 20"	2	21	1 1/2"(40)	0.75(1)	3	220~480	85	675	1437	445
CF-220	220	15 x 20"	3	32	1 1/2"(40)	1.5(2)	3	220~480	105	900	1460	650
CF-330	330	19 x 20"	4.5	37	2"(50)	2.2(3)	3	220~480	126	900	1460	650

● DIMENSIONS





KHQ
SCS13(#304)



SSQ
SCS13(#304)



SQ SCS13(#304)



PL-132/232/332/532



CVQ SCS13(#304)
SCS14(#316)

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All specifications subject to change without notice.