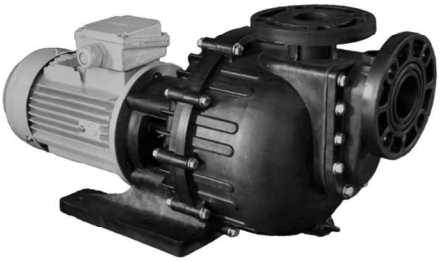
APEC-SUN

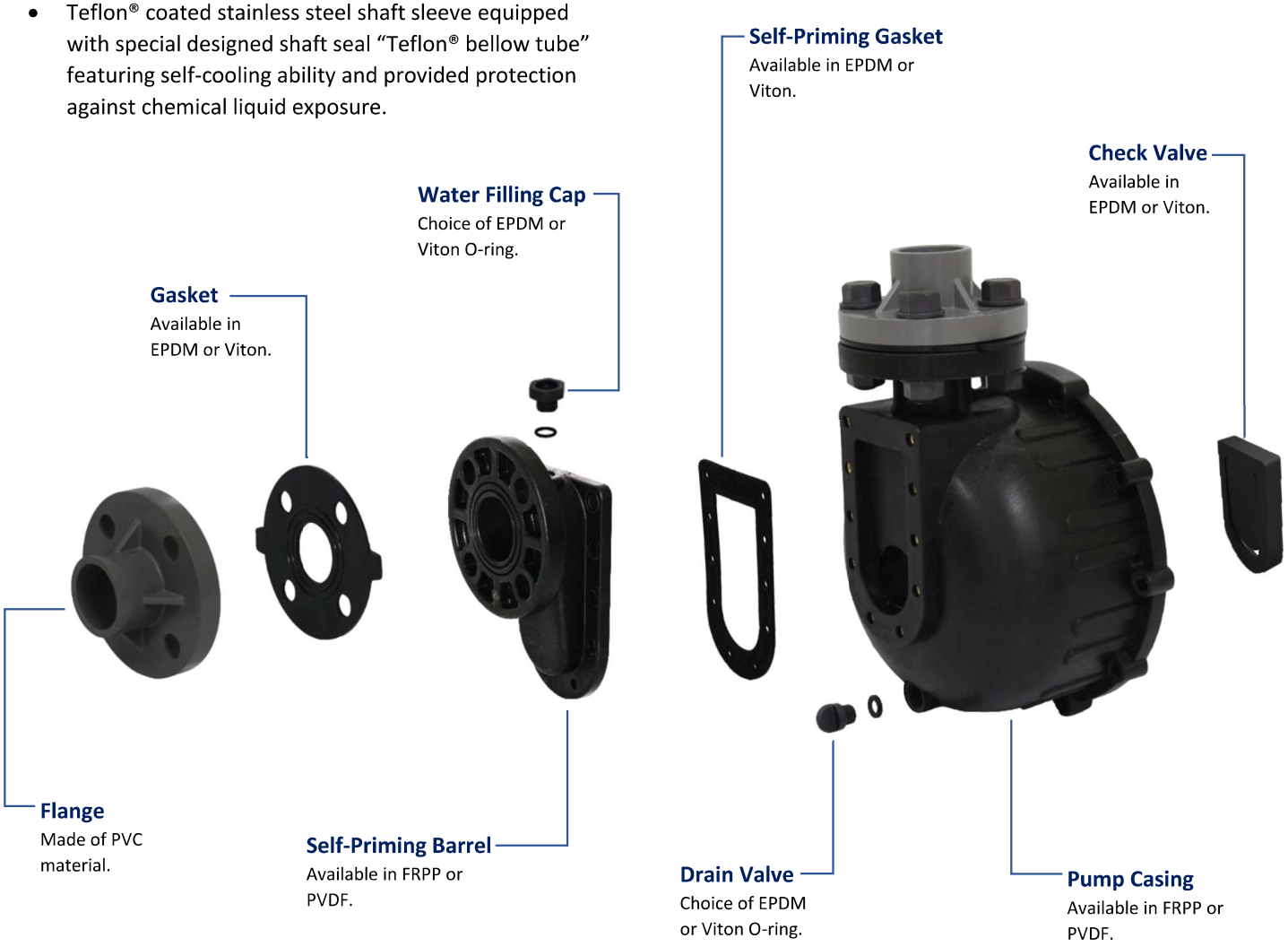
Acid/Alkaline-Resist Pump



Horizontal Self-Priming Acid/Alkaline-Resist Pump

Features

- Self-Priming designed with built-in swing check valve for prevents liquid back-flow into the pump.
- Pump casing is available in FRPP & PVDF material for strong resistance to corrosion, acid and alkaline.
- Maximum working temperature:
  FRPP: 65 °C PVDF: 90 °C
- Teflon® coated stainless steel shaft sleeve equipped with special designed shaft seal “Teflon® bellow tube” featuring self-cooling ability and provided protection against chemical liquid exposure.



Applications

- Water treatment.
- Chemical or water recirculation.
- Plating solutions.

Bellow Tube
Shaft Seal
Teflon® construction with Silicon rotation ring.

Rear Cover
Available in FRPP or PVDF material with choice of EPDM or Viton O-ring.

Motor
Shaft sleeve designed to accommodate with Flange mounted type motor.

Impeller
Available in FRPP or PVDF.

Base Frame
Made of cast iron (FC).

Impeller Nut
Available in FRPP or PVDF with SUS304 threaded.

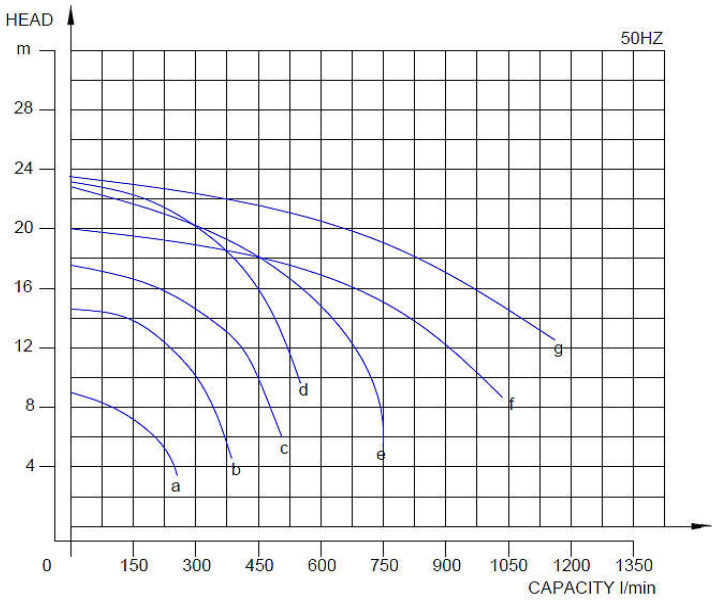
Shaft Sleeve
Made of Stainless Steel (SUS304) coated with Teflon®.

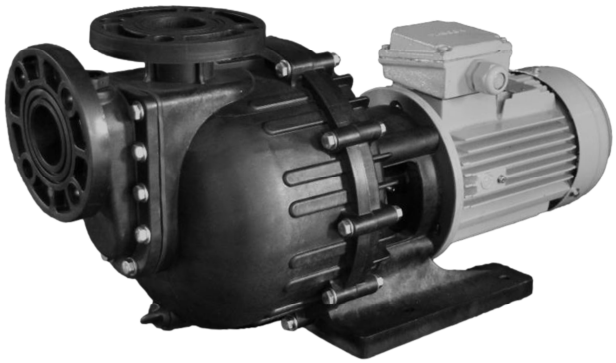
Rear Seal
Available in FRPP or PVDF with Silicon stationary ring.

Check Cover
Available in FRPP or PVDF.

Base
Made of FRPP material.

Performance Curve



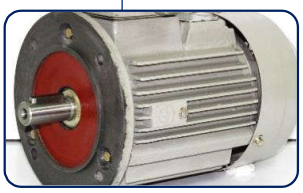


Code Description

FD	40	02	2	E	A	L	C	C	S
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.

1. **Pump Casing**
   - **FD**-FRPP
   - **FDP**-PVDF

2. **Suct.-Dis. Dia.**
   - **40**-1.5”
   - **50**-2”
   - **75**-3”



3. **Power**
   - **01**-3 Ø 1 HP
   - **02**-3 Ø 2 HP
   - **03**-3 Ø 3 HP
   - **05**-3 Ø 5 HP
   - **07**-3 Ø 7.5 HP
   - **10**-3 Ø 10 HP

4. **Pole**
   - **2**-2P

5. **Rubber Material**
   - **E**-EPDM
   - **V**-VITON

6. **Check Valve**
   - **A**-With Check Valve

7. **Head**
   - **L**-Low Head
   - **H**-High Head

8. **Stationary Ring**
   - **C**-Silicon(R)*
   - **S**-Silicon(S)*

9. **Rotation Ring**
   - **C**-Carbon
   - **S**-Silicon(S)*

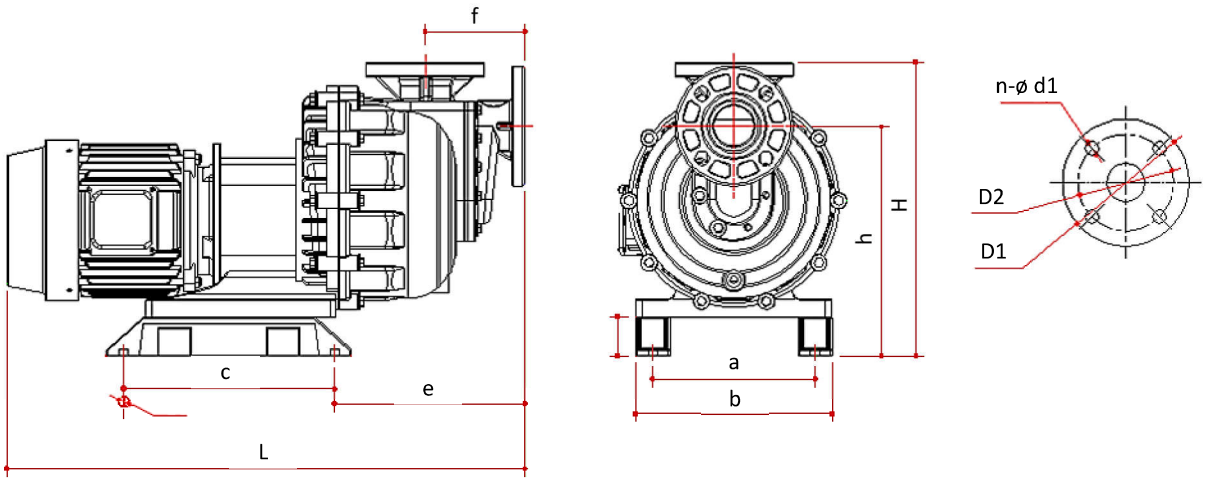
10. **Spring**
    - **S**-SUS316

Specification Table

Model	Curve No.	Max. Head (m)	Max. Capacity (l/min)	Suct./Dis. Diameter (inch)	Power			Weight (kg)
					Phase	Pole	HP	
Frequency: 50 Hz								
FD-40012	a	9	266	1.5” / 1.5”	3	2	1	26
FD-40022	b	14.5	383	1.5” / 1.5”	3	2	2	33
FD-50032	c	17.5	500	2” / 2”	3	2	3	42
FD-50052	d	23	533	2” / 2”	3	2	5	68
FD-75052	e	23	750	3” / 3”	3	2	5	70
FD-75072	f	20	1033	3” / 3”	3	2	7.5	120
FD-75102	g	23.5	1133	3” / 3”	3	2	10	140

***Silicon(R)** = Recrystallized Silicon Carbide ***Silicon(S)** = Pressureless Sintering Silicon Carbide

Dimension



Model	L	H	a	b	c	e	f	h	i	D1	D2	n-ø d1
FD-40012	656	370	208	253	275	239	130	298	50	140	105	4-ø 19
FD-40022	665	380	208	253	275	269	130	298	50	155	120	4-ø 19
FD-50032	665	380	208	253	275	269	130	298	50	155	120	4-ø 19
FD-50052	790	380	208	253	275	269	130	298	50	155	120	4-ø 19
FD-75052	793	404	216	261	275	300	112	216	50	188	150	8-ø 20
FD-75072	859	414	340	370	181	389	112	226	25	188	150	8-ø 20
FD-75102	859	414	340	370	181	389	112	226	25	188	150	8-ø 20

Vertical Acid/Alkaline-Resist Pump

Features

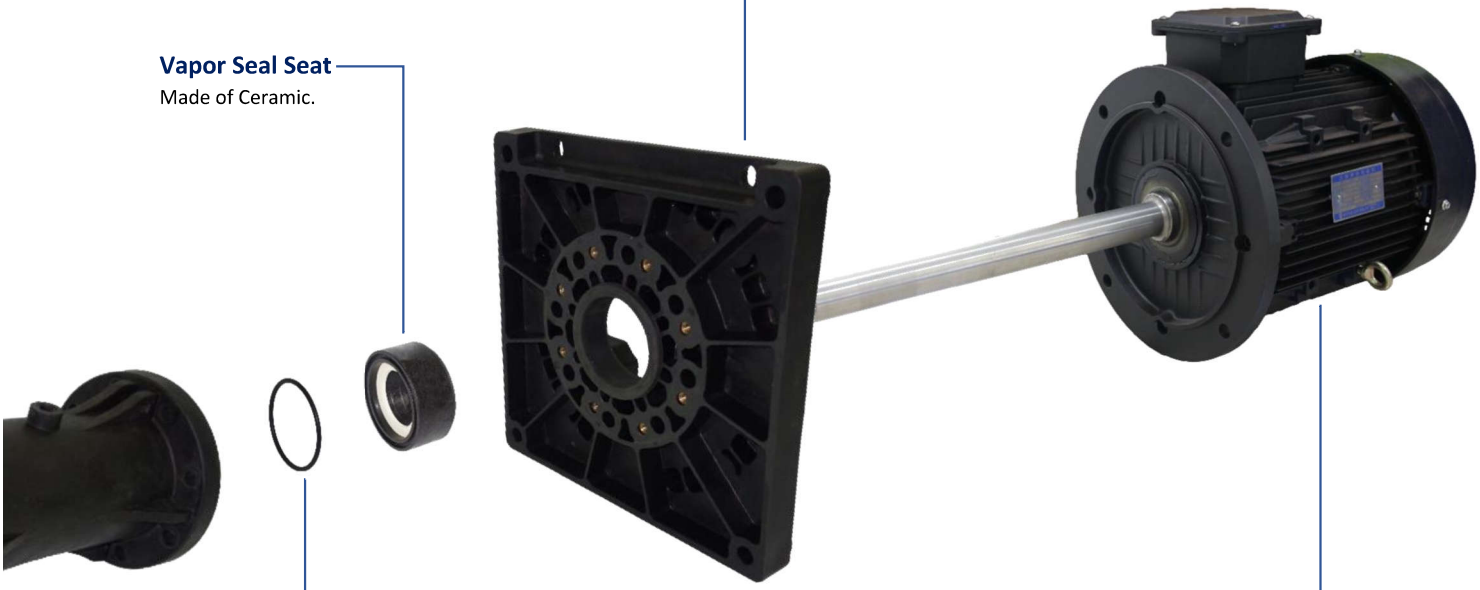
- Vertical designed mold injection pump casing, available in FRPP material for acid, alkaline and corrosion resistant.
- Maximum working temperature: FRPP: 65 °C
- Equipped with dry shaft vapor seal type to provide friction free during operation and allows the pump to dry running without damaging the seal, should a malfunction occur.
- Special designed high efficiency impeller with long shaft to provide balance and smooth during operation.

Applications

- Water treatment.
- Chemical or water recirculation.
- Plating solutions.
- Heat exchanger

Motor Spacer
Available in FRPP.

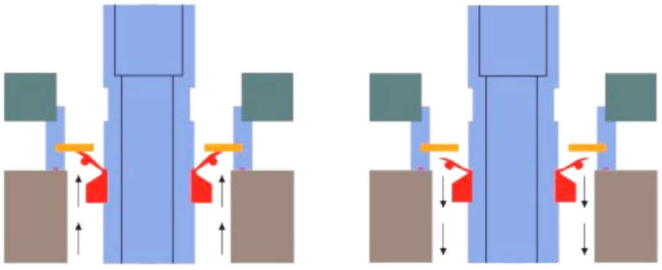
Vapor Seal Seat
Made of Ceramic.



Vapor Seal
Seat O-ring
Available in EPDM or Viton.

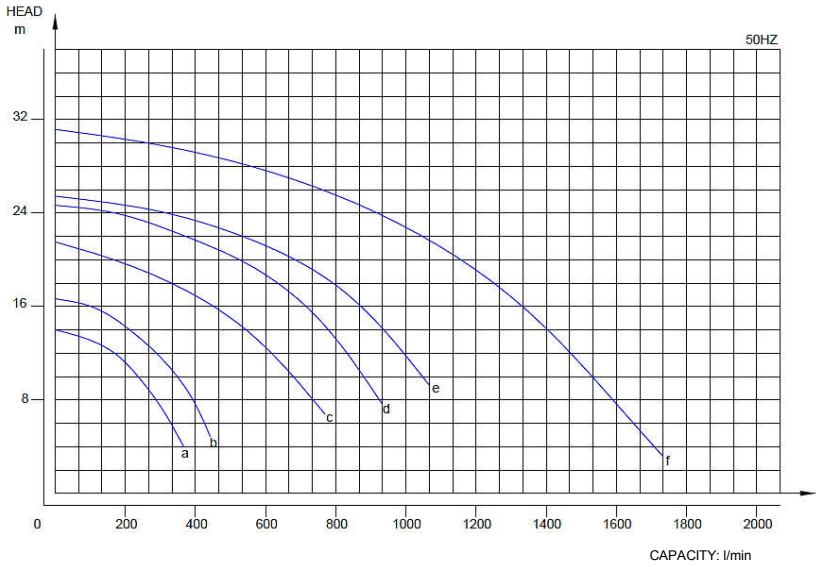
Motor
Long shaft flange mounted motor design specifically for vertical chemical pump to provide balance and smooth during operation.

Vapor Seal Features



Stop Running

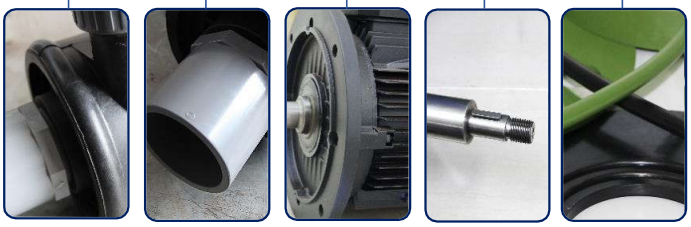
Performance Curve



Code Description

VDS Series

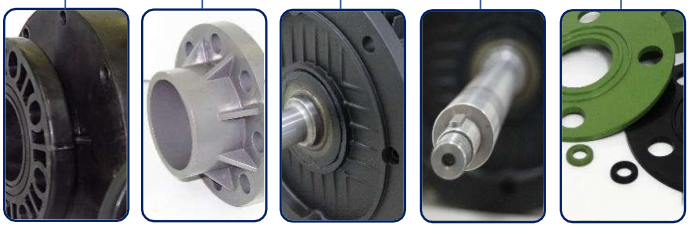
VDS	50	02	2	E
1	2	3	4	5



1. Pump Casing
   - VDS-FRPP
2. Suct Dia.
   - 50-2”
3. Power
   - 02-3 Ø 2 HP
   - 03-3 Ø 3 HP
4. Pole
   - 2-2P
5. Rubber Material
   - E-EPDM
   - V-VITON

VD Series

VD	65	05	2	E
1	2	3	4	5

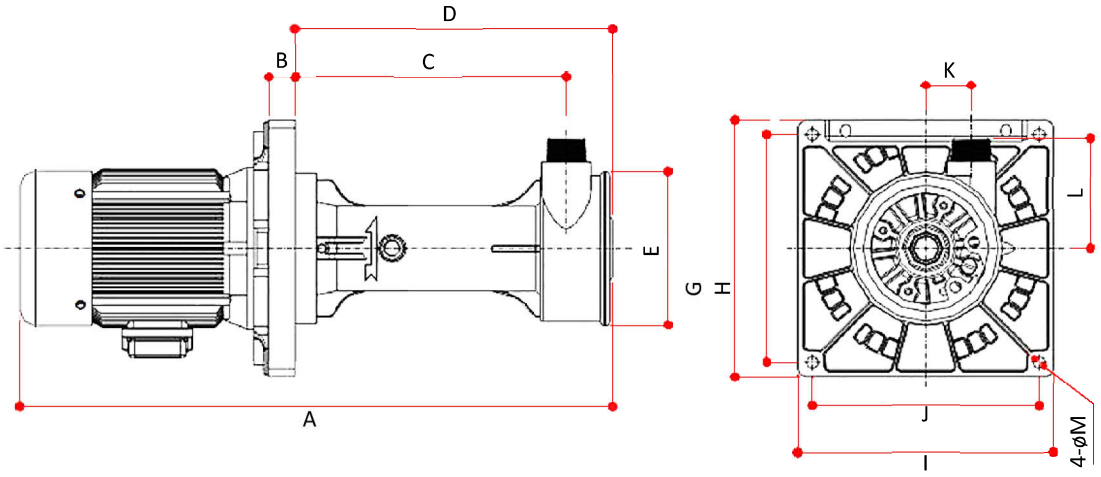


1. Pump Casing
   - VD-FRPP
2. Suct Dia.
   - 65-2.5”
   - 75-3”
   - 100-4”
3. Power
   - 05-3 Ø 5 HP
   - 07-3 Ø 7.5 HP
   - 10-3 Ø 10 HP
   - 15-3 Ø 15 HP
4. Pole
   - 2-2P
5. Rubber Material
   - E-EPDM
   - V-VITON

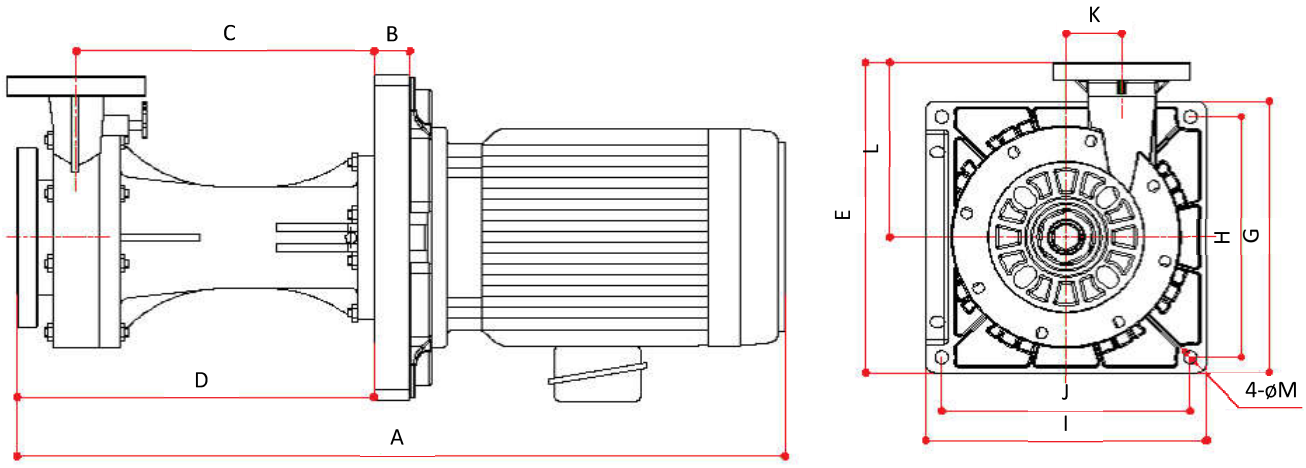
Specification Table

Model	Curve No.	Max. Head (m)	Max. Capacity (l/min)	Suct./Dis. Diameter (inch)	Power			Weight (kg)
					Phase	Pole	HP	
Frequency: 50 Hz								
VDS-50022	a	14	350	2” / 1.5”	3	2	2	21
VDS-50032	b	17	433	2” / 1.5”	3	2	3	28
VD-65052	c	21	766	2.5” / 2”	3	2	5	60
VD-75072	d	25	933	3” / 2.5”	3	2	7.5	92
VD-75102	e	25.5	1050	3” / 2.5”	3	2	10	110
VD-100152	f	31.5	1750	4” / 4”	3	2	15	123

Dimension



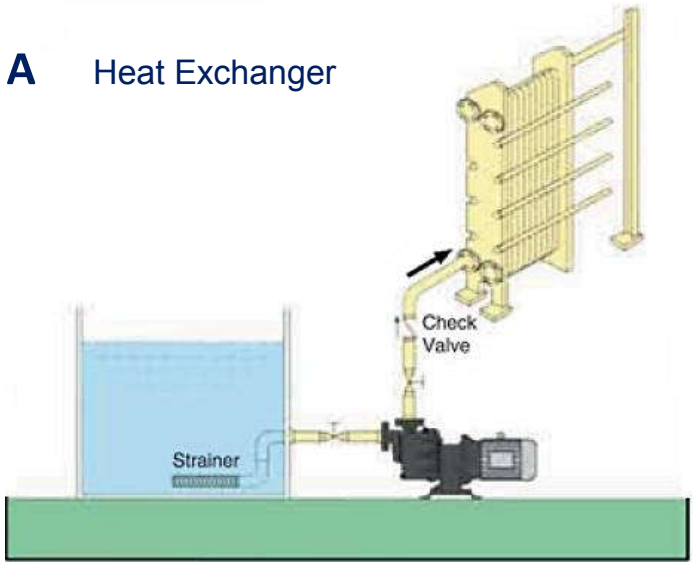
Model	A	B	C	D	E	G	H	I	J	K	L	M
VDS-50022	712	32	337	395	190	320	280	320	280	56	136	15
VDS-50032	741	32	337	395	190	320	280	320	280	56	136	15



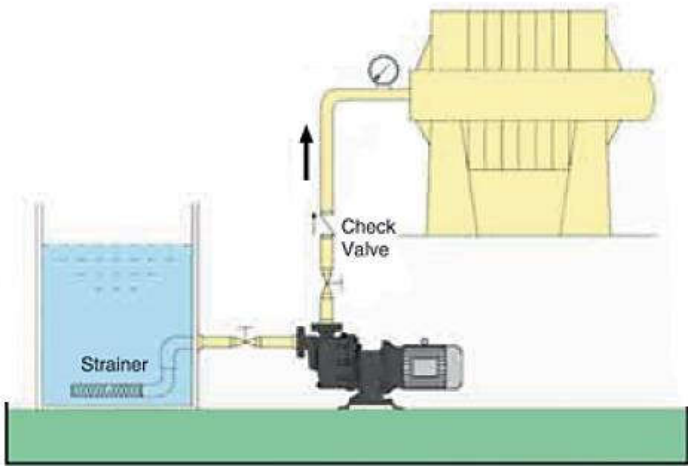
Model	A	B	C	D	E	G	H	I	J	K	L	M
VD-65052	795	32	357	430	360	320	280	320	280	63	200	15
VD-75072	875	32	357	430	360	320	280	320	280	63	200	15
VD-75102	900	32	357	430	360	320	280	320	280	63	200	15
VD-100152	920	32	362	430	360	320	280	320	280	68	200	15

Application Sample

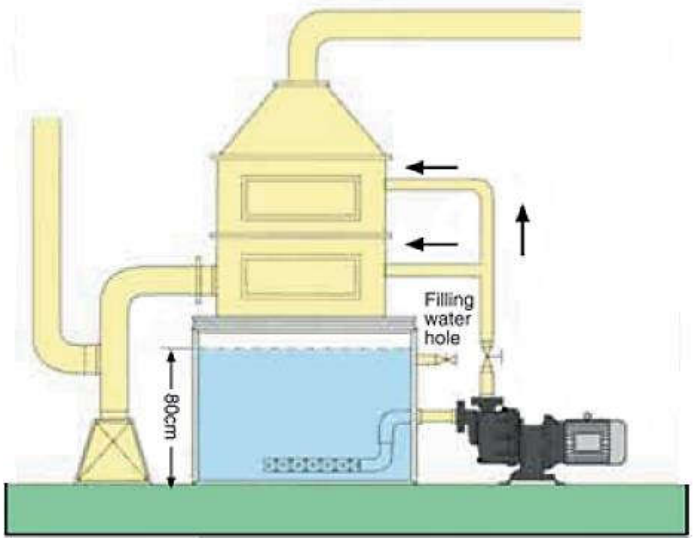
A Heat Exchanger



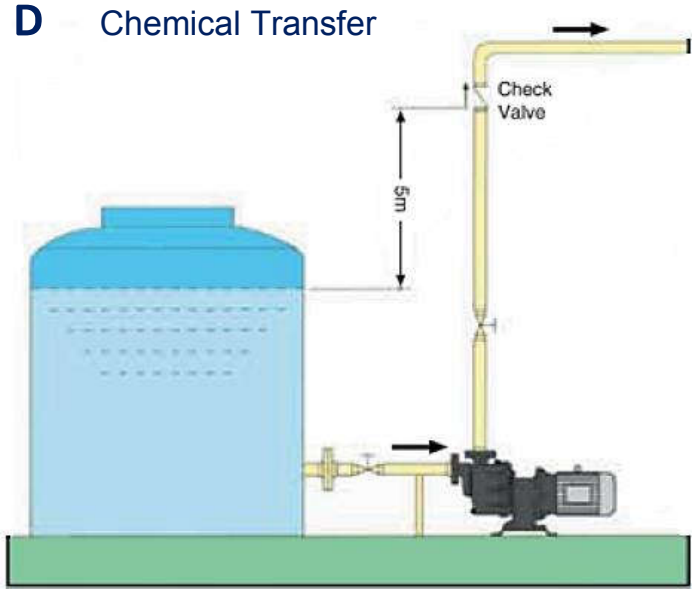
B Cleaning Tower



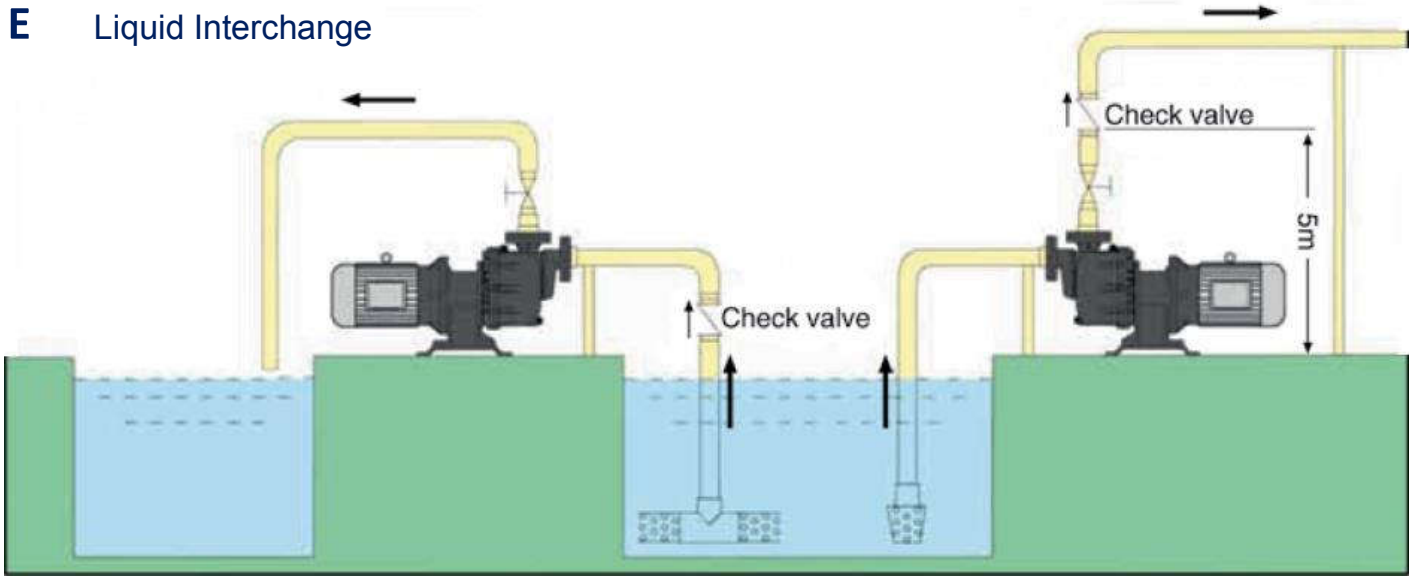
C Cleaning Waste Gas



D Chemical Transfer

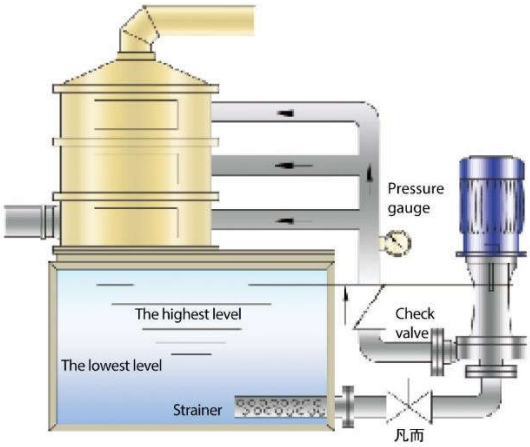


E Liquid Interchange

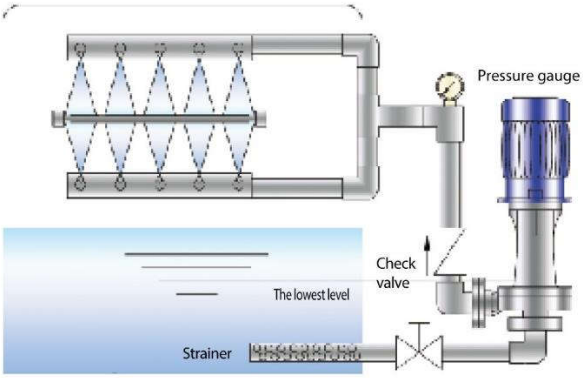


Application Sample

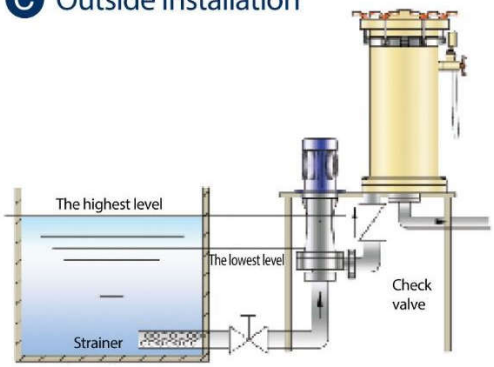
A Scrubber



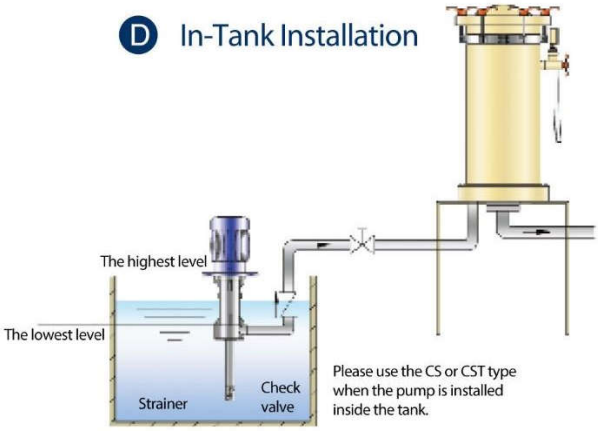
B Etching



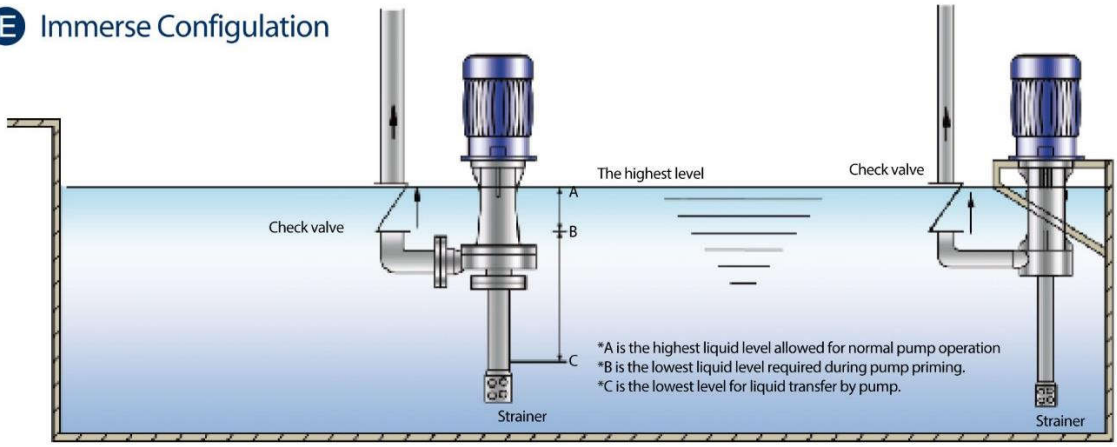
C Outside Installation



D In-Tank Installation



E Immerse Configulation



Cautions:

1. Set a check valve at outlet of the pump if the outlet pipeline is higher than the pump and may cause back flow. Do not put the check valve higher than the highest liquid level in tank too much.
2. Set a strainer at the end of inlet to keep the pump from being damaged by impurities. (The total area of the strainer should be more than 5 times of the suction size.)
3. Please contact our technician if any special demand required. For example, anti-explosion motor.
4. Motor should be anti-corrosion coated for special corrodent environment.

CORROSION RESISTANCE CHART

CHEMICAL NAME	CONCEN-TRATION %	TEMPER-ATE °C	BODY MATERIAL			SEAL MATERIAL			RUBBER MATERIAL		
			FRPP	CFRPP	PVDF	Ceramic	Carbon	Sic	NBR	EPT	VITON
H_2SO_4 Sulfuric acid	30	40	●	●	●	●	●	●	●	●	●
		60	●	●	●	●	●	●		●	●
		80	●	●	●	●	●	●		○	●
		95			●	●	●	●			●
	60	40	●	●	●	●	●	●		●	●
		60	●	●	●	●	●	●		●	●
		80	○	○	●	●	●	●		○	●
		95			●			●			●
	98	40			●	●		●			●
		60			○	●		●			●
HCL Hydrochloric acid	15	40	●	●	●	○	●	●		●	●
		60	●	●	●	●	●	●		●	●
		80	○	○	●	●	●	●		○	●
	32	40	●	●	●	●	●	●		○	○
		60	●	●	●	●	●	●			
		80	○	○	●	●	●	●			
CrO_2 Chromic acid	20	40			●	●		●			●
		60			●	●		●			●
		80			●	●		●			○
HNO_2 Nitric acid	20	40	●	●	●	●		●			●
		60	○	○	●	○		●			●
		80	○	○	●			●			●
	50	40	●	●	●			●			●
		60	○	○	●			●			●
H_2PO_4 Phosphoric acid	25	40	●	●	●	●	●	●	●	●	●
		60	●	●	●	●	●	●	○	●	●
		80	○	○	●	●	●	●		○	●
	50	40	●	●	●	●	●	●		●	●
		60	●	●	●	●	●	●		○	●
		80	○	○	●	○	●	●		○	●
NaOCl Sodium Hypochlorite	10	40	○	○	●	●	○	●			●
		60	△	△	●	●	△	●			●
		80	×	△	●	●	×	●			●
CH2COOH Acetic acid	25	40	●	●	●	●	●	●			×
		60	●	●	●	●	●	●			×
		80	○	○	●	●	●	●			×
HF Hydrofluoric	25	40	×	●	●	×	○	●		●	●
		60	×	○	●	×	○	●		●	●
		80	×	×	●	×	○	●		○	●
$HCl+HNO_2$ Aguaregia	3 : 1	40	×	×	●	●	×	●	×		○
		60	×	×	●	○	×	●	×		○
		80	×	×	●		×	●	×		●
H_2O_2 Hydrogen Peroxide	10	40	●	●	●	●	×	●	×		●
		60	○	○	●	●	×	●	×		●
		80	×	×	●	●	×	●	×		●
NaOH Caustic soda	45	40	●	●	●	△	●	●	●	●	○
		60	○	○	○	×	●	●	●	●	△
		80	○	○	×	×	●	●	○	○	△
$FeCl_3$ Ferric chloride		40	●	●	●	●	●	●	●	●	●
		60	●	●	●	●	●	●	○	●	●
		80	●	●	●	●	●	●		●	●
$Ca(CN)_2$ Copper Cyanide		40	●	●	●	△	●	●	●		●
		60	●	●	●	△	●	●	●		●
$Zn Cl_2$ Zine Chlorate		40	●	●	●	●	●	●	●		●
		60	●	●	●	●	●	●	●		●
$NiSO_4$ Nickel Sulfate		40	●	●	●	●	●	●	●		●
		60	●	●	●	●	●	●	●		●

● EXCELLENT ○ GOOD △ NOT GOOD × BAD