

Vertical centrifugal pumps VT series



Vertical centrifugal pump with excellent corrosion resistance and heat resistance

Seal-less Structure

Efficient use of consumables and extension of service life are realized by the pump's innovative seal-less structure. Its bearing-free design removes it from problems caused by heat generation or wear.

Excellent Corrosion and Heat Resistance

HT-PVC (heat resistant polyvinyl chloride) is employed for the pump body. Its excellent corrosion/heat resistance allows the pump to cope with diverse chemicals.

Two-Piece Structure

Towards attaining excellent maintenance characteristics, its Two-Piece Structured Pump Body is composed of a separate wet end section and a non wet end section. Excellent economic efficiency is realized that even if it becomes excessively worn out by handling slurry, this design allows for replacement of only the wet end section.

Space-saving


The pump has minimal space requirements for installation. It is suitable for both dry and wet pit installation.

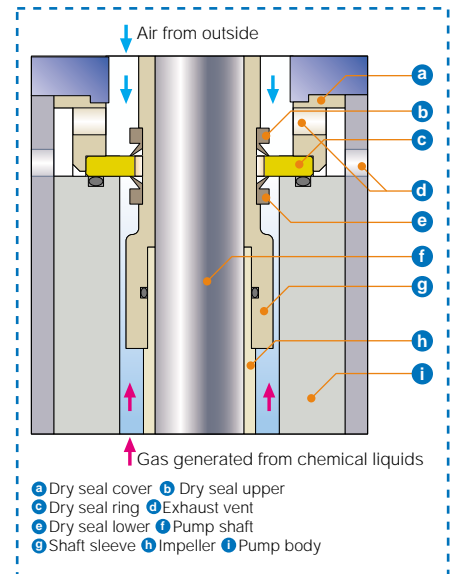
Note : A change in the material of the nuts and bolts to be used may be required to accommodate the liquid to be handled. Please contact us for further information.

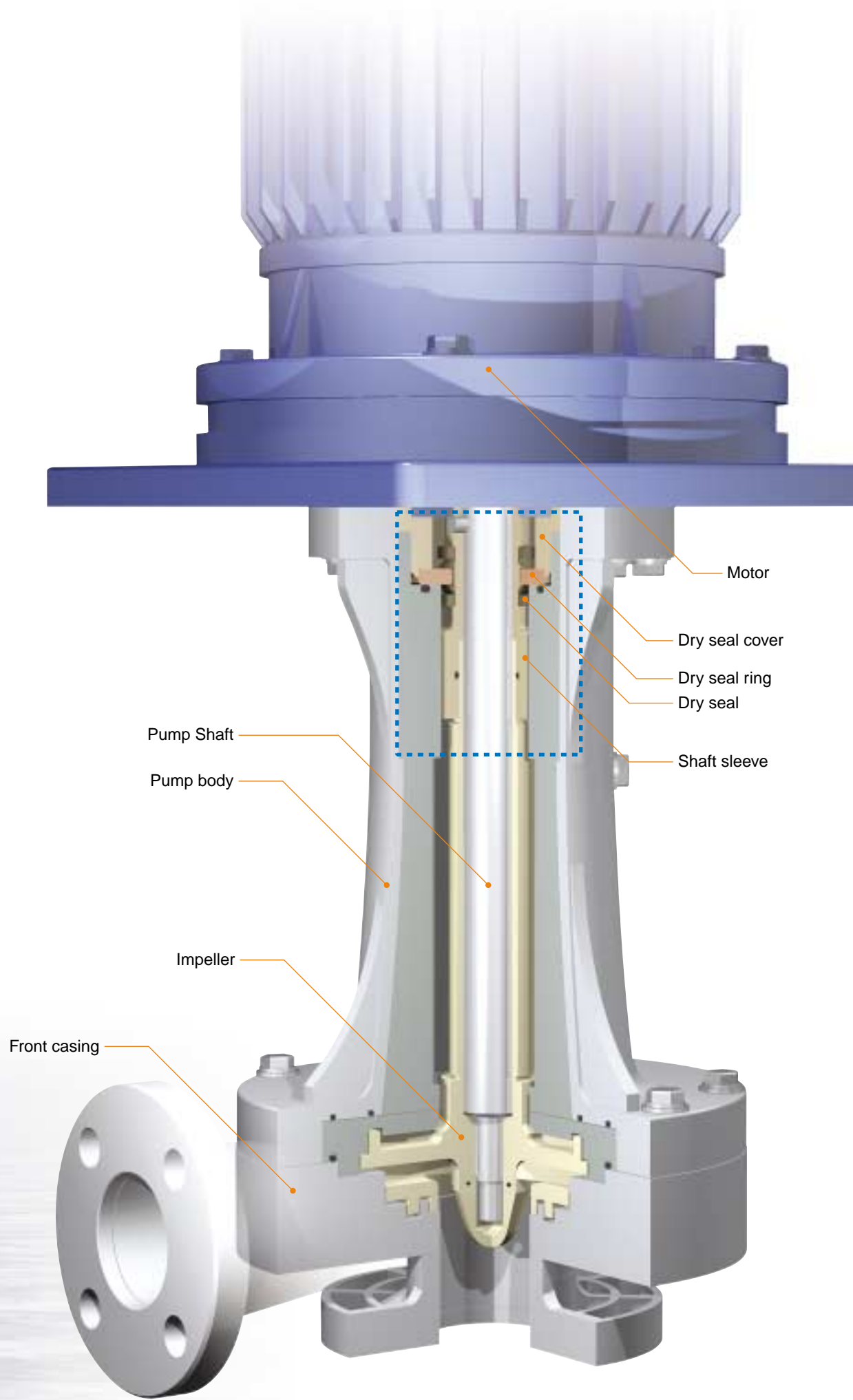
Dry Seal

Dual rubber dry seals are installed at the shaft part of the motor.

- The Lower-side Dry Seal prevents immersion of gas generated from chemical solutions traveling through the pump and protects the motor. Furthermore, vent ports are located at the pump body and motor bracket to allow for quick ventilation of any leaked gas. An oil seal is also present on the motor for protecting the bearing against escaping gas.
- The Upper-side Dry Seal prevents penetration of air from outside of the pump, prevents air lock and stabilizes suction performance.

 Sealing performance of dry seal against any liquid to be handled and its derivative gases is not covered by the warranty.





Motor

Dry seal cover

Dry seal ring

Dry seal

Shaft sleeve

Pump Shaft

Pump body

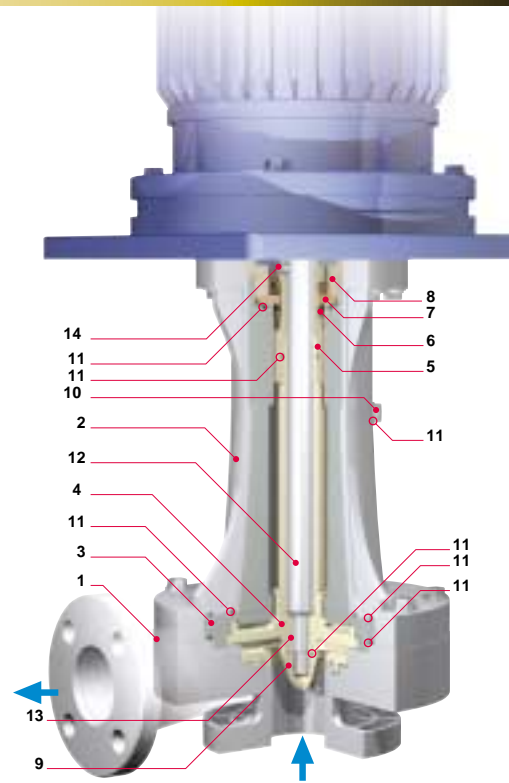
Impeller

Front casing

Wet end materials

No.	Part discription	Material
1	Front casing	HT-PVC
2	Pump body	HT-PVC
3	Rear plate	HT-PVC
4	Impeller	HT-PVC
5	Shaft sleeve	GFRPP
6	Dry seal	FKM
7	Dry seal ring	Alumina ceramic
8	Dry seal cover	GFRPP
9	Impeller nut	HT-PVC
10	Air release bolt	HT-PVC
11	O ring	FKM
12	Pump shaft	Stainless steel
13	Shaft key	Stainless steel
14	Hex socket set screw	Stainless steel

Note : Standard material for all nuts and bolts other than the above-mentioned is stainless steel. Please contact us for other materials which are available in addition to stainless steel.



Pump identification

VT - 65 10 HV - 16 - 2 - S

Pump size

50 : 65A X 50A
65 : 80A X 65A

Motor output

5 : 3.7kW, 2P
7 : 5.5kW, 2P
10 : 7.5kW, 2P

Note :The motor is TEFC outdoor type

Impeller

15 : Specific gravity 1.1 type 50Hz
45 : Specific gravity 1.4 type 50Hz
16 : Specific gravity 1.1 type 60Hz
46 : Specific gravity 1.4 type 60Hz

Material of Pump unit / O-ring

HV : HT-PVC/FKM

Special specifications

S : Special order element included

Motor voltage

2 : 200V 50/60Hz, 220V 60Hz
3 : 220V 50/60Hz, 380V 50/60Hz
6 : 380V 50/60Hz
9 : 400V 50/60Hz, 415V 50Hz, 440V 60Hz

Specifications

Specific gravity	Models	Connection suction X discharge	Motor kW	Min. discharge caacity L/min	Max. head m	Standard capacity L/min-m	Max. capacity L/min	Mass kg	
1.1	50Hz	VT-505	65A X 50A	3.7	150	27.5	500 - 18	700	70
		VT-655	80A X 65A	3.7	200	25	550 - 18	900	70
		VT-657	80A X 65A	5.5	200	28.5	600 - 20	1000	95
	60Hz	VT-505	65A X 50A	3.7	150	29.5	500 - 19	800	70
		VT-657	80A X 65A	5.5	200	34	600 - 23	900	95
		VT-6510	80A X 65A	7.5	200	40	700 - 29	1000	100
1.4	50Hz	VT-505	65A X 50A	3.7	150	26.5	400 - 16	550	70
		VT-657	80A X 65A	5.5	200	26	600 - 16	900	95
		VT-6510	80A X 65A	7.5	200	29	700 - 18	1000	100
	60Hz	VT-505	65A X 50A	3.7	150	29.5	400 - 19	550	70
		VT-657	80A X 65A	5.5	200	33	600 - 16	700	95
		VT-6510	80A X 65A	7.5	200	30	700 - 21	1000	100

Note1 : This pump may not be used below the minimum discharge level. Please plan to use the pump within the range designated with the actual line on the performance curve.

Note2 : Max. head shown on above is discharge valve shut-off point (where the specific gravity is 1.0). These figures are solely for reference when reviewing the pressure resistance of piping and peripheral devices.

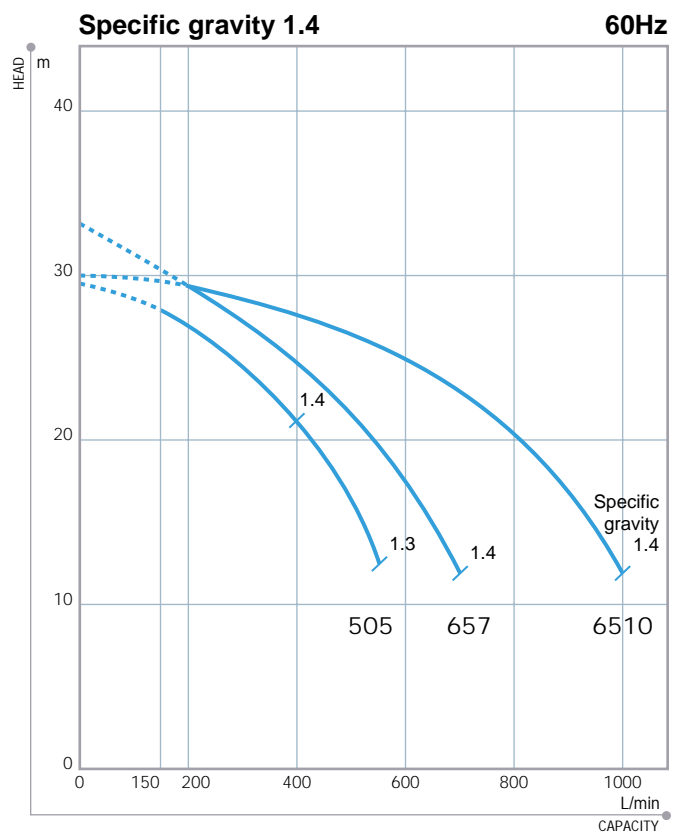
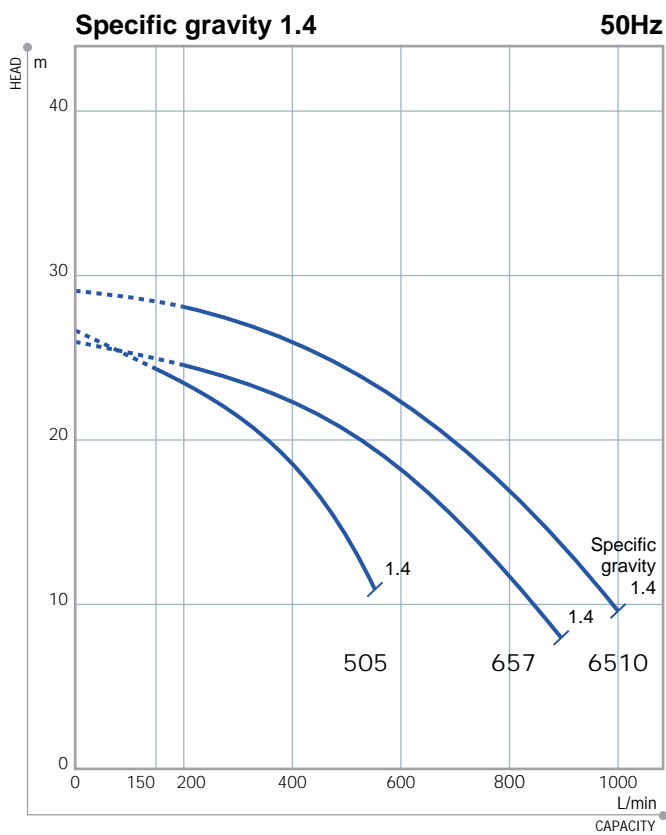
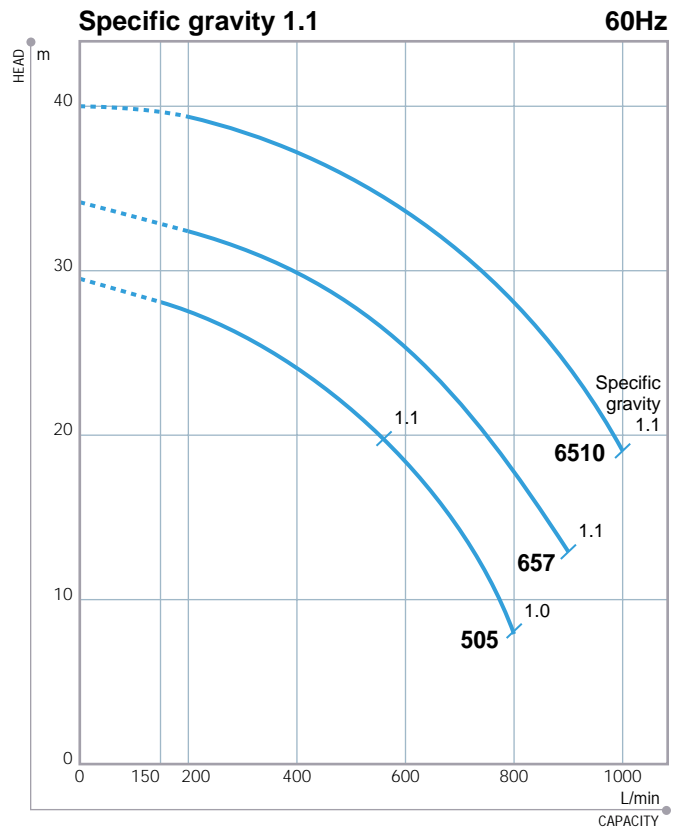
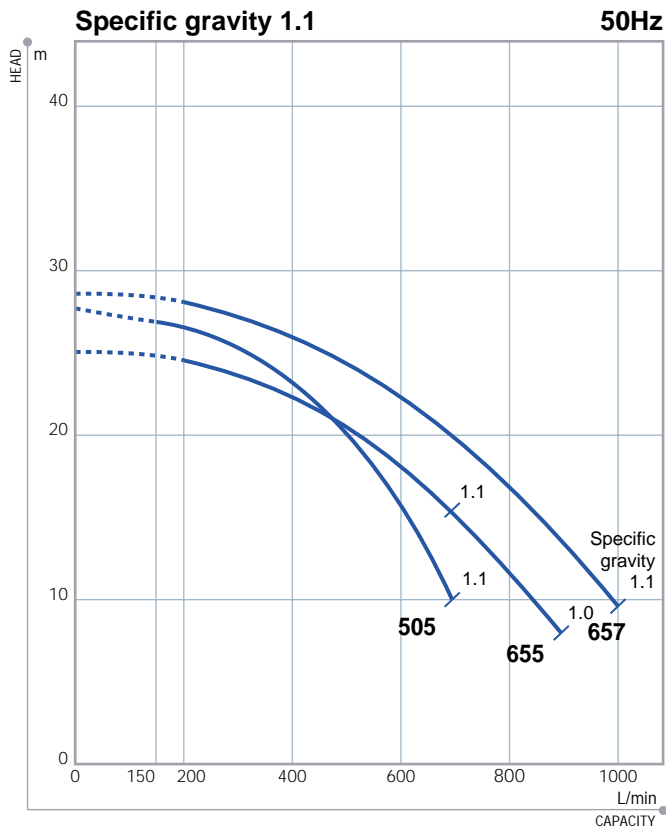
Note3 : The numbers listed on the Mass column shows the weight of pump with motor.

Common Specifications

Liquid temperature range: 0 to 75°C (Where no freeze), Ambient temperature range: 0 to 40°C

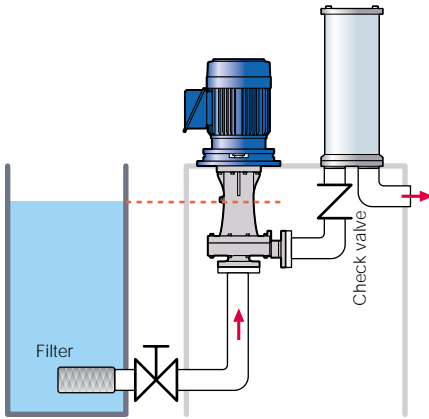
Performance curves

Note : Use the pump in range shown by actual lines.

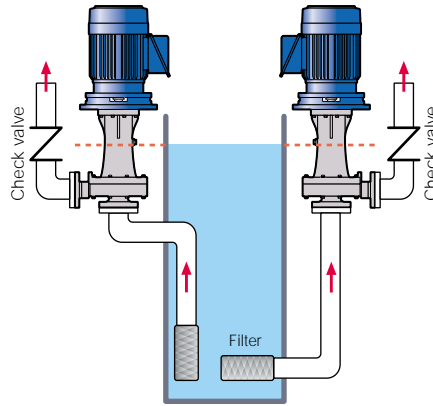


Example of applications

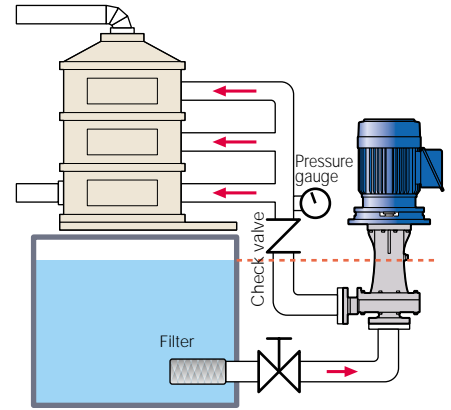
For filtration



For chemical solution transportation (Dry pit installation)



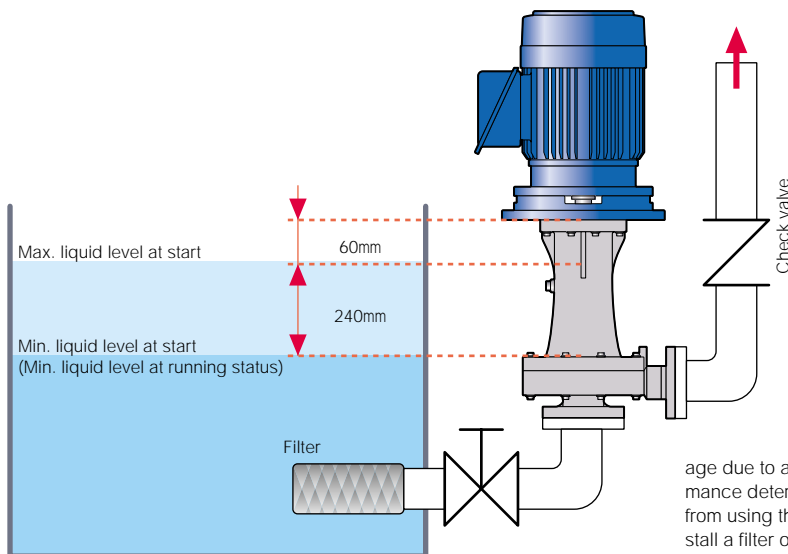
For circulation of scrubber (Exhaust gas scrubbing) equipment



Note: Wet pit installation is also possible. However, a change of material of the nuts and bolts may be required to accommodate the liquid to be handled. Please contact us for further information.

Precautions for use

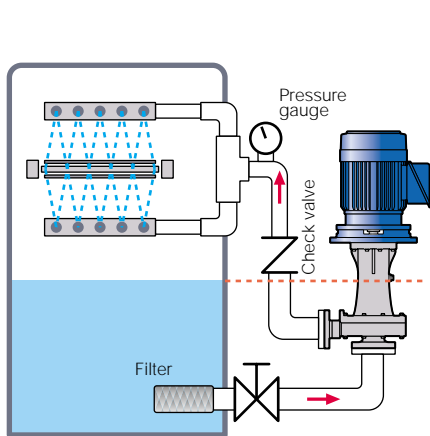
Please use vertical centrifugal pump VT series by referring to the standard installation example shown in the below.



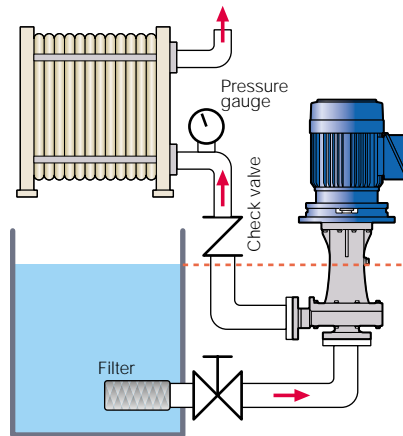
Points especially requiring attention to be paid

- When you start the pump, please pay close attention to the liquid level during operation. If the maximum liquid level of proper operation is surpassed, liquid leakage from the motor part or liquid penetration into the motor may occur. Any liquid leakage from the motor part must be especially well monitored since this may lead to personal injury. If the liquid level decreases beneath the minimum liquid level, the pump will not discharge properly (the VT type is not self-priming pump).
- Please always attach check valve on the discharge side. If check valve fails to be installed, liquid leakage from the motor part or liquid penetration into the motor may occur due to back flow generated by a pump stoppage.
- Take care to avoid discharge valve. Shut-off operation or operation below the minimum flow rate may cause defective discharge due to liquid leakage or air-lock. If this defective discharge condition continues, breakage or liquid leakage may occur due to deformation of a part as a result of liquid temperature rise.
- Using small amounts of slurry will create no damage due to an absence of sliding parts. However, certain performance deterioration may occur due to wear of plastic parts resulting from using the pump in such a way for an extended period. Please install a filter on the suction side where slurry is contained. If you install a filter, please pay attention to whether any cavitation happens due to a clogging filter.

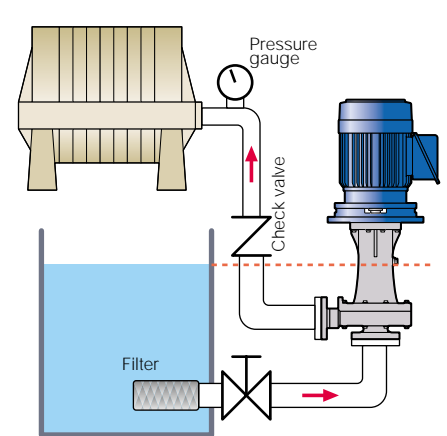
For spray of etching unit



For circulation of heat exchanger

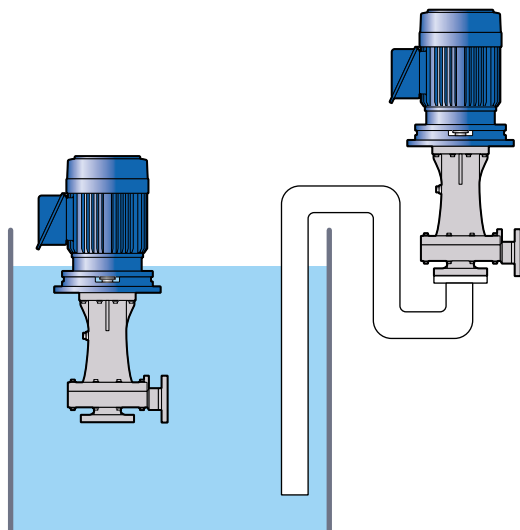


For circulation or transportation for reactor tank, mixing tank, filter-press



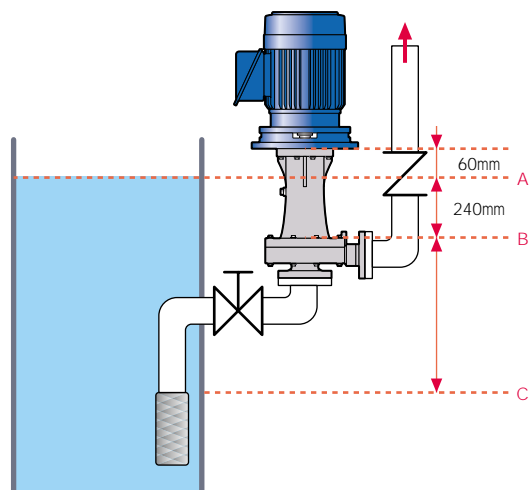
Restriction of Use

Do not operate the pump under submerged conditions as shown in below or with double cross formed piping.

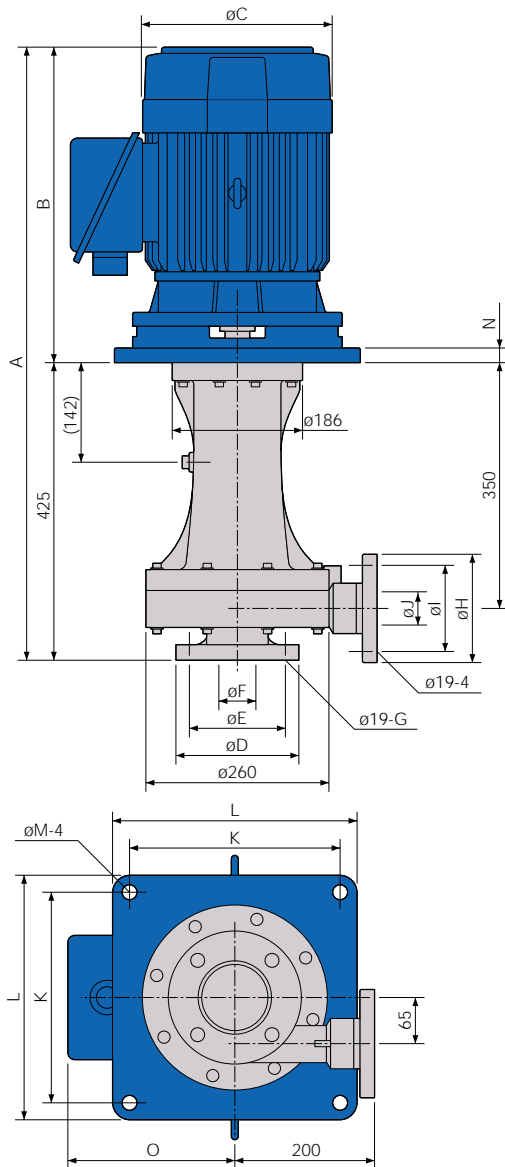


Example of Special Use

- Where liquid level is altered substantially
The pump may continue to function even though the liquid level (within the range between points B and C) is below the front casing (point B) whereas the liquid level should be within the range between the points A and B when you start the pump. The liquid level should be controlled within the proper range by using the level sensor, etc., as shown in below. Please contact us for details and the range of point C.



Dimensions in mm



Models	VT-505	VT-655	VT-657, 6510
A	813	813	880
B	388	388	455
C	235	235	272
D	177	190	190
E	140	150	150
F	65	78	78
G	4	8	8
H	155	177	177
I	120	140	140
J	50	65	6
K	222	222	300
L	260	260	352
M	15	15	18
N	16	16	20
O	187	187	239