WET/DRY RUNNING SEALLESS VERTICAL PUMPS

TDA/TDB SERIES

Technology & innovation

TI TOWN CHEMICAL PUMPS

For example

TDA - 50 SP 5 6 V F — XXX

1 2 3 4 5 6 7 8 9

(1) Model
TDA : FC BASE
TDB : PLASTIC BASE

(2) outlet dimension
40mm
50mm
65mm
80mm
100mm

(3) Specific gravity
SK : 1.1
SP : 1.4 (＊1)

(4) HP
1 : 1HP
2 : 2HP
3 : 3HP
5 : 5HP
7.5 : 7.5HP
10 : 10HP
15 : 15HP
20 : 20HP

(5) Frequency
5 : 50HZ
6 : 60HZ

(6) O-RING
V : FKM (Viton)
E : EPDM

(7) Wet-end material
F : FRPP
P : CFRPP
C : CPVC
K : PVDF

(8) Connection type
None : Flange
S : Screw (BSP)
A : ANSI Union PVC socket
D : DIN Union PP socket
J : JIS Union PVC socket
U: CUSTOM-MADE Union

Reserve for Customization

● TDA/TDB SPECIFICATION

Model	Curve		Specific gravity	HP	In/Outlet	Max. Flow (L/min)		Max. Head (M)		Weight
	50HZ	60HZ				50HZ	60HZ	50HZ	60HZ	TDA KG
40SK-1	a	A	1.1	1	50×40	280	240	12.6	12	34
40SK-2	b	B	1.1	2	50×40	350	350	16	17.7	43
40SK-3		C	1.1	3	50×40		400		23	45
50SK-3	d	D	1.1	3	65×50	400	500	20.5	21.2	46
50SK-5	e	E	1.1	5	65×50	730	700	26	29.2	64
65SK-5	f	F	1.1	5	80×65	800	850	22.5	25	64
50SK-7.5		G	1.1	7.5	65×50		790		37.5	94
65SK-7.5	h	H	1.1	7.5	80×65	1000	1050	25	31.8	95
65SK-10	i	I	1.1	10	80×65	1100	1100	28.5	35.4	100
80SK-15		J	1.1	15	80×80		1100		41.4	151
100SK-15	k	K	1.1	15	100×100	1370	1550	28	31	153
101SK-15	w	W	1.1	15	100×100	2000	1600	33	42	153
102SK-15	x	X	1.1	15	100×100	2300	1600	30	42	153
102SK-20	y	Y	1.1	20	100×100	2500	2500	35	39	158
40SP-1	l	L	1.4	1	50×40	280	230	8.6	9.6	34
40SP-2	m	M	1.4	2	50×40	380	260	16	12.6	43
40SP-3		N	1.4	3	50×40		350		17.2	45
50SP-3	o	O	1.4	3	65×50	450	440	17	17.8	46
50SP-5	p	P	1.4	5	65×50	550	550	24.9	27	64
65SP-5	q	Q	1.4	5	80×65	700	550	21.5	25	64
50SP-7.5		R	1.4	7.5	65×50		500		34	94
65SP-7.5	s	S	1.4	7.5	80×65	940	850	23.9	26.6	95
65SP-10	t	T	1.4	10	80×65	1050	1050	26	31.8	100
80SP-15	u	U	1.4	15	80×80	1100	1150	28.5	38	151
100SP-15	v	V	1.4	15	100×100	1300	1350	26	31	153

＊1：Adjustable customization specification for specific gravity above 1.4 .

＊2：Specifications are subject to change without prior notice. For futher details please contact us.

SPECIAL VERTICAL CHEMICAL PUMPS

CHEMICAL & HEAT RESISTANT • NO SEAL • NO FRICTION

WET/DRY RUNNING SEALLESS VERTICAL PUMPS

MODELS : SK TYPE：Specific gravity below 1.1
SP TYPE：Specific gravity below 1.4 (＊1)

MATERIALS : P - CFRPP (Carbon Fiber Reinforced PP)
F - FRPP (Glass Fiber Reinforced PP)
K - PVDF (KYNAR)
C - CPVC

■ FEATURES :

① The pumps, made of highly chemical-resistant CFRPP, PVDF, CPVC and FRPP, are excellent for resisting heat and corrosio from chemical solutions.
② The impellers are specially designed to prevent air from gettin into the pumps to ensure efficient work and high performance.
③ The sealless design allows no friction when the pumps are working, so dry running or chemical liquid with particles will no cause malfunction of the pumps.
④ All of the major components of our pumps are injection molde to ensure precise performance.
⑤ The motors, which are protected by oil seals and vapor seal to resist corrosion from chemical vapors.

■ Applications :

① Combine with filters to transfer and circulate various plating solutions.
② Work with high-temperature liquid or chemical liquids with particles(e.g.chemical copper, potassium magnate, plating gold liquid, electroless nickel plating solutions, etc.) under certain limitations.
③ Ideal for chemical circulation, PCB etching, waster water, scrubber and heat exchanging applications.
④ Transferring, circulating, and stirring all kinds of chemical liquids in various chemical reacting tanks and mixing tanks.

＊1：Adjustable customization specification for specific gravity above 1.4 .

SPECIAL SEALLESS STRUCTURE AND SIX IMPORTANT FEATURES

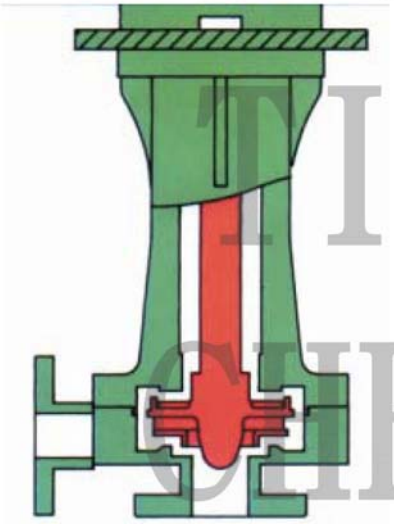
1 Special Long Shaft of the Motor

The ONE-PIECE long shaft of the motor is one of the most critical parts of a vertical pump, for it decides the life of a pump. Our special motor are coated with corrosion-resistant paint, fit flawlessly inside our pumps, and can prolong the life of the pumps.

2 Sealless Structure

Our special design, which allows a 1.5 - 2.0 mm gap between the body and the impeller of a pump, has no friction while the pump is working. The special features of the two-layered impeller control and reduce the air and fluid intake, helping the pump function smoothly.

Analytical drawing as follows：



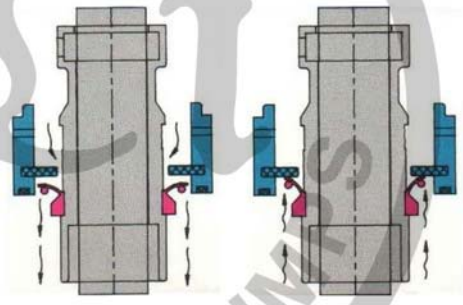
3 Dry Running Allowable

Because there is no friction between the body and impeller, our pumps excellently withstand dry running for long periods without damage.

LEADING TO THE VERTICAL PUMP'S HIGH PERFORMANCE

4 Vapor Seal Structure

Analytical drawing as follows：



NORMAL RUNNING STOP

When the motor is operating, the lid of the vapor seal (it is shown in pink in the pictures above), is forced open by centrifugal force, thus no friction results.

Once the motor stops, the lid bounces back to completely stop any leakage of chemical vapor. Moreover, the oil seal, which is located above the vapor seal, will protect the motor against the corrosive vapor.

5 Wide Range of Working Temperature

Carbon fiber reinforced PP (CFRPP), glass fiber PP (FRPP), PVDF and CPVC, these are applicable for chemical pumps widely, the range of resistant heat as follows：

(water)

Operating range	CFRPP	0°C~95°C
	FRPP	0°C~80°C
	PVDF	-20°C~95°C
	CPVC	0°C~80°C

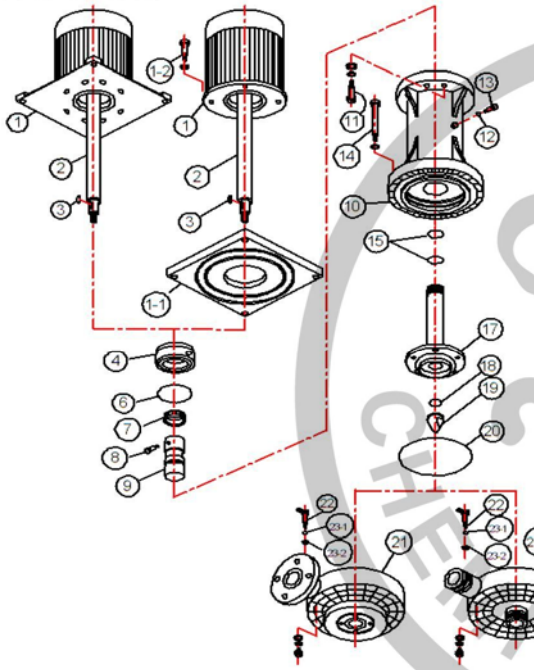
6 High Corrosion Resistant

CFRPP (carbon fiber reinforced PP), FRPP (glass fiber PP), PVDF and CPVC there are four kinds of material which use injecting mold for whole set.

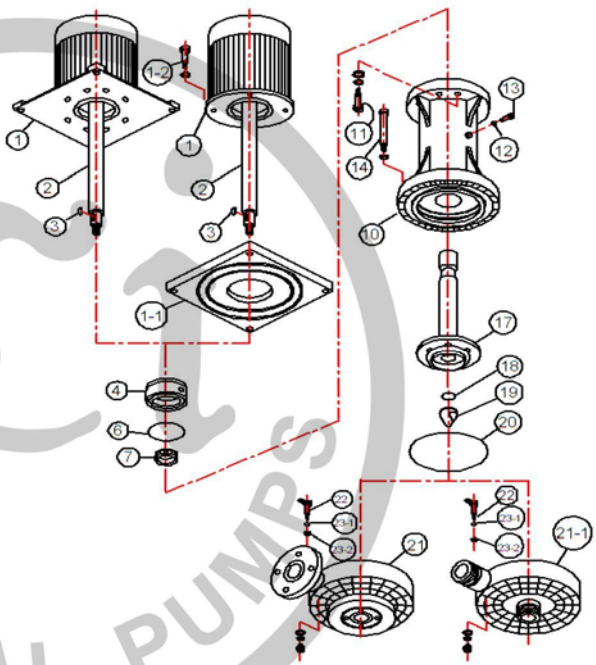
To ensure own high resistant corrosion and high resistant heat.

■ TDA / TDB PARTS ANALYSIS

● For 1 ~ 5 HP



● For 7.5 ~ 20 HP

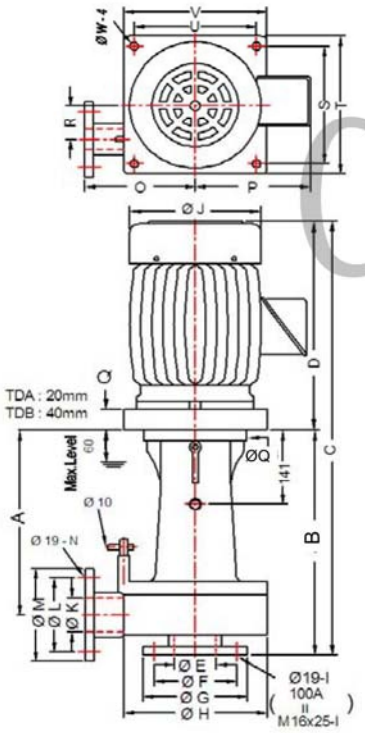


■ TDA/TDB DIMENSION (mm)

Model	HP	A	B	C*	D*	ØE	ØF	ØG	ØH	I	ØJ*	ØK	ØL	ØM	N	O	P*	Q	R	S	T	U	V	W
40SK/SP-1	1	350	425	742	317	50	120	155	230	4	177	40	105	145	4	170	164	186	65	222	260	222	260	15
40SK/SP-2	2	350	425	787	362	50	120	155	230	4	200	40	105	145	4	170	178	186	65	222	260	222	260	15
40SK/SP-3	3	350	425	787	362	50	120	155	230	4	200	40	105	145	4	170	178	186	65	222	260	222	260	15
50SK/SP-3	3	350	425	787	362	65	140	175	260	4	200	50	120	155	4	200	178	186	65	222	260	222	260	15
50SK/SP-5	5	350	425	836	411	65	140	175	260	4	238	50	120	155	4	200	202	186	65	222	260	222	260	15
50SK/SP-7.5	7.5	350	425	856	431	65	140	175	260	7	273	50	120	155	4	200	202	186	65	300	350	300	350	18
65SK/SP-5	5	350	425	836	411	76	150	190	260	8	238	65	140	175	4	200	202	186	65	222	260	222	260	15
65SK/SP-7.5	7.5	350	425	856	431	76	150	190	260	8	273	65	140	175	4	200	202	186	65	300	350	300	350	18
65SK/SP-10	10	350	425	886	461	76	150	190	260	8	273	65	140	175	4	200	202	186	65	300	350	300	350	18
80SK/SP-15	15	350	425	975	550	76	150	190	260	8	273	76	150	190	8	200	245	186	65	300	350	300	350	18
100SK/SP-15	15	350	425	975	550	100	175	210	260	8	273	100	175	210	8	200	245	186	65	300	350	300	350	18
101SK-15	15	356	435	985	550	100	175	220	290	8	334	100	175	220	8	215	287	250	66	300	350	300	350	18
102SK-15	15	356	435	985	550	100	175	220	310	8	334	100	175	220	8	215	287	250	66	300	350	300	350	18
102SK-20	20	356	435	985	550	100	175	220	310	8	334	100	175	220	8	215	287	250	66	300	350	300	350	18

＊：dimension will differ depending on the difference brand of the motor

■ TDA / TDB DIMENSON



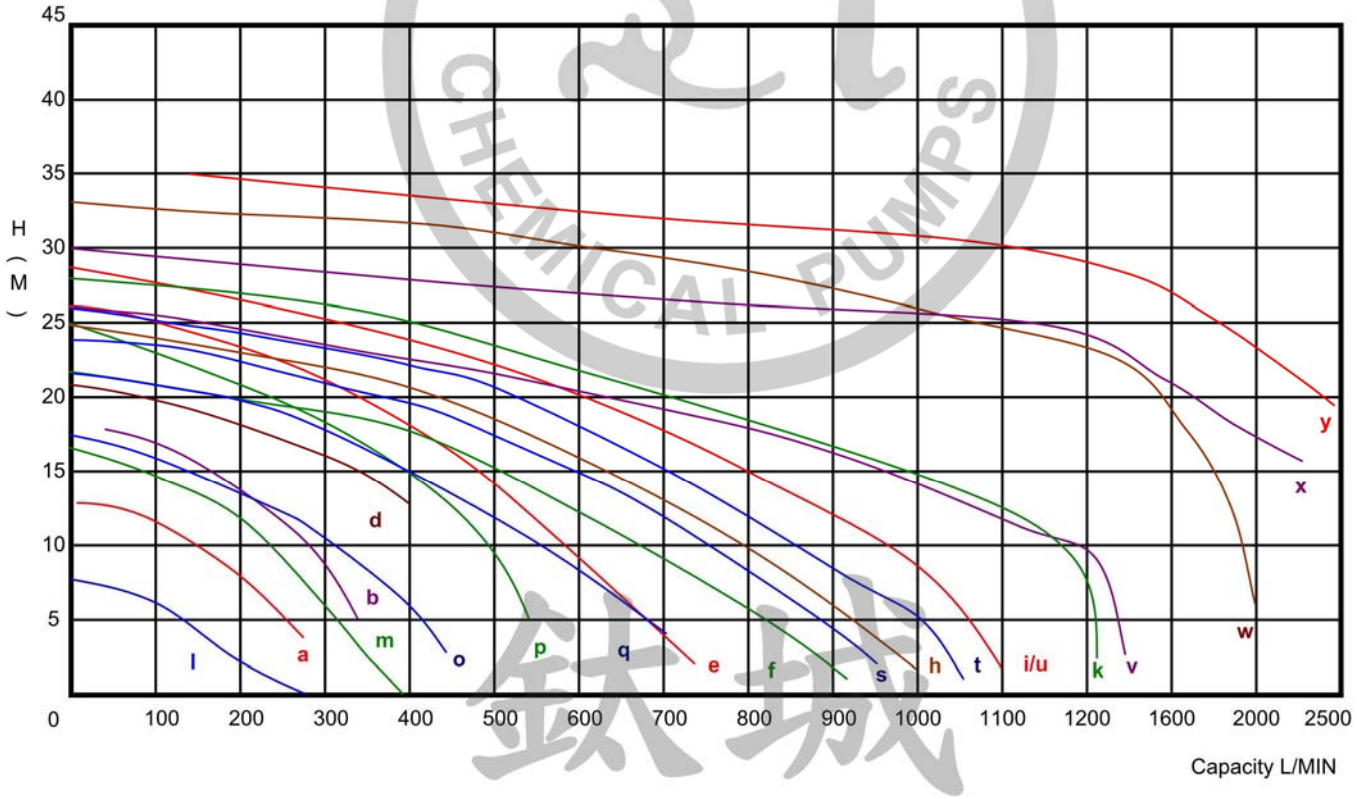
■ TDA/TDB PARTS TABLE

NO	Parts Name	Quantity	Material	NO	Parts Name	Quantity	Material
1	LONG SHAFT MOTOR	1	FC	12	O-RING	1	FKM、EPDM
1-1	MOUNTING	1	TDA：FC TDB：PLASTIC	13	BOLT	1	HTPVC
1-2	BOLT	4	SUS	14	BOLT NUT	8	SUS、Ti、PPS
2	SHAFT	1	SUS	15	O-RING	2	FKM、EPDM
3	KEY	1	SUS	17	IMPELLER	1	CFRPP、PVDF、FRPP、CPVC
4	SEAL CASE	1	FRPP/CERAMIC	18	O-RING	1	FKM、EPDM
6	O-RING	1	FKM、EPDM	19	IMPELLER NUT	1	CFRPP、PVDF、FRPP、CPVC
7	VAPOR SEAL	1	FKM、EPDM	20	O-RING	1	FKM、EPDM
8	BOLT	1	SUS、Ti	21	PUMP CASING	1	CFRPP、PVDF、FRPP、CPVC
9	SEAL HOLDER	1	FRPP	◎22	AIR VALVE	1	CFRPP、PVDF、FRPP、CPVC
10	PUMP COLUMN	1	CFRPP、PVDF、FRPP、CPVC	◎23-1	O-RING	1	FKM、EPDM
11	BOLT	8	SUS、Ti	◎23-2	VALVE PACKING	1	FKM、EPDM

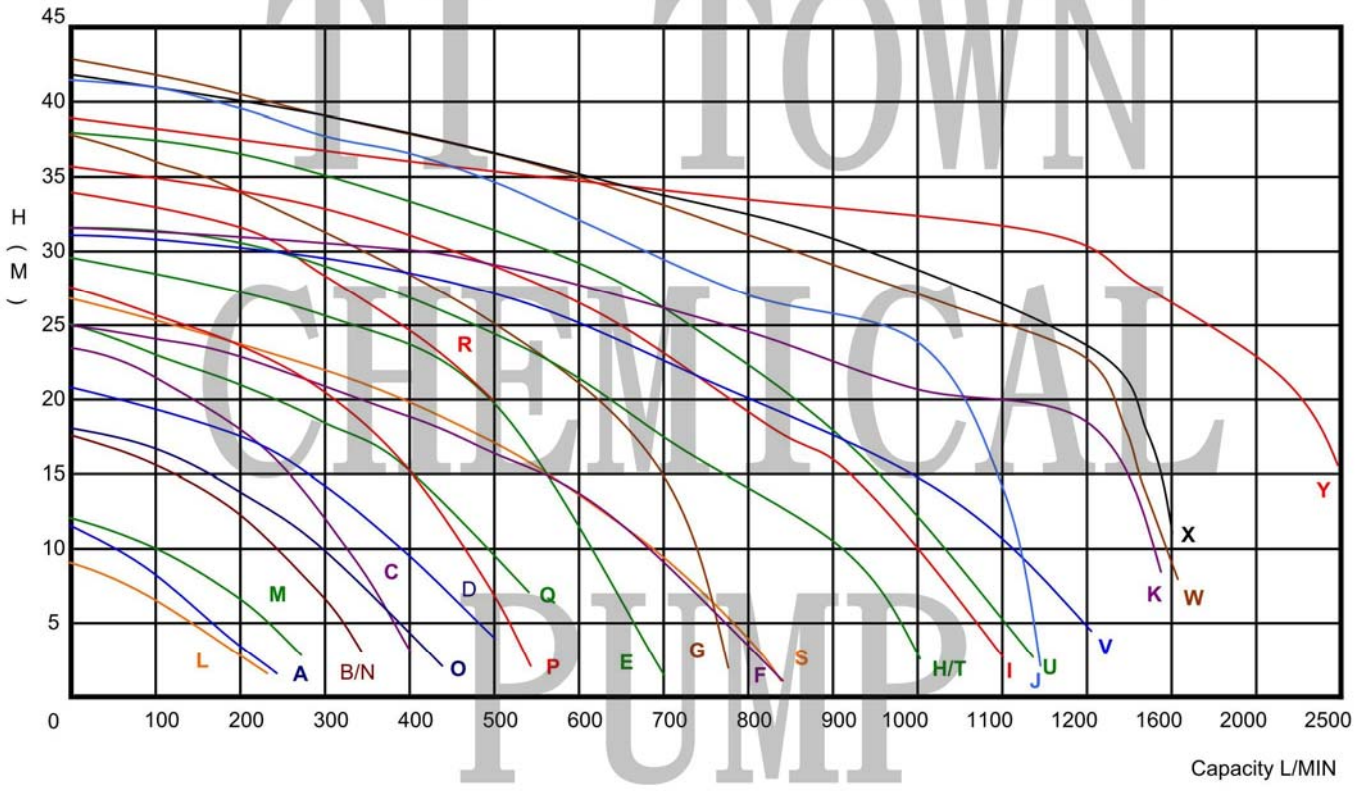
◎：Optinal parts

■ TDA / TDB 性能曲線

■ PERFORMANCE CURVES (50HZ)



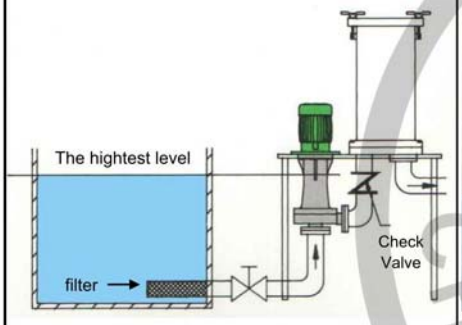
■ PERFORMANCE CURVES (60HZ)



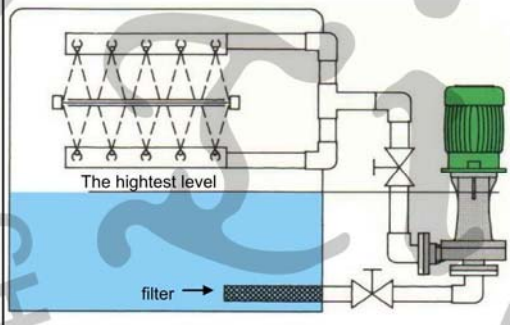
※ Performance curves are determined with water at room temperature.

■ EXAMPLES

A. Circulating pumps with filter



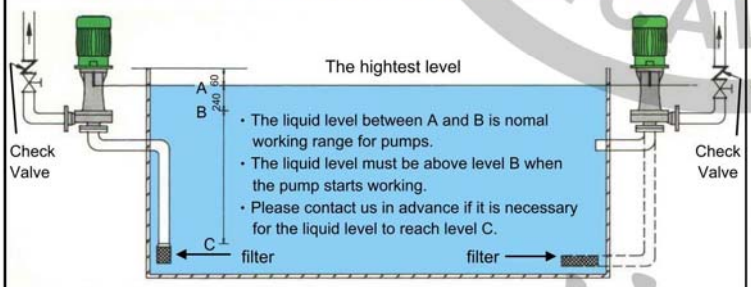
B. Circulating pumps for P.C.B. etching



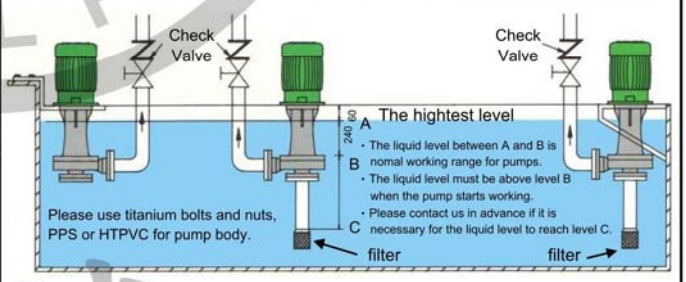
C. Remarks

① Add a check valve in the outlet of the pump when the altitude of the outlet pipe is higher than that of the pump.
② Add an inlet filter to avoid damage to the pump caused by impurities.
③ Keep the outlet pressure under 3.0 kg/cm².
④ Consult with our engineers if necessary when the pump is used under special environments with explosion-proof motor.
⑤ Optional special anti-corrosion coated motors is requirement if the motor operates in corrosive environment.

D. Outside the tank



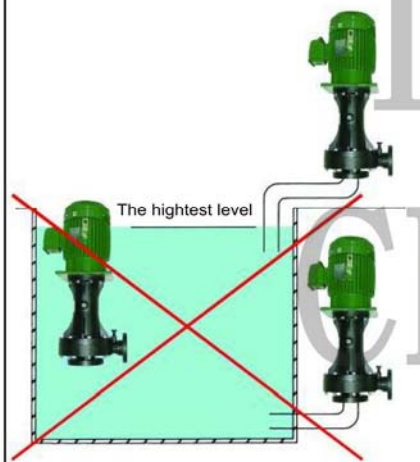
E. Inside the tank



■ Faulty piping

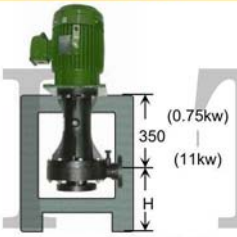
NOTED !

Please don't use pumps like this !



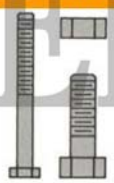
■ Optional Accessories

A. Supporter



Material：FRP, SUS
H：FRP(360mm)
SUS(100~1000mm)

B. Bolt, Nut & Washer



Material：SUS、Ti、PPS、HTPVC、PVC
SPEC：M10×40 . M10×100
M16×60 . 5/8"×60

Specifications listed below are preferred when ordering

1.Working Liquid	name/concentration/sp.gr./viscosity
2. Working Temperature	°C
3. Flow Rate	Liter /Min. or m³/Hr
4. Head	head of inlet and outlet
5. Impurities	percentage contained/ Max. Diameter
6. Height of Liquid	-max. liquid height in the tank -range of liquid height during operating -the initial liquid height for pump starting
7. Motor Spec.	type/voltage/cycle/indoor or outdoor/explosion-proof

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