

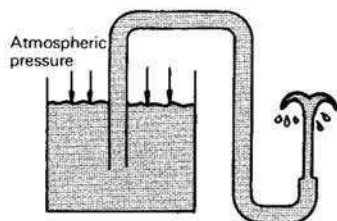
SAL QT TYPE SELF-PRIMING TANK (Optional)

Installing a self-priming tank, if your SAL pump is used for vertical, upward suction, it will be possible for you to use the pump for the following applications:

1. Install where a general-purpose pump with foot valve is being used. There are many cases of problems arising with a foot valve pump because the valve does not operate correctly, breaks down or causes wear of the pump body.
2. Install where a self-priming pump is being used. There are many cases of problems arising due to inefficiency caused by the length of time it takes for priming, malfunction of the check valve on the suction side and wear of the pump body.
3. Install where a submersible pump is being used. There are many cases of problems arising from frequent breakdown of the mechanical seal due to dirt and sand, and extreme wear of the pump body.
4. Install where a vertical shaft pump is being used. There are many cases of problems arising from wear of the submersible vertical shaft bearing, and the frequent necessity of inspection for repair.

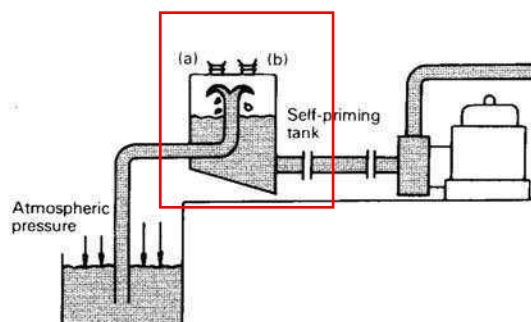
• Principles of Self-Priming: Pumping by means of siphon action

Once the pipes are filled with water (a variety of methods can be used to do this) pumping will be sustained naturally. When the water in a section of piping beings drop, a vacuum is created at the upper end of the pipe. The atmospheric pressure on the surface of the water in the water tank forces water in the tank up into the pipe so that it is once again full of water. (In a vacuum, atmospheric pressure has enough power to push water up 10 meters.) This is why pumping is sustained when the pipe are full. If the pipe that is in the water tank is punctured, air will enter through the hole making siphoning impossible and forcing pumping to stop.



• How to Use the Self-Priming Tank

1. Open the air release valve (a) and the feed water valve (b) and fill the tank with water.
2. After the tank has been filled to the point where water overflows from the top of the suction pipe, close valve (a) and (b) and start the pump.
3. As the water in the tank is sucked up by the pump, its level will gradually drop and the pressure level in the tank will also drop. However, once pressure has dropped to a certain point, the same siphon principle operates. The water in the water tank on the suction side is pushed by a atmospheric pressure into the tank.
4. Therefore, when a pump is operated with a self-priming tank there is no need for a foot valve. When the liquid pump contains slurry, the foot valve seat is often worn to the point where it no longer function and it becomes impossible to operate the pump. With an EBARA Self-Priming Tank, however, this sort of trouble will never arise.



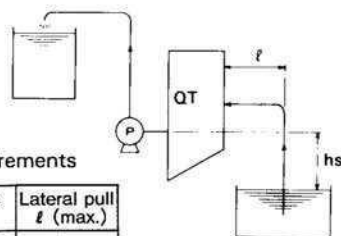
5. Even when the pump is stopped, all water in the tank will not drain which means it is possible to start the next pump operation without any preparation. Note, however, that if the tank is punctured or suction piping is damaged, self-priming will no longer be possible and the pump will not be able to function.

Model and Specifications

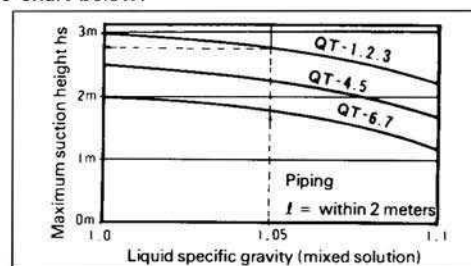
• Tank model and piping requirements

Pump	Tank Model	Head h_s (max.)	Lateral pull ℓ (max.)
40×32SAL	QT-1	3m	2m
50×40SAL	QT-2	3m	2m
65×50SAL	QT-3	3m	2m
80×65SAL	QT-4	2.5m	2m
125×100SAL	QT-5	2.5m	2m
150×125SAL	QT-6	2.0m	2m
200×150SAL	QT-7	2.0m	2m

Water (up to 30°C) .



- When specific gravity exceeds $\gamma = 1$, adjust h_s according to chart below.



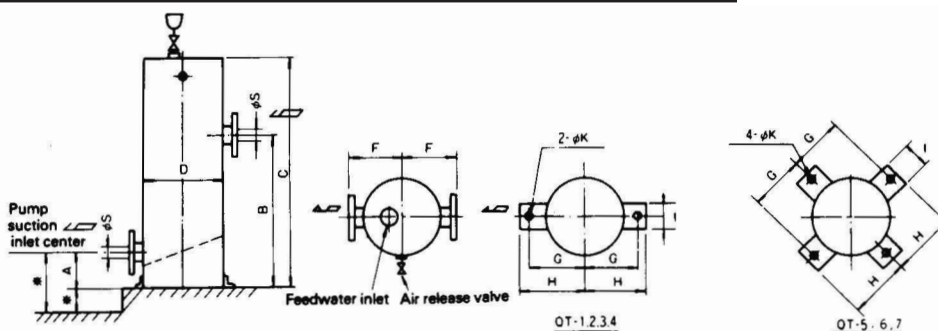
- Pressure: $-1 \sim +0.5 \text{ kgf/cm}^2$ $\{-0.0981 \sim +0.049 \text{ MPa}\}$
- Material: SS400 and others
- Flange: JIS 10 kgf/cm²

Standard Accessories

Air release valve	1
Funnel, with valve	1 set
Anchor bolts	1 set

DIMENSION - SAL QT SELF-PRIMING TANK

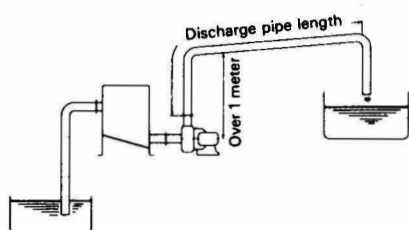
Model	øS	A	B	C	D	F	G	H	I	K	Weight [Mass] Kg
QT-1	40	100	570	770	217	150	130	144	40	12	27
QT-2	50	120	540	780	268	180	155	174	40	12	40
QT-3	65	120	480	780	319	220	185	205	45	15	53
QT-4	80	120	495	850	356	240	200	223	45	15	63
QT-5	125	160	630	1200	508	350	295	319	65	15	188
QT-6	150	210	980	1670	562	400	320	436	65	19	210
QT-7	200	280	580	1600	812	550	450	481	75	24	320



Note: Dimensions marked with asterisk(*) must match pump dimensions.

Notes on Installation

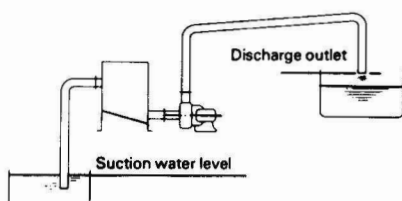
- One self-priming tank should be installed for each pump.
- Pump suction piping:
 1. Connect self-priming tank and pump with no more than two meters of straight piping. Avoid to use elbow as much as possible.
 2. Never allow air in the suction side since pressure will drop.
- Pump discharge piping:
 1. Discharge piping should be higher than top of tank.
 2. Total discharge piping length should be as shown in table below.



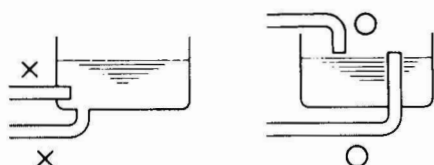
Pump size	Discharge pipe length x dia.
40 x 32SAL	18m x 1 1/4 B
50 x 40SAL	18m x 1 1/2 B
65 x 50SAL	13m x 2B
80 x 65SAL	10m x 2 1/2B
125 x 100SAL	12m x 4B
150 x 125SAL	17m x 5B
200 x 150SAL	24m x 6B

CONVERSION OF SI UNIT
 $1 \text{ kgf/cm}^2 = 0.0980665 \text{ MPa}$

3. The end of the discharge piping should be higher than suction water level.



4. Do not use a check valve. Install so that there will not be a reverse flow at the end of the discharge piping.



5. When a pump is not operating for extended periods, or when it is a type that does not use external feedwater, add water to the tank occasionally.