

# PSV-40 type Pump installation, disassembly, and reassembly

- This instruction manual describes how to disassemble and reassemble the PSV-40 type pump. For details about other operations, see main part of the instruction manual.
- Be sure to deliver this instruction manual with main part of the instruction manual to operators who actually operate the pump.
- Be sure to store this instruction manual and main part of the instruction manual in a safe place where all concerned personnel can refer to it immediately.

## Pump installation



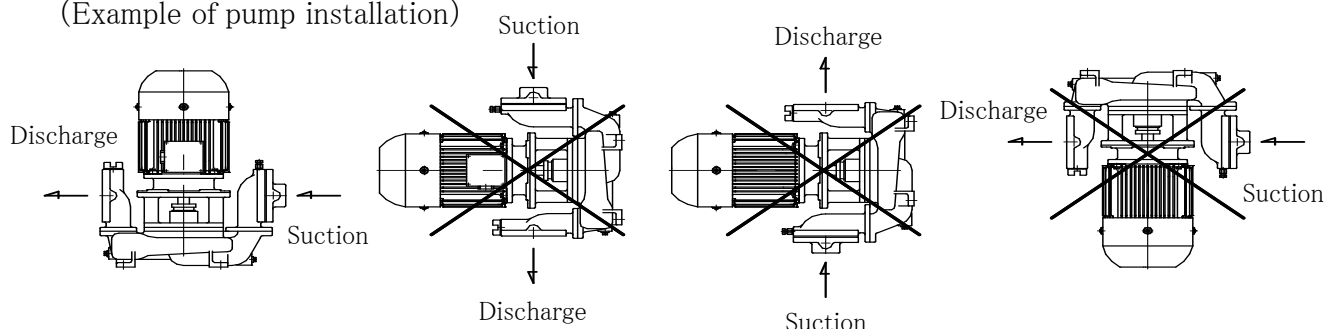
### CAUTION

● When installing pumps, be sure to install the electrical motor either above or to the side of the pump.

\* Never install the electric motor hanging downward.

If the electric motor is installed hanging downward, slight water leak may enter the electric motor, causing an accident. And failure to do so could result in faulty operation.

(Example of pump installation)

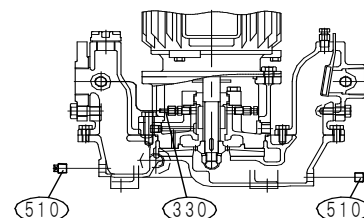


## Pump disassembly

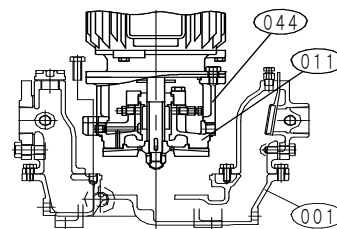
\* This pump can be disassembled without disconnecting it from the piping. However, when necessary, remove the suction flange and discharge flange to detach the casing from the piping.

① Close the gate valves on the suction and discharge sides and remove the drain discharge plug (510) to discharge the fluid from the inside of the pump.

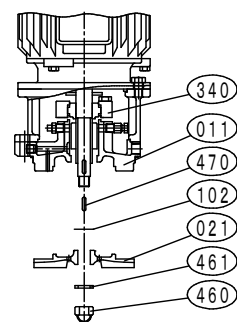
② Disconnect the small piping (external pipe, etc.) around the pump. (For mechanical sealing pump, disconnect the SF pipe (330).)



③ Remove the bolts that secure the casing (001), casing cover (011), and motor base (044). Remove the casing cover (011) together with the motor from the casing (001). (It is convenient to use the motor eye bolts for this work.) In this status, you can inspect the inside of the pump. So, inspect for wear or fault.



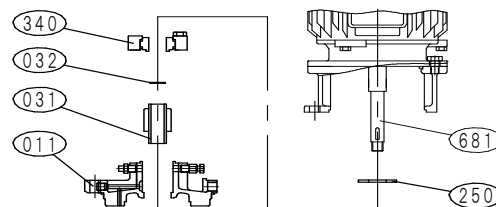
④ Remove the impeller nut (460) and whirl-stop (461), pull out the impeller (021), adjust ring (102), and remove the impeller key (470). (A groove is provided at the shaft end on the rear of the motor shaft. So, use a slotted screwdriver, etc.)



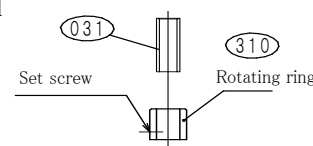
\* 1. For mechanical sealing pump

● For detailed drawing of the mechanical seal, see "Replacing the mechanical seal" on page 12. Remove the mechanical cover (340) from the casing cover (011).

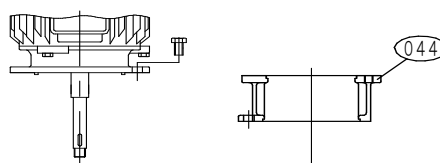
- ⑤ Remove the casing cover (011) from the motor base (044), and pull out the sleeve (031), sleeve packing (032), mechanical cover (340), and deflector (250) from the motor shaft (681).



- \* For mechanical sealing pump, loosen the set screw and pull out the mechanical seal rotating ring (310) from the sleeve (031).



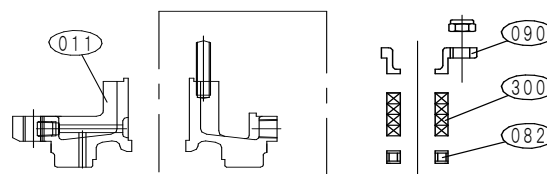
- ⑥ Remove the motor base (044) from the motor.



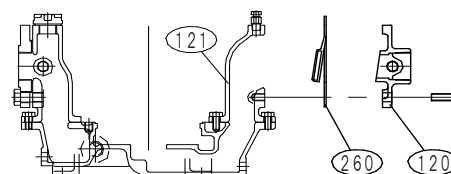
- \* 2. For gland packing pump

- For detailed drawing of the gland packing, see "Replacing the gland packing" on page 12.

Remove the packing retainer (090) from the casing cover (011), and take out the gland packing (300) and water sealing ring (082) from the inside of the pump.



- ⑦ Remove the suction flange (120) from the suction flange (121), and take out the suction valve (260)



## Pump reassembly

Reassembly of the pump is possible by the reverse order of disassembly.

However, pay special attention to the following points.

- (1) Adjust the gap between the semi-open impeller(021) and the casing(001) to be between 0.5 and 1.0mm.  
If necessary, insert an adjust ring(102) between the back of the impeller(021) and the sleeve(031).  
\* The adjustment ring becomes sold separately.
- (2) The suction valve(260) may hang down by own-weight, so be sure to pull up on it from the top when attaching the suction flange(120).
- (3) When attaching the casing cover(011), be careful to orient it properly.
- (4) Replace each packing with a new one.
- (5) If any part is worn out or damaged, replace it with a new one.
- (6) If the inside of each part is clogged with contaminant, clean it before use.

## CAUTION

- For mechanical sealing pump, be sure to bleed the air through the air vent valve(500) before starting the operation.

If the air is not bled, the mechanical seal may be broken.

- When changing the gland packing to the mechanical sealing, be sure to install the air vent valve (500) and SF pipe (330).

Otherwise, the mechanical seal may be broken.

- Do not stretch the SF pipe (330) excessively or give any damage to it.  
Additionally, do not operate the pump under operating conditions other than those shown below.

- \* Operating pressure 12 kg/cm<sup>2</sup> or less
- \* Fluid temperature 80 °C or less

Otherwise, the pipe may be broken, leading to scattering of fluid inside the pump.