

Customer Support - Commissioning

PRECAUTIONS TO BE TAKEN BEFORE OPERATION :

Stuffing Box

Make sure that the stuffing box has been properly packed (see sub-section) and above all that the gland has not been tightened too firmly as, otherwise, damage will occur to the packing and the shaft sleeve. See to it that it is not tightened unevenly and does not rub on the shaft. The shaft must run freely, it must be possible to run it by hand with ease.

Oil Level

Check the oil level in the bearing housing.

Check of direction of rotation

The direction of rotation must correspond to the direction arrow on the volute casing. If the direction cannot be checked whilst the machine is disconnected, the motor may be started for a moment only.

On pumps equipped with mechanical seals this check may be carried out only with the machine disconnected.

Wrong direction of rotation will soon damage to the pump.

Priming the pump

Prior to priming the pump, open the piping supplying the external sealing liquid, the cooling water for the shaft seal and if required, the cooling water for the oil bath. Make sure that the water flows.

When priming the pump, please note:

Pump, suction or feed line must in all cases be filled and properly vented. It is recommended to slowly rotate the pump shaft by hand during the priming procedure. For suction lift duty, the pump can be primed

- ▶ By evacuating the air from the pump and suction line with the regulating valve closed in the delivery line
- ▶ When the delivery line is filled, by opening the regulating valve or a by pass piping in the delivery line
- ▶ Take care that the valves in the suction line (foot valve!) are not stressed beyond the permissible working pressures.

If suction head conditions exist, the isolating valve in the feed line may be opened in order to fill the pump. If a connecting pipe exists between the equalizing pipe and pump delivery branch, the valve in the connecting pipe must be open whilst the pump is primed. During pump operation this valve remains closed.

Attention:

When hot liquids are involved, quick priming of the pump causes distortions and should be avoided. By slowly opening the isolating valve even heating up of the pump is achieved.

□ Starting Up

The isolating valve in the feed line (and, if there is any, the valve in the vacuum equalizing pipe) should be open. The regulating valve in the delivery line, however, should be closed or in the case of automatic operation, the full backpressure should be on the non-return valve.

Make sure that there is a flow in the pipes supplying the external sealing liquid, the cooling water for the shaft seal and, if required, the cooling water for the oil bath. Do not switch on motor until then.

If the delivery pressure does not rise continuously as speed increases, stop the set and prime once more carefully.

Once the pump has run up to working speed, open the regulating valve in the delivery line slowly until the required service data are reached.

Prolonged operating against closed regulating valve in the delivery line may lead to destruction of the internal pump parts and must therefore be avoided.

An alteration of the service data, which might become necessary, may be effected only with the aid of a regulating valve in the delivery line.

Particular care should be taken that the driver does not get overloaded if the weight of the liquid handled is greater than that originally assumed, that the available suction head is still sufficient in case of larger flow rates or, alternatively, that the suction lift to be overcome by the pump is not too high, as otherwise damage due to cavitation will occur.

When starting up automatically operated plants, all isolating valves, hence the delivery gate valve too, must be kept open.

□ Stopping

- ▶ If there is no back flow preventer (non -return flap, non-return valve, etc.) close the regulating valve in the delivery line. Do not switch off motor until then.
- ▶ Close isolating valve in the feed line only if necessary.
- ▶ Once the pump has completely cooled down, shut off the external and cooling water supply. If the pump draws from a vacuum tank, close vacuum equalizing pipe. However, do not shut off the sealing liquid supply.
- ▶ If a vacuum gauge without relief valve is attached to the suction branch of the pump, then it must be isolated before stoping the pump set.
- ▶ If as a result of prolonged shutdown a change in the concentration of the liquid, crystallization, or solidification etc., can be anticipated, drain pump and, if necessary, flush with a suitable liquid.
- ▶ If there is a danger of freezing up during prolonged shut-down periods, the pump including the cooling chamber, heating chamber, etc., must be drained.

□ Re Starting

Before restarting the set take care that the pump shaft is at rest and does not rotate backwards. Starting with the shaft rotating in opposite direction may lead to shaft damage.