



SYSTEMFLO

SAK series

Operating Manual
SAK Coolant Pump



⚠ Please read this instruction manual carefully before installing your new system as failures caused by incorrect installation and operation are not covered by the warranty.

1. Application

The SPC Series coolant pump is design for the circulation and spraying of cooling lubricants, especially for machine tools. This series may be used on all machine tools performing operations involving Turning, Milling, Drilling, Cutting, Slitting, Grinding, etc. It is suitable to carry liquids such as water, coolant, light oil and other clean, non-aggressive liquids.

2. Operating Limits

Ambient temperature : Max. +40°C
 Liquid temperature range : 0°C to 90°C
 Operating pressure : Max.10 kg/cm²
 Head : 50Hz : Up to 12M
 60Hz : Up to 16.5M

3. Installation

⚠ The pump has hot surfaces on the motor. It must be installed so that persons cannot accidentally come into contact with the hot surface.

3.1. Pump location

Note : The pumps can only be mounted in vertical position, see fig.1

3.2. Submerged depth : L(mm)

To avoid dry running and damaging the pump during operation, the minimum pump immersion depth is as follows in fig.2

Model	SAK-2	SAK-4	SAK-8
L (mm)	50	55	60

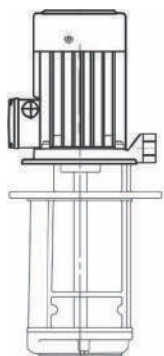


Fig.1

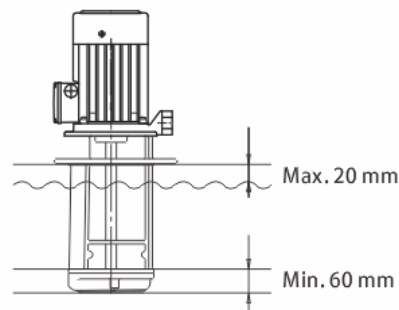
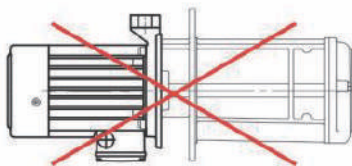


Fig.2

4. Electrical Connection

- The electrical connection should be carried out in accordance with local regulations. Never make any connections unless the power supply has been switched off.
- The electrical hazard warning mark is placed outside the connection box.
- Electrical data (voltage and frequency) are shown on the pump nameplate. Verify if these data match your power supply. A Residual current device (RCD, 30mA) should be installed and the grounding be properly connected for your safety.
- Motors must be connected to a motor-protective circuit breaker which can be manually reset. Set the motor-protective circuit breaker according to the rated current of the motor. See nameplate. Make electrical connection in accordance with connecting diagram located inside the connection box. The motor current must be within the rated amps range indicated on nameplate. Three phase motors require a magnetic starter for safety.
- For three phase motors, check the fan cover for guidance on the correct direction of rotation. If the rotation is wrong, you can reverse the direction of rotation by interchanging any two of the incoming supply wires as shown in fig.3.
- Motors must be equipped with an overload protector and open-phase protector to avoid motor damage.

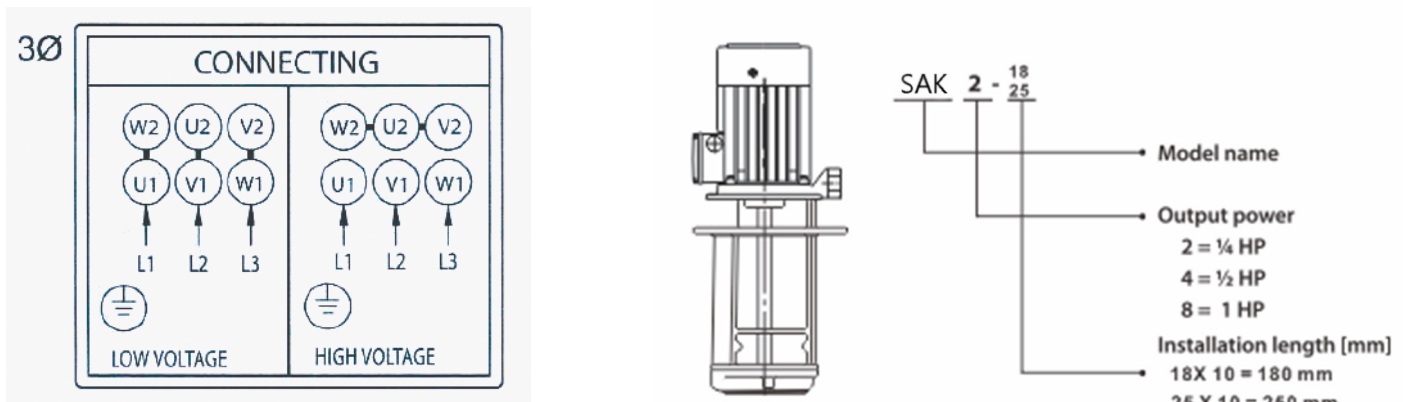


Fig.3

5. Start-up

Before starting the pump, make sure of the following:

- For three phase motors, verify if the rotating direction is correct. The correct direction should be indicated by an arrow on the fan cover.
- All piping joints are completely tight. Leakage in piping may cause pump hydraulic loss.
- The pump is filled with liquid.
- The suction filter is not blocked by any foreign objects.

6. Operation and Maintenance

- ⚠ It is dangerous to operate the pump against a closed discharge outlet because it will cause extremely high liquid flow temperature and damage the pump within minutes.

Periodic checks

The following checks should be carried out periodically to ensure the normal operation.

- Check the volume of liquid and operating pressure.
- Check that there are no leaks on piping joints.
- Check the tripping of the motor starter.
- Check that all controls are functioned normally.
- The pump must not be used to transfer explosive liquids. In systems with hot liquids (over 60°C), extra caution should be exercised to avoid personal injury.
- The pump should not be used to transfer toxic or contaminated liquids. Please carefully follow all instructions in the manual as Systemflo may refuse to accept the contaminated pump for servicing.

7. Trouble Shooting

(Make sure power supply has been switched off before attempting to diagnose any fault)

Fault	Cause
Motor does not start	No power supply
	Fuses are blown
	Motor overheating relay tripped
	Defective magnetic contactors
	Control circuit malfunction
Motor cut out during operation	Fuses blown or breakers tripped
	Overheating relay tripped
	Control circuit malfunction
	Pump locked up by foreign objects
Pumped capacity is not constant	Pump impeller blocked by impurities
	Insufficient liquid level in the tank (See Sec . 3.2)
Pump runs but no liquid at discharge	Impellers damaged
	Liquid level is too low (See Sec. 3.2)
	Incorrect rotating direction

LIMITED WARRANTY

Systemflo pumps are warranted to the first user only to be free of defects in material and workmanship for a period of 12 months from date of installation, but no more than 24 months from date of shipment. Systemflo's liability under this warranty shall be limited to repairing or replacing at our discretion, without charges, FOB Systemflo's distribution center or authorized service agent. Systemflo will not be liable for any cost of removal, installation, transportation, or any other charges that may arise in connection with warranty claim.

The warranty period commences on the date of original purchase of the equipment. Proof of purchase and installation date, failure date, and supporting installation data must be provided when claiming repairs under warranty.

This warranty is subject to due compliance by the original purchaser with all directions and conditions set out in the installation and operating instructions. Failure to comply with these instructions, damage or breakdown caused by fair wear and tear, negligence, misuse, incorrect installation, inappropriate chemicals, or additive in the water, inadequate protection against freezing, rain or other adverse weather conditions, corrosive or abrasive water, lightning or high voltage spikes or through unauthorized persons attempting repairs are not covered under warranty.

Systemflo will not be liable for any incidental or consequential damages, losses, or expenses arising from installation, use, or any other causes. There are no express or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.



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