

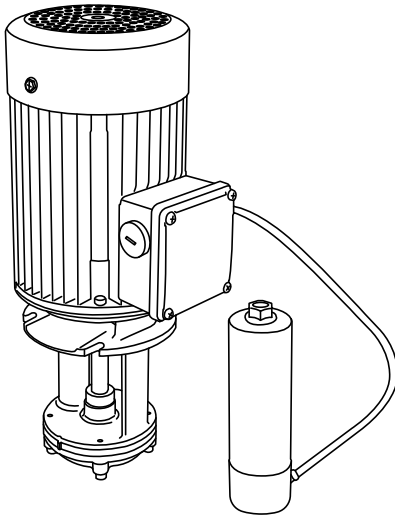


WALRUS
PUMP

TPGK Series

Instruction Manual

Immersible Pump



Model : TPGK440

To ensure safe and proper use, please read this instruction before operation.

ISO 9001 Certified Walrus America Inc.



TPGK Instruction Manual

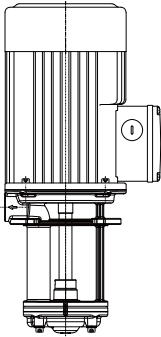


Before installing your new system, please study all instructions carefully, as the warranty does not cover failures caused by incorrect installation and operation.

1. Application

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

2. Model Code



TPGK 440

Model name

Pressure flow

3. Operating Limits

1. Ambient temperature: Max. +40 °C (104 °F)
2. Liquid temperature range: 0°C ~ +90°C (32 °F - 194 °F)
3. Enclosure Class: IP54
4. Operating pressure: Max. 6kg/cm² (85psi)
5. Submerged depth: Min 60mm (2.36in.)
6. Particle Size: Ø0.1mm
7. Liquids(maximum content of solid

- particles in suspension 50g/m³)
8. Kinematical Viscosity: 32 cst (mm²/s)
9. Stop and Restarts:

input power[W]	Times/hour
Below 3000	250

4. Installation



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

4.1. Pump Location

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

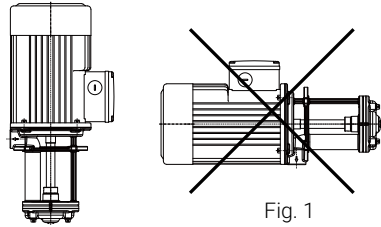


Fig. 1

4.2. Submerged Depth: L (mm)

To avoid dry running and damage the pump during operation, the minimum liquid level should cover inlet at least 60mm as shown in Fig.2. In addition, the bottom of the pump suction inlet must be at least 40mm(1.57in.) above the bottom of the tank.

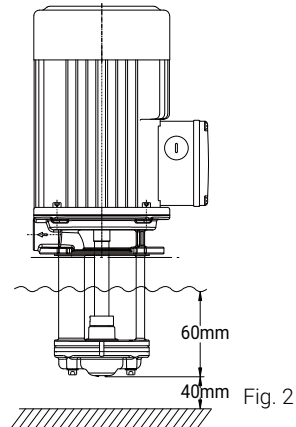


Fig. 2

4.3. Maximum liquid level

The maximum liquid level in the installation tank must be 20 mm (0.78in.) below the top of the tank.

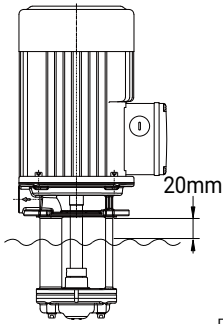


Fig. 3

5. Electrical Connection



5.1 The electrical connection should be carried out in accordance with local regulations. Never make any connections unless the electricity supply has been switched off.



5.2. The electrical hazard warning mark is placed outside the connection box. Be careful.

- 5.3. Electrical data (voltage and frequency) are shown on the pump nameplate. Verify if these data match your electricity supply. A Residual current device (RCD, 30mA) should be installed and the grounding be properly connected for your safety.
- 5.4. 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.
- 5.5. 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 motor requires a magnetic starter for safety.

- 5.6. For three phase motors, look down from the fan cover the correct direction of rotation is rotate clockwise. If wrong rotation, you can reverse the direction of rotation by interchanging any two of the incoming supply wires.
- 5.7. Motors must equipped overload protector and open-phase protector to avoid motor damage.

6. Start-Up

Before starting the pump, make sure the following:

- 6.1. For three phase motors, verify if the rotating direction is correct. It should be clockwise, look down from the motor fan cover.
- 6.2. All piping joints are completely tight. Leakage in piping may cause the pump hydraulic loss.
- 6.3. The pump is filled with liquid.
- 6.4. The suction filter is not blocked by any foreign objects.

7. 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 in a few minutes.

7.1. Lubrication

The mechanical seal and shaft sleeves are lubricated by the pumped liquid.

7.2. Periodic Checks

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

- 7.2.1. Check the quantity of liquid and operating pressure.
- 7.2.2. Check there are no leaks on piping joints.
- 7.2.3. Check the tripping of the motor starter.

- 7.2.4. Check that all controls are functioned normally.
- 7.3. When pump is not in use for a period, it should be drained. For start up after long time inactivity please check if the impeller and mechanical seal are free. If they are locked up by sand, rust or something else please clean them up.
- 7.4. The pump must not be used to transfer explosive liquids. In systems with hot liquids (over 60°C, 140 °F), extra caution should be exercised to prevent from personal injury.
- 7.5. The pump should not be used to transfer toxic or contaminated liquids. Please carefully follow all instructions in the manual as Walrus may refuse to accept the contaminated pump for servicing.
- 7.6. If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

8. Noise Level

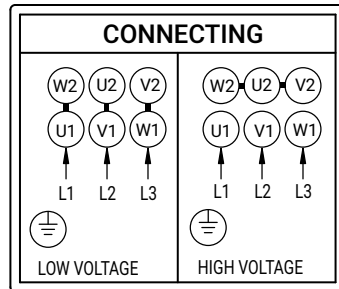
Motor	dB(A)
TPGK440	<70

The above drawing shows the noise level while the pump operated with a closed outlet.

The tolerance of noise level is $\pm 3\text{dB(A)}$.

9. Wiring Diagram

3Ø



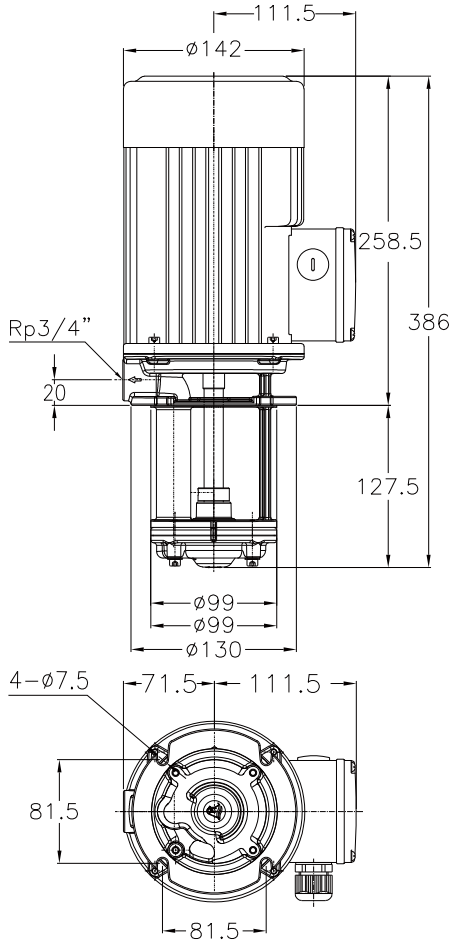
10. Fault Finding

Make sure to disconnect the power before attempting to diagnose any fault.

Fault	Cause	Remedy
1. Motor does not run when started.	Supply failure.	Connect the electricity supply.
	Fuses are blown.	Replace fuses.
	Motor starter overload has tripped out.	Reactivate the motor protection.
	Thermal protection has tripped out.	Reactivate the thermal protection.
	Main contacts in motor starter are not making contact or the coil is faulty.	Replace contacts or magnetic coil.
	Control circuit is defective.	Repair the control circuit.
	Motor is defective.	Replace the motor.
2. Motor starter overload trips out immediately when supply is switched on.	One fuse/automatic circuit breaker is blown.	Cut in the fuse.
	Contacts in motor starter overload are faulty.	Replace motor starter contacts.
	Cable connection is loose or faulty.	Fasten or replace the cable connection.
	Motor winding is defective.	Replace the motor.
	Pump mechanically blocked.	Remove the mechanical blocking of the pump.
	Overload setting is too low.	Set the motor starter correctly.
3. Motor starter overload trips out occasionally.	Overload setting is too low.	Set the motor starter correctly.
	Low voltage at peak times.	Check the electricity supply.
4. Motor starter has not tripped out but the pump does not run.	Supply failure.	Connect the electricity supply.
	Fuses are blown.	Replace fuses.
	Thermal protection has tripped out.	Reactivate the thermal protection.
	Main contacts in motor starter are not making contact or the coil is faulty.	Replace contacts or magnetic coil.
5. Pump runs but gives no liquid or pump capacity is not constant.	Pump strainer partly blocked by impurities.	Clean the strainer.
	Liquid level in tank too low.	Increase the liquid level.
	Pump draws in air.	Check the suction conditions.
6. Leakage in shaft seal.	Shaft seal is defective.	Replace the shaft seal.
7. Noise.	Cavitation occurs in the pump.	Check the suction conditions.
	Pump does not rotate freely (frictional resistance) because of incorrect pump shaft position.	Adjust the pump shaft.

11. Dimensions

TPGK440





WALRUS
PUMP



walrusamerica.com

Walrus America Inc.