

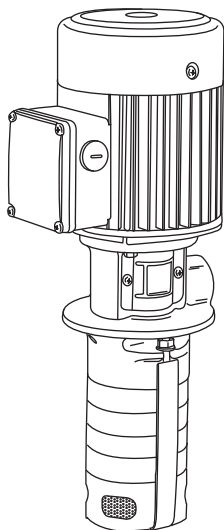


WALRUS
PUMP

TPK Series

Instruction Manual

Immersible Pump (WATER PUMP)



Model : 2T / 4T

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

ISO 9001 Certified WALRUS PUMP CO., LTD. 



EC Declaration of Conformity

Manufacturer:

Walrus Pump Co., Ltd.

Address:

No.83-14, Dapiantou, Sanzhi Dist., New Taipei City 252, Taiwan

Declare that the machinery described:

Name: Water Pump

Model: TPK Series

Conform to the following directive:

2006/42/EC—Machinery directive

2014/35/EU—Low voltage directive

2014/30/EU—EMC (Electromagnetic compatibility) directive

Refer to the following standards:

EN ISO 12100:2010

EN 809:1998+A1:2009

EN 60335-1:2012+A15

EN IEC 60335-2-41:2021+A11

EN IEC 61000-6-2:2019

EN IEC 61000-6-3:2021

R&D Department: Chen, Chih-Chung

Director: *Chen, Chih-Chung*

TPK 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. Electrical Connection



1.1 Electrical installation should be carried out in accordance with the local electrical code. Make sure that the electricity supply has been switched off before electrical connection.



1.2 This mark located outside the connection box is an Electrical Hazard Warning.

1.3 Electrical specifications (voltage, hertz) are shown on the pump nameplate. Verify that the power supply voltage and hertz match pump requirement. An external ON/OFF switch must be installed.

1.4 The electrical connection should be carried out in accordance with local regulations. The operating voltage and frequency are marked on the nameplate. Please make sure that these data match with your job requirement. For your safety, be sure the Residual current device (RCD, 30mA) is in your system and grounding is properly connected to prevent from electric shock.

1.5 The pumps must be supplied through a Residual Current Device (RCD) with a rated residual operating current not exceeding 30 mA.

1.6 If the supply cord is damaged, it must be replaced by the manufacturer, authorized service agent, or qualified persons in order to avoid causing a hazard.

1.7 This pump appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless they have been given supervision

or instruction concerning use of the pump appliance by a person responsible for their safety.

1.8 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.

1.9 Three phase motor must check rotating direction. The rotating direction indicated on the fan cover, is counterclockwise viewing from fan cover end. Interchanging any two leads with power off can reverse the pump rotation.

1.10 The position of the motor connecting box is adjustable. Referring to Fig.1, the adjustment can be done by removing the motor fan cover, unscrewing the frame bolts, turning the motor casing and connecting box subassembly together to proper position. Finally, screw the frame bolts tight, and put the fan cover back.

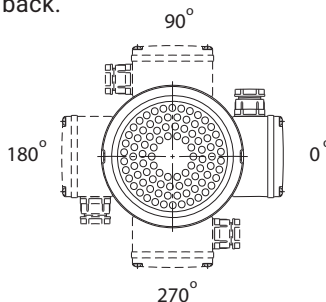


Fig.1

2. Start-Up

Before start the pump, re-verify the following items.

2.1 Verify if three phase pump rotation is correct. The rotating direction should be counterclockwise viewing from fan cover end.

2.2 Piping and joints should be fitted carefully to prevent leak. Leak in the piping will cause the pump hydraulic lost.

2.3 The pump has been filled with liquid.

2.4 The suction filter is not blocked by any foreign objects.

3. Operation and Maintenance



The pump can not be operated under the fully closed of discharge outlet continuously, because it will raise the liquid temperature abnormally, and damage the pump after 5 minutes.

3.1 Lubrication

The pumped liquid lubricates the mechanical seal and shaft sleeves.

3.2 Suction Filter

Suction filter should be always kept clean to make sure no any foreign objects block the filter in order to have best performance.

3.3 Periodic Checks

To ensure regular operation, please follow the below-checking points:

- 3.2.1 Check the amount of liquid and operating pressure.
- 3.2.2 Check there are no leaks on piping joints.
- 3.2.3 Check the tripping of the motor starter.
- 3.2.4 Check that all controls are functioning normally.
- 3.4 If the pump is not in use for some time, it should be drained by removing the priming and drain plugs. If the pump hasn't been in use for some time. After start-up inactivity, please check if the impeller and mechanical seal are free for a start-up. Please clean them up if the impeller and mechanical seal are locked up by sand, rust, or other factors.
- 3.5 DO NOT use the pump to transfer explosive liquids. In systems with hot liquid (over 60 °C), extra caution should be exercised to prevent personal injury.
- 3.6 DO NOT use 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.

- 3.7 If the power supply cord is damaged, it must be replaced by an authorized engineer or assembly available from the manufacturer or service agent.



Always disconnect the appliance from the supply before assembling, disassembling or cleaning.

Pumps without indication that they are protected against the effect of freezing shall not be left outside during freezing weather conditions.

To disconnect the appliance from its power source during service and when replacing parts.

4. Application

- 4.1 The TPK series is multi-stage centrifugal pump designed for transferring liquid used in machine tools.



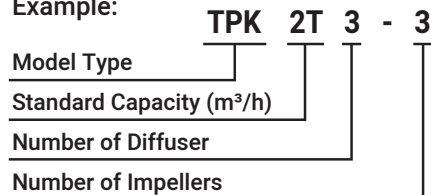
- 4.2 The pump can not be used to transfer explosive liquids, such as gasoline, diesel oil and other similar liquids. It is only suitable for water diluted, low viscosity, uncorrosive cooling or lubricant liquids.

Caution: The pump must NOT be used to transfer flammable or toxic liquids.

5. Model Explanation

The pump models are coded based on the number of pump stages. Standard stages consist of both diffusers and impellers, and null stages, for special installation considerations, contain diffuser chamber only. The pump model is shown on the pump nameplate.

Example:



6. Operation Conditions

- 1. Ambient Temperature: Max.+40°C
- 2. Liquid Temperature: +0°C to +90°C
- 3. Enclosure Class: IP54

4. Discharge Pressure: Max.10kg/cm²
5. Submerged depth: Min. 40mm
6. Stainer Diameter: Ø2mm
7. Particle Size: 2mm
8. Liquids(maximum content of solid particles in suspension 50g/m³)
9. Kinematical Viscosity: 32 cst (mm²/s)
10. Head: 50Hz: Up to 70M
60Hz: Up to 100M

7. Installation



The motor surface temperature is extremely high. It must be mounted in the save place to avoid accidental touch.

7.1. Mounting Position

The pump must be mounted vertically. Installation is simply done by inserting the pump into the hole on the tank top, and fixed by four bolts in mounting flange. Flange dimensions are shown in Fig 2.

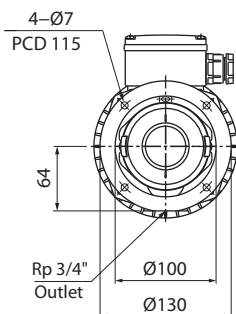


Fig.2

7.2 Submerged Depth

To avoid dry running and damage the pump during operating, the minimum pump submerged depth is 40mm, as shown in Fig. 3. In addition, a minimum 25mm gap between pump suction inlet and tank bottom is required to allow for sediment build up.

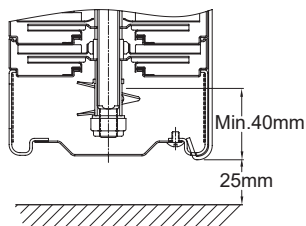


Fig.3

7.3 We recommend outlet should stay the same size as the original. If you narrow the pipe size, it will affect the performance of the pump.

7.4 The motor protector shall be installed by the user.

8. Noise Level

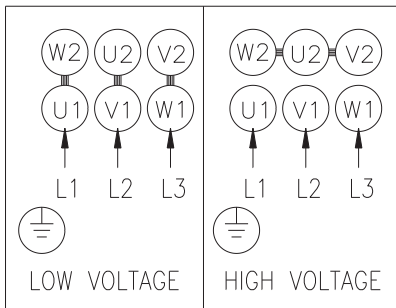
Motor	dB(A)
TPK2T**-1	<70
TPK2T**-3	<70
TPK2T**-5	<70
TPK2T**-8	<70
TPK2T**-11	<70
TPK2T**-12	<70
TPK2T**-15	<70
TPK2T**-17	<70

Motor	dB(A)
TPK4T**-1	<70
TPK4T**-3	<70
TPK4T**-5	<70
TPK4T**-7	<70
TPK4T**-8	<70
TPK4T**-10	<70
TPK4T**-11	<70
TPK4T**-12	<70
TPK4T**-15	<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

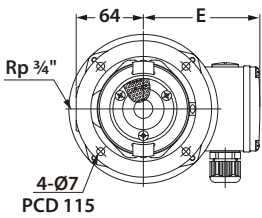
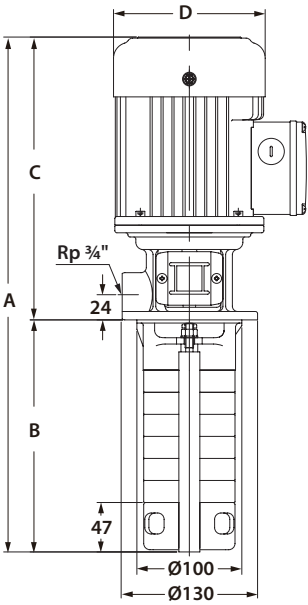


10. Fault Finding

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

Fault	Cause
1. Motor does not start	1. No electricity supply.
	2. Fuses blown or breaker tripped.
	3. Overheating relay tripped.
	4. Defective magnetic contactor.
	5. Control circuit malfunction.
2. Motor cut out during operation.	1. Fuses blown or breakers tripped.
	2. Overheating relay tripped.
	3. Control circuit malfunction.
	4. Pump locked by foreign objects
3. Pump gives unstable discharge.	1. Pump impeller blocked by foreign objects.
	2. Insufficient liquid level. (See Sec.7.2)
4. Pump runs but no water is discharges.	1. Suction filter blocked by foreign objects.
	2. Low liquid level. (See Sec.7.2.)
	3. Incorrect rotating direction.

11. Dimensions



2T

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TPK2T5-1	480	222	258	123	99
TPK2T3-3	438	180	258	123	99
TPK2T5-3	480	222	258	123	99
TPK2T8-3	543	285	258	123	99
TPK2T11-3	606	348	258	123	99
TPK2T5-5	490	222	268	142	111
TPK2T8-5	553	285	268	142	111
TPK2T10-5	595	327	268	142	111
TPK2T11-5	616	348	268	142	111
TPK2T15-5	700	432	268	142	111
TPK2T8-8	553	285	268	142	111
TPK2T11-8	616	348	268	142	111
TPK2T11-11	656	348	308	142	111
TPK2T15-12	740	432	308	142	111
TPK2T15-15	740	432	308	142	111
TPK2T19-15	824	516	308	142	111
TPK2T19-17	824	516	308	142	111

4T

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TPK4T3-1	438	180	258	123	99
TPK4T5-1	480	222	258	123	99
TPK4T3-3	448	180	268	142	111
TPK4T5-3	490	222	268	142	111
TPK4T8-3	553	285	268	142	111
TPK4T19-3	784	516	268	142	111
TPK4T5-5	490	222	268	142	111
TPK4T8-5	553	285	268	142	111
TPK4T11-5	616	348	268	142	111
TPK4T15-5	700	432	268	142	111
TPK4T19-5	784	516	268	142	111
TPK4T19-7	824	516	308	142	111
TPK4T8-8	593	285	308	142	111
TPK4T11-8	656	348	308	142	111
TPK4T15-8	740	432	308	142	111
TPK4T19-8	824	516	308	142	111
TPK4T11 -10	656	348	308	142	111
TPK4T15 -10	740	432	308	142	111
TPK4T19 -10	824	516	308	142	111
TPK4T11-11	656	348	308	142	111
TPK4T15-12	740	432	308	142	111
TPK4T19-12	824	516	308	142	111
TPK4T15-15	740	432	308	142	111
TPK4T19-15	824	516	308	142	111

Limited Warranty

Products manufactured by Walrus Pumps Co (Walrus) are warranted to the first user only to be free of defects in material and quality for 12 months from the date of installation but no more than 24 months from the date of shipment. Walrus' liability under this Warranty shall be limited to repairing or replacing at our election, without charge, FOB Walrus' distribution center or authorized service agent. Walrus will not be liable for any cost of removal, installation, transportation, or any other charges that may arise in connection with the warranty claim.

The warranty period commences on the 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 additives 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.

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

This warranty sets forth specific legal rights and obligations. Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of restrictions on the duration of an implied warranty. Therefore, the rules or exclusions herein may not apply. However, additional rights may exist, varying from state to state.

The above Warranty supersedes all previous publications.



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