



WALRUS

TPK Immersible Pump

Instruction Manual



ISO 9001 Certified

Walrus America Inc

EC Declaration of Conformity

Manufacturer:

Walrus Pump Co., Ltd.

Address:

No. 83 -14, Dapiantou, Sanjhih Township, Taipei County 252, Taiwan

Declare that the machinery described:

Name : Water Pump

Model : TPK Series

Conform to the following directive:

2006/42/EC—Machinery directive

2006/95/EC—Low voltage directive

2004/108/EC—EMC (Electromagnetic compatibility) directive

Refer to the following standards:

EN ISO 12100-1:2003

EN ISO 12100-2:2003

ISO14121-1:2007

EN60335-1:2002

EN 809:1998

EN60335-2-41:2003

EN61000-6-2

EN61000-6-3

R&D department manager: Kao Tien-chuan

Manager:

Kao Tien chuan



Please read this installation and operating instructions carefully before beginning installation and operation.

I. Application

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

1.2 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.



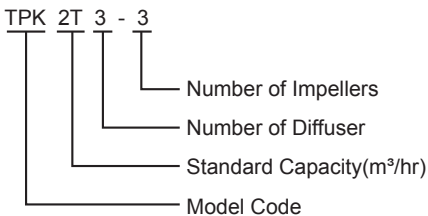
CAUTION

This pump has been tested to water only.

II. 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:



III. Technical Data

Ambient temperature: Max. 122°F (50°C)

Liquid temperature range: 32°F(0°C) to 194°F(90°C)

Flow: 4 GPM to 26 GMP

Head: 20ft to 210ft

Operating pressure: Max. 142psi

Submerged depth: Min. 2.6in.

IV. Installation



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

4.1 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 1.

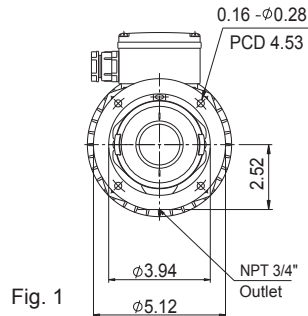


Fig. 1

4.2 Submerged Depth

To avoid dry running and damage the pump during operating, the minimum pump submerged depth is 2.36in., as shown in Fig. 2. In addition, a minimum 1in. gap between pump suction inlet and tank bottom is required to allow for sediment build up.

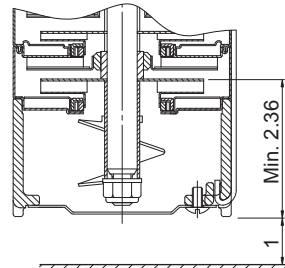


Fig. 2

V. Electrical Connection

- 5.1 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.



- 5.2 Resulting in electrical hazard warning mark has been marked outside the connecting box. Be careful.



- 5.3 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.
- 5.4 Electrical connection should be in accordance with diagram shown on connecting box, and motor current should be within rated amps as shown on nameplate. Three phase pump requires extra magnetic starter with protection.
- 5.5 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.
- 5.6 The position of the motor connecting box is adjustable. Referring to Fig.3, 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.

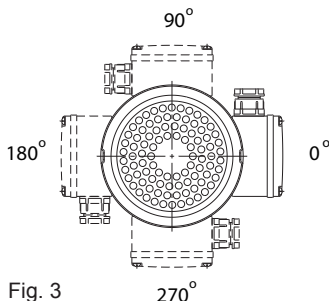


Fig. 3

VI. Start-Up

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

- 6.1 Verify if three phase pump rotation is correct. The rotating direction should be counterclockwise viewing from fan cover end.
- 6.2 Piping and joints should be fitted carefully to prevent leak. Leak in the piping will cause the pump hydraulic lost.
- 6.3 The pump has been filled with liquid.
- 6.4 No any foreign objects block the suction filter.

VII. 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.

7.1 Lubrication

The mechanical seal and shaft sleeves inside the pump are lubricated by working liquid.

7.2 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.

7.3 Periodic Examination

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

- 7.3.1 Check the discharge and output pressure of working liquid.
- 7.3.2 Check the leak of piping and joints.
- 7.3.3 Examine the motor starter/container.
- 7.3.4 Test all the pump control function.
- 7.4 The pump can not be used to transfer explosive liquids. Extra protective device is required if the working liquid temperature exceeds 140°F to avoid scald hazard.
- 7.5 The pump should not be used in the transferring of toxic or contaminated liquid. Service and maintenance will not be provided, if the pump application is not in compliant with the installation and operation procedures. The user must take the responsibility for the damage.

VIII. Sound Pressure Level

MODEL	[dB(A)]
TPK 2T ** - 1	<70
TPK 2T ** - 3	<70
TPK 2T ** - 5	<70
TPK 2T ** - 8	<70
TPK 2T ** -11	<70
TPK 2T ** -12	<70
TPK 2T ** -15	<70
TPK 2T ** -17	<70

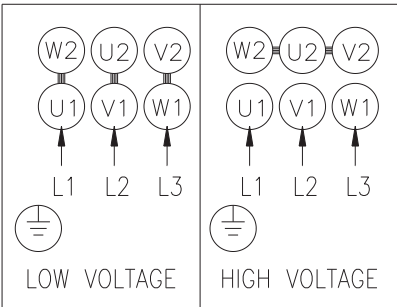
MODEL	[dB(A)]
TPK 4T ** - 1	<70
TPK 4T ** - 3	<70
TPK 4T ** - 5	<70
TPK 4T ** - 7	<70
TPK 4T ** - 8	<70
TPK 4T ** -10	<70
TPK 4T ** -11	<70
TPK 4T ** -12	<70
TPK 4T ** -15	<70

IX. Trouble Shooting

Make sure electricity supply has been switched off before trouble shooting

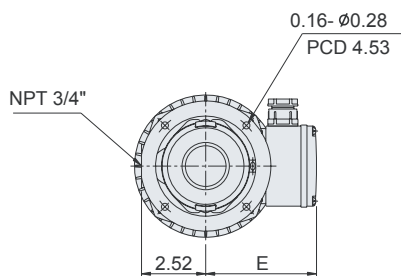
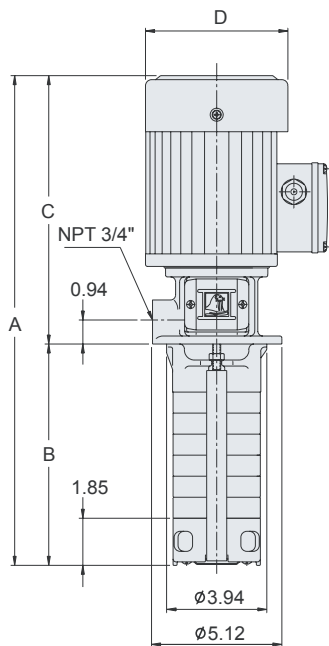
Fault	Causes
1. Motor does not start	1. No electricity supply. 2. Fuses blown or breaker tripped. 3. Overheating relay tripped. 4. Defective magnetic contactor. 5. Control circuit malfunction.
2. Motor cut out during operation	1. Fuses blown or breakers tripped. 2. Overheating relay tripped. 3. Control 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.4.2)
4. Pump runs but no water is discharges.	1. Suction filter blocked by foreign objects. 2. Low liquid level. (See Sec.4.2.) 3. Incorrect rotating direction.

X. Wiring Diagram



XI.Dimensions

Model	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
TPK2T 5 - 1	18.90	8.74	10.16	4.84	3.90
TPK2T 3 - 3	17.24	7.09	10.16	4.84	3.90
TPK2T 5 - 3	18.90	8.74	10.16	4.84	3.90
TPK2T 8 - 3	21.38	11.22	10.16	4.84	3.90
TPK2T 11- 3	23.86	13.70	10.16	4.84	3.90
TPK2T 5 - 5	19.29	8.74	10.55	5.59	4.37
TPK2T 8 - 5	21.77	11.22	10.55	5.59	4.37
TPK2T 10- 5	23.43	12.87	10.55	5.59	4.37
TPK2T 11- 5	24.25	13.70	10.55	5.59	4.37
TPK2T 15- 5	27.56	17.01	10.55	5.59	4.37
TPK2T 8 - 8	21.77	11.22	10.55	5.59	4.37
TPK2T 11- 8	24.25	13.70	10.55	5.59	4.37
TPK2T 11-11	25.83	13.70	12.13	5.59	4.37
TPK2T 15-12	29.13	17.01	12.13	5.59	4.37
TPK2T 15-15	29.13	17.01	12.13	5.59	4.37
TPK2T 19-15	32.44	20.31	12.13	5.59	4.37
TPK2T 19-17	32.44	20.31	12.13	5.59	4.37
TPK4T 3 - 1	17.24	7.09	10.16	4.84	3.90
TPK4T 5 - 1	18.90	8.74	10.16	4.84	3.90
TPK4T 3 - 3	17.64	7.09	10.55	5.59	4.37
TPK4T 5 - 3	19.29	8.74	10.55	5.59	4.37
TPK4T 8 - 3	21.77	11.22	10.55	5.59	4.37
TPK4T 19- 3	30.87	20.31	10.55	5.59	4.37
TPK4T 5 - 5	19.29	8.74	10.55	5.59	4.37
TPK4T 8 - 5	21.77	11.22	10.55	5.59	4.37
TPK4T 11- 5	24.25	13.70	10.55	5.59	4.37
TPK4T 15- 5	27.56	17.01	10.55	5.59	4.37
TPK4T 19- 5	30.87	20.31	10.55	5.59	4.37
TPK4T 19- 7	32.44	20.31	12.13	5.59	4.37
TPK4T 8 - 8	23.35	11.22	12.13	5.59	4.37
TPK4T 11- 8	25.83	13.70	12.13	5.59	4.37
TPK4T 15- 8	29.13	17.01	12.13	5.59	4.37
TPK4T 19- 8	32.44	20.31	12.13	5.59	4.37
TPK4T 11-10	25.83	13.70	12.13	5.59	4.37
TPK4T 15-10	29.13	17.01	12.13	5.59	4.37
TPK4T 19-10	32.44	20.31	12.13	5.59	4.37
TPK4T 11-11	25.83	13.70	12.13	5.59	4.37
TPK4T 15-12	29.13	17.01	12.13	5.59	4.37
TPK4T 19-12	32.44	20.31	12.13	5.59	4.37



Limited Warranty

Products manufactured by Walrus Pumps Co (Walrus) 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. 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 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 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 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.

Supersedes all previous publications

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