



# Installation, Operation, and Maintenance Manual

## GTPK Series Multistage Vertical Immersion Pumps

60 Hz  
MODELS

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GTPK 2T  
GTPK 4T

**RAE Pumps**  
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513.779.3034  
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**Please read this manual carefully before beginning installation and operation.**

## INTRODUCTION

This Installation, Operation, and Maintenance Manual is designed to help you get the best performance and longest life from your RAE pump.

This pump is a GTPK Series vertical multistage centrifugal pump. This self-priming pump should be immersed during operation.

GTPK Series pumps are intended for industrial use to carry fluids such as water, coolant, light oil and other clean, non-aggressive liquids.

Standard pump construction is stainless steel immersed parts.

If there are any questions regarding the pump or its applications which are not covered in this manual, or in other literature accompanying this unit, please contact your RAE Pumps distributor, or write:

**RAE Pumps**  
1212 Streng Street  
Cincinnati, OH 45223  
513.779.3034  
Info@RAEPumps.com  
www.RAEPumps.com

For information or technical assistance on the power source, contact the power source manufacturer's local dealer or representative.

### ! DANGER !

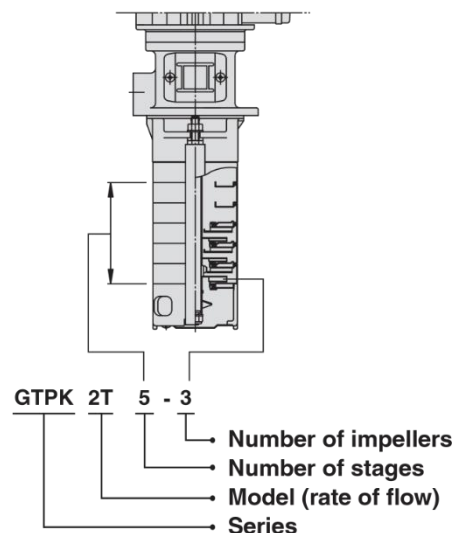
**This pump is not intended to transfer explosive liquids, such as gasoline, diesel oil and other similar liquids. It is only suitable for water, and diluted, low viscosity, non-corrosive cooling or lubricant liquids.**

## SPECIFICATIONS—SECTION A

### MODEL CODE EXPLANATION

The pump models are coded based on the number of pump stages. Standard stages consist of both diffusers and impellers. Some models contain null stages for special installation considerations. Null stages consist of only the diffuser chamber.

The pump model is shown on the pump nameplate.



## OPERATING PARAMETERS

**Ambient temperature:** Max 104°F  
**Liquid temperature range:** 32°F to 194°F  
**Submerged depth:** Min 2.6"

	GTPK 2T	GTPK 4T
<b>Flow (gpm):</b>	4 to 17	9 to 26
<b>Head (feet):</b>	20 to 328	20 to 260
<b>Max psi:</b>	142	112

## MOTOR DATA

**Nominal speed:** 3500 rpm at 60 Hz  
**Standard voltage:** 3 phase; 230V/460V  
**Protection class:** IP54  
**Insulation class:** F

## INSTALLATION-SECTION B

### ! WARNING !

**When running, the motor surface temperature is extremely high. Mount pump in a safe place to avoid accidental touch.**

### MOUNTING POSITION

The pump must be mounted vertically, inserted into the hole on the top of the tank, and fixed by four bolts in mounting flange. Flange dimensions are shown in Figure 1.

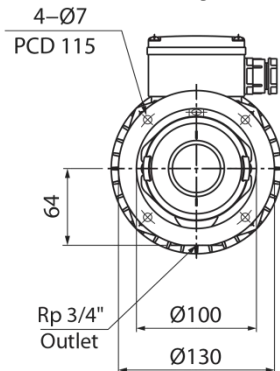


Figure 1

### SUBMERGED DEPTH

To avoid dry running and damage to the pump during operation, the minimum pump submerged depth is 2.6", as shown in Figure 2.

This 2.6" includes a required minimum 1" gap between pump suction inlet and tank to allow for sediment build up.

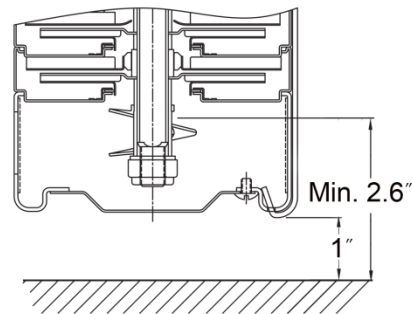


Figure 2

## ELECTRICAL CONNECTION- SECTION C

### ! WARNING !

**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.**

**Use care when accessing pump electrical components.**

### SPECIFICATIONS

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

## CONNECTION

Electrical connection should be in accordance with diagram shown on the connecting box, and motor current should be within rated amps as shown on nameplate. Three phase pump requires extra magnetic starter with protection.

## ROTATION DIRECTION

On this three phase motor, rotating direction is critical. The rotating direction is indicated on the fan cover (counterclockwise viewing from fan cover end). Interchanging any two leads with power off can reverse the pump rotation.

## POSITIONING CONNECTION BOX

The position of the motor connecting box is adjustable. Referring to Figure 3, the position can be changed by removing the motor fan cover, unscrewing the frame bolts, and turning the motor casing and connecting box subassembly together to proper position. Finally, screw the frame bolts tight, and put the fan cover back.

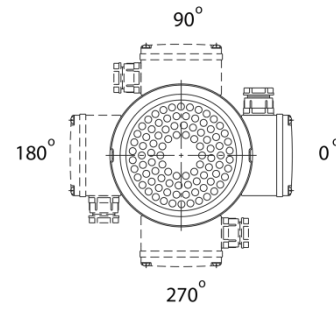
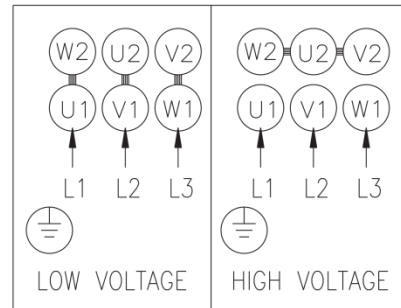


Figure 3

## WIRING DIAGRAM



## OPERATION AND MAINTENANCE—SECTION D

### ! WARNING !

**The pump cannot be operated with discharge outlet fully closed. Doing so will raise the liquid temperature abnormally, and damage the pump after 5 minutes.**

### ! WARNING !

**The pump cannot be used to transfer explosive liquids.**

**Extra protective gear is required if the working liquid temperature exceeds 140°F to avoid scald hazard.**

**The pump should not be used to transfer toxic or contaminated liquid. Warranty will be void if the pump application is not in compliance with the installation and operation procedures.**

## FINAL CHECKS

Before starting the pump, verify:

1. Pump rotation—the rotating direction should be counterclockwise viewing from fan cover end.
2. Piping and joints are fitted carefully to prevent leaks.
3. The pump has been filled with liquid.
4. The suction filter is clear of obstruction.

## LUBRICATION

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

## SUCTION FILTER

For maximum performance, the suction filter should be always kept clean and free from obstructions.

## PERIODIC INSPECTION

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

1. Measure the discharge and output pressure.
2. Inspect piping and joints for leaks.
3. Examine the motor starter/container.

## TROUBLE SHOOTING—SECTION E

**! WARNING !**

**Verify electrical supply has been switched off before trouble shooting.**

<b>Fault</b>	<b>Possible Causes</b>
Motor does not start	<ol style="list-style-type: none"><li>1. No electrical supply</li><li>2. Fuses blown or breaker tripped</li><li>3. Overheating relay tripped</li><li>4. Defective magnetic contact</li><li>5. Control circuit malfunction</li></ol>
Motor cut out during operation	<ol style="list-style-type: none"><li>1. Fuses blown or breaker tripped</li><li>2. Overheating relay tripped</li><li>3. Control circuit malfunction</li><li>4. Pump blocked by foreign objects</li></ol>
Pump discharge is unstable	<ol style="list-style-type: none"><li>1. Pump impeller blocked by foreign objects</li><li>2. Insufficient liquid level</li></ol>
Pump runs but no liquid discharges	<ol style="list-style-type: none"><li>1. Suction filter blocked by foreign objects</li><li>2. Insufficient liquid level</li><li>3. Incorrect rotating direction</li></ol>
Experiencing hydraulic loss	<ol style="list-style-type: none"><li>1. Inspect piping and joints for leaks.</li></ol>

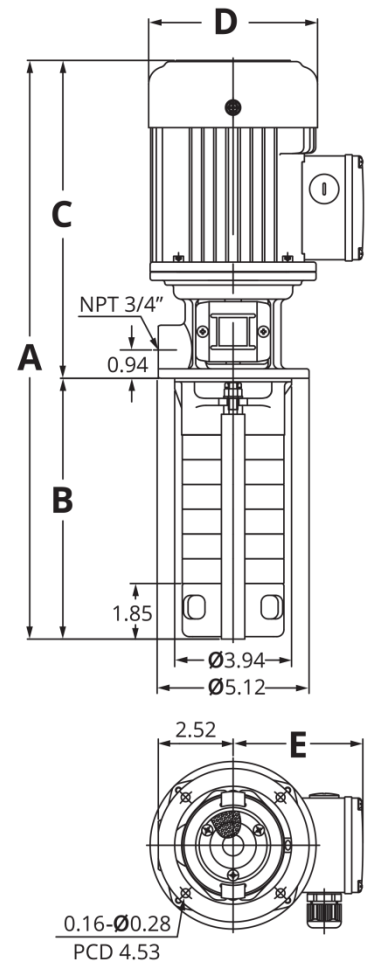
## DIMENSIONS AND WEIGHT—SECTION F

### GTPH 2T

Model	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)	Weight (pounds)
GTPK2T5-1	18.94	8.7	10.24	4.84	3.9	19.18
GTPK2T3-3	17.28	7.05	10.24	4.84	3.9	19.18
GTPK2T5-3	18.94	8.7	10.24	4.84	3.9	19.62
GTPK2T8-3	21.42	11.18	10.24	4.84	3.9	20.28
GTPK2T11-3	23.9	13.66	10.24	4.84	3.9	21.16
GTPK2T5-5	19.33	8.7	10.63	5.69	4.37	26.68
GTPK2T8-5	21.81	11.18	10.63	5.69	4.37	27.34
GTPK2T10-5	23.47	12.83	10.63	5.69	4.37	27.78
GTPK2T11-5	24.29	13.66	10.63	5.69	4.37	28
GTPK2T15-5	27.6	16.97	10.63	5.69	4.37	28.66
GTPK2T19-5	30.91	20.28	10.63	5.69	4.37	29.32
GTPK2T8-8	21.81	11.18	10.63	5.69	4.37	28
GTPK2T11-8	24.29	13.66	10.63	5.69	4.37	28.66
GTPK2T11-11	25.87	13.66	12.2	5.69	4.37	31.53
GTPK2T15-12	29.17	16.97	12.2	5.69	4.37	31.97
GTPK2T15-15	29.17	16.97	12.2	5.69	4.37	33.07
GTPK2T19-15	32.48	20.27	12.2	5.69	4.37	33.95
GTPK2T19-17	32.48	20.27	12.2	5.69	4.37	34.83

### GTPH 4T

Model	A (inches)	B (inches)	C (inches)	D (inches)	E (inches)	Weight (pounds)
GTPK4T3-1	17.28	7.05	8.9	4.84	3.9	18.52
GTPK4T5-1	18.94	8.7	8.9	4.84	3.9	19.18
GTPK4T3-3	17.68	7.05	10.63	5.69	4.37	26.01
GTPK4T5-3	19.33	8.7	10.63	5.69	4.37	26.46
GTPK4T8-3	21.81	11.18	10.63	5.69	4.37	27.12
GTPK4T19-3	30.91	20.27	10.63	5.69	4.37	29.54
GTPK4T5-5	19.33	8.7	10.63	5.69	4.37	26.68
GTPK4T8-5	21.81	11.18	10.63	5.69	4.37	27.34
GTPK4T11-5	24.29	13.66	10.63	5.69	4.37	28
GTPK4T15-5	27.6	16.97	10.63	5.69	4.37	28.66
GTPK4T19-5	30.91	20.27	10.63	5.69	4.37	29.32
GTPK4T19-7	32.48	20.27	12.2	5.69	4.37	32.63
GTPK4T8-8	23.39	11.18	12.2	5.69	4.37	30.42
GTPK4T11-8	25.87	13.66	12.2	5.69	4.37	31.09
GTPK4T15-8	29.17	16.97	12.2	5.69	4.37	31.75
GTPK4T19-8	32.48	20.27	12.2	5.69	4.37	32.63
GTPK4T11-10	25.87	13.66	12.2	5.69	4.37	31.31
GTPK4T15-10	29.17	16.97	12.2	5.69	4.37	31.97
GTPK4T19-10	32.48	20.27	12.2	5.69	4.37	32.85
GTPK4T11-11	25.87	13.66	12.2	5.69	4.37	31.53
GTPK4T15-12	29.17	16.97	12.2	5.69	4.37	32.19
GTPK4T19-12	32.48	20.27	12.2	5.69	4.37	32.63



## **WARRANTY-SECTION G**

RAE Pumps will replace, within one year of shipment from our plant, any pump that, in our judgment, has failed due to defects in materials or workmanship, provided the pump has been properly installed and maintained and has not been subject to abuse.

Modifications, including removal of pump tags or misapplication, void this warranty.

Pump must return to RAE Pumps with complete history of service for inspection and warranty consideration.

RAE Pumps does not accept the responsibility for transportation to and from our plant. Furthermore, we do not assume any responsibility for consequential damage or loss of production.