



Installation, Operation, and Maintenance Manual

GTPHK Series Multistage Vertical Immersion Pumps

60 Hz
MODELS
GTPHK 2T
GTPHK 4T
GTPHK 8T
GTPHK 12T

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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 GTPHK Series vertical multistage centrifugal pump. This self-priming pump should be immersed during operation.

GTPHK 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 !

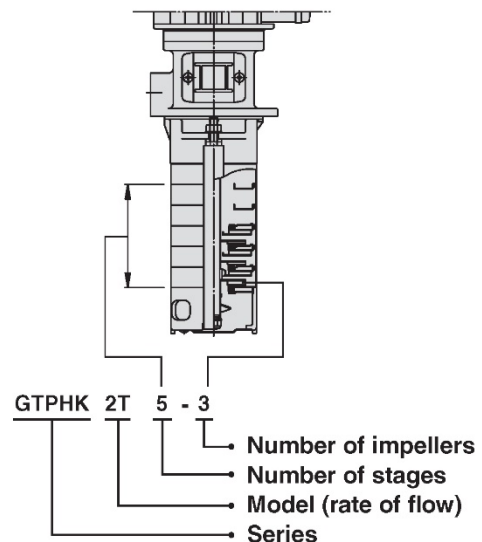
This pump is not intended to transfer explosive liquids, such as gasoline, diesel oil and other similar liquids. It is only suitable for water, and diluted, low viscosity, non-corrosive cooling or lubricant liquids.

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"

	GTPHK 2T	GTPHK 4T
Flow (gpm):	4 to 17	8 to 39
Head (feet):	46 to 300	46 to 300
Max psi:	142	130

	GTPHK 8T	GTPHK 12T
Flow (gpm):	25 to 60	35 to 75
Head (feet):	100 to 250	80 to 185
Max psi:	108	80

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.

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 1.

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

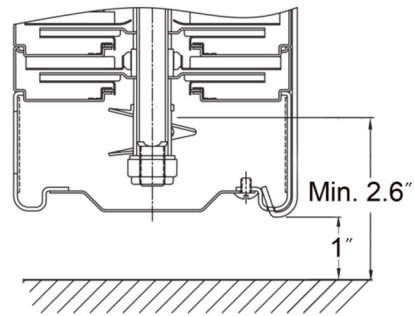


Figure 1

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.

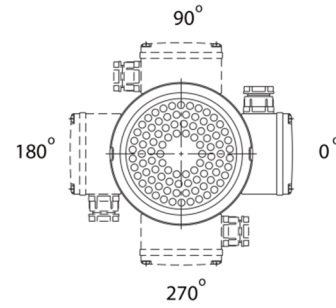
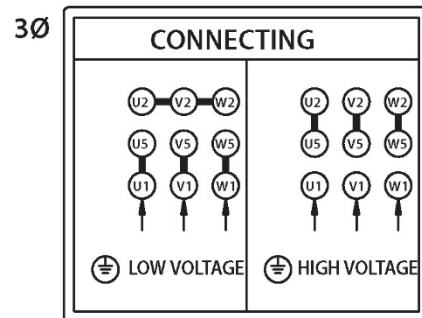


Figure 2

POSITIONING CONNECTION BOX

The position of the motor connecting box is adjustable. Referring to Figure 2, 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.

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.

Fault	Possible Causes
Motor does not start	<ol style="list-style-type: none">1. No electrical supply2. Fuses blown or breaker tripped3. Overheating relay tripped4. Defective magnetic contact5. Control circuit malfunction
Motor cut out during operation	<ol style="list-style-type: none">1. Fuses blown or breaker tripped2. Overheating relay tripped3. Control circuit malfunction4. Pump blocked by foreign objects
Pump discharge is unstable	<ol style="list-style-type: none">1. Pump impeller blocked by foreign objects2. Insufficient liquid level
Pump runs but no liquid discharges	<ol style="list-style-type: none">1. Suction filter blocked by foreign objects2. Insufficient liquid level3. Incorrect rotating direction
Experiencing hydraulic loss	<ol style="list-style-type: none">1. Inspect piping and joints for leaks.

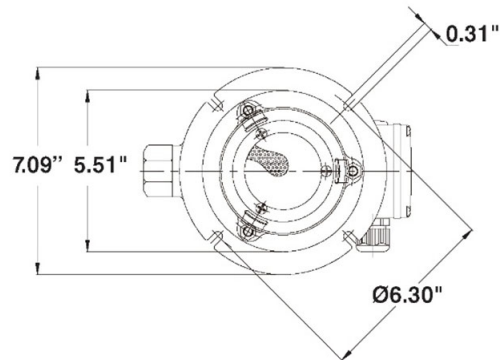
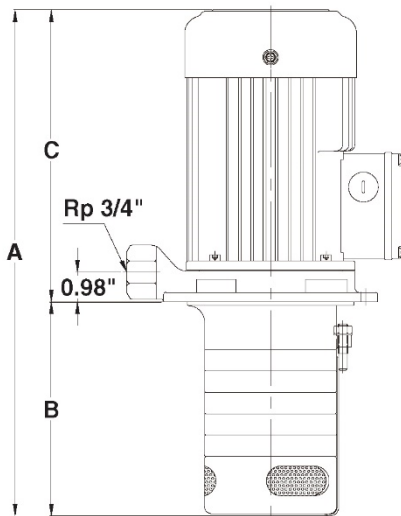
DIMENSIONS AND WEIGHT-SECTION F

GTPHK 2T

Model	A (inches)	B (inches)	C (inches)	Weight (pounds)
GTPHK2T3-1	13.76	5.67	8.09	24.03
GTPHK2T4-1	14.47	6.38	8.09	24.69
GTPHK2T5-1	15.18	7.09	8.09	25.10
GTPHK2T8-1	17.30	9.21	8.09	26.24
GTPHK2T3-2	13.76	5.67	8.09	24.48
GTPHK2T4-2	14.47	6.38	8.09	24.91
GTPHK2T5-2	15.18	7.09	8.09	25.35
GTPHK2T9-2	18.01	9.92	8.09	27.11
GTPHK2T3-3	13.76	5.67	8.09	24.70
GTPHK2T4-3	14.47	6.38	8.09	25.13
GTPHK2T5-3	15.18	7.09	8.09	25.57
GTPHK2T6-3	15.89	7.80	8.09	26.01
GTPHK2T8-3	17.30	9.21	8.09	26.90
GTPHK2T11-3	19.43	11.34	8.09	27.78
GTPHK2T4-4	14.47	6.38	8.09	25.35
GTPHK2T5-4	15.18	7.09	8.09	25.79
GTPHK2T6-4	15.89	7.80	8.09	26.23
GTPHK2T5-5	16.75	7.09	9.67	28.00
GTPHK2T6-5	17.46	7.80	9.67	29.32
GTPHK2T6-6	17.78	7.80	9.98	29.76
GTPHK2T8-6	19.19	9.21	9.98	30.64
GTPHK2T9-6	19.90	9.92	9.98	31.08
GTPHK2T10-6	20.61	10.63	9.98	31.31
GTPHK2T11-6	21.32	11.34	9.98	31.75
GTPHK2T7-7	18.46	8.50	9.98	28.66

GTPHK 4T

Model	A (inches)	B (inches)	C (inches)	Weight (pounds)
GTPHK4T2-1	13.76	5.67	8.09	23.81
GTPHK4T3-1	14.82	6.73	8.09	24.25
GTPHK4T4-1	15.89	7.80	8.09	24.69
GTPHK4T5-1	16.95	8.86	8.09	25.13
GTPHK4T6-1	18.01	9.92	8.09	25.57
GTPHK4T7-1	19.07	10.98	8.09	26.01
GTPHK4T8-1	20.14	12.05	8.09	26.45
GTPHK4T2-2	13.76	5.67	8.09	24.25
GTPHK4T3-2	14.82	6.73	8.09	24.69
GTPHK4T4-2	15.89	7.80	8.09	25.13
GTPHK4T5-2	16.95	8.86	8.09	25.57
GTPHK4T6-2	18.01	9.92	8.09	26.01
GTPHK4T7-2	19.07	10.98	8.09	26.45
GTPHK4T8-2	20.14	12.05	8.09	26.89
GTPHK4T3-3	16.40	6.73	9.67	25.79
GTPHK4T4-3	17.46	7.80	9.67	26.23
GTPHK4T5-3	18.52	8.86	9.67	26.68
GTPHK4T6-3	19.59	9.92	9.67	27.12
GTPHK4T7-3	20.65	10.98	9.67	27.56
GTPHK4T8-3	21.71	12.05	9.67	28.00
GTPHK4T4-4	17.46	7.80	9.67	29.32
GTPHK4T5-4	18.53	8.86	9.67	29.76
GTPHK4T6-4	19.59	9.92	9.67	30.20
GTPHK4T7-4	20.65	10.98	9.67	30.64
GTPHK4T8-4	21.71	12.05	9.67	31.08
GTPHK4T5-5	18.52	8.86	9.67	30.64
GTPHK4T8-5	21.71	12.05	9.67	31.97
GTPHK4T6-6	21.72	9.92	11.20	31.09
GTPHK4T8-6	23.25	12.05	11.20	32.19
GTPHK4T7-7	22.19	10.98	11.20	32.19
GTPHK4T8-7	23.25	12.05	11.20	32.63

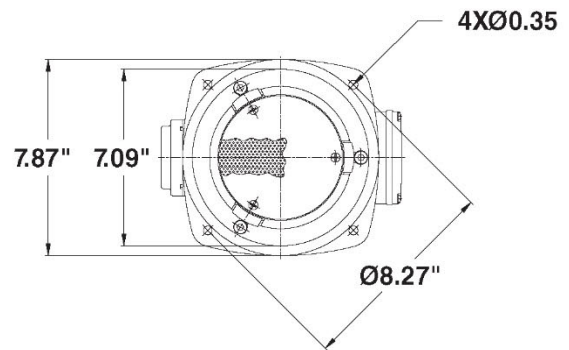
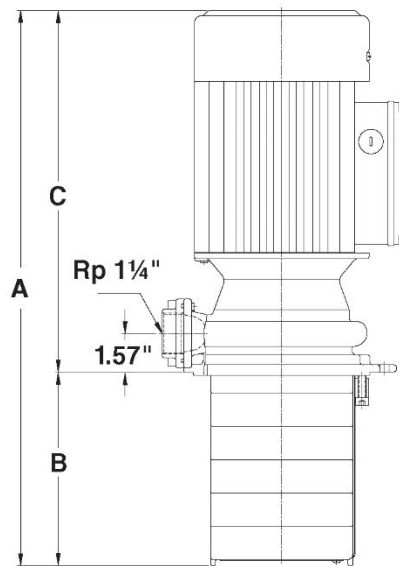


GTPHK 8T

Model	A (inches)	B (inches)	C (inches)	Weight (pounds)
GTPHK8T6-2	22.26	7.74	14.53	52.98
GTPHK8T9-2	26.30	11.75	14.53	55.78
GTPHK8T3-3	18.25	3.72	14.53	50.70
GTPHK8T6-3	22.26	7.71	14.53	53.57
GTPHK8T9-3	26.30	11.75	14.53	56.44
GTPHK8T4-4	19.59	5.06	14.53	59.52
GTPHK8T6-4	22.26	7.74	14.53	61.73
GTPHK2T5-5	20.93	6.40	14.53	61.73

GTPHK 12T

Model	A (inches)	B (inches)	C (inches)	Weight (pounds)
GTPHK12T6-1	22.26	7.74	14.53	59.52
GTPHK12T6-2	22.26	7.74	14.53	63.93
GTPHK12T9-2	26.27	11.74	14.53	67.24
GTPHK12T6-3	22.26	7.74	14.53	66.14
GTPHK12T9-3	26.27	11.74	14.53	69.45



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

