FINISH THOMPSON INC.

VKC 11 SERIES
Sealless, Non-Metallic Vertical Pumps
Installation and Maintenance Instructions

Pat. No. 5,708,313
Pat. No. 5,779,456

ASSEMBLY

PUMPS WITH MOTORS

1. No assembly required. Simply unpack the pump and motor and examine for any signs of shipping damage. If damage is detected, save the packaging and notify the carrier immediately.
2. Ensure that lock rings are securely snapped in place and did not loosen during shipment.
3. Proceed to the "Installation" section of these instructions.

SUMP PUMPS AND CANTILEVER PUMPS WITHOUT MOTORS

(METRIC FRAME)

1. Unpack the pump and any supplied accessories and examine for damage. If damage is detected, save the packaging and notify the carrier immediately.
2. Create a hole if required for discharge piping in the optional mounting plate (item 9) at desired location.
3. Prepare to install the motor on the pump. Carefully place the motor on the fan cover on a suitable, level work surface.
4. Install the metric motor adapter flange (item 2) on the motor with (4) socket head cap screws (item 4). Use lock washers (item 3) on 80 frame motors only (90 frame motors do not require any washers). One side of the adapter fits 80 frame motors and the other side (with hex nut recessed bolt holes) is for 90 frame motors
5. For sump pumps without motors, proceed to steps 4-8 in section Sump Pumps Without Motors. For cantilever pumps without motors, proceed to steps 4-16 in section Cantilever Pumps Without Motors.

SUMP PUMPS WITHOUT MOTORS:

(56C/143-145TC FRAME)

1. Unpack the pump and any supplied accessories and examine for damage. If damage is detected, save the packaging and notify the carrier immediately.
2. Create a hole if required for discharge piping in the optional mounting plate (item 9) at desired location.
3. Prepare to install the motor on the pump. Carefully place the motor on the fan cover on a suitable, level work surface.
4. Slide the coupling half (item 27) onto the motor shaft until it is flush with the bottom of the motor shaft. Align dog point set screw with flat or key slot on the motor shaft and tighten both set screws with a 1/8" Allen wrench to 70 in.-lbs. (7.9 N-m).
5. Insert the coupling insert (item 27) into the coupling half on the motor. Carefully slide motor adapter (item 8) end of the pump assembly over the motor shaft until both coupling halves are completely seated in the coupling insert. Make sure rabbet (step) on the motor is firmly seated into motor adapter.

⚠ **CAUTION: Pump assembly may be top heavy.**

6. Rotate the pump and mounting plate to the desired orientation. Align the holes in the mounting plate and the motor adapter with the holes in the motor face. Secure the mounting plate and motor adapter to the motor using (4) washers, lock washers and 3/8" bolts (items 5,6,7) from the hardware package (if metric frame, use (4) 3/8" hex nuts (item 33).
7. Ensure that lock rings are securely snapped in place and did not loosen during shipment.
8. Install the pump into the system according to the installation instructions.

CANTILEVER PUMPS WITHOUT MOTORS:

(56C/143-145TC FRAME)

1. Unpack the pump parts and any supplied accessories and examine for damage. If damage is detected, save the packaging and notify the carrier immediately.
2. Create a hole for discharge pipe in the optional mounting plate (item 9) at desired location.
3. Prepare to install the motor on the pump. Carefully place the motor on the fan cover on a suitable, level work surface.
4. Slide the drive shaft (item 13) onto the motor shaft until it is completely seated. Align two dog point set screws (item 31) with flat or key slot on the motor shaft and tighten all set screws (items 31 & 32) with a 1/8" Allen wrench to 70 in.-lbs. (7.9 N-m).
5. Carefully slide motor adapter (item 8) over the drive shaft until it is fully seated on motor rabbet (step) or metric motor adapter. Slide the mounting plate (item 9) over the drive shaft and motor adapter.
6. Place optional mounting plate (item 9) over the motor adapter. Align the holes in the mounting plate and the motor adapter

with the holes in the motor face. Secure the mounting plate and motor adapter to the motor using (4) washers, lock washers and 3/8" bolts (items 5,6,7) from the hardware package (if metric frame, use (4) 3/8" hex nuts (item 33).

7. Tighten both bearing set screws (bearing is in bottom of motor adapter) with a 3/32" Allen wrench.
8. Lubricate plastic threads and o-rings on motor adapter. Use a chemically compatible lubricant on threads and o-rings. Place lock ring (item 10) with the smaller pattern facing the motor over the motor adapter.
9. Screw the column housing adapter onto motor adapter. Use strap wrenches to tighten until there is no gap between the sections and the flats are parallel. Pull the lock ring up and snap into place over both sections.

   Note: It may be possible to slightly over tighten the sections, simply back off slightly until the flats are parallel.

10. Remove the access plug (item 15) from the column housing adapter.

⚠ CAUTION: Pump assembly may be top heavy.

11. Place the drive magnet assembly (item 14) over the drive shaft until it is recessed .180" +/- .005" as measured from the top of column housing adapter to the top of the drive magnet assembly. See Figure 1. Use a 3/16" Allen wrench to tighten the (2) set screws (item 14a) to 70 in.-lbs. (7.9 N-m). Access the set screws through the access hole in the column housing adapter. Replace the access plug.

    Note: Set drive assembly using a square set with calipers. A spacing tool (part number M100849) is available for setting the proper dimension.

⚠ CAUTION: Failure to replace the access plug will result in flooding the internal column assembly and damage to the pump.

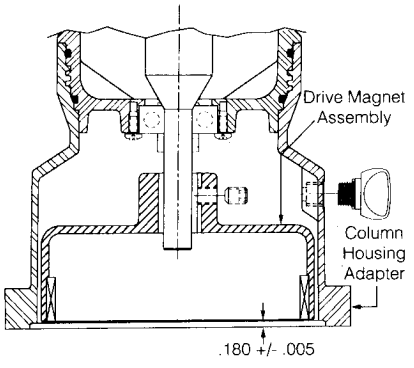


Figure 1

12. Verify that the o-ring (item 21) on the backside of the barrier assembly (item 17) is completely seated and did not move during shipment. It should be on the outermost ring (near bolt holes).

⚠ WARNING: Components can slam together from strong magnets. Keep fingers away from the area between the barrier assembly and the column housing adapter.

13. Tightly grasp the impeller housing/barrier assembly (items 17,19,21,22). Place both thumbs into the pump suction and carefully allow the magnets to pull the assembly into place.

    Note: Verify that the o-ring on the backside of the barrier did not move during installation of the impeller housing/barrier assembly.

14. Align the mounting holes in the barrier assembly/column housing adapter and insert the 5 plastic screws (item 23). Hand-tighten using pattern shown in Figure 2.

    Do not over tighten the plastic screws. (Recommended maximum torque is 25 in.-lbs.).

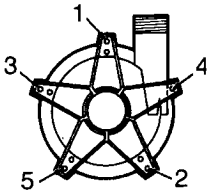


Figure 2

15. Remove the four #8 3 X 5/8" hi-low screws (item 34) from the impeller housing.

    Note: Save screws for future maintenance use during disassembly/reassembly procedures.

16. Install the pump into the system according to the installation instructions.

INSTALLATION

The VKC Series is a versatile pump designed to be operated in a variety of mounting configurations. The pump can be mounted either inside or outside of a tank or sump.

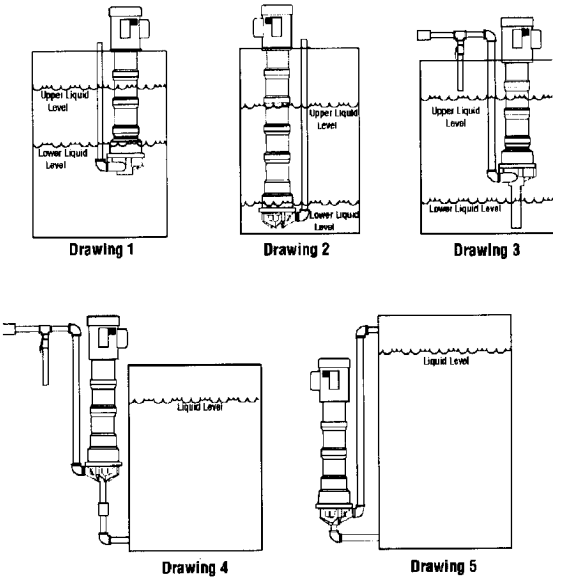


Figure 3

Drawing 1 *shows drawing of pump mounted inside a tank with suction off the bottom of the tank and level fluctuating from near top of pump column to close to the bottom of the pump.*

Drawing 2 *shows drawing of pump suction near tank bottom and level fluctuating between the top and bottom of the tank.*

Drawing 3 *shows drawing of pump with suction extension and the level fluctuating between startup level and low level.*

Drawing 4 *shows drawing of pump mounted outside the tank.*

Drawing 5 *shows drawing of pump mounted outside the tank with the motor below the liquid level.*

Note: Drawings for illustration only. Pumps need to be properly supported when installed.

MOUNTING

A mounting plate is recommended for in tank installations. If required, use a hole saw to cut holes in desired location for piping.

Support and securely fasten the mounting plate on all four sides if possible or on two sides if mounted in a corner. Drill holes in the mounting plate at the desired location for bolting to the tank.

A drip cover may be installed on top of the motor if desired.

Mount pump in desired configuration. Securely fasten mounting plate if used. Motor feet may also be used for mounting.

PIPING

1. Support piping near the pump to eliminate any strain on the pump casings. Do not use suction or discharge piping to support the pump.
2. Do not place the pump suction directly on the bottom of the tank. Keep the pump suction at least one pipe diameter off the bottom.
3. A suction extension tube of up to nine feet in length can be added.
4. To minimize head loss from friction:
   Increase pipe size by 1 diameter.
   Use minimal number of pipe bends.
5. If a check valve is installed in the discharge piping, an air bleed must be installed in the discharge line to prevent air lock. This allows air trapped in the pump internals to be removed on initial startup. See drawings 3 and 4.
6. Maintain a flooded suction. Use a foot valve if necessary.
7. Ensure that the piping does not leak and suction is not prone to clogging. Use a strainer if necessary on the suction.
8. If flexible hose is preferred, use reinforced hose rated for the proper temperature and pressure. This helps avoid collapse or kinks.
9. Install valves a minimum of 10 pipe diameters from the pump.

⚠ CAUTION: To stop the pump if prime is lost, use one of the following: (1) pressure switch on the discharge or (2) motor minder to monitor motor current.

ELECTRICAL

Install the motor according to NEC requirements and local electrical codes. Motor should have an overload protection circuit.

⚠ CAUTION: Before starting, jog motor to determine correct rotation (clockwise viewed from the motor fan end). Refer to directional arrow on pump.

Note: A pump running backwards will pump but at a greatly reduced flow and pressure.

OPERATION

1. Completely open discharge valve. On pumps equipped with a discharge check valve, open air bleed valve on initial startup.
2. Start the pump and check liquid flow. If there is no flow, see the Troubleshooting section.
3. Adjust the flow rate and pressure by regulating the discharge valve.

MAINTENANCE

DISASSEMBLY

1. Disconnect power. Remove electrical wiring.
2. Close discharge valve. Disconnect piping. Remove mounting bolts.
3. Securely clamp the motor to a workbench. Begin disassembly starting at the pump end.
4. Remove the 5 screws (item 23) from the impeller housing (item 22) and pull the impeller housing off the barrier (item 17).
5. Spin the barrier until the bolt holes of the barrier are no longer aligned with the bolt holes in the column housing adapter (item 16).
6. Firmly grab the barrier by the tabs and pull away from the column housing adapter.

   Note: Removal may be aided by tipping the barrier.
7. Remove the impeller assembly (items 18,19,20) from the barrier.
8. Remove the access plug (item 15) from the column housing adapter.
9. Remove the drive magnet assembly (item 14). Use a 3/16" hex wrench to loosen the (2) set screws (item 14a) in the drive magnet assembly. Access the set screws through access hole in the column housing adapter. Pull the drive magnet assembly off the drive shaft.

⚠ CAUTION: Keep the drive magnet and impeller assemblies away from metal chips or particles.

10. Pull the lock ring loose (item 10). Using strap wrenches, unscrew the column housing adapter.

EXAMINATION

1. Check the impeller drive bushing (item 18), thrust ring (item 20), ceramic thrust ring and shaft for cracks, chips, scoring or excess wear. See Figure 4. Replace as required.

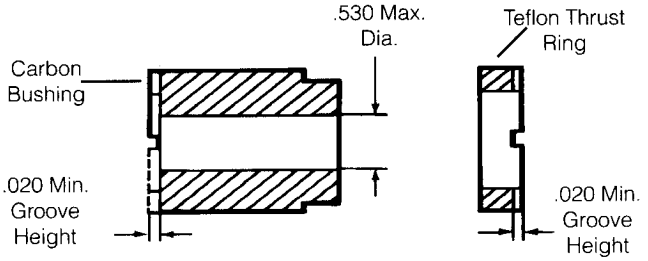


Figure 4

2. Check for loose magnets on the drive assembly or rubbed areas on the impeller or column housing adapter assemblies. Contact your distributor or FTI Technical Service if a problem is found.

BUSHING AND THRUST RING REPLACEMENT

1. To remove the bushing, place the impeller assembly in an arbor press. Insert a 3/4" diameter plastic or wood shaft through the eye of the impeller and pres the bushing out. See Figure 5.

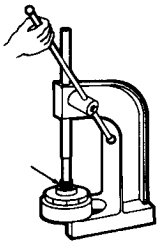


Figure 5

2. To replace the bushing, place the impeller assembly and thrust ring face down into an arbor press. With grooved side up, align the bushing with the impeller bore. Press gently until the bushing bottoms out. The bushing is correctly installed when the front face of the bushing is even with the bottom of the impeller eye.
3. The impeller thrust ring can be removed from the impeller body by gently pulling the ring from the impeller cover.
4. To replace the thrust ring, align the ring (grooved side up) with the inside of the impeller assembly and press into place.

   Note: Protect the thrust ring face with wood or plastic to avoid tilting of the ring.

MOTOR, SHAFT BEARING, O-RING OR COLUMN REPLACEMENT

1. Begin disassembly starting at the pump end. Remove the impeller housing, impeller assembly, barrier, column housing adapter and drive magnet assembly following steps outlined in section Maintenance; Disassembly.
2. Pull column lock ring towards the motor to loosen. Loosen both bearing set screws with a 3/32" Allen wrench. Using strap wrenches, unscrew each column section.
3. Examine the bearing for damage. Replace if necessary. To replace the bearing, remove the (4) bearing retaining screws (item 29). Press the bearing out of the column section.
4. Examine the plastic parts for any damage or wear and replace if necessary.
5. Examine the o-ring for signs of damage and replace if necessary.

   Note: If you remove an o-ring, note the location for reassembly.

6. Remove mounting place (if installed) bolts, flat washers and lock washers (items 7,5,6) and remove the motor adapter section (item 8).
7. Pull the drive shaft (item 13) off the motor shaft. Check the drive shaft for straightness.
8. If the motor (item 1) requires replacement, remove the coupling (item 27, on sump pump only) from the motor shaft.

REASSEMBLY

REASSEMBLY OF CANTILEVER PUMPS

1. Slide the drive shaft (item 13) onto the motor shaft until it is completely seated. Align (2) dog point set screws (item 31) with flat or key slot on the motor shaft and tighten all set screws (items 31 & 32) with a 1/8" Allen wrench to 70 in.-lbs. (7.9N-m).
2. For metric frame, install the metric motor adapter flange (item 2) on the motor with (4) socket head cap screws (item 4). Use lock washers (item 3) on 80 frame motors only (90 frame motors do not require any washers). One side of the adapter fits 80 frame motors and the other side (with hex nut recessed bolt holes) is for 90 frame motors. Proceed to step 5 of Reassembly of Sump Pumps Section.

REASSEMBLY OF SUMP PUMPS

1. Slide the coupling half (item 27) onto the motor shaft until it is flush with the bottom of the motor shaft. Align dog point set screw with flat or key slot on the motor shaft and tighten both set screws with a 1/8" Allen wrench to 70 in.-lbs. (7.9 N-m). Insert the coupling insert into the coupling half.
2. For 56C, 143-145TC, and 90 frame motors, slide the coupling half (item 27) onto the drive shaft until it is flush with the bottom of the drive shaft and tighten both set screws with a 1/8" allen wrench to 70 in.-lbs. (7.9 N-m). For 80 frame motors, slide the coupling half (item 27) onto the drive until it is 3/8" (.375") from the bottom of the drive shaft. (The drive shaft will be recessed).
3. For metric frame, install the metric motor adapter flange (item 2) on the motor with (4) socket head cap crews (item 4). Use lock washers (item 3) on 80 frame motors only (90 frame motors do not require any washers). One side of the adapter fits 80 frame motors and the other side (with hex nut recessed bolt holes) is for 90 frame motors

4. Insert the drive shaft coupling half into the coupling insert on the motor until it is completely seated.
5. Carefully slide motor adapter (item 8) over the drive shaft until it is fully seated on motor rabbet (step) or metric motor adapter. Slide the mounting plate (item 9) over the drive shaft and motor adapter.
6. Rotate the mounting plate and the motor adapter to the desired orientation. Align the holes in mounting plate and motor adapter with the holes in the motor face. Secure the mounting plate and motor adapter to the motor using (4) washers, lock washers and 3/8" bolts (items 5,6,7). If metric frame, use (4) 3/8" hex nuts (item 33).
7. If o-rings were removed or require replacement, lubricate the o-ring and place in o-ring grooves.

   Note: The last column section of the pump must have the column housing adapter o-rings installed. These o-rings are larger than the motor adapter/column housing o-rings.

8. If the bearing (item 28) was removed, press the bearing with the extended race facing away from the motor into the column section. Insert the (4) bearing retaining screws (item 29) into molded holes and tighten.
9. Tighten both bearing set screws onto the drive shaft with a 3/32" Allen wrench. Lubricate plastic threads on motor adapter and column extension. Use a chemically compatible thread lubricant on threads of column sections. Place lock ring (item 10) with the smaller pattern facing the motor over the column section.
10. Screw the column extension (item 30) onto the motor adapter. Use strap wrenches to tighten until there is no gap between the sections and the flats are parallel. Pull the lock ring up and snap into place over both sections. Repeat steps 6-10 until all column extension sections have been attached (cantilever pumps do not have column extensions).

    Note: It may be possible to slightly over tighten the sections, simply back off slightly until the flats are parallel.

11. Lubricate the plastic threads on the column extension and column housing adapter (item 16) sections. Place the lock ring with the smaller pattern facing the motor over the column section.
12. Screw the column housing adapter onto the column extension. Use strap wrenches to tighten until there is no gap between the sections and the flats are parallel. Pull the lock ring up and snap into place over both sections.

    Note: It may be possible to slightly over tighten the sections, simply back off slightly until the flats are parallel.

13. Remove the access plug (item 15) from the column housing adapter.
14. Slide the drive magnet assembly (item 14) over the drive shaft (item 13) until it is recessed .180" +/- .005" as measured from the top of the column housing adapter (item 16) to the top of the drive magnet assembly. See Figure 1. Use a 3/16" hex wrench to tighten the (2) set screws (item 14a) in the drive magnet assembly to 70 in-lbs. (7.9 N-m). Access the set screws through the access hole in the column housing adapter. Replace the access plug.

⚠ **CAUTION: Failure to replace the access plug will result in flooding the internal column assembly and damage to the pump.**

15. Install the o-rings (item 21) on the backside (it should be on the outermost ring near bolt holes) and the front lip of the barrier assembly (item 17). For proper o-ring locations refer to Figures 6 and 7. Lubricate the o-rings with compatible lubricant before installation.
16. Make sure that the impeller assembly (item 18,19,20) is free of metal chips. Slide the impeller assembly over the ceramic shaft in the barrier assembly.
17. Place the impeller housing (item 22) onto the barrier assembly, making sure to align the matching bosses on the barrier assembly with the recesses in the impeller housing. Temporarily install (4) #8 X 5/8" hi-low screws (item 34) (or use #8 X 5/8" self tapping screws) and tighten carefully. Do not over tighten.

⚠ **WARNING: Strong magnets may cause components to slam together. Keep fingers away from the area between the barrier assembly and the column housing adapter.**

18. Tightly grasp the impeller housing/barrier assembly. Place both thumbs into the pump suction and carefully slide into place on the column housing adapter, allowing the magnets to pull the assembly into place.
19. Align the mounting holes and insert 5 new plastic screws (item 23). It is not recommended to reuse plastic screws. Use thread lubricant on plastic screws. With a screw driver, carefully tighten following star pattern shown in Figure 2. **Do not over tighten the plastic screws. (Recommended maximum torque is 25 in.-lbs.).**
20. Remove the (4) #8 X 5/8" hi-low screws from the impeller housing.
21. Reinstall the pump into the system according to the installation instructions.

GENERAL NOTES

1. Do not pump liquids containing metal fines.
2. If magnets decouple, stop the pump immediately. The rare earth magnets used in this pump are more resistant to demagnetization, but operating the pump with the magnets decoupled will eventually weaken the magnets.
3. Plastic pumps will expand and contract with temperature so periodically check and hand-tighten screws.
4. Use a chemically compatible thread lubricant on the threads of the plastic column sections.
5. The setting of the drive magnet dimension is critical. Failure to properly set the dimension may result in decoupling or damage to pump components.
6. Cantilever pumps do not have a separate coupling. The coupling is contained in the drive shaft.
7. Cantilever pumps do not have column extension sections.
8. An information plate is attached to the motor adapter section. The first line is the serial number, the second line is the part number and the third line is the model number. See figure 6.

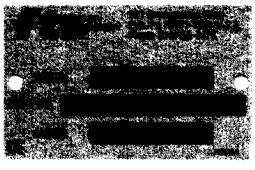


Figure 6

9. The pump will contain various numbers of shaft bearings (item 28) based on the length of the pump as follows:

    Cantilever pump = (1) shaft bearing
    18" sump pump = (2) shaft bearings
    24" sump pump = (3) shaft bearings
    30" sump pump = (4) shaft bearings
    36" sump pump = (5) shaft bearings

10. Due to the hermetically sealed design, the pump will displace liquid as follows:

    Cantilevered = approximately 1 gallon (3.78 liters)

    Sumps = add approximately 1 quart (.95 liters) per column section

    E.G. 24" sump = 1 1/2 gallons (4.73 liters)

TROUBLESHOOTING

NO DISCHARGE

1. Pump not primed.
2. Air lock in pump.
3. Discharge head too high.
4. Closed valve.
5. Viscosity or specific gravity too high (magnets uncoupled).

INSUFFICIENT DISCHARGE

1. Discharge head higher than anticipated.
2. Clogged suction line, foot valve or crimp in hose.
3. Foot valve too small.
4. Foot valve or suction opening not submerged enough.
5. Incorrect pump rotation.

INSUFFICIENT PRESSURE

1. Air or gasses in liquid.
2. Impeller diameter too small.
3. Discharge head higher than anticipated.
4. Incorrect pump rotation.

LOSS OF PRIME

1. Leaking discharge line.
2. Suction lift too high or insufficient NPSHA. Should be 2 feet above NPSHR.
3. Air or gasses in liquid.
4. Foreign matter in impeller.
5. Leaking valve.
6. Malfunctioning level sensor or control.

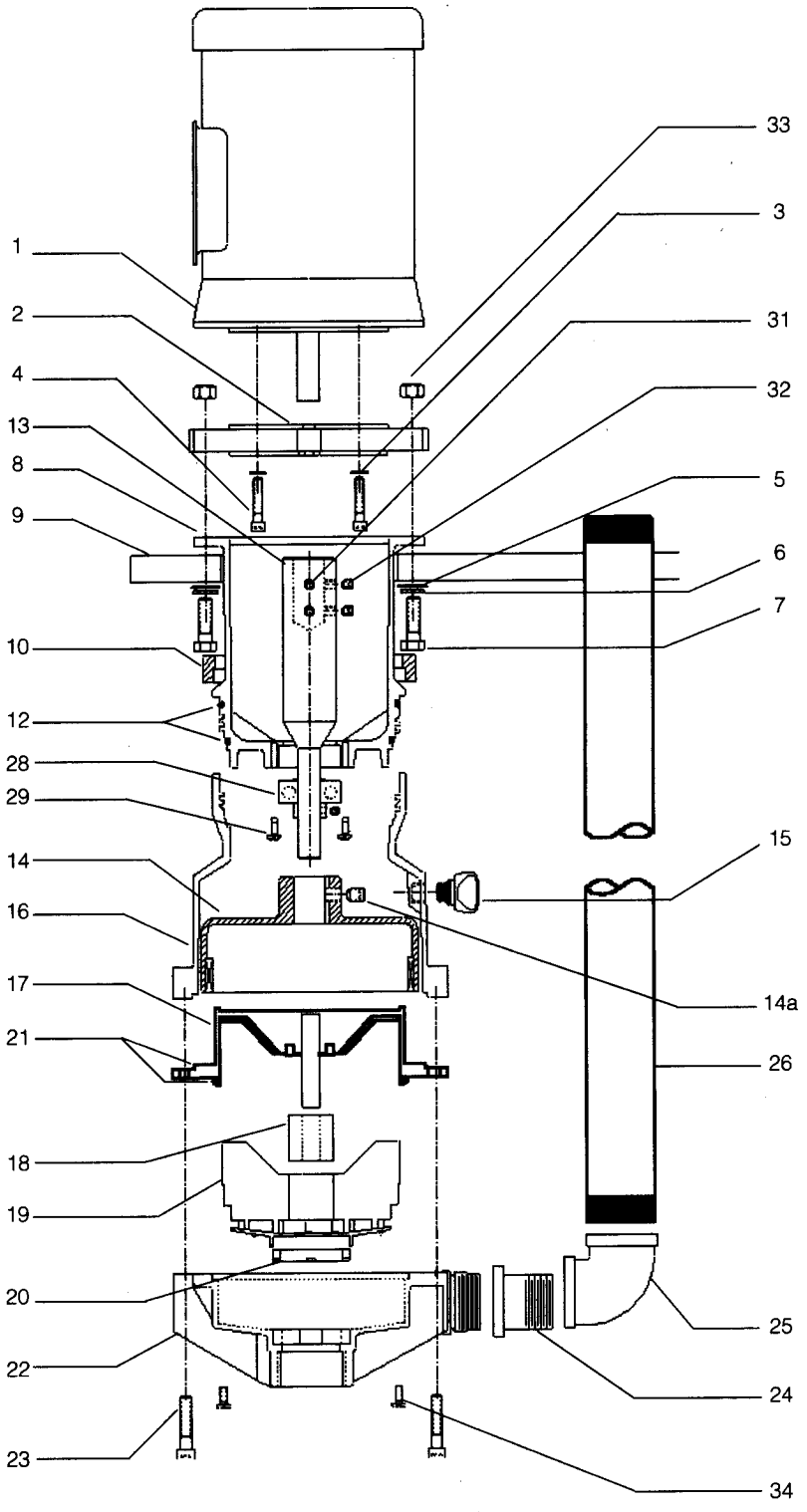
EXCESSIVE POWER CONSUMPTION

1. System head is lower than ratings. Pumps too much liquid.
2. Specific gravity or viscosity of liquid being pumped is too high or higher than defined in application.
3. Binding pump parts.

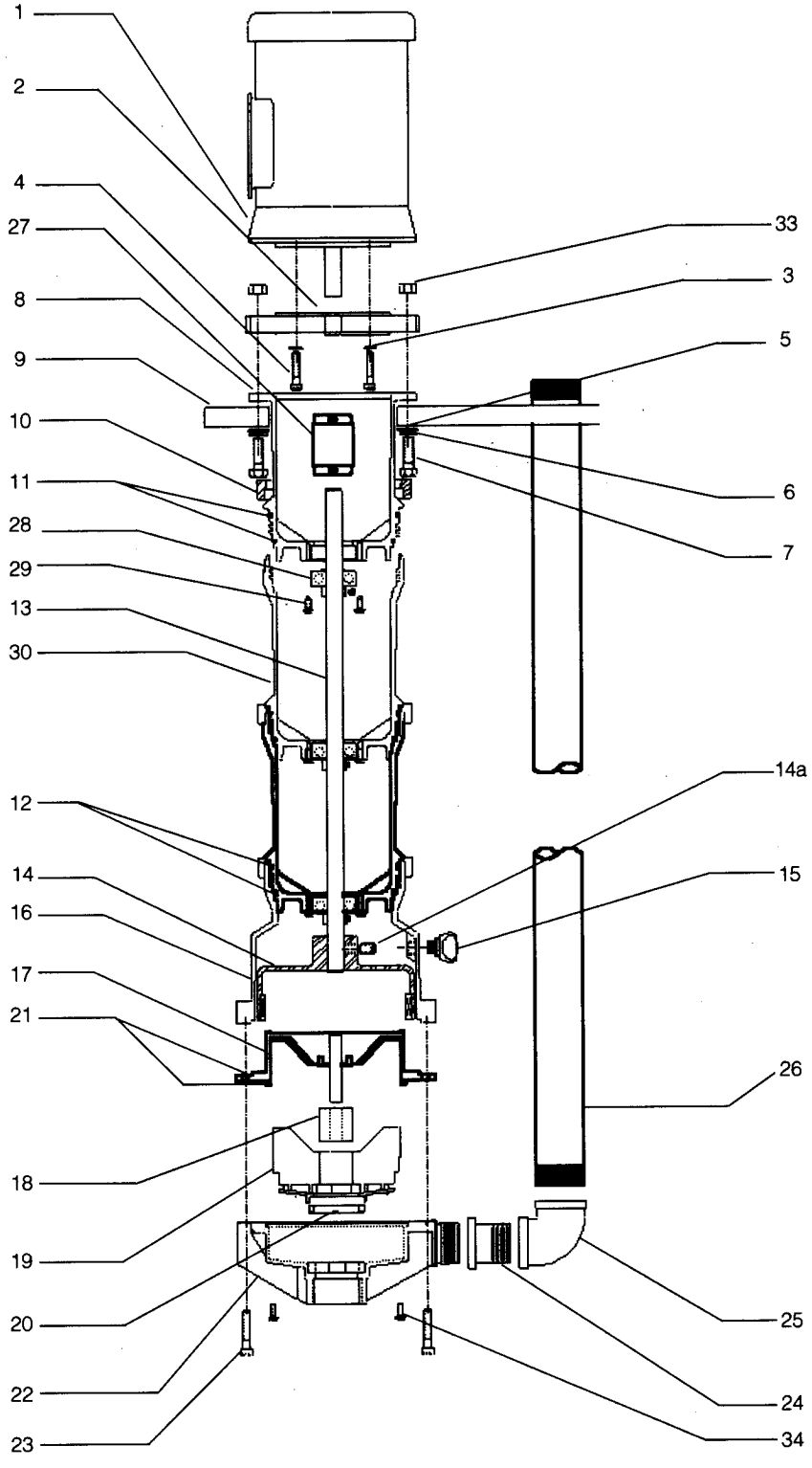
VIBRATION/NOISE

1. Excess bearing wear.
2. Drive magnet uncoupled.
3. Loose magnet.
4. Pump cavitating.
5. Motor or piping not properly secured.
6. Foreign object in impeller.
7. Set screws on motor shaft coupling loose.
8 Drive magnet assembly not be properly set or secured.

VKC CANTILEVER
Figure 7



VKC SUMP
Figure 8



VKC 11 Parts List

Item	Qty	Description	Pump	PP Part #	PVDF Part #
1		1 Motor	All	*	*
2	1	Metric Motor Adapter Flange	80 Frame 90 Frame	M101947 M101947-1	M101947 M101947-1
3	4	1/4" Lockwasher S.S.	All Metric	J100672	J100672
4	4	Socket Head Cap Screw 80 Frame 90 Frame	 VKC 11 VKC 11	 J103228 J101081	 J103228 J101081
5	4	3/8" Flat Washer S.S.	VKC 11	J100128	J100128
6	4	3/8" Lockwasher S.S.	VKC 11	J100115	J100115
7	4	3/8-16 Hex Hd. Cap Screw 56C/143/145TC with Mtg Plate (1 3/4" lg) 56C/143/145TC without Mtg Plate (1" lg) 80/90 Fr. with Mtg Plate (2 1/4" lg) 80/90 Fr without Mtg Plate (1 1/2" lg)	 VKC 11 VKC 11 VKC 11 VKC 11	 J103161 J100114 J103227 J103207	 J103161 J100114 J103227 J103207
8	1	Motor Adapter	VKC 11	M101981-1	M101981-2
9 9	1 1	PVC Mounting Plate 9 1/2" X 14" CPVC Mounting Plate 9 1/2" X 14"	VKC 11 VKC 11	J103132-7 J103132-8	J103132-7 J103132-8
10		Lock Ring	VKC 11	M101984-1	M101984-2
11		Motor Adapter/Column O-Ring Viton EPDM	 VKC 11	 J103306 J103308	 J103306 J103308
12		Column Housing Adapter O-Ring Viton EPDM	 VKC 11	 J103307 J103309	 J103307 J103309
13	1	Drive Shaft 12" 56C Frame 12" 143-145TC 12" 80 Frame 12" 90 Frame 18" 56C/143-145TC Frame 18" 80/90 Frame 24: 56C/143-145TC Frame 24" 80/90 Frame 30" 56C/143-145TC Frame 30" 80/90 Frame 36" 56C/143-145TC Frame 36" 80/90 Frame	 VKC 11	 M101977 M101978 M101987-1 M101987-2 M101972-1 M101972-5 M101972-2 M101972-6 M101972-3 M101972-7 M101972-4 M101972-8	 M101977 M101978 M1087-1 M101987-2 M101972-1 M101972-5 M101972-2 M101972-6 M101972-3 M101972-7 M101972-4 M101972-8
14	1	Drive Magnet Assembly	VKC 11	A101019-1	A101019-1
14a	2	Set Screw	VKC 11	J101084	J101084
15	1	Access Plug w/ O-Ring	VKC 11	J103176	J103185
16	1	Column Housing Adapter	VKC 11	M101983-1	M101983-2
17	1	Barrier	VKC 11	A101008-4	A101008-5
18	1	Impeller Bushing, Carbon Impeller Bushing, Teflon	VKC 11	J100977 J100977-1	J100977 J100977-1
19	1	Impeller Assembly (incl. Carbon Bushing &Thrust Ring. To order Teflon bushing, substitute last two numbers in parentheses 4 1/2" 4" 3 1/2" 3"	VKC 11	 A101928(32) A101929(33) A101930(34) A101931(35)	 A101936(40) A101937(41) A101938(42) A101939(43)

***CONTACT DISTRIBUTOR**

Item	Qty	Description	Pump	PP Part #	PVDF Part #
20	1	Teflon Thrust Ring	VKC 11	J101606	J101606
21	2	Barrier O-Ring Viton EPDM	VKC 11	 J102774 J102775	 J102774 J102775
22	1	Impeller Housing with Ceramic Thrust Ring (NPT)	VKC 11	A101014-1	A101014-2
22	1	Impeller Housing with Ceramic Thrust Ring (BSP)	VKC 11	A101014-4	A101014-5
23	5	Impeller Housing Mounting Screws	VKC 11	J103162	J103163
24	1	Hex Reducer Bushing 1 1/4" x 1 1/2", CPVC	VKC 11	J103191	J103191
25	1	90° Elbow x 1 1/2"	VKC 11	J103165	J103166
26	1	Discharge Pipe 12" 18" 24" 30" 36"	VKC 11	 M101965-1 M101965-7 M101965-3 M101965-9 M101965-5	 M101965-2 M101965-8 M101965-4 M101965-10 M101965-6
27	1	Coupling 56C Frame 143-145TC 80 Frame 90 Frame	VKC 11	 A102485 A102492 A102488 A102493	 A102485 A102492 A102488 A102493
28		Shaft Bearing	VKC 11	J103157	J103157
29		Bearing Retaining Screw	VKC 11	J103175	J103175
30		Column Extension	VKC 11	M101982-1	M101982-2
31	2	1/4-20 x 3/8" Dog Point Set Screw	VKC 11	J102992	J102992
32	2	1/4-20 x 5/16" Knurled Point Set Screw	VKC 11	J100220	J100220
33	4	3/8-16 Hex Nut for Metric Adapter Plate	VKC 11	J100135	J100135
34	4	#8 X 5/8" hi low screws	VKC 11	J101020	J101020

WARRANTY

This product is warranted to be free of defects in materials and workmanship for a period of 180 days from date of original purchase. If a warranted defect occurs within this period, it will be repaired or replaced at the manufacturer's option, provided (1) the product is submitted with proof of purchase date and (2) transportation charges are prepaid to the factory. Liability under this warranty is expressly limited to repairing or replacing the product or parts thereof and is in lieu of any other warranties, either expressed or implied. This warranty does not apply to product or parts broken due to accident, overload, abuse, tampering, alteration or chemical incompatibility. The manufacturer accepts no responsibility for damage or injuries sustained when the product is modified or altered in any way. If this warranty does not apply, the purchaser shall bear all costs for labor, material and transportation.

Call our toll free Technical Service Hot Line, 1-800-888-3743, if you have any questions regarding product operation or repair.

ORDERING SPARE PARTS

Spare parts can be ordered from your local distributor. Always refer to pump model number to avoid error.

OTHER FINISH THOMPSON PRODUCTS

Drum Transfer Pumps, available in sanitary construction, stainless steel, polypropylene, PVDF, and CPVC, are capable of flows to 40 gpm, discharge head to 80 feet and viscosities to 15,000 cps.

Portable Mixers for turbine mixing and blending handle viscosities to 1,000 cps with gentle, non-vortexing circulation. Available in 316 stainless steel.

Centrifugal Pumps, in polypropylene, PVDF, and 316 stainless steel are offered in mag drive sealless or mechanical seal models. Pumps are capable of 250 gpm, up to 130 feet discharge head, and 220°F (104°C) maximum.

For more information, contact Finish Thompson Inc.