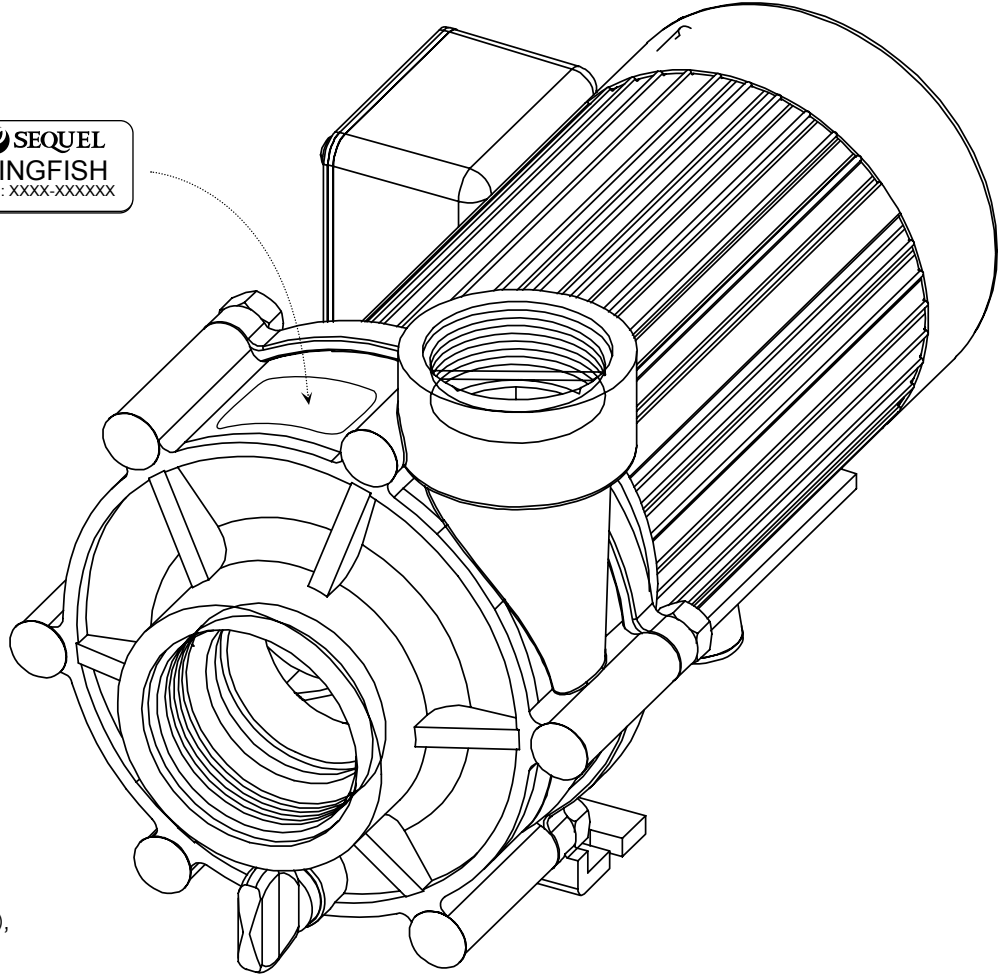


INSTALLATION AND SERVICE MANUAL

Please fill in for future reference:

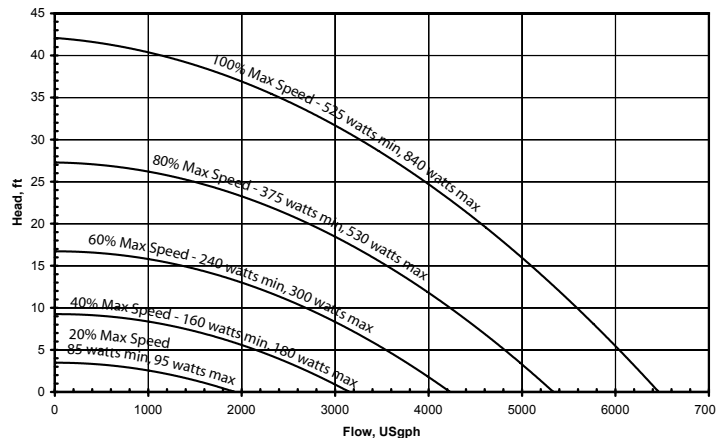
MODEL: _____
 SERIAL NUMBER: _____
 DATE PURCHASED: _____

* Please fill out the warranty registration card in this manual or online at www.mdminc.com



- TYPE:** STRAIGHT CENTRIFUGAL
- MOTOR:** 0.9 HP, 3 PHASE, 230V
- INVERTER:** 120V OR 240V SINGLE PHASE INPUT, 230V 3 PHASE OUTPUT
- INLET:** 2" FNPT
- DISCHARGE:** 1-1/2" FNPT
- MATERIAL:** 40% GLASS FILLED POLYPROPYLENE WITH NORYL IMPELLER
- HARDWARE:** STAINLESS STEEL
- OPTIONS:** SALTWATER SERVICE
- ACCESSORIES:** 90 CUBIC INCH STRAINER BASKETS (1.5" & 2"), SWING CHECK VALVES (1.5", 2", 3")

MODEL	KINGFISH (VARIABLE SPEED)
INLET	2"
DISCHARGE	1.5"
MAX FLOW (gph)	6450
MAX HEAD (feet)	42'
MAX POWER (watts)	840
MAX CURRENT (amps)	9.37 @ 115V
VOLTS	115/230
MOTOR HP	.9
MOTOR ENCLOSURE	TEFC
IMPELLER	8T-3.50"



WARNING: Please read completely before you install or operate your new pump! This is an external "out-of-pond" pump! It is NOT submersible! Do NOT allow this pump to become submerged! Never run dry! Max. case pressure. - 25 PSI!



Proudly Made in the USA

Sequel™ ...NO equal

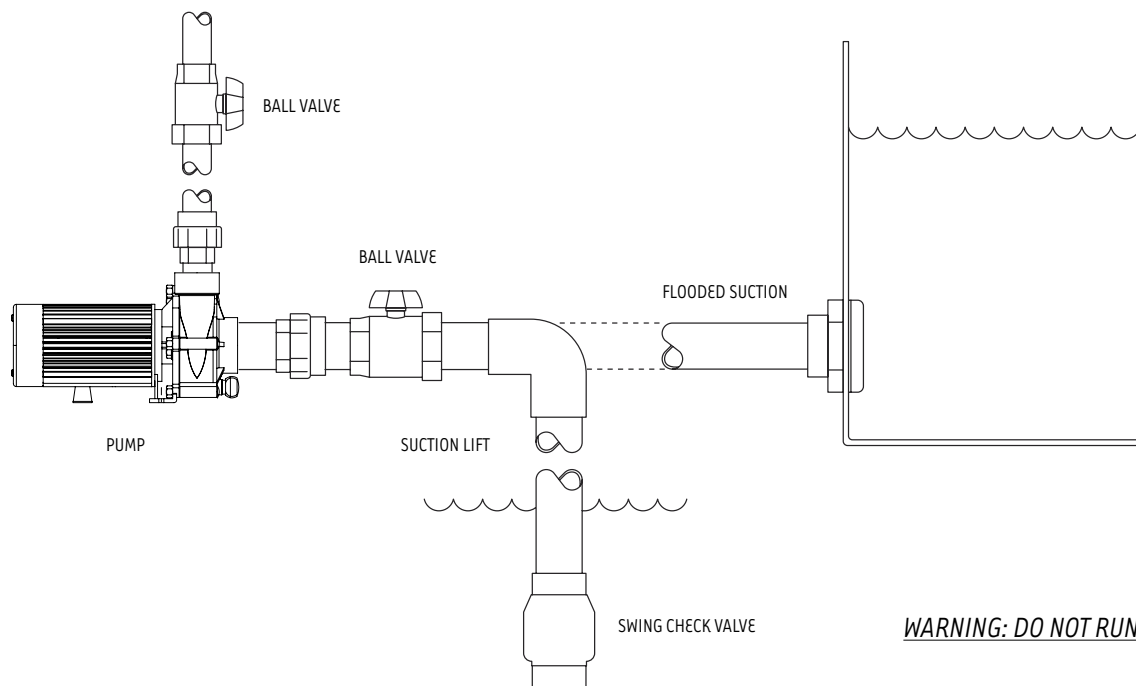
©2008 MDM INC.

We congratulate you on your choice of the Sequel™ KingFish centrifugal pump! Its leading edge design provides you with high output at a minimal operating cost. It is carefully constructed to give you long term, reliable service. To insure proper performance, we urge you to carefully follow the instructions in this manual. If you have any questions, please call your supplier for assistance.

INSTALLATION

Please read carefully! When properly installed, the Sequel™ KingFish will provide dependable, trouble-free service.

1. Do not submerge the unit in water – it is not a submersible pump. Do not allow the pump to become submerged during transient periods, such as heavy rain, run-off, etc.
2. Locate the pump as near the water source as possible. A flooded suction is preferred.
3. The pump is not self-priming. Therefore, if the fluid level is below the pump, a swing check valve must be installed below water level. The pump and inlet line must be primed prior to start up. Do not run pump dry! For non-flooded installations, a strainer basket and check valve are recommended.
4. Mount the motor base to a secure, immobile foundation.
5. Use only plastic fittings on both the inlet and discharge ports. Seal the inlet & discharge fittings with Teflon™ pipe dope. These fittings should be self-supported and in neutral alignment with each port (i.e., Fittings must not be forced into port alignment which may cause premature line failure or damage to the pump volute).
6. Never restrict the inlet! Keep both inlet and discharge lines as free of elbows and valves as possible. Always use pipe of adequate diameter. This will reduce friction losses and maximize output. Never use an inlet line of smaller diameter than the discharge line. Minimize the suction lift.
7. For additional plumbing tips, review MDM's website: www.mdminc.com for pond plumbing and pump installation hints.
8. Please review and refer to Variable Speed Drive manual included with pump!



WARNING: SHUT OFF ELECTRICAL POWER BEFORE INSTALLATION AND / OR SERVICING THIS PUMP!

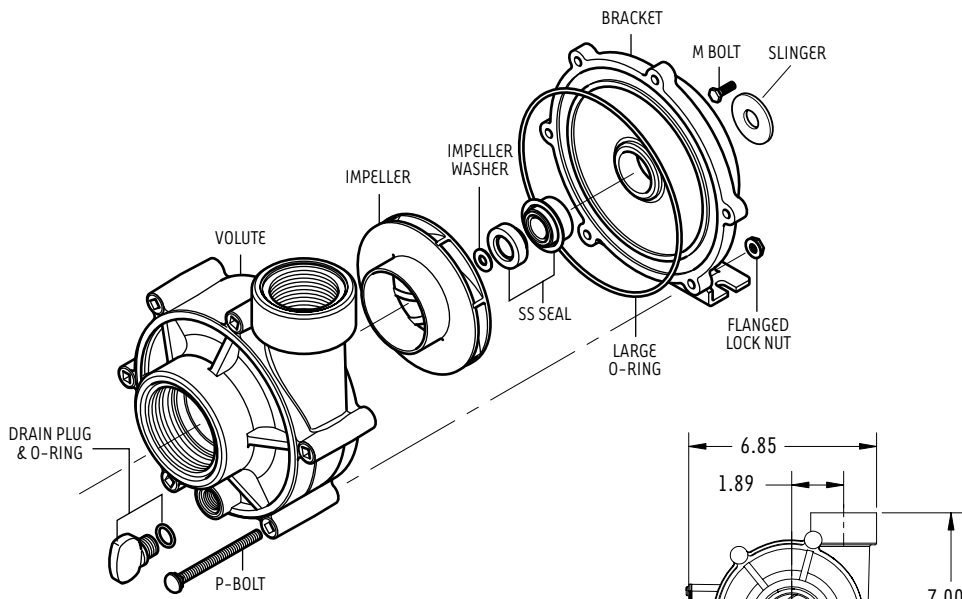
ELECTRICAL HOOK-UP

CAREFULLY, EXAMINE THE POWER CORD BEFORE USE. DO NOT USE THIS POWER CORD IF THERE IS ANY VISIBLE DAMAGE. DO NOT USE THIS POWER CORD IN WATER OR IF THE MOTOR OR ELECTRICAL RECEPTACLE IS IN CONTACT WITH ANY STANDING WATER! THIS POWER CORD SHOULD ONLY BE PLUGGED INTO A PROPERLY INSTALLED 115 VAC GFI RECEPTACLE! ALWAYS TEST CYCLE A GFI RECEPTACLE TO DETERMINE ITS CONDITION BEFORE USE!



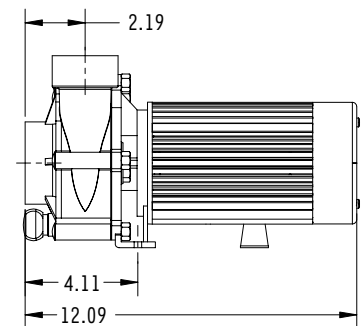
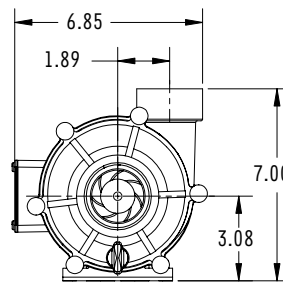
PUMP END ASSEMBLY

1. Inspect all pump parts (O-ring, O-ring groove, impeller hub ID, motor shaft, etc.) and clean if necessary.
2. Apply sealant to the bracket bore ID wall and around the seal case – follow sealant mfg. instructions. We recommend using Gasgacinch®. Silicone sealant can also be used.
3. Press the carbon graphite seal into the bracket while taking care not to touch or damage the carbon graphite face. Never touch or apply pressure to the carbon graphite seal face!
4. Screw four M-Bolts five complete turns into the threaded holes located on the motor face.
5. Mount the bracket to the motor by aligning the key holes over each bolt head, then rotate clockwise which will position the small key hole slot under each bolt head. Tighten each bolt with a wrench to secure the bracket to the motor (8-25 lb. in.).
6. Carefully, lubricate the seal seat elastomer OD and impeller hub ID with water. Press the seal seat into the impeller hub making certain that the ceramic is in evenly – the sealing surface should be parallel with the impeller hub.
7. Apply CLEAN water to the carbon-graphite and seal seat sealing surfaces. Do not use silicon lubricants or grease!
8. Lock the shaft by placing a screwdriver blade into the shaft slot at the fan end of the motor. Thread the impeller onto the motor shaft (Insure that the small impeller washer is in place on the impeller). Thread until the washer securely contacts the shaft shoulder.
9. Seat the large O-ring into the bracket O-ring groove.
10. Assemble the volute onto the bracket with six P-Bolts (10-24 x 2 3/4" carriage bolts) and six flanged lock nuts. Tighten in a cross pattern (30 lb. in.).
11. Install the drain plug and O-ring, into the volute drain hole.
12. Before operating the Sequel™ Pump, allow a proper cure time for the sealant used in step 2.



DESCRIPTION	P/N
DRAIN PLUG	1000.110
O-RING, DRAIN PLUG	E014B70
VOLUTE	750.070
LARGE O-RING	750.061
IMPELLER	750.058T- 3.50
WASHER, IMPELLER	750.012M
SS SEAL	750.0414
BRACKET	750.030
HARDWARE KIT	750.502
VARIABLE SPEED DRIVE	24166837
SLINGER	750.010

These part numbers are only for standard models within the Sequel™ King Fish 750 series.



DISASSEMBLY

1. Shut off power to the motor before servicing any pump!
2. Unplug the power cord.
3. Disassemble the volute from the bracket – six P-Bolts and six flanged lock nuts. The volute may remain attached to the plumbing to help simplify re-installation.
4. Lock the shaft by placing a screwdriver blade into the shaft slot at the fan end of the motor. Unthread the impeller from the motor shaft – Take care not to misplace the small metal impeller washer.
5. Remove the ceramic, with rubber boot, from the impeller hub (if you are replacing the seal).
6. Loosen the four M-Bolts attaching the bracket to the motor. Rotate the bracket counter-clock wise until the screw heads are located in the large key hole slots. Lift off the bracket from the motor.
7. Remove the carbon-graphite seal assembly from the bracket by pressing it out from the motor-side of the bracket. Do not pry it out with a screwdriver from the pump cavity-side of the bracket (if you are replacing the seal)!

MAINTENANCE

Lubrication

Motor – Permanently Lubricated ball bearings – no service required.
 Rotary Seal – Requires no lubrication after assembly.

**The pump must be drained before servicing or if stored below freezing temperatures. Periodic replacement of seals may be required due to normal carbon wear.*

Symptom	Problem	Resolution
No Flow	Insufficient Prime	Prime system with water and purge all air from suction piping.
		Install check valve.
	Insufficient Power	Verify power supply and connection from panel to pump.
		Verify proper voltage. Some models are dual voltage (115/230).
	Flow Restriction	Ensure valves are open.
		Ensure plumbing is clear, including suction strainers, check valves, etc.
Verify check valve orientation and direction of permitted flow.		
Air leak	Clean out leaves or other debris from basket strainer (if applicable).	
Air leak	Fix air leaks at fittings, connections, strainer basket etc. This typically occurs on the intake side.	
System Incompatibility	Verify hydraulic compatibility: i.e. pump & pipe are sized for the system.	
Low Flow	Air leak	Fix air leaks at fittings, connections, strainer basket etc. This typically occurs on the intake side.
		System Incompatibility
	Insufficient Power	Verify power supply and connection from panel to pump.
		Verify proper voltage. Some models are dual voltage (115/230).
	Flow Restriction	Ensure valves are open.
		Ensure plumbing is clear, including suction strainers, check valves, etc.
	Insufficient Prime	Clean out leaves or other debris from basket strainer (if applicable).
		Prime system with water and purge all air from suction piping.
	Cavitation	Verify airtight plumbing on the suction plumbing especially fittings!
		Clean out leaves or other debris from basket strainer (if applicable).
Increase pipe size where possible.		
Decrease suction pipe length, reduce the number of elbows, etc.		
Sporadic Operation	Insufficient Power	Verify hydraulic compatibility: i.e. pump and pipe are sized for the system.
		Verify power supply and connection from panel to pump.
Excessive Noise	Cavitation	Verify proper voltage. Some models are dual voltage (115/230).
		Ensure adequate airflow over motor to prevent overheating.
		Verify airtight plumbing on the suction plumbing especially fittings!
		Clean out leaves or other debris from basket strainer (if applicable).
	Insufficient Power	Increase pipe size where possible.
		Decrease suction pipe length, reduce the number of elbows, etc.
	Flow Restriction	Verify hydraulic compatibility: i.e. pump and pipe are sized for the system.
		Verify power supply and connection from panel to pump.
Insufficient Power	Verify proper voltage. Some models are dual voltage (115/230).	
	Ensure valves are open.	
Flow Restriction	Ensure plumbing is clear, including suction strainers, check valves, etc.	
	Verify check valve orientation and direction of permitted flow.	

MDM INCORPORATED LIMITED WARRANTY

This product is warranted to the initial purchaser to be free of defects in materials and workmanship at the time of initial purchase and for a period of 4 years for all Sequel™ products. Note: 36 months on Variable Speed Drive. In the event this product malfunctions within three years from the date of purchase, the sole obligation of MDM, Incorporated (hereinafter referred to as MDM) will be to repair the unit or replace with an equivalent new or factory refurbished unit at MDM's discretion, subject to the following conditions:

- The malfunction is proved attributable to a defect in materials or workmanship, including repairs performed under this warranty. Malfunction for any other reason—including but not limited to misuse, negligence, accident, or tampering with parts, incorrect wiring, or improper installation—will not be remedied under this warranty.
- MDM specifically does not guarantee chemical compatibility, and expressly does not warrant units from any problems caused by chemical attack or failure due to incompatibility of fluid being pumped with pump materials of construction. Purchaser shall also retain and present to MDM evidence of purchaser's compatibility tests under actual operating conditions.
- All warranty repairs must be performed by MDM or an MDM authorized company. Purchaser must retain the purchase receipt and present it with this certificate as proof of ownership and entitlement to warranty repairs. Unauthorized repairs will not be compensated by MDM, and are not the responsibility of MDM, and if such repairs damage the product, such damages are not remedied under this warranty.
- Purchaser shall bear all shipping, packing and insurance costs and all other costs, excluding labor and parts necessary to effectuate repairs under this warranty.
- Periodic check-ups are not covered by this warranty.

6. This warranty is in lieu of all other express warranties which now or hereafter might otherwise arise with respect to this product. Any and all limited warranties, including the warranties of merchantability and fitness for particular purpose, shall have no greater duration than the duration period of the express written warranty applicable to this product, and shall terminate automatically the expiration of such duration period. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. No action shall be brought for breach of any implied or express warranty after one year subsequent to the expiration of the duration period of the express written warranty.

7. Incidental and consequential damages caused by malfunction, defect, or otherwise, and with respect to breach of any express or implied warranty, are not the responsibility of MDM, and, to the extent permitted by law, are hereby excluded both for property damage and, to the extent not unconscionable, for personal injury damage. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

8. This warranty does not apply to any malfunction arising out of any application of this product other than normal use, unless such application is upon request specifically approved in writing by MDM.

9. The provisions of this warranty are severable and if any provision shall be deemed invalid, the remaining provisions shall remain in full force and effect.

10. Rights under this warranty are not assignable without the express prior consent in writing by MDM and, regardless of the terms of such consent in writing, such assignee shall have no greater rights than his assignor had against MDM.

11. After the warranty period, units requiring maintenance or repair may qualify for our exchange program. The exchange program provides an opportunity to repair/replace your pump and/or motor at a nominal charge. Please refer to the Exchange Policy or contact MDM for details and current pricing.

Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Model: _____ Serial Number: _____
 Date purchased: _____ Where purchased: _____



MDM INCORPORATED

325 Karen Lane • Colorado Springs, CO • 80907
 Phone (719) 634-8202 • Fax (719) 634-8317
 WWW.MDMINC.COM

Activate your warranty by filling out this form and mailing to MDM Inc. or by registering on-line at www.mdminc.com

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 Teflon® is a registered trademark of DuPont Company. Sequel™ is a trademark of MDM Incorporated.
 Sequel™ King Fish Installation Manual.indd Adobe Indesign CS 2.0 05-28-08



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