



## 5RLGF-8KRF

# Self Priming Centrifugal Pumps

For liquid fertilizer

### SAFETY WARNINGS



**BEFORE OPERATING OR INSTALLING THIS PUMP, READ THIS MANUAL AND FOLLOW ALL SAFETY RULES AND OPERATING INSTRUCTIONS.**

**SAFETY** CAREFULLY READ THESE SAFETY MESSAGES IN THIS MANUAL AND ON PUMP.

### CAUTION

- **DO NOT OPERATE THIS PUMP DRY!**
- Review instructions before operating.
- Wear ear protection to reduce objectionable noise.

### WARNING

- Review chemical manufacturer's safety precautions before handling.
- Make sure all connections are tight.
- Do not breathe or ingest fumes or chemicals.
- Never use with flammable fluids.
- Turn off engine before servicing.
- If fuel is spilled, avoid creating any source of ignition until the fuel vapors have been cleaned up and removed.



### APPLICATION

Use these pumps on water or liquid fertilizer, where the vertical suction from the liquid level is 25 ft. (8m) or less.

The elevation above sea level, and friction losses, must be taken into consideration.

**NOTE:** Do not operate this pump dry for more than two minutes. This pump has been tested and operated under actual working conditions. Engine, pump and all accessories were found satisfactory. If pumping unit is not performing as specified, check installation and Troubleshooting Guide carefully.

### INSTALLATION

Refer to Fig. 1

- LOCATION:** For permanent installation, put the pump in a clean, dry and ventilated place. Keep the suction line as short as possible. This keeps pumping flow at its highest.
- MOUNTING:** Mount the pump on a rigid foundation to eliminate creeping due to vibration.
- SUCTION LINE:** Use a suction line the same size as the suction on the pump. If the suction pipe is long, increase it by one size to improve flow. Slope the suction line upwards to the pump to avoid air pockets in the line and hard priming.
- SUCTION PIPE:** Use thread compound on all pipe joints. Connections must be tight. Clean, uncorroded pipe is recommended.

- SUCTION HOSE:** If the suction line runs basically vertically, use an elbow on the hose to prevent kinking. Use double clamps on all hose joints. Connections must be tight.

**NOTE:** If you use the pump for dewatering, attach a foot valve to the suction line.

**NOTE:** The main cause of pumping problems is a leak in the suction line. Even a tiny leak reduces priming and pumping greatly.

## OPERATION - PRIMING THE PUMP

**WARNING:** DO NOT RUN THE PUMP BEFORE PRIMING IT, SINCE THE SEAL AND IMPELLER COULD BE PERMANENTLY DAMAGED.

Refer to Fig. 1

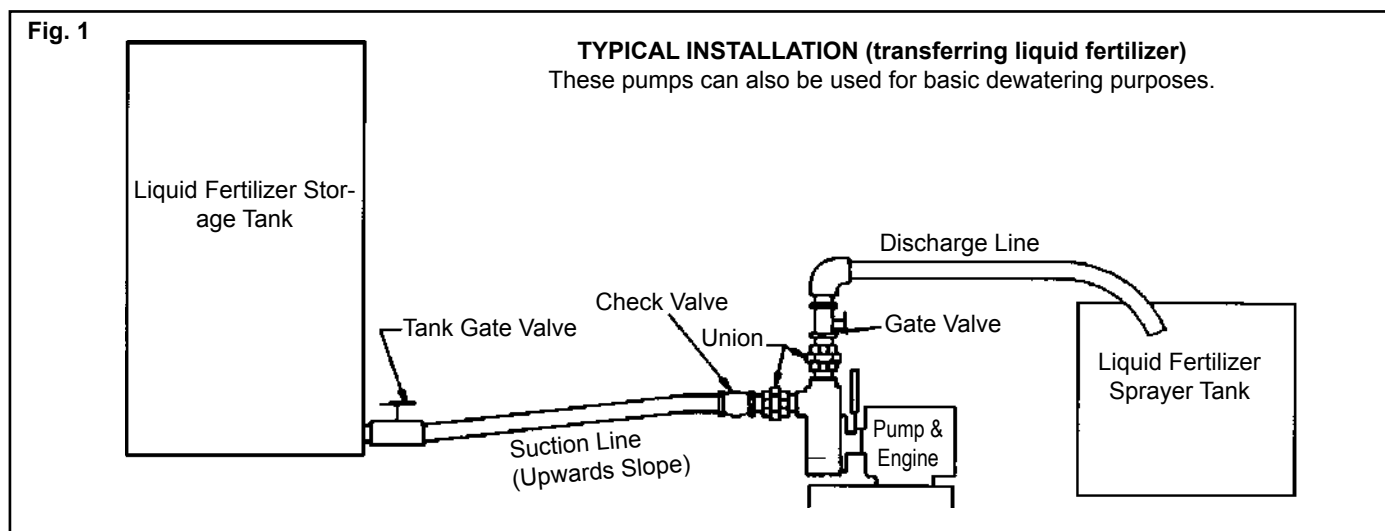
- a) **PREPARING THE ENGINE:** Follow the engine manufacturer's instructions before operating.
- b) **PRIMING THE PUMP:** Remove the priming plug and fill the casing with the same liquid that you will be pumping and replace plug. If the pump is below the level of the liquid that will be pumped (flooded suction), the pump will automatically fill up when the valves are open. Then start the pump.

**NOTE: DO NOT OPERATE THIS PUMP DRY!**

- c) **START-UP:** In a 'flooded suction' situation, the pump will discharge the liquid almost immediately. If the suction line is above the liquid level being pumped, it will take a few minutes to lift the water to the casing and then to discharge it. If the suction line is quite long, the pump may overheat before the liquid in the suction line reaches the pump. In this case, turn the pump off and drain the casing. Wait a few minutes for the seal in the pump casing to cool down. Then replace the drain plug and refill the casing with the same liquid that will be pumped. Replace the priming plug and restart the pump.

**WARNING**

If the overheated casing is filled while hot, damage to the seal will occur.



## MAINTENANCE

- a) **ENGINE:** Refer to the engine manufacturer's instructions for any maintenance requirements.
- b) **FLUSHING:** If you are pumping chemicals, fertilizers or corrosive liquids, flush the pump after each use. Remove the drain and priming plugs and fill the casing several times with clean water.
- c) **DRAINING:** If the pump is subject to freezing temperatures, drain the pump by removing the drain plug and priming plug. After liquid has drained, run the pump for a few seconds to get the last liquid out of the impeller. Make sure the suction and discharge lines are free of liquid.

## REPAIR

Refer to Fig. 2

### DISASSEMBLY:

- 1) Drain the pump (see Draining under Maintenance).
- 2) Disconnect the pipes/hoses.
- 3) To remove the casing (1) remove the 4 bolts from the adapter.
- 4) To remove the impeller (2), use a rubber mallet to tap it loose and unscrew the impeller in a counter-clockwise direction.
- 5) To remove the seal (8), simply pull it off of the shaft. The sleeve (10) will slide off with it.
- 6) Remove the adapter (6), by removing the 4 bolts.
- 7) To remove the ceramic seat (9), press it out from the backside of the adapter with your thumbs.
- 8) Remove the rubber cup (4) from the adapter.
- 9) **DO NOT REMOVE THE FLINGER (11)** unless it needs to be replaced.

**REASSEMBLY:**

- 1) Clean all parts thoroughly before reassembly.
- 2) Apply liquid soap to the outer surface of the rubber cup (4) on the stationary seat (9). Insert the stationary seal seat into the seal adapter plate. Make sure that the smooth face of the ceramic seat is facing towards the front of the pump. Push this assembly into the adapter, using hand pressure only.
- 3) Assemble the adapter (6) and handle (5) onto the engine using the bolts and washers. Make sure that the flinger (11) is on the shaft.

**NOTE:** There may be more than one position that the adapter can be bolted to the engine but only one position is correct (refer to Fig. 3).

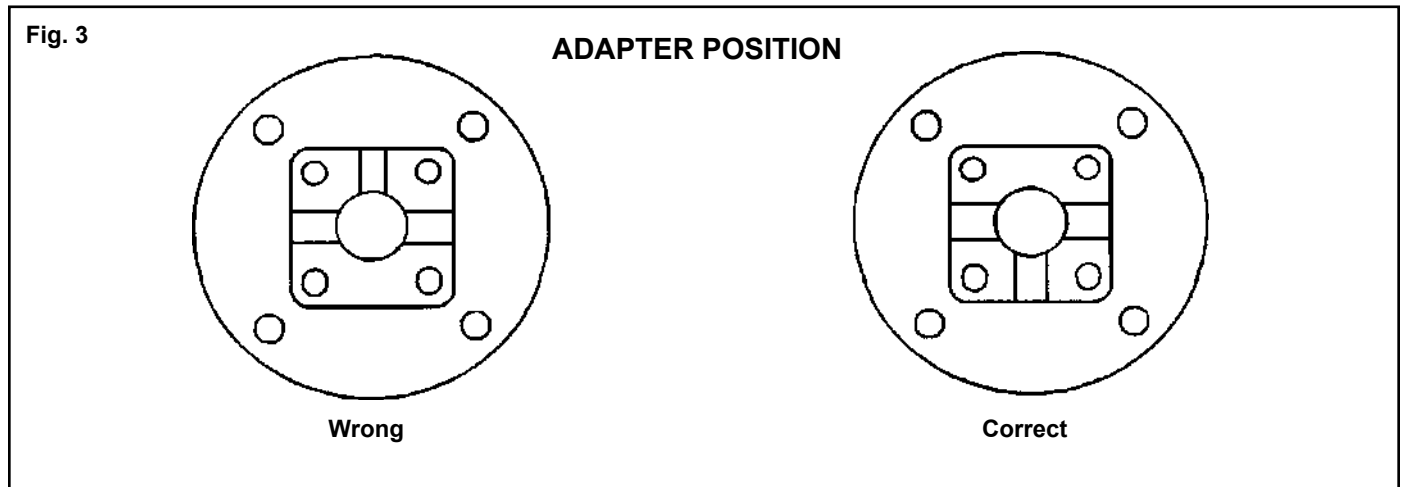
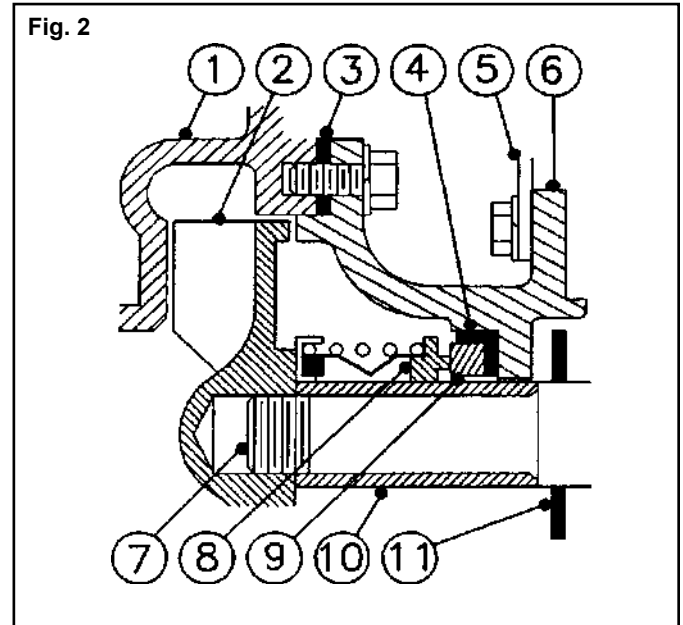
**IMPORTANT:** Be careful not to damage the ceramic seat or shaft, when assembling the adapter to the engine.

- 4) Replace the Seal:
  - The sleeve (10) may have a chamfer on the inside diameter at one end only, or at both ends. If the chamfer is only on one end, the chamfer end must be towards the engine. Slide it onto the shaft.
  - Make sure both faces of the seal are clean, then slide seal (8) onto the sleeve.
- 5) Screw on the impeller (2), clockwise.

- 6) Replace the gasket (3) and the washers. Then assemble the casing onto the adapter. Use thread locking / sealing compound on casing bolts to prevent leaks.

**PRECAUTION:** Check to see that the impeller rotates freely in the casing.

- 7) Reconnect the suction and discharge lines. Use a thread compound and make sure that the connections are tight.



TROUBLESHOOTING		
SYMPTOM	CAUSE	REMEDY
Pump will not pump	Air leak in suction line.  The suction and/or discharge line(s) may be blocked, or the valve(s) are closed, faulty and/or blocked.  End of suction line is not submerged.  Total head is too high for this pump to work against.	Make sure suction hose is double-clamped at joints, clamps are tight, fittings have thread compound and are tight, no nicks or cuts in hose.  Check to see that the lines and valves are in good working order.  Increase its length, or move pump closer to source of liquid.  Reduce total head or use a higher-head pump.
<b>Pump doesn't catch prime</b>	Excessive suction lift*.	Move the pump closer to liquid source.

## TROUBLESHOOTING (cont.)

SYMPTOM	CAUSE	REMEDY
<b>Priming takes a long time</b>	Suction line is quite long.	Refer to "start-up" under operation.
	Air pockets or leaks in the suction line	Check the line for loose connections.
<b>Pump does not perform as well as it should</b>	Flow is restricted due to: a) Debris build-up. b) Faulty or semi-open valve(s). c) Piping/hosing used is smaller than the thread sizes on the pump.	a) Clean the lines and fittings. b) Check to see that the valves are in good working order. c) Increase size of hose/pipe to reduce friction losses.
	Insufficient submergence of the end of the suction line.	The end of the suction line must be submerged.
	Excessively worn impeller**.	Replace impeller.
	Seal is damaged***. Liquid will be leaking through the middle of the adapter.	Replace seal.
	Air pockets or leaks in the suction line.	Check suction line.
	Clogged impeller.	Remove casing to clean out.
<b>Pump loses prime</b>	Liquid level drops below the end of the suction line.	Increase length of suction line or move the pump closer to the liquid source.

\*Excessive suction lift must take into consideration:

- a) Size and length of pipe
- b) Density and temperature of liquid
- c) Pipe fitting
- d) Elevation above sea level

Including all of the above, we recommend that the total suction head not exceed 25 ft.

\*\*An excessively worn impeller is mainly caused from cavitation which is caused by a number of situations.

Examples:

- a) Restricted suction
- b) Excessive suction lift

\*\*\*The seal may be damaged due to:

- a) Normal wear
- b) Overheating
- c) Pumping chemicals that this seal is not designed for

### CALL FOR RETURNED MERCHANDISE AUTHORIZATION (RMA) PRIOR TO RETURN

Toll-Free Help Hotline: 1-888-956-0000

E-mail: [wts-orders@fele.com](mailto:wts-orders@fele.com)

[www.redlionproducts.com](http://www.redlionproducts.com)

# RED LION

#### LIMITED WARRANTY:

For warranty consideration, Franklin Electric Company, Inc. and its subsidiaries (hereafter "the Company") warrants that the products specified in this warranty are free from defects in material or workmanship of the Company. During the time periods and subject to the terms and conditions hereinafter set forth, the Company will repair or replace to the original user or consumer any portion of this product which proves defective due to materials or workmanship of the Company. At all times the Company shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts, or components. The Company has the option to inspect any product returned under warranty to confirm that the warranty applies before repair or replacement under warranty is approved. This warranty sets forth the Company's sole obligation and purchaser's exclusive remedy for defective product. Return defective product to the place of purchase for warranty consideration.

**WARRANTY PERIOD - PRODUCTS:** 12 months from date of purchase by the user. In the absence of suitable proof of the purchase date, the effective period of this warranty will begin on the product's date of manufacture.

**LABOR, ETC. COSTS:** The Company shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or affixing any product, part or component thereof.

**PRODUCT IMPROVEMENTS:** The Company reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such change or improvement.

**GENERAL TERMS AND CONDITIONS:** This warranty shall not apply to damage due to acts of God, normal wear and tear, normal maintenance services and the parts used in connection with such service, lightning or conditions beyond the control of the Company, nor shall it apply to products which, in the sole judgment of the Company, have been subject to negligence, abuse, accident, misapplication, tampering, alteration; nor due to improper installation, operation, maintenance or storage; nor to excess of recommended maximums as set forth in the instructions.

Warranty will be VOID if any of the following conditions are found:

1. Product is used for purposes other than those for which it was designed and manufactured
2. Product not installed in accordance with applicable codes, ordinances and good trade practices
3. Pump allowed to operate dry (fluid supply cut off)
4. Engine housing opened or product dismantled by customer

**DISCLAIMER:** Any oral statements about the product made by the seller, the Company, the representatives or any other parties, do not constitute warranties, shall not be relied upon by the user, and are not part of the contract for sale. Seller's and the Company's only obligation, and buyer's only remedy, shall be the replacement and/or repair by the Company of the product as described above. NEITHER SELLER NOR THE COMPANY SHALL BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE, DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS), ARISING OUT OF THE USE OR THE INABILITY TO USE THE PRODUCT, AND THE USER AGREES THAT NO OTHER REMEDY SHALL BE AVAILABLE TO IT. Before using, the user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. THE WARRANTY AND REMEDY DESCRIBED IN THIS LIMITED WARRANTY IS AN EXCLUSIVE WARRANTY AND REMEDY AND IS IN LIEU OF ANY OTHER WARRANTY OR REMEDY, EXPRESSED OR IMPLIED, WHICH OTHER WARRANTIES AND REMEDIES ARE HEREBY EXPRESSLY EXCLUDED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT EITHER APPLIES TO A PRODUCT SHALL BE LIMITED IN DURATION TO THE PERIODS OF THE EXPRESSED WARRANTIES GIVEN ABOVE. Some states and countries do not allow the exclusion or limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and country to country.