

OWNER'S MANUAL

607704 - 20MGK-GS 607706 - 20MDH-GS Self Priming Centrifugal Pumps



SAFETY WARNINGS



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

WARNING

- Make sure all connections are tight.
- 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.
- Make sure grease cup is full.

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

SPECIAL TOOLS

- The only special tool required to service the pump are Retaining Ring Pliers.

INSTALLATION

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: 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

- PREPARING THE ENGINE:** Follow the engine manufacturer's instructions before operating.
- FILL GREASE CUP:** Grease cup must be filled with NLGI #2 Lithium complex or Calcium Sulfonate complex grease. Flush grease cup and seal box prior to initial startup or if pump has been idle for the last 8 weeks (see Grease Flush Instructions below).
- PRIMING THE PUMP:** 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.
- START-UP:** In a 'flooded suction' situation, the pump will discharge the liquid almost immediately.

MAINTENANCE

- ENGINE:** Refer to the engine manufacturer's instructions for any maintenance requirements.
- FILL GREASE CUP:** Grease cup must be filled with NLGI #2 Lithium complex or Calcium Sulfonate complex grease.
- RECOMMENDED GREASE CUP AND SEAL BOX FLUSH SCHEDULE:**
 - Every 8 weeks during operation
 - Prior to initial start up or if pump has been idle for the last 8 weeks

Grease Flush Instructions

 1. Remove 1/4" NPT vent port plug and allow remaining grease from grease cup to flush out.
 2. Pump new grease into grease cup until new grease oozes out of vent port.
 3. Replace vent port plug and tighten.
 4. Fill grease cup until grease cup stem rises 1-3/4".
- FLUSHING:** If you are pumping chemicals or corrosive liquids, flush the pump after each use. Remove the drain and priming plugs and fill the casing several times with clean water.
- 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.

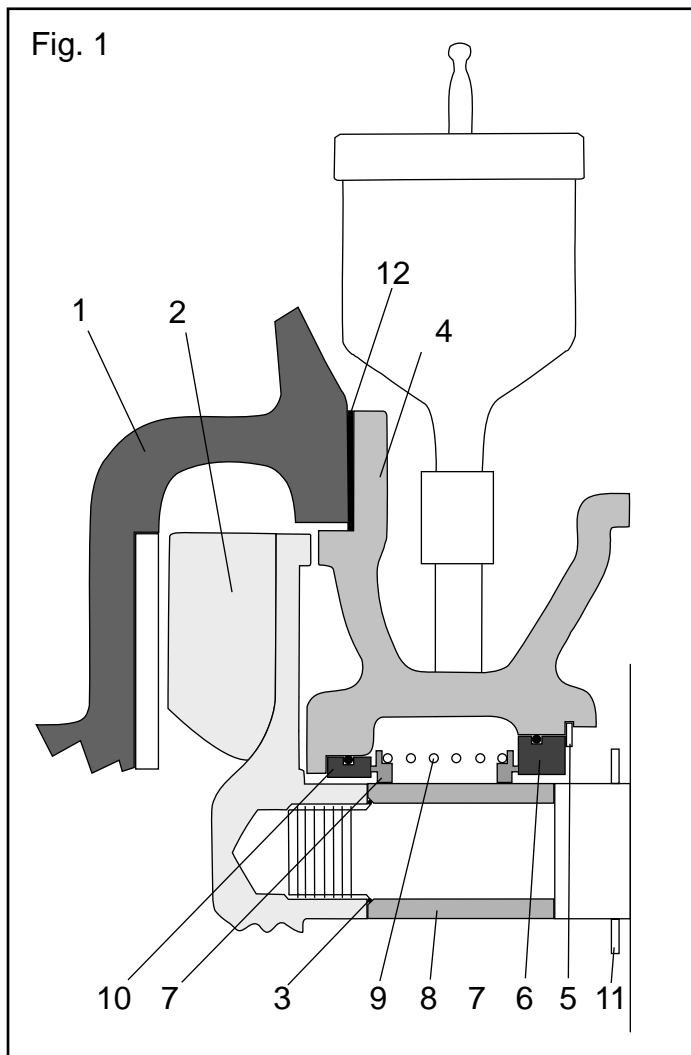
REPAIR - Refer to Figure 1

DISASSEMBLY:

- 1) Drain the pump (see Draining under Maintenance).
- 2) Disconnect the pipes/hoses.
- 3) To remove the casing (1) remove the 6 nuts 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) Remove "O" ring (3).
- 6) Remove the adapter (6), by removing the 4 engine bolts.
- 7) Remove retaining ring (5) on adapter with retaining ring pliers.
- 8) Remove 2-1/2" stationary seat(6).
- 9) Remove sleeve (8), both rotating seals (7) and spring (9) (should come out as an assembly).
- 10) Remove both rotating seal assemblies from sleeve (7).
- 11) To remove the 2-1/8" seat (10), press it out from the backside of the adapter with your thumbs.
- 12) DO NOT REMOVE THE FLINGER (11) unless it needs to be replaced.

REASSEMBLY:

- 1) Clean all parts thoroughly before reassembly.
Note: seal faces must be clean prior to assembly. Use alcohol to clean faces.
- 2) Apply liquid soap to the 2-1/8" stationary seat (10). Press seat (10) into adapter (4), insure smooth face of seat is facing you.
- 3) Apply soap to outside of sleeve (8) and inside of both rotating seals (7). Insert one seal (7) onto sleeve (8). Insert sleeve (8) and seal (7) assembly into adapter.
- 4) Place spring (9) on sleeve (8) in adapter.
- 5) Place second seal (7) onto spring (9).
- 6) Place 2-1/2" seal (6) with mirror face facing down into adapter on rotating seal (7).
- 7) Press seal into adapter until retaining ring (5) groove is visible.
- 8) Install retaining ring (5).
- 9) Bolt adapter (4) to engine.
- 10) Place "O" ring (3) on engine shaft, and push up against sleeve (8).
- 11) Screw on the impeller (2), clockwise and tighten.
- 12) Replace the gasket (12). Then assemble the casing onto the adapter.
- 13) Reconnect the suction and discharge lines. Use a thread compound and make sure that the connections are tight.



TROUBLESHOOTING CHART

| PROBLEMS | CAUSES | SOLUTIONS |
|--|--|---|
| Pump will not pump | <p>Air leak in suction line.</p> <p>The suction and/or discharge line(s) may be blocked, or the valve(s) are closed, faulty and/or blocked.</p> <p>The end of the suction line is not submerged.</p> | <p>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.</p> <p>Check to see that the lines and valves are in good working order.</p> <p>Increase its length, or move the pump closer to the source of liquid.</p> |
| Priming takes a long time | <p>Suction line is quite long.</p> <p>Air pockets or leaks in the suction line.</p> | <p>Refer to "start-up" under operation.</p> <p>Check the line for loose connections.</p> |
| Pump does not perform as well as it should | <p>Flow is restricted due to:</p> <p>a) Debris build-up.</p> <p>b) Faulty or semi-open valve(s) order.</p> <p>Excessively worn impeller ("1).</p> <p>Seal is damaged ("2). Liquid will be leaking through the middle of the adapter.</p> <p>Air pockets or leaks in the suction line.</p> <p>Clogged impeller.</p> | <p>a) Clean the lines and fittings.</p> <p>b) Check to see that the valves are in good working order.</p> <p>Replace impeller.</p> <p>Replace seal.</p> <p>Check suction line.</p> <p>Remove casing to clean out.</p> |
| Grease cup will not fill | <p>Grease cup plunger damaged.</p> <p>Seal on pump side worn or damaged.</p> | <p>Replace grease cup.</p> <p>Replace mechanical seal.</p> |

*1) An excessively worn impeller is mainly caused from cavitation which is caused by a number of situations.
Example: Restricted suction.

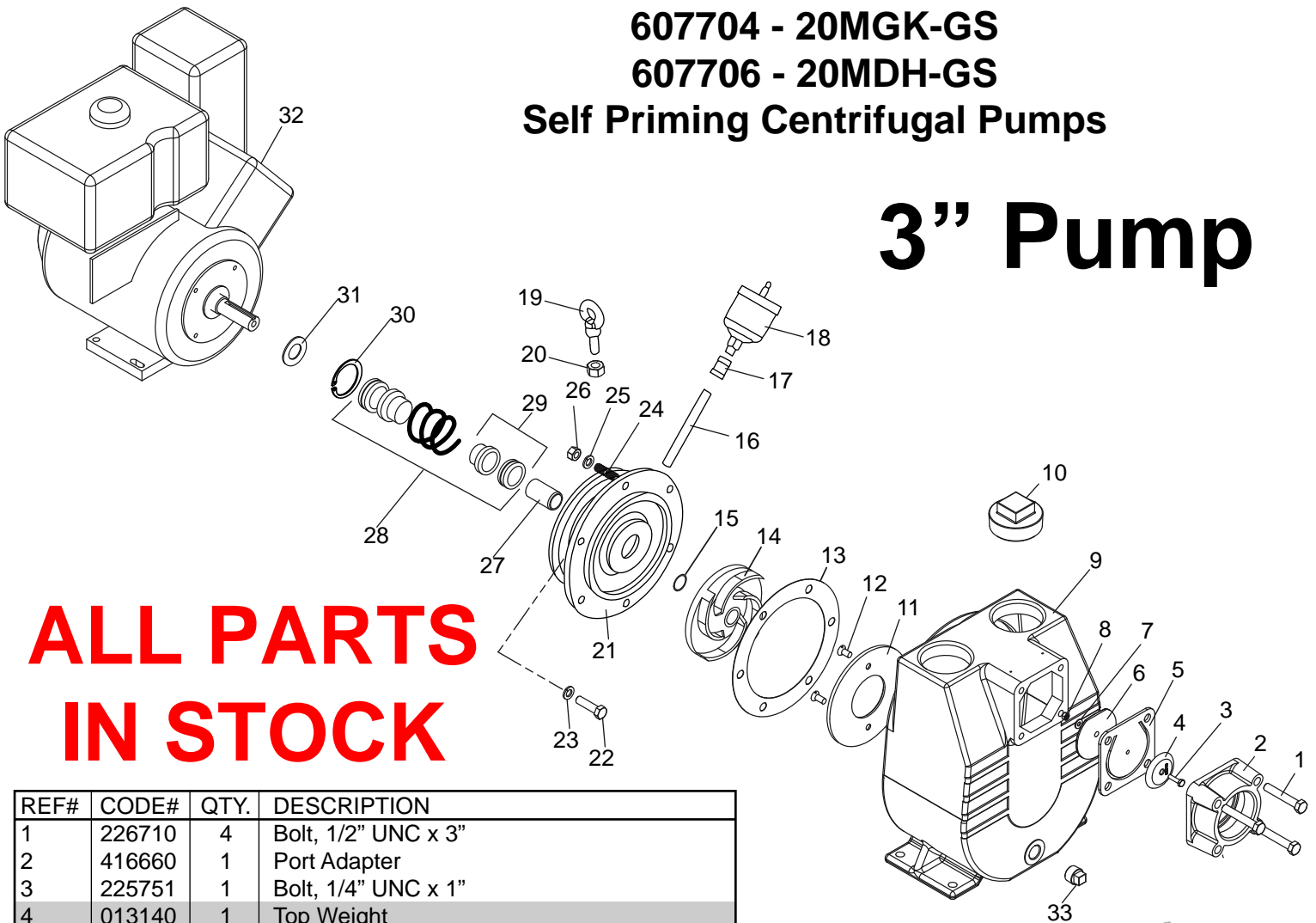
"2) The seal may be damaged due to:

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

Contact a Monarch service depot for further assistance.

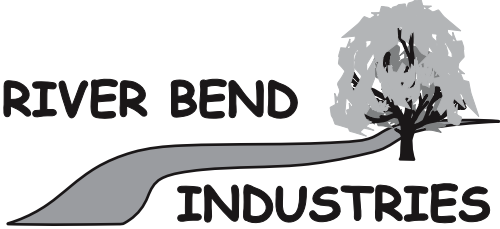
607704 - 20MGK-GS
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 Self Priming Centrifugal Pumps

3" Pump



**ALL PARTS
 IN STOCK**

| REF# | CODE# | QTY. | DESCRIPTION |
|------|--------|------|---|
| 1 | 226710 | 4 | Bolt, 1/2" UNC x 3" |
| 2 | 416660 | 1 | Port Adapter |
| 3 | 225751 | 1 | Bolt, 1/4" UNC x 1" |
| 4 | 013140 | 1 | Top Weight |
| 5 | 191380 | 1 | Valve, Rubber |
| 6 | 016670 | 1 | Bottom Weight |
| 7 | 174591 | 1 | Washer, 1/4" SST |
| 8 | 128880 | 1 | Nut, 1/4" UNC |
| 9 | 416630 | 1 | Casing |
| 10 | 185810 | 1 | Pipe Plug, 3" NPT |
| 11 | 430420 | 1 | Wear Plate |
| 12 | 143980 | 2 | Screw, 3/8" UNC X 3/4" SST |
| 13 | 191390 | 1 | Gasket 9.63 X 7.03 X .03 |
| 14 | 416653 | 1 | Impeller, 6.95" Dia x 1.5" Blade Height |
| 15 | 198542 | 1 | O-Ring -021 15/16" X 1-1/16" D70 |
| 16 | 200543 | 1 | Nipple 1/4" X 3" GALV |
| 17 | 177620 | 1 | Pipe Cplg 1/4" NPT Galv Band |
| 18 | 240520 | 1 | Grease Cup Spring Compression |
| 19 | 119200 | 1 | Eye-Bolt 1/2" UNC X 1-1/2" |
| 20 | 227850 | 6 | Nut, 1/2" UNC ZN PL |
| 21 | 416683 | 1 | Adapter |
| 22 | 226440 | 4 | Bolt, Hex Head 7/16" UNC X 1-1/2" ZN PL |
| 23 | 176240 | 4 | Lock Washer 7/16" ZN PL |
| 24 | 170640 | 6 | Stud 1/2" UNC X 1-3/4" ZN PL |
| 25 | 176250 | 6 | Lock Washer 1/2" ZN PL |
| 26 | 227850 | 6 | Nut, 1/2" UNC |
| 27 | 465508 | 1 | Sleeve, 1.5" OD x 1.001" ID x 2.004" Long |
| 28 | 240306 | 1 | MS-109 SEAL |
| 29 | 240307 | 1 | MS-110 (REPLACEMENT SEAL ONLY) |
| 30 | 138209 | 1 | Retainer Ring 5008-262 |
| 31 | 190846 | 1 | Slinger |
| 32 | 202162 | 1 | Engine KOHLER CH25 |
| 33 | 185650 | 1 | Pipe Plug, 3/4" Galvanized |

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