BLACKMER GLOBAL DISPENSER PUMP

OPERATION AND MAINTENANCE INSTRUCTIONS WITH PARTS LIST

MODEL: GDP

964800
INSTRUCTIONS AND PARTS LIST NO. 1701-A00
Page 1 of 12

Section	1701
Effective	February 2004
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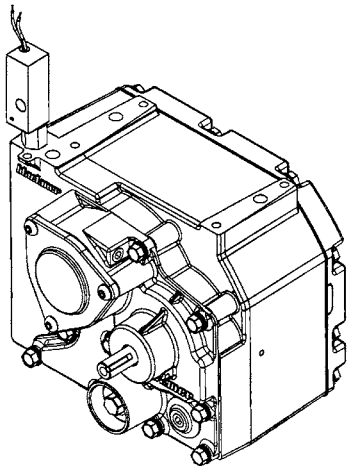

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NOTE: Numbers in parentheses following individual parts indicate reference numbers on the corresponding Blackmer Parts List.

SAFETY DATA

This is a SAFETY ALERT SYMBOL.
When you see this symbol on the product, or in the manual, look for one of the following signal words and be alert to the potential for personal injury, death or major property damage.

⚠ DANGER

Warns of hazards that WILL cause serious personal injury, death or major property damage.

⚠WARNING

Warns of hazards that CAN cause serious personal injury, death or major property damage.

⚠ CAUTION

Warns of hazards that CAN cause personal injury or property damage.

NOTICE:

Indicates special instructions which are very important and must be followed.

NOTICE:

Blackmer GDP pumps MUST only be installed in systems which have been designed by qualified engineering personnel. The system MUST conform to all applicable local and national regulations and safety standards.

This manual is intended to assist in the operation and maintenance of the Blackmer GDP pump, and MUST be kept with the pump.

Blackmer GDP pump service shall be performed by qualified technicians ONLY. Service shall conform to all applicable local and national regulations and safety standards.

Thoroughly review the pump instructions and hazard warnings, BEFORE performing any work on the Blackmer GDP pump.

Maintain ALL system and Blackmer GDP pump operation and hazard warning decals.

SAFETY DATA

⚠WARNING

Hazardous fluids can cause fire, serious personal injury or property damage.

USE CARE WHEN WORKING IN A POTENTIALLY DANGEROUS ENVIRONMENT OF FLAMMABLE FUELS, VAPORS AND HIGH VOLTAGE. FIRE OR EXPLOSION COULD RESULT IN SEVERE INJURY OR DEATH.

⚠WARNING

Hazardous voltage. Can shock, burn or cause death.

FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.

⚠WARNING

Hazardous pressure can cause personal injury or property damage.

DISCONNECTING FLUID OR PRESSURE CONTAINMENT COMPONENTS DURING PUMP OPERATION CAN CAUSE SERIOUS PERSONAL INJURY, DEATH OR MAJOR PROPERTY DAMAGE.

⚠ CAUTION

Hazardous pressure can cause personal injury or property damage.

FAILURE TO RELIEVE SYSTEM PRESSURE PRIOR TO PERFORMING PUMP SERVICE OR MAINTENANCE CAN CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

OPERATION

PRESSURE CONTROL VALVE ADJUSTMENT

Pressure Control Valves (PCV) must be set to the desired single hose operating pressure.

⚠WARNING

Hazardous pressure can cause personal injury or property damage.

RETAINING RING (15) MUST BE IN PLACE AT ALL TIMES DURING PRESSURE CONTROL VALVE ADJUSTMENT. PERSONAL INJURY OR PROPERTY DAMAGE MAY OCCUR IF RETAINING RING IS NOT INSTALLED.

Tools Required: 16 mm Socket Wrench

1. To INCREASE the pressure setting, turn the PCV cover (13) *inward* or CLOCKWISE using a 16 mm socket wrench.

2. To DECREASE the pressure setting, turn the PCV cover (13) *outward* or COUNTERCLOCKWISE using a 16 mm socket wrench.

MAINTENANCE

NOTICE:

MAINTENANCE SHALL BE PERFORMED BY QUALIFIED TECHNICIANS ONLY, FOLLOWING THE APPROPRIATE PROCEDURES AND WARNINGS AS PRESENTED IN THIS MANUAL.

DRAINING PUMP

The following procedure will drain the bulk of the fluid from the pump. Residual fluid may remain in the pump.

Tools Required: 1/4 " Allen Wrench

1. Remove the plug (11) directly to the right of the strainer cover (19). This port may be used to monitor vacuum
2. Remove the plug (11) on the lower right face of the head (9). Fluid will be emptied by removing this plug. Fluid must be properly contained during draining procedure. NOTE: Pump contains up to 0.5 liters of fluid.

   DO NOT use this port to monitor system pressure
3. If sump drainage is desired, plug (11) near the mounting hole on the left side of pump casing (1) may be removed.
4. Manually turn the pump pulley COUNTERCLOCKWISE to aid in fluid removal.
5. Properly dispose of all fluid drained from pump.
6. After pump is drained, replace all plugs (11) using a non-hardening pipe sealant. **DO NOT** use PTFE tape.

STRAINER / CHECK VALVE REMOVAL

Check valves (if equipped) should be replaced only if pump is experiencing frequent prime loss, indicating the check valve is not functioning. Check valve should be installed when tank check valve is not available.

Always use strainers with or without check valves. Strainer must be kept clean to ensure proper operation and pump life.

Tools Required: 5 mm Allen Wrench

1. Lower pump fluid level by removing the plug (11) located at the right of the stainer cover and rotating the pump shaft COUNTERCLOCKWISE approximately ten (10) turns. NOTE: Removing the plug allows air to enter.
2. Remove the three (3) strainer cover screws (21).
3. Remove the strainer cover (19). Inspect cover O-ring (18) for damage. If damaged, discard O-ring and replace.
4. Carefully pull out strainer (17). Keep strainer in a horizontal position to avoid contaminating pump with strainer debris. It may be necessary to use a small tool to gently hook the inside of the metal strainer end cap.
5. If equipped, remove the inlet check valve assembly (16). Inspect for cracked or otherwise damaged O-rings. Replace if damaged.
6. Lift dome strainer (25) out from the bore (behind the check valve assembly.)

MAINTENANCE

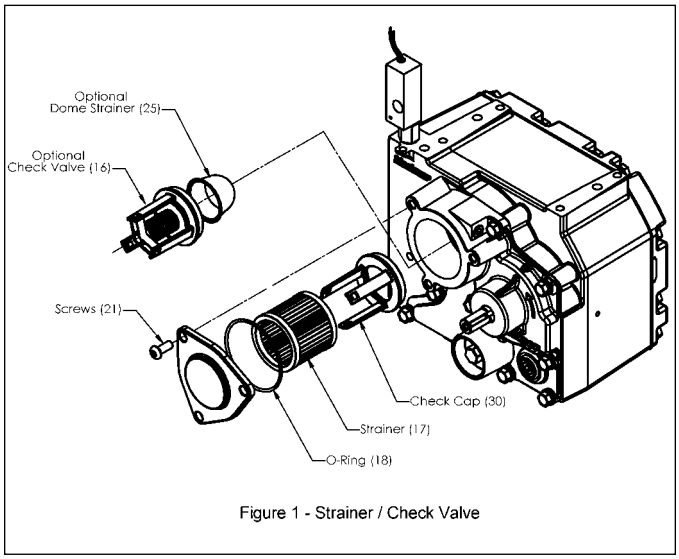


Figure 1 - Strainer / Check Valve

STRAINER / CHECK VALVE INSTALLATION

1. If equip with check valve option, insert dome strainer (25) into bore as shown on figure 1.
2. Clean debris from check valve, especially at the O-ring seats.
3. Lubricate O-ring before installing in check valve assembly.
4. Insert check valve assembly (16) or check cap (30) into corresponding pump bore as shown in Figure 1. Press assembly squarely over receiving cylindrical surface until O-ring seats firmly over the surface and holds assembly in position.
5. Insert new or cleaned strainer (17) into bore, over check valve assembly.
6. Clean debris from strainer cover O-ring groove and install O-ring (18). If O-ring does not stay in place, use a small amount of all purpose grease to hold the O-ring in groove.
7. Install strainer cover (19) with screws (21). Hand tighten, alternating between each screw to keep the cover parallel to the casing face. Torque the screws to 150 lbs-in (17 Nm). DO NOT OVERTIGHTEN.
8. Replace the plug (11) in the hole located to the right of the strainer cover.

PRESSURE CONTROL VALVE REMOVAL

Excessive wear on the pressure control valve (PCV) can cause improper pump performance, including flow loss or excessive or low discharge pressure.

Tools Required: Large Snap Ring Pliers
16 mm Socket Wrench

1. Drain the pump following the procedure outlined under the “Draining Pump” section.
2. Remove the snap ring (15).
3. With a 16 mm socket wrench, turn the valve cover (13) outward or COUNTERCLOCKWISE until completely removed.
4. Remove the spring (12) and valve (10).
5. If valve did not come out with the spring, use a needle nose pliers to remove it from the bore.

PRESSURE CONTROL VALVE INSTALLATION

1. Inspect valve for damage or excessive wear. Replace if necessary.
2. Install pressure control valve in reverse order of removal. Refer to Figure 2. Apply a light application of grease on the cover O-ring (14) to help keep the O-ring from being damaged during installation.

NOTICE:

Modification of pressure control valve or failure to correctly install all components of the pressure control valve will void any regulating agency recognition applicable to this pump.

3. When pump is operating at full speed, discharge pressure must NOT exceed 50 psi (3.5 bar) with any discharge restriction (fully open to fully close discharge). If the pressure exceeds 50 psi (3.5 bar), refer to “Pressure Control Valve Adjustment” procedure in the Operation Section of this manual.

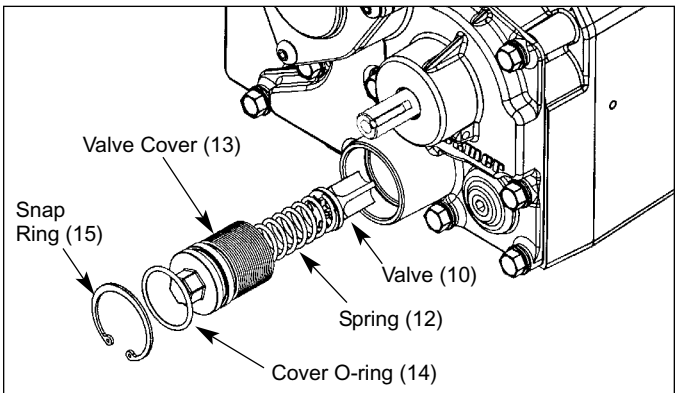


Figure 2 - Pressure Control Valve

PUMP CARTRIDGE REMOVAL

Damage or excessive wear to pump cartridge can cause low suction, low flow, lock-up or excessive noise.

Tools Required: Large Snap Ring Pliers
16 mm Socket Wrench
5 mm Allen Wrench
13 mm Socket Wrench (or 1/2” Socket Wrench)
Rubber mallet (optional)

1. Drain the pump following the procedure outlined under the “Draining Pump” section.
2. Remove belt and pulley.
3. Remove strainer, check valve, and pressure control valve Refer to “Strainer/Check Valve Removal” and “Pressure Control Valve Removal” for disassembly instructions.
4. Remove the ten (10) head capscrews (5).
5. Slightly rotate the head (9) *counterclockwise* around pump cartridge to give exposed edges to grasp.
6. Remove head (9) from pump casing.
7. If the pump cartridge (7) comes off with head, remove by rotating and pulling the cartridge from the head bore.

MAINTENANCE

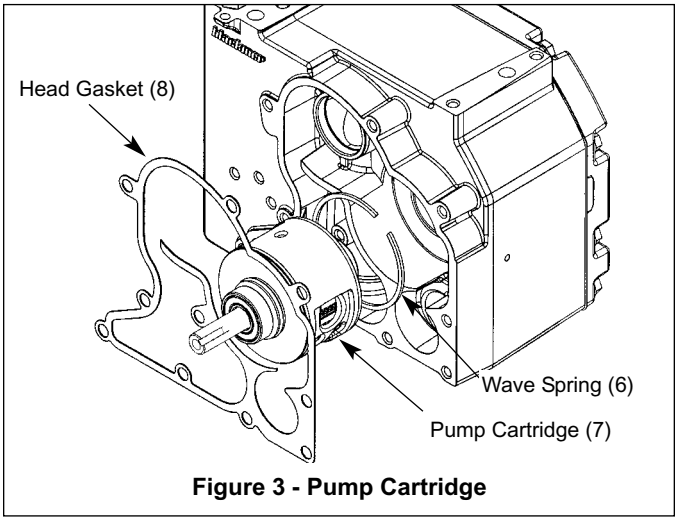


Figure 3 - Pump Cartridge

8. If the cartridge remains in the pump casing, grasp the shaft and/or liner and pull while slightly turning back and forth. If necessary, GENTLY tap around the circumference with a rubber mallet to loosen the cartridge assembly. Be sure to keep it concentric with the bore. DO NOT PRY THE CARTRIDGE OUT AGAINST THE SIDE WALLS AS THE GASKET SEAL SURFACE WILL BE DAMAGED.

PUMP CARTRIDGE INSTALLATION

1. Install the wave spring (6) in the cartridge bore with the dowel pin hole exposed by the gap in the wave spring.
2. Lightly grease the lip seal O-rings.
3. Align the pump cartridge dowel pin with the dowel pin hole and slide in the pump cartridge (7). If the pin is in the hole, you should be able to rotate the cartridge very lightly back and forth and feel the positive stops. The wave spring deflection will also be felt when the cartridge is pressed in axially. PUMP WILL NOT BUILD IF THE CARTRIDGE PIN IS NOT IN THE HOLE.
4. Insert provided guides into screw holes. The guides will orient gasket as well as hold it in position.
5. Install the head gasket (8). If needed, apply a thin film of motor oil onto the mating surface to affix areas of the gasket that do not retain their position.
6. Carefully install the head (9) over the cartridge. Push head in until it comes approximately 1/4" from the casing face.
7. Carefully replace guides with head screws, threading each of them in a few turns.
8. Alternating between the **four screws closest to the shaft**, draw in the head approximately one turn on the screw at a time in order to keep the head parallel to the casing.

   NOTE: Screws will become very tight if faces are not kept parallel. If necessary, go back to step 3 and check to ensure the cartridge pin is still aligned with the hole.
9. Once the head is fully drawn in, torque the four screws to 200 lbs-in (23 Nm).
10. Before tightening the remaining head screws, check that the pump shaft turns freely and uniformly. If so, tighten the remaining screws to 200 lbs-in (23 Nm).
11. Reinstall inlet check valve, strainer and pressure control valve according to previous instructions.

SUMP FLOAT REMOVAL

Pump will have poor suction or sump overflow if sump float mechanism is worn or damaged

Tools Required: 13 mm Socket Wrench (or 1/2" Socket Wrench)
4 mm Allen Wrench

1. Drain the pump following the procedure outlined under the "Draining Pump" section.
2. Remove the pump from the dispenser per dispenser installation instructions.
3. Remove the ten (10) sump cover screws (5).
4. Lift off the sump cover (4) and gasket (3). Inspect gasket and replace if worn or damaged.
5. The sump return float mechanism should operate freely. At full down position, the float valve should center and seat against the rubber seal surface. If it does not seat, or parts are worn or damaged, remove the sump float assembly and replace.

   The sump overflow float mechanism (if present) should operate freely. The float valve should center and seat against the rubber seal surface when float is lifted straight up.

   Either the sump float assembly (2) or the sump overflow float mechanism (23) can be removed by removing the two sump base mounting screws (24).

SUMP FLOAT INSTALLATION

1. Install the sump return float assembly (2) or sump overflow float assembly (23), holding the mount to the casing with one finger and inserting the two screws (24) with the other hand. Take care the rubber washer has not fallen out and is properly seated in the recess of the float assembly mount. See Figure 4.
2. Tighten the screws (24) to a torque of 18 lbs-in (2 Nm).
3. Check float mechanism. It should operate freely.

   At full down position, the sump return float valve should center and seal against the rubber seal surface.

   The sump overflow float assembly should seat when the float is fully elevated.

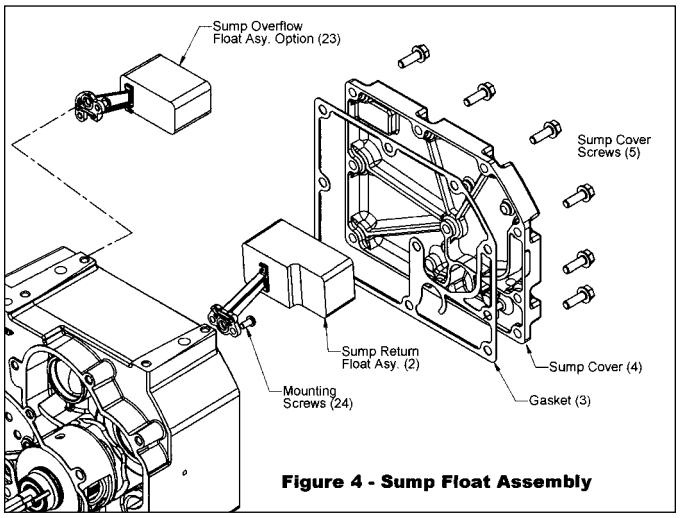


Figure 4 - Sump Float Assembly

4. Install the sump cover gasket (3). Correctly position the gasket onto all sealing surfaces.
5. Lower the sump cover (4) gently into place over the gasket with the pins aligned so as not to move the gasket.
6. Install and tighten the center-most sump cover screw (5) to 200 lbs-in (23 Nm).
7. Install the remaining sump cover screws and tighten to 200 lbs-in (23 Nm), alternating in a cross pattern.

OIML SWITCH REMOVAL

Tools Required: 19mm (or 3/4") Wrench, Wire Cutters

1. Cut and remove tamper resist wire.
2. Rotate (CCW) OIML Switch Asy. (22) off with wrench. Take special care that no debris falls into port upon removal.

OIML SWITCH INSTALLATION

1. Apply very thin film of thread sealing compound onto thread beginning about 3mm from the end. (Thread sealing tape is not advised as it may cause contamination.)
2. Rotate (CW) OIML Switch Asy. (22) threads into sump vent port by hand and tighten firmly with wrench. Again, take care that no debris or loose thread compound fall into sump vent port.
3. Secure new tamper resist wire through appropriate holes in the switch body and pump casing tab.

REPAIR KITS PARTS LIST
FOR STANDARD FLOW PUMPS

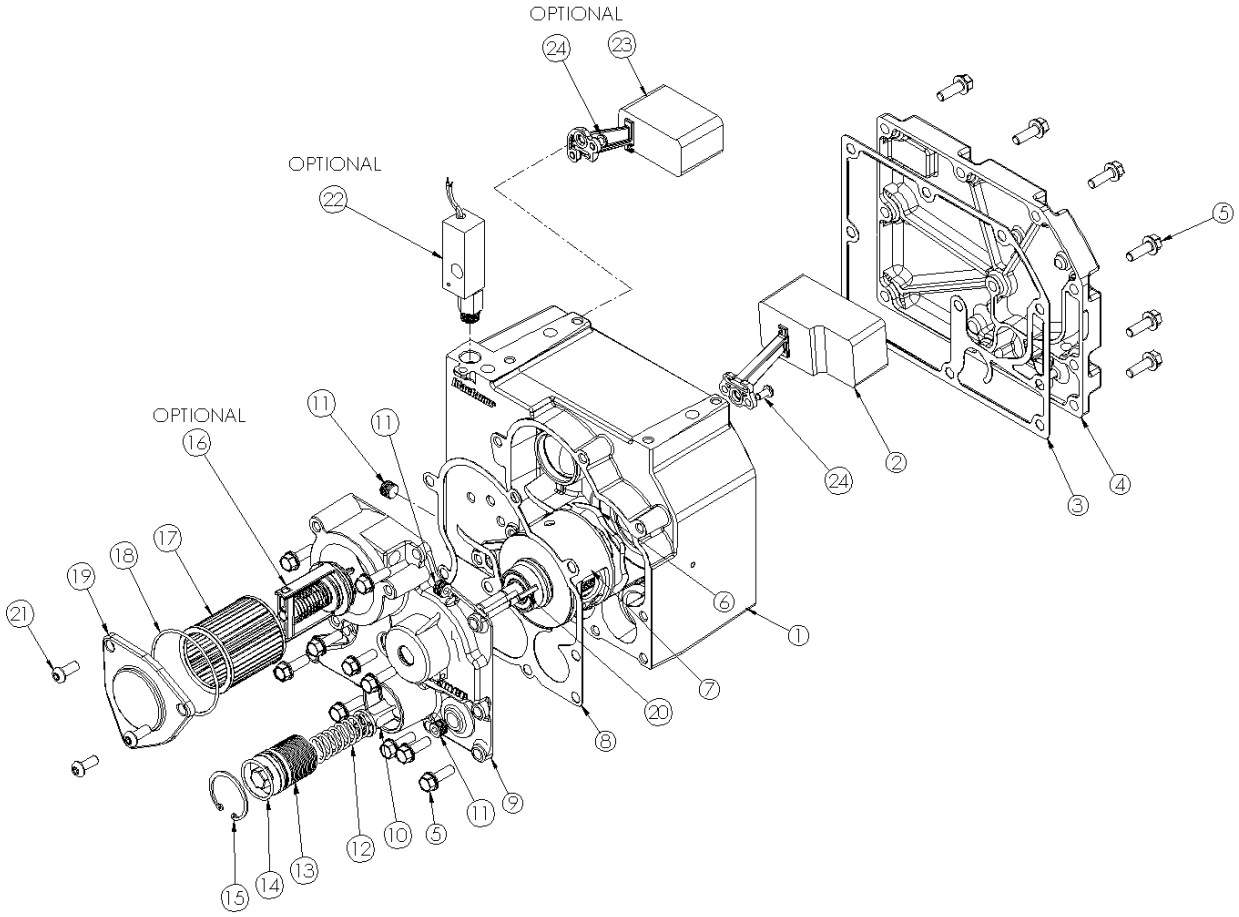
KIT NO.	DESCRIPTION	PARTS INCLUDED IN KIT		
		Ref. No.	Part Description	Part No.
894860	**Inlet Strainer Kit***	17	Strainer	724890
		18	O-Ring, Strainer Cover	702332
894861	**Check Valve Kit***	16	Check Valve Assembly	894840
		18	O-Ring, Strainer Cover	702332
		25	Strainer, Dome	724893
894862	**Inlet Strainer/Check Valve Kit***	16	Check Valve Assembly	894840
		17	Strainer	724890
		25	Strainer, Dome	724893
		18	O-Ring, Strainer Cover	702332
894877	**Pressure Control Valve Kit**	10	Pressure Control Valve (PCV)	454800
		12	Spring, PCV	474865
		14	O-Ring, PCV Cover	702335
		15	Retaining Spring	903621
894866	**Pump Cartridge Kit**	6	Wave Spring	903408
		7	Pump Cartridge	894805
		8	Gasket, Head	384860
		18	O-Ring, Strainer Cover	702332
		14	O-Ring, PCV Cover	702335
		20	Key, Shaft	909152
		15	Retaining Ring	903621
		- -	Pin - Gasket Guide	574861
724894	**Inspection Kit**	8	Gasket, Head	384860
		18	O-Ring, Strainer Cover	702332
		14	O-Ring, PCV Cover	702335
724896	**Overflow Check Valve Kit**	23	Float Asy, Sump Overflow	384850
		24	Capscrew	924018
		3	Gasket Sump	384862
894878	**Float Assembly Kit**	2	Float Asy, Sump	894876
		24	Capscrew	924018
		3	Gasket Sump	384862

*Not available for Models M00955B102 and M00955B201.

REPAIR KITS PARTS LIST
FOR UHF PUMPS

KIT NO.	DESCRIPTION	PARTS INCLUDED IN KIT		
		Ref. No.	Part Description	Part No.
894865	**Inlet Strainer Kit, UHF**	17	Strainer, UHF	724895
		18	O-Ring, Strainer Cover	702332
894861	**Check Valve Kit**	16	Check Valve Assembly	894840
		18	O-Ring, Strainer Cover	702332
		25	Strainer, Dome	724893
894867	**Inlet Strainer/ Check Valve Kit, UHF**	16	Check Valve Assembly	894840
		17	Strainer, UHF	724895
		25	Strainer, Dome	724893
		18	O-Ring, Strainer Cover	702332
894868	**Pressure Control Valve Kit, UHF**	10	Pressure Control Valve (PCV), UHF	454810
		12	Spring, PCV, UHF	474870
		14	O-Ring, PCV Cover	702335
		15	Retaining Spring	903621
894870	**Pump Cartridge Kit, UHF**	6	Wave Spring	903408
		7	Pump Cartridge, UHF	894806
		8	Gasket, Head	384860
		18	O-Ring, Strainer Cover	702332
		14	O-Ring, PCV Cover	702335
		20	Key, Shaft	909152
		15	Retaining Ring	903621
		- -	Pin - Gasket Guide	574861
724894	**Inspection Kit**	8	Gasket, Head	384860
		18	O-Ring, Strainer Cover	702332
		14	O-Ring, PCV Cover	702335
724896	**Overflow Check Valve Kit**	23	Float Asy, Sump Overflow	894850
		24	Capscrew	924018
		3	Gasket Sump	384862
894878	**Float Assembly Kit**	2	Float Asy, Sump	894876
		24	Capscrew	924018
		3	Gasket Sump	384862

PUMP PARTS LIST- MODELS 102 & 201

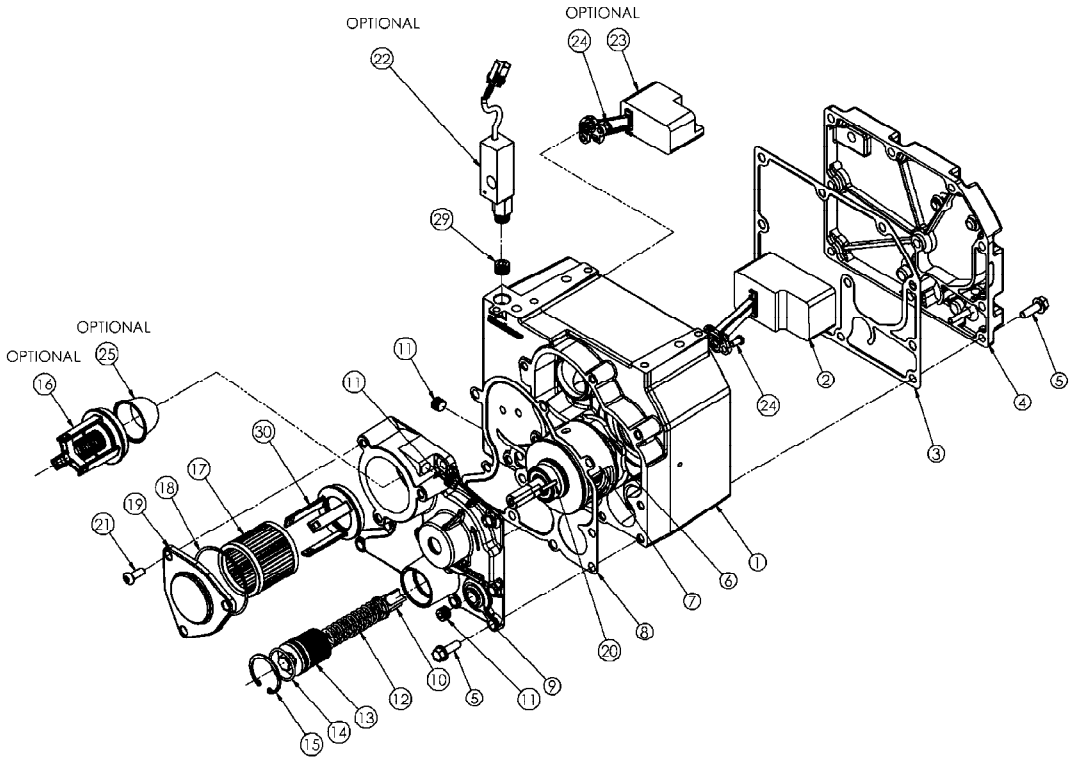


REF. NO.	DESCRIPTION OF PARTS	QTY.	PART NO.
1	Casing, Pump	1	**
2	Float Assembly, Sump (Std)	1	894876
3	Gasket, Sump	1	384861
4	Sump Cover Assembly	1	**
5	Screw, Taptite	20	924002
6	Wave Spring*	1	903408
7	Pump Cartridge*	1	894805
8	Gasket, Head*	1	384860
9	Head	1	**
10	Pressure Control Valve (PCV)*	1	454800
11	Plug	3	908200
12	Spring, PCV*	1	474865
13	Cover, PCV	1	414800
14	O-Ring, PCV Cover*	1	702335
15	Retaining Ring*	1	903621
16	Check Valve Assembly	1	**
17	Strainer	1	**
18	O-Ring, Strainer Cover*	1	702332
19	Cover, Strainer	1	**
20	Key, Shaft*	1	909152
21	Capscrew	3	924021
22	OIML Switch Asy.(Optional)	1	894830
23	Float, Sump Overflow Assembly (Opt)	1	894850
24	Capscrew	2-4	924018

**Not a saleable item.

*Included in one or more repair parts kits.

PUMP PARTS LIST - MODEL 206

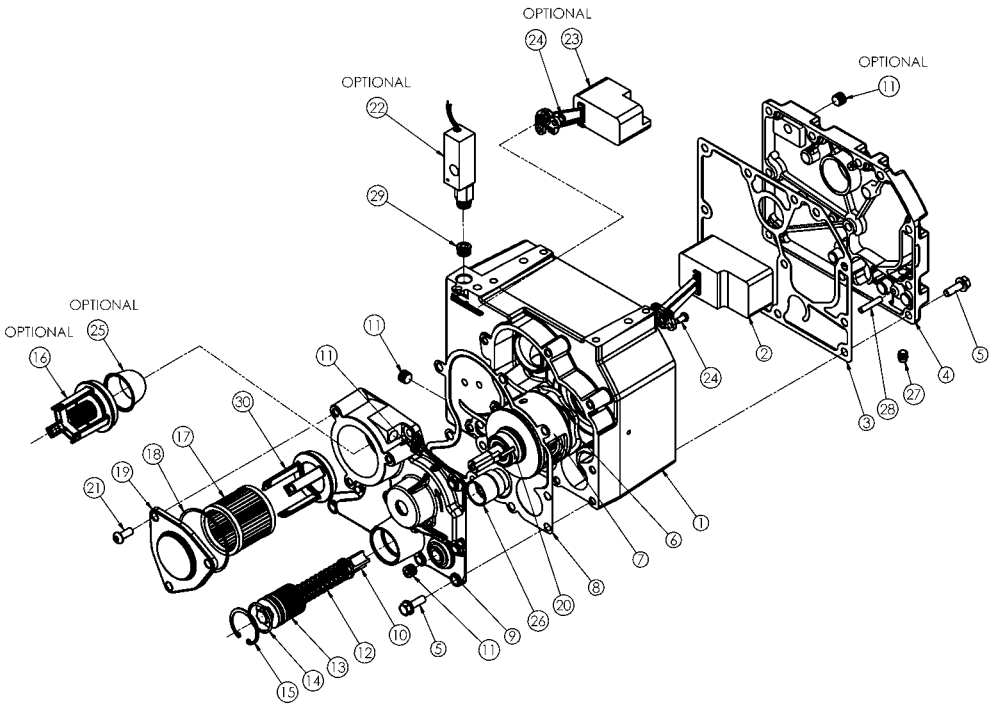


REF. NO.	DESCRIPTION OF PARTS	QTY.	PART NO.
1	Casing, Pump	1	**
2	Float Assembly, Sump (Std)	1	894876
3	Gasket, Sump*	1	384861
4	Sump Cover Assembly	1	**
5	Screw, Taptite	20	924002
6	Wave Spring*	1	903408
7	Pump Cartridge*	1	894805
8	Gasket, Head*	1	384860
9	Head	1	**
10	Pressure Control Valve (PCV)*	1	454800
11	Plug	3	908200
12	Spring, PCV*	1	474865
13	Cover, PCV	1	414800
14	O-Ring, PCV Cover*	1	702335
15	Retaining Ring*	1	903621
16	Check Valve Assembly*	1	894840
17	Strainer*	1	724890
18	O-Ring, Strainer Cover*	1	702332
19	Cover, Strainer	1	034863
20	Key, Shaft*	1	909152
21	Capscrew	3	924021
22	OIML Switch Asy.(Optional)	1	894830
23	Float, Sump Overflow Assembly (Opt)	1	894850
24	Capscrew	2-4	924018
25	Strainer, Dome*	1	724893
26	Sleeve, PCV	1	**
27	Seal Plug	1	**
28	Tube, Vortex	1	**
29	Plug	1	908202
30	Check Cap	1	724842

**Not a saleable item.

*Included in one or more repair parts kits.

PUMP PARTS LIST - STANDARD FLOW PUMPS
MODELS M00955B107, 203, 204, 207, 208, 705, 707

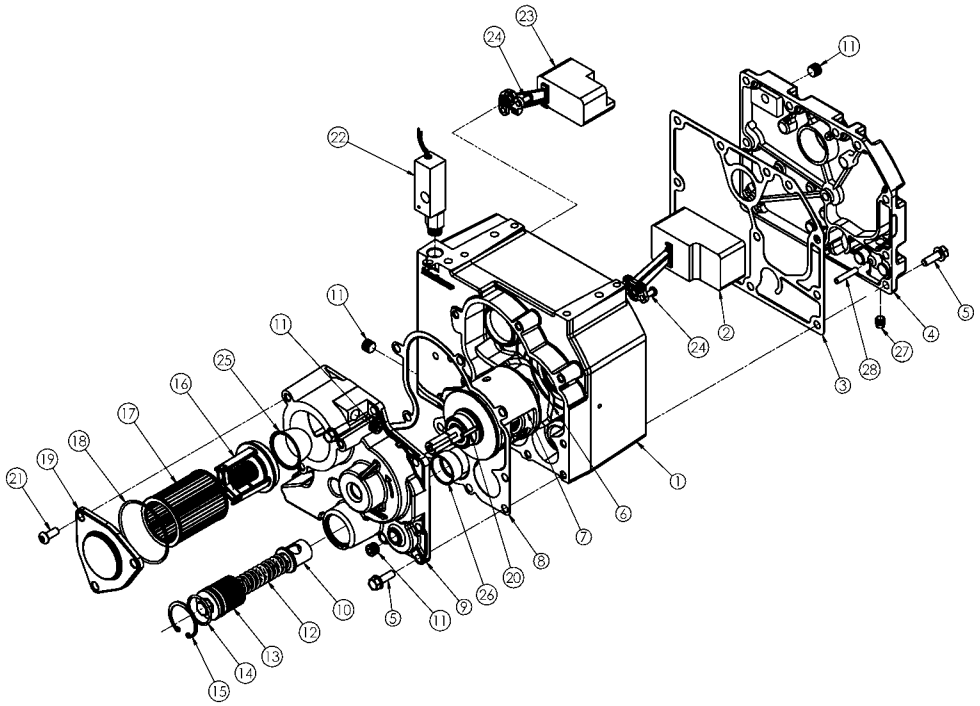


REF. NO.	DESCRIPTION OF PARTS	QTY.	PART NO.
1	Casing, Pump	1	**
2	Float Assembly, Sump	1	894876
3	Gasket, Sump*	1	384862
4	Sump Cover Assembly	1	**
5	Screw, Taptite	21	924002
6	Wave Spring*	1	903408
7	Pump Cartridge*	1	894805
8	Gasket, Head*	1	384860
9	Head	1	**
10	Pressure Control Valve (PCV)*	1	454800
11	Plug	3(4)	908200
12	Spring, PCV*	1	474865
13	Cover, PCV	1	414800
14	O-Ring, PCV Cover*	1	702335
15	Retaining Ring*	1	903621
16	Check Valve Assembly*	1	894840
17	Strainer*	1	724890
18	O-Ring, Strainer Cover*	1	702332
19	Cover, Strainer	1	034863
20	Key, Shaft*	1	909152
21	Capscrew	3	924021
22	OIML Switch Assembly	1	894830
23	Float, Sump Overflow Assembly	1	894850
24	Capscrew	4	924018
25	Strainer, Dome*	1	724893
26	Sleeve, PCV	1	**
27	Seal Plug	1	**
28	Tube, Vortex	1	**
29	Plug	1	908202
30	Check Cap	1	724842

**Not a saleable item.

*Included in one or more repair parts kits.

PUMP PARTS LIST - UHF PUMPS:
MODELS 602 AND 605



REF. NO.	DESCRIPTION OF PARTS	QTY.	PART NO.
1	Casing, Pump	1	**
2	Float Assembly, Sump	1	894876
3	Gasket, Sump*	1	384861
4	Sump Cover Assembly	1	**
5	Screw, Taptite	21	924002
6	Wave Spring*	1	903408
7	Pump Cartridge*	1	894806
8	Gasket, Head*	1	384860
9	Head	1	**
10	Pressure Control Valve (PCV)*	1	454810
11	Plug	4	908200
12	Spring, PCV*	1	474870
13	Cover, PCV	1	414800
14	O-Ring, PCV Cover*	1	702335
15	Retaining Ring*	1	903621
16	Check Valve Assembly*	1	894840
17	Strainer*	1	724895
18	O-Ring, Strainer Cover*	1	702332
19	Cover, Strainer	1	034863
20	Key, Shaft*	1	909152
21	Capscrew	3	924021
22	OIML Switch Assembly	1	894830
23	Float, Sump Overflow Assembly	1	894850
24	Capscrew	4	924018
25	Strainer, Dome*	1	724893
26	Sleeve, PCV	1	**
27	Seal Plug	1	**
28	Tube, Vortex	1	**

**Not a saleable item.

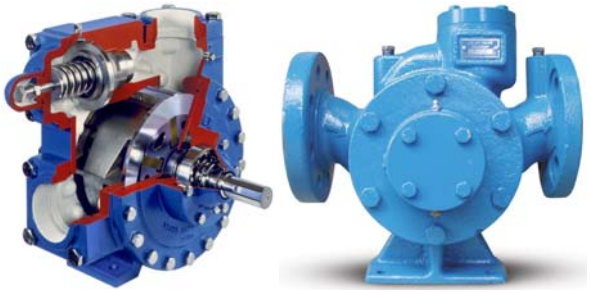
*Included in one or more repair parts kits.

PUMP TROUBLESHOOTING

NOTICE:
MAINTENANCE SHALL BE PERFORMED BY QUALIFIED TECHNICIANS ONLY, FOLLOWING THE APPROPRIATE PROCEDURES AND WARNINGS AS PRESENTED IN THIS MANUAL.

SYMPTOM		PROBABLE CAUSE
Pump not priming or excessive time to prime		1. Suction line obstruction. 2. Air leak in suction line. 3. Clogged strainer (see “Strainer/Check Valve” section). 4. Pump speed too low (Check motor, pulleys and belt). 5. Damaged or missing strainer cover O-ring (see “Strainer/Check Valve” section). 6. Pressure Control Valve open, worn or not seated properly. (See “Pressure Control Valve” section.) 7. Damaged O-ring on Check Valve or improperly seated Check Valve Assembly (see “Strainer/Check Valve” section).
Reduced Capacity (Flow)		1. Pump speed too low (check motor, pulleys and belt). 2. Air leak in suction lines. 3. Restriction in suction lines. 4. Excessive system pressure (flow loss to pressure control valve). 5. Pressure control valve open, worn or not seated properly. (See “Pressure Control Valve” section). 6. Worn or damaged pump cartridge (see “Pump Cartridge” section).
Noise		1. Inlet Restriction of: a. Inlet piping. b. Clogged strainer. 2. Excessive pump speed. 3. Pump inadequately fastened to the base plate. 4. Misaligned pulleys. 5. Improperly anchored piping. 6. Pressure control valve setting too high (see “Pressure Control Valve Adjustment”). 7. Excessive time with closed discharge line (full bypass with no flow). 8. Damaged pump cartridge (see “Pump Cartridge” section). 9. Excessive system pressure.
Leakage	**Port**	1. Loose piping. 2. Improperly applied pipe thread sealant.
	Weep Hole	1. Damaged shaft seal O-ring. 2. Damaged shaft seal (see “Pump Cartridge” section)
	Head or Sump Gasket	1. Damaged gasket. 2. Improperly torqued mounting screws.
	Sump Overflow	1. Excessively foamy fuel (possible air in fluid). 2. Failure of sump float mechanism (see “Sump Float” section). 3. Failure of sump overflow check valve.*
Motor/Belt Overheating		1. Pump cartridge locked up. 2. Pressure Control Valve stuck closed. 3. Excessive speed. 4. Improper belt tightening or alignment. 5. Defective or damaged motor.

*Applies only to units equipped with the Overflow Check Valve option.



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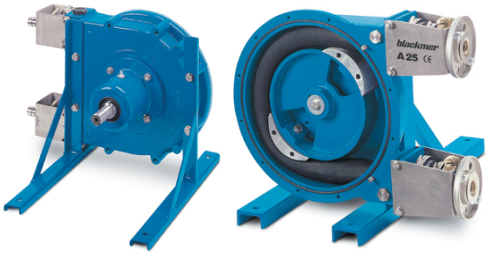

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