Operating and Maintenance Manual
Electric Motor Powered & Without Power
Diaphragm Pumps

Series 55A

Operation Manual Contents:

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Serial Number / Model Number:

A nameplate listing the Model Number and Serial Number is located on each pump. **The Model Number and Serial Number are necessary for ordering parts or requesting service; it is important that you document these numbers.**

Record Model Number and Serial Number Here:

Serial Number	Model Number

Safety Information:

DANGER! INDICATES AN IMMINENTLY HAZARDOUS SITUATION, FAILURE TO ABIDE BY SAFETY PRECAUTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

DO NOT: Operate with a frayed or damaged power cord.
DO NOT: Ground the pump to a gas line.

DO: Ground the pump.
DO: Realize there is a potential for electrocution whenever electricity is present.

WARNING! INDICATES A POTENTIALLY HAZARDOUS SITUATION, FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN DEATH OR SERIOUS INJURY.

DO NOT: Allow water to accumulate around the pump.

DO NOT: Reset a circuit breaker without first investigating the cause of the problem.

DO: Install pump in accordance with the National Electrical Code and all applicable local codes.

DO: Use watertight connections.

DO: Shutdown and lockout circuit breaker before performing maintenance.

Pump Safety:

DO NOT: Pump flammable liquids.

DO NOT: Pump corrosive liquids. Contact local authorities for assistance.

DO NOT: Remove hoses, drain plug, fill plug or any access covers if the pump has not primed in ten minutes. Water in the pump will be hot and could be under high pressure. Allow pump to cool completely before attempting maintenance.

DO NOT: Operate this equipment without understanding the operating procedures.

DO NOT: Attempt to clear blockages or clean the pump while the pump is operating; rotating parts can cause serious injury.

DO: Read, understand, and follow pump and operation manual procedures.

DO: Be sure pump is on a firm, level surface and will not tip, roll or fall while in operation.

DO: Operate only when guards are in place.

DO: Anchor the end of the discharge hose to prevent possible thrashing under high flow conditions.

CAUTION! INDICATES A POTENTIALLY HAZARDOUS SITUATION, FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN A MINOR INJURY OR SEVERE DAMAGE TO THE PUMP.

DO NOT reduce the size of the discharge or try to control capacity by throttling the discharge; severe damage to the pump will result.

DO drain the pump in freezing weather by tipping the unit towards the discharge.

DO flush the pump with clean water after operation to remove any dirt and debris still in the pump.

Service Safety:

WARNING! POORLY MAINTAINED EQUIPMENT CAN BECOME A SAFETY HAZARD! IN ORDER FOR THE PUMP TO OPERATE SAFELY AND PROPERLY, PERIODIC MAINTENANCE AND OCCASIONAL REPAIRS ARE NECESSARY.

DO NOT attempt to clean or service the pump while it is running. Rotating parts can cause severe injury.

DO NOT crank a flooded engine with the spark plug removed on gasoline-powered engines.

DO NOT test for spark on gasoline-powered engines if engine is flooded or the smell of gasoline is present.

DO NOT use gasoline or other types of fuels or flammable solvents to clean parts. Fumes from these fuels and solvents can accumulate and cause an explosion.

DO operate the pump with all safety devices and guards in place and in working order.

DO keep the area around the muffler free of debris. A hot muffler may ignite the debris.

DO replace worn or damaged equipment with parts recommended by CH&E, A Division of ABS Pumps.

DO disconnect the spark plug on pumps with gasoline-powered engines before servicing the pump to avoid an accidental startup.

Operating Instructions:

1. Read the “Pump Safety” pamphlet in its entirety before operating the pump and observe safe-operating procedures at all times.
2. Examine the pump carefully and read all instructions thoroughly before beginning pump operation.
3. Fill the fuel tank with the proper grade of fuel given in the engine manufacturer’s instructions.
4. Turn down all of the grease cups on the pump.
    a. Keep the grease cups filled with clean Mobil™ grease AA2 or similar.
5. Attach a 4” suction hose to the pump suction fitting.
    a. Make sure that the connection is airtight.
6. Set the pump as close to the water source as possible.
    a. Vertical suction lift in excess of 20 ft is not recommended.
    b. A foot valve and strainer on the suction line are recommended on high suction lifts.
7. A 4” hose or pipe can be attached to the discharge side of the pump to lead water away.
    a. Both suction and discharge lines should be supported independently of the pump to prevent excessive weight on the pump parts.
8. Adjust the engine speed for smooth operation of the pump.

Maintenance Requirements:

∗Shut the pump off and remove the spark plug wire before attempting any maintenance∗

- Refer to the engine manual for engine maintenance requirements.
- Keep the interior of the pump and the valves clean.
    - The suction valve can be reached through the suction connection or by removing the diaphragm.
    - The discharge valve can be reached through the cleanout opening in the discharge connection.
- Drain the pump in freezing weather when the pump is not in operation.
- When changing the diaphragm, make sure that it is centered with the pump water box.
    - Pull all bolts evenly and securely so that the diaphragm will not slip or pull out.
- Grease the pump drive gear and pinion when necessary with Mobile grease AA2 or similar.

Troubleshooting Guide:

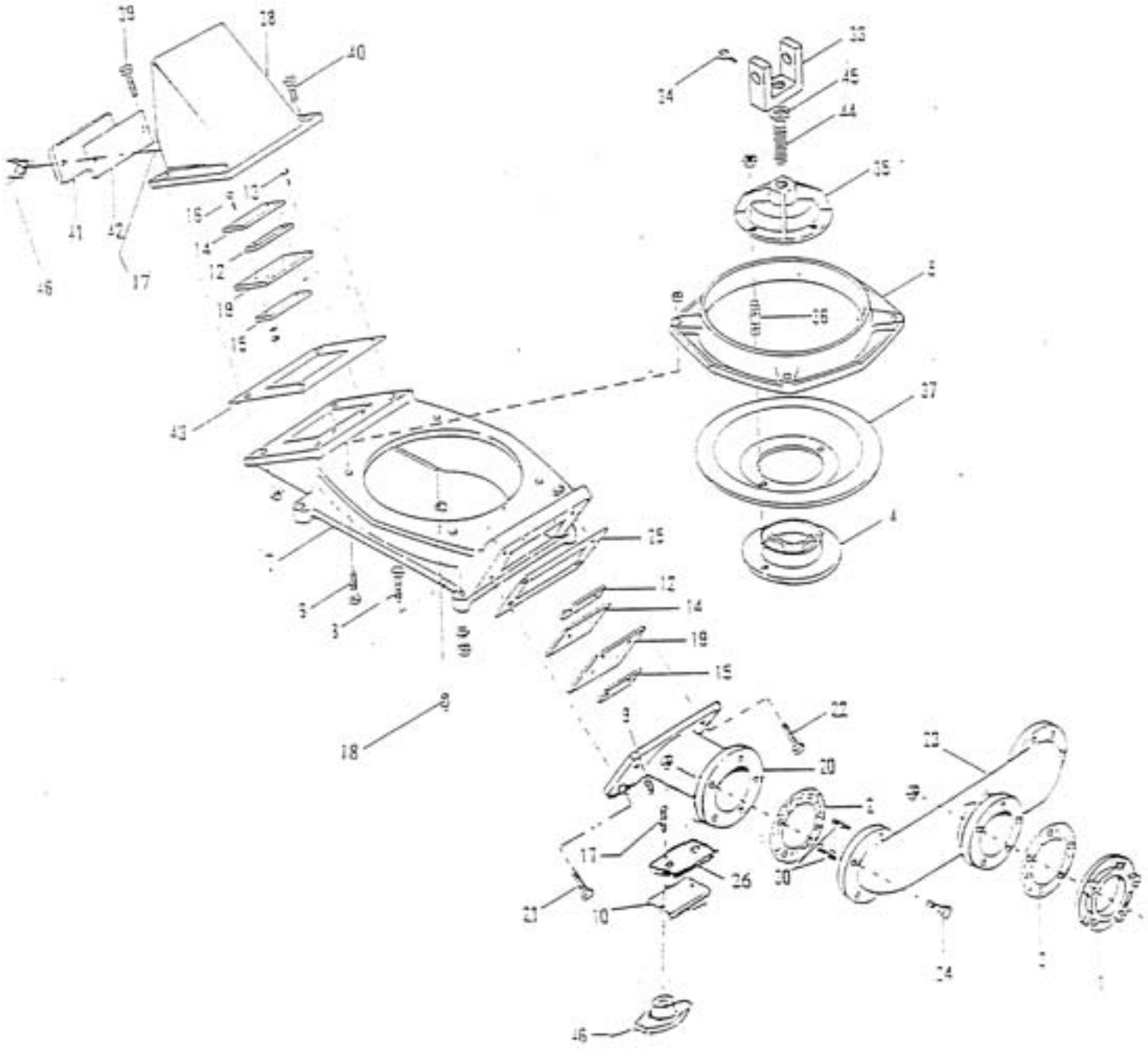
Problem	Possible Reason
Pump does not prime AND/OR Pump does not operate properly.	1. Pump may be too high above or too far away from the water source. 2. There may be leaks in the suction hose or hose connection. 3. Valves may not be sealing properly due to accumulation of residue. Pour water into the suction chamber to seal the valves. 4. Valves may not seal due to distortion. Adjust the tightness of the suction and discharge connection mounting bolts. 5. Check diaphragm for breaks and/or leaks. 6. Ensure that the end of the suction line is in position to allow water to enter. The suction line may be buried or blocked. 7. Do not allow any point of the suction hose to be higher than the suction connection on the pump. A trapped air pocket can form and prevent priming. 8. The pump will not operate properly under a positive suction head condition.
Reduced Capacity.	1. The discharge line may be too small, too high or too long causing: a. Excessive bulging of diaphragm on the down stroke. b. Valves closing with a loud snap. c. Overall rough operation. d. Engine overloads and then slows down. *Diaphragm pumps will handle fluids containing a considerable amount of solids, however, if the mixture is too heavy to be pumped, liquid must be added until the mixture becomes sufficiently fluid for pumping.

55A Parts

Ref. No.	*Part No.*	*Description*	*Qty.*
1	P0807	4″ Cast Iron Flange	1
2	P1106	Flange Gasket	3
3		Hex Screws, 5/8″ x 2 ¾″ HN	5
4	P1157	Diaphragm Bottom	2
5	P1158	Diaphragm Clamp Ring	2
6		Hex Screws, 5/8″ x 2 ½″ HN	8
7	P1162	Water Box	2
8		Hex Screws, 5/8″ x 3″ HN, LW	8
9		¼″ Pipe Plug	2
10	P5436	Hand hole Cover	2
11			
12		Flap Valve Assembly	2
13		Hex Screws, 3/8″ x 1 ¼″	8
14			
15			
16		Carriage Bolt, 5/16″ x 1 ¼″ HN, LW	8
17	P5512	Stud, ½″-13 x 1 ¾″	8
18		3/8″ Pipe Plug	2
19			
20	P1198	Suction Valve Connection	2
21		Hex Screws, 5/8″ x 1 ¼″	4
22		Hex Screws, 5/8″ x 3 ½″ HN	4
23	P1200	Suction Manifold	1
24		Hex Screws, 5/8″ x 2 ¼″ HN	6
25	P1219	Suction Valve Connection Gasket	2
26	P5437	Hand hole Cover Gasket	2
27			
28			
29			
30	P1236	Manifold Stud 5/8″ HN	4
31			
32			
33	P1855	Connecting Rod Fork	2
34		Sq. Head Screw ¼″x ½″	2
35	P1874	Diaphragm Top	2
36	P3844	Stud, 5/8″-11 x 2 ¾″, Heavy HN	4
37	P2157	Diaphragm	2
38	P5374	Discharge Spout w/ Cleanout	2
39		Hex Screws, 5/8″x 3 ¼″ HN	4
40		Hex Screws, 5/8″x2″ HN	4
41	P5375	Discharge Spout Cleanout Cover	2
42	P5376	Discharge Spout Cleanout Gasket	2
43	P2197	Discharge Spout Gasket	2
44	P2504	Diaphragm Top Stud	2
45		Lock Washer 1″	2
46	P3496E	Clamp Handle	8

47	P0680E	14 Tooth Pinion (**55A20**-Petter AB1; **55A30**- Hatz E673; **55A40**- Lombardini 6LD-360; **55A130**- Lister LV1)	1
	P2170	18 Tooth Pinion (**55AH**-B&S 233451; **55A50**-B&S 221457; **55A80**-Wis-Robin WRD1-270; **55A110**-B&S 190452; **55A120**-B&S 161452)	1
	P2170A	18 Tooth Pinion (**55A10**-Wisconsin S-12D)	1
	P2507	16 Tooth Pinion (**55ATE** Wisconsin TJD)	1
	P0680X	14 Tooth Pinion (**55ACE3**; **55ACE5**)	1
48		Key-Gib Head ¼" sq. x 2" long	1
		Key-Gib Head 3/8" sq. x 2 ½" long	1
49	P1173	Lever Pin	3
50	P1850	Walking Beam Assembly w/ Bushings	1
51	P1851	Walking Beam Bracket	1
52		Sq. Head Setscrews 3/8" x 1 ¼"	2
53	P1852	Bearing Stand	1
54	P1853	120 Tooth Gear	1
55		Key-Gib Head 3/8"x3/8"x2 ½"	1
56	P1854	Connecting Rod End	1
57	P1855	Connecting Rod Fork	1
58		Sq. Head Setscrew 3/8"x1"	1
59	P1856A	Crank Pin Hub w/ Dowel Pin	1
60	P3698	Needle Bearing Assembly	1
61		Gib Head Key 3/8"x3/8"x2 ¼"	1
62		Sq. Head Setscrew ½"x1 ¼" (in P1856)	
63	P1857	Crank Pin Washer	1
64		Hex Screw 5/8"x1 ½" LW	1
65	P1858	Bronze Bushing, 1 ¼" ID	3
66	P1859	Bronze Bushing 1 ½" ID	2
67	P1860	Side Crankshaft	1
68	P3699	Needle Bearing Assembly	2
69	P1861	Walking Beam Pivot	1
70	P1862	Connecting Rod	1
71		1" Jam Nut	2
72	P1868	Gear Guard	1
73	P1869	Gear Guard Support	2
74		Hex Screws, 3/8"x1" HN, LW	2
75		Rd. Head Stove Bolt ¼"x5/8" HN, LW	4
76		No.1 Grease Cup	6
77		90 St. Ell.	1

PUMP AND VALVE PARTS



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