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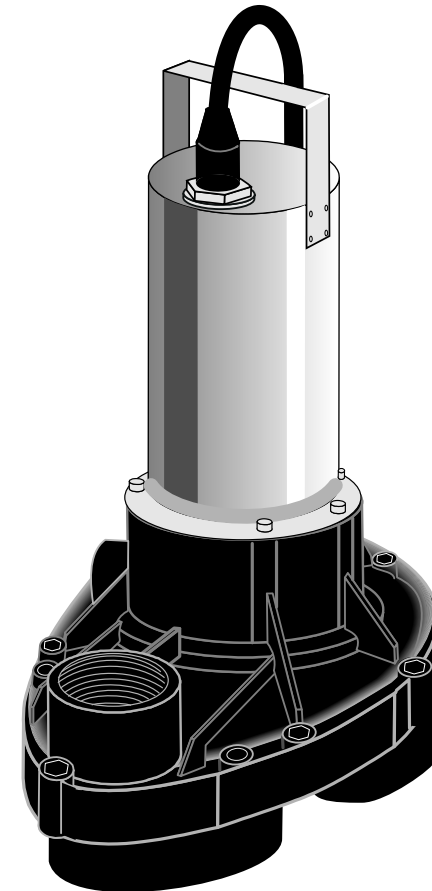
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Effluent Pumps

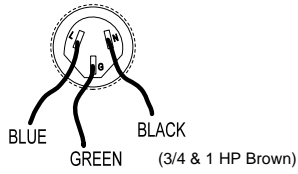
Installation and Operating Instructions



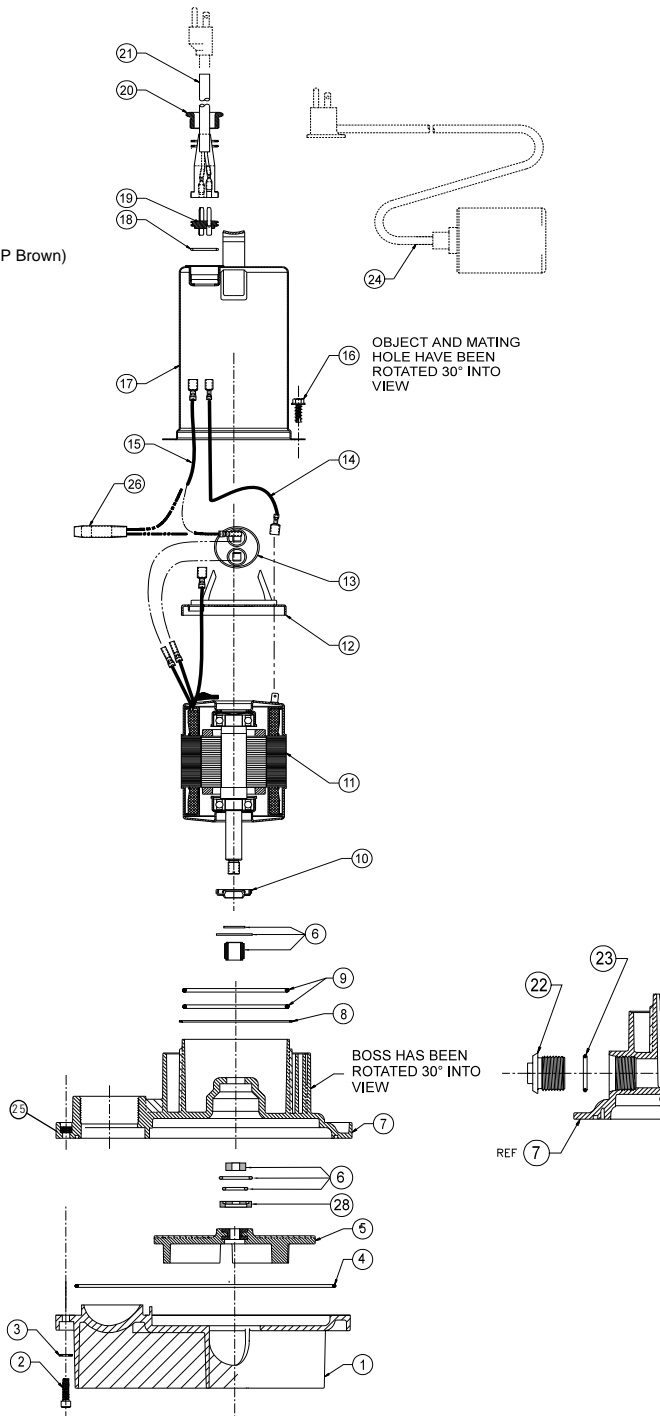
Please leave these instructions with the pump for future reference.

GRUNDFOS 
"Leaders in Pump Technology"

Parts Diagram



Wiring Diagram
3-Pin Connector



Maintenance and Service

WARNING

FOR YOUR PROTECTION, ALWAYS DISCONNECT THE PUMP FROM ITS POWER SOURCE BEFORE HANDLING. Single phase pumps are supplied with a 3-prong grounded plug to help protect you against the possibility of electrical shock. **DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN.** The 3-prong plug **MUST** be inserted into a mating 3-prong grounded receptacle. If the installation does not have such a receptacle, it must be changed to the proper type, wired and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances.

Impeller Replacement: (Refer to page 9, Parts Diagram)

1. Remove the socket head screws (pos.2) from the Lower Volute and remove O-Ring (pos.4). Be careful not to dislodge 1/4" nuts (pos.25) from Upper Volute (pos.7).
2. Hold the impeller from rotating by inserting a long screwdriver and catching the impeller vane.
3. Insert a 1/4" blade screwdriver or 3/16" hex key into the shaft and rotate the shaft clockwise. If the impeller won't budge, use a rubber hammer to strike the impeller vane in a counter clockwise direction and break it free, then continue with the screwdriver until it is removed. Do not lose spacer (pos.27) behind the impeller.
4. (Reverse these procedures for reassembly).

Mechanical Seal Replacement:

The mechanical seal used in the Grundfos Effluent pumps is unique in design and construction. The mechanical seal cannot be replaced by an off-the-shelf mechanical seal.

If a problem is determined to be mechanical seal related, replace the entire seal, do not attempt to service.

Replacement instructions are included with the mechanical seal kit. See spare parts kits for part number.

Maintenance and Service

Power Cable Replacement: (Refer to page 9,Parts Diagram)

The pump should be disconnected from any power before any work is started involving the power cable.

1. Unscrew cable nut (pos.20) securing the power cord (pos.21) to the pump and slide it along the power cord.
2. Unplug the cord from the motor by gently rocking the plug from side to side while lifting. Do not allow the 3-pin connector (pos.19) to be removed.
3. In the event pin connector is removed and wires come loose refer to wiring diagram (pg.9).

Troubleshooting

WARNING

FOR YOUR PROTECTION, ALWAYS DISCONNECT THE PUMP FROM ITS POWER SOURCE BEFORE HANDLING.

Diagnosing Specific Problems

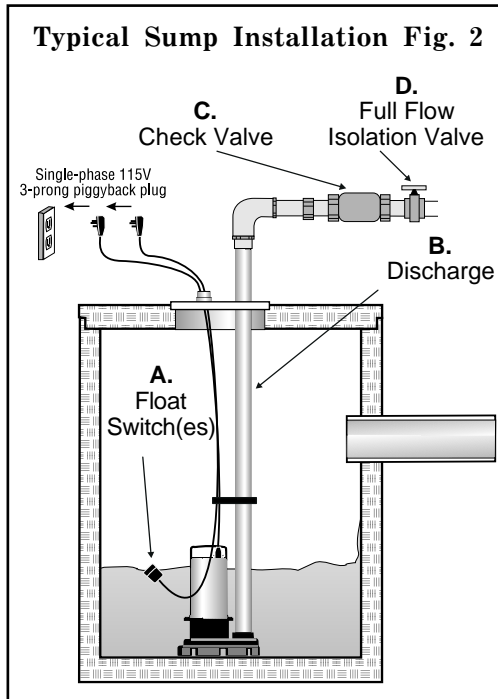
<i>Problem</i>	<i>Possible Cause and Remedy</i>
The pump does not run or start when water is up in tank.	<ol style="list-style-type: none"> 1. Check for blown fuse or tripped circuit breaker. 2. Check for defective level switch. 3. Level or control ball mechanism may be stuck inside basin. Make sure it floats freely. 4. If control panel is used, check to make sure pump is set for automatic start. 5. Check for burned out motor (possible lightning damage). 6. If single-phase and plug-in cords are used, make sure contact blades are clean and making a good connection.
Pump runs but does not deliver expected flow.	<ol style="list-style-type: none"> 1. Check strainer housing and discharge pipe for clog. 2. Check for air lock by stopping and restarting pump several times. 3. Make sure valve is open. 4. Ensure that the check valve is installed properly. 5. Check vertical elevation to make sure pump is not set higher than pump can operate (see pump curve). 6. Incorrect voltage (high or low) may be causing motor inefficiencies. Check to make sure it is $\pm 10\%$ nameplate voltage.
Pump will not shut off	Defective or stuck float switch. Check first to make sure it isn't mechanically bound to the sides of the basin, etc. Then check for out-of-adjustment.
Pump stops and starts too often.	<ol style="list-style-type: none"> 1. Float switch set too "tight". 2. Check valve is either stuck or one was not installed in a long discharge line that needed one. 3. Sump pit is too small. 4. Overload is tripping in hot motor. Pump may be clogged or fluid level is too low, exposing motor.

Installation Procedures

Procedures - Sump Installation

1. Position the pump to one side of the basin or wet-well so there is sufficient room for the float switch(es) to swing unobstructed. Also, ensure that the influence does not cascade directly on the switch(es).
2. If using receiver basin, ensure that the cover is gasketed properly and the discharge and vent lines are sealed against the cover. Failure to do so could mean outside water entering or objectionable odor escaping.

NOTE: INSTALLATION OF COVER SHOULD BE DONE ONLY AFTER SUCCESSFULLY TESTING THE COMPLETE SYSTEM.



Final Installation Adjustments

1. Fill the septic tank, basin or wet-well.
2. Energize the pump(s) manually to verify proper operation.
3. Put the system in automatic mode and refill.
4. Observe turn-on and turn-off points. Adjust position of switches as required.
5. Install basin or septic tank cover after system is adjusted properly.

Parts Diagram

Parts Listing - Effluent Pump

Pos No#	Part Number	Description	Qty.
1	See Kits	Volute Lower	1
2	See Kits	Screw 1/4" Socket Head	8
3	See Kits	Washer	8
4	See Kits	O-Ring (Lower Volute)	1
5	See Kits	Impeller	1
6	See Kits	Mechanical Seal	1
7	See Kits	Volute Assm. Upper	1
8	See Kits	Spacer-Ring	1
9	See Kits	O-Ring (Motor Housing)	2
10	See Kits	Lip Seal	1
11	Not Serviceable	Motor	1
12	Not Serviceable	Capacitor Clip	1
13	Not Serviceable	Capacitor	1
14	Not Serviceable	Wire Harness Green	1
15	Not Serviceable	Wire Harness Black	1
16	See Kits	Screw Hi-Lo Torx	6
17	Not Serviceable	Motor Housing	1
18	See Kits	O-Ring (Pin Connector)	1
19	See Kits	3-Pin Connector	1
20	See Kits	Cable Nut	1
21	See Kits	Power Cord	1
22	See Kits	Plug	1
23	See Kits	O-Ring (Volute Plug)	1
24	See Kits	Float Switch	(Optional)
25	See Kits	1/4" Nut	8
26	Not Serviceable	Klixon (3/4, 1 & 1 1/2 HP only)	1
27	Not Serviceable	Spacer	1
28	See Kits	Upper Volute Gland	1

Recommended Torques

Part Name	Pos. Number	Torque
Socket Head Cap Screw	2	55 in.-lbs. ± 10 in.-lbs.
Impeller	5	100 in.-lbs. ± 10 in.-lbs.
Torx Screws	16	55 in.-lbs. ± 20 in.-lbs.
Volute Plug	22	50 in.-lbs. ± 10 in.-lbs.
Cable Relief Nut	20	90 in.-lbs. Hold for 30 sec.

SEE KITS ON NEXT PAGE

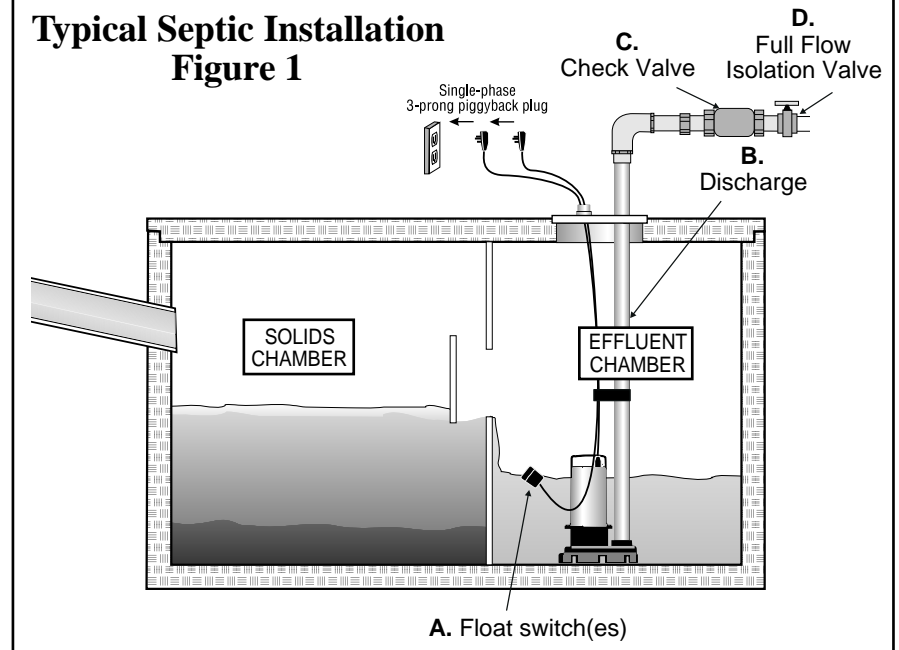
Spare Parts Kits

Spare Parts Kits

Pos No#	Part Description	# in Kit	KIT NUMBER
10	Lip Seal	1	96001573
9	O-Ring (Motor Housing)	2	
22	Plug (Volute)	1	96001574
23	O-Ring	1	
16	Screw Hi-Lo	6	
2	Screw	8	
25	Nut	8	96001576
3	Washer	8	
9	O-Ring (Motor Housing)	2	
4	O-Ring (Std. Volutes)	1	
8	Spacer-Ring	1	
6	Mechanical Seal	1	96001572
5	Impeller 1/3 HP	1	96001579
5	Impeller 1/2 HP	1	96001580
5	Impeller 3/4 HP	1	96001581
5	Impeller 1 HP	1	96001582
5	Impeller 1 1/2 HP	1	96001583
1	Lower Volute	1	96001597
7	Upper Volute	1	96001598
28	Upper Volute Gland	1	
18	O-Ring	1	96001619
19	3-Pin Connector	1	
21	Power Cord 115V 10'	1	96001589
21	Power Cord 115V 20'	1	96001590
21	Power Cord 230V 10'	1	96001591
21	Powercord 230V 20'	1	96001592
*	Motor Oil	1	96001620
24	Float Switch 1/3 & 1/2 HP 115V 10'	1	96001621
24	Float Switch 1/3 & 1/2 HP 230V 10'	1	96001636
24	Float Switch 1/3 & 1/2 HP 115V 20'	1	96001624
24	Float Switch 1/3 & 1/2 HP 230V 20'	1	96001637
24	Float Switch 3/4 & 1 HP 230V 10'	1	96001622
24	Float Switch 3/4 & 1 HP 230V 20'	1	96001625
24	Float Switch 1 1/2 HP 230V 10'	1	96001623
24	Float Switch 1 1/2 HP 230V 20'	1	96001626

Installation Procedures

Typical Septic Installation
Figure 1



Piping

Requirements and Considerations for All Applications

Septic tank, receiver basin or wet-well size should allow sufficient room for unimpeded movement of the **float switches (item A in Figures 1 & 2)**, if used. It must have a solid and uniform bottom and free of any debris.

The **discharge pipe (item B)** should be sized at least as large as the pump's discharge port. If a larger size is being considered, ensure that the liquid velocity in the pipe does not go below 2 feet/second (30 GPM in 2 1/2" pipe or 50 GPM in 3" pipe) to prevent solids settling.

Install a **check valve (item C)** specifically designed for solids handling on the discharge pipe so as to prevent back flow into the receiver. Follow the valve manufacturer's recommendation regarding valve orientation.

Install a **full flow isolation valve (item D)** on the discharge line, after the check valve, to aid in maintenance work. On duplex installations, manifold to a common discharge line after the isolation valves.

Procedures - Septic Tank Installation

1. Position the pump to one side of the effluent chamber so there is sufficient room for the float switch(es) to swing unobstructed. Make sure the influence does not cascade directly on the switch(es).
2. Do not set the pump directly on the bottom of the tank if it is not solid. Raise the pump by using bricks or concrete blocks underneath it.

NOTE: INSTALLATION OF COVER SHOULD BE DONE ONLY AFTER SUCCESSFULLY TESTING THE COMPLETE SYSTEM.

