ALEMITE®

Service Guide

1/3 HP DEF Pump

Description

Self-priming pumps for Diesel Exhaust Fluid (DEF) applications

- Built-in handle for portability and ease of handling.
- Suction lift capability to 15 ft.

Figure 1 *Model 8430 DEF Pump*

WARNING

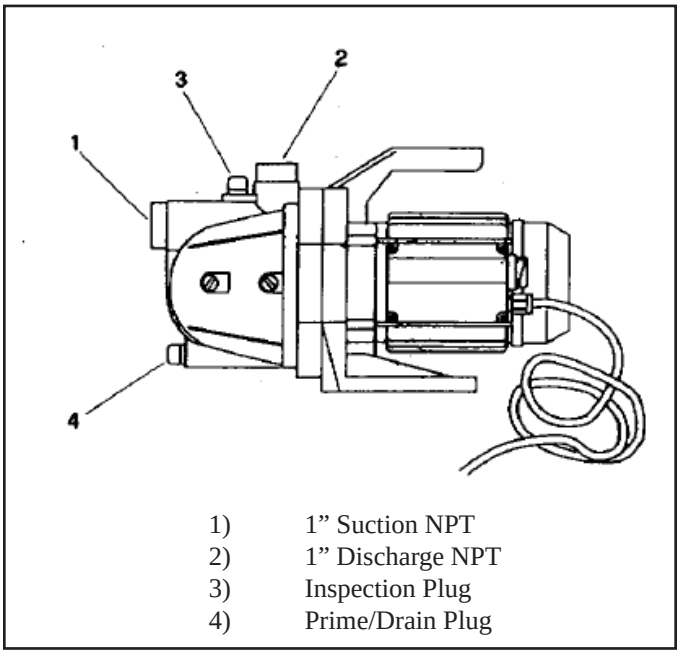
For proper and trouble-free operation of this DEF pump, it is important to carefully read and follow these operating instructions and to fully observe all warnings. For safety reasons, people who are not familiar with these operating instructions should not use the pump, especially children under the age of 16. Before installing or servicing any pump, be certain pump power is disconnected to avoid any possible electric shock.

Conformity with federal, State and local electric codes are mandatory. The National Electric Code requires that a ground fault circuit interrupter (GFCI) be used in the branch circuit supplying sump, utility, effluent and all DEF pumps. Consult a licensed electrician or your power company if in doubt.

Installation

Before putting the pump into operation it is absolutely necessary to carry out the following operations:

1. The diameter of the suction and lines should correspond to the diameter of the connections of the pump housing (1”). See figure 2. For a suction height of over 12 ft., a suction hose with a greater diameter should be used.
2. Fit the suction lines with the foot valve to the pump (at point 1, Fig 2), avoiding siphons, counter slopes and stand the pump on solid, flat level ground.
3. Fit the delivery line (at point 2, Fig 2).
4. Put into operation the pump and wait for the suction of the DEF. If nothing occurs after 2-3 minutes, switch off the pump, unplug and repeat the whole operation. It will be



1) 1” Suction NPT
2) 1” Discharge NPT
3) Inspection Plug
4) Prime/Drain Plug

Figure 2 *8430 (115V/60Hz)*

Alemite, LLC
167 Roweland Drive, Johnson City, Tennessee 37601
www.alemite.com

necessary to recheck pump's installation. When checking operations, always remember to take out the drain plug (point 4, Fig 2). Possible causes for loss of prime may be a leak in packaged product valve or down tube suction line letting air in, faulty foot or check valve, suction line not completely submerged or damaged, too high suction lift clogged suction filter or closed outlet.

5. For all electrical connections, a separate line with a fuse switch should be run from the meter or breaker box and properly grounded.
6. Open all shut-off devices in the pressure system of the pump (e.g.) DEF nozzle, so that air can escape during the priming operation
7. The temperature of the DEF must never exceed 35° C or 100° F.
8. Always unplug the pump before working on it, in case of maintenance.
9. Do not place or submerge the pumps into water.
10. Always use a suction line with an installed check valve or foot valve; this will allow ease priming when starting the pump.

- Always disconnect electricity to the unit before handling it.
- Do not lift the unit by the power cord.
- Do not pump heated liquids. Max. Temperature 35° C or 100° F.
- Conformity with local and State electric codes is mandatory. Consult a licensed electrician or your power company if in doubt.
- Power cables as well as extension cables may be done using same cord type.
- Take care that connections are done in areas protected from flooding.
- Before installation please check for any damage to the unit (e.g. power cable and plug).

Before Operating

- The unit is supplied with a grounding conductor and a grounding type plug.
- To reduce risk of electric shock, connect only to a properly grounded electrical circuit equipped with an interrupter device. For all electrical connections, a separate line with a fuse or circuit breaker switch should be run from the meter, or breaker box, and properly grounded.
- Do not remove the grounding pin from the plug.
- This pump is designed for 115- Volt - 60 Hz operation Be Sure the supply voltage is the same.
- Never pump gasoline or other flammable liquids or operate in the areas where flammable or explosive fumes are present as fire or explosion could occur.
- Unit features can be read on one side of its packaging.
- Piping must be protected against freezing which will cause damage and void the warranty.
- Do not run pump dry. If the pump is run dry, damage will result and void the warranty.
- **This pump must be primed before running.**

General Safety

- Read all instructions carefully and thoroughly before operating, maintaining or servicing the unit.
- Be sure that electrical power supply conforms to the power requirement of the unit. Refer to "Specifications".
- Do not exceed pressure rating of system components.
- Do not make system components adjustments that are not recommended in this service sheet. When in doubt, consult Alemite service representatives or personal familiar with instrumentation.
- Electrical service must be performed by an electrician or personnel familiar with instrumentation.
- Shut off electrical power to the unit before doing service on the unit.

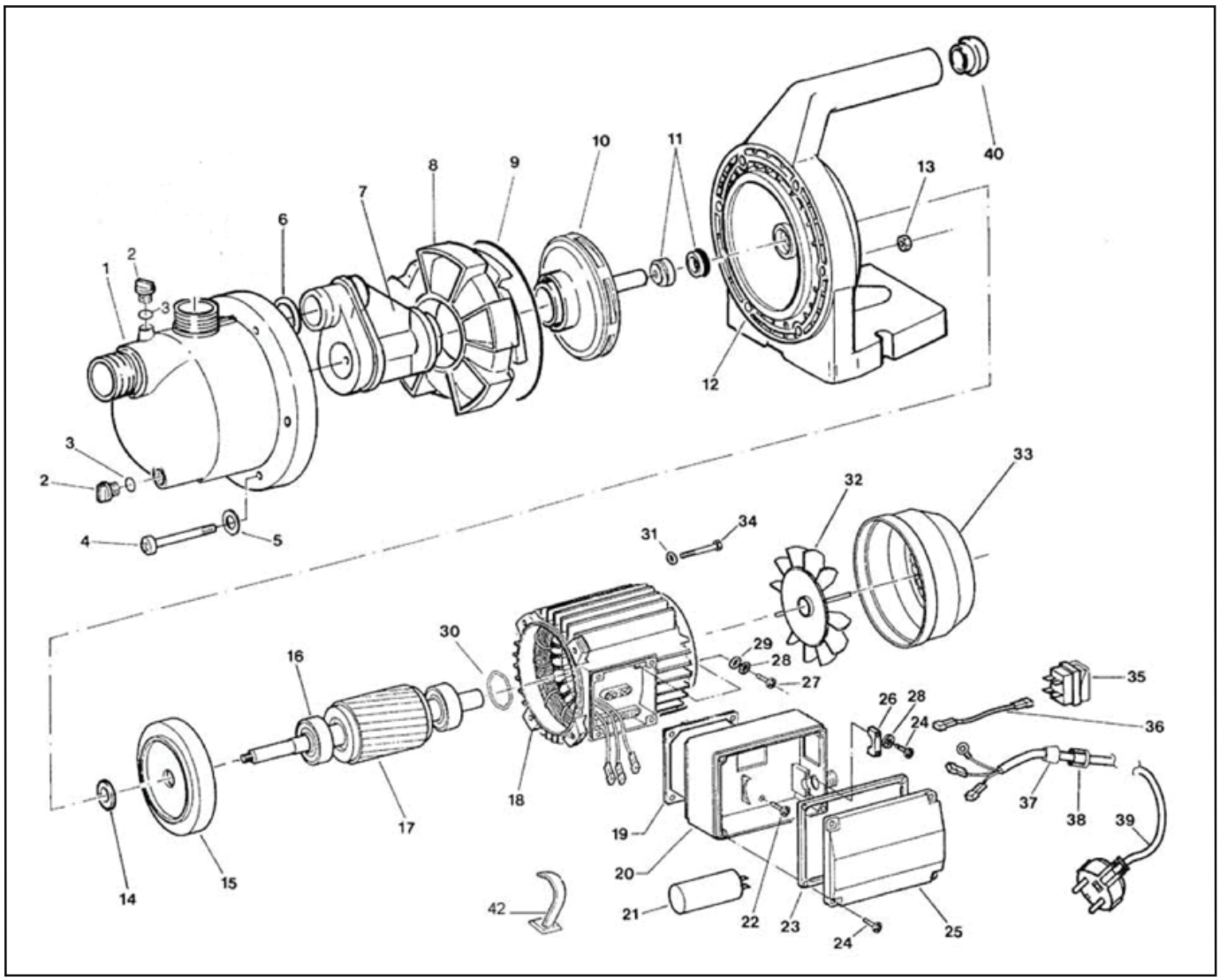


Figure 3 *8430 - exploded view*

Maintenance

[See Figure 3 for all item numbers referenced below]

1. Turn OFF the electrical supply.
2. Drain the pump body by removing the drain plug (Item No. 2)
3. Unscrew the 6 bolt (Item No. 4) that fix the pump body (Item No. 1) to the pump support (Item No. 12) remove the pump body. If the body is stuck you can gently insert a screw driver between the pump body (Item No. 1) and pump support (Item No. 12) and pry apart..

4. Remove the 1 retaining screw that holds the fan cover (Item No. 33) in place. Then slide the fan cover (Item No. 33) from the motor casing (Item No. 18).

5. Once the fan cover is removed the fan (Item No. 32) can then be removed from the Shaft (Item No.17)

6. The shaft (Item No. 17) can then be gripped so that the impeller (Item No. 10) can be unscrewed giving access to the mechanical Seal (Item No. 11). The rotary part will stay on the impeller (Item No.10) and the static part will be retained in the pump support (Item No. 12).

7. By inserting a flat head screwdriver between the back of the seal (Item No. 11) and the impeller (Item No. 10) and then twisting it gently the seal can be removed from the impeller (Item No. 10) allowing the rotary part of the seal to be removed.

8. The static part of the mechanical seal (Item No. 11) can then be prized out of the pump support (Item No. 12) by inserting a small flat head screw driver between the static seal rubber & the plastic of the pump support

9. Before rebuilding the pump inspect all the parts for damage including the replacement parts.

10. Gently press the new static seal into the pump support.
11. Next slide the new rotary part of the mechanical seal onto the impeller and press into place.

12. Now the impeller can be refitted by holding the shaft and screwing the impeller clockwise back into place. Refit the pump body and tighten evenly using the original bolts and washers. Refit the fan checking that that shaft rotates freely. Refit the fan cover and retaining screw.

13. Refit the drain plug, re-prime the pump body and test the pump

Repair Parts

ITEM No.	PART No.	DESCRIPTION	Qty.	NOTES	
1	393802-78	Body	1		
2	393802-79	Cap 3/8”	2		
3	393802-80	O-ring 14 x 2 NBR70	2		
4	393802-81	Screw TC+PH M6x50 galv white	6		
5	393802-82	Washer d6.4 D13 S0.5 ZP Balck	6		
6	393802-83	O-ring 3100 25.07 x 2.62 viton	1		
7	393802-84	Injector 90 “R” REV.1	1		
8	393802-85	Diffuser	1		
9	393802-86	O-ring -4437 110.7 x 3.53 viton	1		
10	393802-87	Impeller R90 turned 0.98	1		
11	393802-88	Mech seal 13/24/13 CAR/viton/302/304	1		
12	393802-102	Counterface 13.8/26/8 STEA /viton	1		
13	393802-89	Nut EA M6 galv black uni 5587	6		
19	393802-90	Term board gasket 63/71 pvc black ROHS	1		
20	393802-91	Electrical box BAS LP black w/hole V0	1		
21	393802-92	Capacitor 20UF V250 2 CAV. AWG18 UL/CSA	1		
23	393802-93	O-ring 3500 126.67 x 2.62 EPDM 30	1		
24	393802-94	Screw TBC-AB 3.5 x 19 uni 6954 galv. C15	4		
25	393802-95	Electrical box cover LP black VO	1		
32	393802-96	Cooling fan MEC63 Hole D.12	1		
33	393802-97	Carena jet MEC 63 black	1		
35	393802-98	Bipol. switch red button 0/1 16(6)A	1		
39	393802-99	Cable 5.4’ SJTW/W-A 16 AWG3 CSA/UL	1		
40	393802-100	1” to 1” Check valve	1		
41	393802-101	3/4” Straight hose barb	1		
42	393802-103	Kit, Complete pump replacement	1		Contains 393802-78, -79, -80,-81,-82,-83,-84,-85,-86,-87,-88,-89,-90,-102
43	393802-104	Kit, Switch box	1		Contains 393802-93,-94,-95
44	393802-105	Kit, Cooling fan	1		Contains 393802-96, -97
45	393802-106	Kit, Seal replacement	1		Contains 393802-88, -102

Condition	Probable Cause	Remedy
Pump does not prime	1.See point nr. 4 — Installation information	1. Clean or replace “reclassifier fittings” 2. Remove “sags” in the inlet line
The pump does not run	1. Not plugged in 2. Thermal overload or Amperometric protection tripped due to: a) Overheating (the pump ran with hot water or ran dry) b) Shaft blocked c) Impeller blocked	1. Check the electric power plug. 2. Remedy to : a) Wait until thermal protector switches back on after adequate cooling time allowed. b) Unplug the pump and with a screwdriver twist the rear shaft side. c) Unplug the pump, disassemble the pump and clean it and remove the causes of the overload / overheating switch off.
The pump runs but does not deliver	1. Air in the pump housing 2. Air bubbles in the suction line 3. Pump not primed	1. Unplug the pump. Take out discharge line; shake the pump and suction pipe. Fill up pump housing with DEF ; fit discharge line and switch on the Pump 2. Verify that suction line and fittings are fixed tight and that foot valve is correctly mounted on suction line. 3. Read priming instructions

Changes Since Last Printing
Initial release