

Submersible Pump

Description

Submersible multistage pumps with 2, 3 or 4 impellers to give a great range of pressures to suit many different applications. Particularly suitable for pumping 34% UREA solution (Diesel Exhaust Fluid) supply from totes or below ground storage tanks.

WARNING

Read this documentation carefully before installation. Installation and functioning must comply with the safety regulations in the country in which the product is installed.

Failure to comply with the safety regulations not only causes risk to personal safety and damage to the equipment, but invalidates every right to assistance under guarantee



Figure 1 Model 8427 DEF Pump

Technical Data

Pump Model	8427	8428	8429
No. of Impellers	2	3	4
H.P.	1/2	3/4	1
Supply Voltage	115V ; 60Hz		
Absorbed power	see electrical data plate		
Delivery (GPM)	2 to 25		
Head Up to (ft.)	79	118	157
Motor protection	IP68		
Thermal Class	F		
Max. operating press (psi)	35	52	64
Liquid temp. range	33 °F to 90°F		
Max. immersion (ft.)	33		
Storage temp	33 °F to 90°F		
Relative air humidity	Max 99%		

WARNING

It is advisable that installation be carried out by skilled personnel in possession of the technical qualifications required by the specific legislation in force. The term skilled personnel means persons whose training, experience and instruction, as well as their knowledge of the respective standards and requirements for accident prevention and working conditions, have been approved by the person in charge of plant safety, authorizing them to perform all the necessary activities, during which they are able to recognize and avoid all dangers.

WARNING

Use is allowed only if the electric system is in possession of safety precautions in accordance with the regulations in force in the country where the product is installed.

The pump should not be handled while connected to an electrical supply.



Figure 2 8427 - Typical below ground installation

1. Alemite Pump Model 8427
2. Water Tight chamber
3. DEF Dispenser
4. Control panel for dry run protection with pump relay
5. Level control sensor
6. Tank air vent
7. External air vent
8. Man hole cover
9. Discharge pipework
10. DEF underground tank
11. Non Return Valve
12. Liquid tight pipe connection
13. Liquid tight cable Junction Box

Before Installation

Before installing the pump you must check that the rotating parts turn freely. For this purpose remove the black bung (Pos. No. 18) from the base of the pump (Pos. No. 20) Fig. A. Insert a flat head screwdriver through the hole and into the corresponding slot in the pump shaft Fig. B. Rotate the shaft counter clockwise through 360°. Then replace the bung (Pos. No. 18) back into the hole in the base (Pos. No. 20)

Installation

Site of installation

- Before immersing the pump in the pit or tank, ensure that the place is free from sand or solid sediment.
- If there is sediment, accurately clean the site where it is to be placed
- Remove the sediment periodically
- It is very important to ensure that the water level never falls below the body of the pump. (Fig.1).

Working Conditions

- Water temperature: from 33°F to 90°F.
- Pump body always completely immersed.
- The pump cannot operate when dry.
- Installation in vertical position.
- The housing pit must be frost-free.
- Maximum depth of immersion 33 Feet. (below water level).
- Ensure that the metal pipes do not exert undue strain on the apertures, thus preventing deformations or breakages.

Hydraulic Connection

- The hydraulic connection of the pump can be made with stainless steel or rigid plastic parts.
- Avoid any kind of choking of the output pipe.
- It is advisable to use pipes with an internal diameter at least equal to that of the delivery pipe, so as to avoid a fall in the performance of the pump and the possibility of clogging.
- The size of the tank so as not so subject the motor to an excessive number of starts.
- To lower the pump, always use a rope or chain fixed beforehand to the hook on top of the pump (Fig.1). Never use the power cable to lift the pump.

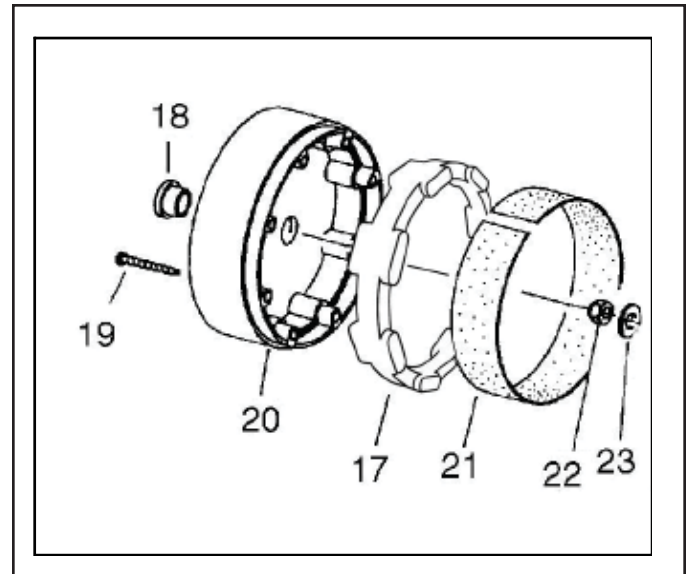


Figure A

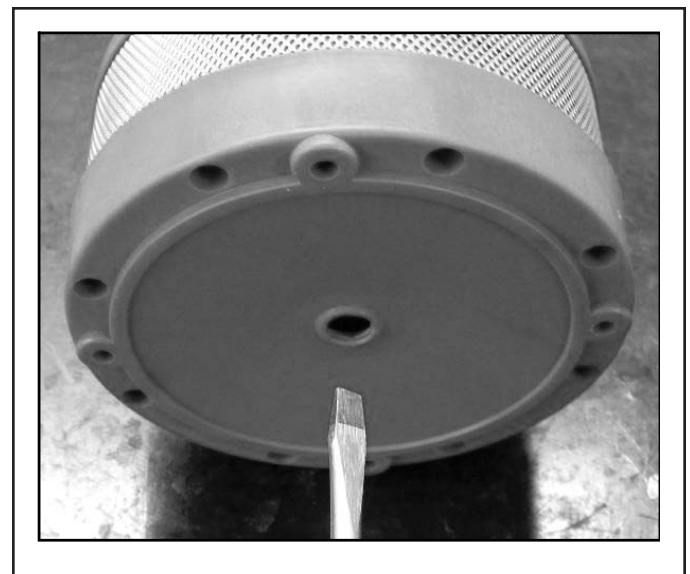


Figure B

WARNING

Install a non return valve on the delivery pipe at a distance of at least 6 feet from the delivery mouth of the pump. (Fig.1)

Dry operation or closed valve operation of the pump causes irreparable damage to the mechanical seal and will cause premature failure.

Electrical Connection

WARNING

All electrical work should be performed by a qualified electrician in accordance with the latest edition of the National Electrical Code, local codes and regulations. Ensure that the mains voltage is the same as the value shown on the motor plate. A faulty motor or winding can cause electrical shock that could be fatal, whether touched directly or conducted through standing water. For this reason, proper grounding of the pump to the power supply's grounding terminal is required for safe installations, the above-ground metal plumbing should be connected to the power supply as a ground as described in Article 250-80 of the National Electrical Code or Section 26-954 of the Canadian Electrical Code

Connect the cable of the pump to the electric panel, ensuring that the following parts correspond



Single-phase motors are provided with built-in thermal overload protection with automatic reset, and may be connected directly to the mains.

Starting Up

WARNING

Do not start the pump unless it has been completely submerged in fluid.

Before starting up, check that the pump is properly primed; fill it completely with clean water by means submerging the pump completely in the liquid to be pumped and releasing all the air from the pump body. This ensures that the mechanical seal is well lubricated and that the pump immediately starts to work regularly. (Fig. 1). Dry operation causes irreparable damage to the mechanical seal.

- Turn the power supply switch upstream from the pump to position 1 (ON) and wait until the liquid comes out of the delivery pipe.
- If malfunctions are found, disconnect the pump from the power supply, turning the power supply switch to position 0 (OFF) and consult the chapter on "TROUBLESHOOTING".
- The pump may be started and stopped manually by means of the isolator switch upstream from the system.

Precautions

The pump should not be started more than 20 times in one hour so as not to subject the motor to excessive thermal shock.

The suction filter in Alemite pumps must always be present during pump operation.

DANGER OF FROST: When the pump remains inactive for a long time at temperatures of less than 32°F, the pump body must be completely emptied, to prevent possible cracking of the hydraulic components. This operation is advisable even in the event of prolonged inactivity at normal temperature.

When starting after long periods of inactivity, the starting-up operations listed above must be repeated.

If the pump has been used with substances that tend to deposit, rinse it after use with a powerful jet of water so as to avoid the formation of deposits or scale which would, tend to reduce the pump characteristics.

Cleaning

To clean the filter, proceed as follows: Fig. A

- Place the pump in a horizontal position.
- Remove the filter cover (Pos. 21), slackening the six screws (Pos. 19) with a screwdriver.
- Clean the inside of the filter, removing any particles that may have been sucked in.
- Check that the various filter slots are free from foreign bodies.
- Replace the filter cover and install the pump as indicated in chapter 7.

Storage

All the pumps must be stored indoors, in a dry, vibration-free and dust-free environment, possibly with constant air humidity. They are supplied in their original packaging and must remain there until the time of installation. If this is not possible, the intake and discharge ports must be accurately closed.

Transport

Avoid subjecting the products to needless jolts or collisions. To lift and transport the unit, use lifting equipment and the pallet supplied standard (if applicable). The pump must never be lifted using the power cord

Maintenance

In normal operation, the pump does not require any specific maintenance. However, it may be necessary to clean the hydraulic parts when a decrease in performance is observed. The pump must not be dismantled unless by skilled personnel in possession of the qualifications required by the regulations in force. In any case, all repairs and maintenance jobs must be carried out only after having disconnected the pump from the power mains.

Any modification not authorized beforehand relieves the manufacturer of all responsibility. All the spare parts used in repairs must be original ones and the accessories must be

approved by the manufacturer so as to be able to guarantee maximum safety of the machines and systems in which they may be fitted.

Before starting, ensure that the pump is not connected to the power supply.

Troubleshooting

Before taking any troubleshooting action, disconnect the pump from the power supply.

If there is any damage to the power cable or pump, all necessary repairs or replacements must be performed by the manufacturer or his authorized customer support service or an equally qualified party with the manufacturer's permission.

Condition	Probable Cause	Remedy
1. The motor does not start and makes no noise.	A. Check all sources of electrical supply, and all contacts for possible loose connections. B. Check that the motor is being supplied with the correct voltage (115 single phase). C. Check the protection fuses.	A. Tighten all loose connections. B. Correct power supply if in correct. C. Reset all safety breaker switches on line or defective fuses in pump circuit
2. The pump does not deliver.	A. The Prime in pump housing is low of fluid. B. Poor connection on suction side of the pump. C. The impellers are worn or blocked with solid material or scale. D. The check valve, installed incorrectly.	A. Fill impeller housing to top of filler orifice. B. Check and tighten all fluid path connections C. Change the impellers or remove any obstruction. D. Check for good operation of the check/foot valve and fluid flow direction relative to design of check; replace it if necessary.
3. The motor turns with difficulty.	A. Check for damaged shaft seal due to operation with lack of prime B. Defective start motor capacitor.	A. Check and replace seals and any excessively worn moving parts. B. Check capacitor and replace if required.
4. The thermal overload protection device stops the pump.	A. Excessively long run cycle B. Volt drop or spike.	A. Stop operation of pump and allow for sufficient time for electric motor to cool. B. Review the integrity of power supply and distance of power supply to Pump.

Changes Since Last Printing
Initial release