

PowerFLO™ 7800 Flex Series 12 Volt DC Motor-Driven Diaphragm Pumps

Specifications

Motor

Type: 12 VDC, permanent magnet, enclosed, non-ventilated

Leads: 14 AWG, 6" long with 2 pin connector

Duty Cycle: See Heat Rise graph

Temperature Limits: Motor is not equipped with thermal protection. For user safety, optimal performance, and maximum motor life, the motor surface temperature should not exceed 150°F (66°C) (See Heat Rise graphs).

Pump

Type: 3 chamber positive displacement diaphragm pump, self priming, capable of being run dry, demand.

Liquid Temperature: 140°F (60°C) Max.

Priming Capabilities: 14 feet (4 m)

Max Pressure: 60 PSI

Inlet/Outlet Ports:
7822FS-201-I: 3/4" Quick Attach

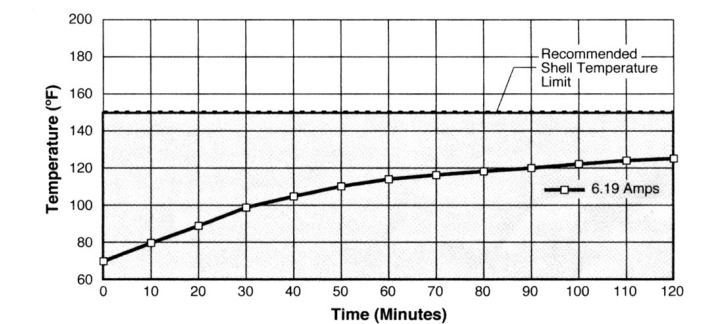
Materials of Construction

Housing: Polypropylene Diaphragm: Santoprene
Valves: Santoprene Fasteners: Stainless Steel

Weight

6 lbs (2.7 kg)

Heat Rise



Approximate values, actual values will vary with ambient temperature.



Installation Recommendations

Mounting:

Determine the optimum location for your pump.

1. The pump should be mounted in a dry place and away from any source of heat. If an enclosure is used, special instructions for cooling the motor may be necessary. Consult the Factory.
2. Do not subject the pump to extreme high or low (freezing) temperatures while in operation. (Operating ambient temperature range is 32° F to 115°F).
3. The pump may be mounted horizontally with the outlet port on the right when viewed from the pump end or vertically with the pump above or below the motor.

Plumbing:

1. Use suction hose on inlet of pump. We recommend the use of 3/8" I.D. minimum flexible tubing with proper pressure rating.
2. Pump will prime only if all pressure is relieved from outlet port.
3. It is recommended that clean water be pumped or an in-line sediment filter (50 mesh) be installed at the inlet side to keep foreign debris out of the system. If a check valve is installed in the plumbing, it must have a cracking pressure of no more than 2 psi (0.14 bar).
4. Avoid any sharp bends which may crimp tubing and restrict flow. Use 90° elbow fittings if necessary.
5. The pump should always be mounted prior to any components which could introduce particles to the water; thus, preventing them from entering the pump chambers and possibly causing clogging.

Electrical:

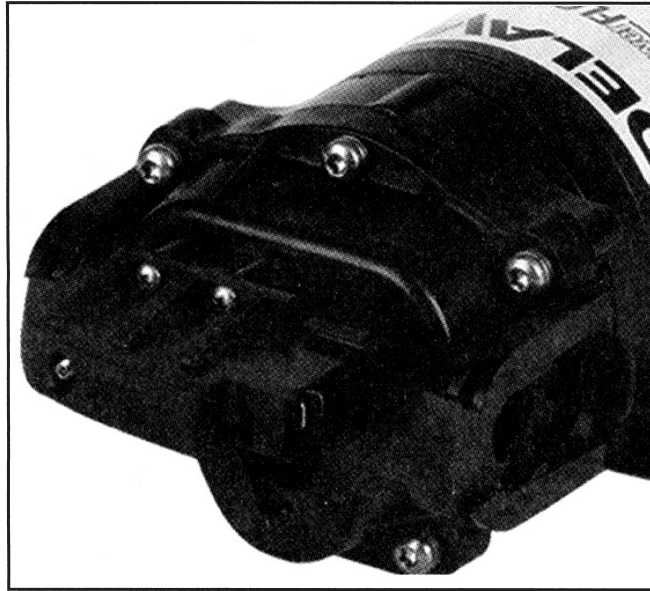
1. The 7800 series pumps are designed for intermittent duty. Make sure that "OFF" periods are sufficient. Refer to Rapid ON/OFF Operation. Consult the factory for particular data and design criteria.
2. Be sure power supply used is adequate for the application.
3. Pump ratings are based off alternator charged battery which supplies 13.7 volts.
4. Each single drop in voltage is a reduction in motor speed thus reducing pump performance.
(1 volt decrease = 200-300 RPM speed reduction)
5. Higher operating flow and pressure increases amp draw.

Installation and Operation

Precautions:

1. The pump is equipped with a pressure sensing demand switch that controls the maximum operating pressure.
2. In addition, never subject the pump to pressures above 125 PSI (8.5 bars).
3. As long as there is inlet water pressure, the pump will not stop forward flow of water even if the motor is turned off. Be sure the system has positive means of shutting off water supply.
4. Do not operate pump in an explosive environment. Arcing from the motor brushes, switch or excessive heat from an improperly cycled motor may cause an explosion.
5. Do not locate the pump motor near materials that may be effected by heat or combustible material. The surface temperature of the motor may exceed 250°F (120°C).
6. Do not pump gasoline or other flammable liquids. Pump head materials are designed for use with water and water based chemicals. Do not use with petroleum products.
7. Do not assume fluid compatibility. If the fluid is improperly matched to the pumps' elastomers, a leak may occur.
8. To prevent electrical shock, disconnect power before initiating any work. In the case of pump failure, the motor housing and/or pump fluid may carry high voltage to components normally considered safe. Therefore, always consider electrical shock hazard when working with and handling electrical equipment. If uncertain, consult an Electrician. Electrical wiring should only be done by a qualified electrician per local and state electrical codes.

Pressure Sensing Demand Switch



The PowerFLO Series 7800 pump is controlled by a built-in pressure sensing demand switch. When a faucet or valve is opened down stream of the pump, line pressure drops thus starting the pump automatically. Conversely, when the valve shuts, the line pressure increases turning the pump off automatically. The pressure switch actuates in response to the pump outlet pressure at a predetermined and preset pressure. The pump label indicates the predetermined ON and OFF pressures. Typically, the OFF pressure is accurately set at the Factory and the ON pressure is within an allowable range below that value. In response to the characteristics of the system in which the pump is installed, the flexibility and length of the tubing, the faucet or valves and the duration that they are open; these pressure settings may vary. Therefore, variation in pressure setting is expected with use and over time.

Standard Warranty

Delavan warrants PowerFLO Series Pumps for a period of **two years** from date of manufacture.

All products sold by Delavan are warranted only to purchasers from Delavan for resale or for use in purchasers' own business or original equipment manufacture, against defects in workmanship or materials under normal use, maintenance and service (rental use excluded).

The sole and exclusive obligation of Delavan under this or any implied warranty shall be to replace or, at its option, to repair, without charge, any product which is determined by Delavan to be defective in workmanship or materials after the product is returned to the Delavan factory*, shipping costs prepaid.

In no event shall Delavan be liable to any person for indirect or consequential damages or for injury or commercial loss resulting from any use or inability to use any Delavan product. Delavan expressly negates any other warranty, express or implied, including any warranty of merchantability or fitness for a particular purpose, or arising from any course of dealing or custom or usage of trade.

No person, including any dealer or representative of Delavan, is authorized to make any representation or warranty on behalf of Delavan in addition to or inconsistent with these provisions. Purchasers to whom these provisions apply agree to hold Delavan harmless from claims by their customers in excess of the obligations of Delavan expressly set forth herein

* Important return safety instructions:

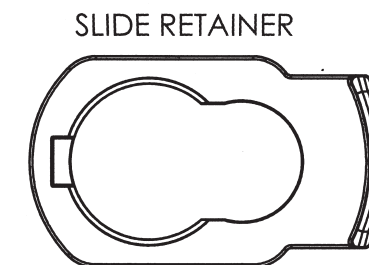
When you return your pump for warranty or repair, you must always do the following:

1. Flush chemical residue from the pump (best done in the field).
2. Tag pump with type of chemicals having been sprayed
3. Include complete description of operation problem, such as how pump was used, symptoms of malfunction, etc.

Since pumps can contain residues of toxic chemicals these steps are necessary to protect all the people who handle return shipments, and to help pinpoint the reason for the breakdown.

Installation and Operation

1. Turn off power/water supply.
2. Remove existing sprayer pump
3. After determining proper components to be used for installation, install QA fitting into pump-head using a light coat of oil or soap/water solution on O-ring to aid in installation. Slide retainer clips into locked position to secure fittings.
4. Pump is now ready for operation.
5. Connect pump to appropriate power supply. With power supply in on position, open discharge (spray gun or boom) to allow water to circulate through pump and purge any trapped air from the system.
6. Close discharge (spray gun or boom). Pump will now build pressure and shut off at the factory set pressure
7. Check system for leaks, repair as needed.



Troubleshooting Guide

Pump will not Start

Check:

- Correct voltage +/- 10% and electrical connections
- Fuse or breaker
- Pressure switch operation and current voltage at switch
- Rectifier or motor for open or grounded circuit

Pump Cycling

Check:

- Orifice size in spray gun or boom tips too small (note: it is recommended that an orifice of .090-.110 is to be used with the Flex Series Pump).
- Debris in inlet/outlet valves.

Pump will not Prime (No discharge with motor running)

Check:

- Debris in strainer
- Restriction (kinks) in inlet/outlet tubes
- Debris or swelling in inlet/outlet valves

Pump will not Shut Off (Output line closed and no leaks)

Check:

- Air trapped in outlet line or pump head
- Correct voltage to pump
- Debris in pump inlet/outlet valves
- Loose drive assembly or pump head screws
- Pressure switch operations/adjustments

Leaks from Pump Head or Switch

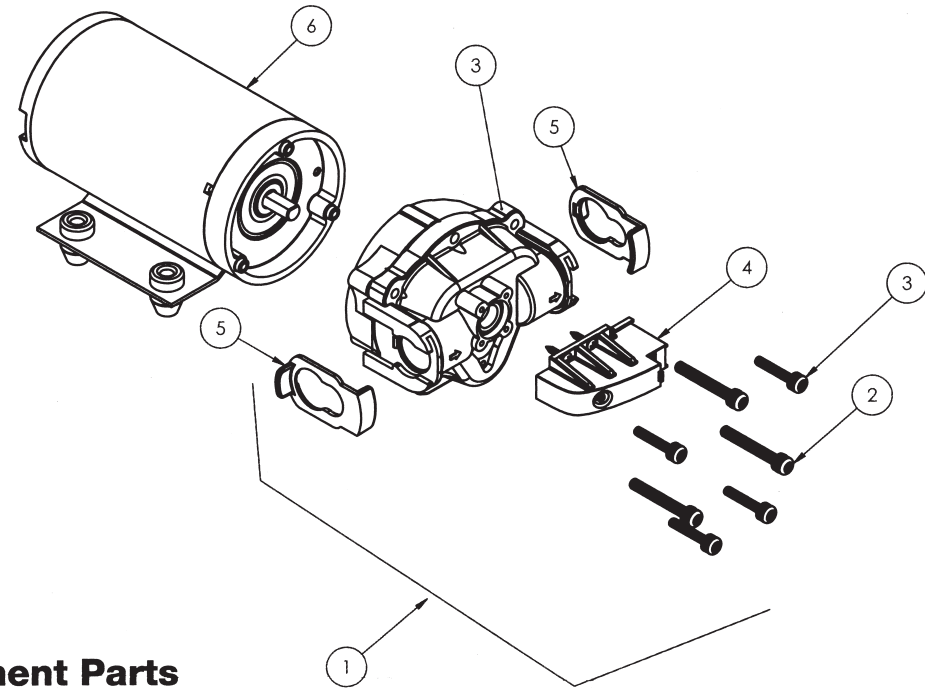
Check:

- Loose screws at switch or pump head
- Switch diaphragm ruptured or pinched
- Punctured diaphragm if fluid is present

Servicing:

Every Year: Check system against operating standards.

Every 2-3 Years: We recommend replacing the diaphragm and checking against operating standards.



Replacement Parts
Flex Series: 7822FS-201-I

| Item | Description | Part Number | Qty |
|------|---|-------------|-----|
| 1 | Complete Pump Housing Assembly | PHA-782F-PS | 1 |
| 2 | Mounting Screws 8-32 X 1 | J78-051 | 4 |
| 3 | Mounting Screws 10-32 X 1 1/2 | J78-050 | 3 |
| 4 | Pressure Switch | 7800-PSW | 1 |
| 5 | Slide Connectors | J58-007 | 2 |
| 6 | 12 VDC Motor 7800 Series w/Connector, No Switch, | M12-78B | 1 |

Dimensions Inches (mm) Weight 6 lbs (2.7 kg)

