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- Operation
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- Parts

PowerFLO™ 2200 Series

12 Volt DC Motor-Driven
Diaphragm Pumps



Delavan Ag Pumps

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PowerFLO™ 2200 Series

Specifications

Motor

Type: 12 VDC, permanent magnet, thermally protected, splashproof

Leads: 2200-1 Models: 18 AWG, 9" long
 2200-2, 2200-3 Models: 18 AWG, 4.5" long with 2-pin connector

Duty Cycle: Intermittent

Pump

Type: 2-chamber positive displacement, self priming, capable of being run dry

Liquid Temperature: 110°F (43°C) Max.

Priming Capabilities: 4 feet (1.2 m) suction lift

Max Pressure: 40 PSI (2.8 bar)

Pressure Demand Switch:

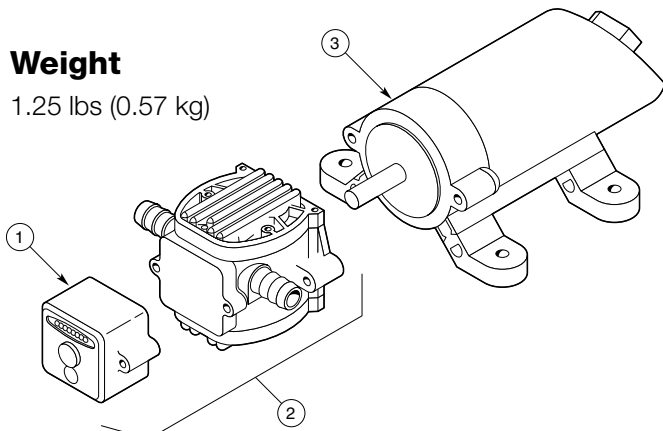
Shut-Off: 40 ±5 PSI (2.8 ±0.3 bar) factory setting

Turn-On: 25 ±5 PSI (1.7 ±0.3 bar) factory setting

Inlet/Outlet Ports: 3/8" hose barb

Weight

1.25 lbs (0.57 kg)



Parts List

Ref #	Description	Part Number
1	Switch Assmly	5157201
2	Pump Head wSwitch Assmly	5275064
3	Motor	
	with no connector, no switch	P39-045A
	with connector, no switch	P39-045B
	with connector and switch	P39-045C

Performance

Pressure/Flow/Amp Draw

PSI	Bar	GPM	LPM	Amps
0-3	0.2	1.00	3.7	1.5
10	0.7	0.85	3.1	1.9
20	1.4	0.71	2.6	2.1
30	2.1	0.61	2.3	2.4
40	2.8	0.42	1.6	2.6

Materials of Construction

Motor Housing: Nylon 6/6

Pump Housing: Polypropylene

Valves: Viton

Diaphragm: Santoprene

Fasteners: Stainless steel and zinc plated

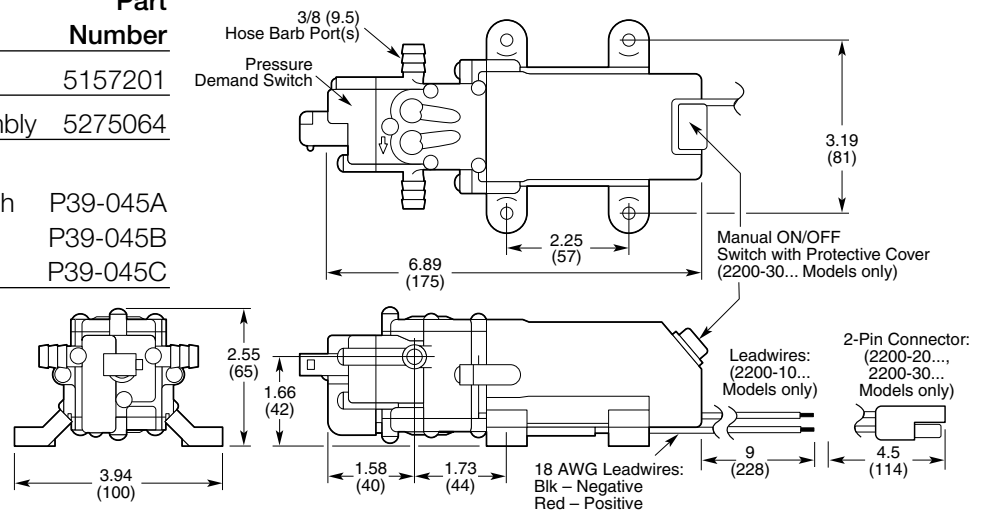
Ordering -

Model Number Configurations

Item #	Description
2200-101	1 GPM Demand Pump Viton Valves, Santoprene Diaphragm, 40
2200-201	1 GPM Demand Pump, Viton Valves, Santoprene Diaphragm, 40 PSI, 3/8" Barb Ports with 2-pin molded connector
2200-301	1 GPM Demand Pump, Viton Valves, Santoprene Diaphragm, 40 PSI, 3/8" Barb Ports with Intergral On/Off Switch and 2-pin molded connector

Dimensions

Inches (mm)



Installation Recommendations

Mounting:

Determine the optimum location for your pump.

1. PowerFLO™ 2200 Series pumps are self-priming and can be located up to 4 feet above the water level. Horizontal and vertical prime vary depending on the fluid viscosity and pump configuration. The pump can be at the same level or below the tank.
2. The pump should be located in an area that is dry and protect the pump from excessive heat by providing proper ventilation. The pump can be at the same level or below the tank.
3. The pump can be mounted in any position. Since the pump head and motor are splash proof, water should not be a concern no matter how the pump is mounted. However, the switch cover does have an opening at the bottom which could collect water if the pump is mounted with the head down.

Plumbing:

1. Use suction hose on inlet of pump. Use flexible hose of the correct pressure rating that is compatible with the fluid to be pumped.
2. Pump will prime only if all pressure is relieved from outlet port.
3. It is recommended that pure 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. 12 volt pump must be provided with a 5-amp fuse.
2. Recommended wire size is 18 gauge (1.3 mm) or larger wire as determined by voltage drop. Negative must be connected to a known ground. Ground wire must be the same gauge/mm as the positive.

Operation Precautions

1. **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.
2. **Do not pump gasoline or other flammable liquids.**
3. **Do not assume fluid compatibility.** If the fluid is improperly matched to the pumps' elastomers, a leak may occur.
4. Intermittent duty is defined as operation and/or frequent starting within a period of time that would cause the motor to reach its maximum thermal limits. Once the maximum is obtained, the motor must be allowed to return to ambient temperature before resuming operation.

Troubleshooting Guide

Problem/Causes and Remedies

Pump will not Start

Check:

- Correct voltage ($\pm 10\%$) and electrical connections
- Fuse or breaker
- Pressure switch operation and correct voltage at switch
- Rectifier or motor for open or grounded circuit
- Locked drive assembly

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

Standard Warranty

Delavan warrants PowerFLO Series Pumps for a period of one year 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.



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