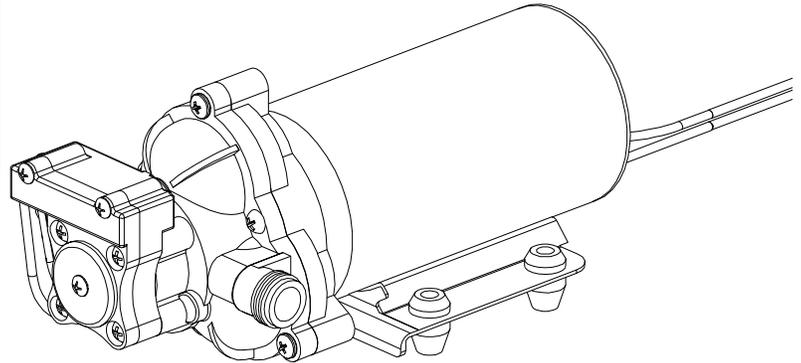


OWNER'S MANUAL



12 Volt, 4.0 GPM, 45 PSI
Diaphragm Pump
Model: HFP-4.0
(5281326/5151073)



Installation and Service Information

Fimco High-Flo Pro Series pumps are designed to pump water and diluted chemicals for liquid application with increased durability over standard pumps. They are not designed to pump flammable materials. They are not designed to pump bleach solutions. **Use of this pump for bleach solutions will void the warranty.** When pumping liquids other than water, the pump should be flushed out with a cleaning solution, such as Fimco Tank Neutralizer & Cleaner, or clean water mixed with a good grade dish soap after each use to prolong pump life.

This High-Flo Pro Series pump is equipped with a demand switch that reacts to outlet pressure and shuts the pump motor off at a factory set pressure limit of 45 PSI. When pressure drops below this preset limit the switch allows the pump motor to start again.

High-Flo Pro Series pumps are self-priming. Vertical prime will depend on the viscosity of the liquid and suction line size. Minimum recommended suction line size is 1/2 inch inside diameter hose. All hose connections need to be tight or air leakage will break the prime and disrupt water flow. The installation of a 50 mesh strainer is recommended to prevent debris or other foreign material from entering the pump and causing pump failure. The pump should be mounted in a dry and adequately ventilated area. The pump can be mounted horizontally or vertically. If mounted vertically, the pump head should be down and the motor should be up. Your pump will come with adapters which will allow you to hook up to various plumbing configurations. 1/2" MNST pipe thread connections will require pipe tape. Do not over tighten fittings causing extra stress, prematurely breaking the pump head. Use flexible hose or tubing to connect to the inlet and outlet ports on the pump. This minimizes stress on the pump head. Never use rigid pipe connections. Do not compress the feet. Overtightening will reduce the ability to isolate vibration and noise.

Your pump is rated at 4.0 GPM @ open flow. If the discharge plumbing is very restrictive or nozzle tips are undersized, the back pressure will cause the pump to cycle rapidly. This rapid cycling will increase the operating temperature of the motor and the amperage draw on the power supply. Extended use with this cycling will cause premature failure of the pump.

Your pump is designed to run off of the battery of your ATV, lawn tractor, or other vehicle with a 12V system. If using a stand alone battery, use a deep cycle RV or marine battery.

The pump should be winterized before storage, by pumping a solution of RV antifreeze through it, and the entire plumbing system.

Retain a copy of receipt for your pump.

As it will be required to validate any warranty service.

High-Flo Pro Series Pumps are warranted against manufacturer or workmanship defects for One (1) year from date of purchase for home owner usage and 90 days for commercial usage. See Page 6 for Warranty Information



WARNING: To reduce the risk of injury, the user must read and understand the operator's manual before using this product.



WARNING: Cancer and Reproductive Harm.
www.P65Warnings.ca.gov



www.fimcoindustries.com

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Toll Free Phone: 800-831-0027 : Toll Free Fax: 800-494-0440

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~~~~~**IMPORTANT**~~~~~

After hooking up this pump it is VERY important for you to test your sprayer with plain water before actual spraying is attempted. This will enable you to check the sprayer for leaks without the possibility of losing any expensive chemicals.

**NOTE:** Make sure all hose clamps are tight before testing or spraying for the first time.

Testing the system for leaks with water:

1. Fill the tank part way with water.
2. Turn on the pump and check all fittings.
3. If a leak is detected, fix the leak and re-test.

~~~~~**WARNING**~~~~~



Read and Understand the Owner's Manual before using this pump. Test and use in accordance to instructions.

Read and Follow chemical label instructions and wear protective gear when filling, using, cleaning and servicing the sprayer.

Know Emergency Procedures Before Handling Chemicals. Pump leaks, bodily chemical contact, poisoning and spills require immediate response. Follow chemical label instructions.

Wear Protective Gear when operating, cleaning and servicing the pump.

Clean pump immediately after use according to directions and follow chemical labels for disposing or storing remaining chemicals.

Keep Pump and Spray materials away from other people, children and pets.

Do Not Turn on Power to the pump, until ready to spray in order to avoid unintentional spray release.

Keep all parts in good condition and properly installed. Fix damaged or worn parts immediately.

After any Repair work has been done, ALWAYS test for leaks with water one final time before using.

Improper use of this pump or handling of chemicals could result in serious injury or illness, or could cause damage to the environment.

Use Caution when connecting and disconnecting to a 12 volt battery. You may use either a stand-alone battery or the battery on your towing vehicle. Follow these steps when connecting and disconnecting from your battery:

Connecting:

1. Connect to the positive (red) terminal first.
2. Then connect to the negative (black) terminal.
3. Then connect the end of the lead wire to the end of the pump.

Disconnecting:

1. Disconnect the end of the pump wire from the lead wire.
2. Then disconnect the negative (black) connection.
3. Finally disconnect from the positive (red) connection.

NOTE: it is important to disconnect power to the pump when not in use for safety reasons.

Warning: Ensure the wiring harness does not become pinched or damaged in any way. This may damage the pump or cause the wiring harness to overheat, resulting in a melt down or fire.

The Pump will be Damaged and Warranty Voided if used to apply bleach, chlorine or gasoline, diesel, kerosene, oil).

Pump should not be used to transfer any product intended for human consumption.

Do Not modify pump design.

Before Spraying:

Pump and Sprayer Prep: Always inspect and prepare the pump and sprayer before use.

Keep Pump Off until ready to spray in order to avoid unintentional spray release.

Wind Speed. Never spray when wind exceeds 4 MPH, in order to minimize spray drift.

Keep Area Clear. Keep people and pets clear of area that is being sprayed.

During Spraying:

Follow Chemical Labels. To avoid over spraying.

Keep Area Clear. Keep people and pets clear of area that is being sprayed.

Wear protective gear if needed to avoid contact with chemicals.

Always clean up spills immediately per chemical label instructions.

Always turn off power to pump and relieve pressure in the system before leaving pump unattended.

After Spraying:

Clean Pump and Sprayer. Using a tank neutralizer cleaner like Fimco Tank Cleaner and Neutralizer to thoroughly clean system.

Dispose or Store chemicals properly as recommended by the chemical label.

Maintenance During/After Spraying

After use, drain the tank and store or dispose of chemical properly. Fill the sprayer half way with clean water. Start the pump and allow the water to pump through the entire plumbing system and nozzles. Drain and then refill half full, add the recommended amount of a good quality tank cleaner, such as FIMCO Tank Neutralizer and Cleaner. Turn pump on and circulate through system for 15 minutes and then spray out through handgun nozzle. Refill sprayer half way with clean water and repeat. Follow chemical manufacturer's disposal instructions of all wash or rinsing water.

WARNING: Some chemicals will damage the pump valves if allowed to soak untreated for a length of time! ALWAYS flush the pump as instructed after each use. DO NOT allow chemicals to sit in the pump for extended times of idleness. Follow the chemical manufacturer's instructions on disposal of all waste water from the sprayer.

Winter Storage

Prepare the sprayer for end-of-season storage by running RV antifreeze through the system. This will keep internal parts lubricated, protect against corrosion and keep the unit from freezing. *Note: RV antifreeze is non-toxic and biodegradable and generally safer for the environment than automotive antifreeze.*

Before storing your sprayer for winter or long term storage, thoroughly clean and drain it as much as possible. Then pour enough pink RV antifreeze into the tank so that when the pump is turned on you can pump the antifreeze throughout the entire plumbing system, including the bypass. Make sure to operate the handgun until you see pink fluid spraying from the nozzle. Leave any remaining antifreeze in the tank. Before your next usage, rinse the antifreeze from the sprayer with clean water.

It is nearly impossible to drain all of the water from the sprayer and any trapped water can freeze in cold weather and damage parts of the sprayer. Pumping the antifreeze through the system will displace the water and help prevent this damage.

Removing from storage: drain the antifreeze. Fill the tank with fresh water and run through the system. Dispose of antifreeze and flush water properly.

Sprayer and Pump FAQs:

◆ **Why does the pump not run all the time?**

This is an on-demand pump and only runs when a discharge is open (spray gun, bypass, boom (if applicable) or a leak is in the system.

◆ **Why does the pump surge while using the spray gun?**

Low flow/high pressure may cause the pump to surge (or cycle). Typically the spray wand is adjusted at too fine of a mist, to overcome, adjust the nozzle for a higher flow.

◆ **How do I adjust the pressure?**

Pressure can only be adjusted by opening the pressure adjust (bypass) valve to allow some of your water or solution to return to the tank (if equipped).

◆ **Pump quit and will not run, what do I need to do?**

Squeeze trigger on spray gun to ensure that the system isn't just pressurized up with discharges closed. Check electrical connections, ensure switch is on. Check fuses. Check for proper voltage. Check pressure switch.

◆ **Low flow or no flow at all, what do I need to check for?**

Check for a clogged or kinked intake hose and/or clogged intake strainer. Check for proper voltage. You will need to occasionally check your intake strainer to ensure that it is clean of any debris.

◆ **What is causing the fuse to blow each time I turn the pump on?**

Check for excessive voltage. Improper adjustment of the pressure switch. Damaged or defective wire harness or defective pressure switch.

Warning: Ensure the wiring harness does not become pinched or damaged in any way. This may damage the pump or cause the wiring harness to overheat, resulting in a melt down or fire.

Before Troubleshooting or Attempting to Service the Pump:

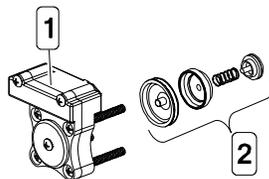
- ◆ **Review Troubleshooting Chart:** Do Not attempt to repair until steps below are followed.
- ◆ **Personal Protective Gear:** Wear protective gear when servicing pump.
- ◆ **Disconnect Power:** Disconnect the power to the pump and relieve the pressure from the system.
- ◆ **Empty and Flush** the pump system with water, never attempt to service the pump until it has been emptied and flushed.
- ◆ **Perform Repairs:** Follow directions provided in the troubleshooting section to repair the pump.
- ◆ **Test:** Always test the pump for leaks with plain water after any repairs before using.

STOP WARNING STOP

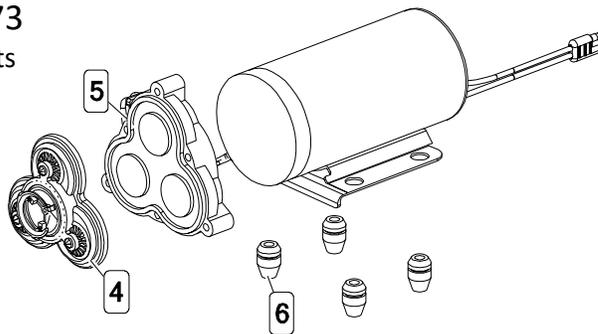
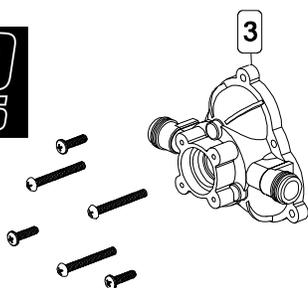
DO NOT USE PUMP IN AN EXPLOSIVE ENVIRONMENT. DO NOT USE TO PUMP FLAMMABLE/COMBUSTIBLE FLUIDS, GASOLINE, KEROSENE, FUEL, OIL, ETC.

Pump Model: 5151073

Available Replacement Parts



Replacement Pump:
5281326



| Ref. # | Part # | Description | Qty |
|--------|---------|---|-----|
| 1 | 5164298 | Switch Assembly, 45 PSI, for 2088 Series | 1 |
| 2 | 5143547 | Pressure Switch Check Valve Kit, 2088 | 1 |
| 3 | 5151057 | Upper Housing, 2088 Series, 1/2" MSPT | 1 |
| 4 | 5143548 | Valve Kit, 2088 Series | 1 |
| 5 | 5281598 | 4.0 Pro Drive Assembly, Geolast Diaphragm | 1 |
| 6 | 5075029 | Pump Mount Grommet | 4 |

DO

- Clean and rinse your pump after each use with Fimco Tank Neutralizer
- Winterize your pump or sprayer by rinsing, draining and running RV Antifreeze through it before storing for the winter.
- Use clean water for your spray mixture
- Store inside a building when not in use.

DON'T

- Use to pump bleach.
- Use to pump gasoline or kerosene
- Leave your pump sit with spray mixture in it for extended periods
- Use dirty or unfiltered water for spraying

CAUTION
PRESSURE SWITCH OPERATION
 Pressure switch is pre-set at the factory. Improper adjustment of the pressure switch, may cause severe overload or premature failure. If the pump is subjected to rapid cycling during normal operation, or infrequent periods, damage may occur.

Troubleshooting the Pump:

Motor does not run:

- Check for loose wiring connection(s).
- Make sure the 'ON/OFF' switch in the lead wire assembly is in the 'ON' position. "I" is the 'ON' position and 'O' is the 'OFF' position.
- Check for defective pressure switch. Refer to directions on next page.
- Check for low voltage at the power supply.

Pump does not prime:

- Check for air leaks in supply line.
- Check for debris in the check valve assembly.
- Check for defective check valve.
- Check for clogged strainer/filter.
- Check for cracks in the pump housing.
- Check for empty product supply.

Low Pressure/Low Flow:

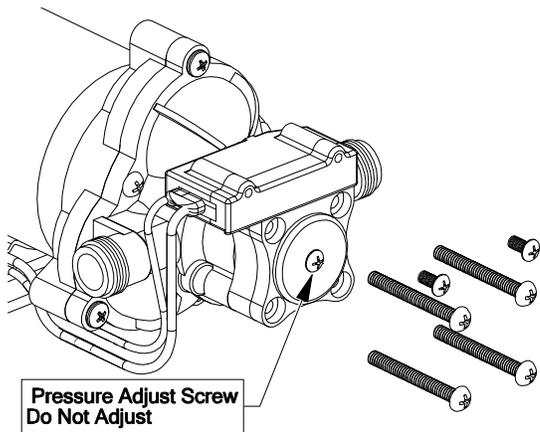
- Check for leaks in the discharge line.
- Check for restriction in the discharge line.
- Check for debris in nozzle orifice.
- Check for clogged strainer.
- Check for proper voltage—try another 12-volt battery.

Pulsating flow (surging):

- Suction leak may cause pump to surge.
- Spray wand is adjusted for a small or fine spray pattern.
- Slightly open bypass (if applicable) to overcome.
- Check for defective pressure switch.
- Check for leaks in the discharge line.
- Check for restriction in the discharge line.
- Check for debris in nozzle orifice.
- Discharge hose may be too long.
- Check for clogged strainer.

Motor continues to run after discharge is shut off:

- Check for empty product supply.
- Check for open bypass valve. (if equipped)
- Check for low voltage.
- Check for leak in discharge line.
- Check for defective pressure switch.
- System has leaks.



Checking the Switch Assembly:

If your motor is not running and you've checked the following: for loose wiring connections, fuse, the switch on the lead wire was "ON" and made sure you were connected to a fully charged battery and everything is fine, but the motor won't run, then it's time to check to see if the pressure switch is bad.

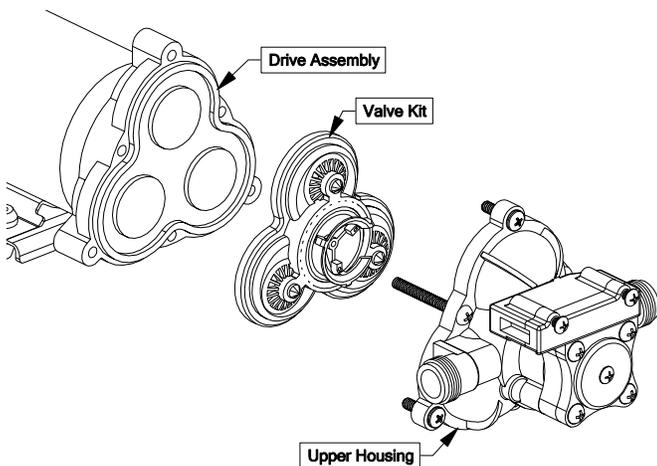
- 6 screws on the pressure switch will need to be removed. Do not turn the center adjustment screw. The pressure switch will then be loose from the pump head. Use a flat blade screw driver to separate the pressure switch housing being careful not to damage the gasket and paying attention not to lose the internal parts. Carefully slide the switch out of the housing without bending the terminals. Pull on the white terminal connections with pliers. A jumper wire will be needed to jump the connections together.
- Connect pump to a good 12 volt power source and everything on.

If the motor runs, it means the pressure switch is bad and needs to be replaced.

Warning: It is NOT recommended to run the pump this way, as the pump will continue to run and not shut off. This could result in blown hoses when all discharges are closed. Also, this could result in premature failure of the pump completely.

If it still doesn't run, try bypassing the switch in the lead wire or using another lead wire.

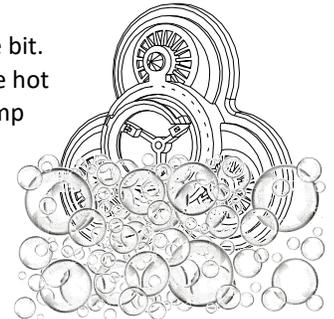
If still not responsive, use a voltmeter or electrical tester to make sure you are getting power to the head of the pump, as it could possibly be something in one of the wires or even the lead wire assembly may need to be replaced.



Cleaning the Valve Kit:

If you're experiencing little to no pressure or the pump is not priming and you've checked your filter screen and it's clean, and you've gone through the other trouble shooting tips, you may need to clean the valve kit.

- Remove the upper housing of the pump, which is held on by 6 screws.
- The first piece inside the head of the pump is called a valve kit, it's the part responsible for building up pressure and pumping water/solution through the lines.
- Clean the valve kit under hot, soapy water (such as a good grade dish soap).
- Swish the valve kit around a little bit.
- Then let it soak for an hour in the hot soapy solution and replace in the pump and reassemble the pump.

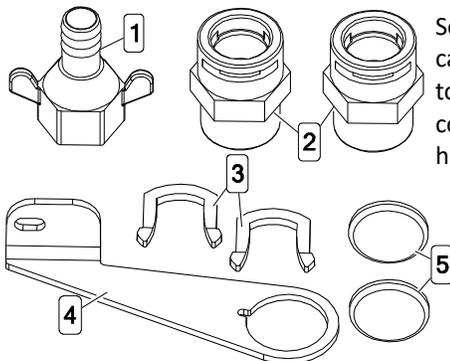


Most times this will restore most, if not all of the prime of a pump.

If you're still having issues with pressure after this step, it would be recommended to replace this part.

Retrofit Kit

Easily connect HFP-4.0 pump to Fimco sprayers with manifolds



Solid grommets are included to plug bypass and intake holes because they will be relocated with the Pro Series pump. Adapter fittings allow any High-Flo port fitting to attach to the Pro Series pump. Manifold support bracket is designed to work with Fimco quick connect manifold installed with the supplied adapter fitting. If the suction side is a 1/2" hose, use the hose barb fitting, if the suction side is a rigid tube, use the adapter fitting.

| Ref. # | Part # | Description | Qty |
|--------|---------|--|-----|
| 1 | 5002502 | ShurFlo 1/2" FPT x 1/2" HB Pump Swivel Fitting | 1 |
| 2 | 5005456 | 3/4" Port to 1/2" Female NPT Adapter | 2 |
| 3 | 5005457 | Port Adapter Clip | 2 |
| 4 | 5037943 | Manifold Support Brace | 1 |
| 5 | 5075027 | Solid Rubber Grommet | 2 |

Warranty

LIMITED WARRANTY FOR NEW FIMCO EQUIPMENT

WHO MAY USE THIS LIMITED WARRANTY. This limited warranty (the "Limited Warranty") is provided by Fimco to the original purchaser ("you") of the Equipment (as defined below) from Fimco or one of Fimco's authorized dealers. This Limited Warranty does not apply to any subsequent owner or other transferee of the Equipment. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WHAT THIS LIMITED WARRANTY COVERS AND FOR HOW LONG. Fimco warrants that any new Equipment will be free from defects in material and workmanship for a period of **one (1) year** (homeowner), **90 days** (commercial user), after delivery of the Equipment to you (the "Warranty Period"). The Warranty Period is not extended if Fimco repairs or replaces the Equipment.

WHAT IS NOT COVERED BY THIS LIMITED WARRANTY. This Limited Warranty does not apply to: (1) used Equipment; (2) any Equipment that has been altered, changed, repaired or treated since its delivery to you, other than by Fimco or its authorized dealers; (3) damage or depreciation due to normal wear and tear; (4) defects or damage due to failure to follow Fimco's operator's manual, specifications or other written instructions, or improper storage, operation, maintenance, application or installation of parts; (5) defects or damage due to misuse, accident or neglect, "acts of God" or other events beyond Fimco's reasonable control; (6) accessories, attachments, tools or parts that were not manufactured by Fimco, whether or not sold or operated with the Equipment; or (7) rubber parts, such as tires, hoses and grommets.

HOW TO OBTAIN WARRANTY SERVICE. To obtain warranty service under this Limited Warranty, you must (1) provide written notice to Fimco of the defect during the Warranty Period and within **thirty (30)** days after the defect becomes apparent or the repair becomes necessary, at the following address: Fimco, 1000 Fimco Lane, North Sioux City, SD 57049; and (2) make the Equipment available to Fimco or an authorized dealer within a reasonable period of time. For more information about this Limited Warranty, please call: **800-831-0027**

WHAT REMEDIES ARE AVAILABLE UNDER THIS LIMITED WARRANTY. If the conditions set forth above are fulfilled and the Equipment or any part thereof is found to be defective, Fimco shall, at its own cost, and at its option, either repair or replace the defective Equipment or part. Fimco will pay for shipping and handling fees to return the repaired or replacement Equipment or part to you.

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