

# TROUBLESHOOTING SPRAYER ISSUES



The following guidelines are with reference to the sprayers listed below

OBS640H	OBS134S	DMS390SE	TS400S
OBS640S	OBS135S	TPS340S	TS400SE
CTF640S	DMS340S	TPS390S	
OBS690S	DMS390S	TPS390SE	

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The following checks should be made if the sprayer is not working or performing as expected. Use the points and test examples as a guide to identifying and resolving any issues. The diagrams and tables on the following pages show the pump assemblies, part numbers and descriptions for ease of replacement ordering. For pump models please see page 3. For disassembly instruction please see pages 4 to 8.

**There are only a few basic reasons why a sprayer pump will not work, follow these instructions to help you identify what is wrong.**

The pump is made up of two parts joined together – the electric motor that drives the pump and the pump head itself (which pumps the liquid). These two parts are bolted together, but separated internally by the watertight diaphragm/ drive assembly. This stops liquid getting into the motor.

The first diagnosis is to work out which part isn't working and then follow the following trouble shooting guide.



Before starting any sprayer maintenance, switch off power to the pump. Release pressure on outlet side, if possible, remove all chemical mix, wash out thoroughly and use clean water when carrying out any maintenance. Always use gloves and protective clothing when handling parts contaminated with chemical

## **PUMP WILL NOT START**

### **Simple checks by operator**

Check fuse

Check for correct voltage 12v ( $\pm 10\%$ ) Use a multimeter to check continuity through all connections from the battery to the motor to ensure power is getting through.

### **Checks by qualified dealer/fitter**

Check outlet pressure is not at 3.1 bar or above — outlet hose may be kinked/blocked or all boom jets may be switched off (pump with pressure switch fitted)

Check motor for open or grounded circuit

Check for jammed pump.

If no solution can be found and rectified, fitment of a new pump may be required.

## **PUMP MOTOR IS WORKING BUT IS NOT PUMPING LIQUID, SO IT WILL NOT PRIME**

### **Simple checks by operator**

There are two common problem areas split into the following -

#### **1. There is a suction leak - so the pump is sucking air rather than liquid**

Check for frost damage during the winter which has cracked a pipe fitting or hose.

Check all fitting connections and filter to ensure they are all air tight.

Check for physical damage which may have broken or cracked any fittings.

### **Simple check**

The easiest way to check for a suction leak is to half fill the tank with clean water. Disconnect the boom or hand lance hose and hold the hose in a bucket of water under the water level with a finger over the end to create a little back pressure. This will ensure there is no air sucked in by the recirculating jet\* in the tank. Switch the pump on and look to see if there are any air bubbles coming out the hose in to the bucket. If yes there is a suction leak in the system and this will need to be found and repaired, otherwise the pump will always suck air rather than liquid.

\*Recirculating jet is fitted to OBS640S, CTF640S, DMS340S and TPS340S sprayer.

### **2. The valves on the viton valve plate assembly are dirty or damaged.**

To remove the valve plate assembly follow the disassembly instructions on pages 4 to 8.

Check the valves for debris/ grit and clean with water as required.

Check for chemical wear and distortion of the valves due to chemical being left in the pump. (Pump not washed out after previous use)

Check that the check valve is not ruptured or pinched. (Shown in point 5.on page 6 and 8).

### **Simple check**

Lay the valve plate on a flat surface and fill the 3 valves with clean water, if any water seeps through this will confirm a problem, clean out and try again until no water seeps through.

If all of the above points have been checked and are ok but the pump is still not performing as it should the viton valve plate assembly should be replaced. The valves may have chemical wear or be distorted; this may not be visible to the naked eye.

If neither of above 2 sort the problem out Logic recommend the sprayer is checked out by a **qualified dealer/fitter**

### **PUMP WILL NOT STOP** (Pump with pressure switch fitted) OBS135-07A pump

Check the pressure switch for failure. Failure is normally caused by the switch cycling repeatedly and the contacts burning as a result. This can happen for example when using a hand lance with the pressure set above 3.1bar. Always reduce the pressure below 3.1 bar to avoid this when using a hand lance.

Other possible problems

### **NOISY/ ROUGH OPERATION**

Check mounting feet are not compressed too tight

Check for loose pump head or drive screws.

Check bearing in the diaphragm/ drive assembly

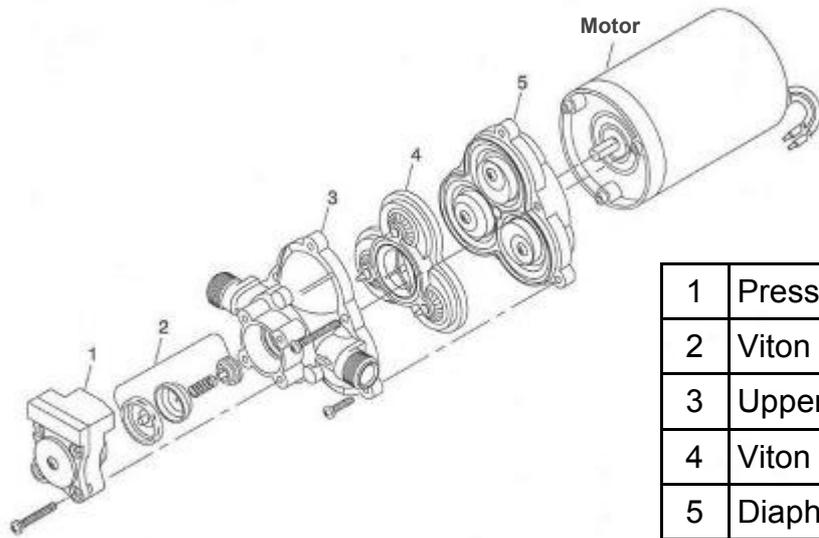
### **PRESSURE LEAKS FROM PUMP HEAD OR SWITCH OR ANYWHERE ON PRESSURE SIDE OF PUMP.**

Pressured water coming out will identify any pressure leak, look to seal as required.

## 2088 SERIES SHURFLO PUMP

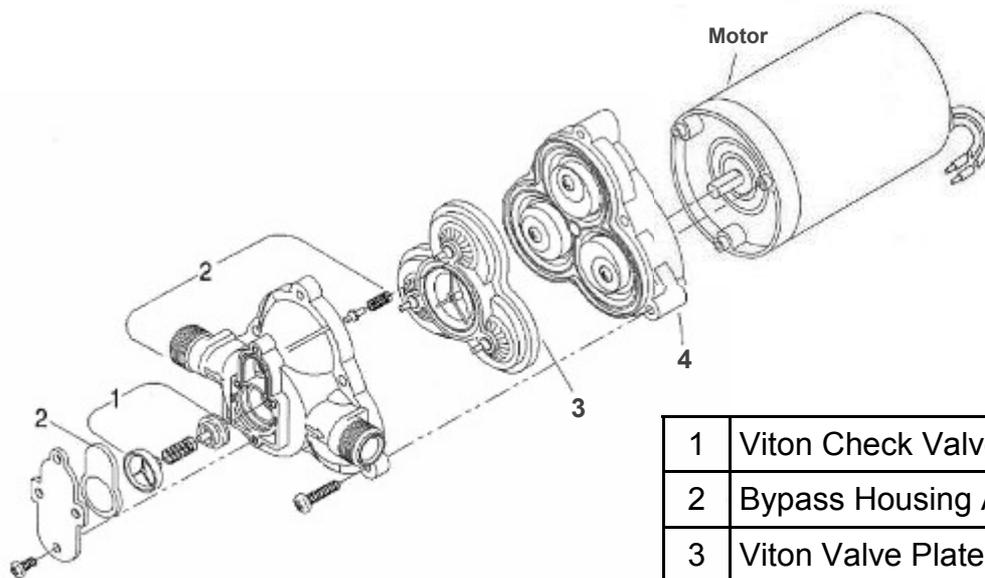
The two models of this series pump are used on the sprayers covered in these guidelines.

Assembly OBS135S-07A



1	Pressure Switch Assembly	OBS135S-1010
2	Viton Check Valve Assembly	OBS134-1011
3	Upper Housing Assembly	OBS135S-1008
4	Viton Valve Plate Assembly	OBS134S-1009
5	Diaphragm/ Drive Assembly	OBS135S-1006

Assembly OBS134S-40A or CTF640S-40A



1	Viton Check Valve Assembly	OBS134-1011
2	Bypass Housing Assembly	OBS134S-1010
3	Viton Valve Plate Assembly	OBS134S-1009
4	Diaphragm/ Drive Assembly	OBS135S-1006

## SERVICE KITS

Kits are readily available to repair standard 2088 series pump. Repair kits include simple illustrated instructions allowing easy installation.

To ensure that the correct kit is received the model number and all name plate data must be included with the order. Contact a Logic dealer to order the necessary replacement parts.

## 1.1 CHECK VALVE INSPECTION AND REPLACEMENT

Before starting any work on the pump assembly it is important to identify which model of pump the sprayer is fitted with. The two different pump assemblies are shown below. The assembly may look a little different depending on the sprayer.

### **PUMP ASSEMBLY OBS134S-40A or CTF640S-40A**

Follow instructions 1.2 on page 5. If you are still unsure as to which pump assembly you have consult the sprayer user manual or contact your Logic dealer.



### **PUMP ASSEMBLY OBS135-07A (easily identified by the pressure control assembly)**

Follow instructions 1.3 on page 7. If you are still unsure as to which pump assembly you have consult the sprayer user manual or contact your Logic dealer.



## 1.2 OBS134S-40A / CTF640S-40A PUMPS

If you are unsure as to which pump assembly you have consult the sprayer user manual or contact your Logic dealer.



1. Unscrew and remove the plastic wing nut outlet hose tail from the pump.



2. Slacken off the 4 nuts on the pump mounting studs, using an 8mm socket or spanner. Do not remove the nuts, this is only to gain access to the lower screw on the end cap assembly.



3. Remove the 6 end cap screws and the pump head.

**Note** - Take note of the self tapping screws only in the outer mounting holes. Machine screws are only in the motor body mounting holes. Do not remove the metal plate on the end of the cap at this stage.



4. Carefully remove the small spring. Check the small white plastic piston has free movement.



5. Check the check valve diaphragm is free to move in and out.

**Note** - If the diaphragm is rigid, remove the metal end capping plate and clean all the components.



6. Carefully remove the valve cover.

**Note** - It may have a suction retention, take extra care.



7. Check the condition of the 3 rubber check valves, see page 2 for simple check. Replace the unit if the valves are showing signs of wear or have curled up edges.



8. Reassemble the pump unit in reverse order and remount to the tank. **Note** - Do not over tighten the nuts on the 4 pump mounting studs, leave 3 threads showing only.



Test the pump is working correctly with clean water only before adding any chemical.

### 1.3 OBS135S-07A PUMP

If you are unsure as to which pump assembly you have consult the sprayer user manual or contact your Logic dealer.



1. Unscrew and remove the plastic wing nut outlet hose tail from the pump.



2. Remove the 4 nuts on the pump mounting studs.



3. Ease up the pump from the studs with a rocking motion, carefully remove from the studs. Carefully twist the motor to the side.



4. Remove the 6 end cap screws and the pump head.

**Note** - Take note of the self tapping screws only in the outer mounting holes. Machine screws are only in the motor body mounting holes. Do not remove the metal plate on the end of the cap at this stage.



5. Check the check valve diaphragm is free to move in and out.

**Note** - If the diaphragm is rigid, remove the metal end capping plate and clean all the components.



6. Carefully remove the valve cover.

**Note** - It may have a suction retention, take extra care.



7. Check the condition of the 3 rubber check valves, see page 2 for simple check. Replace the unit if the valves are showing signs of wear or have curled up edges.



8. Fit the plastic circular support if not already fitted. See valve replacement instructions. This is an upgrade that may not be fitted if your pump is very old.



9. Reassemble the pump unit in reverse order and remount to the tank. Note - Do not over tighten the nuts on the 4 pump mounting studs, leave 3 threads showing only.



Test the pump is working correctly with clean water only before adding any chemical.