

## **POWER-CYCLONE**

### **Trouble Shooting Procedures**

Please perform the following trouble shooting procedures to determine if the problem is with the following components:

- Internal discharge pump
- Power switch/outlet
- Vacuum motor
- Intake or discharge hoses

The test separates the two motors and the power switch/outlet to see if either one is at fault. Both motors rely on each other for proper function.

Please go through all the following steps in order to get a complete test. Once we determine which component is at fault we can fix it.

First test.

This will test the internal discharge pump.

Please remove the vacuum motor to open the bucket.

Turn OFF the discharge pump by unplugging it from the power switch/outlet.

Fill the bucket with garden hose water on full blast.

When the bucket gets full plug in the discharge pump and see how quickly it drains the bucket down.

It should take less than 13 seconds to drain down. The discharge pump can pump 60 gals per minute.

Continue to fill the bucket with garden hose water for at least 5 minutes while the discharge pump is pumping out. If the discharge pump continues to keep the tank drained after 5 minutes of filling then it is reasonable to believe the discharge pump is OK. If the discharge pump starts to slow down or cannot drain the bucket quickly then it is at fault. Check for rocks, algae or plant debris clogging the inlet to the discharge pump. If the discharge pump does not hum or appears to be non-functional go to the second test.

Second test.

This will test the discharge pump power switch/ outlet.

If it appears that the internal sludge pump is not functioning the power switch/outlet plug could be at fault.

Plug the discharge pump into a separate extension cord and plug it directly into a separate electrical wall outlet. If the discharge pump starts to hum or operate then the fault is with the power switch/ outlet plug. The power switch/outlet plug is easy to replace and is covered under the 1 year warranty.

Third Test

This will test the vacuum motor.

Connect the vacuum motor to the bucket and clamp on.

Leave the discharge pump OFF and unplugged.

Turn on the vacuum motor but do not immerse the suction pipe in water.

Just let it suck air for 5 to 10 minutes.

Periodically place and release your hand quickly over the suction end to see if it sucks your hand strong or weak. If you leave your hand over the suction hose for too long the internal float will rise and the motor will surge. You will have to turn off the motor to reset the float.

If the air suction is weak please check for debris such as rocks or roots stuck in the hose. You can take a garden hose and push the garden hose all the way through like a snake to be sure nothing is lodged in the 26 feet of hose. If you are sure no debris is in the hose and after 10 minutes of sucking air you still have strong suction then it is reasonable to believe the vacuum motor is OK. If the vacuum is weak then see if you can find an air leak in the hose or connectors. Is the suction hose kinked in any way? If the suction hose was kinked it could lead to a hole or split in the hose and decreased suction.

#### Fourth Test.

If the vacuum motor has good suction in air then the next test is to immerse the end of the suction hose into clean water. Leave the internal discharge pump OFF.

Suck up water and check your watch to see how fast the bucket fills. You will know when the bucket is full because the vacuum motor will sound different. It will sound like it is surging. If you are far away from the vacuum motor you may not hear the difference in the surge noise.

As the bucket fills the internal float will rise and cut off suction. The vacuum will continue to run but you will lose all suction. Once the float rises and the motor surges you must turn off the unit to let the float drop.

How fast did it take to fill the bucket before the float was engaged? If it fills in less than one minute then this is proper function. If it takes over a minute or two minutes then something is wrong. Check that the float is able to move freely up and down. You could have a float that is stuck. You could also have an air leak.

#### Fifth Test.

Set up the vacuum as for regular function with the discharge pump plugged in.

Set the end of the discharge hose at a lower level than the bottom of the bucket.

Make sure the vacuum bucket is higher than the water level in the pond. If the vacuum bucket is lower than the water level in the pond it can flood the vacuum motor and it will surge.

Start a normal vacuum operation but only vacuum clean water no deeper than 2 feet deep.

If the vacuum performs normally then try lifting the end of the discharge hose higher and higher above the unit to see if the vacuum motor starts to surge. If the discharge pump is not draining the bucket properly then it is possible that the bucket will fill up with water and cause the vacuum motor to surge.

If you are far away from the vacuum motor you may not hear the difference in the surge noise.

If the unit functions normally even up to 7 feet elevation then this is good and proper function.

Please try all these tests.

If you find any component to be at fault you may file a warranty claim with your Matala Distributor.

Only the component at fault will be repaired or replaced under the conditions of the Limited Warranty.

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If the discharge pump is suspected of being the problem please try a few things to narrow down the possibilities.

- 1- Remove vacuum motor head from the canister.
- 2- Plug the discharge pump into a separate outlet or extension cord. Do not plug into the external switch plate on the front of the vacuum.
- 3- Does the discharge pump hum? If it does not even hum or vibrate then the discharge pump should be replaced.

If the discharge pump does hum then the next step is:

- 4- Fill the canister with water and connect the discharge hose to the canister as usual. Plug in the discharge pump and see if it pumps down the water in the canister.

Please be careful of a few things in regards to the discharge pump.

-Always use the prefilter bag during operation. If the prefilter bag is removed during operation you can suck heavy debris into the discharge pump.

-Turn off the unit every 15 to 20 minutes to clean the prefilter bag and let both motors cool for 5 minutes. If the prefilter bag is clogged it will prevent water from entering the unit and cause the discharge pump to overheat.

If you suspect the vacuum motor to be the problem please try a few things to narrow down the possibilities.

Please be careful of a few things regarding the vacuum motor function.

- Maintain the vacuum body above the water level in the pond. Otherwise the vacuum will also start to siphon and you could flood the motor causing it to surge and damage the vacuum motor.
- Position the end of discharge hose below 7 feet for best performance. If the discharge hose is higher than 7 feet above the unit then the discharge pump might not be able to drain the tank quickly enough and it will also flood the motor causing damage to motor.

If you have trouble with the vacuum motor occasionally stop suction please consider the following points:

If water fills up inside the tank the internal float will rise to the motor to protect the motor from sucking in water.

When this occurs the motor will still run but suction will stop and the motor will sound different. It will surge. You may or may not notice this surging sound but if you are aware of it you will begin to recognize it. When this occurs you have to turn off the motor so the float will drop.

Try to understand why the tank is filling up. Normally the discharge pump will pump out the water faster than it can fill the tank.

If you are discharging uphill you can reach a point where the head pressure against the discharge pump slows down the output in gallons and then the tank will fill faster than it can drain. Check your elevation.

Another reason the tank can overfill is if the tank is at a lower elevation than the pond water. If the tank is below the pond water level then it will also begin to siphon into the tank and fill up more quickly than the discharge pump can empty it. Raise the bottom of the tank higher than the pond level.

I have also seen some pond maintenance companies add a filter to the discharge hose in order to return the water back to the pond. In this case the post filter can cause extra back pressure on the discharge pump and the tank will fill up and start to surge.