

# SUMP PUMP

## 7 CAUSES OF FAILURE

### Common Causes of Sump Pump Failure and What to Do

Sump pumps are mechanical appliances, installed in your home's basement or crawl space. Its purpose is to collect water from around your foundation and redirect it out and away from your home.

Sump pumps can fail for a variety of reasons, including power outages, lack of maintenance, old age or improper installation.

Here are seven of the most common causes of sump pump failure:

#### 1 Check valve failure

A check valve is a type of “one-way” valve that allows water to move in one direction only.

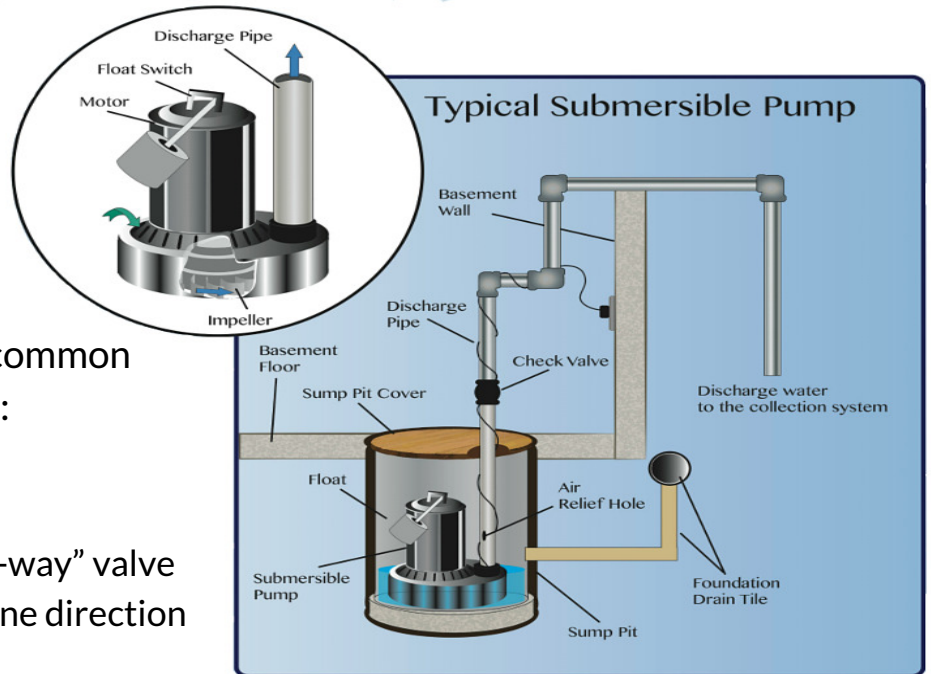
The purpose of the check valve is to prevent water that’s being pumped out of the sump pit from flowing back into the sump pit.

If the check valve fails, the water being pumped out of the sump pit will flow back into the pit, decreasing the amount of water removed per cycle while also increasing the frequency of cycles, which can cause the pump to fail prematurely.

#### 2 Switch failure

The most common mechanical failure in a sump pump occurs when the switch becomes stuck in the ON or OFF position, causing the pump to run continuously or not at all.

Switches are relatively inexpensive to replace. Some homeowners have installed a new pump in the sump basin, but keep the older pump (with a new switch) as an emergency backup pump.





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### 3 Float stuck

The pump's float is responsible for the smooth operation of the on/off switch. If the pump shifts inside the basin, the float can get pressed against the side of the sump basin. Other objects in the sump basin, like sand or pea stone, can also impede the float.

Check to see if float is stuck on something. If so, UNPLUG the pump and remove the obstacle. If necessary, reposition the pump so the the float cannot get stuck.

### 4 Power failure

In the event of a storm where the power is lost, a circuit is tripped, or the power cord is damaged, a battery-powered backup pump or a generator can prevent stormwater from backing up into your basement.

### 5 Motor failure

A common cause of sump pump failure is motor burn out. The voltage from the supply increases until the pump is overheated and shuts off. This can happen when the sump pump is being overworked, due to a poor quality or an undersized pump. If the sump pump's motor is too small, the water might be entering the basin or pit faster than the pump can pump it out. This can cause the system to run continuously, resulting in burnout.

If the pump can't handle the flow, you may need a larger motor. Manufacturers also recommend that your pump be plugged directly into an outlet (no extension cords) and that the outlet be the only thing powered by the circuit breaker (or fuse) that feeds it.



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### 6 Casing failure

The casing is the protective shell that houses the pump's motor. Certain problems, like a failed motor bearing, cracks in the casing, debris in the impeller or a broken impeller can cause the casing to overheat.

**UNPLUG** the pump and inspect the bottom section of pump for cracks or holes that would allow water to escape. Inspect the suction screen at bottom for debris that could be blocking it. Remove debris. Inspect the impeller (the fanlike device at the bottom of the pump) for worn or missing blades. Replace the impeller if needed.

### 7 Discharge piping failure

In addition to leaks, cracks or breaks in the internal discharge piping or undersized piping can cause the sump pump motor to work harder.

At least twice a year, pour water into your sump pump (5 gallons should be sufficient) and as the pump moves the water out of the sump bucket, check your internal discharge piping for cracks or breaks in the joints. If you find any, replace those sections of the piping.



#### Who should I call?

**Most plumbers and some handymen services can repair or replace sump pumps, as well as perform semi-annual sump pump maintenance.**