Continue

Often, the problem with a toilet not flushing properly lies in the cistern. The siphon, indicated in Figure 1, is normally at fault. Figure 1: Siphon inside a toilet cicstern It contains a washer, known as a diaphragm, which disintegrates with age and use. To replace it, follow these instructions carefully. First, switch off the cold water supply. Lift off the lid of the cistern. If possible flush the existing water away. (If you cannot flush, then you will need a sponge to completely empty the cistern.) Then disconnect the water feed pipe, using a spanner - as in Figure 2. Figure 2, disconnecting the water feed pipe from a toilet cistern, using a wrench. Next, remove the two locking nuts connecting the cistern to the toilet bowl. (Figure 3) Figure 3 - butterfly locking nut that attached the toilet cistern to the toilet bowl Remove the two screws holding the cistern to the wall: Figure 4: removing a screw holding the cistern to the wall The cistern will now lift clear of the toilet bowl. Then remove the washer and locking nut from under the cistern. Figure 5: Washer underneath cistern Figure 6: Locking nut Next, remove screw holding the flush handle to the siphon. Figure 7: screw holding flush handle to the siphon. This may be rusted, and need some help from a pair of pliers: Figure 8 - using pliers to loosen a rusted screw from a toilet cistern Slide the flush-lever (the black one shown in figure 8) from the handle, and remove the siphon: Figure 9: the siphon, removed. Inspect the diaphragm for damage. In Figure 10 the diaphragm is the blue plastic floppy washer, and in this case, the damage can clearly be seen. Figure 10: damaged diaphragm - these disintegrate over time In some cases, it may be necessary to replace the entire siphon, but in this case we will replace only the torn diaphragm, which can be purchased separately. Remove the coupling pin from the top of the plunger, as indicated in figure 11. Figure 11: the coupling pin Depress the plunger and remove the housing: Figure 12: push down on the plunger Figure 13 - removing the diaphragm housing Be careful not to lose the spring: Figure 14 - removing the spring. Next remove the washer holding the diaphragm, using a flat screwdriver to prise it off: Figure 15 - prising the washer which is holding the diaphragm in place Figure 16; the loosened washer Lift off the diaphragm Figure 17: lifting off the diapgragn. The damage here can clearly be seen: Figure 18 damaged toilet syphon diaphragm Replace the diaphragm. Figure 19: this replacement diaphragm is made of clear plastic Put back the locking washer. Add the spring. Replace the diaphragm in the siphon housing, and replace the coupling. Insert the siphon into the cistern, and replace the locking nut. Replace the cistern onto the toilet bowl, ensuring you have the sponge washer in place. Figure 20; sponge washer under the toilet cistern. Replace the two screws holding the cistern to the wall. Also replace the two butterfly locking nuts which fasten the cistern to the bowl. Replace the coupling pin between the siphon and the flush-handle - ensuring that the flush-handle is at the original angle - as seen in Figure 21. Figure 21: coupling pin between the siphon and the flush handle. When reconnecting the water supply, it is recommended to wrap plumbers' tape around the threads of the pipe: Figure 22: wrapping the threads with plumbers tape Figure 23 - the wrapped pipe threads Reconnect the water supply to the cistern Figure 24: reconnecting the water feed pipe. Turn on the water, and check for leaks: be prepared to turn off the water again if necessary, and tighten any connections. Now flush the cistern, to test that it's working correctly. Job done. Well done. Fitting a toilet syphon can be a time consuming job, hopefully these instructions will make the job much easier for anyone attempting to have a go themselves. Before replacing the syphon you should inspect the existing one as some syphon's are in two parts and can be split for servicing.This is the toilet with the lid removed. Ensure you put the toilet lid in a safe place as they are easily broken! If you flush the toilet and occasionally it does not flush the first time this could mean that the syphon needs replacing. Firstly you need to isolate the water going to the toilet, this can be done locally via an isolation valve or by isolating the rising mainIf the toilet still flushes give the handle a flush to empty the water out of the cistern. If the syphon is not working at all you need to ladle the water out using a suitable container. To get the last remaining water out of the bottom of the cistern you can use a sponge. Any water from the cistern can be emptied down the toilet pan.Use either the correct sized spanner or an adjustable spanner and undo the nut that connects to the water inlet valve (some water will drip out on removal). The overflow pipe will also need disconnecting (if there is one).Underneath the toilet there are two wing nuts that hold the cistern to the pan, these need removing. If the nuts will not undo you can saw them off with an hacksaw or even cut them off using an angle grinder.Undo any fixings that are holding the cistern to the wall, then carefully lift the cistern clear of the toilet pan. Clean any debris from the toilet pan where the cistern connects as any dirt can effect the seal later.To make fitting the syphon easier you can split the water inlet valve. Now remove the C link that connects the lever to the Syphon.Obtain a new sealing kit for the toilet, this is necessary to refit the cistern back to the toilet pan.Remove the rubber donut washer, then Using water pump pliers undo the large nut at the bottom of the syphon. Remove the syphon from the cistern and clean it using a damp cloth. A clean cistern will ensure a good seal with the new syphon.There will be a sealing washer and flanged nut with the syphon. DO NOT APPLY ANY SILICONE TO ANY SEALS!Slide the rubber washer over the threads on the syphon.Insert the syphon into the cistern, then attach the bolt holding plate at the other side. This is a two part syphon, so it has been split into two. The other half will be screwed back on later.Using a measure check to make sure that the bolt holding plate is straight (this will make fitting it to the toilet pan easier later) Screw the flanged nut up to the bolt holding plate, then draw around the plate using a permanent marker, this is so that you will notice if the bolt holding plate moves during the tightening of the flanged nut.Tighten the nut using water pump pliers. The nut needs to be tight but don't apply too much force or you will crack the nut.Push the new donut washer over the bottom of the syphon and slide the two bolts into the slots. Carefully place the cistern back onto the toilet pan.Make sure any washers are placed on the bolts before the wing nuts, then tighten the wing nuts. Fix the cistern back to the wall ensuring and holes are sealed and cannot leak. Reconnect the water supply to the cistern and fill the cistern slowly whilst checking for leaks. Reconnect the overflow pipe (if there was one) Flush the toilet and check for leaks, then check for leaks some more. Here we talk about toilet syphon problems and there cures. Some people like to call an emergency plumber well other’s try to fix the toilet syphon themselves. Just below are the most common questions that people asked when looking for information about there toilet syphon problems. Who invented the toilet syphon? My toilet syphon isn’t working, what can I do? How do I replace my toilet syphon? What is the best toilet syphon I can buy to fix my toilet flush? What sizes do toilet syphons come in? How much should it cost to fix a toilet syphon? When replacing a toilet syphon, how long does this take? I can’t take my toilet syphon out, any hints? Can I buy a toilet syphon that I can repair without taking the toilet cistern off? How much does it cost to buy a toilet syphon? Where can I buy a toilet syphon? What is the recommended flush for a toilet syphon? There is no overflow on my toilet cistern, is this allowed? How does the toilet syphon work in the toilet? What is the difference between a flushing mechanism and a toilet syphon? Who invented the toilet syphon There were a few inventors that brought along the toilet syphon starting from J. F. Brondel who invented the valve type flush toilet in 1738. The first flushing toilets were invented in 1858. As the toilet flush we know of today, was invented by Thomas Crapper in the 1880’s. In 1980’s the 2 push button toilet valve was invented by Bruce Thompson and has only recently within the last 10 to 20 years really taken off, fading out the toilet syphon, however the toilet syphon is still widely used today. My toilet syphon isn’t working, what can I do If your toilet syphon isn’t working and you don’t want to call an emergency plumber, then it is also best to make sure that the toilet hook is attached firstly. It is most likely that the toilet flap that fills the water up and over through the toilet syphoning route has failed, which is possibly due the flap being torn away give you toilet syphon problems. You can either replace the flap or the toilet syphon completely. Our advice would be is to replace the complete toilet syphon. Unless you have a toilet syphon that comes apart well work from the above of the toilet cistern, then you will need to take out the toilet cistern. How do I replace my toilet syphon To take the toilet syphon off, you will need to firstly unscrew the toilet cistern and undo the bolts underneath, not forgetting to turn the mains water stopcock off and disconnecting water supply and overflow. If you have a donut washer and back plate, it is also advisable to replace them and also to make sure there is no immediate leaks or to near the future. What is the best toilet syphon I can buy to fix my toilet flush The best toilet syphon you can buy is a toilet syphon that adjusts like in the picture above but for any future maintenance, it is advised that the best toilet syphon to buy would be a toilet syphon that comes apart within the toilet but, also adjusts as well. What sizes do toilet syphons come in Toilet syphons generally come in 7 to 11 inch however in the picture above you can also buy an adjustable toilet syphon that caters for 7 to 9 inch solving any future toilet syphon problems and making them easier. How much should it cost to fix a toilet syphon Taking out and replacing a toilet syphon, including the cost of materials, will cost you on average about £100.00, however depending on your circumstance on time, how quickly you need the syphon to be replace and how awkward it is to replace the toilet syphon then expect to pay anything between £50 to £250. When replacing a toilet syphon, how long does this take To fix your toilet syphon problems, as long as the screw or bolts are not rusted and the water isn’t blue, then it should take no longer than 1-hour. If the water is blue then there may need some extra care, which may take an extra half an hour. If the screw and bolts are rusted then depending on how easy it is to grind away in most cases it will add on an extra hour by using a Dremol tool. I can’t take my toilet syphon out, any hints Another of your toilet syphon problems is about taking your syphon out but unable to. If your unable to take your toilet syphon out, then the only other option, rather than causing further damage, is to call an emergency plumber to come out and replace the toilet syphon as this may require some special tools such as, the Dremol. The only other hint here is to buy a Dremol and take off the nuts and bolts, but you must be aware that, you will need to follow all safety procedure in order that you will need to protect your eyes. Can I buy a toilet syphon that I can repair without taking the toilet cistern off Not all toilet syphon problems can be resolved by simply taking the toilet syphon out from the cistern. You can buy a toilet syphon that you can take apart from within the toilet from any good plumbers merchant, however, this does not mean your able to take the old syphon out as easily. How much does it cost to buy a toilet syphon The cost of a toilet syphon will cost you anything between £5 to £20. Where can I buy a toilet syphon You can buy a toilet syphon by visiting the BES website. To find the BES website you will need to visit the search engine and type in BES. What is the recommended flush for a toilet syphon Today the recommended flush is between 6 to 7-litres, where many years ago the recommended flush for a toilet cistern was 9-litres. An easy way to sort out your toilet syphon problems by confirming from 9/11 inch of water is to place objects into the cistern taking up more water space. There is no overflow on my toilet cistern, is this allowed Due to the syphons getting smaller, it was found that if there was any overflowing water, then the water would go through the toilet syphon and therefor due to the water not overflowing when there was a float operating valve problem and passing water, the water overflow was no longer required. How does the toilet syphon work in the toilet The way the toilet syphon works within the toilet is, when the handle to the toilet is pushed down, the toilet hook then fills up the flap from the toilet syphon. As there is already water in the syphon, the water is then pulled up and over the syphon internals causing the syphon to suck the water through the flap. As the water is passing through the syphon, there is a continues suction until there is no water left to vacuum. What is the difference between a flushing mechanism and a toilet syphon A flushing mechanism is a valve that opens and lets the water through but does not syphon any water through, where the toilet as explained in the paragraph above, sucks the water causing the water to syphon. Push buttons have more parts and therefor have more problems than any other of the toilet syphon problems as above. A toilet syphon is a one-way valve, or ‘flap valve’ that’s used to help make flushing easier by boosting the flush, using the natural force of syphoning. This is because the toilet syphon works like a one-way diaphragm pushing water up and down a tube. This creates the syphonic action – the water is then compelled to flow into the toilet bowl, which then means more water is sucked in from the cistern. The syphonic action is then broken when the cistern is emptied. The issue with toilet syphons for homeowners and landlords is the one-way diaphragm, or flap valve. After years of flushing in a busy household, the syphon gets old and cracks or breaks. The flush starts working intermittently, or not at all, and this is your sign that the toilet syphon needs changing. How do toilet syphons work? A toilet syphon is a plastic unit that is either in one or two pieces. It contains a pipe, a pull handle and a plastic diaphragm (or flap valve) on the underside. The pull handle connects to your flush handle, so basically when you flush, the pull handle acts as a piston and lifts the plastic flap valve, activating the syphon and sending water down into the toilet bowl. Replacing your own toilet syphon is quite simple if you’re comfortable getting your hands a little dirty with a bit of DIY. What you’ll need: Correct replacement toilet syphon part/parts (you could simply replace the diaphragm of the old syphon if that’s all that’s damaged) Remove the old syphon 1. Check if your existing syphon is in one part or two – if it’s in two parts, you might be able to split it in order to fix it. 2. Buy the right replacement syphon for your toilet – again, you can buy them in one or two parts depending on what type your existing one is. 3. Isolate the water going to the toilet – you can turn it off locally in the toilet shut-off valve, or turn your water off at the mains. 4. If your toilet still flushes a bit, flush the toilet to empty the water out of the cistern. 5. Remove the lid from the cistern and put it somewhere safe – it’s easily broken if trodden on. 6. If the syphon hasn’t been working at all you’ll need to ladle the water out of the cistern using some Tupperware or another suitable container. To get the last remaining water out, use an old towel and wring it out down the loo bowl. 7. Remove the water supply line that connects to the toilet cistern and the shut-off / isolation valve from the toilet with an adjustable spanner. If you don’t have a shut-off valve then you will need to shut off your household’s water mains for a little while. 8. Now unscrew the nut that connects to the water inlet valve with your adjustable spanner, and also the overflow pipe (if you have one). 9. Unscrew the plastic nut underneath the toilet cistern that holds the syphon to the tank. 10. Unhook the handle hook from the toilet handle and release the old syphon unit. Quickly turn it upside down. Fit the new syphon (follow the pack instructions foremost) 11. At this stage you can inspect the plastic diaphragm at the bottom of the syphon. You’ll need to unclip it to have a good look. It looks like a mini plastic sheet that fits over the plastic grid inside the unit. 12. You could now insert the new plastic diaphragm into the bottom of the unit and clip it in place. 13. Now re-install the syphon unit or install the new unit into the toilet cistern. Screw the syphon unit plastic nut back on. 14. Tighten the water supply connector with your spanner. When you start to feel resistance, give it another quarter turn to seal the deal and make it watertight. Well done! That’ll have you back flushing like nothing ever happened. If you’d like some proper peace of mind when it comes to your plumbing, we offer Plumbing and drainage cover. You can also take a look at our emergency repairs service – and relax knowing we’ll be on our way in a jiffy. FAQs How do you fix a flush valve? It’s usually a worn-out toilet syphon that’s caused this. All you need to do is replace the plastic diaphragm, or the whole unit. Just follow our easy steps and you’ll be feeling flush again in no time. How do you replace a toilet syphon? You can buy a replacement diaphragm, or the whole unit, and cheaply and quickly replace it yourself, remembering to isolate the water supply, in a few easy steps. How long does it take to change a toilet Syphon? It will take no longer than an hour to replace your toilet syphon, as long as you have the correct replacement parts ready to go. Siphons (also known as syphons) are tubes that allow liquid to move upward to above the surface of an origin reservoir against gravity and atmospheric pressure, then back down to a lower level without the help of a pump. Siphons are essential in a toilet, enabling the system to work without a power source. The siphon offers critical benefits like water efficiency and hygiene, which are necessary for a properly functioning toilet. This article explores the basics of how toilet siphons work, how to troubleshoot common problems, and replacement processes, so continue reading to learn more. The siphon tube in a toilet pulls waste and water from the bowl and transmits it into the sewage system. Common issues associated with toilet siphons, which are usually easily fixable, include clogs, leaks, and weak flushes. Repairing the part of the toilet responsible for the siphoning action is doable in some cases, but not all. A toilet siphon consists of a few crucial parts that allow it to work properly, including the flush valve, trap, bowl, and drain pipe. The pieces work together to move liquid levels between the toilet bowl and tank, creating low pressure to flush the toilet. These parts are essential for the siphon process, so issues with any particular piece can lead to problems with the siphon function. In a toilet, the siphon setup sits below the toilet bowl. Many traditional-styled toilets feature a curved tube-like shape underneath the toilet bowl — an integral part of the siphon setup. If you look at the tube-shaped portions at the base of your toilet, you’ll notice that the top of the tube starts lower under the toilet bowl (at the maximum height), arches upward to create a high point, then drops almost straight down from the high point. The short portion before the high point is called the short leg, and the long drop after the high point is called the long leg. Image Credit: Canva So, with the anatomy of the toilet siphon in mind, we can understand how it works. In a properly functioning toilet, the water level remains at a certain point. It remains below the high point in the tubing but high enough that a relatively small amount of water could push it over that point. When you flush the toilet, water drains down from the tank behind the toilet, moving into the toilet bowl. Additionally, it comes through a hollow portion between the bowl and the outside of the toilet, known as the siphon jack. Water flowing from both areas flows into the short leg, but the liquid from the siphon jack has a direct shot into the short leg. The rising water level fills the short leg with a column of water, quickly filling the tubing past the high point and down into the long leg. This results in the siphoning effect (which works due to Bernoulli’s principle), as the weight of the water from the force of gravity continues to “push” water down the long leg until there’s no water left. It essentially creates a vacuum (negative pressure) that pulls water and waste from the toilet bowl into the plumbing system. Image Credit: Adobe Stock Once the flush is complete, the flush valve resituates itself at the bottom of the tank. This blocks the drain hole and stops the flow of water, allowing the tank to refill. When the tank is full, the toilet is ready for another flush, repeating the cycle. Given the nature of the water siphon, you don’t actually need to flush the toilet to kick-start the siphon. For example, if your home’s water main is off temporarily, you could still “flush” the toilet. By pouring a bucket of water into the toilet, you would raise the water level past the curve in the drainage tubing, creating a vacuum and causing the toilet to flush. Once you stop pouring, the water will flow out the end of the siphon (out of the toilet) and stop “flushing.” Siphons don’t only flush toilets. You can also use a hose and the siphon effect to empty clogged toilet bowls, sinks, fish tanks, buckets, etc. Just put one end of the hose in the tank and the other end below the tank and add a small amount of suction to overcome the hydrostatic pressure. Then, remove the suction once the water gets past the highest point of the hose. The water will continue to flow due to the siphon effect. When the siphon process in your toilet stops working, the entire toilet is essentially useless. If waste and water cannot drain into the plumbing system, you can’t use or flush the toilet, so it’s essential to identify and repair the toilet problem sooner rather than later. Three common problems lead to toilet siphon issues: clogs, leaks, and weak flushes (i.e., low flow rate). When troubleshooting your non-functioning toilet siphon, it’s important to consider the possibility of a clog. Clogs and blockages are all too common with toilets, given their function, so most folks have a trusty plunger nearby to tackle these issues. A clog will prevent the siphon from working by blocking water movement into the short leg. If water cannot move into the short leg, over the high point, and down the long leg, the toilet can’t create a siphoning effect, so it can’t flush. Flushing a clogged toilet often results in water backing up into the toilet bowl — and if you’re unlucky, the bowl may overflow. Luckily, clogs are usually relatively easy to tackle. Sometimes it’s as simple as waiting for the toilet paper to break down, as it’s designed to do in water. When the toilet paper breaks down, it might clear the clog by allowing water to move through the toilet and create a siphon. However, some blockages require more assistance, so you should enlist the help of a plunger. To use the plunger, fit the cup over the hole at the bottom of the toilet, ensuring you cover the entire drainage hole. Push down to create suction, then plunge vigorously four to five times. The suction should create air pressure in the toilet’s drainage system, dislodging the clog and allowing water to flow. If your attempts are successful, you should know as soon as you remove the plunger from the toilet, as water will rapidly swirl down the drain. If the toilet doesn’t drain immediately, you might need to wait a few minutes and try again. However, some clogs are more serious (such as foreign objects like toys) and will require the assistance of a plumber, so if you can’t get the toilet to work, you might need to call in a plumber. If your toilet has a leak, there’s a good chance the siphon won’t flush properly. There are a few types of leaks it might have, but the most common types are damage to the tubing making up the siphon, and leaks from the tank. If the problem stems from a small hole or leak in the toilet itself, the toilet won’t be able to form a vacuum. When this occurs, it’ll effectively prevent the toilet from flushing properly. The repair varies based on the location of the problem and its severity. If you’re unsure whether the problem is fixable, consult your local plumber. Alternatively, it could be a leak stemming from the tank. For example, maybe the flapper isn’t covering the drain hole in the tank properly, resulting in a constantly running toilet and a tank that cannot fill. To remedy this problem, you’ll need to replace the flapper (if it’s damaged) or reseat the flapper (by adjusting it or lengthening the chain). Image Credit: Adobe Stock Your toilet needs enough water from the tank to push the water level over the high point of the siphon and trigger a vacuum effect. If there isn’t enough water flowing down from the tank, the toilet might not be able to flush at all, as the water level won’t surpass the high point. In many cases, this problem is the result of a weak flush. The tank might not have enough water in it to facilitate a strong flush to whisk waste away. Generally, weak flushes stem from one of two issues: water level problems and flapper issues. If the water level is set too low, you’ll need to adjust it to ensure the toilet receives enough water to create a siphon. The process of adjusting the water level varies based on the model you have, so refer to manufacturer instructions for assistance. Alternatively, it could be a problem with the flapper. The flapper is the part that covers the drain hole in the tank. If the flapper is damaged or not seated right over the hole, it’ll allow the toilet to run constantly. When you attempt to flush the toilet, there won’t be enough water in the tank to facilitate a strong flush. To correct this issue, you’ll need to examine the flapper for damage and replace it if necessary. Or, if everything looks okay, lengthen the chain connected to the flapper to ensure it seats right. While the mechanisms in a toilet are surprisingly straightforward, many problems can develop, each stemming from a different toilet component. The video below discusses several simple DIY toilet maintenance tips to keep your toilet in tip-top shape and correct common problems. If the tubed portion of your toilet, where the siphoning action takes place, becomes damaged, you may or may not be able to repair it. When you’re dealing with significant damage, like larger holes and cracks, restoring the toilet to ensure it can create a vacuum is complex. However, hairline fractures are easily repairable with plumbing or porcelain epoxy. You’ll need to clean the area around the crack thoroughly and dry it before applying the epoxy. The instructions vary based on the type of epoxy you use, so be sure to follow the manufacturer’s instructions for mixing and application. It’s important to note that the toilet siphon this article discusses differs from the toilet lever flush siphons, which is located in the toilet’s tank (upper reservoir). When your toilet no longer flushes properly, it is possible that the siphon or its diaphragm has gone through wear and tear. In most cases, you would have to replace the entire toilet siphon to fix the problem. How you do this depends on the type of toilet that you have – close coupled or separate cistern and pan. Replacing The Siphon In a Close-Coupled Toilet This process involves more work since you need to detach the cistern from the wall completely, so you can reach the plastic nut that holds the siphon in place. Turn off the water supply Using a footprint wrench, disconnect the overflow pipe and water intake pipe. Using your hand or mole grips, unscrew the butterfly nuts that hold the metal bracket and a large rubber seal that keeps the cistern and pan together. Unscrew the screws that hold the cistern to the wall, then lift off the cistern so you can reach the plastic nut holding the siphon. Once you removed and replaced the siphon, follow the same steps backward to put together the entire cistern and pan. How To Replace a Siphon In a Separate Cistern And Pan This process is the more straightforward of the two, so you should get the job done without breaking a lot of sweat. Using a screwdriver, loosen the large plastic nut found under the cistern, which holds the water pipe in place. Once lose, you should see another nut that holds the siphon. Loosen this too, and then proceed to disconnect the siphon from the hook that keeps it attached to the flush lever. Replace the siphon, and follow the same steps backwards to get everything back in order. Before doing any repairs on both types of toilet, it is important to turn off the water supply and empty the cistern. Flush the toilet until all stored water has gone down the drain. If needed, use a sponge to remove the remaining water. This is done to minimize mess while fixing your toilet. Signs That Your Toilet Might Need Fixing, Including a Siphon Replacement The toilet won’t flush. This can mean two things – the flush lever is not properly connected to the flushing mechanism in the cistern, or the flush diaphragm is split. Since the diaphragm is found inside the siphon, you can choose to replace the diaphragm alone or the entire siphon. The cistern is constantly filling. It is possible that the float valve is faulty or that it has a poorly adjusted arm. This problem not only results in excess water, but also noisy operation of the toilet. You need to repeatedly press the button or pull the lever to get the toilet to flush. In this case, the flap valve probably needs replacing. How Much Does It Cost To Replace The Siphon? If you have confidence in your handyman skills, buying parts is a lot cheaper than with labor cost combined. But even if you hire a plumber, replacing a siphon shouldn’t cost much. So, if a plumber charges you with exorbitant rates, look for other service providers.