



A GUIDE TO

Simple  
Toilet  
Repair

ALL YOU NEED!

Plumbing The Depths: It's a fact: Plumbing problems always seem to stop us in our tracks. It's probably because we can't see a lot of what plumbing really is. Water and waste pipes are generally buried behind walls and under floors, and so what we can't see, we often don't understand. Many of us (men included) are a little scared of what goes on inside those pipes. But, you don't have to be scared because plumbing isn't as intimidating as it seems. Once I understood what plumbing was all about, I found that it isn't a big deal. It's quite logical, in fact. Once you get a grip on the basics, you'll be able to make many repairs in your house that would otherwise cost you an arm and a leg if fixed by a plumber. So here we go!

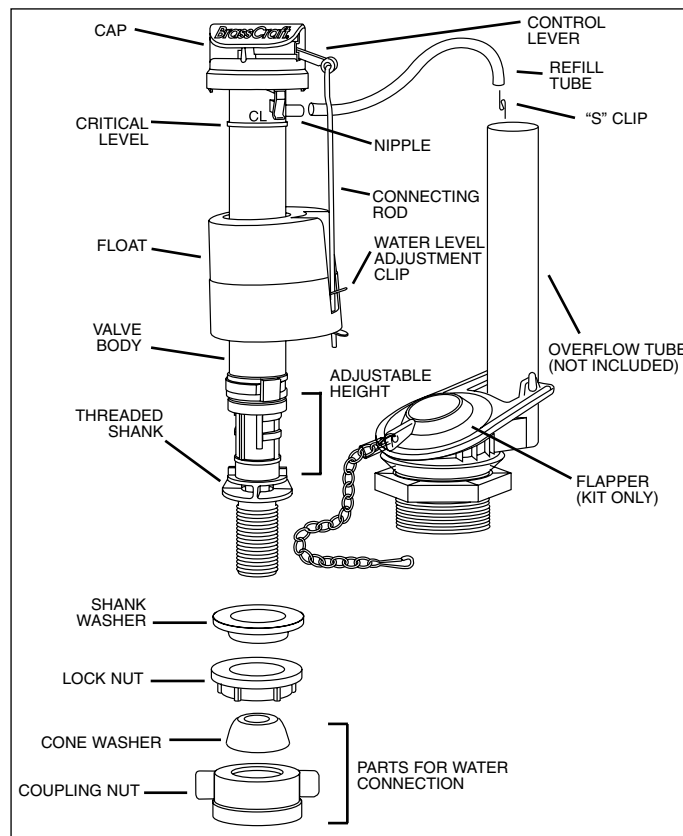
Feeling Flush: Have you ever flushed the toilet, expecting the water to go down the drain and instead it just sits there or worse travels up and over the rim and puddles on the floor? This nightmare scenario is played out all too often in homes. Understanding what happens when you flush may help demystify fixing the toilet. It's pretty simple, actually. First, as you push down the handle, the chain or lift arm inside the tank lifts the flapper up. The water held in the tank flows through the flush valve opening into the toilet's bowl. The water from the tank forces the wastewater in the bowl through the trap (the U-shaped area under the bowl) and into the main drain. Once the tank is empty, the flapper seals the tank and the fill valve refills it. When the tank is full, the float shuts off the fill valve.

Run Away: Repairing a running toilet is a home repair problem that can be solved quickly. If your toilet is running, the toilet is not sealing properly. If the toilet is otherwise working, stopping the water from running is a matter of finding and fixing the cause. One of these solutions should allow your tank to refill and stay full, which means no more wasted water.

Tools Needed to Get the Job Done

Sponge • Screwdriver • Wrench • Gloves

How To Get It Done: This toilet repair kit contains everything you need to replace your tank lever, fill valve, flush valve and flapper, and thus fix the most common toilet fill and flush problems. It also includes a tank-to-bowl gasket along with the bolts and washers you will need to connect your toilet tank to the bowl.

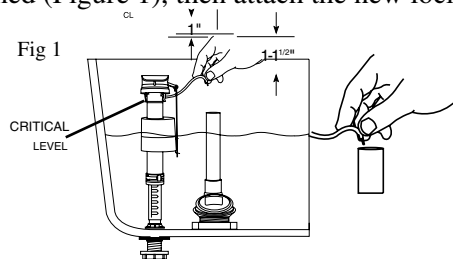


Disconnect tank and water supply lines

- Step 1 – Locate the water supply valve under your toilet and turn it off. This will shut off the supply of water to the toilet.
- Step 2 – Drain the water from the tank. Hold the flush arm down until the water drains from the tank. Remove excess water in the bottom of the tank with a sponge.
- Step 3 – Disconnect water supply line from fill valve.
- Step 4 – Remove the tank lever. Disconnect the lever from the flapper chain, unthread nut from the old handle and remove handle from the tank. Keep old handle nearby as you will need it later as a reference when you install the new handle.
- Step 5 – Unthread nuts from the tank-to-bowl connecting bolts. These nuts are located underneath the tank, on either side of where the tank connects to the bowl.
- Step 6 – Now that the tank is disconnected from the water supply line and the bowl, lift the tank from the bowl and carefully set it down on its side.

Install the new flush valve

- Step 7 – Remove the old flush valve. Disconnect the refill tube, remove old tank-to-bowl washer from the bottom of the fill valve, and unthread the large locknut that holds the flush valve to the tank. Remove flush valve and flapper from tank.
- Step 8 – Install new flush valve. Make sure that the shank washer is correctly positioned on the flush valve threads (narrow end down), and then insert threaded discharge tube of the flush valve through the bottom of the tank. Adjust the flush valve so that the overflow tube is properly positioned (Figure 1), then attach the new locknut and tighten securely. **DO NOT OVERTIGHTEN.**



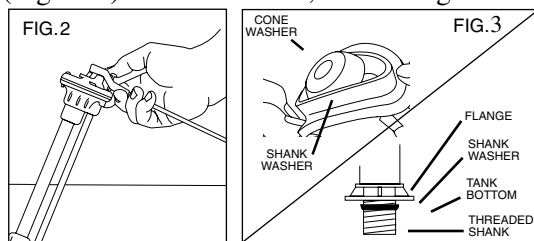
- Step 9 – Install flapper onto flush valve. Slip the ears at each side of the flapper over the protruding pins at the base of the overflow tube.
- Step 10 – Slide new rubber tank-to-bowl gasket (small side down) onto the threaded discharge tube of the flush valve. Remove the old tank-to-bowl bolts and washers. Install new tank-to-bowl washers. Slide a metal washer on each bolt, then a rubber washer (rubber washer must be next to the porcelain). Put the bolt through the tank hole, so the head of the bolt is inside the tank and the threads protrude out the bottom. Thread hex nut snug to tank bottom. **DO NOT OVERTIGHTEN.** You may need to use a screwdriver to hold the bolt steady as you thread on the hex nut.

Repeat for each of the tank-to-bowl nuts.

Step 11 – Put the tank back onto the bowl. Make sure each bolt goes through a bowl bolt hole, and the flush valve discharge tube with the gasket fits into the discharge hole on the bowl. Then hand tighten the poly wing nuts gently until secure.

Install the new fill valve

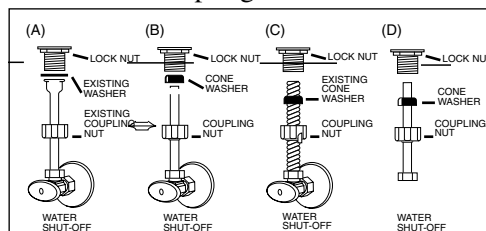
Step 12 – Now that you have the flush valve replaced and the tank back on the bowl, it is time to replace the fill valve. Unthread the existing lock nut then remove old fill valve. (Figure 2) The new fill valve comes with a cone washer and shank washer that are attached together for shipping. You will need to remove the cone washer from the center of the shank washer. Set the cone washer aside and place the new shank washer (flat side up) onto the threaded shank of the new fill valve, flat against the flange. (Figure 3) Next, position the fill valve in the tank (Figure 1) so that the float, connecting rod and control lever of fill valve do not touch the walls of the toilet tank.



Step 13 – Secure the fill valve into the tank. Hold the body of the fill valve (not the float) and thread the new lock nut onto the threaded shank of the fill valve. Push downward on the cap of the fill valve while tightening the lock nut. Hand tighten only. **DO NOT OVERTIGHTEN.**

Step 14 – Identify the type of water supply nosepiece on your current water hookup from illustrations noted below. If the new cone washer and couple nut are necessary, both have been supplied.

- **FLAT** (illustration A) – use your existing coupling nut and washers. It may be necessary to install new washers (not included) to ensure a water-tight seal.
- **CONE** – shape with flange on the tube (illustration B) – use cone washer and coupling nut supplied in the package.
- **CONE** – shape with corrugated tubing (illustration C) – use existing cone washer and or friction ring with new coupling nut supplied. Supply tube **MUST** extend    inch inside the threaded shank of the fill valve.
- **CAUTION** – Replace cone washer if it shows signs of brittleness or loss of pliability. Cone washer supplied **CANNOT** be used in this installation – it will not provide the proper seal (illustration C).
- **PLAIN** (illustration D) – use the existing friction ring with cone washer and coupling nut included in this package. Supply tube **MUST** extend    inch inside the threaded shank of the fill valve.



Step 15 – Install water supply line to the fill valve. Hand tighten the coupling nut. **DO NOT OVERTIGHTEN. DO NOT** use a wrench or similar tool to tighten the coupling nut. **CAUTION** – over-tightening the plastic lock nut or coupling nut may crack or damage the nut or the fill valve, resulting in a water leak and potential flooding.

Step 16 – Attach one end of the refill tube to the nipple on the fill valve. Slide the “S” shaped clip onto the other end of the refill tube and clip onto the inside edge of the overflow tube on the flush valve so that the refill tube will discharge into the overflow tube. **NOTE:** Be certain that the refill tube does not interfere with the operation of the yellow float, connecting rod or the control lever (see figure 1).

Install the new flush lever

Step 17 – The new flush lever is a ‘trim to fit’ universal lever. So the first thing you will need to do is determine if you need to trim the new tank lever to fit your toilet. Measure the length of your old flush lever. If necessary, trim the new lever at the cut line that matches the length of the old lever. A hacksaw is recommended for the best trim results.

Step 18 – Unthread the nut from the new handle (turn counterclockwise) and remove the nut. Slide the new lever arm through the tank hole until the handle shank fits snugly. With the flat side facing the handle, slide the locknut back over the lever arm. Turning the nut clockwise, thread the locknut on threads, but **DO NOT TIGHTEN FULLY** yet.

Step 19 – To connect the flapper chain to the flush lever arm, choose the hole that provides the best fit and reattach the flapper chain to the lever (remove excess slack in the chain).

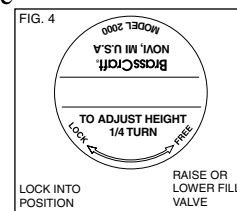
## Final Adjustments

Step 20 – Turn on the water supply and allow the tank to fill. Your new fill valve will shut off when the cycle is complete. The water level should be 1” to 1 ½” below the top of the overflow tube. For proper anti-siphon operation, the Critical Level mark on the fill valve (noted by a “CL” on the fill valve body), **MUST** be 1” above the overflow tube. If the CL level is not in the correct position with the overflow tube, you will need to adjust the height of the fill valve.

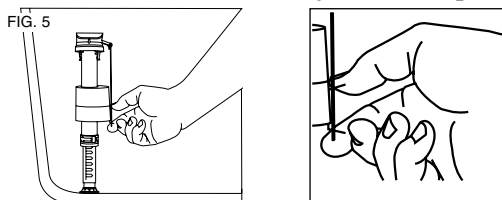
Step 21- If you need to adjust the height on the fill valve, and then rotate the valve body –turn in the Free (counterclockwise) direction as noted on the fill valve cap. Push down to break seals loose as they may tend to stick.

● To **RAISE** the water level, pull up to the desired height then rotate the valve body –turn clockwise in the **LOCK** direction to lock the new position into place.

● To **LOWER** the water level, press down on the valve body to the desired height then rotate the valve body –turn clockwise in the **LOCK** direction to lock the new position into place. (see Figure 4)



● If the height of the fill valve is acceptable, then to **FINE TUNE** the water level, squeeze the tabs of the float adjustment clip on the lift arm and slide the float up or down as necessary. Sliding the float **UP** will raise the water level and sliding the float **DOWN** will lower the water level. Be careful not to slide the adjustment clip off the end of the lift arm (see Figure 5).



Step 22 – Now it is time to check the lift action of the flush lever. Replace the tank lid and flush the toilet. Adjust the length of the chain as necessary. When done, lift the tank lid and tighten the flush lever lock nut securely onto the handle shank. **DO NOT OVERTIGHTEN.**

Step 23 – The final step is to check the fill valve. Flush the toilet and allow the tank to refill to determine the results of the adjustments, and make further adjustments as needed.

Step 24 – Check the coupling nut and lock nut on the flush valve for leaks. If a leak appears, further tighten the nuts. If the leak continues, turn off the water supply and flush the toilet to empty the tank. Remove the nut, realign the washer and retighten connections.

Check the fill valve for trouble-free operation:

Does the fill valve shut off? If not, check...

● The float, connecting rod and control lever – do they operate without touching the toilet tank wall or interfere with the refill tube?

If so, adjust accordingly.

● The flapper – is it seated properly? If not, reseal flapper into position on the flush valve.

● The water level – does it rise higher than 1 ½” below the top of the overflow tube? If so, see step #21 to adjust the water level.

Does the tank fill? If not, check...

● The water supply valve – is it open? If not, turn handle of the water supply counterclockwise to open the valve and allow the flow of water to the toilet.

● The refill tube – is it properly fastened to the top inside edge of the overflow tube? Are there other components that interfere with the refill tube’s operation? Adjust accordingly.

● The flapper – is it seated properly? If not, reseal flapper into position on the flush valve.

Does the fill valve shut off with a loud noise (water hammer)? If yes, check...

● The water supply valve – partially closing the water supply valve will reduce the flow rate and eliminate the hammer sound.

### CAUTION

Toilet tank drop-in cleaners can damage or severely reduce the product life. **DO NOT** use chlorine based in-tank toilet bowl cleaners.