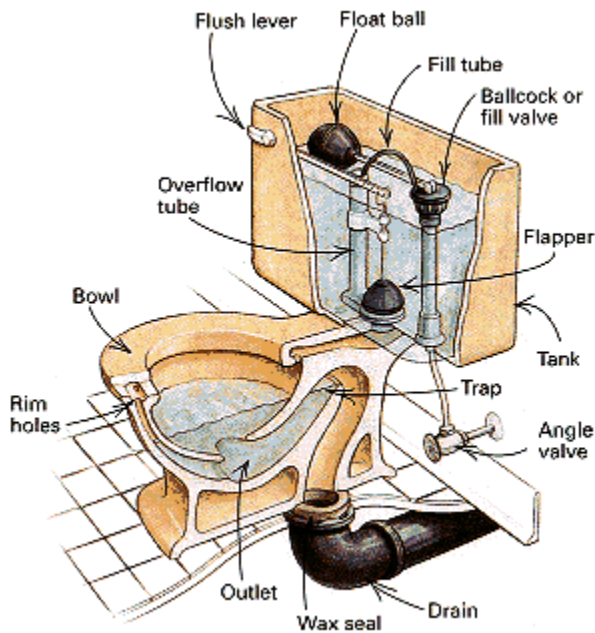


Toilet Repair-Replace a Tank Type Toilet



1. Close the water valve (water stop) by turning it clockwise, as you would a faucet.
2. Turn off the water to the toilet by turning the knob on the shut off valve to the right until it stops. The valve should be located a few inches above the floor on the left when facing the toilet.
3. Remove the tank lid and store it out of the way so that it does not get broken. Be very careful because they are NOT a standard item that can be easily replaced, especially if you have an older toilet.
4. Flush the toilet holding the handle down to empty as much water as possible from the tank. If the handle is broken, reach into the tank and pull up on the chain that is connected to the flapper at the center of the tank. Empty the remaining water by absorbing it up with a



Figure 1: Water Stop (water valve or angle)

sponge or rag and wringing it out into the bowl, the bath tub, or a bucket.

5. Disconnect the water supply line from the fill valve and the shut off valve by turning the compression nuts counterclockwise. You can use a small set of channel lock pliers to do this. Discard the supply line.
6. Remove the fill valve by removing the jam nut that is at the bottom of the tank and then pulling it straight up out of the tank. There may be a small water line clipped to a riser tube in the center of the tank, just unclip it and it will come out with the fill valve. Dispose.
7. Remove the tank from the bowl by removing the two screws that run through the bottom of the tank and through the back of the bowl. Please note that some toilets have three bolts holding the tank to the bowl. You will need a screwdriver and adjustable wrench or pliers to remove these. When the nuts are completely removed, carefully pick straight up on the tank to separate it from the bowl. Once again be careful not to damage the tank because they are not universal and you will most likely have to replace the entire toilet if the tank gets broken.
8. Remove the gasket from the bottom of the flapper assembly (it kind of resembles the Apollo Lunar Module) and remove the jam nut holding the flapper assembly to the tank. Lift the flapper assembly out of the tank and dispose.
9. If the handle is broken, remove the locknut from the inside of the tank and then remove the handle assembly. Dispose. At this point you should have a completely stripped out tank. Inspect it for cracks. If it is cracked replace the entire toilet. Even if it isn't leaking now it will eventually break and the fill valve will run wide open, which will flood your home. This sort of thing tends to happen when you are away for extended periods of time.
10. Remove the bowl from the floor by removing the two nuts from the flange bolts. They may be hidden under caps, if so just pry the caps loose with a screwdriver. It is not uncommon for these to be corroded and impossible to remove with a wrench. If this is the case, you may have to cut the flange bolts with a hacksaw or (if you have one) a Dremel or similar tool with a cut off wheel. Just hold the bolt still with pliers and cut it



Figure 2: Removing the jam nut



Figure 3 : Bottom of a 2 bolt toilet tank



Figure 4: :Lifting the toilet.



off below the nut. Resist the temptation to forcefully pull the toilet from the flange if you can't loosen both bolts; you will probably end up breaking the flange, use your Dremel or hack saw!

11. Pick straight up on the bowl and place it in some kind of drip pan or in the bath tub (be careful not to chip or scratch the bath tub if you place it in there. Tip the bowl forward and backward several times to empty the water from the bowl as well as water in the trap.

12. Scrape the wax seal from the bottom of the bowl and off of the flange at the floor with a putty knife. If there are any foreign objects stuck in the bowl, you should be able to remove them now. If the object is too large to pass through the opening at the bottom of the bowl, use a toilet snake or wire hanger to push it back through the trap and remove it topside.

13. Inspect the flange. If it is broken you can purchase a "spanner" or a repair ring to fix it. The spanner slips under the flange on the broken side and creates kind of a bridge

to hold the flange bolt. The ring is a complete circle that has holes in it for the flange bolts and also has provisions for screwing it to the floor. If you use a repair ring, you will want to seal it with a bead of silicone caulk so that it won't leak. Clean the flange thoroughly and apply the caulk, then place the ring over the flange and screw it down. A rocking toilet usually indicates a broken flange.

14. Now that everything is apart, inspected for damage, and once the flange is ready, you can put it all back together. If you have to run out to buy new components for your toilet, cover the opening in the floor with plastic to prevent sewer gases from entering

your home. Some people stuff a rag in the opening instead of covering it with plastic. This is fine, but be sure you remember to remove it before you replace the toilet!

15. Place new flange bolts into the slots in the flange. They should have a plastic washer that is designed to hold them in place. If they do not you can cut some from a coffee can lid. Use a quarter as a template and cut two out using a utility knife. Cut an X in the center, the other until it contacts the flange. These will help hold the bolts upright and also keep them from falling through if there is no floor beneath the flange at that point (it happens).

16. Place a new wax ring centered on the flange and (after you remove the plastic or rag covering the opening) set the bowl back down by carefully lining the flange bolts up with the holes in the foot of the bowl. Press down and use a slight twisting motion to spread the wax. Place the metal washer and locknut on the flange bolt and tighten, but be careful not to over tighten as you may crack the base of the toilet or break the flange. Just snug it enough to keep the toilet from rocking. You may have to shim the base of the toilet if the floor is uneven. Slide the shims in until snug and then cut them off even with the side of the bowl with a utility knife. If you are going to use caps, then put the base for the cap between the bowl and the metal washer before tightening the nut. The base for the cap should be marked "This Side Up".

17. Assembling the tank is the reverse of removal. Be careful not to over tighten as you may crack your tank or bowl. Over tightening may actually cause leaks, also. Hand tight plus about half a turn is usually enough. When tightening the tank to the bowl, switch side to side as you tighten to ensure even pressure. The gasket below the flapper will be spongy so you may want to apply slight downward pressure to the tank while tightening the screws. Once the tank is seated to the bowl (china to china contact) then hand tight pressure on the screws should be ample. Assemble the tank screws as follows- Metal washer followed by rubber washer, insert through tank and bowl, metal washer then lock nut. The rubber washer will seal against the floor of the tank. All the components will come with illustrated directions.

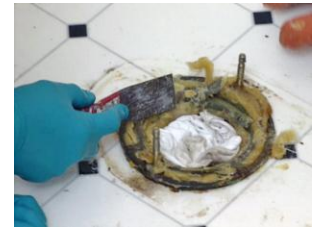


Figure 5: Removing old wax ring.



Figure 6: Checking the old flange.



Figure 7: Caulking the new flange.



Figure 8: New wax ring.

For instructions on individual part, replacement and repair, see our task specific instructions in the AquaOne Library.

Tips

- You may not have to completely disassemble your toilet to repair it. They make a repair kit for the flapper that doesn't require the removal of the tank to install it. Just follow the instructions that come with the kit.
- You do not need to remove the tank to change the fill valve or the handle.



- If your toilet runs it may be over filling. You can adjust the shut off by turning the ball type float out or in to adjust the fill level. On newer fill valves, pinch the clamp next to the float and slide the rod up or down until the toilet fills to the desired level. The water should stop about one inch short of the top of the riser tube.
- You can pull your toilet as a whole unit if you need to replace just the wax seal (if it leaks around the bottom) or if you are putting in a new floor. It will be a little heavy and awkward but with a little care you should be ok. Get a friend to help if necessary.
- Frequent wax ring replacement is usually a sign of "over-plunging" the toilet. Blockage below that toilet will cause undue pressure to the wax ring.

While you are at it, don't forget to install a Toilet Guardian to alert you to potential money wasting water leaks as well as eliminate the water loss if there is. The Toilet Guardian is also great if you just want to prevent bowl overflows caused by kids, seniors, disabled persons or simple blocked drains.

Conserve, Contain, Complete



Eco-Smart Water Valve Saves Money, Water and Eliminates Overflows