Top Ten Plumbers Information for New Starts

Shutting Off a Water Supply

The key to fixing most plumbing issues begins with shutting off the water to the affected area. In about 50% of cases the items that needs attention, say a sink or toilet, have their own shut-off valve, usually located beneath each fixture. If it is an uncontainable problem like a burst pipe or involves a fixture that has no shut-off valve of its own, shut off your home's main water valve, which is typically installed in either the basement or outside the house, usually near the utility meters or outside in the street)called a "Toby" valve). The main valve is a stop-cock attached to a pipe leading underground. If yours is a crawlspace or basement-installed system, which is common in colder climates, the water pipe may be hidden inside your basement wall, but the stop-cock will be evident. Turn it clockwise to shut off the water supply to your entire house (remember: righty, tighty—lefty, loosey). If your valve requires a special tool to turn it easily, make sure to store it near the valve. Show everyone in your family where the main valve is located and how to shut it off. If you have trouble shutting off your main valve, call your local water utility and ask them to send someone to turn off the water supply at the street source. While your water supply is suspended, ask your utility person to fix your shut-off valve or recommend a pro that can.

The Plumbing System

A home's plumbing is a fairly logical system. It is actually comprised of three systems that work together to keep water flowing, waste whisked away and gas build-up vented.

The Vent System: You may not know that the house has a large pipe that vents to the outside called the "Main Vent Stack" (if you live in a sprawling house you may have more than one). The Main Vent Stack and the smaller vents leading to it are designed to eliminate the gas that can build within each fixture and level the pressure within the drainage system so that trap seals don't get exposed to excessive internal pressure, which could diminish water flow and even cause pipes to rupture. Pressure is the main cause of leaks, so your vent system is more important than you probably know. Remember that your vent system not only expels gas build-up, it also brings air into your pipes to keep them running—if the vent is blocked, you'll have problems.

The Supply System brings hot and cold water through a main supply pipe that feeds off your local water utility or other source. If you have metered water, that's how your usage is determined, by water inletting through your main supply line. The main shut-off valve to your home controls the incoming water supply. Know where it is and how to shut it off.
The Drain Waste System takes all the wastewater away from your home. One of the larger pipe configurations in the maze called your plumbing system is the soil stack, which takes away the nastier crud you and your family dispose of via sinks, disposers and toilets. It runs down beneath your home and then exits to meet up with the sewer line or septic tank.

Now that we have the basic system terminology covered, let's tackle some common household dilemmas. Plumbing problems typically amount to one of three things: leaks, drips or clogs. Each is incredibly frustrating in its own way. Left untended, minor problems can become worse or create other problems (the very least of which are heavy utility bills), so it's best to fix them as soon as possible.

Plumbing Tool Guide

Of course some jobs will require other tools, but the list provided here is a great default list that you'll need for the more common procedures. All are fairly inexpensive and widely available and home improvement and hardware stores.

Tip: When buying tools, pay a bit more for quality. Crummy tools don't work as well, can break and add time (and anxiety) to the task.

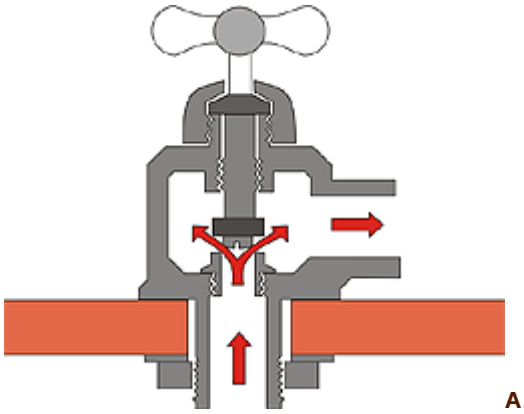
1. Washers and O-rings—these little rubber pieces wear out, especially when hot water flows through them, and their erosion is a typical reason for dripping compression taps, both at the handles and the nozzle
2. Plungers—have both a small plunger handy for stopped drains and a large one for clogged toilets
3. A Cable auger (aka plumber's snake) to clear lines where a plunger won't do or is ineffective. A hand auger will be easier to use for many clogs
4. Plumber's mate (A Type of Putty)
5. WD40
6. Silicon Lubricant
7. Channel pliers

8. Adjustable smooth-jawed spanner—won't grind the finish off surfaces (called a FootPrint)
9. Pipe wrench—having a few different sizes is perfect. If you want to keep only one around, choose a medium size like a 12 or 14 inch
10. Pipe cutter—much better than a saw at making a clean cut through copper pipe
11. Joint compound or Plumber's tape—seals the threading on steel pipes, helps prevent rust and makes it much easier to take everything apart when needed. A must-have when you need to replace pipes or stop a leak at a connection.
12. Various other bits and pieces (Listed in the New Starter Manual for new start Plumbers)

With your plumber's larder stocked, let's start with a project every home owner will encounter sooner of later.

Repairing Taps

Taps come in four types: compression, disc, cartridge and lever. The most common, the good old compression tap, is characterized by two handles that twist on and off. The disc, cartridge and ball varieties, also called washerless Taps, usually have one control handle that you flip up and down. Because what you'll need to repair your Tap may depend heavily on the brand and type, it's never a bad idea to remove it and take it with you when you shop for replacement parts.



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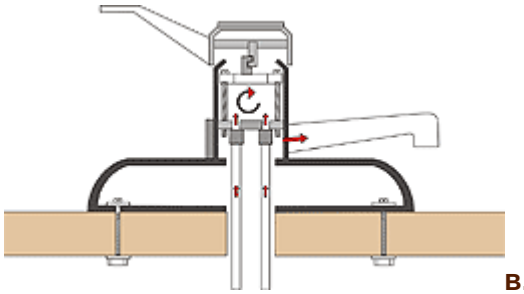

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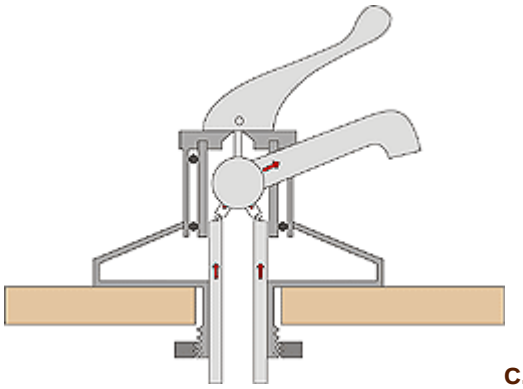

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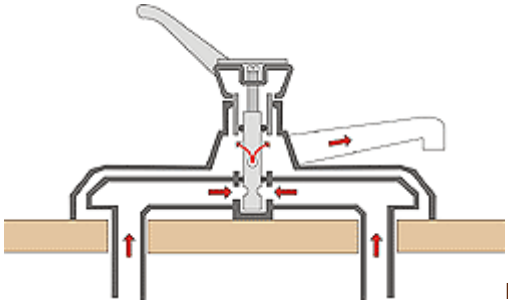

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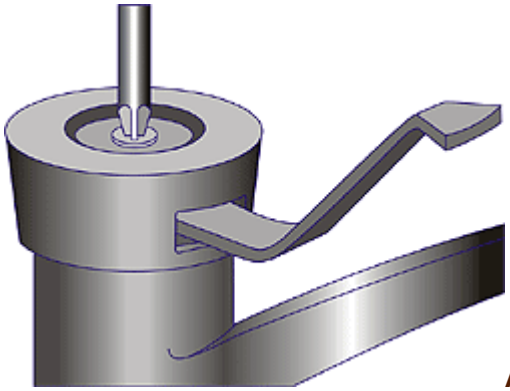
Fixing a Cartridge Tap

Leaking cartridge Taps are usually the result of a worn O-ring or a defective cartridge. Since you have to take apart and put together the Tap anyway, you may as well replace both at the same time. Cartridge taps vary by brand, and their instructions will help as you replace the pieces. Make sure you get the right replacement kit for your tap.

1. Turn off the water at the local shut-off valve. If necessary, you can shut off the main water supply valve. Open the tap to expel any sitting water.
2. Remove the decorative cap and unscrew the handle screw.
3. Manoeuvre the spout cap (the part with the handle) gently back and forth until you can pull it off the body of the tap.
4. Cut off and replace any worn O-rings.



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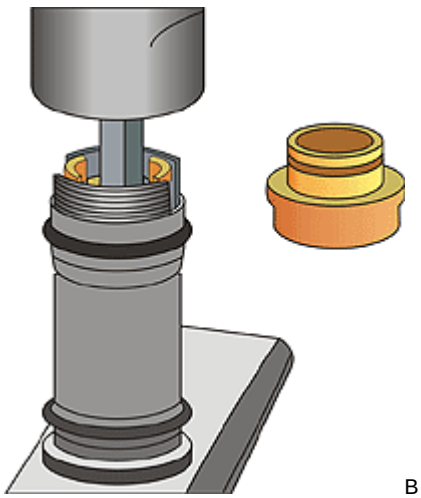
5. There will most likely be a nut holding the cartridge in place (otherwise there will be a clip). Remove the stem nut or clip and use pliers to lift the cartridge straight up and out.
6. Insert the new cartridge with the flat side (if your brand has one) forward.
7. Make sure the retainer clip or nut fits firmly into place to hold the cartridge in place.



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Top Ten Plumbers Information for New Starts

Fixing a Lever Tap

Ball Taps contain an interior ball (hence the name) and are typically inexpensive to repair. There are kits that usually have everything you need, so you may save time and money getting a kit rather than bluffing your way through the process. **Do the following:**

1. Shut off the sink's water at the shut-off valve.
2. Release the handle by unscrewing the tiny setscrew and remove the handle.
3. Try tightening the adjusting ring just inside the cap. Kits often come with special adjusting ring wrenches (but if yours doesn't, a bread knife inserted into the slot will do).

That may be enough to stop the leak. If not, proceed to the following steps:

4. Remove the adjusting ring and lift off the cap. Gently remove the taps outer sleeve to expose the parts inside. Lift out seals and springs, making sure you don't misplace the springs.
5. Scrape away any gunk and scale that may have accumulated in the holes.
6. Replace any worn O-rings.
7. Replace the seals with identical new ones. You can use the same springs unless they're ruined by deposits.
8. If the ball is worn, replace it with one just like it. Be careful to position it just as it was.
9. Replace the cam, spout sleeve and cap. Tighten the adjusting ring.
10. Replace the handle.

Fixing a Disc Tap

Disc Taps are perhaps the easiest and cheapest style to repair. The most common problem with these taps is worn rubber seals, which are easy to replace.

1. Shut off the sink's water at the shut-off valve.
2. Lift the tap handle all the way up.
3. Unscrew the tiny setscrew just beneath the handle with an Allen wrench. Don't remove the screw completely, just enough so that you can remove the handle and cap.
4. You'll see two screws holding the cartridge in place. Loosen them and pull out the entire cartridge unit.
5. Remove the two small seals (called inlet seals) and one large one (the outlet seal) and replace with identical new seals
6. Check the holes in the valve seat for mineral deposits and other gunk. Scrape holes clean with a butter knife.
7. Position cartridge seals with holes as you replace the cartridge.
8. Reassemble the tap.

Fixing a Bathtub Tap

Bathtub taps, as with sink taps, are either compression (two handle) or washerless (one pull handle). The idea is quite similar to dismantling sink taps, which you should review before beginning this project. Determine which of the sink instructions relates to your bathtub tap and follow carefully.

Tip: One difference is that your compression bathtub taps "packing gland," which is the nut at the forefront of the stem assembly, may be recessed into the wall or tub body and be hard to pull out. In this case, use a deep-socket wrench to carefully grab and loosen the packing nut so you can remove the assembly to replace any worn washers and/or O-rings.

Replacing a cartridge in a washerless type tap is the same as with washerless sinks, in that you must remove the retainer clip to free and replace the cartridge. If you have a ball-type tap, you can replace the worn seals and O-rings.

Shower Heads

The two things that usually go wrong with showerheads are they leak at the showerhead where it threads onto the outlet stem, or a blocked or erratic water stream. Both problems are easy and cheap to fix.

To fix a leaky showerhead: Wrap a hand-towel or thick piece of cloth around the collar where it threads onto the outlet stem (the pipe that leads out from the wall) and use adjustable pliers to loosen and remove it. (If the collar has flat edges, you can use an adjustable spanner if necessary.)

Replace the washer: You can use joint compound or plumber's tape, if necessary, to create a better seal across the threads before you screw the showerhead back on.

Tip: To aid the mobility of a swivelling showerhead, grease the interior swivel ball with silicone lubricant before reinstalling.

For clogged holes in the showerhead: Remove the faceplate by unfastening the screw(s) holding it to the showerhead. If the faceplate is permanently attached, you will need to remove the whole piece by loosening the collar (see instructions under To fix a leaky showerhead). Soak the faceplate overnight in white vinegar (if it's attached to the showerhead, soak it faceplate side down) to dissolve lime deposits. Poke a toothpick, piece of wire or a tiny nail through the outlet holes. Finally, scrub the faceplate with a stiff plastic brush and reinstall.

Cleaning and Clearing Drains

One of the great banes of our existence, a clogged drain can make you crazy. If the source of your slow-clearing drain is limited to the trap or the pipes just behind it, clearing the blockage isn't a big deal. If it's deeper within your plumbing system, like the main soil stack or the main drain that runs beneath your home, the process is a bit more complex and probably not for a novice.

Tip: The best way to deal with plumbing clogs is to prevent them. Use this non-toxic mixture as a weekly treatment for sink and bathtub drains:

· 1 cup salt
· 1 cup baking soda
· ¼ cup cream of tartar

This mixture is enough to treat four drains. Mix accordingly if you have fewer or more drains. Pour the mixture in equal parts into each drain, followed by two cups of boiling water.

Clearing a Clogged Sink

You don't need to turn off the water valves for this, but do turn off any taps or appliances (such as a dishwasher) that run to the affected sink. First choice to unclog a stopped sink should always be a plunger.

Surprised? You may be, since plungers often seem ineffective and are therefore seldom used for this purpose. The reason they seem so lame is that they're typically used incorrectly. Using them the right way is usually very effective in clearing clogs without using caustic agents, harming your pipes or trying to master using a snake. But correct use of the plunger isn't as easy as just shoving it in and pumping it a few times, as you might to unclog your toilet. It's actually a process where you need to create maximum suction. Think about maintaining as much suction as you can as you proceed

The Plunger Method

1. Don't use a plunger if you have first tried a chemical drain opener like Drano or Liquid Plumber. Chemical drain cleaners can cause serious burns if they splash on your skin or into your eyes. If you have first tried a chemical and it failed, move on to the snake method.
2. Block off all holes related to the sink, including the overflow outlet(s) and the drain in a double sink with tight plugs, damp rags or balled up plastic wrap to create a vacuum.
3. Coat the rim of the plunger cup with petroleum jelly (Vaseline). It will help the plunger to form a seal against

your sink bottom. In addition, you and the plunger are now very good friends.

4. Your sink is probably at least partly full with gross water. If not, run enough cold water into the sink to cover the plunger cup and then insert the plunger into the water at an angle so that there is as little air as possible inside the cup. The drain opening must be covered completely by the plunger cup.
5. Grip the plunger so that it is perfectly vertical and plunge as forcefully as you can, concentrating on creating suction that will pull the clog free as you release. Do this about 20 times. With any luck you will hear the sucking sound of the drain clearing.
6. If the clog has not cleared, rest a moment and repeat the plunging process a few more times or until you feel like your arms will fall off, whichever comes first. If that fails, try using a snake or a chemical agent.

The Snake Method

The snake (also called a cable or pipe auger) is a long metal coil that will move agilely through a pipe until it hits an obstruction. It is optimal to first place a bucket beneath the sink, shut off the water supply by turning the shut-off valves clockwise and remove the trap, which is the U-shaped pipe connection beneath your sink.

Feed the snake in through the open drainpipe, carefully snaking it back and forth through turns in the plumbing, until it hits the clog. Twist the snake around as you continue pushing until you feel the clog break up. Keep twisting until you can feel the pipe open completely. If you think the clog is caused by a mass (such as hair), try to pull it out if possible.

If the trap is fixed or if you hate the idea of removing it, you can keep it in place and feed the snake in from the sink. It is designed to move through the curved trap as well as through any other twists in the pipes, so be patient and guide it carefully until you hit the blockage.
If going through the sink proves too difficult, try feeding the snake through the trap cleanout. Direct it either up toward the sink or inward toward the wall, depending on the clog's location.

Tip: If your careful manoeuvring doesn't clear the clog, it may be a deeper problem, affecting the main cleanout or the Main Drain at the base of your plumbing system, or a vertical-running main pipe called the Soil Stack. How can you tell if your Soil Stack or Main Drain is to blame? Typically you will have more than one drain and/or toilet acting up at the same time. If you have several drains backing up on you, your problem is likely something deeper than at the fixture site. Clearing these is a tricky, dirty job and in most cases it is time to bring in a professional.

Using Drain Chemicals

These agents work well when you have a drain that is slow to get rid of water, but not well when you have standing water, no matter what the label says. If you are set on using a chemical treatment in a sink is full of water, try plunging first. Even if it fails to clear the clog, it may be enough to get rid of the standing water. Remember: chemical drain cleaners are caustic agents that can burn skin, so use them carefully.

- Read the label carefully before you begin.
- Don't use a drain cleaner if you recently put another caustic agent (such as bleach, cleanser, ammonia, etc.) in the sink or drain.
- Don't plunge a drain treated with chemicals.
- Never use drain chemicals in waste disposal units.
- Choose the right product. Some chemicals dissolve grease and some break down hair, soap and sludge, but they must never be mixed together.
- Stupid as you may feel, put on goggles and use rubber gloves; keep away from the treated drain opening, which may be exuding noxious fumes.
- If any chemical comes into contact with your skin, first apply baking soda to the area to neutralize the acid. Wash off baking soda with lukewarm water, then wash skin thoroughly with mild soap.

Tip: Before relying on caustic drain cleaners, you might want to try a non-toxic variety:

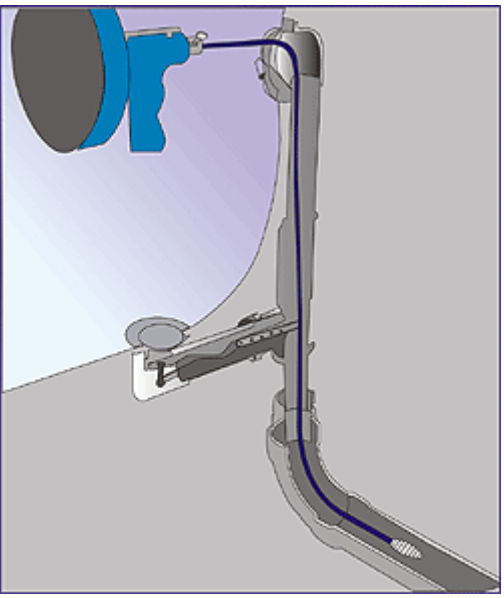
Top Ten Plumbers Information for New Starts

1. Rid the sink/tub of any standing water
2. Deposit 1 cup baking soda into the drain
3. Immediately add 1 pint of white vinegar
4. Wait 15 minutes and pour 3 cups of boiling water into the drain
5. If drain clears, gloat that you saved money and the environment

Clearing a Clogged Bathtub Drain

If you have an older bathtub (the kind that you stop with a detachable plastic stopper), you can clear the drain using the same methods you would use to clear a sink. See Cleaning and Clearing Drains.

If your bathtub is the kind with a plunger or pop-up tub drain, a slow-clearing drain is often the result of a clogged drain assembly. Cleaning the assembly, which is prone to catch hair and gummy soap residue, is frequently enough to take care of the problem.



Cleaning a Pop-Up Drain

A pop-up drain opens and closes by moving a lever that either pulls the stopper down to close the drain or (you guessed it) pops it up to allow drainage. To remove the pop-up drain, use the lever to pop the plunger open as far as it will go. Remove the stopper and the attached arm and clean away all the gunk with a stiff toothbrush or wire brush.

If there is not enough debris collected on the stopper and arm to explain the drainage problem, the next step is to remove the cover plate (the piece with the stopper control lever attached to it) by unscrewing the anchor screws. Gently remove the drain assembly through the opening. Clean it with a stiff toothbrush or wire brush dipped in white vinegar to help remove scale deposits. Lubricate the pieces with Vaseline or heatproof grease. Reinstall

Cleaning a Plunger Drain

A plunger drain is the type where the stopper is hidden beneath the drain outlet and closed with the flip of a lever. Remove the cover plate by unscrewing the anchor screws. Gently pull the attached links and plunger assembly through the opening.

Clean all parts with a stiff toothbrush or wire brush dipped in white vinegar. Lubricate the pieces with Vaseline or heatproof grease. Reinstall.
If cleaning the plunger assembly isn't enough, it's time to clear the drain line.

Plunger method: Remove the cover plate from the overflow drain and stuff the opening closed with a wet rag. Remove the stopper and plunge the drain opening with a small sink plunger, using a vigorous straight up and down movement. Plunge 15-20 times, rest, then repeat 2-3 more times if necessary. If this fails, try the snake method.
Snake method: Use and hand snake (also called a hand auger) to clear the drain line. Remove the overflow drain cover plate and gently lift out the drain assembly. Carefully feed the snake through the opening until you hit the blockage. Set the line lock and rotate the handle clockwise until you break through the clog. Reinstall the assembly and cover plate.

Clogged Shower Drain

It won't be a surprise to find out that most shower drain clogs are caused by hair. For this reason it is not enough to break through the clog—ideally you should remove it. The easiest method should be the first you try. Carefully pry off the strainer cover with a flat-head screwdriver. Shine a torch into the opening and see if you can see a disgusting glob of hair, gooey soap and/or black debris. If you can, once you're done gagging, use a length of wire coat hanger to grab hold of the obstruction and pull it up and out. If this method fails, try plunging. Use a small plunger that completely covers the drain.

To enhance the seal, first run Vaseline around the rim. Run enough water into the shower to cover the plunger cap and create a vacuum. Plunge straight up and down using force 15-20 times. Shine the torch in and see if plunging pulled the glob into view and try to pull it out with a coat hanger. If not, try plunging again 2-3 more times.

If the plunger method fails, use a snake. Carefully feed the snake through the opening until you hit the blockage. Set the line lock and rotate the handle clockwise until you can grab the glob and lift it out.

Toilets

It is an unspoken rule that as soon as you're expecting guests, making dinner for the in-laws or have the worst case of flu in your life, your toilet will fail you. If your problem is limited to one toilet, it is typically easy to fix. If it's happening with several or all of your toilets, then the problem may be in your larger Drain Waste System, and you should call in a qualified professional to root out the problem.

An Overflowing Toilet

It never fails: Uncle Ernie comes to visit and the next thing you know, your toilet is acting up. Few sights fill us with more dread than watching the toilet water rise and rise until… well, here's what you do to stop it in its disgusting tracks:

- Take the lid off the tank and reach down to the bottom of the tank.
- Push the stopper valve (or flapper, in newer toilets) firmly into the valve seat.
- Turn off the shut-off valve beneath your toilet. If you have a toilet with no shut-off valve, you will have to turn off your home's main water valve.
- Plunge the toilet. If this fails to clear Uncle Ernie's blockage, plunge Uncle Ernie. Or, better yet, use a toilet snake. Feed the snake into the toilet, being careful not to scrape the porcelain. Push the snake in with gentle firmness until you feel it hit the obstruction and then (gulp) pull it out. You can also use a regular sink snake, but doing so greatly increases your chances of scratching up your toilet.

Tip: A plunger with a large rubber dome over a smaller inner cap will cost a bit more but works better than the simple open dome variety.

A Clogged Toilet

Most toilets become clogged when objects that are too large or aren't supposed to be flushed get stuck in the passageway before reaching the main waste and vent stack. Low-level toilets are especially vulnerable to clogs because the water pressure is often too low to completely rid the drain line of debris. If you have a low-level toilet, it is always a good rule of thumb to flush appropriate waste using several flushes instead of relying on one to take everything out to the sewer.

If your toilet is not overflowing but simply sluggish, try plunging first. No need to turn off the water if the water isn't rising close to the rim. In fact, a few inches of water in the bowl will help create a vacuum.

1. Get a bucket filled with water and have it at the ready.
2. Plunge vigorously fifteen to twenty times.
3. Pour water from bucket into the bowl until bowl clears or until you're in danger of overflowing the toilet.
4. Repeat plunging 2-3 more times, if necessary.

Problems Inside Your Tank

Almost all toilet problems apart from clogs develop within the tank. Whenever you flush, you cause a chain reaction of valves, tubes, balls, wires and other silly-looking apparatus. If you look at the drawing of your tanks innards, you'll see that the system is a fairly simple one, even if it is intrinsically a bit icky to contemplate.

When you flush, the stopper valve is lifted away from the valve seat, causing water to rush into the bowl and carry away its contents. As the tank drains, the float ball drops, the stopper settles back into the valve seat, and the tank refills with clean water from the tank refill tube. If any of the mechanisms involved in the chain fail, you will have a problem: toilet won't flush, water runs constantly, etc.

Top Ten Plumbers Information for New Starts

Here's a guide to common problems and how to fix them. Remember to shut off water to the tank using the toilet's shut-off valve before attempting a fix.

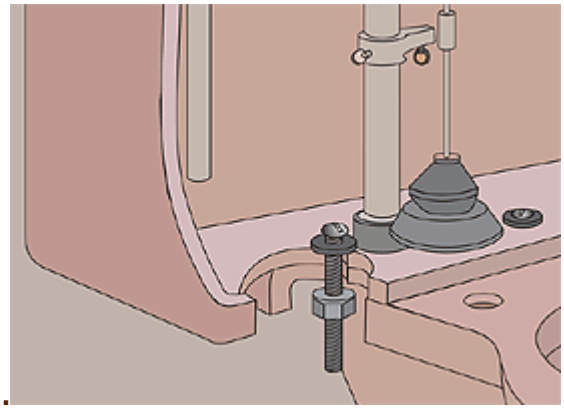
Problem: Water continues running after tank is full
Reason:
1. The trip assembly is catching on itself and not completing the cycle. Flush with the tank cover off and see if everything appears to be working.
2. The chain attached to the stopper is too long; adjust so that it has about ½ inch of slack.
3. The stopper valve and/or the valve seat needs replacing. To test, reach in the push the stopper into the seat. If the running noise ceases, replace the stopper and, if necessary, the valve seat.
4. Check the float ball to make sure there is no water in it, dragging it down. If there is, replace it.
5. The trip assembly connected to your toilet handle has corroded or stretched. Check to make sure the mechanism still lifts the stopper from the valve seat and then falls back into it as the tank refills. Replace any worn parts.

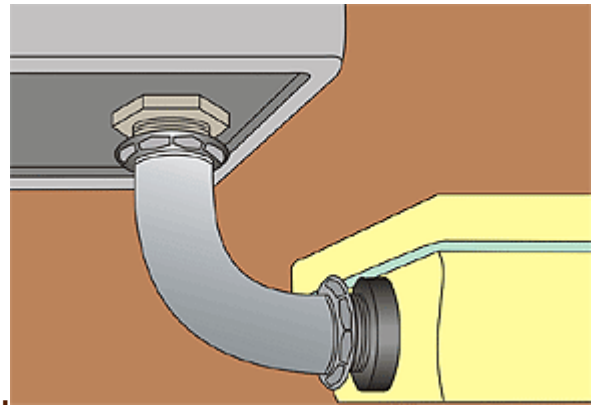
Problem: The toilet won't flush completely
Reason:
1. The float ball may be set too high, allowing too much water into the tank. Carefully bend the float downward.
2. Float ball may be too low, so that too little water is in the tank Gently bend the float upward.
3. Check the float ball to make sure it isn't full of water.

Problem: Tank doesn't fill completely
Reason:
1. The trip assembly is catching on itself and not completing the cycle. Flush with the tank cover off and see if everything appears to be working.
2. The toilet's float ball may not being raised enough to allow the tank to fill. Gently bend the float ball upward so that it is raised and allows more water to enter. If the float ball has water in it, it may have a leak and need replacement.
3. The trip assembly may be worn or bent out of shape. Check to see that the toilet handle hasn't become too loose and tighten the set screw just inside the tank; check the trip lever and guide arm for kinks or corrosion that interferes with its movement; check to see if the wire attaching the trip lever to the stopper has stretched or broken.

Problem: Tank sweats (has condensation on the outside)
Solution:
Insulate the inside of your tank. First drain the tank by turning off the local water valve; flush toilet repeatedly until you have gotten rid of as much water as possible; get rid of the sitting tank water using sponges or other absorbent material. Allow inside of tank to dry completely. Using watertight glue, attach a 1/2 layer of foam rubber or polystyrene to all four inside walls. Allow to dry completely before refilling tank.

Problem: Tank leaks
Solution:
First make sure that the problem is really a leak and not the tank sweating. To test, add some food colouring to the tank water. After an hour, run a white cloth or tissue along the underside of the tank, especially around the nuts and bolts. If you see colour, it's a leak. If the water is clear, your tank is sweating (see previous item).

A. 

B. 

Fixing a Leaking Tank

1. Turn off water at the local shut-off valve and drain water completely from tank by flushing. Sop up remaining water with sponges or cloths.
2. If you have a tank attached to the wall, use wide pliers to tighten the couplings on the pipe that leads from your tank to your toilet. If the couplings seem very tight, loosen the couplings, remove the pipe and replace the washers. Make sure the couplings are nice and tight when you reinstall the pipe.
3. If you have a toilet with an attached tank, use a screwdriver to tighten the bolts on the floor of the tank. If this isn't enough to stop the problem, unscrew the bolts and replace the gaskets (the rubber piece that each bolt holds in place).
4. If the bowl leaks where it connects to the floor, it is time to remove the bowl and apply a fresh seal where it connects to the waste pipe. We recommend calling in a Top Ten Plumber for this task.

Waste Disposal units

The reason Waste disposal Units usually fail is abuse. Most people simply don't understand what the mechanisms have been designed to do (and not to do) and overwork them.

Common mistakes include the following:

- **Overloading:** It is a better idea of feed items into the disposer a little at a time. Cramming a lot of crud in there at once clogs the blades and overworks the motor.
- **Running it dry:** Always run a full blast of cold water into the sink as you run the motor. Why cold? It keeps the motor cool and helps prevent overheating. It is also beneficial to continue running cold water for a minute after you turn the unit off to clean off the blades and grinder.
- **Dumping in the wrong stuff:** A general rule is that fibrous foods, while good for the body, have the opposite effect on a disposer: they clog it. Don't drop in large amounts of carrot or potato skins. Avoid putting in onionskins, chives, peapods, leeks, celery, etc. altogether. If the item is "stringy," save it for the rubbish bin.
- **Over-greasing:** Great gobs of animal fat are a disposer no-no. Animal fats congeal when they get cold (think of how a lump of lard looks) and they coat the blades and motor and can clog the whole system. Plus, they can create lingering odours in your pipes.
- **Grinding up solid matter:** It is a good rule of thumb to shine a torch into your disposer before you run it if there is any possibility that a solid object has dropped into the unit (silverware, fruit pits, bones). If you find something solid in there, retrieve it with a pair of tongs. Remove the fuse first and never put your hand in there…for any reason.

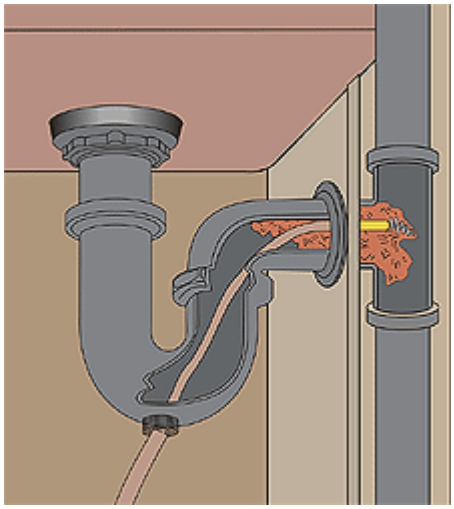
If you find your disposer has stopped working because you committed one of the above (or other) sins, you most likely succeeded in tripping its overload switch. Once you have allowed it to cool, the unit can be reset by firmly pressing the reset button (usually red and under the sink near the bottom of the unit). If you unit has no reset button, it may have an automatic reset; simply wait for the unit to cool and try it again.

If the disposer makes absolutely no sound when you turn it on, you may have blown a fuse or tripped a circuit breaker. Check your home's main circuit breaker box and reset the switch or replace the fuse. Once the circuitry is determined to be functioning, again press your disposer's reset button, if it has one. If not, wait for the unit to reset itself.

If the disposer's motor hums but the unit doesn't run, you probably have a jam in the grinder. To free it up, check beneath the sink to see if the unit comes equipped with a small crank designed to turn a flywheel inside the system to clear up jams. If there's no crank, you may see a socket designed to be used with a hexagonal wrench that came with the disposer. If you see the socket but don't have the wrench, use a standard Allen key inserted into the socket to turn the flywheel.

If you don't have these features or they fail to work, insert a wooden spoon handle into the sink and carefully work the disposer's blades back and forth until the jam is cleared.

If the unit is clogged, you may need to feed a snake (auger) into the unit's trap cleanout. Switch off the unit and remove the fuse first. Keep the fuse with you so that no one can "mistakenly" insert it whilst you're working on the unit. Direct the snake up toward the sink or inward toward the wall, depending on the clog's location. If you don't have a snake handy, you can remove the trap beneath the unit and see if you're able to clear the clog that way. For more on traps, see our information on Traps.



If disposer doesn't seem to be grinding well, you may not be running enough cold water during activation, or you may be trying to grind items that the disposer wasn't meant to grind. Remove any rattling items from disposer with tongs. If these possibilities don't address the problem, you may need to hire a pro to replace the unit's blades or shredder.

Water Heaters

Whether you have an electric or gas water heater, most should last about ten years. If you do regular maintenance on your heater, it can as much as double its life. Combi-boiler water heaters are energy efficient, are trickier than traditional storage water heaters, and a specialist should address their repair and maintenance.

If you have hard water, (not generally a problem in Edinburgh) be aware that hard water leaves lime residue that will reduce your heater's efficacy. If you find that your hard water heater is failing before its time, you may need to invest in a water softener that removes deposits from your water supply before it goes through your heater. Water softeners are often about the same price as a new hot water heater, but can save you a host of other problems around the house, since lime builds in every plumbing component of your home.

The Do-it-Yourself man with the more familiar storage heater can do a lot to repair and maintain the appliance to ensure solid performance and long life. Storage tanks work by heating stored water that is drawn to various locations in your home by hot water taps. Like a chimney, a gas heater has a flue to vent gasses. For obvious reasons, electric heaters don't have flues. Some pre-emptive measures can save you a lot of grief and are uncomplicated to administer.

Water Heater Maintenance

- Set the thermostat to 120° F (48.9° C) or below to help prevent damage caused by an overheated tank. It will also save money.
- Every six to twelve months, drain your heater to remove debris and sediment.

Follow these steps:
1. Turn off the gas if you have a gas heater and the power if you have an electric heater at your home's main shut-off valve.
2. Turn off the cold water shut-off valve at the top of your heater. If necessary, you can shut off your water at the main water valve.
3. Using a large bucket or an attached hose line that feeds into a drainage area, open the drain valve attached to the water heater and drain out a few gallons.
4. If you notice dirty water or sediment, drain out a few more. Keep draining until the water looks clear.
5. Turn the gas or power back on.
6. If you have a gas heater, check the pilot.

If the process snuffed the pilot, light it again according to the instructions on your heater.

- If you have a gas heater, check the flue (the pipe that runs the inside length of your heater and exits from the top like a metal chimney) twice a year to make sure it is clear of debris. You don't need to touch the flue outlet to test it; simply place your hand near (not on) the draft diverter. If you feel air flowing out, it most likely means you have a blockage in the flue that should be removed.
- Every six to twelve months, check the pressure-relief valve to make sure it is releasing building pressure in the tank. The valve is located either on the side or the top of standard heaters and has a copper overflow line attached to it. Carefully lift the valve to open it. If it is functioning correctly, water will eject into the overflow line. If you ever notice steam or boiling hot water escaping from the valve, immediately turn the heater off.

Problems and Solutions

Even with proper maintenance, water heaters can malfunction (or we can mistakenly believe they're malfunctioning). Here are some of the most common problems and solutions:

Problem: Water heater gives no hot water

Solution for Electric Heaters:
Check breaker box for a blown fuse or tripped circuit. If this happens frequently, try turning down your heater's thermostat. If this doesn't help, consult a pro to see if the problem is the heater or your circuitry.

Solution for Gas Heaters:
1. Check pilot light to make sure it is lighted. If not, relight using instructions on your heater.
2. Make sure your gas connection valve is open all the way.

Solutions for both Gas and Electric:
1. Check to see if thermostat is turned off or set to low. Raise temperature to 120° F (48.9° C).
2. Flush water heater. See Water Heater Maintenance.
3. Insulate hot water pipes to increase efficiency.

Problem: Water is too hot
Solution:
1. Thermostat is set too high. If thermostat is broken, call in a pro.
2. Flue is obstructed. Check flue and clear blockage.

Problem: Water heater makes a rumbling noise
Solution:
It's likely that it is overheating. Turn off heater immediately and allow it to cool. Check thermostat settings and set to 120° F (48.9° C) or lower if applicable. If thermostat is broken, call a pro. If heater continues to have problems unrelated to the thermostat, it may be time to replace it.

Problem: Water heater leaks
Solution:
If you water heater leaks, it is time to replace it. As a precautionary measure, turn off water at the main shut-off valve, along with either the gas or the electricity. Drain the tank using either a large bucket or a garden hose attached to the drain valve that leads to a drainage area. Unless you have somewhat advanced plumbing and gas or electrical know-how, installation is best left to a pro.

Problem: Flame of gas heater is yellow
Solution:
The shutter on your heater's burner may need adjustment. This is a job for a pro.

Problem: Heater smells of gas
Solution:
Your first thought may be that you need to relight the pilot. WRONG. The smartest thing is to get everyone out of the house, turn off the gas at your main supply valve and call the local utility from a safe location.

Tip: For more on safely dealing with gas leaks, please refer to Transco in the 'phone book

Pipes

Leaking pipes come in two varieties: horrible and worse. Actually, small leaks involving visible pipes aren't terribly complicated to arrest until you can have the pipe replaced. If you hear water running when everything is off both inside your home and out, go outside and look at your water meter. If it's running, you have water evacuating somewhere.

Check all places where pipes are accessible (beneath sinks, toilets, washing machine, etc.) for moisture. If you see no signs of leakage, begin examining your floors, ceilings and walls for water damage (ceilings, for example, will typically develop tea-stained areas where pipes above have developed leaks). If you find stains in a wall, water may be travelling down a piece of pipe before gravity throws it against the stained area, so it may be safe to assume the leak is higher up than the stain. Don't forget to check the status of your basement, crawlspace and garage, since pipes may run through or adjacent to them.

If you find evidence that a concealed pipe is leaking (one within your walls or ceiling), turn off your home's main water valve and call a pro in to fix it as soon as possible. Hidden leaks can ruin structural elements of your home, as well as create prime environments for mould leading to rising damp.

If the leak is in an exposed pipe, you can probably fix it yourself, or at least stave off further problems while you wait for a Top Ten Plumber.

Tip: When working on hot water pipes, always let them cool first. Hot water pipes and the residual water remaining inside can be hot enough to burn.

Quick fix for a Leaking Pipe

Quick fix for a Leaking Pipe: The leaking or broken pipe will have to be replaced, but until you have the time to do it or to can find a pro to come out and do it, you can make a temporary fix to help stave off problems:

- Turn off your home's main water valve immediately.
- Place a bucket beneath the leaking pipe.
- If you can find the hole in a leaking pipe, insert a sharp pencil into the hole and break off the tip.
- Dry the pipe as much as possible and tightly wrap electrical tape around the area, extending at least 3-4 inches on either side. Concentrate on covering the pipe in with 2-3 layers of tape (avoid over-wrapping, which can increase risk of fire).
- Cut a section of garden hose lengthwise and wrap it around the affected area, so that the solid area of the hose is against the leak and secure it in place with locking pliers, plastic cable ties or, best of all, hose clamps.
- Replace the affected pipe as soon as possible.

This fix should enable you to turn on your main valve for a little while if needed—just remember to turn off the local shut-off valve.

Better Fix for a Leaking Pipe: Any of these methods should give you time to replace the leaky pipe in case you can't get to it immediately or have to wait a couple days for a pro. Remember that all fixes shown here are for small leaks; for large leaks or ruptures, turn off the water at your home's main shut-off valve immediately and call a Top ten Plumber as soon as possible.

Top Ten Plumbers Information for New Starts

Before you attempt any of these fixes, turn off the water at the local shut-off valve or your home's main shut-off valve. Read each carefully before you begin and, if you believe the leak is too big to be at least temporarily abated by these options, call a Top ten Plumber immediately.

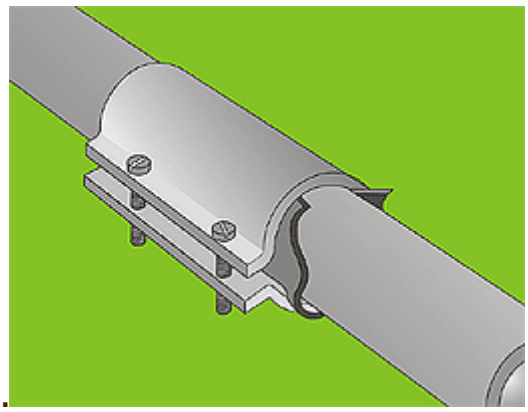
Method A: Position a piece of garden hose, cut down it length, or a piece of heavy rubber matting to the affected area. Secure it tightly with a sleeve clamp the same diameter as the pipe.

Method B: Tightly secure a piece of heavy rubber matting over the leak with an adjustable hose clamp.

Method C: If the leak is located at a pipe joint, the best temporary solution is to apply epoxy putty to the affected area with a putty knife. Let it dry completely before turning local shut-off valve back on.

Tip: For plumbing novices, the best way to learn how to repair a pipe is to practice on one you don't intend to install in your system. It allows you to get the feel of the task, and helps take away the intimidation factor. Simply pick a method and apply it to a section of cracked pipe and test for water-tightness. If and when a real emergency arises, you'll feel confident that you can do the repair.

A.



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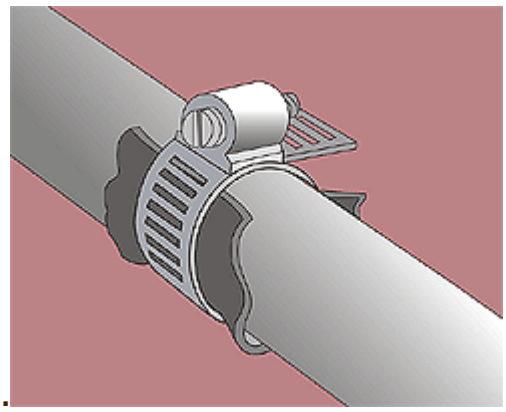

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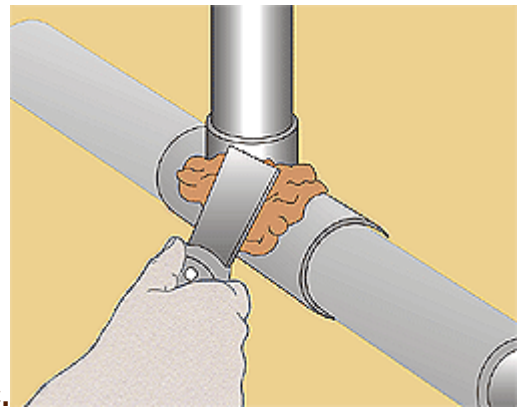
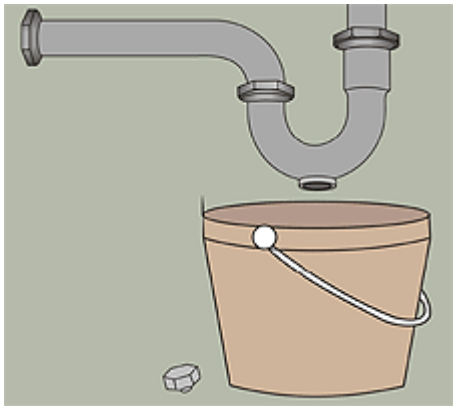


Traps

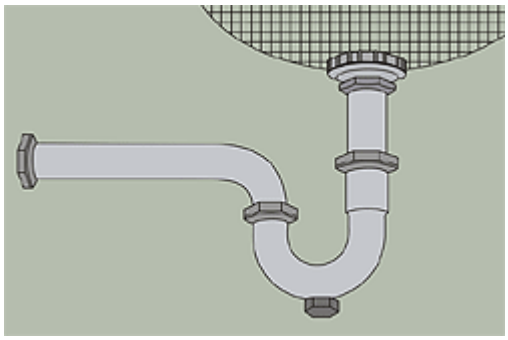
The "traps" in your plumbing system aren't for rodents (although more than one rodent has been caught in one). The trap is the U-shaped part of your drainage system, usually beneath the attached fixture: underneath the sink, waste disposal unit, etc. People unfamiliar with plumbing often ask "What use a U-shaped piece of pipe, when it just ends up full of gunk and hair?"

The trap does more than just exasperate people; it actually protects you from the disgusting gas that lurks in your pipes. The U-shape allows water to sit within the pipe without draining completely and forms a seal that prevents gas from backing up into your drains and keeps it moving toward the venting system. So as annoying as it may be to have to dismantle your trap when you have a clog or a lost piece of jewellery,

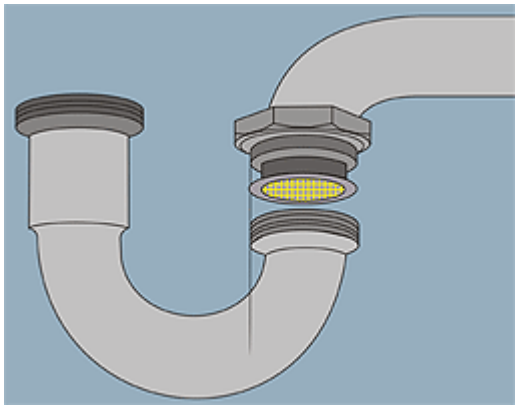
remember that your traps help keep your home a nice place to be.
You may find, however, that your traps leak around the connections to the other drainage pipes. Leaks usually occur because either the slip nut has become loose, or the interior washer has worn out. Either way, it's an easy fix.



1. To dismantle a trap, turn off the local water valve and place a bucket beneath the trap.
2. If your trap has a cleanout valve (you'll see a capped hole at the bottom of the trap), open it first and let it drain into the bucket to prevent making a mess. Note: if you have a clog, you may be able to avoid removing the trap by simply feeding a snake (auger) into the cleanout valve.
3. If you have a leak, first try using a pipe wrench or large adjustable pliers to gently tighten the slip nuts where they join the sink tailpiece on one end and the drainpipe on the other. Note: tighten only one-quarter turn at the most. Any more and you risk stripping the slip nuts.



4. If this doesn't fix the leak, loosen the slip nuts and pull the trap free.
5. Check the washers for wear and corrosion and replace if necessary.
6. If you notice a problem with the trap itself, take it to your local hardware store and get the same size and shape trap.



7. When reinstalling the trap, first tighten the slip nuts by hand as tightly as you can.

8. Use your pipe wrench or pliers to tighten nuts only one-quarter turn more than you were able to by hand. Dry off all connections and the trap itself.
9. Close off the drain and turn the local shut-off valve back on. Fill the sink with a few inches of water and open the drain. Check all connections for leaks. If you continue to have leaks at the slip nuts, dismantle again and check for stripping. You can also form a tighter seal using plumber's tape or joint compound.

Frozen Pipes

If it's cold outside and your pipes have very little or nothing to offer when you turn on the tap, you probably have a frozen pipe. The important thing is to thaw the pipe out before it becomes brittle enough to rupture.

You have several thawing options. If you're near an outlet, then a hairdryer, heating pad or heat lamp provide methods that require less work. But if the frozen pipe is outside or any other location where these methods prove impossible, the boiling water method may be your best option. In every case except plastic pipes, it is the safest.

Tip: When using a thawing method that involves electricity, remember that water and electricity are a dangerous combination. Be careful never to let the two elements come into contact with each other. Do not attempt if you have wet feet or hands. It is always a good idea to wear rubber-soled shoes when working with electricity.

To thaw a frozen pipe:

1. Turn off your water at your home's main shut-off valve.
2. If the pipe is indoors, take ample precautions to catch melting water, including buckets, tarpaulins and/or towels.
3. Open the tap that the frozen pipe serves to allow drainage.
4. If your pipes are metal and not plastic, the safest method is to use boiling water. Wrap the pipe in rags and carefully pour water on the rags, beginning at the area of pipe closest to the tap and slowly working your way to the icy section. Repeat if needed. Remove rags once they have cooled.
5. Use a hairdryer to defrost the pipe, working from the section of pipe closest to the tap and outward to the icy area. Do not use while standing in water or with wet hands.
6. Heat lamps can thaw pipes inside the framework of your home, such as walls and floors. Point the lamp toward the affected area. To reduce risk of fire, make sure you leave at least 8 or 9 inches of space (or more if recommended by the lamp's manufacturer) between the lamp and the pipe, wall, or other area receiving the heat beam.

Tip: Some people use blowtorches to thaw frozen pipes. If you have the know-how to do it, proceed at your own risk. If not, we recommend trying boiling water or another method instead. In any case, never use a blowtorch on plastic pipes! Doh!

Weatherproofing Your Plumbing

As always, the best cure is always prevention. If you live in an area prone to cold winter temperatures, you need to take care to protect your plumbing from the weather. Once the cold sets in, try the following preventive measures.

Winter Tips

- Keep your whole house heated or, at least, open doors between warm and cold rooms.
- Insulate pipes. You can use special insulation tape designed for this purpose, or foam padding sleeves, which wrap easily around pipes. In a pinch, you can use rags or newspaper, but not on those pipes that may get wet because such insulation can freeze.
- Heat the exposed areas of your plumbing system with space heaters or heat lamps (keep them at each lamp manufacturer's recommended distance).
- Regularly run water from every valve, if possible.
- If it gets really cold, run a tiny trickle of water from every valve. See, ponds freeze over; rivers don't.

Holiday Tips

Top Ten Plumbers Information for New Starts

If you plan to leave to go on holiday for longer than a few days, it is a good idea to shut off your water. If it's warm, that should be enough of a precaution in case your pipes fail for some reason. If it's cold, you will need to drain your pipes before you go. Your empty home will be without heat while you're away, leaving your plumbing vulnerable. Frozen pipes can rupture and coming home to a flood is never a good way to end a Holiday. The best course is to have your water utility cut your water off at the street but, if that isn't an option, you can do it at your home's main shut-off valve. Then it's important to drain your pipes: all of them. If you have a two or three story house, start at the top floor and work down.

1. Open every tap inside your home; every bathtub, every sink, everything.
2. Outside, disconnect any garden hoses and drain the water from all outdoor taps (also called sill cocks) and turn on your sprinkler system.
3. Turn off the gas or electric power to your water heater and drain it. If you have a drainage area nearby, screw a hose onto the heater's water valve (the spigot attached to the side of the tank), lead the hose to a drainage area and open up the valve. If this method is impossible, you can use a bucket.
4. Leave one valve open at the lowest point in your home to allow residue to drain and air to get in. If you have a basement, leave a spigot fully open. If you have no basement, leave a first floor valve open, preferably one in a garage, such as a utility sink or your water heater's water valve.

If you live in a bitterly cold area where frozen pipes are common, you should also do the following:

1. Empty the traps beneath your sinks, either by opening the cleanout valve or by removing the trap and emptying it. For more information on how to do this, see our section on Traps.
2. To weatherproof the hidden traps beneath your toilets and bathtubs or a basement drain, use cold weather-rated windshield fluid. For toilets, flush and then dump a gallon of fluid into each tank. Flush again.
3. For bathtubs, floor drains and other fixtures with traps that are inaccessible, pour a quart of windshield fluid into each drain.
4. For you dishwasher, clothes washer or other appliance that holds water, siphon off as much water as possible from each appliance. Whether you're able to siphon off water or not, don't add windshield or other fluid to these appliances, as it could damage them.

Once you return home to your cold, dry house, you'll of course want your life back. To get the sweet flow of water back into your home, go through your house as well as all around the outside and make sure all taps are off (remember, unless you have a spigot that was improperly installed, turn them clockwise to shut them off: righty-tighty; lefty-loosey). Do the same outside. Then have the Water Company restore your water if they shut it off at street level. If you shut off your own water, turn on your main water valve slowly and don't be alarmed if you hear sputtering and knocking as everything kicks back into gear.

Of course, the first thing you'll want to do after returning from a nice long trip is to take a shower. Well, that won't happen for a while. If you forget to restore the gas or electricity to your water heater, however, it will take a lot longer

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Information correct as at October 2004