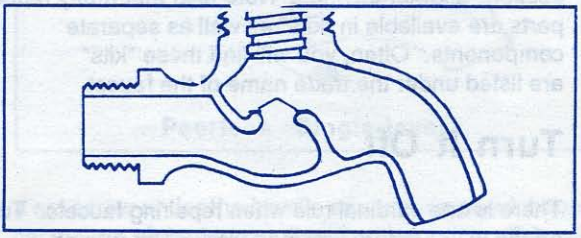
HOW-TO BOOKLET

#11

LEAKY FAUCETS



TOOL and MATERIAL CHECKLIST

- Pipe Wrenches
- Adjustable Wrench
- Washer Assortment
- Valve Seat Dressing Tool
- Phillips/Standard Slot Screwdrivers
- Packing String
- Wiping Cloths
- Steel Wool

Read This Entire How-To Booklet for Specific Tools and Materials Not Included in Basics Above

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The faucets (fixtures or valves) in your home can be classed into three types: compression, tipping valve, cartridge. Within this classification are stem, globe, and gate faucets (compression type); disc and ball faucets (tipping valve type); and cartridge faucets which utilize a self-contained cartridge to govern the flow and mixture of water through the faucet spout.

When faucets leak, the problem almost always is worn washers or packing. Repair is extremely easy at negligible cost.

First, before you start repairs, read this entire booklet. A few minutes up front can save you plenty of time and money later. Also, determine the project beforehand. You may not need all the supplies listed under the Tools and Materials section--another savings. Note also that many faucet parts are available in "kits" as well as separate components. Often, you will find these "kits" are listed under the trade name of the faucet.

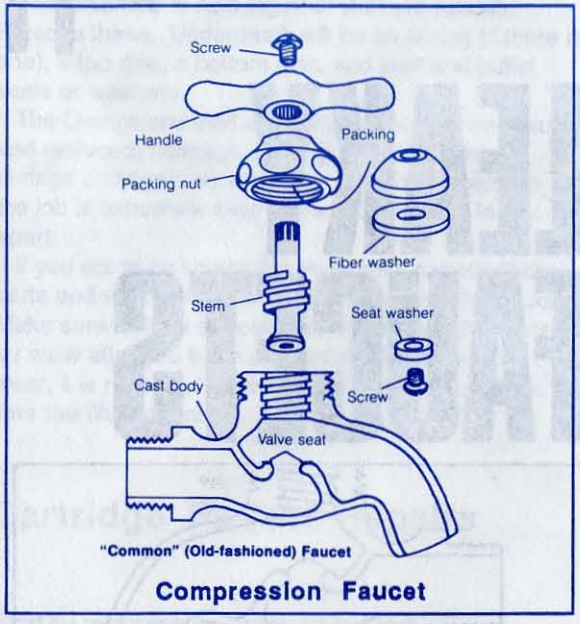
Turn It Off

There is one cardinal rule when repairing faucets. Turn off the water before you start work. The turn-off (supply) valve is below the sink or lavatory fixture (stop or supply valves) or at the main water entrance to your home (gate, globe valves).

Compression Faucet Repairs

Compression faucets are probably the most common mechanically. They have a cast body or housing with a removable stem that is threaded like a big screw. On one end of the stem is a washer. On the other end (cap) is a packing washer and/or packing string to prevent water leaking from the cap component.

If the faucet is a supply valve (gate or globe), it probably will have a cap washer with O-ring washers on the stem. (Some compression faucets also have O-ring washers along the stem.) The stem most likely will be brass or a soft metal without a washer on its end. The metal base fits into a matching metal seat. A gate valve, for example, has a metal "gate" which



Compression Faucet

shuts off the water when you turn the handle down. A gate valve may not have a washer at the bottom of the gate; the bottom may be just plain metal.

To repair a leaking compression faucet:

1. Turn off the water at the supply source.
2. With the tip of a standard slot screwdriver, pry off the decorative cap (escutcheon) on the handle of the faucet--if the handle has an escutcheon. This is the little plate that reads H or C (hot/cold).

The escutcheon may be difficult to flip off with a screwdriver. If so, try the tip of an old case knife which has a thinner blade that may go between the cap and the faucet handle.

3. Remove the screw that holds on the handle. It turns counterclockwise.
4. Pry off the handle. Use a screwdriver for this. You can protect chrome finishes by padding the screwdriver with cloth. Also be careful if the handle has a thin metal wall. This metal bends with too much pressure. Try prying lightly around the base in several spots.
5. Remove the packing nut.

6. With an adjustable wrench (or pipe wrench) loosen the stem. Then turn out the stem by hand. If the stem is tight, replace the handle without the set screw and turn the handle. The stem will then loosen so you can remove it. See the illustration.
7. The washer is at the bottom of the stem. It is secured with a metal screw--usually brass. Remove the screw (counterclockwise) and the old washer. Some washers are contained in a round brass housing. Be careful that you don't damage the housing as you remove the washer.
8. Fit the new washer on the stem and secure it with the holding screw. If the old screw is damaged, replace it. Most washer assortments you buy have extra screws in the package. If there is corrosion on the stem of the faucet, clean it off with steel wool. Buff the metal shiny; don't remove any metal.
9. Reassemble the faucet--stem, cap, handle. Tighten the assembly slowly and carefully. Do not exert too much pressure with wrenches and screwdrivers.

Replacing Cap Washers

At the time you replace the stem on a compression faucet, note the condition of the cap washer directly under the cap at the handle. The washer probably is a flat type and you may spot the remains of a string-like material wrapped around the stem. This is packing string. It serves as a back-up washer to the cap washer.

Replace the cap washer and the packing string and reassemble the faucet. The string is wound around the stem so it forms a seal between the stem and the cap. A couple of twists of string is plenty.

Replacing O-Rings

Some compression faucets have O-ring washers along the stem. If so, replace these washers as you replace the other washers in the unit. You can pry out the O-rings with a screwdriver or the tine of an old fork.

The new washer simply slides over the stem and is

seated in the "notch" tooled for it in the stem. It is recommended that all washers and packing are changed at the time you disassemble the faucet. The cost in time and parts is nill. In fact, all the parts often are contained in the washer package you buy.

Regrinding Valve Seats

At the bottom of the stem washer in the housing or base of the faucet is a round soft-metal ring. It is called a valve seat. You may have to bend over and peer down into the housing to see the valve seat.

Sometimes this seat becomes worn from the friction of the stem washer and its housing. When this happens, washers on the stem quickly wear out because of the roughness of the seat.

In some faucets, this seat can be replaced by turning it out with a square or hex-shaped wrench. Or, the seat may be smoothed with a valve seat grinding tool. The procedure for regrinding is this:

1. Turn off the water and disassemble the faucet as detailed above.
2. Insert the grinding tool into the housing of the faucet as illustrated.
3. Adjust the guide nut on the grinding tool so it matches the depth of the opening of the faucet housing. This aligns the grinding tool in the housing and provides a turning base.
4. Turn the handle of the tool. Don't apply too much downward pressure as you revolve it. Valve seats are made of soft metal and it doesn't take much grinding or pressure to smooth the seat properly.

If the valve seat is worn out, you will need a valve seat removal tool (inexpensive) to remove the seat. Usually, this tool has a square configuration on one end and a hex on the other. These patterns match most valve seats manufactured.

Engage the tool in the seat ring and turn the tool counterclockwise. Then lift out the seat and install the new seat (clockwise). Take it easy with the tool; valve seats are very soft metal. Also have patience. It takes some doing sometimes to get the seat threaded properly. A little grease on the tool and seat will help

prevent the seat from misaligning.

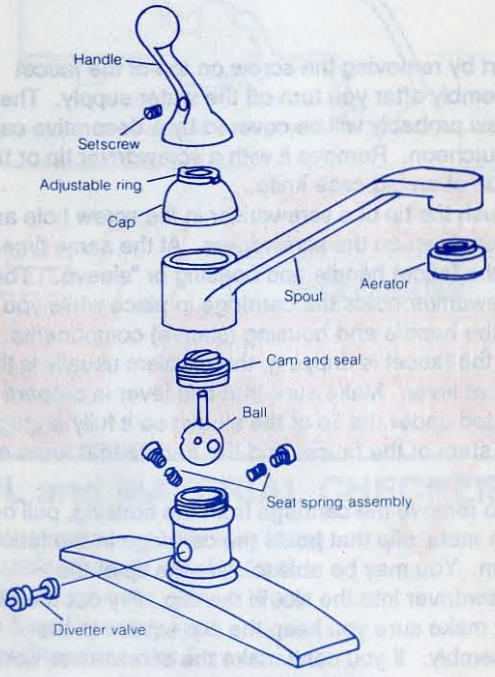
If the faucet doesn't have a removable seat, you can smooth the integral seat area with a valve seat grinding tool, as detailed above.

Tipping Valve Faucet Repair

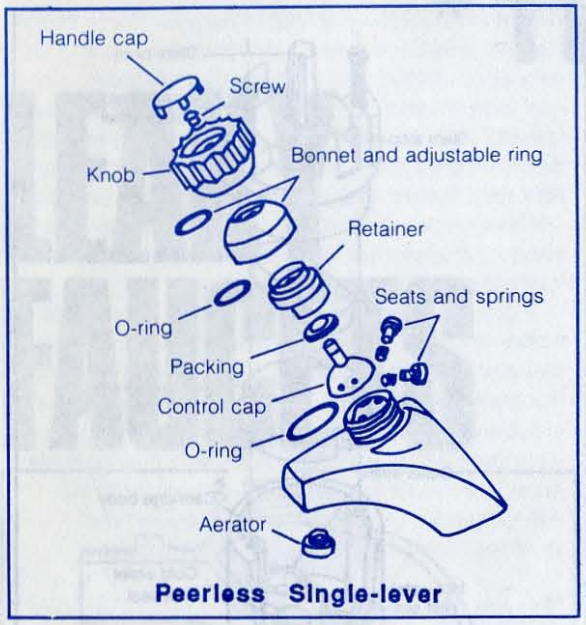
Tipping valve faucets are commonplace at both sinks and lavatories. These faucets are sometimes labeled "single lever" and "ball" faucets. Most designs mechanically operate about the same, regardless of the brand name or the manufacturer of the product.

To repair a leaking tipping valve faucet:

Remove the handle, the faucet spout, and the metal escutcheon covering AFTER you have turned off the water at a supply valve. The handle usually is held by



Delta Single-lever



Peerless Single-lever

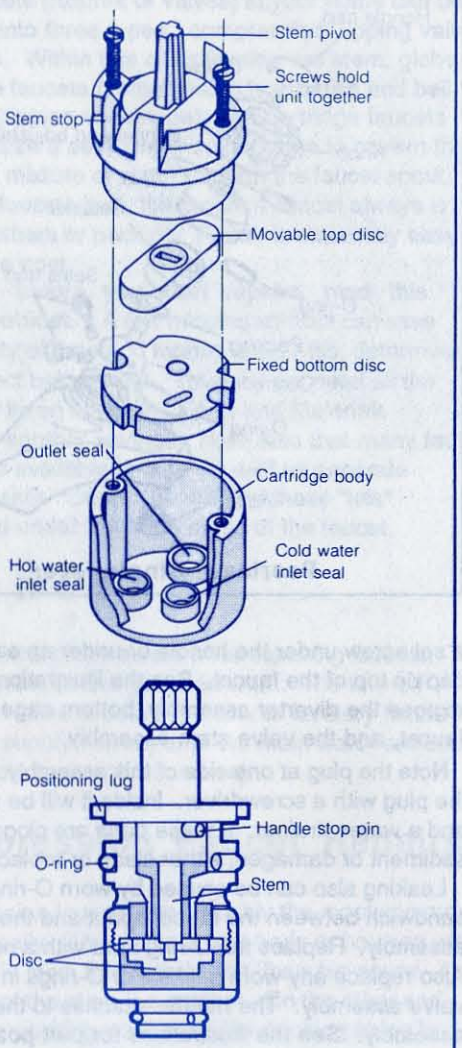
a set screw under the handle or under an escutcheon cap on top of the faucet. See the illustration. This will expose the diverter assembly, bottom cage of the faucet, and the valve stem assembly.

Note the plug at one side of this assembly. Remove the plug with a screwdriver. Inside it will be a gasket and a water strainer. If these parts are clogged with sediment or damaged, either clean or replace them.

Leaking also can be caused by worn O-rings that sandwich between the faucet spout and the diverter assembly. Replace the O-ring here with a new one. Also replace any worn gaskets or O-rings in the cam valve assembly. The handle attaches to the cam valve assembly. See the illustrations for part positions.

Disc Faucet Repairs

Some disc faucet designs have O-ring seals at the top of the stem. Remove the handle and the escutcheon covering which will let you get at the faucet assembly below. Turn off the water first.



Disc Faucet

The assembly is held together with two screws. Remove these. Underneath will be an O-ring (if there is one), a top disc, a bottom disc, and inlet and outlet seals or washers.

The O-rings and inlet and outlet seals may be cleaned and replaced, although it is suggested that new O-rings and seals be installed. The cost is pennies; the job is extremely easy while you have the faucet apart.

If you opt to just clean the assembly, remove these parts and wash them thoroughly under another faucet. Make sure all lime deposits are off. Check the discs for wear after you have cleaned them. If you spot wear, it is recommended that you replace the discs. See the illustrations.

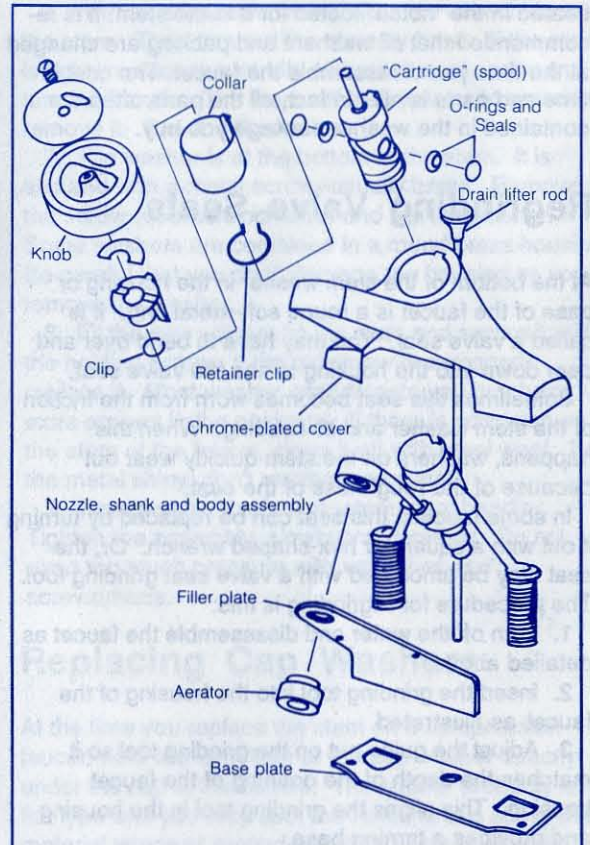
Cartridge Faucet Repairs

Start by removing the screw on top of the faucet assembly after you turn off the water supply. The screw probably will be covered by a decorative cap or escutcheon. Remove it with a screwdriver tip or the blade of an old case knife.

Push the tip of a screwdriver in the screw hole and press down on the screwdriver. At the same time, lift off the faucet handle and housing or "sleeve." The screwdriver holds the cartridge in place while you lift off the handle and housing (sleeve) components.

If the faucet is dripping, the problem usually is the faucet lever. Make sure that this lever is properly seated under the lip of the sleeve so it fully engages the stem of the faucet and the handle that turns on/off the water.

To remove the cartridge from the housing, pull out a little metal clip that holds the cartridge in the faucet stem. You may be able to slide the tip of the screwdriver into the slot in the clip. Pry out the clip. But make sure you keep the clip square to the assembly. If you can't make the screwdriver work, use pliers to pull the clip. You now should be able to lift out and replace the entire cartridge.



Speakman Single-lever Faucet

Rotating Ball Faucet Repairs

Turn off the water and then the knurled cap assembly. You'll probably need pliers or a pipe wrench for this. If so, pad the sharp jaws of the tool so it doesn't damage chromed or finished parts.

With the cap assembly off, you will see a valve seat in the center of the faucet housing. Remove the valve seat to expose a spring, and, probably, two rubber valve seats at the bottom of the faucet housing. Some faucets have three valve seats. It is recommended

that all parts be replaced; the cost is nill.

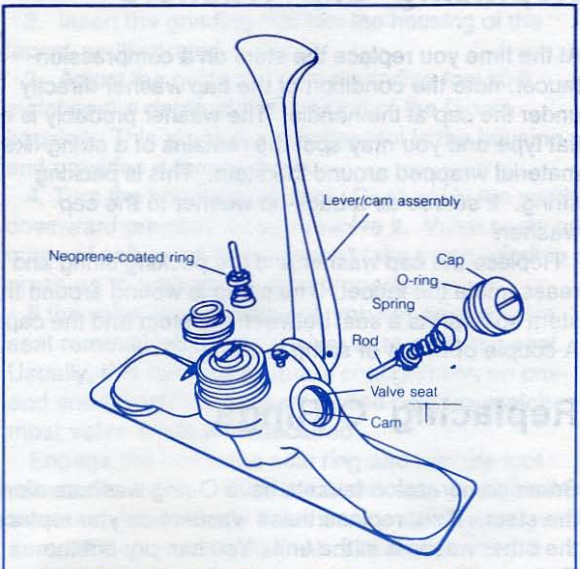
Also look carefully at the ball and cap assembly for any wear and corrosion. If corroded, you may be able to remove the debris by buffing the part lightly with fine steel wool. If not, replace the part.

The ball fits into the housing via a tiny metal pin that projects from the ball. This pin must be aligned with the slot in the housing.

The cam assembly fits over the ball and also has a pin that fits a slot in the faucet housing. Make sure it is aligned properly.

When the faucet is back together, set the adjusting ring with the tip of a screwdriver. Just move it clockwise. Turn on the water and check for any leaks. If water comes up through the stem, try turning the adjusting ring a tad tighter.

If the faucet leaks, turn off the water and replace the rubber parts in the cam assembly (if you did not do so earlier). You complete the job by re-installing the handle which is held to the cam assembly with a set screw that usually is directly under the handle (see the illustrations).



Cam-type Faucet Assembly