HOME MAINTENANCE WORKSHOPS

Welcome!

Today's topic:
Small Home Repairs

November 14, 2015

Richmond Metropolitan Habitat for Humanity®

Small Home Repairs Course

Presented by Monique Johnson

Environmental Green Solutions, LLC

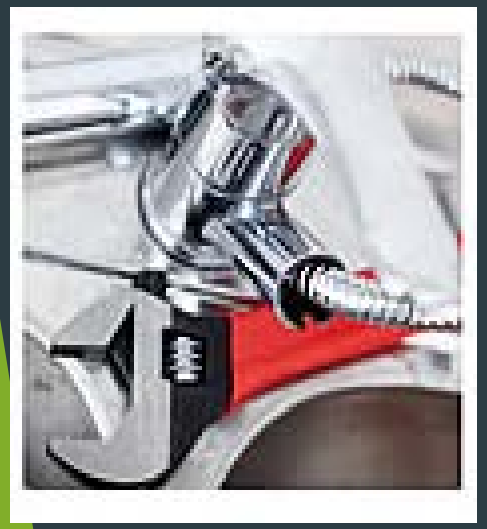
Objective

- Educate homeowners on basic technical skills that will help the homeowner understand daily operations of different functionalities around the home.
- Basic technical skills include:
  * Minor Plumbing
  * Minor Electrical
  * Minor HVAC - Heating, Ventilation, Air Conditioning

Basic Plumbing

Plumbing

- This objective will help homeowners understand the functionality of their plumbing equipment and how to properly fix, install, and maintain minor plumbing issues.
- Identify tools needed for minor repairs.





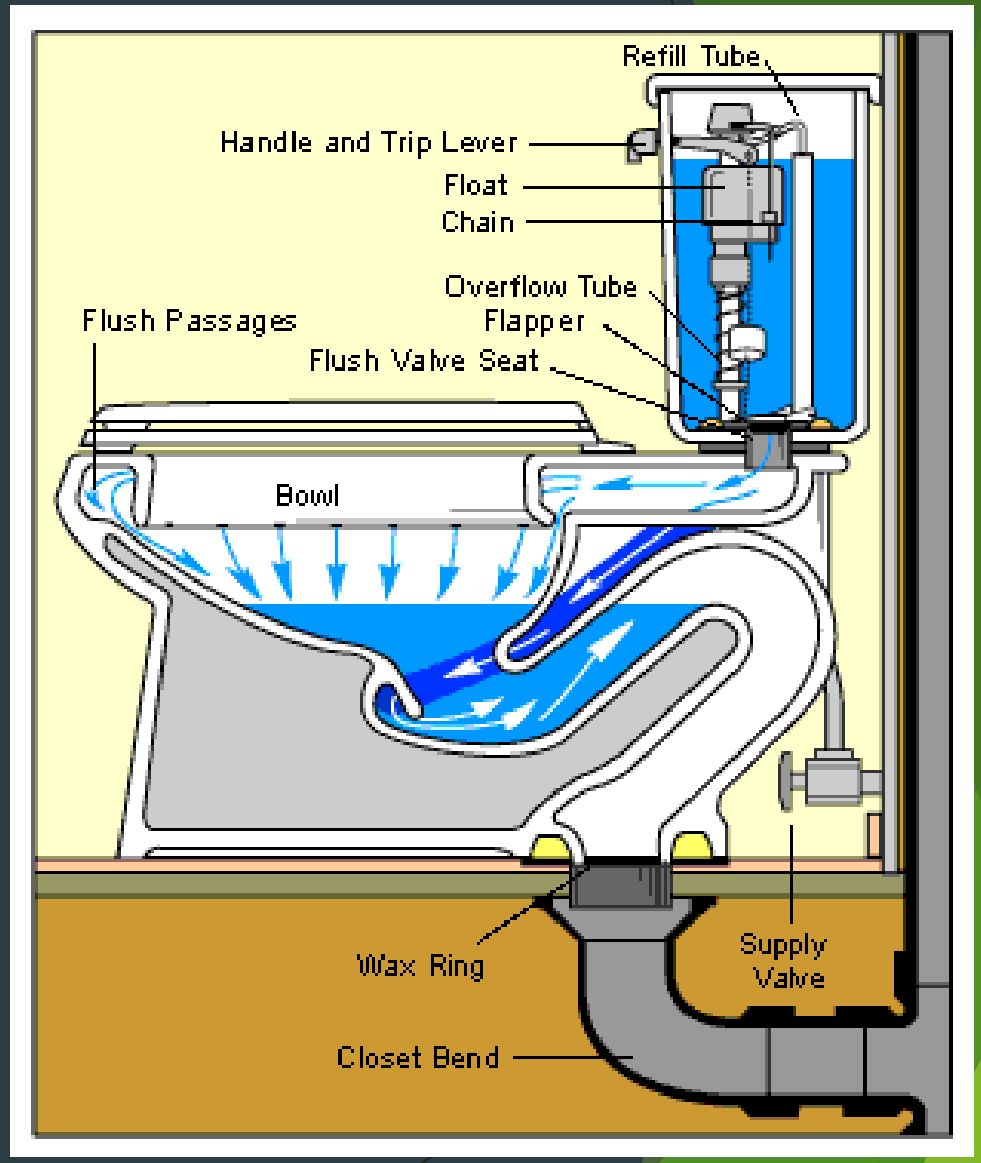
Tools and Supplies

- Pipe wrench
- Crescent wrench
- Flat and Phillips head screwdrivers
- Plumber’s grease
- Needle nose pliers
- Teflon tape

Toilets

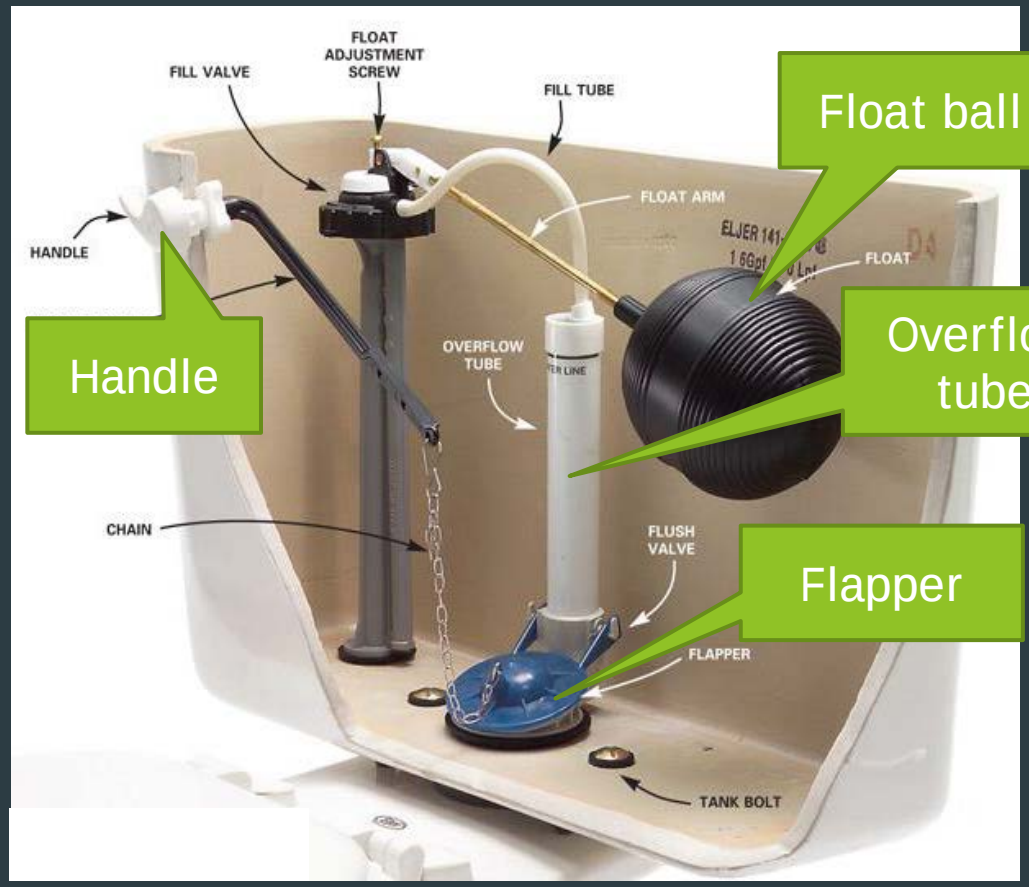
How A Toilet Works:

1. Push the handle to release the flush valve. This opens the connection between the tank and the bowl.
2. Water is “poured” quickly from the tank into the bowl.
3. Allowing the water in creates a siphon effect.
4. The siphon effect empties the bowl from the suction created.
5. Fresh water begins to fill the tank because the level indicator (or float) turns the supply valve on
6. When float reaches the predetermined level, it triggers the supply valve to shut off.

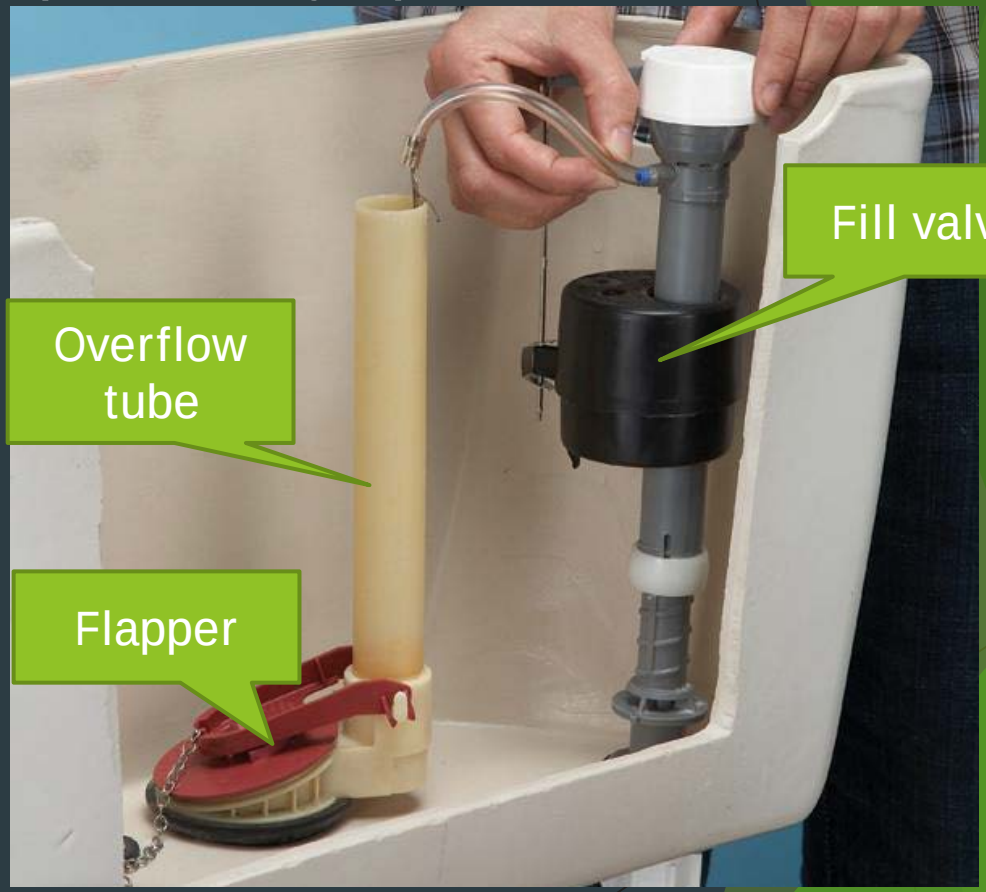


Old vs. New Tank Parts

(Older Style) float ball



(Newer Style) Fill Valve



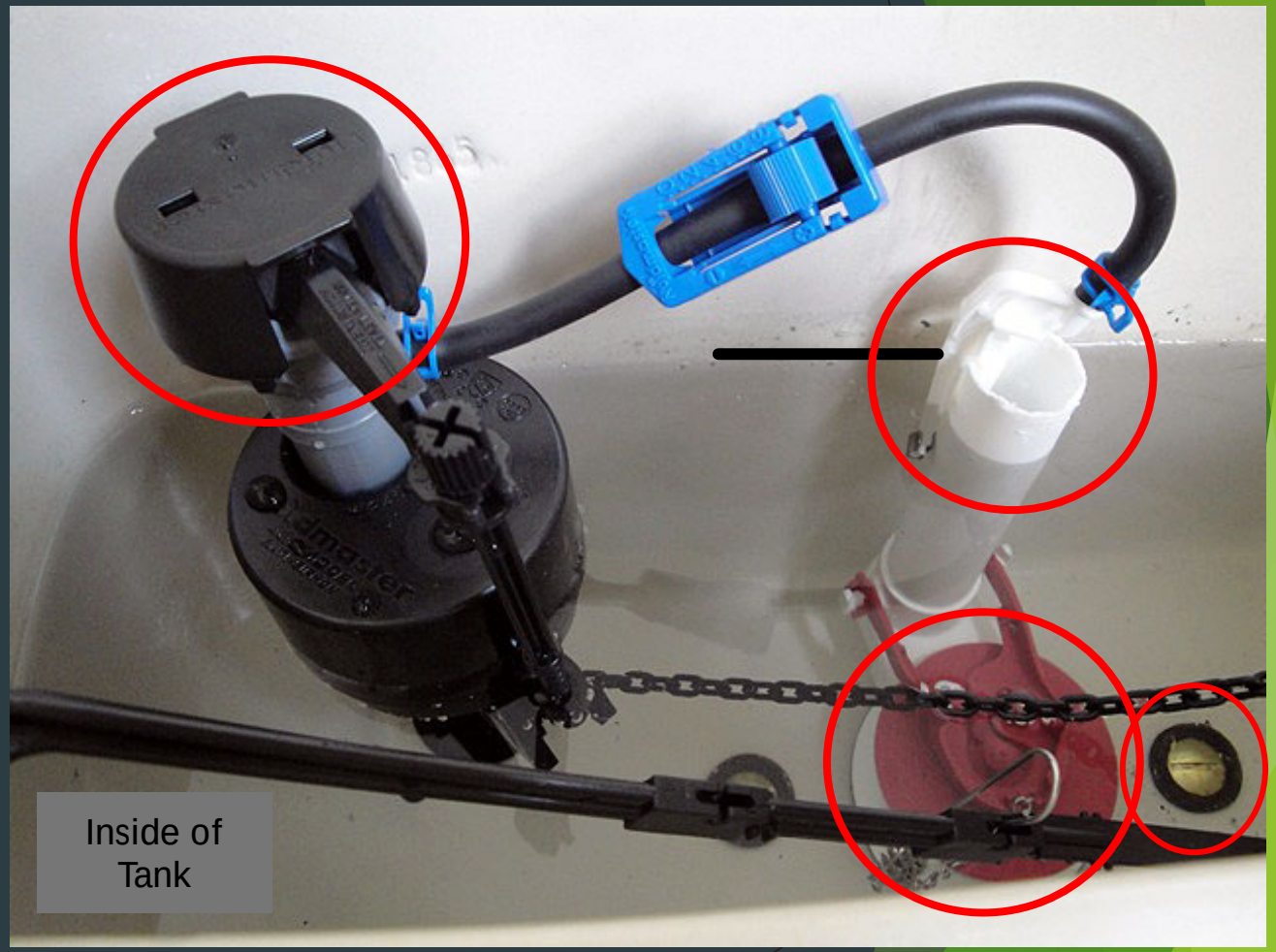
Common Toilet Problems

- Water runs continually
- Water spills into overflow tube
- Toilet does not flush completely
- Tank is leaking
- Water runs after flushing
- Base of toilet is leaking
- Toilet clogged

Water Runs Continuously

Solutions:

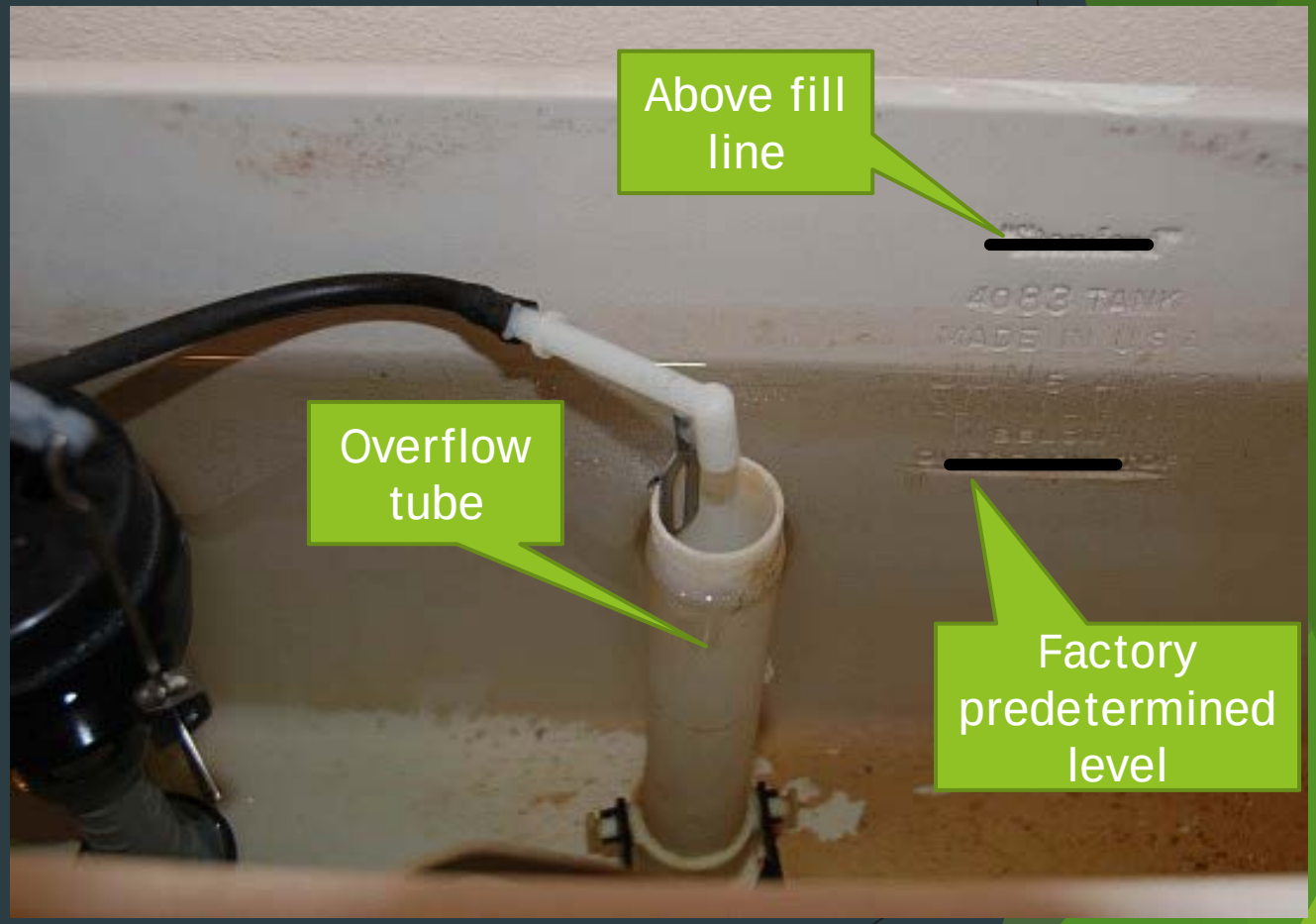
1. Check fill valve or float ball; if bad replace it
2. Check the lift chain to see if the handle is properly connected
3. Adjust the water level in the tank if water is running into the overflow pipe
4. If the tank ball or flapper ball is worn replace it



Note: Before you start tank repairs, turn the shut off valve off and flush the toilet. This will drain the water from the tank.

Water Spills Into the Overflow Tube

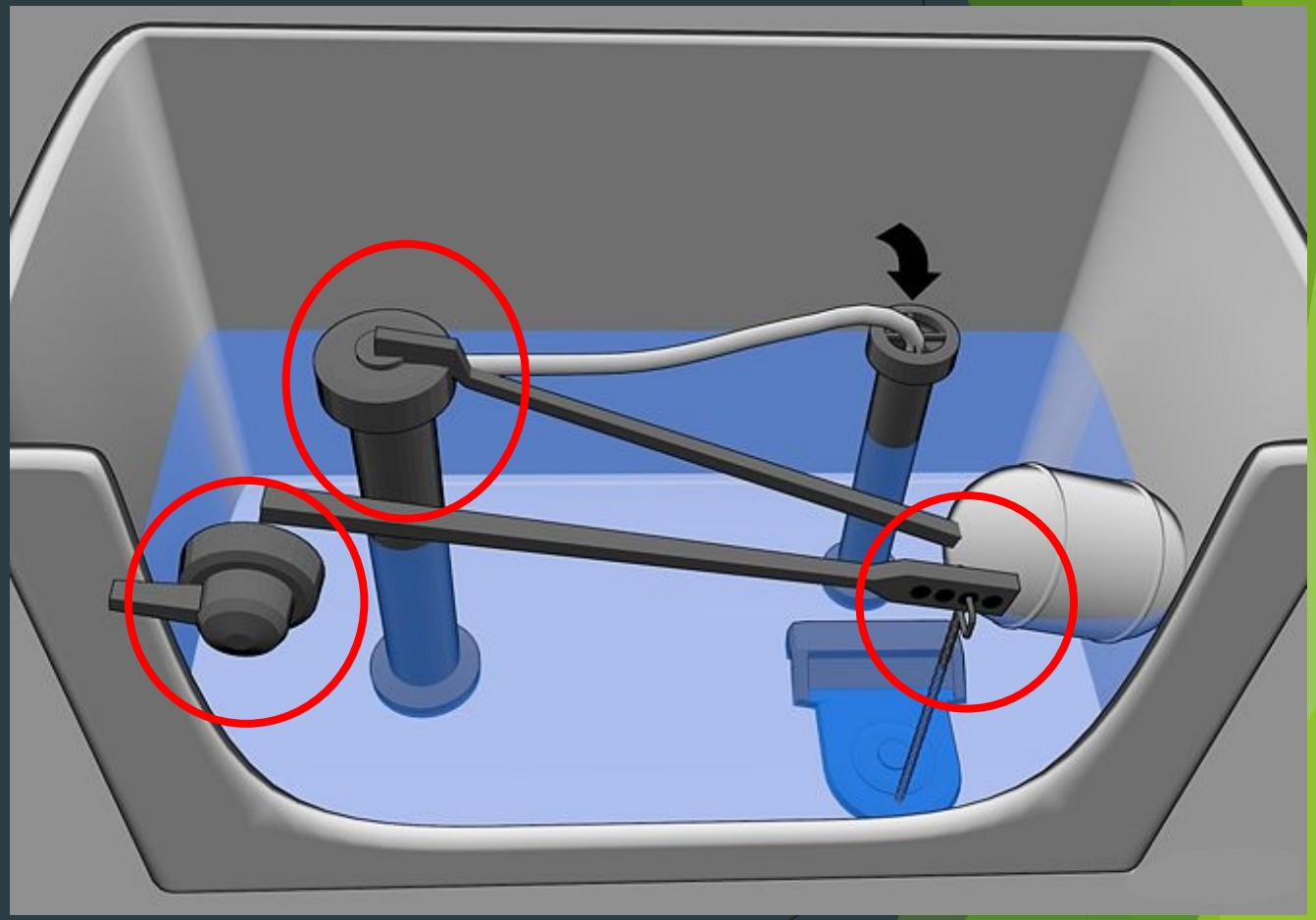
1. Adjust the float arm clamp (by bending downward or upward) so that the water level is about ½” to 1” below the top of the over flow tube
2. Replace the float ball or fill valve if it has filled with water



Toilet Does Not Flush Completely

Solutions:

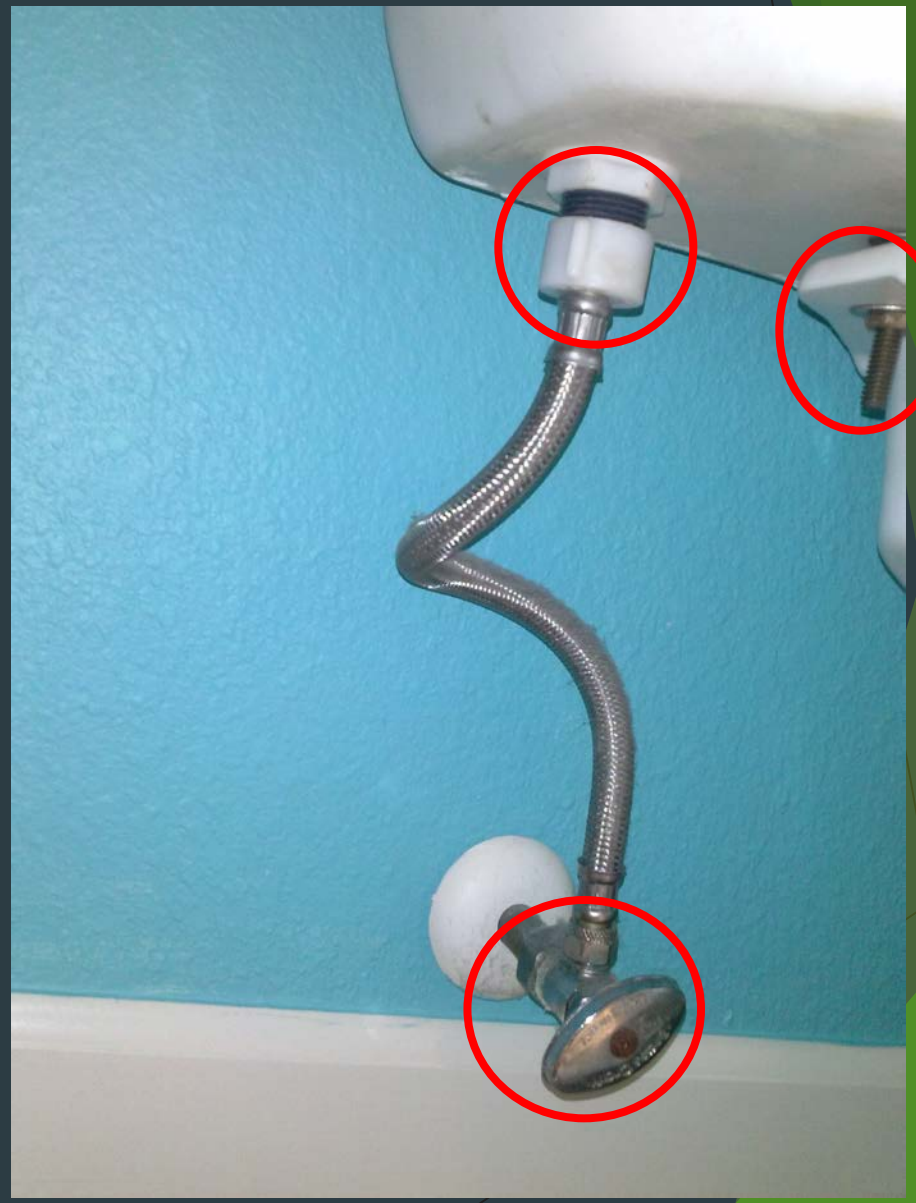
1. Adjust the lift chain to make sure there is not too much slack.
2. Raise the level ½” to 1” below the top of the overflow tube by bending the float arm upward.
3. Check flush handle to see if handle nut is tight.



Tank Leaking

Solutions:

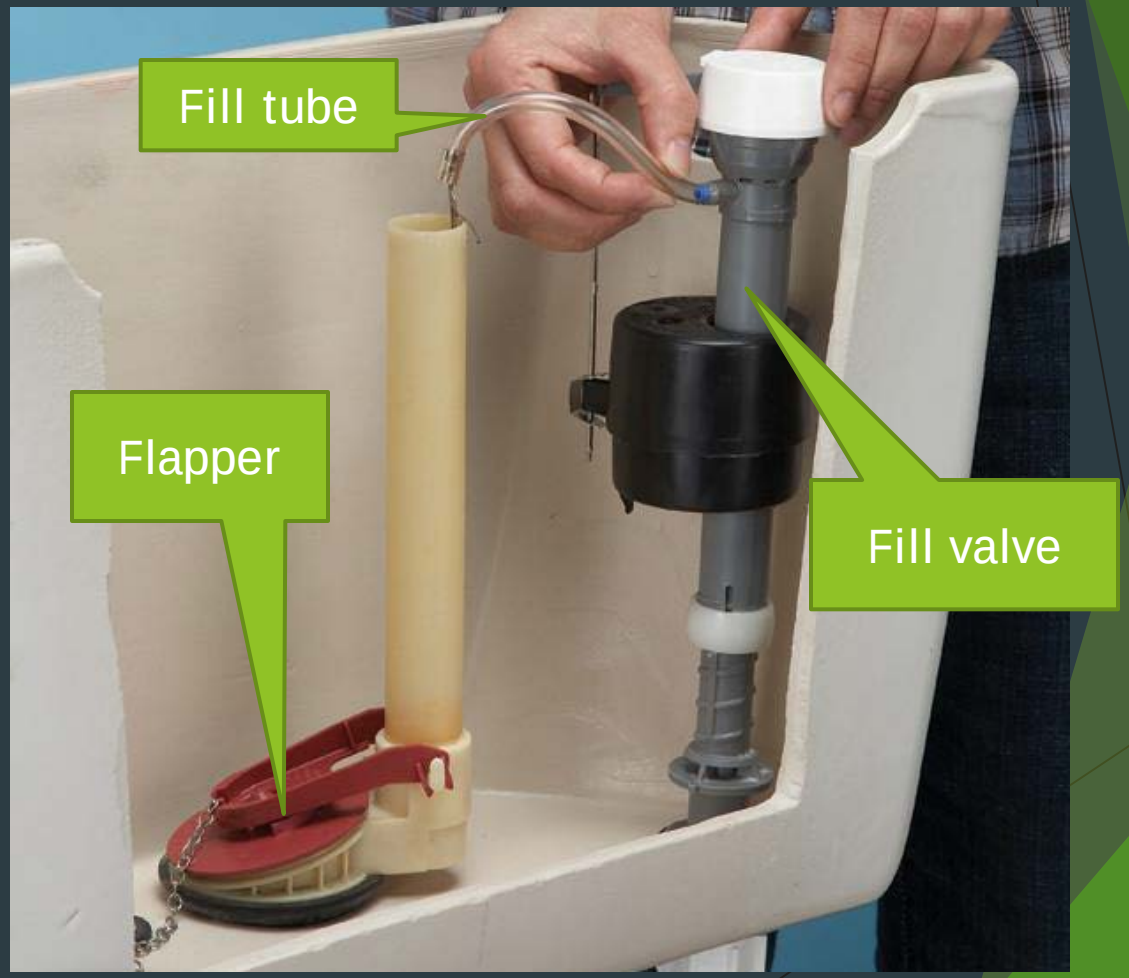
1. Make sure the connections to the water supply line are tight.
2. Make sure shut-off valve is open.
3. Check for leaks around shut-off valve. (Washer could be bad or water outlet line damaged).
4. Check tank bolts to ensure proper seating of rubber washer and bolts where they attach to the bowl.



Water Runs After Flushing

Solutions:

1. Check tank flapper to make sure that it is properly seated on flush valve. If flapper is worn replace it.
2. Adjust fill valve or float ball.
3. Check the tank water level.



Base of Bowl Leaking

Solutions:

1. Tighten the bolts at the base of the bowl.
2. Replace wax ring gasket under the bowl.
3. Toilet bowl needs to be realigned.(If you notice the bathroom floor is not level spacers will be required for proper alignment.)

Note: Always replace the wax ring when reinstalling a toilet.

Unclogging Toilets

Solutions:

1. Only use a flange plunger.

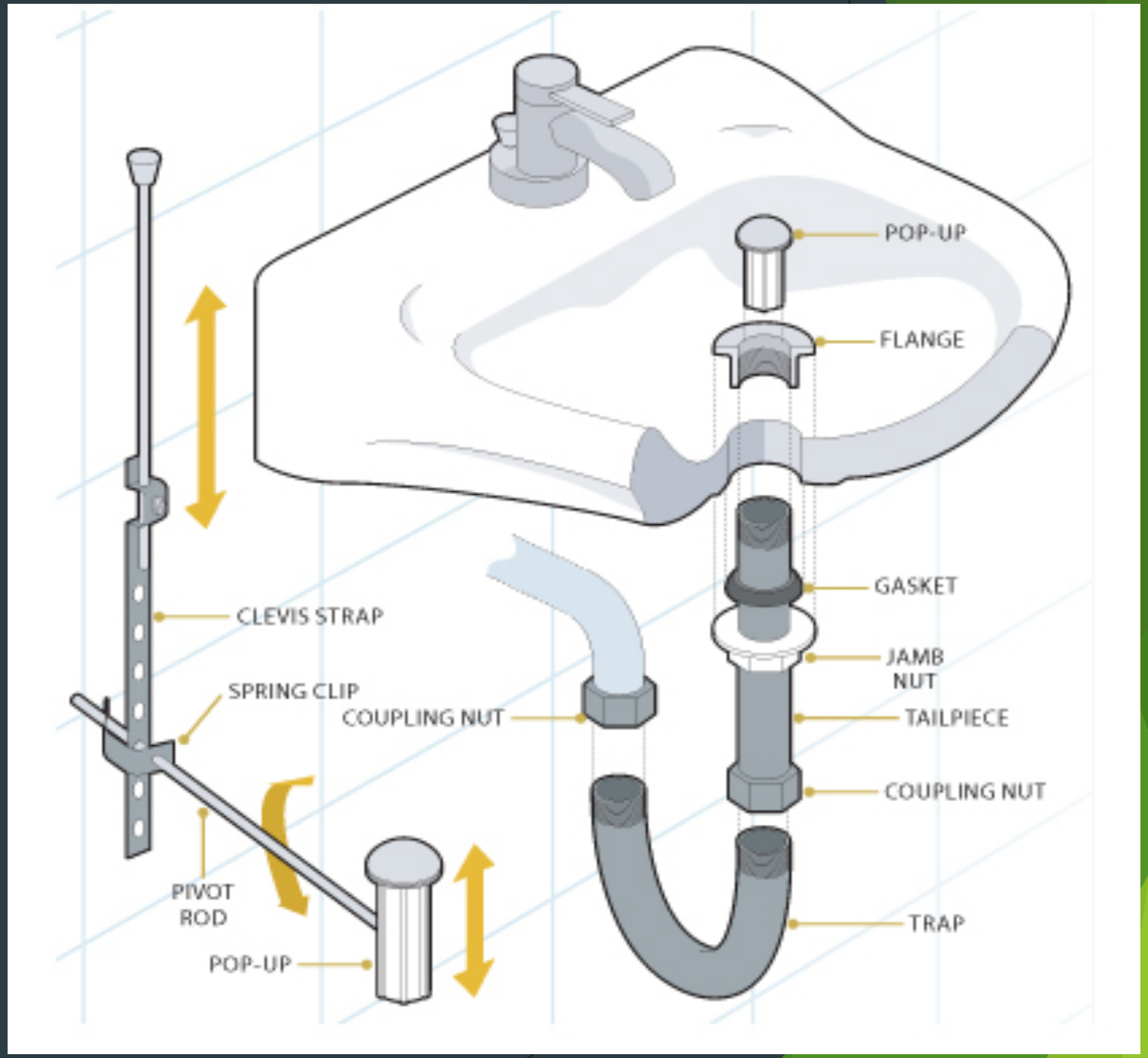
   A flange plunger is designed to seal the opening of a toilet bowl and maintain the required vacuum and pressure as you plunge.

How a Bathroom Sink Works

The strainer body on the sink basin that you can see in the sink is a rubber gasket and a locknut.

These connect to the strainer sleeve which connects to a tailpiece. All this leads up to the p-trap .

The p-trap has a clean out plug on the bottom and then winds back up and connects to the pipe that takes the water out to the septic or sewer.



Common Bathroom Sink Problems

- Faucets leaking
- Missing or worn slip nut gasket
- Clogged p-traps
- Shut-off valve leaking
- Worn or damaged pop-up assembly
- Drain pipe leaking
- Supply lines leaking

Faucets Leaking

Solutions:

- Replace stem or cartridge
- Replace faucet stem
- Replace O-ring gasket
- Replace faucet




Missing or Worn Slip Nut Gasket

Solutions:

- Replace gasket
- Tighten slip nut
- Replace slip nut

Clogged P-Traps

Solutions:

- Remove p-trap and clean out trap
- Replace it
- Install a pressure p-trap

Leaky Shut-Off Valves

Solutions:

- Tighten packing nut
- Replace packing nut
- Check water supply line

Safety: When working on water supply lines you must cut the main shut-off valve off first.

Leaky Supply Lines

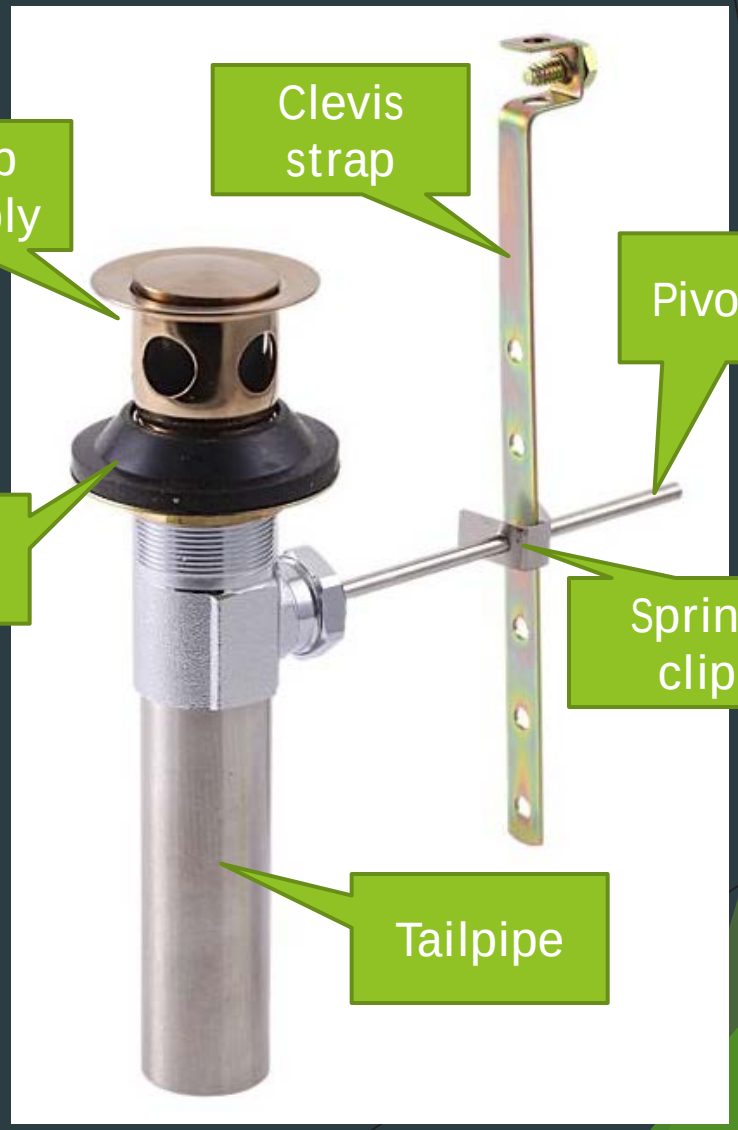
Solutions:

- Always check your connections
- Tighten any line that feels loose
- Replace it

Worn or Damaged Pop-Up Assembly

Solutions:

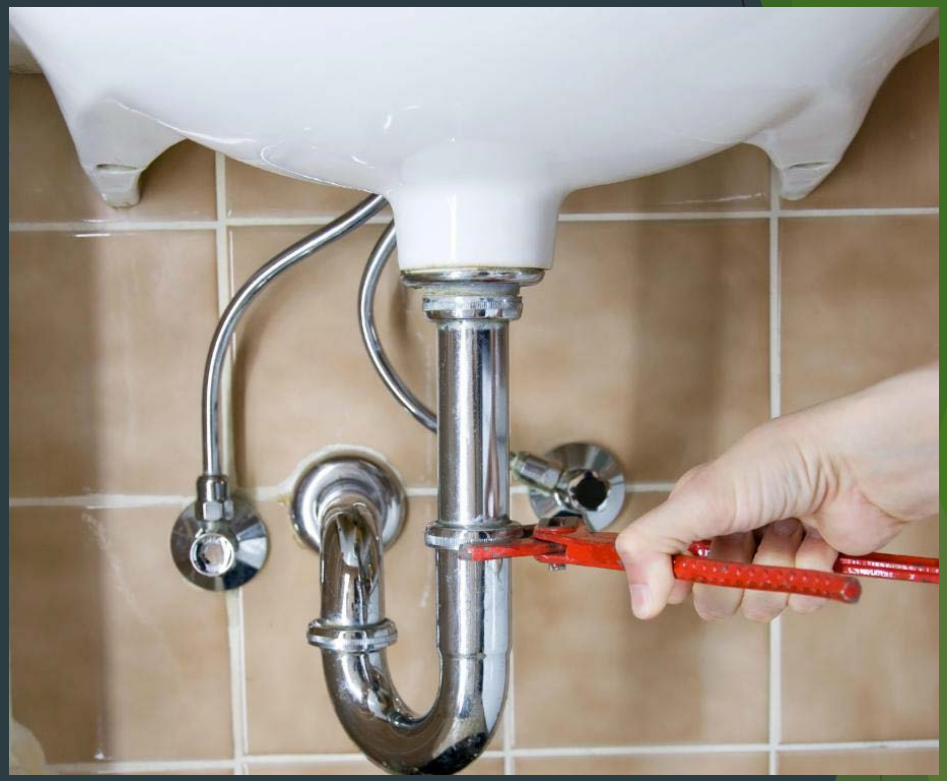
- Replace gasket
- Replace tailpipe
- Replace or repair pivot rod
- Replace pop-up assembly
- Replace spring clip
- Replace clevis strap



Drain Pipe Leaks

Solutions:

- Tighten slip nut
- Replace or repair gasket
- Replace piping



Basic Electrical

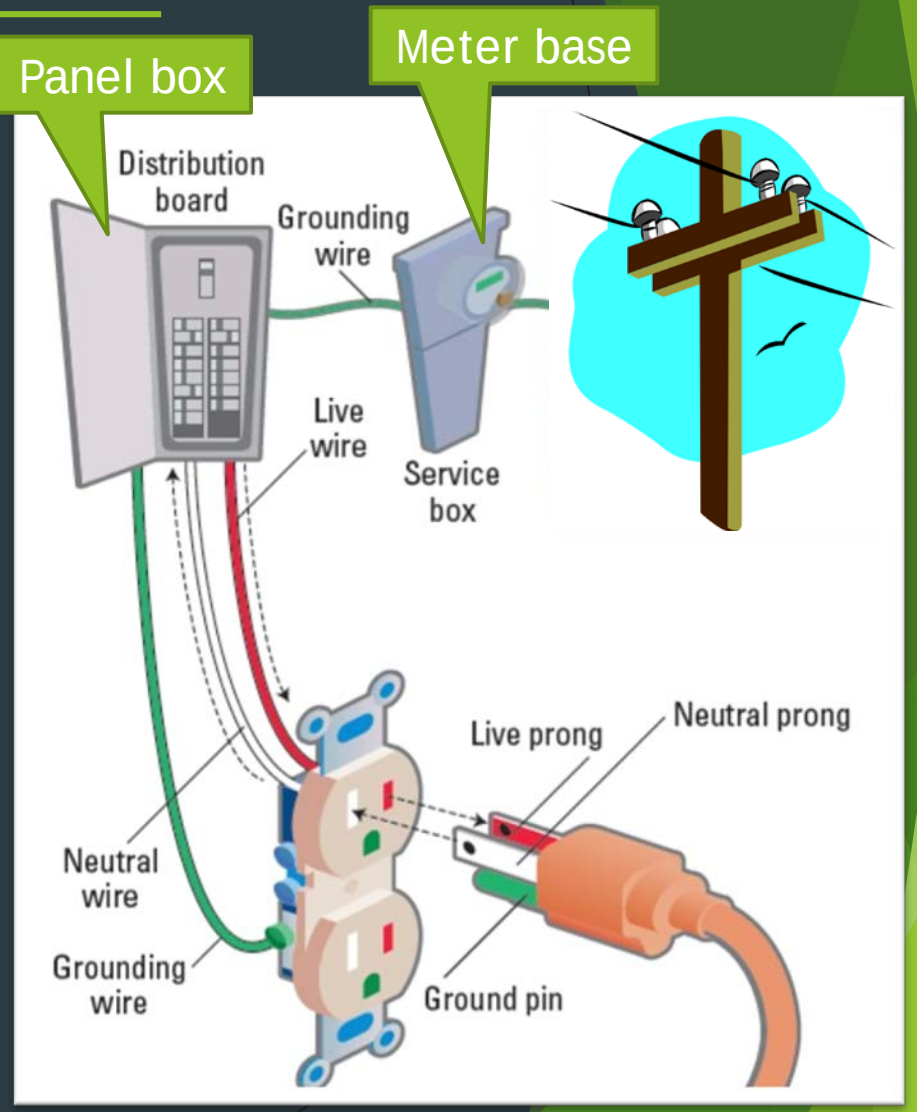
Electrical

- This objective will help homeowners understand the functionality of their electrical equipment as well as how to properly fix, install, and maintain minor electrical issues.
- Identify tools needed to fix minor repairs.

Safety: Always disconnect power before starting ANY electrical repairs

How Does Electrical Service Work?

- Electricity enters your home from the power company via a 240v power line into your meter base outside the home.
- The panel box that feeds from the meter base contains breakers (or fuses in older homes).
- The circuit breakers divert the electricity along small wires running behind your walls, crawl space, and roof. This allows the forming of separate circuits around your house which deliver electricity to all the switches and power points.
- Houses have multiple circuits to help the electrical current stay small, reducing the risk of overloading the circuits.
- Fuses and circuit breakers automatically block incoming surges of electrical power over a safety limit. (A circuit breaker sometime can be simply switched back on.)



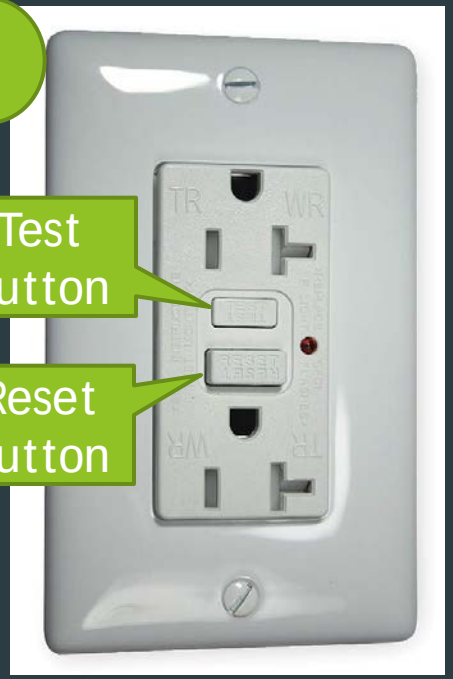
Common Electrical Problems

- Tripped GFCI (Ground Fault Circuit Interrupter)
- Tripped breaker
- No power to wall outlet
- Lights flickering
- Broken bulb in fixture
- Broken or missing outlet plate cover
- Broken or burned outlet

Tripped GFCI (Ground Fault Circuit Interrupter)

1. Reset set GFCI by pushing the reset button
2. Check breakers in your home panel box.
3. Replace it

1



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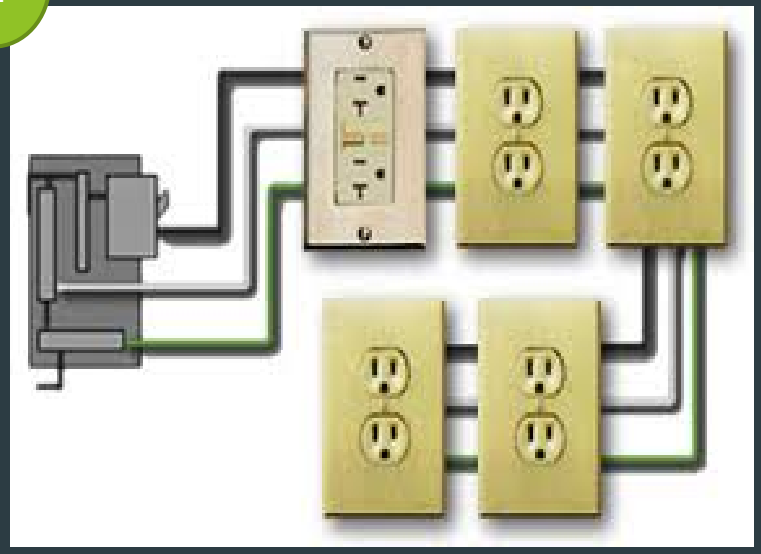


3

Safety: Always turn power off before replacing any electrical equipment.

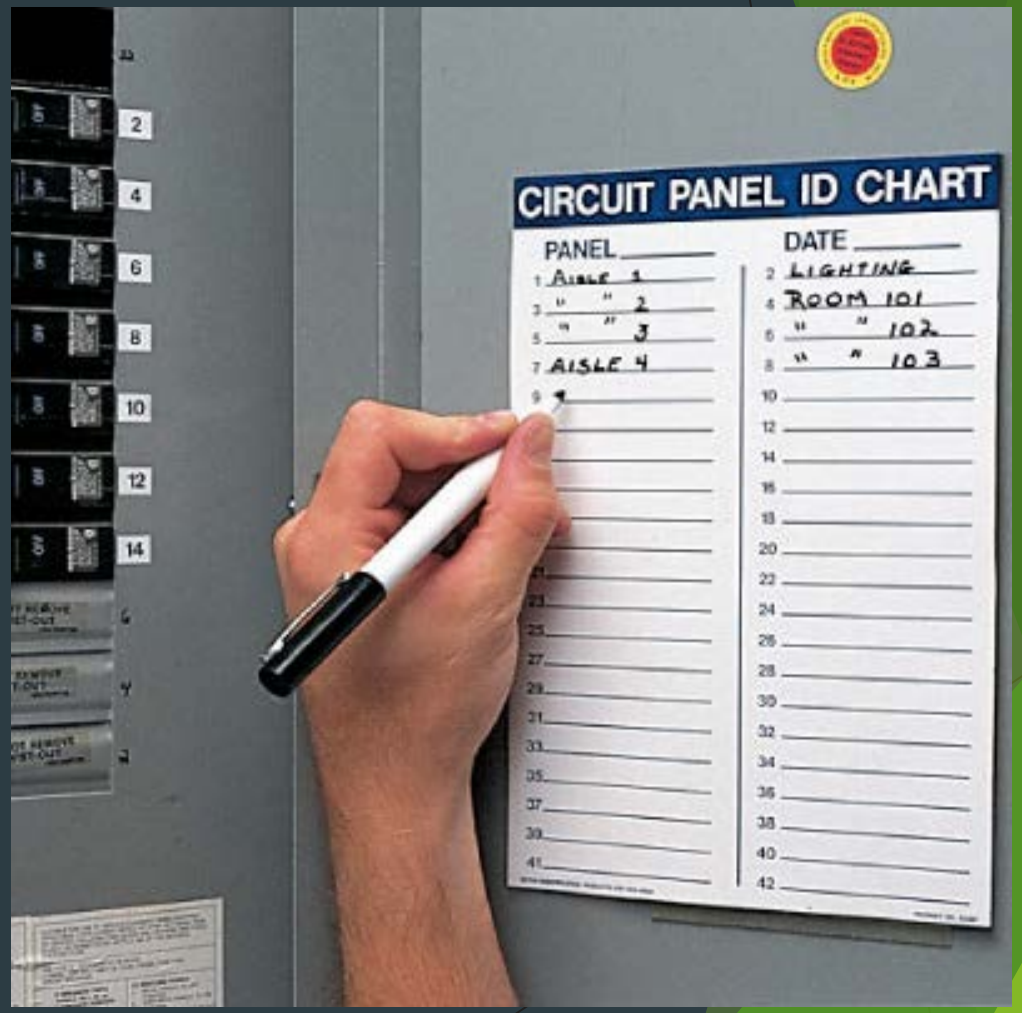
Tripped Breaker

Solutions:

- Reset breaker
- Figure out what's plugged in – this will help you predetermine what is pulling some amps.
- If a breaker trips frequently have a certified electrician come to inspect the problem.

Importance of Proper Labeling

- Go through panel box to figure out which breaker is connected to electrical aspects of your house
- Each breaker controls the different parts of the home's electricity
- Important to shut appropriate breaker off of electrical item being repaired, replaced, or installed



No Power to Wall Outlet

Solutions:

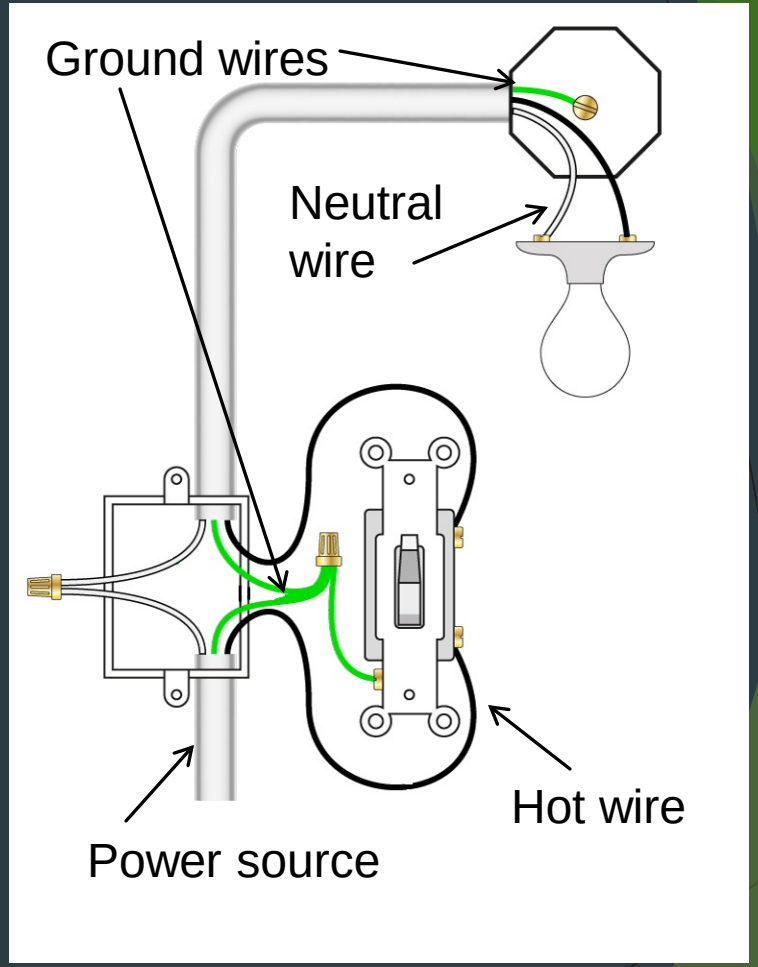
- Check GFCI – if tripped reset it
- Check breaker – if tripped reset it
- Faulty outlet – turn off power and replace

Safety: Always turn off power before doing any electrical repairs

Light Flickering

Solutions:

- Replace bulb with recommended wattage
- Check to make sure dimmer switches have dimmable bulbs
- Check wiring to make sure everything is tight in wire nut and there are no burned wires



Safety: Always shut power off to the circuit when checking wires

Broken Bulb in Lighting Fixture

Solutions:

- Turn power off to the circuit from the main panel box.
- Use light bulb remover tool or needle nose plier to unscrew base from fixture.
- Make sure you wear thick gloves – broken glass will cut you.

Safety: Always turn power to a fixture before working on it.

Missing or Broken Outlet Plate

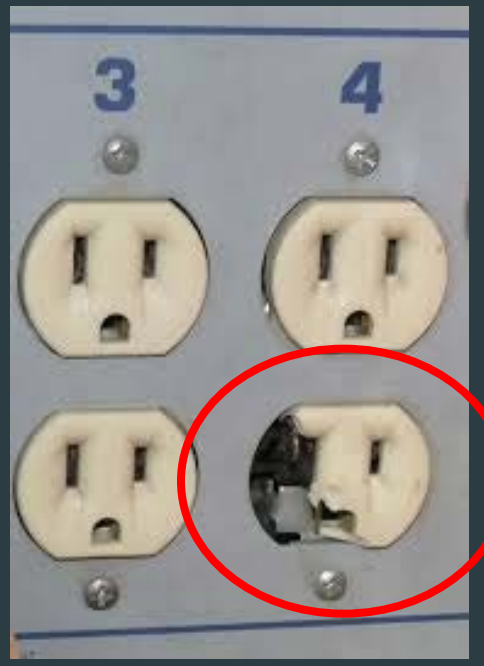
Solutions:

- Install new outlet plate

Broken or Burned Outlet

Solutions:

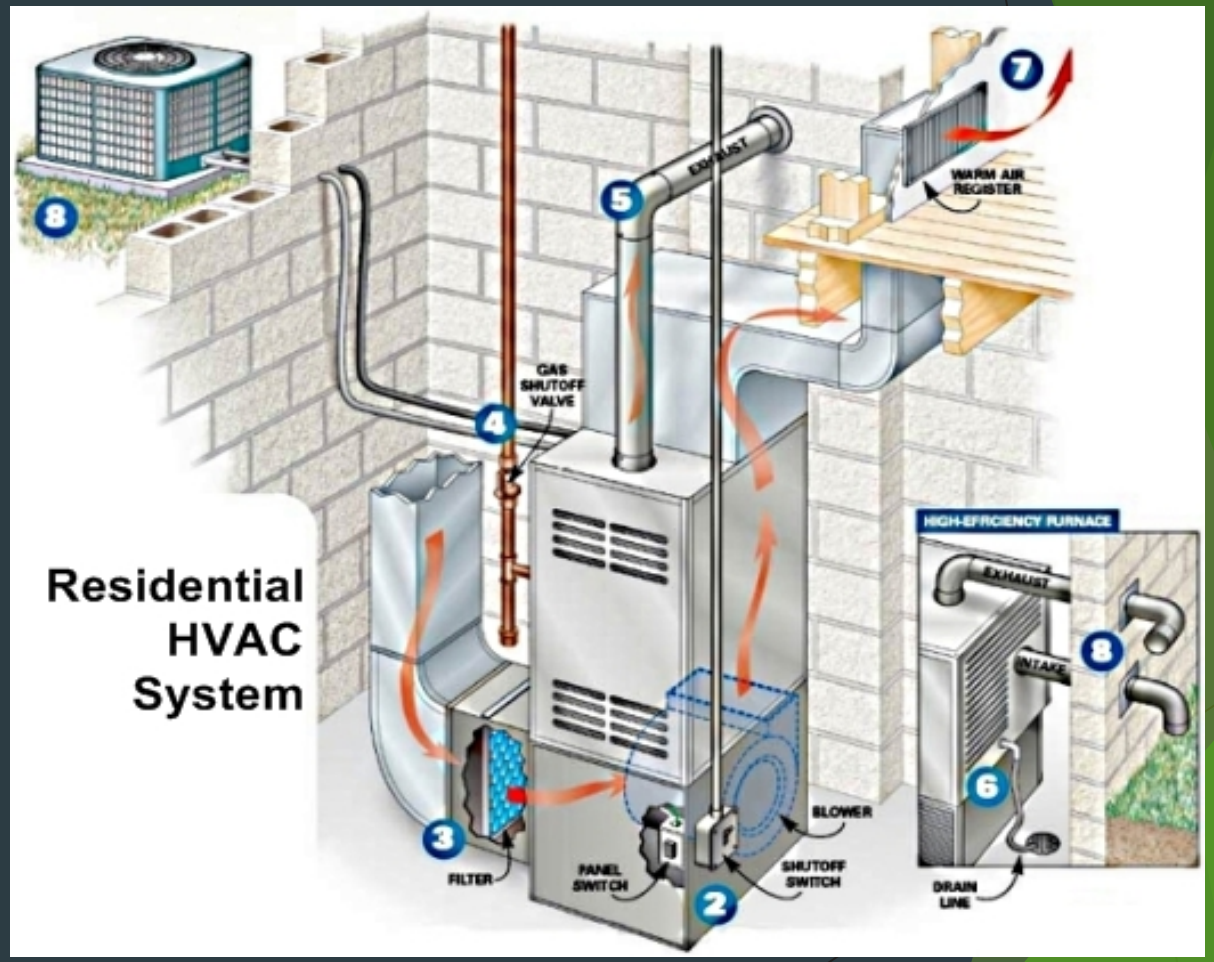
- Turn power off at the breaker
- Replace outlet
- Make sure you wire the outlet the same way it is currently wired
- Use outlet tester to check if outlet is properly wired.



Basic HVAC (Heating, Ventilation, and Air Conditioning)

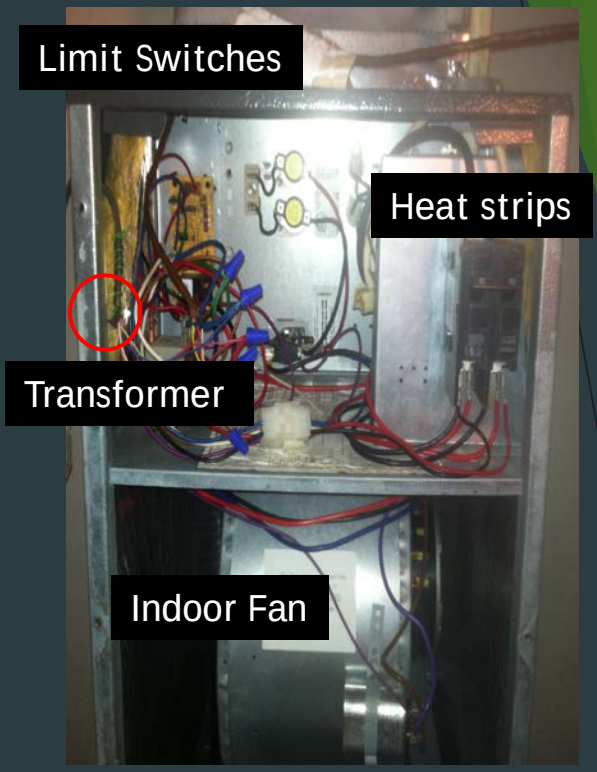
HVAC (Heating, Ventilation, and Air Conditioning)

- This objective will help homeowners understand the functionality of their HVAC equipment as well as how to properly fix, install, and maintain minor HVAC issues.
- Identify tools needed for minor repairs.

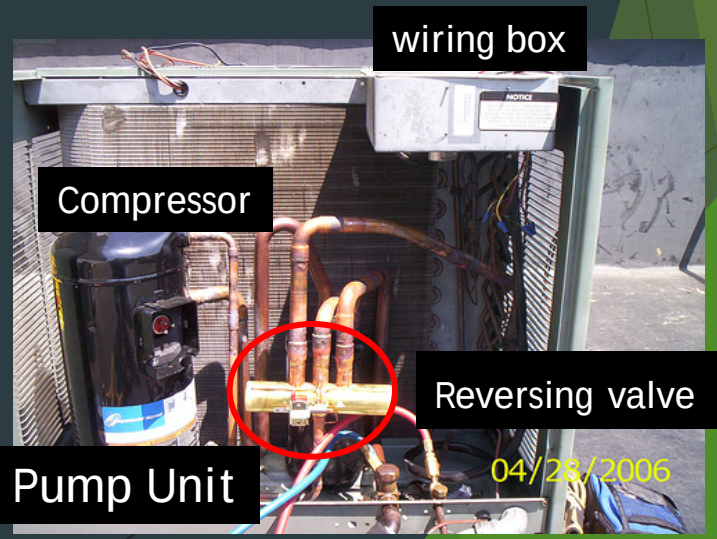


How Does a Heat Pump Work?

- When you first turn your thermostat on to heat the indoor unit fan comes on.
- Once the indoor fan comes on the outdoor unit comes on 5 sec later.
- The indoor temperature will depend on how comfortable you are trying to be.
- If you are looking to warm your house instantly raising the thermostat temperature 4 to 5 degrees higher will turn on your strip heater which is known as aux heat.
- If you are trying to knock the chill off raising the temperature 2 degree above the thermostat reading will cut your heat pump on.
- The air coming out the vents on will only be warm air.



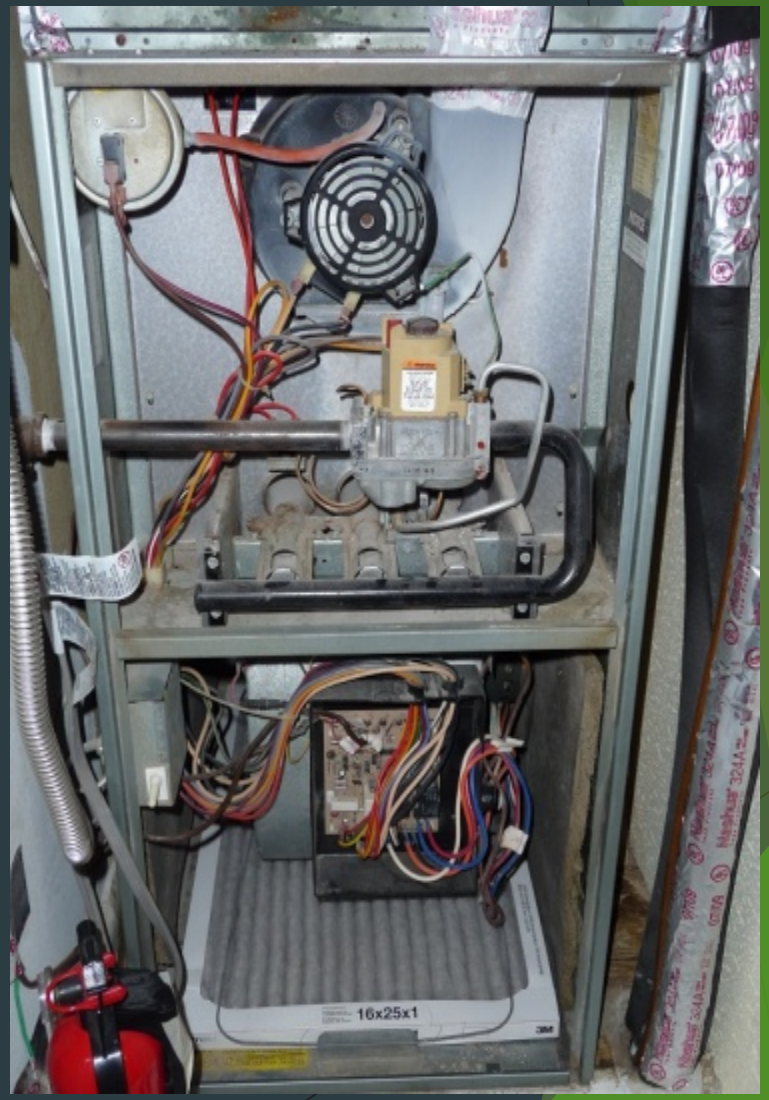
Indoor Air Handler



Heat Pump Unit

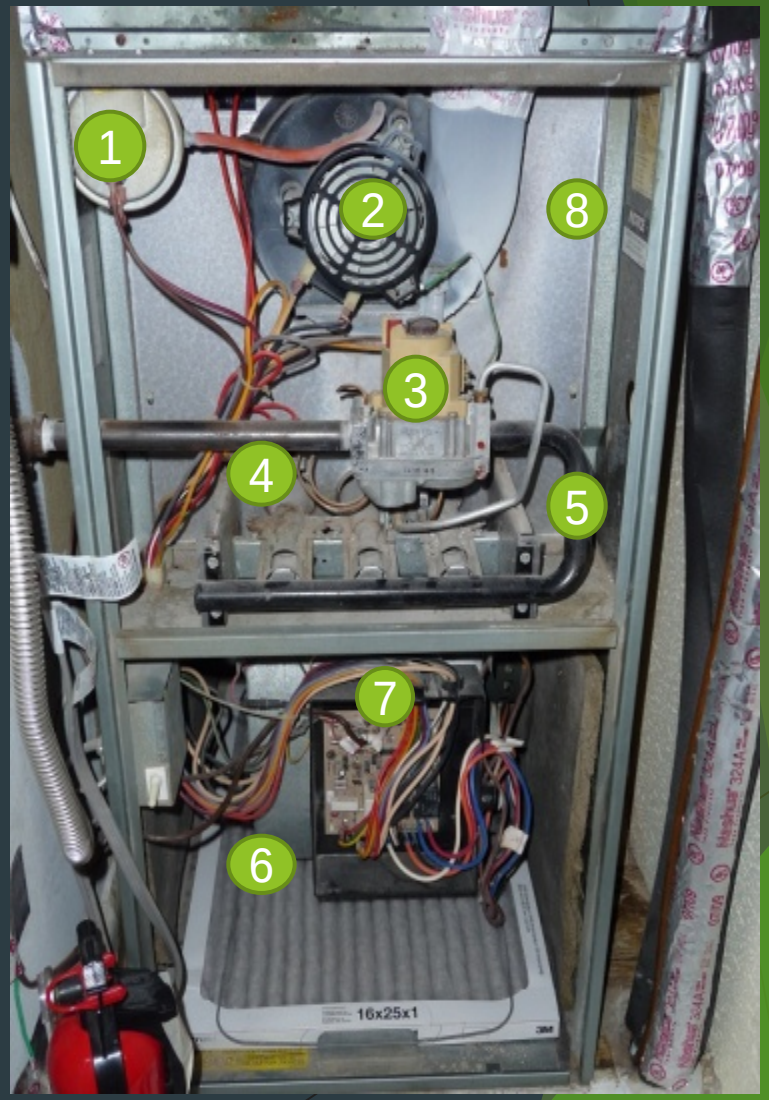
How Does a Furnace Work?

- A furnace heats the cool intake air from your home and returns the heated air back to the home.
- A heat exchanger is used to contain the burning fuel and exhaust. This will avoid circulating toxic fumes throughout your home. When burning the fuel source, much of the heat is absorbed by the heat exchanger.
- The cool air intake absorbs the energy in the exchanger and returns the heated air to the home through the ventilation duct.



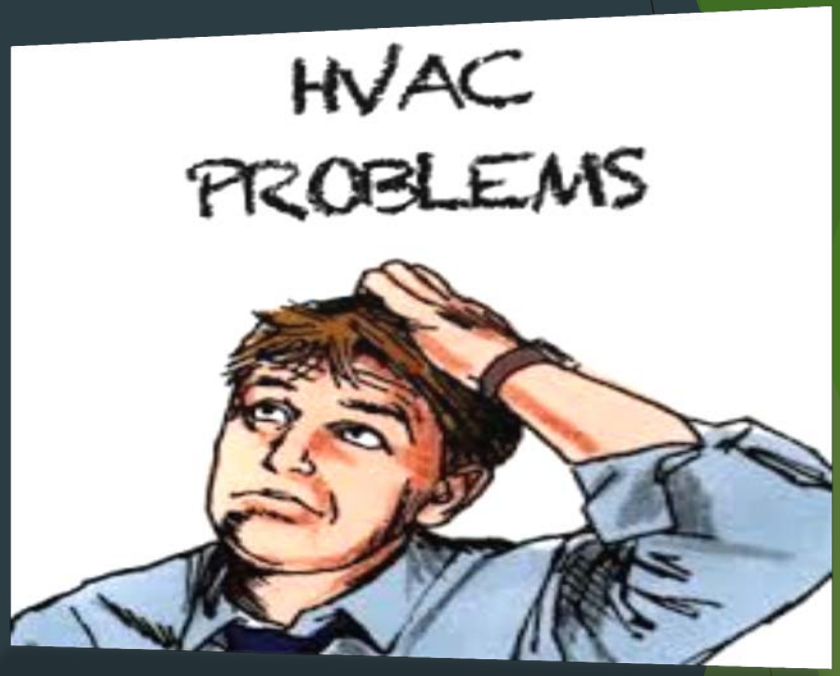
How Does a Furnace Work?

- 1. Pressure switch
- 2. Inducer draft fan motor
- 3. Gas valve
- 4. Burners
- 5. Gas line pipe
- 6. Air filter
- 7. Gas control board
- 8. Heat exchanger



Common HVAC Problems

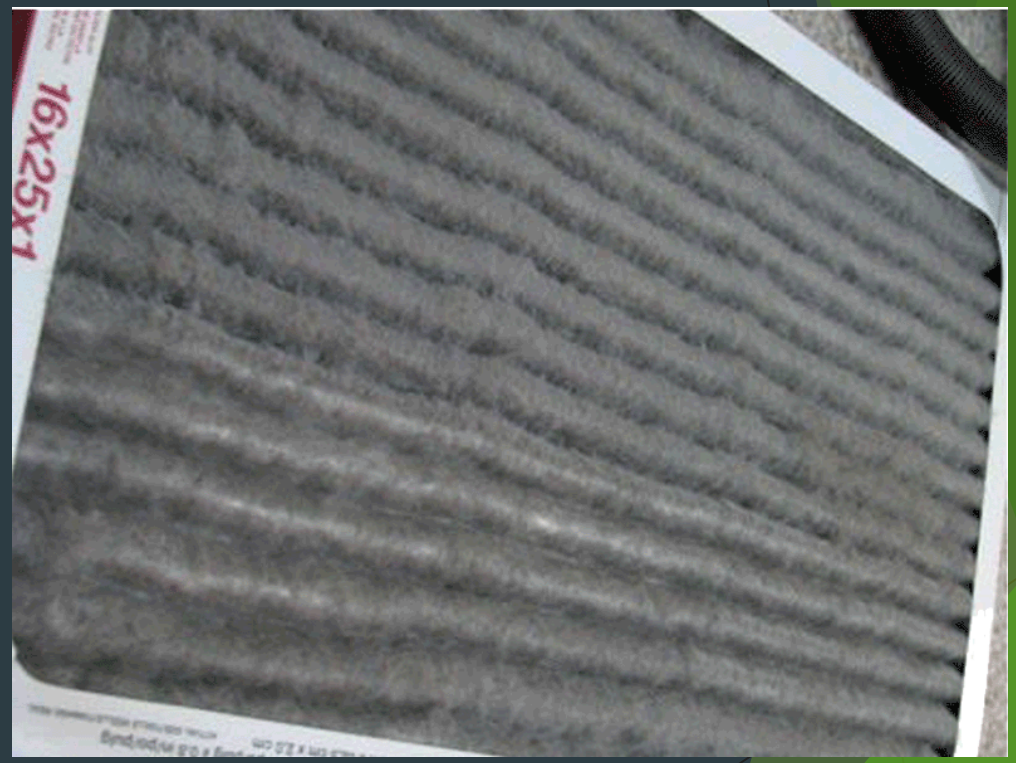
- Supply air has odor
- Dirty air filter
- HVAC system is noisy
- Lack of preventive maintenance
- Supply vents blocked
- Condensate line blocked



Dirty Air Filters

Solutions:

- Change filters every 30 days (especially if you have pets)
- Have your unit inspected seasonally



Dirty Condenser Coil

Solutions:

- Turn power off to unit.
- Use a water hose with a nozzle and gently wash condenser coil down.

Unit Does Not Function Properly

Solutions:

- Preventive maintenance
- Routine maintenance

Not Enough Air Flow

Solutions:

- Air vent covers
- Air vent deflectors

Conclusion

- This training course is design to help homeowners understand the functions and basic skills needed to make minor repairs around the home
- Our job is to educate homeowners on minor skilled repairs for their home which include: Plumbing, HVAC (Heating, Ventilation, and Air Conditioning), and Electrical.
- After completing this course the homeowner will have a basic understanding of how things work in their home.

THANK YOU

County of Henrico, Department of Community Revitalization

Richmond Metropolitan Habitat for Humanity

Environmental Green Solutions, LLC

HOME MAINTENANCE
WORKSHOPS

Thank you for coming

Upcoming workshops:

Saturday, February 6 - Home Improvements

Saturday, March 5 – Landscaping and Curb Appeal

Richmond Metropolitan Habitat for Humanity®