HOME MAINTENANCE STUDENT MANUAL

NORTHWEST TERRITORIES
HOUSING CORPORATION

CAVEAT

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Produced by the Northwest Territories Housing Corporation

Programs and District Operations Division, Headquarters

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Overview

The Home Maintenance course is part of the Northwest Territories Housing Corporation's training program for clients.

The course aims to teach NWT Housing Corporation clients basic home maintenance and repairs. It can be expected that most course participants will have little or no knowledge of home maintenance and repair issues.

Student Manual

The Student Manual is divided into five chapters:

1. Chapter 1: Electricity
2. Chapter 2: Heating
3. Chapter 3: Plumbing
4. Chapter 4: Home Repair
5. Chapter 5: Home Safety

Course Length

The total course length is 5 hours and 5 minutes (9:30 am – 4:45 pm with two 15-minute breaks and a 1-hour lunch).
The course can be delivered in one full day or be split into two or three evening sessions.

The approximate time required to deliver each chapter is as follows:

1. Electricity - 50 minutes
2. Heating - 75 minutes
3. Plumbing - 75 minutes
4. Home Repair - 80 minutes
5. Home Safety - 25 minutes

Note: There is a 30 minute introduction and discussion of prior knowledge at the beginning of the course.
There is also a 15 minute course debrief and course evaluation at the end of the course.

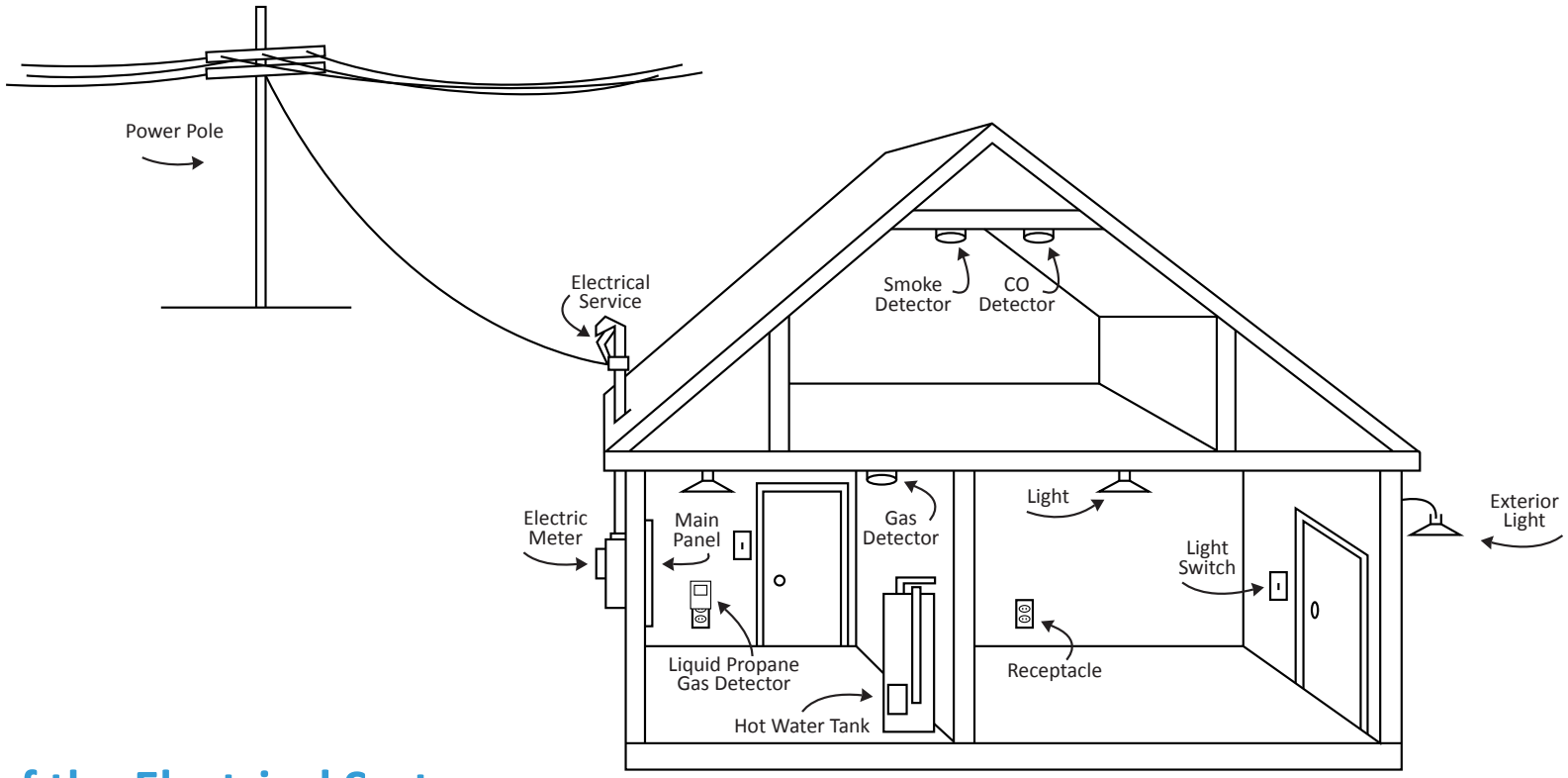
To successfully pass the course, participants must be present during the delivery of all chapters covered in the course delivery.

Table of Contents

Electricity

In this chapter you will learn to:

- **Identify the main parts of a home electrical system**
- **Recognize the dangers of electrical systems**
- **Locate and safely reset circuit breakers on an electrical panel**
- **Demonstrate safety procedures in and around an electrical system**
- **Safely use basic electrical repair tools**
- **Troubleshoot electrical issues and problems**



The Parts of the Electrical System

- Power comes into your home from the power pole and is hooked up to your electrical service.
- The power meter shows how much power is being used in your home.
- The main panel has breakers that supply power to all the wiring for your lights, outlets and appliances.
- Smoke, CO and Gas detectors protect your family and your home.
- Lights, outlets and appliances get power from the main panel.
- Power lines can cause a fire and serious injury or even death - Do not touch powerlines and keep tree branches clear.
- Power meters are read to find out how much power you used.

The Main Electrical Panel

The main electrical panel has circuit breakers for all the lights, outlets and appliances in your home. You will find the main electrical panel circuit breakers in a metal box where the power comes into your home.

You may have to turn off the power to an appliance:

if you smell smoke or see sparks coming from any electrical fixture or appliance.

if an appliance or fixture is not working properly.

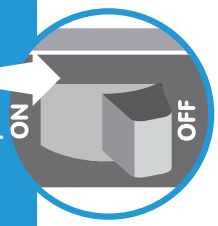
if you need to repair an appliance or fixture.

Each circuit is protected by a circuit breaker at the Main Panel that will automatically shut off the power to the circuit if:

- There is a dangerous electrical overload that may be caused by too many appliances plugged into the same outlet.
- There is an appliance that is broken or has damaged wires.

If the circuit breaker trips and stops the power to a circuit, do the following:

1. Push the breaker lever all the way to the OFF position.
2. Then push the breaker lever all the way to the ON position.
3. If the breaker trips again when you turn on the lights or appliances you were using, the problem still exists. If the problem is an overloaded circuit try moving the appliance to a different circuit. If that breaker trips, then there is problem with the appliance.



Caution

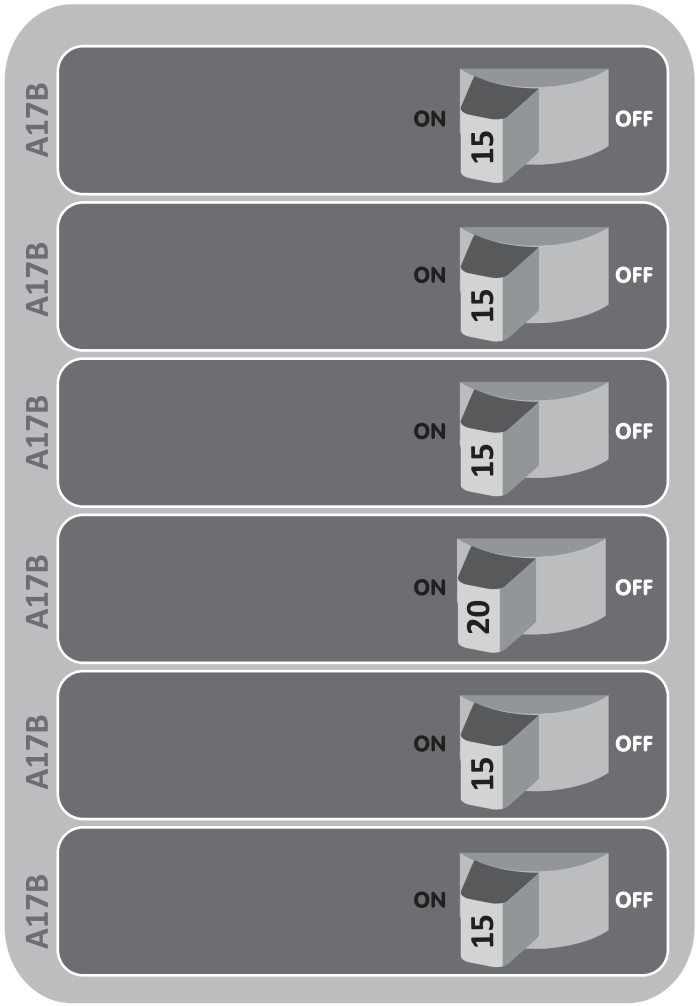
Do not remove the circuit breaker panel cover.

Appliances such as the electric range, water hear and other appliances often require their own circuit and high amp breaks.

Always

Get a qualified electrician to do work on your electrical panel or moving appliances that are hardwired in and do not have a plug.

Do not continue to reset a breaker that constantly trips. Contact an electrician or the landlord.



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Tip

Make sure all the circuits are labeled properly by an electrician so you will know how to shut off the power in an emergency.

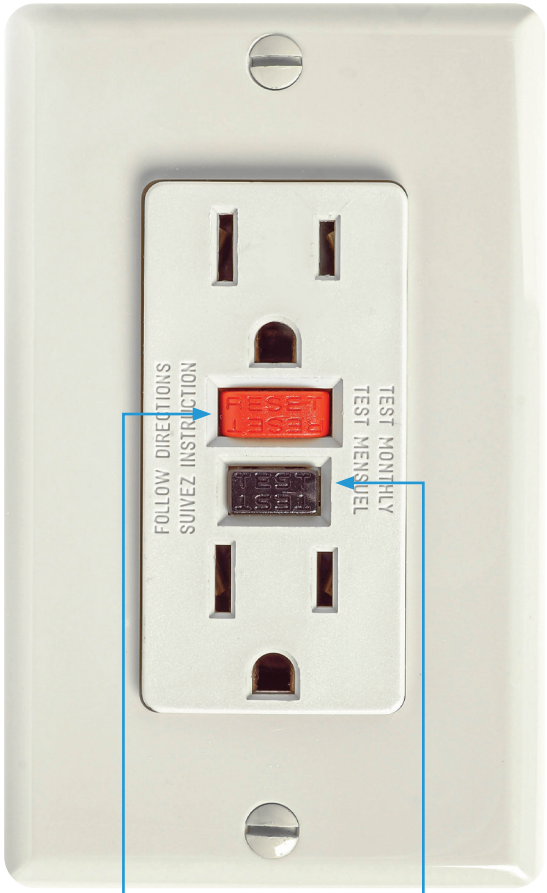
Ground-Fault Circuit Interrupters (GFCI)

Ground-Fault Circuit Interrupters are usually found in the kitchen, bathroom and for outdoor electrical outlets.

GFCIs protect you from getting a shock. For instance, if your electric shaver or hair dryer causes a short, the GFCI will trip and shut off the power to the outlet you are using. To reset the outlet, push the top button in the centre of the outlet.

Once a month you should push the bottom button in the center to see if the GFCI is working properly. The top button will pop out and shut off the power to the outlet. Remember to push the button that usually is red to reset the plug.

- Keep moisture away from the GFCI plug.
- If the GFCI continually trips, do not continue to reset. Call an electrician for repairs or to replace the receptical.



Electrical Safety

- Always turn off the circuit breaker when working with electricity.
- Never remove the third prong on an electrical cord; it's there to keep you and your home safe.
- Never work on an appliance without making sure that it is unplugged.
- Never stand in water when working with electricity.
- Never use water on an electrical fire.
- Never overload your electric outlets with lots of plugs. Plugging in too many appliances will trip a breaker.
- Always have a certified electrician do major electrical repairs in your house.
- Always shut off power at the breaker or unplug an appliance before you work on it.
- Always keep electric cords in good condition. Never use a cord that is frayed, broken or showing bare wires.
- Always use safety caps in outlets if there are small children in the house.
- Always unplug electric heaters when no one is in the room.
- Be careful if standing on a step stool or ladder.
- When on or carrying a ladder, ensure to avoid touching overhead powerlines.
- Never run extension cords or appliance cords under a rug or carpet.
- Never overload outlets or powerbars.

Electrical Repair Tools

Flashlight

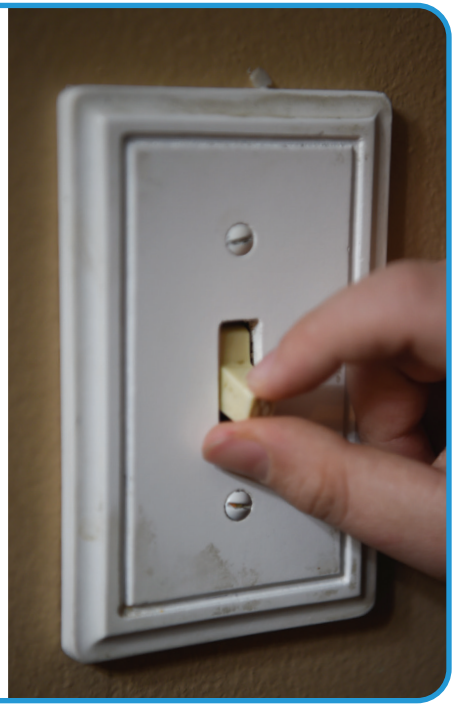
Screwdriver set

Electrical outlet tester

Problem **No Electricity**

If all of your lights and outlets go out, either your main breaker has tripped or the power is down in your community. Check your main electrical panel. To see if the main circuit breaker has tripped.

- Turn off or unplug everything from the circuit that you suspect is causing the problem.
- Reset the breaker.
- If it trips again, call an electrician to do the electrical repairs in your home.
- If it works, turn lights back on and plug in electrical appliances one at a time.
- If one device causes an overload or short circuit, the appliance is probably faulty. It will need to be repaired by a qualified appliance repair person.



Problem **Outlet Doesn't Work**

When a single outlet doesn't work:

- Make sure the problem isn't with the appliance or lamp. Test the outlet with another plug-in appliance or an electrical outlet tester.
- Check if there is a switch that operates that outlet and that it is turned on.
- Check that the circuit breaker has not tripped.
- If the outlet still doesn't work, it may have become faulty. It will need to be repaired by an electrician.

Problem **Light Doesn't Work**

When a single light doesn’t work, the problem is usually either the bulb, the circuit breaker or the switch.

- **The bulb**
  Install a new bulb.
- **The circuit breaker**
  Check the electrical panel to see if the breaker has tripped, If it has, reset the breaker and try the light again.
- **The switch**
  If the switch is the problem, have it replaced.

Household Appliances

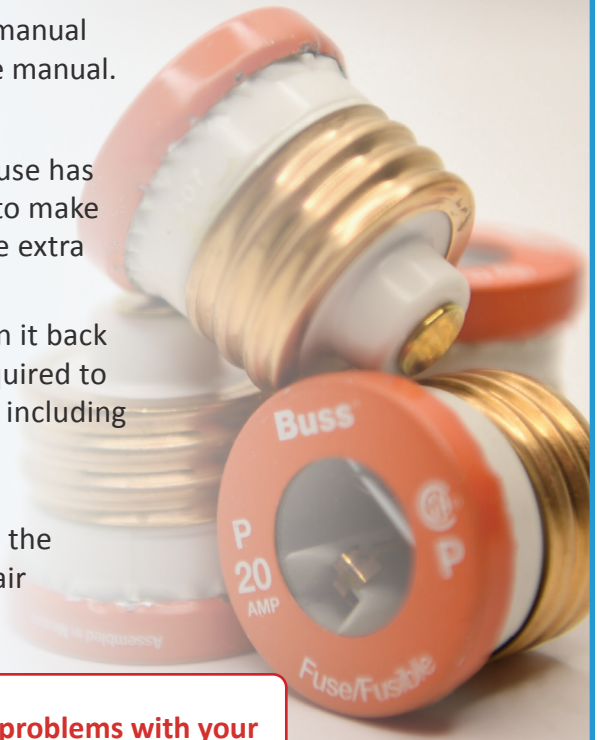
The owner's manuals of your household appliances are full of helpful information from the manufacturers that applies to your specific model. You can find the manual on the internet by searching for the model name and serial number found somewhere on the appliance.

Electric Range (Stove)

If your stove does not turn on or an element does not work, start by checking the owner's manual to find a solution specific to the problem. Perhaps check the troubleshooting section of the manual.

Common problems

- A fuse may need to be replaced on the unit. Locate the fuse box, and determine if a fuse has burned out. If a fuse does need to be replaced, look for the unit number on the fuse to make sure you replace with the correct fuse. This is a common problem, so it's good to have extra fuses on hand.
- Check that the circuit breaker on the main electrical panel is not tripped. If it has, turn it back on and monitor the unit. If the breaker trips again, it is likely that a professional is required to fix the problem. Continuing to try to use the appliance could cause a serious problem including fire.
- Other common problems include the burner not working properly, inaccurate oven temperature, or the oven not turning on. Your owner's manual can help troubleshoot the problem and identify replacement parts you may need. A professional appliance repair person may be required.



Electric Ranges are 220 volt, ensure to unplug or turn off the breaker when addressing problems with your stove. Consult our manual, an electrician or appliance repair person before attempting to fix your stove.

Fridge

If it's taken care of properly, a fridge will last 17 years on average. Regular maintenance and basic repairs can extend how long it lasts and how efficiently it runs.

- **Fridge is always running.**

  A refrigerator shouldn't run all the time. If it does, it is probably because the condenser coils are dusty, you have the fridge's temperature set too low, or the fridge is too close to the wall.

  Clean the coils with a vacuum cleaner and a fine bristle brush. The coils are usually on the back of the appliance. They should be cleaned every year.

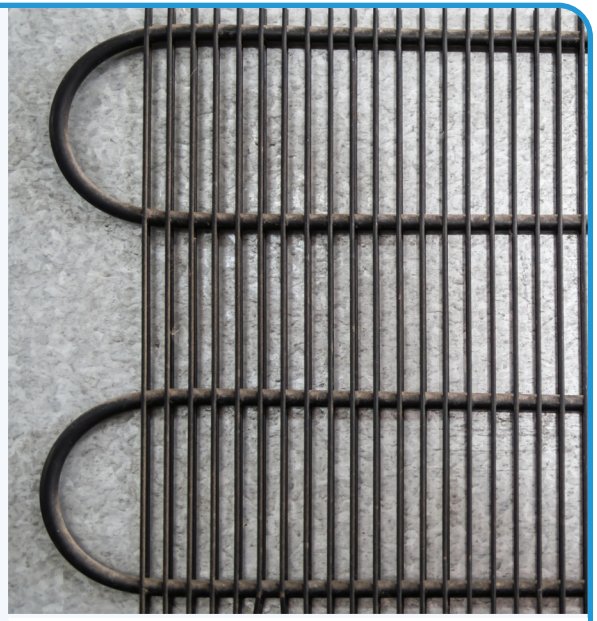
  The fridge's "set point" is the temperature that the fridge is set to keep. The dial(s) should be at 4°C, but sometimes the unit's thermostat is inaccurate. To check the temperature inside your fridge, place a thermometer in a glass of water and sit the glass in the fridge for 8 hours. Adjust the set point until the thermometer in the glass of water shows 4°C.

  If this does not solve the issue, check your fridge's operating manual or consult an appliance repair professional.

- **Fridge is leaking water.**

  Water puddling up under the fridge is common. It is usually because a defrost drain is blocked. Follow these steps to fix it.

  1. Unplug the fridge.
  2. Locate the drain (usually located at the back of the fridge), and pour warm water through it. You can also use a coat hanger or pipe cleaner to try to remove what is blocking the drain.
  3. If this doesn't work, the drain hose will need to be located from the back of the unit, removed and drained. This should only be done by someone who has the right tools and who has experience working on appliances.



Washer

- **Washer doesn't drain**

  The drain hose may be kinked or clogged. Remove the hose from the drain and the machine. Then pour hot water through the hose until you remove any blockages.

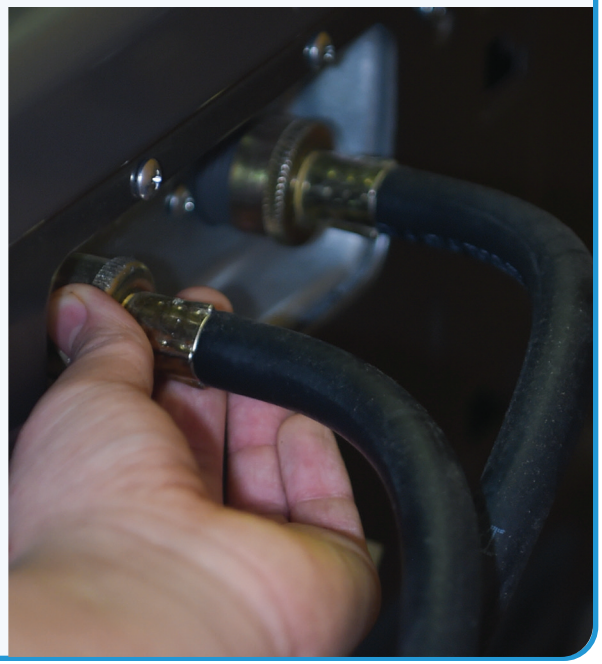
  If that doesn't work, the problem might be that the drain in the wall is clogged. You can try to unclog the wall drain with a liquid drain cleaner. If that does not work, you may need a plumber who has special equipment.

  If the hose and the drain are not clogged, it might be the drain pump filter that is clogged. Locate the pump (usually at the front of the machine) and clean the blockage. Tip: You should clean your pump filter every year.

- **Washer takes a long time to fill**

  The most common cause is a kinked hose or clogged water intake screens. The following steps should be completed annually.

  1. Turn off water, remove hoses, and clean the screens on the hose and the machine.
  2. Screw the hoses back onto the faucets. Be sure the screens are put back properly.
  3. Turn the water back on and watch for any leaks.



Washer Tips

- Make sure the hoses are not kinked and that they don't look like they are wearing out. The best hose choice has elbows or bends to prevent kinks in tight spaces. Hoses should be checked every year and changed every three years.
- Ensure the drain hose is secured with a zip tie to the drain pipe. This helps prevent water leaking or flooding into your home.
- If the machine rocks when in use, adjust the feet so that it sits level.
- Check taps to ensure they are fully open and not leaking.
- Clean your hose screens in spring as water may contain more silt.

Clothes Dryer

When a dryer takes too long to dry it is usually because the dryer's vent is blocked with lint. Clogged vents reduce your dryer's efficiency, which leads to higher power bills and possibly fire.

Follow these steps to clean a dryer vent.

1. Remove the dryer vent pipe and use a vacuum cleaner to clean out the lint.
2. Locate the dryer vent grill on the outside of your home. Remove the screws from the grill and use a vacuum cleaner to clean out the lint. The dryer vent pipe should be made of 4-inch aluminum rigid duct and elbows. Do not use flexible plastic duct. It restricts air flow and may catch fire.
3. Clean the inside lint trap after using the clothes dryer.
4. Make sure that the dryer vent grill is not iced up or blocked by snow build up.

Tip
Inspect your dryer vent regularly, to ensure there is no lint buildup. This will help to avoid a fire.

Failure to clean the lint filter is the leading cause of home clothes dryer fires.

POWER SAVING TIPS

Saving Electricity in Your Home

By following these energy saving tips you can save a lot of money on your electrical bill.

Lighting and heating

- Install energy efficient LED bulbs.
- Turn off lights when not in use.
- Have your furnace serviced in the fall.
- Turn down heating at night if possible.
- Use a small lamp instead of lighting an entire room.
- Clean lamps and fixtures on a regular basis to get the best lighting.

Appliances:

- Buy energy efficient appliances.
- Hang your clothes outside to dry on a line.

Water:

- Install a low-flow showerhead. A low-flow showerhead will add air to the water and reduce the amount used. Low-flow showerheads can reduce hot-water consumption for showering by 30%.
- Wash your clothes in cold water.
- Have your thermostat on your water heater turned down when you have it serviced.
- Insulating water lines can help save water-heating costs.

Electrical Maintenance and Repairs

Lower your water heater thermostat

You can lower how much it costs to heat your water by lowering the thermostat setting on your water heater. For most household needs, the best temperature to set your thermostat is 48.9°C. For every 5.6°C that you lower the water temperature, you use 3% to 5% less energy.

Electric water heaters

Some electric water heaters have two thermostats. Both thermostats will have to be adjusted. The thermostats on electric water heaters are covered by screw-on plates. This is because there is a risk of electrical shock. Call a certified plumber to adjust the thermostats, or have the plumber do it during your yearly service.

Gas water heaters

On gas water heaters, the thermostat is on the outside of the tank. You can adjust the water temperature by turning the knob on the control.

Oil water heaters

For oil-fired water heaters, the temperature is controlled by an aquastat. An aqaustat is a device that senses water temperature inside the heater. It will turn the oil burner on or off according to settings on the aquastat.

Tip

Ask for assistance if you are unsure on how to adjust the temperature on your waterheater.

Refrigerator Energy Saving Tips

- Don't keep your refrigerator or freezer too cold. Recommended temperatures are 3° to 4°C for the fresh food compartment of the refrigerator and -15°C for the freezer section.
- Make sure your refrigerator door seals are airtight. Test them by closing the door over a piece of paper so it is half in and half out of the refrigerator. If you can pull the paper out easily, the latch may need adjusting, or the seal may need replacing.
- Cover liquids and wrap foods stored in the refrigerator. Uncovered foods release moisture and make the compressor work harder.
- Clean the Refrigerator Coils. Vacuum the refrigerator coils once a year. Your refrigerator compressor will run for shorter periods with clean coils. Pull the refrigerator away from the wall and unplug it or turn off its circuit breaker. With a long, narrow nozzle on your vacuum, clean out all of the dust.
- Empty your fridge before pulling it out to avoid damage to the floor.

Freezer energy saving tips

- Locate freezers away from heat and direct sunlight.
- Allow at least 1-inch space on each side of freezer for good air circulation.
- Freezers can be installed in an attached garage or basement. Don't run a freezer in a space that goes below 7°C, as the refrigerant will not work properly.
- Unplug your freezer in the wintertime if you keep it in an unheated porch. Make sure you plug it back in when it gets warmer or your food will go bad.
- Freezer temperature should be kept at -18°C.
- Make sure the freezer door closes tightly. Check the door seals and gaskets for air leakage. Lubricate the gaskets with petroleum jelly (Vaseline), to keep them from cracking or drying out.
- Avoid putting hot foods directly in the freezer. Let them cool in the room first.
- A full freezer will perform better than a nearly empty freezer. You can put in an empty box filled with paper to make up the space.
- Label food in the freezer so that you can find what you want quickly and do not keep the door open longer than necessary.
- If you have an older freezer you may have to defrost it more often. Defrosting the freezer will improve its efficiency.

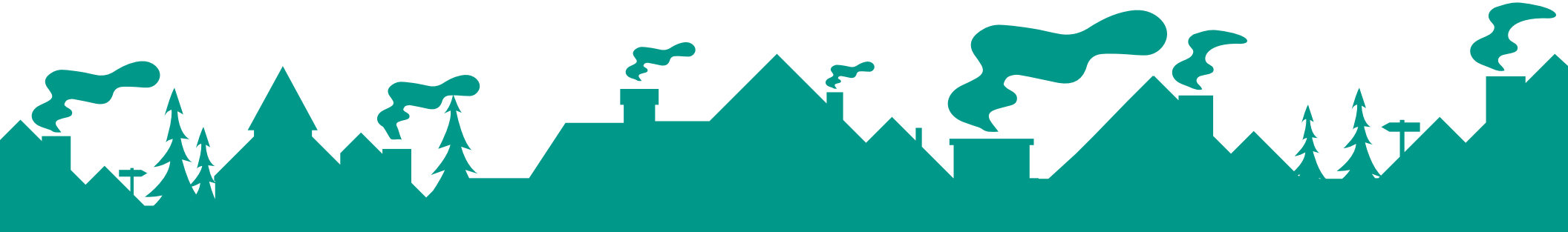
In this chapter you have learned to:

- Identify the main parts of a home electrical system
- Recognize the dangers of electrical systems
- Locate and safely reset circuit breakers on an electrical panel
- Demonstrate safety procedures in and around an electrical system
- Safely use basic electrical repair tools
- Troubleshoot electrical issues and problems

Heating

In this chapter you will learn to:

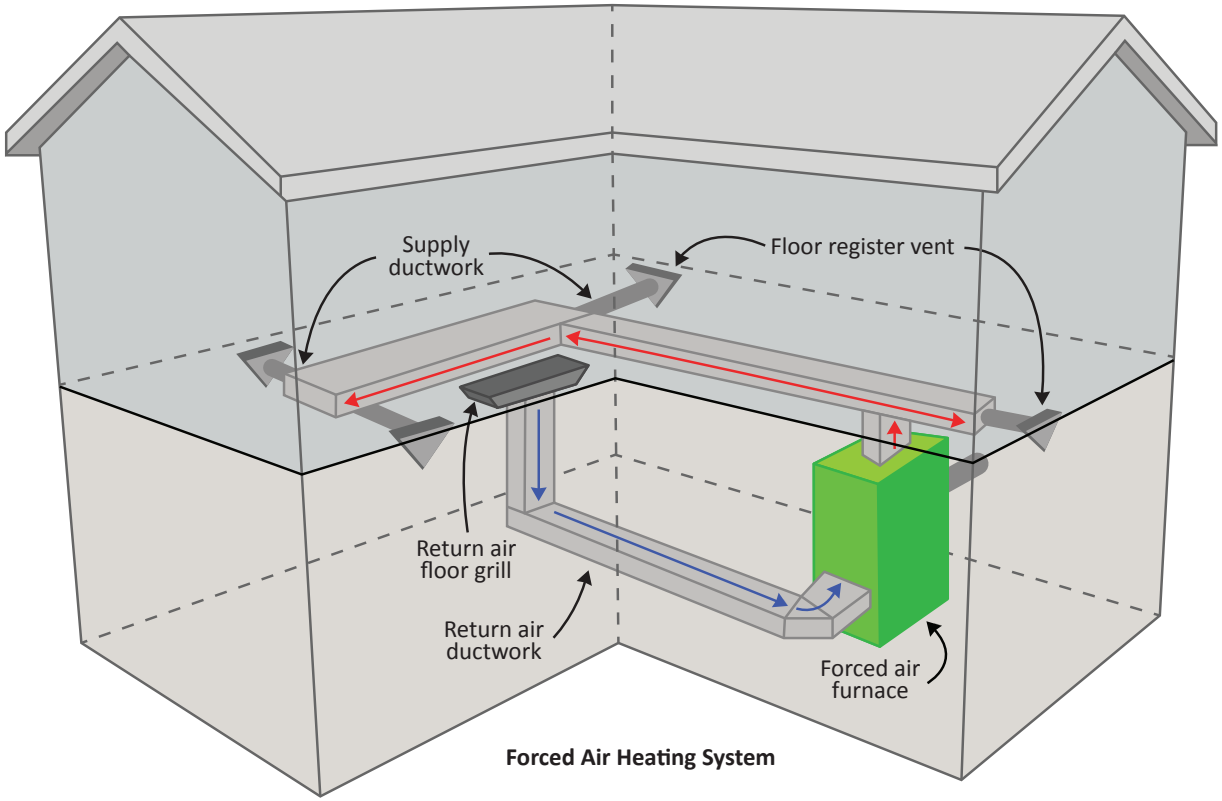
- **Identify the main types of home heating systems**
- **Recognize parts of a forced air furnace system and hydronic boiler system**
- **Maintain forced air ducts and furnace filters**
- **Identify installation, maintenance and safety issues regarding wood stove, wood pellet, electric heater, natural gas and liquid propane space heater operations**



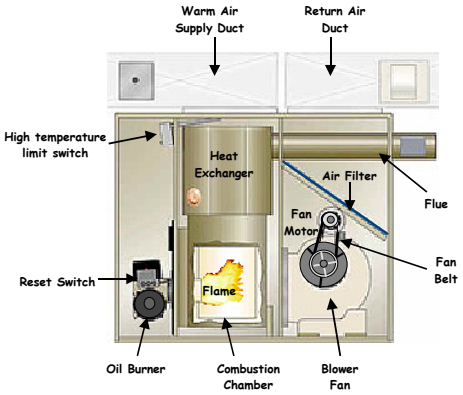
Central Heating System Types

A central heating system is designed to generate heat in one place and distribute it throughout the house. In the Northwest Territories a home's central heating system will likely be a forced air furnace or a boiler. Some homes use wood stoves as the primary heating system, but for the purposes of this manual this is classified as a other heat sources.

Forced air furnace



Forced Air Heating System

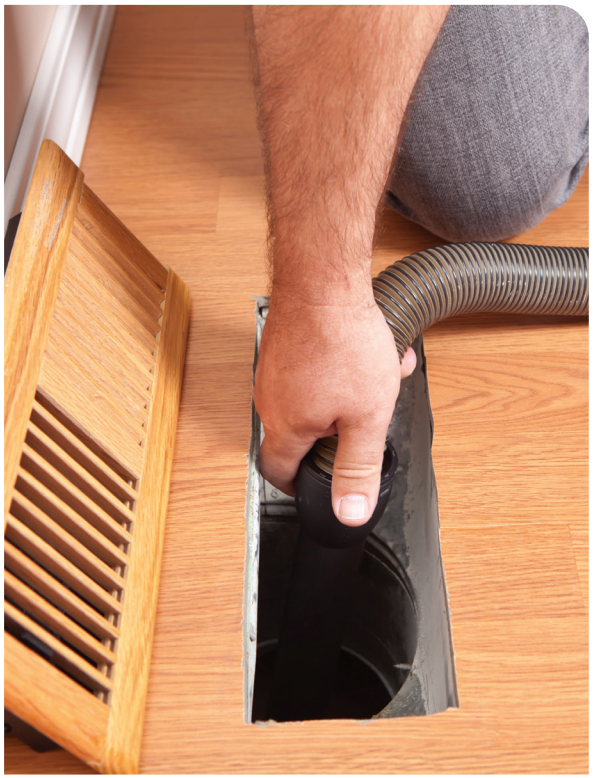


Forced Air Furnace

A home that is heated by forced air has a furnace that sends warm air throughout the house. Metal ducts pull air from the home's rooms to the furnace. The furnace heats and filters the air, and then the furnace blower sends the air back into the rooms. Exhaust gases from the burner are vented outside through a pipe (called a flue) that goes through the roof, or in some homes it is vented directly through the wall.

A forced air furnace is controlled by a thermostat, which senses the temperature in the house. Thermostats are either manually controlled or are electronic. An electronic thermostat that is programmable can save you money because you can set it ahead of time. For example, you can choose to not keep your home as warm when no one is home during the day.

Ensure the thermostat is tested by the heating technician as part of the heating system's yearly service.



Maintenance

Cleaning Ducts

Furnaces with clean ducts are less likely to break down or add to health problems. They will also run more efficiently. Ducts should be cleaned every summer before heating season begins in the fall. Remove and clean the grate covers and vacuum the ducts at all supply and return vents.

You should have the air ducts cleaned by a professional if:

- Ducts are clogged with lots of dust causing particles to blow into the home.
- There is substantial visible mould growth inside the ducts.
- Ducts are infested with rodents or insects.

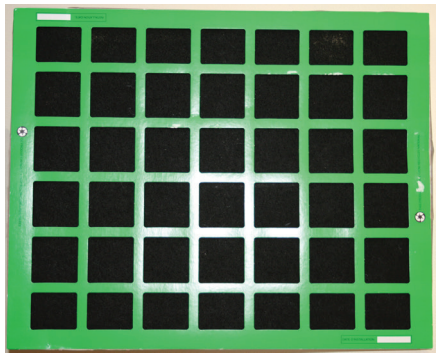
Changing Furnace Filters

The purpose of filters is to protect the heating system from damage and to clean the air to ensure a healthy environment. There are different furnace filters to choose from:

Flat fiberglass filters are not very effective at capturing smaller particles from the air. They should be changed monthly.

Pleated filters provide additional surface area on which particles can be trapped. They should be checked monthly and changed every two to three months.

Electrostatic filters are the best at trapping smaller particles that can cause health problems. They are the best choice and are recommended if someone in your household suffers from breathing issues such as asthma. They should be changed every two to three months.



Washable/Reusable filters can be used for a number of years but are not very good at capturing smaller particles from the air. They should be washed monthly.

How to Change a Furnace Filter

1. Turn off the power to the furnace at the furnace switch or the main electrical panel.
2. Carefully remove the filter.
3. To determine if it’s dirty, hold it up to the light. If you can’t see light clearly, clean or replace the filter.
4. Make sure you install the filter with the arrow on the filter pointing toward the blower motor.
5. Clean blower fan compartment with a vacuum cleaner.

Tip

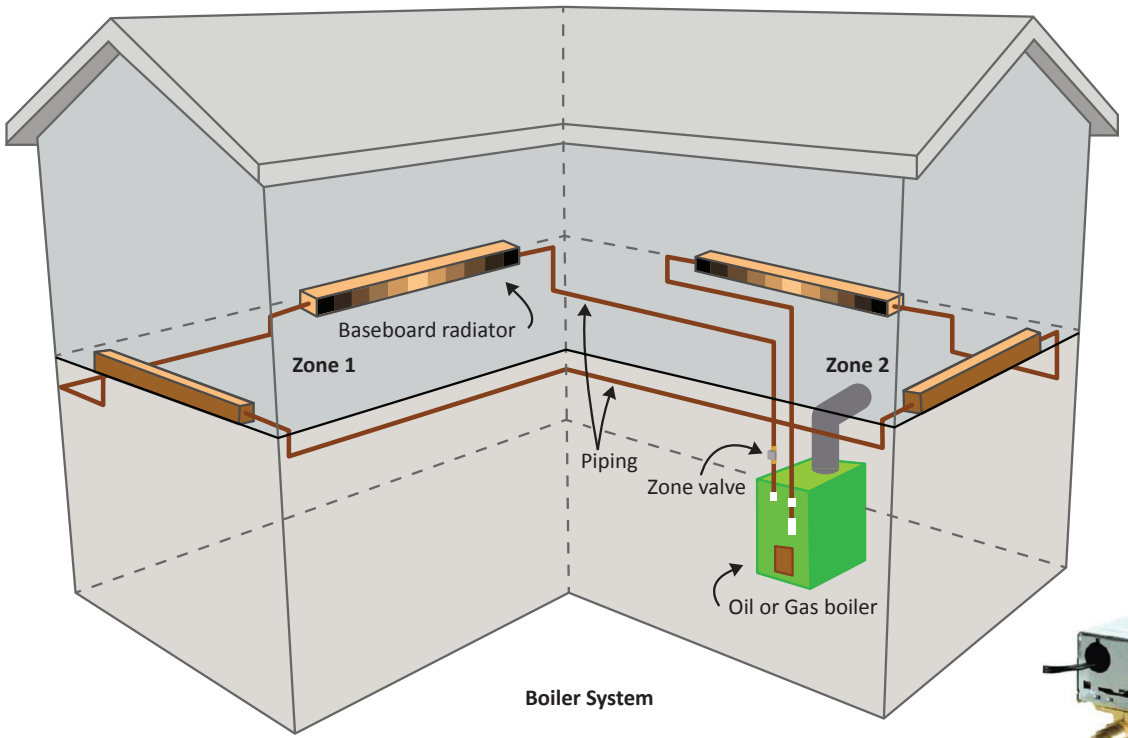
- Check the owner's manual for specific information and model number of the filter you will need. It must fit properly to work.
- When having your furnace serviced, ask for a demonstration on how to change the filter.
- Always have a supply of filters on hand.

The forced air system should be serviced annually in the summer by a qualified technician. In addition to cleaning and servicing the furnace, the technician should change the belts, test the thermostats and examine the duct work for rust or leaks. The fuel tanks should also be examined. Refer to the Seasonal Checklist.

Boiler

Boilers send heat through pipes to baseboard radiators throughout the home. These radiators have a row of metal plates called “fins”. Air moves from the floor through the fins of the baseboard cabinet, rises to the ceiling, and then moves back down to be heated again. This is called the convection cycle and is key to properly heating the space. If an object blocks this cycle of air, then the system will not work as well, and the room will feel cool. Avoid blocking the convection cycle with curtains or furniture.

Hydronic boiler



Boiler System

Zone valve

Parts of a boiler

- Baseboard radiator or fan coil
- Pipes
- Oil or gas boiler
- Zones 1-2 (a zone is an area with its own thermostat)
- Thermostat(s)
- Zone valve

How Heat is Controlled

With a hydronic heating system, there might be many thermostats throughout your home to control the heat in each room or zone. Each thermostat controls valves in the radiation cabinets or in the boiler room. Zone valves control the flow of hot liquid through the heating system.

Fuel Source

A boiler uses either heating oil or propane. If your furnace is heated by fuel, the tank will either be outside or in the basement. If it's a propane furnace, the tank will be outside. Be sure your system doesn't run out of fuel, or else you will need a repairperson to start it. Ask your fuel supplier about going on an automatic delivery schedule so they will refill your tank without you needing to call.

Circulation pumps

Circulation pumps push the heat throughout the home. If you don't have heat in your house, it could be that the pump is not on. The pumps are quiet, but you can check for a slight vibration to tell if they are operating (careful, they are hot!).

Pressure gauge

To run, your system must keep a constant pressure of 12-18 psi ("psi" stands for pressure per square inch). A gauge on the boiler measures the pressure. If your system is not producing heat, check the pressure gauge. It's a good idea to check the pressure gauge regularly.

Maintenance

The hydronic system should be serviced every summer by a qualified boiler technician. While the technician is there to clean and service the boiler, this should also done:

- Radiation cabinets checked for leaks
- Radiators bled of air
- Circulating pumps lubricated
- Expansion tanks drained
- Fuel tanks examined
- Owner can vacuum radiator cabinets
- Be patient when adjusting the temperature, as boilers take time to adjust

Other Heat Sources

WOOD STOVES

Wood stoves can reduce the cost of heating if you have access to your own wood, but it is very important that they are installed to code and are properly maintained.

Maintenance/Safety

- Wood stoves should be installed by a Wood Energy Technology Transfer (WETT) certified tradesperson to ensure safe operation of the unit.
- Check with your home insurance provider to confirm your policy will cover burning wood, and add it to your policy if needed.
- The flue lets smoke into the chimney. When not using the wood stove, remember to shut the flue to save energy costs.

- **Always burn split and dried wood. Wood that hasn't been dried properly, called "green wood" will increase creosote buildup in your chimney, which can cause a chimney fire.**
- **Wood stove chimneys should be checked for creosote build-up and cleaned at least annually, but more frequently if wood is your primary heating source.**
- **Never burn garbage, plastics, cardboard, styrofoam or pressure-treated wood in your wood stove, as these materials release toxic chemicals.**
- **Always inspect your stove to ensure the gaskets, bricks and glass are in good condition before burning.**
- **Always use a properly sized chimney brush to clean the chimney.**

WOOD PELLET STOVE

Wood pellet stoves are an excellent additional source of heat. Wood pellet stoves can cost less to operate. Wood pellets are more convenient than cord wood and have a lower impact on the environment. Wood pellet stoves use pellets that are manually loaded into the stove.

Maintenance and Safety

- Check and empty the ashtray regularly.
- Follow the manufacturer's guidelines for cleaning the appliance and clean chimney annually.
- If the flame is orange or dark instead of yellow or white, you should get it serviced by a professional.

ELECTRIC SPACE HEATERS

An electric space heater warms the air in its immediate surroundings. Electric heaters are portable and can be plugged into any outlet. Portable electric baseboard space heaters are a major cause of home fires and are very expensive to operate. **They are not recommended as a space heating appliance in the Northwest Territories and should be used for emergency heat.**

Maintenance and Safety

- **Electric space heaters are only meant to provide supplemental heat to you home's heating system.**
- **Never leave a space heater unattended.**
- **Heaters must be kept at least three feet away from anything that can burn.**
- **Never place heaters on carpet, which can overheat and start a fire.**
- **Never plug a Portable heater into an extension cord or power bar.**

VENTED NATURAL GAS OR LIQUID PROPANE SPACE HEATER

Natural gas or liquid propane space heaters provide radiant heat. Some heaters have a built-in fan that will help distribute the warm air around the room. Theses heaters are directly vented through an exterior wall.

Never use portable liquid propane space heaters indoors, because deadly gas will accumulate in your home.

TOYOTOMI HEATER

Toyotomi Heater is a sealed combustion, direct vent heating systems that is fuel-efficient, and energy saving. It uses up to 50% less fuel to heat the same space as other heaters in their class, and have substantially lower carbon dioxide emissions with up to 50% less CO^2 than traditional diesel fuel oil-fired home and cottage heating systems.

Oil Tanks

If oil is the type of fuel your heating system uses, the oil is stored in an oil tank. Oil tanks are usually outside of the home or in the basement. If your oil tank is outside your home, make sure you remove the snow so that the fuel delivery truck can get to the fill pipe. If the home runs out of fuel, you will need to get an oil burner mechanic to re-start your system. Ask your fuel provider about setting up automatic delivery, so they will come fill the tank without you calling each time.

Your oil tank should have a safety valve (called a firomatic safety valve). It is designed to shut off the flow of oil to the furnace if there is a fire. There should be one firomatic safety valve at the oil tank and one on the fuel line at the oil burner. When the heating system is serviced, the technician should check to be sure the valve is working properly.

Homeowners should take the following steps as soon as a spill or leak is discovered.

1. **Turn off the power to your furnace or boiler at the emergency on/off switch and close the valve on the fuel line.**
2. **Call a heating technician to come immediately to help address the problem.**
3. **Call the Government of the Northwest Territories, Spill Report Line at (867) 920–8130.**

Tank Maintenance

As it gets old, metal fuel oil tanks will at some point start to leak. The homeowner is legally responsible to be sure the fuel oil tank is taken care of, and to clean up any leaks that might happen. It can be very expensive to clean up an oil leak. Check with your insurance company that an oil spill cleanup is covered in your insurance plan. Metal tanks should be converted to a double wall. Check your local bylaws.

Homeowners are also responsible under the Environmental Protection Act to report any leak or spill from a tank. To avoid oil spills and leaks, have your tank inspected at least once a year by a qualified technician. Include oil tank inspection as part of the heating system servicing every year.

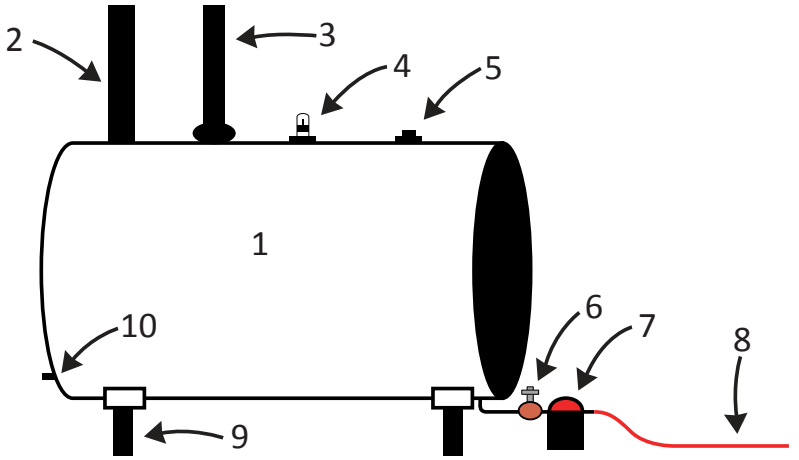
Tip

- Keep your tank clear of snow and debris.
- It is always good to have a small spill kit for leaks and small spill containment.

Tank Replacement or Adjustment

Consider the following points:

- Have the oil tank inspected as part of the annual furnace inspection.
- Are the tank legs unstable or on a shaky foundation? Do they look bent, or badly corroded?
- Are there any drips or signs of leakage around the fill or vent pipes, around the fuel feed line, filter or valves or by the tank itself?
- Are there any signs of rust, weeping, wet spots or dents on the tank?
- Is there a strong smell of fuel oil near the tank?
- Is the filter and/or fuel line located at the base of the tank protected from falling ice or snow?
- Does the vent alarm make a high pitched whistling sound when the tank is being filled? Ask the delivery person if it is working OK.
- Is the fuel gauge cracked, stuck or frozen?
- Is the tank blackened at the low end, around the drain? (This may indicate water and corrosion inside the tank.)
- Water can accumulate in the tank from condensation. Have your tank drained completely of water and dirt every few years. Is the vent pipe clogged or restricted because of snow or ice?
- What is the age of the tank? (The age is not usually indicated until after 1998.)



1. Underwriters Laboratory of Canada (ULC) approved oil tank.
2. Fill pipe (where you fill the tank)
3. Vent pipe (air escapes from here)
4. Tank gauge (indicates fuel level)
5. Vent alarm (sounds when tank is full)
6. Firomatic safety valve (oil shut off valve)
7. Oil filter (filters dirt from oil)
8. Copper feed line (supplies oil to furnace)
9. Tank legs (supports the tank)
10. Tank drain (drain the water here)

Propane Tank

Propane gas can cost less than oil. It can also be safer for the environment. Propane is not available in every NWT community, and it needs a boiler, furnace, or space heater made to burn it.

Tank Maintenance

To work well in extreme cold, the propane tank needs to be taken care of properly to be sure the gas keeps flowing. When the temperature drops below -30°C, the tank pressure starts to drop to a point where the gas will stop flowing. This means your heating equipment will not work. There is a way to deal with this issue, but you have to take steps ahead of time.

- Keep your tank filled above 30% in the winter. There is a gauge on the top of the tank that tells how much gas there is in the tank.
- Have an approved electric propane tank heater installed on your tank. These heaters are made to turn on only when the weather gets to a set temperature, making them safe and more energy efficient.
- Install an insulated tank blanket.
- Talk to your fuel supplier about an automatic delivery schedule and about renting a tank heater and blanket. Even if you are on an automatic schedule, it is still a good idea to check your fuel level when it is extremely cold outside.

Hot water on demand


Propane tank


Gas regulator


Propane tank - 1000 gallons

Propane has a sour smell that should be addressed immediately if noticed, especially if it is in the home. Turn the valve off at the tank and call your fuel supplier or your heating technician.

In the summer, do a full tank inspection.

- Ensure the tank is on solid, level ground, and that there is no tension on the hoses.
- Check the hoses for any sign of wear. The joint connection is typically where a slow leak will occur.
- Clean the grill on the two regulators.

Cleaning Ice Buildup Off the Chimney

Ice buildup on your chimney is a serious hazard that can lead to a chimney fire or carbon monoxide poisoning. Every year many people die because of this issue.

If your chimney is on the roof, develop a plan to remove ice buildup. A ladder is required as well as safety equipment to protect you from falling. If you do not feel comfortable with being on the roof, or don't have the equipment, find someone who is qualified and arrange for them to help.

Tip

- Find someone who is qualified to clean your chimney and experienced at working with heights.
- If using a ladder to get on a roof, for safety, ensure the ladder is 3 feet above the roofline.

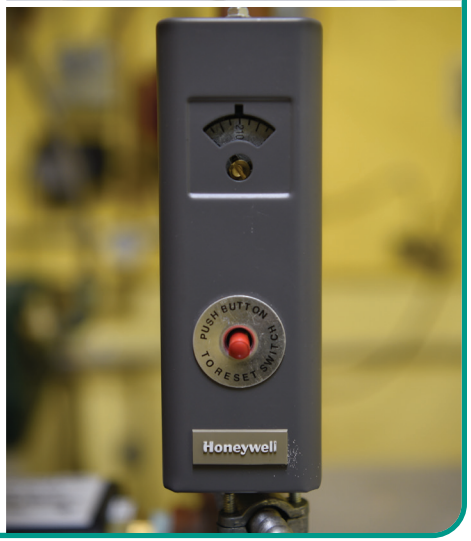
Iced up chimney

Chimney brush

Problem: **No Heat**

Most heating system problems are caused by a thermostat or by a loss of power.

- Ensure the thermostat is set to the heat position.
  If it isn't, turn it to a higher temperature or check batteries.
  Also check the shut off valves.
- Check to ensure there is fuel, by observing the fuel level indicator on the fuel tank.
- Ensure the heating system's emergency power switch is on.
- Check the main electrical panel to see if the furnace (or boiler) circuit breaker has been tripped. If it has tripped, reset the circuit breaker. If the circuit trips again, do not try it again. Call a heating technician to troubleshoot the problem.
- If the furnace (or boiler) still does not start, the burner may need to be reset because of an overload. Press the burner **RESET button** on the furnace or boiler located on the burner motor. If nothing happens, wait about 30 minutes for the motor to cool, then try the RESET button again. If the furnace doesn't come on after pushing the button a second time, do not push the reset button again. Call a heating technician.



Problem: **Insufficient Heat From a Forced Air System**

If your furnace runs and provides some heat but not enough:

- Ensure the room heating registers are open or look for anything blocking the flow of air.
- Be sure the thermostat is set properly. Try raising the set temperature a few degrees and wait to see if the system turns on. On manual thermostats, make sure it is sitting level on the wall.
- Check the furnace filter and change it if it is dirty. You should check your filter monthly.
- If these simple steps don't work, have a heating technician check your system.

Do not push the reset button a second time as this creates a safety hazard. The burner chamber may be full of fuel and pushing the button again may create a fire or explosion.

Problem: **Thermostat Misreads Temperature**

If your furnace runs and provides some heat but not enough, the problem might be the thermostat.

There are different reasons your thermostat might show a different temperature than the actual temperature in the room. The thermostat might be dirty or hung on the wall unevenly. It could also be affected by the sun shining right on it or by a cold draft.

Try these steps.

- **Clean the thermostat**
  1. Remove the thermostat's cover.
  2. Use a soft brush or vacuum with brush attachment to gently remove dust. If your thermostat has two metal strips, wipe them off with a soft cloth.
- **Level the thermostat on the wall**
  If you have a mechanical, non-electronic thermostat, be sure it is mounted level on the wall. Check it with a tool called a bubble level (a small one will be best).
- A thermostat should be mounted five feet from the floor. It should also not be put in a corner, behind a door, in a closet, near a window or door, or near a heat source. Being in locations like these will probably affect how correctly it can measure the temperature in the room. If the thermostat is already attached in one of these spots, consider having a heating technician install it in a different spot.
- A programmable thermostat may have a battery in it. Check your battery regularly.

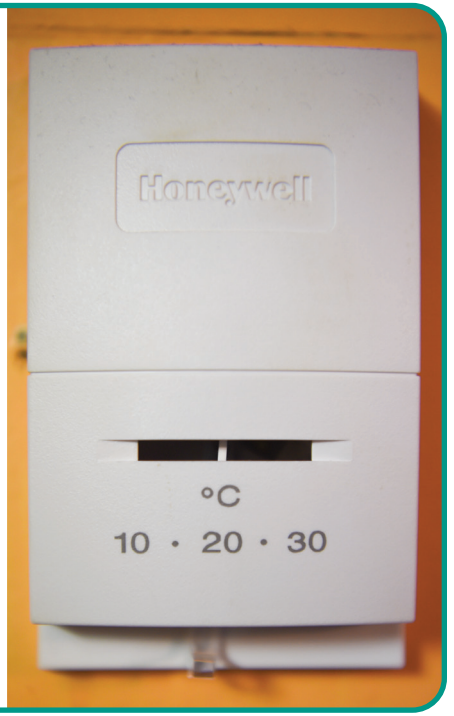
The thermostat should be checked by a technician during the annual heating system service check.

Some thermostats contain mercury and should be cleaned by a qualified technician.

Problem: **Major Room Temperature Swings**

When the room temperature rises higher or drops lower than the set temperature on the thermostat, it usually means that the thermostat is improperly calibrated or installed where it doesn't sense a proper room air.

Call a heating technician to adjust the thermostat.



In the heating section you have learned to:

- What type of heating system you have in your home
- How to maintain your heating system, including the use of the seasonal checklist
- How to fix common problems
- How to ensure your fuel storage tank remains safe and efficient
- Identify the main types of home heating systems
- Recognize parts of a forced air furnace system
- Maintain forced air ducts and furnace filters
- Recognize parts of a hydronic boiler system
- Know the schedule for servicing a hydronic boiler system
- Identify installation, maintenance and safety issues regarding wood stove, wood pellet, and electric heater operations
- Recognize propane tank maintenance and replacement issues

Plumbing

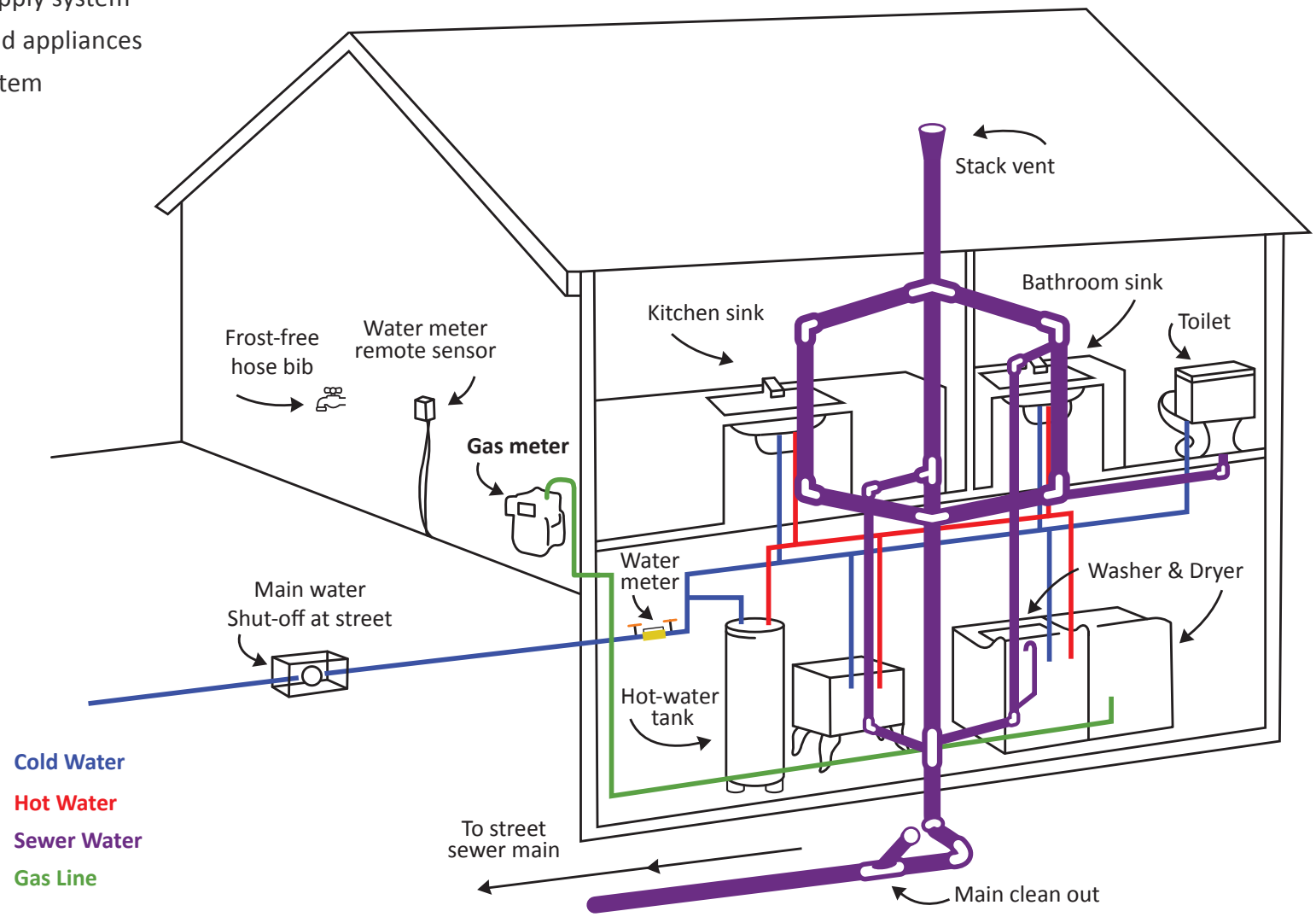
In this section you will learn to:

- **Identify and understand the main types of a plumbing system and how it works**
- **Identify the tools to maintain your plumbing system**
- **Identify and troubleshoot common plumbing problems**

How Plumbing Systems Work

A home plumbing system is made up of three basic components:

1. A water supply system
2. Fixtures and appliances
3. A drain system



Water Supply System

Water to your home is delivered either through a community pipe system, or it is delivered by a truck to a storage tank in the home.

The homeowner will receive a bill based on the consumption measured by a meter on the main line entering the home.

The piped water supply is pressurized. If a water line breaks in your home, the main water shut-off valve needs to be turned off.

Do not tamper with meter.

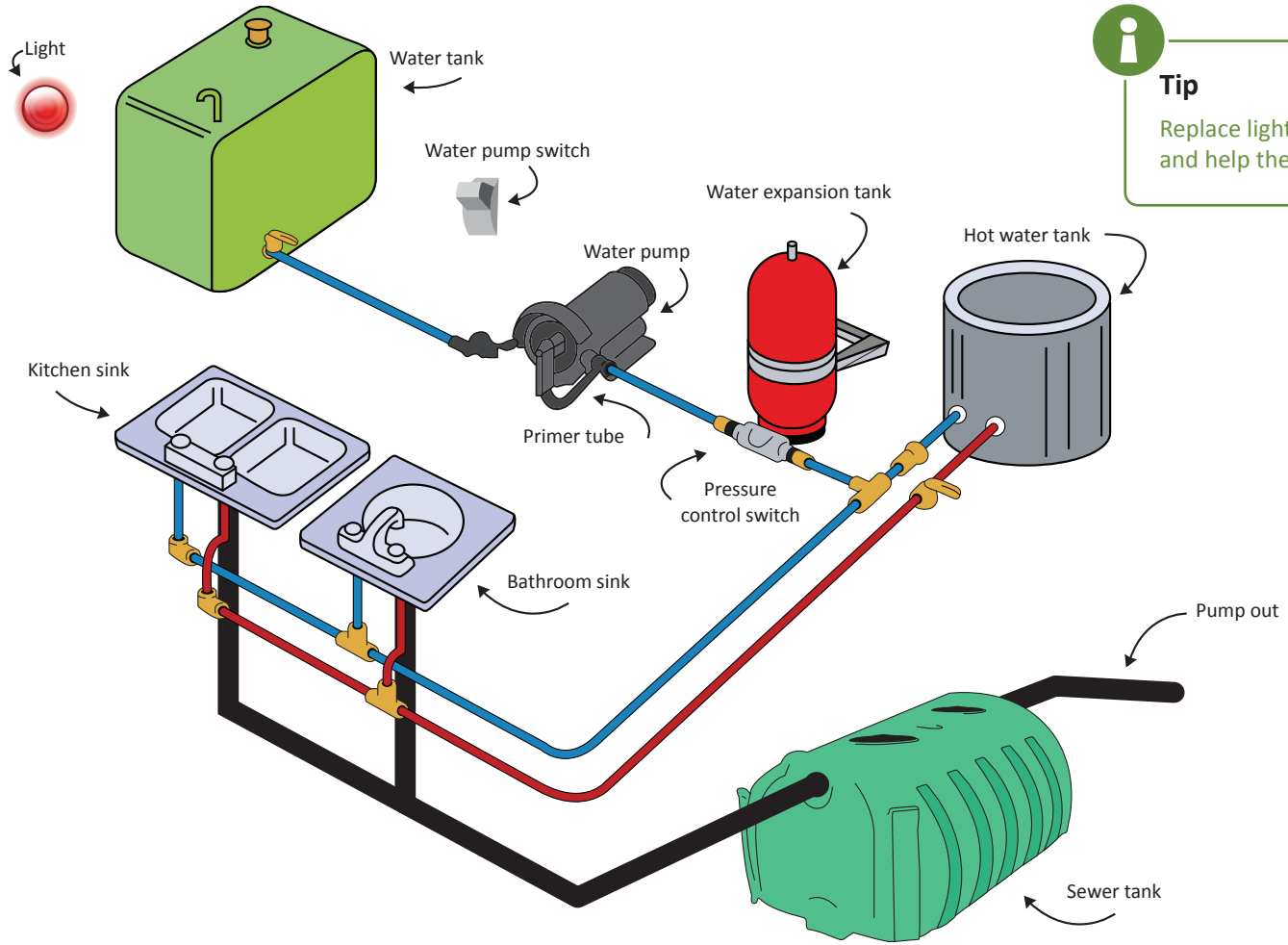
Each water fixture within the house will have a water shut-off valve to turn the water off in case of a line break. The shut-off valve will stop the flow of water into the broken pipe, which will reduce the risk of water damage to your home. This is why every homeowner needs to know where the water turn off valve is located, and each family member should know how to turn off the water. This should be reviewed every year.

Main water turn off valve. Also note the water meter on the main line.

Trucked Water Supply System

If the home is not connected to a community line, then water is delivered by truck to the home. When water is turned on at a tap, a pump pressurizes the system, and this pressure pushes water to the fixtures such as sinks and toilets.

The water truck driver fills your tank depending on the signal given by a light. This light is controlled by a float in the tank. The float lowers in the tank as you use water, and at a certain water level, the float turns the light on. It also indicates to the driver when to stop filling the tank. The float system and light should be checked every summer.



Tip

Replace lights with a red LED to ensure a long life and help the driver see the light in the daylight.

Fixtures and Appliances

Fixtures and appliances like sinks, toilets and the laundry washer get water from the water supply system and the hot water system. Each fixture has a water valve to turn off the water in the case of a leak.

This section covers some common problems with the plumbing system. Information about problems with fixtures and appliances are in the Troubleshooting section.

Drain System

Wastewater leaves your home through the drain system connected to either the community sewer system or to a sewage tank. The piping system has a main vent pipe that allows sewer gases to be released away from your house. The vacuum on the sewer truck can collapse a sewage tank if the venting stack is blocked. It is very important to be sure the vent pipe that comes up through the roof of the house is not frozen or covered by snow. If you smell sewer gases in your home or the toilet water is sucked out when the pump truck comes, it means that the vent is blocked. Talk to a plumber or someone who knows how to keep the vent pipe clean.

Sewer Tank Maintenance

- Once a year, inspect your sewage tank, drain the lines, and check for signs of leakage. Breaks are most common where the lines connect to the tank, so look for signs of the tank shifting that could put pressure on the connection.
- If the connection point is made of ABS (black) pipe, it is common during extreme cold for the pipe to snap off and need replacing. Ask your plumber to replace the connection with a metal pipe and a rubber fernco seal.
- A sewer tank located outside must have a heat trace line wrapped around it so it does not freeze. Get the heat trace inspected when your heating system is getting its servicing every year.

Sewage pump truck

Hot Water Tanks

Hot water tanks can be heated with electricity or fuel or be heated by the boiler. It usually uses the most energy.

Hot Water Tank Maintenance

- Hot water tanks will leak sooner or later, so it's very important to have a drain pan under the tank. Check the plumbing that connects to the hot water tank once a month. It's a good idea to check the drain pan for water even more often to be sure the tank isn't leaking. Call a qualified repair person to repair a leak.
- Hot water tanks usually last 8-12 years, but may have to be replaced sooner than that depending on the type of the water in the area. Proper maintenance of your hot water tank can improve its safety, energy efficiency, and how long the tank lasts. Have your hot water tank maintained every year by a qualified repair person.

Tip

- Switching from an electric-heated hot water tank to a direct-fired one is often the best energy savings investment a homeowner can make.
- Write the installation date and installer name on the tank.
- Water heater drain pan should be installed under the tank.

Leaking hot water tank? Call a qualified repair person or LHO maintenance staff.

Plumbing Repair Tools

Toilet plunger

Pipe wrench

Crescent wrench

Flat and Philips (star) screwdrivers

Channel-lock pliers

Teflon tape

Lubricant

Hacksaw

Problem: **Run out of tank water**

1. Shut off the water pump switch.
2. Call for water delivery.
3. When the water tank is full, switch the water pump back on. If there is a pressure control switch, it will need to be reset by pulling the switch to the right and holding it for a few seconds until the pressure builds up.
4. If you hear the pump on but there is no water pressure, the pump will need to be primed. Remove the cap on the pump and fill the tube with water.

If your pump is short cycling, turn off the switch to the pump and call a qualified repair person.

Short Cycling of a Water Pump

Normally the pump will run from 30 to 90 seconds or longer, depending on the size of the water expansion tank. If your pump is turning on and off rapidly every few seconds, this means that the pump is short cycling. Short cycling can damage the pump or controls.

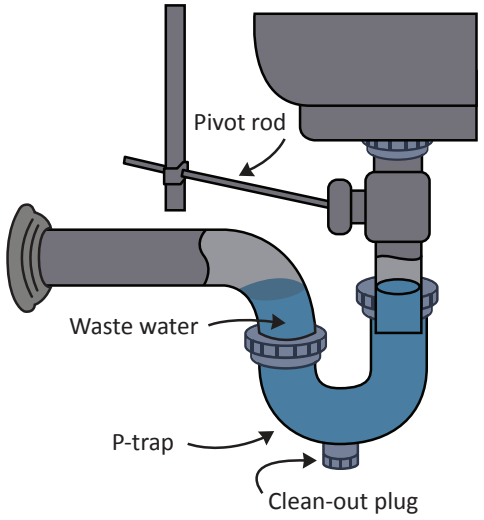
Problem: **Clogged Drain**

A clogged drain is a common household issue and can usually be taken care of by the homeowner. The clean-out process depends on whether the drain has access to the P-trap or not. The P-trap is located below a fixture, like a sink, and allows for easy access to where a clog usually happens. A plunger can be used to unclog the drain, but removing and cleaning the P-trap is easy and should be performed every year.

1. Have a bucket in place to catch the small amount of water in the trap.
2. If there is a cleanout plug. remove the plug with a pair of channel lock pliers. Clean the debris from the trap with some wire or a bent coat hanger. Tighten the plug back in place.
3. If the trap does not have a plug, remove the trap by loosening the couplings that hold the trap in place.
4. Clean the trap and reconnect. Be sure not to overtighten the couplings.

In a drain without access to the P-trap, follow these steps:

1. Remove drain cover, pull out any loose debris, and loosen the rest with a bent coat hanger.
2. Put a cup of baking power down the drain, and then pour in a cup of vinegar. Let sit for 15 minutes.
3. Use a plunger with some vaseline on the bottom to loosen the clog. Run the water to rinse the debris away.
4. If these steps don't work, use a store-bought, chemical clog remover.
5. When using a chemical clog remover, follow the instructions and wear protective equipment such as safety glass, gloves and mask.



Problem: **Clogged Toilet**

If flushing the toilet causes sewage to back up in the bathtub or another fixture, it usually means there is a clog in the main drainpipe. This clog cannot effectively be plunged and will require a tool called a "snake." If you have access to a snake device, you can attempt to fix it, but a plumber is likely required.

If your toilet is clogged but not backing up elsewhere, don't try to flush it – it will overflow.

- Use a bell-shaped plunger. Fill the bowl halfway with water. Push the bell-shape of the plunger down into the drain and, maintaining a tight seal with continuous pressure, rapidly pump 10 to 20 times with short strokes. Refill the bowl with water and repeat until unclogged.
- Consider a drain cleaner only as a last resort. Never mix any of these chemical cleaners, as dangerous reactions could occur.
- If this doesn't work, call a qualified repair person.

Never put baby wipes, paper towel or kitchen grease down your toilet.

Problem: Toilet Continuously Running

Sometimes water will run from the toilet tank into the bowl without stopping, instead of only when it has been flushed. The problem might be that toilet flapper isn't sealing all the way. Another reason might be that the water level inside the toilet tank is set above the overflow drain. The water in the tank should be 1 inch below the top of this drain.

With either of these causes, the problem is usually easy to fix. Try these steps.

1. Look to see if the water is still running into the overflow drain. This will require an adjustment to the float. Your toilet probably has either a float cup float or a plumber arm.
    a. The float cup can be adjusted up or down by turning the screw on the assembly.
    b. A plunger arm sometimes has a screw that can adjust it up or down. If not, bend the float arm down.
2. Check to see if the chain is caught below the flapper and stopping it from sealing. Adjust or trim the chain if needed.
3. The flapper will lose its seal over time and may need to be cleaned or replaced.
    a. Shut off the water supply and flush the toilet.
    b. Replace the flapper. (When buying the replacement flapper, be sure it will work with your brand of toilet.)
    c. Turn the water back on and flush the toilet.

Problem: **Leaking Tap**

The are the four types of taps that are usually found in northern homes.

Compression Taps

- This is the most common type of tap. Drips from the spout are caused by worn-out washers. Leaks around the handle are caused by worn-out O-rings.

Ball-type Taps

- Ball-type tapes have a hollow ball inside that controls water temperature and flow. Dripping at the spout is caused by worn-out valve seats or springs, or by a damaged ball. Leaks around the base of the tap are caused by worn-out O-rings. Try tightening the cap before making other repairs.

Cartridge Taps

- Cartridge taps have a hollow insert that controls water temperature and flow. Leaks around the base mean there are worn-out O-rings. Dripping at the spout is caused by a worn-out cartridge seal. Replacing the cartridge is easy, but be sure to line the new one up the same way that the old one was.

Disc Taps

- Disc taps have a sealed cylinder that holds two ceramic discs. The handle controls water by sliding the discs into place. When the neoprene seals or the openings in the cylinder are dirty, it can cause the spout to drip. Replace the cylinder only if the faucet still leaks after cleaning.

How to repair a leaky tap

A leaky tap can cost you a lot of money. For example, one drip per second adds up to 400 gallons in a year. That's water that is wasted, but that you still have to pay for. If the dripping water is hot water, you also pay a higher electricity or gas bill to heat the wasted water.

Most taps are easy to fix. Replacement parts don't cost much, and are for sale at hardware stores or in the hardware section of your local store. See the following page for pictures of the different parts of the taps.

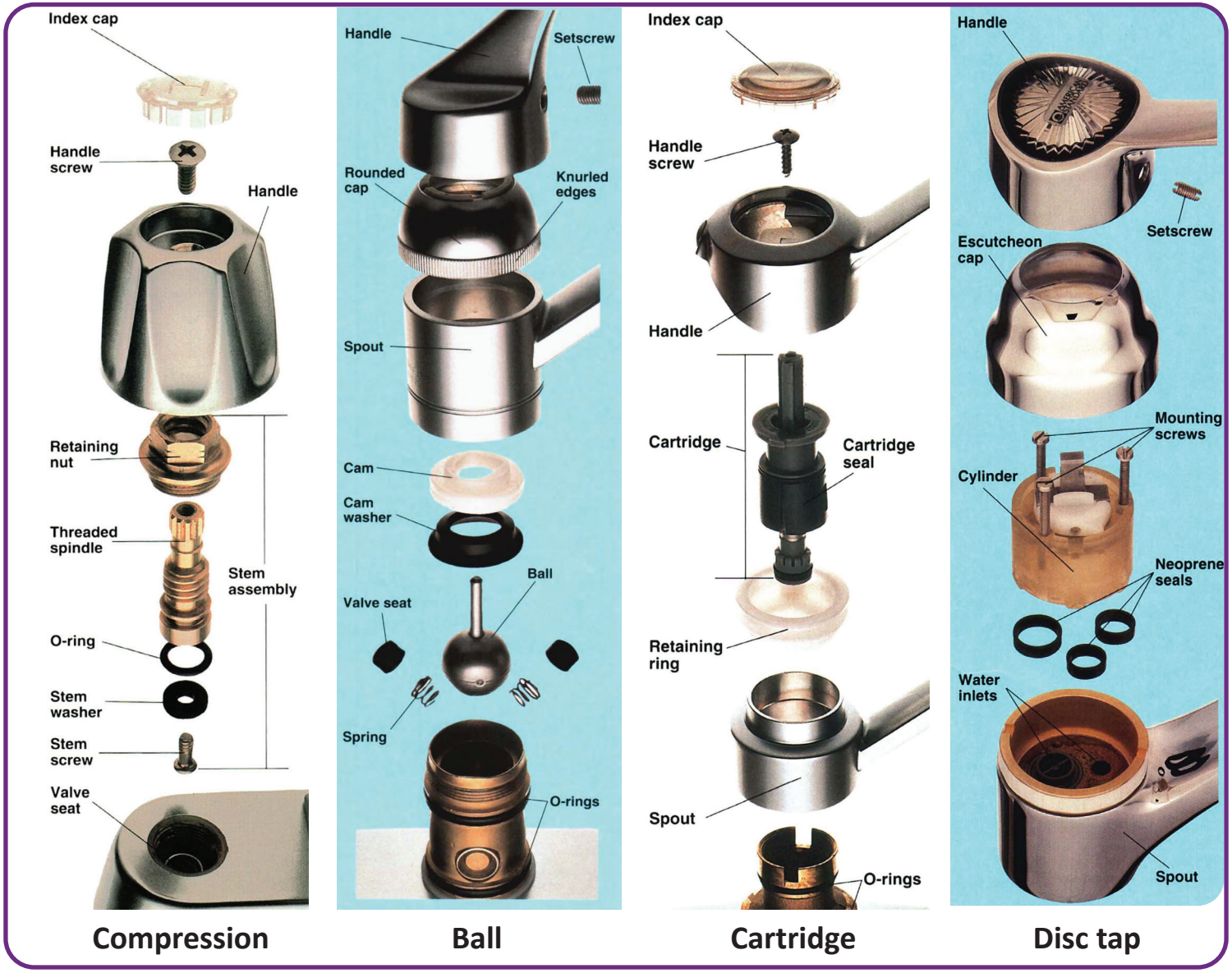
Tip

As you work, take a photo at each stage. That way when you're putting it all back together, you can check that you're doing it correctly.

Compression tap process

- Start by shutting off the water supply to the faucet.
- To take off the handle, remove the index cap and take out the handle screw.
- Unscrew the stem assembly. The best tool for this is channel-type pliers.
- Remove the brass stem screw from the stem assembly.
- Remove the worn stem washer.
- Unscrew the threaded spindle from the retaining nut.
- Cut off the O-ring and replace it with a new one. Install a new washer and replace the stem screw if it is worn-out.
- Rub all the parts with plumber's grease or Vaseline, and then put the faucet back together.

Types of faucets



In the plumbing section you have learned to:

- Identify the main types of a plumbing system
- Understand how a plumbing system works
- Identify the tools to maintain your plumbing system in good repair
- Follow a maintenance checklist that is necessary to look after a household plumbing system
- Identify and fix basic common plumbing problems

Home Repair

In this chapter you you will learn to:

- **Identify and use the various types of home repair tools**
- **Complete basic home repair**
- **How to work safely when doing basic home repair**

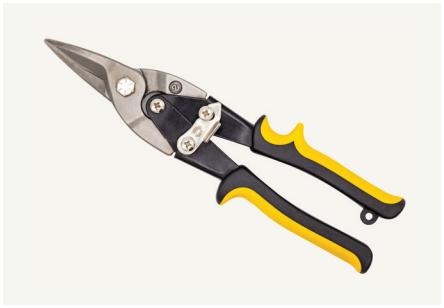
Basic Home Repair Tools

Hacksaw

Claw hammer

Channel lock Pliers

Leather gloves



Tin snips

Wood rasp and mill file

Multibit screwdriver

Caulking gun

Four foot level

Measuring tape

Utility Knife

Addressing Moisture and Mould in your Home

Mould growth in buildings is a serious health hazard. Damp conditions and mould indoors causes the risk of allergy symptoms related to breathing to go up. It can also make asthma worse for people who are sensitive to mould. It is important to know how to identify, take care of, and prevent mould and too much moisture in your home.

Identifying Mould

Mould can hide. It can grow behind walls or above ceiling tiles. Mould is naturally occurring both indoor and outdoors. If you have plants, you have mould. It is important to check anywhere that is damp and especially anywhere that has had water damage. Look for signs of mould or of too much moisture, such as stains on floors, walls, window frames, ceiling tiles, fabrics, and carpets. Look for signs of leaks, condensation, flooding, or a musty odor. Mould will begin to grow within 48 hours, so it's important to act fast. Any mould you can see needs to be removed. Not taking care of a moisture problem and mould can affect the health of the people who live in your home. It can also damage the building.

When Should I Consult a Professional?

Health Canada guidelines state that large areas (three square meters or more) require an expert assessment and cleanup. An expert can properly rate the problem and take care of removing the mould.

Small Area

- Three or fewer patches adding up to a total area that is less than 1 square meter is considered a small area.
- Clean up using proper precautions.

Medium Area

- If there are more than three patches or if the patches add up to more than 1 square meter but less than 3 square meters, that is considered a medium area.
- Expert assessment is recommended, but may be cleaned up by using proper precautions.

Large Area

- If a single patch covers more than 3 square meters, it is a large area.
- Expert assessment and cleanup are required.

Mould buildup on inside of window frame.

Damage caused by condensation on windows.

Dehumidistat

How to Reduce Moisture in Your Home

Unless the cause of the moisture problem has been identified and solved, mould will come back. To prevent future problems, you need to control where the moisture can come from.

- Be sure rain, irrigation water and snowmelt drain away from the house by sloping the grade away from the building.
- Keep eavestroughs and downspouts clean of debris and ensure that the outflow runs away from the house and not into neighbouring foundations.
- Repair plumbing leaks promptly.
- Use exhaust fans and ventilation systems to vent moisture outdoors, particularly when cooking with high moisture and when showering.
- Use moisture-tolerant materials in areas likely to get wet like the kitchen, bathrooms, or laundry area.
- Adding a 15 minute timer to your fan or running your fan for 15 minutes can help to reduce moisture.

How to Clean Up Small and Medium Mould Problems:

DO NOT USE BLEACH TO CLEAN UP MOULD.

Washable Surfaces (window sills, wood, hard surfaces and tiles):

- Scrub surface using a cloth with an unscented soap solution.
- Sponge with a clean wet cloth and dry quickly.

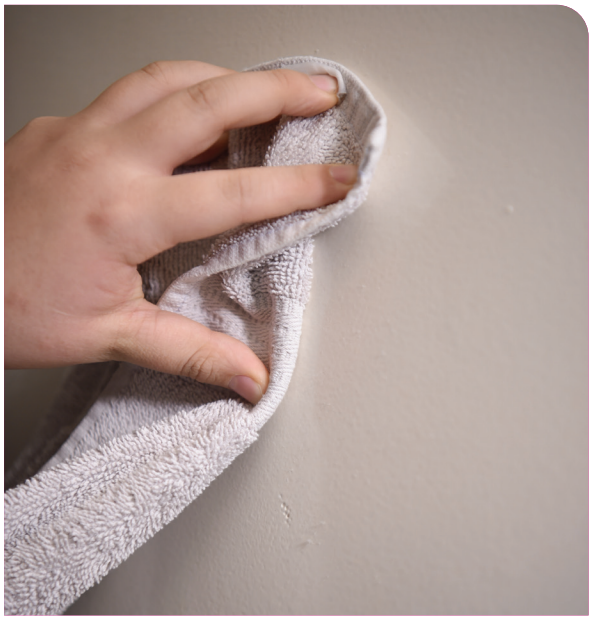
Walls:

- Clean the surface of the wall with a damp cloth using baking soda or a small amount of unscented soap solution.
- DO NOT allow the drywall to get too wet. Cleaning with too much water adds moisture to the paper and can damage the surface.
- If the mould is underneath the paint, the drywall will need to be removed and replaced with new drywall.
- Painting over a mouldy surface does not kill mould and does not stop it from growing back. Painting only temporarily hides the problem.

Concrete Surfaces

- Scrub surface using a brush with an unscented soap mixed warm water.
- Sponge with a clean, damp cloth and dry quickly.
- Remove any carpets or cardboard boxes that have been placed directly on the concrete floor as these may have become damp and allowed mould to grow.

Tip
For more information on addressing moisture and mould in your home, see Health Canada website.



How to reduce condensation on windows:

If condensation still persists you may have a broken window seal. You may want to consider installing a new energy efficient window.

- If you have drapes, be sure to leave them open so warm air can pass over the window.
- Check for worn out weather-stripping.
- Check if the window hardware is operating properly.
- Install plastic window film on any drafty windows.

Tip

Window film can be bought in most hardware stores.

Installing plastic window film

- **When cleaning mould, wear protective clothing such as safety glasses, gloves and mask.**
- **Do not mix bleach with other cleaners as it may cause a hazardous chemical reaction.**

Asbestos

The main properties that make asbestos useful are its incombustibility, strength and flexibility when separated into fibres. It is also effective as a reinforcing or binding agent when combined with cement or plastic. Many products which at one time contained asbestos are either no longer in use or have been replaced.

- **There is some risk associated with all asbestos installations.**
- **Asbestos must be inhaled to cause disease.**
- **Intact and undisturbed asbestos presents no direct health hazard but does present a potential exposure hazard should fibres be released and inhaled.**

Caulking

There are many cracks and gaps around your windows, doors and other parts of your home. In the heating season, these openings allow warm air to leak out and cold air to leak in. A leaky home can cost up to 40% more to heat. Caulking waterproofs and weatherproofs. It seals cracks and fills in joints both inside and outside of your home. It saves you money.

Some older caulks may contain asbestos.

Caulking tools

Types of caulking

Putty knife

Caulking gun

Masking tape

Types of caulking

When choosing caulking, there are several things to think about. This includes durability, flexibility and whether it can be painted.

These are the most common types of caulk homeowners use.

Acrylic Latex (made to last 10 years)

- Good flexibility
- Sticks to most surfaces
- Reasonable moisture resistance
- Can be painted
- Good for around doors and windows
- Easy to apply and clean up, but cannot be applied below freezing

Latex (made to last 3 to 10 years)

- Use mostly indoors
- Low flexibility
- Sticks to porous surfaces only
- Can be painted
- Easy to apply and clean up
- Inexpensive

Silicon-Latex Blend (made to last 20 years or more)

- Weathers very well
- Good flexibility
- Sticks to most surfaces
- Some can’t be painted
- Bit harder to apply and clean up, and also cannot be applied below freezing
- Medium shrinkage

Tip

- You can purchase mould resistant caulking.
- Some caulking can be multi-purpose.

Silicone (made to last 20 to 50 years)

- Often used outdoors, excellent moisture resistance
- High flexibility
- Sticks very well
- Usually is not paintable, but it comes in many colors
- More difficult to apply, requires solvent to clean up, and cannot be applied below freezing
- Low shrinkage
- Sometimes has a strong vinegar odour while it's setting
- Kitchen and bath silicone caulk has special additives to fight mildew. It works very well in any area that has a high moisture level. It is more difficult to apply and clean up.

Types of caulking

Interior caulking

Recaulking the bathtub

House settling often results in cracks between the wall and bathroom sink or tub. Clean and dry the area, removing any loose caulking with a putty knife. Use a kitchen and bath silicone caulk to fill the cracks and let dry overnight before using the bath.

Recaulking the kitchen

Check the caulking on your kitchen countertops and at the base of your kitchen cabinets. Use a kitchen and bath silicone caulk to fill any gaps.

Caulk floor at base of tub

Exterior caulking

Caulking is used to seal openings where two types of building materials come together. Water from rain and melting snow can seep into these cracks and damage the building. Exterior caulking should be flexible to expand and contract with the walls as the weather changes. Use a silicone caulk if you're applying the caulking in cold weather. Use an acrylic latex caulk if you want to paint over the caulking when it is dry.

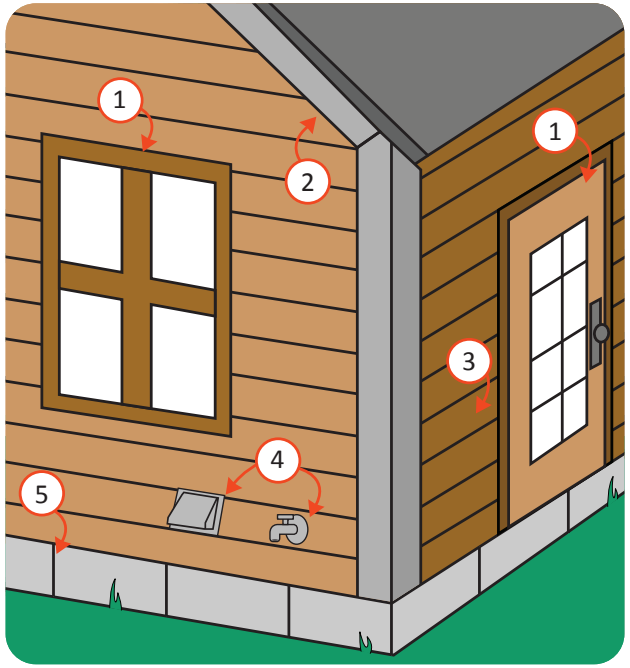
Inspect caulking in the following areas and replace as necessary:

1. Windows & doors (where outer frames meet exterior)
2. Roof vents, flashing, eaves troughs, and downspouts
3. Cracks in siding
4. Penetrations through exterior walls at: vents, electrical boxes, plumbing pipes, and other locations where there is a possible air path to the outside
5. Foundation (where foundation meets the sill plate)

Tip

The tube of caulk has instructions on how and where to use that kind of caulk.

Check exterior caulking



Windows & doors

Downspouts

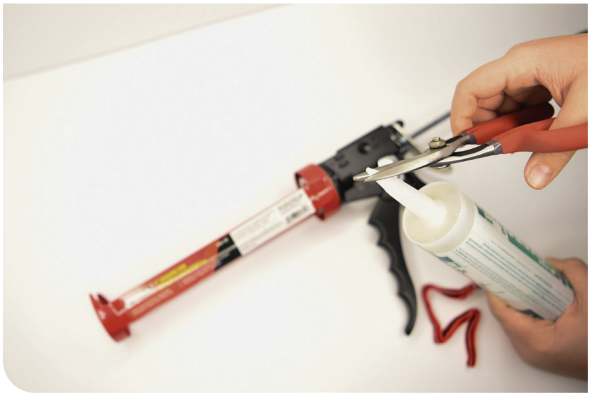
Cracks in siding

Foundation wall

Dryer vent

How to apply caulking

- Be sure to use the right type of caulking for the job.
- Clean and dry the surface you're going to caulk.
- Tape the area on either side of where the caulk will go.
- Cut the tip of the caulk tube at a slant of about 45°, and open the hole to about 1/8-inch across. For wider cracks, open the hole wider.
- Break the inner seal with a long nail or coat hanger.
- Put the tube of caulk into the caulking gun.
- Use both hands to hold the gun. Press the trigger and drag the tip of the caulking gun along the crack towards you. Keep the gun slanted at about a 45° angle to the surface. When finished that line of caulk, press the "Spring Release Lever" to stop the caulk from oozing out.
- Smooth out the bead with a wet finger if necessary. Be careful not to cut your finger on jagged edges.
- Keep a rag handy and wipe the gun tip after every pass.
- When finished, put a nail or piece of coat hanger into the tip of the tube and wrap with plastic to keep the caulk from drying out.



Cut nozzle at 45º angle

Put tube in caulking gun

Pull caulking gun toward you

Tip

Some caulking guns have a penetrating pin.

Doors

How to repair a binding exterior door

If your exterior door is binding or rubbing, it may be caused by the foundation of your house not being level. Refer to the last section of this chapter, Foundations, for information on leveling your foundation.

To fix an exterior door that is binding or rubbing on the jamb you will need to adjust the hinges or sand the door edge. Steps include:

1. First find where the door is rubbing. Close the door and check how it fits in the jamb. Look for any tight spots to make sure the top edge of the door is level. If the top looks more than 1/4-inch out of level, the cause is probably sagging.
2. If the door is sagging you can usually repair this problem by replacing a screw of the upper hinge with a longer, 2 ½ - inch screw, (the screws are usually only 1 ½ - inches long). Angle the screw slightly toward the jamb's center. Drive it in tightly and tighten all the other hinge screws.
3. Built up paint can cause a door to stick. To solve this, you have to mark the areas where the door is rubbing (use a pencil).
4. Remove the door, and sand the high spots slightly. Don't take off too much.
5. Humidity can also cause a door to swell and stick in the frame. Paint wood doors on all surfaces, including the edges, to prevent moisture from warping the door.

Tip

A 4 foot level and framing square can help to check to see if the door and frame are square.

Install a 2 ½" screw in hinge

Remove built up paint from door

Lubricate locks and hinges

Locks

Locks should be lubricated once a year with special graphite powder designed for locks.

Hinges

Hinges should be lubricated with penetrating oil or silicone spray. If the hinges are rusty:

- Remove the hinge pin.
- Clean the hinge pin and hinge with steel wool.
- Coat both with protective grease, and
- Wipe up any excess grease or oil.

Lubricant

Penetrating oil

Problem: **Door Knob**

If your door has a loose knob, look for two screws that hold the doorknob in place and tighten them.

Tighten up screws on loose knobs

Problem: **Key won't go in lock**

Is the weather cold enough for the lock to be frozen?

If so, heat the key and, wearing gloves, insert it gradually into the keyway. Repeat heating and inserting until the ice has melted. Try squirting some lock de-icer into the key opening.

If the lock isn't frozen try squirting a little graphite powder into the lockset. If this doesn’t work you might have to get a new replacement key made.

Inspect key to see if beat, worn or damaged.

Lock de-icer

TROUBLESHOOTING DOORKNOBS

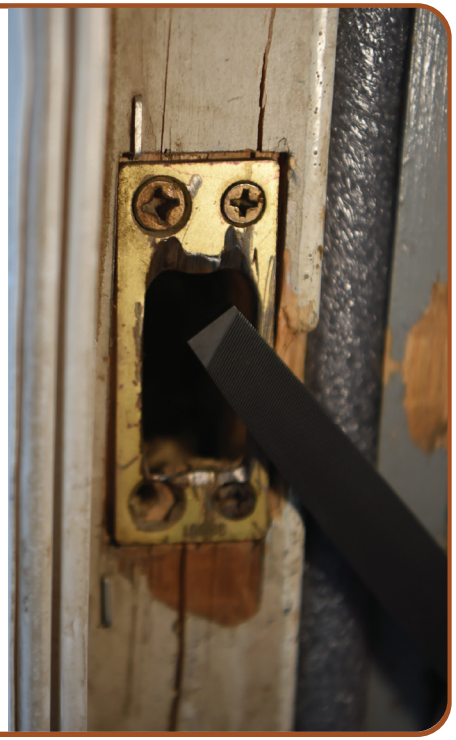
Problem: **Key is broken off in lock**

Using pliers, try to grip and pull the key straight out. If you can't get a grip with pliers or needle-nose pliers try inserting a wire to hook and drag the key out. If you can’t get the key out of the lock take the lock to a locksmith or replace the entire lock mechanism.

Problem: **Door lock/latch doesn't latch shut**

When a door latch doesn't click into position, it usually means the latch and the strike plate are out of alignment. Tighten the hinge screws, then try adjusting the strike plate by loosening its screws and shifting it slightly.

When possible, it's easier to file the top or bottom of the slot in the strike plate a little bit so that it will receive the latch. You can also remove the strike plate and put it in a vice or vice grip to make it easier to use a file.



File door latch

Weather-stripping

Weather-stripping provides a seal for moveable windows and doors. Weather-stripping is a material that blocks air movement when windows and doors are closed by creating a tight seal around the windows or doors.

Before the winter you should inspect all the weather-stripping in your home and replace it if worn:

- Windows (inside frames and at bottom of window)
- Doors (inside frames and at bottom of door)
- Sliding glass doors (inside frames and at end of sliding doors)
- Garage doors (bottoms)
- Attic hatch (inside frame)

Old weather-stripping

Tape style weather-stripping

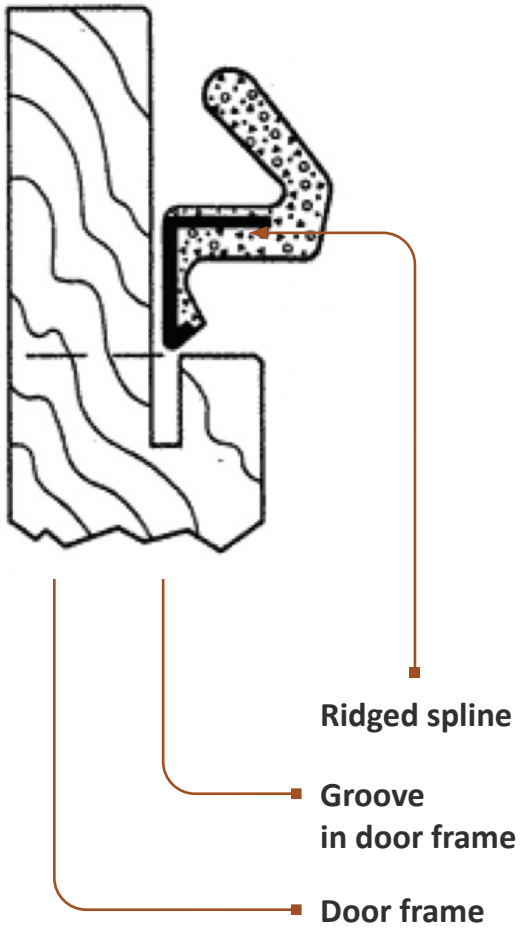
Replacing door weather-stripping

To apply compression weather-stripping to a door:

1. Open the door and remove the old weather-stripping. You can use a screwdriver or a butter knife to carefully remove the weather-stripping out of the groove in the door frame.
2. Carefully measure the door frame and cut each strip to length with a hacksaw or tin snips. Scissors are handy for trimming the soft foam.
3. Push the ridged spline part of the weather-stripping into the groove in the door frame. Start at the top and work your way toward the bottom of the door frame.
4. Check the door frequently to make sure it operates easily.

Press the new weather-stripping into the groove in the door frame

New weather-stripping installed in doorjamb

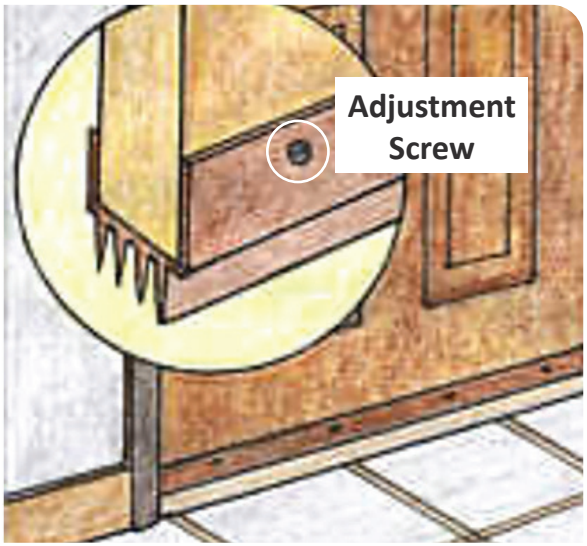


Replacing door- sweep weather-stripping

Door-sweep weather-stripping is used to close the gap at the bottom of the door.

To apply door-sweep weather-stripping to a door:

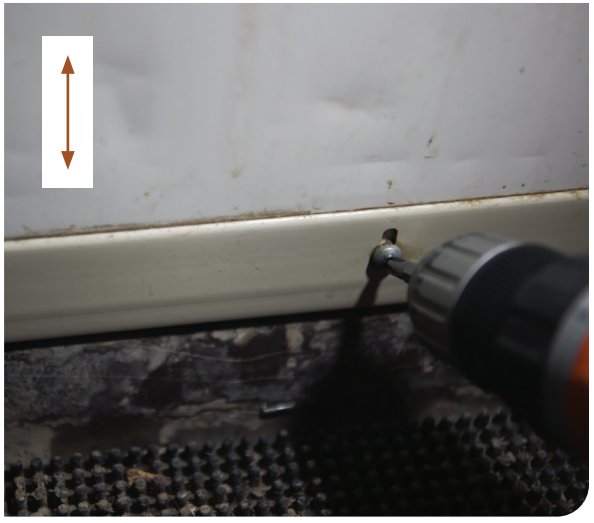
1. Carefully measure the bottom of the door.
2. Cut the door-sweep weather-stripping to length with a hacksaw.
3. Slide the weather-stripping onto the bottom door starting from the edge.
4. Close the door and check it to make sure it operates easily.
5. Close the gap between the weather-stripping and the threshold by adjusting the height of the weather-stripping.
6. Drill holes in the door for the screws.
7. Fasten the weather-stripping to the bottom of the door with screws.
8. The door-sweep weather-stripping has slotted holes in it to allow for seasonal adjustment.



Measure the bottom of the door

Drill holes for screws in door

Door-sweep weather-stripping



Install screws in door and adjust the weather-stripping

Window Screens

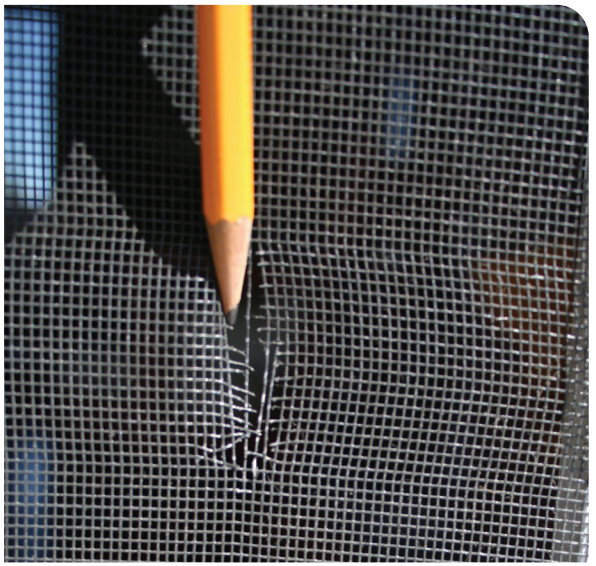
Window screens keep insects out while allowing air to come in through open windows. With regular maintenance, your window screens can last for years. Clean screens every year with a stiff bristle brush. You don't have to remove your screens in the winter, but if you do, store your screens in a safe place where they won't get damaged.

Repairing fiberglass screening

- You should always repair your screens if you notice a small hole or tear.
- Patching it before it grows larger will prevent you from having to replace it.
- To glue a patch over a small hole in a fiberglass window or door screen, cut a small patch from extra screening fabric.
- Use epoxy glue and layer the glue over the patch until the tear is filled.
- If a hole or tear is large, it's better to replace the entire screen rather than try to patch the hole.

Tip

Adhesive is activated with heat. (use a hair dryer).



Hole in screen

Patch kit

Floors

Replacing vinyl floor tiles

To reglue a tile that's lifted at one corner or replace a damaged tile:

1. First warm the damaged tile with a hair dryer or iron until it begins to curl. Focus the heat on the corner if you want to reglue a tile that's lifting.
2. Peel it up, using a putty knife as shown on the right, and scrape off the old adhesive.
3. Using a notched spreader or trowel, as shown below right, spread resilient tile adhesive on the subfloor.
4. Push the tile firmly into the tile adhesive.
5. Wipe away any excess adhesive.

Floor blisters in sheet vinyl (linoleum)

Blisters in sheet vinyl can be easily repaired.

1. Make a knife cut along the edge of the blister, just large enough to let you work contact cement glue under the sheet vinyl.
2. Use a small brush to apply contact cement glue on both the subflooring and under the sheet vinyl.
3. Let the contact cement glue dry until tacky, then lay the sheet vinyl down.
4. Place something heavy, flat on the repaired area for several hours.

• Some floor tile, adhesive or floor leveling compound may contain Asbestos.
• Be careful when heating the tile, excessive heat could cause a fire. Have a fire extinguisher handy.

Lift floor tile with heat & putty knife

Notched trowel

For safety reasons, call a repair person

Troubleshooting - Oven bakes unevenly or burns food

When foods are burned, soggy, or baked unevenly, it generally means heat isn't being distributed evenly throughout the oven, it’s escaping out the door, or the controls are out of adjustment. Another sign of heat escaping from the oven is blackening around the edges of the cupboards.

Some solutions include:

1. Remove any aluminum foil from racks or the bottom of the oven.
2. Check the door gasket and, if necessary, have it replaced.
3. Be sure nothing is obstructing the vent.
4. Reposition the oven racks so baking pans aren't too close to the heat sources.
5. Check your baking pans. If they're dark, they may be burning your food. Reduce temperature by 25º F when baking in dark metal or glass pans.
6. Call an appliance repairperson to adjust the controls.

Important

Replace burnt fuses with a new fuse of the same amp number.

Washer

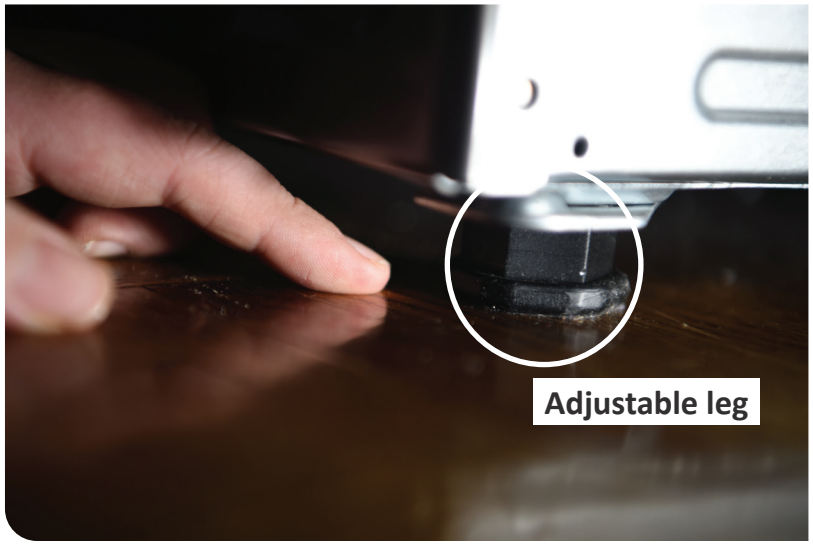
Washer tips

- Because washer hoses are under constant pressure, they can flood your home if they burst when you're away. Shut off the valves to the washer when not using it.
- Use the right amount of detergent for your washer.
- Check that hoses are not worn.
- Don't overload your washer.
- Make sure washer feet are levelled.

Check if the drain hose is bent

Screw leg out to raise washer

Screw leg in to lower washer



Leveling washer

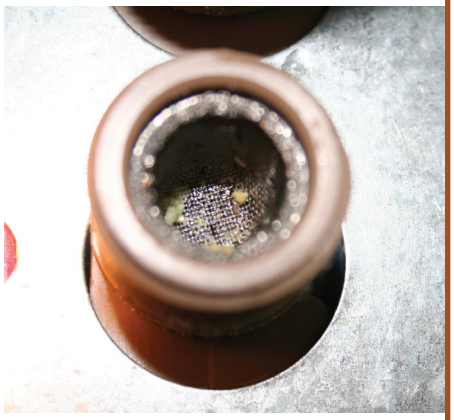
Hot and cold water shut off valves

Problem: **Washer doesn't fill properly**

1. You will need a pair of channel-lock pliers for this repair.
2. Be sure both the hot and cold-water faucets are turned on.
3. Be sure the supply hoses are not kinked.
4. Turn off the faucets.
5. Unscrew the hoses from the faucets using your channel-lock pliers and drain them into a bucket. Otherwise water in the hose will drain on the floor.
6. Hold a bucket under the faucets and test them to make sure they both work and have plenty of pressure. Clean the screens on the ends of the hoses.
7. Screw the hoses back onto the faucets.
8. Unscrew the other end of the hoses from the washer. The washer inlet valves are located on the back of your washer. Clean the filter screens just inside them and the screens in the hoses; these may be clogged. To do this:
   a. Pry out the screens with a screwdriver.
   b. Flush them under running water.
   c. Put them back into the washer inlet valves and the ends of the hoses. If the screens look defective, replace them.
   d. Then screw the hoses back onto the valves. Be careful not to damage the hose threads on the inlet valves when screwing them back onto the valves. Make sure you hook up the hoses to the proper valves (cold to cold and hot to hot).
9. If the washer still doesn't fill properly call an appliance repairperson; there may be a defective inlet valve or a problem with the controls.

Turn off water faucets

Unscrew hose from washer

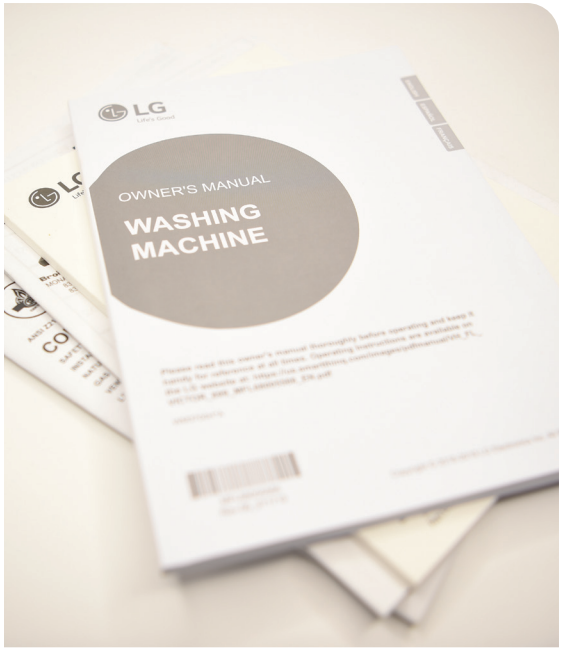


Clean dirt from filter screen

Troubleshooting Washers

Problem: **Washer doesn't drain**

1. Be sure the drain hose isn't bent sharply.
2. The water pump may be broken or clogged with a small article of clothing or the controls may be broken; call an appliance repairperson.



Owner's Manual and Warranties

If your appliance is under warranty, be sure the service person you call is factory-authorized. If you use an unauthorized repairperson, the manufacturer probably won't cover the fee and, the warranty may be voided. A list of authorized warranty service outlets can usually be found in the owner's manual.

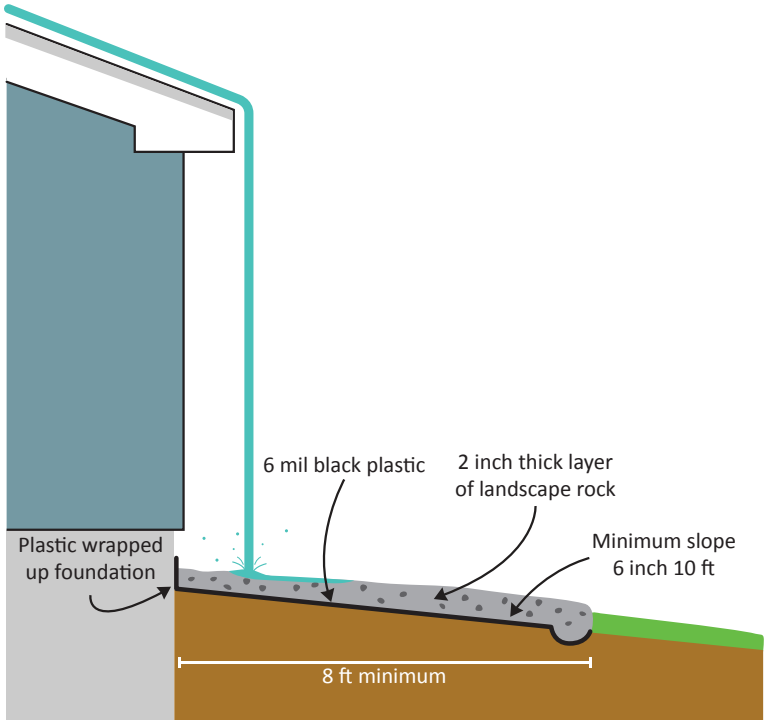
When you buy a new appliance, be sure to store or keep all owner's manuals and warranties where you'll be able to find them later.

Exterior Repairs

Make sure that the ground slopes away from the building. This will prevent water from accumulating under your house if it has a crawl space and causing mould and possibly rotting out your foundation.

Have eaves troughs installed on your home to direct water from the roof away from the foundation.

Maintain your eaves troughs by cleaning them out annually.



Divert all water away from your house.
Slope the ground away from your home.

Clean your eaves troughs

Mould and rust can cause damage to foundation footings

Foundations

Many homes in the Northwest Territories have adjustable foundations. This is because the ground around and underneath the homes may settle unevenly over the seasons.

Some signs of uneven settling are interior doors that are rubbing or sticking, cracks in interior and exterior caulking, and cracks in the drywall. You should take care of the problem as soon as possible to limit damage to your home. Check to see if your floor is level by using a tool called a four-foot level. Another easy way is to see if a marble will roll across the room (in a room that isn't carpeted).

Your house might need to be leveled in the spring and the fall every year. This should be done by someone who has experience in this type of work.

Check your foundation annually for settling and level your house if required.

In the Home Repair section you have learned to:

- Identify and use the various types of home repair tools
- Complete home repair
- Follow basic safety protocols when undertaking home repair

Home Safety

In this chapter you will learn to:

- **Identify safety equipment your that home should have**
- **Properly maintain safety equipment**
- **Develop a fire escape plan for your family**

Smoke Detectors

Many fires happen when the occupants are asleep. A smoke detector will warn residents when there is a fire, giving them time to escape.

Some smoke detectors are wired into a home's electrical system, but most are battery powered. A homeowner can install a battery-powered smoke detector. Follow the instructions that come with the smoke detector. A smoke detector should be installed on the ceiling in the centre of the room. Use at least one smoke detector on every floor level. Install one outside of bedrooms.

To maintain your smoke detectors:

- Once a month, press the tester button to ensure the device works.
- Once a year, change the battery and clean the smoke detector. Vacuum around the edge of the device.

Tip

- Set a monthly and annual reminder in your phone to ensure you don't forget these actions.
- Look to replacing old detectors with worry-free combination detectors as they often have longer life span.

- If there is one home maintenance task that you should never miss, it is ensuring the safety detectors are working.
- Never tamper with or disconnect your detectors.

Carbon Monoxide (CO) Detectors

Carbon monoxide (CO) is a dangerous poisonous gas that you can't smell, taste or see. It is created by burning fuels like oil, wood, kerosene, natural gas, propane, and gasoline. In Canada, CO poisoning is the #1 cause of accidental poisoning deaths. A CO detector warns you when it senses too much carbon monoxide. This warning gives you time to escape.

You can install a carbon monoxide detector yourself. Follow the instructions that come with the unit. Detectors should be placed on a wall about 5 feet above the floor or on the ceiling. Do not put the carbon monoxide detector right next to or over a fireplace or above an appliance that uses a flame. You should have a separate detector on each floor of your home. If you have only one detector, place it near the sleeping area and make certain the alarm is loud enough to wake you up. Some models plug directly into a wall.

Every home should have a carbon monoxide detector.

The average life of many carbon monoxide detectors is about two years. Follow these steps to take care of it.

- Once a month, press the tester button to be sure it works.
- Once a year, clean it and change the battery. Write the expiration date on the unit and replace it with a new one every two years.

If the alarm sounds:

1. **Immediately get out of the house.**
2. **Call the fire department - 911, and do not go back into the building until the fire department says it's safe.**
3. **Go to the health centre to be checked.**
4. **Call a certified technician to find out where the CO came from.**

Natural Gas/Propane Detectors

A gas and propane detector warns you if it senses gas in the air. This warning gives you time to escape from the building. Natural gas and propane can start on fire, and they also can kill you if you breathe them. Every home that has gas and propane appliances needs at least one gas detector.

You can install a natural gas and propane detector yourself. With some models, it's as easy as plugging it into a wall outlet. Follow the instructions that come with the unit. You should place your detector near a gas appliance or in a room that is above where the appliance is. A natural gas or propane leak can cause a dangerous buildup, resulting in a possible fire or explosion if ignited.

The average life of many gas detectors is about two years. Follow these steps to take care of it.

- Once a month, press the tester button to be sure it works.
- Once a year, change the battery and clean the device.
- Write the expiration date on the unit and replace it with a new one every two years.

Fire Extinguishers

Fire extinguishers are labeled according to the type of fire they are designed to extinguish. Ensure your home has the correct type of fire extinguisher for a residential setting. For your house, use an ABC type fire extinguisher, which can be safely used on all types of fires.

How to use a fire extinguisher

1. **Remember PASS**: It stands for **"Pull, Aim, Squeeze, and Sweep."**
2. Make sure the fire extinguisher is upright.
3. Remove the plastic tie from the handle.
4. **Pull** the pin from the handle.
5. **Aim** the nozzle low, while keeping the extinguisher upright.
6. **Squeeze** the handle and direct the spray at the base of the fire, not farther than 12 feet away.
7. Then you can see that the fire is being put out, move in toward it, keeping the extinguisher's spray focused on the base of the fire.
8. **Sweep** in a side-to-side motion until the fire is out.

Tip

- Fire extinguishers should be kept near heating or cooking areas and on each floor.
- Contact your local fire department if you are interested in training in the proper use of a fire extinguisher.

Pull the pin

Aim at the base of the fire

Squeeze handle and

Sweep over the fire

Maintenance of fire extinguishers

- Fire extinguishers can only be serviced and inspected by someone who is certified. Check with your local fire department to find a certified technician in your community.
- Inspect your extinguisher annually according to the manufacturer's instructions. Ensure that:
    - o The safety pin is in place.
    - o The gauge indicates that there is pressure.
    - o Nozzle and hose are in good shape.
    - o The inspection tag is in place.
- Never "try out" an extinguisher. It will lose pressure and won't be dependable when you really need it.
- If you have a rechargeable extinguisher, recharge it after each use. If you have a disposable extinguisher, replace it after each use.
- Ensure your extinguisher is easily accessible. It's best near an escape route exit. Attach it to a wall at waist height.
- Your extinguisher must be ULC certified.
- All dry chemical fire extinguishers require hydrostatic pressure testing by a professional once they reach a certain age. CO2 extinguishers should be checked every five years, dry chemical extinguishers every 12 years.
- During fire prevention week in the fall, watch out for the local advertising for safety and training information.

Tip

This is a good time to review your fire escape plan.

FIRE ESCAPE Plan

Making a fire escape plan for your home can mean the difference between life and death. A home fire can become deadly very fast. From the time the smoke alarm sounds, the people in your home might have only a very short time to get out of the house. This means that everyone who lives there must know what to do as soon as the smoke alarm goes off. To be able to do that takes planning and practicing.

Create your fire escape plan.

1. Using a large piece of paper and several colourful markers, draw a floorplan of your home. Show where the doors, windows, and stairs are. Draw in the location of each room, and write in the name of each room.
2. Using your markers, show how someone can get out of every room. If possible, show two different ways to get out. For example, the first way out would be the door, and the second way out might be a window. If a window on the second floor is one of the ways to escape, consider buying fire escape ladders to keep in that room in case of an emergency.
3. Write down the plan.
4. If you have children. Practice the escape plan together.
5. Have a meeting place a safe distance from the home in the event of a fire.
6. Post your escape plan in a place where everyone can see it.

IF YOUR SMOKE DETECTOR ACTIVATES

All alarms should initially be treated as a fire.

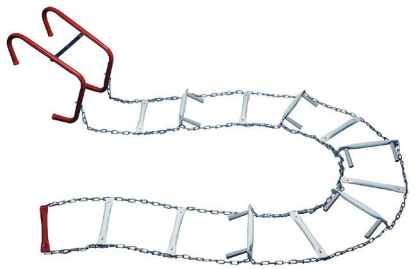
Determine the cause of the alarm (e.g. pot left on stove, cigarette burning, dirty toaster, someone playing with matches, candles)

If the source of the smoke is under control:

- Shut off the heat source.
- Open windows to air out the building.
- Fan smoke away from the smoke detector. Do not disconnect the smoke detector.

If there is a fire:

- Evacuate everyone from the house, and close the door behind you.
- Call the fire department by dialing 911.
- Do a head count and let the fire department know if anyone is missing.
- Give your home address to direct the fire department to the fire.
- If you used the fire extinguisher, have it recharged as soon as possible.



General Safety

Don’t!

- Don't mix ammonia or any detergent containing ammonia with bleach. The combination forms a poisonous gas.
- Carry too many tools. Make a second trip.
- Don't take shortcuts.

Do

- Keep the workspace clean.
- Use a step stool or ladder when working at heights.
- Always turn the power off when working on an electrical appliance.
- Make sure that all your tools are in good working condition. For example, don’t use screwdrivers that are worn out, and don’t work with electrical cords that have bare wires.
- Protect your lungs with a respirator mask if you are cleaning mould. Make sure that the respirator is rated for the type of work you are doing.
- Wear hearing protection if you’re working in an area with loud noises.

Safety glasses

Respirator mask

Hearing Protection

First aid kit

Every family needs a first aid kit. It is a simple inexpensive way to protect your family in an emergency. Buy a first aid kit and explain to your family how to use it.

Tip

A First Aid course teaches you how to properly use the items in your First Aid Kit.

Emergency preparedness kit

What you have on hand when a disaster happens could make a big difference. Plan to store enough supplies for everyone in your household for at least three days.

- Water. Have at least one gallon per person per day.
- Food. Pack non-perishable, high-protein items, including energy bars, ready-to-eat soup, peanut butter, etc. Select foods that require no refrigeration, preparation or cooking, and little or no water.
- Flashlight. Include extra batteries.
- Medications. Don't forget both prescription and non-prescription items.
- Battery-operated radio. Include extra batteries.
- Clothing and blankets and sleeping bags. Provide a change of clothes for everyone, including boots and gloves.
- Sanitary supplies. You'll want toilet paper, feminine supplies, personal hygiene items, etc.
- Money. Have cash. (ATMs and credit cards won't work if the power is out.)
- Pet supplies. Include food, water, leash, litter box or plastic bags.

Child safety tips:

- Every medicine cabinet should have a child-proof section with a lock on it.
- In kitchens, bathrooms, and workshop areas, make sure to lock cabinets that contain matches, lighters, flammable liquids, household cleaners, garden pesticides, automobile chemicals, alcohol, dangerous tools, appliances, etc.
- Electrical outlets should all be fitted with safety caps or devices.
- Store small electrical appliances and their cords, out of the reach of children who could throw them in a sink, toilet, or tub or pull on top of themselves.
- The bottoms and tops of stairs should have safety gates to prevent children from climbing or falling.
- Sharp-edged furniture and fireplace hearths should have edge guards placed on them.
- Put out of reach things that could strangle or suffocate a child

  (plastic bags, electrical cords, drapery cords, etc).
- Keep guns unloaded and securely locked up.
- Lock your house. This will keep intruders out of your house and toddlers safely inside your home.

Pest Control

The two types of pest that are most common in the north are:

1. INSECTS, such as ants, carpet beetles, clothes moths, houseflies, mosquitoes, silverfish, and spiders.
2. ANIMALS, such as mice, squirrels and rabbits.

To eliminate pests involves three steps:

1. Inspection: to detect evidence of pests and conditions that lead to pests.
2. Removal: removing pest from your home.
3. Prevention: by cleaning to prevent pest from entering.

How to remove pests from your home

Ants

Ants can cause structural damage to wooden building components and spread disease-causing germs to food. Black or red in colour, these insects measure between 3 and 12 mm (1/8" to 1/2") in length.

To reduce the risk of ant infestations, eliminate moisture-collecting areas in your home. Also, keep wood from direct contact with the soil.

To prevent ants from coming into the house the best method is to spread an insecticide treatment around the house.

Ensure pets and small children cannot come in contact with any insecticides.

Tip

A mixture of equal parts of Borax bleach and icing sugar is a good ant killer.

Ant

Saw-toothed grain beetle

This slender, flattened reddish-brown beetle measures 2 to 3 mm (1/10") in length and features 6 tooth-like projections on its midsection. It commonly inhabits stored products such as grains, cereals, and packaged goods. Although it is not a health risk, a grain beetle infestation can cause growth of destructive moulds.

Keep food dry and store in tightly sealed containers.

Saw-toothed grain beetle

Flea

Fleas are a common household pest in the south and can be brought north in bedding or on pets or fur clothing. Feeding off blood, these small, black to brownish-black (1 to 4 mm, or less than 1/6") wingless insects can bite their hosts repeatedly, causing an allergic reaction. Scratching these extremely itchy bites can lead to secondary infections, especially in children.

Treat your dog or cat with a flea shampoo during the summer. If you have fleas in your home, you will have to use a flea spray on all your carpets and furniture. It may also be necessary to wash all bedding and clothes. Also treat any fur clothing with a flea spray.

Flea

Tip

Tee tree oil is a very effective treatment for fleas. It is also available in shampoos.

Silverfish

Silverfish are slender, silver-coloured insects with 3 long tail-like antennae on the end of their abdomens. They are likely to be found in old books and cotton clothing stored in damp areas such as basements. They can be a major problem in multi-unit residential buildings, where they can move from unit to unit in search of food.

Keeping storage areas dry, and regularly vacuuming around stored books and clothing, will help prevent silverfish infestations.

Silverfish

Bed bugs

Bedbugs are very hard to get rid of. If you do have bedbugs, it is strongly recommended that you hire a licensed professional pest control operator.

If you are a tenant and have bedbugs, you should tell your landlord right away. Tenants who have bedbug-related issues should speak with a public health officer for help in dealing with the infestation.

If you live in a multiple-unit dwelling and building management has asked you to prepare your unit for bedbug treatment, this usually includes emptying storage furniture to make it easier to inspect, organizing your belongings and placing them in bags, washing all your clothes and bedding, and moving furniture away from the walls. The pest control operator will usually give you specific instructions to prepare for an inspection or treatment.

Bed bugs

Rodents

Rodents such as mice, shrews, sik-siks and squirrels can cause damage to your home and spread diseases. They will chew through wood and even electrical insulation to get to food.

Holes chewed in food boxes and bags, along with nearby trails of droppings that look like dark grains of rice, are evidence of the presence of mice.

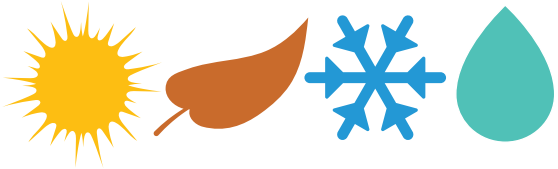
Sealing the gaps and cracks that they use for access, and keeping food and garbage in tightly sealed containers, will help prevent infestations.

Place mouse traps along the base of outside walls and over any exposed beams in your basement or crawl space.

Mouse

In the home safety section you have learned to:

- Identify safety equipment that homes should have
- Properly maintain safety equipment
- Develop a fire escape plan for your family



Seasonal checklist

NORTHWEST TERRITORIES
HOUSING CORPORATION

Contact Information

ELECTRICIAN

Name: _____

Company: _____

Phone: _____

Email: _____

Website: _____

LHO Maintenance (office)_____

After Hours phone number _____

PLUMBER

Name: _____

Company: _____

Phone: _____

Email: _____

Website: _____

HEATING

Name: _____

Company: _____

Phone: _____

Email: _____

Website: _____

GENERAL MAINTENANCE

Name: _____

Company: _____

Phone: _____

Email: _____

Website: _____

NWT SPILL LINE 867 920 8130

LHO Office: _____

LHO Maintenance: _____

Summer checklist

	Y1	Y2	Y3	Y4
• Clean out washer pump filter and water inlet screens				
• Check clothes washer hoses for signs of wear. Replace every 3 years				
• Disconnect clothes dryer duct connection, and vacuum lint from duct and outside hood				
• Clean dust from the refrigerator and freezer condensing coils				
• Pour hot water down the defrost drain at the back of your fridge				
• Check and clean range hood filters				
• Clean filter on heat recovery ventilator - your house may not have one				
• Remove the floor grilles on forced- air systems and vacuum inside the ducts				
• Vacuum bathroom fan grille				
• Check pressure gauge on fire extinguishers; replace if necessary				
• Clean wood stove and chimney annually, more frequently if wood is your primary heating source				
• Check the chimney cap is secure and check for loose or corroded fittings				
• Clean water storage tank. Hire a professional with appropriate safe cleaning solutions and protective safety gear				
• For trucked water homes, Check the water tank float and light signalling. Ensure a LED light is being used				
• Review water shut off plan with family members				
• Inspect sewer tank and connection points for signs of leakage and ensure pipes insulation. Get heat tape inspected when your doing annual heating system maintenance				
• Check sump pump and line to ensure proper operation				

Summer checklist

	Y1	Y2	Y3	Y4
• Fuel Oil Tank Inspection				
Check the stability of the fuel tank - legs, foundation etc				
Check for any signs of leaks				
If metal look for rust or dents. Consider replacing with fiberglass or double wall tank				
Confirm the vent alarm is operational. Ask the fuel supplier when filling				
Confirm the fuel gauge is operational. Ask the fuel supplier when filling				
Confirm with your insurance provide that an oil leak clean up is covered				
• Propane Tank Inspection				
Ensure the tank is level and on stable ground				
Check hoses for any ware, smell for gas leak				
Clean the grill on the regulators				
• Ensure windows close tightly - adjust or replace weather stripping if necessary				
• Clean and inspect wood stove				
• Check door weather-stripping - replace if needed				
• Lubricate door hinges, and tighten screws as needed				
• Re-level any exterior steps or decks that moved as a result of frost or settling				
• Check exterior wood siding and trim for signs of deterioration; clean, replace or refinish as needed				
• From the ground, check shingles for repair or replacement - curling edges are an indicator they will need to be replaced. Consult a professional.				
• Inspect electrical service lines for secure attachment to the house. Check for overhanging tree branches and have the power company remove them.				
• Deep clean carpets and rugs				

Fall checklist

	Y1	Y2	Y3	Y4
• Remove window screens - it will reduce ice build up				
• Drain and store outdoor hoses. Turn off water to outside taps				
• Have heating system serviced by a professional				
• Replace thermostat batteries if using an electric unit				
• Develop or go over the house fire escape plan with family				

Winter checklist

	Y1	Y2	Y3	Y4
• Remove ice from door jamb to ensure proper closure - regular checks				
• Clear snow away from vents and basement windows				
• Drain off a dishpan full of water from the clean-out valve at the bottom of your hot water tank to control sediment				
• Check all faucets for signs of dripping and change washers as needed				
• Clean drains in dishwasher, sinks, bathtubs and shower stalls				
• Test water shut-off valves to ensure they don't seize				
• Monitor chimney for ice build up. Get qualified person to remove. It can cause fire or carbon monoxide poisoning				
• Make sure air vents indoors and outdoors are not blocked by snow or debris				
• Remove any ice build up on your heating system exhaust and intake				
• Check to ensure your sewer vent stack is not covered with snow or frozen; this should be done after every big snow fall				
• Trucked water delivery home, clear snow and ice build-up from in front of water tank connector.				

Spring checklist

	Y1	Y2	Y3	Y4
• Install window screens				
• Examine the foundation walls for cracks, leaks or signs of moisture, and repair as required				
• Shut down, drain and clean furnace humidifier				
• Carefully test hot water tank temperature and pressure relief valve to ensure it is not stuck. Caution: This test may release hot water				
• Open valve to outside hose connection after all danger of frost has passed				
• Clean sink p-traps and rinse drain with baking soda and vinegar				
• Clean fireplace or pellet stove and chimney. If this is your primary heat source it should be cleaned twice a year or if sooty builds up to 1/8"				
• Clean entire yard				

Monthly checklist

- Make sure electrical outlets are equipped with safety plugs, if kids in house
- Check furnace filter monthly and change each season
- Check the hot water heater for leaks
- Check and clean range hood filters
- Test ground fault circuit interrupter(s) on electrical outlets monthly by pushing the test button, which should then cause the reset button to pop up.

All Seasons

- Fill basement drain trap with water to prevent sewer gases in house
- Test smoke detector, carbon monoxide detector
- Clean smoke detector, carbon monoxide detector with vacuum
- Observe main water pump for signs of short cycling - turning off/on rapidly

NORTHWEST TERRITORIES
HOUSING CORPORATION

HOME MAINTENANCE

REPAIR MANUAL