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It comes to a time when a water heater replacement is essential, but it need not be overly expensive. Gas water heater installation may seem intimidating, but it's actually easier than you may think. If the job is bigger than you want to tackle, you can always hire a professional plumber. They'll be happy to install your gas water heater and dispose of your old heater as well. But if you're up for the challenge, you can save yourself some money by doing it yourself, follow the instructions below for some guidance. The average service life of water heaters is 8 to 12 years, so if yours is entering old age, you may want to consider purchasing a new unit (read our pick of the best tankless gas water heaters) versus repairing your old water heater. Keep in mind that in most situations it's generally best not to switch fuel types (gas or electric), although sometimes it does make sense. You may also want to consider transitioning to a tankless water heater and take advantage of the fuel efficiency benefits (and money saving) they have to offer. Consult with a Local Plumber Step 1: Remove the Old Water HeaterTurn the gas supply off to the water heater.Use a wrench to disconnect the gas line to the old water heater.Inspect and detach the venting to the water heater.Set the venting aside. You'll use it later.Open a hot water faucet in your home, and let the water flow until it is cool.Shut off the incoming water supply to the water heater.Connect a garden hose to the drain valve.Open the drain valve and drain the tank.The water may contain sediment. If you have difficulty draining the tank, check out this article to help you unclog your drain valve. Open a hot water faucet to allow air to enter the tank.Remove the T&P discharge pipe from the T&P valve.Set the discharge pipe aside. You'll use it later.Disconnect the water supply pipes.Remove the old water heater using a hand truck. Consult with a Local Plumber Step 2: Install the New Water HeaterPlace the new water heater in a drain pan.Install the discharge pipe to the T&P relief valve.Apply plumbers tape (white) to the hot and cold heat trap nipple threads.Attach the flexible hoses to the hot and cold water nipples.Use the dielectric fittings if required in your area.Use plumbers tape (white) to line each end of the connector body.Secure the flexible hose to one end of the connector body.Hold the other end of the hose up to the pipe and use a pencil to mark where to cut. Be sure to leave a little slack in the hose.Cut the pipe and remove the burs.Slide the compression nut onto the pipe.Push the pipe into the fitting and tighten the compression nut. Install earthquake straps to secure the water heater to the wall.Step 3: Fill the Water Heater TankAt the nearest faucet, remove the aerator and open the hot water side.Turn on the cold water supply to the water heater and check the fittings for leaks.If there are no leaks, fill the tank full of water.You'll know the tank is full when the water runs from the open faucet.Close the open faucet once the water stops sputtering.Step 4: Attach the Venting and Gas LineConnect the venting to the water heater.Attach the venting to the exhaust hood using self-tapping sheet metal screws.Set the control knob to OFF on the water heater's control valve.Wrap the fitting threads with gas plumbers tape (yellow).Insert the flare nut into the control valve.Screw the other flare nut onto the gas line.Connect the flexible gas hose (yellow) to each flare nut.Use leak detection solution on the gas fittings. The solution will bubble if there's a leak.Tighten connections as needed.Follow your manufacturers guidelines on how to light the pilot.Check that your water heater is properly venting.Install the air filter.Watch the Video Consult with a Local Plumber Find out how to install a gas water heater with our step-by-step guide and easy-to-follow instructions. Learn about the best location for the large cylinder, venting, and plumbing requirements, as well as the tools you'll need and how to avoid common problems. photo: hotwatertalk.com Find Your Local Water Heater Expert! It's important to follow state and local codes and the manufacturer's instructions when installing a gas water heater to ensure reliable and safe operation. For example, one requirement may be to install an expansion tank on the incoming water supply line in a closed heating system. Some codes may also require a special license to connect the gas line to your heater, comply with venting regulations, and install a vacuum relief valve, among other things. Yes, you can install a gas heater yourself, but only if you know how. For your reference, detailed instructions are below. This is not an easy DIY job and can be very costly and dangerous if not done correctly. For proper installation and worry-free operation, you need to have more than basic knowledge and experience to safely handle any electrical, plumbing, and gas work. In addition, you might need to get the permits from your local building department. Whether you want to replace an old or install a new gas water heater, most of the required tools are found in almost any handyman home, and these include: Adjustable plumbing wrenches Power drill Pipe cutter Screwdriver Garden hose for draining Plumbing sealant or tape Also: pipes, fittings, valves Before installing a gas water heater, you should carefully select an indoor location as its placement is crucial for the safety of the occupants, economical and efficient use of a unit. Keep in mind that the tank-type models, as opposed to tankless, can only be installed indoors. Your device should not be installed in the area where gas or water leakage from the heating system can damage adjacent areas and lower floors and cause damage to the structure. The risk of the water and gas leak, difficulties in maintaining, service, handle, removal and control, are the reasons why some plumbers do not recommend attic installation, even knowing that some homes (especially those with the slab foundation) already have it installed. To ensure the proper water and gas flow, the floor where the unit will be standing must be on a level surface. Specific local codes might require a stand to raise a heater and provide a required clearance. That is why it is essential to provide the correct drainage solution under the heater, like a drain line or drain pans. Since the burner and air inlet are located in the lower part of the tank, your drainage solution must not restrict this entrance. The selected location must provide adequate clearance for servicing and maintenance. Do not put the tank directly on the carpet, but slide the piece of metal or wood panel beneath if you have to. During the installation, keep in mind that combustible and flammable products, like paint, propane, gasoline, should never be stored in the same room or close to the unit. Most modern devices are equipped with the FVIR system, which ensures that there will be no ignition of the flammable vapors outside the combustion chamber. To reduce the energy waste and if the water line is too long, insulate the pipes to protect them from exposure to freezing temperatures. You can always wrap the heater with an insulated jacket or blanket and reduce the standby loss. Before you install the unit, make sure, if possible, to place it close to the most used application and a power source. Install your tank-type gas unit only in the designated room, not in the bathroom, bedrooms, or any unprotected outdoor location. You want to place your unit close to the external wall to make room for the vent pipes. This is why garages, laundry rooms, and basements are good spots. Related: How to light a gas water heater (with the pilot light) Install a gas water heater close to the external wall to ensure an unobstructed venting, short vent pipe run, and sufficient fresh air for the normal operation. When installing your heater in the confined space, two openings have to be made for adequate combustion and ventilation air intake. One opening is located 12″ above the floor and the other 12″ from the ceiling. The total free area of the opening depends on the heater's BTU. Check also if the vent connectors are properly secured, flue baffle installed in the flue tube, connected to the chimney or vent pipe system, and at a safe distance from other combustible materials. Also, make sure they are supported with the metal hanger and at the specified distance. Do not operate the unit if the flue baffle is not installed. The manufacturer's instructions must be followed. Note: The building code dictates venting requirements, either dealing with the power vented, direct vent or atmospheric models. It is required to install a unit per code, and with the potential problem that might arise, it is recommended to contact a professional technician. If the vent kit is supplied with the unit, it must be installed per the manufacturer's instructions, such as following the minimum rise, termination setup, sealing the vent kit joints, proper clearances, and others. The vent pipes of the atmospheric type water heaters must provide an upward, natural movement of the hot air. The flue gases moved by the natural draft are directed from the combustion chamber through the draft diverter, metal vent pipe, chimney, and outdoors. If the house does not have a chimney or similar, using this type of heater can be expensive to install. Proper venting depends on the pressure difference between the highest and lowest point on the vents, including the surrounding air pressure. Any obstruction leads to back drafting, gas spillage and exposure to carbon monoxide. For the natural draft type models, it is recommended to use a galvanized steel pipe or preferably B-vent (double-wall vent pipe) secured to the draft hood with sheet metal screws. The size is usually 3″ or 4″, depending on the unit capacity. The problem with the single wall vent pipe is that it might cause excessive condensation if used in colder areas (a garage, for example). For the proper draft, the metal pipe between the heater and chimney must run upwards, rising not less than 0.25″ per foot, and should be straight and as short as possible. The surrounding air, which enters the house from the outside, is used for gas combustion and dilution. If the house is tightly sealed, this can lead to a problem as there will be no sufficient air coming in – other venting options should be considered. As opposed to atmospheric type water heaters, power-vented (PV) models, also known as an induced draft or fan-assisted, can have the venting pipes installed either horizontally through the sidewall or vertically through the roof. This is because PV models use the electric blower (fan) and dedicated vent pipes, usually made of PVC. The blower, mounted on top of the unit, guarantees proper venting and eliminates the risk of negative pressure buildup inside the home. PV models are often found on energy-efficient models and are recommended for homes without a chimney or where it is hard to install the atmospheric type. However, they are more expensive. Direct vent water heaters (DV) also rely on the natural draft for proper venting. This type is excellent for homes with no chimney and no electric source located close to the unit. The advantage is that you will have hot water even if the power goes out. DV models are designed with a single or dual vent pipe system. Single-vent models use the surrounding air for combustion and one vent pipe to move the exhaust gases outside the building. Dual-vent models utilize two pipes, where one pipe is used to draw the fresh air from the outside, while the other pipe is used as an exhaust. As the air is coming from the outdoor, DV models, do not have a problem with insufficient indoor ventilation. Use this test to check if the venting on your gas water heater is proper: Make sure all the windows and doors are closed and the unit is running. Take the extinguished match and put it near the vent hood. If the venting system is operating correctly, the smoke from the match should pull into the vent hood. If it blows back, there is a problem. This issue must be fixed as soon as possible as there is a risk of carbon monoxide poisoning. Turn the unit off. Turn the power off on the electrical panel. Shut off the gas supply on the gas control valve and water supply on the shut-off valve. Remove the water from the tank. Attach the garden hose to a drain valve to empty the tank. See details on how to drain a water heater fast and easy. Remove the vent pipe when replacing the old model. Disconnect the gas line. Use the adjustable wrench to unscrew the pipe at the union fitting, but keep the T fitting and sediment trap. Disconnect the water lines. Using the same adjustable wrench, disconnect both cold and hot water lines from the top of the unit. Or, cut the copper lines if soldered. Remove the TPR discharge pipe. Remove your old water heater and dispose it of properly. Prepare the site for a new unit. Position a device in an adequate location with the drain pan underneath to collect any leaks. Install heat traps on the device and connect both hot and cold water lines to these fittings. We recommend using flexible braided stainless steel lines for easy installation and service. To prevent corrosion of the fittings use dielectric unions when connected to copper pipes. Install a new temperature and pressure relief valve and the overflow pipe. Connect the gas line. You can connect the piping to the gas control valve either by using the flexible connector or black iron pipe. Make sure everything is clean and sealed. And remember, always check for leaks. Turn the gas, electrical, and water supply on. When filling the tank with water, the drain valve must be closed. And when the heater is in use, the cold water supply must be left open. Open the nearest hot water faucet to let the air exit and ensure constant flow. Light the pilot (if available), or start the unit per instructions. The tank can be filled only when the gas and water supply are connected – preferably by a licensed plumber. When the air is removed from the heating system, the gas supply can be activated and tested for leaks. Never use a hot water heater unless it is full of water. Check if the gas type and pressure supplied to the heater are the same as indicated on the rating plate. If not, contact the supplier. A manual shutoff valve must be installed in the gas supply line and close to the unit. The gas regulator control valve has a 1/2″ female threaded connection, which is typical for most gas models. After you are done with the gas water heater installation, always check connections for the leak. Use a solution of dish-washing soap and water and apply to the gas pipe connections. A leak will cause the soap to bubble. If there is a leak, tighten the loose connection, and check again. Per building codes, a drip leg or sediment trap should be installed to collect any small particles or moisture present in the pipeline. A union must be installed between the gas control valve and shutoff valve, for easy maintenance. Connecting piping to the heater's control valve can be accomplished by either a flexible connector or black iron pipe. Plumbing work includes connecting your home plumbing and the cold water inlet and hot water outlet (3/4″ NPT male thread), including the following elements: Dip tube installed in the cold water inlet Shutoff valve Union installation so the heater can be easily disconnected if needed Temperature and pressure relief valve installation, including the discharge line Check valve and pressure reducing valve, if needed Expansion tank The following instructions are based on the assumption that an old water heater has to be replaced. If your home plumbing uses the galvanized pipes, remove the pipe close to the heater and at the nearest fitting. If it uses copper or plastic pipes, simply cut the pipe close to the unit using the pipe cutter. To make a connection between the water heater and plumbing, you have several options; hard or flexible connections. Flexible is better, especially when the existing pipes do not line up with the new heater connections. And it is faster to put it on. But first, check the codes. To make the hard connections, you will need more than basic skills and the right fittings to line up the pipes, while with the copper pipes, there will be some cutting and soldering. With the plastic pipes, it is even easier, using the right fittings and sealants where needed. Just keep the plastic pipes at least 6 inches away from the hot surfaces. According to homedepot.com, the average gas water heater installation cost is between $1300 and $2000, including a basic model, permits, material, labor, and removal of the unit. As per homeadvisor.com, you will pay between $45 and $150 an hour just to hire a plumber and between $831 and $1651 to purchase a storage tank heater and have it installed by the plumber. Also, as per homeguide.com, an average labor cost for the gas water heater installation is between $200 and $1000, which is cheaper than if done through the Home Depot or Lowe's ($400-$1100). And for your reference, it usually takes from 2 to 6 hours to install one. When it comes to installing a gas water heater, safety should always be your top priority. While the information we've provided here can be a helpful reference guide, it's essential to seek the assistance of a licensed installer or plumber to ensure that the installation is compliant with legal codes, regulations, and manufacturer's instructions. Attempting to install a gas water heater on your own can be dangerous, as it requires specialized knowledge, tools, and skills. By working with a professional, you can be confident that your new water heater will be installed correctly and safely, without the risk of leaks, fires, or other hazards. Tankless water heater venting is a crucial aspect of installation that ensures the system operates safely and efficiently. Proper venting, along with professional installation, ensures the system runs safely and… If you're wondering whether to install a mixing valve in your water heating system, the answer is a resounding yes. A thermostatic mixing valve offers a straightforward yet effective way… A checklist for gas water heater installation is essential to ensure a safe and efficient setup. Whether you're a homeowner taking on the project yourself or a professional installer, careful… Without water heaters, what would separate civilized people from animals? Hot water is one of the essential comforts in the United States. If your water heater is out in December, you're going to feel it, even in the sunbelt. A water heater tank can be expensive to replace. If you are looking to do the job yourself, a novice can accomplish it. Here, you will learn how to install a gas water heater in an afternoon. Before getting started installing a gas water heater yourself, ask this question: Do I Need to Solder the Connections? Will I need to know how to use a torch for soldering? Water heaters can connect to various pipe types. Plastic water pipe needs to have water flex connections at least 18" long to keep from overheating the pipe. These water flexes are made of copper and have threaded connections on both sides, so no soldering is required in this instance. It is possible to have water to flex connections that are solder only on one end and threaded on the other (typically, if you are tying into an existing copper line). If you need to learn how to solder water heater pipes, we also have a resource for that. The pressure relief valve outlet may require some soldering, but that can typically be run with PVC pipe and a male adapter instead (the valve threads into the water heater, so no soldering there). Gas Hot Water Heater Installation in 8 Steps Whether you are interested in installing a propane water heater, or more commonly, a natural gas water heater, the steps will be very similar and will both be outlined here: Move your tank into position. Ensure that the drain valve is closed tight. Connect the water supply line with the shutoff valve to your water heater inlet (it should be marked as cold or have a blue ring around it). Again, you may have to solder, but maybe not. We recommend using Teflon tape for better connections with the supply line and the water heater. Connect to the hot water line out. Connect the Gasflex to the water heater valve on the front of the heater. The side that hooks into the heater will require Teflon tape or pipe dope, but the connection on the gas flex side is a "flared" connection and does not. Connect the tank to the ductwork leading to the draft hood that vents out the water heater. This may require the use of a 1/4 or 5/16 inch socket, depending on your heater brand. Turn on the water supply line, and the tank should fill up. If you feel like it's near full, check a faucet on your top floor. If there is no steady flow of water, your tank is not yet complete (full or not, expect some spitting and hissing as the air in the water lines is replaced with water). Double-check that your water heater valve is set at the off position, and turn your gas valve on. Follow the instructions for setting the Pilot. Some are manual; others are automatic. Ignite the pilot light, set the temperature (120 degrees or so), and you're in business! For a visual tutorial, try this AO Smith how-to video. Turn to the Water Heater Experts Hopefully, this how to install a gas water heater tutorial guide has been helpful. If you are looking for water heater parts, or a specific brand of water heater (Bradford White, for example), then you are in the right place. If you have any questions about your project or water heaters in general, please contact us. Related resources:How to Install an Electric Water HeaterHow to Solder Water Heater PipesHow to Wire a Hot Water HeaterHow to Install a Water Heater Expansion Tank Share — copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt — remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution — You must give appropriate credit , provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Space heater powered by combustion of gas Not to be confused with Gasoline heater. This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources: "Gas heater" – news · newspapers · books · scholar · JSTOR (April 2011) (Learn how and when to remove this message) Upright non-flued liquefied petroleum gas heater, 1970s A wall mounted gas heater that runs on either propane or natural gas. A gas heater is a space heater used to heat a room or outdoor area by burning natural gas, liquefied petroleum gas, propane, or butane. Indoor household gas heaters can be broadly categorized in one of two ways: flued or non-flued, or vented and unvented. The first gas heater made use of the same principles as the Bunsen burner. Beginning in 1881, the burner's flame was used to heat a structure made of asbestos, a design patented by Alice H.Parker, a England engineer. The gas heater is able to warm up a whole room by first allowing the flame to heat the air locally, then it disperses throughout the air by convection. Today the same principle applies with outdoor patio heaters or "mushroom heaters" which act as giant Bunsen burners. Modern gas heaters have been further developed to include units that utilize radiant heat technology, rather than the principles of the Bunsen burner. This form of technology does not spread via convection, but rather, is absorbed by people and objects in its path. This form of heating is useful for outdoor heating, where it is more economical than using a standard air heating system. A flued heater that burns wood for heat. Any byproducts leave through the flue pipe in the back Flued heaters are permanently installed wherever they are placed. The flue, if properly installed with the correct overall height, size, and orientation should extract all of the heater emissions. A correctly operating flued gas heater is typically safe for use. Another example of a non-flued gas heater, running on natural gas. Non-flued heaters – also known as unvented heaters, vent-free heaters, or flueless fires, may be either permanently installed or portable, and sometimes incorporate a catalytic converter.[1] Non-flued heaters can be risky if appropriate safety procedures are not followed. There must be adequate ventilation, they must be kept clean, and they should always be switched off before sleeping. If operating correctly, the main emissions of a non-flued gas heater are water vapour, carbon dioxide, and nitrogen dioxide. Home gas heating controls cycle using a mechanical or electronic thermostat. Gas flow is actuated with a valve. Ignition is by an electric filament or pilot light. Flames heat a radiator in the air duct but outside the flue, convection or a fan may distribute the heat. Gasoline heater Kerosene heater Fireplace ^ "RR023 - Flueless gas fires - concentration of carbon monoxid..." www.hse.gov.uk. Media related to Gas heaters at Wikimedia Commons Retrieved from " Download Article Download Article Installing a water heater is not as hard as it seems — it's simply a matter of soldering pipes, aligning connections, and securing valves to the heater. Whether you need to install a new gas or electric water heater, the process can take a few hours and requires some basic tools and construction supplies, but before you know it you'll be enjoying a fresh heated water supply in your home. 1 Remove the old water heater by turning off all valves and draining the water. If you're replacing an old hot water heater, you must cut the pipes away, turn off every valve, and drain it of water. To remove an old heater, do the following:[1] Turn off the cold water valve at the top of the heater. Switch off the gas valve and turn off the electric supply to the heater at the circuit breaker — watch the pilot light go out to ensure no more gas remains. Attach a hose to the drainage pipe and let the water flow into a drain. Unscrew and disconnect the vent shaft at the top of the heater. Remove any remaining unions with a pipe wrench or tubing cutter. Place the heater on a lifting trolley or forklift, place it in your truck, and bring it to the proper disposal facility. Consider hiring a removal service if you lack the ability to carry it yourself. 2 Place the new heater on top of blocks and align it with the pipes. Lift the heater onto cinder blocks or concrete blocks with a lifting trolley or a forklift — use blocks that are the same size placed directly next to each other to minimize the risk of the heater falling. Align it as best as you can with the water and gas pipes, as you can rotate the heater later on if it isn't quite perfect. It's essential that the water heater does not make contact with the ground, even while you are setting it up, as it could alter the integrity of the heater's exterior, damage low pipes, and make the heater less effective overall. 3 Attach a new temperature and pressure relief valve. Grab the temperature and pressure relief valve, which looks like a faucet with a valve on top with a small hose-like pipe coming out of the bottom. Screw it into the temperature and pressure relief hole, which looks like a large circle with an input slot, and apply teflon tape if necessary to prevent leaking.[2] Use a pipe wrench to get the temperature and pressure relief valve fully tightened. Opt for a copper version of the relief valve to keep the lines clean, as copper has antibacterial properties. 4 Solder new copper adapters to the water intake on top of the heater. Using 6 in (15 cm) copper pipes, solder a new adapter to one open end of a pipe to make it fit correctly into the water intake on top of the heater. Use a pipe wrench to secure the connection.[3] The hot water output should have a red ring around it, while the cold water intake should have a blue ring. If your area has particularly hard water or if your city requires it, attach a plastic lining "nipple" to the top of the intake valve to further regulate the water quality. 5 Attach the water lines to the top of the heater. Align the copper pipes extending from the intake valve on top of your new heater with the water pipes coming from the ceiling or wall. Then, solder the pipes together with copper couplings.[4] If they don't line up, solder elbow joints to the water heater's copper pipes to get them to connect seamlessly. 6 Reattach the vent shaft over the draft hood on top of the heater. Shove the draft hood tightly over the vent and secure it to the heater with 3⁄4 in (1.9 cm) screws. The vent should be at least 1 foot (0.30 m) high before it bends, so re-adjust the vent as needed.[5] It is best to pre-drill the holes into the draft hood so you can align the vent shaft with the draft hood easily. 7 Reconnect the gas line to the gas valve. Coat the ends of a steel pipe with pipe joint compound and screw one side into the gas valve. Then, align it to the tank and connect it to the gas supply. Use two wrenches to reduce the stress on the gas valve, keeping one on the valve itself to steady it and one to do the turning.[6] Use plastic coverings to secure the union of the gas valve and the gas intake. 8 Fill the new tank with water and test it for leaks by turning on a faucet. Turn on the water at the main shutoff and leave the cold water valve open. Turn on a faucet in a nearby room to hot and listen for the heater to turn on. Then, look at every joint on the heater to make sure there are no leakages.[7] If you smell gas, turn off the gas valve and the faucet, wait a few hours, then solder the connection. If you don't wait, you could spark the gas in the air. Water leaks and gas leaks can be fixed by tightening the connections or soldering the pipes. Turn off the valves and tighten or solder the loose connection, then try again. Turning on hot water throughout the home activates the heater, even if the pilot light is not on, so you are able to check the pipes for leaks much more easily. 9 Light the pilot light per the heater's instructions and set it to 120 °F (49 °C). After you have checked for leaks and made sure your connections are secure, light the pilot light of the heater and set the heater's temperature to 120 °F (49 °C) according to the manufacturer's instructions. Every heater has a different process, so follow the manufacturer's guide to finding the location and method of lighting the pilot light.[8] The pilot light will generally be at the bottom of the heater behind a removable panel, but again, check the instructions that came with your heater to safely get it started. Advertisement 1 Remove the old electric heater after turning off the electricity and draining the water. If you have an old heater that is being replaced, you must cut the pipes away, turn off every valve, switch off the electricity, and drain it of water. To remove the old heater, do the following:[9] Turn off the cold water valve at the top of the heater. Switch off the electric supply to the heater at the circuit breaker. Attach a hose to the drainage pipe and let the water flow into a drain. Remove any remaining unions with a pipe wrench, tubing cutter, or screwdriver. Place the heater on a lifting trolley or forklift, place it in your truck, and bring it to the proper disposal facility. Consider hiring a removal service if you lack the ability to bring it yourself. 2 Place the new electric heater on concrete blocks and test its stability. Electric heaters tend to be thinner and less stable than gas water heaters, so after placing it on a few blocks to keep it off of the ground, rock it back and forth gently to make sure the blocks don't shift. Place the blocks perfectly aligned with each other and at the same height to reduce the risk of the heater falling. If the blocks move, reposition the tank and switch out blocks until it stands on its own.[10] Keep the drain valve in the front as best as you can to easily drain out water later on in the water heater's life. 3 Solder copper pipes to the cold water intake. Cut 6 in (15 cm) copper pipes with a tubing cutter, then check to see if the end fits over the water intake valves on top of the heater. Attach an adapter if the pipe doesn't fit over the intake valves. Heat the copper pipes with a torch, then solder it together — the solder should activate quickly if the pipe is heated beforehand.[11] You can find copper tubing, tubing cutters, pipe adapters, and a soldering iron at your local hardware store. Clean the pipes beforehand with steel wool if you want to reduce the amount of buildup in the water heater, but it is not required as there is only a little bit of deposit that could get into the heater from copper tubing. 4 Align the water intake pipes with the water pipes coming from the ceiling. Align the copper pipes you just soldered onto the top of the heater to the water pipes coming from the ceiling or wall. Solder these pipes together, using elbow joints if necessary, to prevent leakages and create a connection. If they don't line up, elbow joints are necessary to get the pipes to connect correctly. 5 Attach a new temperature and pressure relief valve to the heater. Buy a temperature and pressure relief valve that is rated the same as your heater — check the American National Standard Institute to make sure the numbers are the same. Cut a length of copper tube that reaches down from the relief valve no more than 3–4 in (7.6–10.2 cm) above the ground.[12] Use a pipe wrench to secure the new valve, and then solder the copper tube onto the valve's opening. There should be a large circular opening near the bottom of the heater to attach the new temperature and pressure relief valve to. If you don't see one, consult the manufacturer's guide. Use teflon tape on the connecting portion of the valve if it doesn't quite fit into the heater. Make sure the opening is pointing towards the ground. 6 Remove the cover of the heater and connect the electric wires to your grid. Attach the grounding wire to the green grounding screw on the top of the heater. Then, follow the instructions that came with your heater very closely to figure out the correct configuration for the rest of the wires. Different electric heaters have very different wire configurations and colorations, so to prevent damage to your heater's circuitry and to prevent electrocuting yourself, consider calling an electrician or electrical inspector to check your work or connect the wires for you. If the heater's wires don't reach the wires that connect to your home grid, then mount a metal electrical box on a nearby wall and run the old wires and heater wires to the box using an armored cable.[13] 7 Fill the heater with water and check for leaks before turning on the electricity. Fill the heater with water by turning the water valve on, then turn on a tap somewhere in the home and check every connecting pipe for leaks. If there are leaks, empty the water heater through the drain valve with a garden hose, then solder the offending leaky areas again. Be sure to close the drain valve before you fill it with water. [14] Don't turn on the electricity until you are sure there are absolutely no leaks in the heater, or you could destroy the electrical components and have to replace them. 8 Turn on the electric connection and set it to 120 °F (49 °C). Turn on the electricity at the main panel, and set the temperature to no more than 120 °F (49 °C). Different electric heaters have the temperature control in different places, so consult your user guide that came with the heater to find out exactly where this panel is on your device.[15] Setting the temperature above 120 °F (49 °C) is not recommended as it will heat up the water too hot for use and can loosen buildup in the pipes over time, creating a tainted water supply. Advertisement Add New Question Question How long does it take to install a 40 gallon hot water heater? Patrick Johns Home Improvement Specialist Patrick Johns is a Home Improvement Specialist and the Owner of CatchAll Handyman Services. With more than 28 years of experience, he has worked on a variety of home improvement projects, such as carpentry, plumbing, and door and window installations in both commercial and residential properties. Usually, it can be done within two hours. If you have to do any draining, though, it might take just a little bit longer, because part of the hot water heater can be a little calcified. Question Is it possible to install a water heater outside? Yes, you can install a water heater outside, but it must be in a secure enclosure to protect it from weather, animals, and potential damage. Ensure that the surrounding area is covered and securely closed at all times. Question Where should I install a water heater in my home? You can install a water heater in the garage, laundry room, basement, or an outdoor-accessible area. Some houses have a dedicated "closet" outside, accessible only from the exterior of the home. See more answers Ask a Question Advertisement 6 in (15 cm) copper tubes Soldering iron Blowtorch Temperature and pressure relief valve (rated for your heater) Concrete blocks or cinder blocks Pipe wrench Elbow joints Tubing cutter Teflon tape Thanks Advertisement Thanks Thanks Advertisement Co-authored by: Home Improvement Specialist This article was co-authored by Patrick Johns. Patrick Johns is a Home Improvement Specialist and the Owner of CatchAll Handyman Services. With more than 28 years of experience, he has worked on a variety of home improvement projects, such as carpentry, plumbing, and door and window installations in both commercial and residential properties. This article has been viewed 57,566 times. Co-authors: 17 Updated: March 10, 2025 Views: 57,566 Categories: Water Heating Systems Print Send fan mail to authors Thanks to all authors for creating a page that has been read 57,566 times. VIDEO TRANSCRIPTION Uninstalling an Old Gas Water Heater First, check if the venting is functioning. To do this, turn on all gas appliances and exhaust fans then decrease the tank temperature for a few minutes. Once you do this, hold an extinguished matchstick close to the hood. If the smoke flows towards the hood, then the venting is proper. If not, then the venting has a problem and you need to seek help from a professional. Use a pressure relieve gauge to check pressure. The right amount of pressure should be between 50 and 60 psi. Turn off the gas and disconnect the gas pipe. Detach the venting. Open a hot water faucet and let it run till the water cools. Shut off the cold water supply and drain the tank. Once the tank is empty, remove the discharge pipe from the Temperature and Pressure Relieve (TMP) Pump. Disconnect the water supply pump and remove the old tank. Installing a New Heater Set it on a drain pump and route it to a drain in case of flooding. Install the discharge pump to the TMP relieve valve. Use a flexible hose kit to hook up the water. Importantly, use plumbers tape for all fitting threads. If required, install seismic straps and secure the tank firmly to the wall. Remove the aerator from the closest faucet and open the hot side. Turn on the cold water supply and ensure that there are no leaks. Let the water fill the tank. There should be water running from the faucet when the tank fills. Let it run for a while to remove air. Fix the venting to the exhaust hood. Connect the gas line using the gas hose to the control valve. The tank's control knob should be off. Once more, check for leaks. To turn on the system, rotate the control knob to pilot and press it while simultaneously pressing the ignite button. The light should flicker. The ideal temperature setting should be 120 degrees Fahrenheit. Perform the vent test. Lastly, position the air filter and after a short while check if the pressure has increased by checking for a leaking pipe. It is also important to have a carbon monoxide detector near the heater. As you can see, installing a gas water heater is easy and fast. After all, drinking warm water has its own health benefits. Consequently, isn't it just easier to turn on a hot bath in the morning before rushing off to work? Thinking about installing a gas water heater on your own? It might seem like a big task, but with the right steps, you can get it done. This guide will walk you through the entire process, from prepping your space to firing up the heater for the first time. Whether you're replacing an old unit or setting up a new one, these steps will help you tackle the project with confidence. So, grab your tools and let's get started on how to install a gas water heater! Key Takeaways Always turn off the gas supply before starting any installation work. Gather all necessary tools and materials before beginning the installation. Follow the manufacturer's instructions carefully to avoid any mishaps. Check for leaks after connecting gas and water lines to ensure safety. Consider hiring a professional if you're unsure about any step. Preparing for Installation Gathering Necessary Tools and Materials Before you dive into installing your new gas water heater, it's smart to gather all the tools and materials you'll need. Being prepared can save you a lot of time and hassle. Here's a checklist to get you started: Gas supply line: Make sure it's the right size and pressure for your heater. Pressure gauge: Handy for checking water pressure before and after installation. Gloves: Protect those hands! Hand truck: Moving the heater is a lot easier with this. Understanding Safety Precautions Safety first, always! Here's what you need to keep in mind: Turn off the gas supply before you start. This is super important to avoid any accidents. Follow the manufacturer's instructions closely. They're there for a reason. Consider hiring a pro if you're not confident. It might cost more, but it's safer. Remember, a safe installation is a successful installation. Don't rush or skip steps. Assessing the Installation Site Before setting up your heater, check the spot where you'll be installing it. Here's what to look for: Ventilation: The area needs to be well-ventilated to prevent carbon monoxide buildup. Combustible materials: Keep things like gasoline or paint thinner far away. Clearance: Ensure there's enough space around the heater for easy access and maintenance. Check local codes for specific requirements. By taking these steps, you're setting yourself up for a smooth installation process. Happy installing! Removing the Old Water Heater Getting rid of your old water heater can feel like a big task, but it's really about taking one step at a time. Let's break it down into simple steps. Draining the Existing Water Heater First, you need to turn off the water supply to the heater. This is super important to avoid any mess. Next, attach a garden hose to the drain valve at the bottom of the heater. Make sure the other end of the hose is in a safe place, like a floor drain or outside. Open the valve and let the water flow out. This might take a while, so be patient. Disconnecting Gas and Water Lines Once the tank is empty, it's time to disconnect the lines. Start by turning off the gas supply. Use a wrench to carefully disconnect the gas line from the heater. Then, do the same with the water lines. If you're not sure how to do this, don't worry. Just take it slow and double-check your work. Safely Disposing of the Old Heater Now that everything's disconnected, you can move the old heater out. It's heavy, so you might need a friend or a dolly to help. Check with your local waste management to see how to properly dispose of it. Some places might even pick it up for you. Remember, if your water heater is around 15 years old, it's smart to evaluate its condition and think about a replacement. New models are more energy-efficient and safer, which can save you money in the long run. Setting Up the New Gas Water Heater Positioning the Heater First things first, you need to find the right spot for your new gas water heater. Make sure it's level and has enough space around it. This space is important for when you need to do maintenance or repairs later. Use a level tool to check that the heater isn't tilted. If your heater isn't level, it might not work right. Checking the Vent Pipe Next up is the vent pipe. This pipe lets out gases safely from the heater. Check if the vent pipe is in good shape and fits well. It should not have any cracks or gaps. A poorly fitted vent pipe can be dangerous, so take your time with this step. If you're reusing an old vent pipe, make sure it matches the new heater's size. Ensuring Proper Clearance Finally, you need to check for proper clearance. This means there should be enough space around the heater for air to flow. Good airflow helps the heater work better and keeps it safe. Make sure nothing is too close to the heater, like furniture or boxes. Remember, setting up your water heater the right way can save you a lot of trouble later. Take your time and double-check each step. Connecting the Water Supply Lines Using Union Fittings First things first, you need to connect the water lines to your new heater. You'll want to use something called union fittings. These are special connectors that make it easy to attach pipes. Start by connecting the cold water line to the inlet. Then, attach the hot water line to the outlet. Union fittings help make this task easier and more secure. Tightening Connections Carefully Now that your lines are connected, it's time to tighten them. Grab a wrench and start tightening each connection. But here's the thing—don't go overboard. If you tighten too much, you might damage the pipes. Just make sure they're snug enough to stay put without leaking. Checking for Leaks Once everything's connected and tightened, it's time to check for leaks. Turn on the water supply slowly. Look closely at each connection. If you see any drips, you might need to tighten the fitting a little more. Sometimes, a tiny leak can cause big problems later on. Tip: Always have a towel or rag handy when checking for leaks. It helps spot those sneaky drips that might otherwise go unnoticed. Connecting water supply lines might seem tricky at first, but with the right tools and a little patience, you'll have it done in no time. Just remember to take it slow and double-check your work. Installing the Gas Line Turning Off the Gas Supply Before you begin, make sure the gas supply is turned off. This is super important for safety. Look for the gas valve and turn it to the "off" position. Double-check it's off by trying to turn on a gas appliance. If nothing happens, you're good to go. Attaching the Gas Nipple Now, you need to attach the gas nipple to the gas control valve on your new heater. Use two wrenches for this job. One wrench holds the valve steady, while the other tightens the nipple. Be careful not to overtighten, as this can cause damage. A snug fit is all you need. Checking for Gas Leaks Once everything is connected, it's time to check for gas leaks. Mix a little soap with water in a spray bottle. Spray this solution on the connections. If you see bubbles, there's a leak. Tighten the connections or replace the faulty parts. Remember, safety first! If you're unsure, it's always a good idea to call a professional. Installing the Ventilation System Proper ventilation is key to keeping your gas water heater running safely. Let's walk through the steps to get your ventilation system up and running. Attaching the Vent Hood First up, grab the vent hood. This piece goes right on top of your water heater. Use some self-tapping screws to secure it in place. Make sure it's snug but don't overdo it. Connecting the Vent Pipe Next, you'll need to connect the vent pipe to the hood. Check if your old vent pipe is still in good shape. If it is, you can reuse it. Just make sure it matches the diameter of the new vent hood. Attach it so it slopes upwards, which helps exhaust gases escape easily. Avoid any dips or sags in the pipe as they can trap gases. Installing the Draft Diverter The draft diverter is your next task. This little gadget prevents backdrafting, which is when air flows the wrong way. Place it on top of the vent pipe and secure it. Make sure it's level. Remember, proper ventilation isn't just about getting rid of gases. It's about safety. If you're not sure about any step, don't hesitate to call in a professional. Once everything is in place, double-check all your connections. A secure fit means everything's working as it should. If you're feeling unsure, it might be a good idea to have a pro take a look. Safety first, always! By setting up your ventilation system correctly, you're ensuring that your water heater runs smoothly and safely. Keep it up, and you'll have a cozy, warm home in no time! Testing and Final Adjustments Testing for Gas Leaks Before you fire up your new gas water heater, double-check for any gas leaks. This is super important for safety. Use a gas leak detector or just a mix of soap and water. Dab the solution on the gas connections. If you see bubbles forming, you've got a leak. Tighten the connections gently or swap out any faulty parts. Safety first! Checking Water Connections Next up, make sure your water conn