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## Frequently Asked Questions about ELM wood stoves made by Vermont Iron Stove Works

### Elm stove parts

The most frequently asked questions involve whether I have various parts to sell. Baffles, flat window glass, gaskets and gasket cement, pie plates, tie rods, wood knobs, stove paint, stove back castings, catalytic combustors and the casting that holds them, legs, and thermometers. In short, any Elm stove parts you are looking for are available from me. They are listed and pictured on the parts pages.

### Cast iron baffle

The most frequently replaced part is the cast iron baffle in the firebox. For the 18" and 24" or 36" non cat Elm and the cat Elms this is fairly easy. Step one is to remove the old one. It is quite likely that the nut is rusted on the bolt, and using a screw driver and wrench will break off the bolt with a little force. Step two is to position the new one just as the old one was using a piece of 2x4 or a small car jack. If the firebricks are removed a 14 and 1/2" piece of wood is about the right length. For the non-cat Elms, make sure the rounded droopy end with the little hole goes toward the rear, right up against the back casting. When you have it stable in there you can drill a new 1/4" hole through the tabs on it from outside the stove, and bolt it in place, with the nut on the inside of the stove. The longer baffle has 2 tabs in the front, and 2 more in the back. The cat Elm baffles also have 4 tabs for bolts. The U shaped cutout goes toward the back of the stove. Drill one of the tabs with a 1/4" hole, and put it in place with the first bolt and nut to hold it. Make sure it is positioned so that all 4 of the tabs are covering the holes in the steel barrel. Drill and bolt one on the opposite side, then drill and bolt the remaining 2. For the past two years I have been making and selling stainless steel baffles. While I am impressed with how well they work, they are difficult to make, and the addition of chromium to the old style baffles has made them an easier alternative. The chromium makes them resistant to burning through as the old ones did.

### Glass

How do I install replacement glass in my Elm? Start by taking the door off the hinges and placing it on a table or work bench. If the hinge pins are stuck you may gently tap on the bottom of the hinge pins to loosen them. Caution! Hitting any cast iron too hard can cause it to break. Another alternative is to use penetrating oil on the hinge, and it will loosen by itself. Remove the 4 bolts that hold the Elm tree casting in place. Remove the glass and gasket material. Vacuum or clean out any dust, broken glass or any other foreign materials. Wrap the flat fiberglass tape gasket material around the edge of the Pyroceram stove glass. It is adhesive backed so it will stick to the glass long enough to get it in place in the door. If your Elm takes a full circle piece of glass, you will need to get the "Window Widger" cast iron adapter, and place it in the top of the opening before installing the new piece of flat glass. On top of that goes the #209 Pyrex Pie plate, and a piece of 1/4" fiberglass rope gasket around the edge of the glass, followed by the Elm tree casting secured by the 4 bolts. Make sure that the glass is not loose and does not rattle when you are finished. Replace the door on its hinges. The interior flat glass is called Pyroceram or Neoceram. It is a high temp ceramic material made to take the heat of wood stoves. We sell the Neoceram which is 3/16" thick. Cleaning the inner glass can be done using a razor blade, rubbing it with crumpled newspaper, or burning

a hot fire once a day with good dry wood. Avoid using abrasive cleansers as they will scratch it. You can use ordinary window cleaner if the glass is at room temp.

### Gaskets

How do I replace the gaskets between the steel barrel and the cast ends? This requires taking the stove apart. Basically both ends of the stove will have to be removed, and the old gasket material scraped out of the grooves, cement is then applied, and new 5' pieces of 3/8" fiberglass gasket is then installed. You can do this by raising the stove off the hearth slightly, removing the tie rods, and then removing both the front of the stove and the back of the stove. You can do it one end at a time, so that you have at least two of the legs on the hearth. This is best done with a helper, as it is a very tippy situation with the barrel supported for this and being a round cylinder. It is important to get the stove oriented properly when you put it back together, so that all 4 legs touch the hearth. I advise marking the front and back castings with a marker where they meet the welded seam on the barrel. Then you can tighten the tie rods to their proper tension. You can commonly find gasket material in hardware stores, stove shops, and online. We carry complete kits with all the proper sizes and lengths. The stove door and front ring have a gasket that needs periodic replacement. Again, scrape all the old gasket and cement out of that groove. Apply the clear gasket cement and a piece of 1/4" rope gasket about 48" long, trimmed so that it meets end to end. Close the door, and lock the handle and leave it for several hours so that the cement hardens before you fire the stove again.

### Safe to operate?

Another FAQ involved whether it was safe to operate the stove without parts like baffles, glass or gaskets. The stove operates okay without a baffle, but will lose efficiency with some of the heat just going straight up the chimney. In some cases the baffles burned through and eventually just fall down if neglected. People sometimes remove the broken glass or broken pie plate and run the stove with air leaking in, which reduces the stove's airtightness. You need to keep the stove airtight in order to control the rate of combustion, and shut it down in case of a chimney fire. It is often difficult to know if the stove is leaking at the gaskets because you cannot see the gaskets to know if they really are sealed. Taking the stove apart is the only way to know for sure that the gaskets are in good repair. I have gasket replacement kits available to fit all Elm stoves.

### Stove paint

Does the paint effect the efficiency of the stove? Studies show that black paint is the most effective in transferring the stove's heat to the room. People often prefer some of the other colors available from stove paint manufacturers. A fresh coat of stove paint that is rated to take 1200 degrees F is a good way to protect the stove from rust. We have always used the ThurmaloX brand, and stock it in 12 oz. spray cans. 2 cans will give you plenty to do a thorough job on your stove. We stock the usual satin black as well as the popular midnight green by ThurmaloX.

### How do I paint a stove?

As you may have guessed, cleaning the stove surface will help the new paint adhere better. Vacuum with a brush attachment. I sand blast stoves to give the new paint the bare metal to adhere to, but it is not possible or necessary in your home. You can paint a stove in place, but you will need to protect everything around it from over-spray, and protect people and animals from the fumes. That means plenty of fresh

air, both during the repainting process, and during the first firing, as the stove will give off fumes and smell a bit for the first fire. Back to preparing the stove. You will need to cover the glass, knobs, shiny parts that are nickel plated, the floor or hearth area, and any other things you do not want to have paint on them. Painter's masking tape can be used to cover the 4 long rods, and the nuts on each end, as well as the knobs. It may be easiest to remove the glass for painting. If there is rust anywhere, either sand it or use steel wool or scotchbrite to scrub off all the rust, then vacuum it. Carefully spray the entire surface, making sure to keep the spray area moving and not allow any dripping to occur. It is better to spray a light coat all over and go back and apply a second coat to avoid too much being applied to the surface. Take your time. You probably won't get around to doing this very often. Allow the paint to dry completely before lighting the first fire. Preferably 24 hours.

### Firebricks

Does the stove need firebricks, and what do they do? The bricks protect the steel barrel, as well as providing extra thermal mass to keep the fire hot. A hot fire is the most efficient fire. If the bricks are broken is it okay to continue to use them? Yes, if they are only broken in half it is okay to continue to use them. If they become crumbled it is best to go to a stove shop or masonry supply company and ask for "splits" which are 4.5" by 9" and half the thickness of the usual firebricks. These are 1.25" thick.

### Elm stove legs

My stove has a broken leg. What can I do? Broken or missing legs will require that you order a new one. Be prepared to tell me if it is 8" or 14" long. If you want to replace the whole set of legs, we can help you with that too. Many people prefer the 14" longer legs because it raised the stove up to a height that is easier for loading and cleaning out the stove.

### The Elm owner's manual

[Is available](#) in PDF. It contains all sorts of information on the different Elm models, how they are operated, and how they should be installed. In the back there are exploded drawings showing all the parts of the stoves, and the names and numbers of the various parts.

### Repairs to the stove

Should the owner make repairs to the stove? Or should they call a more qualified expert. That is a good question. I have many people who insist on making repairs themselves. I provide all the information I can to make it possible for people to do this. There are also people who do not feel comfortable with these tasks, and prefer to call a stove repair person. I sell parts direct to owners. I also sell parts to businesses that specialize in selling and installing wood stove parts. Our goal is to keep as many Elm stoves in good repair as possible.

### Catalytic Elms

For those of you who have Catalytic Elms, there are replacement catalytic combustors available. Typically the old ceramic ones crumble and lose their effectiveness within 5 or 6 years of being installed. Some people report that theirs are still in good condition, but the chemistry that causes the stove to burn more efficiently has long since worn off. You just can't see that. So periodic replacement is a fact of life. I sell replacement ceramic combustors made by Condar. The cast iron basket that holds the combustor in many stoves has burned out. It is by far the hottest part of the firebox, and the original iron alloy just cannot

withstand the heat without burning out. Our solution to this problem is to make new ones which appear just like the old ones, except that they are different chemically. The iron foundry adds chromium to the iron to make it resistant to burning out from that intense heat. If yours has burned out, we now have replacement pieces with the new chemistry. What is the benefit of a catalytic stove? The catalytic provides up to 20% more heat, and reduces creosote by 90%. It results in a 75% reduction in air pollution. I have been working on installing stainless steel tubes which supply preheated secondary air for more complete combustion. Basically this air is added just under the baffle so the smoke has the additional oxygen it needs. This system can be used to replace the catalytic parts, but the work has to happen here in my workshop. Replacing the combustor can is sometimes a big job. If you can lift out the old one you can replace it with a new one. But first you should remove the probe thermometer. If there is not enough clearance to remove the can casting, you will have to remove the combustor housing. The four bolts that secure it may be rusted and you may have to cut them off with a grinder. Replacing the housing will require installing a new gasket on the bottom where it meets the barrel.

#### Elm Back Casting

If I find a crack in the back of my stove, how did it happen, and can I use the stove, and how do I get a new part? The crack quite likely happened from a log being tossed too hard against the back casting. The crack might have been very small at first, growing from the intense heat. The new replacement parts have chromium added to keep those parts from being effected by the heat of the firebox. I have heard of people with very small cracks, and medium sized ones as well as cracks as long as 11". I have never heard of cracks that traveled to the edge of the part. In cases of longer cracks, I advise people to purchase a new back. Solutions such as filling the crack with furnace cement, welding or brazing, all are short term solutions at best. I will need to know if your stove is a catalytic or non cat. They take different back casting. The very earliest Elms had a back that exited the smoke straight back. In the late 70's we changed to backs that had a rotating 45 degree elbow attached, so the pipe could be attached either straight up or straight back or odd angles in between. The Catalytic Elms have a back with no opening, and the 45 degree elbow is attached to the catalytic combustor housing on top of the stove.

#### Tie rods

There are 4 steel tie rods that hold the stove together. Together with the gaskets between the steel barrel and the cast ends, they keep the stove together and airtight at all operating temperatures. Proper torque is 20 to 25 foot- pounds when the stove is cold.

#### Steel Barrel

Is the steel barrel prone to any problems? The beauty of the steel cylinder is that it is a very stable shape. It expands and contracts uniformly and I have never heard of anything more than surface rust effecting the steel barrel. Steel rusts less than cast iron, and does not crack or crumble. I have seen stoves so hot that part of the barrel glows cherry red, and when it cools down, it is not damaged in the least. I advise against this because the tie rods and gaskets undergo a tremendous strain from that heat and expansion. Recently I heard from someone who had a nut on a tie rod shoot across the room. It turned out the stove had no gaskets, and the rods were too tight. This is a bad combination. He had purchased the stove second hand, and did not know the correct operating procedure.

#### Wood knobs and handles

My wood knob has worn out or is so charred that it falls off. What should I do? The best thing to do is to replace it. There are people who make their own replacements, and some of them turn out quite nice. Some people try glues and fillers, most of which fail due to the heat in that area. We have always liked wood knobs and handles since they stay fairly cool to the touch. They don't last forever, though. New ones are available here.

#### Nickel parts

How do I take care of the nickel plated parts? The nickel plating is a very thin layer of nickel, electrically applied to the stove parts. If you want to shine it up, we advise using a very fine buffing compound or cream that jewelers use to shine jewelry. Grocery stores carry several products that will work. What you want to avoid is using something that will scratch it off, like steel wool, sand paper or similar products. Once it is gone, it is gone for good.

#### Do I buy or sell used Elm stoves?

Yes, I have been buying and refurbishing stoves with as many new parts as possible to assure the new owner that the stove is in the best condition possible. Prices depend on the model and the options that are installed on each stove.

#### Burning soft wood in my stove

Can I burn soft wood in my Elm? I lived in Colorado for a while, and soft wood was all that was available. As many of you know, it burns hot and fast and won't hold a fire very well through the night. I advise you to clean and check your chimney more often as softwood can cause more creosote. Whenever possible it is best to burn good dry hardwood. As always we advise you to check your chimney and keep it clean each year. We advise you to have a stove pipe damper to close down the flow of gases in case of chimney fires. Burning the stove hot at least once a day for 20 to 30 minutes is a good way to keep the stove free of creosote. An Elm is not designed to burn coal. A coal stove has a shaker grate system, an Elm does not. An Elm is also not designed to burn wood pellets, corn, compressed grass or any other manufactured solid fuels. Never use liquid fire starters or solvents in your stove. Only crumpled newspaper and finely split kindling should be used to start fires in addition to your normal dry hard or soft wood. No painted wood should be used, particularly in catalytic stoves. No trash should be burned in the stove either. Foreign compounds and plastics can damage your catalytic combustor, and cling to the inside of your stove pipe or chimney.

#### Radiant wood heater

Why do people like stoves that provide radiant heat as opposed to convection heat? There is no stove that warms you right to the bone like an Elm on a cold winter day. Actually an Elm provides a combination of radiant heat and heat that moves the warm air around the house. But the area right around it is particularly popular both for people as well as dogs and cats.

#### Former Vermont Iron phone number

I am sure many of you have tried calling Vermont Iron's former phone number, and have found that someone else has that number now.

#### Vermont Castings

Are Vermont Iron and Vermont Castings related? No, they never have been. Actually there was a stove design competition in the mid 70's in Warren, Vermont. Three stoves were designed by three different people. The Elm stove became Vermont Iron Stove Works, and the Defiant became Vermont Castings, and the Maple was never put in production.

#### Handmade stoves

Some manufacturers say with pride that their stoves are made by hand in Vermont. If you go to see their production you will find that they are assembled by local people, but the parts are made elsewhere in big factories. The beauty of cast iron stoves is that since they are manufactured by foundries, their quality is strictly controlled. The metal is the same for every part, and the shape and size of parts is strictly controlled.

#### Warranty

Are Elms purchased in the 1980's still covered by a warranty? Unfortunately the owners of the business at that time just closed down the store and left without honoring the warranty on stoves they manufactured. So the answer is, no, they are not covered by any warranty.