

Take a file and push the file across the face of the frizzen and see if the file will cut the face, if it catches and you can feel it cut, it's soft and needs to be hardened and properly tempered. If it skids off like its on a piece of glass, then its hard. Too hard is not good either for producing sparks. The flint actually has to scrape tiny pieces of metal off the face of the frizzen to make sparks. Heating to a non-magnetic phase(roughly 1580 deg. f) then quickly quench in transmission fluid slowly swirling it around for 30 sec. or so. Then tempering it to 375 deg.f. in an oven for about 1 hour.

Using two propane torches, or a mapp gas torch, hold the frizzen by the tail of the frizzen. Heat to a bright red color, from the back, striking face up, and dip the th face into the Kasnit. Reheat for 20 minutes or so, sprinkling on more Kasnite as it bubbles off. Use an old spoon, or something with a long handle to sprinkle the Kasnit.

Check the temp of the frizzen with a magnet held in tongs. When the magnet refuses to stick to the metal, drop into a bucket of room temp water. Room temp water is cool to the touch, Not cold, but cool. 70-80 degrees.

Immediately clean off the scale with an old file. Th frizzen will be glass hard. Repeat the process using more heat if the file cuts into the frizzen.

Place the clean frizzen into the kitchen oven at 350-400 degrees for an hour. Let it cool in the oven.

Remove the frizzen and run the flame of the torch over the tail until it turns blue. let the color run to the pan cover and the screw hole. Keep the flame on the tail of the frizzen and let the color run on its own. Heat the tail slowly so it doesn't overheat. It should not turn red.

Let the color run to the base of the face of the frizzen and quench in cool water to stop the heat from traveling to the face of the frizzen.

Case hardening with Kasnit puts a .010 thick case on the part. The problem is, a .010 thick case is pretty thin and will wear through in several months of hard use.

For a thick case that will wear much longer. Use a bean can or small metal box large enough to hold the part with about an inch of charcoal all around it.

Build a hot fire in a shady place in the yard, or in a BBQ grill. A wood fire works great. Get a good hot fire going and let it burn down to coals.

While the fire is burning down. Break up enough lump charcoal into about 1/2 dimaeter lumps. The size isn't important other than there be no gaps to trap air. The gaps can be filled with finer charcoal.

Charcoal briquettes won't work for hardening the frizzen, or for the fire. Briquettes contain too many contaminanents to work for hardening. The binders also restrict the amount of heat they will produce.

So's ya gotta use real lump charcoal.

Fill the can about 1/3, or so full of charcoal and insert the frizzen into the middle. Cover the frizzen with charcoal. Don't let the frizzen touch the sides of the can.

Place a metal lid on the can. The lid doesn't have to fit tight. It can just sit on top, but don't let it fall off. Using tongs, place the can in the fire and use some of that lump charcoal to build up the fire. Keep a hot fire going all around and on top the can for at least an hour. Longer is better.

The fire needs a natural draft, so it wouldn't hurt to build the fire over a coupla firebricks or flat rocks. Set the can on the rocks.

The can needs to remain RED hot for at least an hour.

When you think the proper time has passed, pick the can out of the fire using tongs and dump the contents into a bucket of room temp water.

Do this outside, away from any flammable buildings. Hot coals, sparks, hot water and steam, and no telling what else will erupt from the can and water bucket. Wear old clothes, a hat, and DO NOT stand over the water bucket when you turn that can upside down.

When the frizzen has cooled, clean off any scale and place it in the kitchen oven at 350-400 degrees for an hour.

Using a torch, heat the tail as explained earlier.

Though "pack hardening" is more time consuming, it will yield a deeper case hardening that will last for years.