

Hand Plane Restoration:

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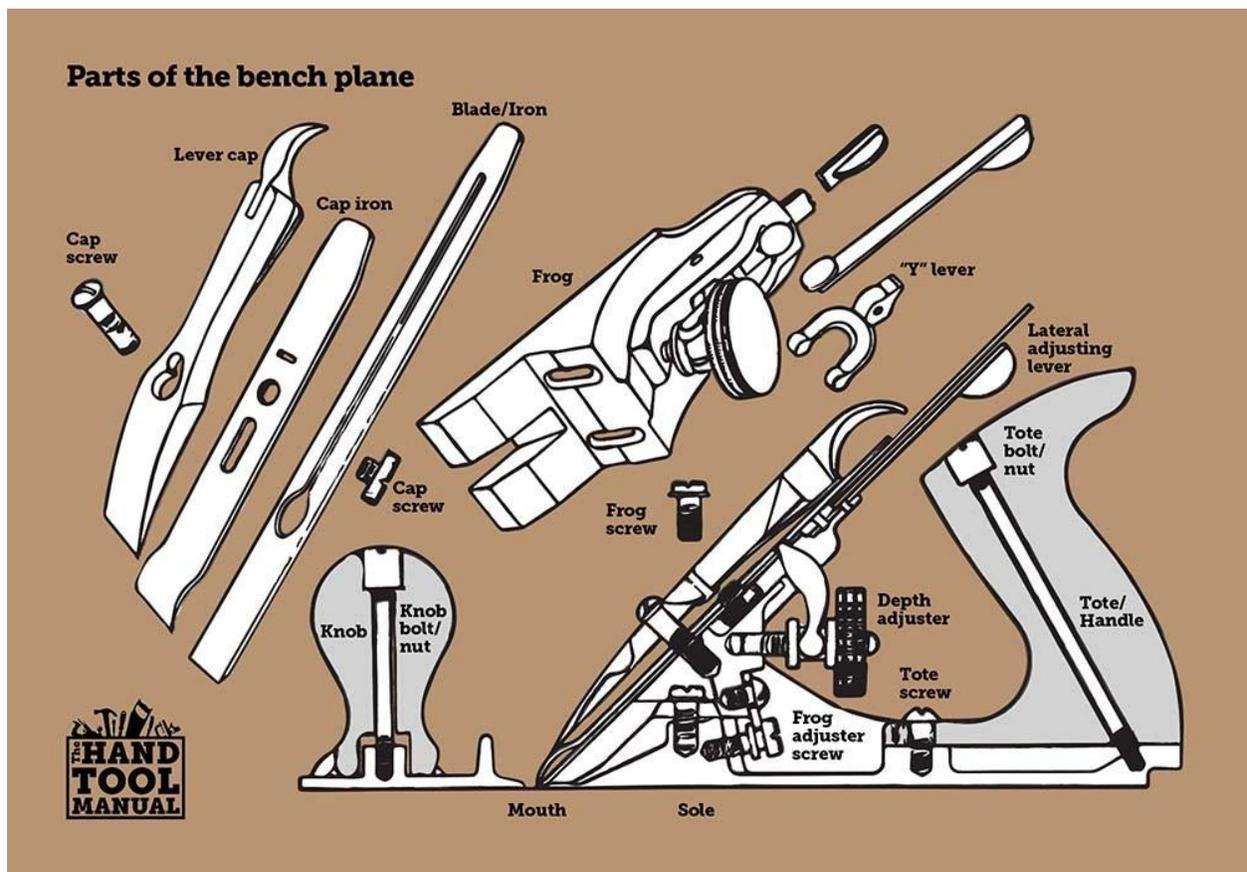
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Parts of the plane:



Things You Need:

A means to de-rust key parts of the plane.

I use a deburring wheel to remove rust on the casting, blade, frog, cap iron, lever cap and screws. I'll use sandpaper attached to the granite plate for the frog adjustment yoke.

A means to flatten the bottom

I use some old granite counter tops and backsplashes as lapping plates to flatten the sole. I use 80, 220, and 320 because that's what I have. Sometimes I'll go as high as 400 or 600 grit when I can find it in adhesive backed rolls. The key is to be flat so 320 is high enough though. We are not trying to create a sharp edge just a flat surface. Once its flat and we begin to use it, we'll put some wax on the bottom and it will glide perfectly.

Other things you'll need or want

A bristle brush is good for cleaning the japanned surfaces and the plane in general. For some of the more difficult things to clean, I'll use a brass brush. In my opinion, you should never use a steel brush and especially don't use a wire wheel. You don't want more scratches to remove and the wire wheel really takes of material as well. I use WD-40 as an agent to clean the japanning but anything that isn't too extreme will work. We just want to get the gunk off and see what's there. A sandflex block is a decent manual tool if you don't want to get a deburring wheel but the time spent will be magnitudes greater. You'll need a flat blade screwdriver for the various screws. If you plan to redo the tote and knob then you'll need some lacquer thinner and the finish of your choice to apply when the wood has been stripped. I like rattle can lacquer but spray shellac is a good choice too. You'll need also need: a dowel, blue painters tape, a fine scotch-brite pad, and paste wax. You'll also need whatever is appropriate for you sharpening method.

The Process

First thing to do is disassemble the plane and clean the various surfaces with the bristle brush and some WD-40. You'll be surprised how many times you find a bunch of chips under the frog. I think people don't realize the last time they are used is going to be the last time for quite some time so you can tell the planes that truly worked hard. I like those, I like holding a plane that someone used to make a living. I feel like I'm touching history. Okay, enough romanticizing, next use the deburring wheel to remove the surface rust from the casting, frog, cap iron, iron/blade, screws and lever cap. Be careful with the lever cap. If there is an embossed maker's mark with paint/japanning on it, you'll want to make sure you go around that carefully so that you don't remove it. Once the basic rust removal is done, reassemble the plane. Make sure the support surfaces of the frog are clean and debris free. Don't work too hard on this as you don't want to change the way the frog aligns and mates with the casting.

Next, we'll need to flatten the bottom of the plane. The plane needs to assembled with the blade installed and the lever cap snapped in place. Have the blade in place ensures the casting is under the same pressures as when it's operational. The casting can flex so we are flattening it to the forces, flexes and stresses that are in play when using the plane. Back the blade up as much as possible to ensure we aren't making it any blunter than it probably already is. Begin moving the plane back and forth on the 80 grit granite plate until you have uniform scratches on a flat bottom. Move to the next plate with the next higher grit and do the same thing until you've moved through all the grits you have.

Now that we've got the bottom flat, we just need a snug fitting cap iron and sharp blade to begin using it. Lay the cap iron on a flat surface and make sure the edge on the blade end (the curved end) is

touching the flat surface evenly. If not you'll need to be creative and bend it a bit so the edge contacts the blade evenly. You'll also want to take the edge of the cap iron to one of the granite plates (I usually use the 220) and run the edge along sideways. Dip the top end a few degrees lower than the plate so you have a slight edge. This will help to keep chips from get under the cap iron and clogging the throat. I'm not going to cover how to sharpen a plane blade other than to say the default angle for a bench plane is 25 degrees. There are a lot of complex thoughts about different pitches for different uses, back bevels, and all sorts of other things. If you'd like to explore this, here's a site to get you started <https://virginiatoolworks.com/2013/02/16/sharpening-angles-for-bench-block-planes/>

At this point we've done enough to use the plane and it will look pretty good, too. There's a few more things we can do to make it look really good though.

If the tote and knob are in good shape and still have a lot of finish then you may want to leave them. If they just have a few paint spatters which is a pretty standard thing you can take that off with a small amount of lacquer thinner on a q-tip then scrap a little with your finger nail. You want to take the paint and as little else as possible. If you are going to refinish then soak a rag in lacquer thinner and then just rub it until most is gooey. Then just keep working it until it's off. You can soak it in a small dish of lacquer thinner to and use a bristle brush. Whatever method works best for you. I think they are both a pain so I switch back and forth. Once most is off, let it dry and sand with 220 then 320 up to whatever you're comfortable with but 320 is enough. I use a quarter inch dowel with a wad of blue tap about 3 inches down from the top as a holder and just spray the lacquer (semi gloss or gloss, I like them both). Be careful with spray lacquer, if you don't get a good cover, wait 15-20 minutes and spray again. If you try to cover too much in one pass, it will run and you'll have to start over. Once the lacquer is dry, I knock down the rough spots with a fine scotch-brite and then apply a coat of past wax. I like Renaissance Wax but you can use whatever you like.

Once everything is done, I'll wax the exposed metal surfaces because rust will want to get started on the fresh metal.

Dos, Don'ts and Other Things

Don't use a wire wheel, it's too abrasive and will not give good results.

Do not soak the casting in Evaporust or vinegar or other solutions unless you are repainting/rejapaning. These solutions are acidic and will eat away the metal, too. Not a lot but the metal will have a dull quality. They will also dull the japanning if you aren't refinishing.

If you do refinish the casting, use genuine japanning which can be purchased here.

<https://www.dickblick.com/products/ronan-superfine-japan-colors/>

Or if you want to use paint, Dupli-Color engine black is recommended by most of our fellow tool restorers.

Using the Plane

When assembling the plane, make sure the frog is in the position you want for the type of work you will be doing. Close the throat for a thinner shaving if you smoothing (approaching the final finish) or a

more open throat for a thicker shaving when dimensioning. Once you've settled on the frog position, make sure the frog is aligned longitudinally with the plane. You can do this by site and it will be better than you think. Use a block of wax and make several stripes completely across the sole, 2 in front of the mouth more after. A good rule of thumb: 4 after the throat for a No. 4, 5 for a No. 5, and so on. To set the blade, advance the blade with the depth adjustment wheel until you think you are about where you need to be. Grab the plane by the knob; turn it over so you are looking down the plane from front to back; take a small block of wood about the size of your finger (square works best) and slide a corner of the wood into the blade on each side. Gauge the shaving by eye for depth of cut and evenness across the blade; adjust the blade and repeat until you've dialed it in. When moving the plane across the wood, keep your arms close to your body and use your hips to move evenly through the pass. If you use just your arms the motion will have lurching, jerky quality and will not give good results. I won't go into all the detail for using the plane as that would be another presentation.

Choosing a Plane

Regardless of brand, look for an undamaged plane. If it has a crack in the casting, run away, that is the worst issue you can encounter. Broken tote or knob is not a deal breaker but so many have good wood that it should be a good plane at a good price to choose it. Inspect the mouth. If there is any damage, pass it by. In reality, only the leading edge of the mouth needs to be undamaged but any damage will have devalued the plane so stay clear. Rust is okay but if you see it starting to bulge out that is a sign of pitting and you don't want that or at least too much of it. Broken lever caps are not a deal breaker if you have spares and once you go down this path, you most likely will have a "bone yard" to draw on for parts. Ideally, the blade will be in good shape with plenty of life but blades are not deal breakers either. A blade is a consumable.

The obvious choice for an antique plane is Stanley. The golden age for Stanley was 1907 to 1941 (type 10 to type 16). Planes from this era had the best machining, included all the most useable features and had nice rosewood handles. However, for pure usability, Stanley planes from 1902 to 1961 are all good choices. The planes from 1902 to 1907 (type 9) did not have the frog adjustment screw but were still very good planes. Planes from 1942 to 1961 (types 17 to type 19) had some missing elements but for the most part were still very good planes.

Millers Falls planes started making planes in 1929 and was a very worthy competitor of Stanley. The planes are nearly identical with the exception of the Millers Falls 2 piece lever cap which is arguably better. Millers Falls started later and so did not use japanning. All Millers Falls planes are painted. The best Millers Falls planes are from 1929 to 1953 (type 1 to 3). The type 4 from 1953 to 1966 is also good but has some less traditional aesthetics. For more information look here.

<http://oldtoolheaven.com/bench/benchtypes.htm>

When looking for other brands, look for similar features as Stanley and Millers Falls (modern frog, frog adjustment screw feature, rosewood tote/knob) and be sure to evaluate the condition as previously described.

Other good choices:

Sargent – good planes – Shaw’s patent planes are similar to Bedrock and collectible
Keen Kutter –only get the K series which are like Stanley Bedrocks planes. The KK is not as good.
Winchester – W series is best (bedrock) the 3000 series is a Sarget, good but not as good as the W
Record – good planes
Union
Vaughn & Bushnell – have a bedrock like frog. Uncommon but not expensive – good users
Ohio Tool Company
Various hardware stores had house brands that were mostly Stanley and Sargent. Look them up on the internet and you may find quality plane for a bargain price. Marshall Wells Zenith, Shapleigh Diamond Edge, Conover Revonac.

Plane Type Studies

Collectors track the features that each plane has and when the manufacturer offered it. Not all plane manufacturers have such a following that collectors are developing a type study. Stanley has such a type study for standard bench planes and for the Bedrock series of planes. Below are links to those type studies. Different websites also have different presentations of the type study, these are just the ones I use.

Bench planes: <http://tooltrip.com/tooltrip9/stanley/stan-bpl/bailey-types.htm>

Bedrock planes: <https://www.antique-used-tools.com/btypes.htm>

The Millers Falls type study can be found here: <http://oldtoolheaven.com/bench/benchtypes.htm>

Various Plane Links

The first two links for any discussion on planes should begin with the Midwest Tool Collector’s Association <https://mwtpca.org/> and Patrick Leach’s website: The Superior Works – Patrick’s Blood ‘n Gore commonly referred to as just “Blood ‘n Gore” <http://www.supertool.com/StanleyBG/stan0a.html>

Links:

<https://woodandshop.com/identify-stanley-hand-plane-age-type-study/>

<http://tooltrip.com/tooltrip9/stanley/stan-bpl/plenefacts.pdf>

<https://woodandshop.com/identify-stanley-hand-plane-age-type-study/>

<https://virginiatoolworks.com/>

Facebook group: Hand Plane Building, Restoring and Collecting

<http://www.handplane.com/>

<http://tooltrip.com/tooltrip9/stanley/comb-planes/stan-com.htm>

<http://www.planemaker.com/products.html>

<http://www.sargent-planes.com/>

<http://www.sargent-planes.com/sargent-planes-by-number/>

<http://www.petermcbride.com/planemaking/>

<http://www.rexmill.com/>