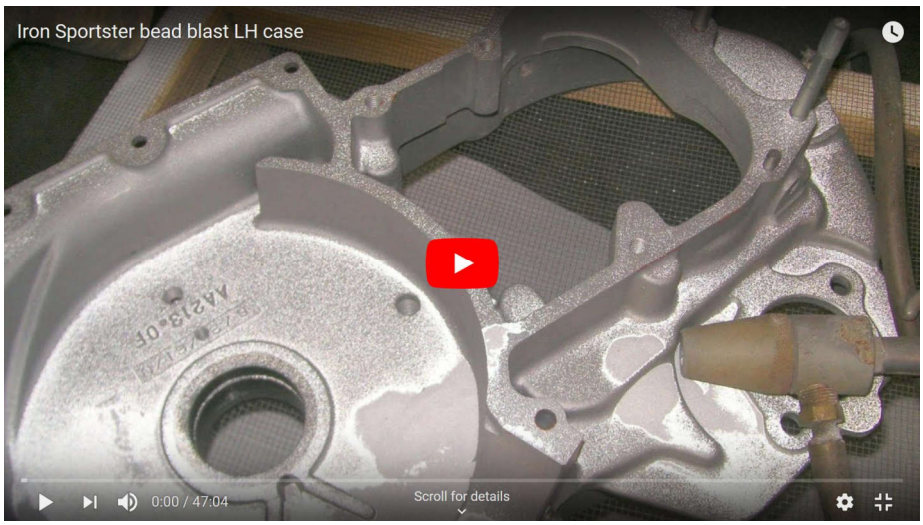
Open-Sport.org

Iron Sportster bead blast LH case

You need a special tool to remove the Timken bearing. Then clean and bead blast.

The tips and tricks:

1. **Use special tool 94547-80B to remove the Timken bearing, the -80A tool will not fit.**
2. **A press is best to push out Timken bearing races.**
3. **Use a punch through the oil hole to remove the snap ring (1977 to 1985).**
4. **You can double-nut or use a pipe wrench to get the big peg stud out.**
5. **Plastic lunch bags can keep parts clean and organized.**
6. **The case must be clean and dry before bead blasting.**
7. **#10 glass bead gives a bright finish.**
8. **Have a bin or tray for all the parts.**



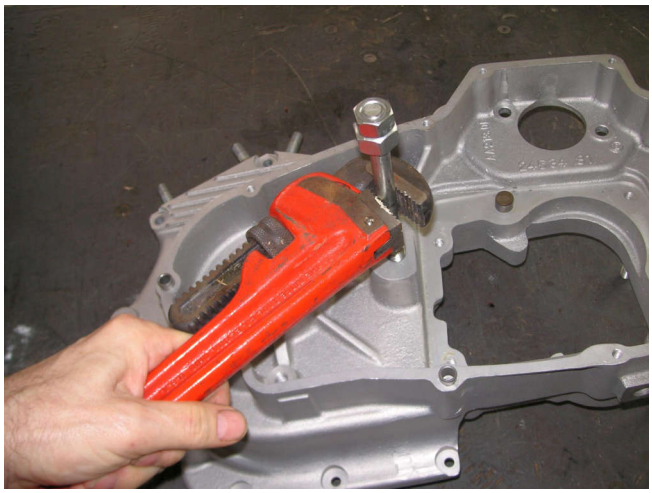
A video shows the stripping, cleaning, and bead-blasting a left-hand Sportster engine case. (Click for video.)

The 1977 to 1985 Iron Sportster uses a Timken bearing on the crankshaft with a single snap ring between the two tapered races. The 1952-1976 engines use a different Timken where the race is one piece with two outward tapers. It is held in with two snap rings, one inside, one outside. In addition to the race, there is a spacer that holds the crank seal.

Getting the 1977-85 races out pretty much requires a special tool, 94547-80B. It has two halves that snap into the tapered race, then a handle holds them apart so you can push or hammer the race out. You might be able to sneak a punch into the space between the races and work the first one out, but you risk damaging the races or the case. I spent $80 bucks on the tool. It also seems really hard to save the seal. This far into the engine, I figure to buy new seals and races anyway. Roller bearing can look fine right before they fail.

Kroil makes penetrating oil that works really well. In addition to Aero Kroil, and liquid Kroil, there is a SiliKroil that has silicone in it. Automatic transmission fluid is very detergent, and may also work. Spray the stud down the night before if you can, to let the oil soak in.

You can leave the foot-peg stud in, but it makes the case half unwieldy in the bead blast cabinet. With the Kroil, you can double-nut the stud, and it usually comes out pretty easy. This stud is exposed to primary oil on this side, and since it goes into a through-hole, it's exposed to engine oil on the flywheel side. It is easier to get out than the foot-peg stud on the other side. Note the 3/8" stud for the primary chain tensioner is already removed from the case-half.

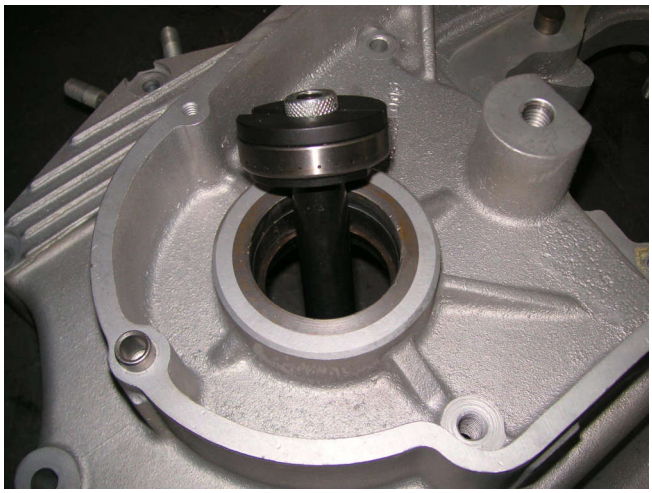


If the double-nut trick does not work you can resort to a pipe wrench.

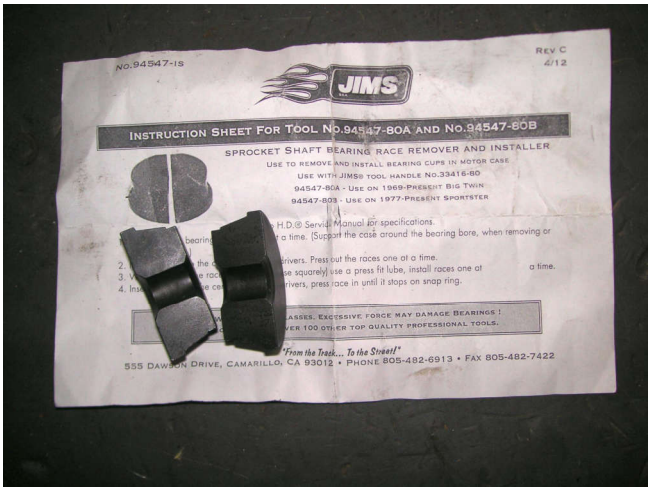
A seal puller gets out the crank seal.

The shape of the ends work way better than a screwdriver or anything else to get out the seal. It might be possible to push the seal with the race, but it's tricky.

I leave the dowels in unless they fall out like this one did.

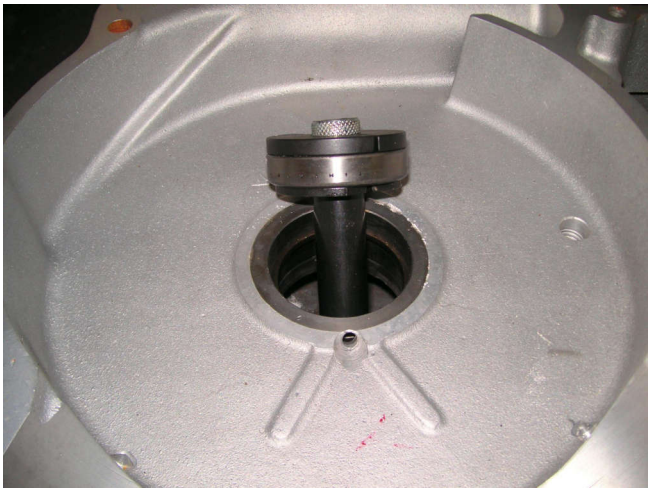


Here is the outside race popped out. You can't use the tool to push out the seal too.



To remove the races, use special tool 94547-80B, The -80A tool is for big bikes and won't fit.

The 1977-1985 Timken race. Note the inner spacer at bottom, don't leave it out.



The inside race comes out like this. Support the case at the steel insert.

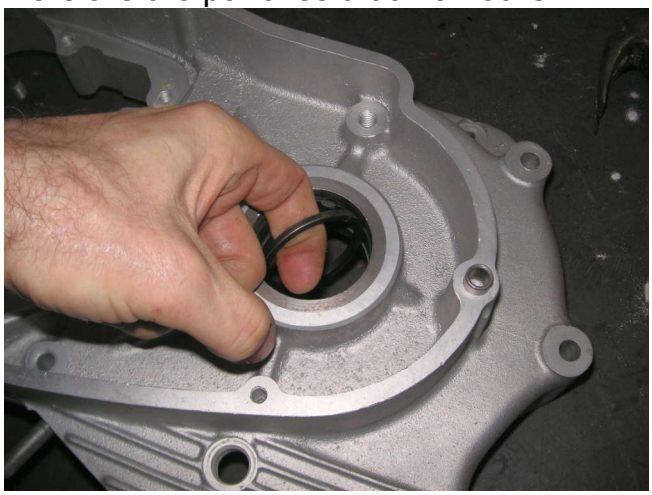
There is an $80-dollar handle for the tool, but this cheap set has a handle that works perfectly.

Put the bearing in a new plastic bag in case you have to reuse it. The snap ring, inner spacer and races are all matched.

The gap in the snap ring is supposed to be over the top oil hole passage.

A 3/16" punch knocks the end of the snap ring down out of the groove, while a 1/4" punch will let you "chase" the ring out of the groove as it spirals down.

Here are the punches that worked OK.



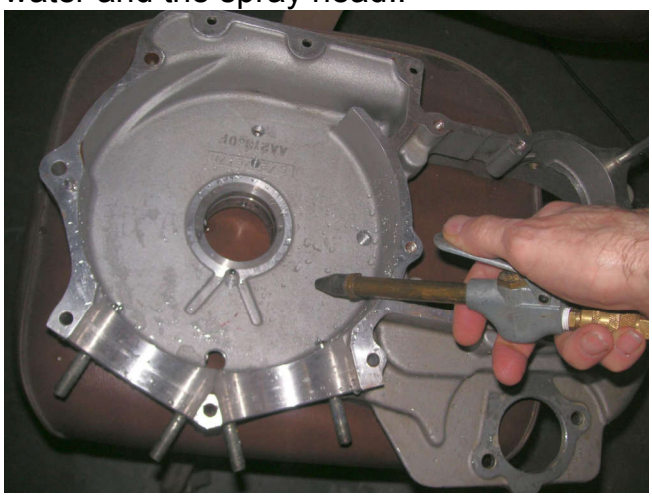
With the snap ring knocked sideways, you can yank it out. Put it in the same way, tap it in sideways, then rotate to snap it in the groove. Remember to put the gap over the upper oil hole in the case.

An Amazon parts washer works to get the oil and dirt off the case. The key thing is that brush that passes the fluid. The lid does not flop back like my old one, I might just move the pump over. It had a sticker "Aqueous cleaner only". Sorry, not for me. I got spoiled using Safety-Kleen at a buddy's motorcycle shop.

This stuff cost $160 bucks at Amazon, try auto store. It works great, and washes off.

After the Scotch-Brite once-over, I use hot water and the spray head..

To get the gasket surfaces clean, I use steel wool.



Blow everything dry. I read that all dishwasher soap damages aluminum.

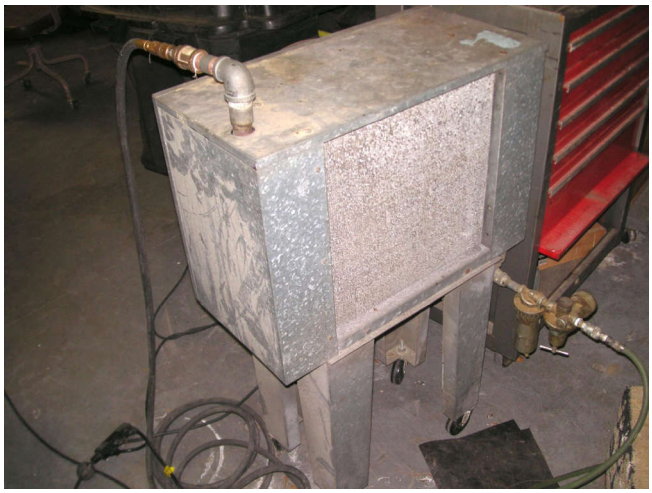
Out of the solvent and into the kitchen sink. All the oil has to be gone or the bead blast media will just stick and not work.

I spray carb cleaner or brake cleaner into all the blind holes to get any oil film dissolved, then blow out the holes.

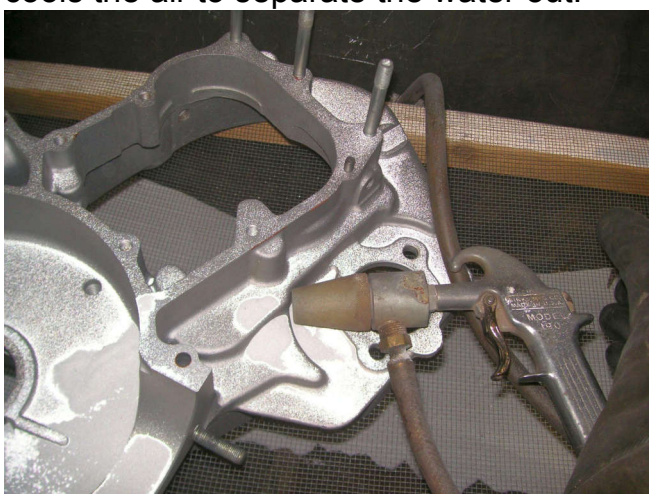
The solvent does pretty good, this is the oxidized aluminum appearance.

My home-made bead blaster just fits a case half. I use #10 fine glass beads.

A 2-HP compressor just barely keeps up the air pressure. This one is quieter than some of the cheapest compressors.

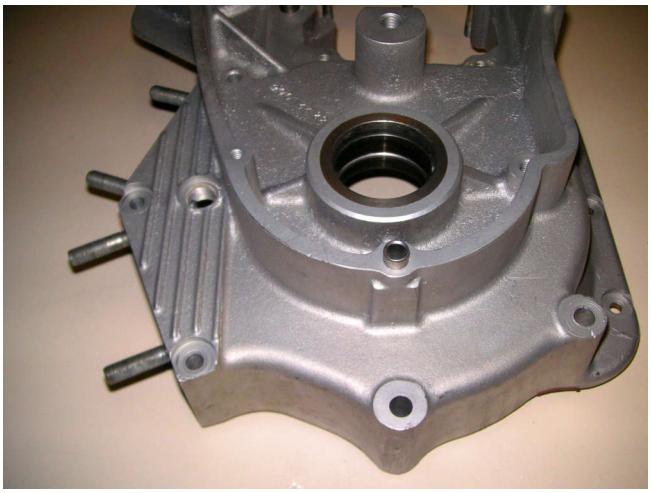


Key thing is keeping the air supply dry or the part will have gray stains. This radiator cools the air to separate the water out.



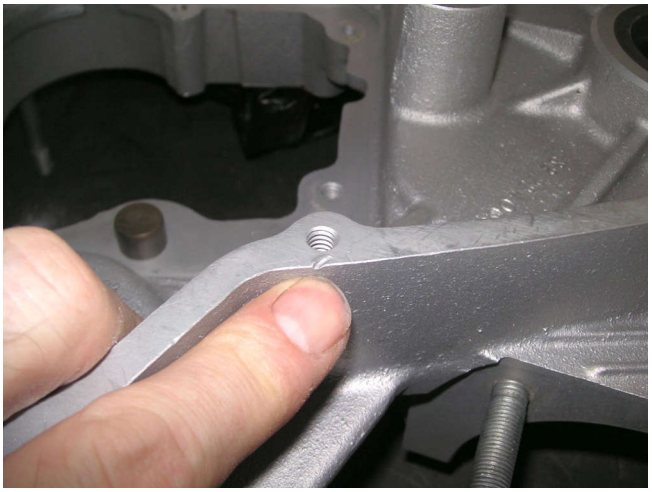
Inside the bead blaster, concentrate on the gasket surfaces. They should be perfect.

The fine #10 glass beads give a bright silvery appearance.



Some purists think blasting ruins the original casting patina. I find the fine beads do not rough up the surface.

The left-hand case mated with the right-hand case we did last week.



The case had a gouge on the primary cover gasket surface.

A fine file can bring the surface flat again. I prefer to fill any deep gouges with JB-Weld. Keep silicone away from your Sportster, it will get into the bearings, skate them, turn them blue, melt them, and seize the bike, often at speed.

I store the cases in those Really Useful bins I like so much. You can stack them to the ceiling. Note there is some bubble wrap between the two cases. Getting knocked around with other parts is what puts gouges in the gasket surfaces. Handle the cases gently and try to keep them from clanging into anything. When putting the case halves together, I like Yamabond 4, put on very very sparingly. The fine bead blast surface preparation will let the Yamabond seal, and looks good to boot. Some purists prefer soda blasting.