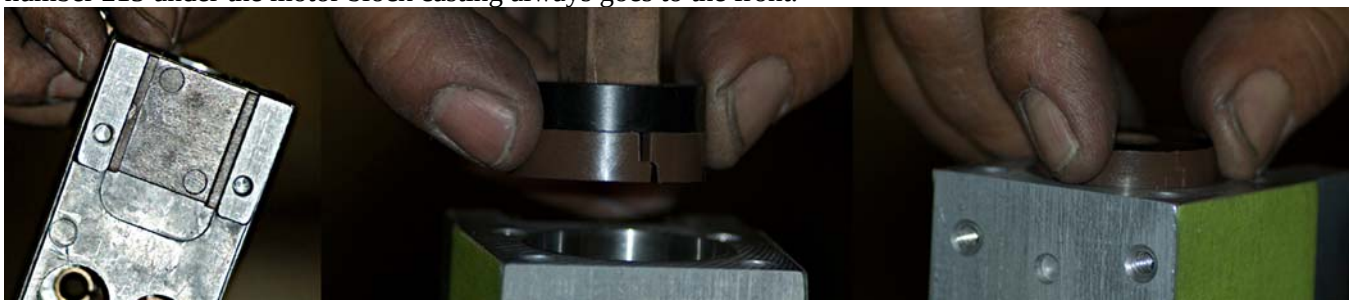
Assembly 2000

1.Press on 1241S Counterweight Guards onto 1215 Motor Block. The end with the hole goes towards the center. Note slot on top of 1215 Block always goes towards the front. Put 1212S Rings on 1211 Piston. They snap on each end. It is best to replace these with each repair to ensure good compression. Place block on end, and drop piston in. Jiggle it to get it to drop all the way in. When flipping over take note that the number 215 under the motor block casting always goes to the front.

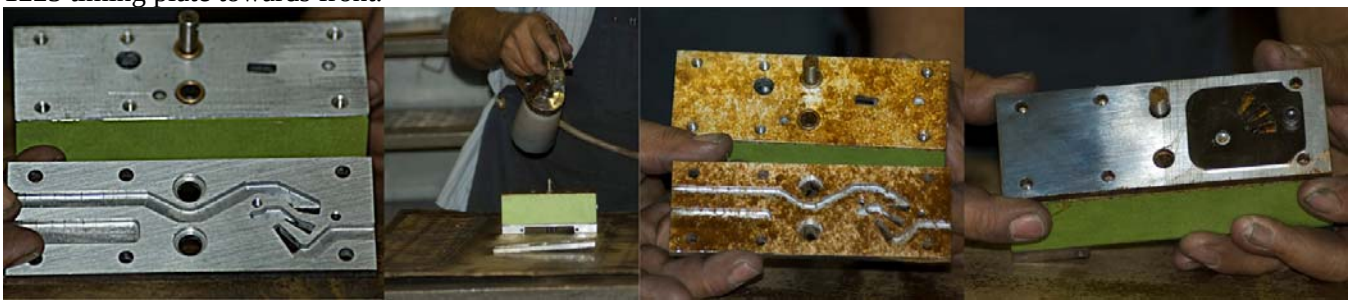


2 Place block upside down, so you can look through two large holes on bottom of casting. These are where the 1210-1 & 1209 shaft will go. Use both thumbs, to tilt piston so gear teeth are at an angle. 1210-1 gear goes in, furthest away from your body. Use thumbs to twist piston gear rack into place. Drop 1209 in the bottom space or closest space towards you. Tilt the 1211, until the 1209 gear drops down. A few taps with a hammer might be necessary.

3.Place the top gear 1227 by the gears. Use an arbor press to press both 1209 & 12010-1 flat. Press one at a time. The extra gear will let you know when to stop.

4.Now the block needs to be freed up. Place motor block on side, and use aluminum block and hammer. Tap gear until piston pushes free in motor block from side to side. Do one side, then flip block over and do other side.

5.Use Spray gasket glue or Silicone Sealant on 1214 Valve Plate. When tacky, place on motor block with 1225 timing plate towards front.



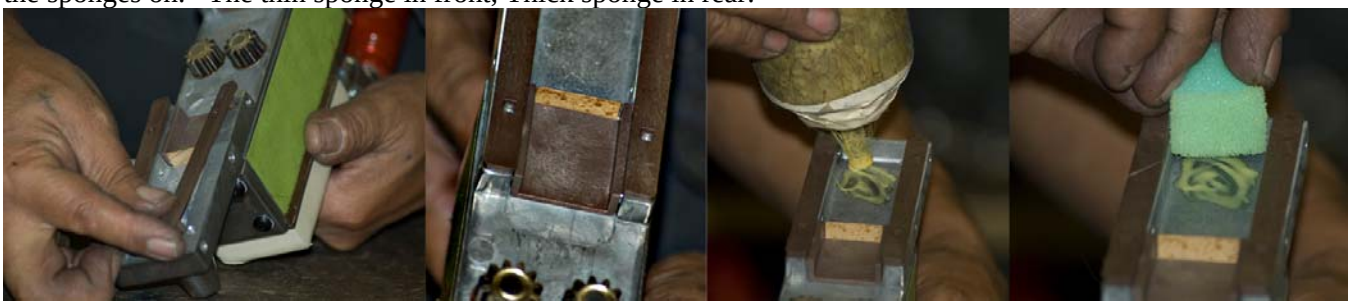
6.Use new 1212S gaskets and glue onto each end of motor block. Make sure to put gasket on, so airway is not blocked. The center hole has a notch. Align that towards the top of the tool. Attach 1217 front with screws, and small clear washers. Hand tighten screws, then tighten with screw gun. The 1218 rear can then be attached in the flowing order: 1220 gasket, 1218 rear, 1222 gasket, & 1223 muffler. Screws with no washers are used.

7.We will now install the 1227 gear on top. With front to you left and rear to right line up hole in 1210-1. Line up 1227 gear hole with hole in shaft. Press 1227 gear down with press, or gently tap down with hammer. Now use 1252 to secure gear. You will need to put tool on side to do this. Use a 1/8 punch to press pin all the way into gear. Turn the gear you just installed counterclockwise till it stops.

8.Prepare 1228S. Place puck inside sector opening, then add washer & screw. Place on top of housing lining up the last tooth to the right. Test turning the sector to make sure you have the correct tooth. When turning back & forth, the sector set should not go over the edge of the block. Turn 1228s to align in direct center, counting the 3rd tooth. Tighten screw by hand then screw gun.

9.Attach new 1232 gasket to 1233 handle. Glue gasket on one side. Wait till tacky, then press down onto 1233 handle. Please give a few hours for handle to dry, unless using minute glue. After drying time, Attach handle housing with screws.

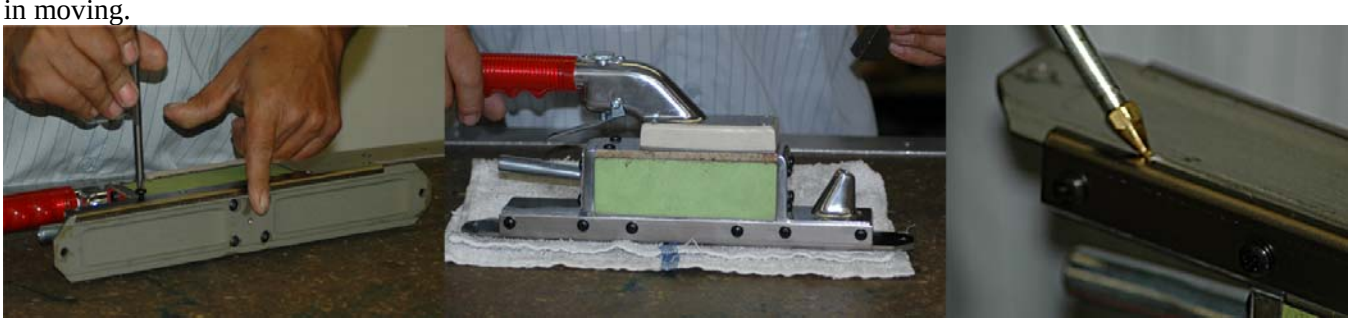
10.Clean any excess glue off. Turn over tool and check gears to make sure they spin freely. Prepare to install 1242 counterweight bar. Install 4-1207S ware strips. Press in with holes towards center gears. Glue the sponges on. The thin sponge in front, Thick sponge in rear.



11.Hold tool in hand angling handle towards you body. Turn Right gear (1210-1 long gear) all the way counterclockwise till it stops. Put counterweight bar 1242 in, lining up spring first. The second tooth on counterweight bar will line up towards rear of tool.

12. Placing the 1204 drive shoe is just the opposite. This part is lined up with gears, all the way to the front.

13. Install 1235S side rails. Start screws on ends and move towards middle. Tighten screws. After installing both sides, move shoe both ways by banging on table. Make sure the drive shoe shuffles to front and back. Now it is time to test the tool with air. Freeing up 2000 is very important. You will need to squirt two full squirts of oil into airway. Start tool, and turn upside down in you lap. Turn off tool, and oil along siderails, and in center hole. Start again, and run hand along bottom on both sides. Check to see if there are any hotspots. Use an aluminum block and Hammer to tap the siderails and stop any metal from rubbing. While looking at bottom, when the tool has good stroke, the screws on each end will appear to touch when the tool in moving.

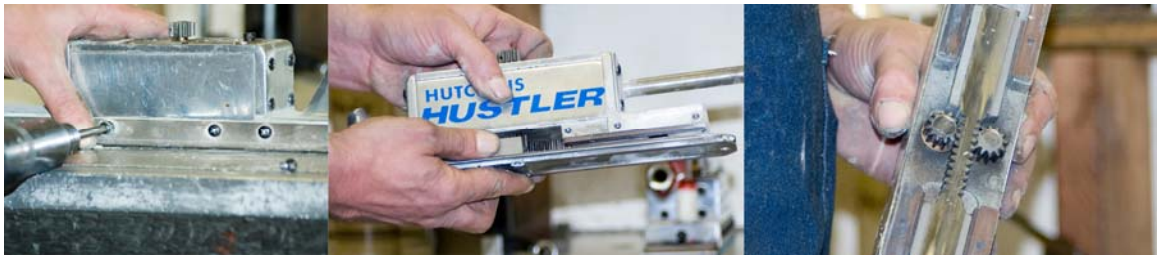


14. Install Hutchins pad, always put the whole on top towards the rear of tool. Run the tool flat on the bench, under a full person's weight. You should not be able to stop the tool. Never use 3M pads! These will bind on the bottom of the tool, and cause extensive damage.

2000 Disassembly

Remove Knob, Pad & Handle # 1233
Check under handle. Note condition of the timing sector. You will sometimes see water bubbled in the oil. Remove the 1228S. Check Timing Sector, has worn grooves into the 1225 timing plate? Unscrew Top Valve plate 1214. Do not remove plate yet.

Remove 1235S Side Rails and the 1204 Drive Shoe will come off now. This part should be replaced when you have gouges in the metal on the outer edge (see picture below). The counterweight bar 1242 will come out now. The Old style bar will not have the counterweight spring.



3M pad damage
This is what happens when using a 3M pad. The bowing of the pad can cause wear right through the metal. It can eventually wear through the side rails and cause the counterweight #1242 to break. This situation always voids the tool warranty.

(*metal completely worn through)

Remove the front 1217 and rear 1218.

Use a 1/8 drift punch to push the 1252 pin out of the 1227 gear. Push pin out just enough to free 1210-1 gear

Place the 1215 Block on top of the two aluminum blocks. With a hammer and bit, tap out the 1209 and 1210-1 gears through the top of the valve plate. They should drop through the bottom of the block.

Pry off the 1214 Valve plate. The 1211 Piston and 1212S Piston Rings with ends will now come out. Rings should have no wear, and have a good seal. It is usually a good idea to replace these with each repair, unless the tool is very new.

What to look for:

- Rust and pitting in cylinder.
- Inspect 1209 & 1210-1 from broken or severely sharp teeth on gears.
- Check 1207-1S and 1241-1 for excessive wear. Tip: flip over 1246-1 to use the clean side.
- Replace 1204 and 1235S when the groove is deep on the ends of the 1204.