http://www.planetisuzoo.com/articles.htm?id=56&Isuzu_Front_Bearing_Repack)

Isuzu Front Bearing Repack

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Performing one of the recommended items on the 30K-mile maintenance list

Many thanks to Mike Murrell, Ed Chin, Michael Clark, and the myriad of others from the 4x4Wire.com's Isuzu Tech Forum who gave me so many helpful hints and pointers. Without the help of these individuals, this article could never have been written.

Disclaimer: I'm not a mechanic and never claimed to be one. This article is written as a reference point only. Attempt your own maintenance at your own risk.

This article details the front bearing repack for a 2nd generation Isuzu Amigo/Rodeo Sport. Specifically, the vehicle is a 2000 Amigo. As with all "do it yourself" projects, I wanted to save the three to four hundred dollars I was quoted by the dealer to do the job. It is one of the prescribed maintenance items listed under the 30K-mile service. Unfortunately, many people choose not to do the service because of the expense. Not the wisest of decisions, putting off this service could result in lower gas mileage, and higher rates of wear and tear on your front drive-train components. It is not that complicated. However, it is rather involved.

Please note these procedures were written for a 2000 Isuzu Amigo with Superwinch Manual Hubs installed. However, in general, the instructions are similar for the various makes of Isuzu 4wd models.

Tools Needed:

- Spring scale: a fishing scale from Wal-Mart will do fine
- Snap ring pliers- Pep Boys Part number: 0-83045-46000
- 8mm Allen wrench or bit for a 3/8" ratchet
- 3/8" ratchet
- 1/8" Allen wrench
- 1/2" ratchet
- 19mm 1/2" socket for a 1/2" ratchet
- 22mm 1/2" socket for a 1/2" ratchet or box/open end wrench
- 90-degree dental pick
- Hub nut tool- modified 4-prong Ford 1/2 Ton pickup front axle tool. - Advance Auto part number: T72048
- Seal Puller- Advance Auto part number: T72138
- Seal and Bearing driver- Pep Boys part number: 0-83045-12600
- Bearing packer- Pep Boys Part number: 0-53001-2990
- Grease gun
- Torque wrench
- Big Hammer- hand sledge or dead-blow hammer is preferable to a "regular", carpenter's hammer
- #2 Phillips screw driver

Consumables required:

- Several can's of SuperTech Carb Cleaner- $0.97 from Wal-Mart; you'll need at least 2 cans per side A tube of blue Locktite
- A tube of RTV sealer/gasket maker
- NLGI No.2 rated grease (synthetic or dino, it doesn't really matter)
- **LOTS** of rags
- Wire clothes hanger
- Front Axle Seals- Part number 710168 from Federal Mogul
- 26mm Snap Ring: quantity of 2 Hub Flange/Bearing Cover gasket- need 2

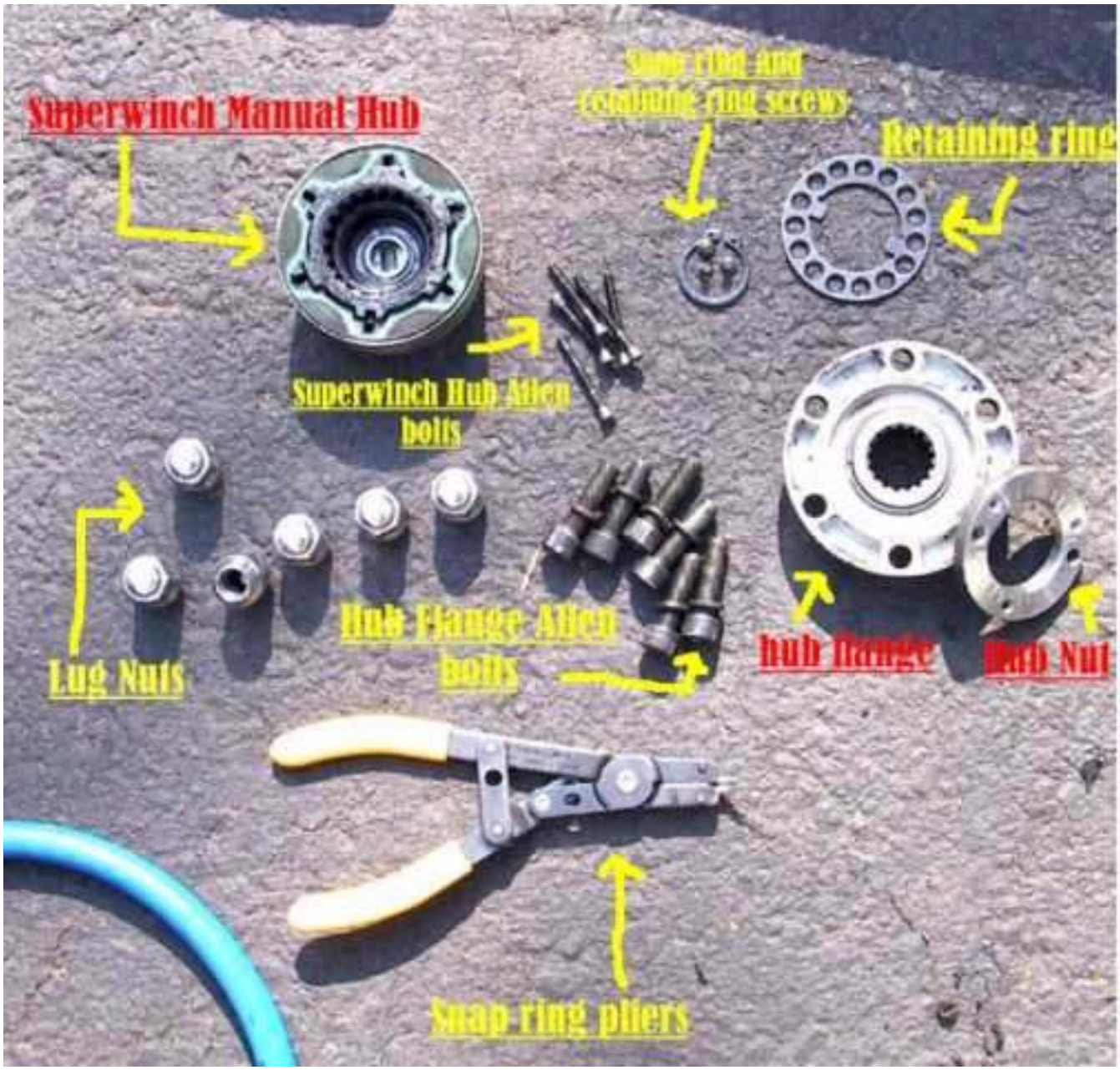
Procedures:
Before you start the actual removal of the wheel and hub, I would recommend modifying the 4-prong Ford 1/2 Ton pickup front axle tool. I went to my local Advance Auto and picked up a Ford, 4wd, 4 prong, locknut Socket tool. The part number on the pack is T72138. This tool fits a 1/2" ratchet. Cut off two prongs that are opposite each other. Then, grind (from the outside in) off half of each prong.

This will allow the hub nut tool to fit into the 2 holes. If you do choose to buy the "official" Isuzu tool, the Isuzu axle nut tool is sold at Napa parts stores. The tool is in Napa's special tool catalog - Napa tool # 3375. The Isuzu part number (if you can order it from Isuzu) is J-36827.

Now that you have the hub nut tool made, you can now proceed with the removal of the wheels and hubs to repack the bearings. With the wheels on the ground, use the 19mm socket and 1/2" ratchet or breaker bar to loosen the lug nuts. With the wheels still on the ground, use the 1/8" Allen wrench to loosen the Allen bolts located on the Superwinch manual hub body. Remove the Superwinch manual hub. Once you have removed the Superwinch hubs (or hub covers for those of you who do not have manual hubs), take a rag and wipe away any grease that you see on the end of the axle shaft. You will see a 26mm snap ring. Remove the snap ring with the snap ring tool. Unless you have extra 26mm snap rings lying around, be very careful in how and where you place your snap rings. Use your 8mm Allen wrench or bit on a 3/8" ratchet to loosen the Allen bolts on the hub flange. They will (should) be tight, so use of the hammer will be required. However, do not remove them.

You are now ready to jack up the vehicle. Raise the vehicle until the wheel you are working on comes off the ground. Then place jack stands under the vehicle (frame) on both sides. Remove the lug nuts you had loosened and then remove the tire.

Then remove the Allen bolts you had loosened earlier and set those aside. Either use a zip lock bag to hold each "section" of parts (1 bag for lug nuts, 1 bag for Allen bolts, 1 bag for snap ring, etc.), or a parts tray with dividers. Needless to say, unless you have extra parts lying around, you do not want to lose any parts. Remove the "hub/bearing cover/hub flange". Clean this with a rag and carb/brake cleaner. Set this aside.



Once you have removed the hub/bearing cover, you will see the retaining ring. This is a large ring/washer with holes drilled into it. It is being held in by three #2 Phillips screws.

Use the hammer to tap on the screwdriver a few times before attempting to remove the screws. Be sure to use constant pressure to remove these screws. They strip very easily. If you do need replacements, they can be found at Home Depot. Look for "Machine screw flat - Phillips 4mm x 8mm". After removing the screws and placing them in a secure location, use the dental pick to help you remove the retaining ring. Most of it will be covered in grease, so removing the ring will take a little persistence.

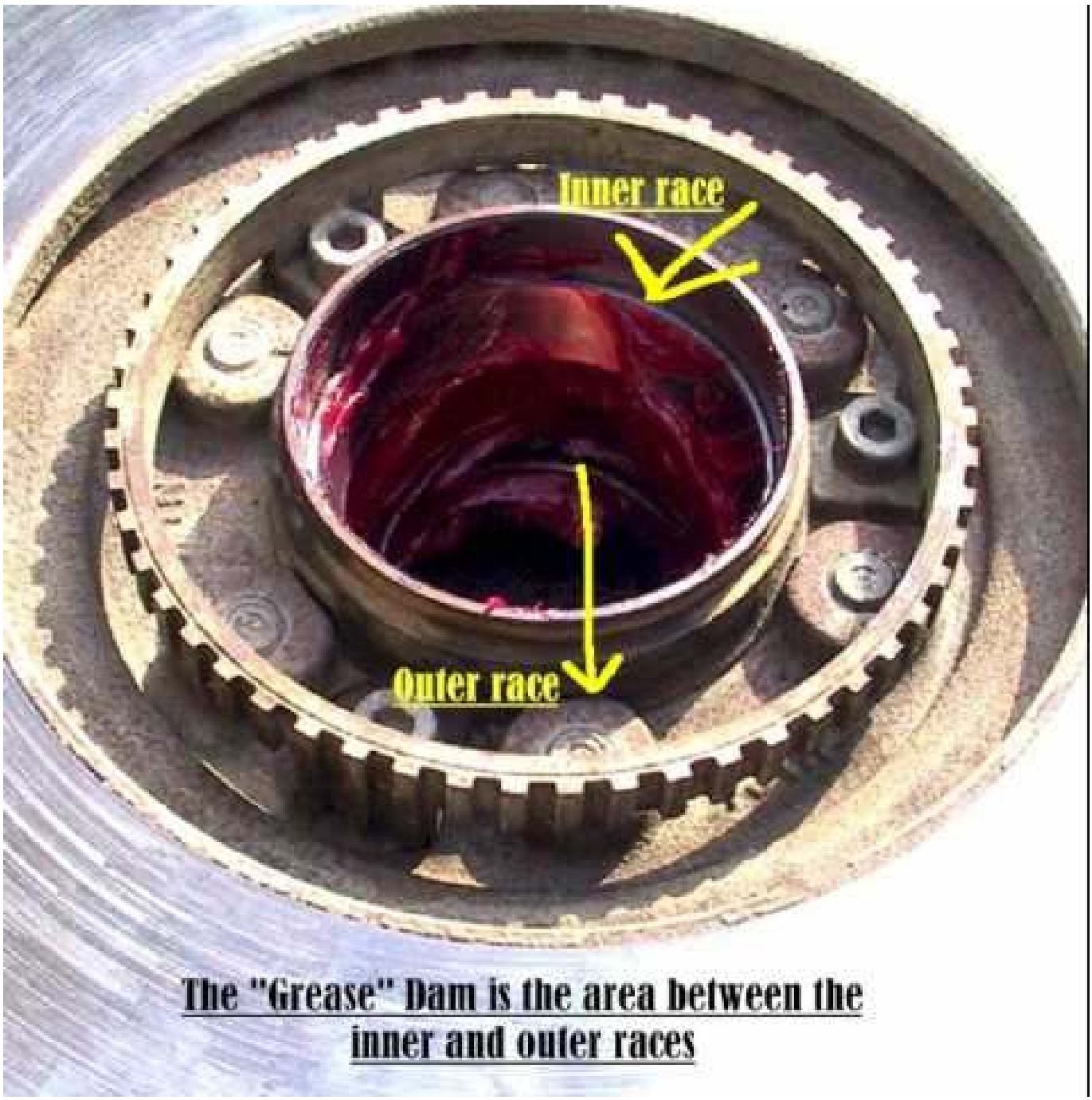
After you remove the retaining ring, you will see the hub nut. The hub nut is an approximately 7mm thick, threaded washer with holes for the retaining rings and 2 holes that are 180 degrees apart from each other for the hub nut removal tool. Use the hub nut tool you modified earlier to loosen the hub nut. You must now remove the brake caliper in order to pull the hub off the axle shaft. Make sure the wheel is straight and use the 22mm socket and ratchet or wrench and the hammer to loosen the 2 bolts holding the brake caliper. These are torqued on rather tightly. It will take a good bit of tapping to get them to loosen. Once they are loosened, you can use the wire clothes hanger (unstrung) to hang the caliper out of the way. You do not want the caliper to hang by the brake hose. I used a nylon rope, but the clothes hanger is easier to work with. To prevent the pads from coming together, I also used one of the 22mm bolts as a stopper between the brake pads. With the caliper up and out of the way, you can now remove the hub.

Pull the hub away from the truck directly toward you. With the hub removed, you will be able to remove the outer bearing. This bearing is smaller than the rear bearing, but somehow note that it is the front bearing. Soak that in parts cleaner. I used copious amounts of carb/brake cleaner to blow out the grease that was inside the bearing. Do this until there is no more grease in the bearing. Rinse with water and allow to air dry. If you use compressed air to dry the bearing, do not let the bearing spin. Check the bearing and the outer race for nicks, cracks or any other physical damage. Place the hub front side down on a table or any other flat surface. Try to secure the hub so that it can not tilt one way or another. Use the seal-pulling tool to remove the rear grease seal.

Once that is removed, discard the seal and remove the rear bearing. Go through the same steps to clean this bearing as you did the outer bearing. Please note the inner bearing is larger than the outer bearing. Take a rag and wipe it inside the hub assembly to remove as much of the old grease as possible. Use the carb/brake cleaner to clean the grease and grime from the inside of the hub. Allow the hub to air dry.

While you're waiting for the hub to dry, repack the 2 bearings that you have removed (provided they are not damaged). You can either use the bearing repacking tool, or the hand repacking method. The bearing repack tool is very straightforward.

Once you have repacked the bearings with grease, you will need to grease the inside of the hub. In between the two bearing races, you will find a depression. Fill this depression with grease to form a "grease dam".



Also place a light coating of grease on the races. Replace the inner (the large) bearing. The Isuzu shop manual does not recommend using a bearing driver to "seat" the bearings. The tightening of the hub nut will do this for you. Use the seal driver to replace the axle seal.

A large block of wood works, as well. Be sure to drive the seal in straight and that you do not bend the seal in any way. You can now put some more grease in the hub if you would like. Replace the hub back on the spindle/axle. Any excess grease will be pushed out when you do this. Wipe away any grease that may have fallen on the brake rotor. Replace the outer bearing. Tighten the hub nut.

After tightening the hub nut using the hub nut tool, rotate the hub assembly several times, forward and back. You will then need to loosen the hub nut and rotate the hub assembly forward and reverse several times. Repeat the tightening, rotating, loosening, and rotating sequence several more times. This action distributes the grease and seats the bearings. Tighten the hub nut one more time. Attach a spring scale to one of the wheel studs and pull. I started them at 3 o'clock (forward preload) and at 9 o'clock (reverse preload) and pulled straight down to measure pre-load. The Isuzu shop manual shows the mechanic pulling from the 12 o'clock position. Adjust the tightness of the hub nut until your preload reads between 2.6lbs-4.0lbs for old bearings and a new seal or 4.4lbs-5.5lbs for a new seal and new bearings. I tried to obtain these readings in both forward and reverse motion. Be sure to do this without the brake caliper installed.

Once you have set the preload, it is time to re-install everything. Take the retaining ring and slide it over the spindle with the tapered side facing you (each of the drilled holes in the retaining ring is tapered). If the holes do not line up with the threaded screw holes for the retaining ring screws, remove the retaining ring and rotate the ring 180 degrees and reinstall. The holes should now line up. Replace the screws. As you are tightening the screws, remember to tap the screwdriver a few times with the hammer before you try to torque them down. Reinstall the brake caliper by reinstalling the two brake caliper bolts you removed. The 2 brake caliper bolts must be torqued to 115 ft/lbs. It is a good idea to use the blue Locktite on these bolts. Install the gaskets for the "hub/bearing cover/hub flange" (I used RTV silicone/gasket maker). Reinstall the "hub/bearing cover/hub flange". Do not attempt to "torque" these Allen bolts, as you will need to have the wheel on the hub and the wheel on the ground to prevent the hub from turning while you are applying force. Replace the wheel on the studs and hand tighten the lug nuts. Remove the jack stands and lower the vehicle onto the ground. Torque the lug nuts to 87 ft/lbs. Now, torque the "hub/bearing cover/hub flange" Allen bolts to 43 ft/lbs. Please note it would be a good idea to use some Locktite on these Allen bolts, as well. Reinstall the snap ring. You are now ready to reinstall the Superwinch hubs or stock (locked) hub assembly.

Congratulations, you have now finished the repacking on one side. It should have taken you approximately 3 hours. Please be sure to dispose of your dirty rags in a responsible manner.