

MAXGRIP LSD KIT INSTRUCTIONS BY WEIR PERFORMANCE

The first step to installing the MAXGRIP kit is to disassemble the LSD unit.

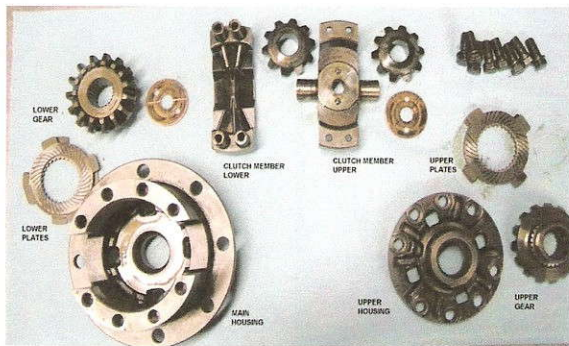
- 1) Check to be sure your LSD has match marks where the top cover and main LSD case meet. If your LSD is not marked use a center punch to mark it.



- 2) Remove the old bearings (you will have to remove two bolts to get the puller under the bearing).



- 3) Once you have the bearings removed, remove remaining bolts and disassemble the LSD. Keep all parts in order as shown in picture below. Inspect all parts for abnormal wear and galling.



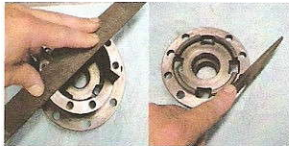
- 4) Set aside **upper** plates only, springs, and thrust washers, as these are not needed.



- 5) Clean all remaining parts making sure parts are completely dry.



- 6) After all the parts are clean you will need to chamfer the spring holes on both upper and lower clutch members to remove the sharp corners. This is important to keep the sharp corner from wearing into the new springs. A rotary grinder works fine for this. Also, remove any nicks or burs on the main housing and upper cover using a flat file.



Although not necessary to install the MAXGRIP kit we removed the unwanted material from the upper and lower clutch members.



All the parts, clean, dry and de-burred.



7) Open and set out the parts from your MAXGRIP kit



8) Next, making sure all parts are clean and dry, measures the total thickness of the O.E.M. lower plates stacked together and record the reading. You will be matching this thickness using the new plates and shims supplied in the MAXGRIP kit.



9) Place together the new plates from the MAXGRIP kit using two stationary plates (four outer tabs) and one clutch plate (splined bore) and measure.

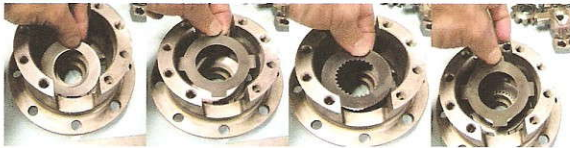


10) Subtract the measurement of the MAXGRIP plates (.2175") from the O.E.M. plates (.2425").
 $.2425'' - .2175'' = .025''$.

11) Now, add the required shims to make up the difference (.025") to the MAXGRIP plates. Get as close to the O.E.M. thickness as possible. Here we are within .001" (close enough, +/- .003" will work). This is important, as the two pinion gears need to be on centerline with the main housing, which has a mating radiused bore.



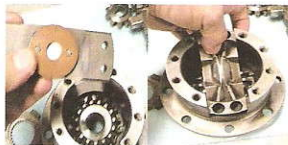
12) Now that you have the MAXGRIP lower plates shimmed you can install them into the main housing. Install the shims **first** then a stationary plate, clutch plate and remaining stationary plate. Do not use any oil at this time, assemble dry.



13) Install the lower side gear into the main housing being sure it is engaged into the clutch plate and firmly seated.



14) Place the solid bronze thrust washer on the lower clutch member and place into main housing.



15) Place the upper clutch member into housing, matching the marks on upper and lower clutch members. Leave out the springs and pinion gears, then add the solid bronze thrust washer.



16) Next, place .030"-.040" of shims into the upper housing and install the new plates and side gear.



17) Install upper housing onto main housing making sure side gear remains seated in upper housing. Use four bolts and finger tighten evenly. The bolts only need to be snug enough that upper housing is firmly in place.



18) Once the upper housing is installed the clearance between the upper and main housing needs to be measured using a feeler gauge. Because we added the .030"-.040" shims the upper housing will not sit flush onto the main housing, this is what we want at this time. Measure the clearance in several places making sure the feeler gauge is a snug fit between the two housings and record the average reading.



Here the average reading is .006". This means the upper housing is +.006" from resting flush onto the main housing.

- 19) Next the upper housing shims need to be adjusted to set the axial clearances inside the LSD casing. We know that the cover in the example above is + .006" and we installed .030" of shims. So, subtract .006" from .030" this equals .024".
 $.030-.006=.024$

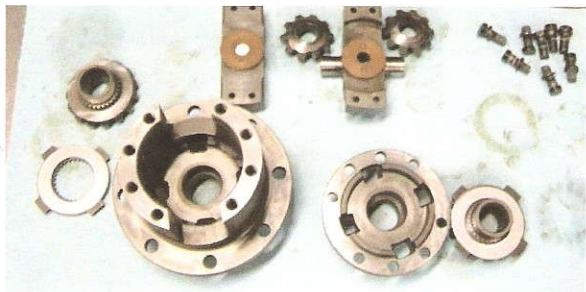
This now gets us to zero clearance. With .024" of shim in the upper housing, the upper case and main case will bolt together making metal-to-metal contact. We now need to remove shim to gain axial clearance inside the casing. The axial clearance needs to be at minimum .006" and maximum .010" So, we will use .008" and subtract this from .024"

$.024-.008=.016$ " This is the corrected shim thickness needed for the upper housing in the example shown above. NOTE: **DO NOT** set the clearance below the minimum amount required. Doing this will cause **DAMAGE** to the clutch plates and the LSD **WILL NOT** function properly.

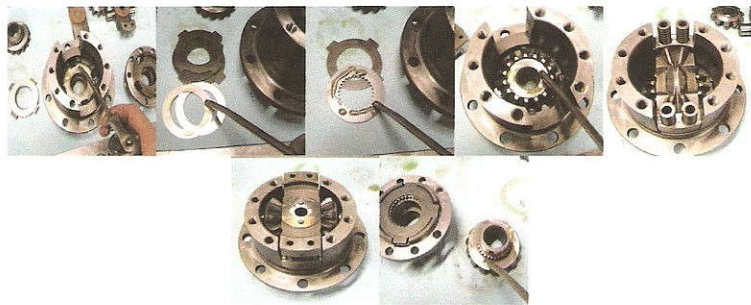
- 20) Remove the upper housing bolts and remove housing. Remove side gear, plates and shims. Adjust the shim thickness to gain the required amount of clearance for **YOUR** LSD. Reinstall corrected shims, plates and side gear into upper housing and install all bolts. Torque bolts to 33-35 ft.-lbs. Now check that the upper clutch member can move vertically in the housing to verify there is clearance. You can also insert an axle shaft into the side gear and rotate the axle. It should turn freely and smoothly. If you can feel no movement on the clutch member or the side gear does not turn smoothly with an axle installed, there is not enough axial clearance and you need to repeat the steps above to gain clearance. Do not move to the next step until you have the clearance set correctly.



- 21) Now that you have verified you have the correct axial clearance disassemble the LSD keeping all shims in place with their housings.



- 22) It's now time for final assembly. Reinstall all the parts in order just as you did in the above instructions. Make sure you align the match marks on the upper and lower clutch members. Install the MAXGRIP springs and the pinion gears at this time. You need to oil **every** part during installation. Use the same oil you will be using as your gear lube.



- 23) Because the MAXGRIP springs are longer and stiffer than the o.e.m. springs, you will need to clamp the upper member to get the pinion gears down into the casing. This will allow you to place the thrust washer onto the upper clutch member. Once the washer is in place you can remove the clamps.



- 24) Install the upper housing and bolts using high strength, red thread locker. Make sure the match marks are lined up on the upper and lower housings. You will need to push down on the upper housing to get the bolts started. Once you have all the bolts started tighten them evenly in a diagonal pattern until the upper housing seats flush. Torque the bolts to 33-35 ft. lbs.



- 25) Your MAXGRIP equipped LSD is now ready to be installed into your thirdmember!