



## Superior Axle and Gear Dana 35 C-Clip Eliminator



Thank you for choosing Superior. This product is designed to alleviate many of the troublesome issues associated with breaking a c-clip axle by converting from straight to tapered roller bearings. You can rest assured that you will generally be able to maintain the brake system integrity by keeping the drum in place should you break one of the stronger alloy axles. Not having to remove the diff cover for every repair and having to deal with the proper disposal of gear oil on the trail should be much less of an issue as well.

The installation of this kit requires the use of tools for the removal of rust and contaminants as well as a hammer for striking parts during disassembly. Always use the appropriate Safety Gear including eye and hearing protection as well as a respirator when working around brake dust.

A parts identification page is included.

Throughout the instructions are numbers in parenthesis ( ) that will match up to the part being used.

### ***Here are the steps to install the kit and get you and your rig back on the trails.***

**1-** Secure the vehicle in a safe manner with the rear axle up on suitable jack stands and the front tires chocked to prevent the vehicle from rolling.

**2-** After you remove the rear tires, you will need to release the parking brake so you can remove the rear drums.

**3-** Remove the differential cover and catch the gear oil in a drain pan so it can be disposed of properly.

**4-** The cross pin retaining bolt can now be removed.

**5-** After the retaining bolt is out, the cross pin can be extracted.

**6-** Once the cross pin has been removed and laid aside, pushing inwards on each axle will allow the c-clips to be fished out of the grooves in the end of each axle shaft.



**7-** With both clips removed and the ends of the axles pushed back slightly, the cross pin can be reinserted and the retaining bolt installed and torqued to the factory specification.

**8-** Pull each axle shaft out and set aside. The replacement axles are different lengths. Match up the longer one with the longer side OEM shaft that was removed so that they will be installed correctly when the time comes.

**9-** At this time, the brake backing plate assemblies should come off by removing the 4 nuts on the housing end bolts. It is not necessary to disassemble or remove the brake shoes and hardware from the backing plates.



**10-** Take care when you hang them up out of the way so as to NOT kink or otherwise damage the hard brake lines running to each wheel cylinder. You may need to remove the fasteners holding the parking brake cables to the control arms to get enough freedom to get the brake assemblies far enough out of your way to work comfortably.

- 11- With the backing plates out of the way, the 4 housing end bolts will need to be tapped out of the housing end with a shop hammer.



- 12- Remove the axle seals to expose the axle bearings, these will not be reused.

- 13- To simplify removal of the bearing race, pry out the bearing cage and remove it and the roller bearings. None of these parts will be reused. Be careful to keep any of the rollers from escaping into the tube. Remove and discard the bearing race.



- 14- To prevent any possible contamination during the next step, stuff a lint free rag a few inches into the axle tube.

- 15- The housing end flange and bearing snout exterior surfaces will need to be cleaned of any rust, grease or contaminants. We recommend a wire cup brush on a die grinder, a small angle grinder or similar. DO NOT USE ANY ABRASIVES OR ANY PROCESS WHICH WILL REMOVE METAL. IT IS OF UTMOST IMPORTANCE THAT THE DIMENSIONAL INTEGRITY OF THE OEM HOUSING END AND BOLT FLANGE BE MAINTAINED.



- 16- After the housing end has been wire brushed to a clean and shiny surface, finish up by wiping it down with brake cleaner and a clean cloth.

- 17- Apply a thin coat of a RTV silicone sealant suitable for use with gear oil to the housing end flange and exterior of bearing snout. We recommend Mopar Gear Sealant, but a suitable substitute can be used.



- 18- The New inner housing end ( 1 ) will be installed now. Orient it with the tapered bearing race outwards. Push 4 of the 3/8-24 x 2 1/2" Grade 8 bolts ( 4 ) through the holes in the housing end flange from the back side. Slide the new end over them until it butts up against the bearing snout. Slide 1 of the 7/16 nuts ( 6 ) on each bolt before threading a 3/8-24 hex nut ( 7 ) onto each bolt. The 7/16's nuts are being used as spacers to prevent bottoming out the 3/8" nuts on the unthreaded shoulder of the bolt. The goal here is to evenly press the new end in place by tightening the nuts in a cross pattern. Watch the gap between the new end and OEM flange to keep it uniform as you tighten the nuts. Tighten the nuts to 35 ft lbs.



**19-** Use the supplied 25/64" drill bit ( **11** ) and an appropriate drill motor to drill the 5th hole in the factory housing end flange using the bottom hole in the new housing end as a guide. Take care to keep the bit straight and square.



**20-** Insert one of the 3/8-24 x 2" bolts ( **5** ) into the new hole. Use a 3/8-24 hex nut ( **7** ) on the backside of the flange and torque it to 35 ft lbs. To complete the press fit of the new inner housing end, use the cross pattern and re-torque all five bolts to 45 ft lbs.

**21-** Remove all the nuts, spacer nuts and the 5th bolt. Push the 4 new bolts for the housing end back far enough so that you can fit up the drum brake backing plate over them. Once you have the drum backing plate in place on the bolts, go ahead and push them the rest of the way through to the outside.



**22-** Inspect both sides of the backing plate in the area that will contact the new housing ends and remove any rust or dirt. Push the backing plate back until it centers on the small lip around the bearing race. It will need to stay in place in order to get the new o-ring in the next step correctly in place. If you don't have a helper to hold it for you, use a couple of bungee cords stretched back to the suspension and axle to keep it in place.



**23-** Lightly coat one of the o-rings ( **3** ) with grease to prevent it from being pinched or cut when you press on the new outer housing end.



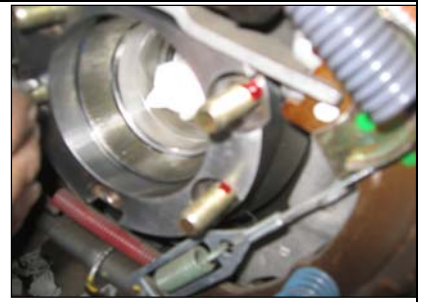
**24-** Place the o-ring around the bearing race in the new inner housing end and push it back against the drum backing plate. This o-ring will prevent any oil migration around the bearing race.



- The new outer housing end ( **2** ) can now be slid in place on the 4 bolts to sandwich the drum backing plate between it and the new inner housing end.
- 25-** Orient it with the 5 recessed holes outwards and the small o-ring groove inwards. You may need to slide the brake shoe adjuster over to the side a bit to clear the way.



- 26-** Open the supplied .5 ml tube of Loctite 271 ( **9** ) and place a couple of drops on the threads of each bolt near the new outer housing end.



- 27-** Use 4 of the 3/8-24 hex nuts ( **7** ) to secure the new outer housing end ( **2** ) in place. Torque the nuts to 45 ft lbs using a cross pattern sequence. This will capture the drum backing plate and make future work a bit easier should you have to pull the axle.

- 28-** The same 25/64" drill bit can now be used to drill through the backing plate using the 5th hole in new outer housing end as a guide taking the same care as was used before to keep the hole straight and square.



- 29-** After the drilling of the hole through the backing plate is complete, reinstall the same shorter 3/8-24 ( **5** ) bolt through it from the outside. This bolt will point the opposite direction of the other four so that it won't interfere with the axle retainer. Thread on one of the 3/8-24 Stover lock nuts ( **8** ) and torque it to 45 ft lbs. Include the other 4 nuts in this tightening sequence to ensure the housing end is seated and all 5 bolts have the correct torque value.

- 30-** Take the supplied 1/2-20 threaded wheel studs ( **10** ) and prepare each of them for installation into the threaded holes in the axle assembly wheel flange by putting a drop or two of the 271 Loctite on the threads of each near the head after they have been cleaned. If any oil is present on the threads, it should be removed with brake cleaner or similar. Thread the studs in and torque them to 90 ft lbs. Do this for both axle assemblies.

- 31-** Each axle assembly has been shipped with a 4 bolt retainer, an oil seal, a bearing, and a shaft collar in that order starting at the flange. Wipe a thin layer of grease around the outside of the oil seal.



Match up the long and short side axle assemblies to the sides that the longer and shorter OEM axles were removed from and install accordingly after removing the rag from the tube. Slide the axle assembly into the axle tube. As you get the flanged end near the new housing end, align the 4 bolt retainer to the new bolts. The wider part will be at the bottom covering the 5th bolt. You may need to sneak a flat blade screwdriver in against the brake shoe adjuster to get the retainer behind it as you slide it onto the 4 bolts. Rotate the axle as needed to line up the splined end in the differential. Watch the oil seal and be careful to keep it lined up with the seal area in the new housing end. This will prevent any cuts or gouges that could cause leaks when the axle is put into service.

32-



Start the Stover lock nuts onto all 4 bolts through the access hole in the axle flange. Tighten them a little at a time to pull the retainer up against the housing end. This will keep the oil seal square as it enters the seal bore in the new housing end. Once they have been evenly tightened enough to butt the retainer up against the housing end, proceed to the next step.

33-



Using the access hole in the wheel flange, torque the lock nuts to 30 ft lbs. As before, use a cross pattern tightening sequence and go over them twice.

34-

Remove an axle sticker ( 12 ) from the protective backing and apply it to the recessed area in the center of each axle. To ensure adhesion, clean the recessed area with brake cleaner if any oil is present. Reinstall the brake drums and tires. Don't forget to torque the lug nuts to factory specifications.

35-



After the differential cover and housing seal surfaces are cleaned, apply sealant to the cover and reinstall it. As always, torque the cover bolts to factory specifications and refill the differential housing with the correct amount and type of gear oil. Replace the fill plug.

36-



Take a moment and inspect your handiwork. Make sure you got the parking brake cable retainers reinstalled and the hard lines for the brakes didn't suffer any damage that could affect their function. Once you are satisfied everything is correct, go ahead and put the vehicle back on the tires, pull the wheel chocks and take it for a test drive.

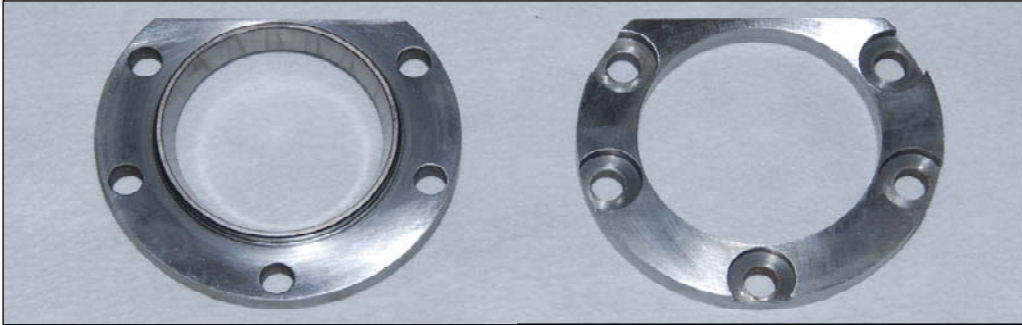
37-

Pay attention to anything out of the ordinary. There should be no leakage around the housing ends and no unusual noises.

38-



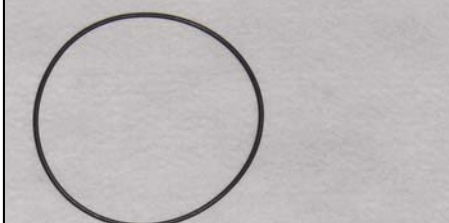
Superior Axle and Gear  
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 Parts List and Identification Page



(1) Inner Housing End x 2 pcs.

(2) Outer Housing End x 2 pcs.

(3) O-Ring seal x 2 pcs.



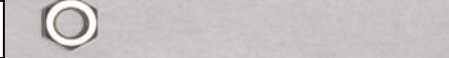
(4) 3/8-24 x 2 1/2" Grade 8 Hex Head Cap Screw x 8 pcs.



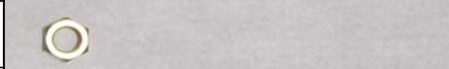
(5) 3/8-24 x 2" Grade 8 Hex Head Cap Screw x 2 pcs.



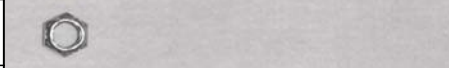
(6) 7/16-20 Hex Nut for Spacer x 4pcs.



(7) 3/8-24 Hex Nut x 8 pcs.



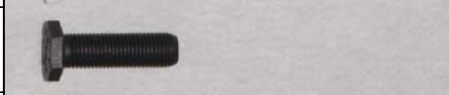
(8) 3/8-24 Stover Lock nut x 10 pcs.



(9) Loctite 271 Thread locker .5 ml x 1 pc.



(10) 1/2-20 Low Profile Hex Head Grade 8 Threaded Wheel Stud x 10 pcs.



(11) 25/64" Drill Bit x 1 pc.



(12) Axle Stickers x 2 pcs.



Note: Right and Left Axle Assemblies are not shown.