

INSTALLATION INSTRUCTIONS

DIF-2021 STERLING 10.5" / 10.25" SHAVE KIT

Ballistic Fabrication produces products for custom vehicles. Many products require general welding and fabrication skills. Welding should only be done by a competent welder. Ballistic Fabrication is not liable for improper installation. Check with local laws if your vehicle is driven on the street as some Ballistic Products may not be street legal in all states.

Specifications

- DIF-2021 is designed as a direct replacement for Ford 10.25 axles from 1985 to present and 10.50 axles from 1999 to present..
- Ultra thick 3/8" flange and 1/4" body with 15 different bends to create a geometrically strong cover.
- Thirteen 3/8"-16 x 1" Grade 8 bolts included to mount diff cover for 85-99 axles or thirteen M8 x 1.25 X 25mm bolts for 99+ axles.
- All holes are machined after welding to ensure proper locations.
- Flange is machined perfectly flat after welding for a good seal.
- Zinc Plated 3/4" Fill Plug
- Zinc plated Magnetic Drain Plug (neodymium)



Disassembly

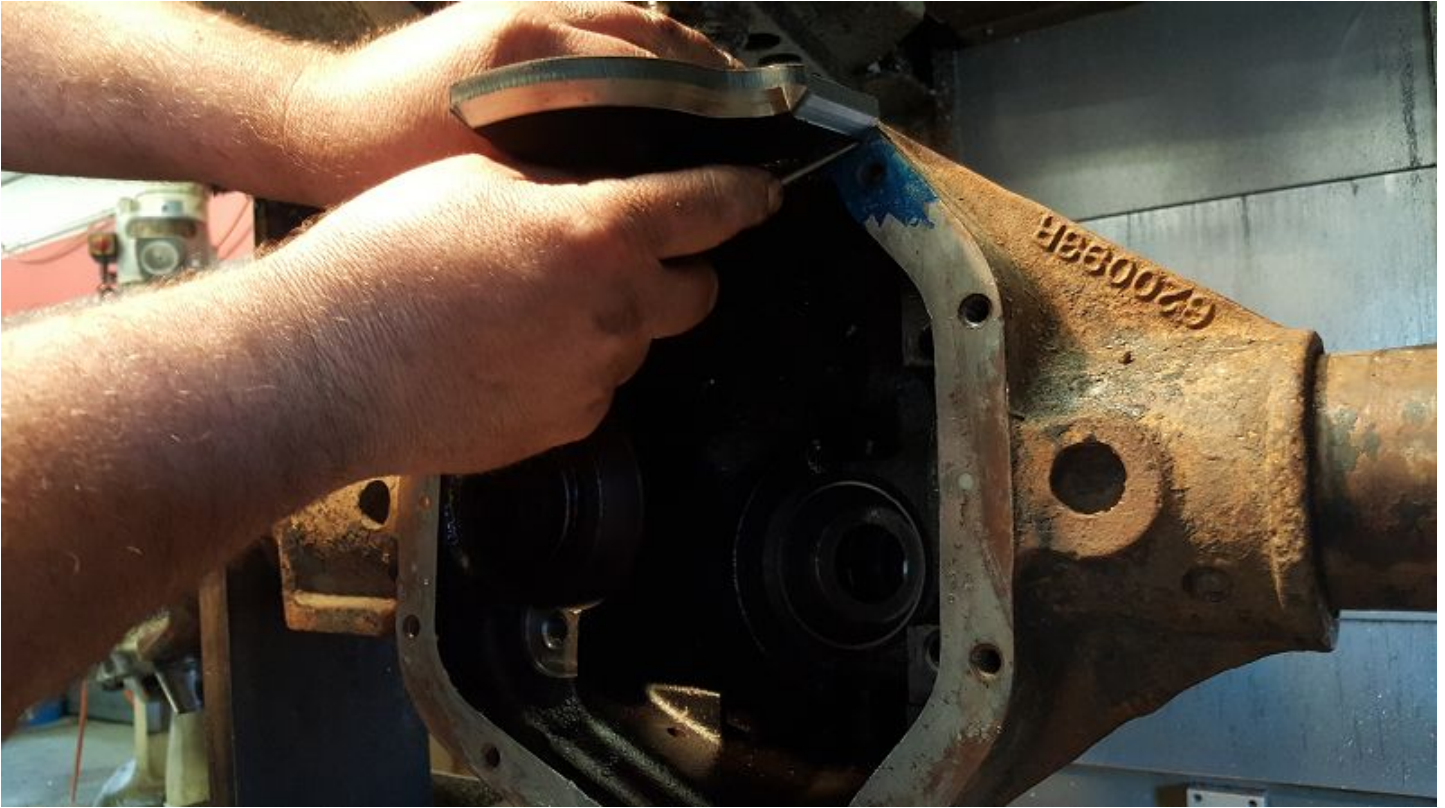
- Clean any loose dirt from around the differential cover to avoid contaminating the differential cavity.
- Position a fluid drain reservoir under the differential and loosen all differential cover plate retaining bolts.
- Gently pry the cover plate away from the differential housing to completely drain all differential fluid.
- Once drained, remove the differential cover. This is a good time to inspect the differential components, inspect the oil and the bottom of the housing for metal particles which may indicate a worn bearing or differential component.
- Clean all oil residue off the differential housing. It may be necessary to scrape old gasket material off of the housing with a scraper or razor blade.
- Remove the bearing caps after marking them so they can be replaced in the same position.
- Remove the carrier from the housing. Keep the shims separate for each side so they can be re-installed the same as they were removed.
- The pinion does not need to be removed, but if it is left in place care needs to be taken not to overheat the pinion bearings.

Machining the Axle Housing

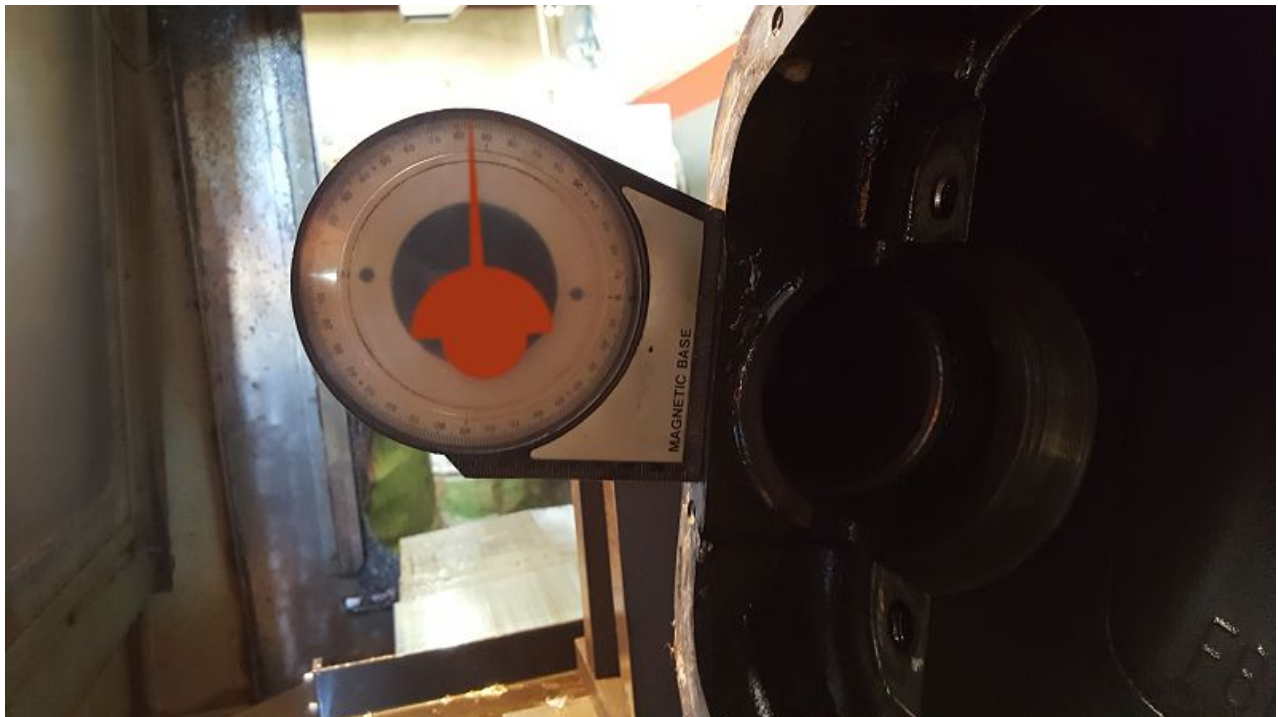
- Place the Differential Cover in position on the differential housing and mark the bottom edge of the cover using Dykem (or equivalent) and a scribe.



- Remove the cover and using the bottom plate mark the cut line on the housing by aligning it to the previous mark and scribing a line. **Important...** this line is only a guide. Machine the housing to a point where accurate measurements can be taken.



- Mount the axle housing in the mill.
- Set the axle at an 84 degree angle, 6 degree pinion angle.



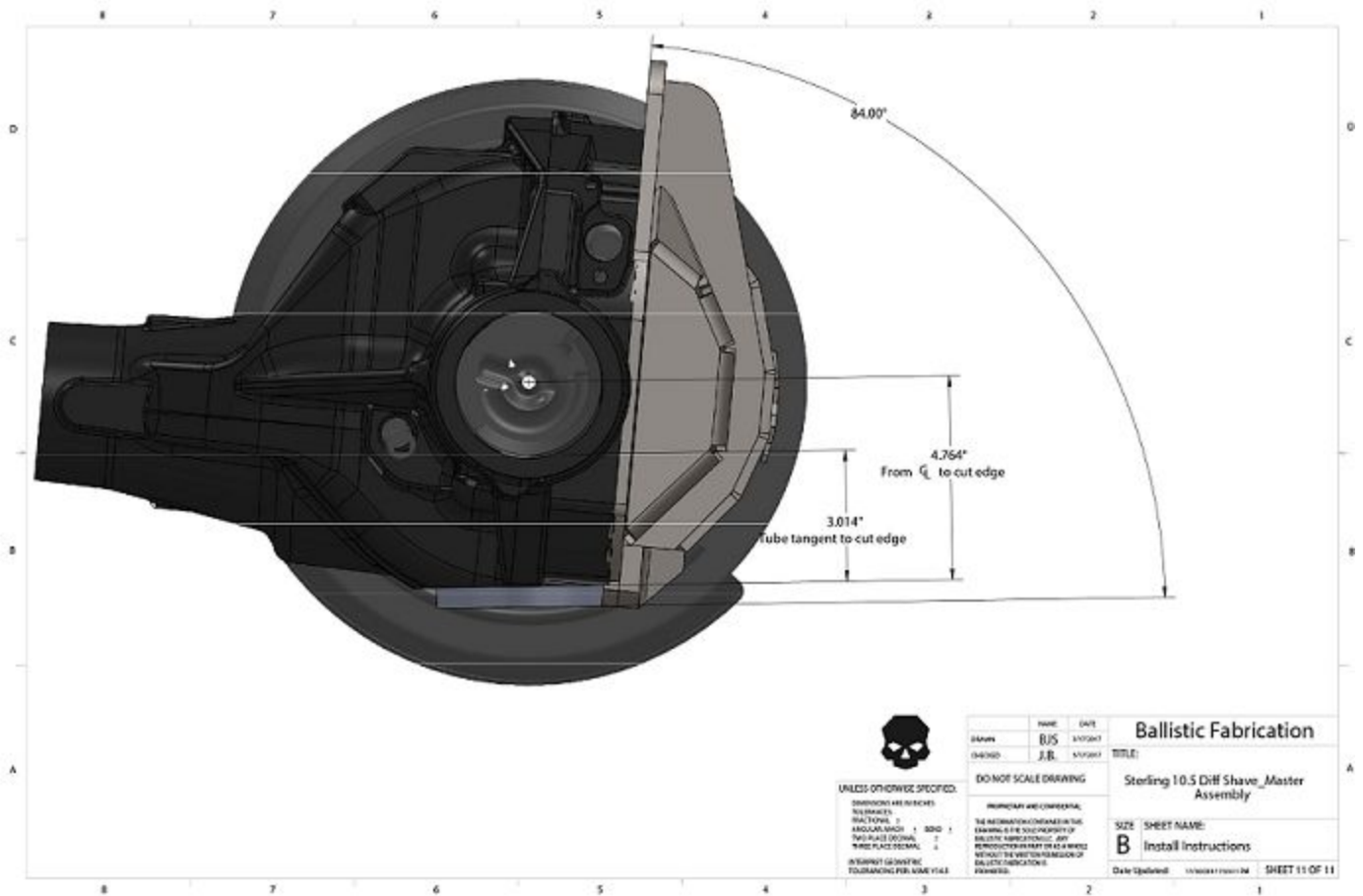
- Machine the housing until the supports cast into the housing have been exposed.



- Using a cut off wheel or saw remove the supports to ensure they do not break off while machining.



- Continue machining until the correct dimensions are obtained.



- Deburr all machined edges.

Assembly

- VERY IMPORTANT - This modification will require professional level welding by a person qualified to weld cast ductile iron / Nodular iron. The sterling casting is NOT STEEL and CANNOT be welded by conventional means.
- Bolt the differential cover to the housing.
- Heat the casting to between 250 - 400 degrees F. Use Tempsticks to ensure that the casting is heated correctly.





- Weld using Nicore 55 mig wire using spray transfer in two passes.
- Use Tempsticks to gauge heat or tape a thermocouple to the housing 6 or 7 inches from the weld area. Be careful to not overheat the welding area by ensuring that the 400 degree temp stick won't melt 1" or more away from the weld
- Stress relief of welds by needle scaling or moderate to light air-hammering after each pass.
- Prolong the cool-down process with heat blankets. Wrap differential in welding blanket and stuff differential with fabric as well.



- If any one of these processes are not completed properly, the housing will be prone to cracking. Ballistic Fabrication will offer welding and machining services for \$445. Brackets and leaf perches can be removed for \$100.
- Ring gear machining WILL be required. Ballistic Fabrication will provide machine work to housing for \$150 and machine work to ring gear for \$45
- Once cooled, remove the differential cover.
- Ring gear needs turned down to 10.000 +/- .010.
- Re-install the carrier per manufacturer's procedure.
- Paint or Powder Coat the Differential Cover.
- Apply gasket sealant, or a modified replacement gasket to the flange of the differential housing.
- Install the Differential Cover onto the housing and screw in the bolts.
- Torque bolts to 35 ft-lbs.
- Fill the differential with the appropriate oil until it reaches the bottom of the fill hole.