

DIFP-2002-INST



# INSTALLATION INSTRUCTIONS

**DIF-2002-6 05-08 Ford SD D60 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-2002-6 is designed for use on 2005 - 2008 Ford Superduty Dana 60 front axles.
- Ultra thick 3/8" flange and 3/8" body.
- CNC Laser cut, CNC Press formed and welded.
- Grade 8 bolts included to mount diff cover.
- 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
- Optional bolt protector block, machined from 4140 Chromoly and then heat treated and zinc plated.

## Disassembly

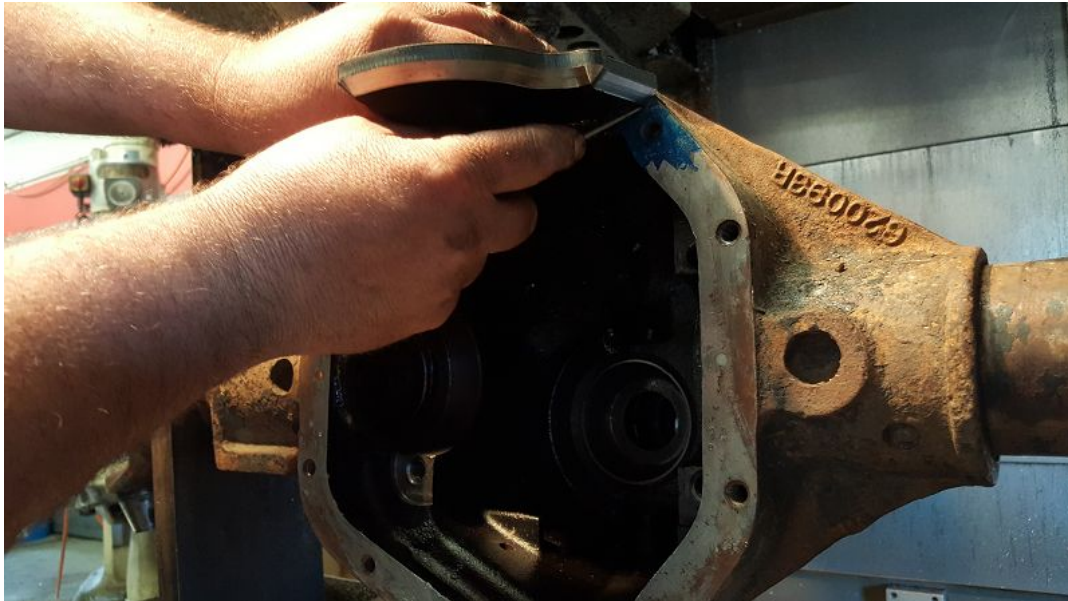
- Clean any loose dirt from around the differential cover to avoid contaminating the differential cavity.
- Position a fluid drain reservoir under the differential and loosen all differential cover plate retaining bolts.
- Gently pry the cover plate away from the differential housing to completely drain 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.
- 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

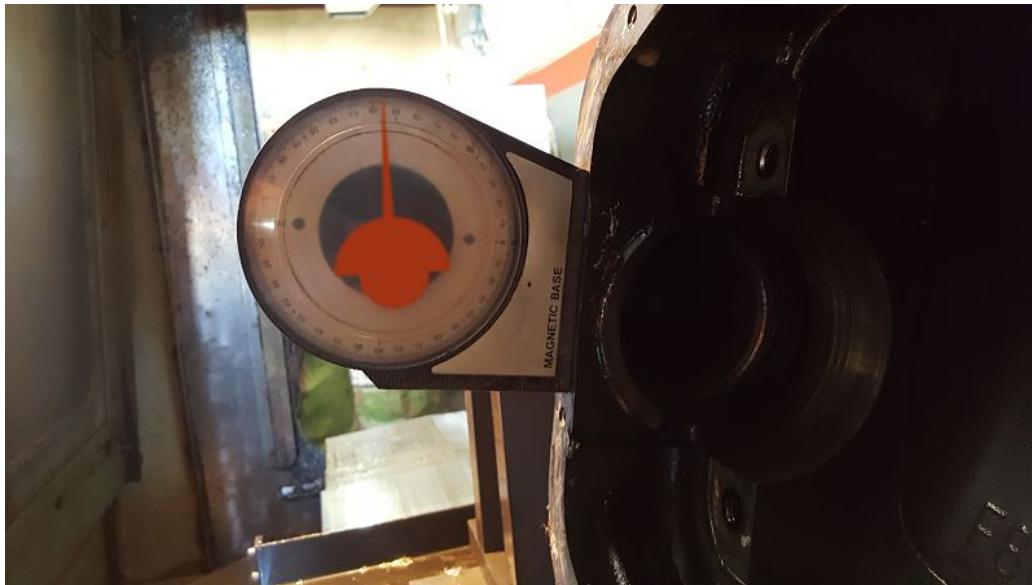
- If any one of the following processes are not completed properly, the housing will be prone to cracking. Ballistic Fabrication offers welding and machining services if necessary. Call for pricing.
- Place the Differential Cover in position on the differential housing and mark the bottom edge of the cover using Dykem (or equivalent) and a scribe. (the following picture is not of a Ford Superduty Dana 60 axle, but is used for reference purposes)



- 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. (the following picture is not of a Ford Superduty Dana 60 axle, but is used for reference purposes)



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



- Machine the housing until a distance of 3.025" from the tangent line of the axle tube is obtained.
- Deburr all machined edges.
- If a mill is not available the housing may be cut using a sawzall and angle grinder. If using this method, do so carefully so there is a tight fit between the bottom plate and the housing.
- Modifications to the ring gear may be necessary. The ring gear diameter can not exceed 9.50".

## Assembly

- Bolt the differential cover to the housing.
- Heat the casting to 400 degrees F. Use Tempsticks to ensure that the casting is heated correctly. (the following picture is not of an AAM 11.5" axle, but is used for reference purposes)





- Weld the bottom plate to the housing using ER70 or ER80 mig wire.
- 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.
- Use a chipping hammer or a needle scaler (preferred) to relieve the weld and material while maintaining heat as best as possible. Do this until the entire area has been relieved.
- Weld the housing to the bottom plate from the inside of the housing and needle scale.
- Prolong the cool-down process with heat blankets. Wrap differential in welding blanket and stuff differential with fabric as well.



- Once cooled, remove the differential cover.
- 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.