

BALLISTIC FABRICATION



14 BOLT SHAVE KIT INSTRUCTIONS

Included Parts

- Diff Cover
- Bottom Block
- Mounting Hardware - 11 3/8" 16tpi socket head cap screws, 4 5/16" 18tpi socket head cap screws (not shown)
- Instruction Manual



For online version of instructions please visit:
<http://ballisticfabrication.com/assets/images/PDF/Instructions.pdf>

Optional Parts

- New Machined Ring and Pinion - \$340
- Truss with Mounting Hardware (shown) - Separate Kit - \$375.99
- We can machine your ring gear to the proper specifications - \$100.00
- We can also machine a bare housing and weld the necessary parts - \$250.00 - (Call for more information)



NOT ACTUAL PRODUCT

Disassembly:

- Drain the oil and remove the diff cover from the housing.
- Remove the carrier from the housing as well as the pinion gear and bearings.
- Remove the ring gear from the carrier so machine work can be performed

Modification to Housing with Hand Tools:

- Install the new diff cover onto the unmodified housing to ensure initial fitment of all bolts and to mark the initial cut line on the mating surface of the housing
- Mark the cut line. The cut needs to be made at 6 degrees past horizontal as shown in the figure (Fig 1.)
- Cut using reciprocating saw or large cut-off wheel slightly below marked line, ensuring too much material is not removed.
- Clean up leftover material with an abrasive grinding wheel until the cover / bottom plate assembly bolts to housing without interference.
- Clean up an sharp edges for better weld quality.

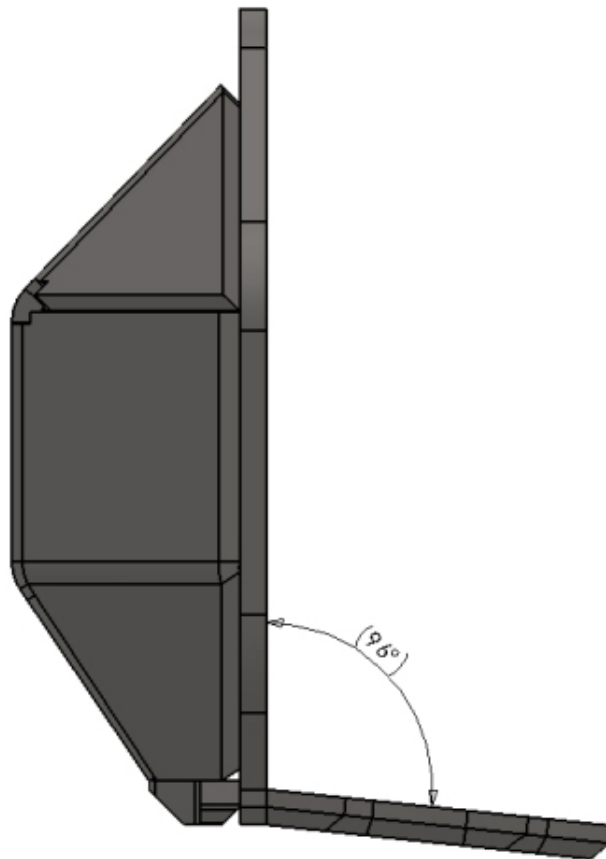


Fig 1.

Modification to Housing with Machining:

- Remove bearings, carrier seals and ring gear.
- Excess steel can be easily saw cut or removed with a reciprocating saw to leave less material for machining
- Fixture housing so that the pre-machined surface for the cover creates a 96 degree angle to the surface to-be machined as pictured (Fig. 1)
- Machine flat on housing until the dimension from the top tangent of the axle tube is 3.125” to the new flat created (Fig. 2)
- Clean up sharp edges and burrs to facilitate welding



Fig 1. (Ring gear installed to confirm dimensions)

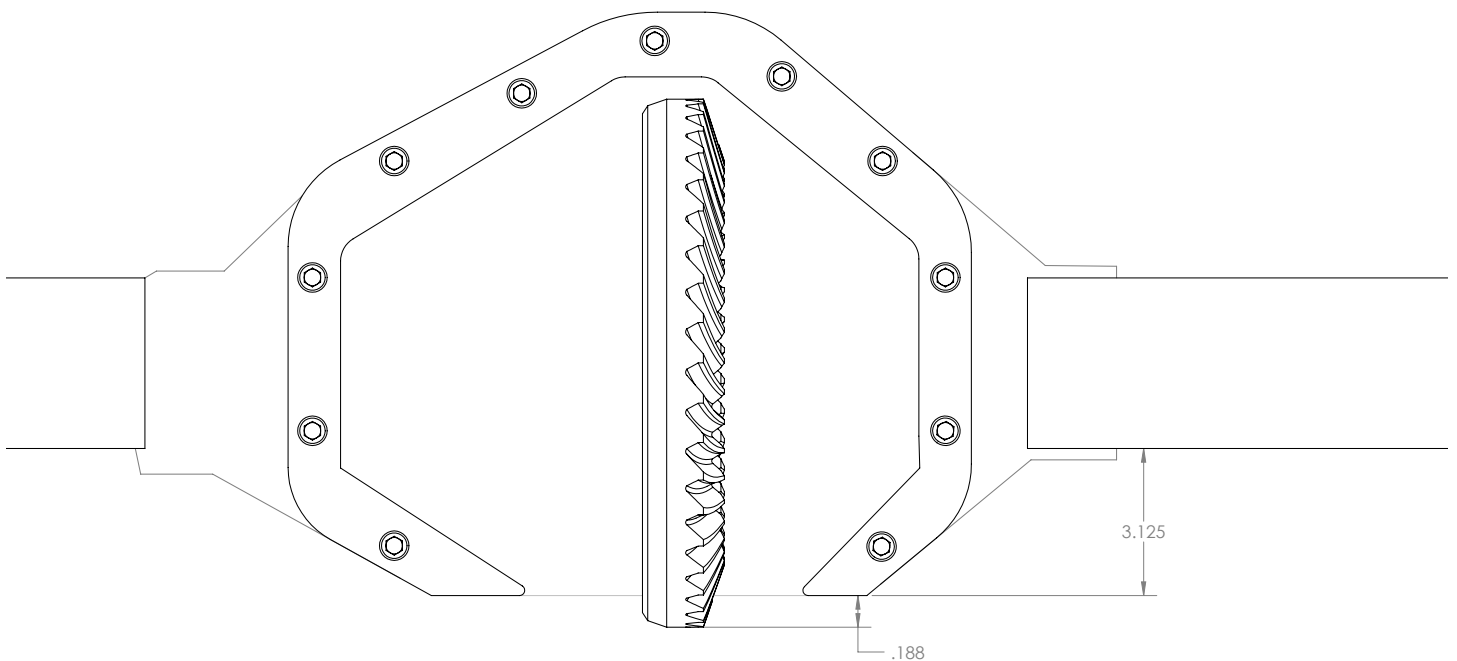
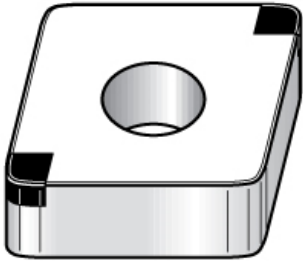


Fig 2. (Not to scale)

Ring Gear Modification:

MSC #: 02642809



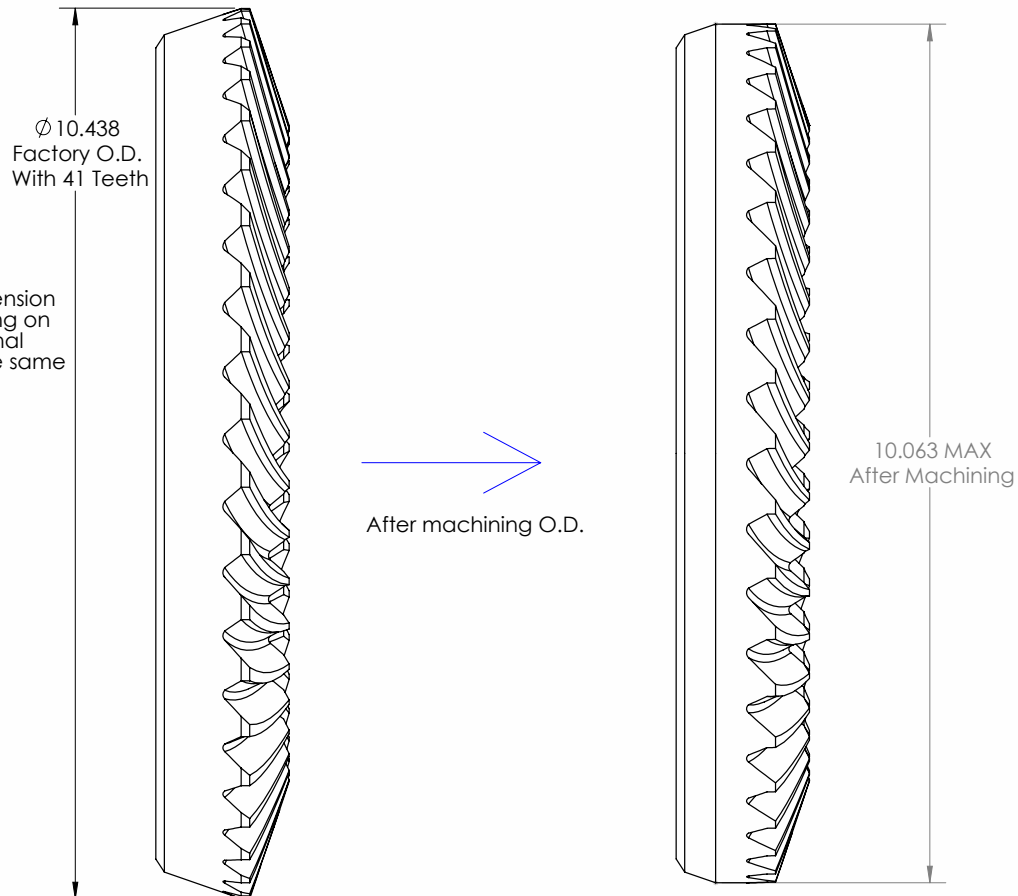
Kennametal

For Turning: Use indicated BCN multi-tipped carbide insert due to extreme interrupted cut and hardness. Inserts range from \$50-\$75 ea.

Turning recommendations

- 345 SFM
- .004”-.020” DOC
- .003”-.008” FPT
- High pressure coolant recommended, BCN tip must stay cool

- ANSI Number: CNGA432S0425MT
- Manufacturers Catalog Number: CNGA432S0425MT KB5625
- Style: CNGA432
- Manufacturer’s Grade: KB5625
- Mat: BN-Low CBN



Welding Procedure:

- ER70 or ER80 welding wire is recommended
- Reinstall the ring gear, carrier and bearings.
- Tack weld the bottom plate/cover assembly to the housing with ALL bolts installed.
- Check that the assembly is free of interference's.
- Remove the cover.
- Remove the ring gear, carrier and bearings.
- Pre-heat the housing/bottom plate with a rose bud torch until they are approximately 400 degrees. (Temperature marker can be used to indicate temp. You should not see a cherry color. If you do it is too hot.)
- Weld the bottom plate from the outside first. 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.
- Re-heat if necessary and weld inside. Repeat needle scale and heat.
- Apply heat blanket and let cool as slowly as possible.



Final Assembly

(After everything has cooled to ambient temperature)

- Install the pinion bearing as per manufacturers specifications.
- Install carrier and set pinion pre-load, backlash and gear pattern as per manufacturers specifications.
- Set differential cover back on the housing to ensure all the bolts line up after the welding and cooling process.
- Remove the differential cover in preparation for final installation.
- Clean the mating surface of the differential cover and housing using acetone or other solvent that does not leave a residue.
- Using a quality form in place gasket (FIPG) such as “Right Stuff[®]” or other equivalent RTV sealant place an 1/8” to 3/16” bead on the mating surface of the housing and around all bolt holes.
- Install the cover and torque to specifications (if using some other sealant form, follow the provided instructions on the back of the package about torque sequence as some may require a secondary tightening after a setting period)

