

INSTALLATION INSTRUCTIONS

14 Bolt 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.

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



Optional Parts

- New Machined Ring and Pinion - \$340
- We can machine your ring gear to the proper specifications - \$45.00
- We can also machine a bare housing and weld the necessary parts - \$250.00 - (Call for more information)

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.

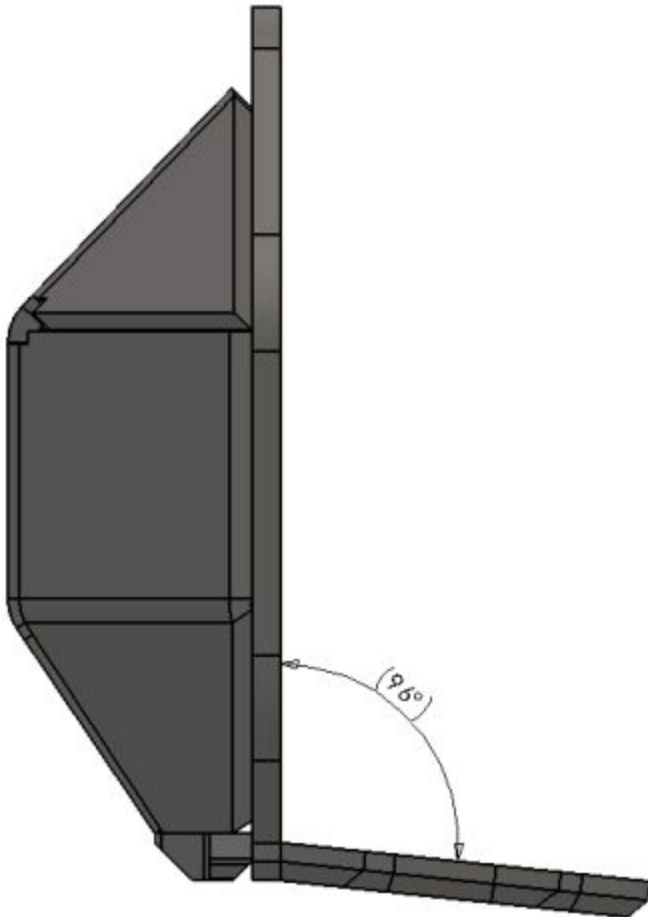


Fig 1.

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. 2)
- Machine flat on housing until the dimension from the top tangent of the axle tube is 3.125” to the new flat created (Fig. 3)
- Clean up sharp edges and burrs to facilitate welding



Fig.2 (Ring Gear installed to confirm dimensions)

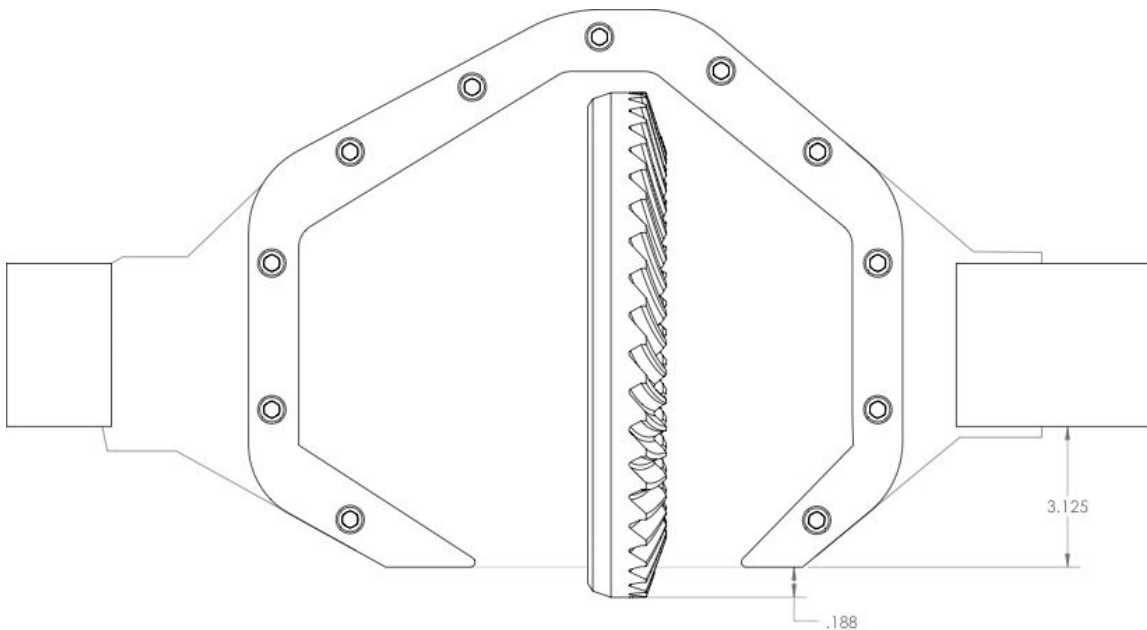
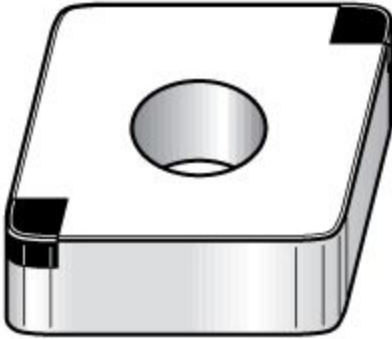


Fig. 3 (Not to scale)

Ring Gear Modification:

MSC #: 02642809



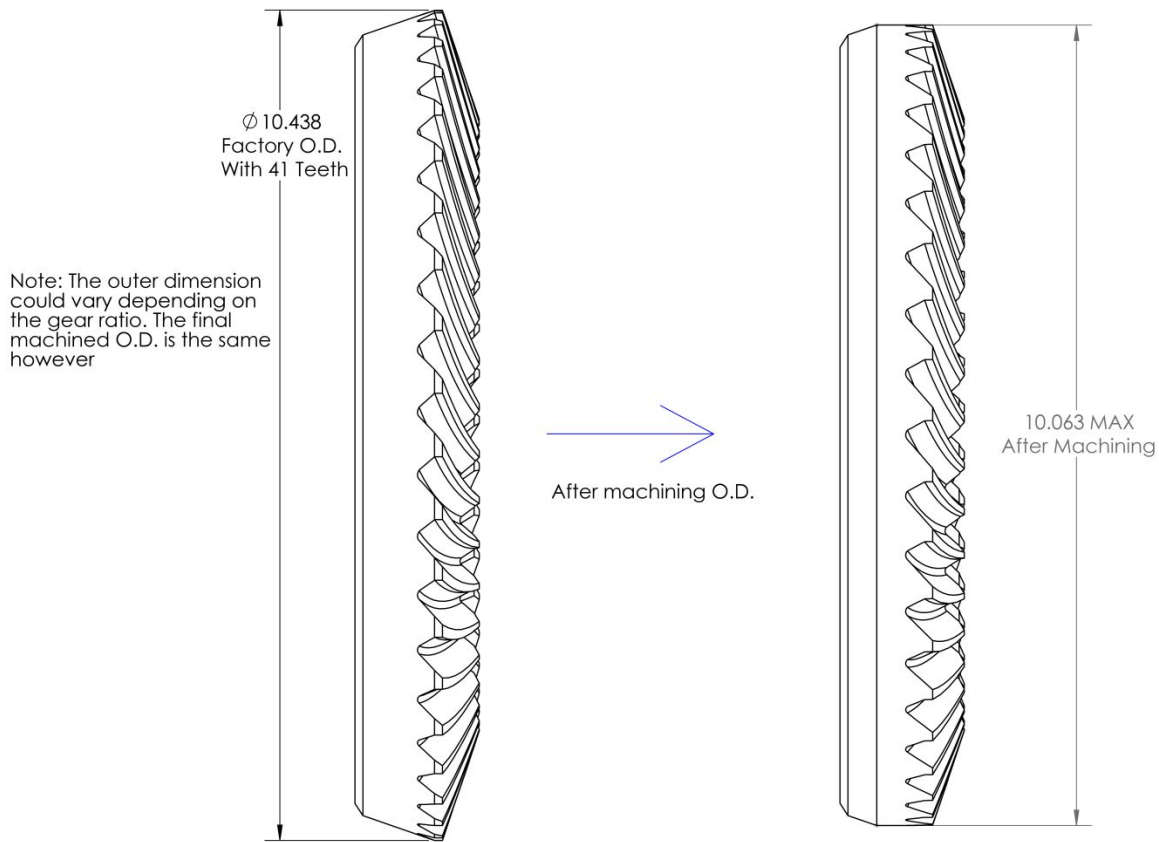
Kennametal

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

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



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)

- Remove the differential cover in preparation for final installation. The differential cover is raw steel and will need to be painted or powder coated unless you want it rusty for the rat rod look.
- 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.
- 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)