

Proper ring gear and pinion tooth contact is essential for proper rear axle operation. After performing basic adjustments outlined previously, slight modifications may be required to ensure proper contact. Tooth contact is adjusted by making modifications to the pinion depth and ring gear backlash settings.

1. Coat drive and coast face of each ring gear tooth with a suitable marking compound.
2. Apply braking force to ring gear and turn pinion to rotate ring gear several revolutions in each direction.
3. Examine tooth contact on models with Gleason gears referring to **Fig. 20**, and note the following:
 - a. Illustration ``A" shows proper contact without load on gears, while ``A1" shows proper pattern with gears loaded. **Loading gears will shift contact pattern outward slightly.**
 - b. Illustration ``1," high narrow contact pattern, indicates excessive pinion depth. Increase pinion depth shim and increase backlash setting slightly to compensate.
 - c. Illustration ``2," deep narrow contact, indicates insufficient pinion depth. Decrease thickness of pinion depth shim and reduce backlash slightly to compensate.
 - d. Illustration ``3," short contact pattern on toe end of ring gear, indicates insufficient backlash. Increase backlash, and if further correction is required increase thickness of pinion depth shim slightly.
 - e. Illustration ``4," short contact pattern on heel of ring gear, indicates excessive backlash. Decrease backlash, and if further correction is required, decrease thickness of pinion depth shim slightly.
4. Examine tooth contact pattern on models with Klingelnberg gear referring to **Fig. 21**, and note the following:
 - a. Proper tooth contact pattern without load is shown in ``B," and proper contact with load on gears is shown in ``C."
 - b. Pattern shown in ``D" can be corrected by decreasing pinion depth shim thickness (moving pinion away from ring gear) and slightly decreasing backlash to compensate.
 - c. Pattern shown in ``E" can be corrected by increasing pinion shim thickness (moving pinion toward ring gear) and slightly increasing backlash to compensate.
5. Other possible incorrect contact patterns and the necessary corrections are shown in **Fig. 22**.
6. Perform indicated corrections in assembly adjustments, ensure pinion preload and total assembly preload are properly adjusted, then recheck contact pattern. **If pinion depth shim must be replaced, use new collapsible spacer when installing pinion.**