GENERAL INFORMATION

Gear Tooth Contact Patterns

* PLEASE READ THIS FIRST *

NOTE: This is GENERAL information. This article is not intended to be specific to any unique situation or individual vehicle configuration. For model-specific information see appropriate articles where available.

INSPECTION

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Wipe lubricant from internal parts. Rotate gears and inspect for wear or damage. Mount dial indicator to housing and check backlash at several points around ring gear. Backlash must be within specification at all points. If no defects are found, check gear tooth pattern contact.

NOTE: Drive pattern should be well centered on ring gear teeth. Coast pattern should be centered, but may be slightly toward toe of ring gear teeth.

GEAR TOOTH CONTACT PATTERN

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1. Paint ring gear teeth with marking compound. Wrap cloth or rope around drive pinion flange to act as brake. Rotate gear until clear contact pattern is obtained.
2. Contact pattern will indicate whether correct pinion bearing mounting shim has been installed and if drive gear backlash has been set properly. Backlash between drive gear pinion must be maintained within specified limits until correct tooth pattern is obtained.

ADJUSTMENTS

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GEAR BACKLASH & PINION SHIM CHANGES

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1. With no change in backlash, moving pinion further from ring gear moves drive pattern toward heel and top of tooth, and moves coast pattern toward toe and top of tooth.
2. With no change in backlash, moving pinion closer to ring gear moves drive pattern toward toe and bottom of tooth, and moves coast pattern toward heel and bottom of tooth.
3. With no change in pinion shim thickness, an increase in backlash moves ring gear further from pinion. Both drive and coast patterns move toward heel and top of tooth.
4. With no change in pinion shim thickness, a decrease in backlash moves ring gear closer to pinion gear. Both drive and coast patterns move toward toe and bottom of tooth.

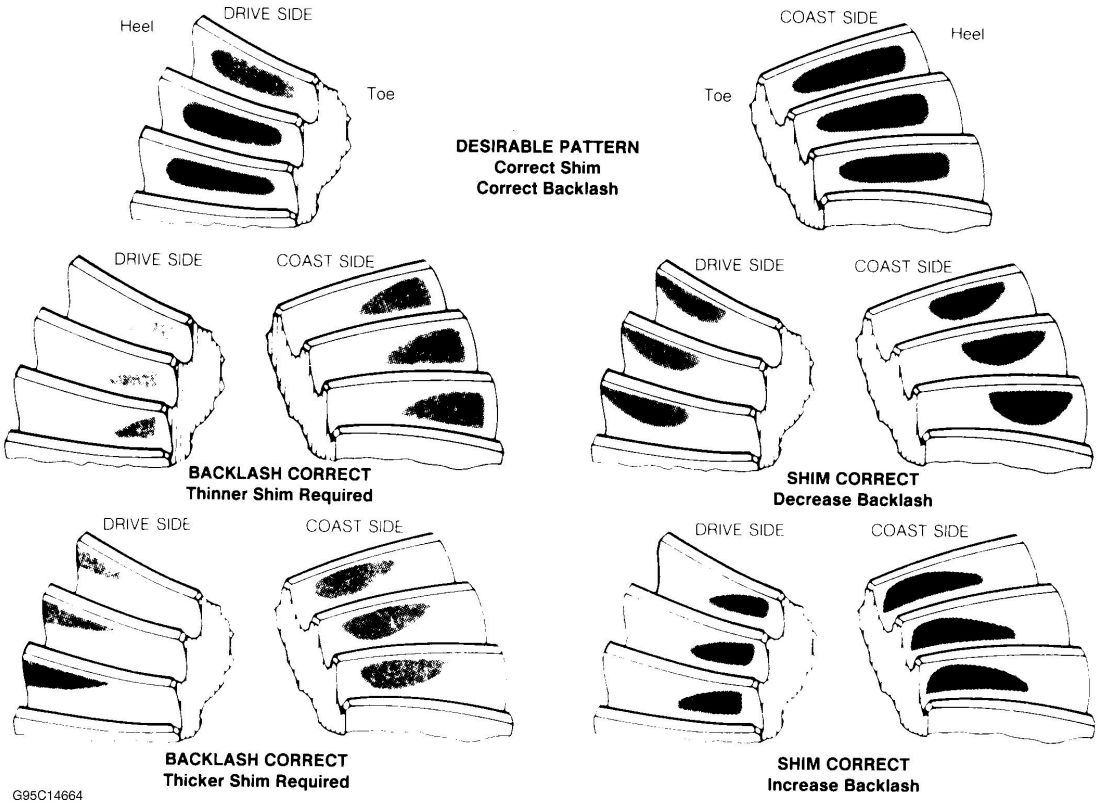

Fig. 1: Drive Axle Gear Tooth Patterns