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A Correct tooth pattern without load

A1 Under load, the contact pattern moves slightly outwards.

Moving the ring gear will mainly change the backlash, but will also displace the contact pattern in longitudinal direction of the teeth. Moving the drive pinion will displace the contact pattern in favor of tooth height, but the backlash will be altered just very slightly.

Here are the four basically incorrect contact patterns, which usually occur in combination. Knowing these patterns will facilitate making adjustments.

1. High, narrow contact pattern (tip contact) on ring gear.

Move drive pinion toward ring gear shaft and perhaps correct backlash by backing ring gear off of drive pinion.

2. Deep, narrow contact pattern (root contact) on ring gear.

Move drive pinion away from ring gear shaft and perhaps correct backlash by moving in ring gear.

3. Short contact pattern on small tooth end (toe contact) of ring gear.

Move ring gear away from drive pinion. Maybe move pinion closer to ring gear shaft.

4. Short contact pattern on large tooth end (heel contact) of ring gear.

Move ring gear toward drive pinion. Perhaps back drive pinion away from ring gear shaft.