

SECTION 2C

DIFFERENTIAL

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GENERAL DESCRIPTION

DIFFERENTIAL

Differential is integrated with transmission case and is installed on chassis together with engine. Reduction gear is installed parallel to countershaft and is helical gear type. Differential gear is bevel gear type and is integrated with reduction gear.

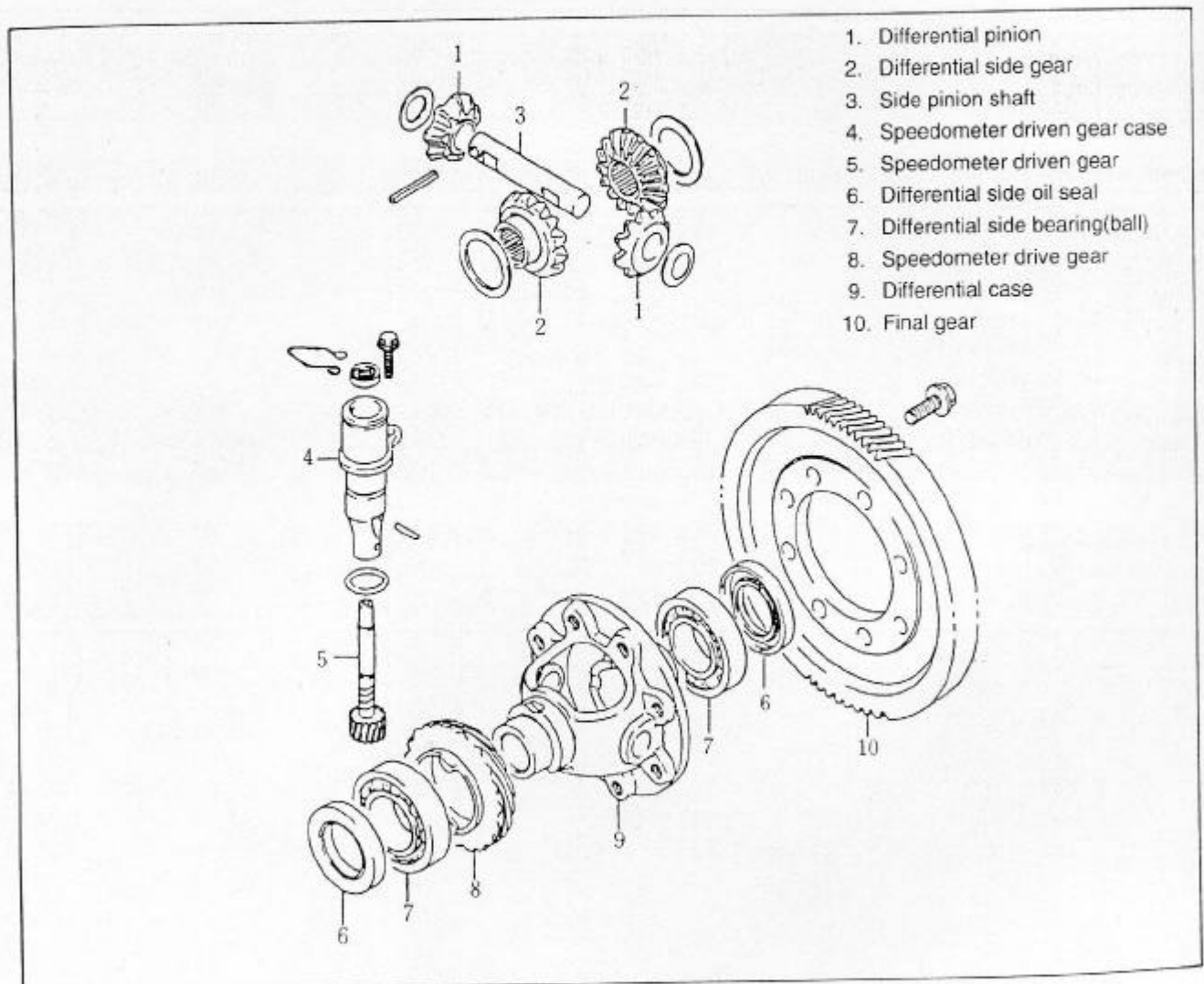


FIG. 2C — 1 DIFFERENTIAL CONFIGURATION

Differential changes the direction of power and increases rotational power by reducing speed. This is also called as final reduction gears as it reduces finally and the reducing rate is called as final reduction ratio. Final reduction gear consists of driving pinion and ring gear and is integrated with differential. Differential automatically provides smooth running when rotational speeds of both wheels are different. Namely, when rounding a curve, outer wheel of car shall travel longer path comparing with inner wheel. When the road is indented, the travels of both wheels are different, therefore differential makes difference between the rotational speeds of both wheel and distributes rotational moment uniformly to driving wheels.

TROUBLESHOOTING

Condition	Probable Cause	Correction
Gear noise	<ul style="list-style-type: none">• Degraded or water included gear oil• Improper or insufficient gear oil• Maladjustment of backlash between bevel pinion gears• Improper contact between gear teeth• Binding bevel gear• Damaged side gear or side pinion	<ul style="list-style-type: none">• Replace or refuel• Replace or refill• Adjust as specified• Adjust or replace• Replace or retighten• Replace
Bearing noise	<ul style="list-style-type: none">• Degraded or water included gear oil• (Continuous noise) improper or insufficient gear oil• (Noise during driving) damaged bevel pinion bearing• Damaged differential side bearing or accelerator bearing	<ul style="list-style-type: none">• Replace or refuel• Replace or refill• Replace• Replace

DISASSEMBLY

1. Remove differential side bearing using special tools.

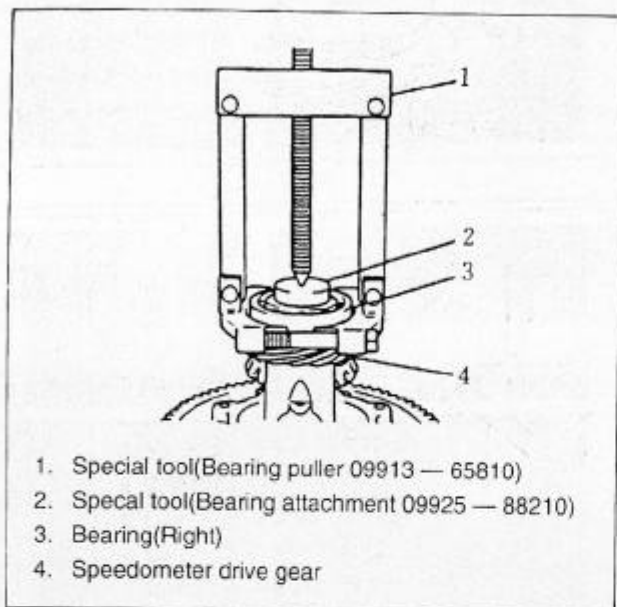


FIG. 2C — 2 REMOVING DIFFERENTIAL SIDE BEARING

2. Speedometer drive gear
3. Differential side bearing(Left)
4. Final gear
5. Remove spring pin using special tool.

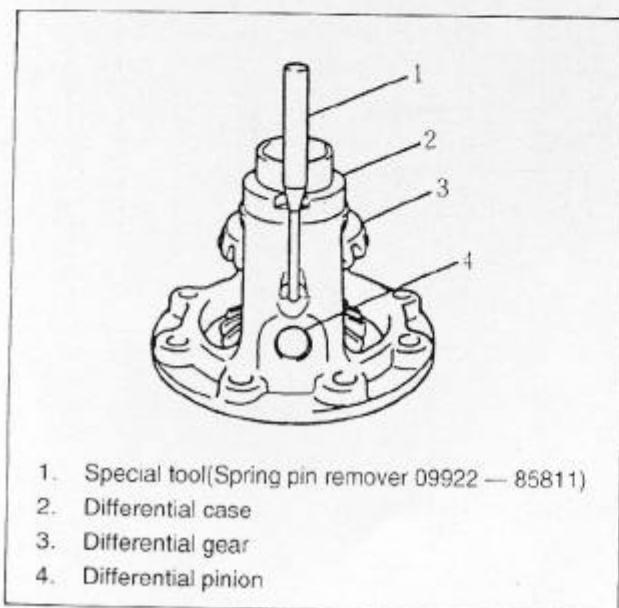


FIG. 2C — 3 REMOVING SPRING PIN

ASSEMBLY

It is the reverse of disassembly procedures. Take care of the followings.

- After measuring thrust free travel of differential gear select and adjust proper shim if free travel exceeds standard.

Thrust free play of differential side(mm)	0.05 — 0.33
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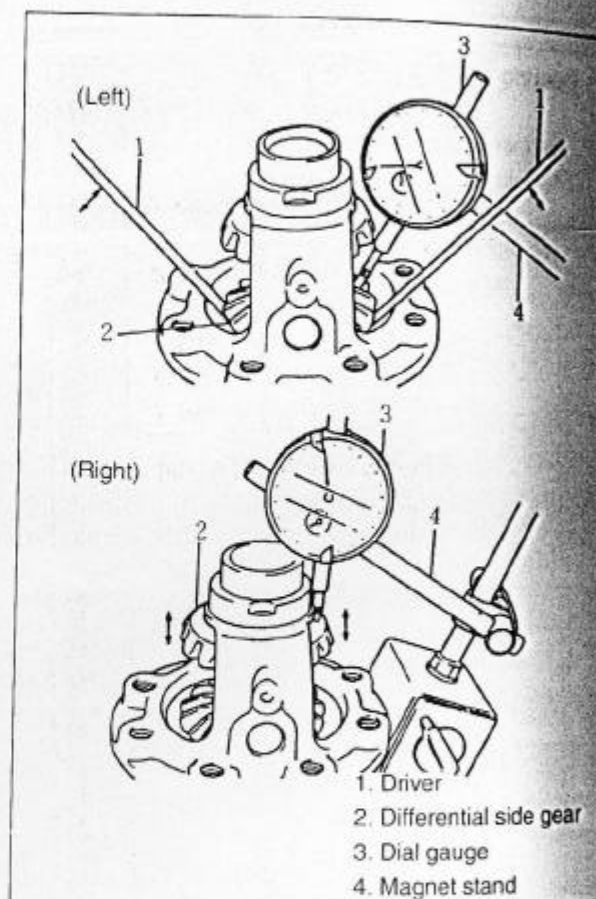


FIG. 2C — 4 MEASURING THRUST FREE TRAVEL OF DIFFERENTIAL SIDE GEAR

Thrust adjusting shim(mm)	0.9, 0.95, 1.0, 1.05, 1.1, 1.15, 1.2
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Press-fit differential side bearing using special tools.

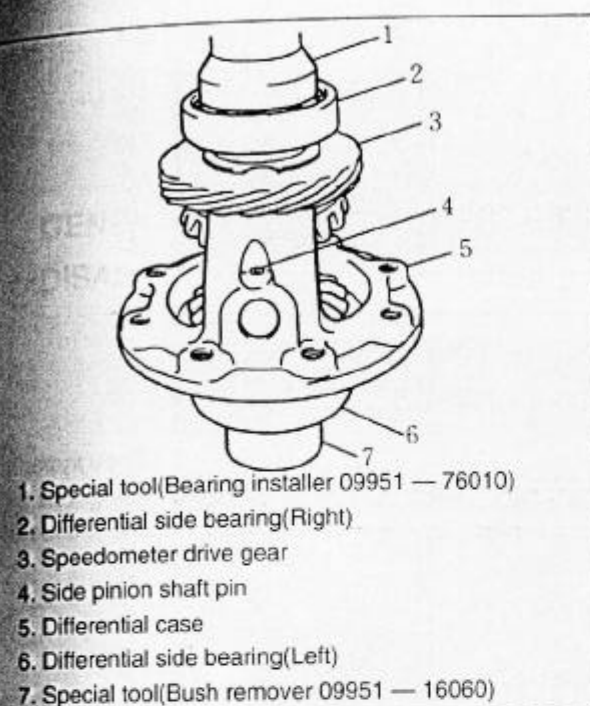


FIG. 2C — 5 PRESS- FITTING DIFFERENTIAL SIDE BEARING

- Tighten final gear bolt to specified torque.

Tightening torque for final gear bolt(kg • cm)	800 — 1000
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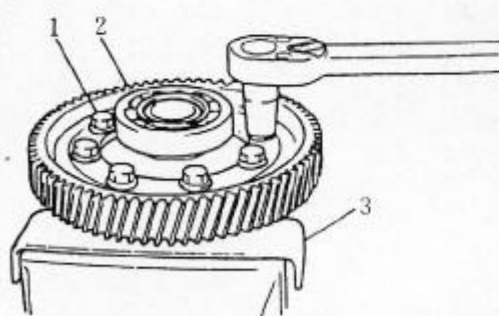


FIG. 2C — 6 TIGHTENING FINAL GEAR