

0604 Differential

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دیجیتال خودرو

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران



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1 General Information

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1.1 Important notes

- When turning, the travel distance of the outside wheels is longer than that of the inside wheels, so the speed of the outside wheels is faster, which will therefore break the balance of vehicle's drive train.
- The planetary gear mechanism in the differential can transmit the speed difference between the outside and inside wheels to the axle shaft gear via the axle shaft when turning. It can force the planetary gear to rotate, thus allowing the inside and outside wheels to spin at two different speeds in order to balance the speed difference and make the vehicle turn smoothly.
- The final drive is the major component to reduce the rotation speed and increase the torque in the drive train.
- All fixing bolts must be tightened with the specified tightening torque.
- The differential consists of the following components:
 - a. Final drive gear
 - b. Planetary gear
 - c. Differential housing

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1.2 Product specifications**06****Torque specifications**

Component	Torque (N•m)
Final drive driven gear bolt	137±3

Standard parameters of differential components

Component	Inspection item	Specification (mm)
Differential	Check the differential axle shaft gear clearance	0.025~0.150

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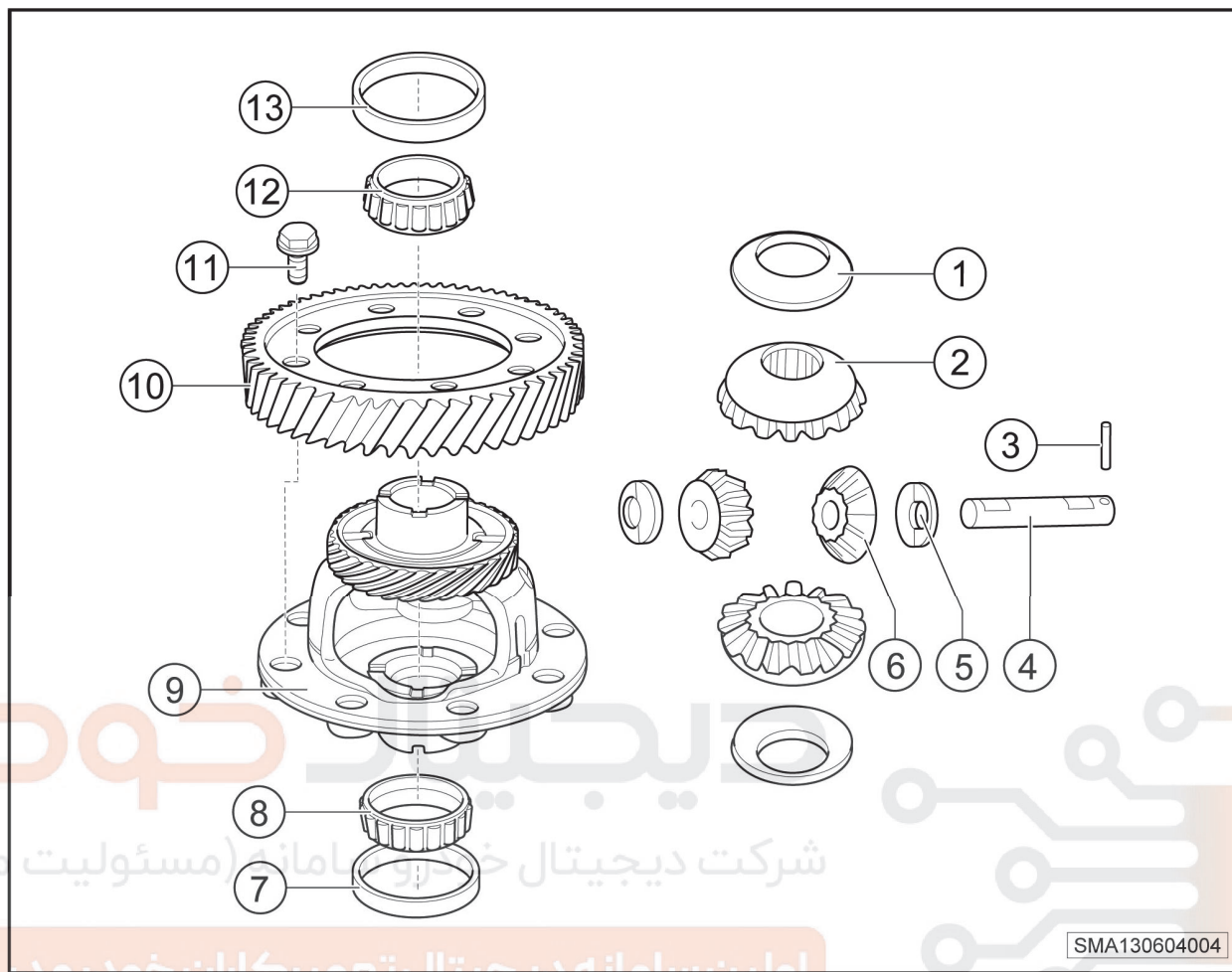
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1.3 The differential assembly drawing



1. Axle shaft gear washer	2. Axle shaft gear
3. Dowel pin	4. Planetary gear shaft
5. Planetary gear gasket	6. Planetary gear
7. Differential tapered bearing outer ring	8. Differential tapered bearing
9. Differential housing	10. Final drive driven gear
11. Bolt	12. Differential tapered bearing
13. Differential tapered bearing outer ring	

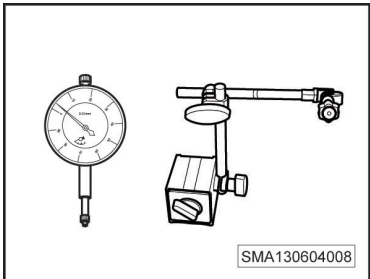
2 Diagnosis and Inspection

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2.1 Checking the differential gear clearance.....969

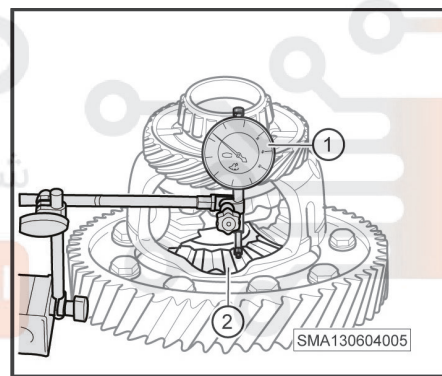
2.1 Checking the differential gear clearance

Maintenance tools and common equipment

	
Dial indicator and bracket	

Methods

1. Remove the differential => refer to page 920.
2. Check the differential axle shaft gear (-2-) clearance with the dial indicator (-1-).
 - The gear clearance: 0.025~0.150 mm



i Note

- If the clearance does not meet the standard, please replace and adjust the axle shaft gear gasket.
- After replacing the axle shaft gear gasket, you shall measure and adjust the clearance again to ensure it meeting the standard.

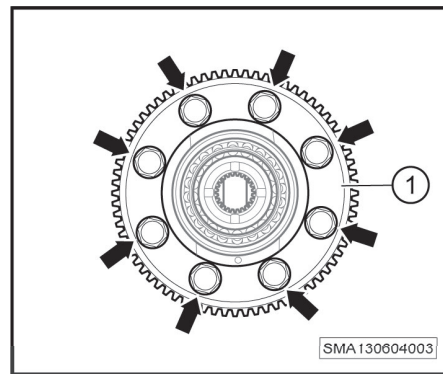
3 Differential

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3.1 Removing and installing the final drive driven gear

Removal

1. Remove the differential => refer to page 920.
2. Unscrew the fixing bolts (-arrow-) and remove the final drive gear (-1-).
 - Tightening torque of the bolt: $137 \pm 3 \text{ N}\cdot\text{m}$



Installation

Installation shall follow the reverse sequence of the removal procedure.

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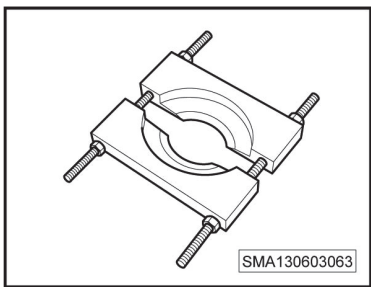
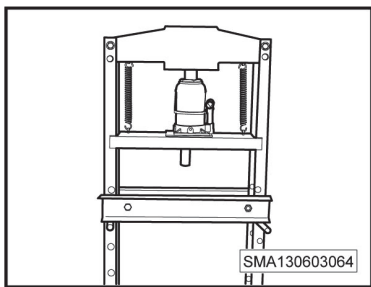
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3.2 Removing and installing the differential tapered bearing

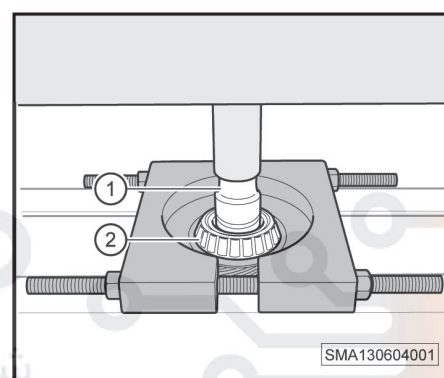
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Maintenance tools and common equipment

	
Gear retaining tool	Hydraulic press

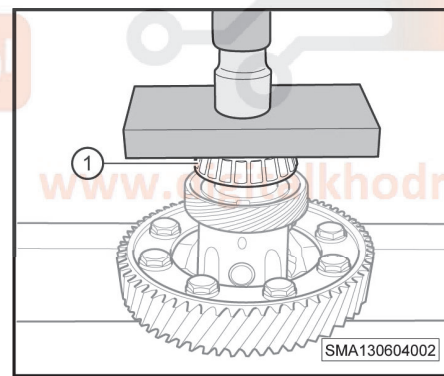
Removal

1. Remove the differential => refer to page 920.
2. Separate the bearing (-2-) from the differential with the hydraulic press (-1-).



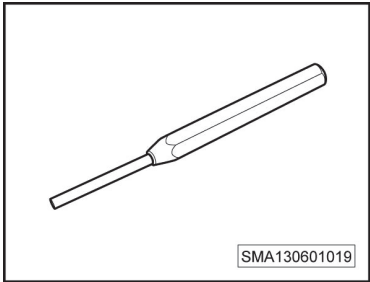
Installation

1. Press the bearing (-1-) into the differential with the hydraulic press.



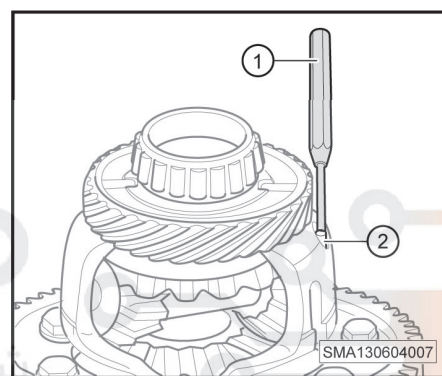
3.3 Removing and installing the differential planetary gear

Maintenance tools and common equipment

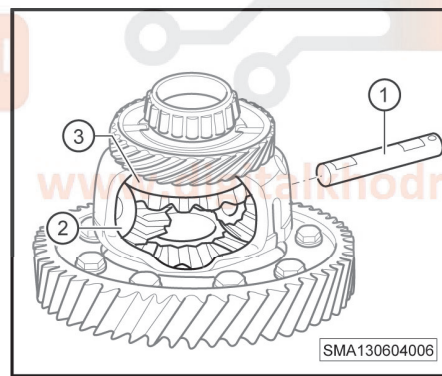
	
Punch	

Removal

1. Remove the differential => refer to page 920.
2. Knock out the dowel pin (-2-) with the punch (-1-).



3. Remove the planetary gear shaft (-1-).
4. Remove the planetary gear (-2-).
5. Remove the axle shaft gear (-3-).



Installation

Installation shall follow the reverse sequence of the removal procedure.