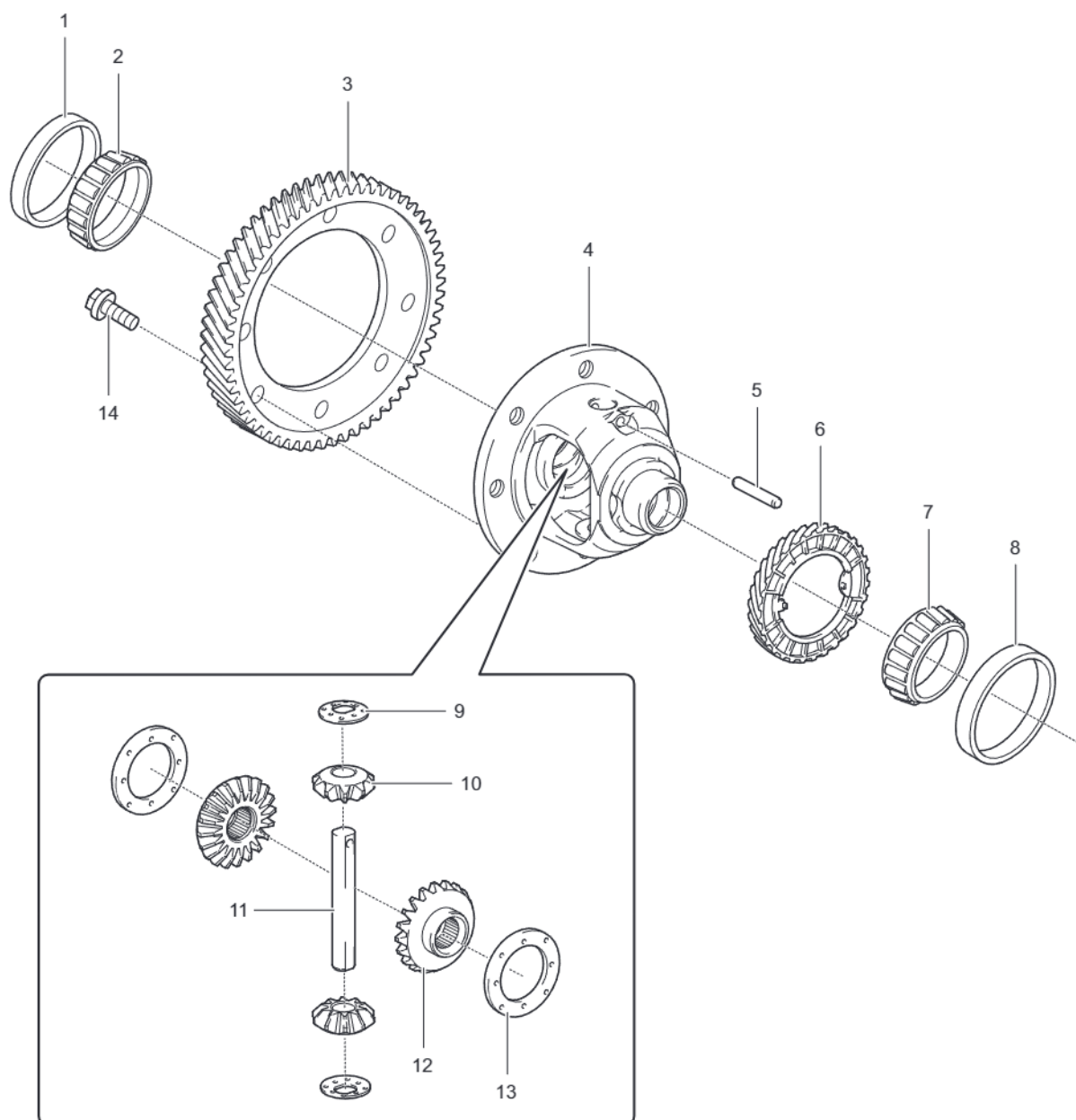

DIFFERENTIAL

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GENERAL INFORMATION

Description



RS19200010

1 - Differential Tapered Roller Bearing Outer Race	2 - Differential Tapered Roller Bearing
3 - Driven Gear of Final Drive	4 - Differential Case
5 - Dowel Pin	6 - Speedometer Drive Gear
7 - Differential Tapered Roller Bearing	8 - Differential Tapered Roller Bearing Outer Race
9 - Planetary Gear Washer	10 - Planetary Gear
11 - Planetary Gear Shaft	12 - Drive Shaft Gear
13 - Drive Shaft Gear Washer	14 - Bolt

The differential case contains drive shaft gears, planetary gear shaft and planetary gears. The driven gear of final drive is linked up with the differential case by bolts. The planetary gear shaft, which is fixed on the differential case, drives the planetary gears to rotate when the differential operates, thus driving the drive shaft gears to turn. The drive shaft gears are connected with the drive shaft to transmit the effort to the wheels.

Operation

When driving on a bumpy road or 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 breaks the balance of vehicle drive train.

The planetary gear mechanism in the differential can transmit the speed difference between the outside and inside wheels via the drive shaft when turning. It forces the planetary gears to rotate, thus allowing the inside and outside wheels to spin at two different speeds in order to balance the speed difference and keep the vehicle moving smoothly.

Specifications

Torque Specification

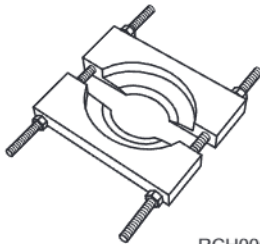
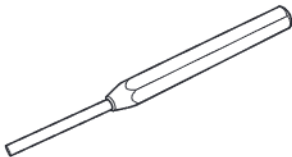
Description	Torque (N·m)
Final Drive Driven Gear Bolt	137 ± 3

Clearance Specification

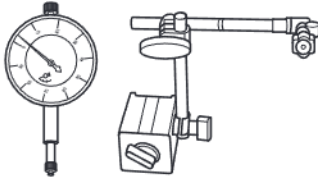
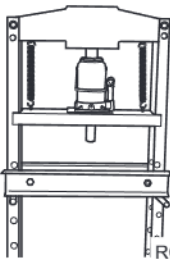
Description	Acceptable Range (mm)
Clearance Between Differential Case and Planetary Gear	0.025 - 0.150

Tools

Special Tools

Bearing Remover	 RCH0000011
Punch	 RCH0000015

General Tools

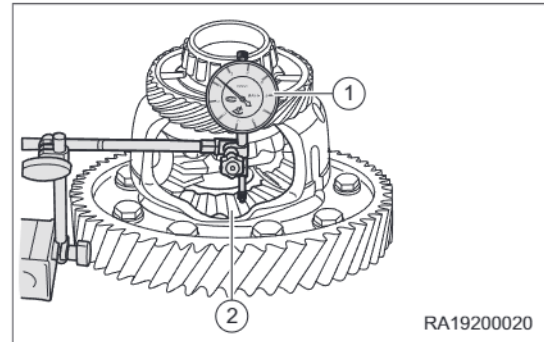
Dial Indicator and Magnetic Holder	 RCH0000023
Hydraulic Press	 RCH0000012

DIAGNOSIS & TESTING

Differential Gear Clearance Inspection

Inspection Method

1. Remove the differential ([See page 17-21](#)).
2. Check the clearance of differential drive shaft gear (2) with the dial indicator (1).



Gear clearance: 0.025 - 0.150 mm

CAUTION

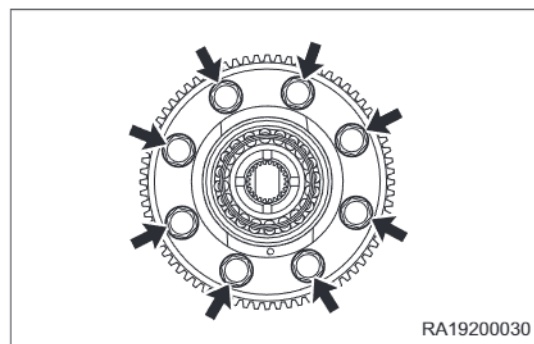
- If the clearance is not as specified, replace and adjust the drive shaft gear washer.
- After replacing the drive shaft gear washer, measure and adjust the clearance again to ensure that it is as specified.

ON-VEHICLE SERVICE

Driven Gear of Final Drive

Removal

1. Remove the differential ([See page 17-21](#)).
2. Remove the driven gear of final drive.
 - a. Hold the differential in a vise.
 - b. Remove the final drive driven gear bolts and then take off the final drive driven gear.
(Tightening torque: $137 \pm 3 \text{ N}\cdot\text{m}$)



Installation

Installation is in the reverse order of removal.

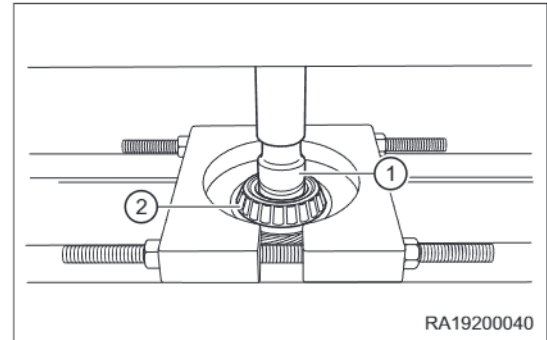
CAUTION

- Apply seal gum to the bolts during installation.

Differential Bearing

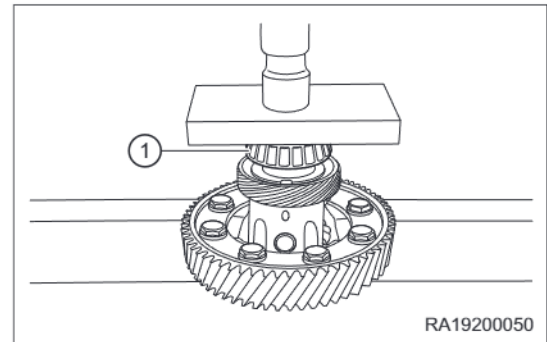
Removal

1. Remove the differential ([See page 17-21](#)).
2. Remove the differential bearing.
 - a. Using a hydraulic press (1), separate the bearing (2) from the differential.



Installation

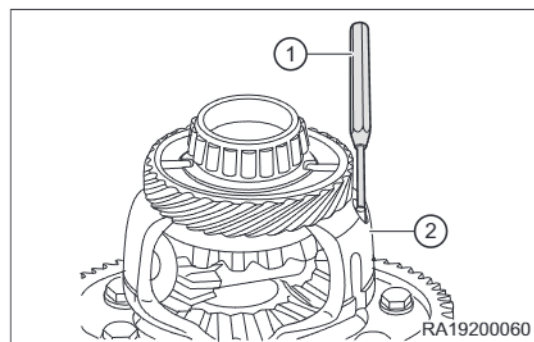
1. Install the differential bearing.
 - a. Using a hydraulic press, press the bearing (1) into the differential.



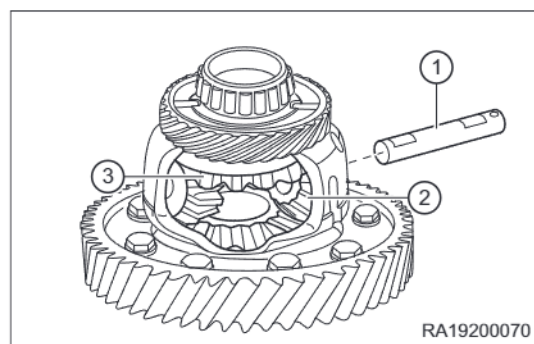
Differential Planetary Gear

Removal

1. Remove the differential ([See page 17-21](#)).
2. Remove differential planetary gear.
 - a. Tap out the dowel pin (2) with a punch (1).



- b. Remove planetary gear shaft (1), planetary gear (2) and drive shaft gear (3).



Installation

Installation is in the reverse order of removal.

CAUTION

- Adjust clearance until the gear clearances of both sides are the same during installation.
- The drive shaft gears and planetary gears should operate normally after tapping in the dowel pin.

Differential Parts Inspection

1. Clean all the components.
2. Check the following components for wear:
 - Driven gear of final drive
 - Planetary gear washer
 - Drive shaft gear
 - Planetary gear
 - Planetary gear shaft
 - Drive shaft gear washer

