



SPARTAN

→ **LOCKER**

TOYOTA V6 INSTALLATION MANUAL



Also available from USA Standard Gear:

- **Ring & Pinion Sets** •
- **Master Overhaul Kits** •
- **Axles** •

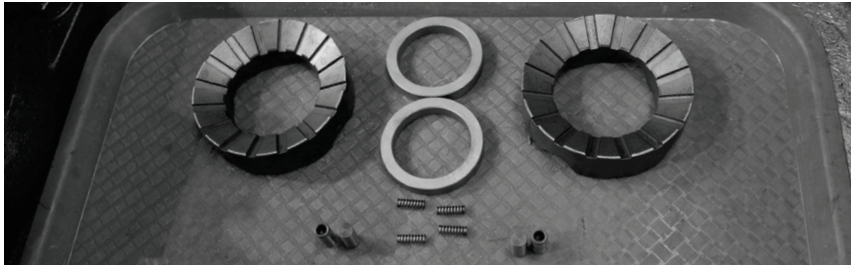


Note about your carrier: Before beginning to tear down your differential, please be aware that the Spartan Locker is designed to fit open carriers only. It will not install into any other type of carrier.

Note about thrust washers: This Spartan Locker does not use the side gear thrust washers. Attempting to install or operate the unit with thrust washers present may damage the unit or your case. *Figure 1*

This Spartan Locker design comes with the following components:

- Two (2) Drivers
- Four (4) Alignment pins
- Four (4) Springs
- Two (2) Spacers



Preparing the vehicle for installation

Take the following steps to prepare your vehicle for installation:

- Block the vehicle's tires, and place the transmission in neutral.
- Loosen the lug nuts and jack the vehicle up.
- Make sure that the vehicle is securely resting on jack stands.
- Remove the wheels; disconnect the brake lines and emergency brake cables, if needed.
- Slide out both axles to provide enough clearance to remove the carrier.
- Remove the dropout from the axle housing.

Carrier removal and teardown

- Using a punch, mark one of the bearing caps so you can remember which side it belongs to. Bearing caps are specific to each side of the housing. This is very important for re-assembly.
- Check your backlash with a dial indicator and make note of it. You will need to check it again later after re-assembly to make sure everything went back together properly.
- Remove bearing caps, and pull out carrier.
- Make note of the bearing races as they will need to be reinstalled on the same side they came off of.
- Loosen carrier case bolts and remove the top half of the carrier. *Figure 2*
- Remove cross pin shaft, spider gears and thrust washers.
- Clean carrier case and side gears thoroughly.
- Inspect carrier case and side gears for excessive wear. If the carrier or side gears are damaged or worn excessively, your Spartan Locker may not work properly or could be damaged.

Installation Steps:

- Place springs into the alignment pins. *Figure 3*
- Carefully install the alignment pins and springs into the holes in the back of the drivers. Make sure the springs do not fall out or become wedged sideways in the holes during installation. *Figure 4*
- Install the first side gear into the carrier case, without the thrust washer. *Figure 5*
- Place first driver onto side gear. *Figure 6*
- Place first spacer on top of the bottom side gear. *Figure 7 & 8*
- Install cross. *Figure 9*
- Place the second driver on top of the cross. The alignment pins in each driver must fall into the slots of the opposing driver. *Figure 10*
- Install the second spacer. *Figure 11 & 12*
- Install the second side gear on top of the driver, without the thrust washer. *Figure 13*
- Place top carrier half onto carrier assembly. *Figure 14*
- Install carrier case bolts and tighten down. Consult shop manual for torque specifications.

Final Installation Steps

- Thoroughly clean the housing.
- Place the carrier races on same sides they were removed from.
- Install the carrier into the housing.
- Replace bearing caps to their correct sides, torque down bolts to the proper specification. Consult shop manual for the torque specification.
- Adjust backlash and tighten down side adjusters. Consult shop manual for proper bearing preload specification.
- Finish assembly by reconnecting brake lines, backing plates, tires, etc
- Check installation by putting the vehicle in gear and in 4WD if installing in a front application.
- Rotate one tire forcefully until it stops against the drivetrain. Have a second person rotate the opposite tire in the opposite direction, It should unlock and spin.
- Repeat engagement/disengagement testing for both directions on each side of the vehicle.
- Your Spartan locker should make a clicking sound as the teeth move over each other. If this sound is not present, or you cannot get the teeth to disengage at all, check your work.
- Repeat engagement/disengagement testing as indicated above.
- Add gear oil

****Note about tire diameters****

For safety and long life of your Spartan Locker, it is important that your tire diameters are as close to identical as possible. Differing tire sizes can cause premature wear to your Spartan Locker, shortening its life and causing possible damage to your differential. Measure each tire to make sure that they match from the ground to the top of the wheel.



Figure 1 - MUST REMOVE thrust washers

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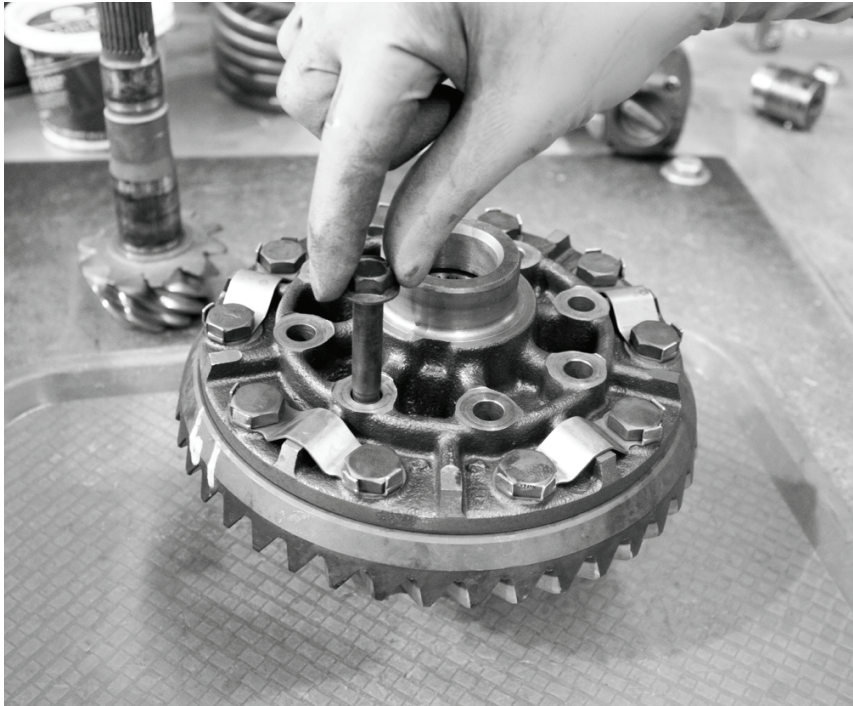


Figure 2



Figure 3

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Figure 4

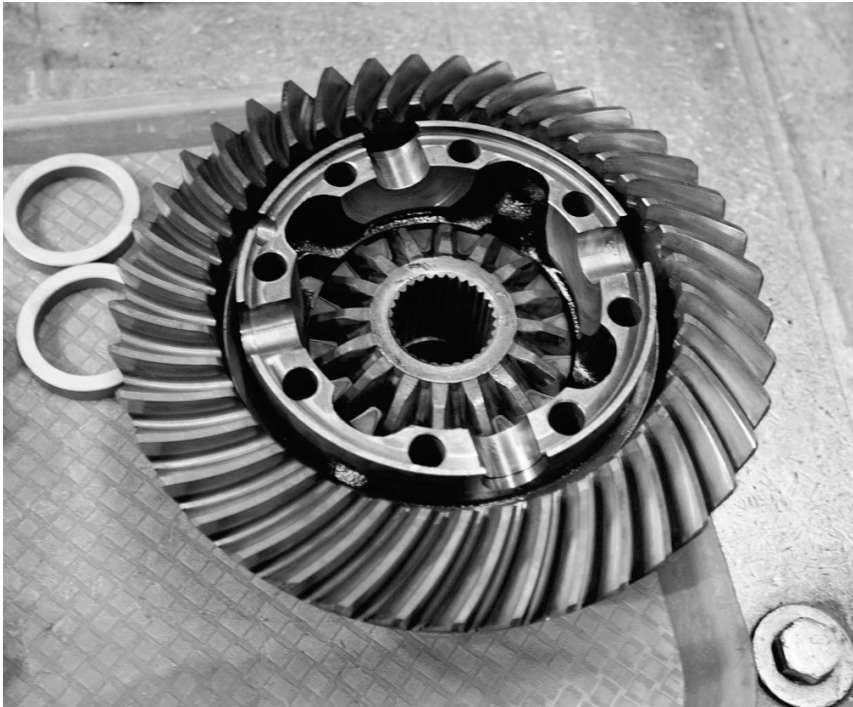


Figure 5

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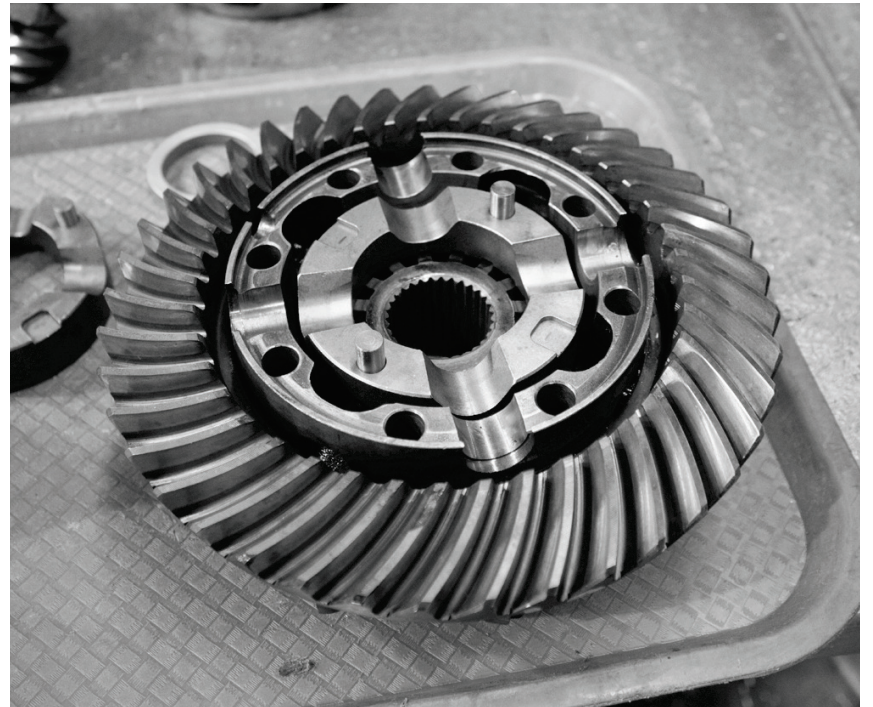


Figure 6

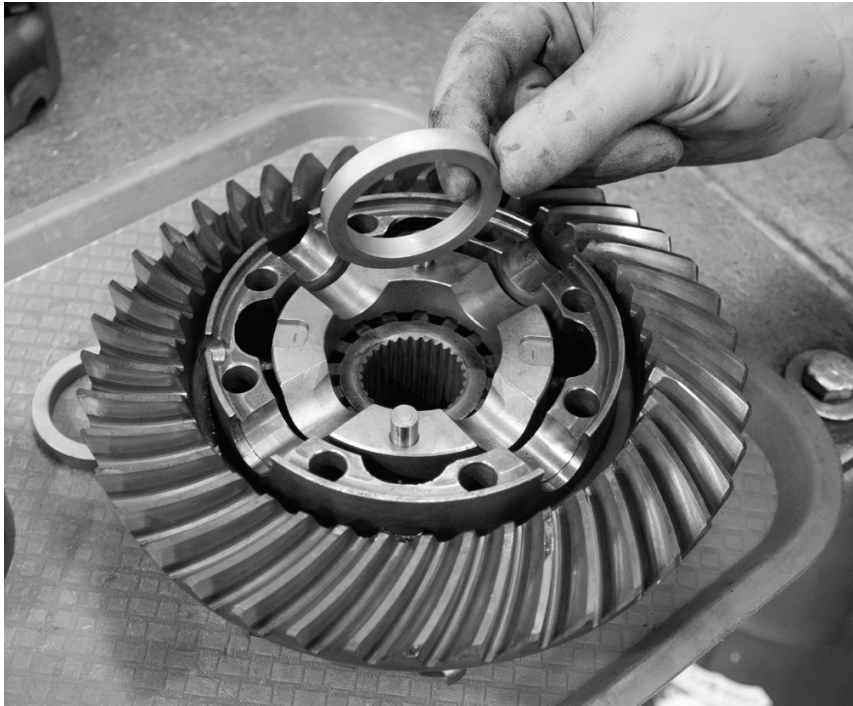


Figure 7

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Figure 8

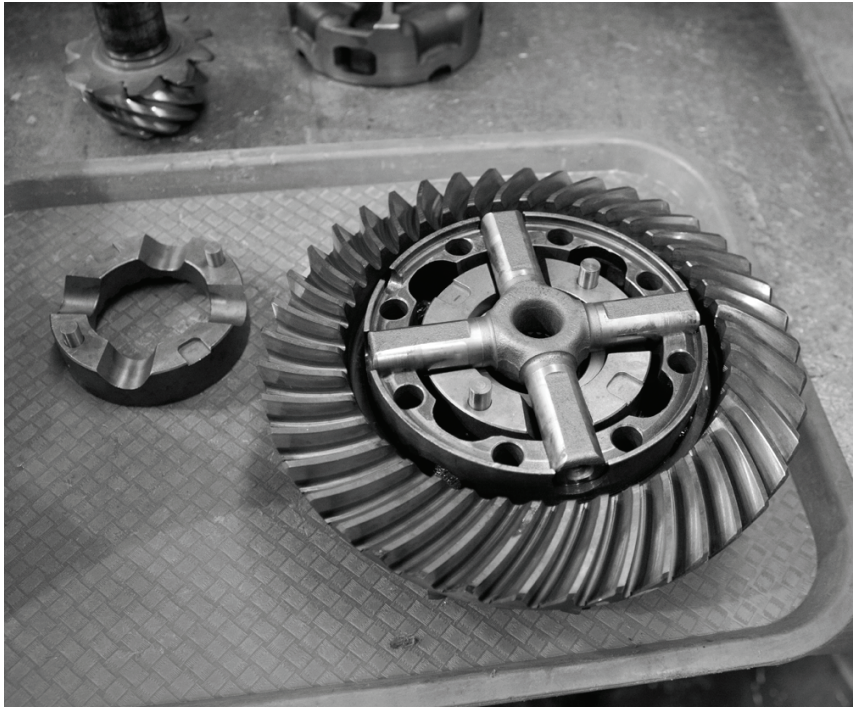
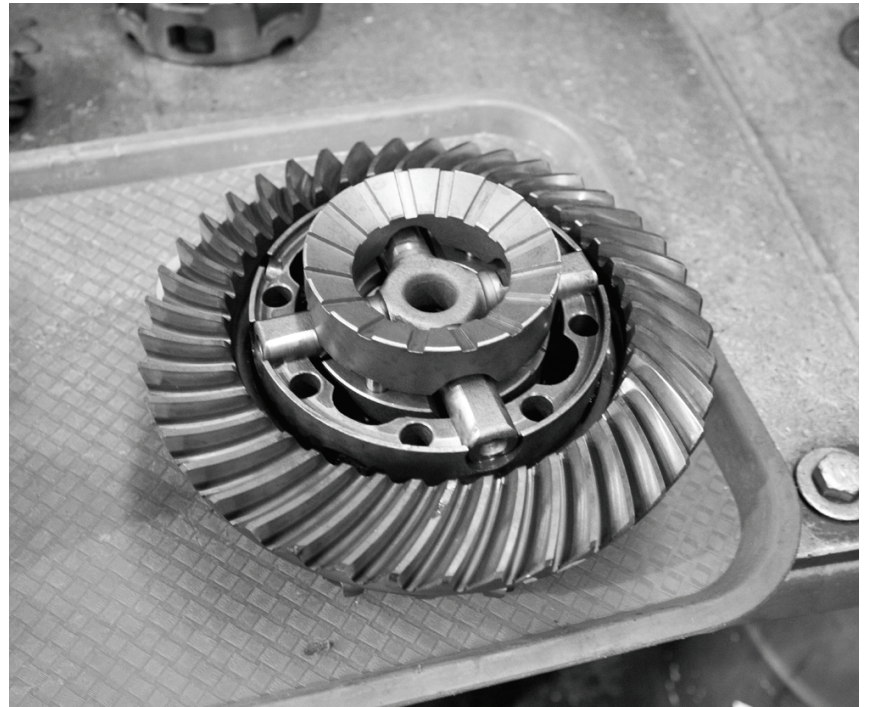


Figure 9



9 Figure 10

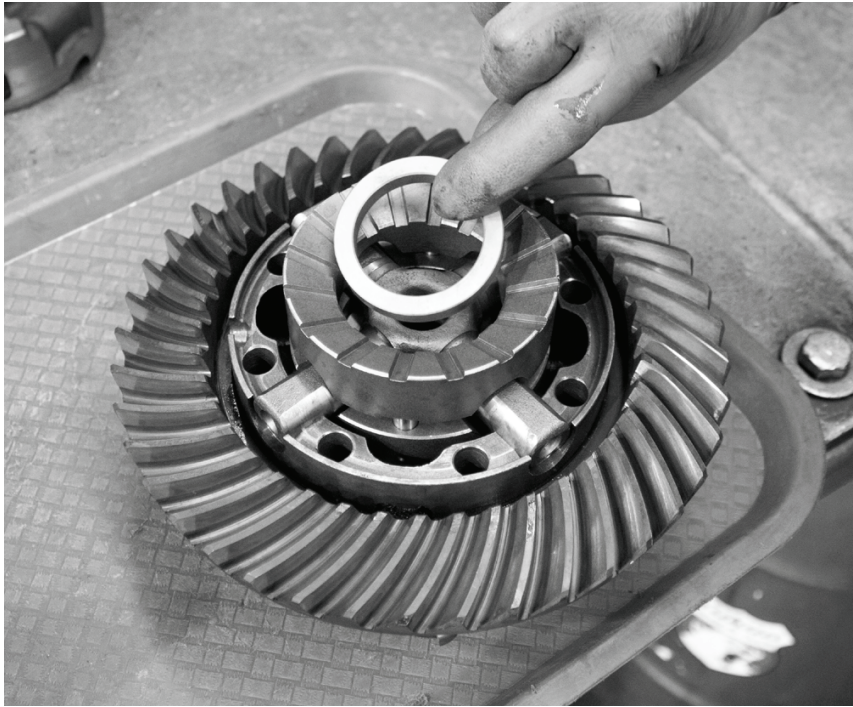
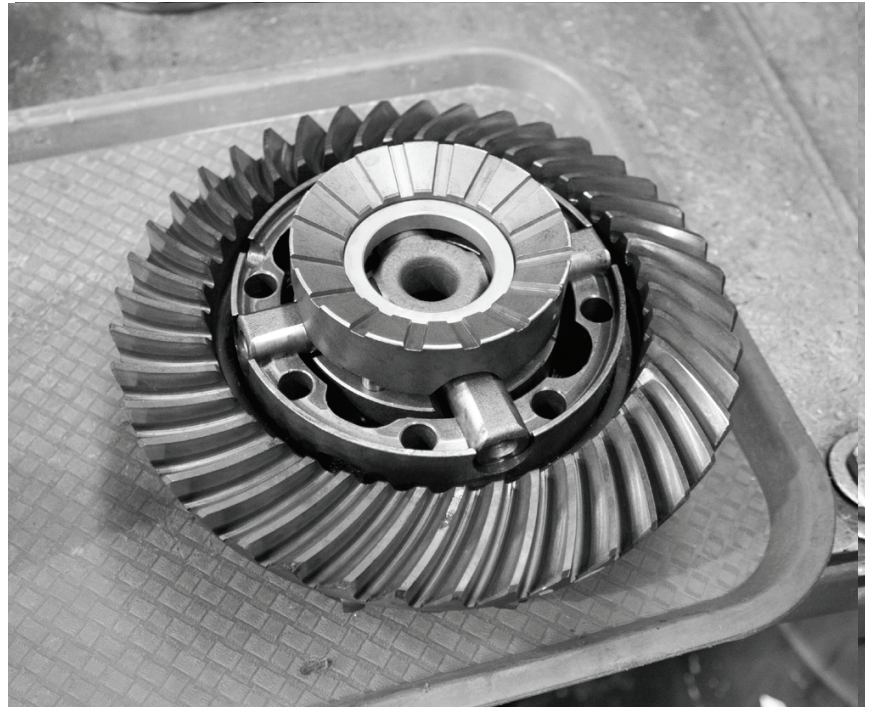


Figure 11



10 Figure 12

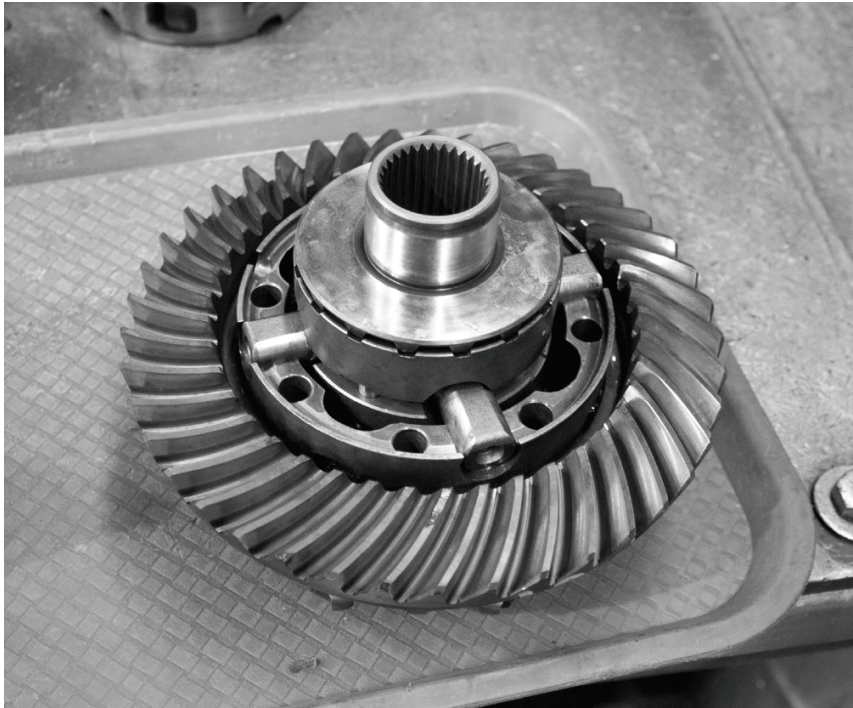
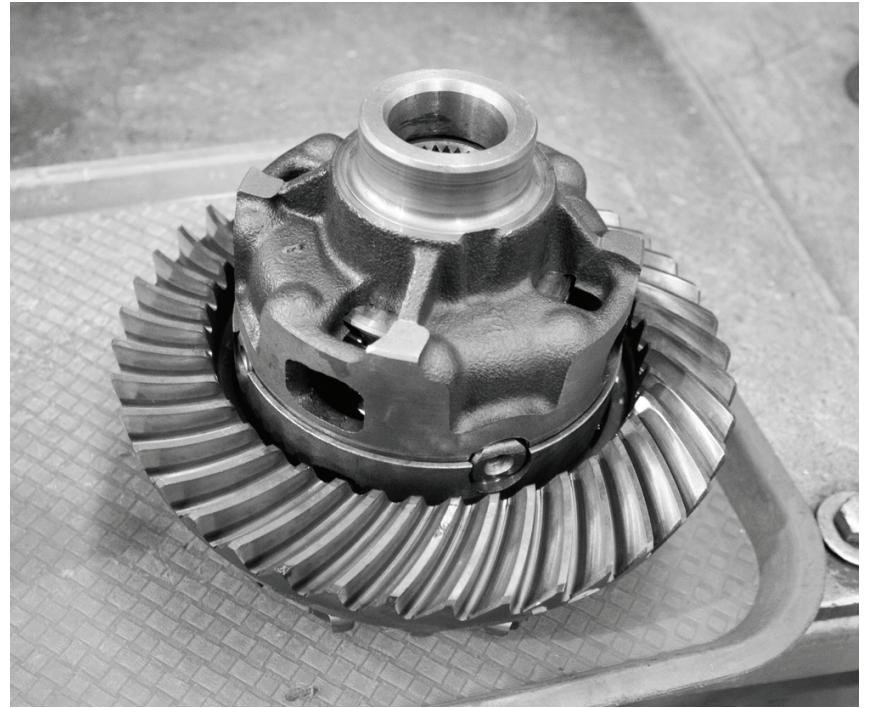


Figure 13



11 Figure 14