

6. Only if you must remove the wheel hub with the brake disc, or if the adjusting nut requires replacement, remove the adjusting nut as indicated in Fig. 4-11.

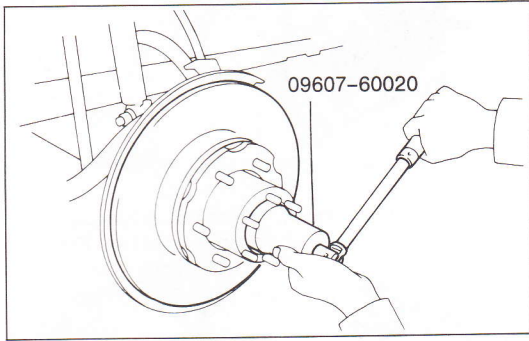


Fig. 4-11. Toyota service tool being used to remove adjusting nut from stub axle.

To repair automatic-locking free wheel hub:

1. Remove the snap ring indicated in Fig. 4-12. Remove the outer thrust washer. Remove the inner hub subassembly from the hub body. See Fig. 4-13.

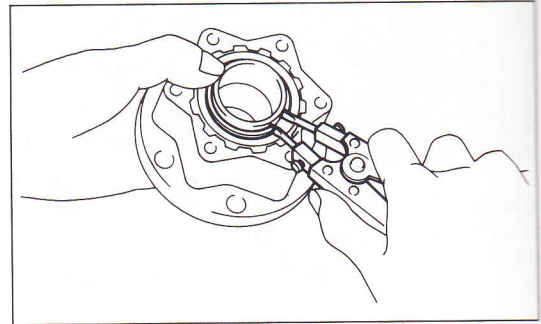


Fig. 4-12. Snap ring being removed prior to removing inner hub subassembly from hub body.

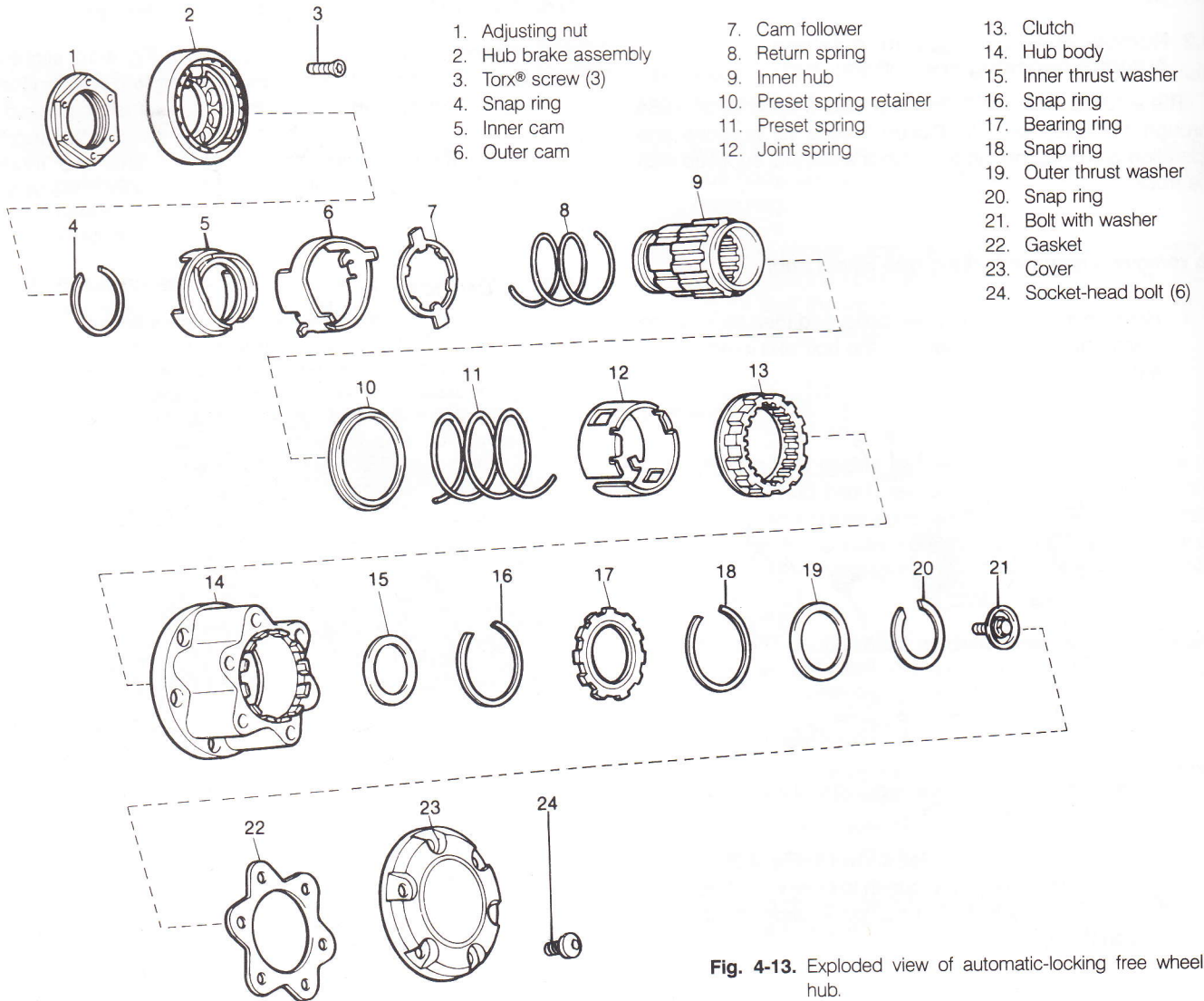


Fig. 4-13. Exploded view of automatic-locking free wheel hub.

- Using snap-ring pliers as shown in Fig. 4-14, slightly expand the joint spring and release it from the tabs of the cam follower. Then remove the clutch and the joint spring as a unit from the inner hub subassembly. Remove the preset spring and the preset spring retainer.

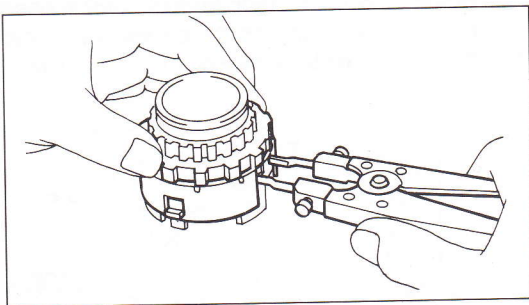


Fig. 4-14. Snap-ring pliers being used to expand joint spring slightly. Over-expansion may damage spring.

- Use a puller attached to the inner and outer cams to compress the cams against the tension of the return spring (Fig. 4-15). Remove the snap ring as shown, and then release the puller and remove the inner and outer cams as a unit. Remove the cam follower and the return spring.

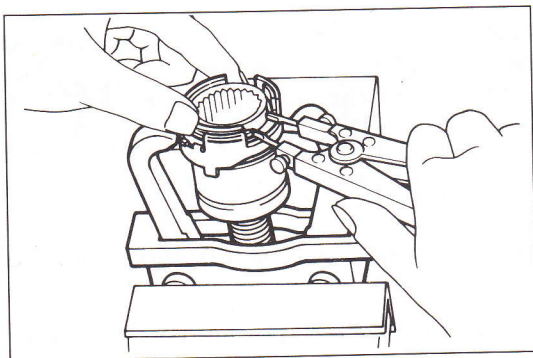


Fig. 4-15. Snap ring that holds cams to inner hub being removed. Notice puller used to compress cams against spring tension.

- Using pliers, slightly compress and then fully remove the brake shoe return spring from the hub brake assembly. Then partially withdraw the brake shoe, and measure its thickness as shown in Fig. 4-16. If the shoe has worn to a thickness of less than 1.00 mm (.039 in.) on 1984 and 1985 models, or 1.5 mm (.059 in.) on 1986 and 1987 models, replace the entire hub brake assembly.

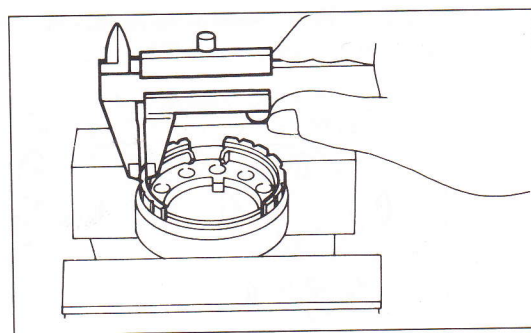


Fig. 4-16. Vernier caliper being used to measure thickness of brake shoe.

- Inspect all parts for wear, damage, and corrosion—especially corrosion or burrs that might weaken the springs or prevent the clutch and the cams from sliding smoothly inside the hub body. During assembly lubricate all sliding surfaces with Benton-type grease "Plus Guard SG", grade NLGI No. 2 only.
- Adjust the puller's screw to the position indicated in Fig. 4-17. To do this, temporarily install the cam follower on the inner hub, and then install the assembled parts in the puller as shown. Adjust the puller's screw so that the puller's claws will engage the tabs of the cam follower, and will hold the cam follower in the position shown in the inset of the illustration. Without altering the screw's position, swing the claws aside and remove the cam follower from the inner hub—leaving the inner hub in the puller.

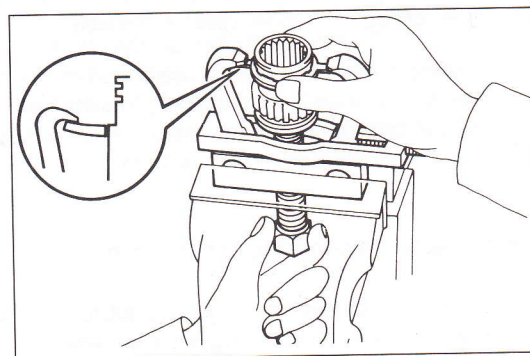


Fig. 4-17. Position of puller's screw being adjusted. Inset shows relationship of cam follower to puller claw and inner hub with screw correctly adjusted.

CAUTION

Do not remove the shoe from the drum, because reinstallation in the absence of special tools available at the factory is likely to cause damage.

14 TRANSFER AND FRONT DRIVE AXLE

7. Assemble the inner cam and the outer cam as indicated in Fig. 4-18.

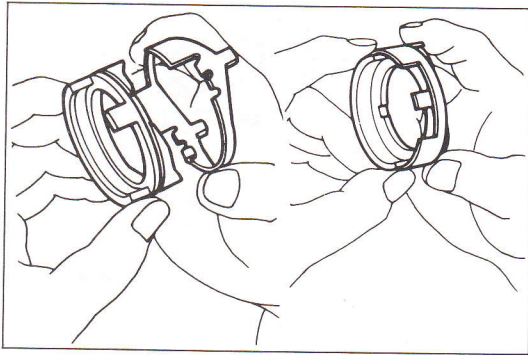


Fig. 4-18. Inner cam and outer cam being assembled. Left: claw of outer cam being aligned with and inserted into notch of inner cam. Right: cams assembled with their positions correctly aligned.

8. Install the return spring on the inner hub, and place the cam follower atop it. Then install the assembled cams atop the cam follower, and hand-press them onto the inner hub against the tension of the spring. While keeping the spring compressed, swing the puller's claws into position atop the cam follower's tabs in order to keep the spring compressed. Install the snap ring as shown previously in Fig. 4-15.
9. While slightly expanding the joint spring with snap-ring pliers, install in the joint spring the clutch, the preset spring, and the preset spring retainer. Install the assembled parts on the inner hub, while slightly expanding the joint spring in order to engage it with the tabs of the cam follower. See Fig. 4-14, given previously.
10. Install the thrust washers on each end of the inner hub. Insert the inner hub subassembly into the hub body, and then install the snap ring, using a procedure similar to that illustrated earlier in Fig. 4-12.

To install automatic-locking free wheel hub:

1. If you have removed the adjusting nut, loosely install it on the stub axle. Then, using a torque wrench, gradually tighten the adjusting nut to 60 Nm (44 ft. lb.). Hand-turn the axle hub with brake disc clockwise and counterclockwise several times. Loosen the adjusting nut only until it can be turned by hand, and then retorque it to 5 to 6 Nm (44 to 53 in. lb.).

2. To adjust the position of the adjusting nut, install a spring scale as indicated in Fig. 4-19. Using the spring scale, measure the load required to start the axle hub just turning. Slightly loosen or tighten the adjusting nut to obtain a starting preload between 1.0 and 3.9 kg (2.2 and 8.6 lb.) on 1984 models, or between 2.9 to 5.7 kg (6.4 to 12.6 lb.) on 1985 through 1987 models. With the nut in one or the other of the positions shown in Fig. 4-20, the nut should be secured.

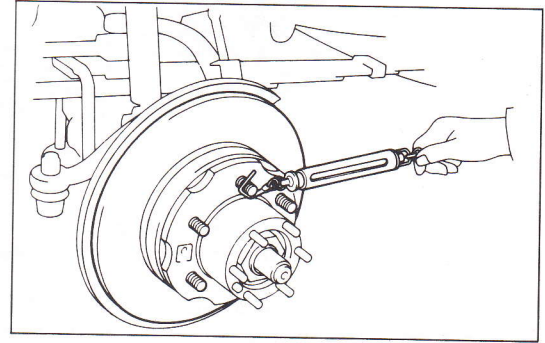


Fig. 4-19. Spring scale being used to determine starting preload of front wheel bearings.

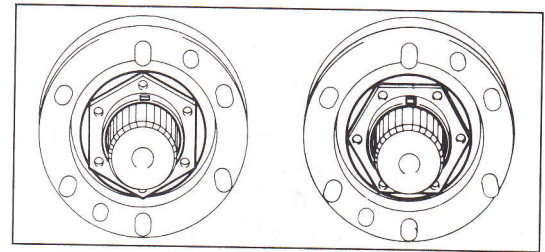


Fig. 4-20. Two positions in which adjusting nut may be secured.

3. Using needle-nose pliers, position the shoe return spring of the hub brake assembly so that one of the screw holes is uncovered. Then loosely install the hub brake assembly in the front wheel hub, aligning the uncovered screw hole with one of the screw holes in the adjusting nut. Install one of the Torx® screws. Reposition the shoe return spring so that you can install the other two Torx® screws at points 120° to either side of the initial screw (that is, the three screws should be evenly spaced with vacant holes left on either side of each screw). Accurately torque the screws to 7 Nm (62 in. lb.).

4. After making sure that the brake shoe is pushed as far as possible into the hub brake assembly, align the gap of the hub brake assembly's shoe return spring with one of the alignment pins on the front wheel hub. Align the claw of the inner cam with the alignment pin with the alignment pin hole in the hub body. See Fig. 4-21. Then install the hub body assembly on the front wheel hub, so that the claw of the inner cam passes through the gap of the return spring and correctly engages the brake assembly. The hub body must easily fit in firm contact with the vehicle's front wheel hub.

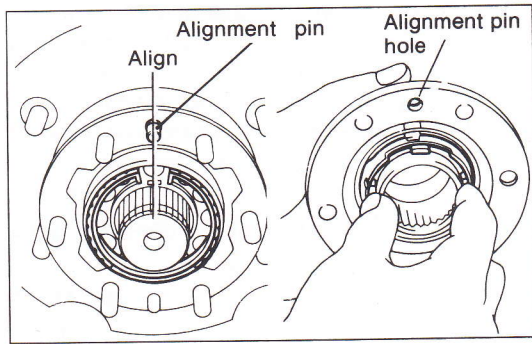


Fig. 4-21. Left: gap in brake shoe return spring being aligned with wheel alignment pin on front wheel hub. Right: claw of inner cam being aligned with alignment pin hole in hub body assembly.

5. Install the six conical washers, the six spring washers, and the six nuts. If necessary, consult Fig. 4-8, given earlier. Working diagonally, torque the six nuts to 31 Nm (23 ft. lb.).
6. Install the bolt with washer to a torque of 18 Nm (13 ft. lb.).
7. Install a new gasket, then install the cover, torquing the six socket-head bolts to 10 Nm (7.5 ft. lb.).

Checking Operation of Automatic-locking Free Wheel Hubs

You can check the operation of the automatic-locking free wheel hubs with the truck supported off its wheels. See Fig. 4-22. Both forward operation and reverse operation should be checked.

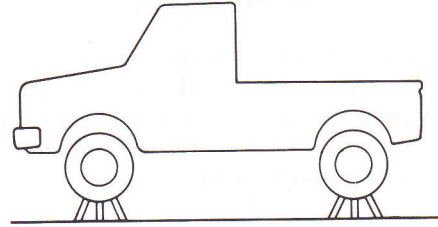


Fig. 4-22. Truck supported off its wheels, so that operation of automatic-locking free wheel hubs may be checked.

To check forward operation, start the engine and place the transfer gearshift lever at H4 and engage 1st gear. All four wheels should turn in their forward direction when you release the clutch. If a front wheel does not turn, it indicates trouble in that wheel's free wheel hub. Stop the engine. Place the transfer gearshift lever at H2 and put the transmission in neutral. When you and a helper hand-turn the front wheels simultaneously in their reverse direction once or twice, the front wheel driveshafts should not turn. If they do turn, the automatic-locking free wheel hubs are failing to release.

To check reverse operation, start the engine and place the transfer gearshift lever at H4 and engage reverse. All four wheels should turn in their reverse direction when you release the clutch. If a front wheel does not turn, it indicates trouble in that wheel's free wheel hub. Stop the engine. Place the transfer gearshift lever at H2 and put the transmission in neutral. When you and a helper hand-turn the front wheels simultaneously in their forward direction once or twice, the front wheel driveshafts should not turn. If they do turn, the automatic-locking free wheel hubs are failing to release.