

1. Raise vehicle on a hoist, remove road wheels, disconnect the drag-link from the passenger-side hub assembly and disconnect the steering tie rod ends from both the driver and passenger side hub assemblies.
 2. Drain the front differential fluid.
 3. Remove the free-running hubs or drive flange.
- For **manual-select free-running hubs**, follow the next three steps.
 1. Set the position of the hub to 'FREE', remove the six mounting bolts and then pull off the hub cover.

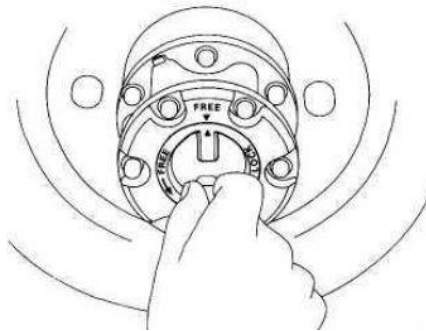


Fig 1

2. Using circlip pliers, remove the axle circlip.

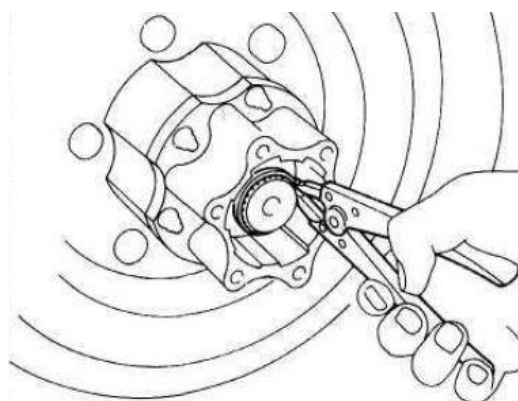


Fig 2

3. Remove the 6 manual hub mounting nuts and washers and then using a brass drift and hammer, tap the stud heads to remove the cone washers. After completing this step, remove the manual hub.

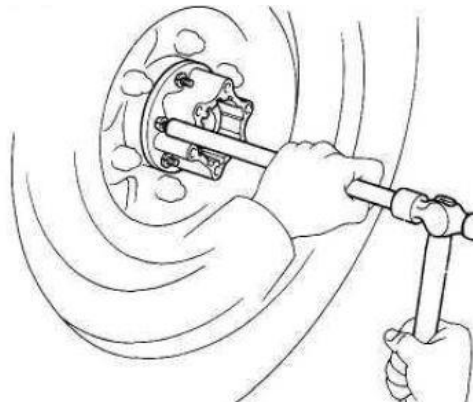


Fig 3

- For **non-freewheeling hubs**, follow the next two steps.
 1. Remove the axle end-cap and circlip.
 2. Remove the 6 flange mounting nuts and washers and then using a brass drift and hammer, tap the stud heads to remove the cone washers. After completing this step, remove the flange.

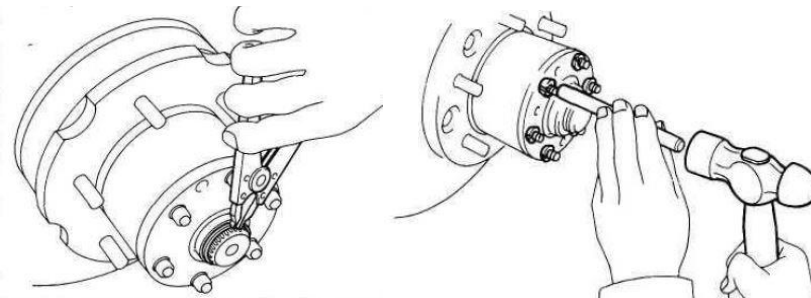


Fig 4

4. Unbolt the front brake caliper assemblies from the hub assemblies and securely position away from the hub assembly working area. For ABS-equipped models, also remove the ABS wheel speed sensor.

- Using a screwdriver or equivalent, release the lock washer tab from the outer wheel bearing lock nut.

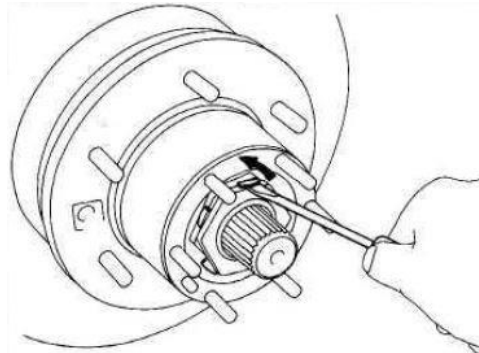


Fig 5

- Using a suitable tool, remove the outer wheel bearing lock nut, lock washer and inner wheel bearing lock nut. Then remove the wheel hub from the vehicle.
- Remove backing plate and dust seal by removing the eight retaining bolts. After removal, take the spindle off by tapping with a hammer and brass drift.

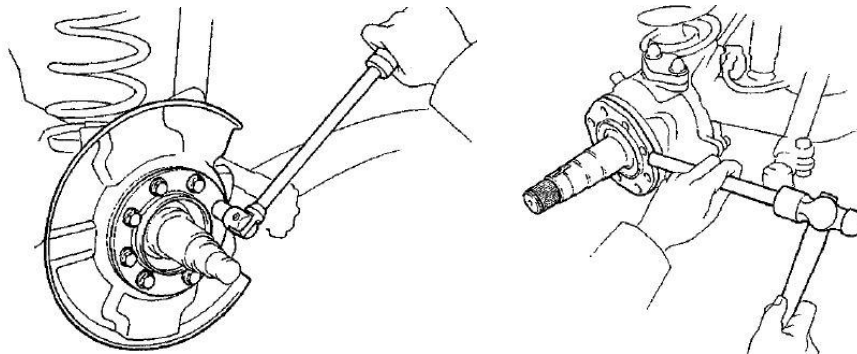


Fig 6

8. Remove the driveshaft thrust washer, rotate the drive shaft until the slat section of the CV faces upwards and then remove the driveshaft from the axle housing.

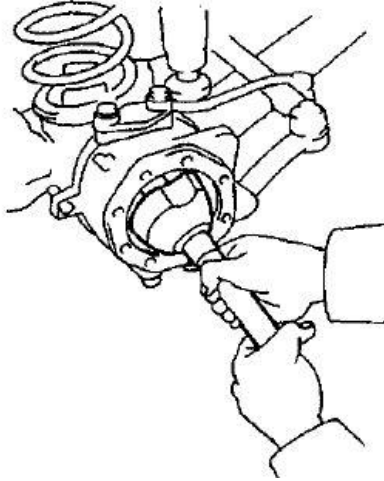


Fig 7

9. Remove the six ball seal retainer bolts, remove the two-piece retainer and then dislodge the felt, ball seal and ball seal supporting ring from the hub housing.

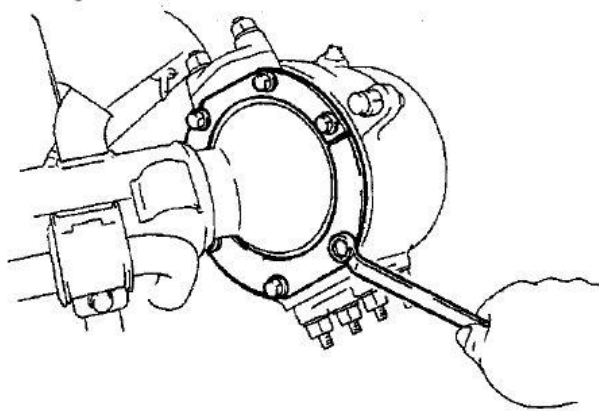


Fig 8

10. Remove the upper king-pin bearing cap bolts and the four lower knuckle arm retaining nuts and washers. Use a brass drift and hammer to tap the lower four studs to dislodge the four cone washers. Remove both bearing caps ensuring that the bearing preload shims (if installed) on the upper cap are removed also. After removing the caps and bearings, the hub housing and dislodged ball seals/retainers can be removed from the axle.

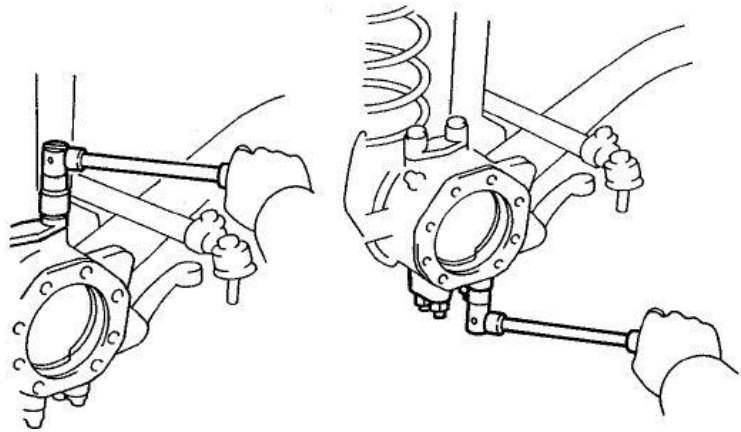


Fig 9

11. Remove the king-pin bearing caps using a suitable drift. After removing the king-pin bearing caps and plugs, remove the oil seal from the axle shaft.

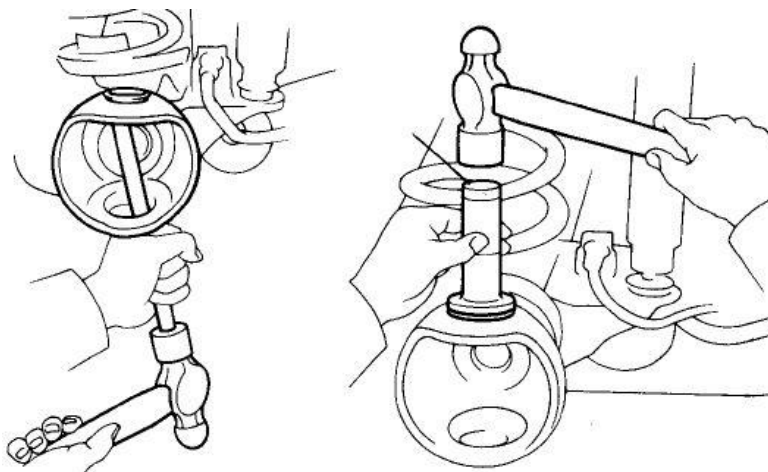


Fig 10

****NOTE**** At this point, it is advisable that all components be cleaned and thoroughly inspected for serviceability. Items like the axle balls, drive shafts and hub knuckle assemblies should be checked for corrosion, cracks, distortion and/or other signs of excessive wear.

12. Install the supplied new axle seals with a suitable driver; ensuring that the spring-loaded lip of the axle seal is pointing inboard (toward the differential of the axle). After installing the axle seal, apply a small amount of grease to the lip of the seal.

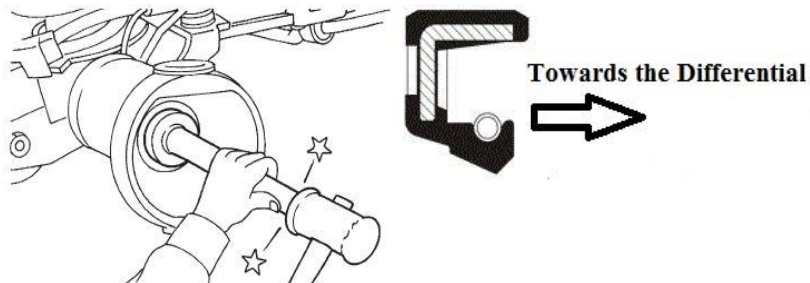


Fig 11

13. Install the supplied new king-pin bearing caps and bearing plugs with a suitable driver. Refer to fig 10.

14. Install the felt, the rubber ball seal and the metal ball seal support ring over the axle ball in that order and allow them to temporarily rest on the axle tube. **Note:** The rubber ball seal has a raised rib on one side of it. This raised rib is to point toward the differential when installed. Use these orientation diagram (Fig 12) as a guide when installing these seals.

Tip: many installers thoroughly coat the felt in bearing grease; forcing the grease into the fibres prior to installation.

adding, removing or changing the upper bearing cap shim(s). If required, additional shims can be purchased via Toyota.

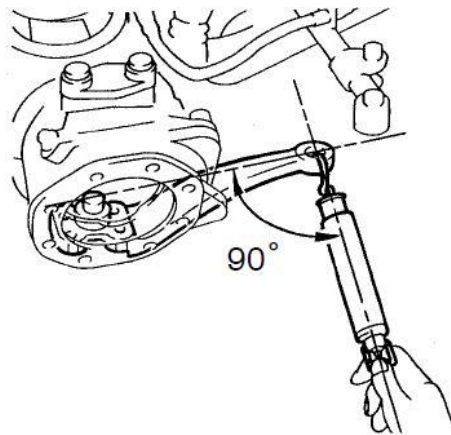


Fig 13

17. Install the axle ball seal supporting ring, ball seal and felt as per figure 12. Reinstall the grease seal guard/retainer as per fig 8.
18. Repack the cleaned CV joint of the driveshaft with a CV joint-specific grease and reinstall the driveshaft into the axle; ensuring the flat of the CV joint is facing upwards during insertion. (Refer to fig 7). Fill the hub cavity around the CV joint to approx. $\frac{3}{4}$ capacity with a CV joint-specific grease.
19. Remove the brass thrust washer and axle needle roller bearing from the knuckle spindle and replace both with the new supplied items. For early 80 Series vehicles, remove the one-piece brass thrust washer/axle bearing and replace with the supplied needle roller bearing and brass thrust washer. Apply a small amount of grease to the needle roller.

20. Install the octagonal-shaped paper gasket, spindle, backing plate, circular-shaped paper gasket and the large metal dust seal in that order. Tension the spindle flange bolts to 47 Nm. Apply a small amount of grease to dust seal lip.

Tip: To assist with this step, many installers will use two studs, inserted into opposing hub flange threads, to position the backing plate and gaskets as the flange bolts are inserted.

21. Pack the cleaned original or new wheel bearings (Pedders part #512201) with a premium wheel bearing grease. Also pack the bearing cavity of the wheel hub with a suitable amount of the same grease. Install the inboard wheel bearing into the wheel hub and install the new supplied wheel hub seal.

****NOTE**** the seal must be installed so that the flat surface (the seal has both a flat and a raised surface of the metal body) of the seal faces inboard when the hub is installed to the axle. Apply a small amount of grease to the lips of the wheel hub seal.

22. Install the outer wheel bearing to the hub and then install the hub to the knuckle spindle. Secure the hub with the lock nut and adjust the wheel bearing preload. Once the wheel bearing preload is set, install the supplied new lock washer and lock nut. Tighten the lock nut and bend the lock washer against the lock nut to secure it from moving.

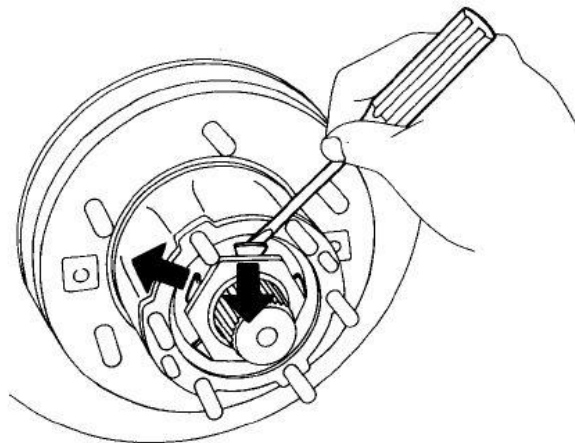


Fig 14

23. Install the drive flange or free-running hubs using the following:

- **For Fixed hub flanges:**

Install the new supplied paper gasket and drive flange to the wheel hub. Install the six cone washers, washers and nuts and torque to 35 Nm. Using a bolt or similar (refer to image below), pull the axle outwards and reinstall the circlip. After installation, refit the axle end cap.

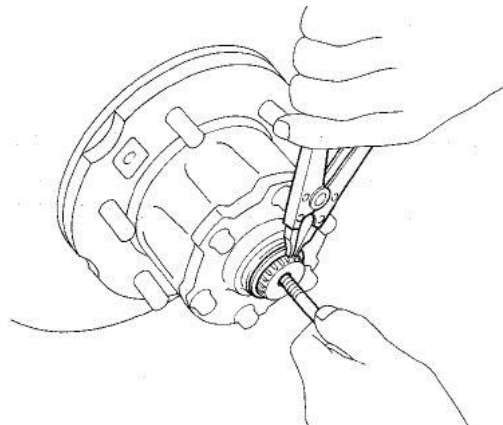


Fig 15

- **For Manual free-running hubs:**

Install the new supplied paper gasket and free-running hub body to the wheel hub. Install the six cone washers, washers and nuts and torque to 31 Nm. Using a bolt or similar (refer to fig 16), pull the axle outwards and reinstall the circlip. After installation, refit the hub cover and bolts using the new supplied paper gasket. During installation of the hub cover, ensure that the hub selector is set to the 'free' position and the follower pawl tabs are aligned with the non-toothed sections of the body (Refer to fig 17). Torque the six hub cover bolts to 10 Nm.

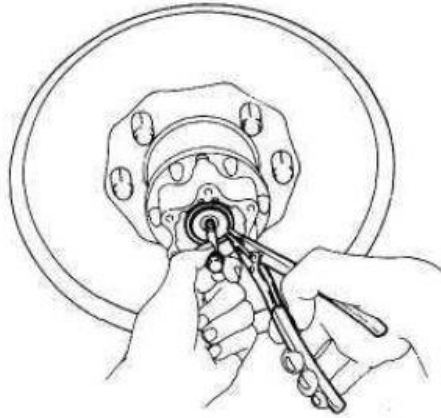


Fig 16

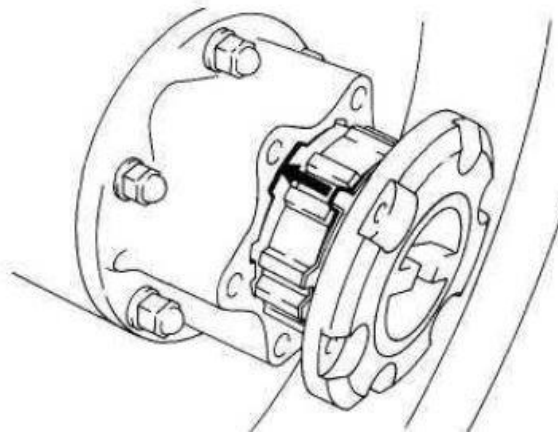


Fig 17

24. Reinstall the brake calipers and bleed the brake hydraulic system if necessary. Reinstall the ABS wheel-speed sensor (if applicable). Reconnect the drag-link to the passenger-side hub assembly and reconnect the steering tie rod ends to both the driver and passenger side hub assemblies. Refill the front differential with the correct fluid. Reinstall the road wheels.

****Note**** It is advisable to have a wheel alignment completed after the installation of the Pedders 512107 swivel hub rebuild kit.