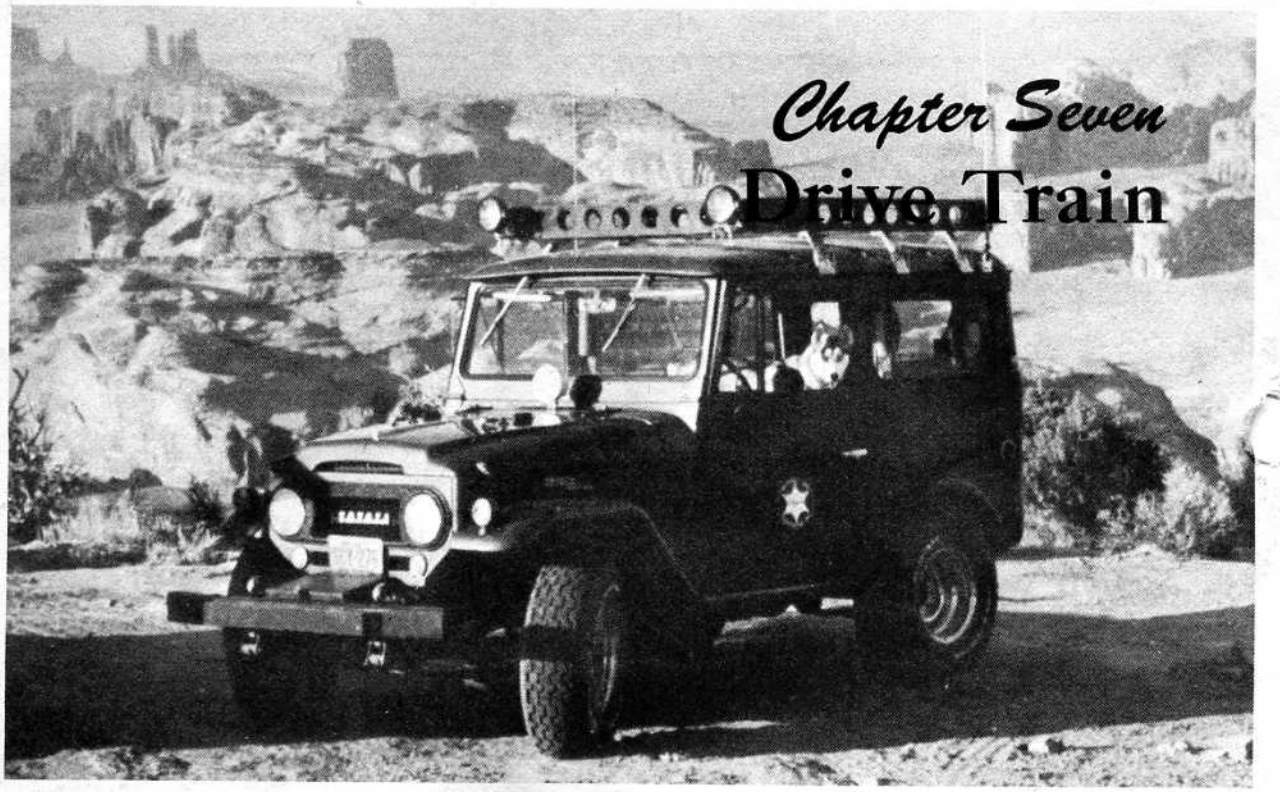


Chapter Seven
Drive Train

Driveline

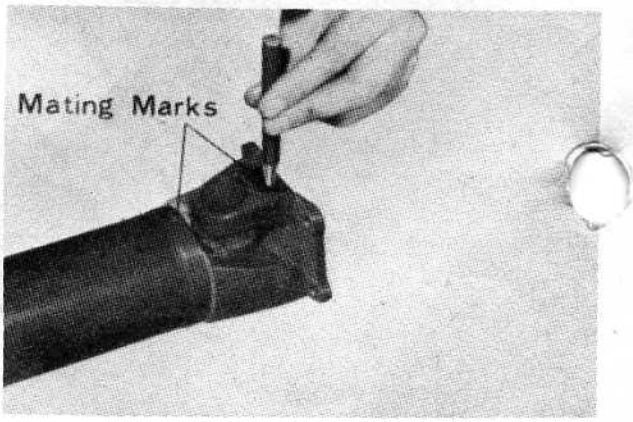
FRONT AND REAR DRIVESHAFTS

Removal and Installation

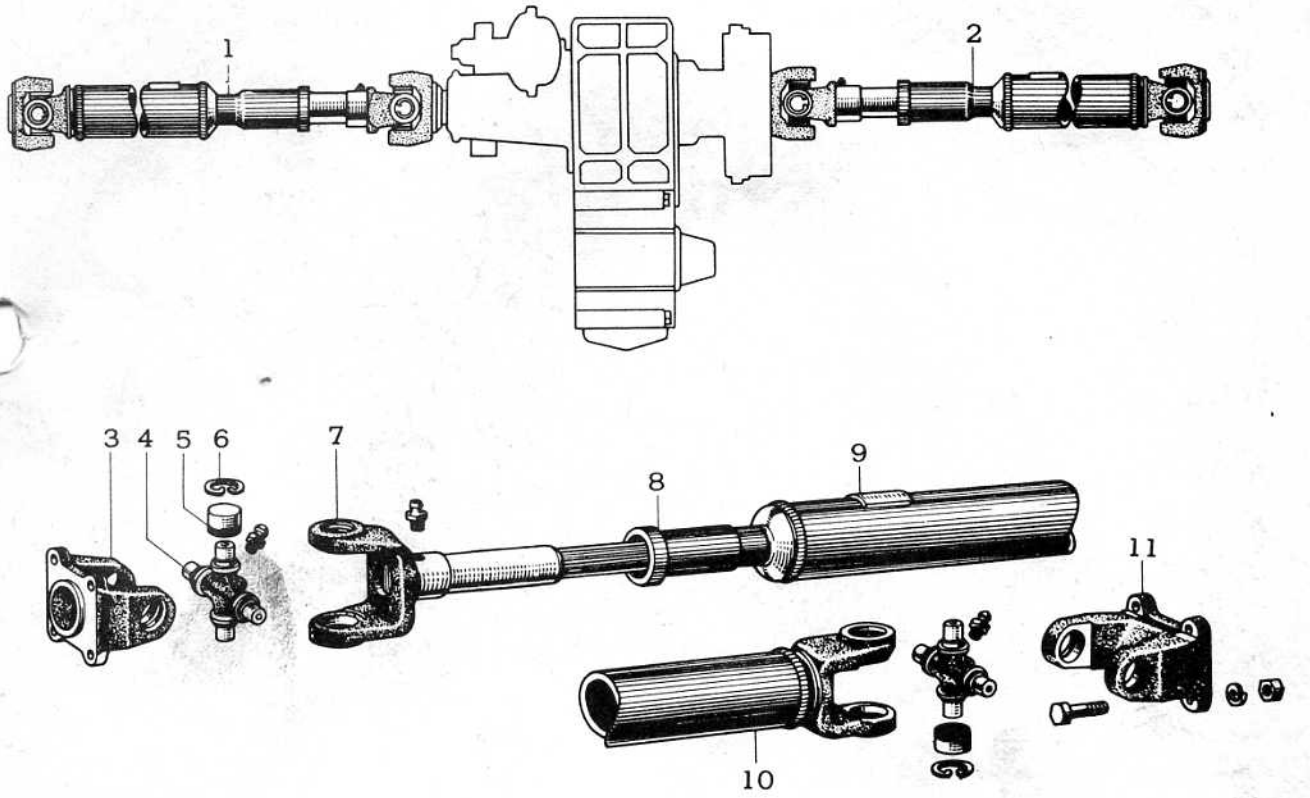
1. Remove the bolts retaining the universal joint flange yoke onto the differential and disconnect the driveshaft from the differential.
2. Remove the bolts retaining the universal joint flange on the transfer case output shaft.
3. Remove the driveshaft assembly from under the vehicle.

U-Joint Overhaul

1. Slide the universal joint slide yoke assembly out of the driveshaft.
2. Punch mating marks on both the universal joint flange yoke and the universal joint slide yoke so that the driveshaft assembly can be reassembled in the same position.
3. Remove the snap-rings from the bearing holes of the yoke.
4. Place the yoke in a vise with a small socket positioned against one of the bearing cups and a larger socket placed against the yoke on the opposite side. The larger socket must be able to receive the bearing cap when it is pressed out of the yoke.
5. Tighten the vise until the bearing caps are free of the yoke.
6. Remove the two remaining bearings from the opposite yoke in the same manner and remove the spider bearing journal.
7. Make sure that the new spiders and needle bearings in the bearing caps are well lubricated.
8. Assemble the universal joint spider and bearing caps to the yoke in the reverse manner of removal, using the smaller socket to press the bearing caps into the yoke and the larger socket to bear against the yoke bearing cap hole at the opposite end. Use a vise to press the bearing caps in place.



Matchmark the driveshaft and the yoke assemblies so that they can be installed in their original positions



The front and rear driveshaft assemblies

1. Front driveshaft
2. Rear driveshaft
3. Universal joint flange yoke
4. Universal joint spider
5. Spider bearing
6. Snap-ring
7. Universal joint slide yoke
8. Sliding shaft dust cover
9. Balance piece
10. Front driveshaft
11. Universal joint flange yoke

9. Install the hole snap-ring to secure the bearing caps.

NOTE: *Grease fittings on the universal joint spider should face toward the slide yoke.*

10. Assemble the slide yoke to the driveshaft, aligning the marks made prior to disassembly. If no marks were made, align the grease fitting on the slide yoke with the arrow mark on the driveshaft and insert the slide yoke into the driveshaft. Check the sliding joint for smooth movement.

11. Install the driveshaft assembly on e vehicle.

Rear Axle

AXLE SHAFT

Removal and Installation

1. Remove the hub cap and loosen the wheel nuts.

2. Raise the rear axle housing with a jack and support the rear of the vehicle with jackstands.

3. Drain the oil from the differential.

4. Remove the wheel nuts and take off the wheels.

5. Remove the brake drum and related parts. See Chapter 9.

6. Remove the cover from the back of the differential housing.

7. Remove the pin from the differential pinion shaft.

8. Remove the pinion shaft and its spacer from the case.

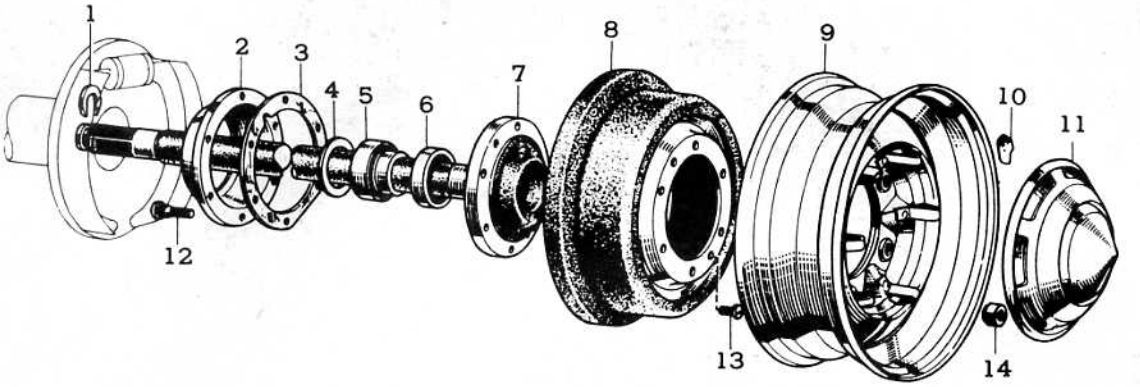
9. Use a mallet to tap the rear axle shaft toward the differential to aid in removing the axle shaft C-lock.

10. Remove the axle shaft C-lock.

11. Remove the axle shaft from the housing.

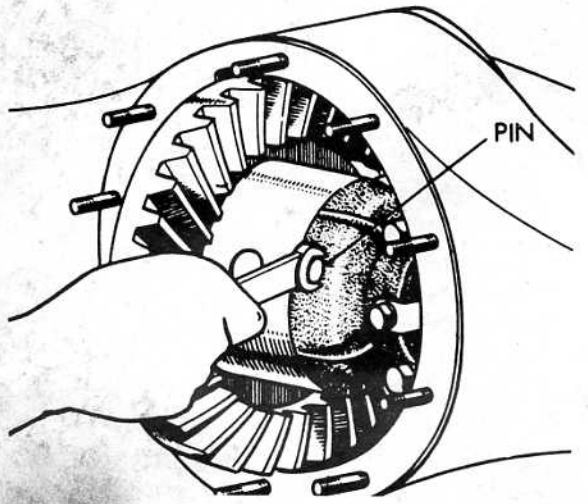
12. Repeat the removal procedure for the opposite side, if necessary.

13. Install the axle shaft in the reverse order of removal. After installing the axle shaft, C-lock, spacer and pinion



The rear axle shaft assembly and related components

1. Rear axle shaft lock
2. Brake drum oil deflector
3. Gasket
4. Spacer
5. Wheel bearing
6. Oil seal
7. Axle shaft
8. Brake drum
9. Wheel
10. Wheel balancing weight
11. Hub cap
12. Hub bolt
13. Brake drum set bolt
14. Lug nut



Removing the pin from the differential pinion shaft

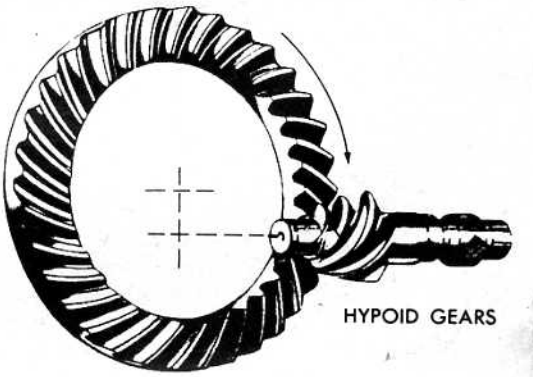
shaft, the clearance between the axle shaft and the pinion shaft should be between 0.0024–0.0181 in. The clearance is adjusted by adding or subtracting spacers behind the wheel bearing.

DIFFERENTIAL

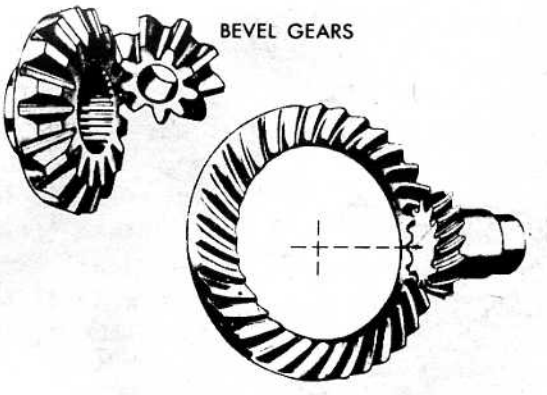
Differential service is best left to those extremely familiar with their vagaries and idiosyncrasies. A great many specialized tools are required as well as a good deal of experience.

Introduction

The rear axle must transmit power through 90°. To accomplish this, straight cut level gears or spiral bevel gears were used. This type of gear is satisfactory for differential side gears, but since the centerline of the gears must intersect, they rapidly became unsuited for



Hypoid type gears



Bevel type gears

ring and pinion gears. The lowering the driveshaft brought about a variatio of the bevel gear, which is called the hypoid gear. This type of gear does not require a meeting of the gear centerlines and can therefore be underslung, relative to the centerline of the ring gear.

Operation

The differential is an arrangement of gears which permits the rear wheels to