

Chapter Eight Suspension and Steering

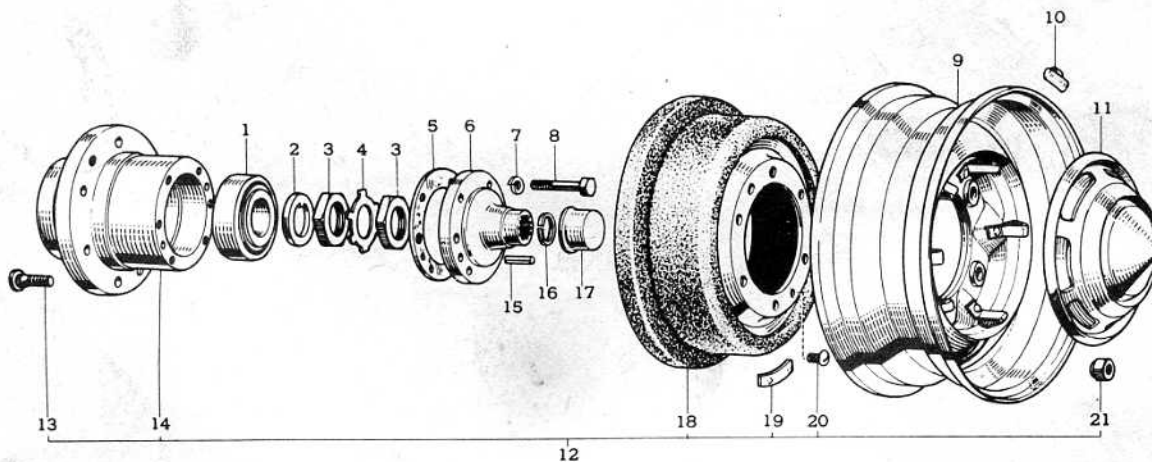
Front Suspension

The front suspension consists of the leaf springs and double acting telescopic hydraulic shock absorbers.

The front axle is a full-floating type, with a banjo type differential housing containing a hotchkiss drive hypoid gear

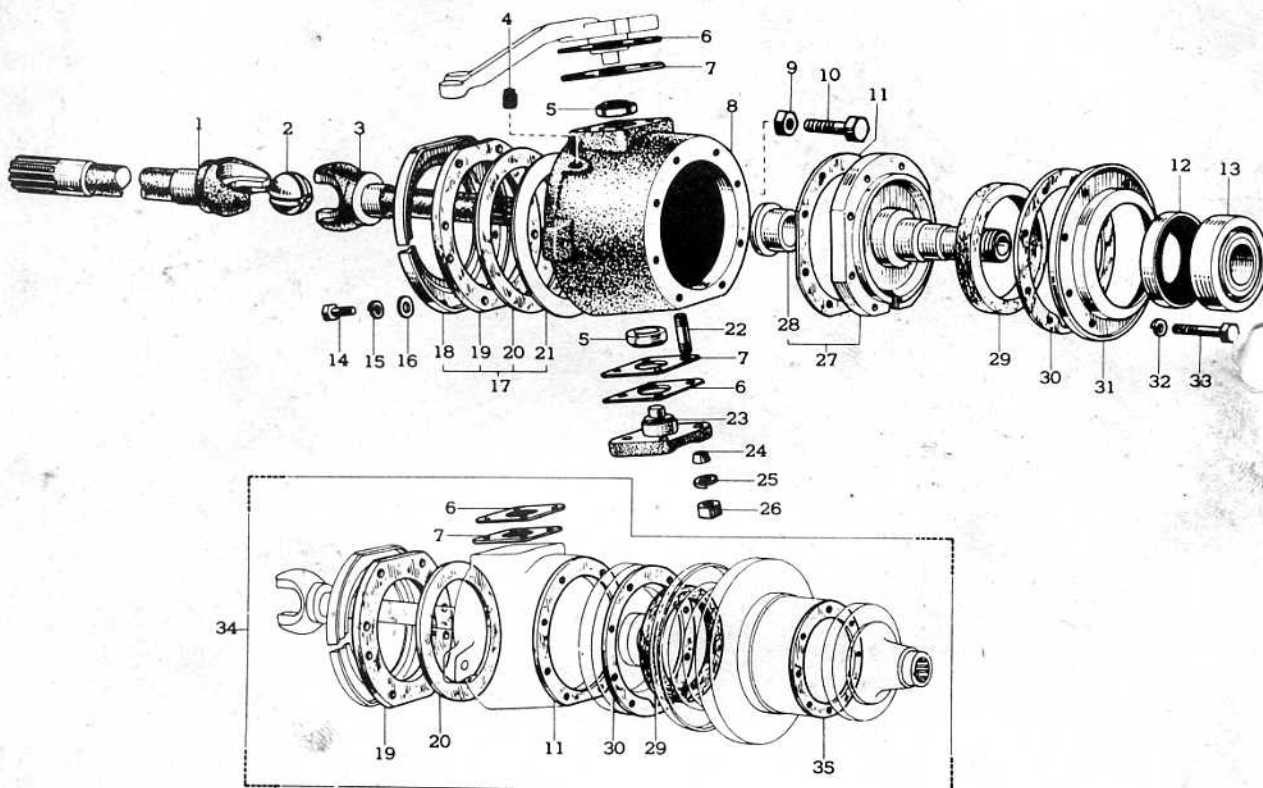
differential. The differential is placed off-center to the right-side in order to provide more road clearance and to allow the front driveshaft to be inline with the transfer case.

The joints of the axle shaft are of two types: the ball joint type or the Birfield constant velocity joint type. The action of the axle shaft joints at the steering knuckles permit power to be delivered



Exploded view of the front hub, drive flange, brake drum and wheel assembly

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|------------------------------|--|
| 1. Axle hub outer bearing | 12. Front axle hub and brake drum assembly |
| 2. Claw washer | 13. Hub bolt |
| 3. Front wheel adjusting nut | 14. Front axle hub |
| 4. Lockwasher | 15. Straight pin |
| 5. Flange gasket | 16. Shaft snap-ring |
| 6. Axle outer shaft flange | 17. Axle outer shaft flange cap |
| 7. Lockwasher | 18. Brake drum |
| 8. Bolt | 19. Balance piece |
| 9. Disc wheel | 20. Brake drum set screw |
| 10. Balance weight | 21. Hub nut |
| 11. Wheel cap | |



Exploded view of the ball joint type steering knuckle

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|--|------------------------------------|
| 1. Front axle inner shaft | 19. Outer oil seal |
| 2. Front drive joint ball | 20. Inner oil seal |
| 3. Front axle outer shaft | 21. Oil seal inner ring |
| 4. Plug | 22. Stud bolt |
| 5. Steering knuckle bearing | 23. Steering knuckle bearing cap |
| 6. Steering knuckle adjusting shim No. 1 | 24. Dowel |
| 7. Steering knuckle adjusting shim No. 2 | 25. Lockwasher |
| 8. Steering knuckle | 26. Nut |
| 9. Nut | 27. Steering knuckle spindle |
| 10. Bolt | 28. Knuckle spindle bushing |
| 11. Gasket | 29. Dust seal |
| 12. Oil seal | 30. Oil retainer gasket |
| 13. Front axle hub inner bearing | 31. Oil retainer |
| 14. Bolt | 32. Lockwasher |
| 15. Lockwasher | 33. Bolt |
| 16. Washer | 34. Front axle gasket kit |
| 17. Steering knuckle oil seal set | 35. Axle outer shaft flange gasket |
| 18. Oil seal cover | |

to the wheels when they are turned from the straight-ahead position.

SPRINGS

Removal and Installation

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

2. Raise the front of the vehicle and place jackstands under the frame and under the front axle housing.

3. Remove the hub nuts and remove the wheel/tire assembly.

4. Remove the nuts, cushion, and the cushion retainer, then disconnect the

shock absorber upper end from the bracket.

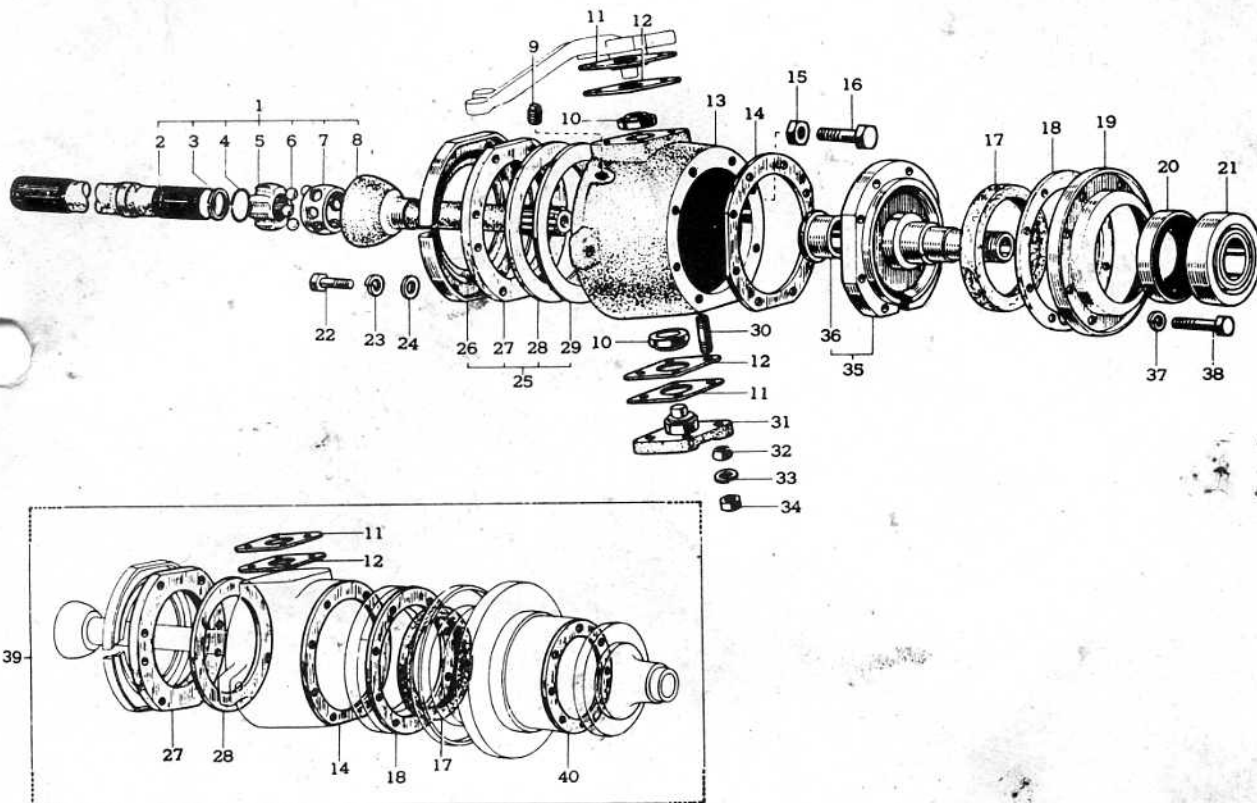
5. Remove the cotter pin and the nut at the lower end of the shock absorber and then remove the shock absorber.

6. Loosen and remove the U-bolts, nuts, and remove the U-bolt seat and U-bolts.

7. Adjust the axle housing height with a jack until the weight is off the springs.

8. Remove the nuts and take out the spring shackle inner plate.

9. Pry the spring shackle with a suitable bar and remove the spring shackle and the rubber bushings.



Exploded view of the Birfield constant velocity joint type steering knuckle

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|------------------------------|----------------------------------|
| 1. Front driveshaft assembly | 21. Axle hub inner bearing |
| 2. Axle inner shaft | 22. Bolt |
| 3. Shaft snap-ring | 23. Lockwasher |
| 4. Shaft snap-ring | 24. Washer |
| 5. Joint inner race | 25. Oil seal set |
| 6. Ball | 26. Oil seal cover |
| 7. Joint cage | 27. Outer oil seal |
| 8. Axle outer shaft | 28. Inner oil seal |
| 9. Plug | 29. Oil seal inner ring |
| 10. Steering knuckle bearing | 30. Stud bolt |
| 11. Adjusting shim No. 1 | 31. Steering knuckle bearing cap |
| 12. Adjusting shim No. 2 | 32. Dowel |
| 13. Steering knuckle | 33. Lockwasher |
| 14. Gasket | 34. Nut |
| 15. Locknut | 35. Steering knuckle spindle |
| 16. Bolt | 36. Bushing |
| 17. Dust seal | 37. Lockwasher |
| 18. Oil retainer gasket | 38. Bolt |
| 19. Oil retainer | 39. Front axle gasket kit |
| 20. Oil seal | 40. Flange gasket |

10. Remove the two bolts retaining the spring bracket pin onto the spring bracket.

11. Be careful and drive out the spring bracket pin, then remove the front spring. Remove the rubber bushings from the spring.

12. Install the front spring in the reverse order of removal, taking note of the following:

13. Make sure that the spring center bolt head is properly positioned in the hole provided in the spring seat on the axle housing.

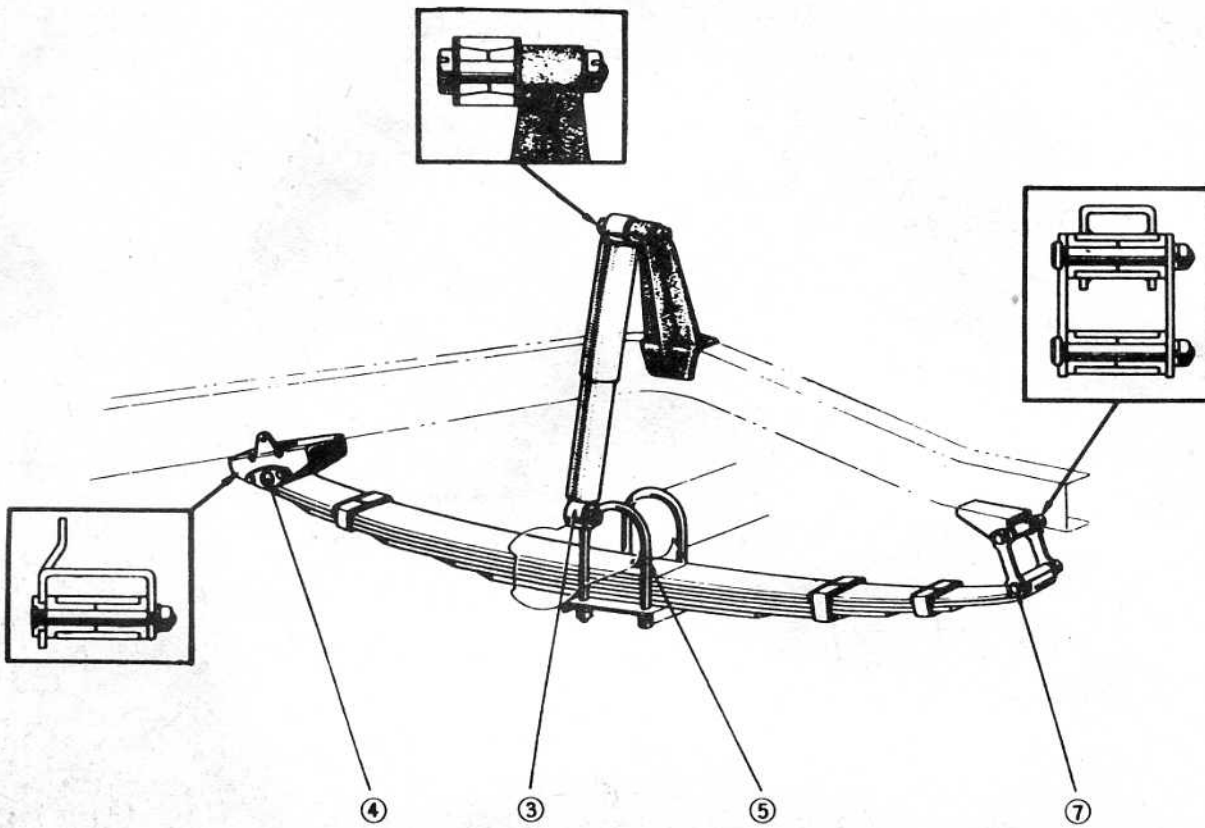
14. The nuts on the spring shackle and the spring bracket pin must be tightened firmly after applying weight on the spring.

15. Tighten the U-bolt nuts to 50-70 ft lbs and the spring shackle and spring bracket pin nuts to 36-58 ft lbs.

SHOCK ABSORBERS

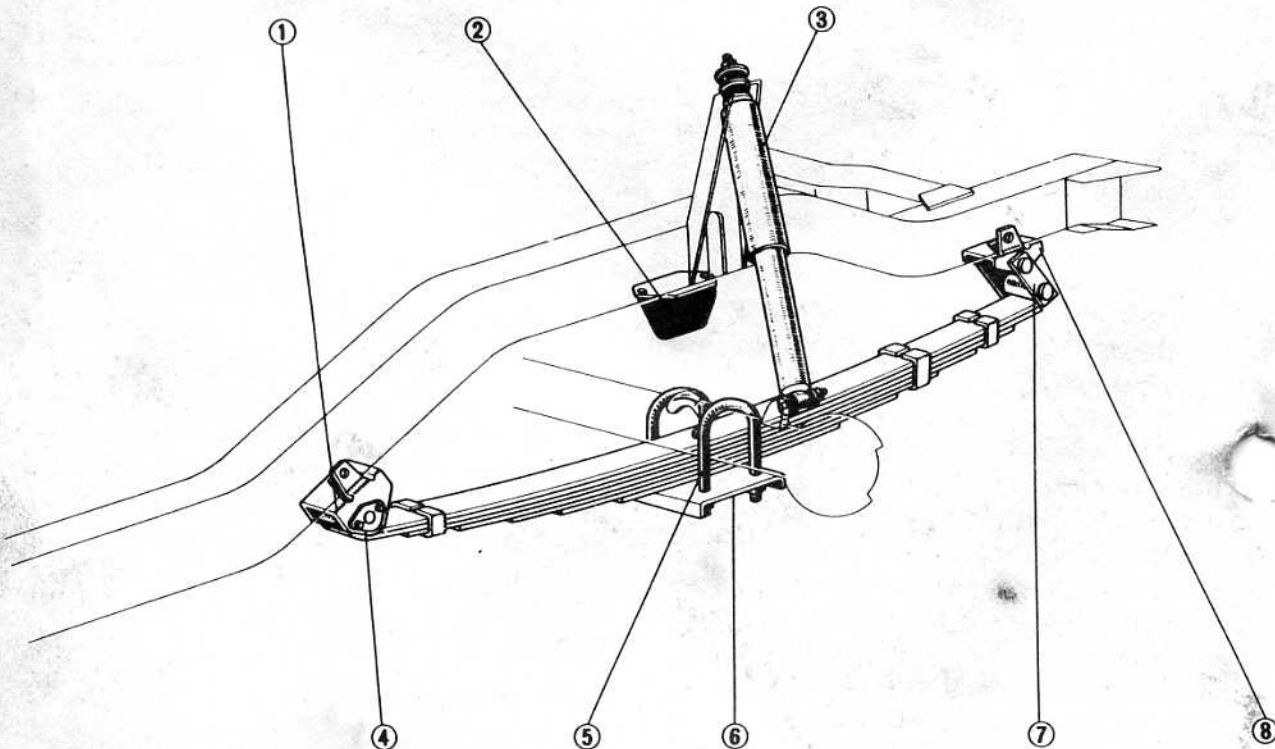
Removal and Installation

1. Remove the nuts, cushion, and the cushion retainer, then disconnect the



The front suspension assembly on the FJ 40 series

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|------------------------|-----------------------|
| 1. Spring bracket | 5. U-bolt |
| 2. Front spring bumper | 6. Spring U-bolt seat |
| 3. Shock absorber | 7. Spring shackle |
| 4. Spring bracket pin | 8. Spring bracket |



The front suspension assembly on the FJ 55 series

