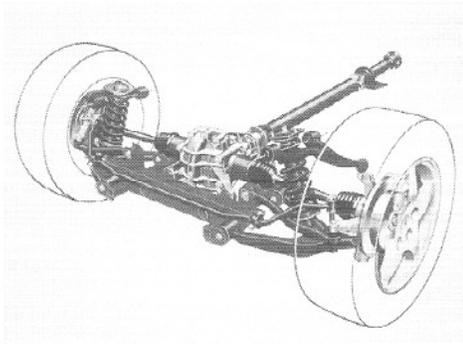


Wheel Alignment



Name: _____ Date: _____
Instructor: _____ Score: _____ Textbook pages 1406–1427

Objective: After studying this chapter, you will be able to explain wheel alignment principles.

1. In reference to vehicles, what does the term *alignment* mean? _____

2. What does correct alignment provide for a vehicle? _____

Wheel Alignment Principles

3. What is the main purpose of wheel alignment? _____

4. Identify the six fundamental angles or specifications needed for proper wheel alignment.

Caster

5. Steering wheel pull caused by the hump in the center of the road is road _____ 5. _____
6. Define *positive caster*. _____

7. It is typical for positive caster to be recommended for vehicles with _____ 7. _____ steering.

8. Negative caster is recommended for vehicles with _____ steering. 8. _____
9. Explain how the directional control angle of caster is used to offset the effect of road crown.

Camber

10. Define *camber*: _____
11. What are the three reasons for camber? _____
12. What is the difference between positive camber and negative camber? _____

Toe

13. Toe is determined by the difference in _____ between the front and rear of the left and right-hand wheels. 13. _____
14. Explain the difference between *toe-in* and *toe-out*. _____

Steering Axis Inclination

15. Steering axis inclination is always a(n) _____ tilt, regardless of whether the wheel tilts inward or outward. 15. _____
16. How does steering axis inclination aid directional stability? _____

Toe-Out on Turns (Turning Radius)

17. Explain how *toe-out on turns* works. _____

18. _____ built into the steering system produce proper toe-out on turns. 18. _____

Tracking

19. With proper tracking, the rear tires follow in the tracks of the _____ tires, with the vehicle moving straight ahead. 19. _____
20. What can improper tracking cause in a vehicle? _____

Prealignment Inspection

21. All of the following should be checked before attempting wheel alignment, *except*: 21. _____
- (A) worn tires.
 - (B) incorrect cradle alignment.
 - (C) dog tracking.
 - (D) loose wheel bearings.
22. What are possible consequences of improper cradle location? _____

Adjusting Wheel Alignment

23. All of the following are common adjustable wheel alignment angles, *except*: 23. _____
- (A) tracking.
 - (B) toe.
 - (C) caster.
 - (D) camber.
24. Explain how caster is adjusted. _____
25. Camber is usually adjusted after setting _____. 25. _____
26. How is toe usually adjusted? _____
27. Changing one tie-rod more than the other will _____ the steering wheel spokes. 27. _____
28. What could be the cause of rear wheels failing to track properly? _____

Turning Radius Gauges

29. What do turning radius gauges measure? _____

30. How do you check *toe-out on turns*? _____

Caster-Camber Gauge

31. To measure caster with a caster-camber gauge, turn one of the front wheels inward until the radius gauge reads _____ degrees. 31. _____
32. To measure camber with a caster-camber gauge, turn the front wheels _____ 32. _____
- (A) to the right
 - (B) to the left
 - (C) straight ahead
 - (D) None of the above.

Tram Gauge

33. How does a *tram gauge* work? _____

34. When measuring toe with a tram gauge, the difference between the lines on the front and rear of the tires is _____ actual toe. 34. _____
- (A) two times
 - (B) three times
 - (C) four times
 - (D) five times

Alignment Machines

35. What components does the alignment machine include? _____

36. What does alignment equipment software include? _____

37. What should you check for as you test drive the vehicle after completing a wheel alignment?

