

# Steering & Suspension

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Mid-Term Review

# Steering & Suspension

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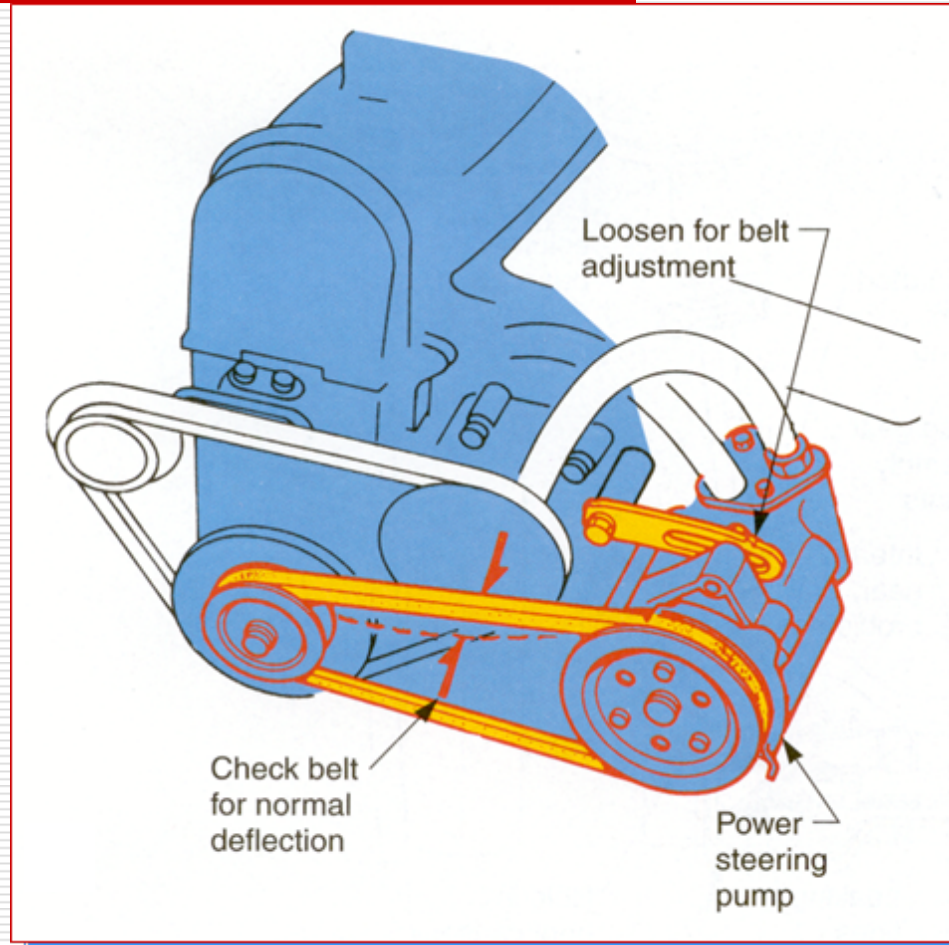
- ❑ Toe-In / Toe-out can be adjusted by changing the length of the tie rod.
  - ❑ Radial runout includes, out of round wheel hub, miss-centered wheel lug bolts, and variations in tire sidewall stiffness.
  - ❑ Front wheel shimmy can be caused by dynamic imbalance and/or a bent wheel hub.
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- ☐ Hard steering can be caused by low tire pressure and/or incorrect steering gear mesh preload.
  - ☐ A power steering belt does not have to be replaced if the belt tension is incorrect.
  - ☐ Replace the power steering belt if it is glazed.
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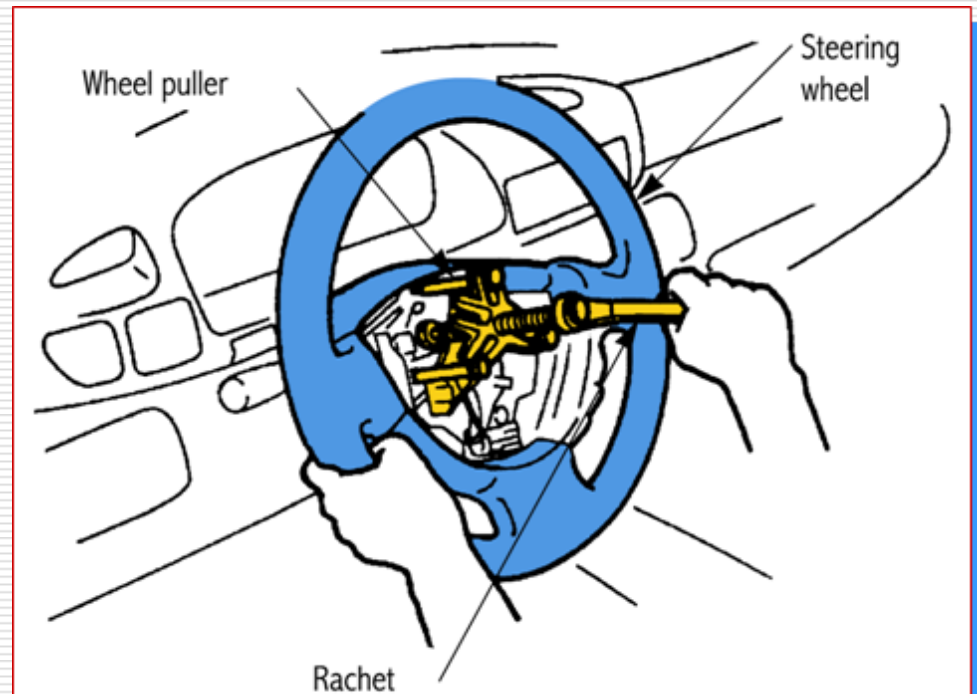
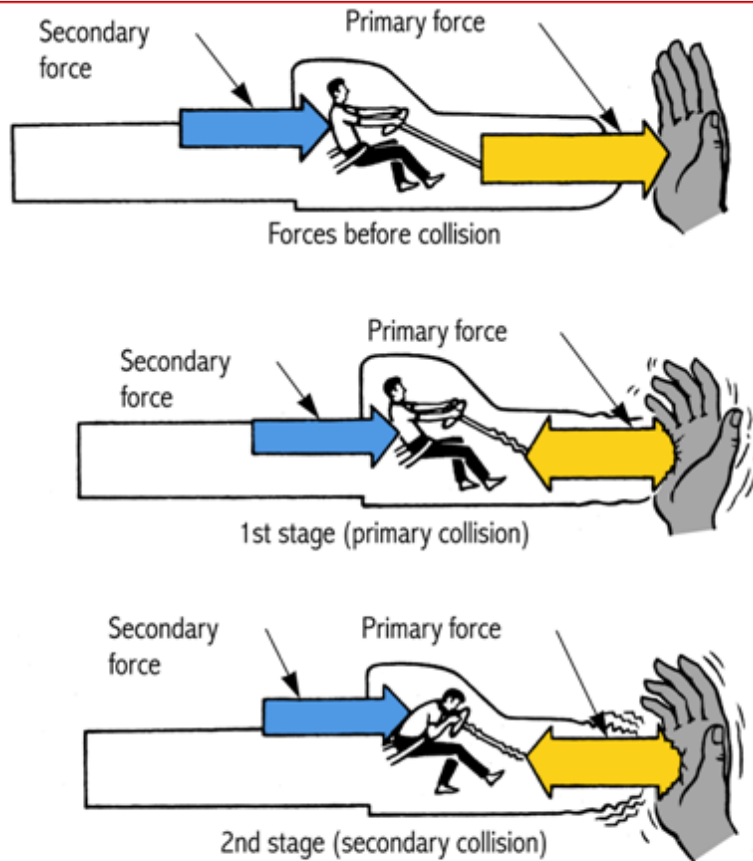
- ☐ If a car does not recover well from turns the steering shaft bearings may be loose and/or wheels may be out of alignment.
  - ☐ Unequal tire inflation can cause pulling to one side during straight ahead driving.
  - ☐ Straighten (center) the steering linkage and wheels before removing the steering wheel.
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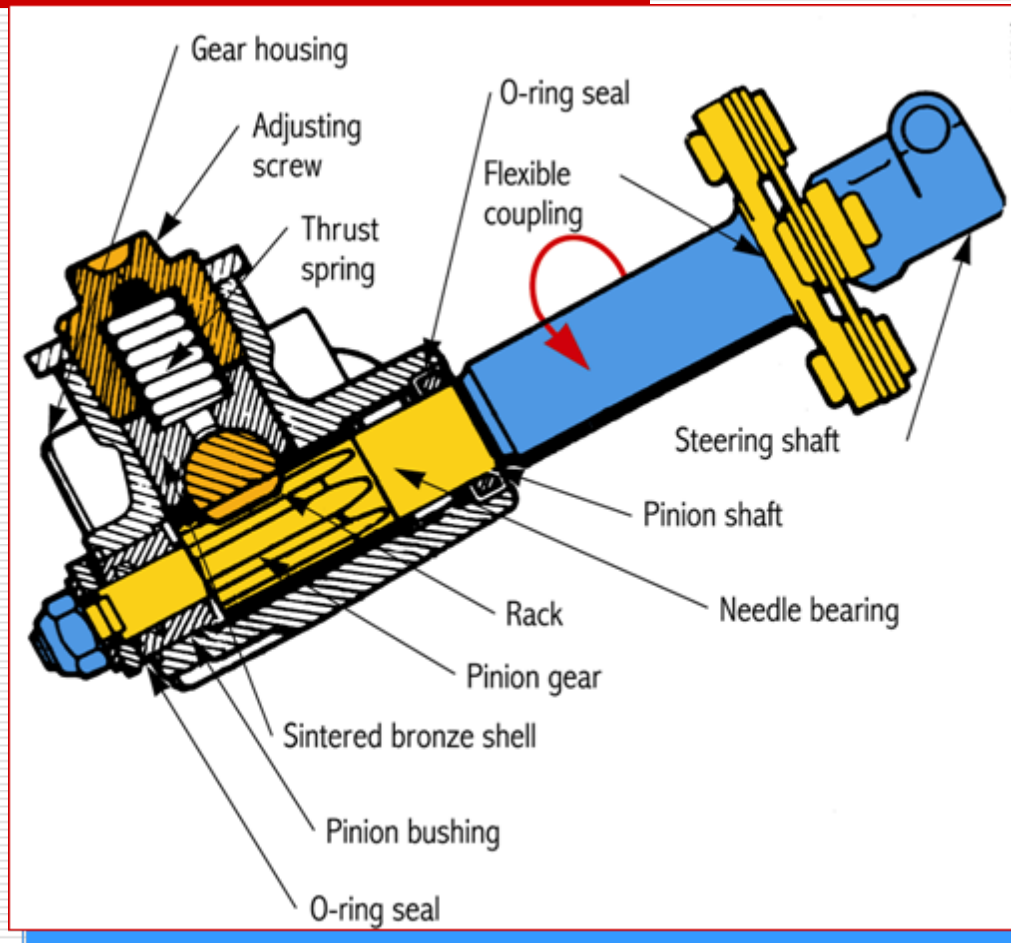
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- ❑ Always use a puller to remove a steering wheel from the shaft.
  - ❑ Always inspect the steering column if a car has been in a collision.
  - ❑ A rack and pinion steering gear may have an adjusting screw or adjustment shims to adjust steering gear preload.
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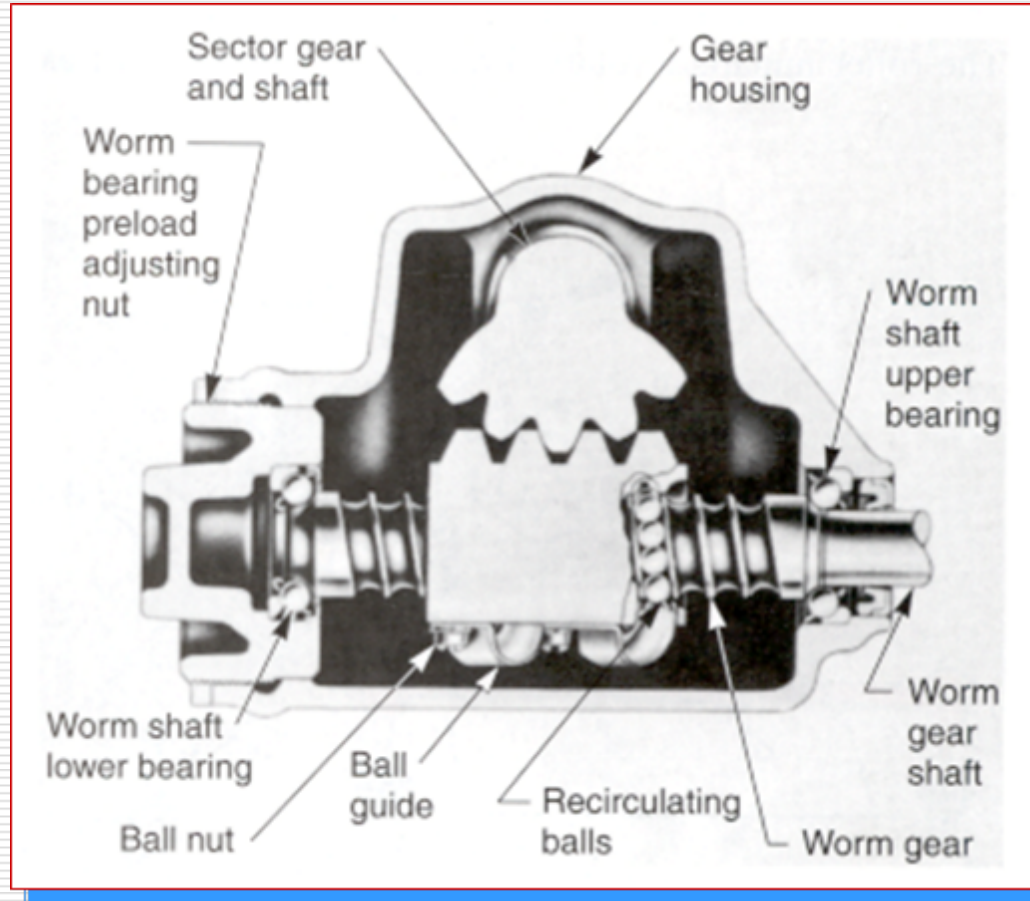


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- ❑ Disconnect the steering shaft from the pinion shaft when removing a manual rack and pinion steering gear.
  - ❑ When servicing a manual recirculating ball steering gear rotate the worm gear shaft in the ball nut to check for smooth operation.
  - ❑ Top-off the P/S fluid reservoir when bleeding the power steering system if it gets low.
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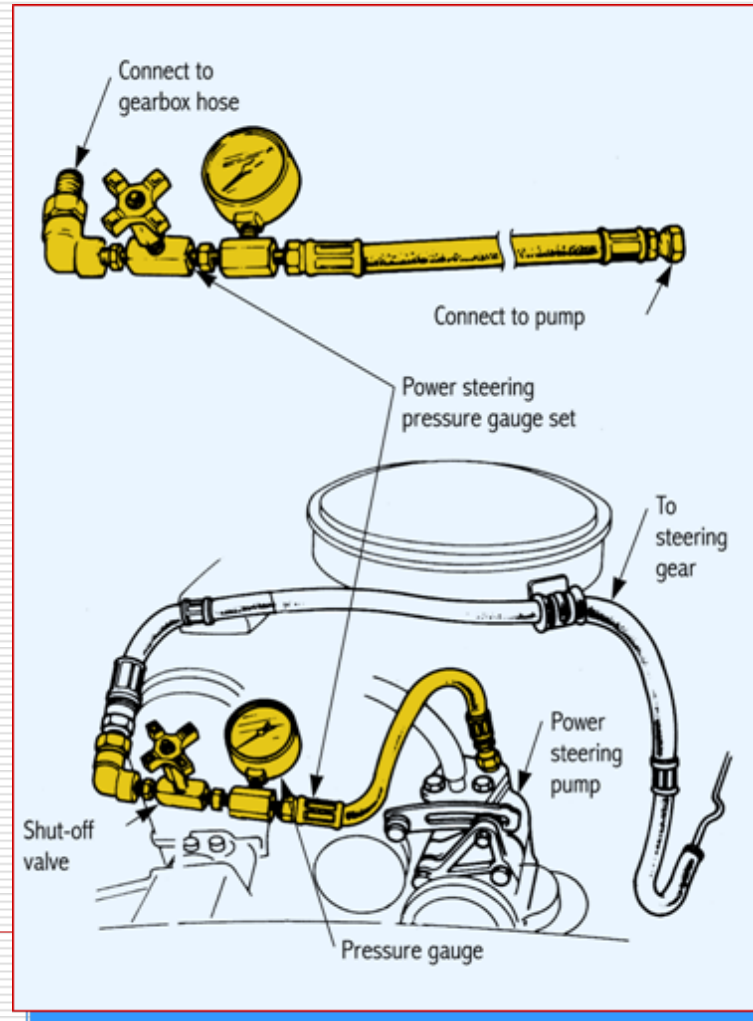


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- ❑ When replacing power steering system hoses align marks on flare fittings before tightening.
  - ❑ Install a pressure gauge between the pump outlet and pressure hose to pressure test a power steering system.
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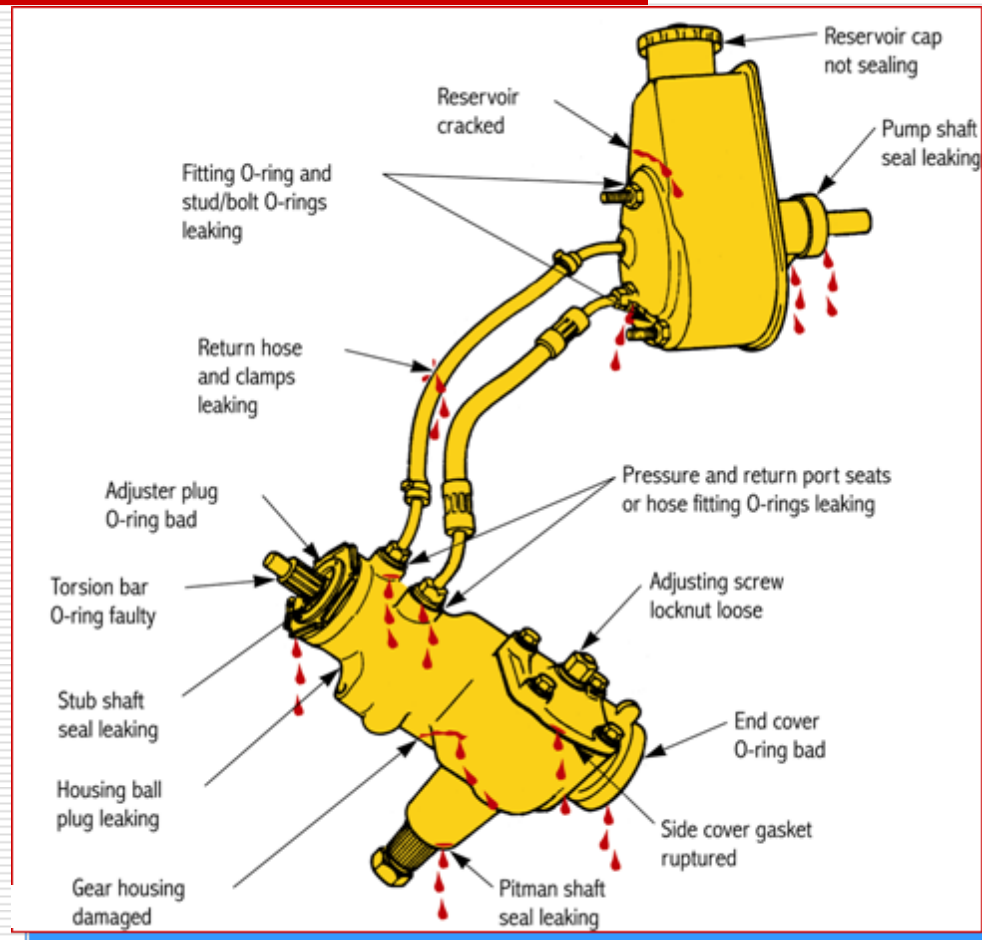


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- ❑ If a system pressure check shows pressure is lower than specified, check the hydraulic system for leaks and pressure test the pump & steering gear.
  - ❑ Adjust belt tension if a power steering pump drive belt deflects 1 inch (25 mm) under moderate pressure.
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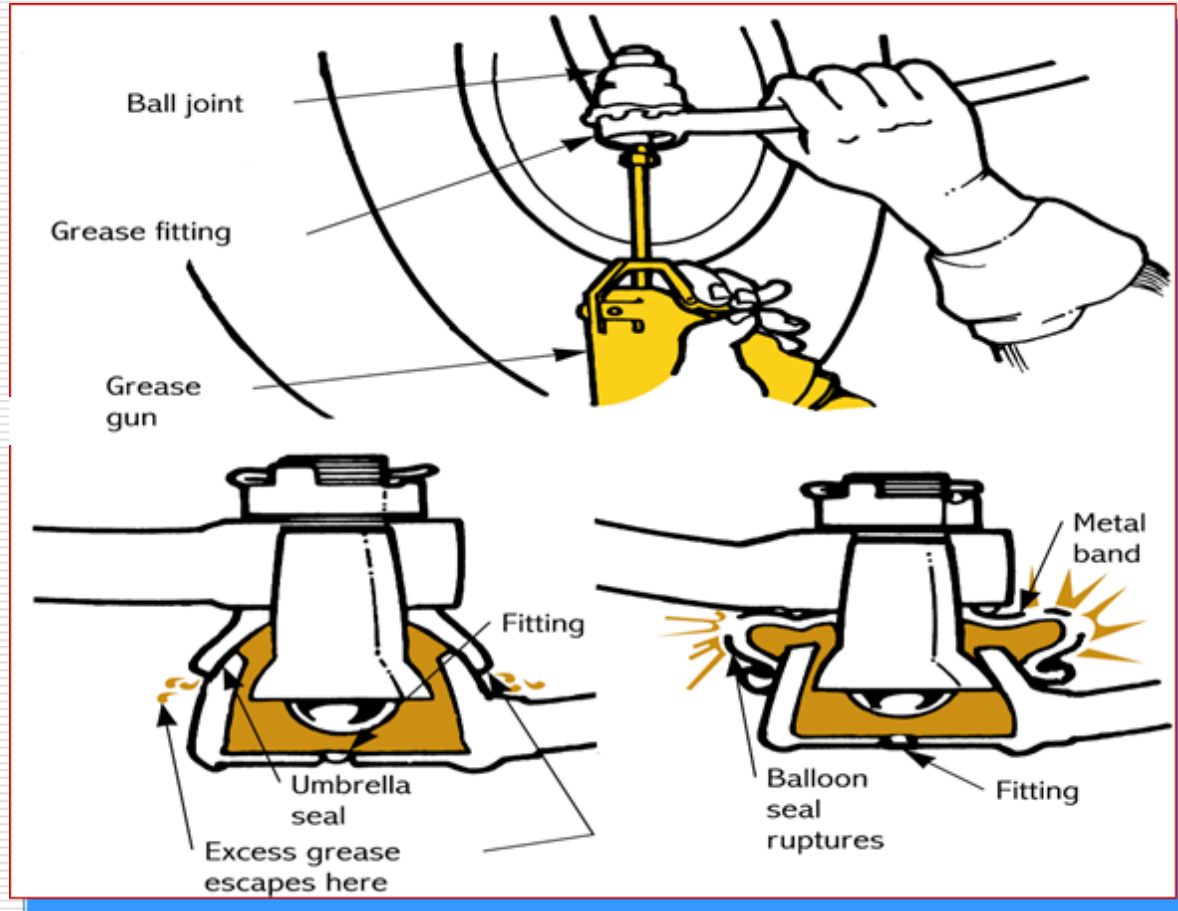


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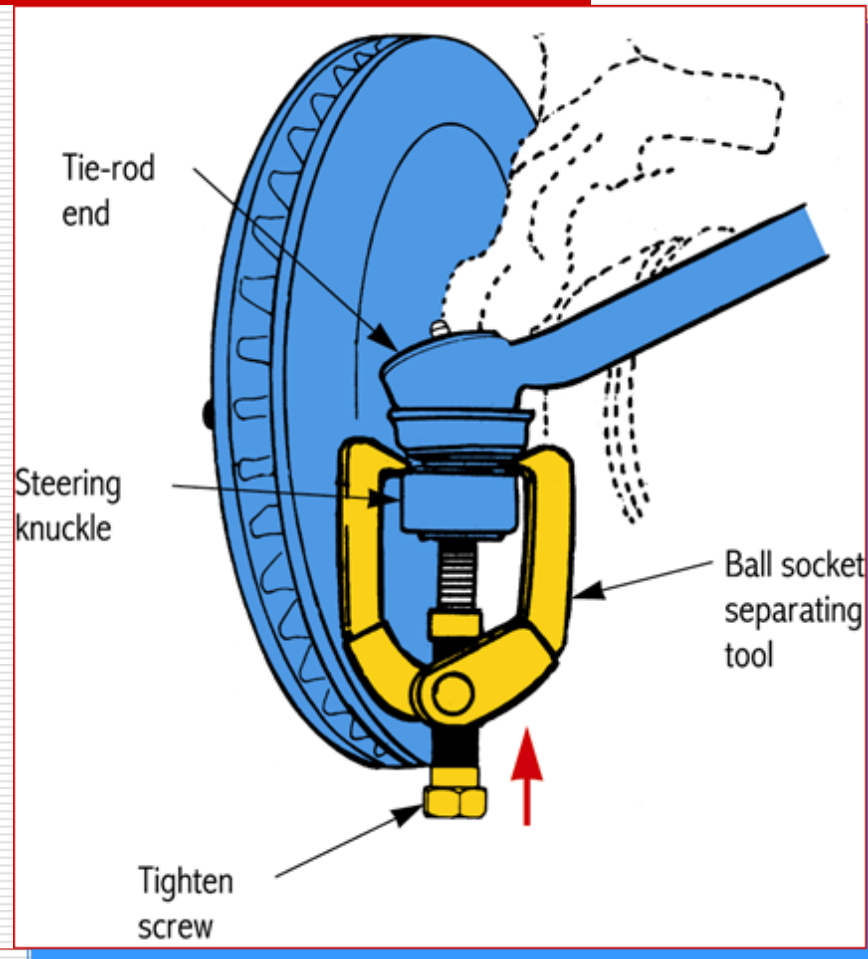
- ☐ Replace grease plugs with grease fittings.
  - ☐ Never use high (shop pressure) when greasing lube fittings.
  - ☐ Using a special puller instead of “pickle fork” to prevent damage to ball joints or steering linkage during disassembly.
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- ❑ Shock absorbers are worn if a vehicle keeps bouncing three more times after bouncing the front or rear end.
  - ❑ Worn suspension springs probably cause low ride height.
  - ❑ If suspension bump stops are damaged the suspension is probably bottoming out due to worn shocks and springs.
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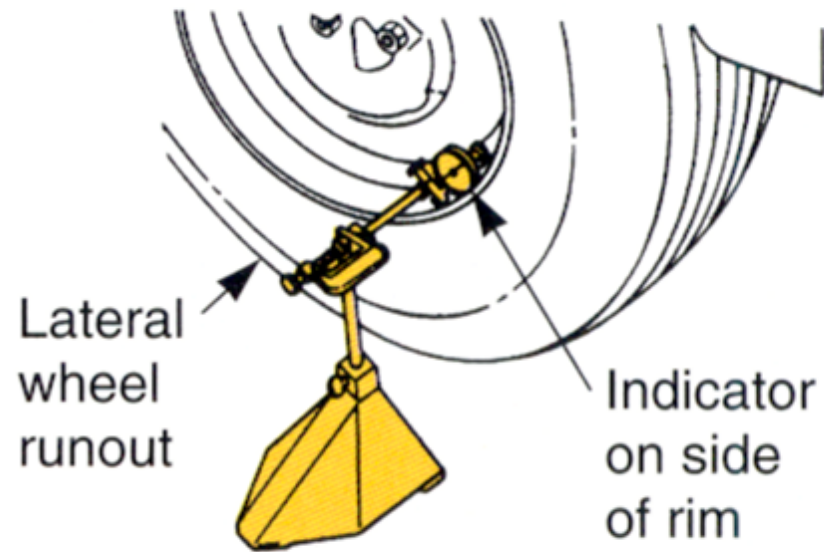
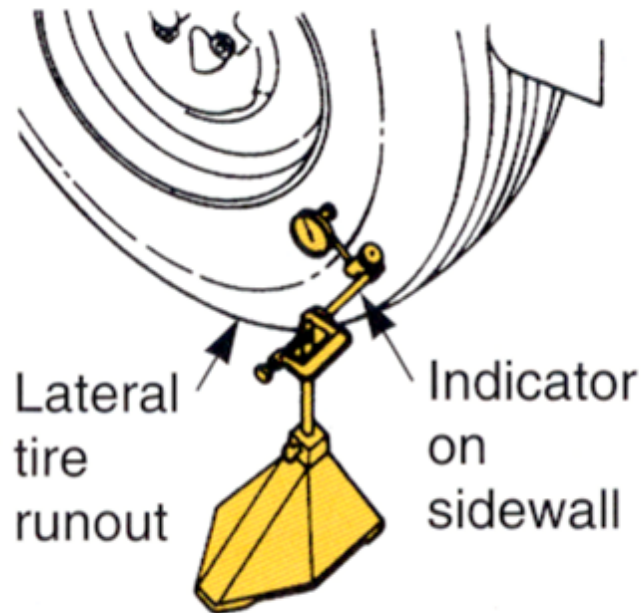
- ☐ Incorrect tire inflation can cause hard steering.
  - ☐ When rotating directional tires move the front wheels straight back and the rear wheels straight forward.
  - ☐ When balancing steel wheels never add more than 6 oz (170g) total weight to each wheel.
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- ❑ Place the tip of a dial indicator against the wheel flange to check lateral wheel runout.
  - ❑ Incorrect dynamic balance causes wobble (up and down vibration).
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