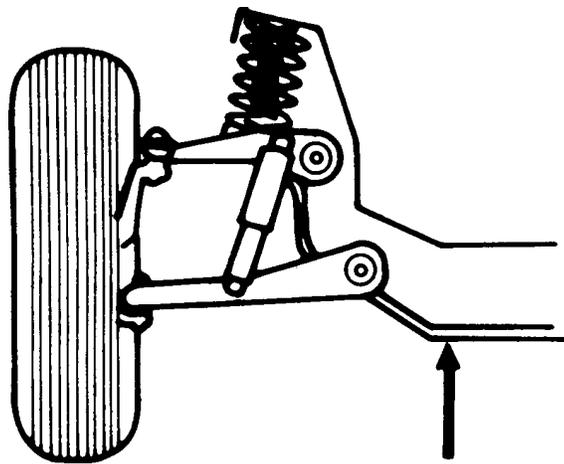




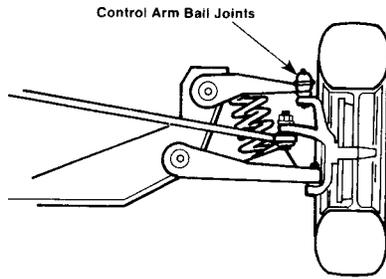
HOW - TO **SUSPENSION UPKEEP**



Tool And Material Checklist

- | | |
|---|---|
| <input type="checkbox"/> Hammer | <input type="checkbox"/> Channel Lock Pliers |
| <input type="checkbox"/> Nut Buster or Chisel | <input type="checkbox"/> Wheel Chocks |
| <input type="checkbox"/> Jack and Jack Stands | <input type="checkbox"/> Front Wheel Grease Seal
Installer |
| <input type="checkbox"/> Wood Dowel | <input type="checkbox"/> Adjustable Wrench |
| <input type="checkbox"/> Wheel Bearing Grease | <input type="checkbox"/> Socket and Ratchet Wrench |
| <input type="checkbox"/> Clean Rags | <input type="checkbox"/> Penetrating Oil |
| <input type="checkbox"/> Grease Gun | <input type="checkbox"/> Safety Glasses or Goggles |
| <input type="checkbox"/> Diagonal Pliers | |

** This How-To Guide is designed as a general overview of a vehicle repair procedure. You should always refer to a service manual designed for your vehicle for detailed instructions. Parts Plus assumes no liability for an incorrect procedure.*



Ball joint location

The comfort and safety of you and your passengers depend, to a great extent, upon the condition of your car's suspension. Worn or faulty suspension parts and tires cause many breakdowns each year. This booklet will show you not only how to correct routine suspension problems but also how to avoid large and costly repairs.

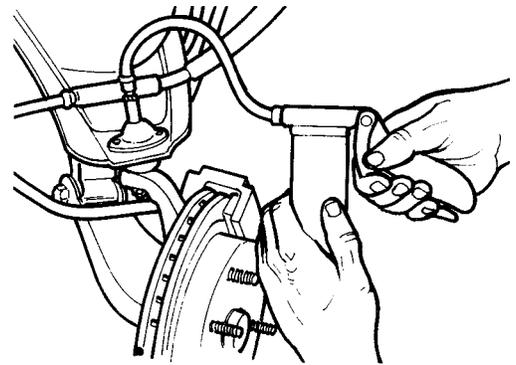
LUBRICATION

Chassis lubrication should be done as often as called for in the owner's manual. How often the chassis must be lubricated identifies the type of joints in the car. For example, if the recommended interval is in the 30,000-mile range, the car has lifetime-sealed ball joints; lesser intervals indicate the old style joints. Check the shop manual for the location of all grease fittings. Also, protect your eyes by wearing safety glasses or goggles when lubricating a car.

1. Wipe off each grease nipple with a clean rag before attaching the grease gun. This prevents dirt from being injected along with the grease, which could clog the nipple.
2. Attach the grease gun nozzle to the nipple and squeeze the trigger of the gun.
3. On the old style ball joints, the old grease will ooze out of the joint as the new grease is injected. The new style joints seal both the old and new grease inside. When servicing new joints, fill them only until the rubber boot begins to swell. Do not overfill because it will burst the boot.
4. Make sure the grease gets into the fitting. If the trigger is extremely difficult to pull or grease squirts out between the nozzle and the nipple, then the nipple is clogged.
5. If grease cannot pass through the nipple, it must be replaced.

WHEEL ALIGNMENT AND BALANCING

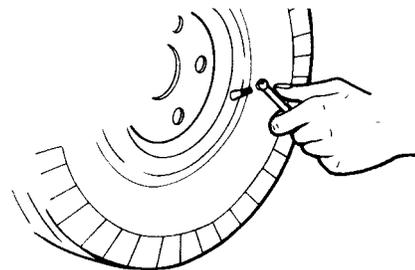
Proper front-end alignment is a crucial part of suspension system maintenance because it permits the tires to roll straight without excessive tread wear. Often the wheels can become misaligned from striking curbs and other raised objects, driving through pot holes, etc. Misalignment subjects your tires to uneven and/or irregular wear while in motion. An out-of-balance condition can also cause increased ball joint wear and deterioration of shock absorbers and other suspension components. Should an inspection show uneven or irregular front tire wear, a professional wheel alignment and balance is a must.



Operating a grease gun

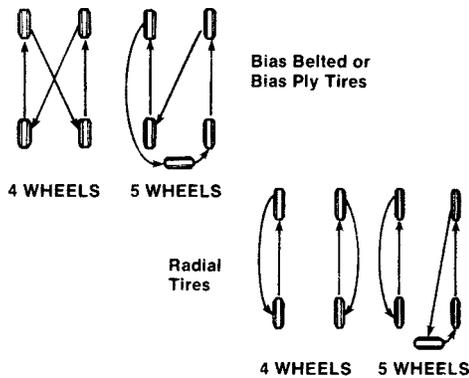
TIRE CARE

Without a doubt, neglect ruins more tires than anything else. Tires are a very important part of your car and should be treated as such. Check them regularly for proper inflation pressure, abnormal wear, and damage.



Check tires regularly for proper inflation pressure.

To equalize wear, rotate your tires regularly. Bias ply and bias belted tires should be rotated every 6,000 miles; radial tires should be rotated after the first 7,500 miles and every 15,000 miles thereafter.



Recommended tire rotation

CHECKING SHOCK ABSORBERS

1. Begin by pushing up and down on a fender. Do this several times until you have created a bouncing action.

2. Let go of the fender after a down stroke.

3. Observe the car's response. It should come up, go down a bit, and then settle to its normal height. If it does, the shock absorber at that corner is probably good. If the car bounces two or more times, the shock absorber is worn or damaged and must be replaced.

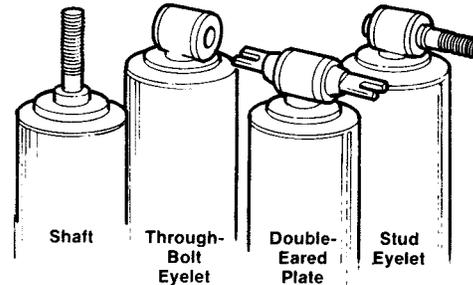
4. Repeat this procedure on each corner of the car.

Another sign of worn shocks is leaking fluid that leaves a wet film on the shock and surrounding suspension parts. (On some higher priced gas-charged shocks, small traces of oil are normal.) Also check for loose and/or damaged mounting hardware. If the rubber bushings are deteriorating, your shocks might be in poor condition.

REPLACING SHOCK ABSORBERS

This is not a hard job to do. In fact, the hardest part is removing the old shocks because they are frequently rusted at the fasteners.

Following are some tips for removing shocks:



Types of shock absorber mounts

1. Thoroughly soak all fasteners in penetrating oil well in advance of performing the job. To protect your eyes from the penetrating oil, wear safety glasses or goggles.

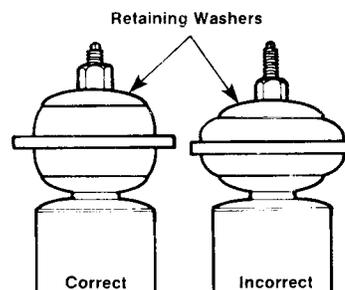
2. As the fasteners and mounts are removed, lay them aside carefully so that the new ones can be assembled in the same order.

3. When removing shaft mount shock absorbers, a nut buster or hammer and chisel might be needed to remove the fastening nut.

4. When tightening mounts that use rubber bushings and washers, tighten them only until the bushing expands to the diameter of the washer.

5. Never use pliers to grasp the shaft of the shock. This will cause the shaft to damage the seal and the seal will leak fluid.

6. Always install shocks in pairs, even if one seems to be in good shape. And if one pair is



Tightening mounts with rubber bushings and washers

worn, replace both pairs to prevent an uneven ride.

7. Whenever shock absorbers are replaced, also replace the bushings.

CHECKING SPRINGS

Sagging springs (or torsion bars) can cause sloppy handling of your car. Check the springs simply by observing; if one end or side of the car is lower than the other, you have a sagging spring that must be replaced.

WARNING: Replacing a spring is a dangerous job that should be done by a professional. Do not attempt it yourself.

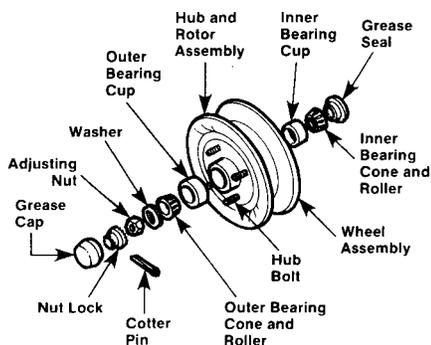
BALL JOINT INSPECTION

Today's ball joints don't need replacement, but a professional should inspect them at regular intervals. Ball joint failure can result in a serious accident.

REPLACING THE WHEEL BEARINGS

Wheel bearings permit the tire, wheel, and hub to rotate on the spindle or axle. If more than 15,000 miles have been put on your car since the wheels were inspected, chances are a repacking of the front bearings is in order. To do this, proceed as follows:

1. Remove the two front wheel covers and loosen the lug nuts or bolts one full turn.
2. After raising the car, remove the lug nuts or bolts. Store the lugs in the wheel cover.
3. Remove the two front wheels.



Typical wheel bearing

4. Grasp the dust cover with channel lock pliers and pry it off using an up-and-down motion. Remove the cotter pin using diagonal pliers.

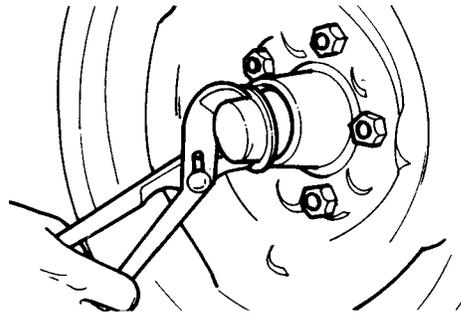
5. Loosen the adjusting nut by turning the channel lock pliers counterclockwise, until the nut is almost at the end of the spindle. Pull out the brake drum by hand, and then push the drum back in place; this will loosen the outer bearing from the brake drum hub.

6. Remove the adjusting nut, washer, and outer bearing. Set the bearing on a clean surface.

7. If the car has disc brakes, the caliper and rotor must be removed to reach the inner bearing. The rest of the procedure is the same for both disc and drum brakes.

8. If the car has drum brakes, grasp the brake drum firmly and pull it off. Set it on a clean surface with the lugs facing up.

9. Put a wood dowel (approximately 12" long) through the outer bearing opening in the drum and against the inner bearing. Strike the dowel with a hammer to release the inner bearing and grease seal.



Removing adjusting nut with channel lock pliers

10. Thoroughly clean both bearings with a general-purpose solvent and a hand cloth, and then blow them dry with compressed air. Also clean the inner hub of the brake drum and the spindle.

11. Hold the inner bearing with the wider opening facing up. Force wheel bearing grease through the bearing until it oozes out the opposite side. Continue working around the circumference until grease has been forced into the entire bearing.

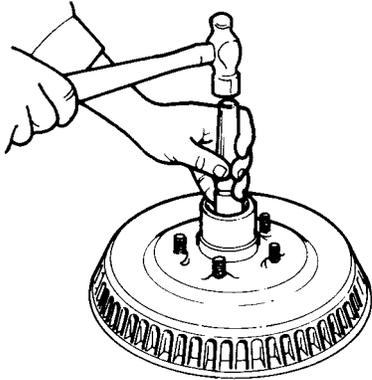
12. Set the bearing on a clean surface, then grease the outer bearing in the same manner.

13. Install the inner bearing with the taper facing the inside of the drum.

14. Using a front wheel grease seal installer, install a new grease seal; the lip of the seal must face the bearing. Apply a very small amount of grease to the lip.

CAUTION: Be careful not to get any grease on the inside of the brake drum. Grease in this area can cause a braking problem.

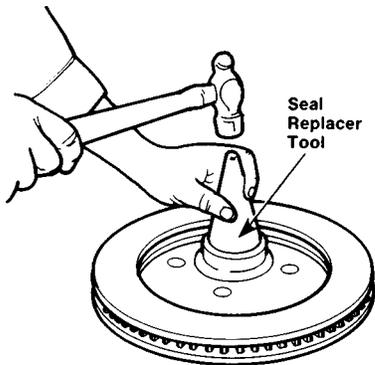
15. Replace the brake drum on the spindle, making sure it is fully seated against the back of the spindle.



Strike the dowel to release the inner bearing and grease seal.

16. Install the outer bearing with the taper facing the inside of the drum.

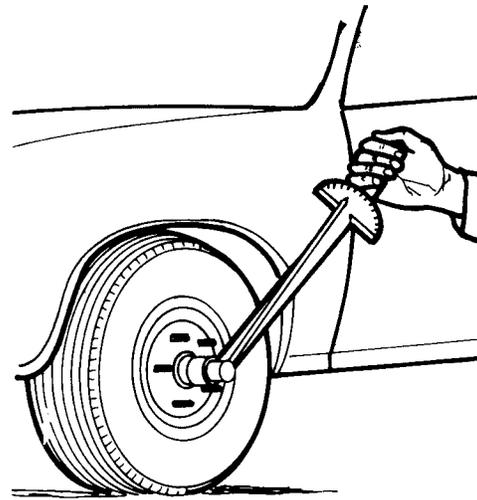
17. Reinstall the washer and adjusting nut. Use the channel lock pliers to tighten the nut until it is snug against the washer and slight pressure is felt.



Installing a grease seal

18. Use a torque wrench to adjust the wheel bearings to the manufacturer's specifications.

19. If a stamped nut lock is used, replace it, aligning one opening with the cotter pin hole in the spindle.



Torquing the wheel bearings

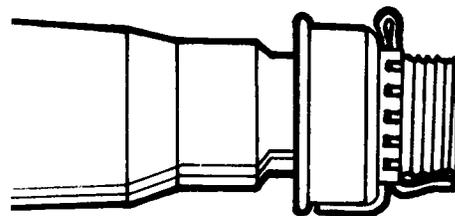
20. If a castellated nut lock is used and the pinhole is covered, turn the nut lock counterclockwise until the nearest slot is in line with the hole in the spindle. The cotter pin can now be installed.

21. Use diagonal pliers to spread the ends of the cotter pin that protrude past the adjusting nut. Pull one end toward you and cut it even with the spindle.

22. Push the other end of the cotter pin back toward the washer and cut it so it just touches the washer.

23. Replace the dust cover, using a rubber mallet to tap it into place.

24. Replace the tire and wheel assembly, lower the car, and make sure all lug nuts or bolts are sufficiently tight.



Securing the cotter pin