

BALL JOINT CHECKING

FACTORY RECOMMENDED METHOD

AMERICAN MOTORS

Upper Ball Joint (Exc. Pacer) — Lift front of car until front wheels are off ground and place safety stands under body side sills. Remove upper ball joint grease fitting and install gauge tool (J-21240). Place pry bar under tire and lift several times. Subtract minimum reading from maximum reading obtained. If difference is more than .080", replace ball joint.

Lower Ball Joint (Exc. Pacer) — Move lower portion of wheel and tire inward and outward. If lower ball joint has any lateral shake, ball joint should be replaced.

Upper Ball Joint (Pacer) — Raise front of vehicle until wheels are off the ground. Move upper portion of wheel inward and outward. Then move upper control arm up and down. If ball joint exhibits any looseness, replace ball joint.

Lower Ball Joint (Pacer) — Remove grease fitting from ball joint and insert a stiff wire or thin rod into hole until it contacts ball stud. Scribe mark on wire where it aligns with outer edge of hole. Measure distance from end of wire to scribe mark. If distance is greater than $\frac{7}{16}$ ", ball joint should be replaced.

BUICK

Upper Ball Joint — If ball joint stud has any perceptible lateral shake, or if it can be twisted with no torque, replace ball joint.

Lower Ball Joint — Wear is indicated visually. A new ball joint will show a $\frac{1}{16}$ " protrusion of round nipple into which grease fitting is installed. Replace ball joint if round nipple is flush or below surface of cover.

CADILLAC

Upper Ball Joint (Exc. Seville) — With car on stands, remove wheel and tire. Scribe an alignment mark between steering knuckle and camber eccentric. Loosen ball joint stud lock nut two turns. Use hammer to separate joint and knuckle and remove lock nut and washer from stud. Using joint stud nut and a second nut as a lock nut, turn joint in socket using an INCH lb. torque wrench. Reading should be between 24-48 INCH lbs. Replace ball joint if too tight or loose.

Upper Ball Joint (Seville) — If upper ball joint has any lateral shake or can be twisted by hand, ball joint should be replaced.

Lower Ball Joint (Exc. Eldorado) — Wear is inspected visually. A new ball joint will show a .050" protrusion of round nipple (at service plug). Replace ball joint if round nipple is flush or below surface of cover (see illustration).

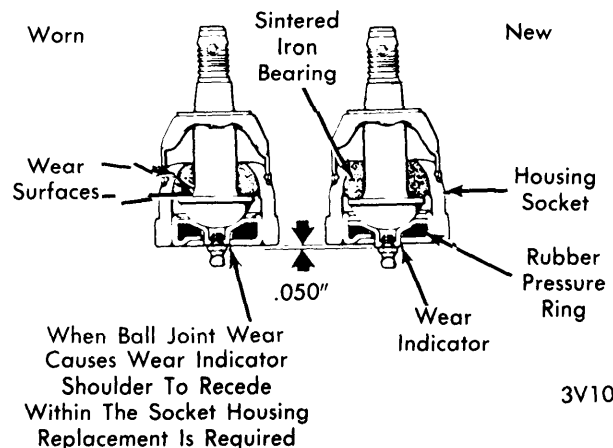
Lower Ball Joint (Eldorado) — Raise vehicle and position stands under lower control arms. Clamp self-locking pliers on hub to drive axle nut so pliers are in horizontal position. Using a suitable stand, mount a dial indicator so indicator is horizontal and contacting pliers. Place pry bar between lower control arm and drive axle outer race, then pry down on bar. **CAUTION** — Do not contact drive axle seal with pry bar or seal may become damaged internally. If reading on dial indicator exceeds .125", replace ball joint.

CHEVROLET

Upper Ball Joint — Raise vehicle and support on frame to allow front suspension to hang free, then remove wheel assembly. Support lower control arm on jack stand and disconnect upper ball stud from steering knuckle. Reinstall stud nut on ball stud and check for lateral shake. If lateral shake present or ball joint can be twisted in its socket with fingers, replace upper ball joint.

Lower Ball Joint (Exc. Corvette & Nova) — Support vehicle on wheels or frame so lower ball joint is in a loaded condition. Ball joint features a visual wear indicator and is checked as follows: Wear is indicated by protrusion of $\frac{1}{2}$ " diameter nipple into which the grease fitting is threaded. On a new, unworn joint, round nipple projects .050" beyond surface of ball joint cover. Normal wear will result in nipple retreating inward. If round nipple is flush with outside cover surface (see illustration), ball joint must be replaced.

Lower Ball Joint (Corvette & Nova) — With vehicle weight supported under lower control arm, measure distance from grease fitting to end of threaded stud. Record dimension. Raise tire and knuckle assembly by levering under the tire. This will seat ball stud internally. Remeasure, if difference in measurements exceed $\frac{1}{16}$ ", the joint is worn and must be replaced.



G.M. LOWER BALL JOINT WEAR INDICATOR

CHRYSLER CORP.

Lower Ball Joints (Valiant & Dart) — Ball joints and steering arm assemblies should not be replaced if axial end play (up and down movement) is under .070". Looseness of this nature is not detrimental and will not affect front wheel alignment.

Lower Ball Joints (All Other Models) — Ball joints are preloaded (zero axial end play). If any axial end play (up and down movement) in excess of .020" is observed, ball joint should be replaced.

BALL JOINT CHECKING (Cont.)

FORD MOTOR CO.

NOTE — Two different types of front suspensions are used. Both types are similar in design with the basic difference being the location of the coil springs and shock absorbers. One type (enclosed coil), has the coil spring and shock absorber mounted between the upper and lower control arms. The second type (spring tower), has the coil spring and shock absorber mounted between the upper control arm and body. For further description and information, see appropriate article in SUSPENSION Section.

Upper Ball Joint (Enclosed Coil) — Place floor jack under lower control arm and raise wheel. Check radial play by rocking wheel at top and bottom. There should be no perceptible looseness of upper ball joint. If so, replace upper control arm.

Lower Ball Joint (Enclosed Coil) — Place floor jack under lower control arm and raise wheel. Attach dial indicator to lower control arm so that plunger rests against inner side of wheel rim. Check radial play by rocking wheel at top and bottom. Maximum allowable radial play is .250". If wear exceeds specification, replace lower control arm.

Upper Ball Joint (Spring Tower) — Place jack under front crossmember and raise vehicle allowing wheel to drop to full down position. Attach dial indicator to upper control arm so that plunger rests against inner side of wheel rim. Check radial play by rocking wheel at top and bottom. Maximum allowable radial play on Maverick and Comet is .250", and on all other models there should be no perceptible looseness of upper ball joint. If wear exceeds specification, upper control arm should be replaced.

Lower Ball Joint (Spring Tower) — Place jack under front crossmember and raise vehicle allowing wheel to drop to full down position. Check radial play by rocking wheel at top and bottom. If any noticeable play exists, replace lower control arm.

OLDSMOBILE (EXC. TORONADO)

Upper Ball Joint — Place dial indicator against wheel rim with vehicle raised on jack stands. Push in on bottom of tire while pulling out at top, reverse procedure. Difference on dial indicator should not exceed .125".

Lower Ball Joint — Wear is inspected visually. A new ball joint will show a .050" protrusion of the round nipple into which grease fitting is installed. Replace ball joint if round nipple is flush with or below the surface of the cover.

OLDSMOBILE TORONADO

Vertical Check — Place car on floor stands positioned under lower control arms. Place dial indicator on stand. Clamp self-locking pliers on hub to drive axle nut so that pliers are in horizontal position. Make sure that indicator button contacts pliers. Place pry bar between lower control arm and drive axle outer race and pry down on bar. If reading on dial indicator exceeds .125", replace ball joint.

PONTIAC

Upper Ball Joint (Exc. Astre) — Place vehicle on floor stands positioned under lower control arms. Remove ball joint stud from steering knuckle by prying on control arm and tapping sharply on knuckle in area of ball stud. Install ball joint retaining nut on ball stud and measure amount of torque required to turn ball stud in socket. If zero torque is required, ball joint should be replaced.

Lower Ball Joint (Exc. Astre) — Wear is inspected visually. A new ball joint will show a .050" protrusion of round nipple into which grease fitting is installed. Replace ball joint if round nipple is flush or below surface of cover.

Upper Ball Joint (Astre) — If ball joint stud has any perceptible lateral play, or if it can be twisted with no torque, replace ball joint.

Lower Ball Joint (Astre) — With vehicle weight supported under lower control arm, measure distance from grease fitting to end of threaded stud. Record dimension. Raise tire and knuckle assembly by levering under tire. This will seat ball stud internally. Remeasure, if difference in measurements exceeds $\frac{1}{16}$ ", the joint is worn and must be replaced.