

BALL JOINT CHECKING

FACTORY RECOMMENDED METHOD

AMERICAN MOTORS (ALL MODELS)

Upper Ball Joint — 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 suitable 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 — Move lower portion of wheel and tire inward and outward. If lower ball joint has any noticeable lateral shake, joint should be replaced.

BUICK (EXCEPT APOLLO)

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 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.

BUICK APOLLO

Lower Ball Joint — Support vehicle weight under lower control arm and measure distance from grease fitting to end of threaded stud. Raise tire, knuckle and brake assembly by levering under tire and remeasure. If difference is greater than 1/16", joint is worn.

CADILLAC

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

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 DIVISION

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.

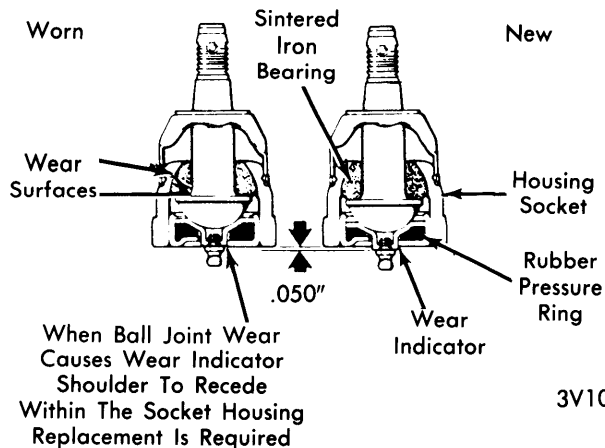
Lower Ball Joint (Exc. Nova, Vega & Corvette) — Support vehicle on wheels or frame so lower ball joint is in a loaded condition. Ball joint features a visual wear indicator and is checked as follows: Wear is indicated by protrusion of 1/2" diameter nipple into which the grease fitting is threaded. On 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 or inside cover surface (see illustration), ball joint must be replaced.

Lower Ball Joint (Nova, Vega & Corvette) — 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 1/16", joint is worn and must be replaced.

CHRYSLER CORP.

Lower Ball Joints (Valiant, Barracuda, Challenger & Dart) — Ball joints and steering arm assemblies should not be replaced for looseness if axial end play (up and down movement) is under .040". 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.



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G.M. LOWER BALL JOINT WEAR INDICATOR

FORD MOTOR CO. (ALL MODELS)

See Alternate Method in this section.

OLDSMOBILE (EXCEPT TORONADO)

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

Lower Ball Joint (Exc. Omega) — Raise vehicle and support under lower control arm. Ball joint features a visual wear indicator and is checked as follows: Wear is indicated by protrusion of 1/2" diameter nipple into which grease fitting is threaded. On a new unworn joint, round nipple projects .050"

Ball Joints

BALL JOINT CHECKING (Cont.)

beyond surface of ball joint cover. Normal wear will result in nipple retreating inward. If round nipple is flush or inside cover surface (see illustration), ball joint must be replaced.

Lower Ball Joint (Omega) — Support vehicle weight under lower control arm and measure distance from grease fitting to end of threaded stud. Raise tire, knuckle and brake assembly by levering under tire and remeasure. If difference is greater than $1/16"$, joint is worn.

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 — Place car 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. Ventura) — 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 (see illustration).

Lower Ball Joint (Ventura) — Support front lower control arm under spring seat and remove lube fitting from ball joint.

Remove hub and backing plate assembly or brake caliper assembly. Remove lower ball joint stud from steering knuckle by prying on control arm and tapping sharply on knuckle in area of ball stud. Mount dial indicator on lower control arm and position plunger of dial indicator into lube fitting hole so plunger is touching base of ball stud inside ball joint. Pull threaded part of ball stud straight up and down, noting dial indicator reading. If reading is over $.050"$, replace ball joint.

ALTERNATE METHOD

NOTE — There are two general types of suspensions, one type with spring or torsion bar attached to lower control arm, and the other with spring attached to upper control arm. Check axial play by moving wheel up and down. Check radial play by rocking wheel at top and bottom.

SPRING ON LOWER CONTROL ARM

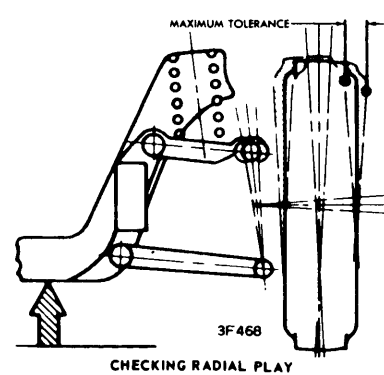
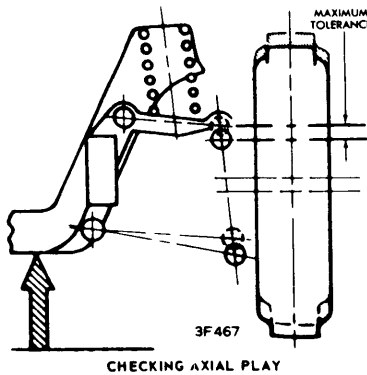
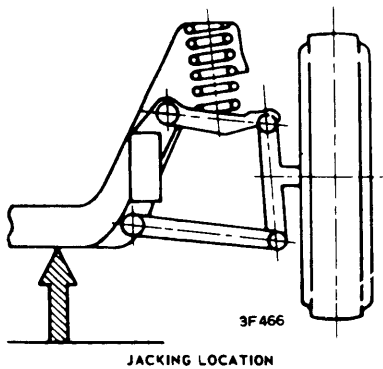
Upper Ball Joint — Replace ball joint if there is any perceptible looseness at joint.

Lower Ball Joint (Radial Play) — If radial play exceeds $.250"$, measured at bottom of tire on side wall, replace ball joint.

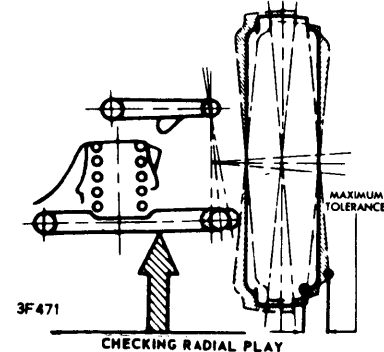
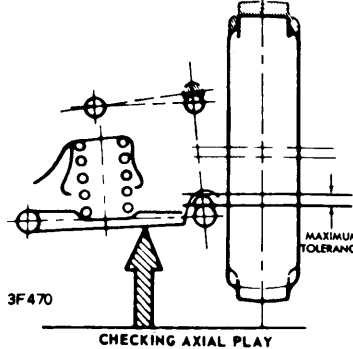
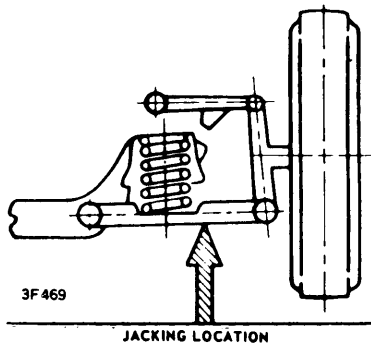
SPRING ON UPPER CONTROL ARM

Upper Ball Joint (Radial Play) — If radial play exceeds $.250"$, measured at top of tire on side wall, replace ball joint.

Lower Ball Joint — Replace ball joint if there is any perceptible looseness in joint.



SPRING SUPPORTED ON UPPER ARM



SPRING SUPPORTED ON LOWER ARM