BALL JOINT CHECKING

FACTORY-RECOMMENDED METHOD

AMERICAN MOTORS

Lower Ball Joint – With front of vehicle supported, alternately move lower portion of wheel assembly toward and away from center of vehicle. Ensure that ball stud retaining nut is tightened to 75 ft. lbs. Ball joint is spring equipped and preloaded to compensate for wear and minimize looseness. If lateral movement is noted, ball joint should be replaced.

NOTE – *On Eagle models, lower control arm and ball joint must be replaced as an assembly. Do not attempt to service ball joint separately.*

Upper Ball Joint – With front of vehicle supported at control arm, position dial indicator or wheel runout gauge at tire scrub bead. Move top of wheel assembly in and out several times, noting maximum travel. If total movement exceeds .160", ball joint should be replaced.

CHRYSLER CORP.

Lower Ball Joints (Rear Wheel Drive Models) – **1)** Raise vehicle and place on safety stands so weight of vehicle rests on control arms as far outboard as possible. Install dial indicator and clamp assembly to lower control arm. Zero indicator with plunger tip against knuckle arm.

2) Raise and lower wheel using levering action under tire. Measure axial travel of knuckle arm. If movement of knuckle arm relative to lower control arm exceeds .030", replace ball joint.

Lower Ball Joint (Front Wheel Drive Models) – With weight of vehicle resting on wheels in normal driving position, grasp grease fitting and attempt to move fitting. If fitting moves easily, joint is worn and should be replaced.

Upper Ball Joint (Rear Wheel Drive Models) – **1)** Raise vehicle clear of floor with jack under lower control arm. Remove hub cap, grease cap, and cotter pin from spindle. Tighten spindle nut to remove all bearing end play. Lower vehicle until it lightly touches floor.

2) Grasp the top of the tire and firmly apply in-and-out motion. Check for any movement at the ball joints between knuckle and upper control arm. If any lateral movement is observed, replace upper ball joint.

FORD MOTOR CO.

Escort and Lynx use MacPherson strut type suspension system with the spring at the top of the shock absorber strut assembly. A single ball joint is used at the lower end of the steering knuckle where it attaches to the lower control arm. Ball joint is not replaceable. If worn, lower control arm assembly must be replaced.

Ford, Mercury, Lincoln Town Car and Mark VI use the double arm enclosed coil spring system with 2 ball joints. Upper ball joint attaches outer end of upper control arm to steering knuckle and lower ball joint connects lower control arm to bottom of steering knuckle. Ball joints are not replaceable.

All remaining Ford models use a modified MacPherson strut with coil spring mounted between frame spring pocket and lower control arm. Ball joint is used at attachment point of lower control arm and steering knuckle. Ball joints are not replaceable.

NOTE – *Front wheel bearings must be properly adjusted before inspecting ball joints.*

Lower Ball Joint (Escort & Lynx) – Raise vehicle so that wheels fall to full down position. Grasp lower edge of tire and move tire and wheel assembly in and out. Any movement between lower end of knuckle and control arm indicates abnormal wear and requires replacement of lower control arm assembly.

Lower Ball Joint (All Except Escort & Lynx) – With vehicle in the normal driving position (weight on wheels), wipe wear indicator and ball joint cover checking surface free of dirt and grease. Checking surface should project as shown. See *Fig. 1*.

NOTE – *Some models may not be equipped with grease fittings.*

Upper Ball Joint (Ford, Mercury, Lincoln Town Car & Mark VI) – Support vehicle near outer end of lower control arms. Move lower edge of wheel and tire in and out. Any movement between upper end of steering knuckle and control arm indicates abnormal wear and requires replacement of control arm.

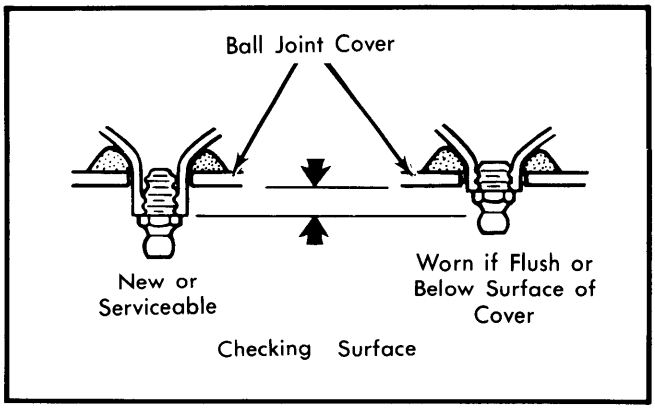

Fig. 1 Checking Lower Ball Joint (Ford Motor Co.)

GENERAL MOTORS

Lower Ball Joint (Eldorado, Riviera, Seville & Toronado) – **1)** Raise vehicle and position stands under lower control arm. Clamp self-locking pliers on hub-to-drive axle nut so pliers are in a horizontal position. Mount a dial indicator in a horizontal position so plunger contacts pliers.

2) Place pry bar between lower control arm and drive axle outer race. Pry down on bar. If reading on dial indicator is greater than .125", replace lower ball joint. Also replace if ball stud is disconnected from knuckle or if any looseness is noted. Replace ball joint if ball stud can be twisted in its socket with fingers.

Lower Ball Joint (Corvette) – **1)** Raise vehicle off ground and support weight under lower control arm. Measure distance from grease fitting to end of threaded stud. Record dimension.

BALL JOINT CHECKING (Cont.)

2) Raise tire and knuckle assembly by levering under tire. This will seat ball stud internally. Remeasure. If difference in measurements exceed .06", the ball joint is worn and must be replaced.

3) Check ball stud tightness in knuckle boss by shaking wheel and observing movement of stud end and/or nut at knuckle boss or by removing cotter pin and checking torque. Looseness can mean a bent stud or an "opened up" hole in knuckle. Replace defective parts if found.

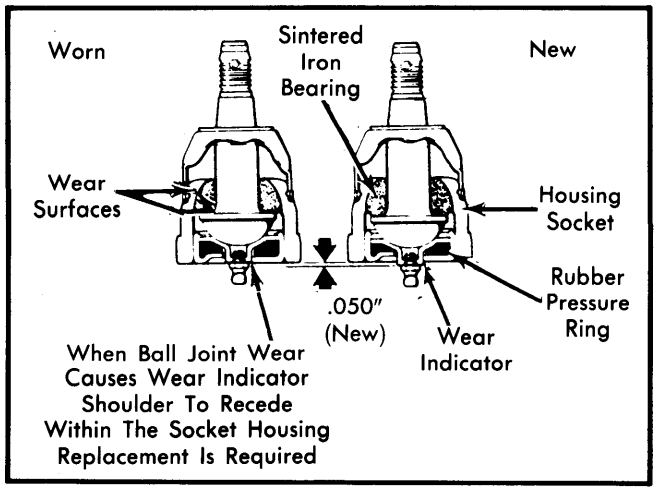

Fig. 2 Lower Ball Joint Wear Indicators (General Motors)

Lower Ball Joint (Citation, Omega, Phoenix & Skylark) – Support vehicle by placing jack or lift under cradle. Grasp wheel at top and bottom and shake in an in-and-out motion. If horizontal movement between knuckle and control arm is noted, replace ball joint.

Lower Ball Joint (All Other Models) – Raise vehicle and support under lower control arms. Visually inspect ball joint. Wear is indicated by position of ½" diameter nipple into which the grease fitting is threaded. On a new or unworn ball joint, the nipple will extend .050" beyond surface of ball joint cover. Normal wear will cause nipple to become flush or recessed into cover. Replacement is then required. See *Fig. 2*.

Upper Ball Joint (Eldorado, Riviera, Seville & Toronado) Raise vehicle and position stands under outer ends of front lower control arms. Position dial indicator against wheel rim. Push in and out on bottom and top of wheel. Total reading of dial indicator should not exceed .125". If greater than .125" replace ball joint.

Upper Ball Joint (All Other Models) – Raise the vehicle and support with stands beneath the lower control arms. Place stands between ball joint and spring pocket. Grasp wheel at top and bottom and move top of wheel firmly in and out. Any looseness observed, without movement of steering knuckle, indicates worn ball joints. Replace ball joints if they can be twisted by hand or if lateral shake is noted.