

Ball Joint Checking

ARROW/COLT

All Models — With components removed from control arm and ball joint still installed, check following: Horizontal and vertical free play (0"), and ball joint rotation starting torque 4-6 ft. lbs. (6-8Nm). Replace ball joints if correct specifications are not obtained.

AUDI

Fox — Clearance of ball joint with pressure applied by leverage should be .04-.10" (1.0-2.5 mm). If not replace ball joints.

BMW

All Models — With lower control arm removed, measure axial (up and down) movement of ball joint stud. If movement exceeds .0945", replace ball joint. See *BMW in SUSPENSION Section*.

COURIER

All Models — Check working surfaces of ball joints and studs for wear or damage. End play should not exceed .031" (.8 mm). If end play is excessive, replace ball joint. See *Courier in SUSPENSION Section*.

DATSUN

All Models (Exc. 620 Pickup) — Remove lower control arm. See *Datsun in SUSPENSION Section*. Use appropriate spring tension gauge and attach it to top of ball joint stud nut. Measure force (INCH Lbs.) required to move ball joint stud laterally. If measurement is not within specifications, replace ball joint.

Ball Joint Specifications

Application	Lateral Movement INCH Lbs. (cmkg)
F10.....	30 (35)
All Others.....	More Than 50 (43)

FIAT

All Models — With vehicle raised and supported under lower control arms, grasp wheel at top and bottom and try to shake wheel. If any movement is noted, control arm must be removed for further inspection. See *Fiat in SUSPENSION Section*.

HONDA

All Models — Raise and support front of vehicle. Attach dial indicator onto lower control arm with indicator tip on steering knuckle near ball joint. Place pry bar between lower control arm and steering knuckle. **NOTE** — Take care not to damage ball joint rubber boot. Push on pry bar and observe movement on dial indicator. If movement is in excess of .020" (.5 mm), ball joint must be replaced. See *Honda in SUSPENSION Section*.

JAGUAR

All Models — Upper ball joint must be replaced if signs of wear or play are evident. The lower ball joint is adjustable with shims if axial play exceeds .004-.006" (.10-.15 mm). Shims must not be removed to take up excessive wear in ball pin and socket. If parts are excessively worn, replacement is required.

LANCIA

All Models — If ball joint shows excessive amounts of wear (play), replace ball joints. See *Lancia in SUSPENSION Section*.

LUV

With vehicle raised and supported under lower control arms, grasp wheel at top and bottom. Try to move wheel and replace ball joint if movement exceeds .06" (1.52 mm).

MAZDA

All Models — Check ball joint dust seal for wear or damage and, if necessary, replace seal. Ball joint end play must not exceed .039" (1 mm). If end play exceeds specifications, replace ball joint. See *Mazda in SUSPENSION Section*.

MERCEDES-BENZ

There should be no lateral movement of ball joint. Vertical movement is adjusted by adding or removing washers.

OPEL

All Models — Raise and support front of vehicle. Inspect ball joint rubber boots for damage and replace as necessary. If lower ball joint axial play exceeds .008" (2 mm), ball joint must be replaced. See *Opel in SUSPENSION Section*.

PEUGEOT

All Models — Inspect ball joints for roughness or excessive wear. Replace ball joints as necessary. See *Peugeot in SUSPENSION Section*.

PORSCHE

All Models — When moving ball pin some friction torque should be felt. If ball pin can be moved without resistance and end play is shown, replace ball joint.

RENAULT

All Models — Inspect ball joints for wear or excessive play. Replace ball joints as necessary.

SAAB

All Models — If ball joint exhibits excessive play, it must be replaced as a complete unit. See *Saab in SUSPENSION Section*.

SUBARU

All Models — Check ball joint for excessive play by pushing and pulling on ball joint stud. Allowable looseness is less than .012". If play exceeds this specification, ball joint must be replaced. See *Subaru* in *SUSPENSION* Section.

TOYOTA

Corona & Pickup — To check lower ball joint, jack up lower suspension arm and check for ball joint looseness by moving wheel vertically and horizontally. Movement limit in vertical direction should be less than .04" (1 mm) Corona and .20" (5.0 mm) Pickup. Movement limit in horizontal direction should be less than .08" (2 mm) Corona and .09" (2.3 mm) Pickup.

NOTE — *Ensure other suspension parts are tight before checking ball joints. To check upper ball joints, disconnect upper suspension arm from steering knuckle. Turn ball stud and check for excessive looseness or tightness. Replace ball joint if it is excessively loose or tight.*

All Other Models — Check for excessive looseness, proper operation and damaged ball stud. Replace as necessary.

TRIUMPH

All Models — Inspect ball joints for excessive wear or play. Replace ball joint as necessary. See *Triumph* in *SUSPENSION* Section.

VOLKSWAGEN

Type 1 — Raise front of vehicle and turn steering to one side. Place pry bar tool over nut or bolt head mounting steering

knuckle to strut. Compress ball joint spring and place vernier caliper over top of ball joint and over bottom stud. Note caliper reading, then release lever and record caliper travel. Increased reading is ball joint play. Replace ball joints as necessary.

Type 2 — Raise front of vehicle and turn steering to one side. Insert pry bar tool VW 281a (or equivalent) under lower control arm and over top of strut mounting. Fit a vernier caliper on lower or upper torsion arm and steering knuckle. Record measurement. Press down with lever and measure travel of vernier caliper. If travel exceeds specifications, replace ball joint.

All Other Models — Raise and support, then turn steering to one side. Install suitable levering tool so that ball joint spring may be compressed. With spring compressed, position a vernier caliper with lower jaw on ball joint stud and upper jaw on top of clamping bolt for ball joint stud. Note reading. Slowly release tension from spring and note travel of caliper. This reading indicates ball joint play. If specified play is exceeded, replace ball joint. See *Volkswagen* in *SUSPENSION* Section.

Ball Joint Specifications

Application	Travel In.(mm)
Type 208 (2)
All Others10 (2.5)

VOLVO

All Models — Maximum permitted axial play for lower ball joint is .12" (3 mm). Check ball joint by prying back and forth with a bar. If specifications are exceeded, replace ball joints. See *Volvo* in *SUSPENSION* Section.