

## FIAT (Cont.)

**Models 128 & X1/9** — Tighten front and rear spindle nuts to 112 ft. lbs. When spindle nuts are properly tightened, stake collar of spindle nut into machined slot on spindle.

## HONDA

**All Models (Front)** — Front wheel bearings are not adjustable. Torque front spindle nut to 87-130 ft. lbs. (Civic) or 109 ft. lbs. (Civic CVCC).

**All Models (Rear)** — Rear wheel bearings are not adjustable. Torque rear spindle nut to 72-94 ft. lbs. (Civic) or 83 ft. lbs. (Civic CVCC).

## JAGUAR

**All Models** — While rotating hub, tighten nut until no end play is evident. Loosen nut 1 or 2 flats to line up cotter key and install cotter key. End play should be measured with a dial indicator and should be .002-.006". If not within specifications, adjust axle nut to correct end play.

## LUV

**All Models** — While rotating wheel, tighten spindle nut to 22 ft. lbs. Turn hub through two or three turns and loosen nut until just finger tight. Check free play. Using a pull scale attached to wheel stud, measure turning torque; adjust nut until pull recorded on scale is 1.1-2.6 lbs. when wheel begins to rotate.

## MAZDA

**All Models** — With vehicle raised and supported under lower control arms, measure amount of bearing preload using a pull scale hooked on hub bolt. Preload should be 1.3-2.4 lbs. (B1600) or .9-2.2 lbs. (all other models). If not to specifications, adjust by tightening spindle nut until correct bearing preload is obtained. Align slot of spindle nut with hole in spindle and install new cotter key.

## MERCEDES-BENZ

**All Models** — While rotating hub, tighten clamping nut until hub can just be turned. Loosen clamping nut and release bearing tension by striking steering knuckle spindle with plastic hammer. Using a suitable dial indicator, check wheel bearing end play. End play should be .0004-.0008". Adjust clamping nut until end play is within limits. Tighten socket bolt of clamping nut. Washer between outer bearing and clamping nut should rotate with light pressure applied to it.

## MG

**Midget** — Raise front of vehicle and remove each wheel. Remove caliper assembly, but do not disconnect hydraulic brake hose. Support caliper to prevent damage to hose. Attach suitable dial indicator and measure runout of hub at outer edge of brake rotor. If runout exceeds .006" remove rotor and reposition on hub. Torque spindle nut to 46 ft. lbs. and recheck runout.

## MG

**MGB & MGB/GT** — Raise front of vehicle and remove front wheels. Using suitable dial indicator, measure hub end play. Correct end play is .002-.004". If not within specifications, remove spindle nut, washer, and outer bearing. Add or remove shims behind outer bearing, until correct end play is obtained with spindle nut torqued to 40-70 ft. lbs.

## OPEL

**All Models** — Raise and support front of vehicle. While rotating wheel, torque spindle nut to 18 ft. lbs. Back off spindle nut ¼ turn. If slot in spindle nut and hole in spindle do not align, back off nut until they are aligned and insert cotter pin. Properly adjusted wheel bearing will exhibit small amount of end play.

## PEUGEOT

**All Models** — While turning wheel, tighten spindle nut to 22 ft. lbs. Loosen and retorqued nut to 7 ft. lbs. Lock nut in this position, by staking nut collar into slot of spindle.

## PORSCHE

**All Models** — Turn wheel and tighten clamping nut just enough to seat roller bearings. Loosen until tab washer can be easily moved in a lateral direction (by means of a screwdriver) and no perceptible bearing play is felt when hub is moved axially. Tighten screw on clamping nut to specified torque and recheck adjustment.

## RENAULT

**All Models (Front)** — Front wheel bearings are not adjustable. Torque spindle nut to 115 ft. lbs., while holding hub-disc assembly.

**All Models (Rear)** — Tighten rear spindle nut to 25 ft. lbs., while rotating the disc or drum. Loosen nut ¼ turn and check end play using a dial indicator. End play should be .001-.002". Adjust spindle nut until end play is set to specifications, then install a new cotter key.

## SAAB

**All Models (Front)** — Front wheel bearings are not adjustable. Torque front spindle nut to 145 ft. lbs.

**All Models (Rear)** — Install washer and lock nut. Tighten lock nut to 36 ft. lbs. (5 mkg) to seat bearings. Loosen lock nut completely, then tighten nut to 1.4-2.9 ft. lbs. (.2-.4 mkg) and lock nut in place by bending flange into slot of lock nut.

## SUBARU

**All Models (Front)** — Front wheel bearing is not adjustable. Tighten spindle nut to 174 ft. lbs.

**4WD Station Wagon (Rear)** — Rear wheel bearings are not adjustable. Tighten spindle lock nut to 145-181 ft. lbs.

# Wheel Bearing Adjustment

## SUBARU (cont.)

**All Other Models (Rear)** — While rotating brake drum, snug down spindle nut to seat bearings. Back spindle nut off  $\frac{1}{8}$  turn and bend down tab of locking washer to secure spindle nut. If adjustment is correct, a force of 6.1-8.7 INCH lbs. will be required to rotate wheel.

## TOYOTA

**Land Cruiser** — Install claw washer and tighten front wheel adjusting nut with suitable tool (09607-60010). Rotate drum to seat bearings. Loosen nut  $\frac{1}{8}$ - $\frac{1}{6}$  turn. If brake drum rotates properly, install lock washer and tighten lock nut with suitable tool (09607-60010).

**Hi-Lux** — Tighten front axle castle nut to 36 ft. lbs. to seat bearings, then back off until nut is finger tight. Retighten nut to 36 ft. lbs. and back off  $\frac{1}{6}$ - $\frac{1}{3}$  turn and install cotter key. When properly adjusted bearing preload should be as shown in table, when checked with pull scale attached to hub bolt.

**All Other Models** — Tighten castle nut bearing retainer nut 18.8-23.2 ft. lbs. and turn brake drum back and forth to seat bearing. Loosen nut until can be turned with fingers. Tighten nut to finger tight using a socket without the handle. If not aligned for cotter key installation, tighten until installation possible. Preload at hub (hub rotating) should be within specifications.

### Bearing Preload Specifications

Application	Preload (Oz.)
Corona.....	12.3-30.6
Hi-Lux.....	10.6-38.8
All Others.....	10.6-24.7

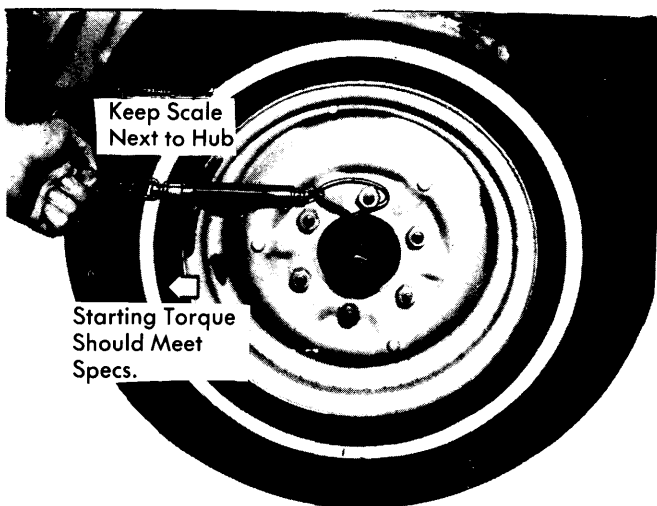


Fig. 1 Using a Pull Scale to Measure Wheel Bearing Starting Torque

## TRIUMPH

**TR7** — Raise and support front of vehicle, then remove wheel and tire. Check hub for excessive end play. If adjustment is necessary, remove grease cap and cotter key. Tighten spindle nut to 5 ft. lbs. (.7 mkg), then back nut off one flat and install cotter key.

**All Other Models** — Raise and support front of vehicle, then remove wheel and brake pads. Attach a dial indicator and measure bearing end play. If end play exceeds .003-.005" (TR6) or .002-.008" (Spitfire), remove cotter key and loosen or tighten spindle nut until end play is within specifications. Install a new cotter key.

## VOLKSWAGEN

**Type I & II (Front)** — Raise and support front of vehicle. While rotating wheel, tighten spindle clamp nut to seat bearings. Loosen clamp nut until axial play is .001-.005". Tighten clamp nut.

**All Other Models (Front)** — Front wheel bearings are pressed into bearing housing and no adjustment is necessary. Tighten front axle nut to 180-216 ft. lbs. (Dasher) or 173 ft. lbs. (all other models).

**Dasher, Rabbit & Scirocco (Rear)** — Wheel bearings are correctly adjusted if thrust washer can be moved slightly with a screwdriver. *NOTE* — This will provide axial play of approximately .001-.003".

## VOLVO

**All Models** — While rotating hub, torque nut to 50 ft. lbs. Loosen nut  $\frac{1}{3}$  turn and check for hub rotating freely with no end play. If necessary to align cotter key holes loosen nut and install cotter key.

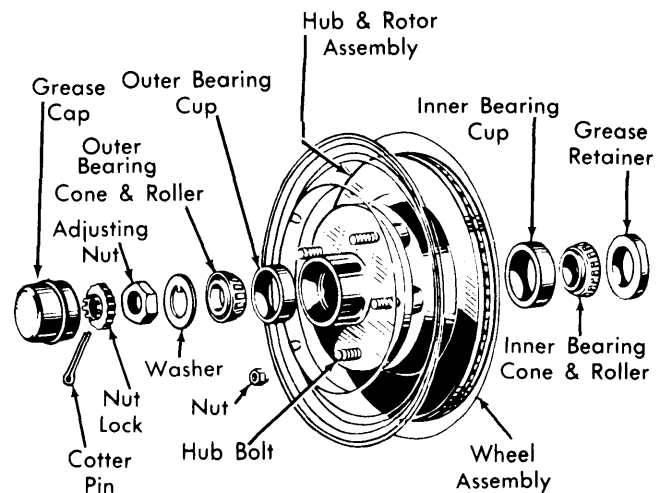


Fig. 2 Exploded View of Wheel Bearing Components with Disc Brakes