VOLKSWAGEN (Cont.)

Type 2 (Front) – Loosen both clamp bolts on right side tie rod. Rotate right side tie rod until toe is within specifications. Rotating tie rod toward front of vehicle increases toe. Opposite direction rotation decreases toe.

Dasher, Rabbit, Scirocco (Front) – Place front wheels in straight-ahead position. Loosen lock nut on adjustable tie rod end (left side, Dasher; right side, Rabbit and Scirocco). Hold axle boot to avoid twisting. Adjust tie rod until specified toe-in is obtained. Tighten lock nut and recheck toe-in.

Type 1 (Rear) – If adjustment is necessary, remove nuts securing spring plate but do not remove bolts. To adjust, move diagonal arm forward or backward in slotted spring plate mounting holes until toe-in is set to specifications. Install spring plate attaching nuts and recheck toe-in.

Type 2 (Rear) – If adjustment is necessary, loosen bolts in axle tube flange. Hook toe setting tool (VW 160) in position and set toe-in to specifications.

All Other Models (Rear) – Toe-in is not adjustable. If toe-in is not within specifications, inspect rear suspension for wear or damage and repair or replace components as necessary.

TORSION BAR ADJUSTMENT (REAR)

Type 1 – Using a suitable protractor, find deviation of vehicle from horizontal plane and note reading which will be used in setting angle of spring plate. Install spring plate on torsion bar and measure position with protractor. If not within specifications, adjust by moving torsion bar, one spline at a time, forward or backward until correct position is obtained.

Type 2 – Using a suitable protractor, check horizontal position of vehicle on one frame side member. Reading should be noted; it will be used in setting spring plate angle. Insert inner end of torsion bar in center anchor and press spring plate on outer end of torsion bar. Adjust protractor on unloaded spring plate until bubble is in center position. Adjust torsion bar one spline forward or rearward until correct specifications are obtained.

Torsion Bar Specifications

Application	Degrees
Type 1	21°20′+20′
Type 2	
Kombi, Campmobile	20°+50′
Station Wagon	23°+50′

VOLVO

ADJUSTMENT

TIRE INFLATION (COLD)

Before attempting to check or adjust wheel alignment, make sure tires are properly inflated. Refer to manufacturers specifications given in owner's manual.

CASTER

Caster cannot be adjusted. If not within specifications, check front end components for damage.

CAMBER

If camber is not within specifications, loosen nuts at strut assembly upper attachment. Use special tool 5038 (or equivalent) at strut upper attachment to adjust camber. Tighten lock nuts. Recheck camber.

TOE-IN

Place wheels in straight-ahead position and loosen lock nut and rubber dust boot outer clamp. Turn tie rods until toe is within specifications. Make sure length of tie rods does not differ more than .08" (2 mm). Measure difference between groove in tie rod and lock nut.

AUDI

5000 (Front) – Adjustment not required. Torque spindle nut to 203 ft. lbs. (28 mkg).

5000 (Rear) – Tighten adjustment nut firmly while rotating wheel. Make sure bearing is fully seated. Back off nut until thrust washer can be moved with screwdriver. Insert cotter key.

Fox (Front) – Adjustment not required. Torque spindle nut to 145 ft. lbs. (20 mkg) for M 18x1.5 nuts or 175 ft. lbs. (24 mkg) for M 20x1.75 nuts

Fox (Rear) – Remove grease cup, cotter pin and castle nut. Tighten spindle nut and loosen for adjustment. Adjust by lightly tightening spindle nut until plain washer (beneath spindle nut) can just be moved from side to side, using screwdriver. This adjustment will correspond to .0012-.0027" (.03-.06 mm) wheel bearing play.

BMW

320i Models – While rotating wheel hub, tighten castle nut to 22-24 ft. lbs. (3.0-3.3 mkg), then rotate hub at least 2 more times. Loosen castle nut until bearing end play is noticed. Tighten castle nut to a maximum of about 2 ft. lbs. (.3 mkg), then loosen to nearest hole and install cotter pin.

NOTE – *After adjustment, slotted washer should move easily, without noticeable resistance.*

528i, 633CSi & 733i Models – Tighten castle nut to 22-24 ft. lbs. (3.0-3.3 mkg), while continuously rotating wheel. Loosen castle nut until there is visible axial bearing play. Again rotate wheel and tighten bearing, this time to 2 ft. lbs. (.3 mkg). Insert cotter pin. Thrust washer should have movement with only slight resistance after adjustment.

CHRYSLER CORP. IMPORTS

All Models (Exc. Champ & Colt FWD) – Tighten adjusting nut to 14.5 ft. lbs. (2.0 mkg) on Arrow, Challenger, Colt (exc. FWD) and Sapparo models or to 21.7 ft. lbs. (3.0 mkg) on pickup models. After seating bearing components, loosen nut to 0 torque reading. Now make final adjustment to 3.6 ft. lbs. (.5 mkg) on all except pickup models. On pickup models tighten nut to 5.8 ft. lbs. (.8 mkg). Insert cotter pin.

NOTE – *Do not loosen adjusting nut more than 30° on pickup models or 15° on all other models.*

Champ & Colt FWD – 1) To obtain the correct bearing preload spacer, install special tool (Spacer Selection Gauge MB 990768) to hub and tighten the nut to 14 ft. lbs. (1.9 mkg).

2) Rotate hub and special tool assembly to seat wheel bearings. Install dial indicator on special tool and load approximately .2" (5 mm) of travel on dial indicator. Zero dial indicator.

3) Measure travel by holding threaded stud of special tool with a wrench, then back off nut slowly until travel no longer registers on dial indicator. Note reading.

4) Repeat procedure to ensure accurate reading. Average the readings and select a spacer of the correct thickness. Install spacer, with chamfered side toward steering knuckle.

COURIER

All Models – While rotating wheel, hub and drum assembly, tighten adjusting nut to 17-25 ft. lbs. (2.4-3.5 mkg). Back adjusting nut off ¼ turn and retighten nut where castellations on lock nut are aligned with cotter pin hole in spindle. Install new cotter pin and check wheel rotation.

DATSUN

All Models (Except 310) – Tighten spindle nut to torque specifications in table. Spin wheel and retorque spindle nut. Loosen nut according to specifications in table and then tighten to align cotter pin hole. Insert cotter pin.

Wheel Bearing Adjustment

Application	Torque Ft. Lbs. (mkg)	Loosen
210, 510	22-25 (3.0-3.5)	90°
200SX, 810, 280ZX	18-22 (2.5-3.0)	60°
Pickup	25-29 (3.5-13)	45°

310 – 1) With vehicle raised and supported, remove wheel and steering knuckle. Disassemble components. Determine required thickness of bearing spacer as follows: Place outer bearing on base (KV40100700-3) and place steering knuckle over it so bearing seats in outer race. Then slide inner bearing over dummy shaft (KV40100700-1) and place shaft bearing in knuckle with end of shaft in outer bearing and inner bearing in inner race.

2) Slide weight (KV40100700-2) over dummy shaft and down onto knuckle. Turn knuckle back and forth to seat bearing. Assemble suitable dial indicator with contact button resting on top of dummy shaft, and set indicator to zero. Pull upward on shaft until it reaches end of travel, rotate it 1 revolution and record maximum deflection of indicator needle.

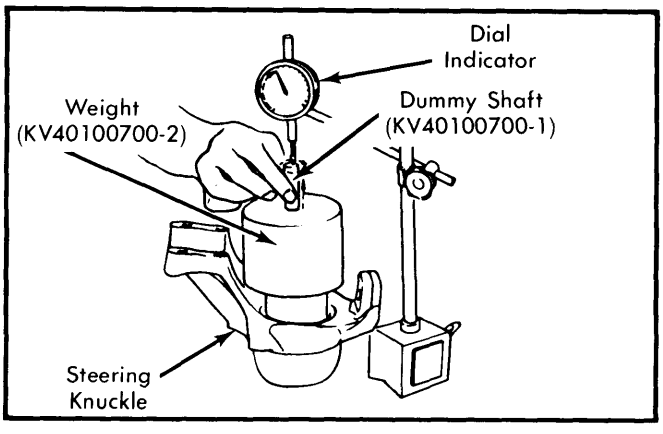

Fig. 1 Determining Required Spacer Thickness

3) To determine required spacer thickness, add recorded dial indicator reading to metric thickness dimension stamped on side of flange on end of dummy shaft.