DATSUN 310

DESCRIPTION

All models use a strut type front suspension system. Shock absorbers are built into each strut. Upper end of strut is mounted to inner fender panel. Lower end is connected by a ball joint to lower control arm. Control arm mounts at two points on subframe. Steering knuckle is removable from strut. Knuckle bolts to strut with four bolts and has a hole for axle drive shafts to pass through.

ADJUSTMENTS

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

See Wheel Alignment Specifications and Procedures in WHEEL ALIGNMENT Section.

WHEEL BEARING ADJUSTMENT

1) Loosen spindle nut and tighten to 87-145 ft. lbs. (118-196 N•m). Spin assembly several times in both directions to ensure smooth rotation.

2) Torque required to start rotation at spindle nut should be 6.9-24.3 INCH lbs. (.8-2.7 N•m). Preload may also be measured with a pull scale attached to one of the wheel studs. Force required should be 3.1-10.8 lbs. (13.7-48.1 N).

3) If preload is not to specifications, bearing spacer must be replaced. (See "Bearing Removal"). If any axial end-play is present in wheel bearing, or bearing preload is below specification, replace spacer with a smaller one. If bearing preload is greater than specification, a larger spacer must be installed.

BALL JOINT CHECKING

With ball joint removed and stud nut in place, check turning torque required to turn stud. If force required is less than 8.7 INCH lbs. (1.0 N•m) on a used joint, it should be replaced. Check end play with dial indicator at stud end. If end play exceeds .059" (1.5 mm), replace ball joint.

REMOVAL & INSTALLATION

CONTROL ARM

Removal – Raise and support vehicle with safety stands. Remove tire and wheel. Remove bolts securing lower control arm to ball joint. Take off nut mounting stabilizer bar to control arm. Disconnect control arm from subframe by removing two mounting bolts.

Inspection – Inspect arm for distortion. Replace control arm bushings using a press. Make sure new bushings extend evenly on both sides of hole.

Installation – To install, reverse removal procedure and note: Control arm bolts must be tightened with weight of vehicle on ground.

STEERING KNUCKLE

Removal – Raise vehicle and place on safety stands. Remove tire and wheel. Detach and plug brake line and remove brake caliper. Remove axle nut. Using a puller, remove stub axle and brake rotor assembly from axle shaft. Disconnect ball joint and support control arm. Remove 4 bolts securing steering knuckle to strut.

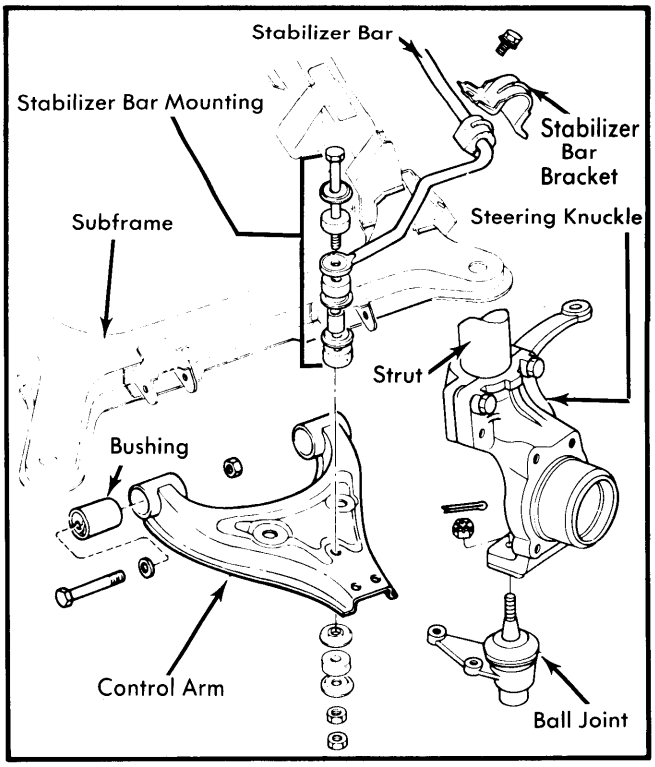

Fig. 1 Exploded View of Control Arm and Stabilizer Bar

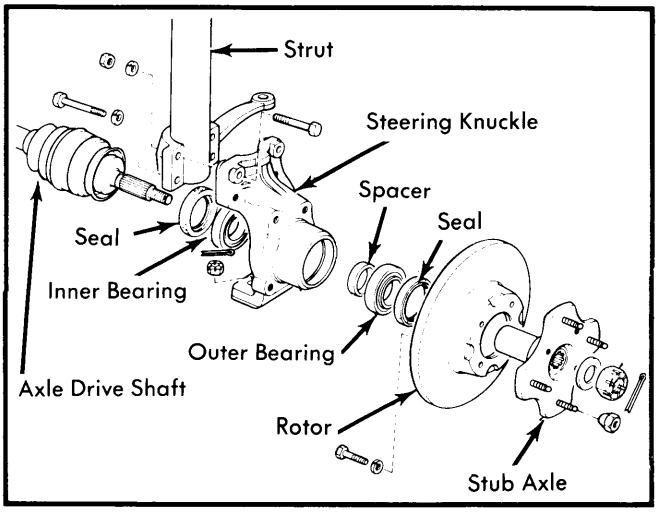

Fig. 2 Exploded View of Steering Knuckle and Strut

Installation – To install, reverse removal procedure and note: Adjust wheel bearings.

BALL JOINT

Removal – Raise vehicle and support on safety stands. Remove tire and wheel. Remove ball joint stud nut. Use ball joint driver and hammer to drive ball joint stud out of knuckle. Remove bolts securing ball joint to lower control arm.

NOTE – *Take care not to damage ball joint dust cover.*

Installation – To install ball joint, reverse removal procedure and make sure new cotter pin is installed. Replace ball joint dust cover if cracked.

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STABILIZER BAR

Removal – 1) Raise vehicle and support on safety stands. Support subframe with jack. Disconnect exhaust pipe from exhaust manifold and front body mount. Disconnect transmission control linkage and transmission support rod at transmission.

2) Remove stabilizer-to-control arm nuts. Loosen, but do not remove, subframe attaching bolts. Lower subframe just enough to allow removal of stabilizer bar clamp bolts from subframe. Remove stabilizer bar from vehicle.

Installation – To install, reverse removal procedure and replace any bushing that is worn or cracked.

STRUT ASSEMBLY

Removal – 1) Raise vehicle and suitably support with safety stands. Remove tire and wheel. Working from inside engine compartment, remove cap. Partially loosen lock nut mounting piston rod. Disconnect brake line and plug opening. Detach tie rod from steering knuckle.

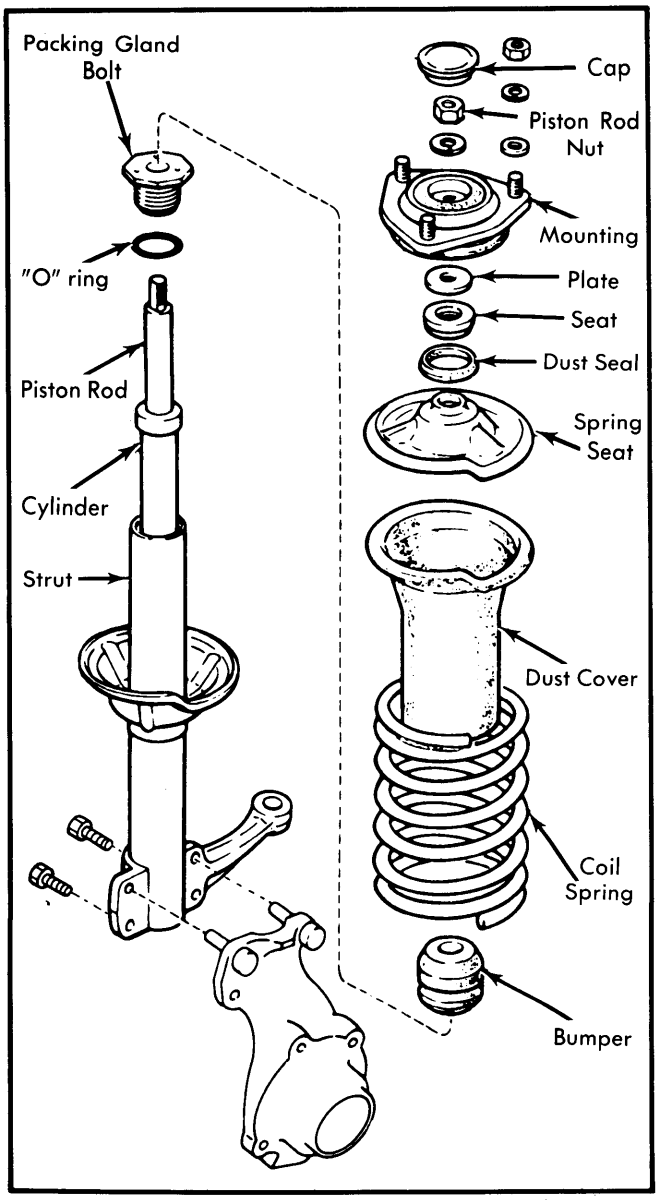

Fig. 3 Exploded View of Strut Assembly

2) Place safety stand under control arm for support. Remove four bolts mounting strut to steering knuckle. Remove three nuts keeping upper portion of strut to inner fender panel. Maneuver strut and coil spring assembly from vehicle.

Disassembly – 1) Place strut in a vise and use a spring compressor to slightly compress coil spring. Remove piston rod nut and all upper mounting hardware.

2) Push piston rod into cylinder until it bottoms. Remove packing gland bolt. Remove "O" ring, then slowly lift out piston rod and cylinder as a unit. Drain all fluid from inner cylinder and strut casing. Discard inner cylinder. Flush strut casing with solvent.

Inspection – Inspect all components for damage or excessive wear. Always replace packing gland and "O" ring.

Reassembly – 1) Install cylinder and piston rod in strut casing. Remove piston rod guide from cylinder. Add 7 oz. (210 cc) of strut oil to Atsugi struts or 7.4 oz. (220 cc) to K.Y.B. struts. Place piston rod guide in cylinder and install new "O" ring over rod guide. Install and tighten gland packing bolt.

NOTE – *Lubricate gland packing bolt sealing lips with multipurpose grease.*

2) Bleed air from cylinder by pumping piston rod in and out until equal resistance is felt on inward and outward strokes. Refit coil spring on strut.

NOTE – *Install a new piston rod nut, but do not torque it until strut is installed in vehicle.*

Installation – To install strut assembly, reverse removal procedure and note following: Make sure all contact surfaces are clean and dirt free.

WHEEL BEARINGS

Removal — Remove steering knuckle. Remove bolts securing wheel hub to brake rotor. Using press and drift, separate rotor from hub. Remove and discard old oil seals. Press wheel bearing from hub. Remove wheel bearing from steering knuckle. Drive out bearing race with a brass drift fitted through notches in knuckle.

Installation — 1) Pack wheel bearings with grease. Install inner and outer bearing races.

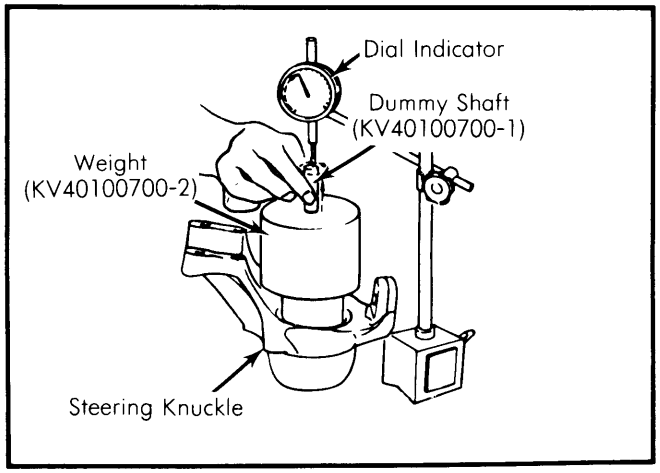

Fig. 4 Determining Required Spacer Thickness

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2) 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.

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

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

5) Select required spacer. Spacers are available in 18 sizes, ranging from .291-.293" (7.38-7.44 mm) to .331-.333" (8.40-8.46 mm) in .002" (.05 mm) increments. For size identification, spacers are numbered "05" (smallest size) through "22" (largest size).

6) Pack grease seal and bearings with bearing grease. Install outer grease seal and press outer bearing onto stub axle. Install rotor on stub axle. Place knuckle in position on stub axle, install spacer and press inner bearing onto stub axle and knuckle assembly until it just bottoms. Install inner seal, then reinstall knuckle and wheel on vehicle.

NOTE — *Wheel bearings must always be replaced in complete sets including both bearings and races.*

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N•m)
Packing Gland Bolt	58-116 (79-158)
Piston Rod Nut	46-53 (63-72)
Strut-to-Steering Knuckle	24-33 (33-45)
Ball Joint Stud Nut	20-29 (27-39)
Ball Joint-to-Control Arm	40-47 (54-64)
Caliper Mounting Bolt	40-47 (54-64)
Control Arm Mounting Nut	42-51 (57-69)
Stabilizer Bar	6-9 (8-12)
Axle Shaft Nut	87-145 (118-197)