

Front Suspension

DATSUN/NISSAN 310, SENTRA & STANZA

DESCRIPTION

All models use a MacPherson strut type front suspension system. Shock absorbers are built into each strut tube.

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 to subframe. Steering knuckle is removable from strut. Knuckle bolts to strut 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

1) Loosen hub nut and tighten to specifications. Preload is 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). If preload is not to specifications, bearing spacer must be replaced, see Bearing Removal.

2) 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

1) With ball joint removed and stud nut in place, check turning torque required to turn stud. On Stanza and 310 models, if force required is less than 8.7 INCH lbs. (1.0 N.m) on a used joint, it should be replaced.

2) On Sentra models, if force required is less than 4.3 INCH lbs. (.5 N.m) on 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

WHEEL BEARING

Removal

1) Remove steering knuckle. Remove bolts retaining wheel hub to rotor. Using press and drift, separate rotor from hub. Remove and discard old oil seals.

2) 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

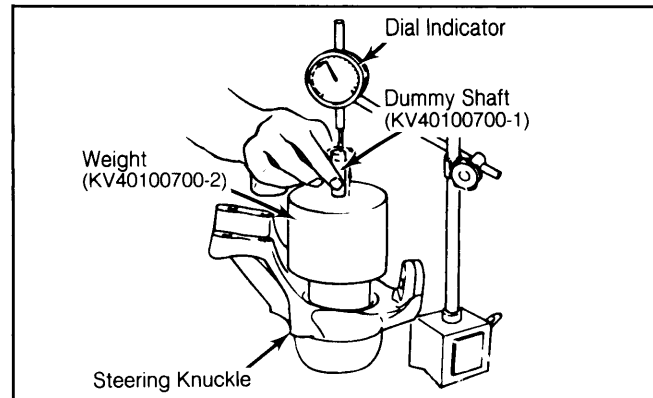
1) Pack wheel bearings with grease. Install inner and outer bearing races.

2) Place outer bearing on base (KV40100700-3) and place steering knuckle over it so bearing seats in outer race.

3) Slide inner bearing over dummy shaft (KV40100700-1). Place shaft bearing in knuckle with end of shaft in outer bearing and inner bearing in inner race.

4) 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.

Fig. 1: Determining Required Spacer Thickness



5) Zero indicator. Pull upward on shaft until it reaches end of travel, rotate 1 revolution and record maximum deflection of indicator needle.

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

7) 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).

8) Pack bearings with bearing grease. Install outer grease seal and press outer bearing onto stub axle.

9) Install spacer and press inner bearing onto stub axle and knuckle assembly until it just bottoms. Install inner seal. To complete installation, reverse removal procedures

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

BALL JOINT

Removal

Raise vehicle and support with safety stands. Remove wheel assembly. Remove ball joint stud nut. Use ball joint driver and hammer to drive ball joint stud out of knuckle. Remove bolts retaining ball joint to lower control arm.

NOTE: Do not to damage ball joint dust cover.

Installation

To install, reverse removal procedures. Make sure new cotter pin is installed. Replace ball joint dust cover, if cracked or damaged.

CONTROL ARM

Removal

1) Raise vehicle and support with safety stands. Remove wheel assembly. Remove bolts retaining lower control arm to ball joint.

2) Take off nut retaining stabilizer bar to control arm. Disconnect control arm from subframe by removing retaining bolts.

Inspection

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

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Installation

To install, reverse removal procedures. Control arm bolts must be tightened with weight of vehicle on floor.

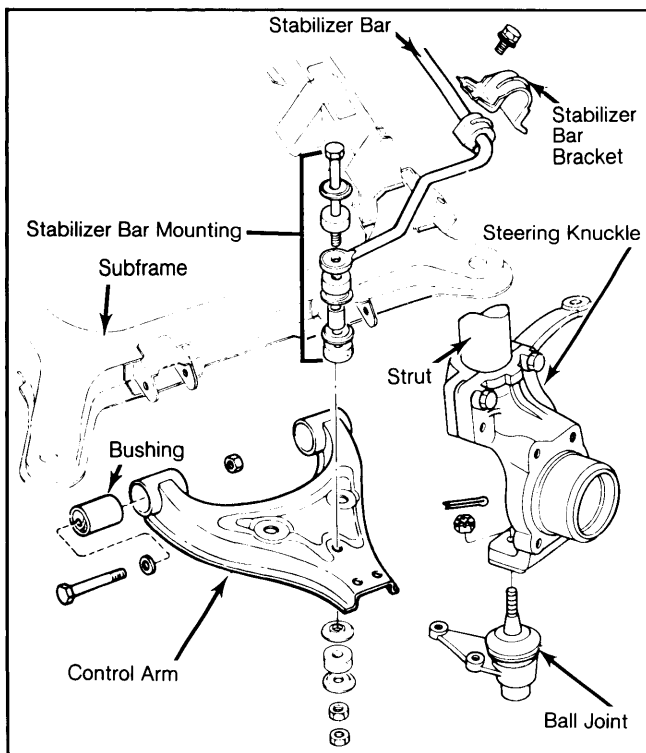
STEERING KNUCKLE

Removal

1) Raise vehicle and support with safety stands. Remove wheel assembly. Disconnect and plug brake line. Remove brake caliper. Remove axle nut.

2) Using a puller, remove stub axle and brake rotor assembly from axle shaft. Disconnect ball joint and support control arm. Remove bolts retaining steering knuckle to strut.

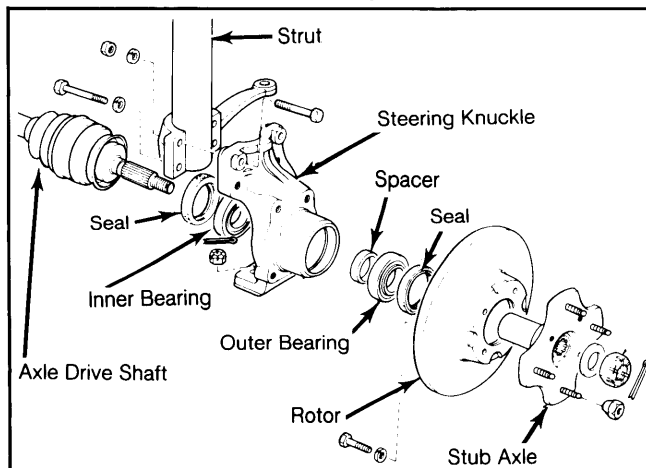
Fig. 2: Exploded View of Control Arm and Stabilizer Bar



Installation

To install, reverse removal procedures.

Fig. 3: Exploded View of Steering Knuckle and Strut



STABILIZER BAR

Removal

1) Raise vehicle and support with safety stands. Support subframe with floor jack. Disconnect exhaust pipe from exhaust manifold and front body mount.

2) Disconnect transmission control linkage and transmission support rod at transmission. Remove stabilizer-to-control arm nuts. Loosen, but do not remove, subframe retaining bolts.

3) Lower subframe just enough to allow removal of stabilizer bar clamp bolts from subframe. Remove stabilizer bar from vehicle.

Installation

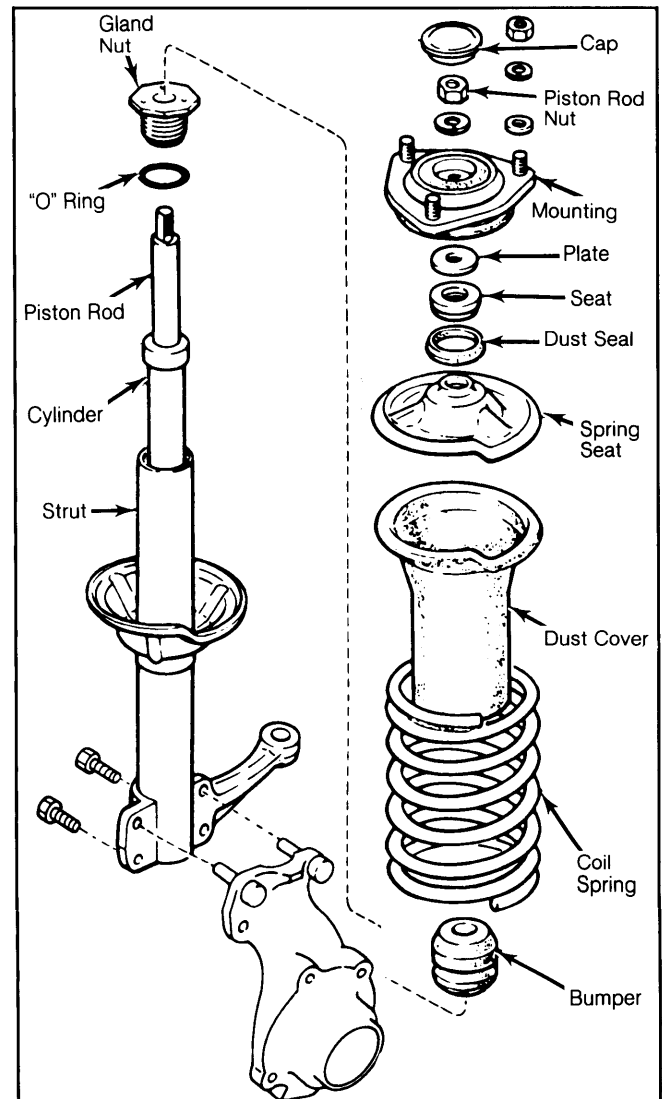
To install, reverse removal procedures. Replace any bushing that is worn or cracked.

STRUT ASSEMBLY

Removal

1) Raise vehicle and support with safety stands. Remove wheel assembly. Working from inside engine compartment, remove cap and loosen lock nut retaining piston rod.

Fig. 4: Exploded View of Strut Assembly



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2) Disconnect brake line and plug opening. Detach tie rod from steering knuckle. Place safety stand under control arm for support.

3) Remove bolts retaining strut to steering knuckle. Remove nuts keeping upper portion of strut to inner fender panel. Remove strut and coil spring assembly from vehicle.

Disassembly

1) Place strut in a vise. Using a spring compressor, slightly compress coil spring. Remove piston rod nut and all upper mounting hardware.

2) Push piston rod into cylinder until it bottoms. Remove gland nut. Remove "O" ring. Slowly lift out piston rod and cylinder as a unit.

3) 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 gland nut and "O" ring.

Reassembly

1) Install cylinder and piston rod in strut casing. Remove piston rod guide from cylinder. Add oil to strut. Place piston rod guide in cylinder. Install new "O" ring over rod guide. Install and tighten gland nut.

NOTE: Lubricate gland nut sealing lips with grease.

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

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

Installation

To install, reverse removal procedures. Make sure all contact surfaces are clean and dirt free.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Gland Nut	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 Retaining Bolt	40-47 (54-64)
Control Arm Retaining Nut	42-51 (57-69)
Stabilizer Bar	6-9 (8-12)
Axle Shaft Nut	
Sentra & 310	87-145 (118-197)
Stanza	145-203 (197-276)