

Steering Gears & Linkage

1967-73 DATSUN 411, 510, 620 & 1200

411 (1967)
510 (1968-73)
620 (1973)
1200 (1971-73)

DESCRIPTION

Steering system consists of recirculating ball type gear box and parallelogram linkage. Steering linkage is equipped with torsion rubber system idler arm which absorbs wheel shocks.

REMOVAL & INSTALLATION

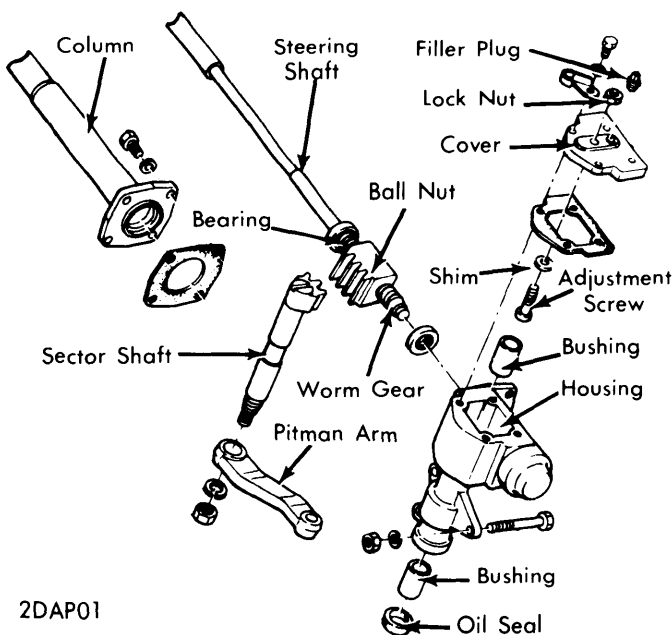
STEERING GEAR

Removal — 1) Detach horn ring, unscrew steering wheel nut, and remove steering wheel. Remove steering column shell; disconnect and remove turn signal/dimmer switch assembly. Detach hand shift lever from steering column by removing attaching screws.

2) Unbolt steering column bracket from instrument panel. Remove screws holding column grommet to dash panel. Remove cotter pin from trunnion to separate shift and select rods from change lever and select lever.

3) Separate pitman arm from cross shaft. Screw out bolts attaching steering gear housing to body. Pull gear and transmission selector forward. Detach transmission control from gear assembly.

Installation — To install, reverse removal procedures, noting the following: Check alignment and smooth travel of steering wheel. Steering wheel free travel should be 0.98-1.18" (25-30 mm).



2DAP01

STEERING GEAR COMPONENTS

STEERING LINKAGE

Removal — 1) Jack up front of vehicle and support on stands. Remove cotter pins and nuts retaining outer tie rod end to steering knuckles. Separate knuckles from rod ends. Detach idler arm and pitman arm from cross shaft. Remove cross shaft and tie rod assembly from vehicle.

2) Unbolt idler assembly from vehicle. Disconnect both tie rods from cross shaft. Remove idler arm nut and disassemble idler unit.

Installation — Reassemble and install steering linkage in reverse of removal procedure, noting the following: Installed length of both tie rods should be 12.185" (309.5 mm) as measured at ball stud centers. Realign front end.

ADJUSTMENT

NOTE — Adjustments are performed as part of reassembly procedure. See Overhaul as outlined below.

OVERHAUL

STEERING GEAR

Disassembly — 1) Place gear and shaft assembly in padded vise or on suitable holding device (ST27700000) such that gear is in same relative position as when in vehicle. Drain gear box of oil. Remove pitman arm from steering gear.

2) Loosen sector adjusting screw a few turns, then remove sector cover and sector shaft. Unscrew retaining bolts for column tube, pull tube off housing, then remove shaft assembly. **CAUTION** — Do not allow ball nut to run to either end of worm, or damage to ball guides will result.

3) Extract sector shaft oil seal from housing and rear bearing outer race from column tube. Take out bearing inner races of front and rear worm bearing. Remove column shaft bearing.

4) If ball nut disassembly is required, unbolt ball guide clamp, remove guides and invert ball nut. Rotate column back and forth until all 36 balls (38 on 1200 models) have dropped from nut. Nut may be removed from worm; 22 additional balls may be removed from ball guides. **NOTE** — On 620 Pickups, ball nut disassembly and sector shaft bushing replacement (in housing) are not recommended. If these parts are defective, replace them, with their respective parts, as assemblies.

Inspection — If nut or column is damaged, replace as assembly. Ball guides may be replaced individually. Check bearings for roughness or scoring and replace as required.

Assembly & Adjustment — 1) Place ball nut on worm with holes upward. Drop 18 ball bearings into each of two holes on same side of nut, rotate column as necessary. Place remaining 22 bearings into ball guides (11 each). Replace guides in ball nut. Clearance between ball guides and nut should be .28-.67". Attach guide clamp.

1967-73 DATSUN 411, 510, 620 & 1200 (Cont.)

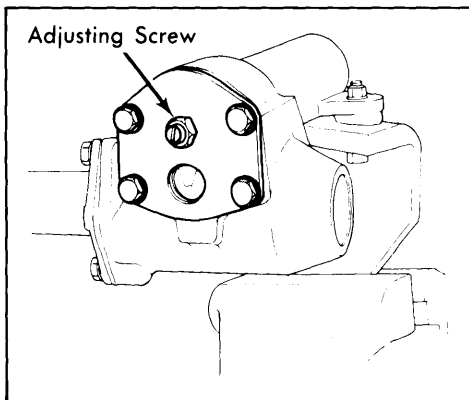
2) Press oil seal into housing (grease lip of seal). Replace bearings in reverse of removal procedure. Insert column assembly into column tube and attach to housing (with worm bearing adjusting shims in place). Check column initial turning torque at steering wheel (place temporarily on column). If necessary, change worm bearing adjusting shims to obtain 3.5-7.0 inch lbs. (sector shaft not installed).

3) Place adjusting screw and proper shim in slot on sector shaft such that end clearance on 510 and 620 models is .0004-.0012" (.01-.03 mm) and on 1200 models, .002" (.05 mm). Position sector shaft in housing, rotate column until ball nut is at center of travel (with center tooth engaging center tooth of sector), and attach sector shaft cover (with gasket). Ensure some lash between ball nut and sector teeth, then temporarily tighten side cover bolts. Turn sector shaft back and forth to ensure smooth operation.

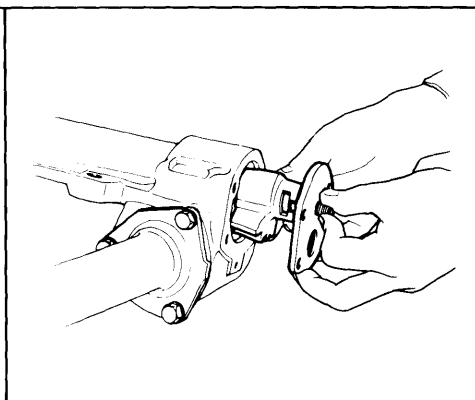
4) Attach pitman arm, aligning marks on arm and shaft, set arm at center of travel and turn adjusting screw so that free play of pitman arm is not more than .004" (0.1 mm). Turn adjusting screw in an additional $\frac{1}{8}$ - $\frac{1}{8}$ turn and secure with lock nut. Fill housing with .7 pint suitable gear oil.

TIGHTENING SPECIFICATIONS

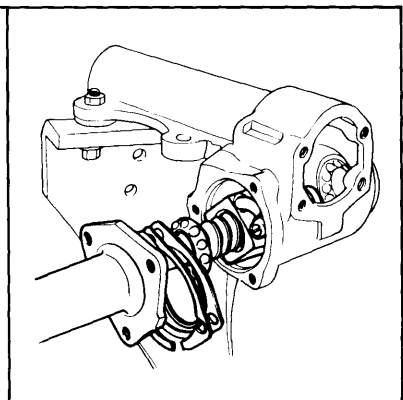
Application	Ft. Lbs. (mkg)
Column Tube-to-Gear.....	16 (2.2)
Ball Stud Nut.....	48 (6.6)
Pitman Arm-to-Gear.....	96 (13.3)
Idler Arm Nut.....	48 (6.6)
Adjusting Screw Lock Nut.....	16 (2.2)
Gear Housing-to-Body.....	72 (10)
Idler Arm Bracket-to-Body.....	38 (5.3)



Removing Sector Shaft Cover



Removing Sector Shaft



Removing Steering Worm