

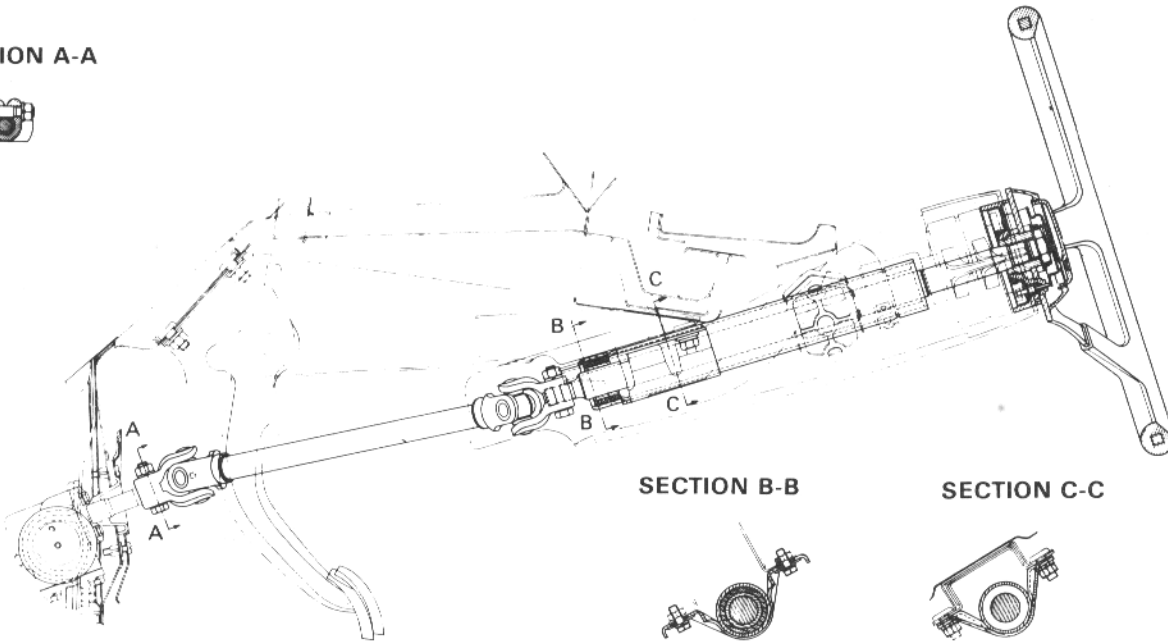
SPECIFICATIONS

Type	Rack and pinion
Ratio:	
— Steering wheel turns, lock to lock	3
— Corresponding rack travel	4.6 in. (117 mm)
Pinion bearings	Two, ball type
Pinion adjustment:	
— Early type	By shims
— Late type	By threaded retainer
Rack adjustment	By shims
Minimum diameter of turning circle	32.5 ft. (9.9 m)
Tie rods	Adjustable, with fixed end ball joints
Steering angles:	
— Outer wheel	28°
— Inner wheel	32° 40'
Front wheel toe-in	+3/32 to +5/64 in. (+2.5 to +6.0 mm)
Steering column	Breakaway type, two universal joints
Steering box capacity	5.3 oz. (.127 kg)
Steering box lubricant	SAE 90 EP oil or lithium-base grease with molybdenum disulphide

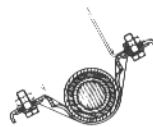
TORQUE SPECIFICATIONS

DESCRIPTION	THREAD	TORQUE FIGURE		
		N-m	Kgm	Ft. Lb.
Nut, steering wheel to column	M 16 x 1.5	49	5	36
Nut, tie rod ball joint to rack	M 14 x 1	49	5	36
Nut, self-locking, ball joint to steering knuckle	M 10 x 1.25	35	3.5	25
Nut, steering box to body bolt	M 8	24.4	2.5	18
Nut, universal joint	M 8	24.4	2.5	18
Nut, upper steering column support	M 8	15	1.5	11

SECTION A-A



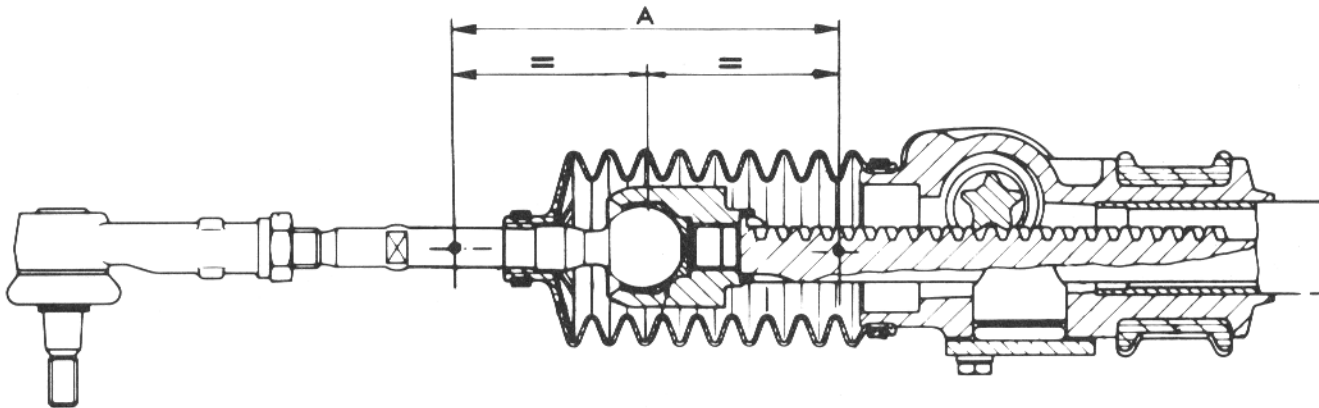
SECTION B-B



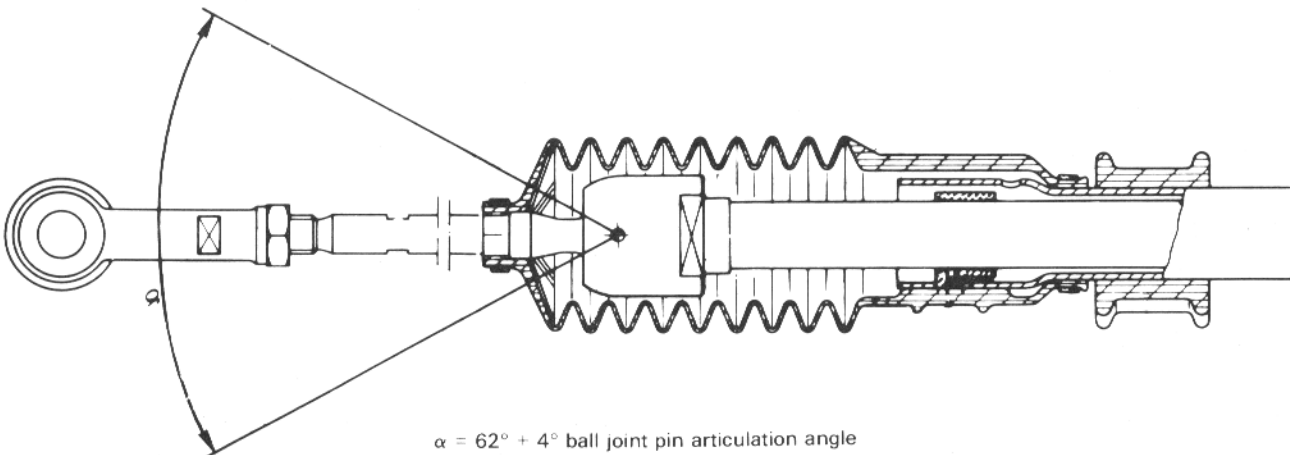
SECTION C-C



CROSS SECTION OF STEERING COLUMN



A = rack travel corresponding to 4.6 in. (117 mm)



$\alpha = 62^\circ + 4^\circ$ ball joint pin articulation angle

CROSS SECTION OF STEERING BOX

STEERING WHEEL

REMOVAL AND INSTALLATION

Center steering wheel and front wheels.

Disconnect battery ground cable.

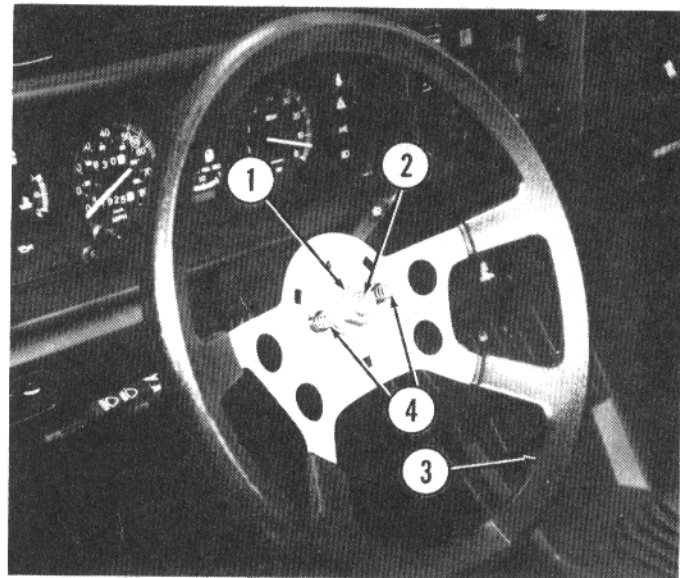
Pry horn button off steering wheel (3).

Remove two horn button springs (4). Remove nut (1) holding wheel (3) to shaft (2).

Mark steering wheel and steering shaft for installation reference. Pull wheel off shaft.

Install steering wheel in reverse order. Torque nut to 36 ft. lbs. (5 kgm).

1. Nut 2. Steering shaft 3. Steering wheel 4. Horn button springs



STEERING COLUMN

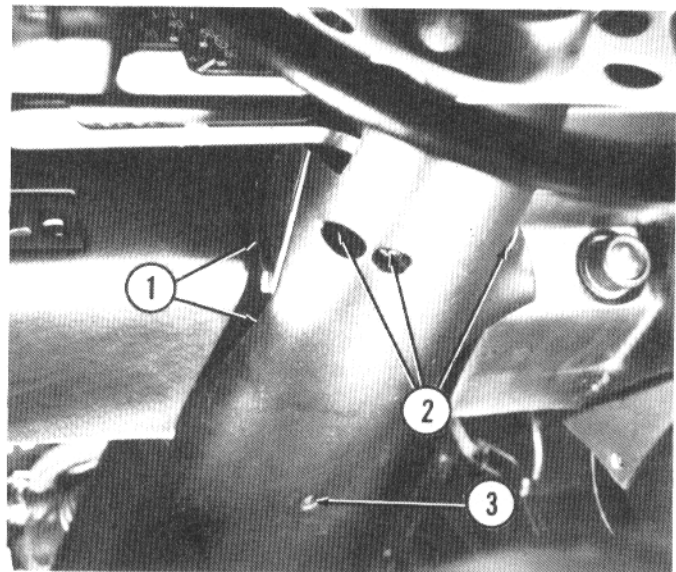
REMOVAL AND INSTALLATION

Center steering wheel and front wheels.

Disconnect battery ground cable.

Remove four screws (2 and 3) to remove upper and lower steering column covers (1).

1. Steering column covers 2. Screws 3. Screw

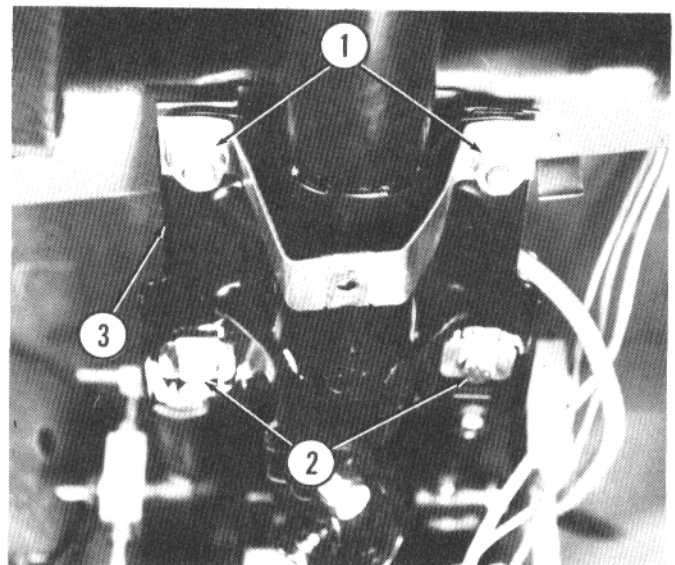


Remove two nuts (1) and washers and two bolts (2) and washers holding steering column support (3) to dash board.

Lower column slightly and disconnect five electrical connectors at dash board.

Rest steering column on floor.

1. Nuts 2. Bolts 3. Steering column support



Steering Box

412.02

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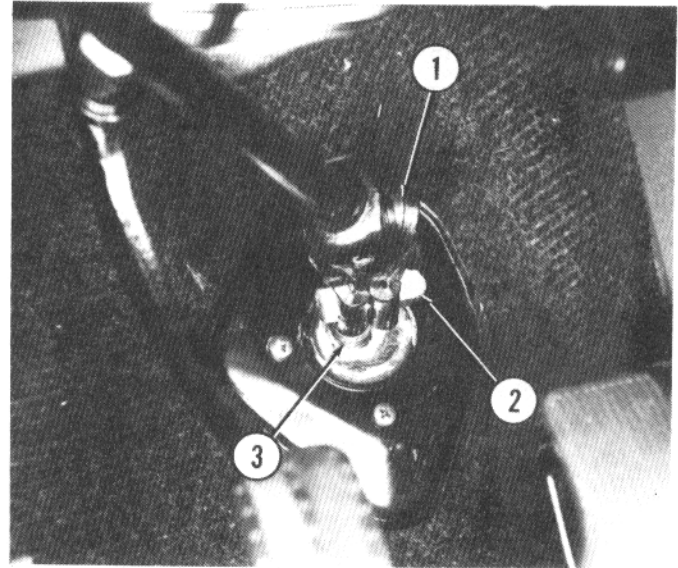
REMOVAL AND INSTALLATION

Center steering wheel and front wheels.

Mark universal joint (1) and steering box shaft (3) for installation reference.

Remove bolt and nut (2) holding universal joint to steering box shaft.

1. Universal joint 2. Nut 3. Steering box shaft

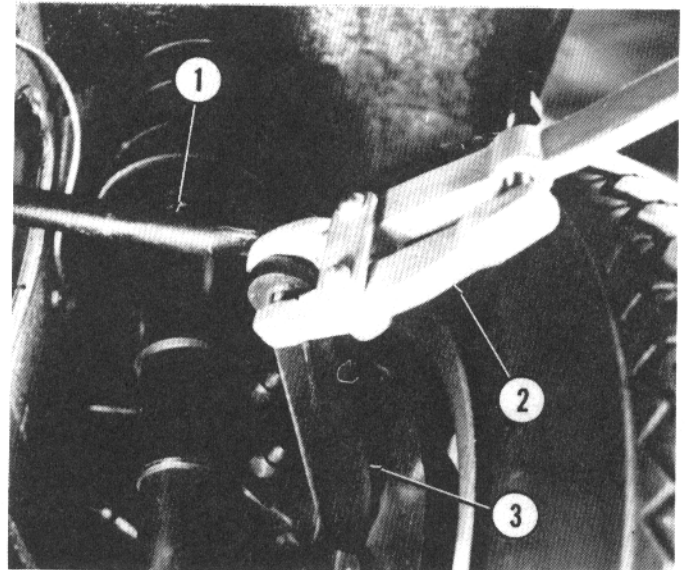


Raise front of vehicle.

Remove nut holding ball joint on tie rod (1) to steering knuckle (3).

Install puller A.47035 (2) on ball joint. Tighten bolt on puller to separate ball joint from steering knuckle. Repeat for other side.

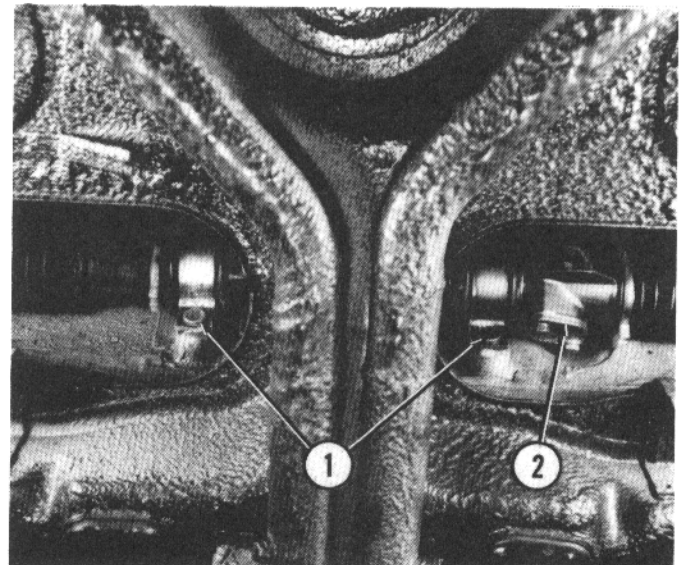
1. Tie rod 2. Puller A.47035 3. Steering knuckle



From inside vehicle, remove nuts from four bolts (1) holding steering box (2) to body. Remove steering box from vehicle.

Install in reverse order. Torque nuts and bolts to specifications. Check front wheel toe. Refer to 443.01.

1. Bolts 2. Steering box



INSPECTION (Refer to illustration on previous page)

Before inspection, clean all metallic parts in a suitable degreaser. Blow dry.

Inspect rack (19), pinion (21), bearing (20) and housing (15) for wear, scratches, broken teeth or other damage. Replace entire steering box if damaged.

Inspect rubber boots (7 and 17) for tears or breaks that would permit moisture entry. Replace if damaged.

Inspect bushing (18) and thrust block (14) for wear or breaks. Replace if damaged. Replace spring (12) if worn. Inspect bearing (4 or 22) for wear. Replace if damaged. Check that ball joints (5) move freely in all directions. They should not fall under their own weight. Replace if worn.

Replace seal (1 or 26) if worn or damaged.

ADJUSTMENTS

Pinion (Early Type)

Remove two bolts, cover with seal, plate, and shim to gain access to pinion bearings.

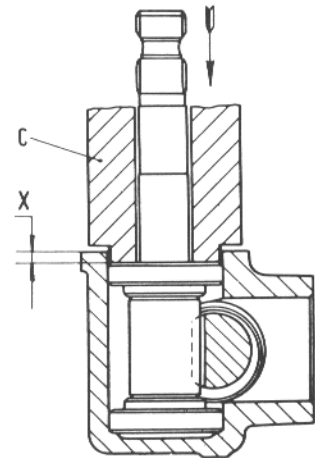
Using a suitable driver, make sure bearing is firmly seated.

Measure distance from top of bearing to pinion cover facing (dimension X).

To dimension X, add 0.003 ± 0.002 in. (0.078 ± 0.053 mm). Combine shims to make up new dimension. Shims available are 0.0047, 0.008, 0.010, and 0.020 in. (0.12, 0.20, 0.25, and 0.50 mm).

Carefully install shims so they are centered on the pinion.

Install plate, cover with seal, and two bolts.



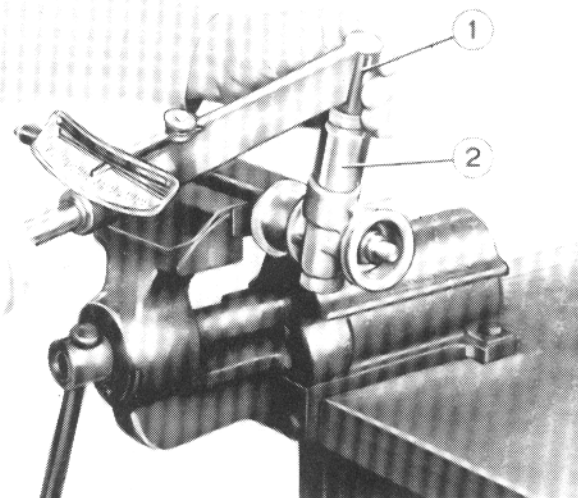
Pinion (Late Type)

With threaded retainer installed over pinion, torque retainer to 22 to 25 ft. lbs. (3.0-3.5 kgm).

Check initial turning torque of pinion. Torque should be 4.3 to 14.0 inch lbs. (0.05 to 0.16 kgm).

Stake retainer.

1. Torque wrench 2. Socket



Rack

Center the rack in its travel.

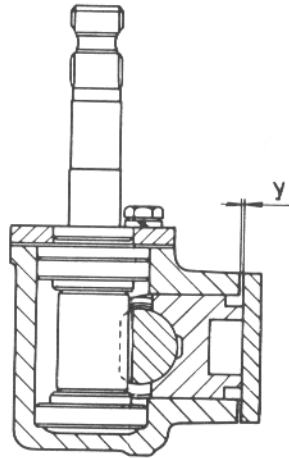
Remove two bolts, cover, shims, and spring to gain access to rack trust block.

While holding rack trust block against rack, turn pinion through 180° in both directions to settle fit.

Measure distance from top of rack thrust block to cover facing (dimension Y).

To dimension Y, add 0.0035 ± 0.0015 in. (0.09 ± 0.04 mm). Combine shims to make up new dimension. Shims available are 0.0039 and 0.0059 in. (0.10 and 0.15 mm).

Install spring, shims, cover, and two bolts.

**LUBRICATION**

If steering box is being lubricated with grease, lubricate as specified in STEERING BOX DISASSEMBLY AND REASSEMBLY.

If steering box is being lubricated with oil, check that steering box (rubber boots) is empty of oil.

Turn steering fully to the right.

Lift up left side of steering box.

Loosen clamp on left rubber boot.

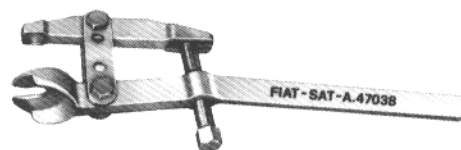
Using a syringe, add 5.3 oz. (.127 kg) of 90 W oil to left rubber boot.

Tighten clamp.

ALIGNMENT

After the steering box has been installed, set toe-in as specified in SUSPENSION section.

A.47038 Puller for separating tie rod ball joints



A.74247 Tool for fitting rack bush

