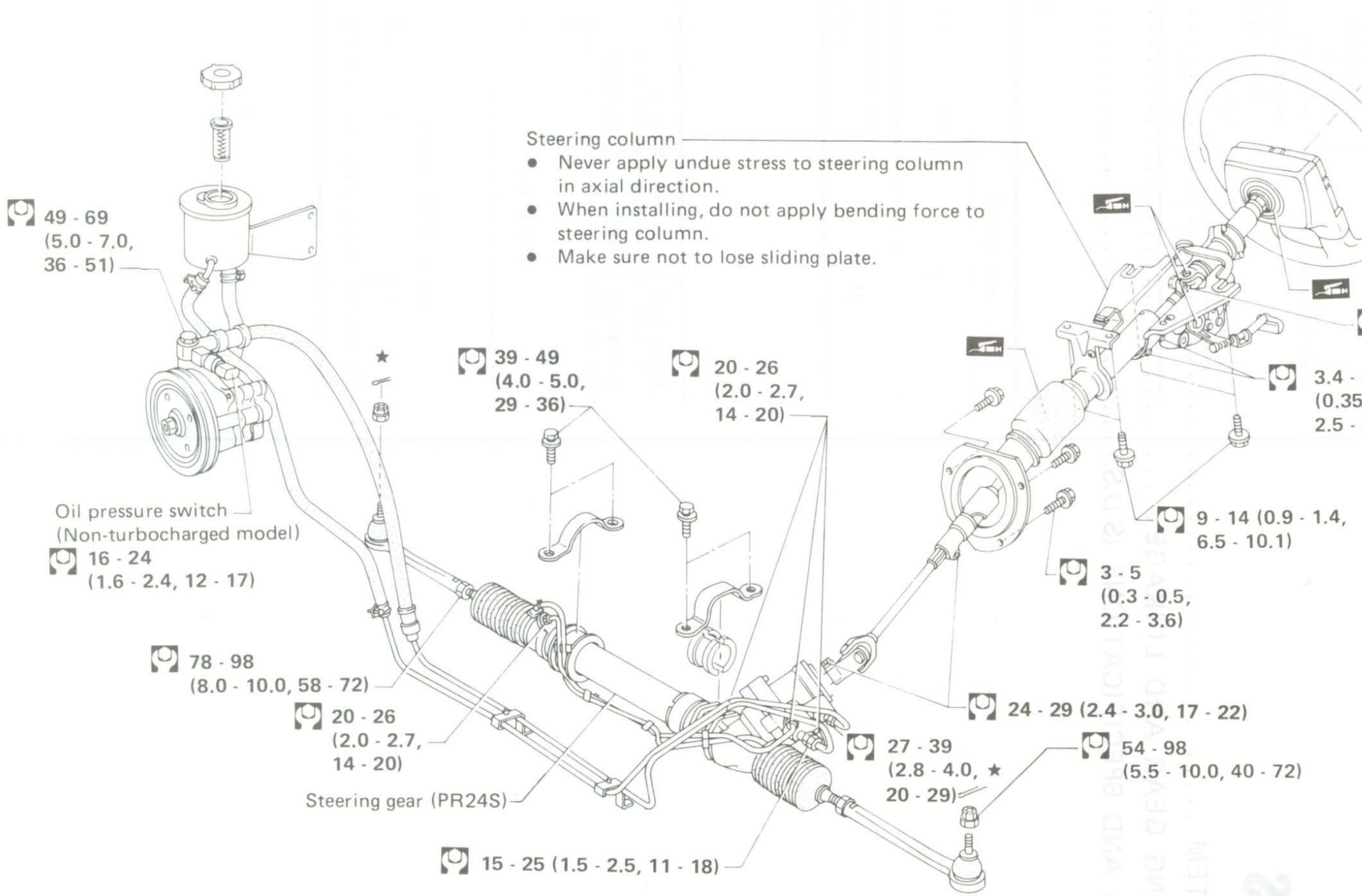
STEERING SYSTEM

SECTION ST

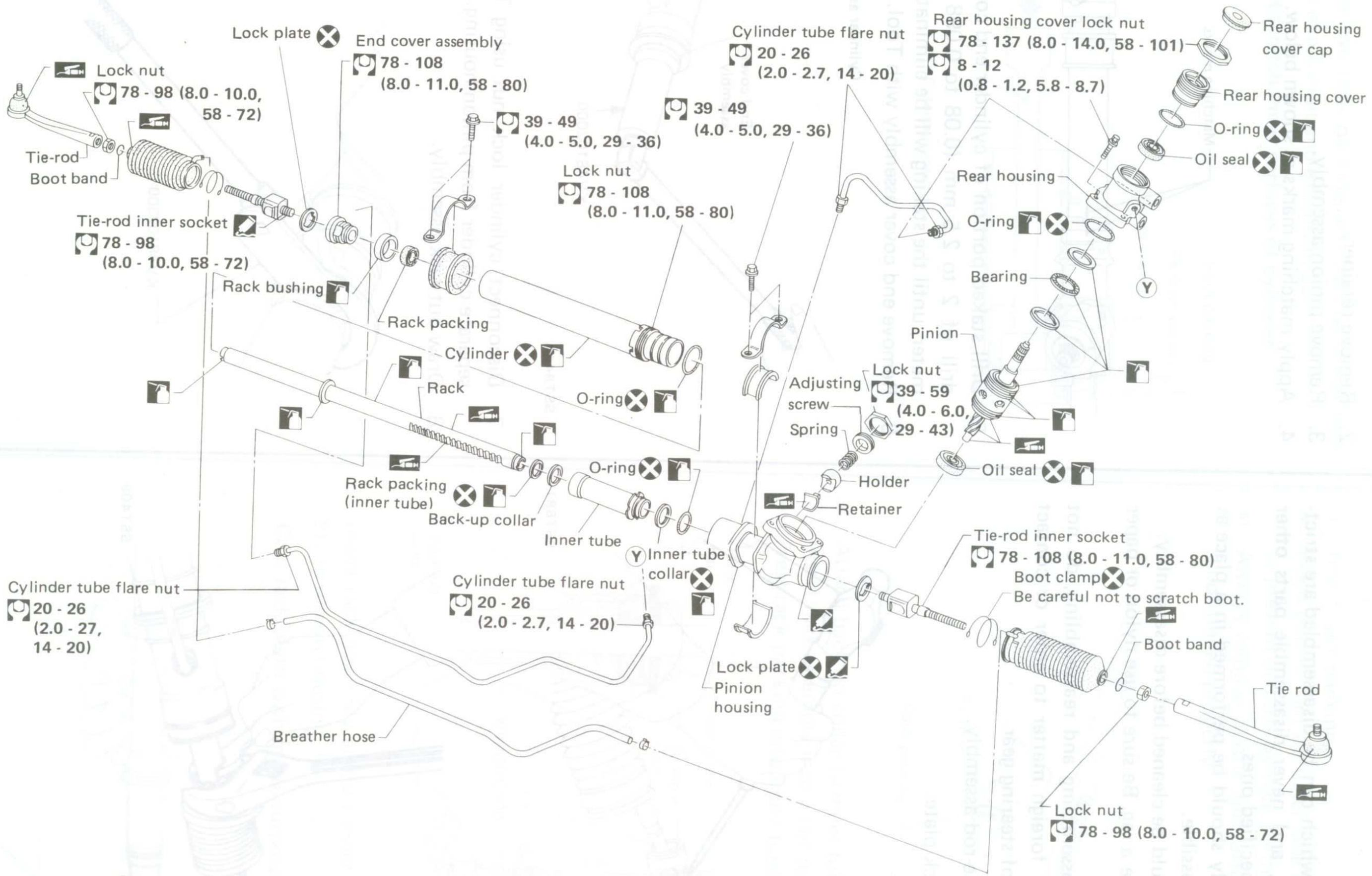
CONTENTS

STEERING SYSTEM ..... ST- 2
POWER STEERING GEAR AND LINKAGE ..... ST- 3
SERVICE DATA AND SPECIFICATIONS (S.D.S.) ST-10



★: Always replace when disassembled.
: N·m (kg-m, ft-lb)

SST338A



: N·m (kg-m, ft-lb)
: Always replace when disassembled.

SST965A

POWER STEERING GEAR AND LINKAGE

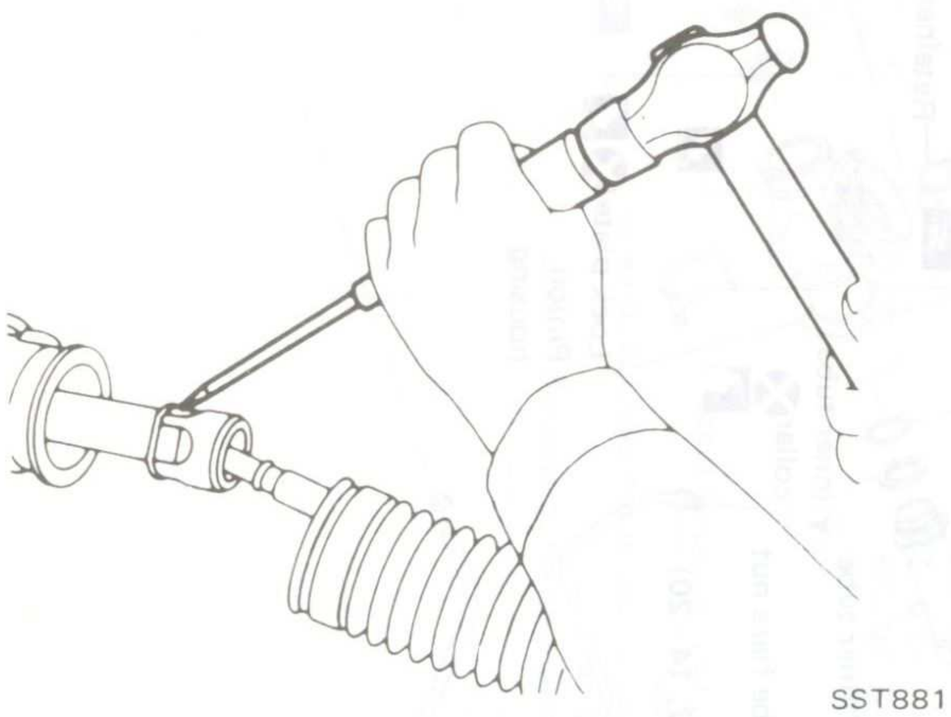
Disassembly

CAUTION:

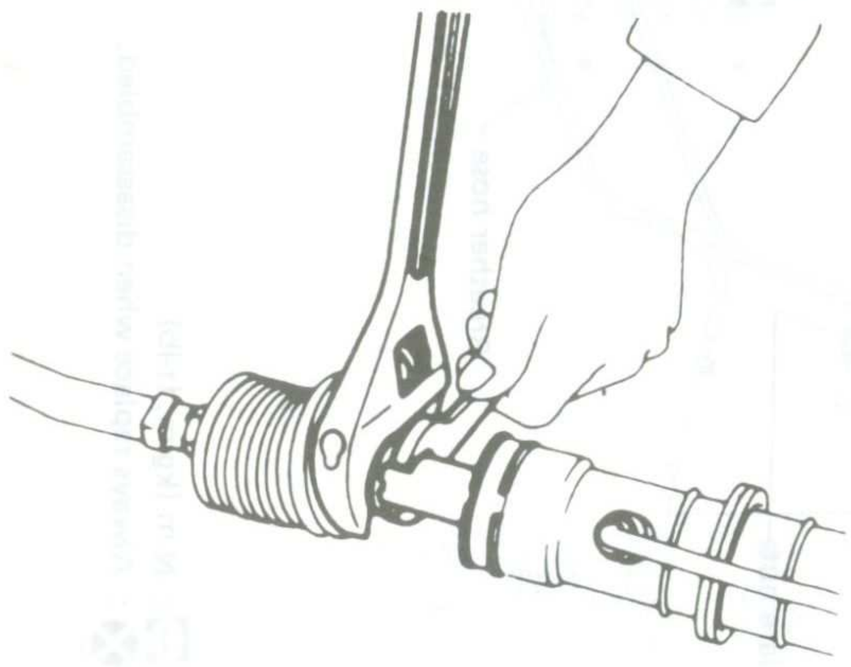
- **The parts which can be disassembled are strictly limited, and never disassemble parts other** than the specified ones.
- Disassembly should be performed in a place as clean as possible.
- Hands should be cleaned before disassembly.
- Do not use a rag. Be sure to use nylon or paper cloth.
- When disassembling and reassembling, do not allow any foreign matter to enter or contact any parts of steering gear.

1. Remove tie-rod assembly.

- Flatten lock plate.

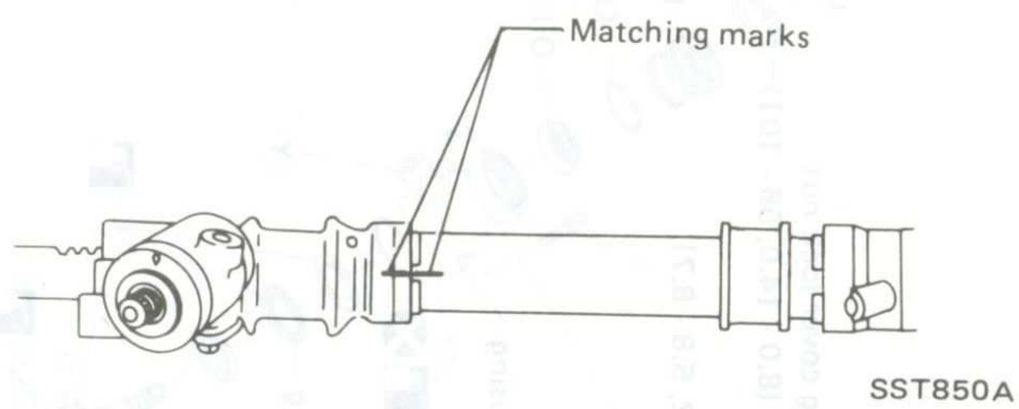


SST881



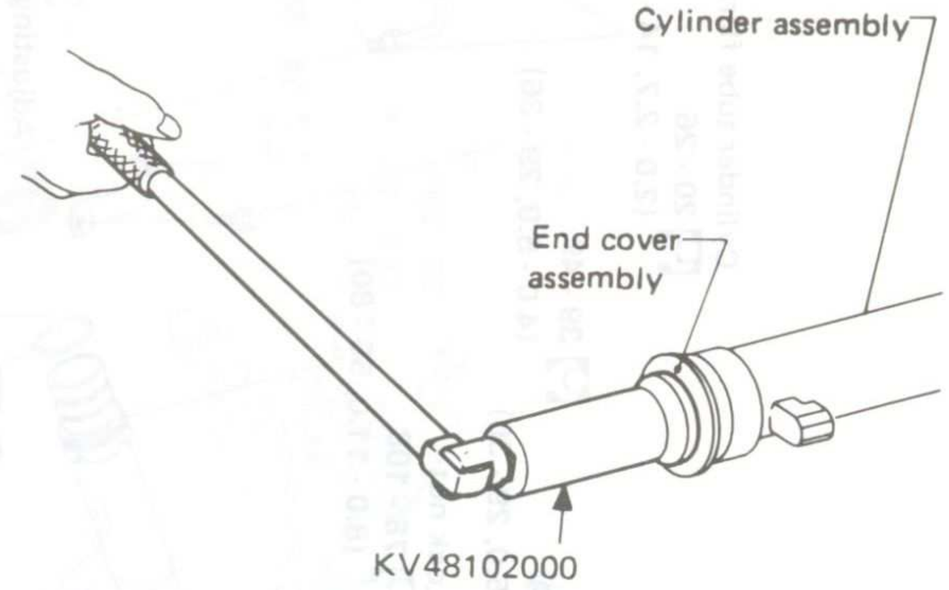
SST409

2. Remove retainer.
3. Remove pinion assembly.
4. Apply matching marks as shown below.



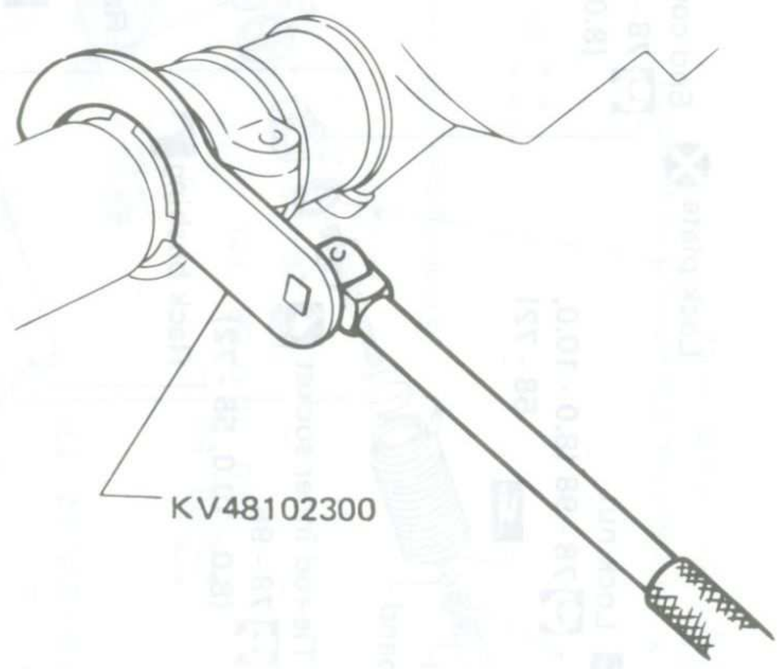
SST850A

5. Drill staked portion of cylinder end cover with drill of 2 to 2.5 mm (0.08 to 0.098 in) diameter, until the staking will be eliminated.
6. Remove end cover assembly with Tool.



SST844A

7. Disconnect cylinder lock nut using Tool and separate cylinder from pinion housing.
8. Draw out rack assembly.

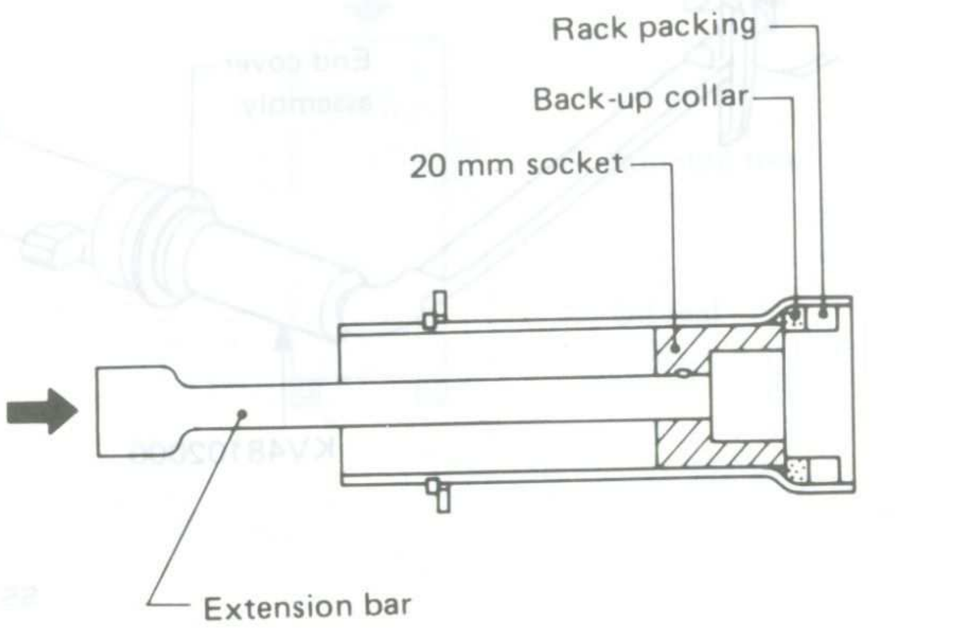


SST845A

Disassembly (Cont'd)

9. Remove rack packing and back-up collar with 20 mm socket and extension bar.

Do not scratch inner surfaces of cylinder.

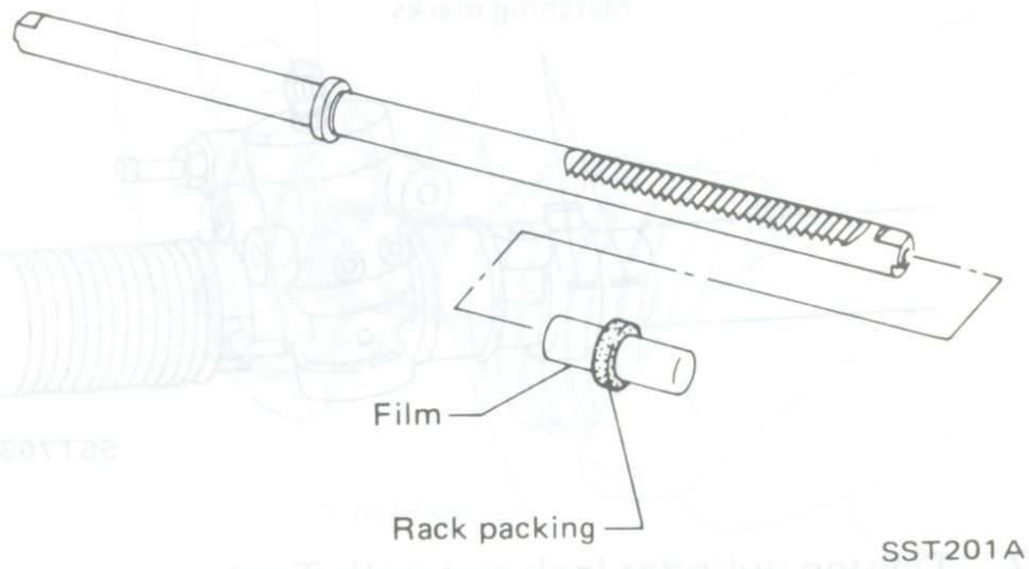


SST761A

Assembly

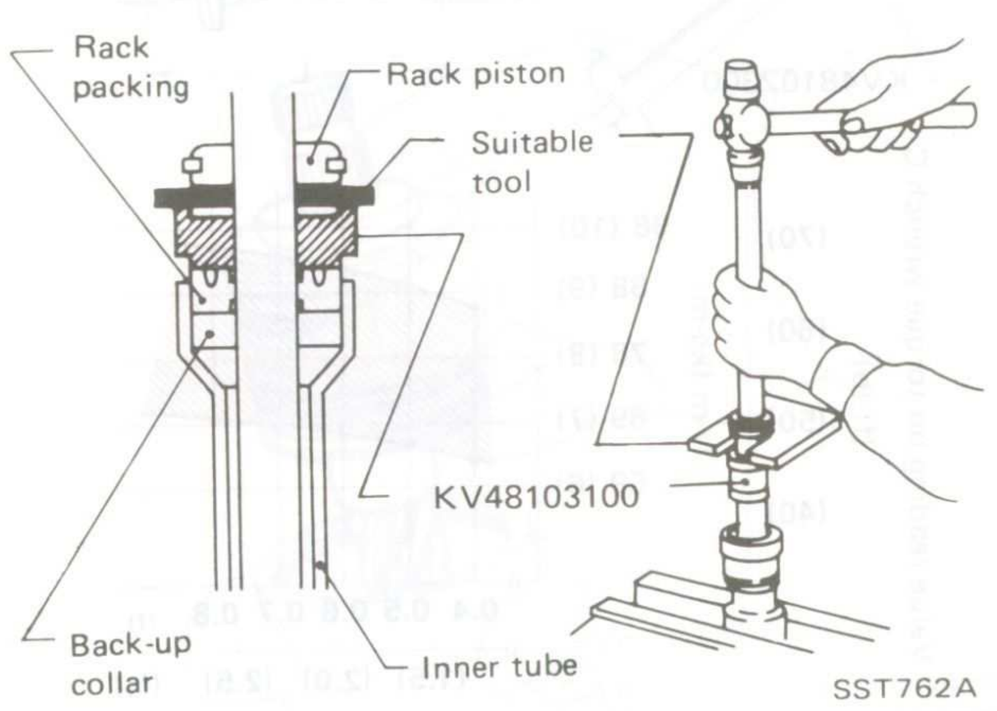
1. Insert rack packing.

- Place plastic film on inner side of rack packing to prevent damage by rack teeth.
- Always remove plastic film after rack packing is positioned properly.



SST201A

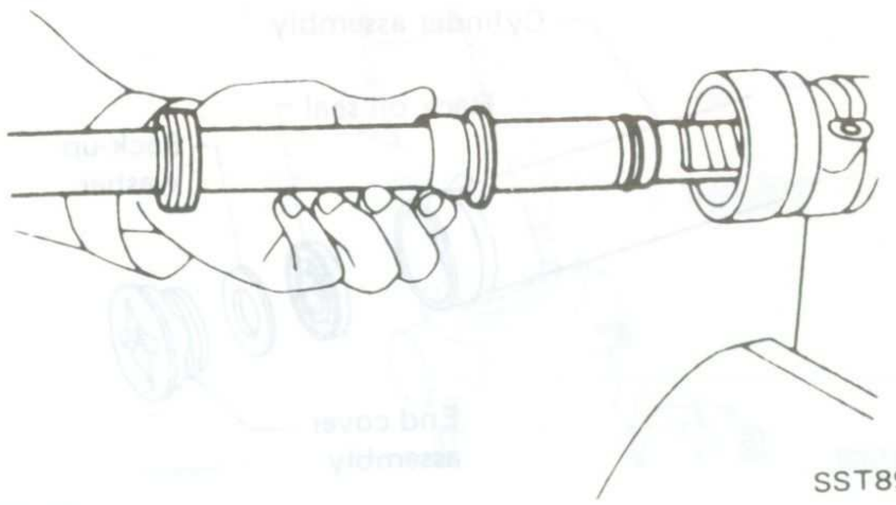
2. Attach back-up collar to inner tube.
3. Insert rack assembly into inner tube.
4. Press rack packing into inner tube.



SST762A

5. Insert rack assembly and set inner tube assembly to pinion housing.

Coat rack teeth with multi-purpose grease.

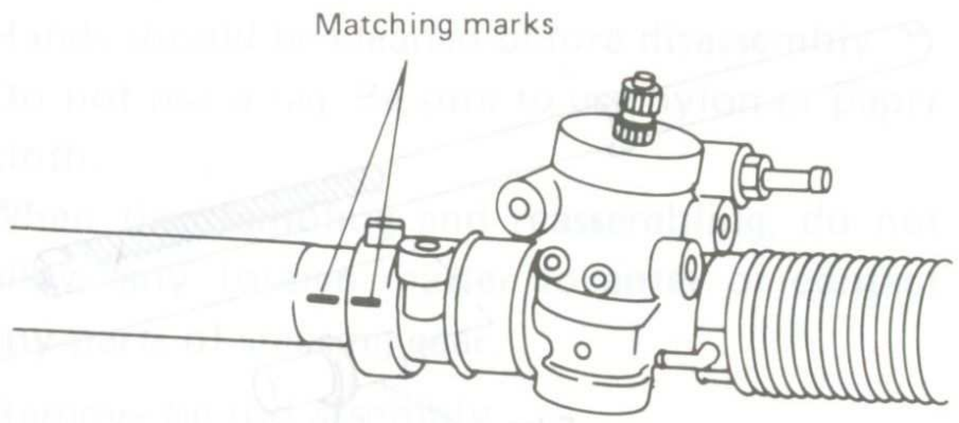


SST894

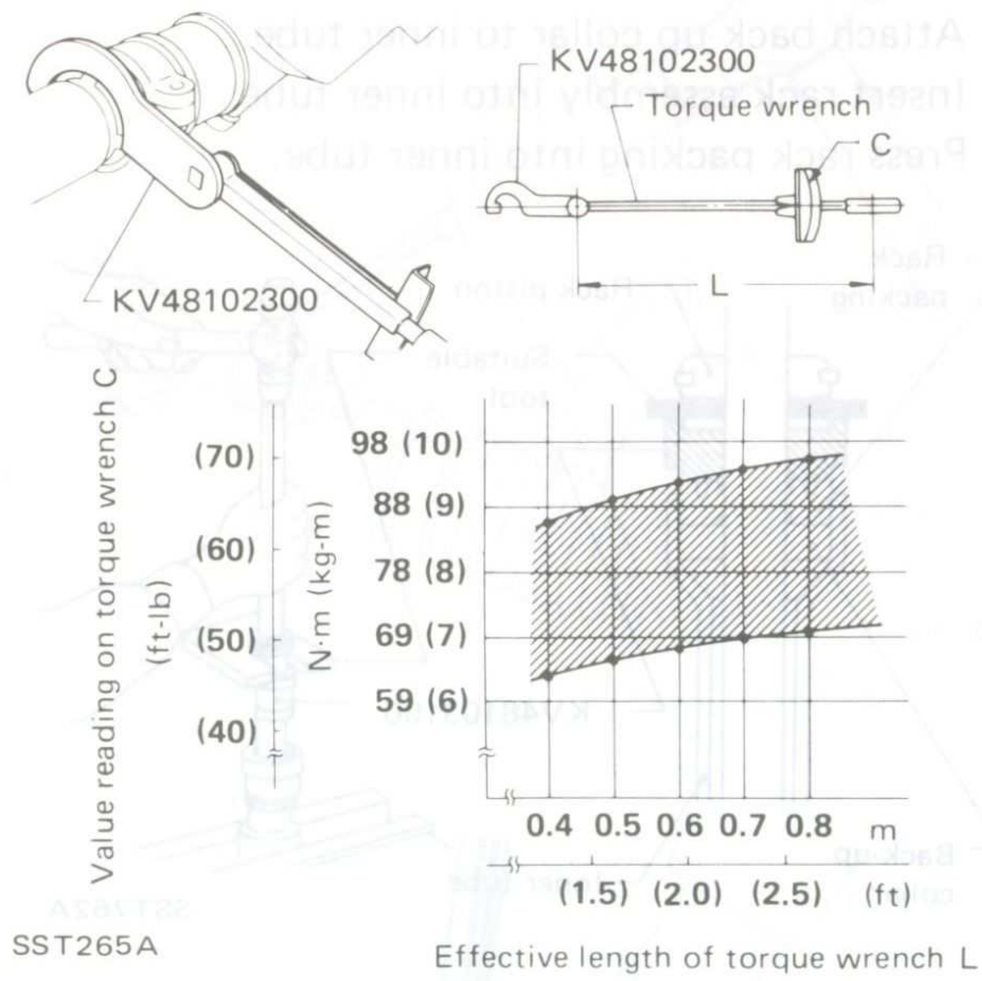
Assembly (Cont'd)

6. Position cylinder assembly on pinion housing by aligning matching marks.

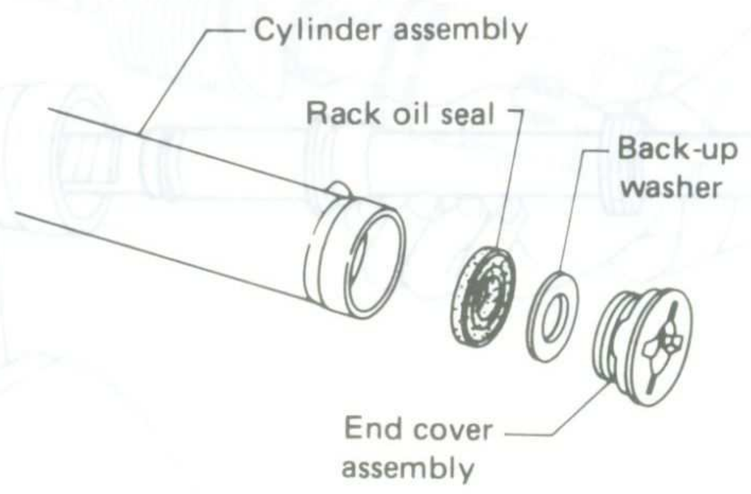
   Be careful not to damage piston teflon ring.



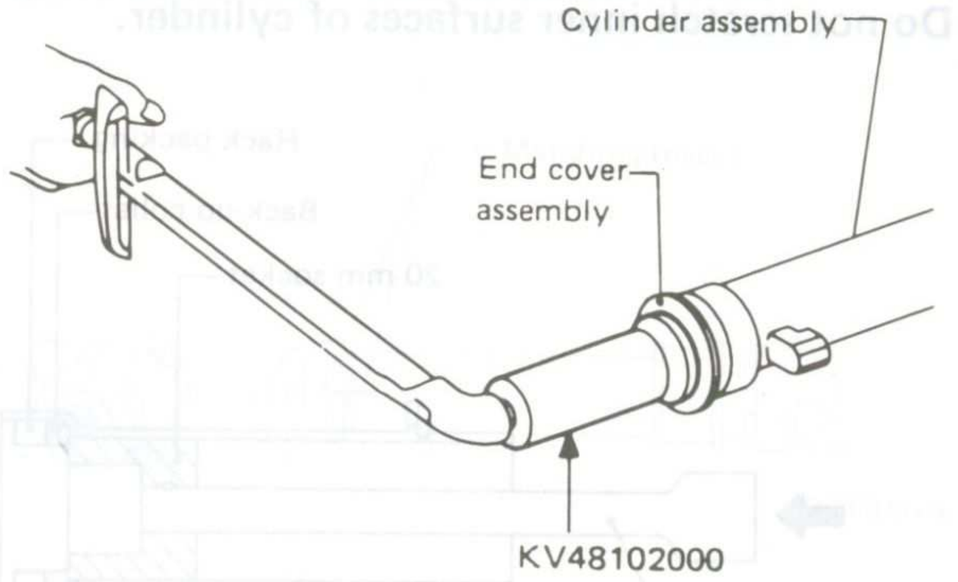
7. Tighten cylinder lock nut with Tool.



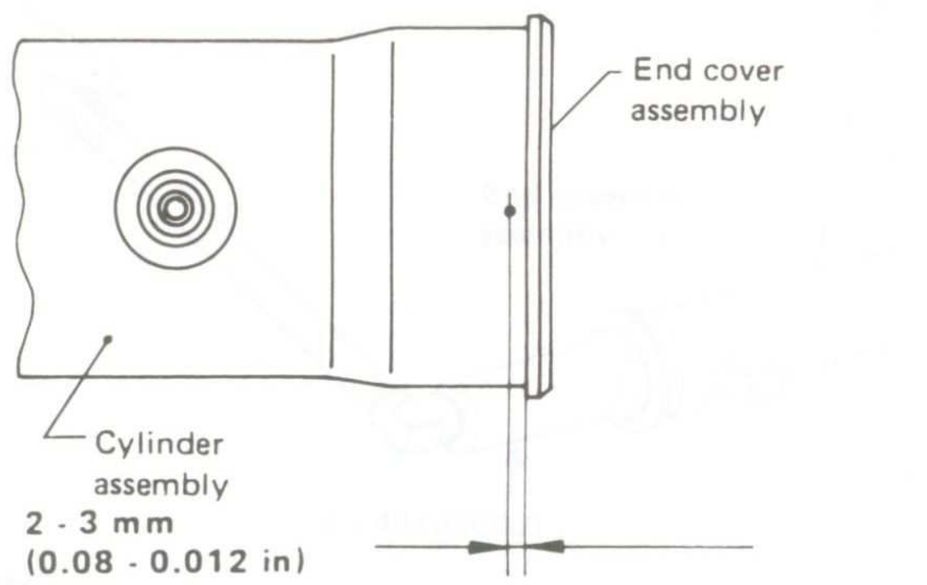
8. Install back-up washer and rack oil seal to cylinder assembly.



9. Tighten end cover assembly with Tool.



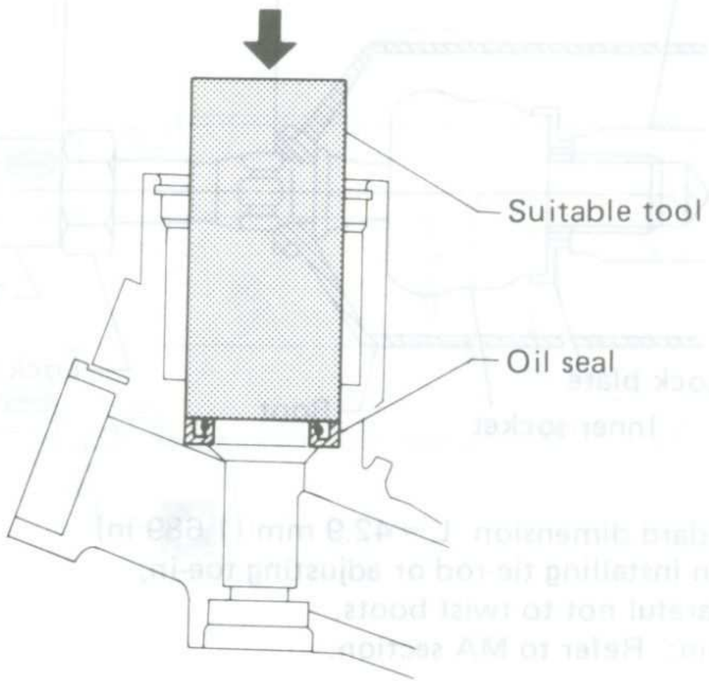
10. Fasten end cover assembly to cylinder assembly by staking.



11. Set rack gear in neutral position.

Assembly (Cont'd)

12. Coat seal lip of oil seal with multi-purpose grease and install new pinion oil seal to pinion housing with suitable tool.



SST381A

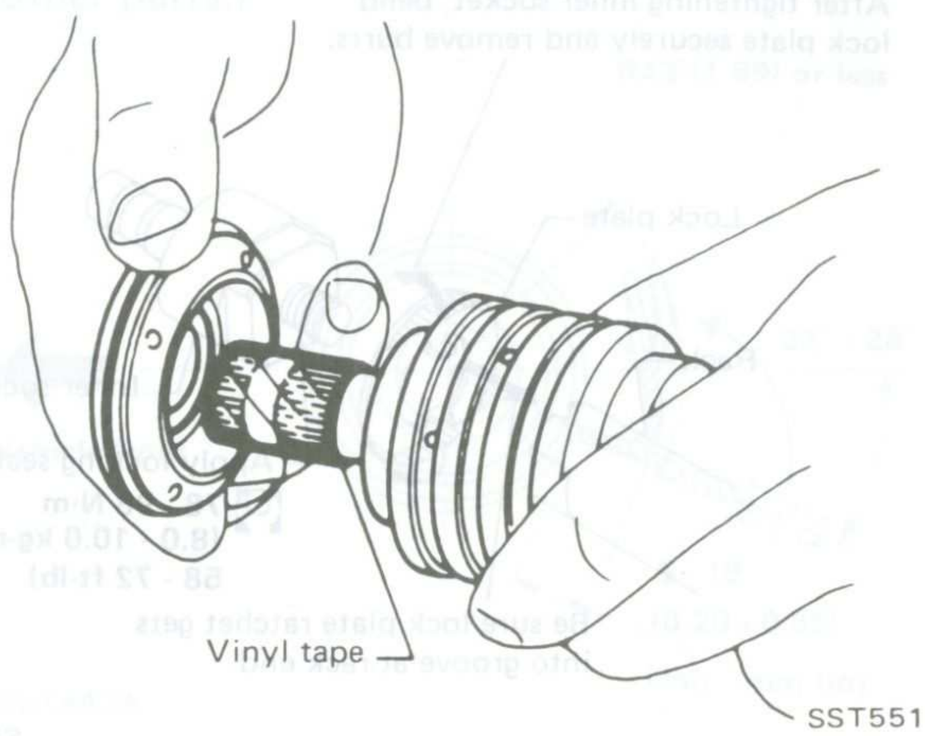
13. Install rear oil seal using suitable tool.



SST268A

14. Install rear housing cover assembly to pinion.

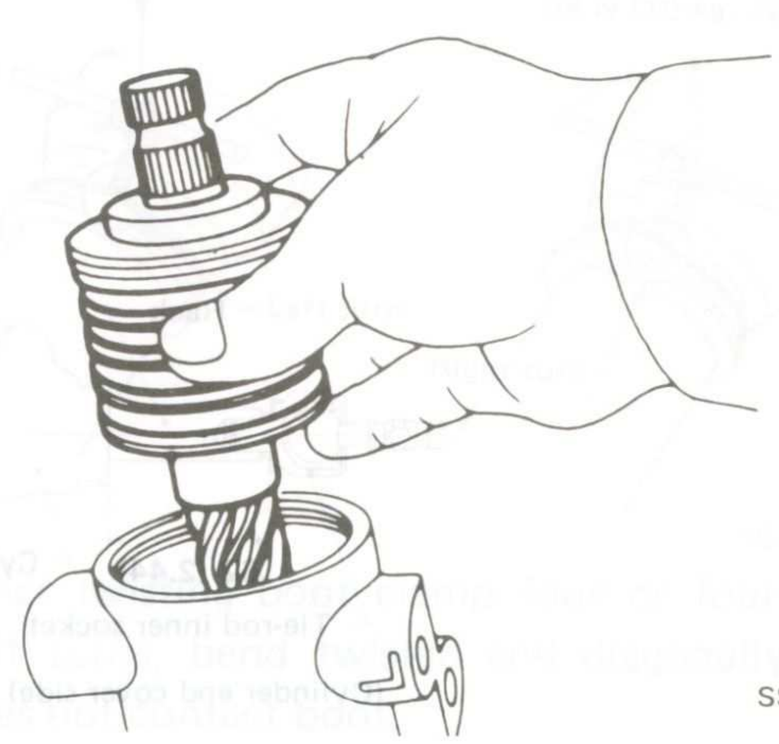
Wrap vinyl tape around pinion serrations to prevent oil seal from being damaged.



SST551

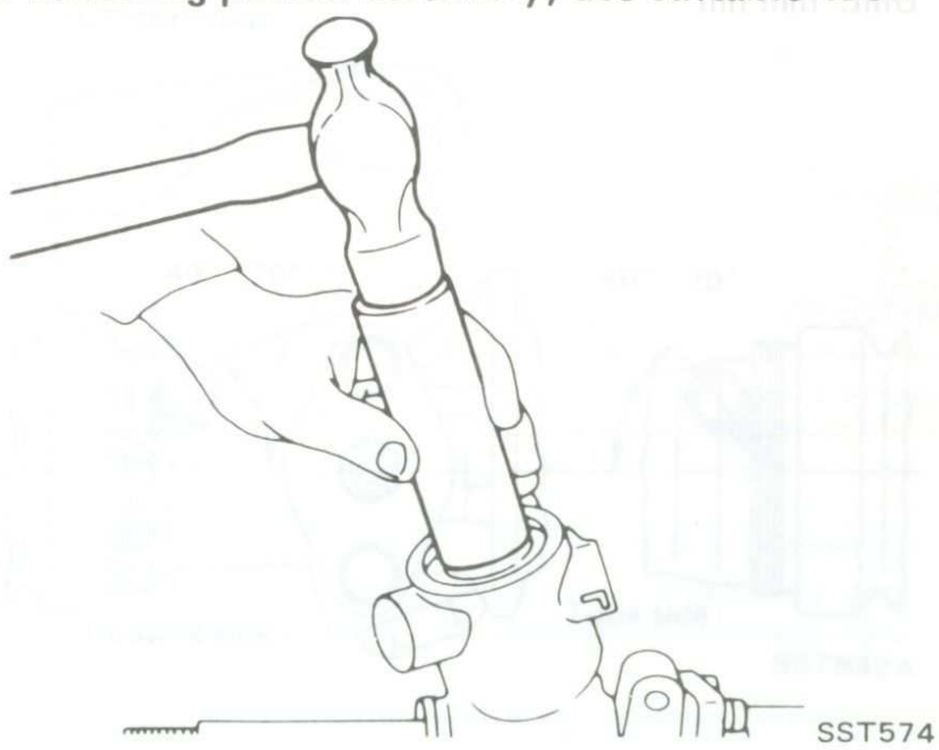
15. Install pinion assembly to pinion housing.

Be careful not to damage pinion teflon ring.



SST552

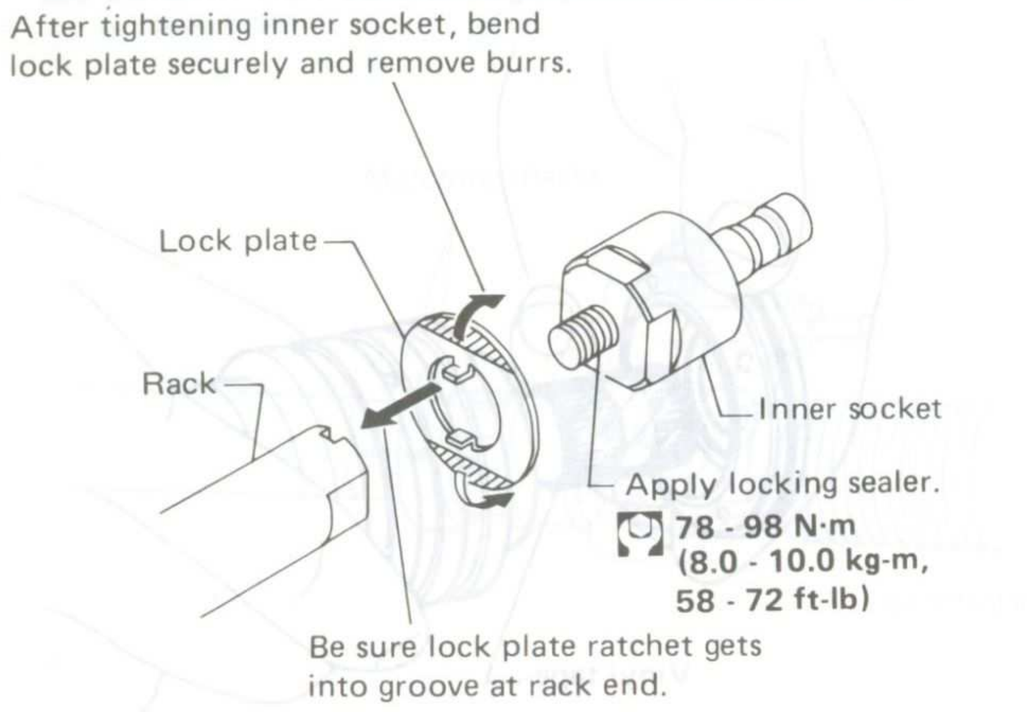
When installing pinion assembly, use suitable tool.



SST574

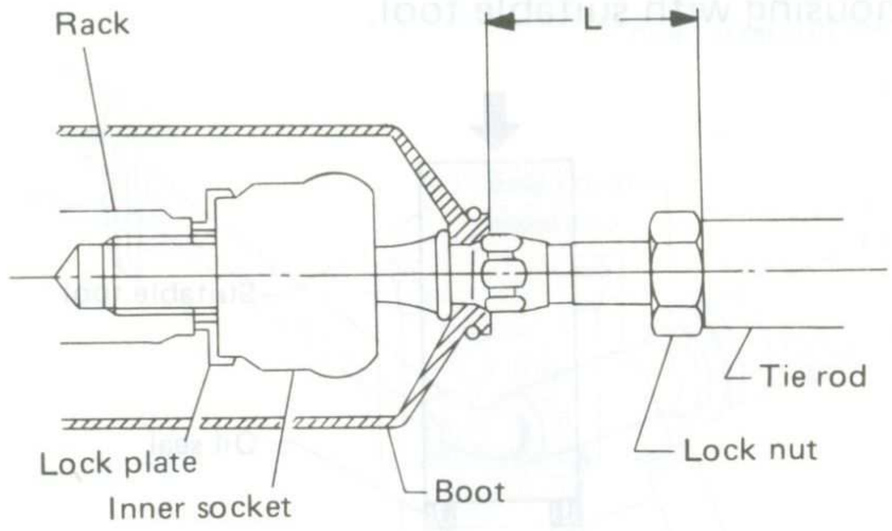
Assembly (Cont'd)

16. Install tie-rod inner socket.



SST213A

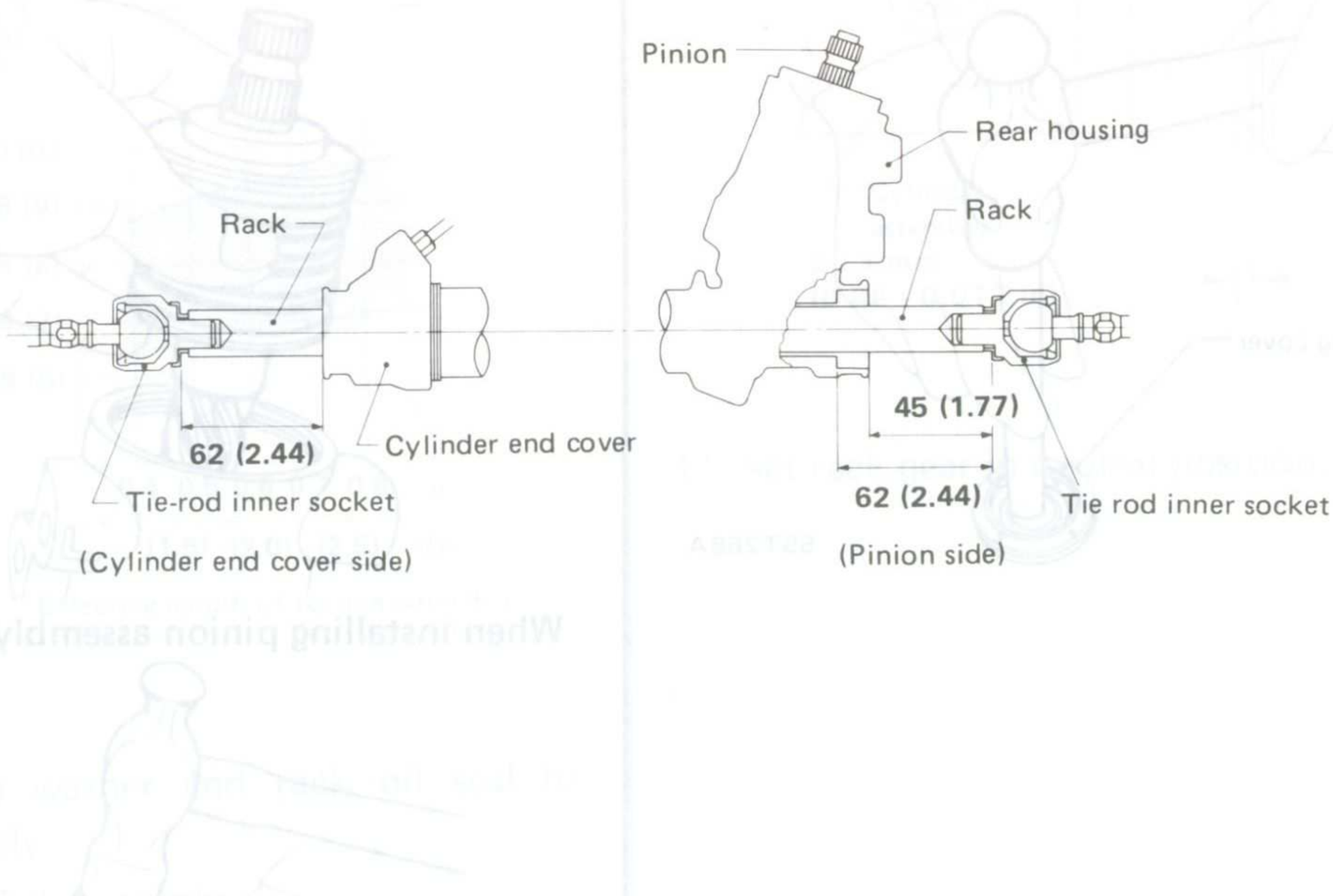
17. Install tie-rod.



- Standard dimension L = 42.9 mm (1.689 in)
- When installing tie-rod or adjusting toe-in, be careful not to twist boots.
- Toe-in: Refer to MA section.

SST936A

18. Measure rack stroke.

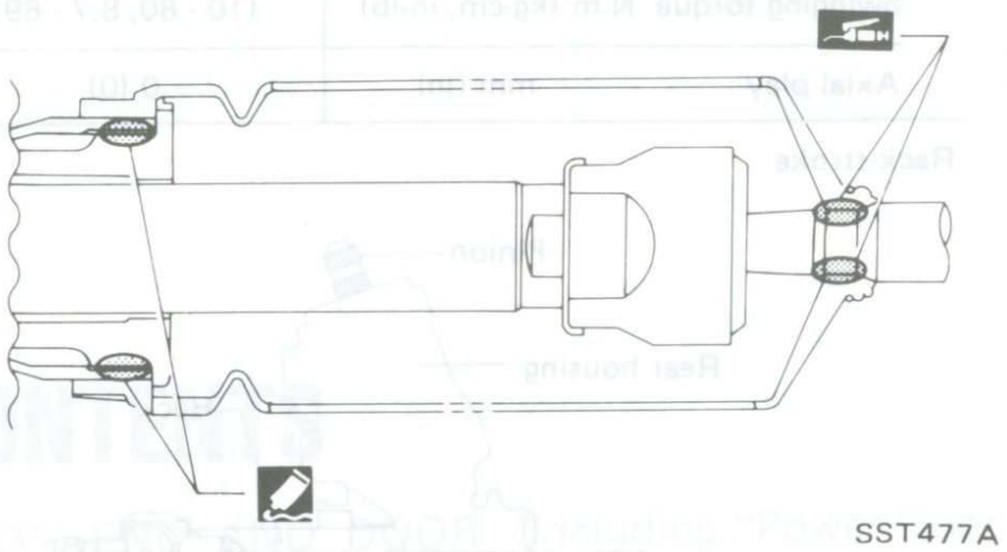


Unit: mm (in)

SST215A

Assembly (Cont'd)

19. Apply a coat of sealant to contact surfaces between boot and cylinder before installing boot.

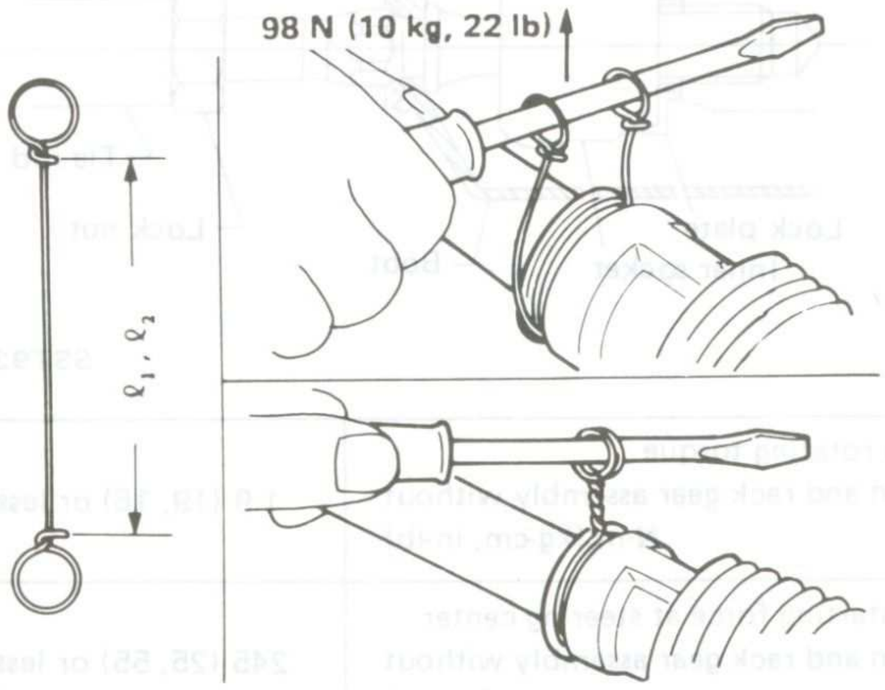


SST477A

20. Install boot clamps.
- To install, wrap boot clamp around boot groove twice. Tighten clamp by twisting rings at both ends four or four and a half turns with screwdriver while pulling with a force of approx. 98 N (10 kg, 22 lb).

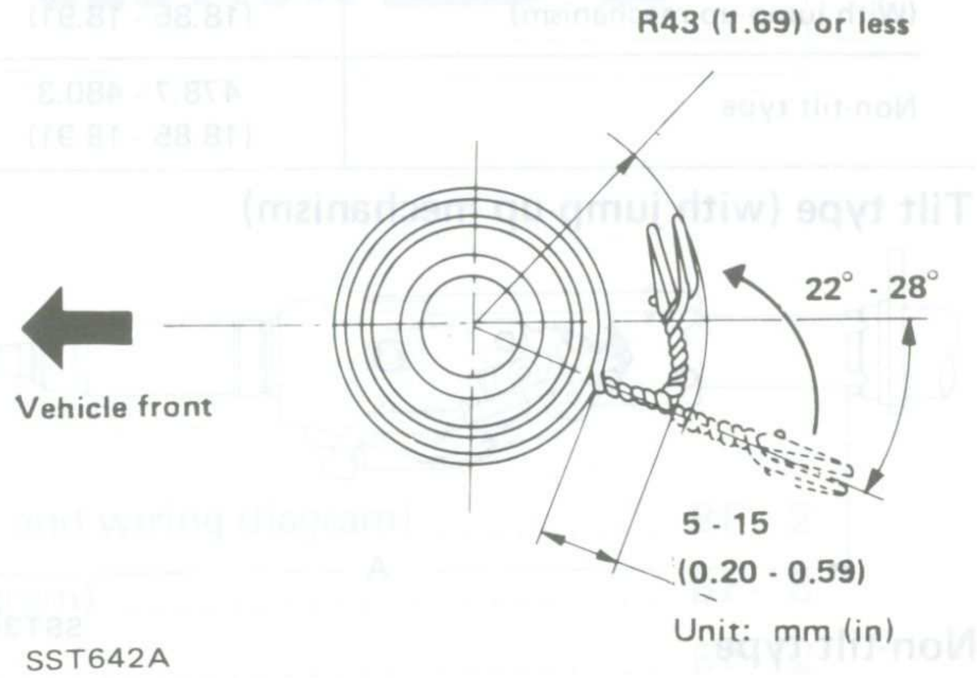
Boot clamp length: ℓ_1, ℓ_2

ℓ_1 = 390 mm (15.35 in)
... at pinion gear side
ℓ_2 = 430 mm (16.93 in)
... at opposite pinion gear side



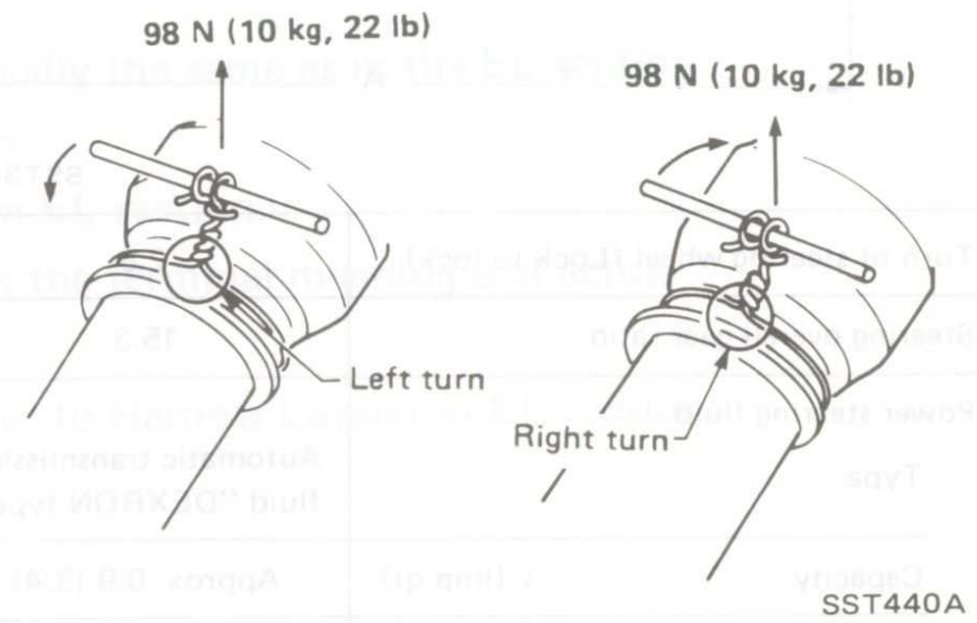
SST438A

- Install boot clamp so that it is to the rear of the vehicle when gear housing is attached to the body. (This will avoid interference with other parts.)



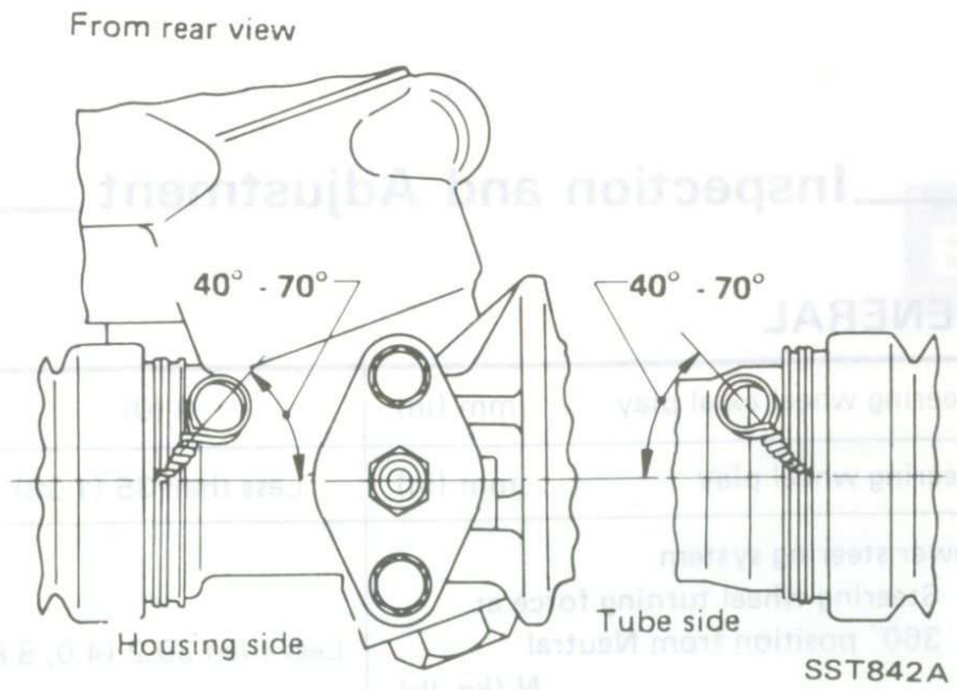
SST642A

- Twist boot clamp in the direction shown in figure at left.



SST440A

- After twisting boot clamp four or four and a half turns, bend twisted end diagonally so it does not contact boot.



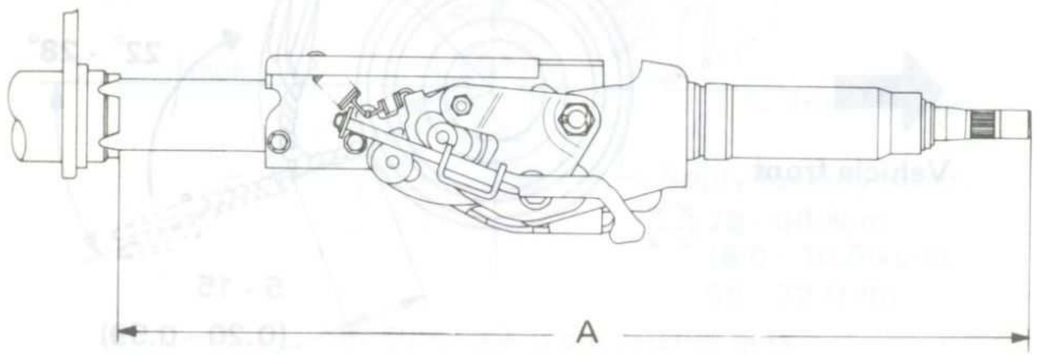
SST842A

SERVICE DATA AND SPECIFICATIONS (S.D.S.)

General Specifications

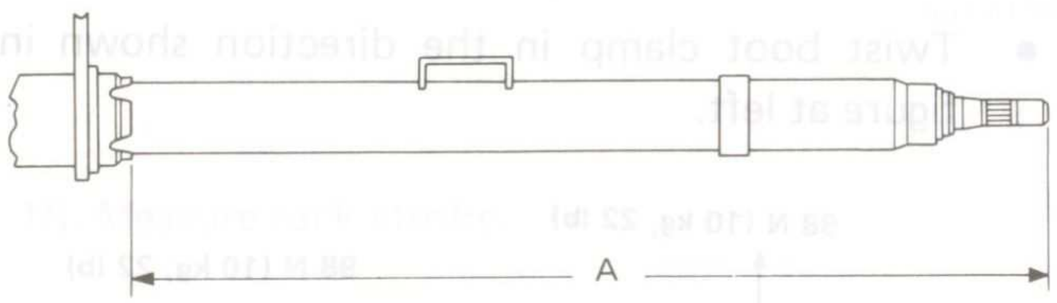
Steering gear type	PR24S [Power steering]
Steering column	Collapsible
Steering column length "A" mm (in) Tilt type (With jump-up mechanism)	478.7 - 480.3 (18.85 - 18.91)
Non-tilt type	478.7 - 480.3 (18.85 - 18.91)

Tilt type (with jump-up mechanism)



SST341A

Non-tilt type



SST342A

Turn of steering wheel (Lock to lock)	2.8
Steering overall gear ratio	15.3
Power steering fluid Type	Automatic transmission fluid "DEXRON type"
Capacity ℓ (Imp qt)	Approx. 0.9 (3/4)
Normal operating temperature °C (°F)	60 - 80 (140 - 176)

Inspection and Adjustment

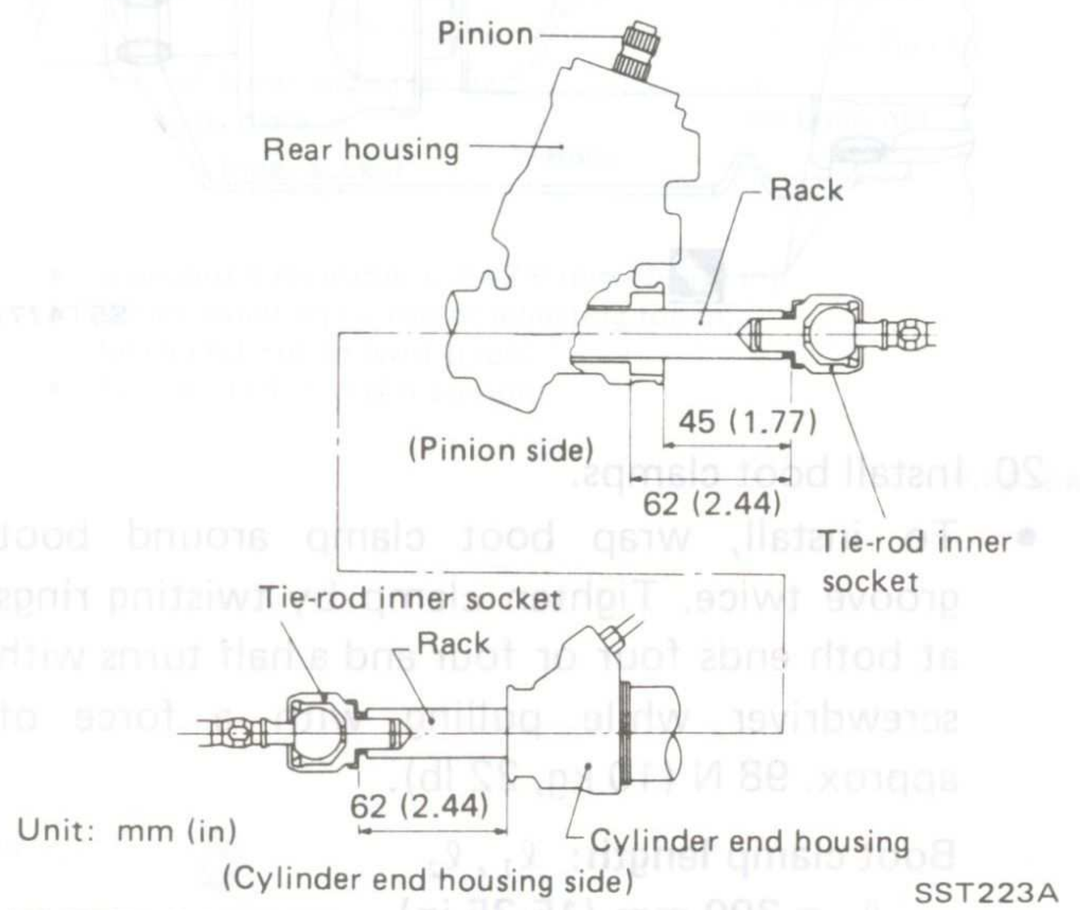
GENERAL

Steering wheel axial play	mm (in)	0 (0)
Steering wheel play	mm (in)	Less than 35 (1.38)
Power steering system Steering wheel turning force at 360° position from Neutral	N (kg, lb)	Less than 39.2 (4.0, 8.8)

STEERING GEAR AND LINKAGE (PR24S)

Tie-rod outer ball joint Swinging torque N·m (kg-cm, in-lb)	0.15 - 2.94 (1.5 - 30, 1.3 - 26.0)
Tie-rod inner ball joint Swinging torque N·m (kg-cm, in-lb)	1.0 - 7.8 (10 - 80, 8.7 - 69.4)
Axial play mm (in)	0 (0)

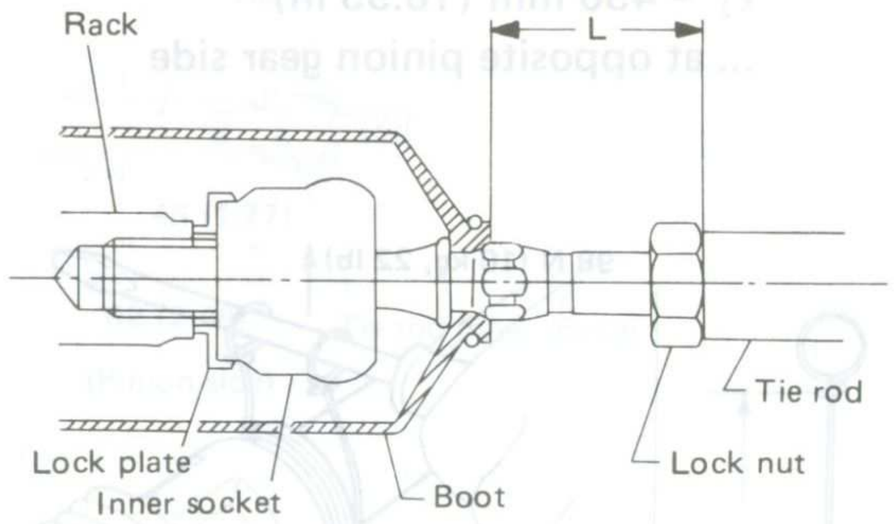
Rack stroke



Unit: mm (in)

SST223A

Tie-rod standard length



SST936A

Pinion rotating torque (Pinion and rack gear assembly without fluid) N·m (kg-cm, in-lb)	1.9 (19, 16) or less
Rack starting force at steering center (Pinion and rack gear assembly without fluid) N (kg, lb)	245 (25, 55) or less