

DAIHATSU

L500, L501

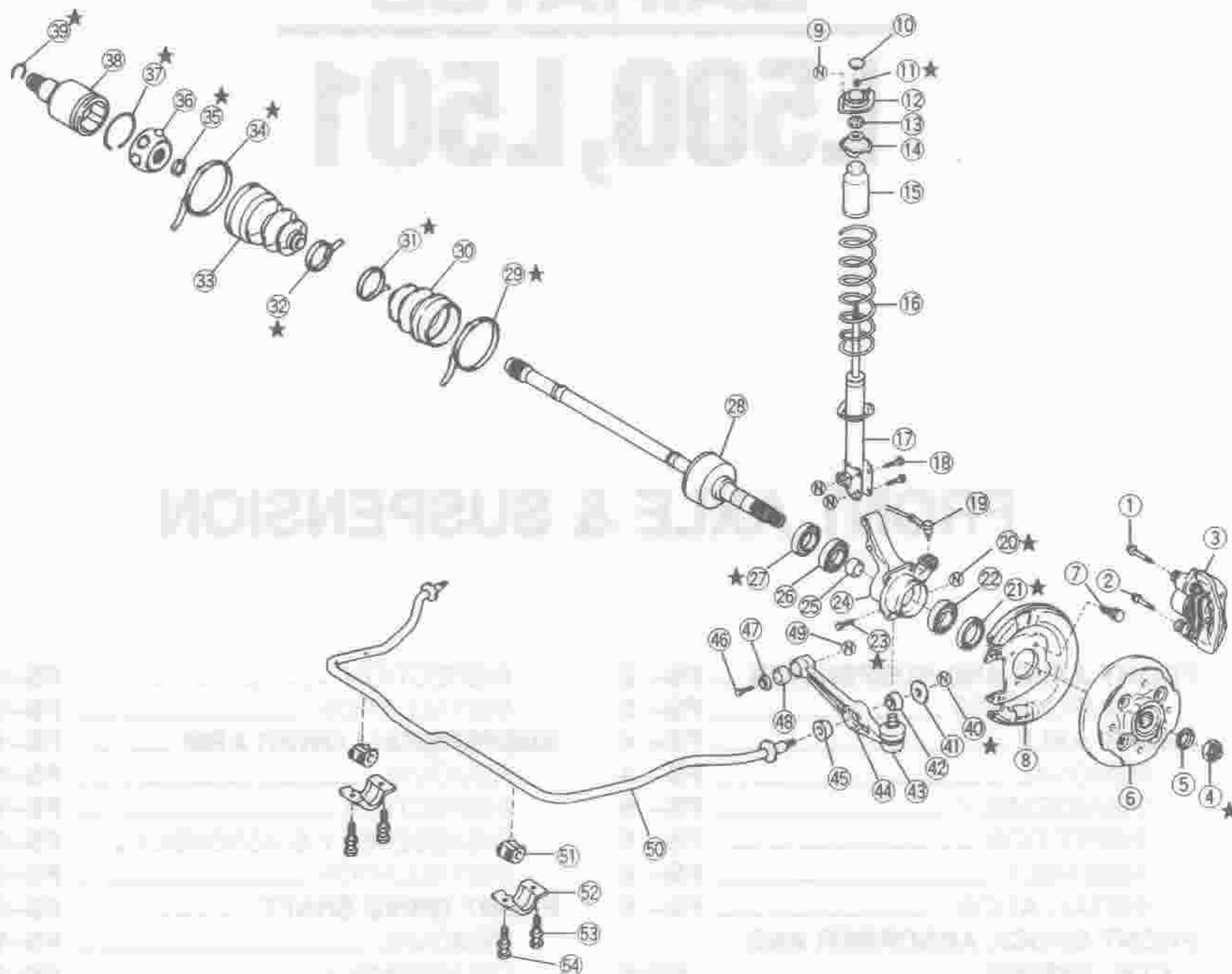
FRONT AXLE & SUSPENSION

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FS

LFS00001-00000

FRONT AXLE AND SUSPENSION COMPONENTS



- ① Bolt
- ② Bolt
- ③ Disc brake caliper assembly
- ④ Nut
- ⑤ Plate washer
- ⑥ Front axle hub & disc assembly
- ⑦ Bolt
- ⑧ Disc brake dust cover subassembly
- ⑨ Nut
- ⑩ Bearing dust cover
- ⑪ Nut
- ⑫ Front suspension support
- ⑬ Bearing
- ⑭ Front spring upper sheet
- ⑮ Spring bumper
- ⑯ Coil spring
- ⑰ Shock absorber
- ⑱ Bolt & nut
- ⑲ Tie rod end
- ⑳ Nut
- ㉑ Oil seal
- ㉒ Radial ball bearing
- ㉓ Bolt & Nut
- ㉔ Steering knuckle
- ㉕ Collar
- ㉖ Radial ball bearing
- ㉗ Oil seal

- ㉘ Outboard joint subassembly
- ㉙ Boot band
- ㉚ Boot
- ㉛ Boot band
- ㉜ Boot band
- ㉝ Boot
- ㉞ Boot band
- ㉟ Shaft snap ring
- ㊱ Ball subassembly
- ㊲ Hole snap ring
- ㊳ Inboard joint subassembly
- ㊴ Snap ring
- ㊵ Nut
- ㊶ Cushion retainer
- ㊷ Strat bar cushion
- ㊸ Ball joint dust cover
- ㊹ Suspension lower arm
- ㊺ Strat bar cushion
- ㊻ Bolt
- ㊼ Washer
- ㊽ Lower arm bush
- ㊾ Nut
- ㊿ Stabilizer bar
- 1 Stabilizer bush
- 2 Stabilizer bracket
- 3 Bolt
- 4 Bolt

① Bolt	M10, L=71, Tightening torque: 3.2 - 4.2 kgf-m
② Bolt	M10, L=56, Tightening torque: 3.2 - 4.2 kgf-m
③ Disc brake caliper assembly	
④ Nut	Be sure to stake the lock nut after tightening. M22, Tightening torque: 22.0 - 26.0 kgf-m
⑤ Plate washer	D=40, t=4.5
⑥ Front axle hub & disc assembly	
⑦ Bolt	M8, L=16, Tightening torque: 3.0 - 4.0 Kgf-m
⑧ Disc brake dust cover subassembly	Installed with a total of four bolts.
⑨ Nut	M8, Tightening torque: 3.0 - 4.5 kgf-m
⑩ Bearing dust cover	
⑪ Nut	Non reusable parts. Tightening torque: 5.5 - 7.5 kgf-m
⑫ Front suspension support	
⑬ Bearing	Apply the grease on the surface of bearing.
⑭ Front spring upper sheet	
⑮ Spring bumper	
⑯ Coil spring	
⑰ Shock absorber	
⑱ Bolt & nut	M12, L=51, Tightening torque: 8.5 - 11.0 kgf-m
⑲ Tie rod end	
⑳ Nut	Non reusable parts. Tightening torque: 4.0 - 5.5 kgf-m
㉑ Oil seal	Non reusable parts. Apply the amix chassis grease to the lip section. This part differs from Item ㉑
㉒ Radial ball bearing	Items ㉒ and ㉓ are used in common. Apply the amix chassis grease.
㉓ Bolt & Nut	M12, L=50, Non reusable parts. Tightening torque: 6.5 - 9.0 kgf-m
㉔ Steering knuckle	
㉕ Collar	
㉖ Radial ball bearing	Items ㉒ and ㉓ are used in common. Apply the amix chassis grease.
㉗ Oil seal	Non reusable parts. Apply the amix chassis grease to the lip section. This part differs from Item ㉑. It is thicker than Item ㉑.
㉘ Boot band	Non reusable parts.
㉙ Boot	"NTN"-Sunlight SW2,65 - 85g, "TK"-Molillex No.2,65 - 85g
㉚ Boot band	Non reusable parts.
㉛ Outboard joint subassembly	Non disassembly parts.
㉜ Shaft snap ring	This ring can not be reused.
㉝ Ball subassembly	Non disassembling parts.
㉞ Hole snap ring	This ring can not be reused.
㉟ Inboard joint subassembly	
㊱ Snap ring	This ring can not be reused.
㊲ Boot band	Non reusable parts.
㊳ Boot	"NTN"-VU-3A702,70 - 90g,"TK"-Molillex No.2,65 - 85g
㊴ Boot band	Non reusable parts.
㊵ Nut	M12, Tightening torque: 9.4 - 11.0 kgf-m
㊶ Cushion retainer	Pay attention to the assembling direction. t=4
㊷ Strat bar cushion	Pay attention to the assembling direction. Items ㊷ and ㊸ are used in common.
㊸ Ball joint dust cover	Non reusable parts.
㊹ Suspension lower arm	
㊺ Strat bar cushion	Pay attention to the assembling direction. Items ㊷ and ㊸ are used in common.
㊻ Bolt	M10, L=60, Tightening torque: 6.0 - 8.5 kgf-m
㊼ Washer	This part is provided at the right side only.
㊽ Lower arm bush	
㊾ Nut	M10, Tightening torque: 6.0-8.5 kgf-m
㊿ Stabilizer bar	
① Stabilizer bush	
② Stabilizer bracket	
③ Bolt	M10, L=25, Items ③ and ④ are used in common. This should be tightened before Item ④ Tightening torque: 7.5 - 9.5 kgf-m
④ Bolt	M10, L=25, Items ③ and ④ are used in common. After Item ③ has been tightened, tighten this bolt. Tightening torque: 7.5 - 9.5 kgf-m

FRONT AXLE

REMOVAL

1. Jack up the vehicle.

NOTE:

- Be sure to support the vehicle securely with safety stands.

2. Remove the front wheel.

3. Disc brake caliper removal

- (1) Remove the disc brake caliper by removing the two bolts.

- (2) Suspend the disc brake caliper.

4. Front axle hub removal

- (1) Remove the nut using the following SST.

SST: 09511-87202-000

NOTE:

- Do not reuse the nut.

- (2) Remove the plate washer.

- (3) Remove the front axle hub, using the following SST.

SST: 09510-87301-000

- (4) Remove the disc brake dust cover by removing the four bolts.

5. Tie rod end separation

- (1) Remove the nut from the tie rod end.

NOTE:

- Do not reuse the nut.

- (2) Separate the tie rod end from the steering knuckle, using the following SST.

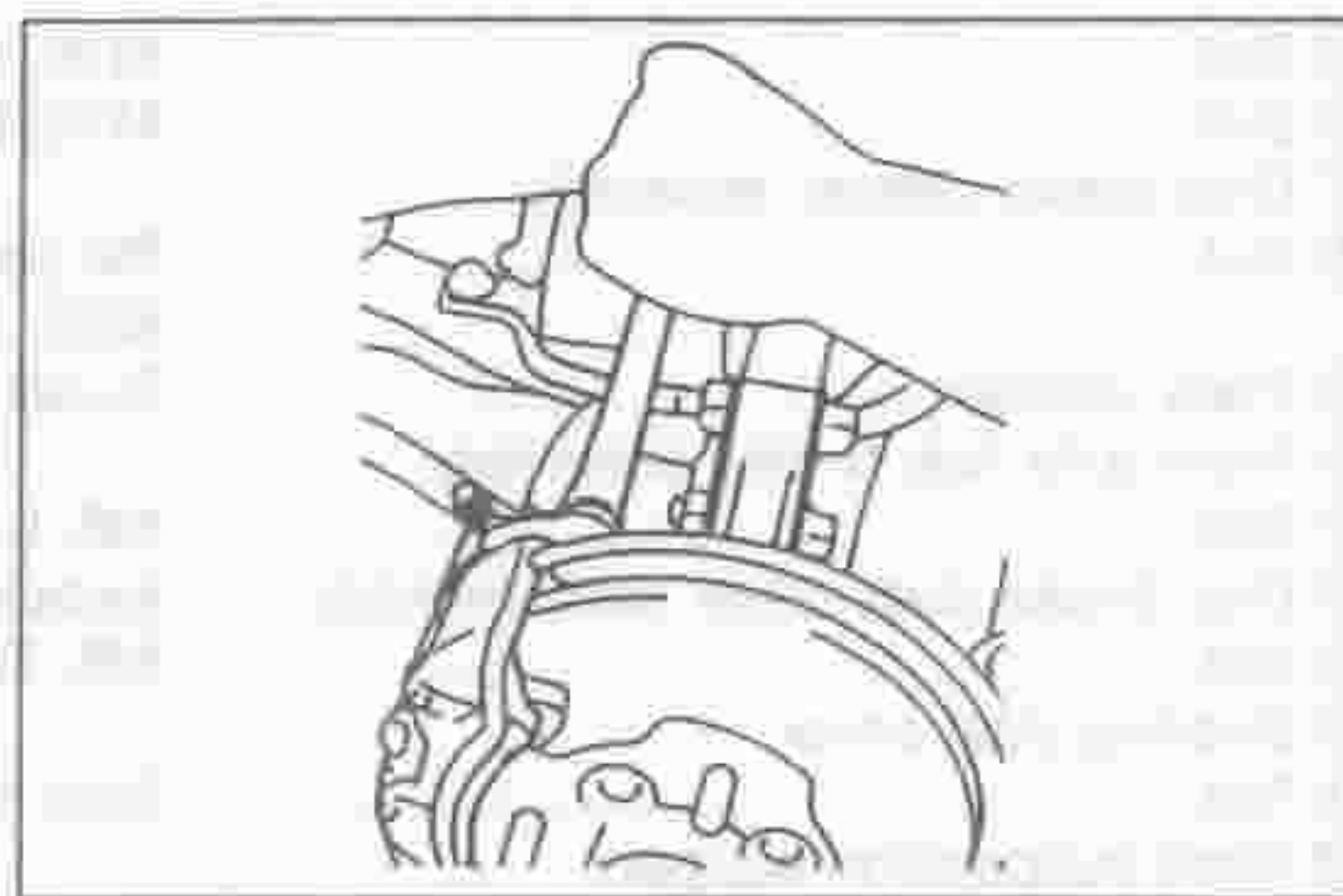
SST: 09611-87701-000

NOTE:

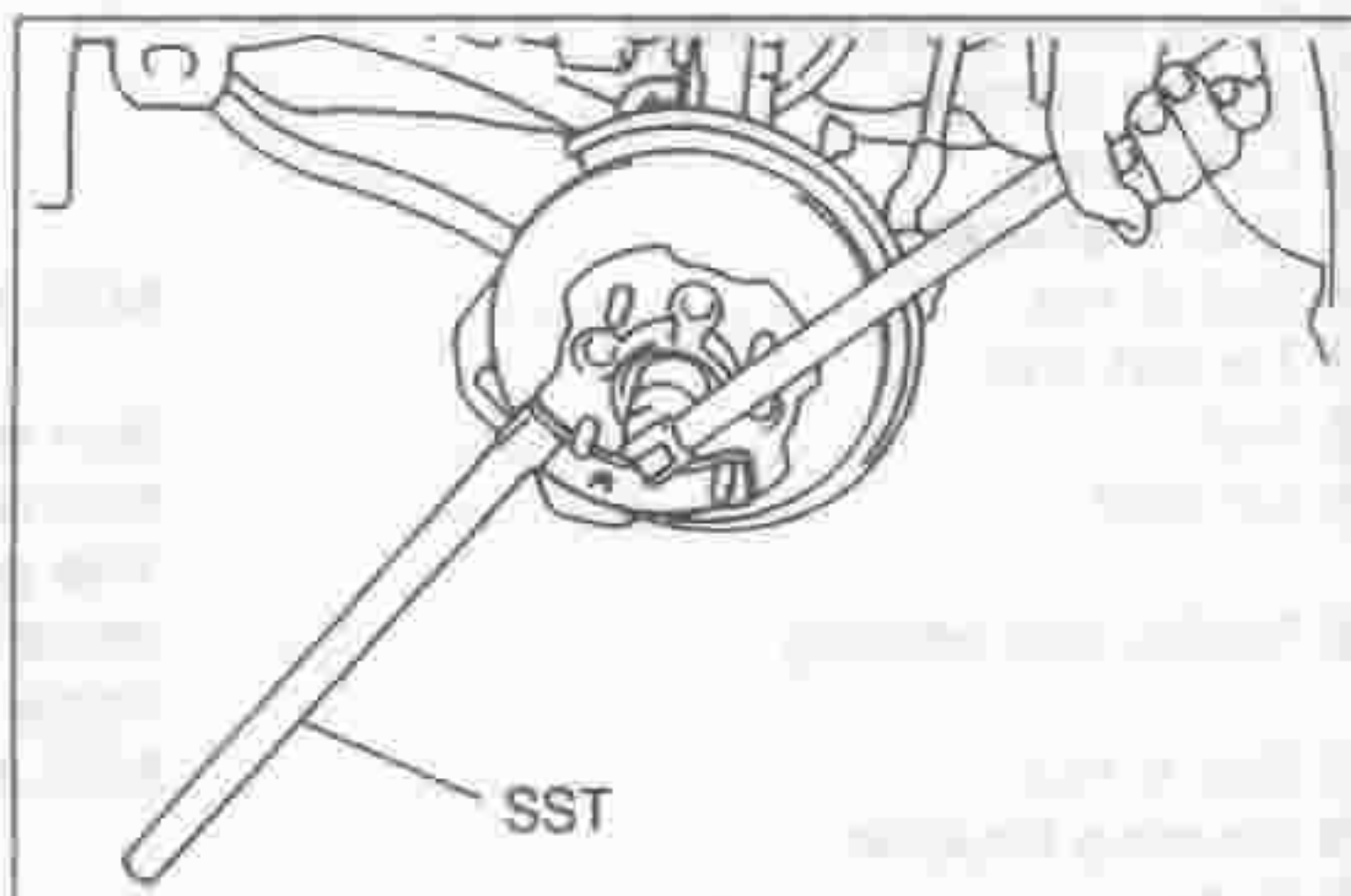
- Be certain to use the SST after loosening the nut until it becomes flush with the bolt.
- While using the SST, be very careful not to damage the boot and threaded portion.

6. Steering knuckle removal

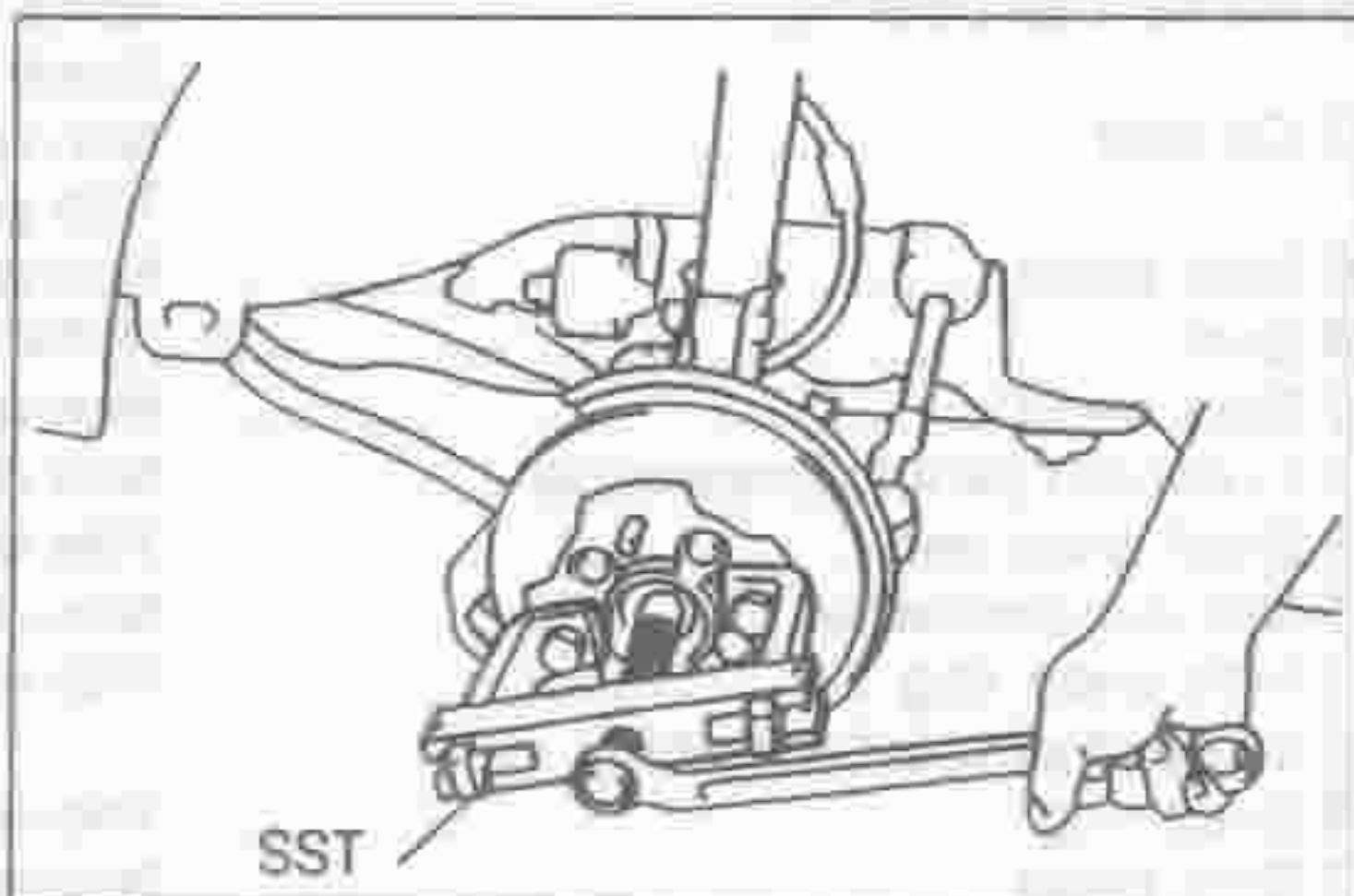
- (1) Remove the attaching nuts. Leave the bolts in their inserted conditions.



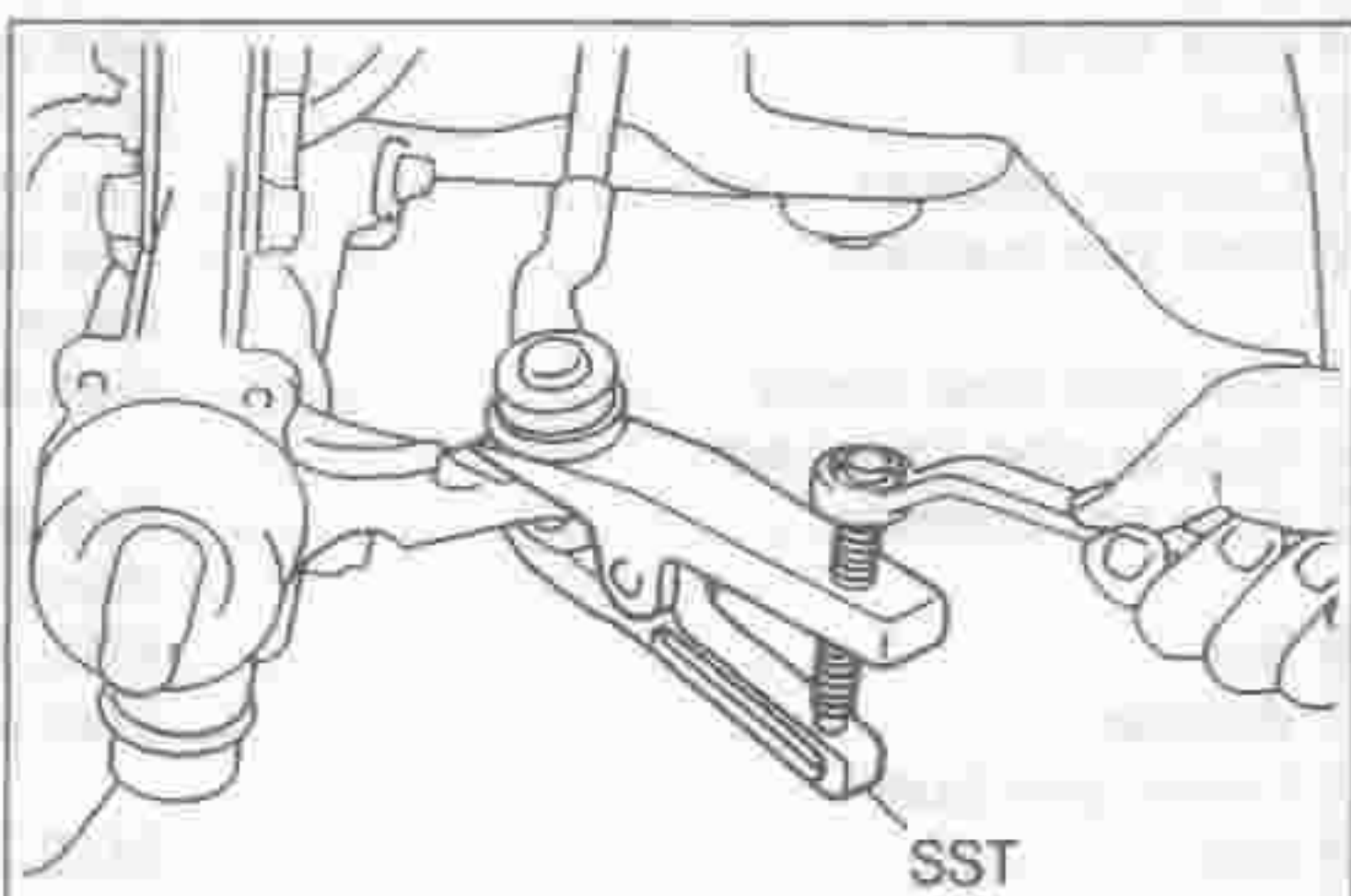
LFS00004-00002



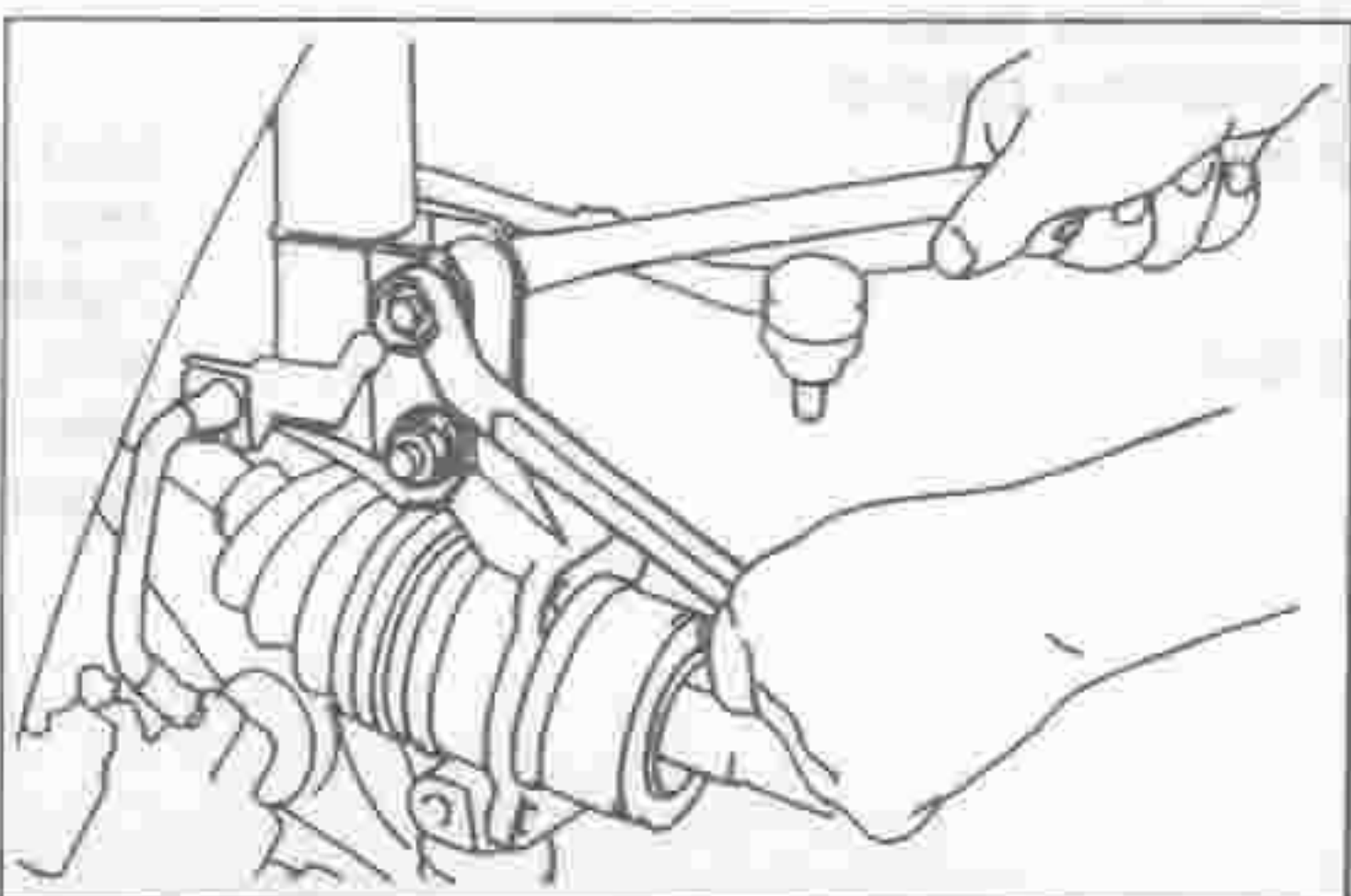
LFS00005-00003



LFS00006-00004



LFS00007-00005

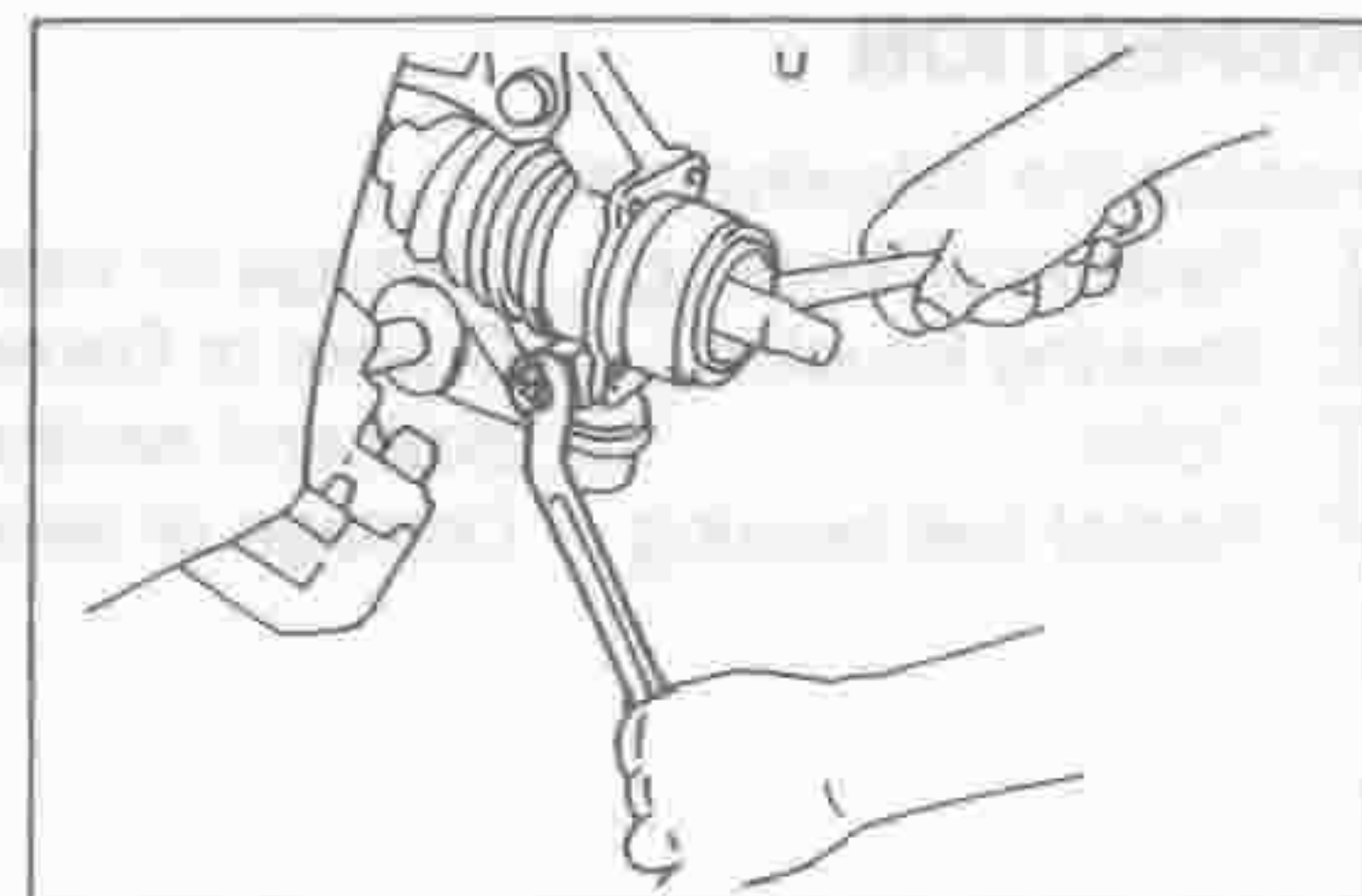


LFS00008-00006

- (2) Remove the lower ball joint by removing the bolt and nut.

NOTE:

- Do not reuse the bolt and nut.



LFS00009-00007

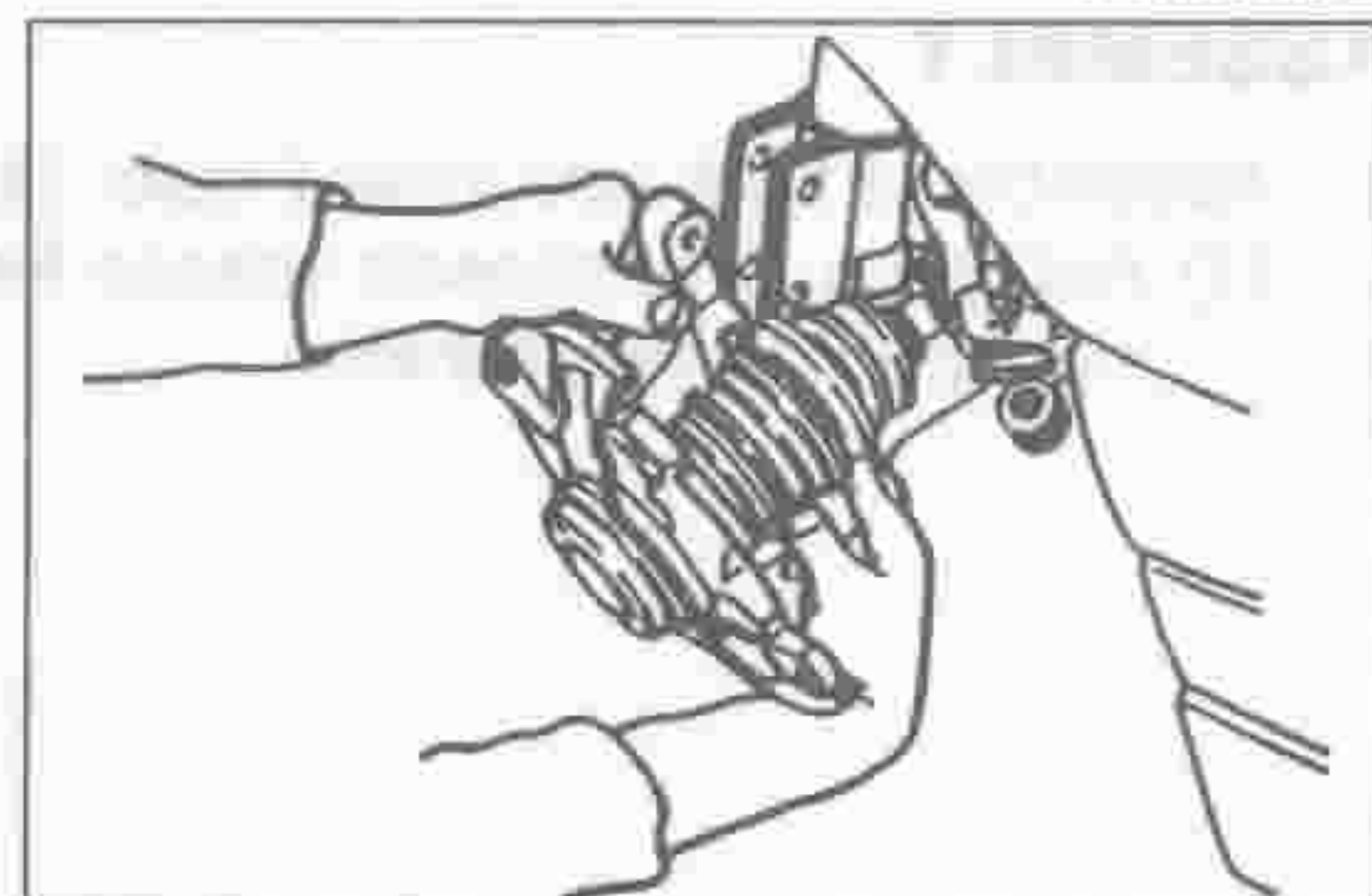
- (3) While supporting the steering knuckle, draw out the attaching bolts of the shock absorber lower bracket.

- (4) Disengage the front axle hub from the drive shaft.

Remove the steering knuckle.

NOTE:

- Protect the drive shaft boot with cloth or the like so that it may not be damaged during the operation.
- Care must be exercised not to distort the disc brake dust cover.



LFS00010-00008

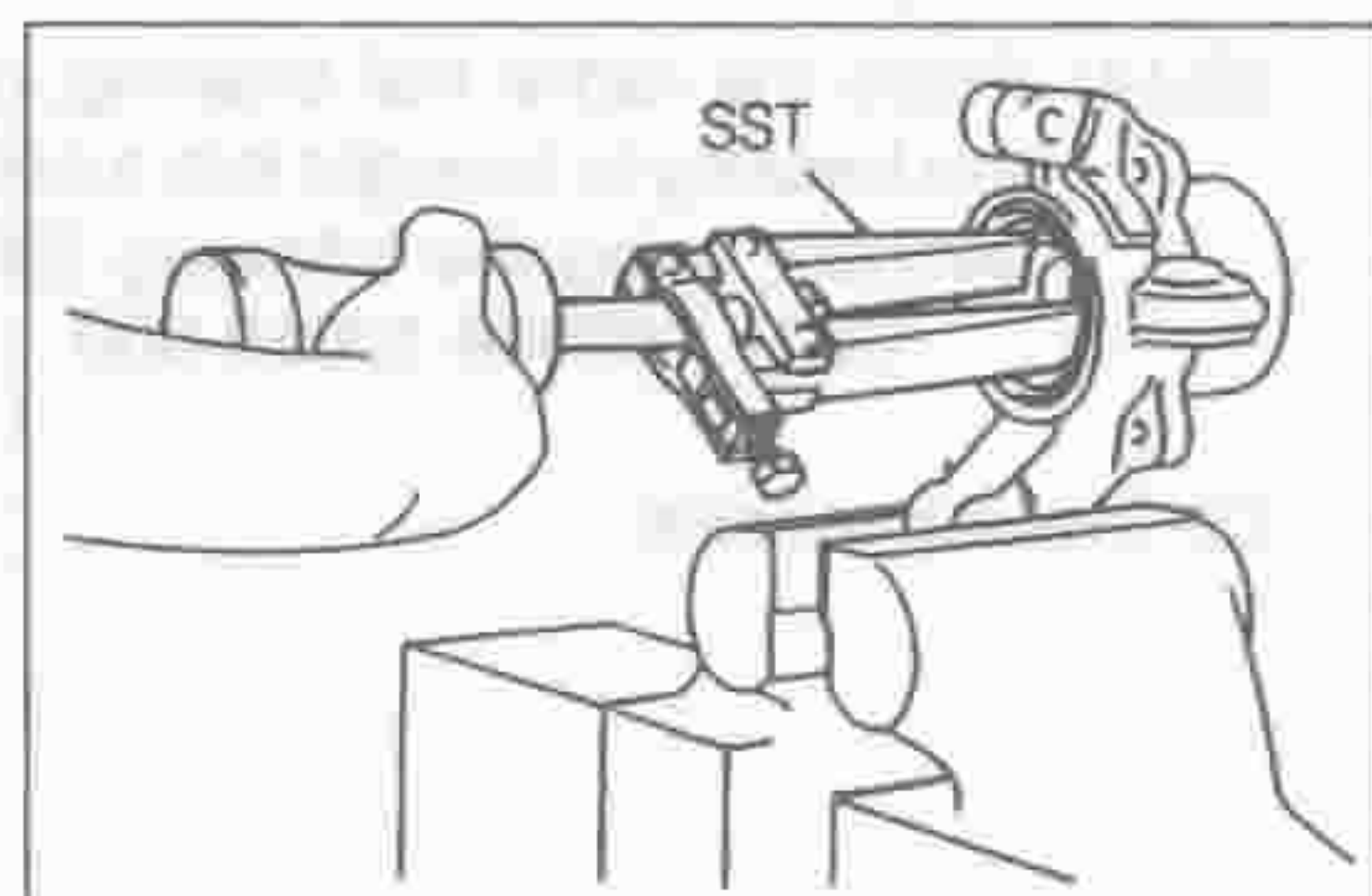
DISASSEMBLY

1. Remove the inner (outer) oil seal, using the following SST.

SST: 09308-00010-000

NOTE:

- Do not reuse the oil seal.



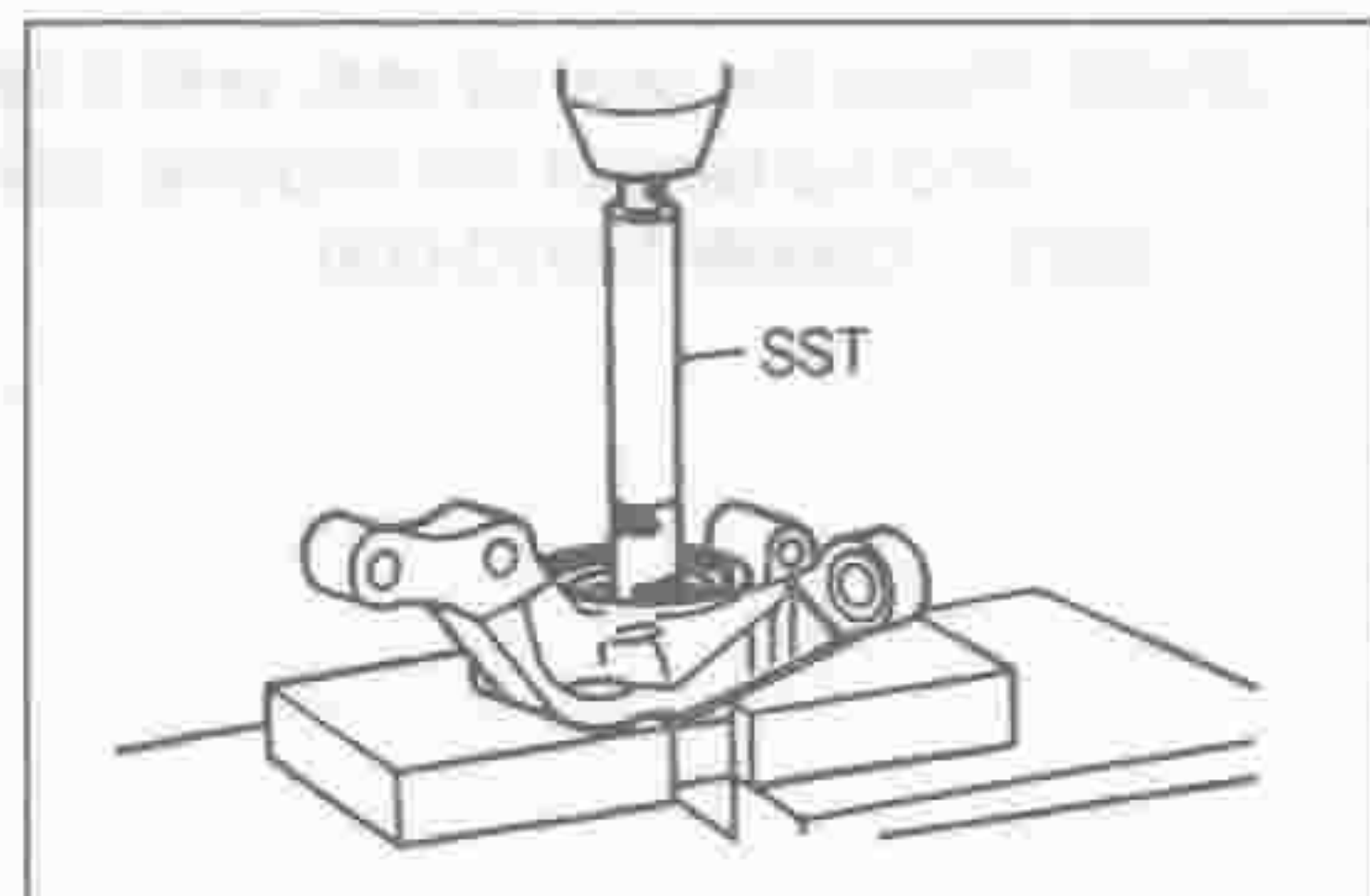
LFS00011-00009

2. Remove the bearing, using the following SST.

SST: 09608-12010-000

NOTE:

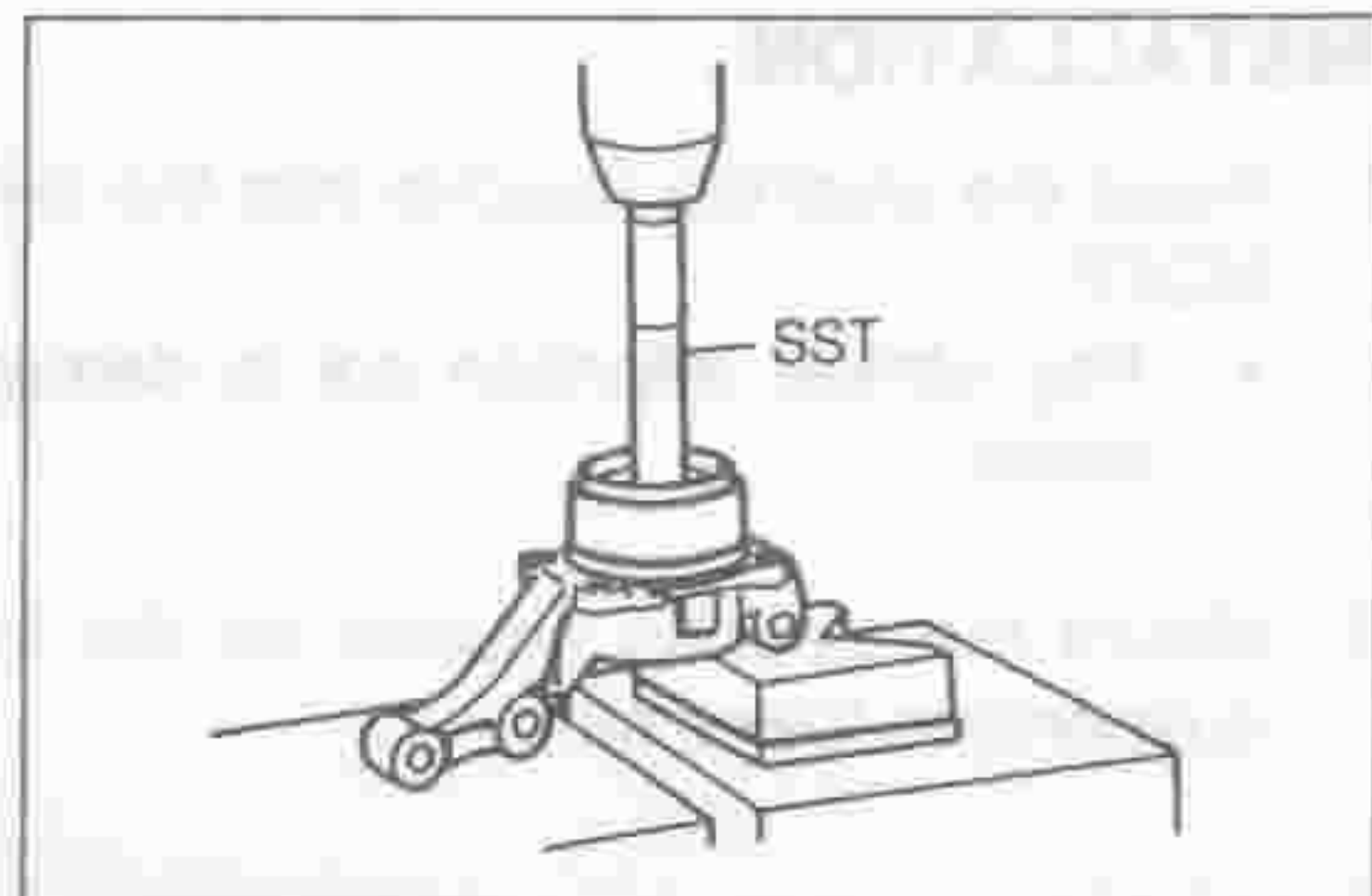
- Remove the collar by pushing it.



LFS00012-00010

3. Remove the inner (outer) bearings, using the following SST.

SST: 09608-12010-000



LFS00013-00011

FS-6

④ Radial ball bearing ... Damage or wear

ASSEMBLY

1. Assembly of front axle inner (outer) bearings

- (1) Apply the amix chassis grease for oil seals and bearings, prior to install them.

- (2),(4) Press the radial ball bearing, until the outer race of the bearing is brought into a contact with the holding section, using the following SST.

SST: 09608-12010-000

- (3) Insert the collar,

- (5),(6) Press the new oil seal, until it becomes flush with the end surface of the knuckle, using the following SST.

SST: 09608-12010-000

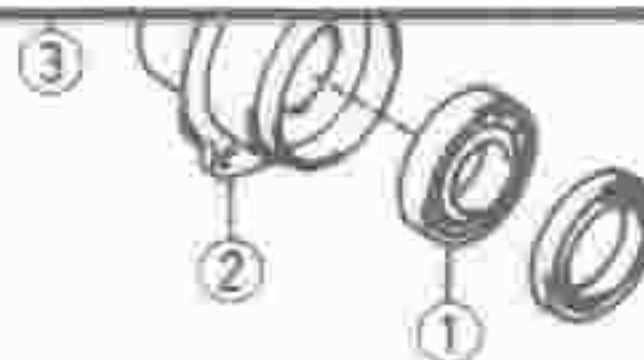
INSTALLATION

1. Insert the steering knuckle into the drive shaft.

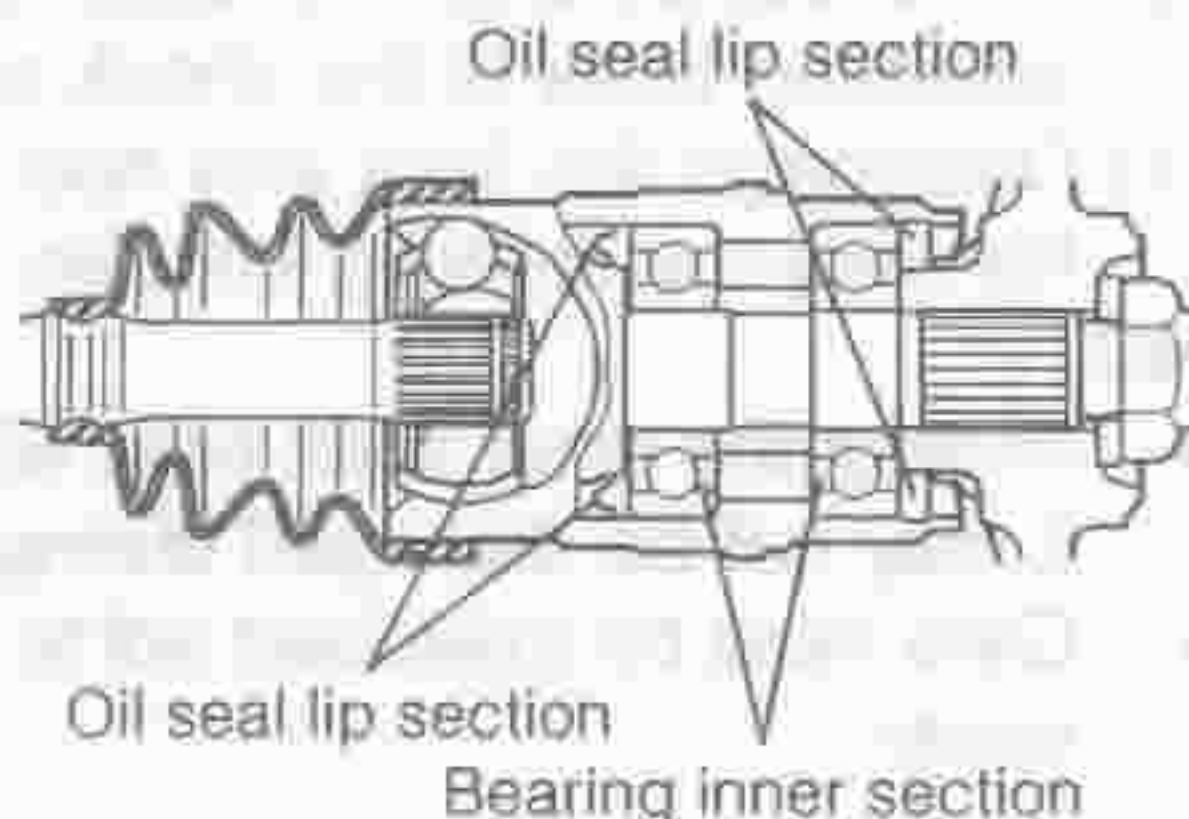
NOTE:

- Pay utmost attention not to damage the ball joint dust cover.

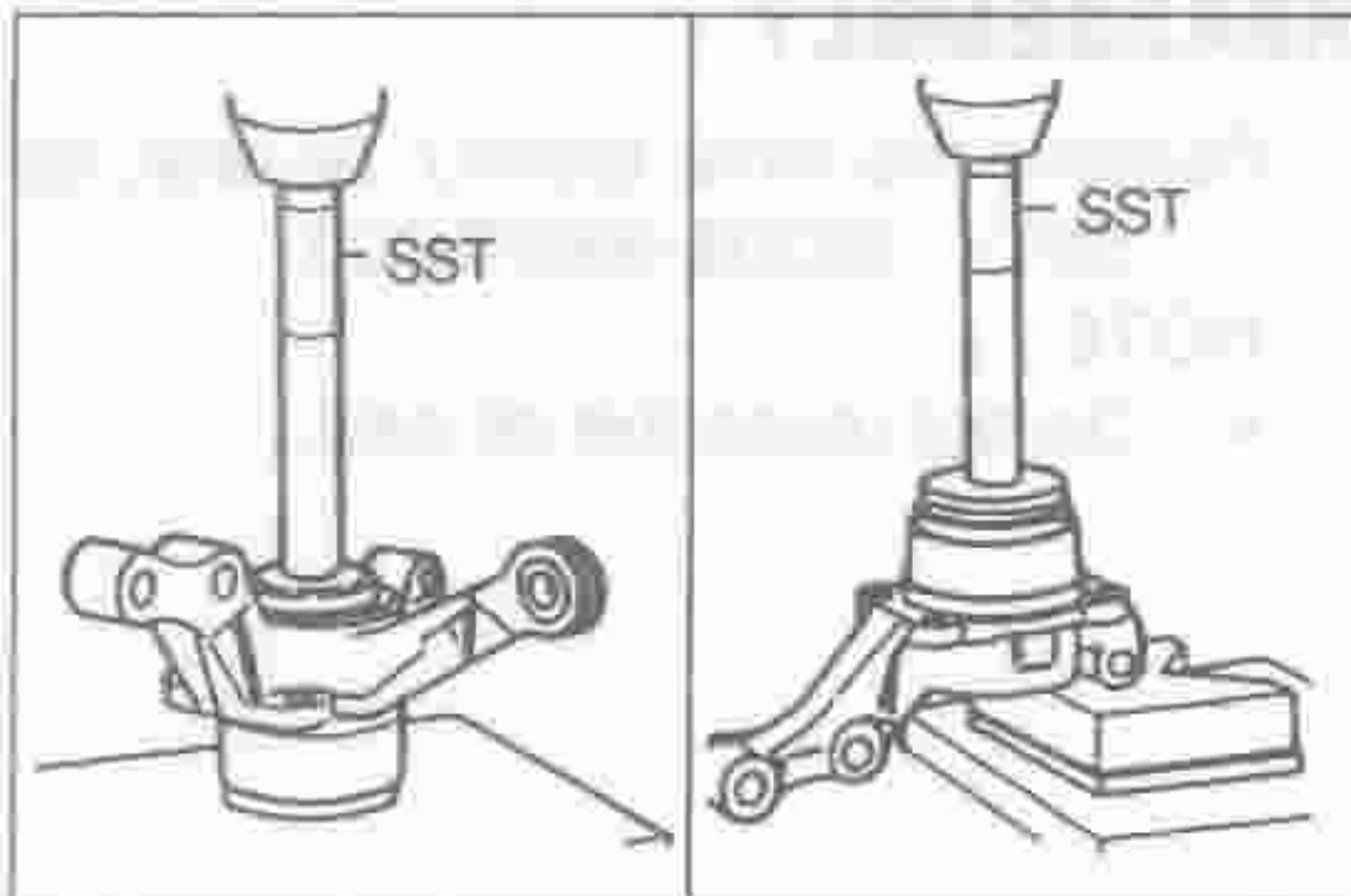
2. Mount the steering knuckle on the lower ball joint of the suspension lower arm.



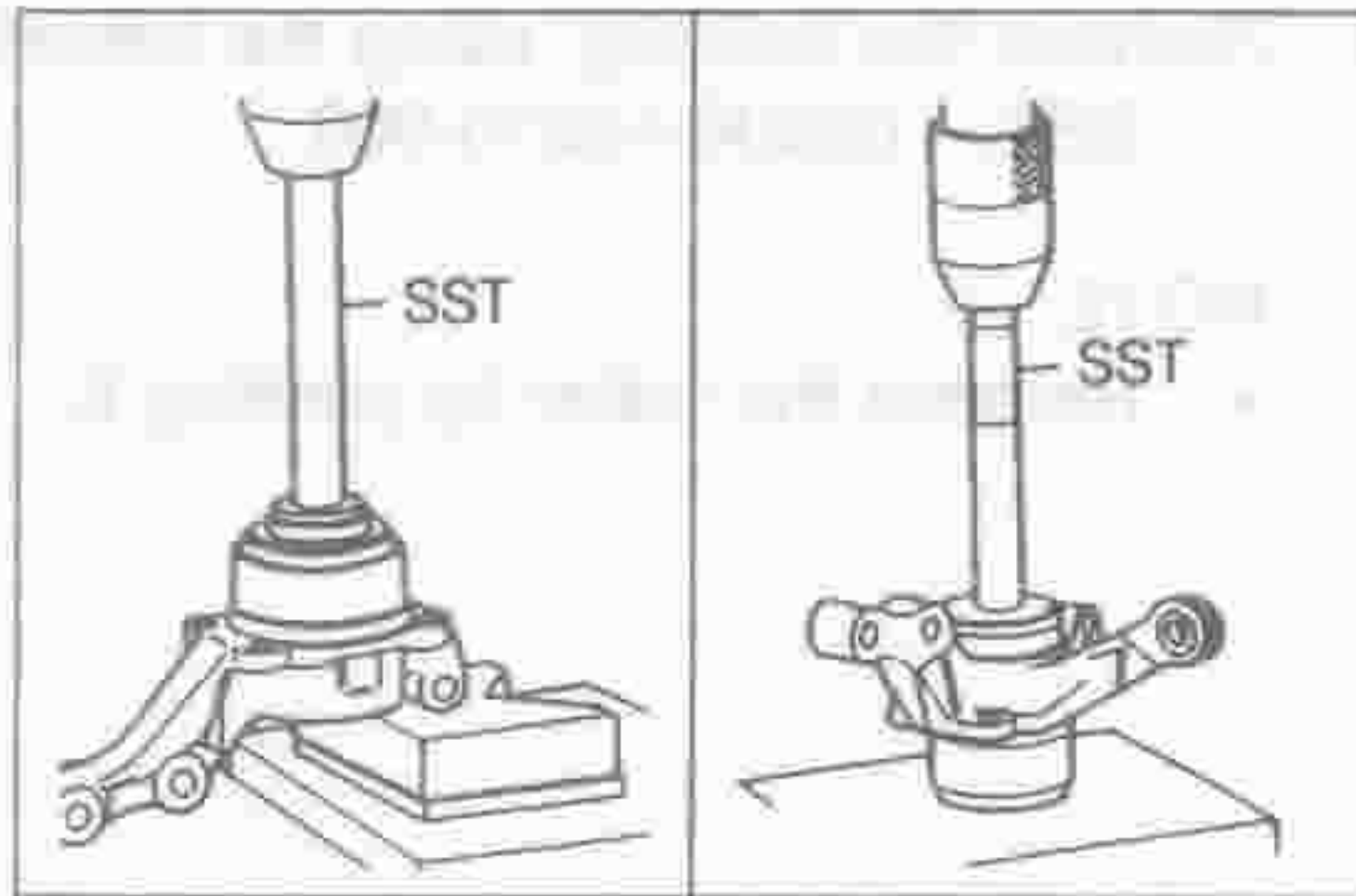
LFS00014-00012



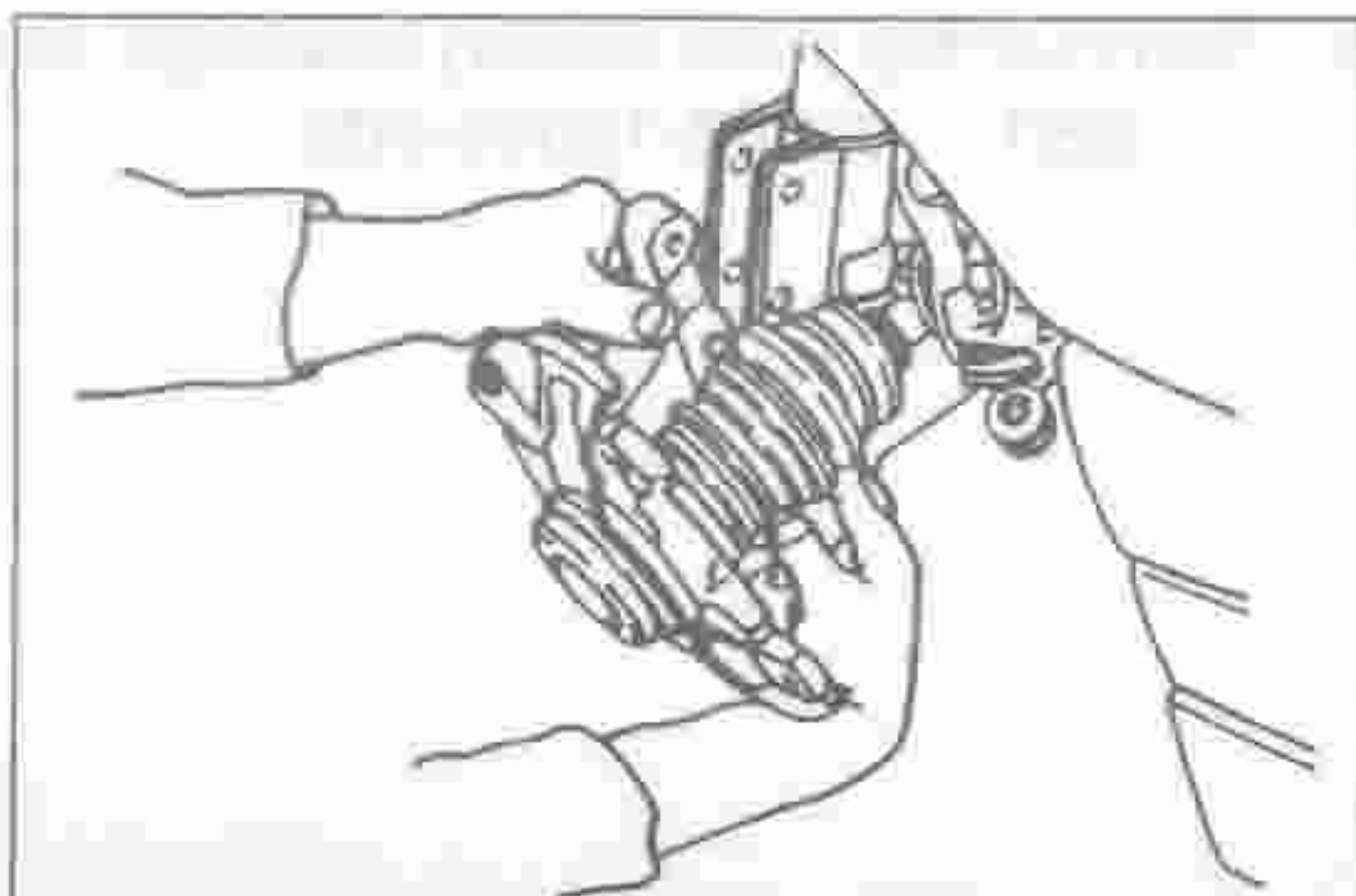
LFS00015-00013



LFS00016-00014



LFS00017-00015

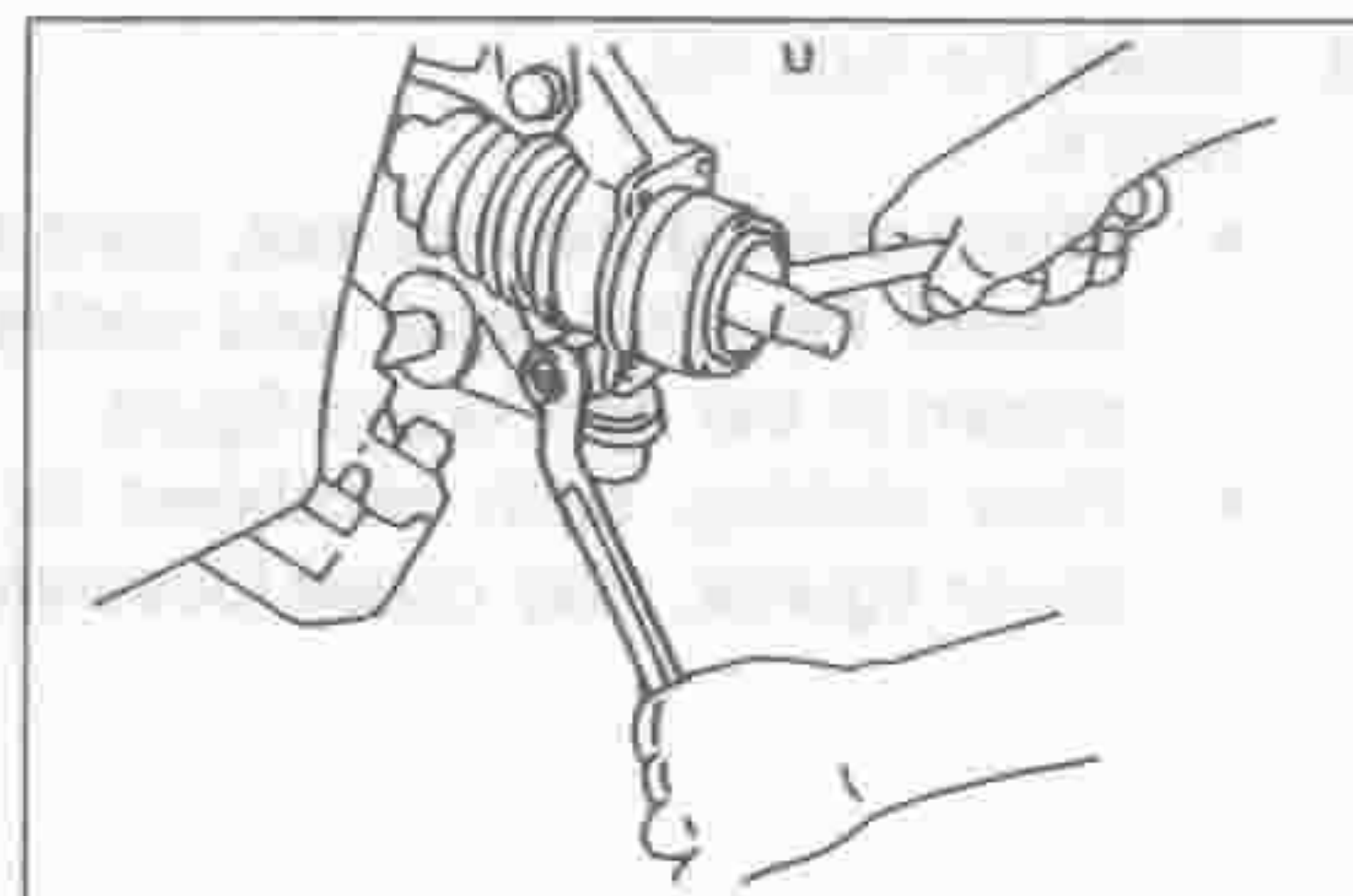


LFS00018-00016

3. Temporally tighten the bolt and nut of the ball joint section.

NOTE:

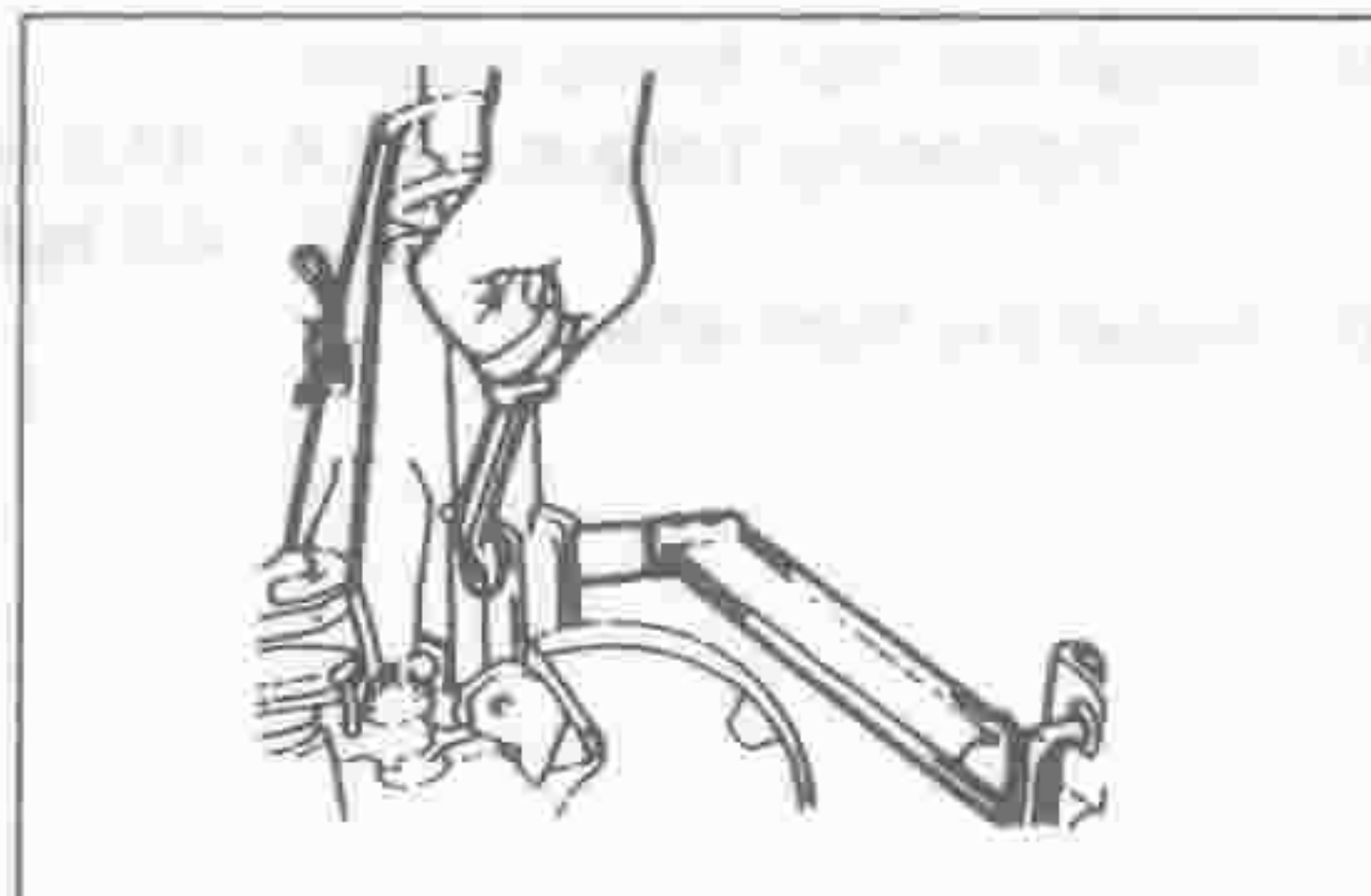
- Make sure that no grease or oil, etc. gets to the lower ball joint attaching bolt and nut.



LFS00019-00017

4. Mount the steering knuckle on the shock absorber lower bracket. Tighten the bolts and nuts.

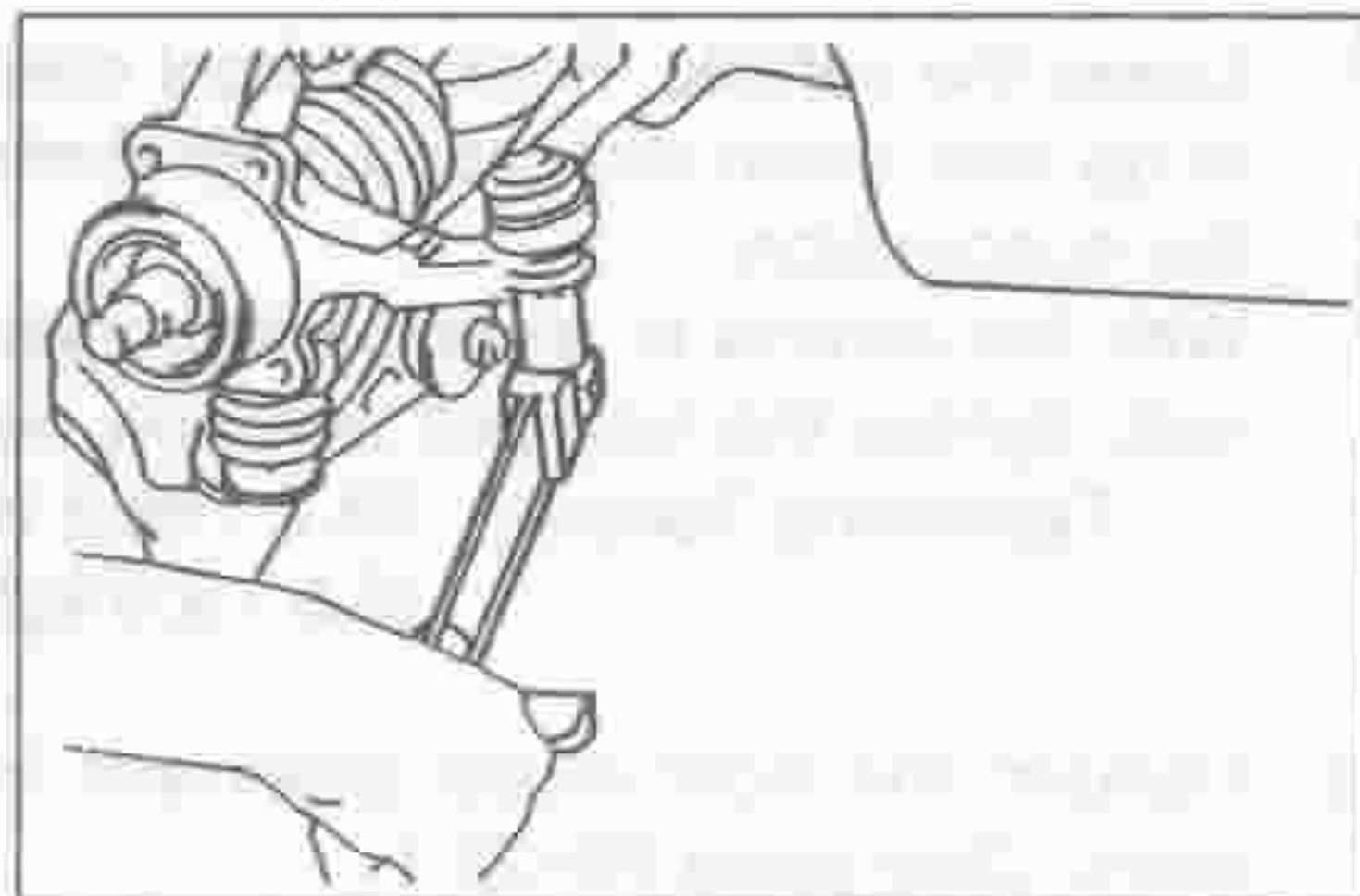
Tightening Torque: 83.4 - 108 N·m
(8.5 - 11.0 kgf-m, 61.5 - 80.0 ft-lb)



LFS00020-00018

5. Attach the tie-rod end to the steering knuckle and tighten the new nut.

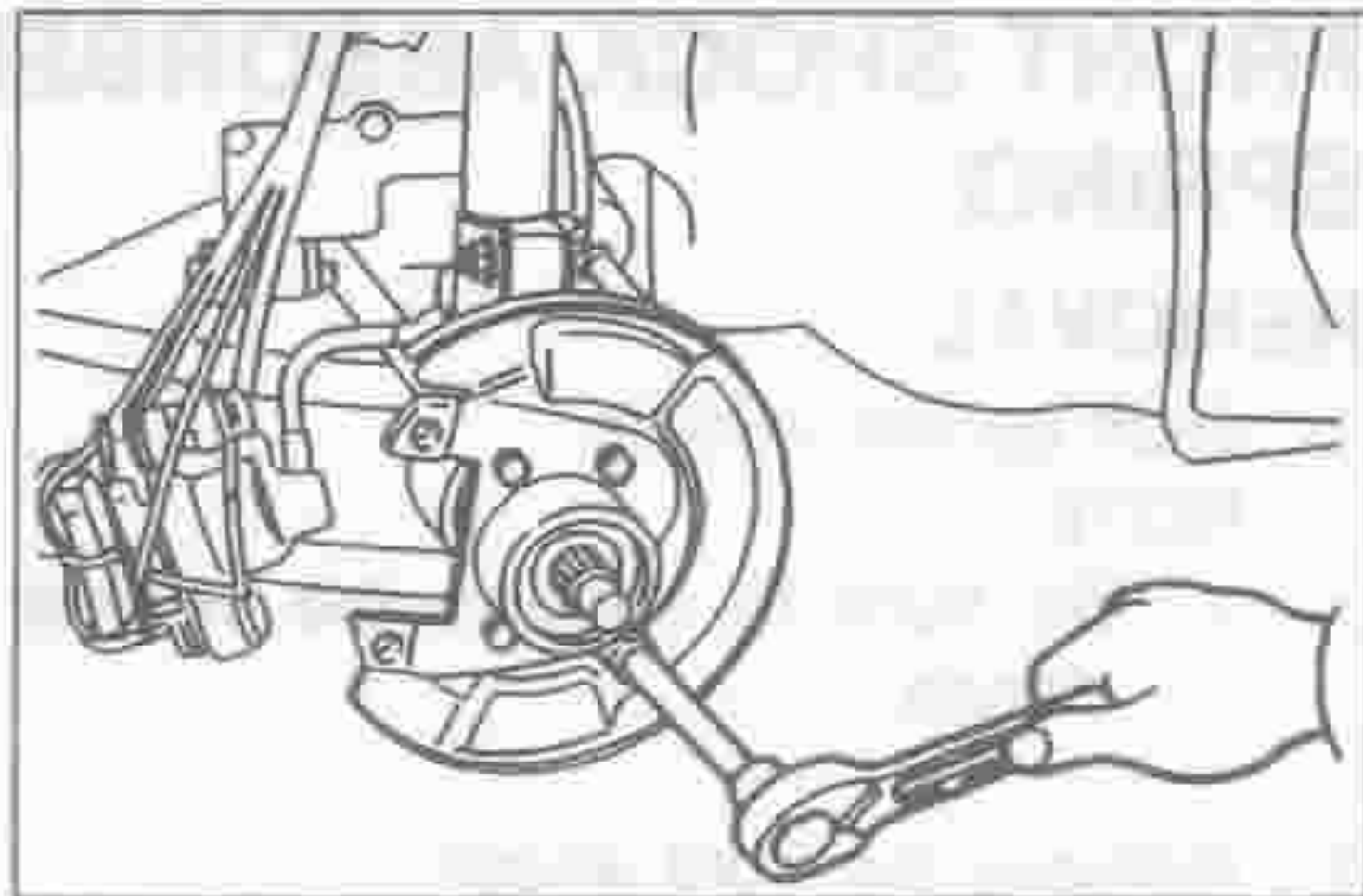
Tightening Torque: 39.2 - 53.9 N·m
(4.0 - 5.5 kgf-m, 28.9 - 39.8 ft-lb)



LFS00021-00019

6. Install the disc brake dust cover with the four bolts.

Tightening Torque: 29.4 - 39.2 N·m
(3.0 - 4.0 kgf-m, 21.7 - 28.9 ft-lb)

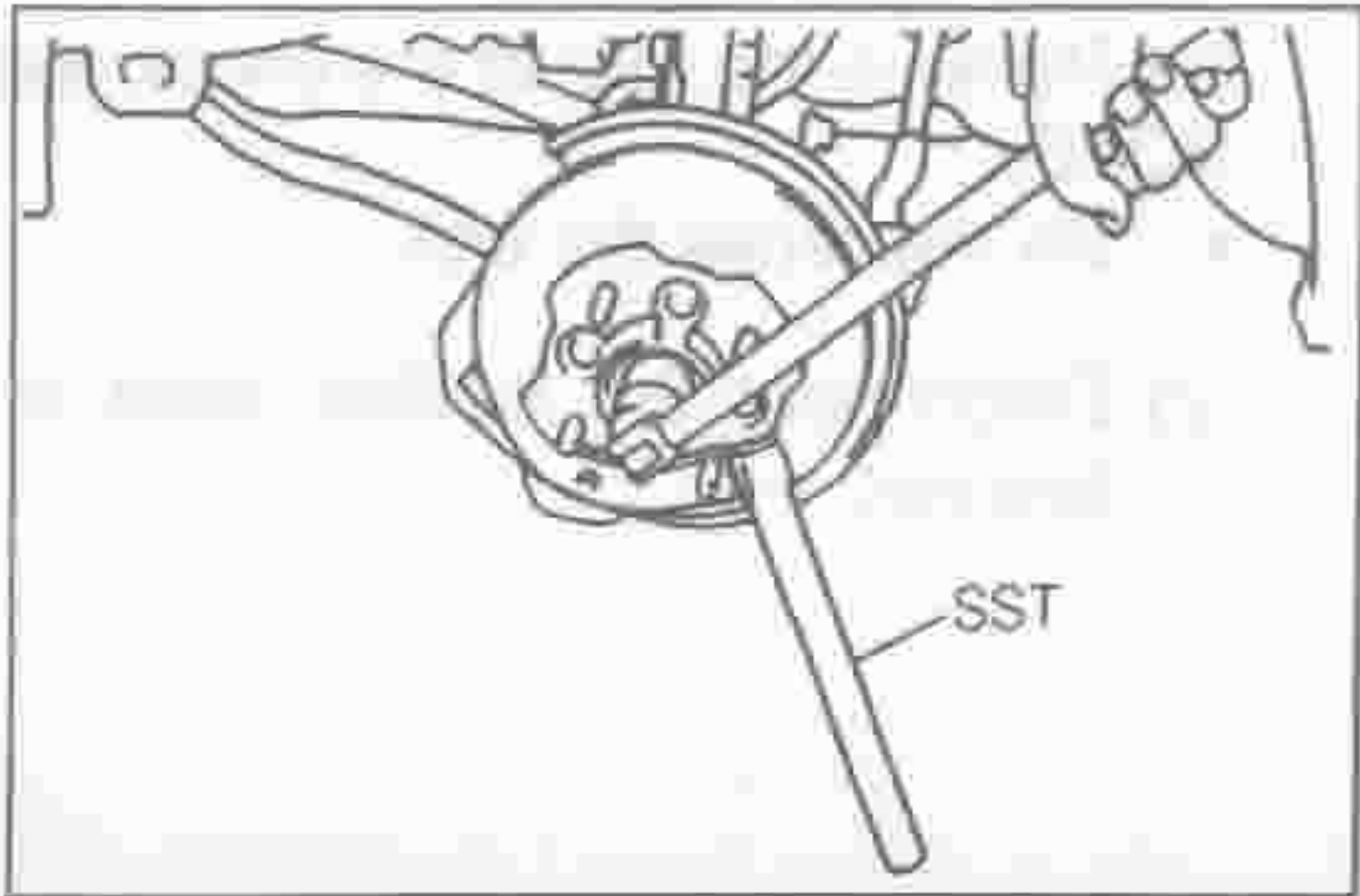


LFS00022-00020

7. Install the front axle hub and disc assembly, using the following SST.

SST: 09511-87202-000

Tightening Torque:
216.0 - 255.0 N·m
(22.0 - 26.0 kgf-m, 159.0 - 188.0 ft-lb)

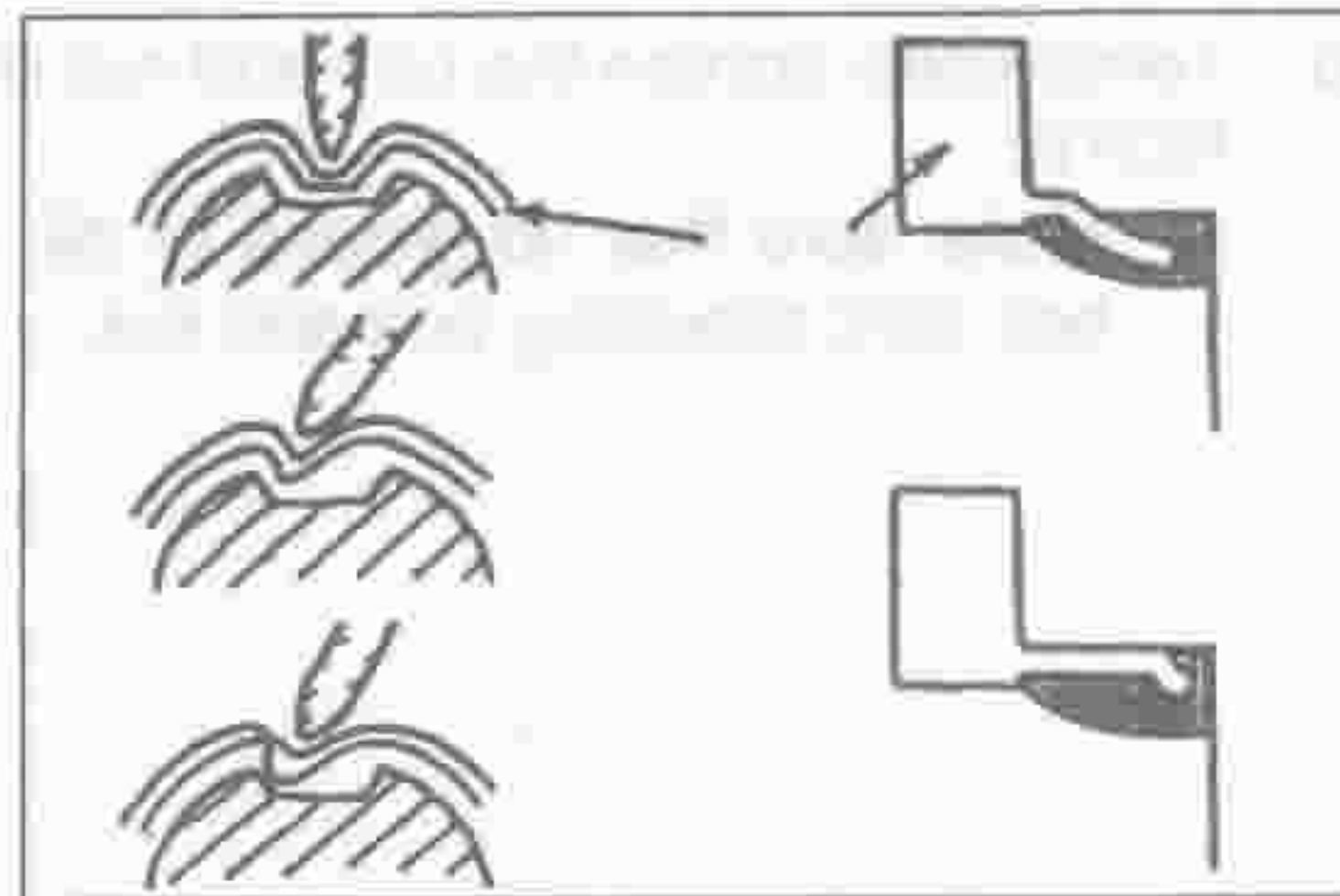


LFS00023-00021

8. Stake the lock nut.

NOTE:

- When staking the lock nut, point a suitable staking tool toward the drive shaft axis center to lock securely, as shown in the right upper figure.
- Poor staking, such as shown in the right middle and lower figures, may cause loosening of the lock nut.

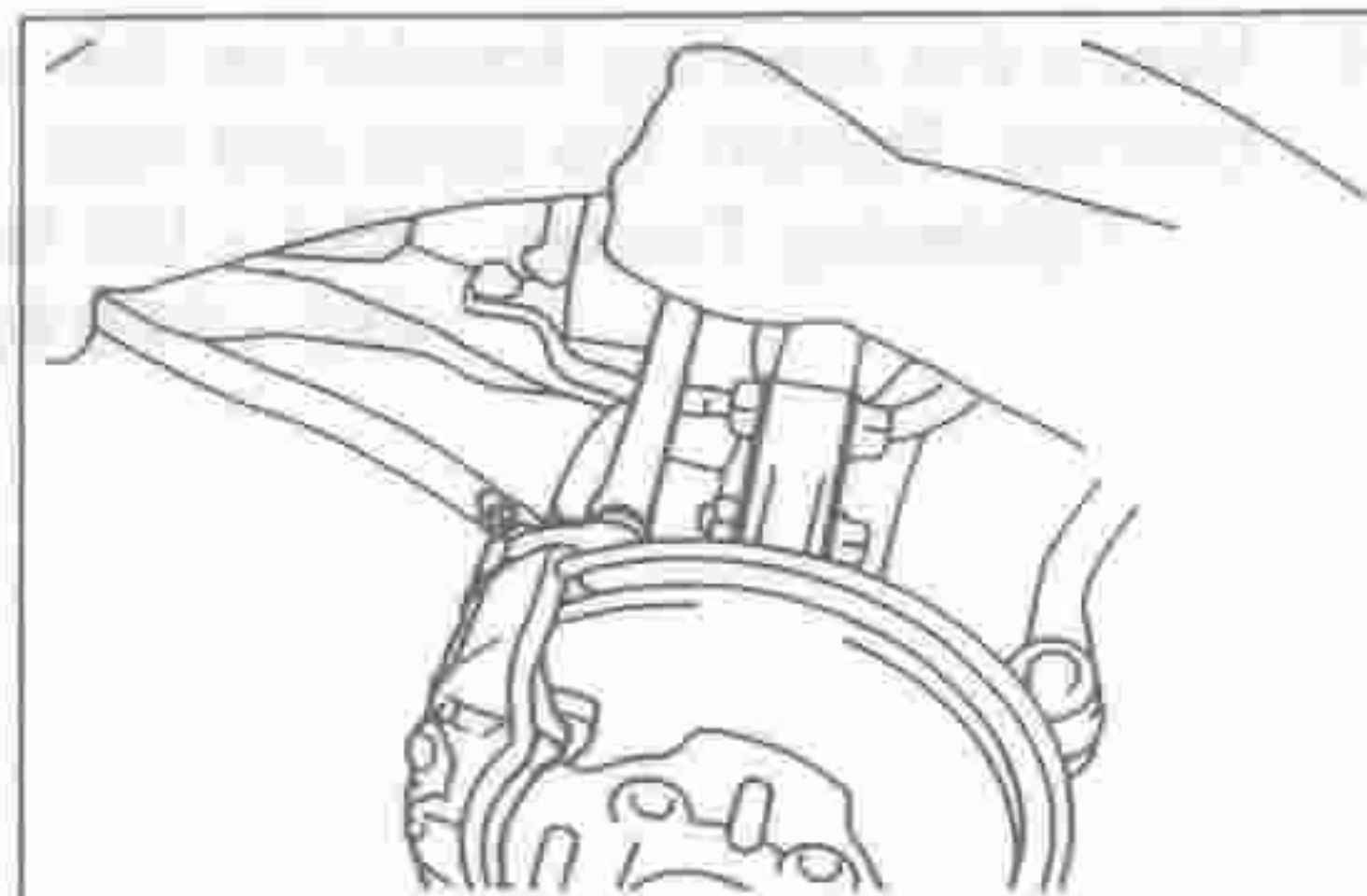


LFS00024-00022

9. Install the disc brake caliper.

Tightening Torque: 31.4 - 41.2 N·m
(3.2 - 4.2 kgf-m, 23.1 - 30.4 ft-lb)

10. Install the front wheel.



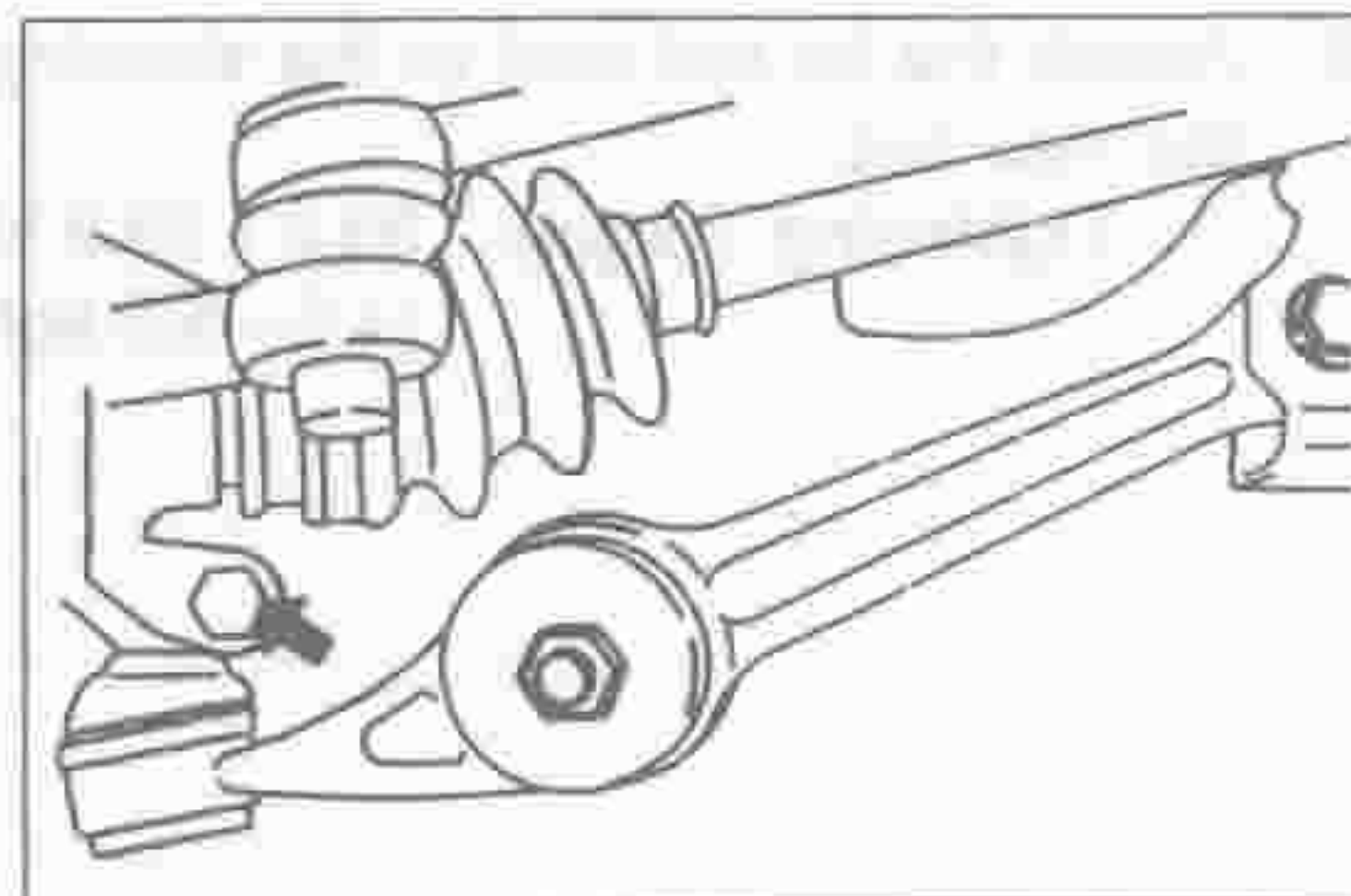
LFS00025-00023

11. Lower the vehicle. Rock the front suspension of the vehicle in up and down direction two or three times so as to settle the suspension.

With the vehicle in an unloaded state (lower arm is horizontal), tighten the new bolt and new nut.

Tightening Torque: 63.7 - 88.3 N·m
(6.5 - 9.0 kgf-m, 47.0 - 65.1 ft-lb)

12. Perform the front wheel alignment inspection and adjustment. (See page FS-22.)



LFS00026-00024

FRONT SHOCK ABSORBER AND COIL SPRING

REMOVAL

1. Jack up the vehicle.

NOTE:

- Be sure to support the vehicle securely with safety stands.

2. Remove the front wheel.

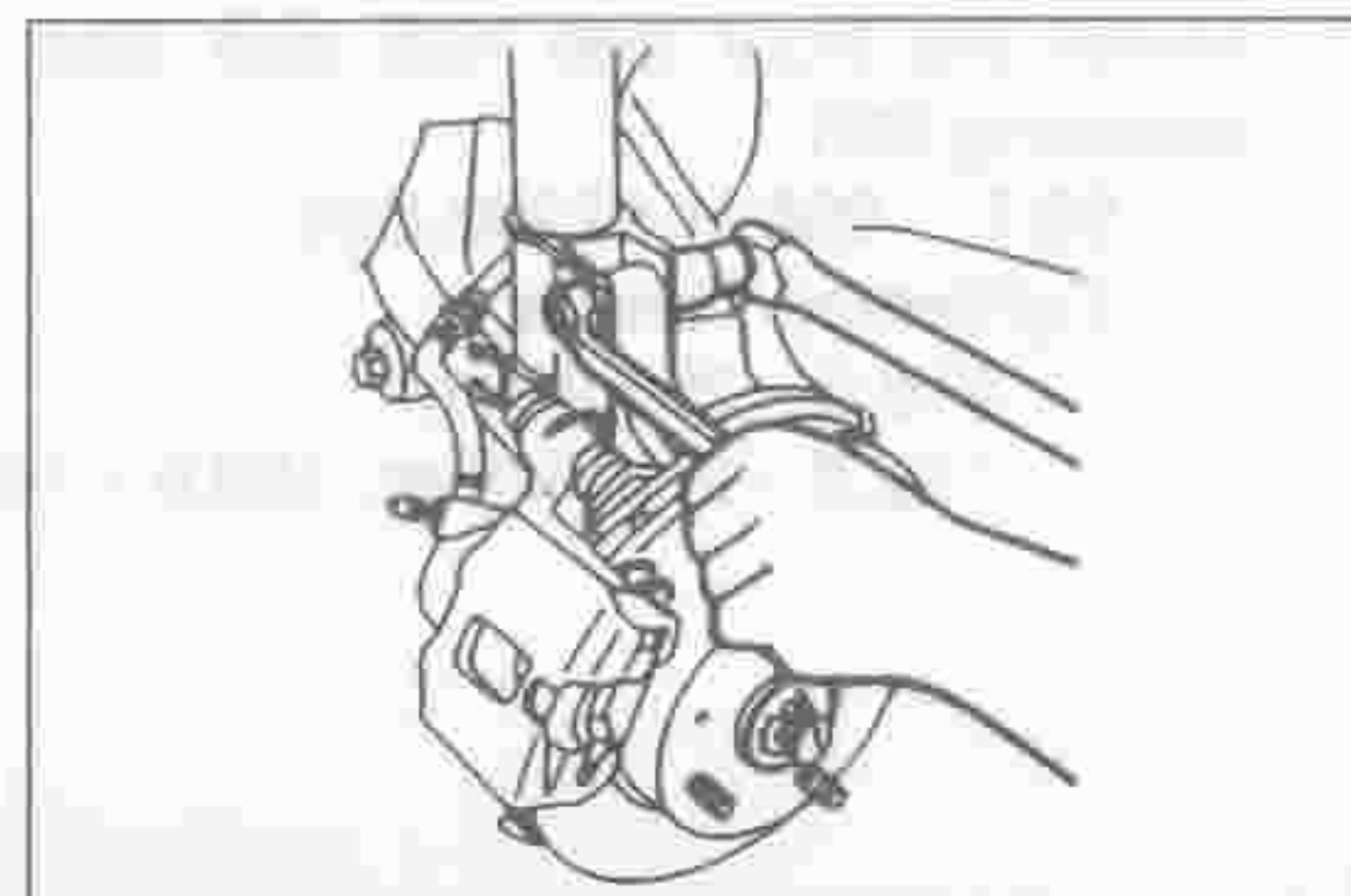
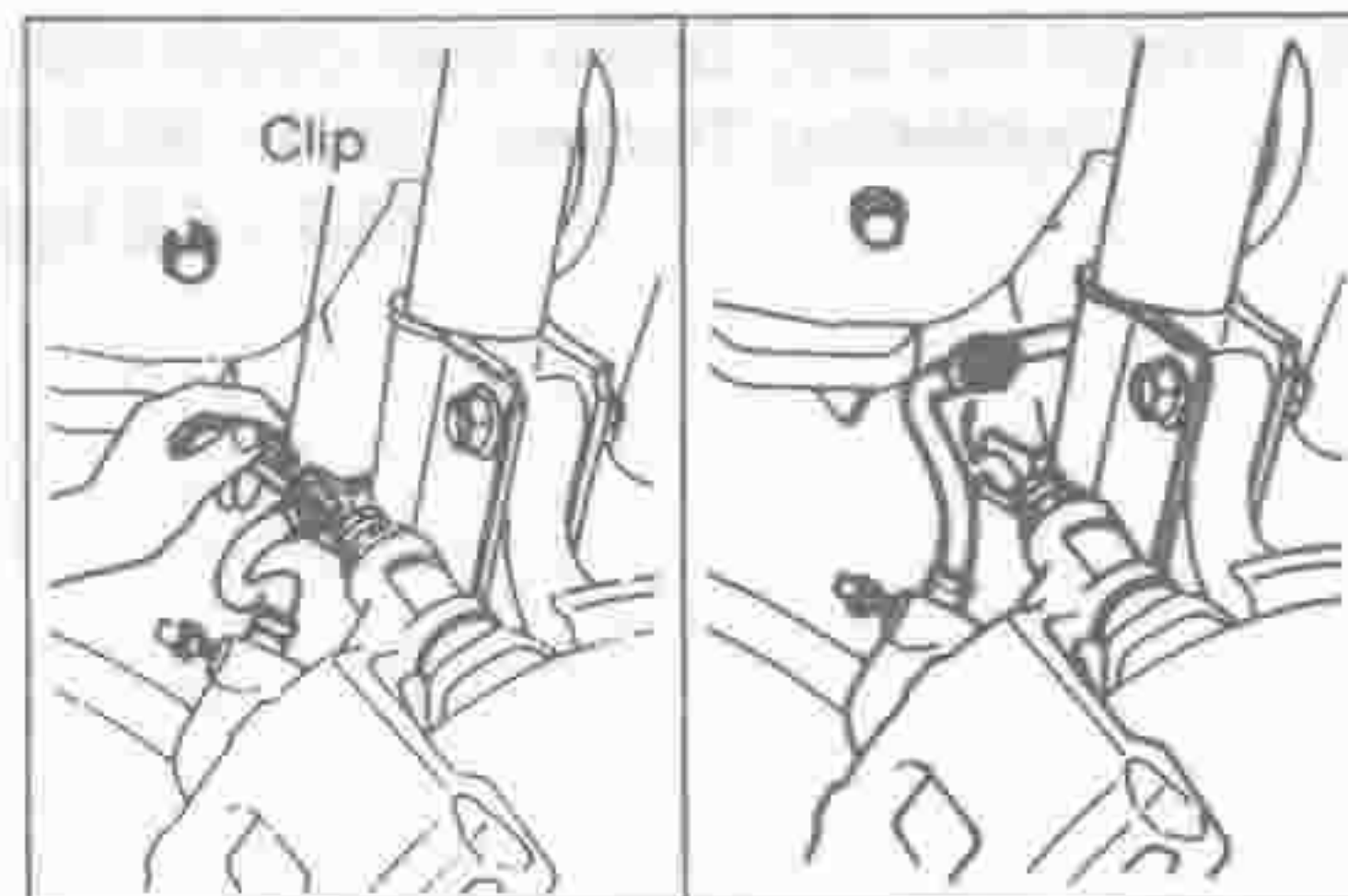
3. Flexible hose removal

(1) Remove the clip at the shock absorber side.

NOTE:

- Do not reuse the clip.

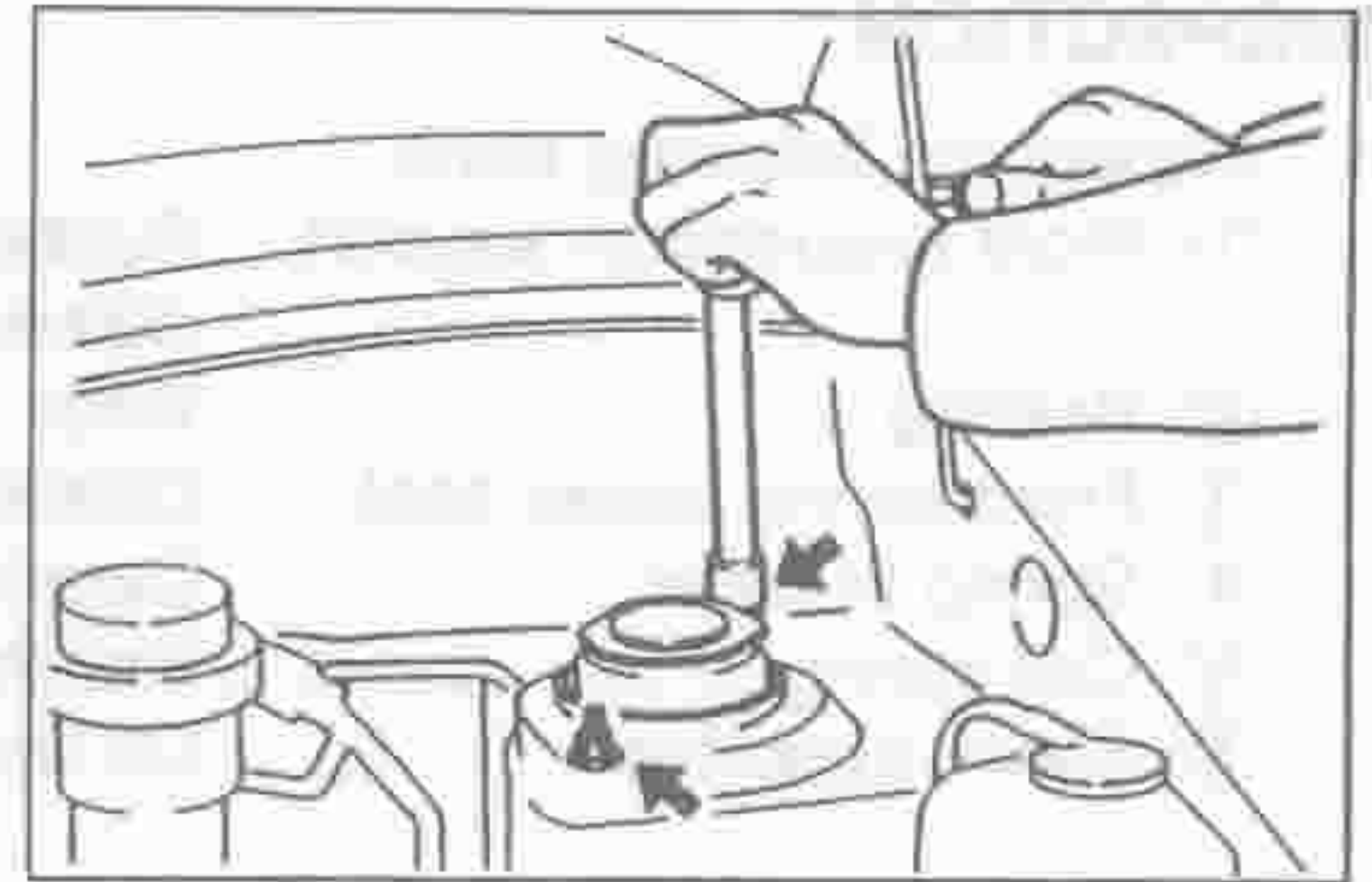
(2) Disconnect the flexible hose at the shock absorber bracket.



LFS00027-00025

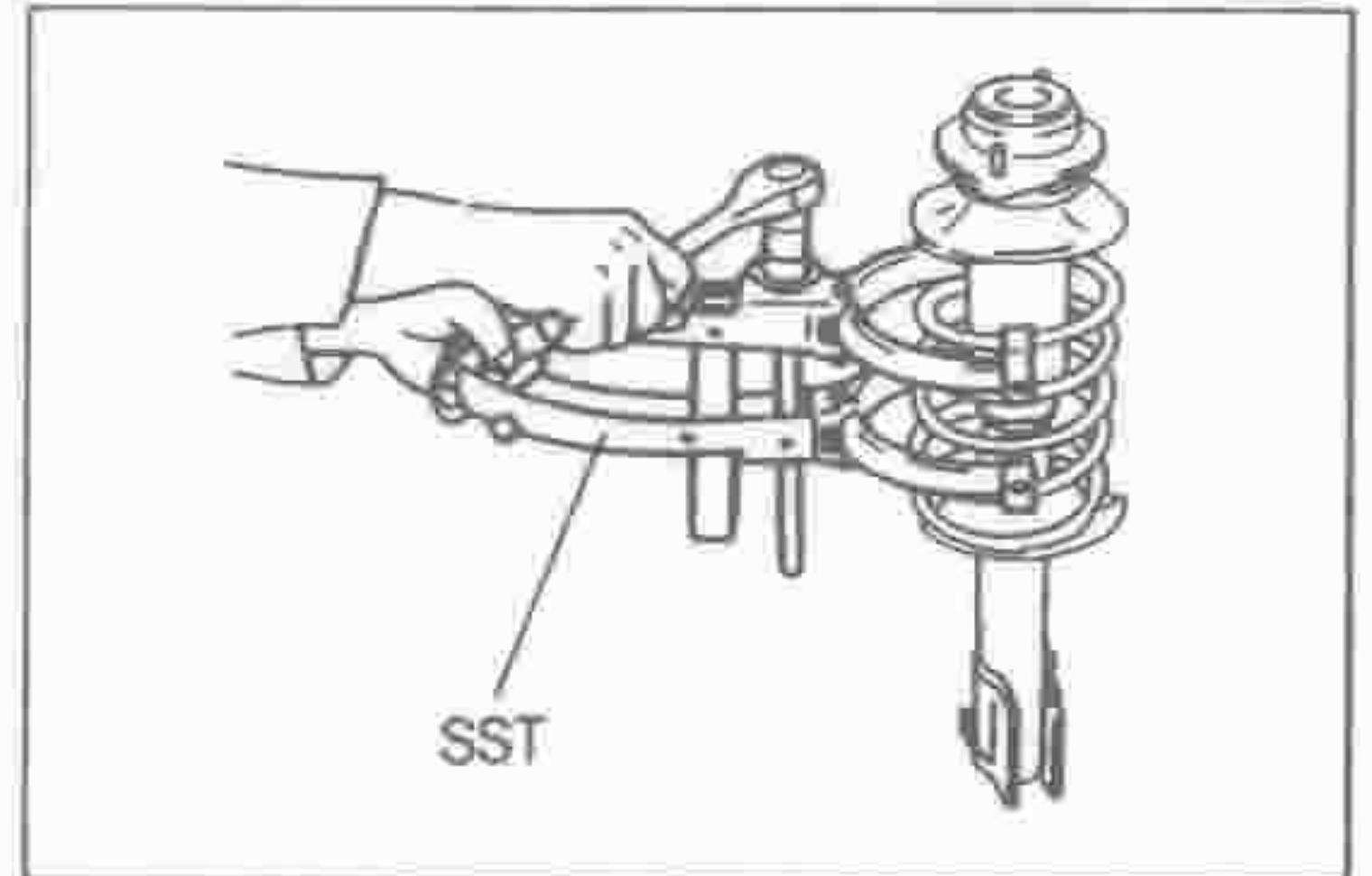
4. Shock absorber removal

- (1) Remove the attaching nuts. Leave the bolts in their inserted conditions.



LFS00028-00026

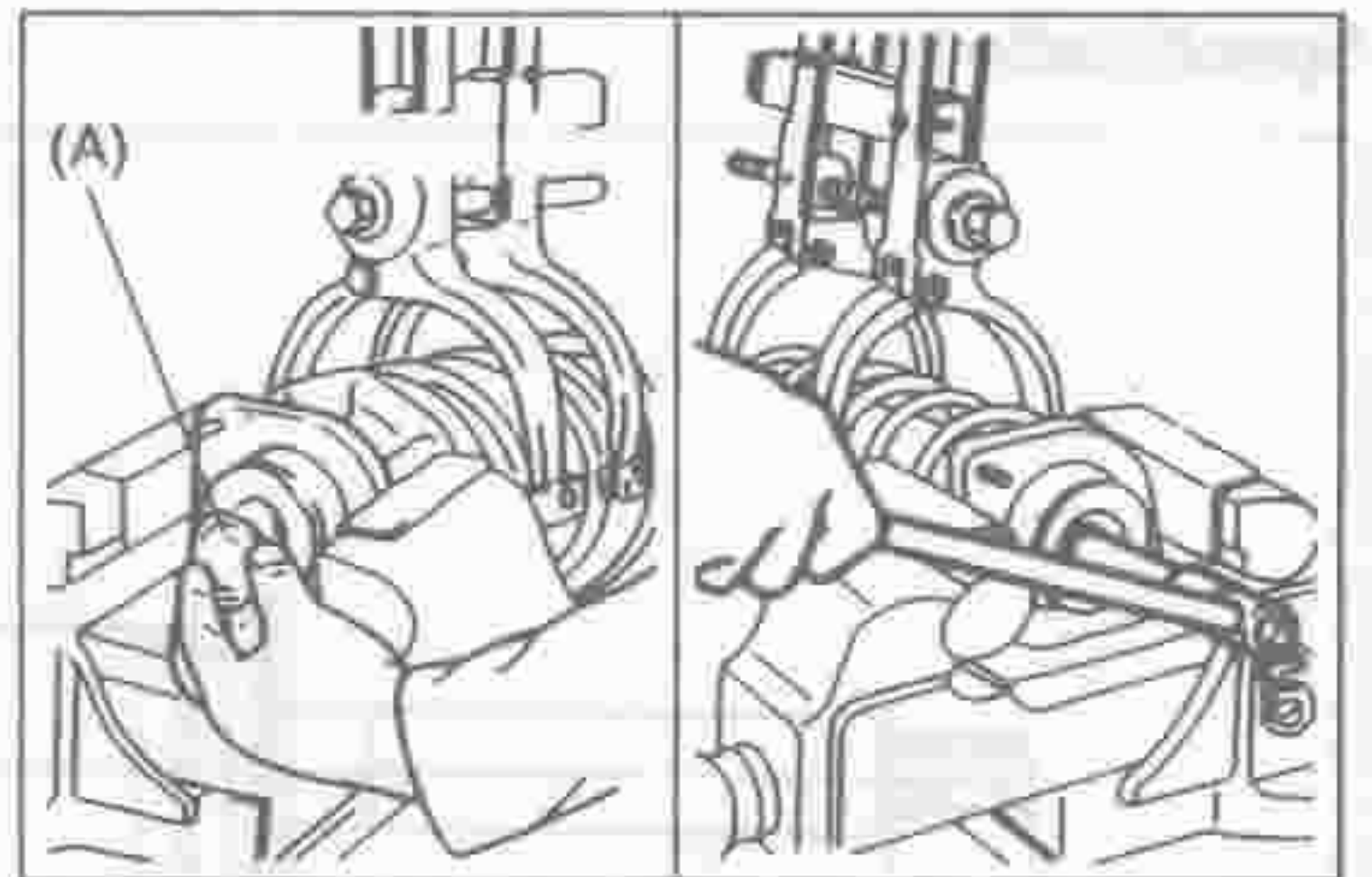
- (2) Remove the two attaching nuts of the suspension support at the upper part of the fender.
- (3) Remove the steering knuckle attaching bolts. Draw out the shock absorber from the vehicle.



LFS00029-00027

DISASSEMBLY

1. Compress the coil spring, using the following SST.
SST: 09727-87701-000



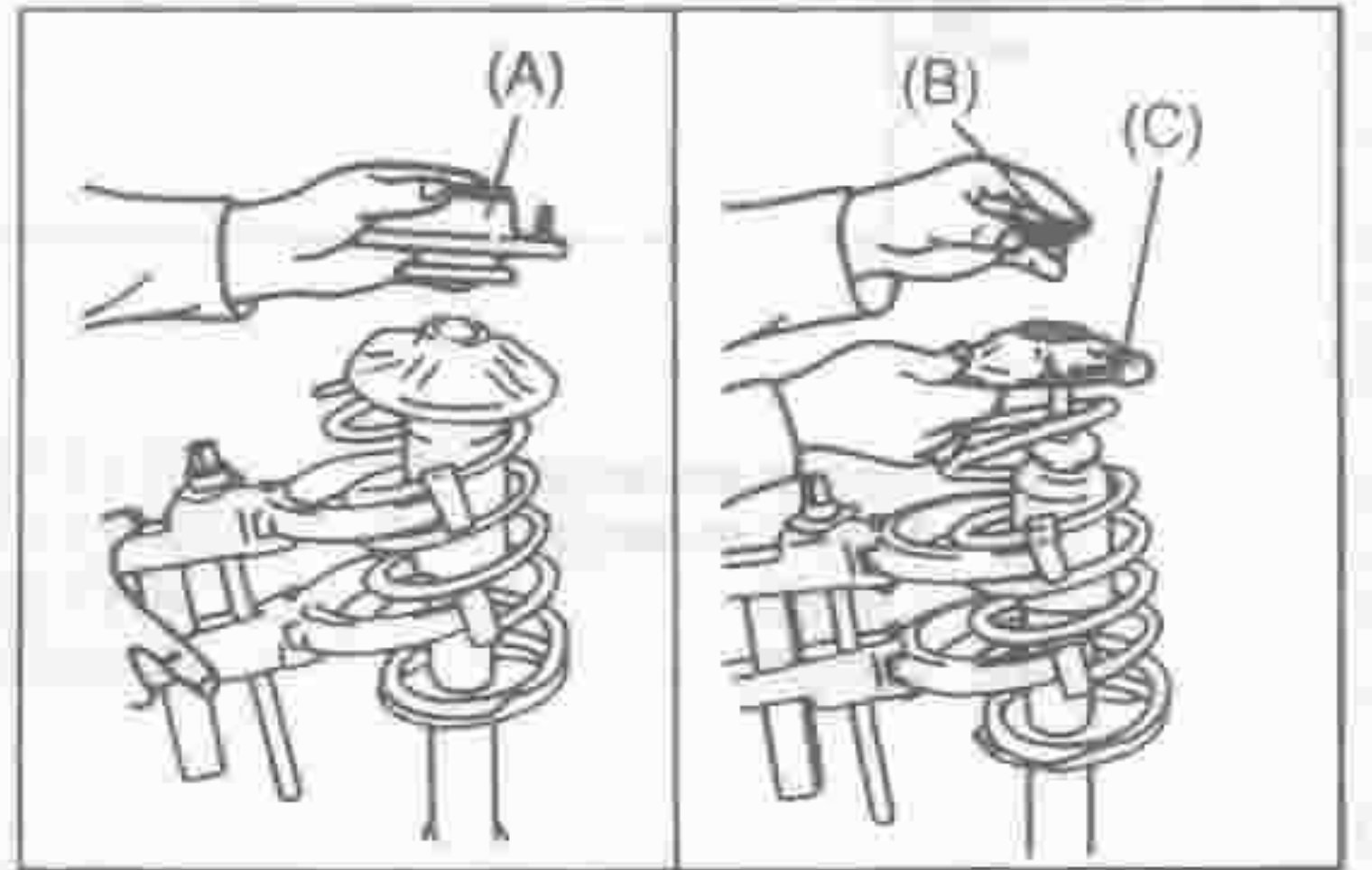
LFS00030-00028

2. Coil spring disassembly

- (1) Clamp the front suspension support in a vice.
- (2) Remove the bearing dust cover (A).
- (3) Loosen the nut.

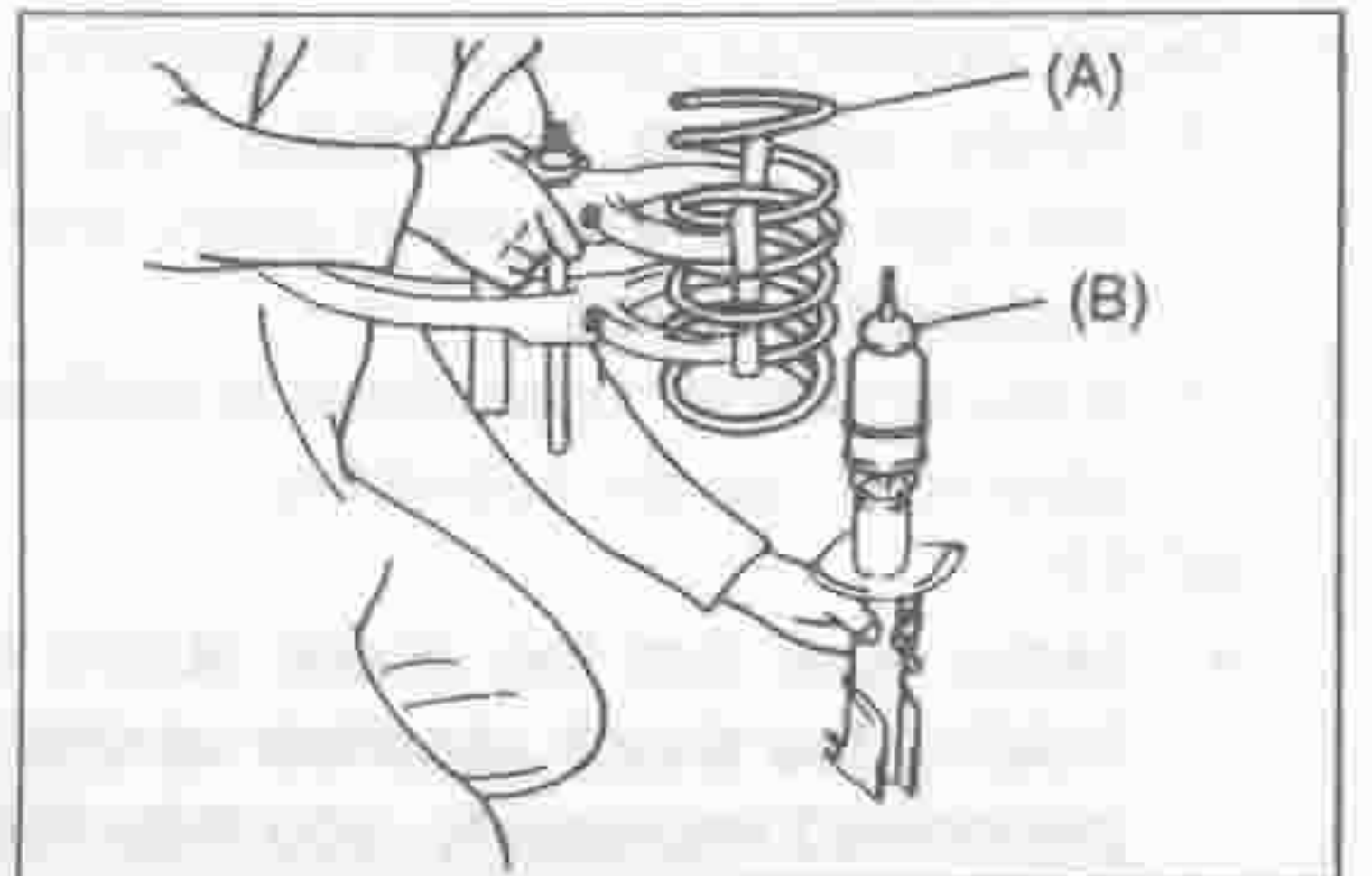
NOTE:

- Never remove the nut by applying impacts on it, using an impact wrench or the like.
- Do not reuse the nut.



LFS00031-00029

- (4) Remove the front suspension support (A).
- (5) Remove the bearing (B) and front spring upper seat (C).

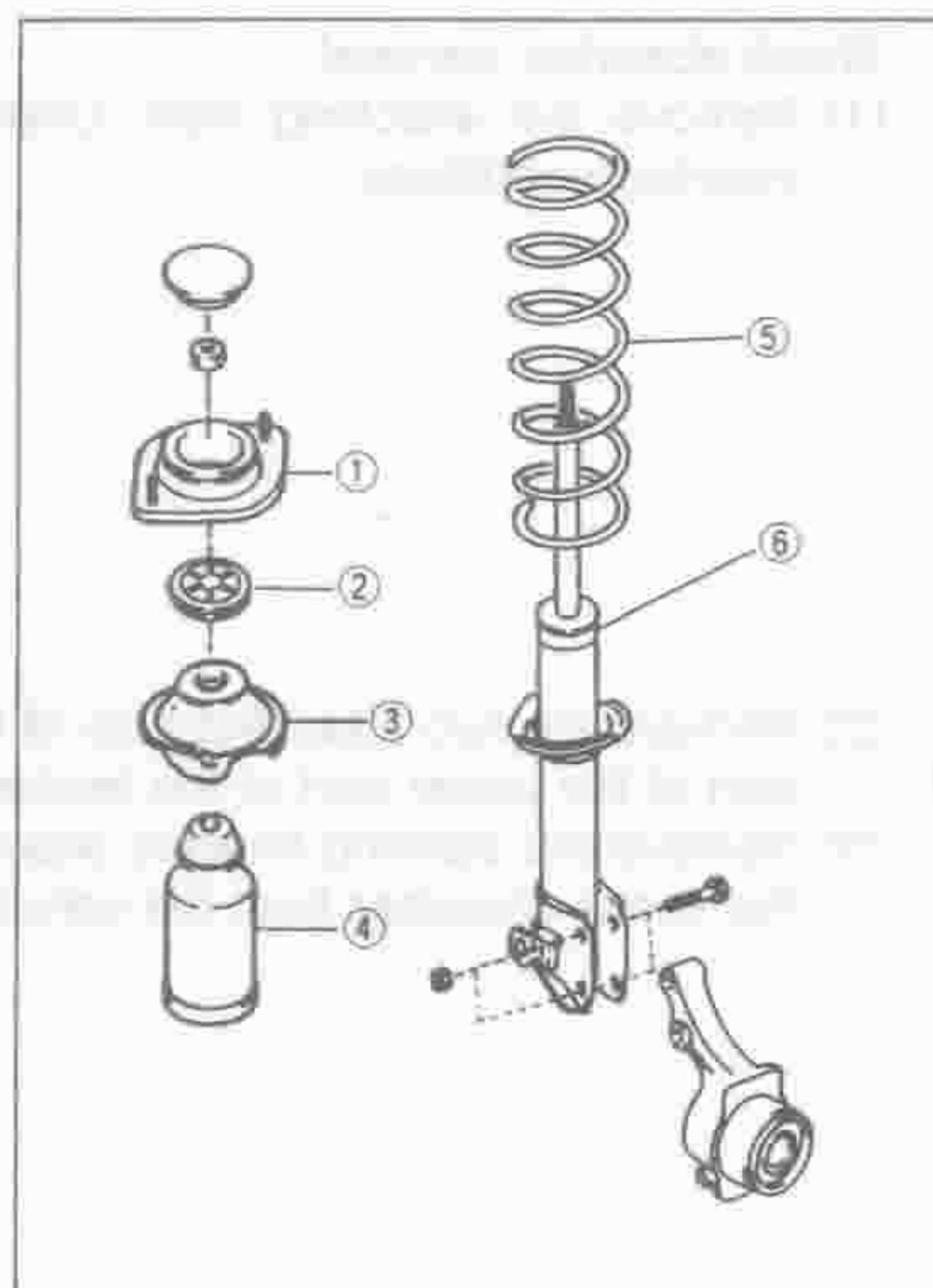


LFS00032-00030

INSPECTION

1. Inspect the following parts.

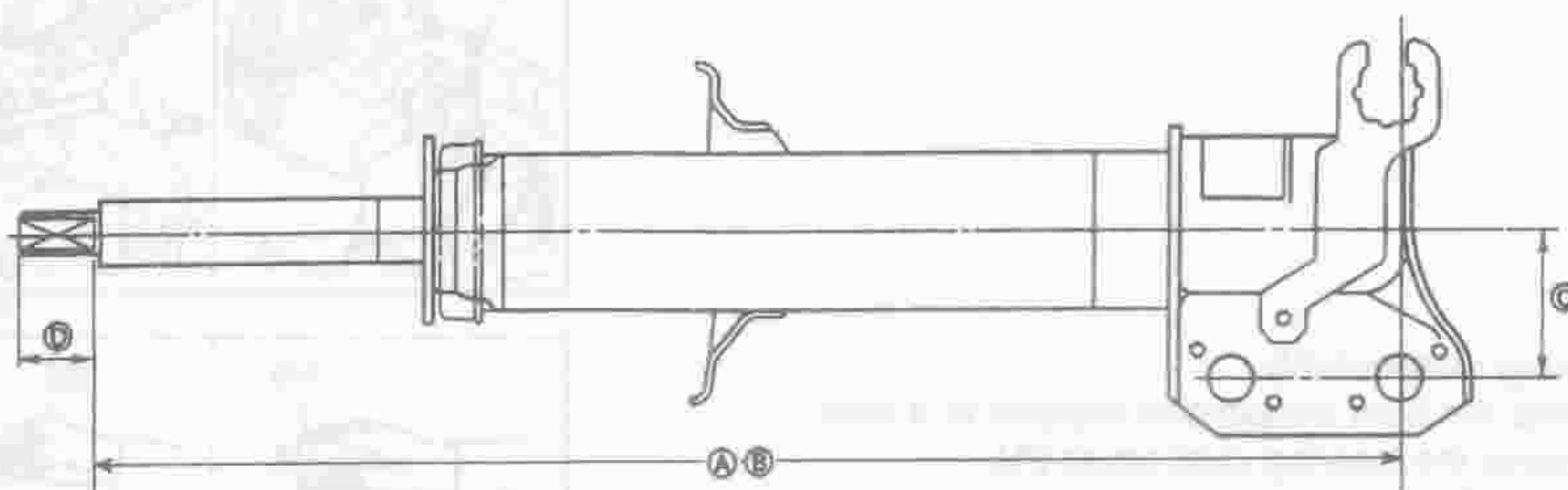
- | | | |
|----------------------------|-------|----------------------------------|
| ① Front suspension support | ... | Rubber section for deterioration |
| ② Bearing | ..... | Wear |
| ③ Front spring upper seat | ..... | Deterioration, Deformation |
| ④ Spring bumper | ..... | Deterioration |
| ⑤ Coil spring | ..... | Flattened condition |
| ⑥ Shock absorber | ..... | Oil leakage |



LFS00034-00032

Specifications

Unit: mm (inch)



- | | | | |
|---|-----------------|-------------|---|
| Ⓐ | Maximum length: | 447 (17.75) |, when brought into contact with stopper |
| Ⓑ | Minimum length: | 303 (11.93) | |
| Ⓒ | Length: | 40 (1.57) | |
| Ⓓ | Length: | 24 (0.94) | |

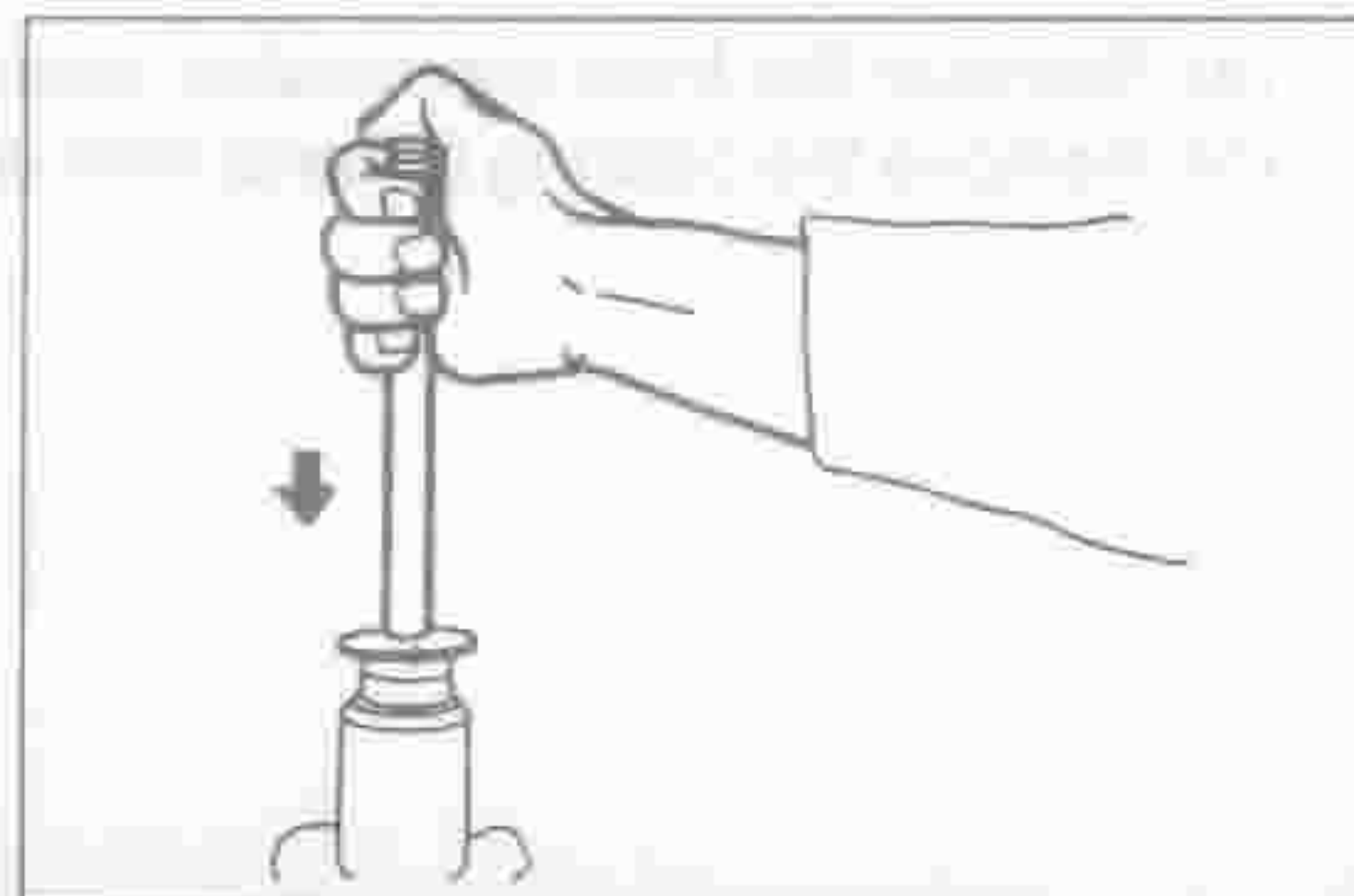
LFS00035-00033

2. Shock absorber operation inspection

- (1) While pushing the piston rod, check that the pull through out the stroke is even, and there is no abnormal resistant or noise.
- (2) If the absorber operations is malfunctioning, replace the absorber, as an assembly.

NOTE:

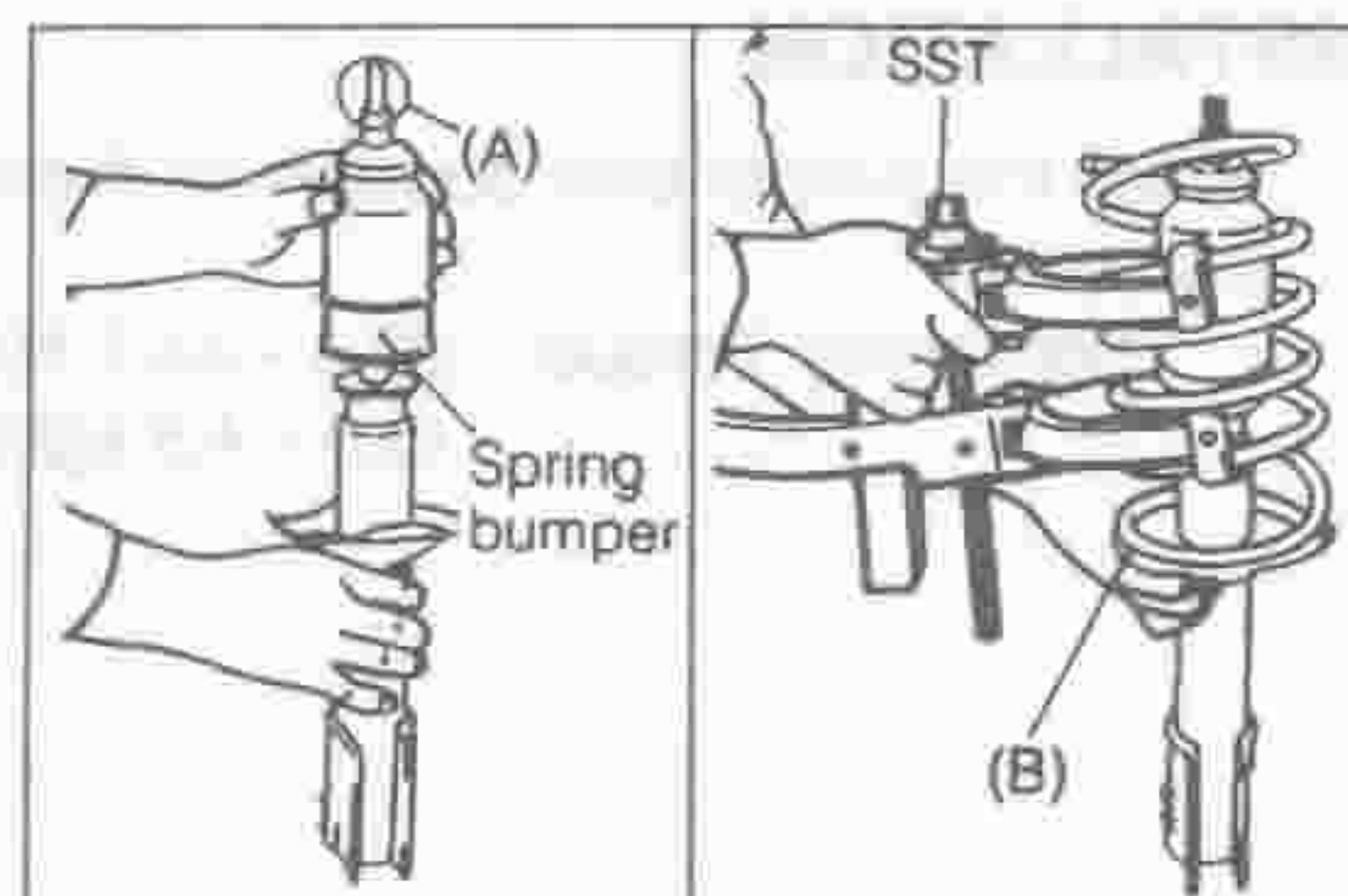
- Make sure that the check above is carried out without holding the shock absorber upside down. If the check is performed improperly, you may feel the operating characteristics of the shock absorber differently.



LFS00036-00034

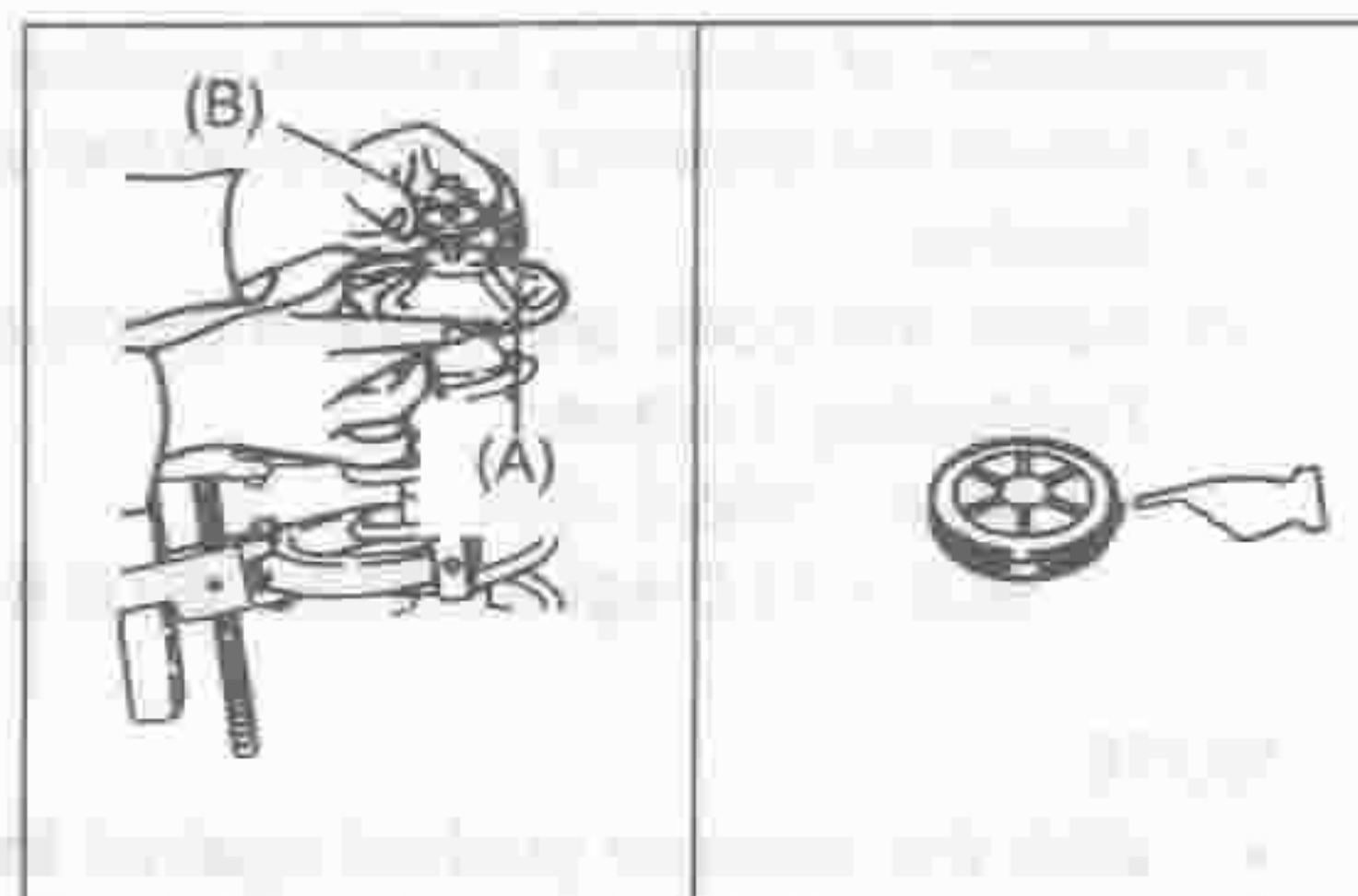
ASSEMBLY

1. Insert the spring bumper at a point below the cut-out section (A) of the piston rod.
2. Compress the coil spring (B), using the following SST.
SST: 09727-87701-000



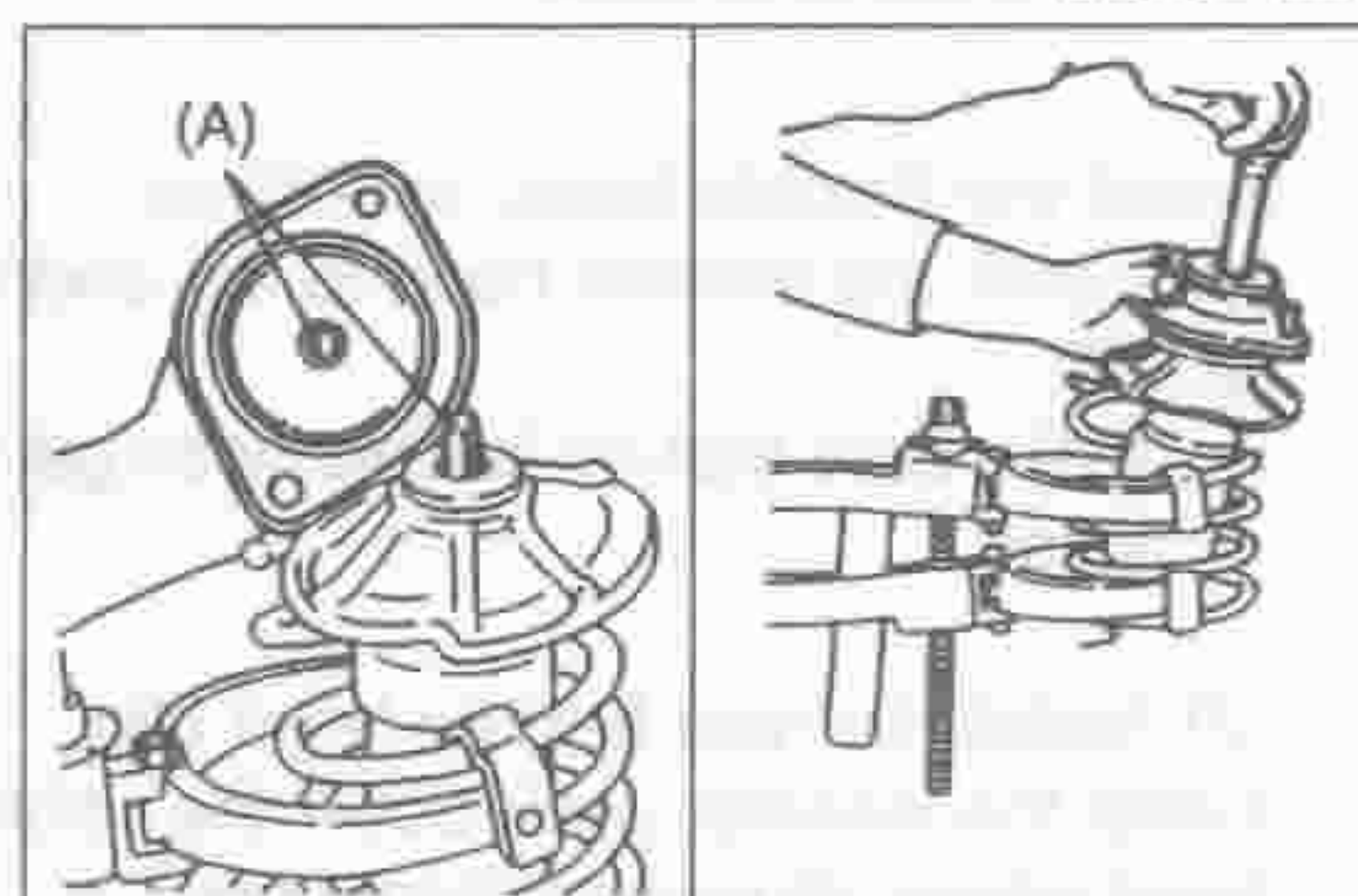
LFS00037-00035

3. Install the front spring upper seat (A) and bearing (B).
NOTE:
• Apply the grease on the surface of bearing.



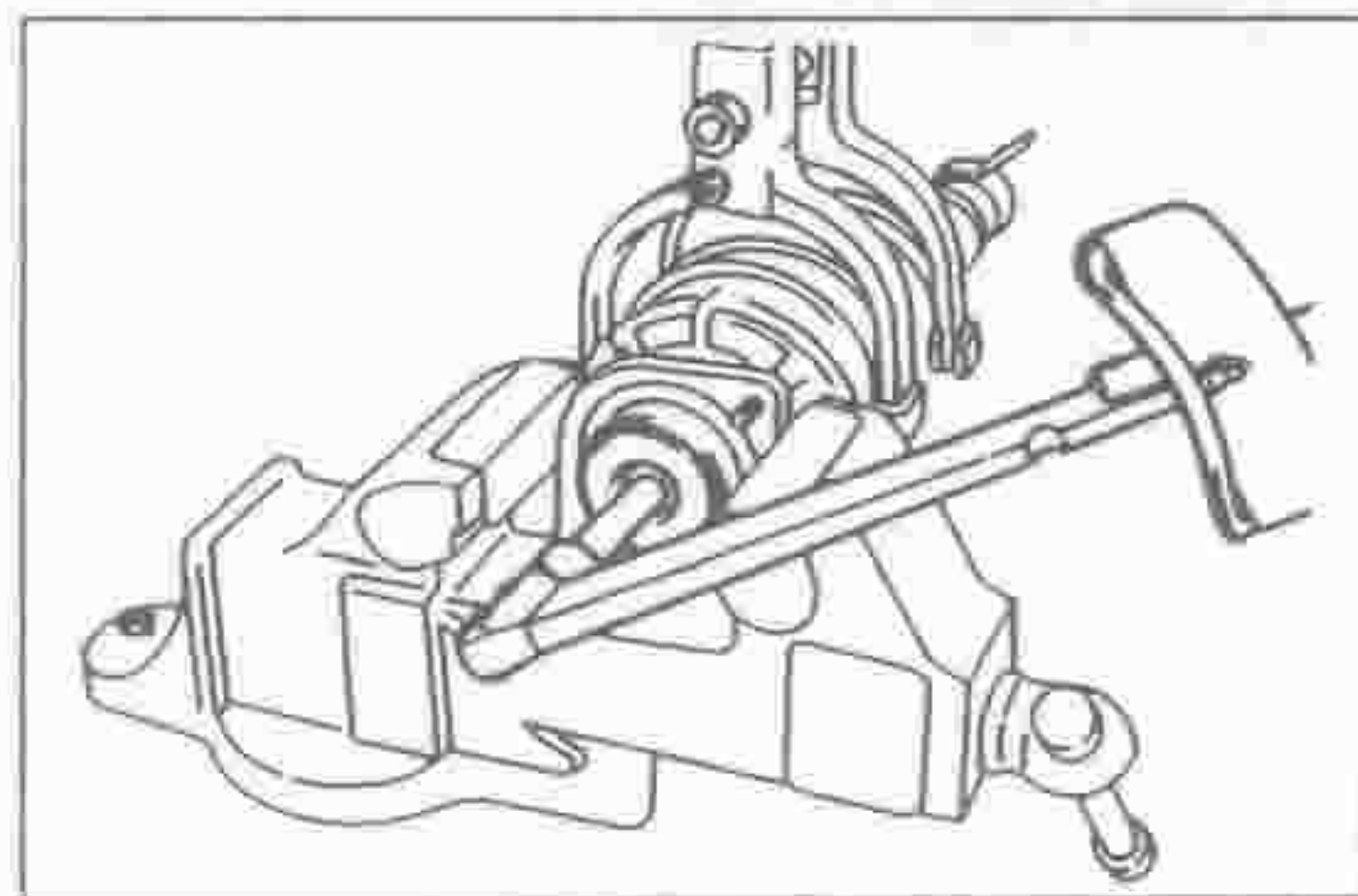
LFS00038-00036

4. Install the front suspension support.
NOTE:
• Be sure to align the cut-out section (A) of the front suspension support with that of the piston rod during the assembly.
5. Temporarily tighten the new nut.



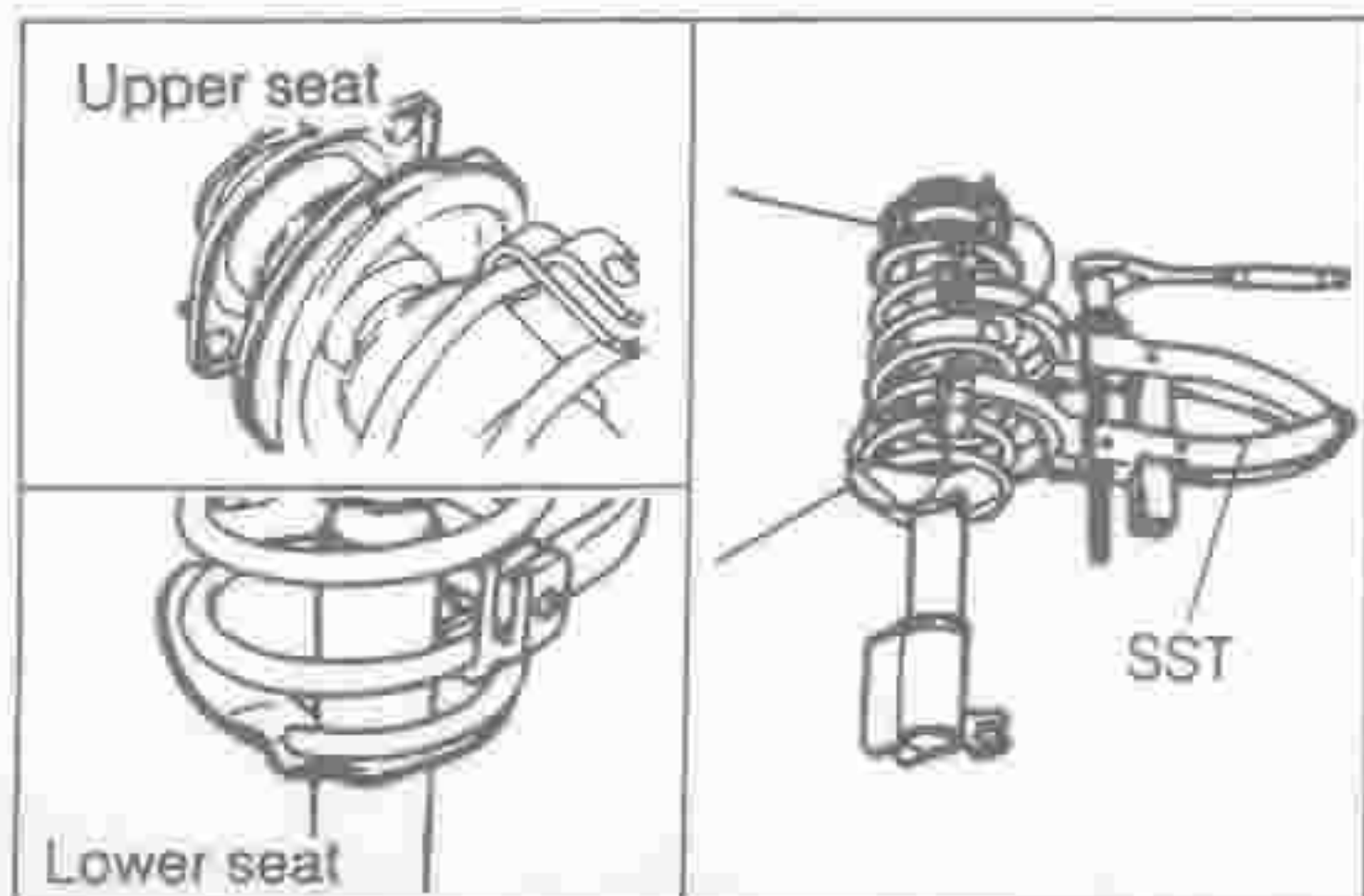
LFS00039-00037

6. Clamp the front suspension support in a vice. Tighten the suspension support, using a new nut.
Tightening Torque: 53.9 - 73.5 N·m
(5.5 - 7.5 kgf-m, 39.8 - 54.2 ft-lb)



LFS00040-00038

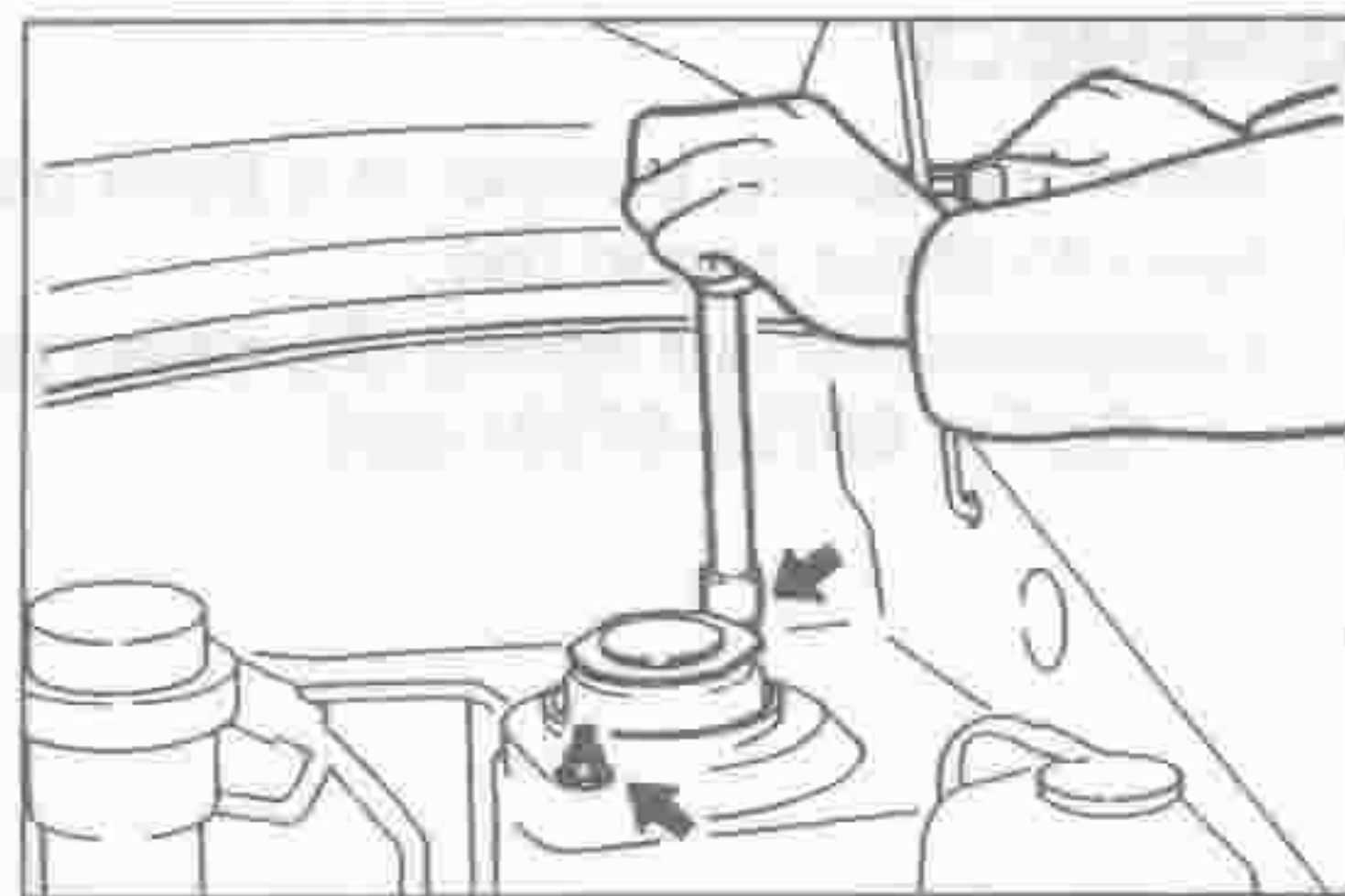
7. Install the bearing dust cover.
8. Align the coil spring end with the released sections of the upper and lower seats.
Proceed to remove the SST.



LFS00041-00039

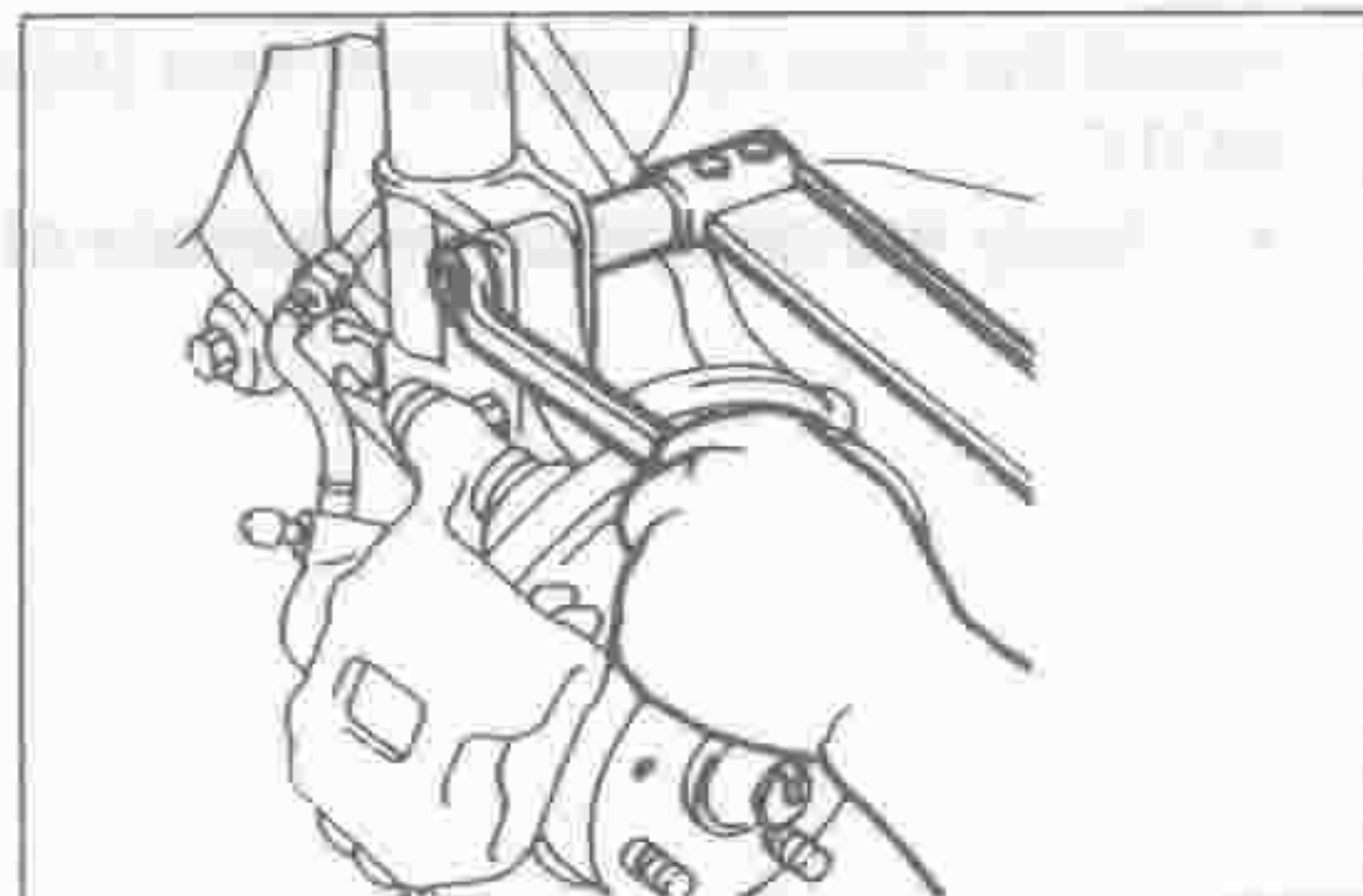
INSTALLATION

1. Install the suspension support on the fender apron with the nuts.
Tightening Torque: 29.4 - 44.1 N·m
(3.0 - 4.5 kgf-m, 21.7 - 32.5 ft-lb)



LFS00042-00040

2. Installation of steering knuckle section
 - (1) Mount the steering knuckle on the shock absorber lower bracket.
 - (2) Install the bolts and nuts in place and tighten them.
Tightening Torque: 83.4 - 108.0 N·m
(8.5 - 11.0 kgf-m, 61.5 - 80.0 ft-lb)



LFS00043-00041

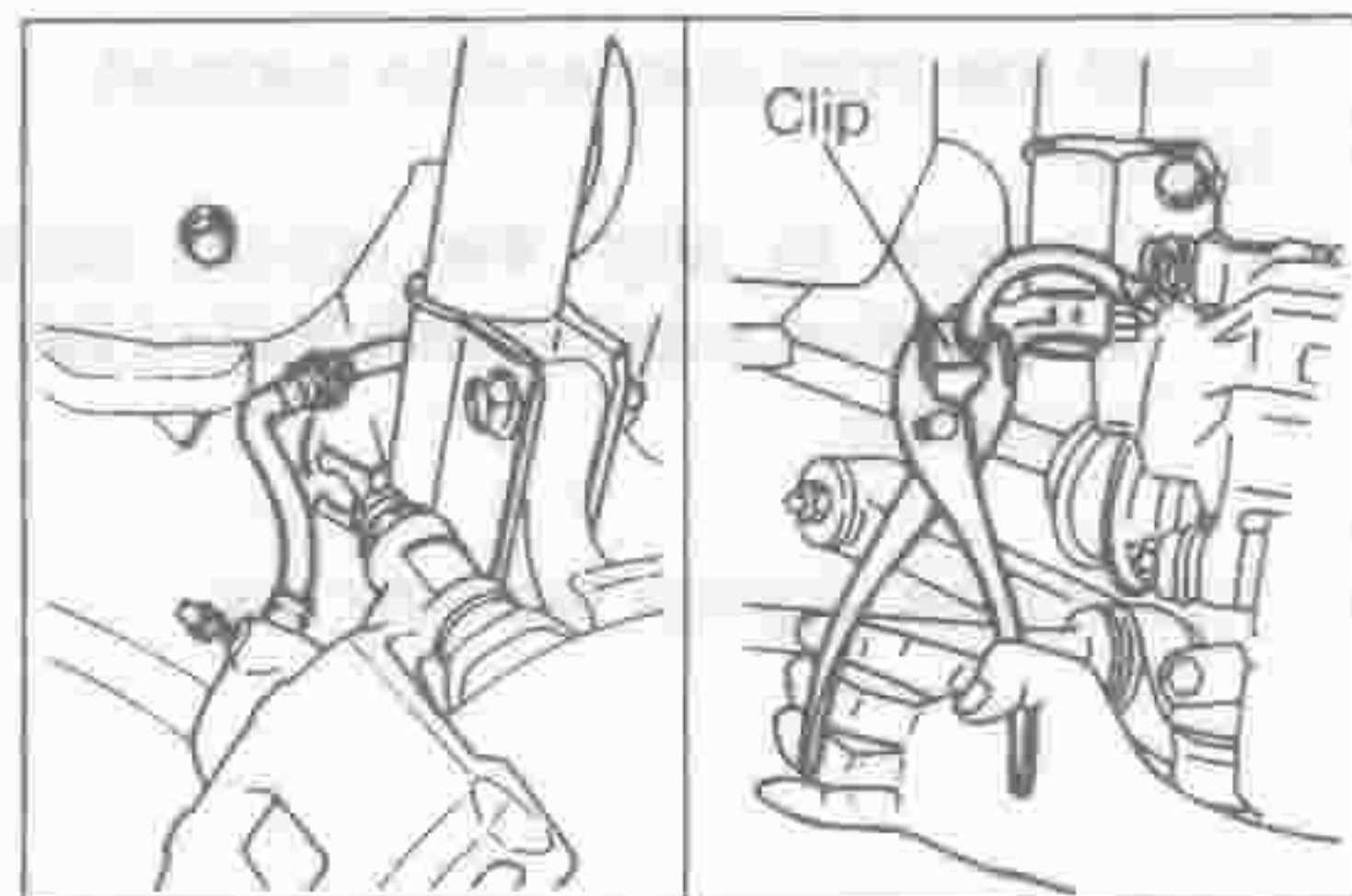
NOTE:

- With the knuckle pushed against the upper side, tighten the bolts and nuts.

3. Install the flexible hose, as follows.
 - (1) Install the flexible hose to the shock absorber bracket.

NOTE:

- Make sure that no flexible hose get to twist during installation.



LFS00044-00042

- (2) Install the new flexible hose clip.
4. Install the wheels. Jack down the vehicle.
5. Front wheel alignment inspection.
(See page FS-22.)

FRONT STABILIZER BAR

REMOVAL

1. Jack up the vehicle.

NOTE:

- Be sure to support the vehicle securely with safety stands.

2. Remove the stabilizer bar, as follows.

- (1) Remove the stabilizer bar and cushion retainers by removing the end nuts.

NOTE:

- Do not reuse the nut.

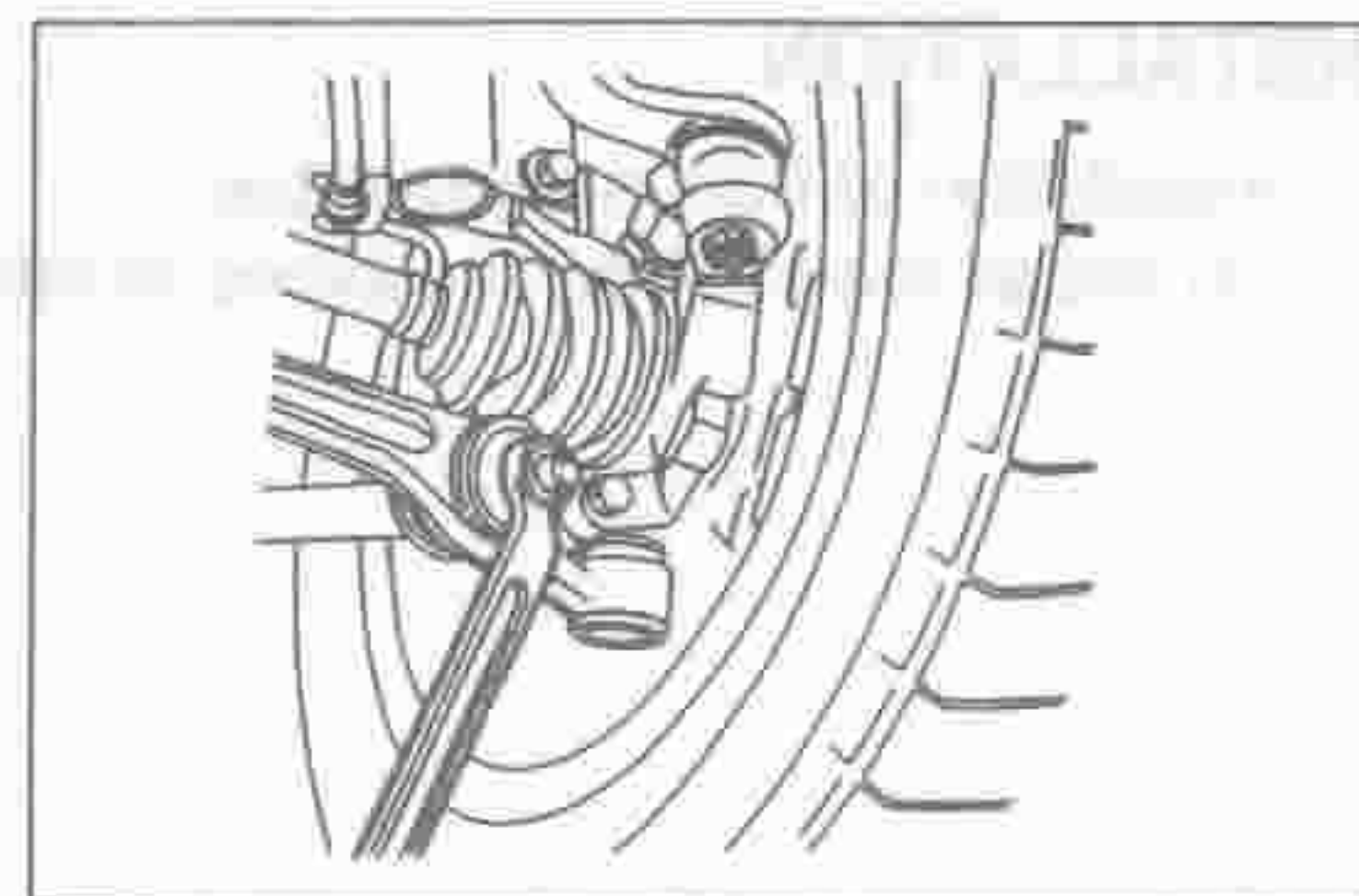
- (2) Remove the attaching bolts of the stabilizer brackets.

- (3) Remove the front stabilizer bar from the vehicle.

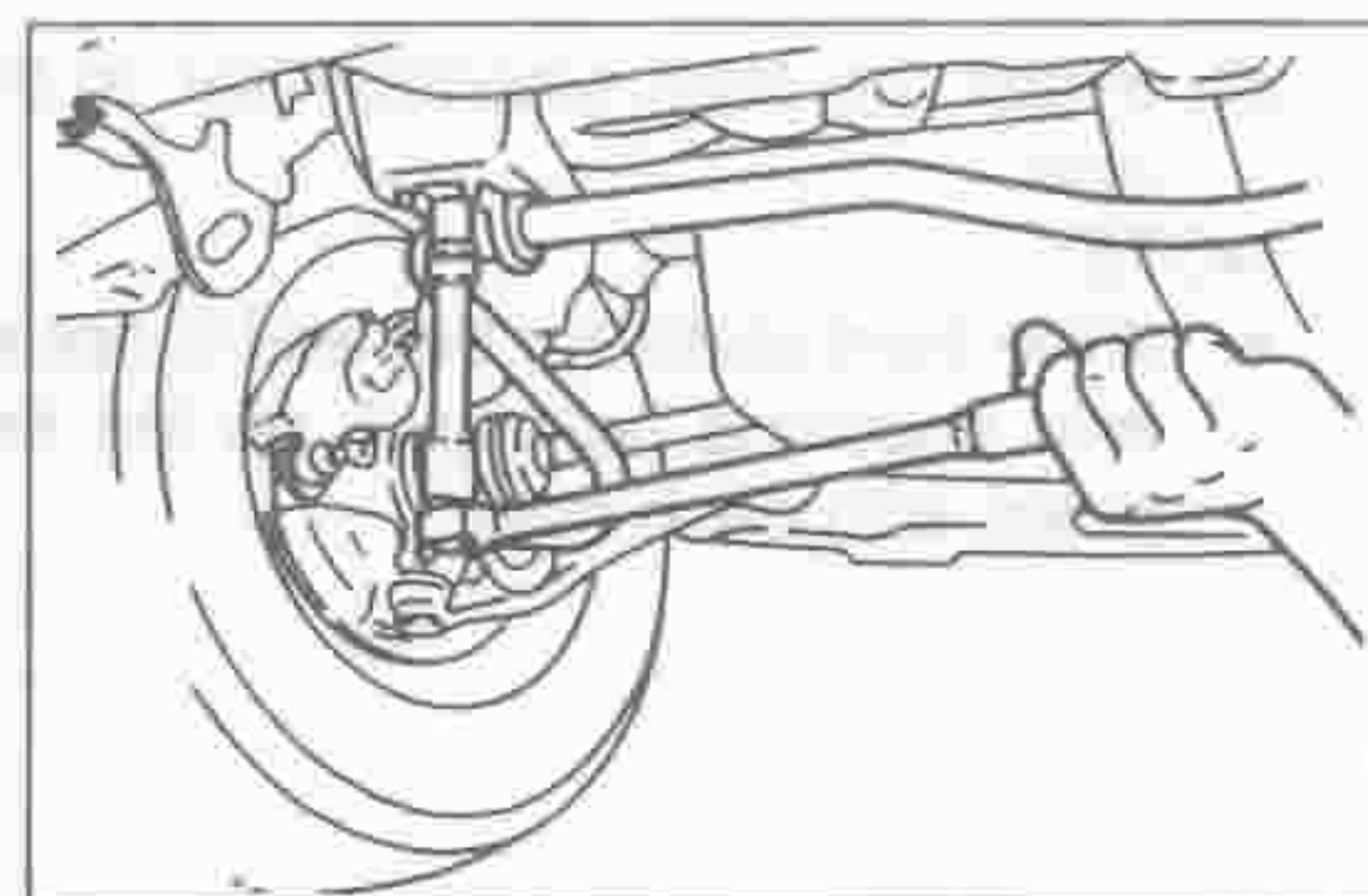
NOTE:

- If any difficulty in removing the stabilizer bar is encountered, remove the stabilizer bar by jacking up the tire.

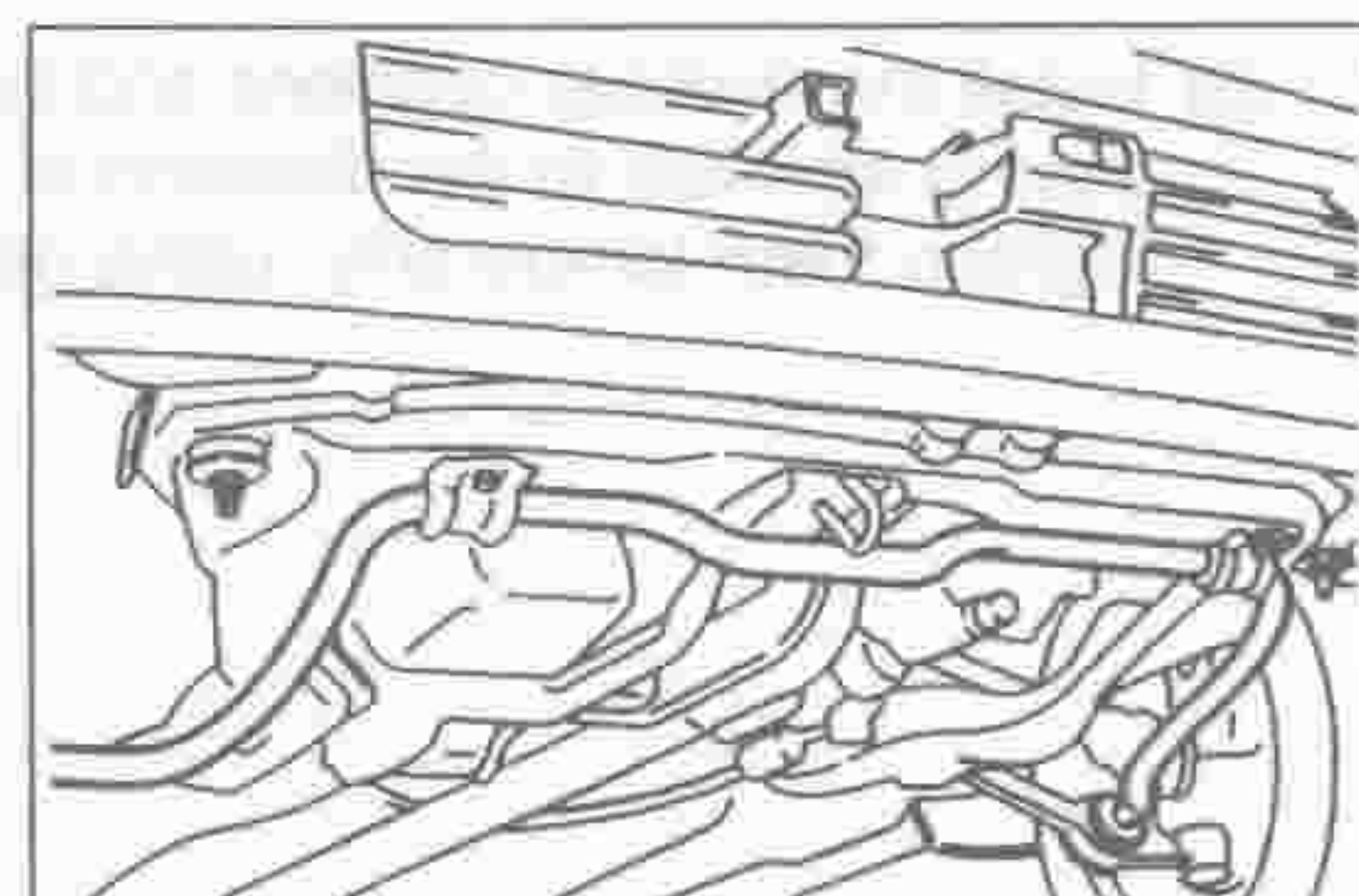
- (4) Remove the stabilizer and strut bar cushions from the front stabilizer bar.



LFS00045-00043



LFS00046-00044

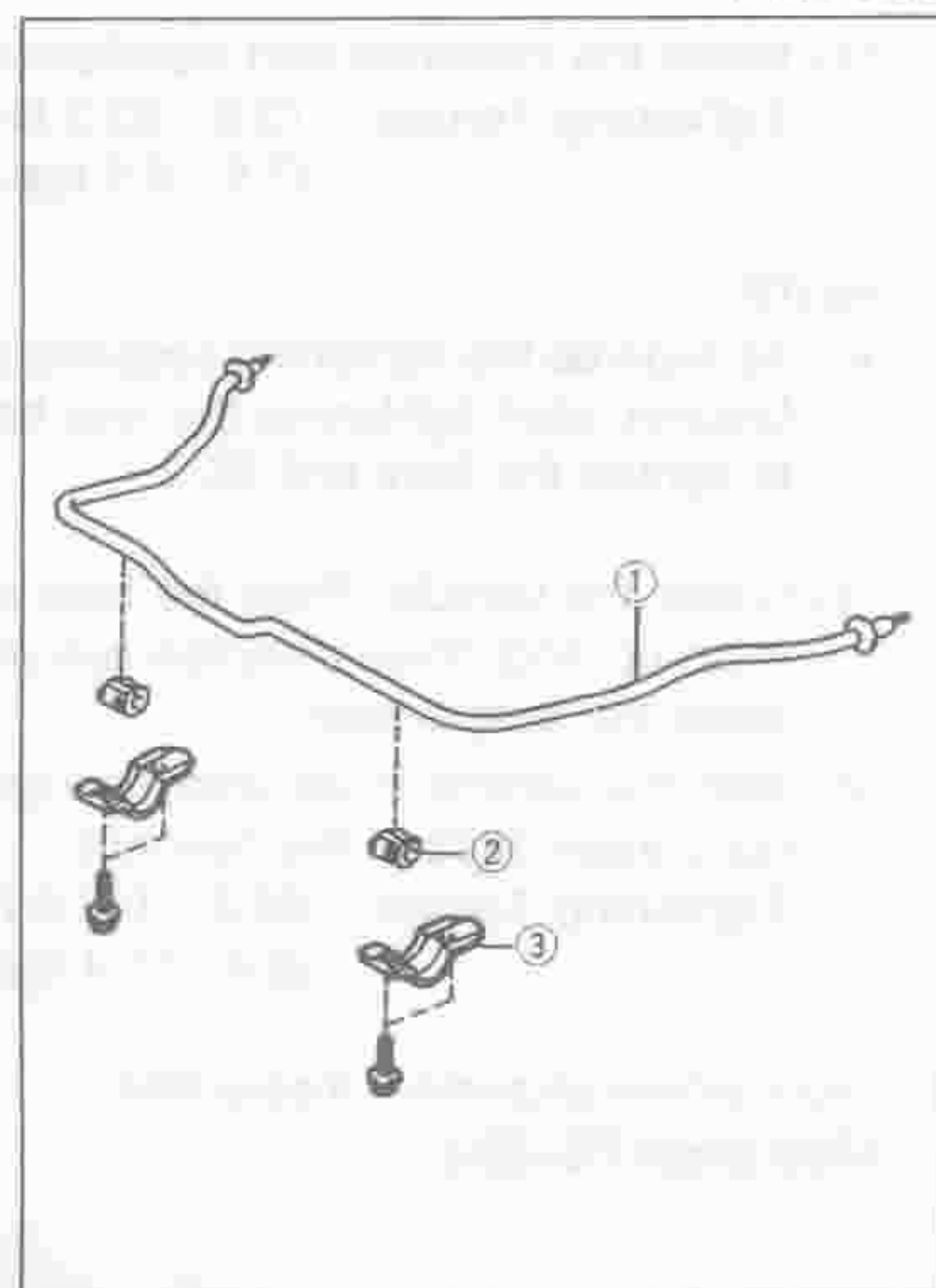


LFS00047-00045

INSPECTION

Inspect the following parts.

- | | |
|----------------------------|---------------------|
| ① Stabilizer bar | Deformation, Damage |
| ② Stabilizer bush | Deterioration |
| ③ Stabilizer bracket | Deformation, Damage |

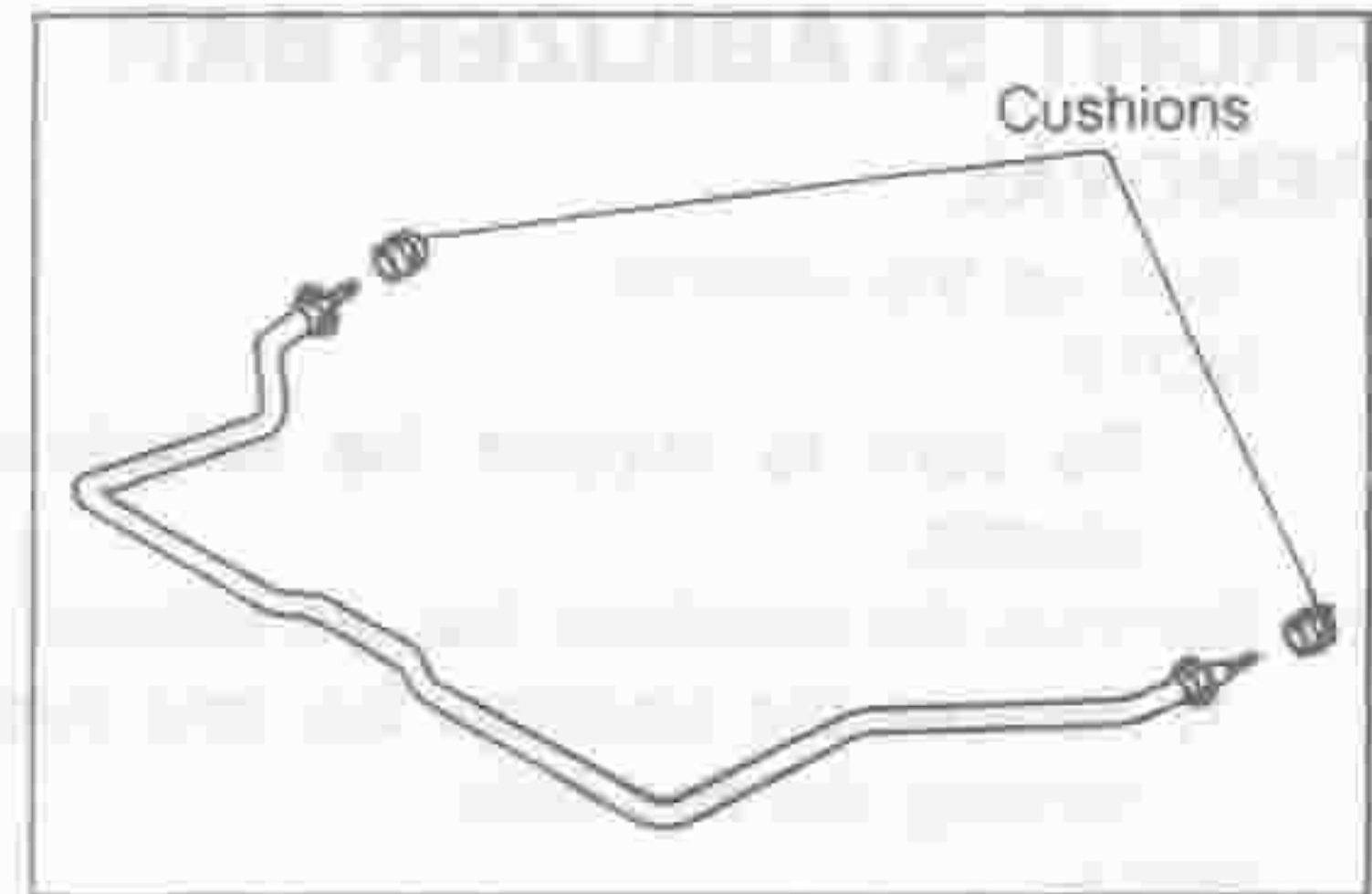


LFS00048-00046

INSTALLATION

1. Installation of front stabilizer bar

- (1) Install the strut bar cushions to the front stabilizer bar.

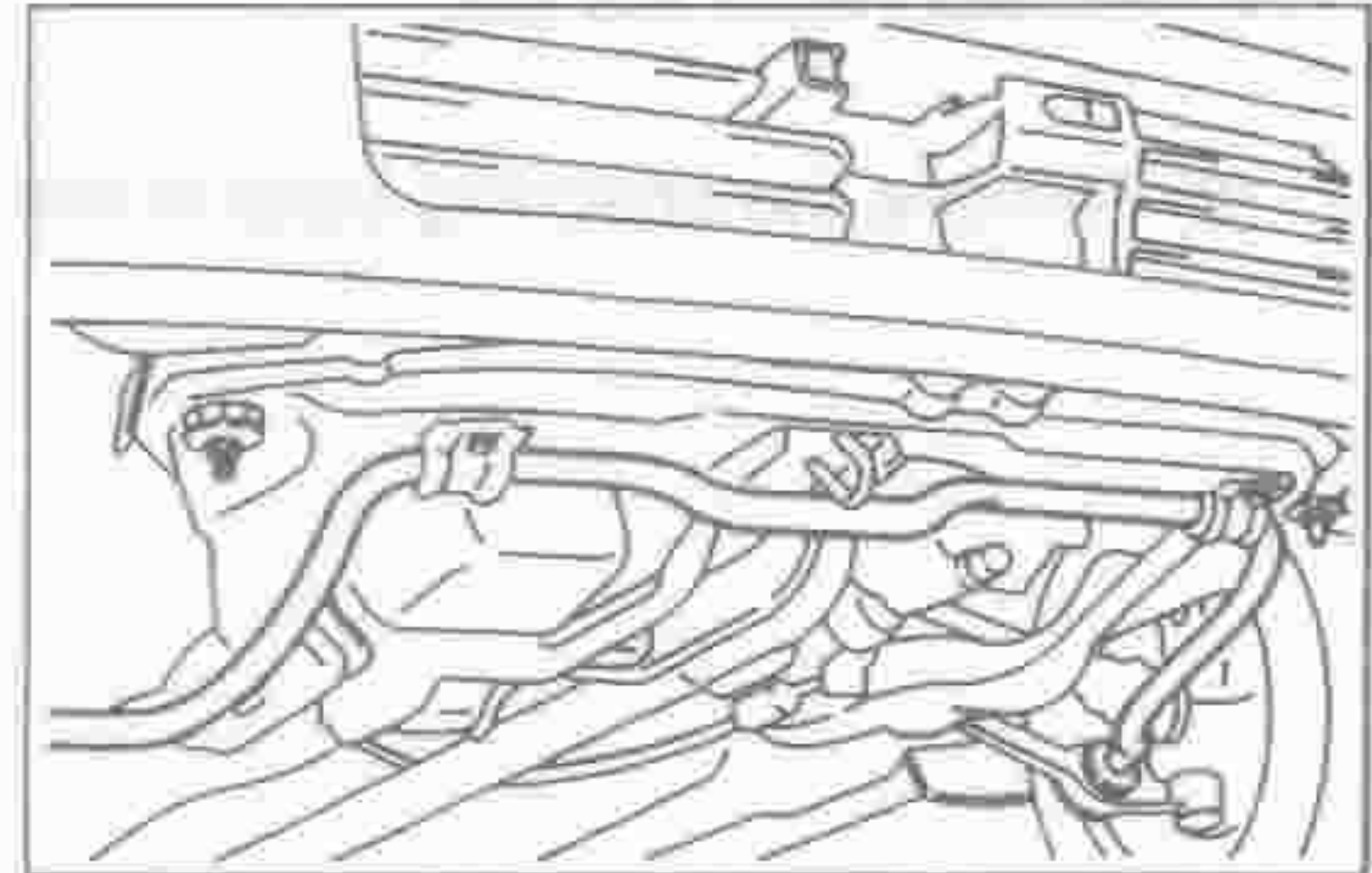


LFS00049-00047

- (2) Install the front stabilizer bar to the suspension lower arm.

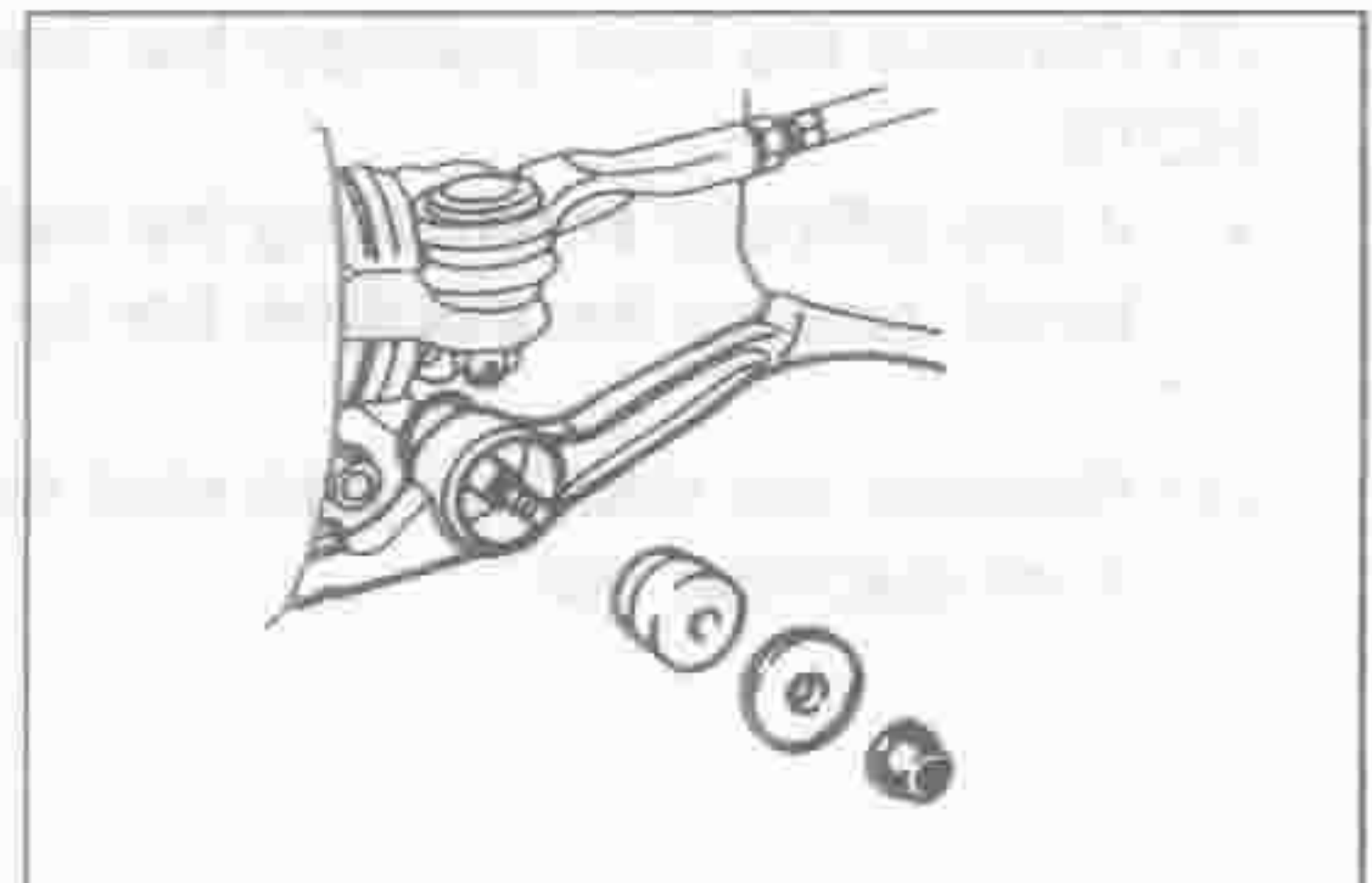
NOTE:

- If the front stabilizer bar end is not aligned with the lower arm attaching hole, jack up the tire so as to align the holes with each other.



LFS00050-00048

- (3) Install the strut bar cushions and cushion retainer, while paying attention to the direction of the cushion retainer. Tighten them temporarily, using new nuts.



LFS00051-00049

- (4) Install the cushions and stabilizer brackets

Tightening Torque: 73.5 - 93.2 N·m
(7.5 - 9.5 kgf-m, 54.2 - 68.7 ft-lb)

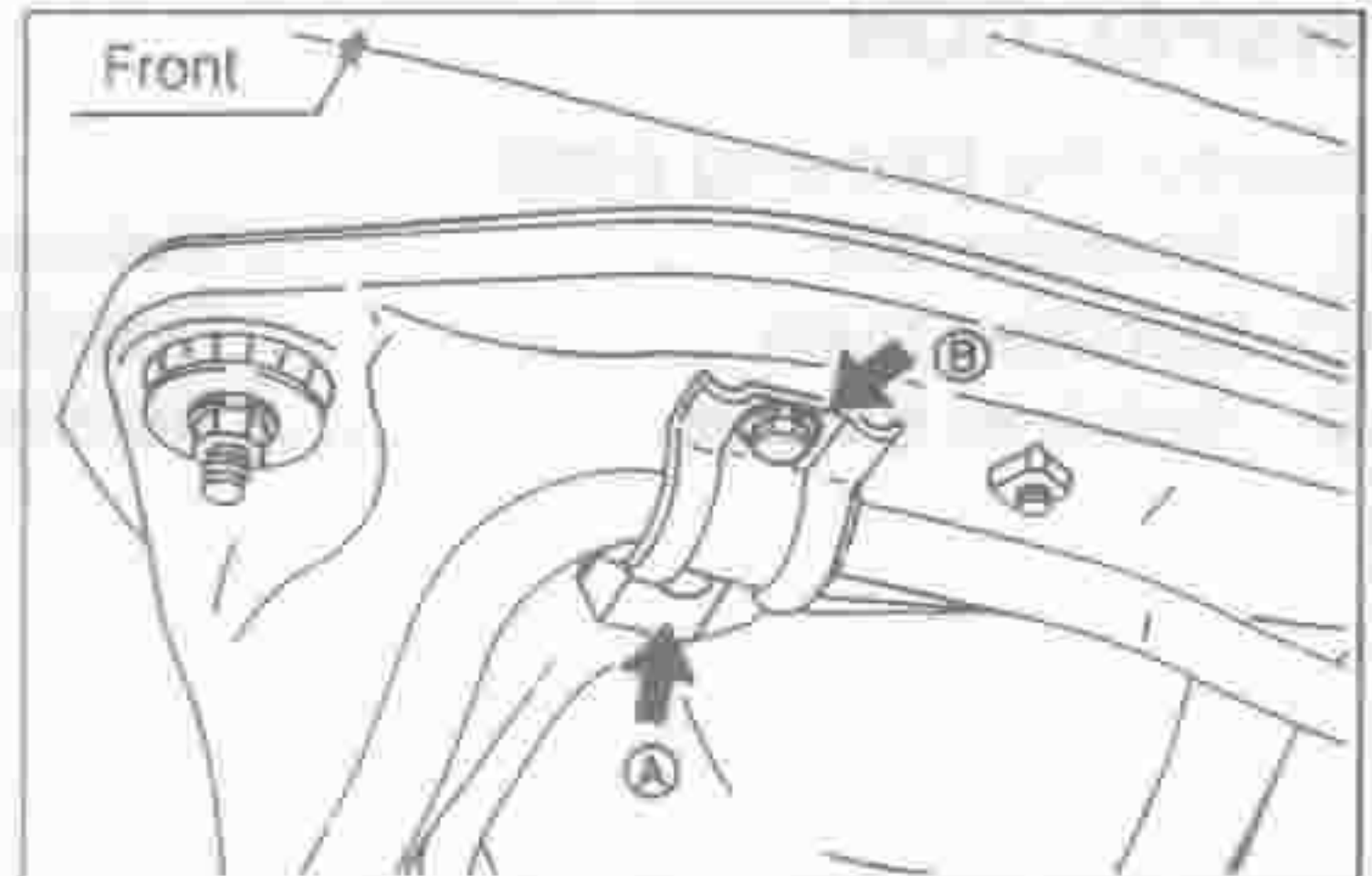
NOTE:

- As regards the tightening sequence of the front stabilizer bracket, start tightening the rear bolt (A). Then, proceed to tighten the front bolt (B).

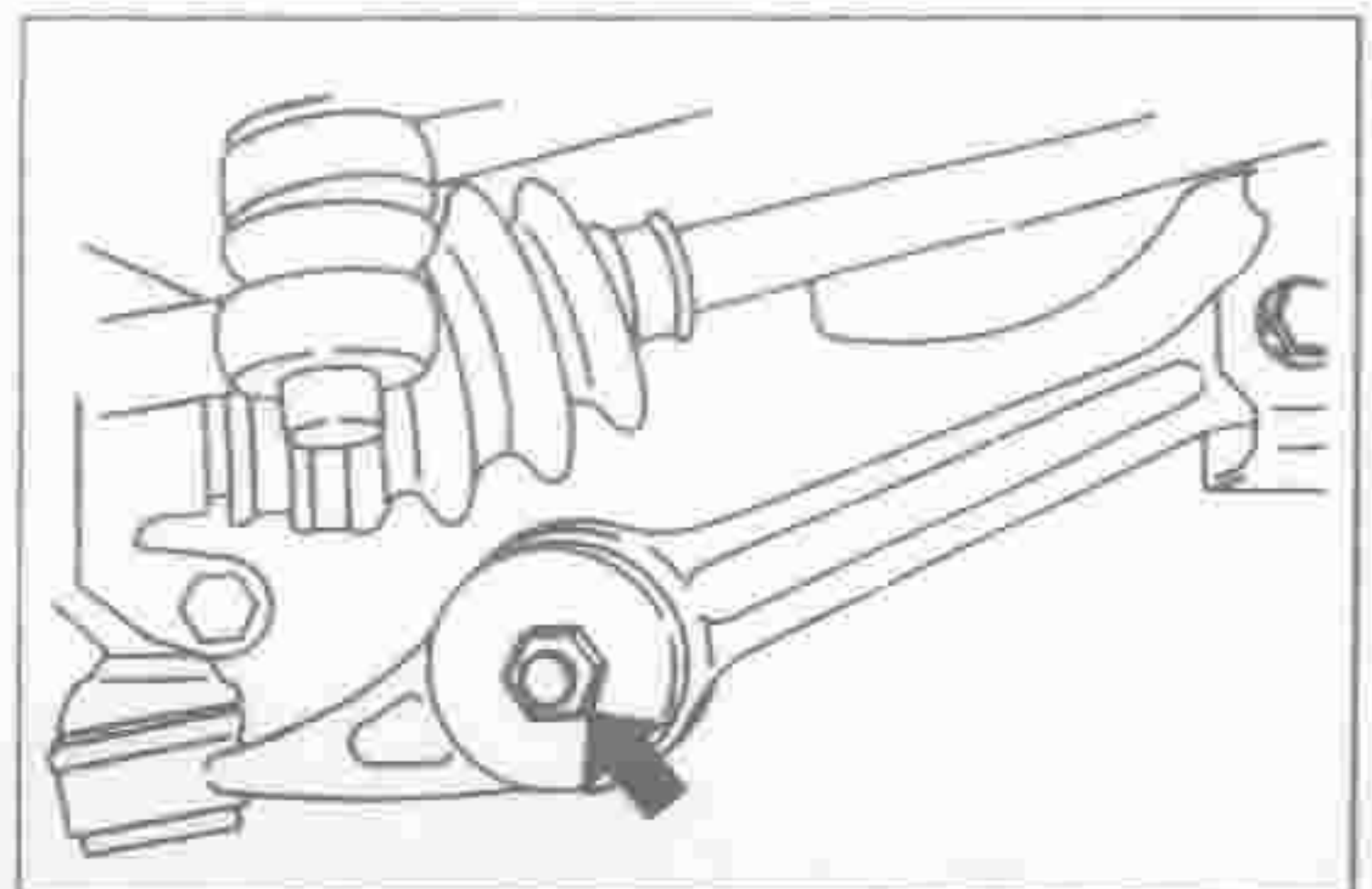
- (5) Lower the vehicle. Rock the front section of the vehicle in an up-and-down direction two or three times so as to settle the suspension.

- (6) With the vehicle in an unloaded state (the lower arm is horizontal), tighten the new nut.

Tightening Torque: 92.2 - 112.0 N·m
(9.4 - 11.4 kgf-m, 68.0 - 82.5 ft-lb)



LFS00052-00050



LFS00053-00051

2. Front wheel alignment inspection

(See page FS-22.)

SUSPENSION LOWER ARM

REMOVAL

1. Jack up the vehicle.

NOTE:

- Be sure to support the vehicle securely with safety stands.

2. Remove the front wheel.
3. Remove the front stabilizer bar and suspension lower arm attaching nut.

NOTE:

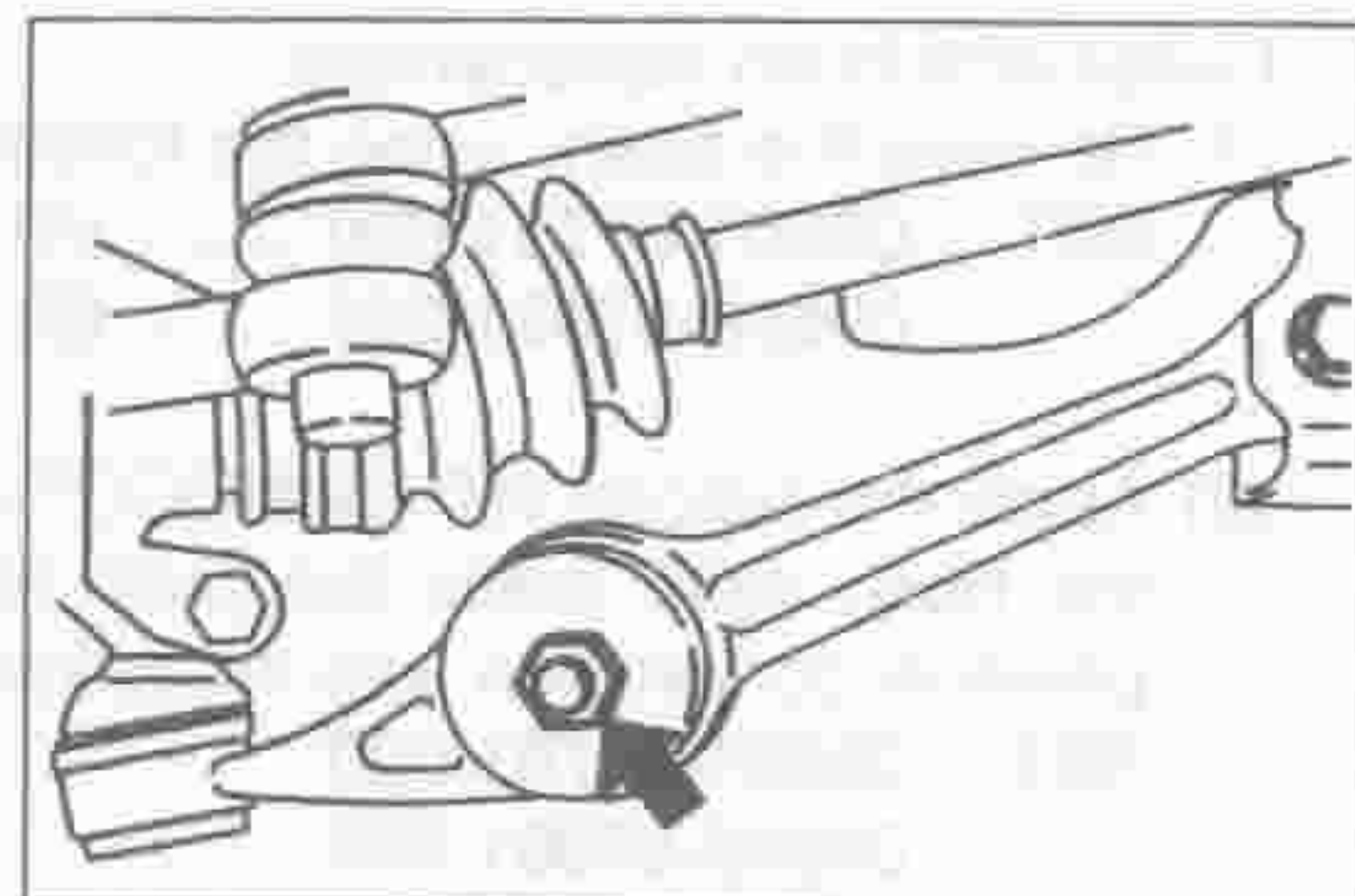
- Do not reuse the nut.

4. Suspension lower arm removal
 - (1) Remove the attaching bolt and nut of the ball joint.

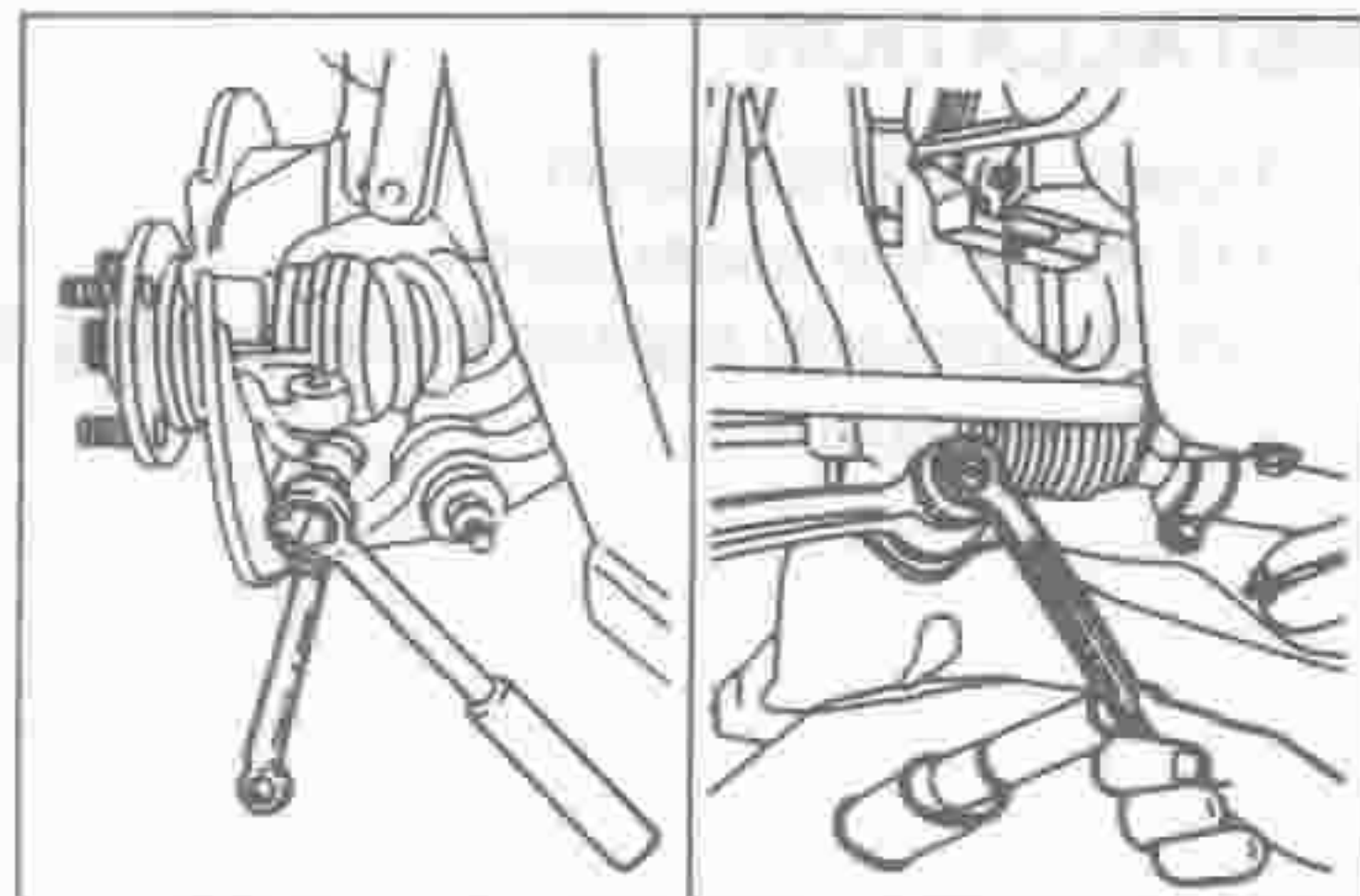
NOTE:

- Do not reuse the nut.

- (2) Remove the attaching bolt of the suspension lower arm at the body side.
 - (3) Remove the suspension lower arm.



LFS00054-00052

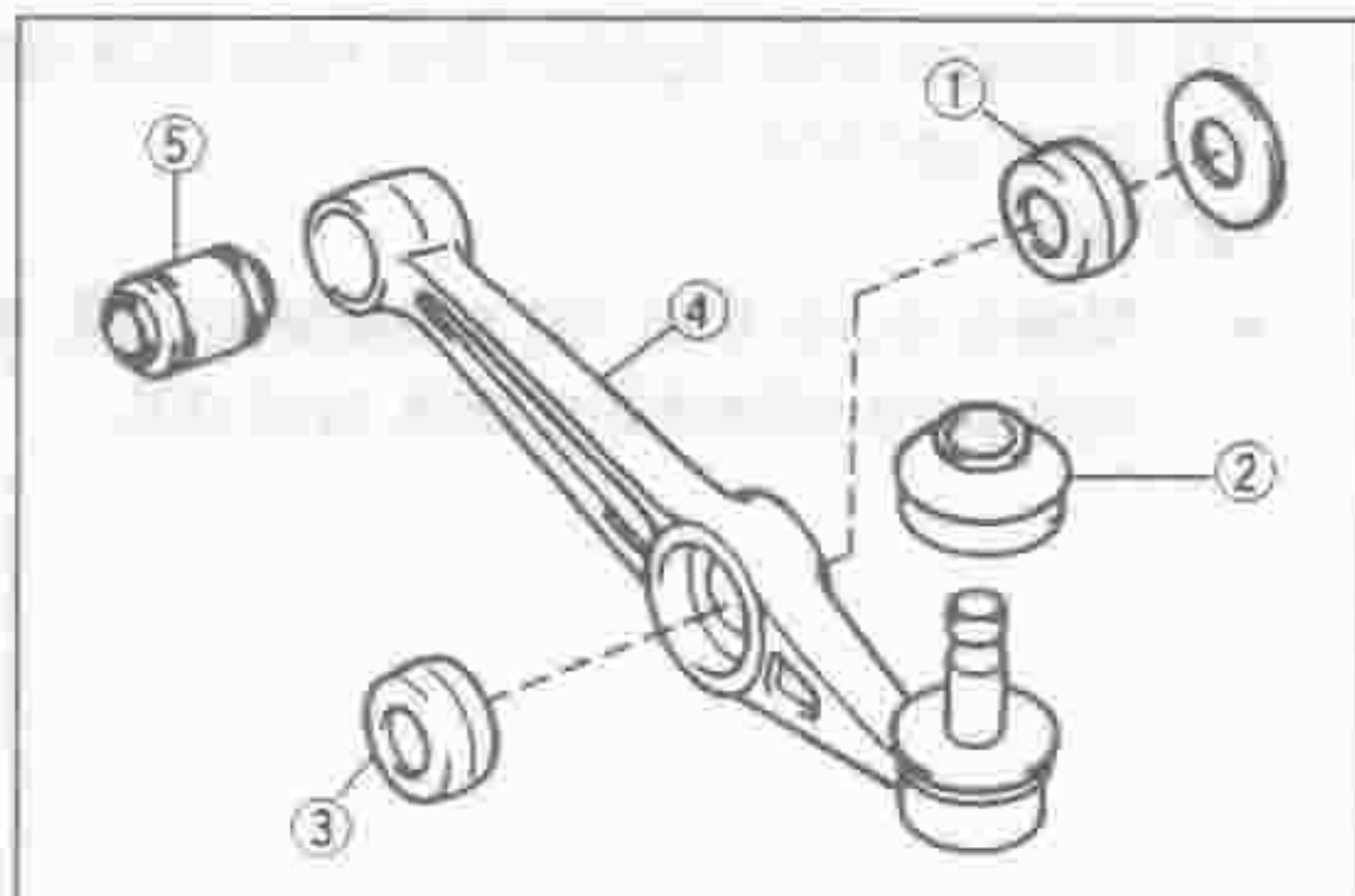


LFS00055-00053

INSPECTION

Inspect the following parts.

- | | | |
|-------------------------|-------|----------------|
| ① Strat bar cushion | ..... | Deterioration |
| ② Ball joint dust cover | ..... | Deterioration |
| ③ Strat bar cushion | ..... | Deterioration |
| ④ Suspension lower arm | ..... | Damage, cracks |
| ⑤ Lower arm bush | ..... | Deterioration |



LFS00056-00054

DISASSEMBLY & ASSEMBLY

1. Lower ball joint dust cover replacement

- (1) Remove the dust cover, using a screwdriver.

NOTE:

- Be very careful not to damage the socket section.

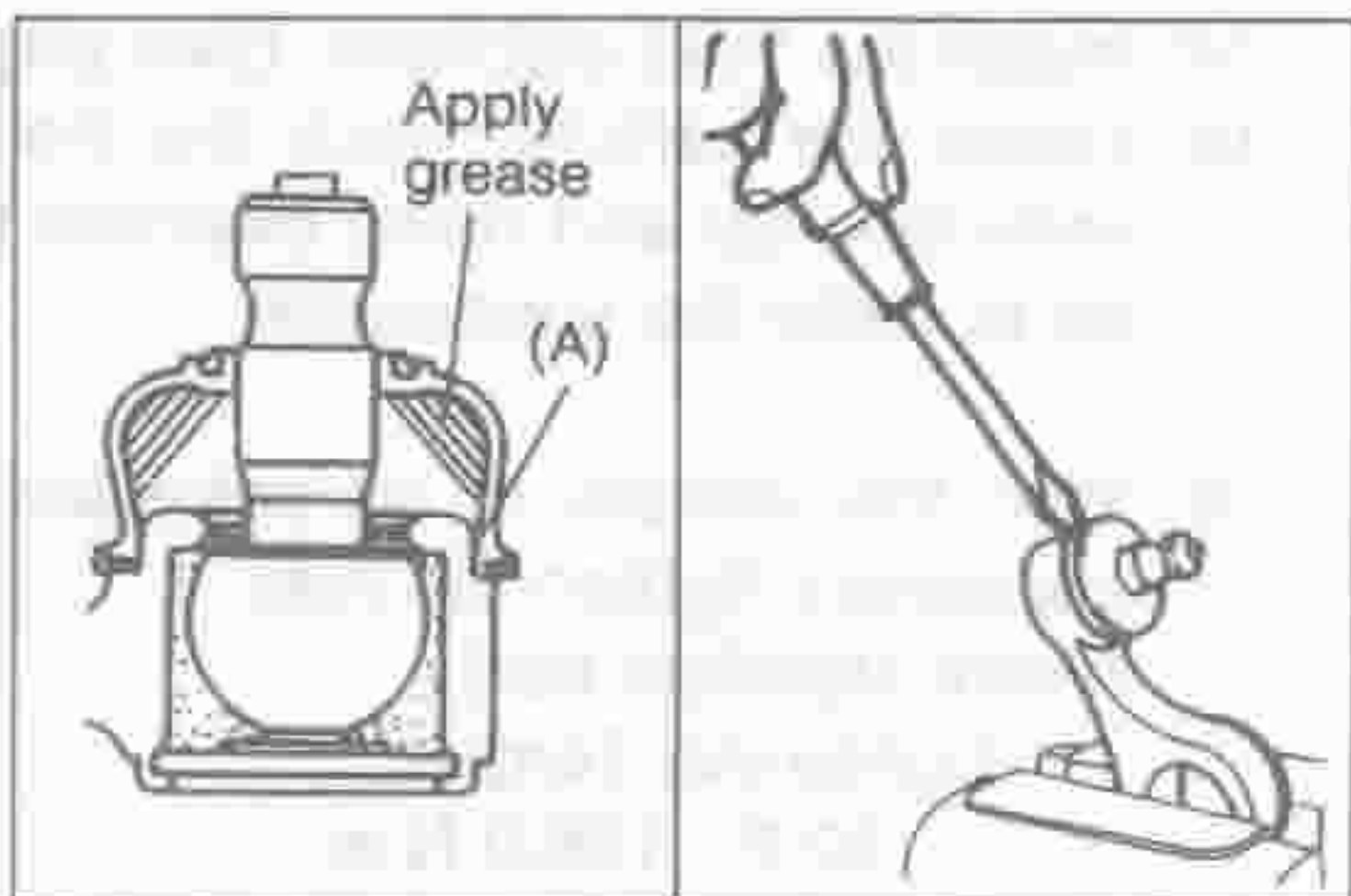
- (2) When assembling the lower ball joint dust cover, apply grease to the illustration.

NOTE:

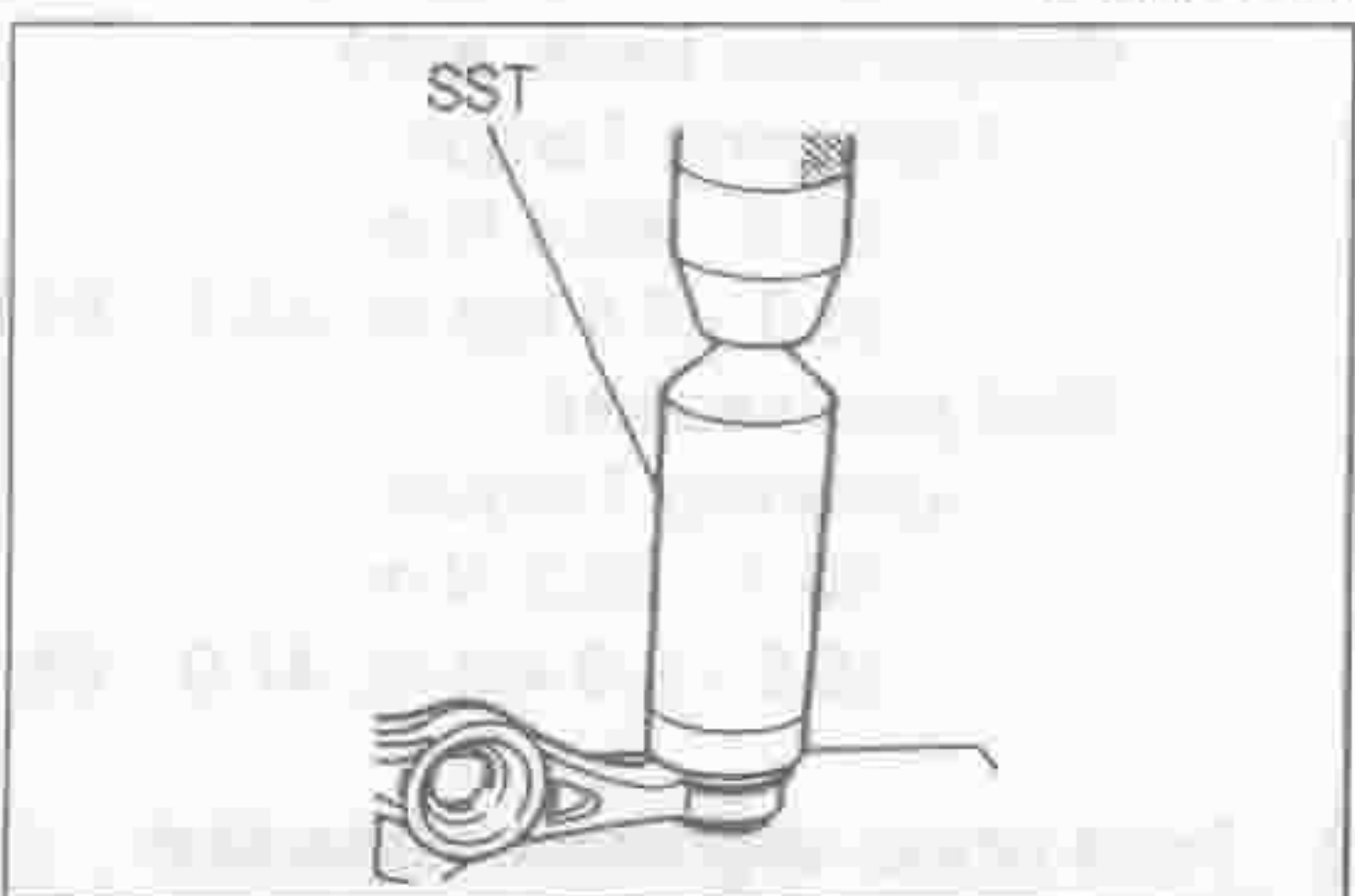
- Make sure that no grease or oil gets to the socket section (A) during the press operation.

- (3) Press the new dust cover into position, using a press in combination with the SST.

SST: 09618-87301-000



LFS00057-00055



LFS00058-00056

2. Lower arm bush replacement

- (1) Remove the bush, using the following SST.

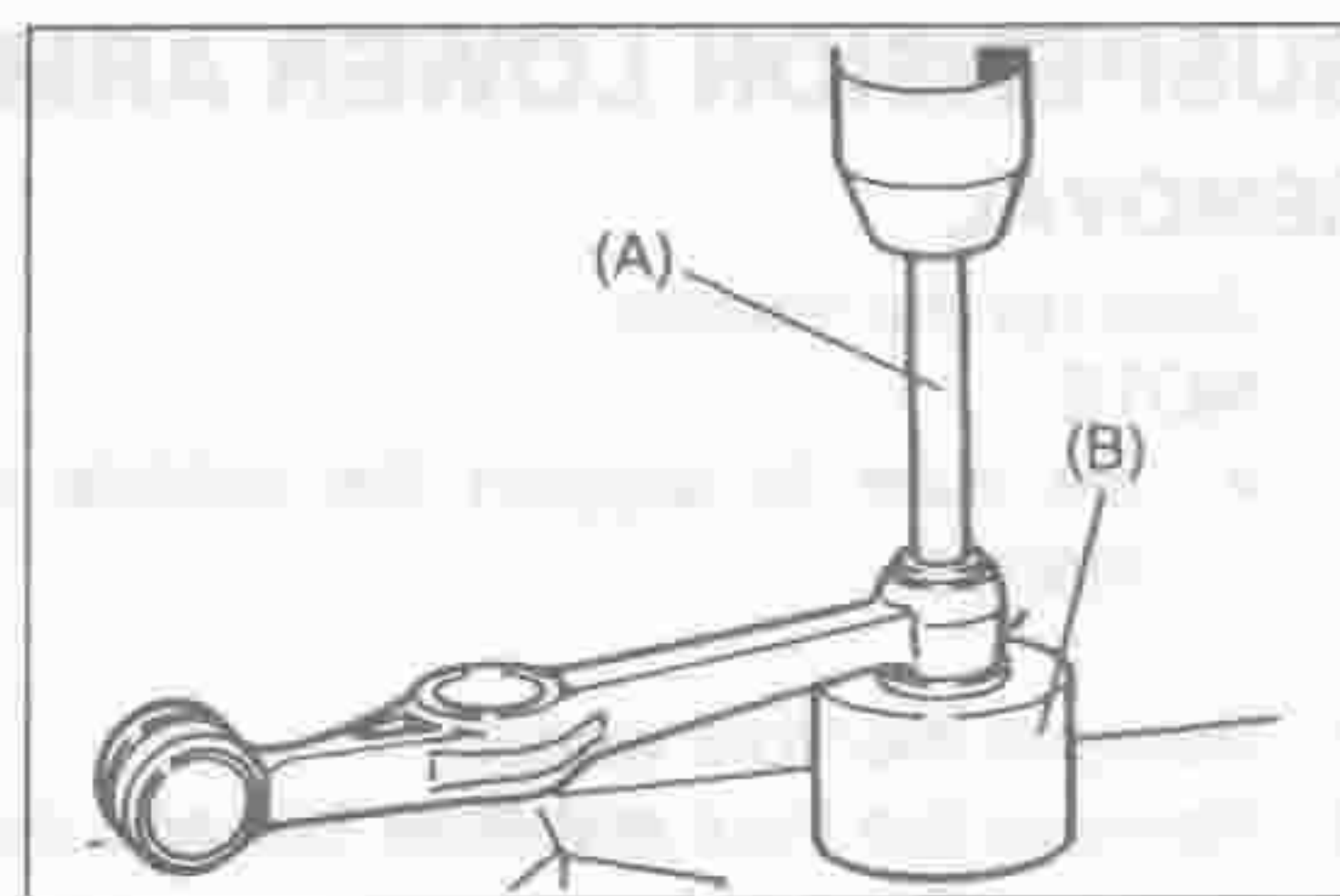
SST: 09301-87701-000 (A)

09506-87301-000 (B)

- (2) Apply the sunpar-150 (SUNOCO®) or equivalent around the bush then, press the bush into position, using a press in conjunction with the following SST.

SST: 09301-87701-000

09506-87301-000

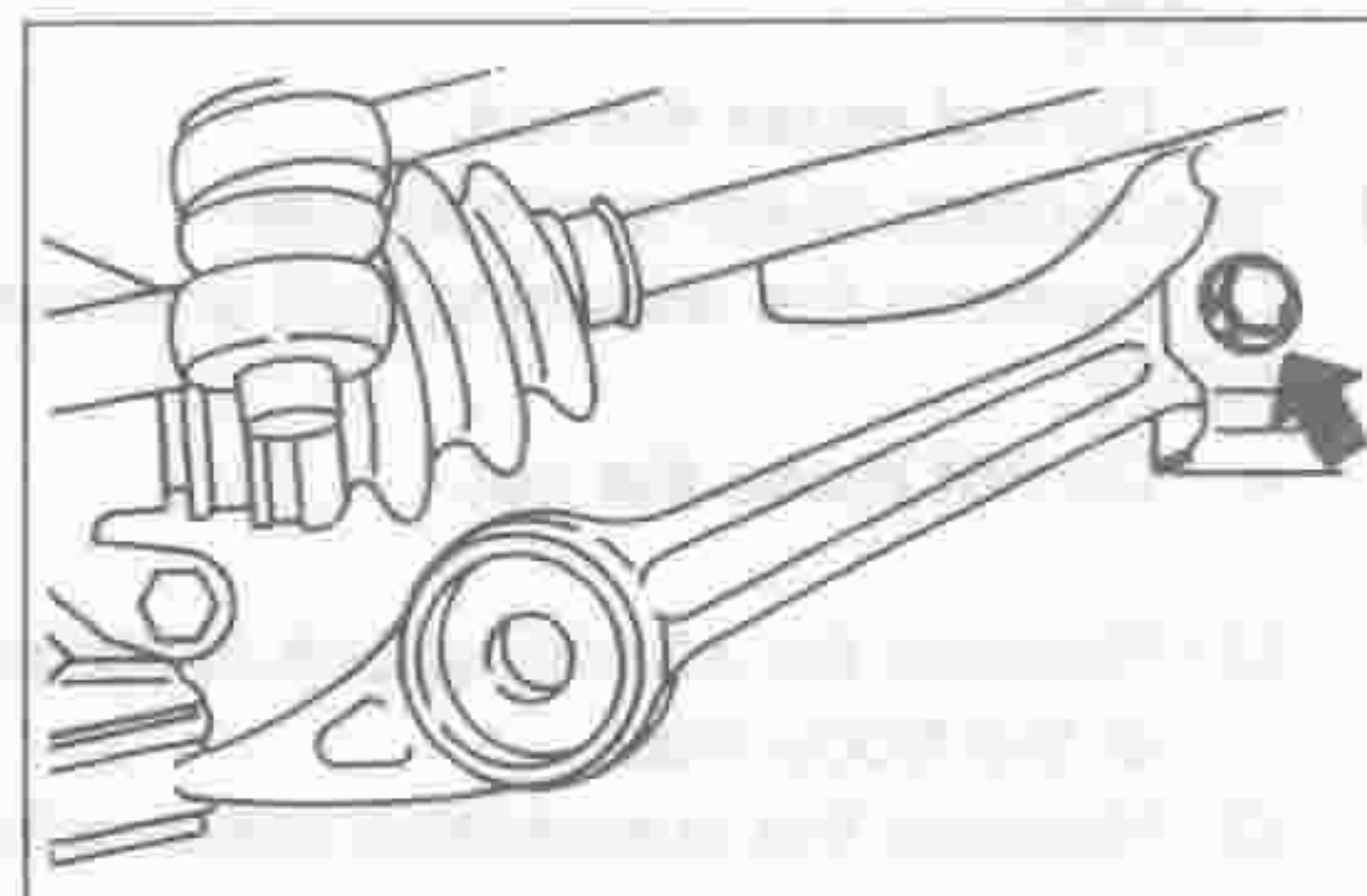


LFS00059-00057

INSTALLATION

1. Lower arm installation

- (1) Install the lower arm.
- (2) Temporarily tighten the attaching nut of the suspension lower arm.

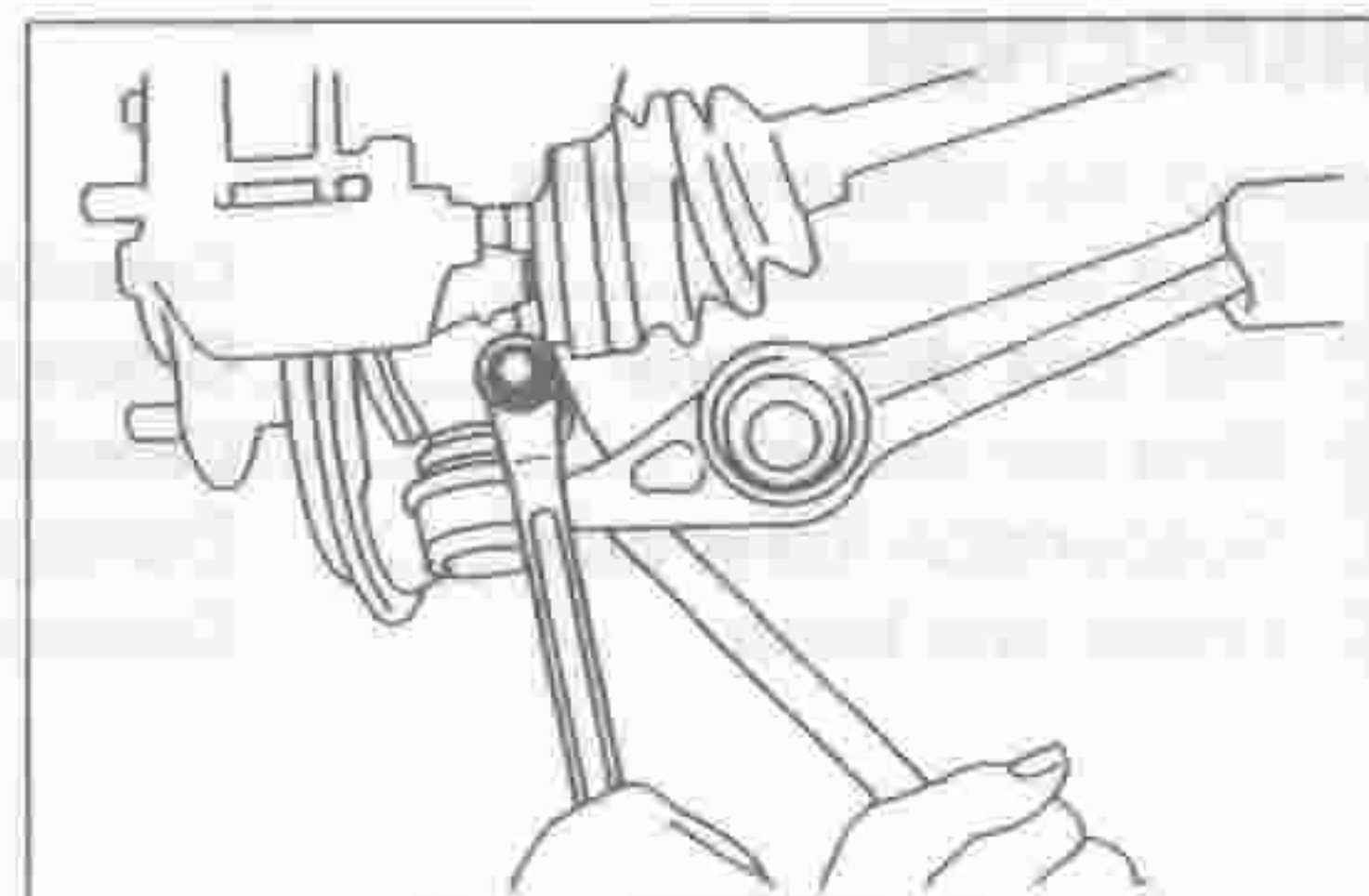


LFS00060-00058

- (3) Temporarily tighten the new bolt and new nut of the ball joint section.

NOTE:

- Make sure that no grease or oil, etc. gets to the lower ball joint attaching bolt and nut.



LFS00061-00059

- (4) Install the front stabilizer. (See page FS-14.)
- (5) Lower the vehicle. Rock the front suspension of the vehicle in up and down direction two or three times so as to settle the suspension.

- (6) With the vehicle in an unloaded state (lower arm is horizontal), tighten the nuts.

(Front stabilizer bar)

Tightening Torque:

92.2 - 108.0 N·m

(9.4 - 11.0 kgf-m, 68.0 - 82.5 ft-lb)

(Suspension lower arm)

Tightening Torque:

58.8 - 83.4 N·m

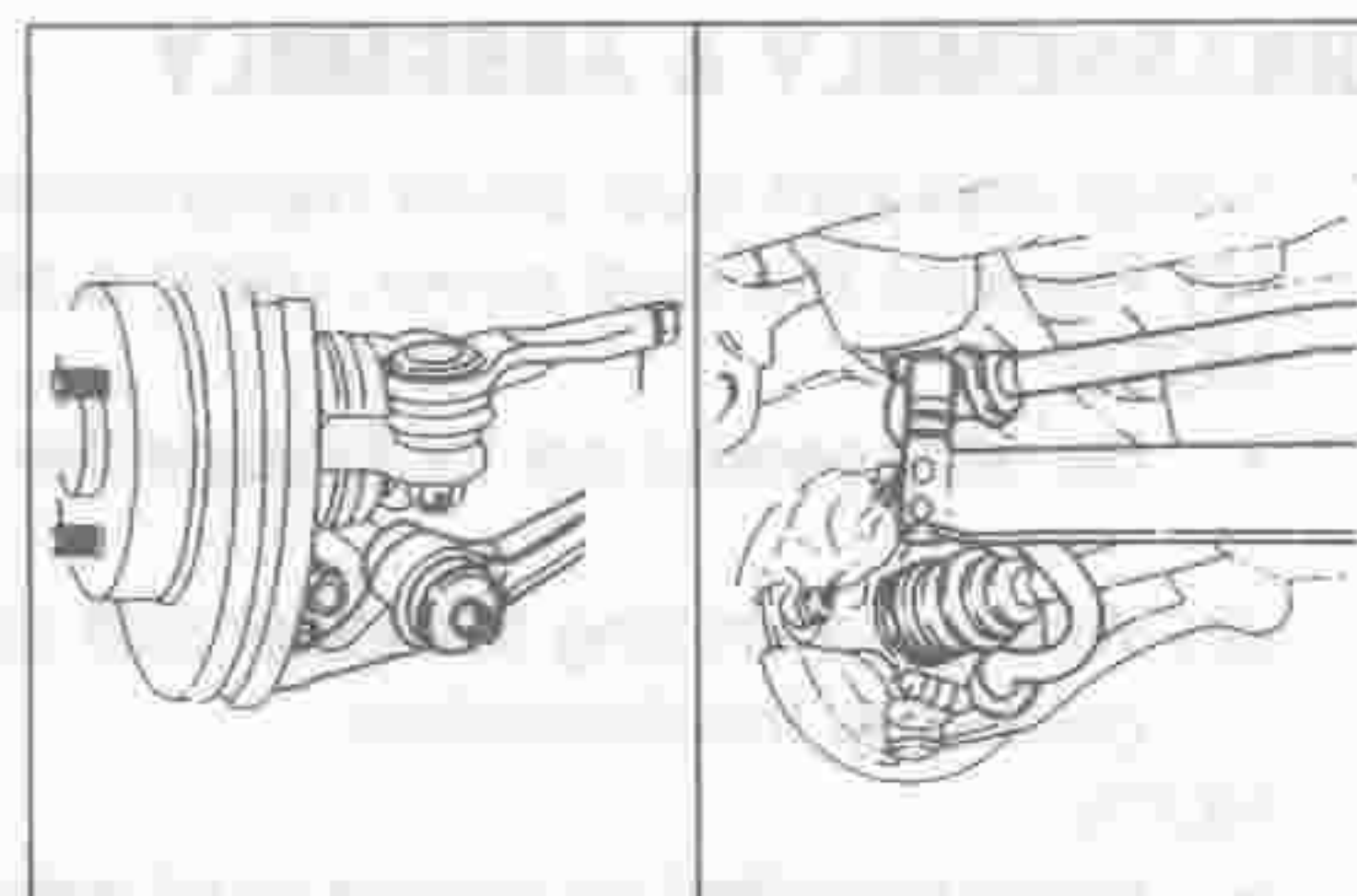
(6.0 - 8.5 kgf-m, 43.4 - 61.5 ft-lb)

(Ball joint section)

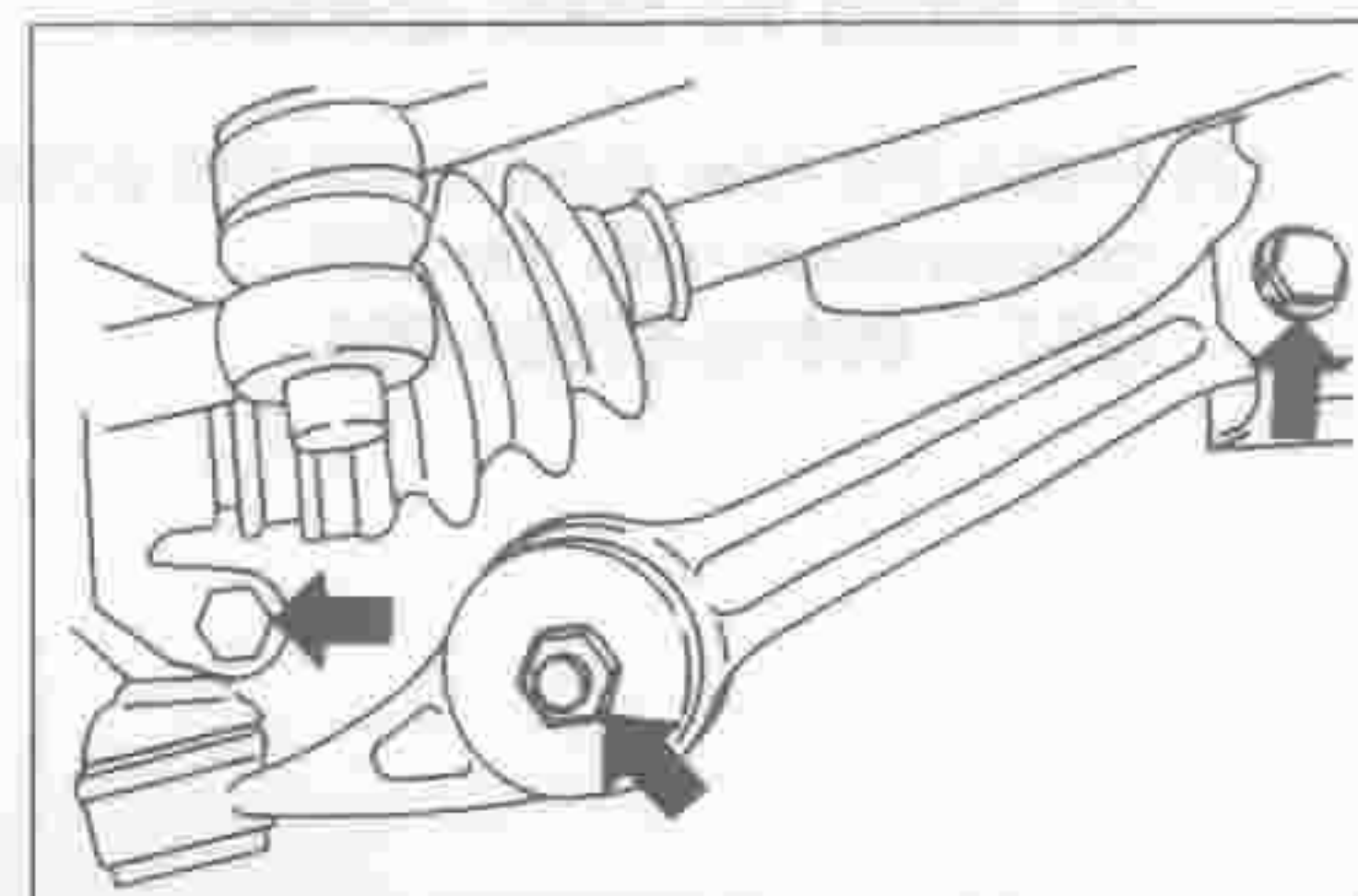
Tightening Torque:

63.7 - 88.3 N·m

(6.5 - 9.0 kgf-m, 47.0 - 65.1 ft-lb)



LFS00062-00060



LFS00063-00061

2. Front wheel alignment inspection

(See page FS-22.)

FRONT DRIVE SHAFT REMOVAL

1. Jack up the vehicle.

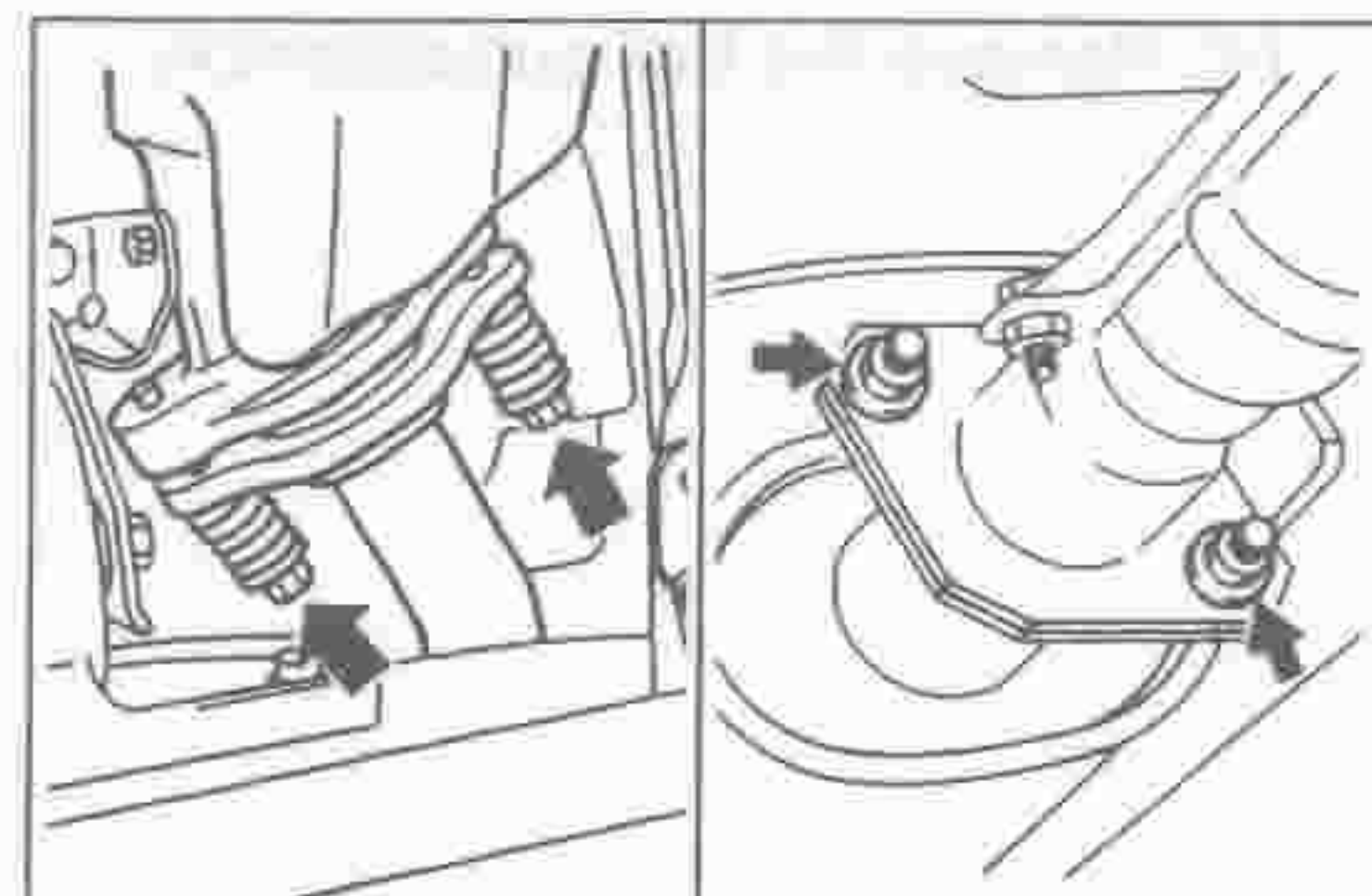
NOTE:

- Be sure to support the vehicle securely with safety stands.

2. Remove the front wheels at the right and left sides of the vehicle.
3. Drain the transmission oil.
4. Remove the disc brake caliper. (Refer to FS-4.)
5. Remove the front axle hub. (Refer to FS-4)
6. Tie rod end separation. (Refer to FS-4)
7. Remove the lower ball joint. (Refer to FS-4)
8. Remove the steering knuckle. (Refer to FS-4)
9. Remove the front exhaust pipe.

NOTE:

- Do not reuse the gasket and front exhaust pipe and tail pipe attaching nuts. (Refer to BO section)



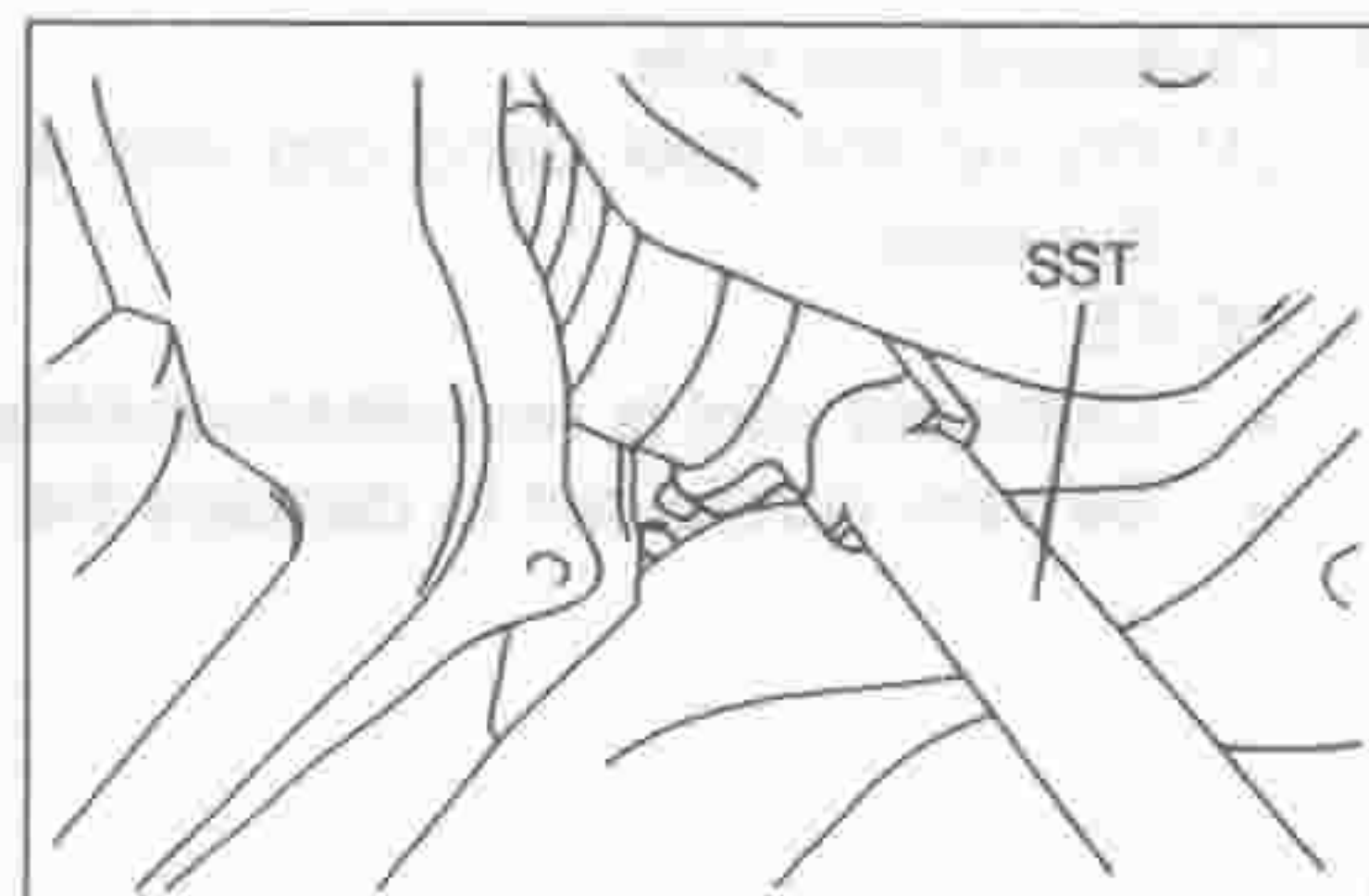
LFS00064-00062

10. Removal of drive shaft

- (1) Remove the right side drive shaft, using the following SST.

SST: 09648-87201-000

- (2) Remove the left side drive shaft, using the common tyre lever or the like.



LFS00065-00063

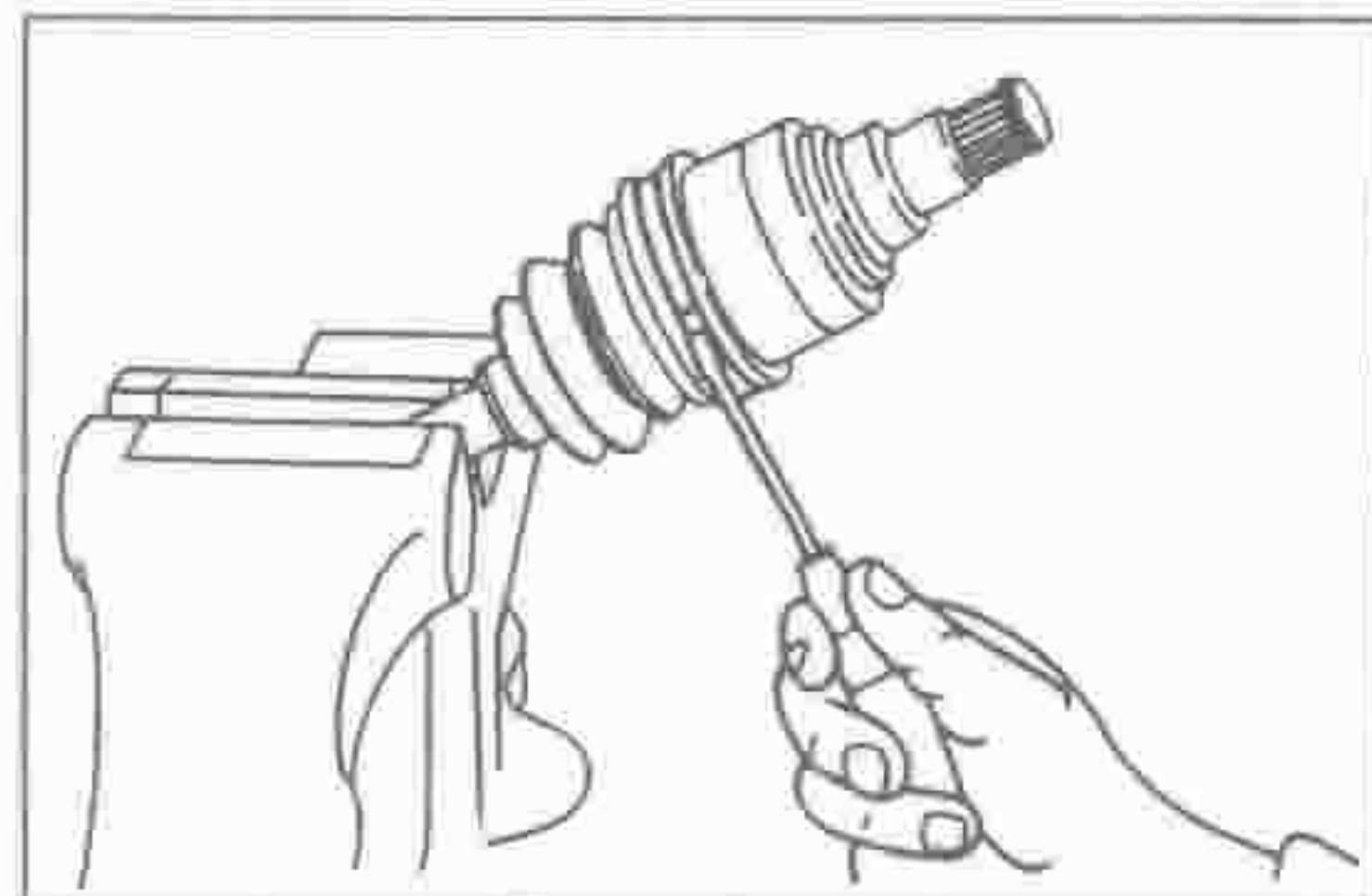
DISASSEMBLY

1. Inboard joint

- (1) Pry up the boot band clip with a screwdriver. Detach the boot.

NOTE:

- Be very careful not to damage the boot.
- Perform the disassembly, following the procedure described in this section. However, it should be noted that the front axle outboard joint is non-disassembling parts.

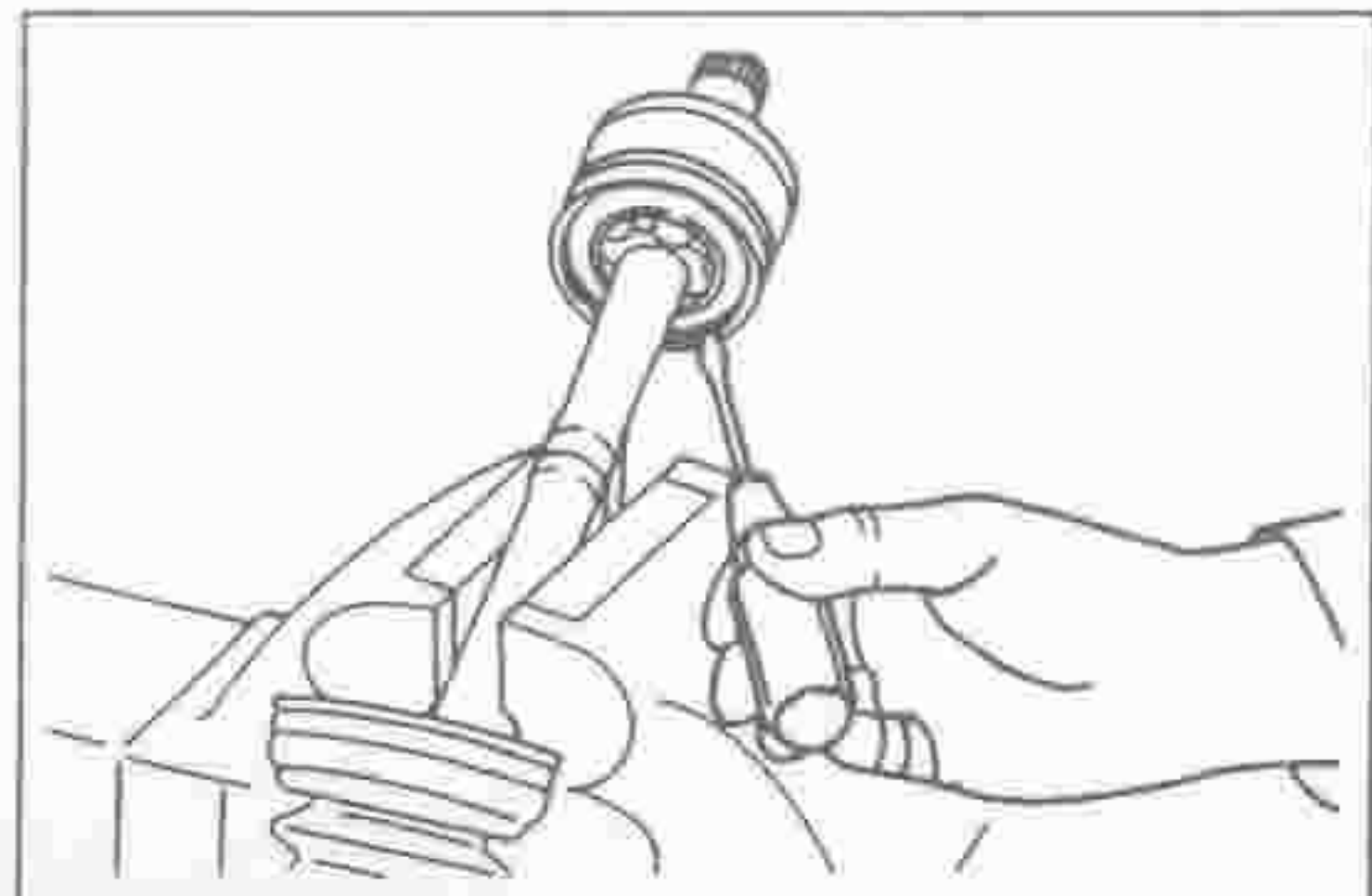


LFS00066-00064

- (2) Detach the ring, using a screwdriver.

NOTE:

- Do not reuse the ring.

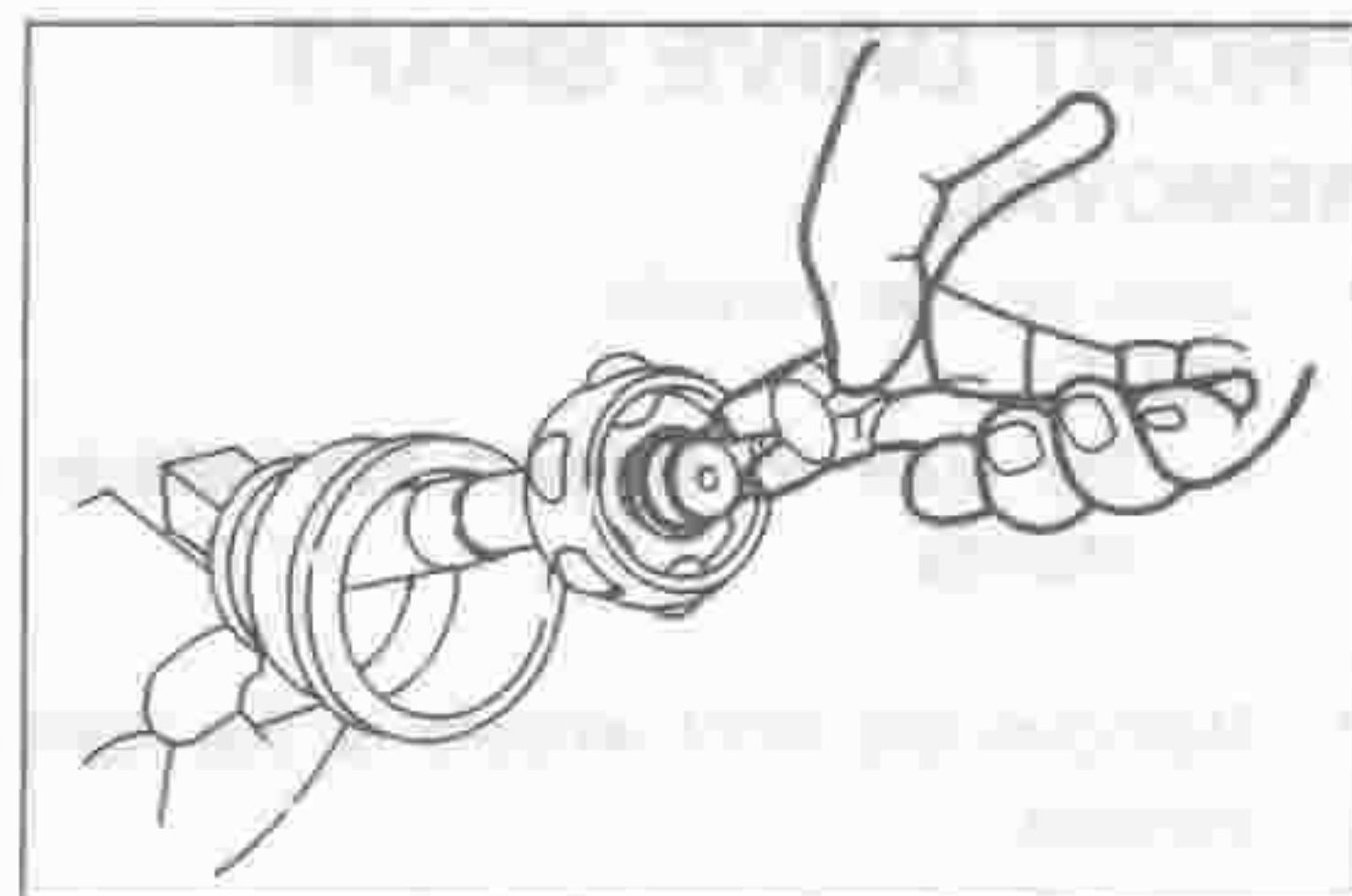


LFS00067-00065

(3) Detach the snap ring.

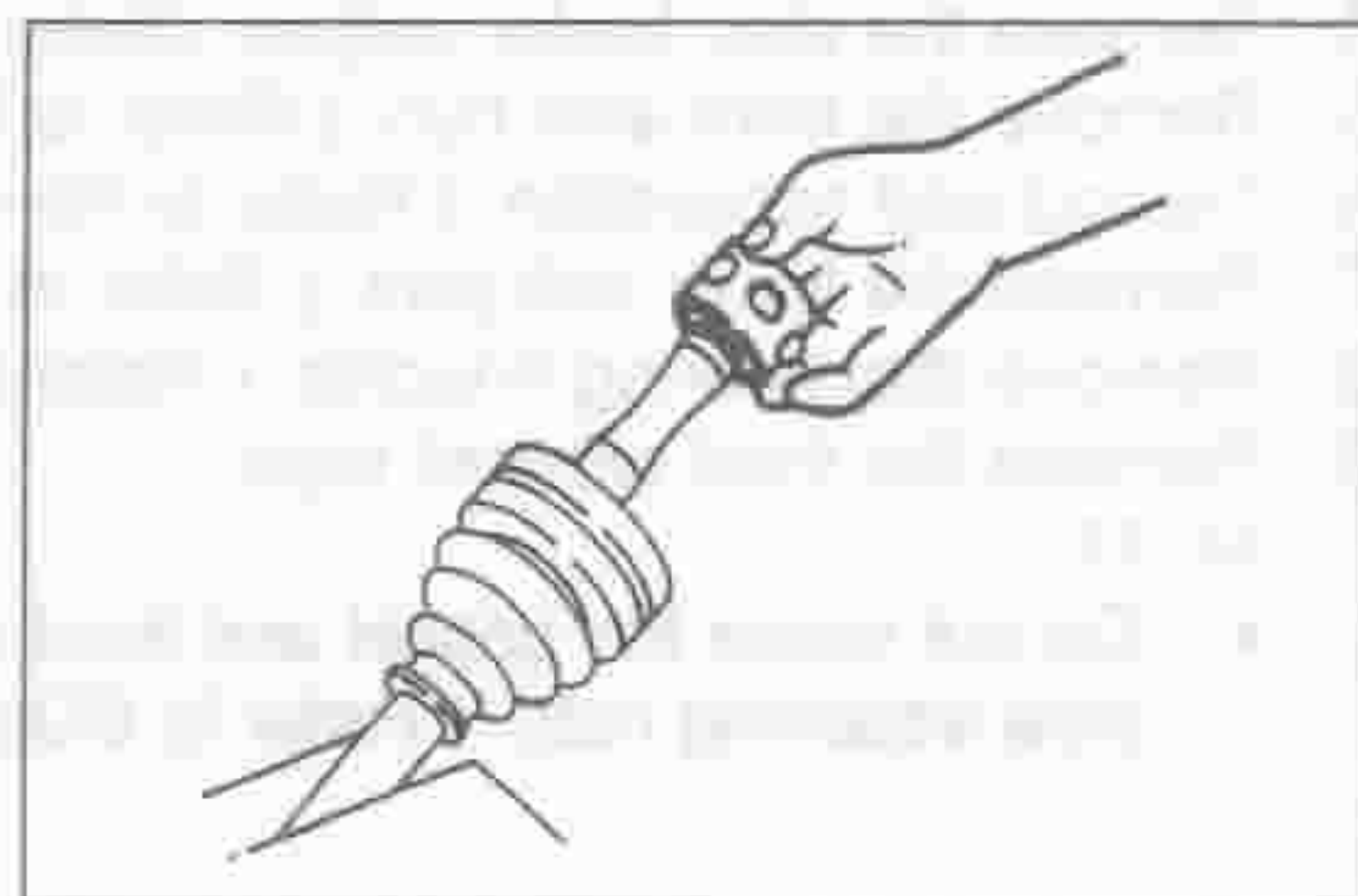
NOTE:

- Do not reuse the snap ring.



LFS00068-00066

(4) Remove the ball subassembly.



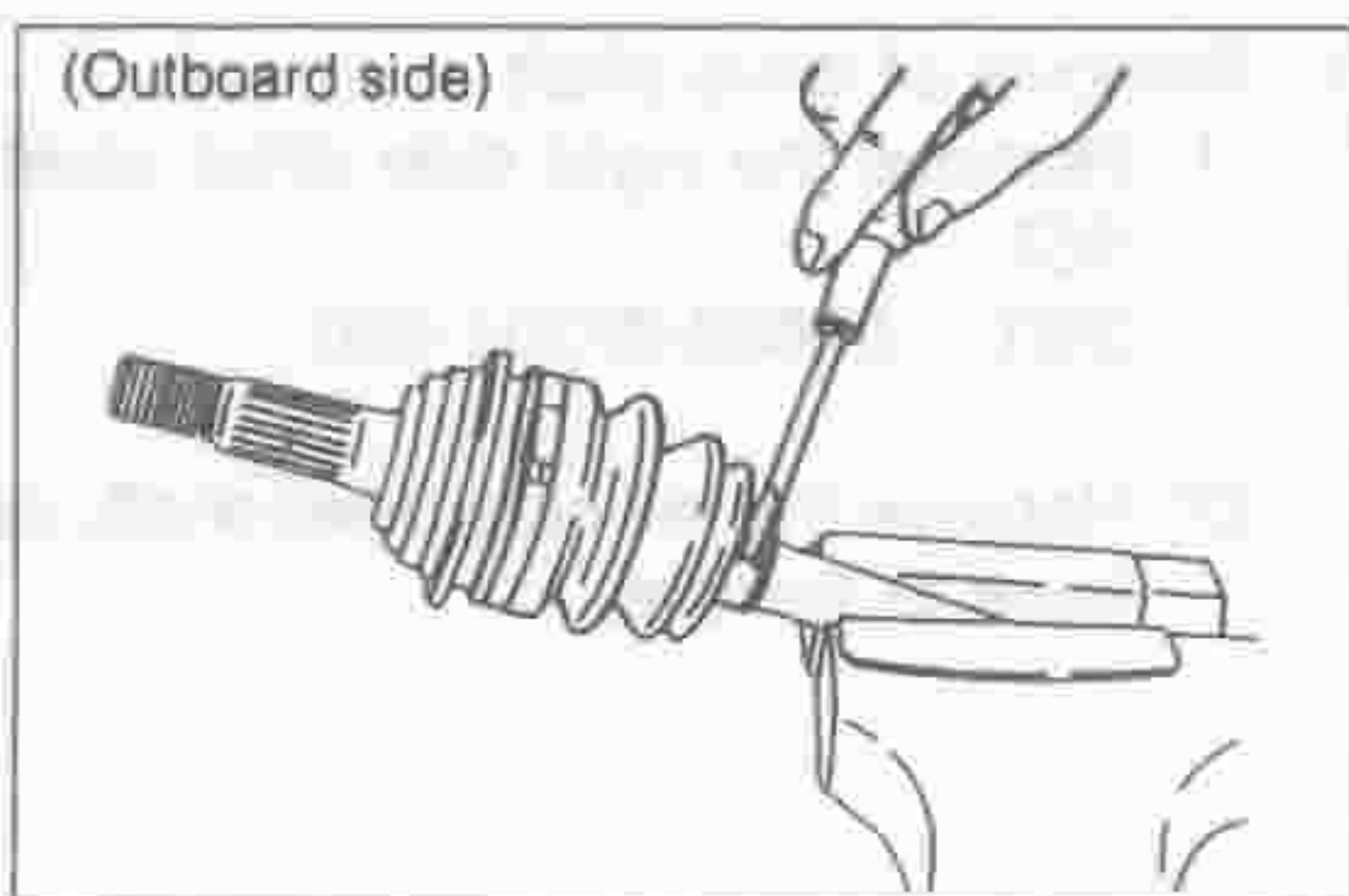
LFS00068-00067

2. Outboard joint side

(1) Pry up the boot band clip with a screwdriver. Detach the boot.

NOTE:

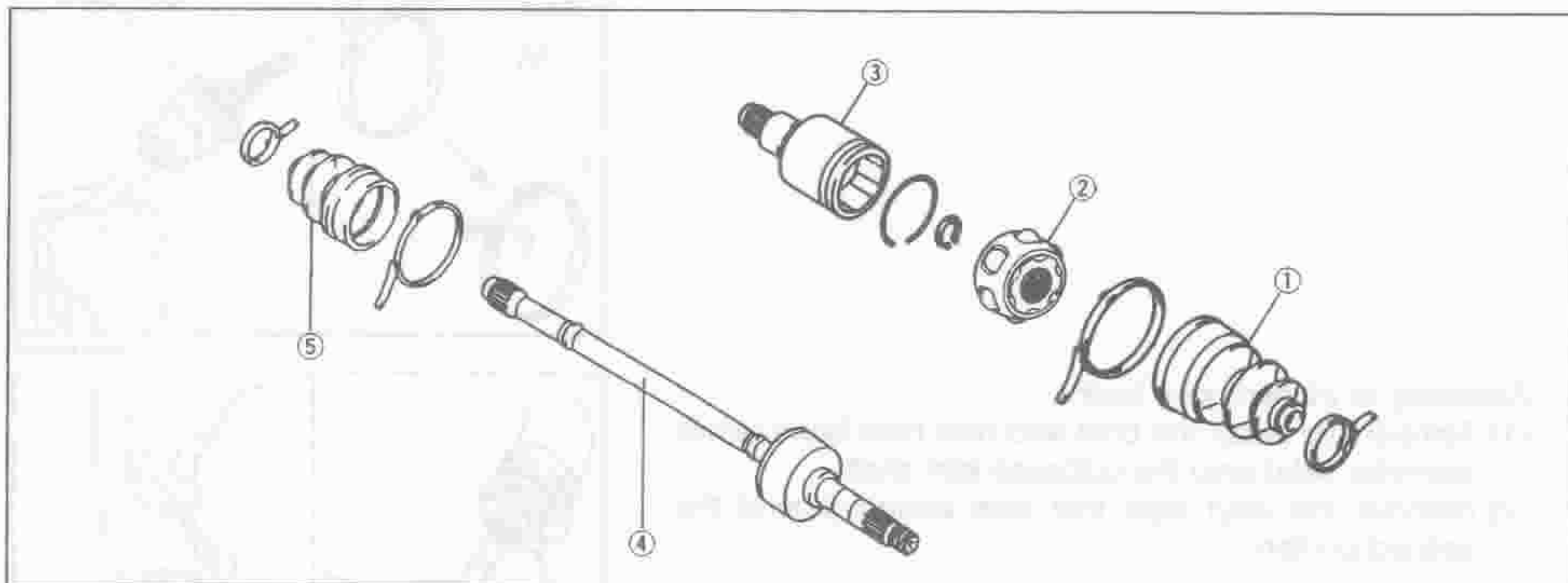
- Outboard joint is non-disassembling parts.
- Be very careful not to damage the boot.



LFS00070-00068



INSPECTION



- | | | |
|------------------------------|-------|--|
| ① Boot | ..... | Damage |
| ② Ball subassembly | ..... | Damage |
| ③ Inboard joint subassembly | ..... | Serration for damage |
| ④ Outboard joint subassembly | ..... | Ball joint spline serration for damage |
| ⑤ Boot | ..... | Damage |

NOTE

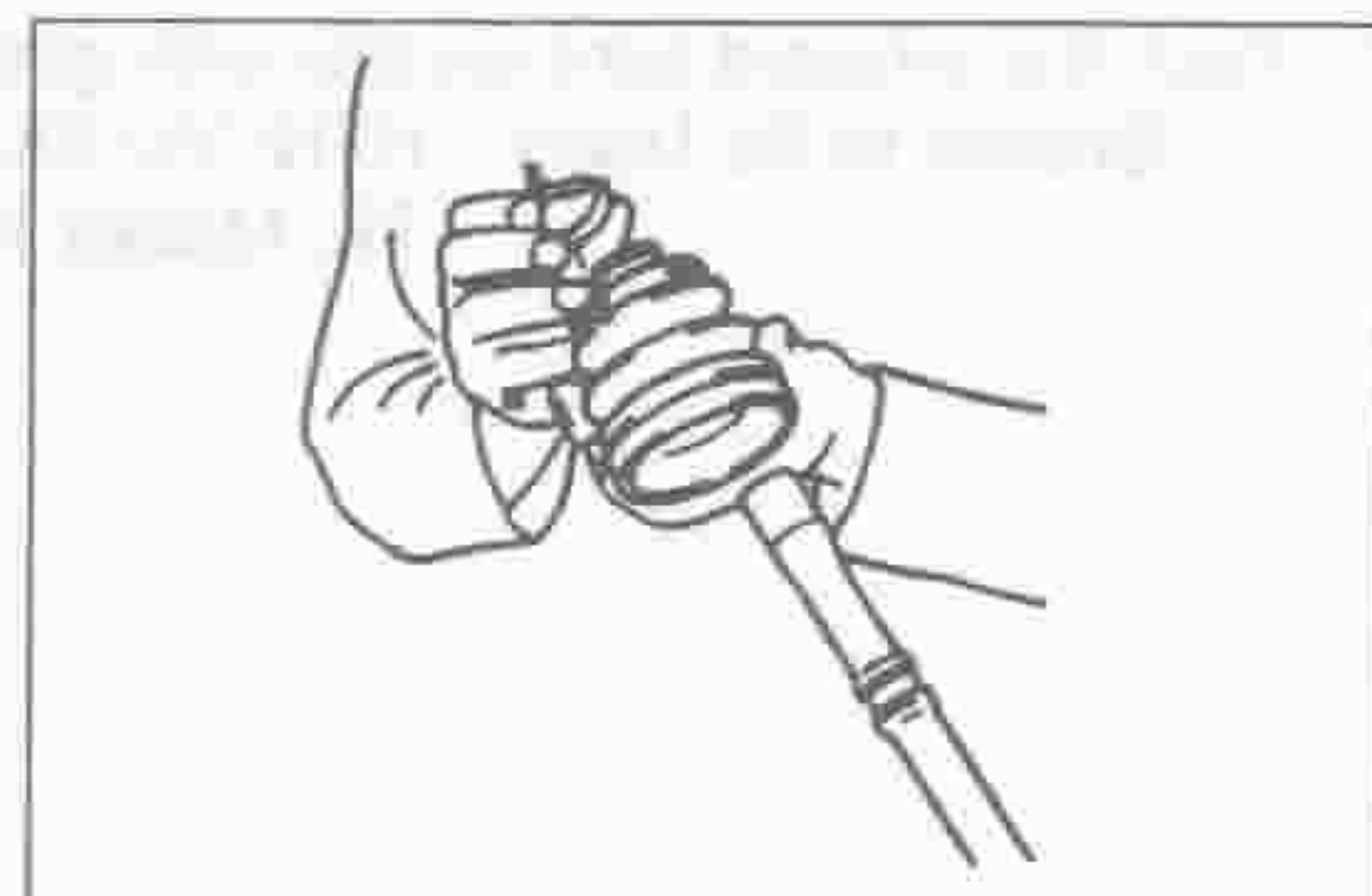
- The left part only comes in the following two different makes.

NTN MAKE	.....	BOOTS-MOLDED "NTN"
TK MAKE	.....	BOOTS-MOLDED "TK"

LFS00071-00069

ASSEMBLY

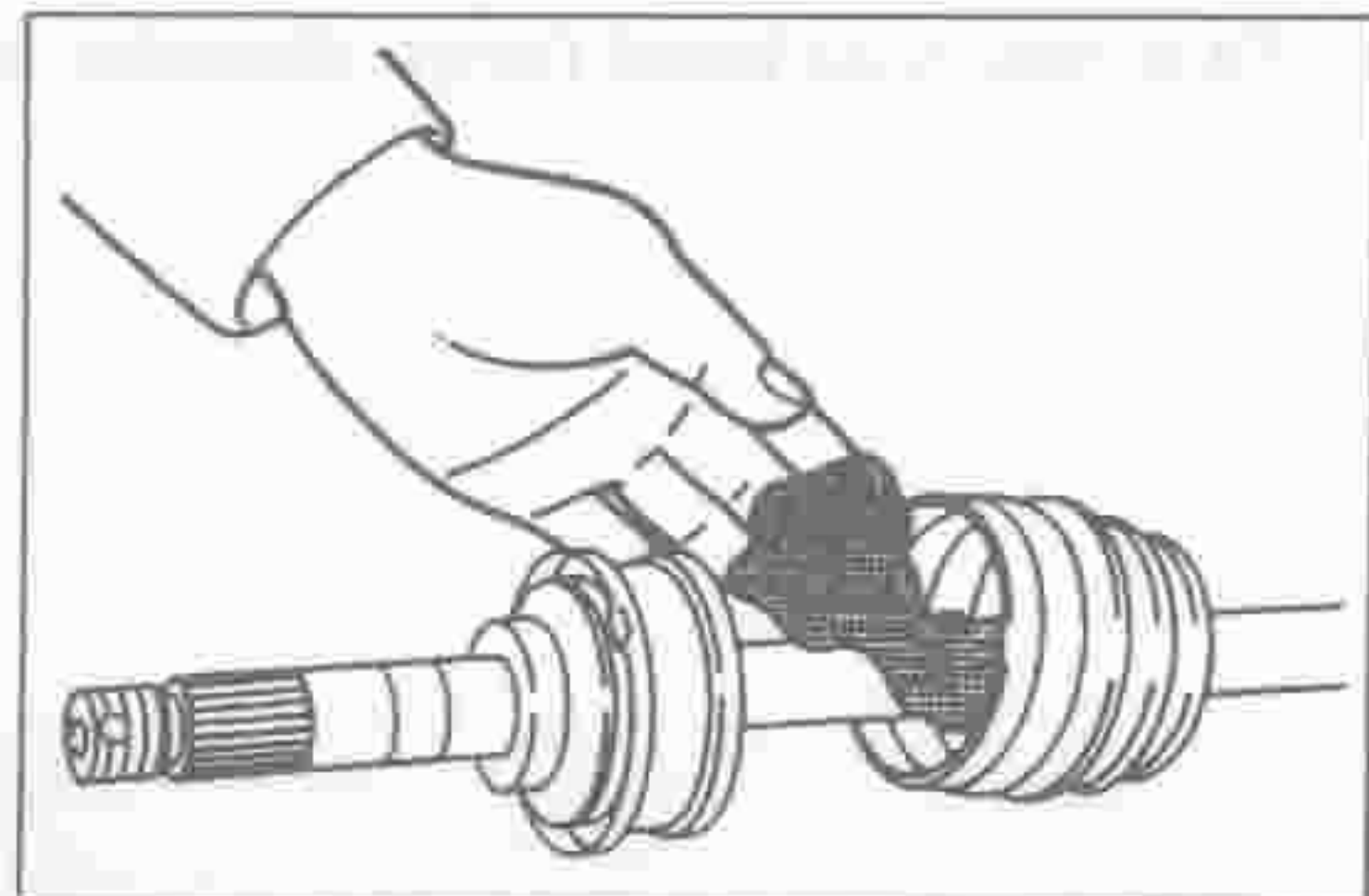
- Assembly of outboard joint boot
 - Wind vinyl tape from the tip end of the outboard joint shaft to the splined portion so that the boot may not be damaged during the fitting.
 - Fit the boot and a new boot band (smaller diameter side) on the outboard joint.



LFS00072-00070

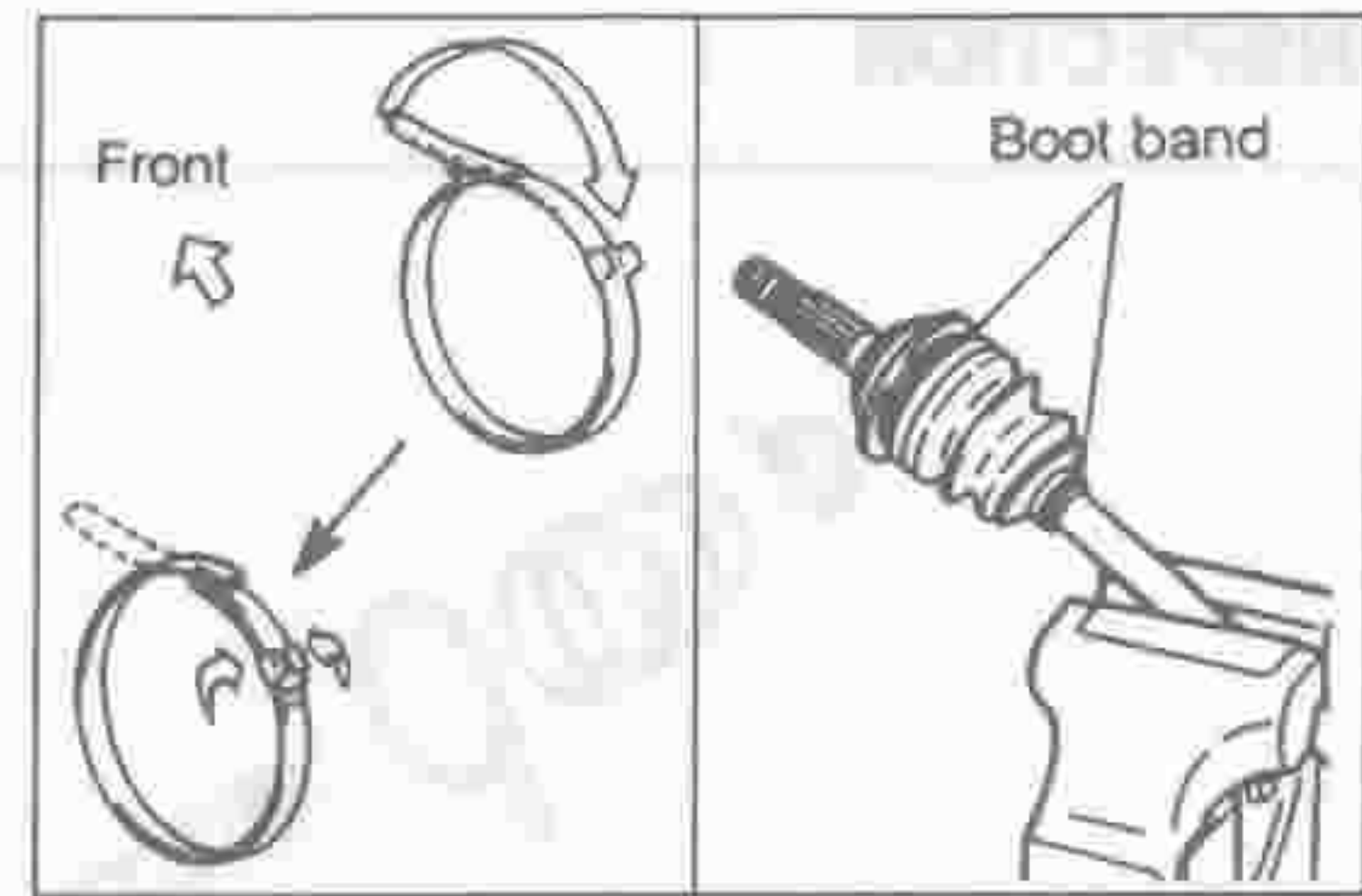
- Pack the outboard joint section with grease.

Grease to Be Used: NTN: Sunlight SW2, 65 - 85g
TK: Molilex No.2, 65 - 85 g



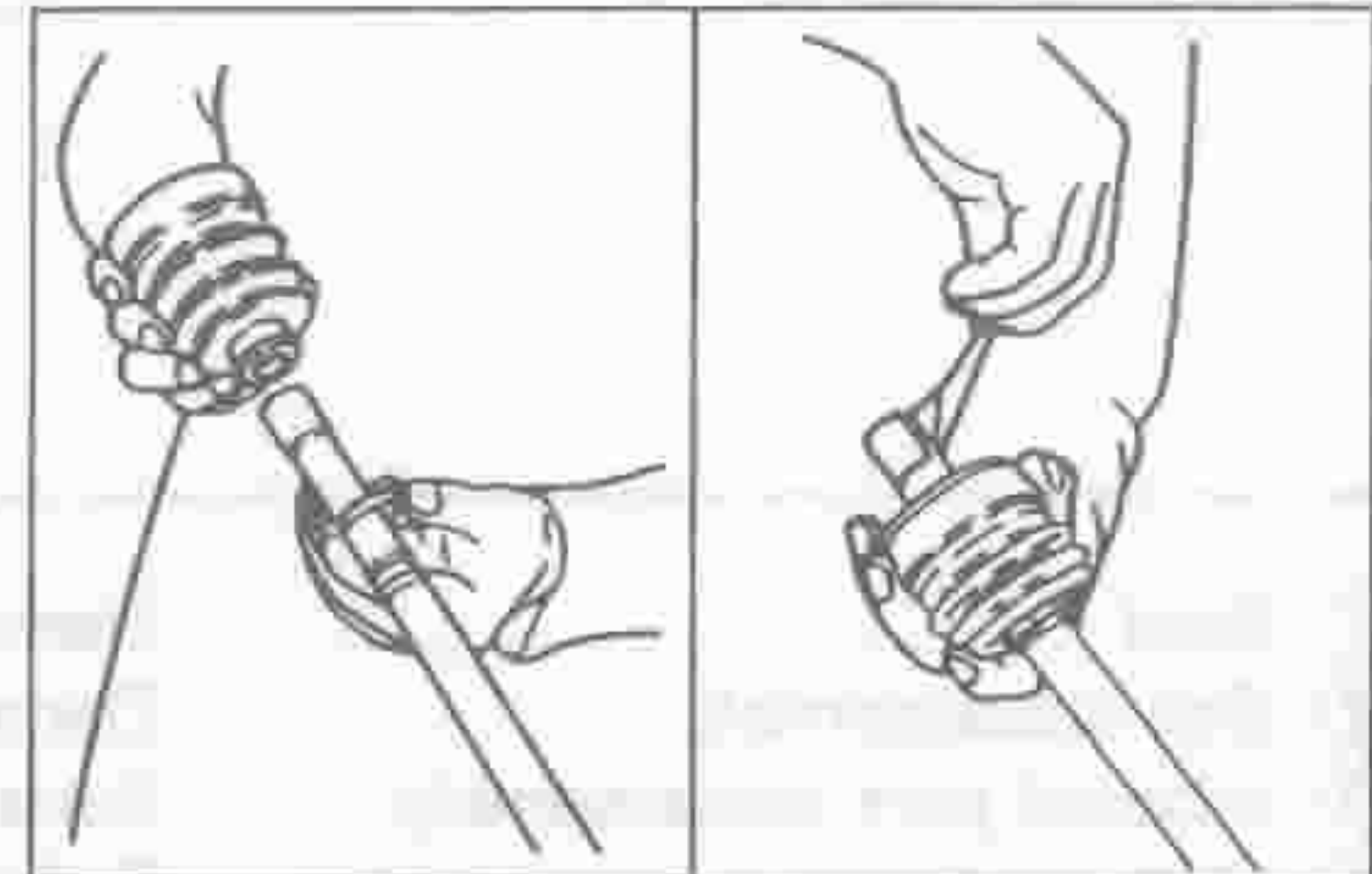
LFS00073-00071

3. Fit a new boot band (large diameter side) in place.



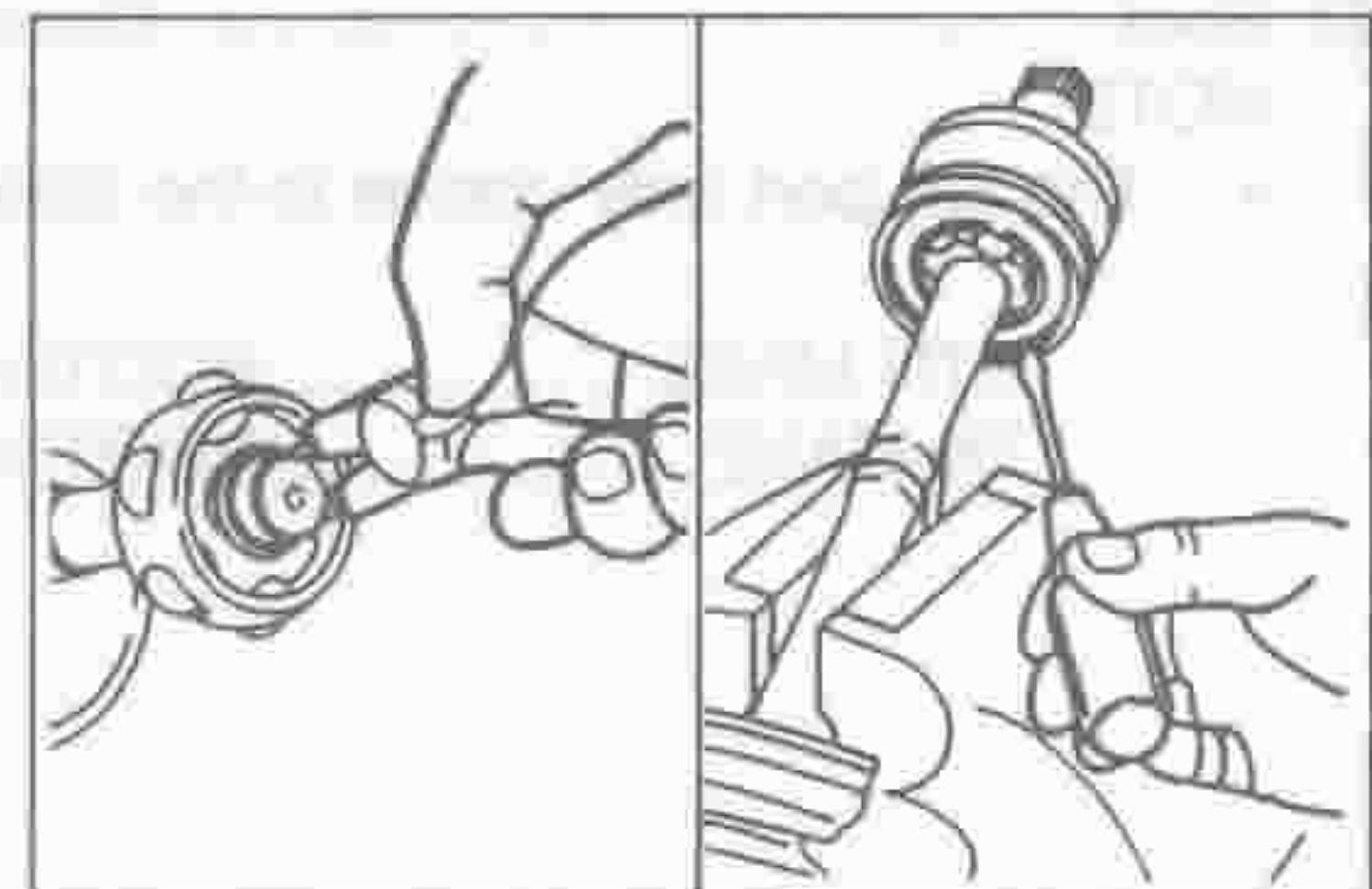
LFS00074-00072

4. Assembly of inboard joint boot
 - (1) Temporarily install the boot and new boot band (small diameter side) onto the outboard joint shaft.
 - (2) Remove the vinyl tape that was wound around the splined portion.



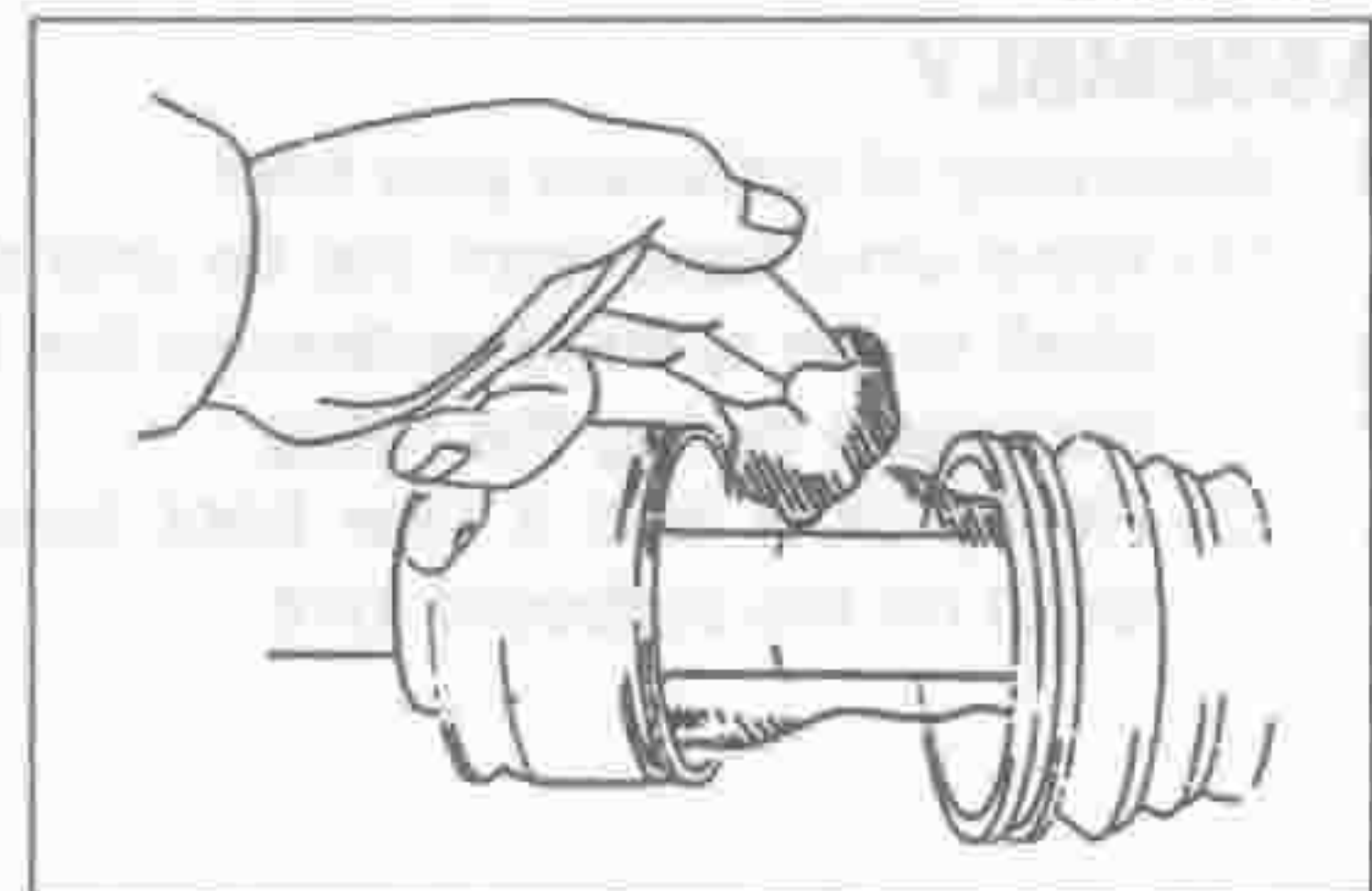
LFS00075-00073

5. Install the ball subassembly and secure it with the snap ring.
6. Install the ring.



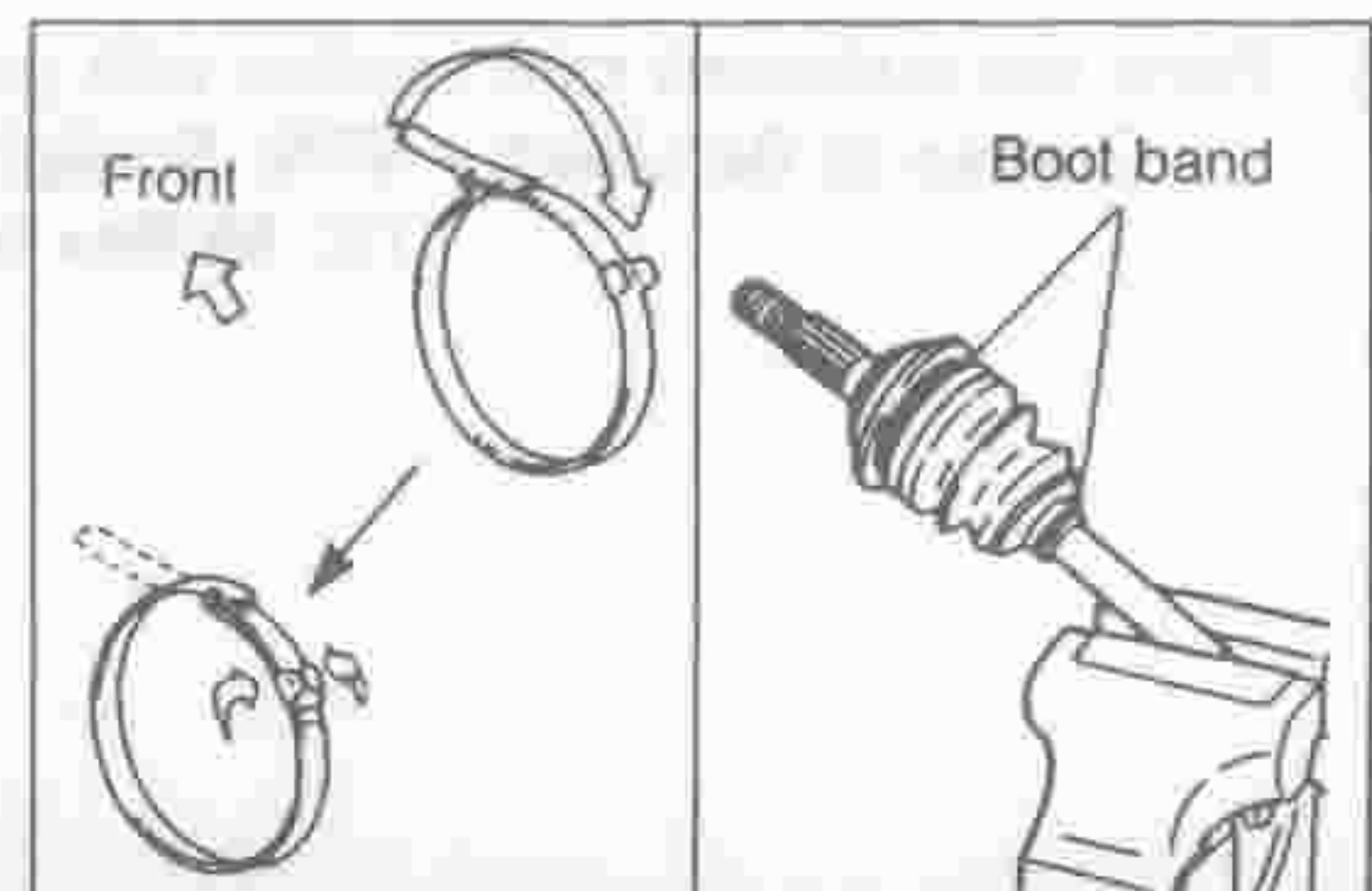
LFS00076-00074

7. Pack the inboard joint section with grease.
 Grease to Be Used: NTN: VU-3A702, 70 - 90g
 TK: Molilex No.2, 65 - 85g



LFS00077-00075

8. Fit a new boot band (large diameter side) in place.

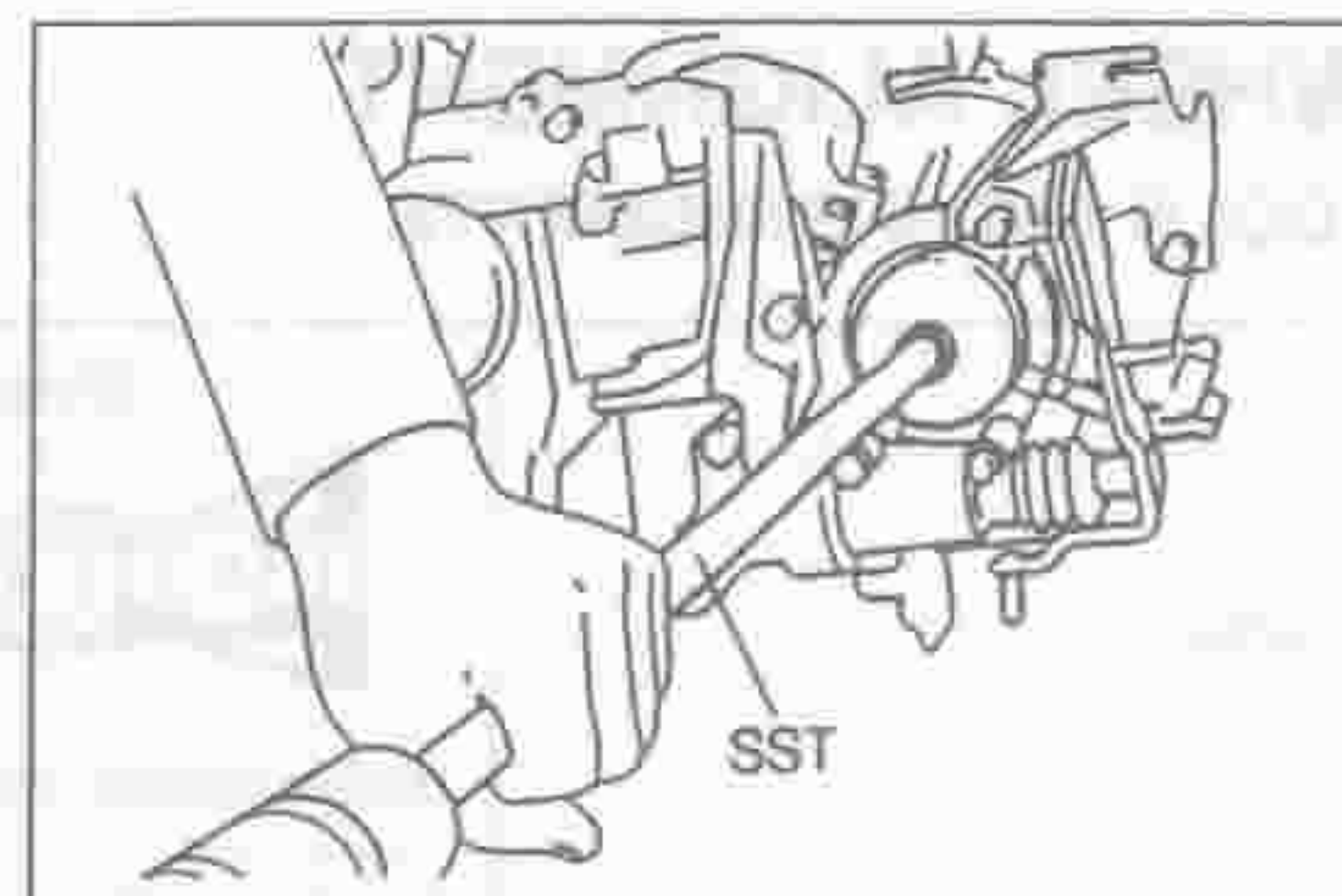


LFS00078-00076

INSTALLATION

1. Prior to assembling the front drive shaft, check the differential oil seal. Replace the oil seal if it exhibits any damage.

- (1) Remove the oil seal, using a screwdriver.
 - (2) Drive the oil seals into position, using the following SST.
- SST: 09517-87203-000 (Right side)
09517-87204-000 (Left side)



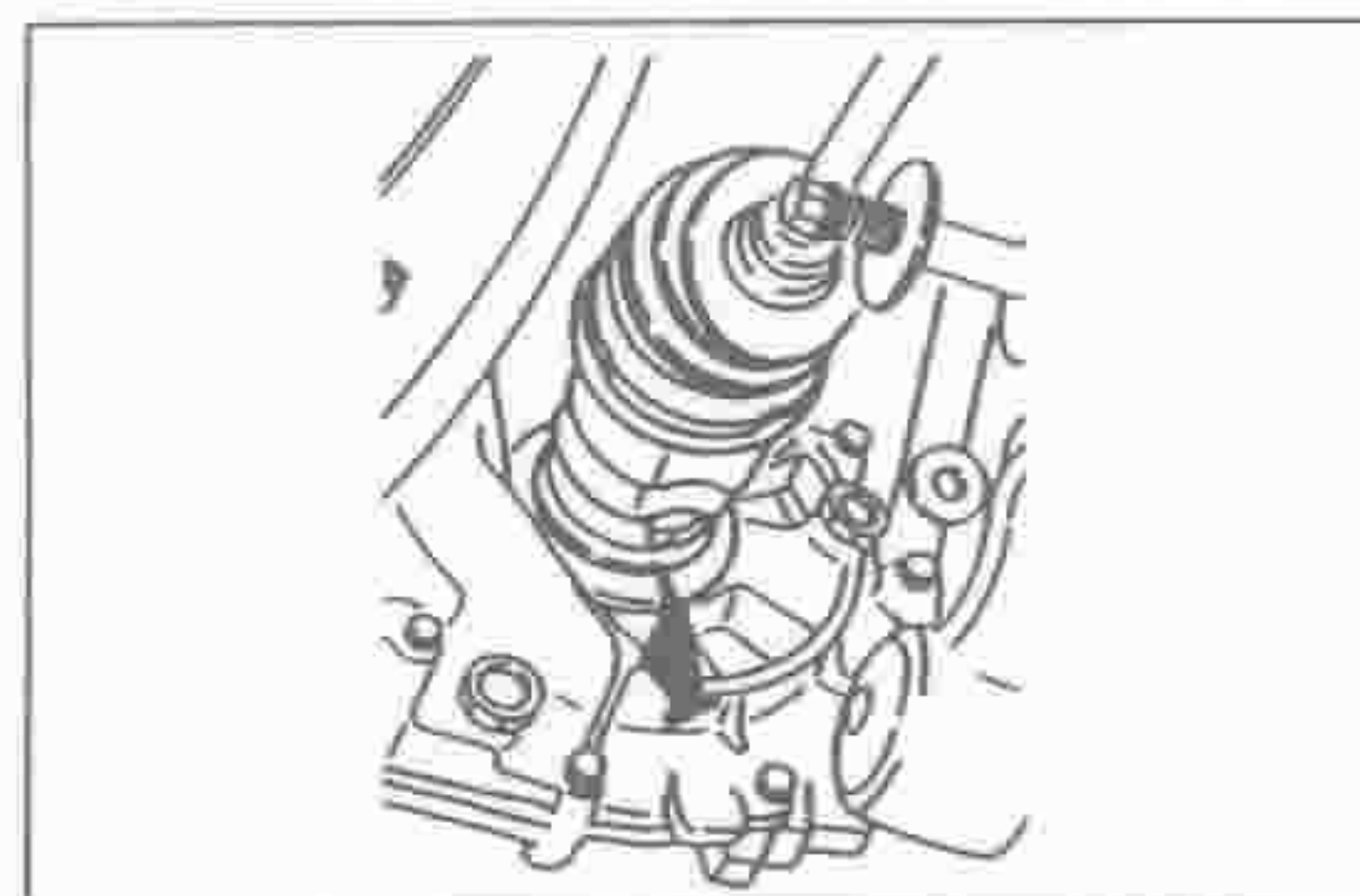
LFS00079-00077

2. Assembly of front drive shaft.

- (1) Apply chassis grease to the whole serrated section of the front drive shaft at the outboard joint side.
- (2) Insert the inboard joint section of the front drive shaft into the transaxle.

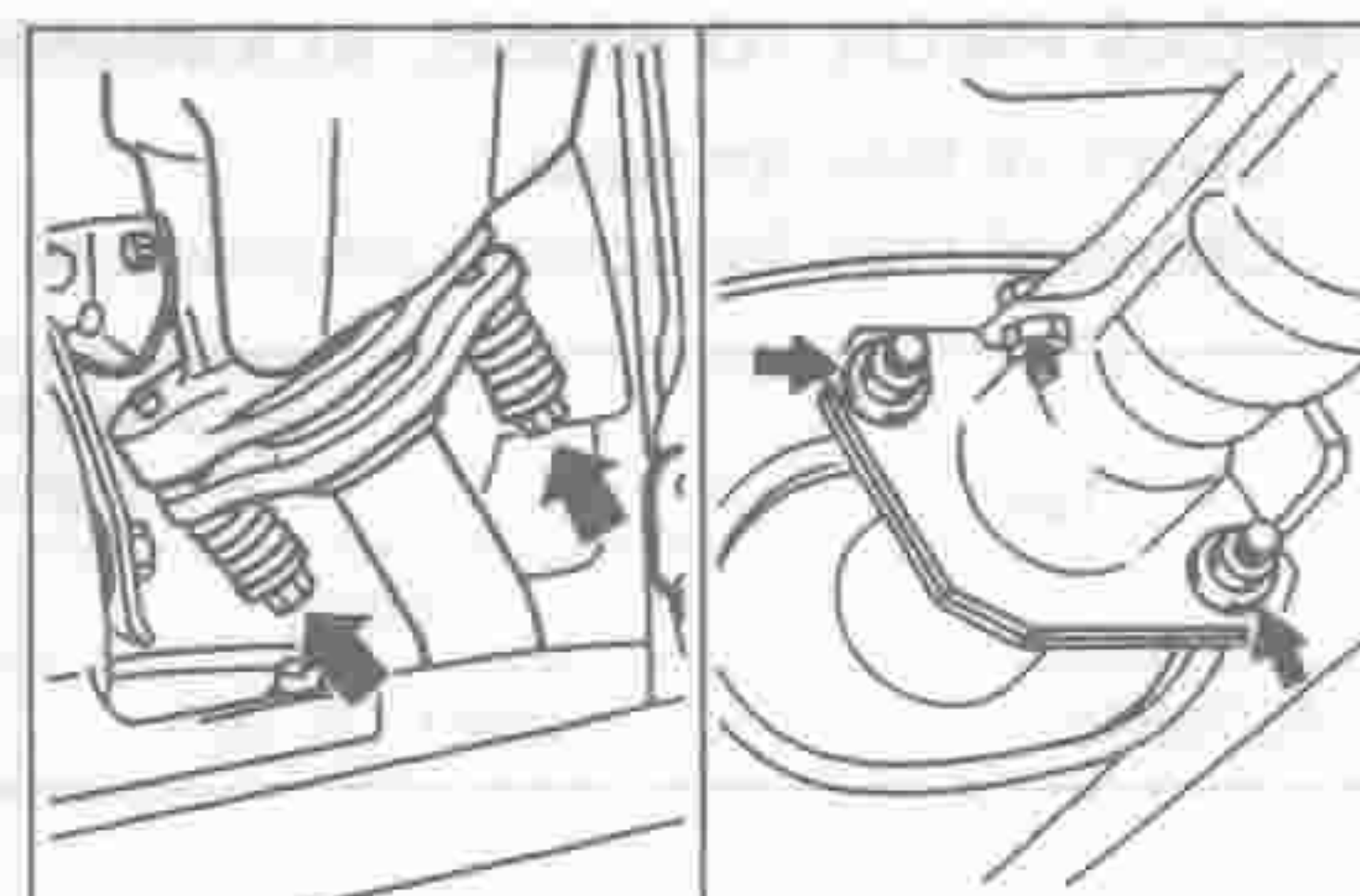
NOTE:

- Apply MP grease to the lip section of the oil seal.
- Be very careful not to damage the oil seal during the installation.



LFS00080-00078

3. Install the front exhaust pipe. (Refer to BO section)
4. Install the steering knuckle.
5. Temporarily tighten the new bolt and new nut of the ball joint.
(Refer to FS-6.)
6. Attach the tie rod end to the steering knuckle.
(Refer to FS-7.)
7. Install the front axle hub. (Refer to FS-7.)
8. Install the disc brake caliper. (Refer to FS-8.)



LFS00081-00079

9. Install the wheel.
10. Lower the vehicle. Rock the front suspension of the vehicle in up and down direction two or three times so as to settle the suspension.

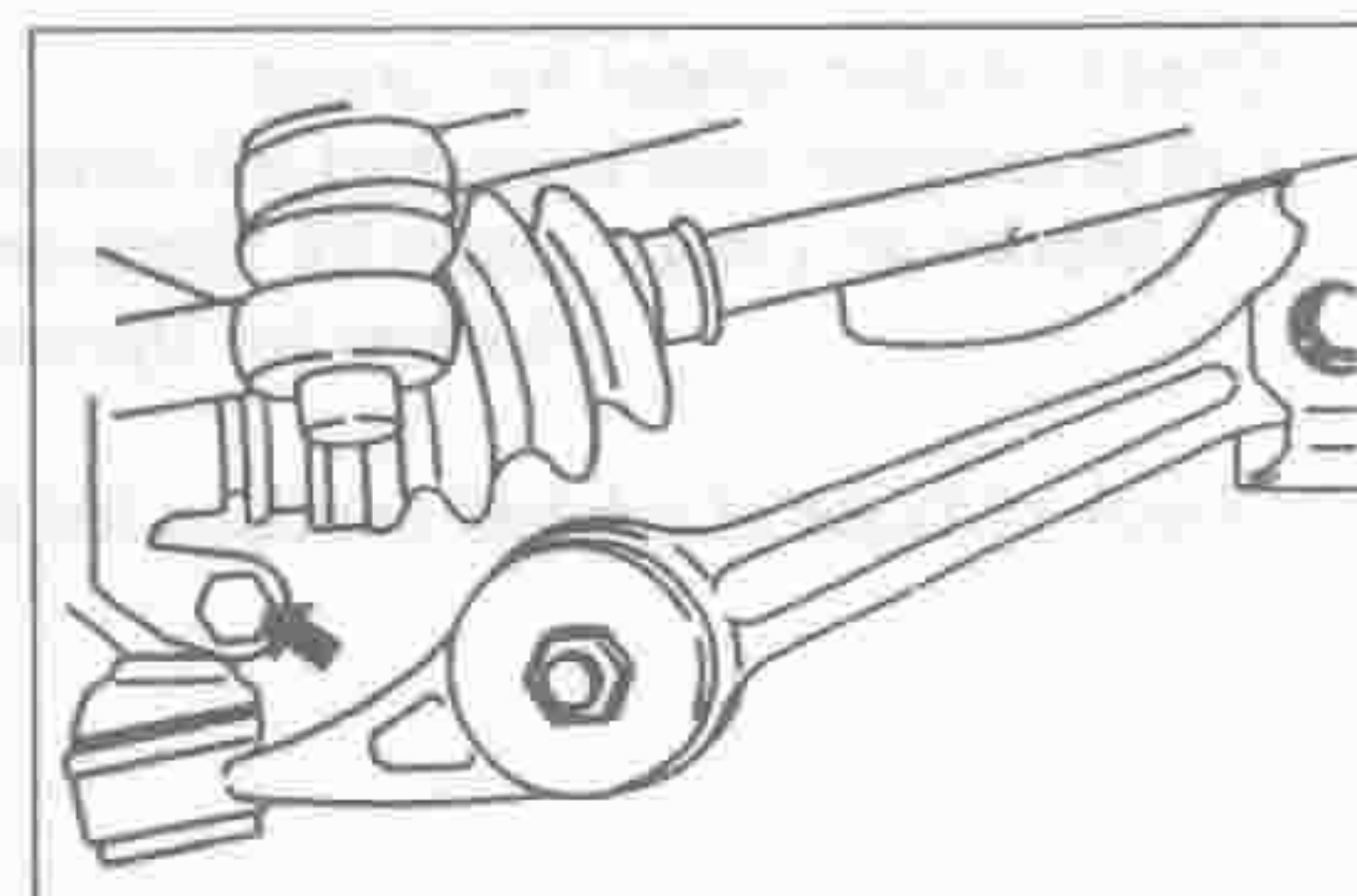
With the vehicle in an unloaded state (lower arm is horizontal), tighten the following section.

- (1) Lower ball joint

Tightening Torque:

63.7 - 88.3 N·m

(6.5 - 9.0 kgf-m, 47.0 - 65.1 ft-lb)



LFS00082-00080

11. Front wheel alignment inspection and adjustment.
(See page FS-22.)

WHEEL ALIGNMENT TOOLS AND INSTRUMENTS

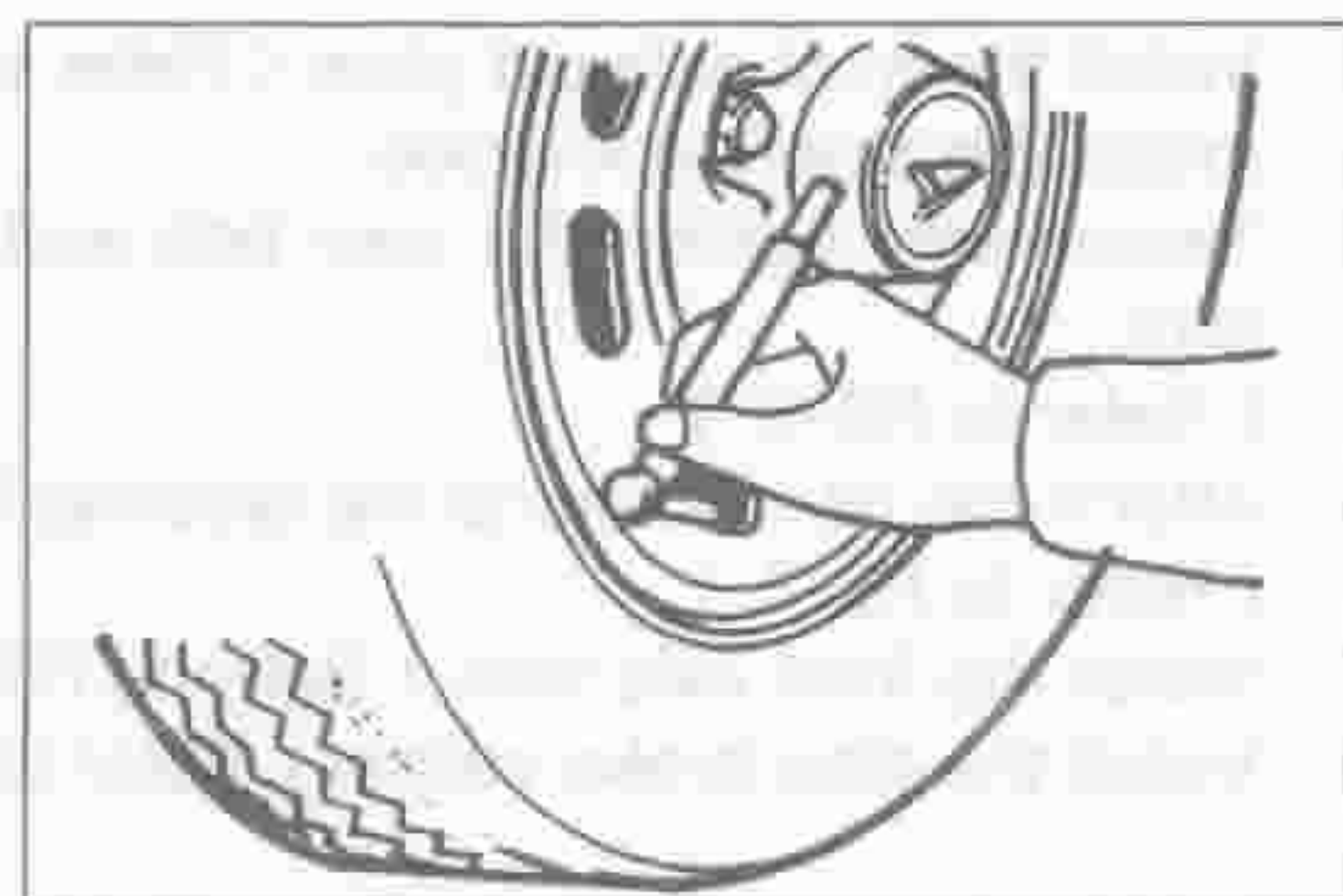
	Shape	Nomenclature	Use
Tools		CCK gauge compensator (CCK-IN) Supplied by Banzai, Ltd.	Attachment for camber, caster and kingpin gauge
	Brake pusher, hexagon wrench key (width across flats: 8 mm)		
Instruments	Turning radius gauge, tire pressure gauge, camber, caster, kingpin gauge and dial gauge		

LFS00083-00081

CHECKS PRIOR TO WHEEL ALIGNMENT MEASUREMENT

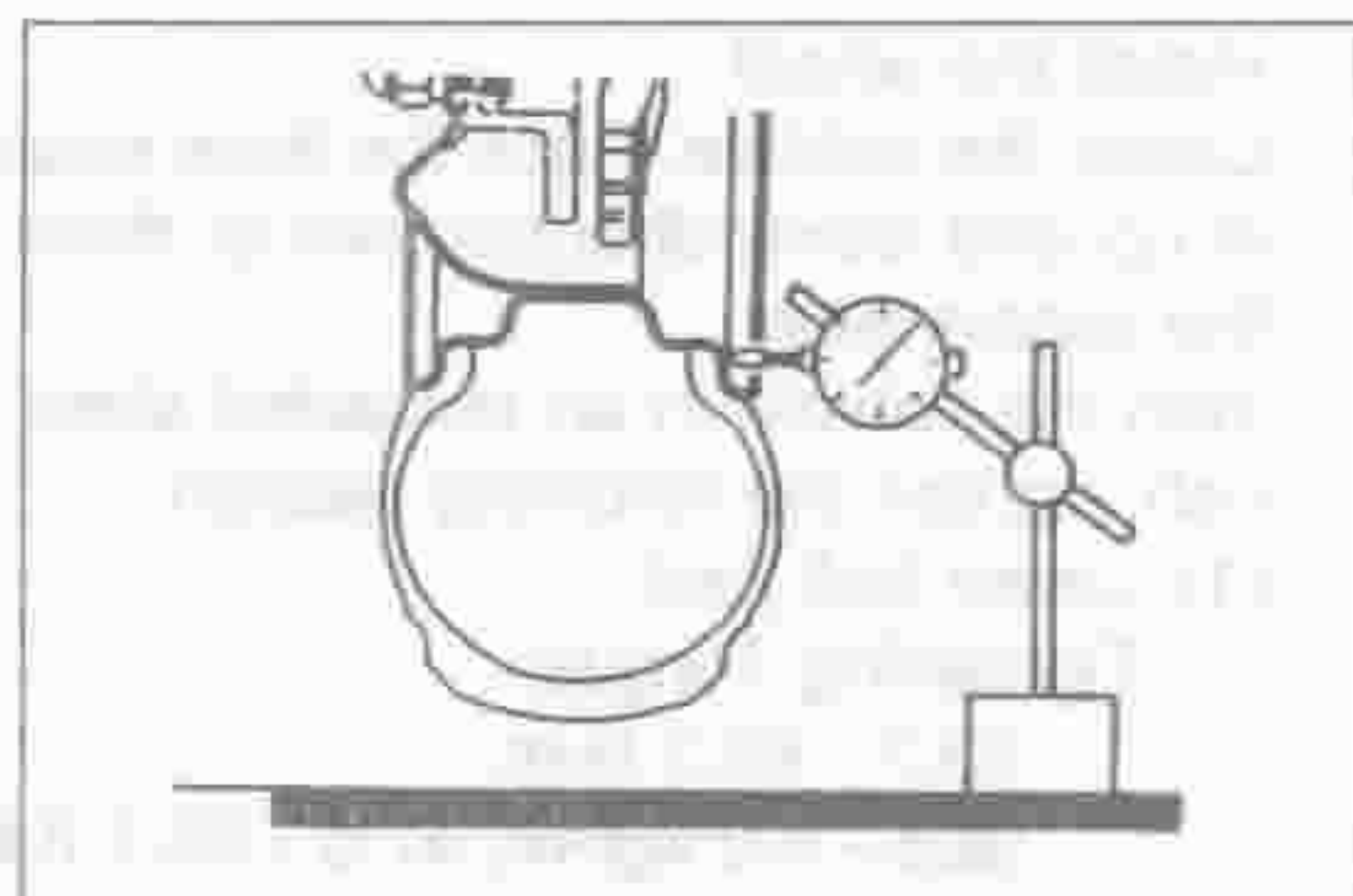
1. Check of tires for wear
2. Check of tires for correct air pressure

Tire	Air inflation pressure kPa (kgf/cm ² , psi)	
	Front	Rear
145/70R12	180 (1.8, 26)	180 (1.8, 26)



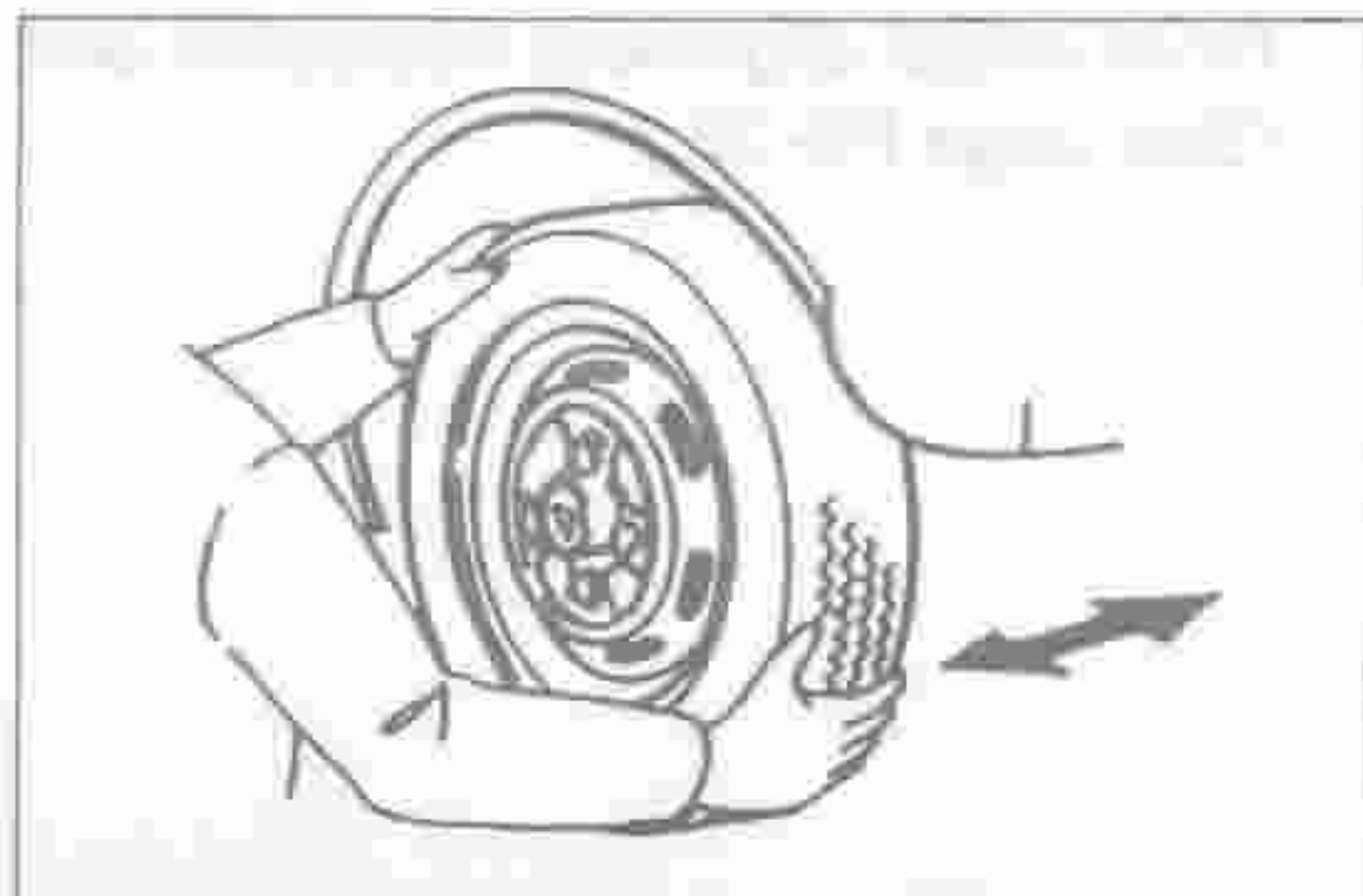
LFS00084-00082

3. Check of disc wheel for runout
(Up-and-down and right-and-left directions)
Maximum Limit: 2mm for Right-and Left
1.4mm for Up-and-Down
4. Check of bolts of related sections for tightened condition



LFS00085-00083

5. Check of related sections for excessive amount of play
 - (1) Jack up the vehicle. Alternately push and pull the upper and lower parts of each tire. Ensure that the tire exhibits no excessive play.
 - (2) If the tire exhibits an excessive amount of play, perform the following check while the brake pedal is being depressed.
 - The excessive amount of play disappear;
This indicates that the front wheel bearing is loose.
 - The excessive amount of play still persists;
This indicates that the knuckle section, axle carrier section or suspension is loose.



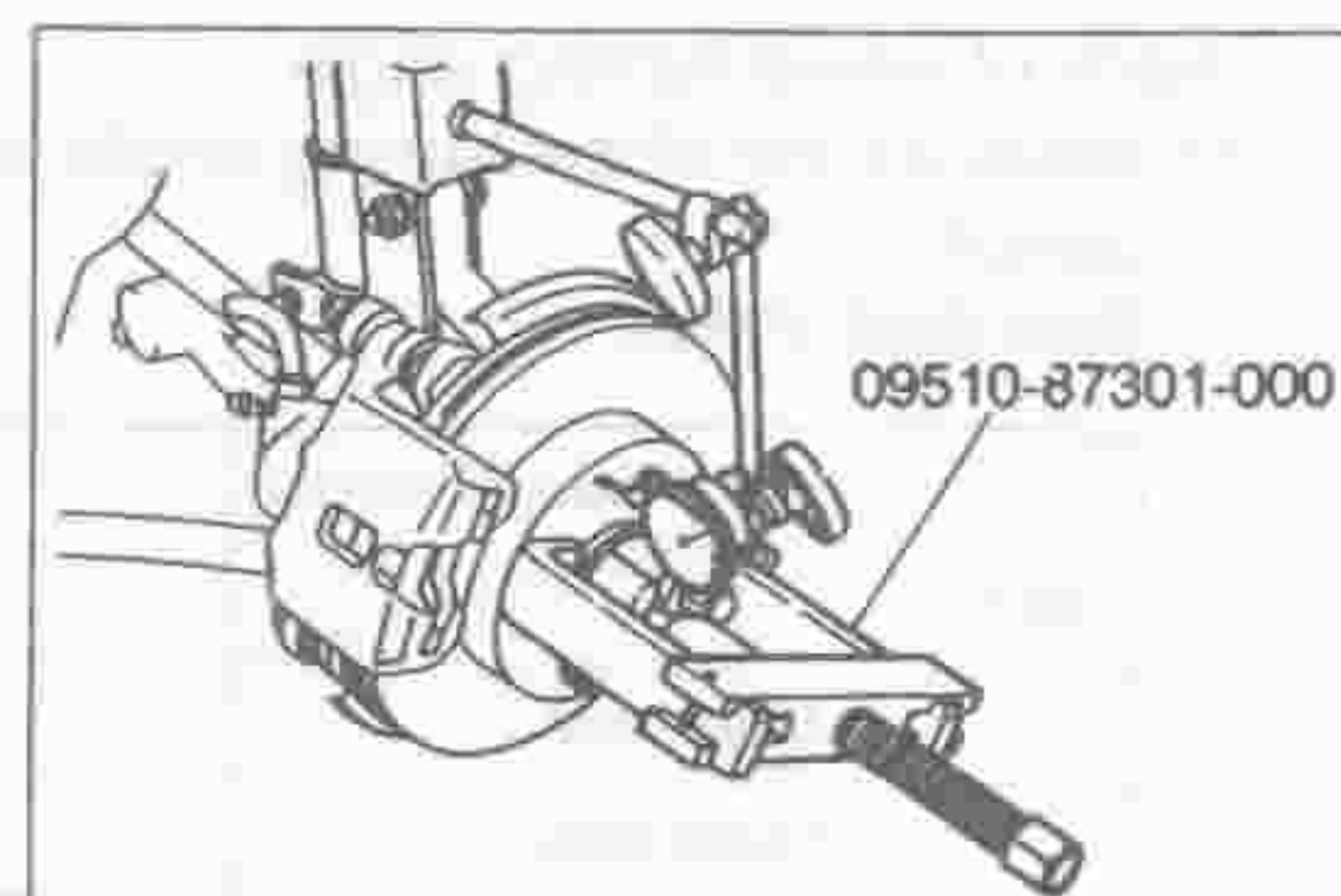
LFS00086-00084

- (3) If the wheel bearing is judged as being loose, proceed to check the play in the axial direction, using the following SST and a dial gauge.

SST: 09510-87301-000

Specified Value: Not to exceed 0.2 mm (0.008 inch)

Maximum Limit: Specified value 0.5 mm (0.02 inch)



LFS00087-00085

Wheel alignment specified value

Item		Vehicle model	M/T, A/T
Front wheel alignment	Camber angle		$0^{\circ} \pm 45'$
	Caster angle		$2^{\circ}50' \pm 1^{\circ}$
	Kingpin angle		$12^{\circ}00' \pm 1^{\circ}$
	Toe-in	mm (inch)	0 ± 2 (0 ± 0.08)
	Sideslip	mm (inch)	0 ± 5 (0 ± 0.2)
	Wheel turning angle	Inner	$37^{\circ}30' \pm 2^{\circ}$
		Outer	$33^{\circ}10' \pm 2^{\circ}$

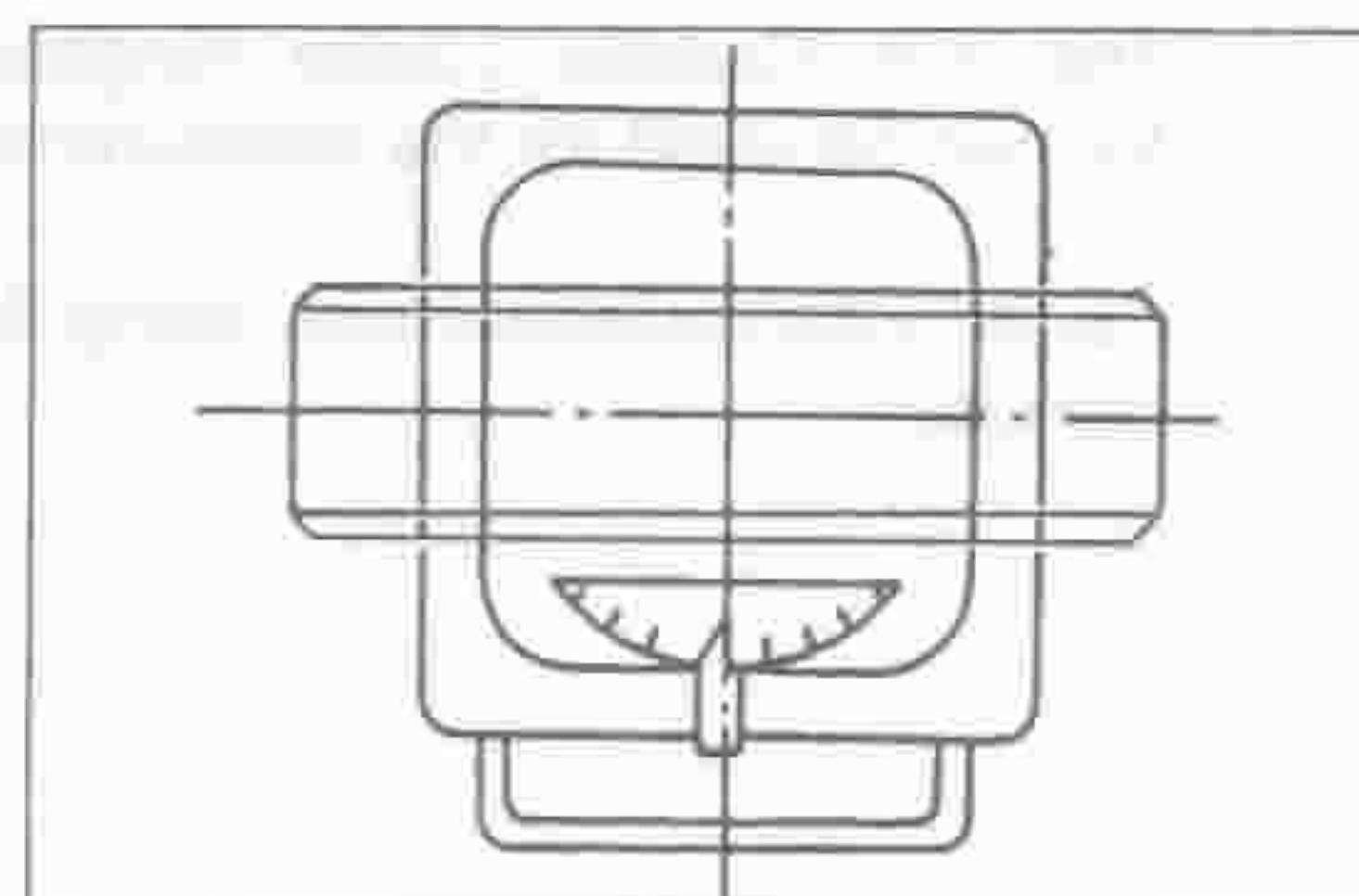
LFS00088-00000

CHECKS AND ADJUSTMENTS OF FRONT WHEEL ALIGNMENT

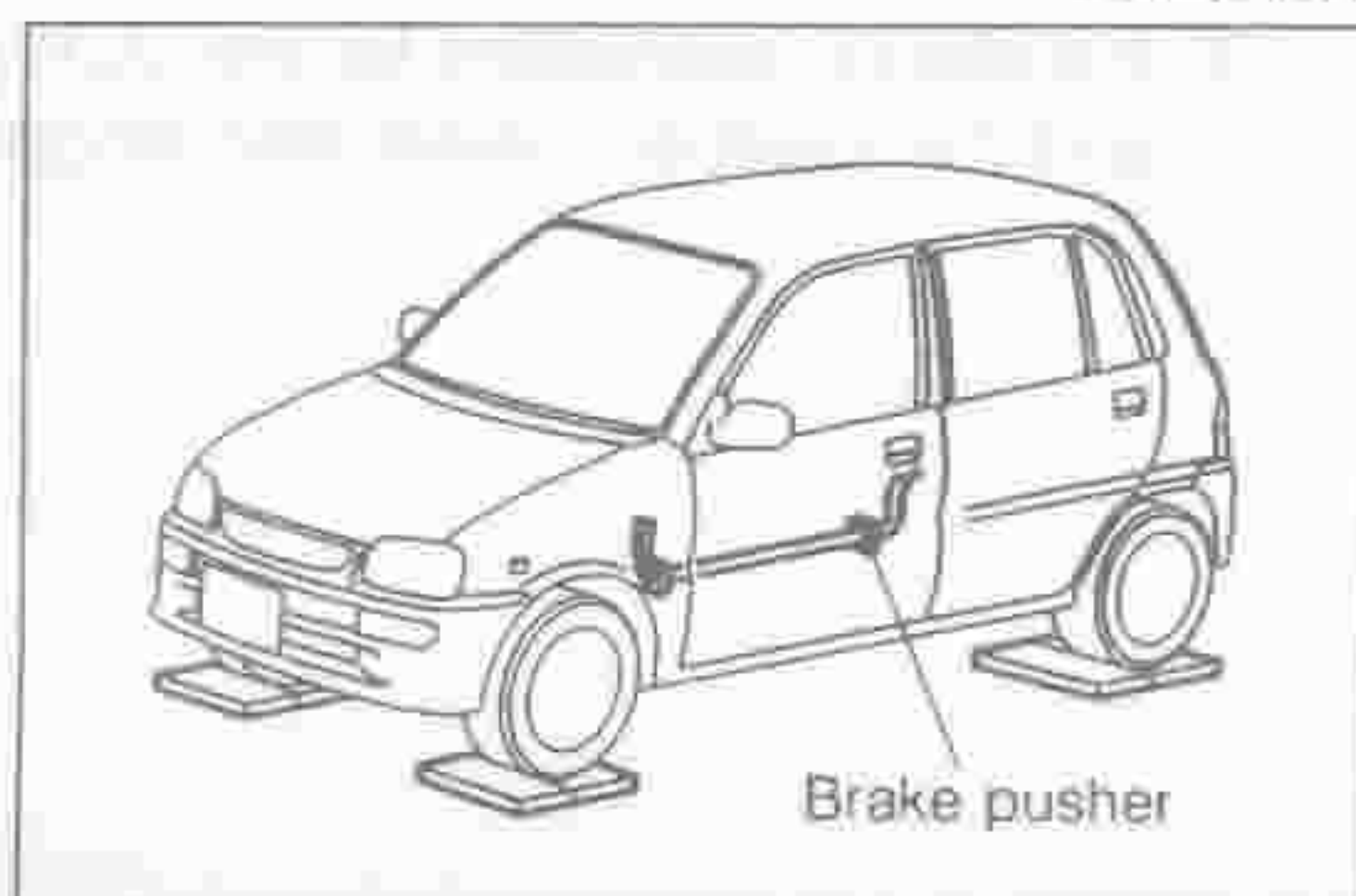
- Turning radius gauge set
 - Set the turning radius gauge to the zero point. Proceed to lock the gauge.
 - Place the vehicle on the gauge in such a way that the center of the tire-to-floor contact surface may be aligned with the center of the turning radius gauge.

NOTE:

- Perform the check on a level floor.
- Then a portable type turning radius gauge is employed, a plate having the same thickness as that of the gauge should be placed under the rear wheel so that the vehicle levelness may be maintained.
- Make sure that the wheels are in their straight-ahead conditions.
- Keep the vehicle in an unloaded state. In order to prevent the vehicle from moving during the check, be sure to apply the foot brake, using a brake pedal pusher or the like.
- Remove the stop lamp fuse so as to prevent the stop lamp from staying on.



LFS00089-00085



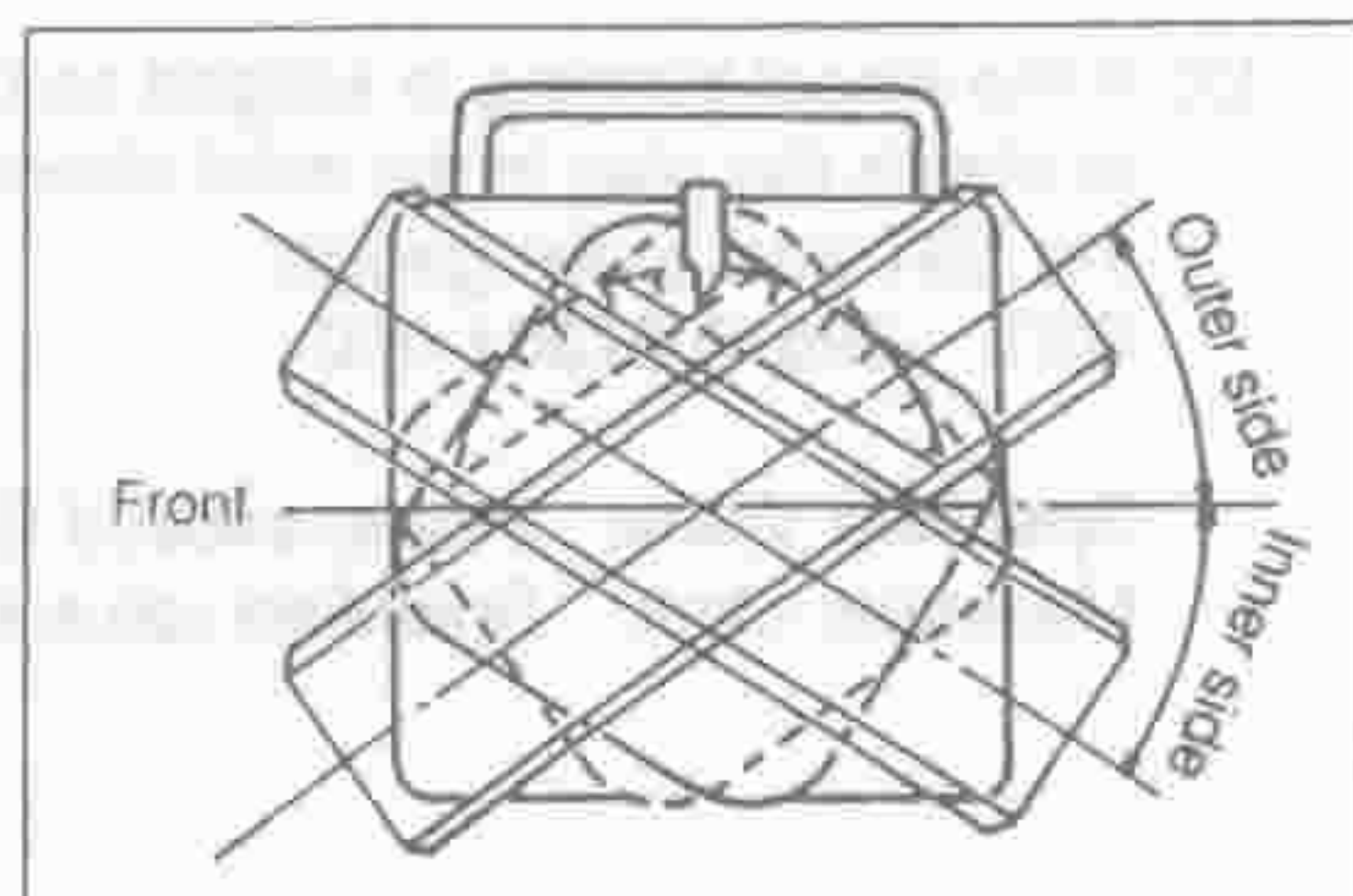
LFS00090-00087

2. Check of wheel turning angle

(1) Measure the wheel turning angle, using a turning radius gauge.

Specified Value:

Item	Vehicle Model	M/T, A/T
Inner side		$37^{\circ}30' \pm 2^{\circ}$
Outer side		$33^{\circ}10' \pm 2^{\circ}$



LFS00091-00088

(2) If the wheel turning angle differs between the right and left sides, correct the turning angle.

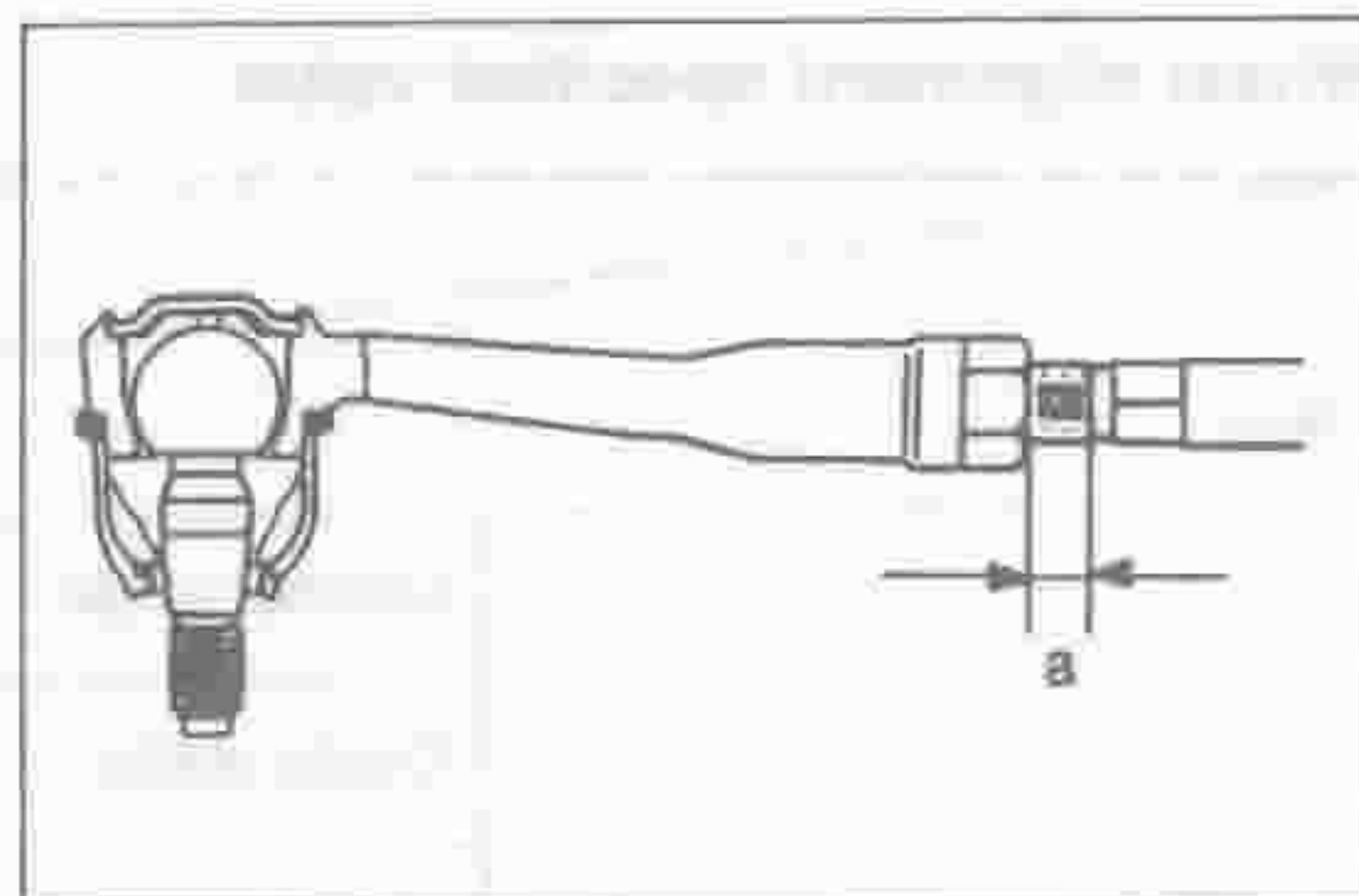
3. Correction of wheel turning angle

(1) Loosen the lock nuts of the tie rod ends.

(2) Make the length (a) indicated in the right figure equal between the right and left sides.

NOTE:

- Make sure that the boot is not twisted during this correction.
- Make sure that the tie rods at the right and left sides are turned by the same amount.



LFS00092-00089

4. Check of camber, caster and kingpin angles

(1) Perform the measurement, using the following SST (attachment).

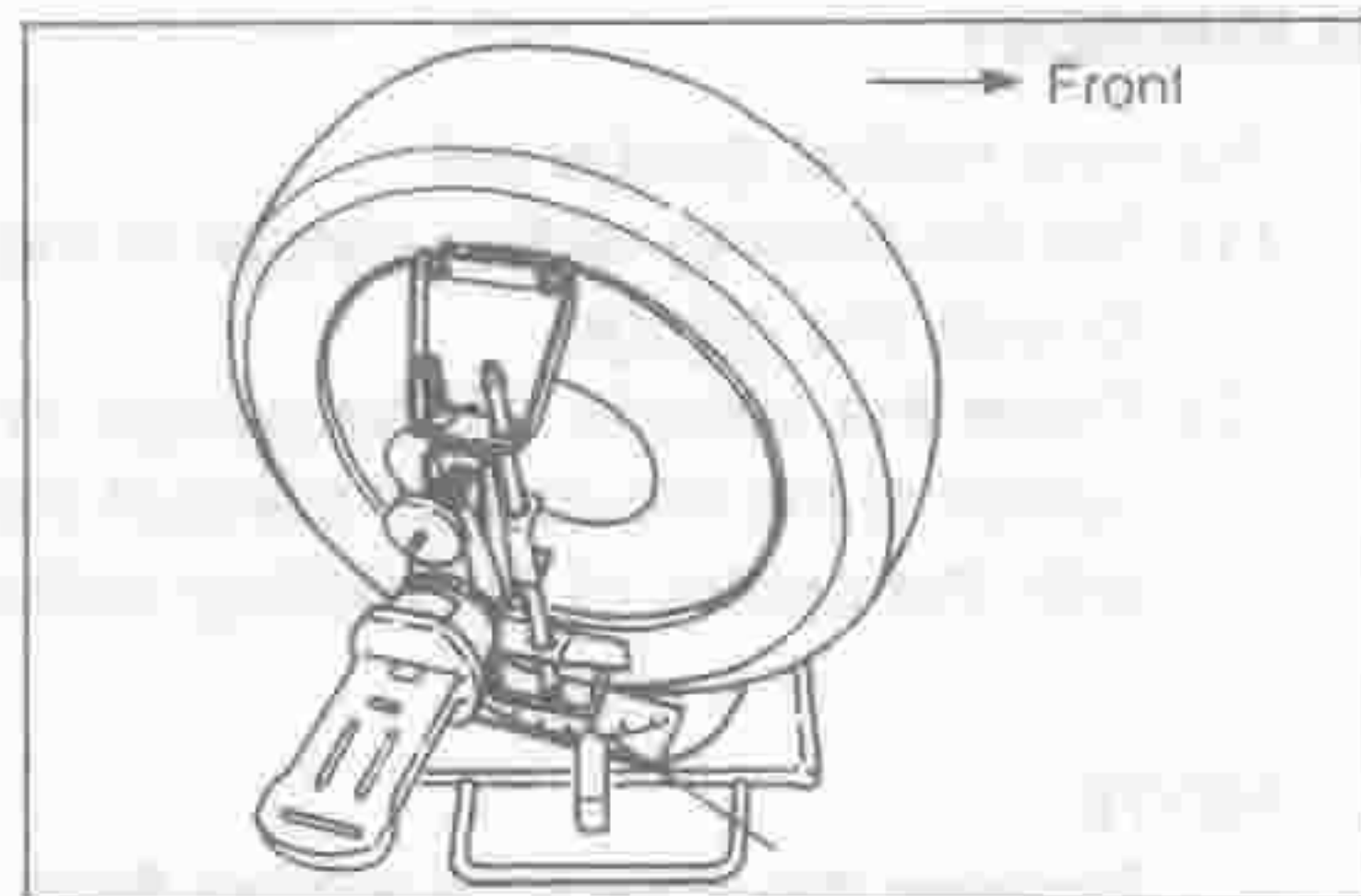
SST: 09722-87702-000



LFS00093-00090

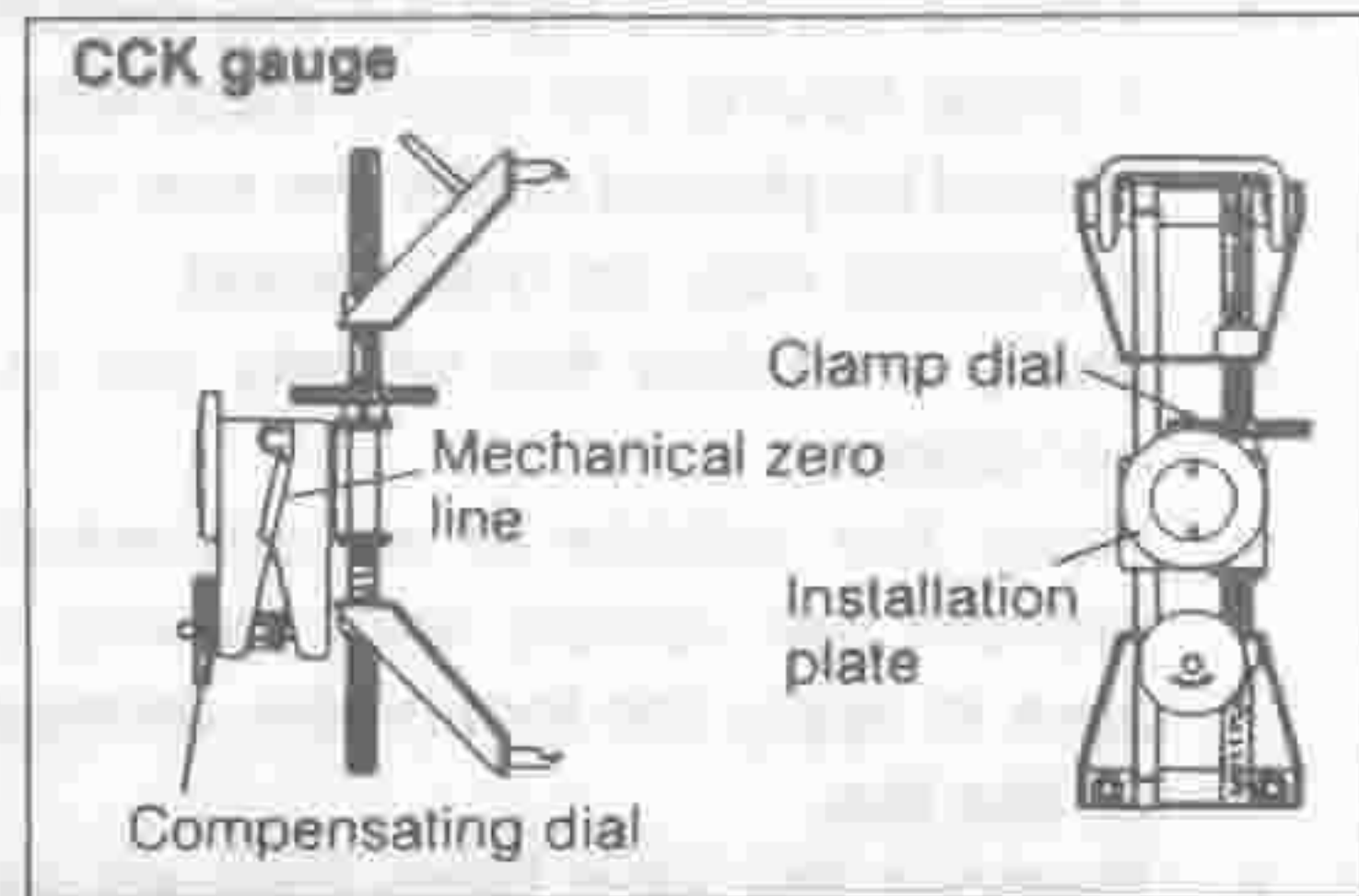
The CCK (Camber, Caster, Kingpin) gauge compensator can be used for the measurement.

(2) Perform the measurement, using the CCK gauge compensator.



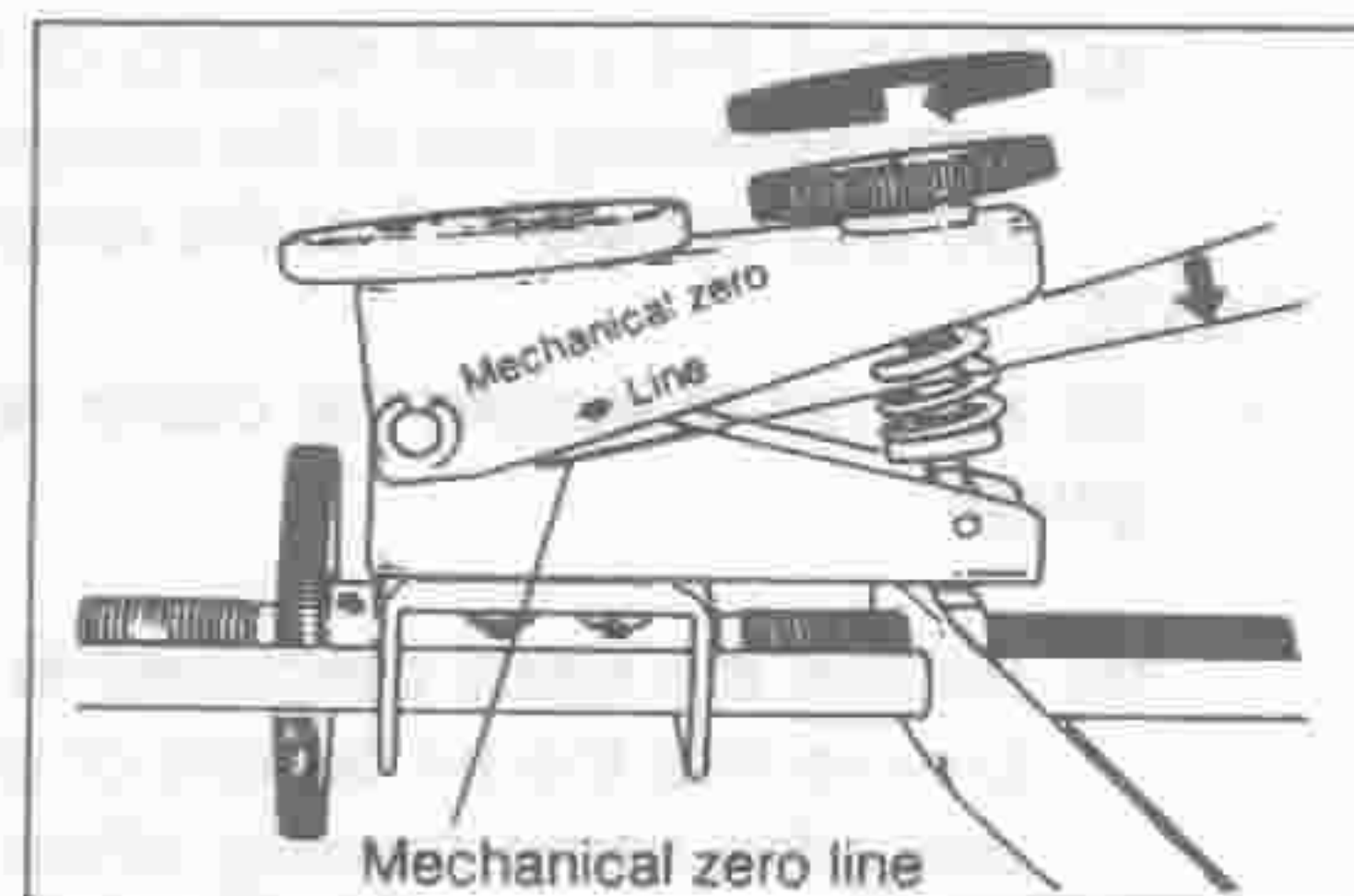
LFS00094-00091

(3) Installation procedure for the CCK gauge compensator, and the camber, caster and kingpin gauge.



LFS00095-00092

- (a) Jack up the vehicle.
- (b) Before installing the CCK gauge to the wheel, set the CCK gauge compensator to the mechanical zero line by turning the compensating dial of the compensator.

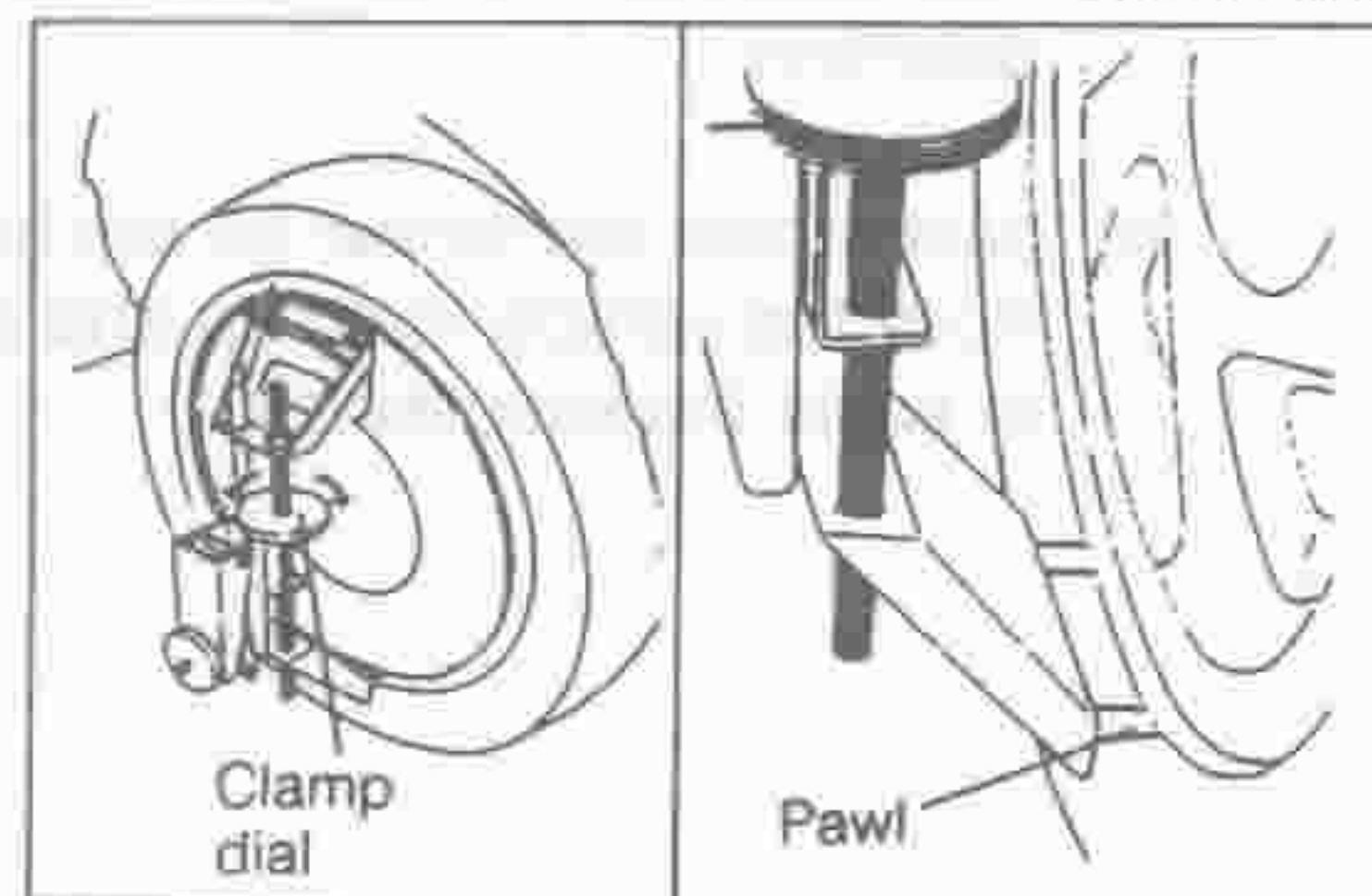


LFS00096-00093

- (c) While turning the clamp dial of the CCK gauge compensator, hook the four pawls to the wheel edges securely. While pushing the compensator, lock the compensator positively by turning the clamp dial.

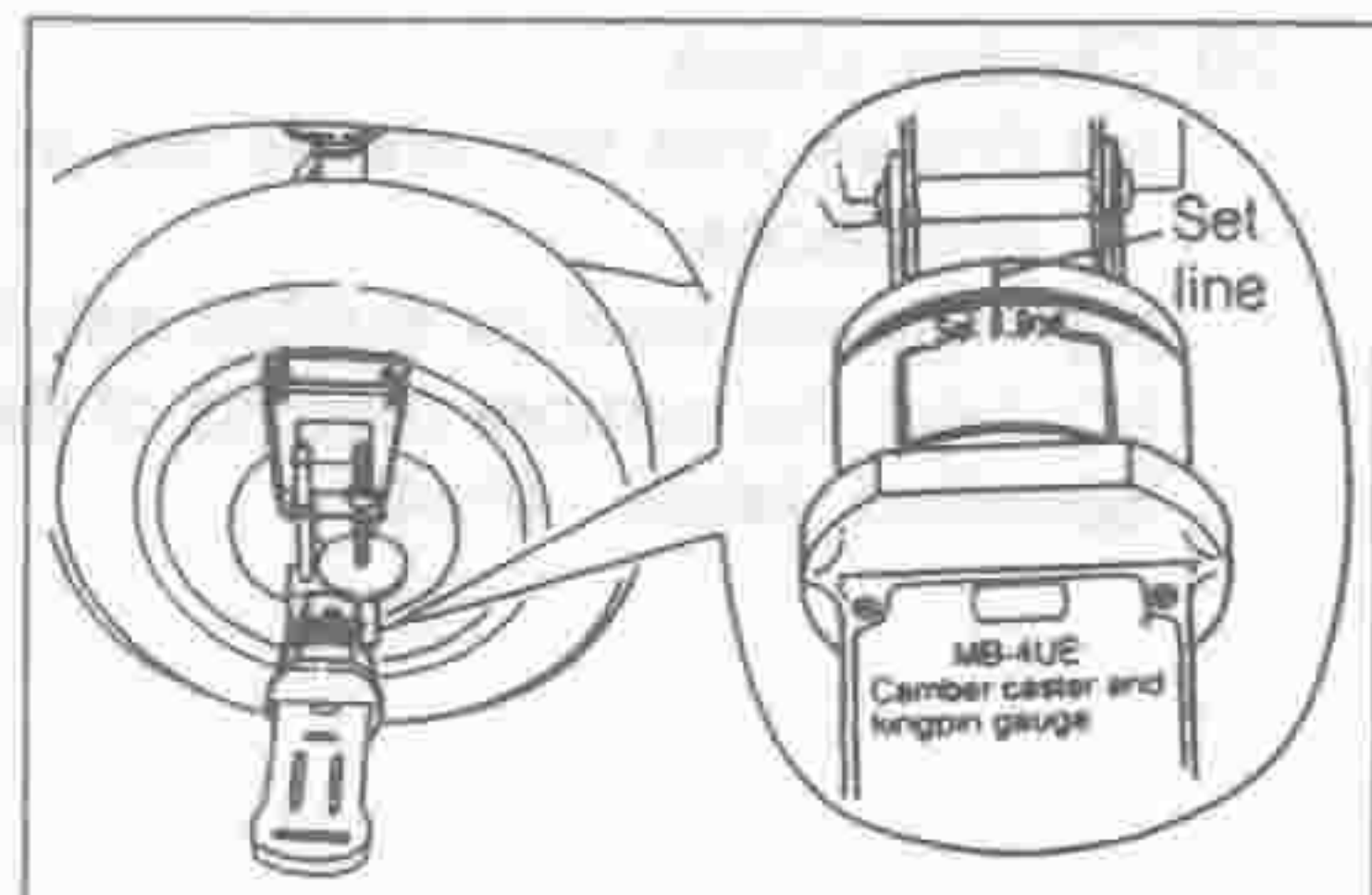
NOTE:

- In order to prevent the wheel edges from being scratched, affix tapes on the wheel edge sections to which the four pawls of the compensator are hooked.



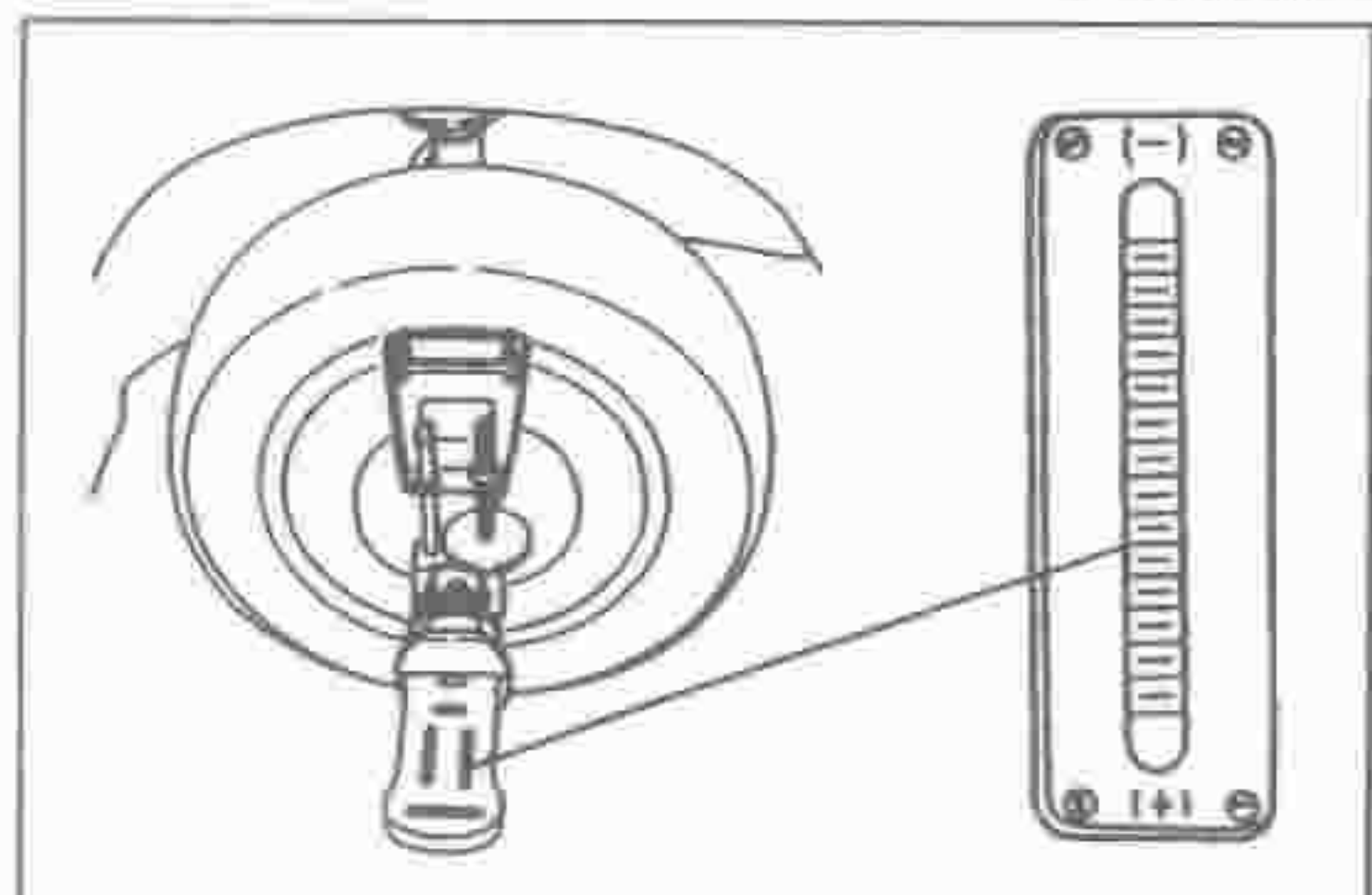
LFS00097-00094

- (d) Set the camber caster and kingpin gauge to the installation plate of the CCK gauge compensator. At this point, align the lines on the gauge and compensator with each other.



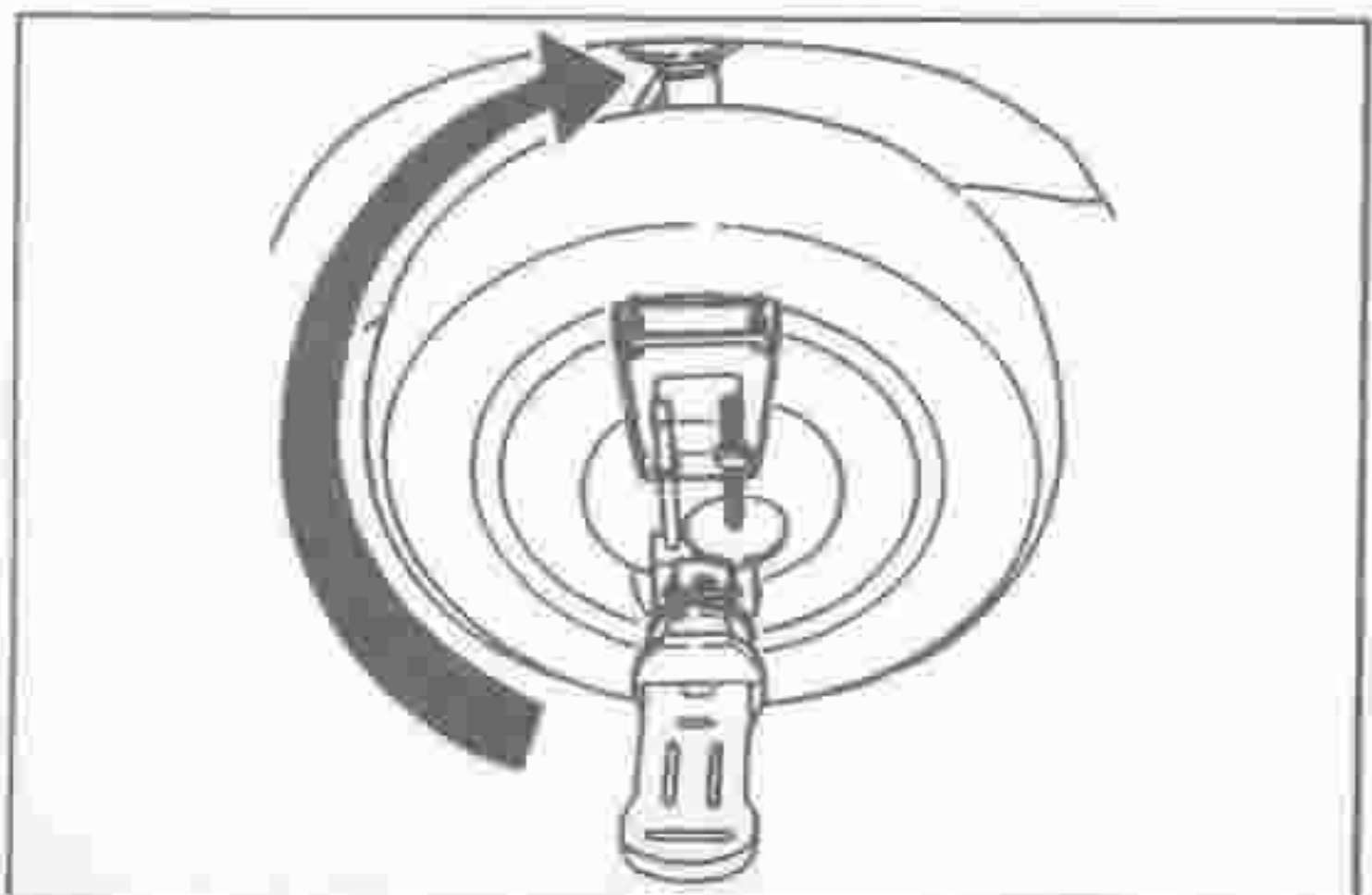
LFS00098-00095

- (e) Turn the wheel so that the level air bubble in the gauge comes to the central position. At this position, turn the caster adjusting screw of the gauge so that the caster air bubble may be aligned with the graduation zero position.



LFS00099-00096

- (f) Turn the wheel 180 degrees so that the gauge may be turned over. Proceed to align the set lines on the gauge and compensator with each other. Next, turn the wheel so that the level air bubble in the gauge comes to the central position.

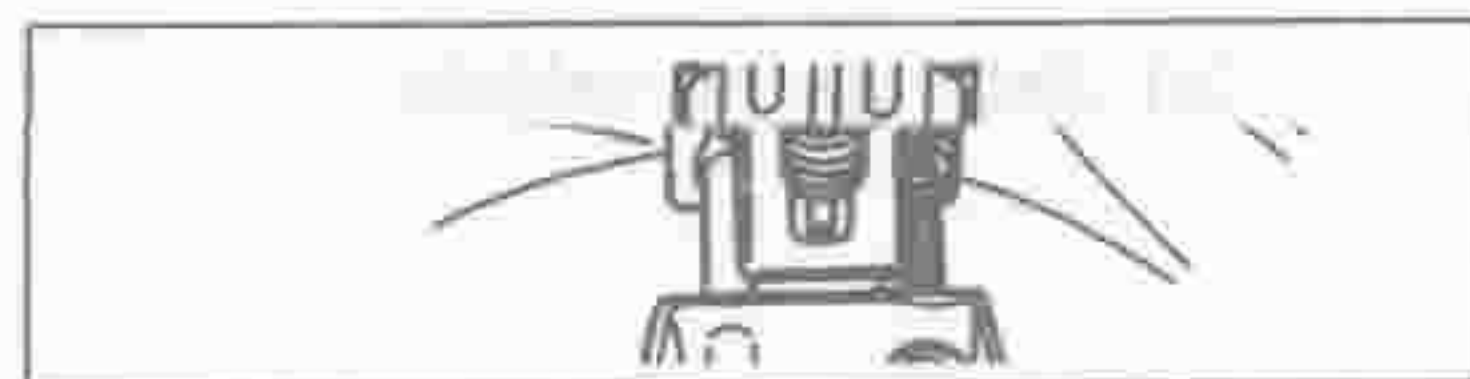


LFS00100-00097

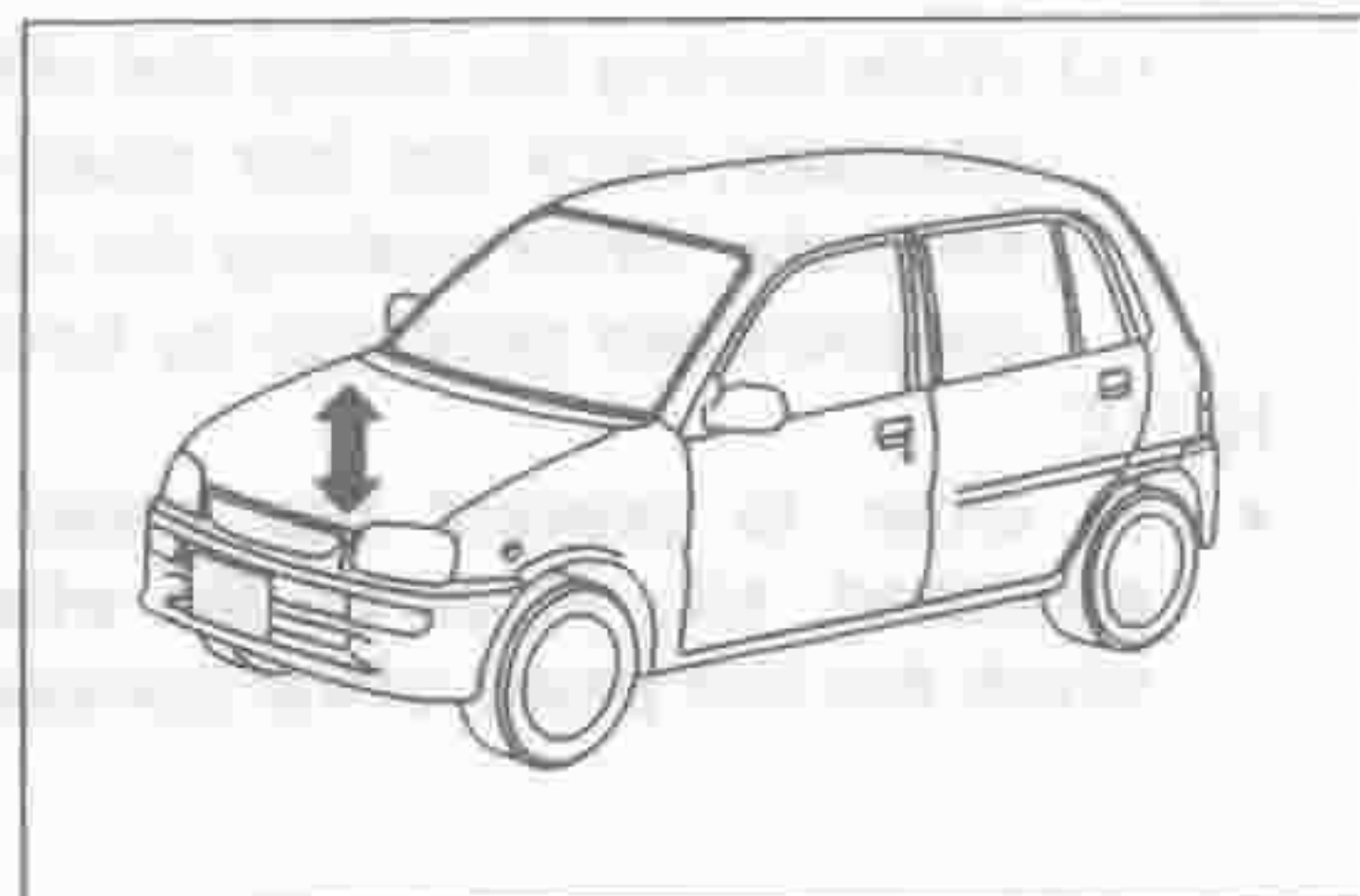
- (g) Record the caster reading of the gauge. Turn the wheel.
- (h) Repeat the steps described in (f) and (g).

Ensure that the air bubble of the caster gauge registers the same reading when the wheel is turned 180 degrees in a normal direction and in a reversed direction.

- (i) Jack down the wheel on the turning radius gauge. Rock the vehicle in an up-and-down direction so as to settle the suspension.



LFS00101-00098



LFS00102-00099

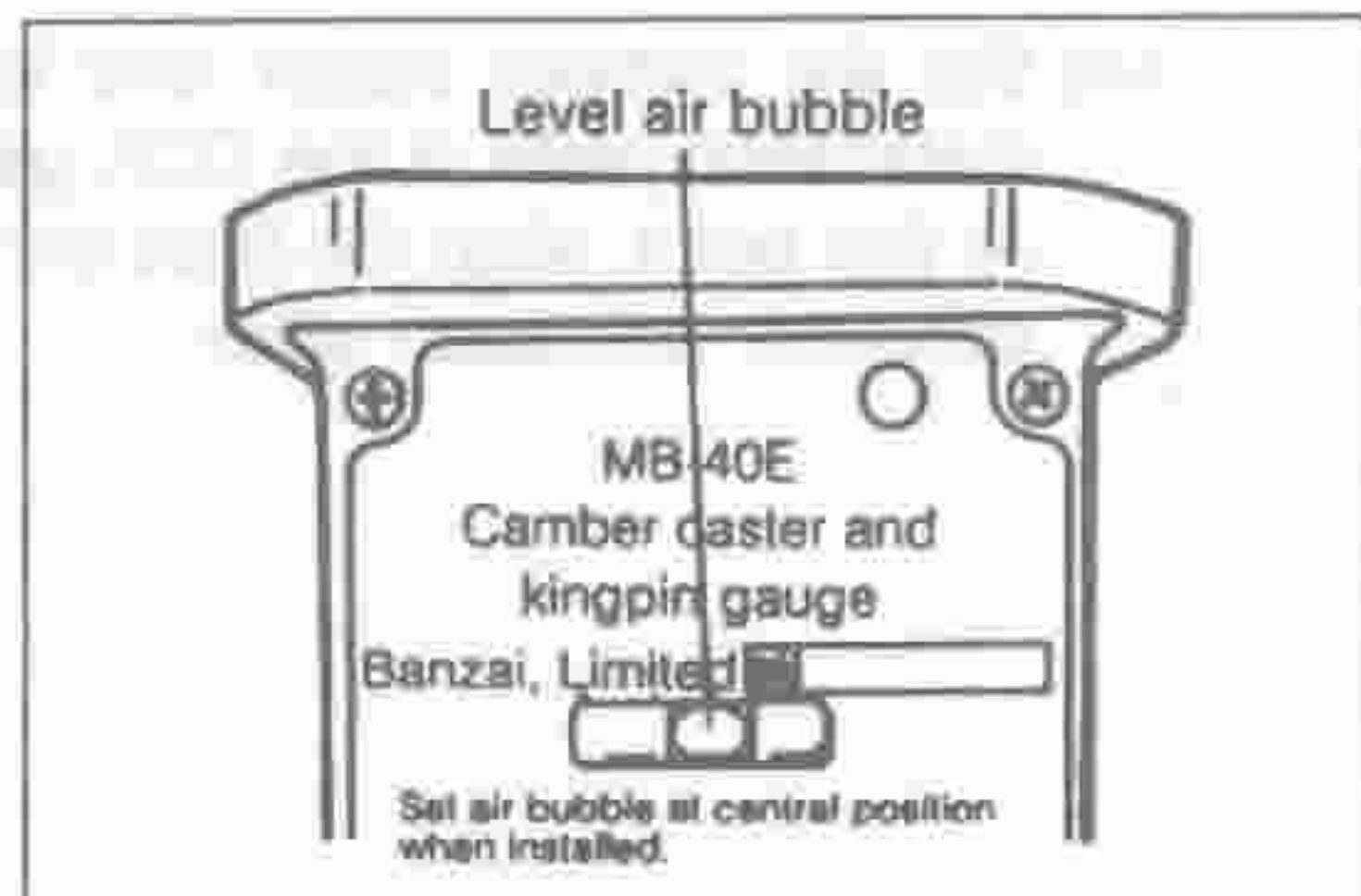
(4) Camber check

- (a) Ensure that the wheels are in their straight-ahead conditions.

- (b) Align the level air bubble with the central position.

- (c) Take the camber reading of the gauge.

Specified Value: $0^{\circ} \pm 45'$



LFS00103-00100

(5) Check of caster and kingpin angles.

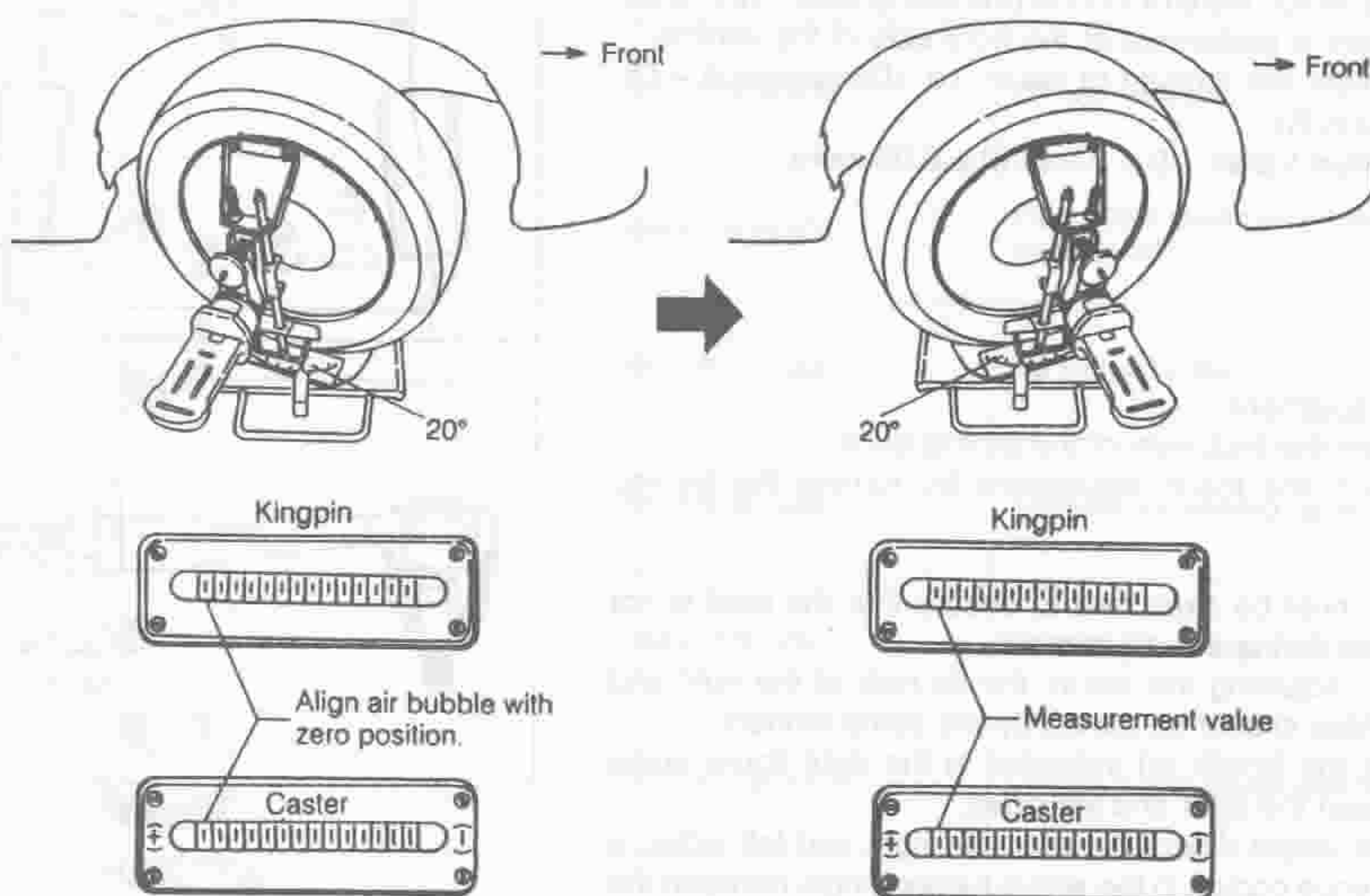
(Right wheel)

- Turn the steering wheel to the right side, until the right front tire comes at a point where the turning radius gauge registers 20 degrees.
- Turn each of the caster and kingpin adjusting screws so that the respective air bubble may be aligned with the zero point.
- Turn the steering wheel to the left side, until the right front tire comes at a point where the turning radius gauge registers 20 degrees.
- Take the gauge readings of the caster and kingpin angles.

Specified Value: Caster $2^{\circ}50' \pm 1^{\circ}$
 Kingpin angle $12^{\circ}00' \pm 1^{\circ}$

(Left wheel)

- Perform the check, following the same procedure as with the right wheel. However, the turning direction of the steering wheel must be reversed.



5. Toe-in measurement

- (1) Rock the vehicle so that the vehicle height may stabilize.
- (2) Move the vehicle forward about five meters so that the front wheels may become in their straight-ahead conditions.

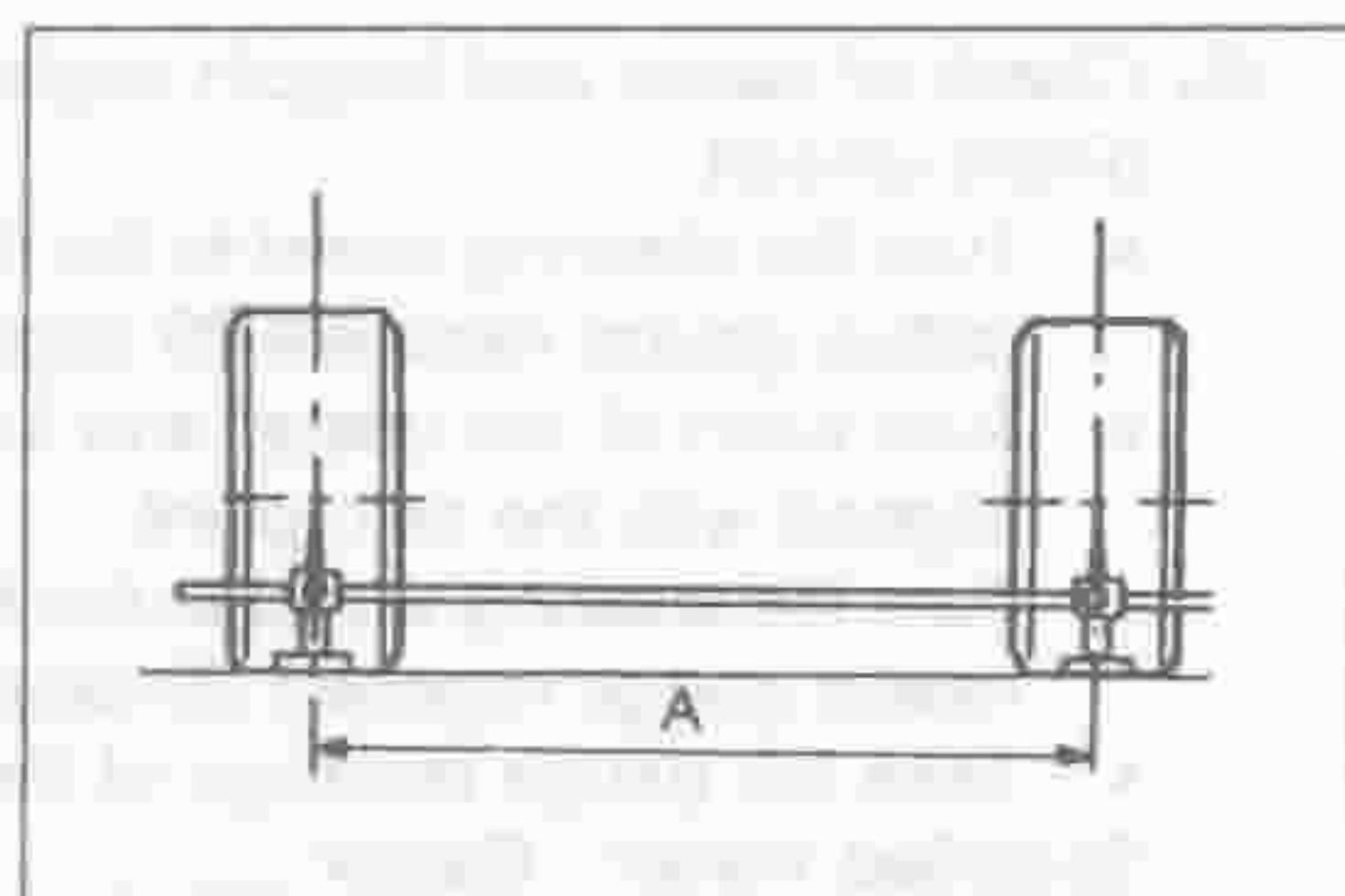
NOTE:

- Do not move the vehicle backward during the measurement.

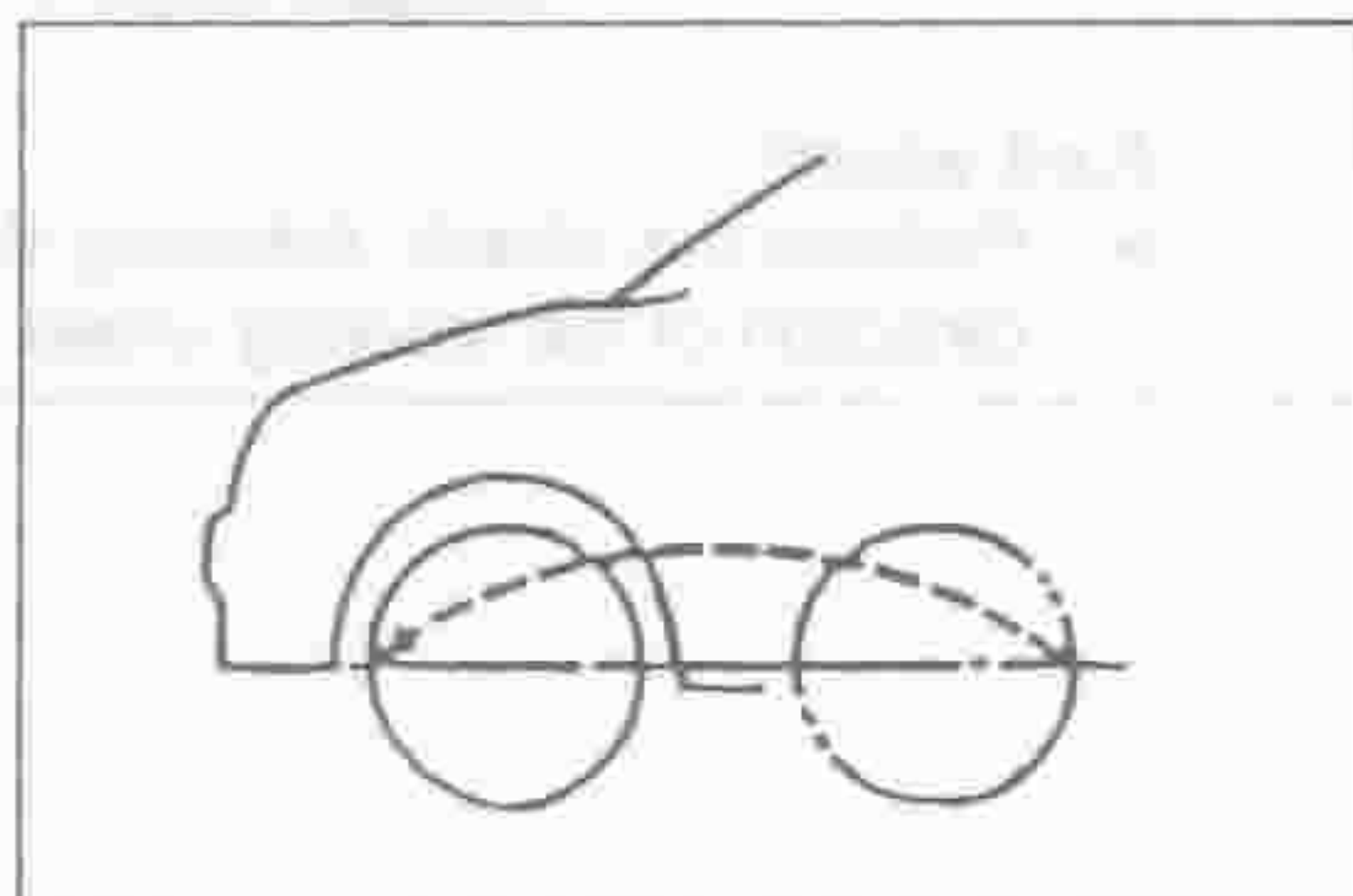
- (3) Align the height of the toe-in gauge pointers with the center height of the front wheels.
- (4) Put a mark on the tread center of each front wheel tire at the rear side. Measure the distance between the two marks (Dimension A) in the figure.
- (5) Slowly move the vehicle forward by pushing the vehicle, until the wheels turn 180 degrees.

- (6) Measure the distance (Dimension B) between the two marks which were put in the preceding step. This measurement is performed at the front side of the vehicle. Calculate the amount of toe-in, i.e. (Dimension A – Dimension B).

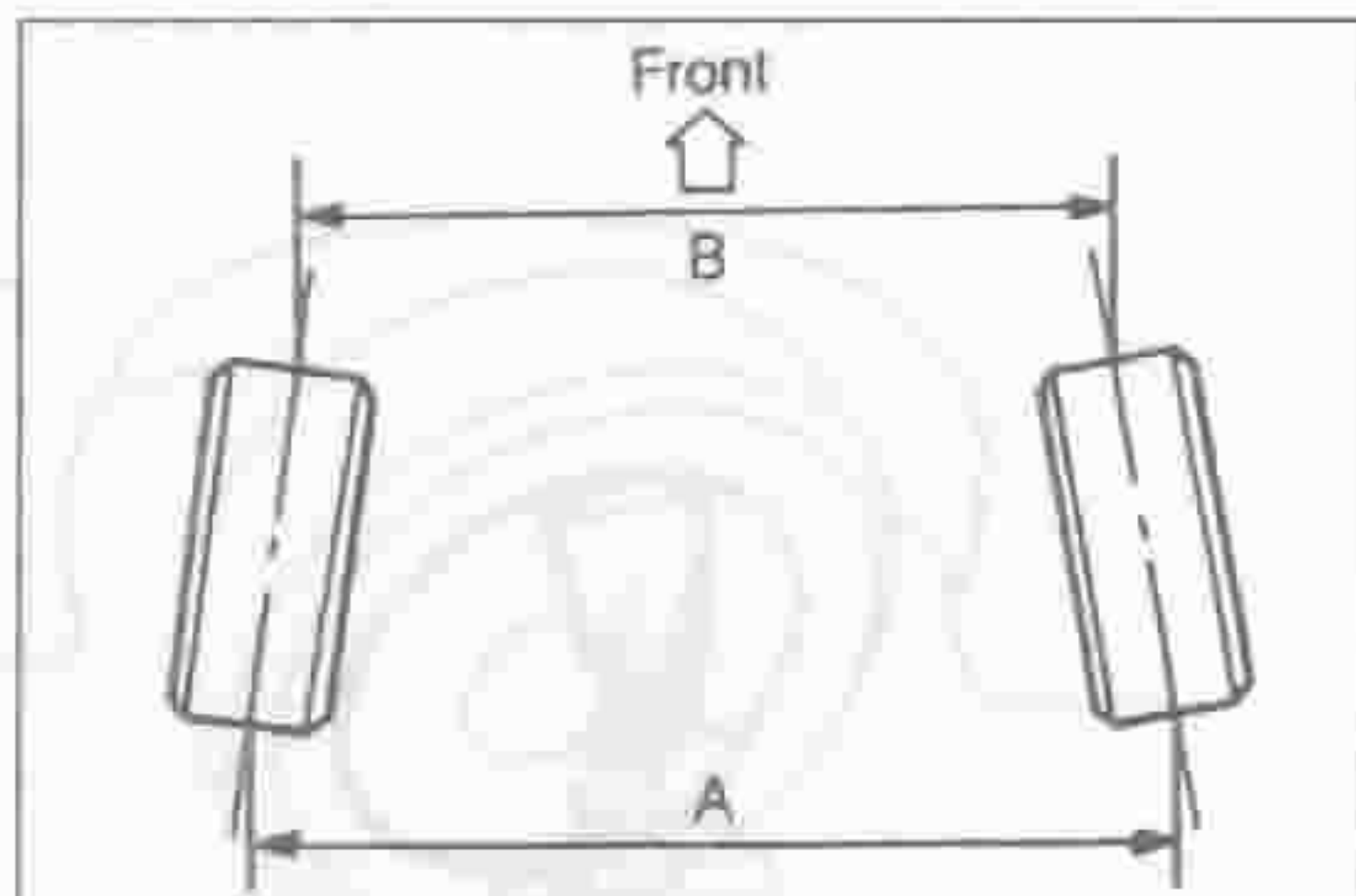
Specified Value: $0 \pm 2 \text{ mm}$ ($0 \pm 0.08 \text{ inch}$)



LFS00105-00102



LFS00106-00103



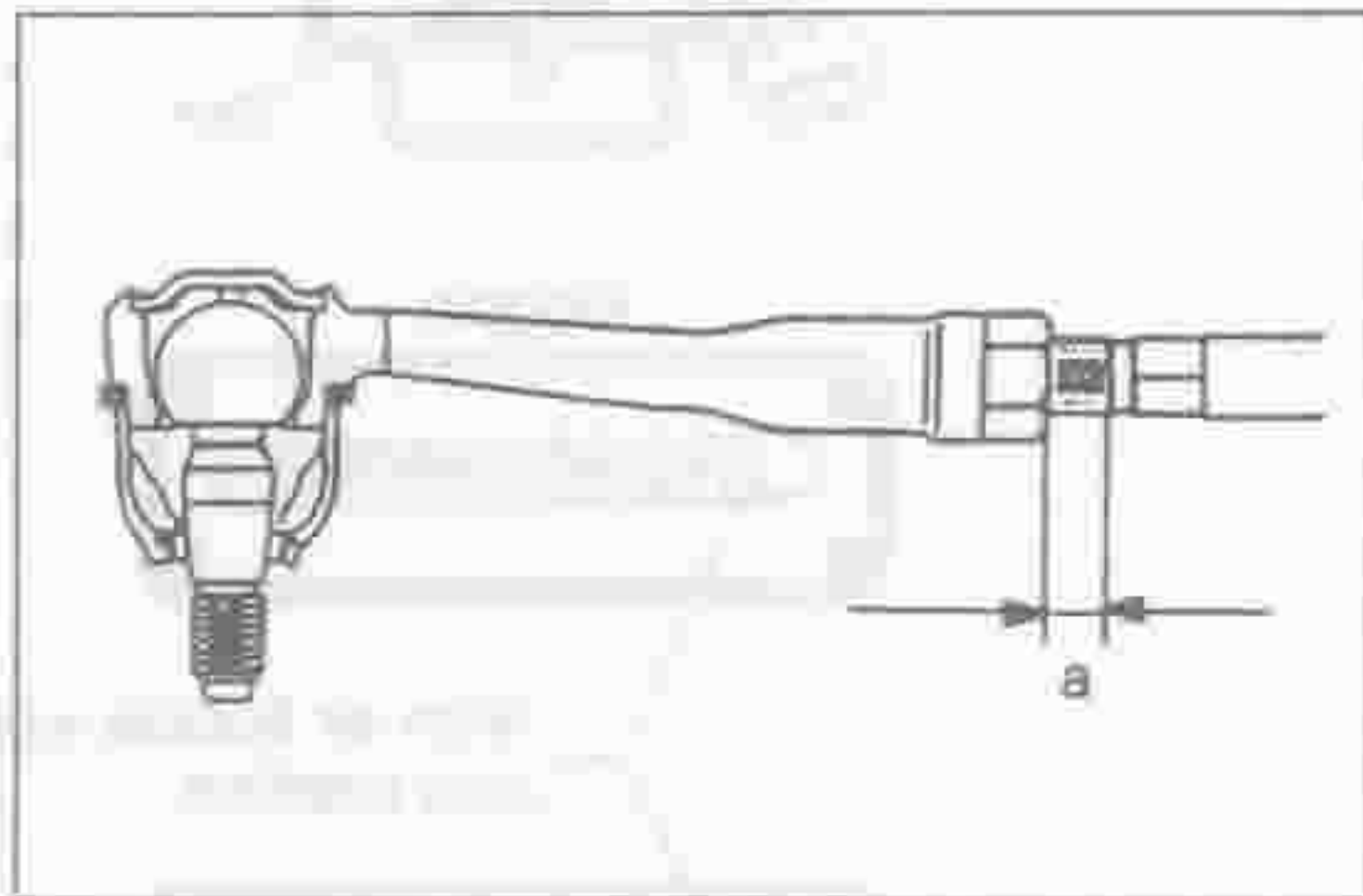
LFS00107-00104

6. Toe-in adjustment

- (1) Loosen the lock nuts of the tie rod ends.
- (2) Perform the toe-in adjustment by turning the tie rod ends.

NOTE:

- Care must be exercised to ensure that the boot is not twisted during the adjustment.
- When adjusting the toe-in, the tie rods at the right and left sides should be turned by the same amount.
- Make the length (a) indicated in the right figure equal between the right and left sides.
(If the length differs between the right and left sides, a difference occurs in the wheel turning angle between the right and left sides.)



LFS00108-00105

7. Sideslip check

Check the sideslip, using a sideslip tester.

Specified Value:

$0 \pm 5 \text{ mm}$ ($0 \pm 0.2 \text{ inch}$) per 1 meter (3.28 ft)

SST

Figure	Parts number	Parts name
	09301-87701-000	Tool, clutch guide
	09308-00010-000	Oil seal puller
	09506-87301-000	Differential drive pinion bearing cone rear replacer
	09510-87301-000	Front hub & drum puller
	09511-87202-000	Break drum stopper
	09517-87203-000	Oil seal replacer
	09517-87204-000	Oil seal replacer
	09608-12010-000	Front hub & drive pinion bearing replacer set
	09611-87701-000	Tie rod end puller
	09618-87301-000	Transmission bearing replacer
	09648-87201-000	Driver shaft replacer
	09722-87702-000	Camber caster gauge attachment
	09727-87701-000	Front coil spring compressor

TIGHTENING TORQUE

738

Tightening components	Tightening torque		
	N·m	kgf·m	ft·lb
Shock absorber × Front suspension support	53.9 - 73.5	5.5 - 7.5	39.8 - 54.2
Shock absorber × Fender apron	29.4 - 44.1	3.0 - 4.5	21.7 - 32.5
Shock absorber × Steering knuckle	83.4 - 108.0	8.5 - 11.0	61.5 - 80.0
Stabilizer bar × Stabilizer bracket	73.5 - 93.2	7.5 - 9.5	54.2 - 68.7
Stabilizer bar × Lower arm	92.2 - 112.0	9.4 - 11.4	68.0 - 82.5
Lower arm × Body	58.8 - 83.4	6.0 - 8.5	43.4 - 61.5
Lower arm × Steering knuckle	63.7 - 88.3	6.5 - 9.0	47.1 - 65.1
Tie rod end × Steering knuckle	44.1 - 53.9	4.5 - 5.5	32.5 - 39.8
Drive shaft × Nut	216.0 - 255.0	22.0 - 26.0	159.0 - 188.0
Disc brake dust cover × Steering knuckle	29.4 - 39.2	3.0 - 4.0	21.7 - 28.9
Disc brake caliper	31.4 - 41.2	3.2 - 4.2	23.1 - 30.4

LFS00110-00000

