

REAR AXLE & REAR SUSPENSION

SECTION **RA**

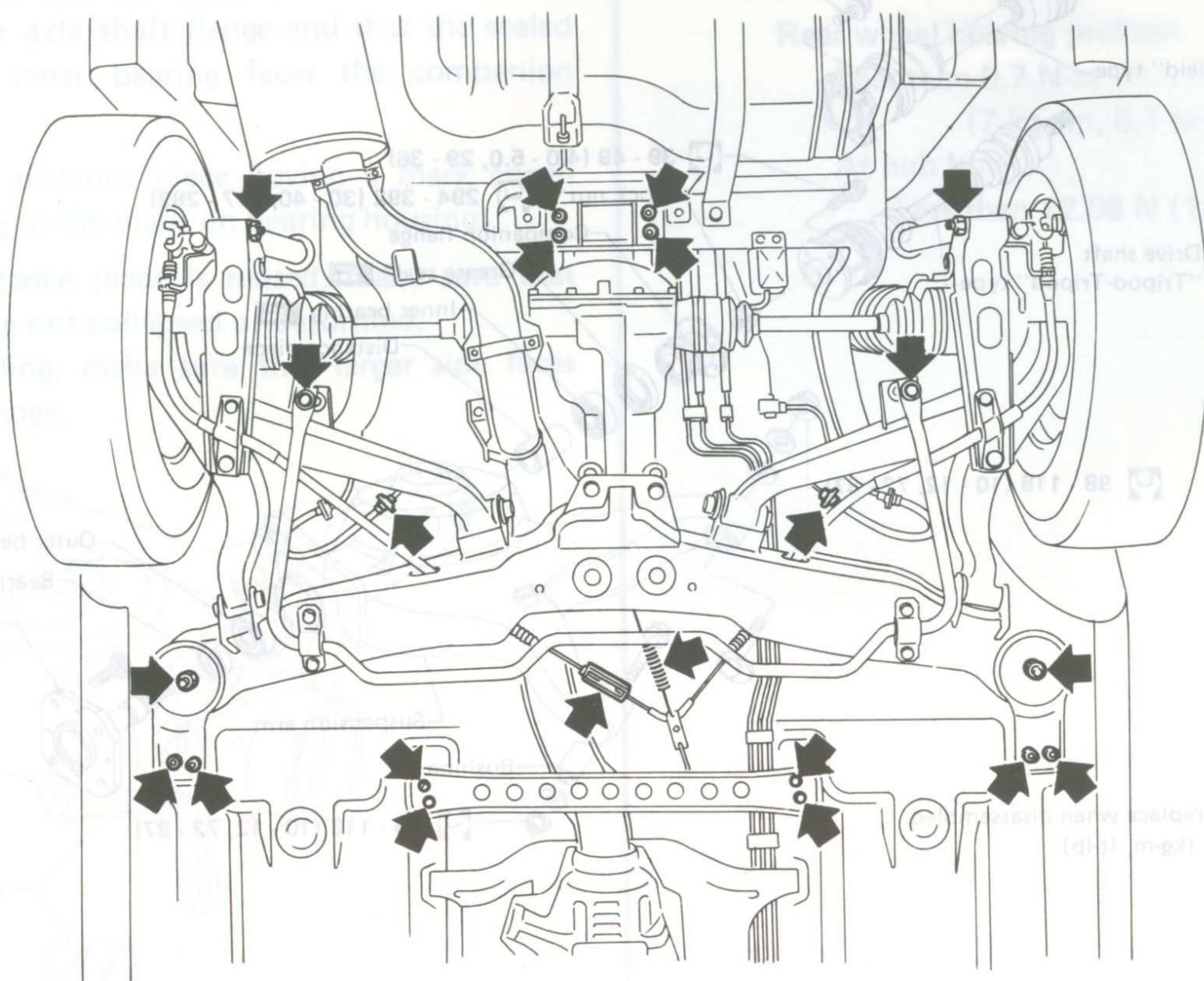
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RA

REAR AXLE AND REAR SUSPENSION

Removal and Installation



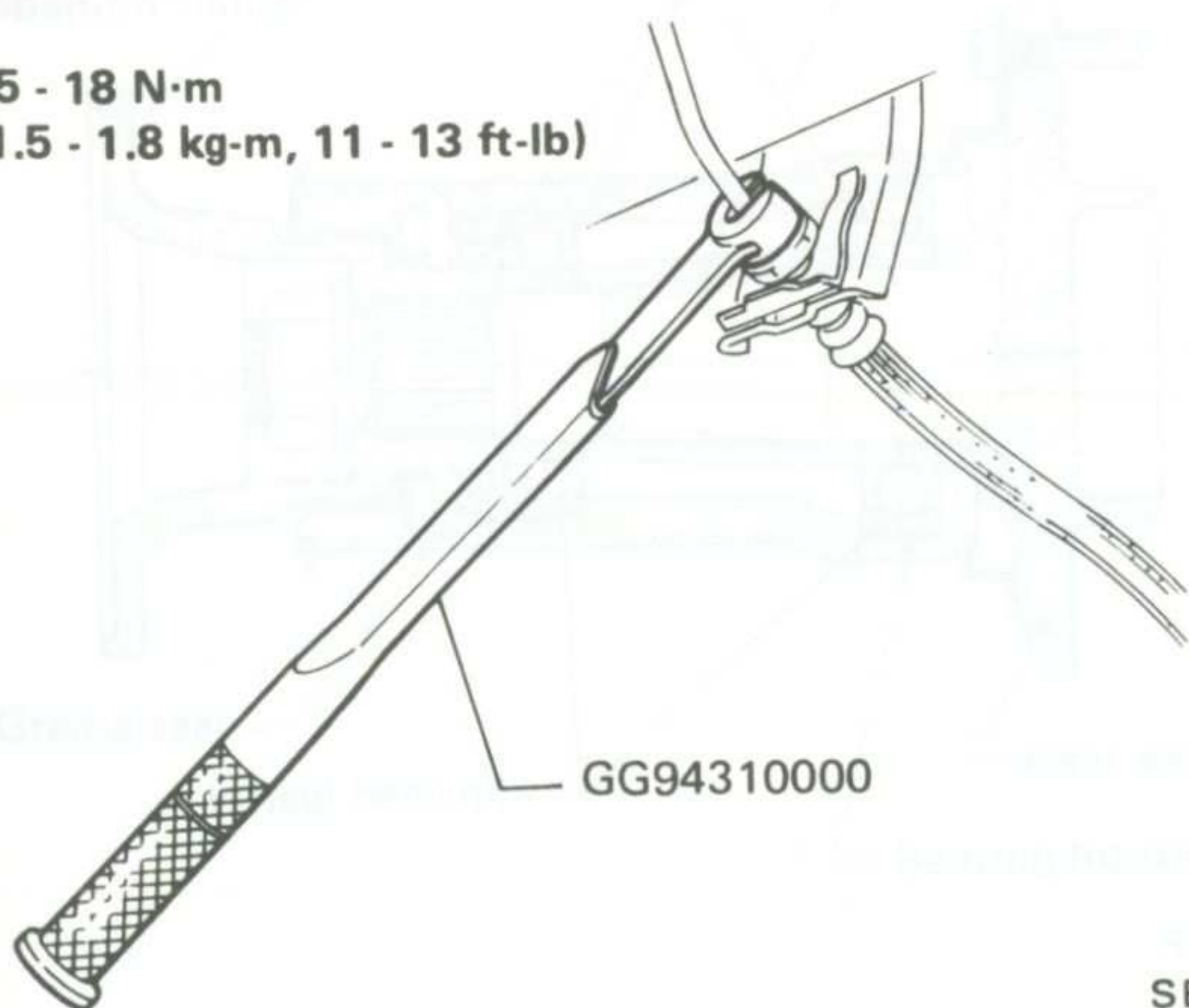
← : Removing and installing points

- Disconnect brake hydraulic line and parking brake cable.

CAUTION:

When removing or installing brake tubes, use Tool.

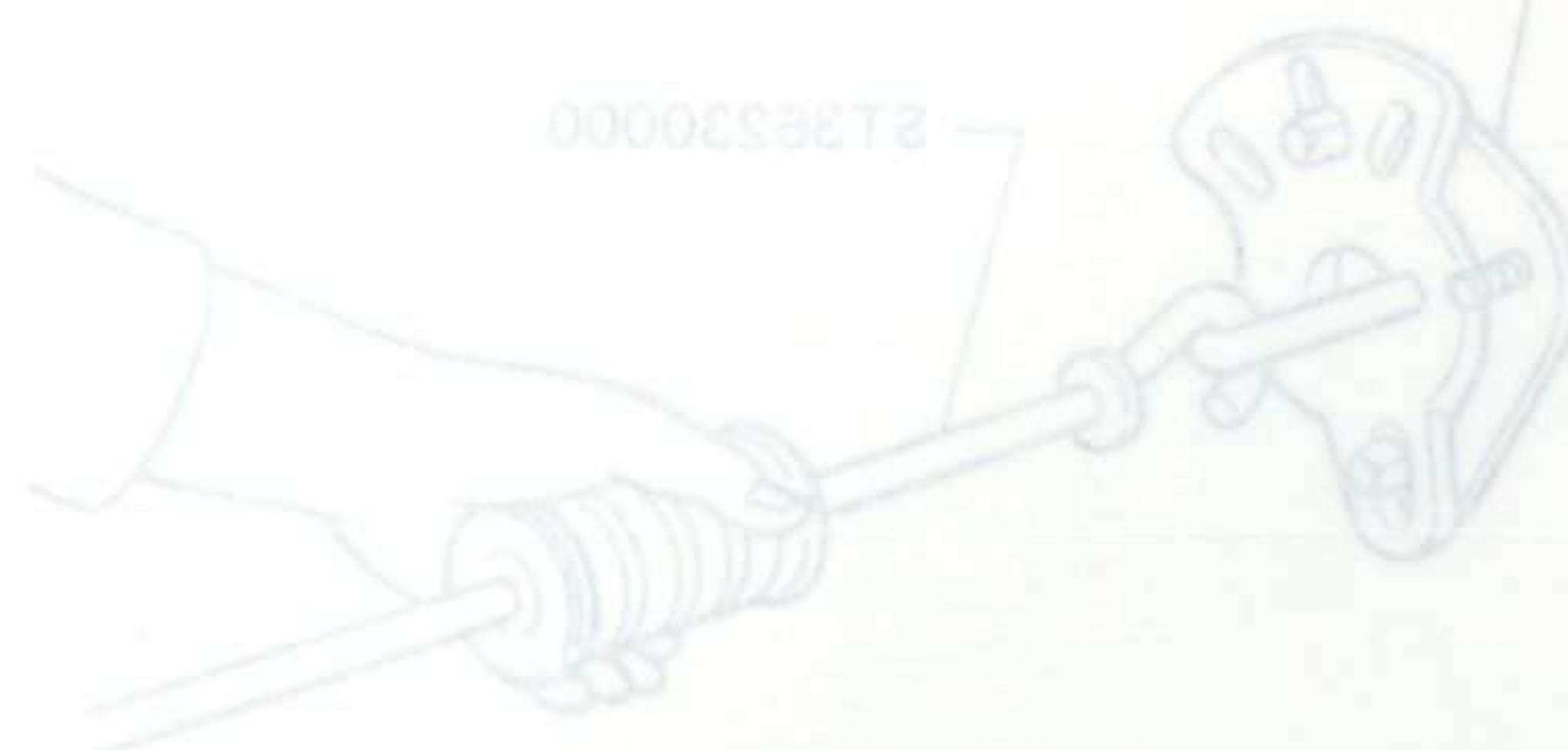
15 - 18 N·m
(1.5 - 1.8 kg-m, 11 - 13 ft-lb)



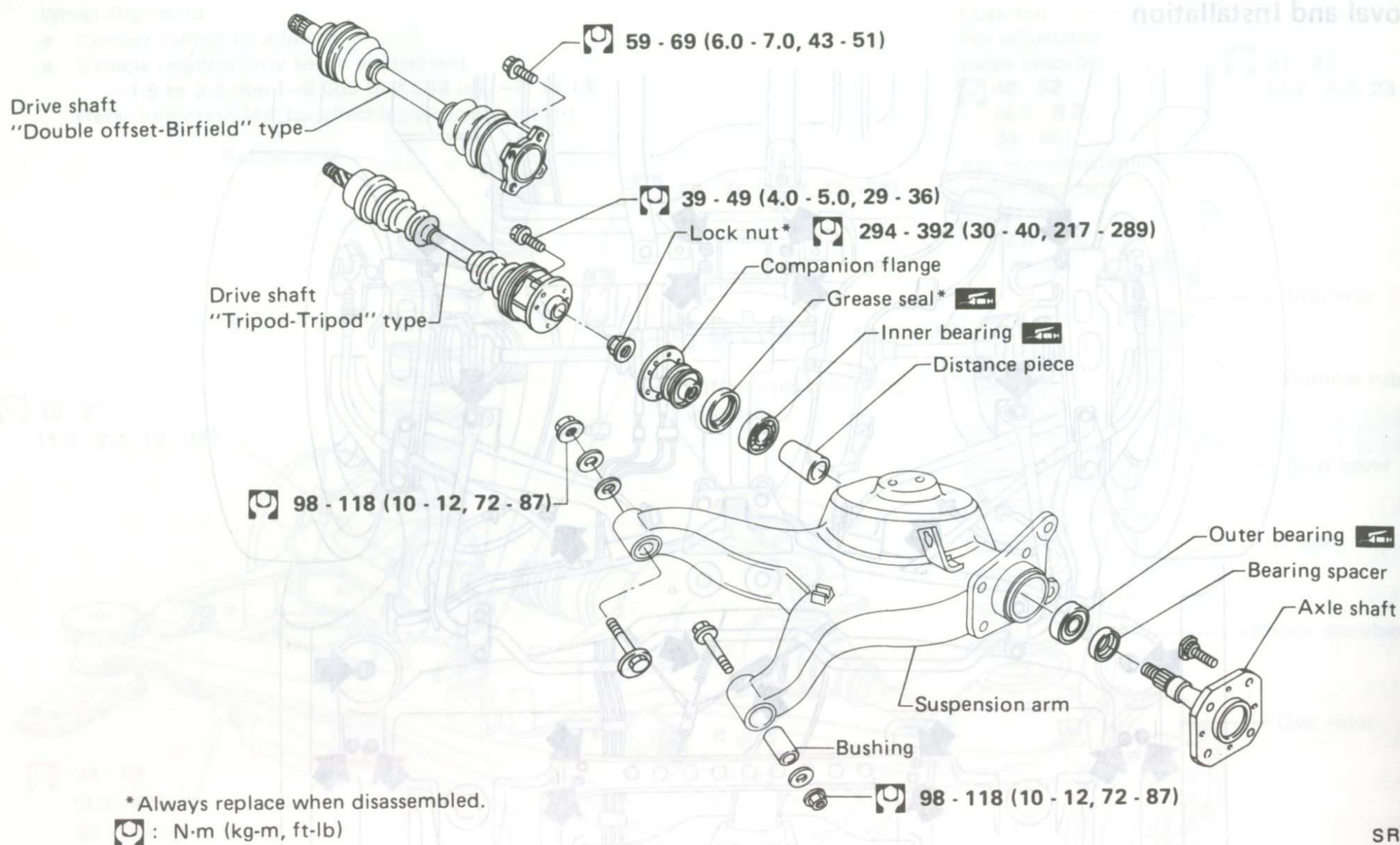
SBR500

SRA442

- Remove stabilizer fixing bolt.
- Remove rear exhaust tube (Refer to Section FE for removal).
- Disconnect propeller shaft (Refer to Section PD for removal).
- Disconnect rear sensor connector on model equipped with 4-wheel skid control system.



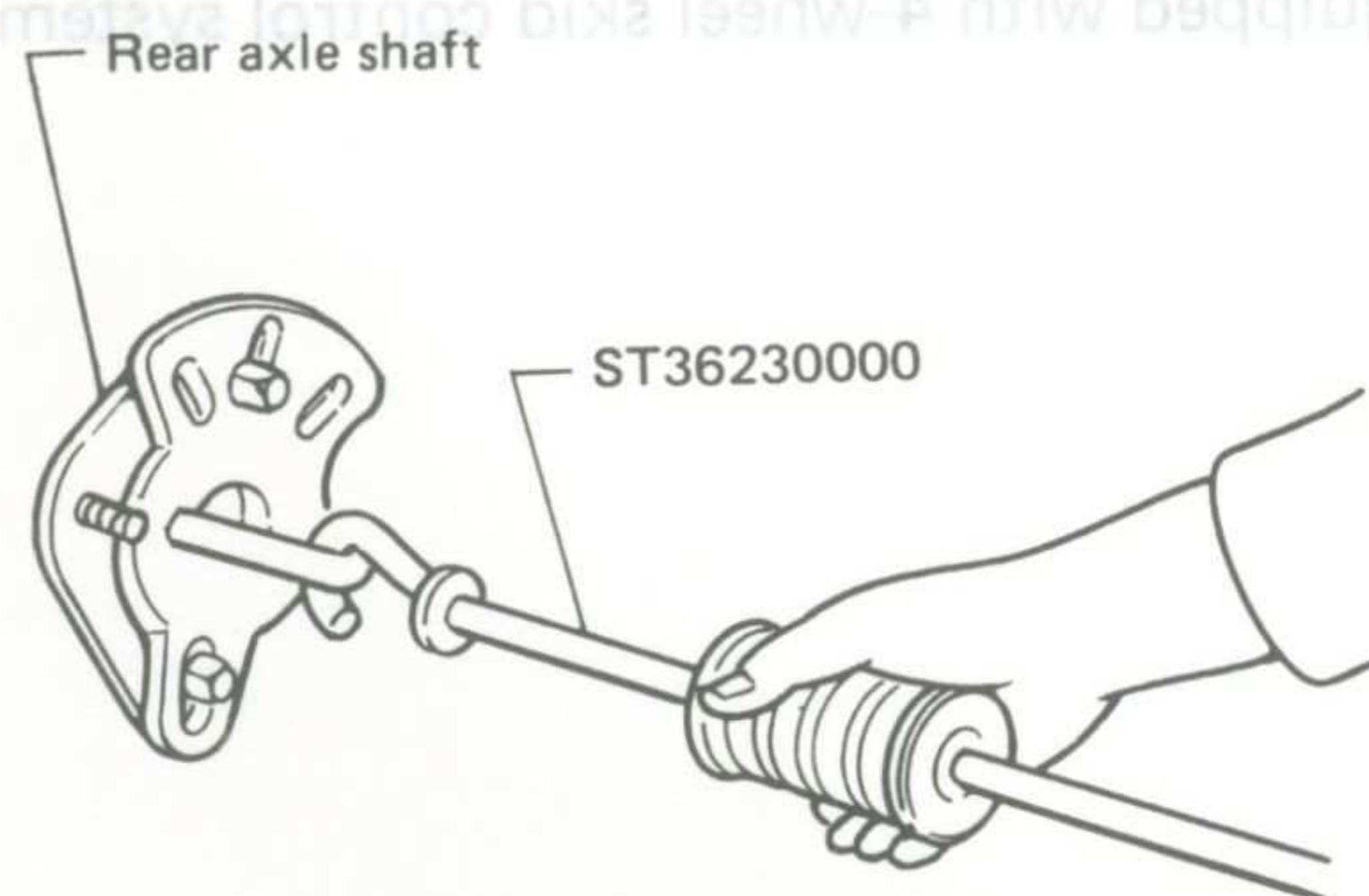
REAR AXLE—Axle Shaft



SRA443

Removal

- Disconnect drive shaft. Refer to Drive Shaft for removal and installation.
- Remove wheel bearing lock nut while operating parking brake.
- Remove brake caliper and rotor. Refer to Section BR.
- Draw out rear axle shaft using suitable tool.

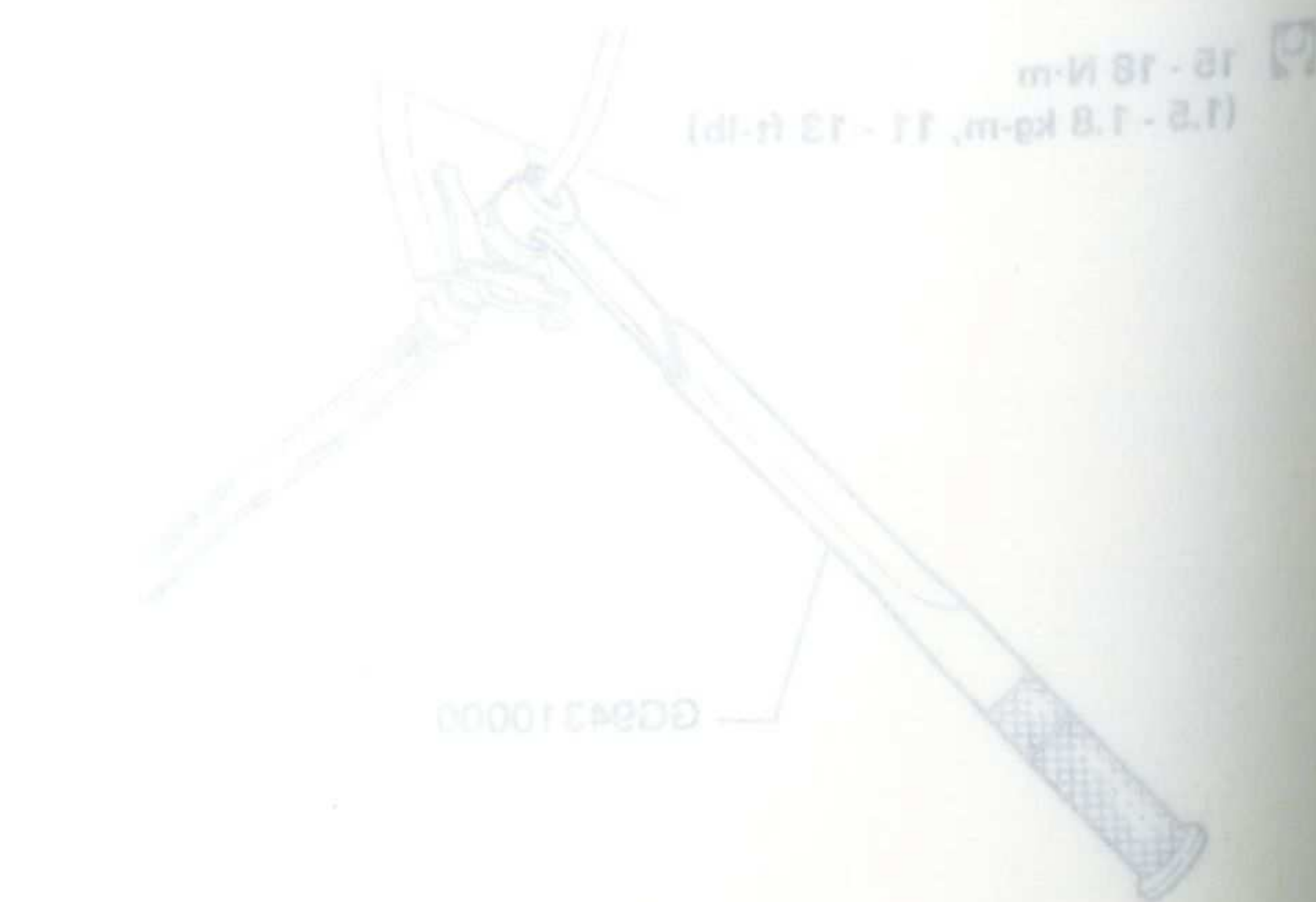


SRA444

Inspection

Check rear axle shaft for cracks, wear or deformation. Replace if necessary.

- Disconnect brake hydraulic line and parking brake cable.



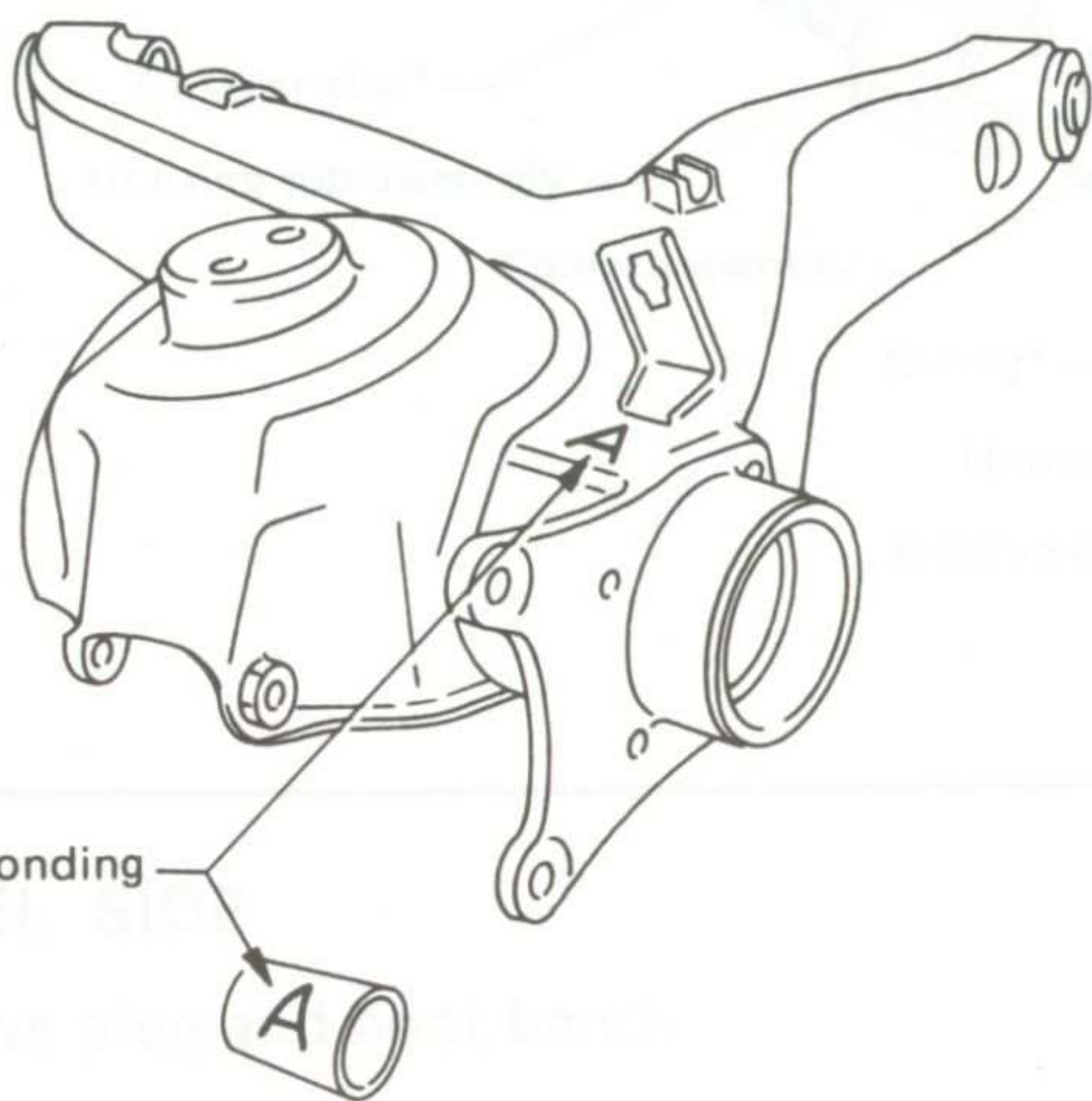
REAR AXLE—Axle Shaft

Installation

- Wheel bearings are sealed type. When installing, make sure that the sealed side of outer bearing faces the axle shaft flange and that the sealed side of inner bearing faces the companion flange.
- Select a distance piece having a mark corresponding to the mark on bearing housing.

When a distance piece is reused, make sure that both ends are not collapsed or deformed.

When installing, make sure that larger side faces axle shaft flange.

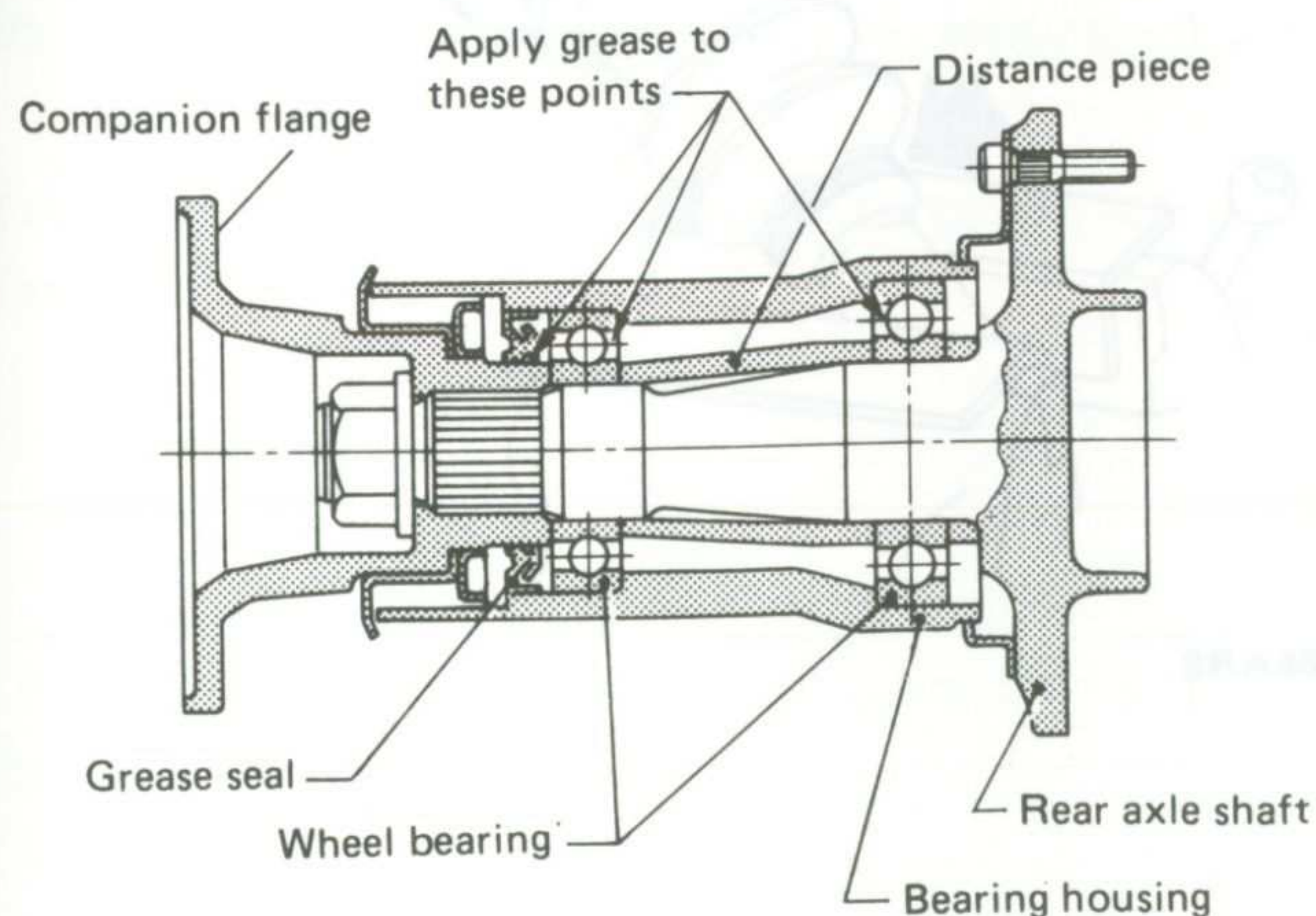


SRA445

- Fill recommended multi-purpose grease to the portions indicated below.

CAUTION:

Keep grease away from lock nut thread portion and seating surface.



SRA446

- Measure rear wheel bearing preload after installing rear axle shaft.

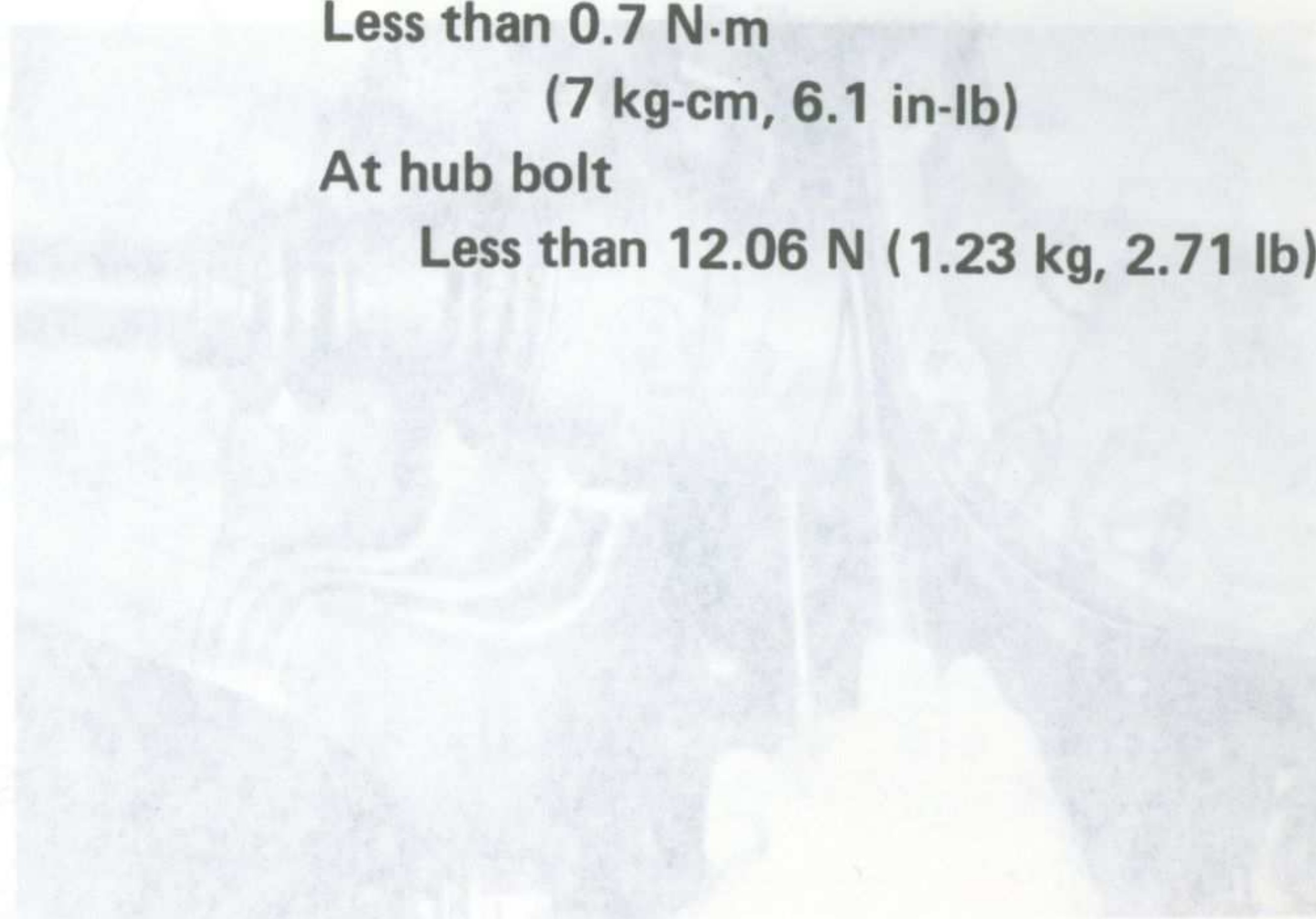
Rear wheel bearing preload:

Less than 0.7 N·m

(7 kg-cm, 6.1 in-lb)

At hub bolt

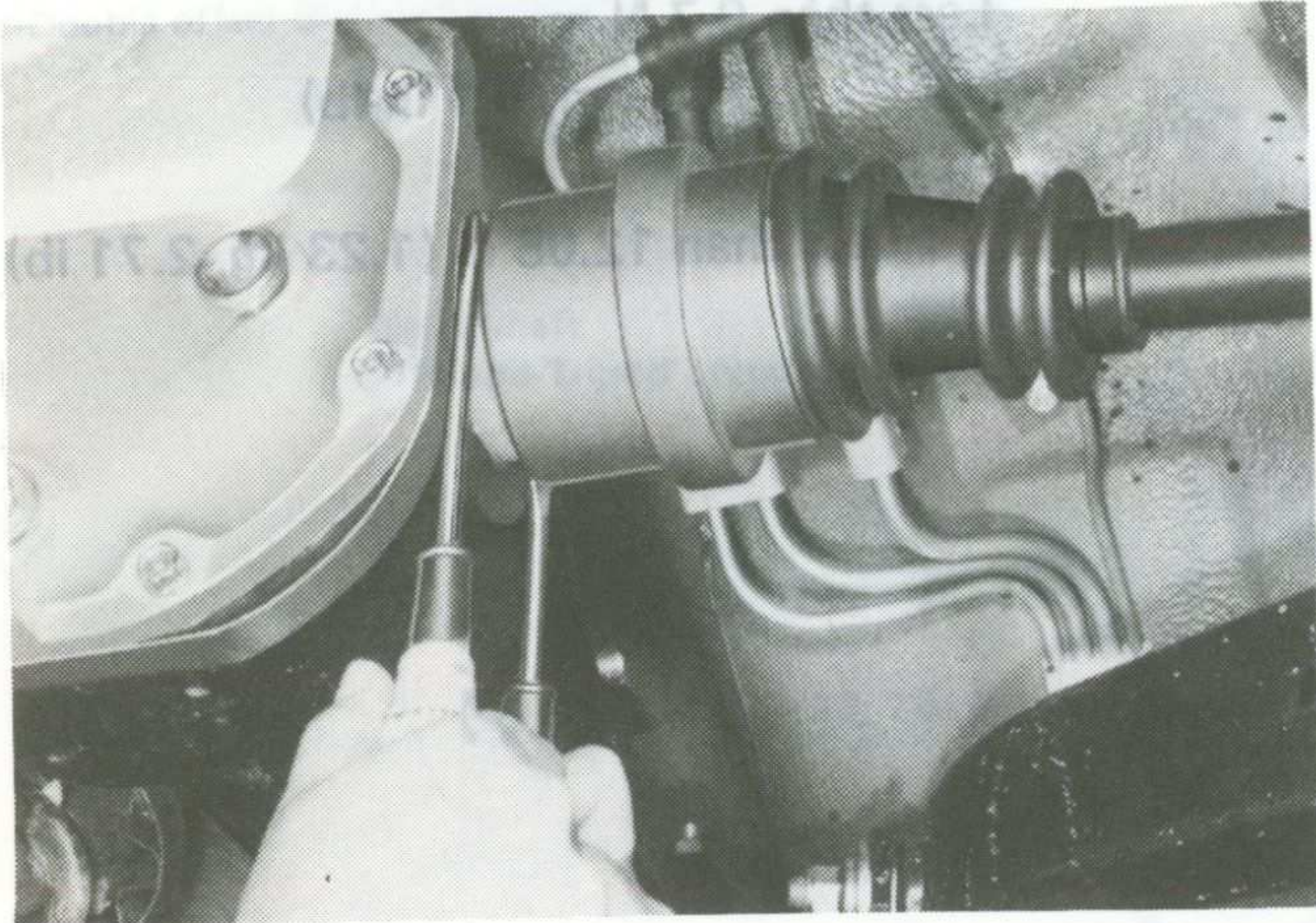
Less than 12.06 N (1.23 kg, 2.71 lb)



DRIVE SHAFT

Removal and Installation

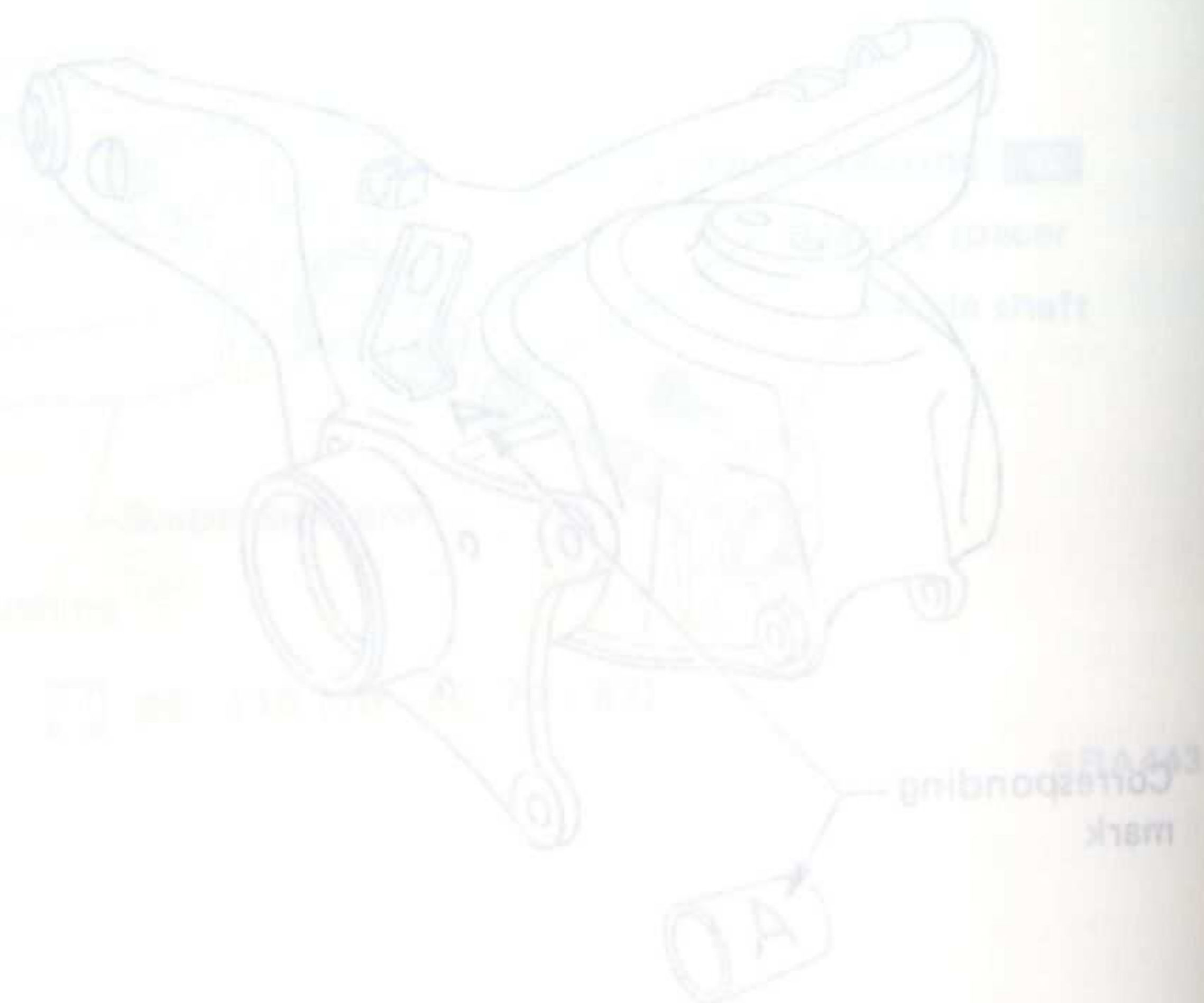
- Remove spring seat stay.
- Extract drive shaft from differential carrier by prying it with a suitable steel bar.



CAUTION:

Be careful not to damage oil seal of differential carrier.

- Wheel bearings are sealed type. When installing, make sure that the sealed side of outer bearing faces the axle shaft flange and that the sealed side of inner bearing faces the companion flange.
- Select a distance piece having a mark corresponding to the mark on bearing housing. When a distance piece is reused, make sure that both ends are not collapsed or deformed. When installing, make sure that larger side faces axle shaft flange.

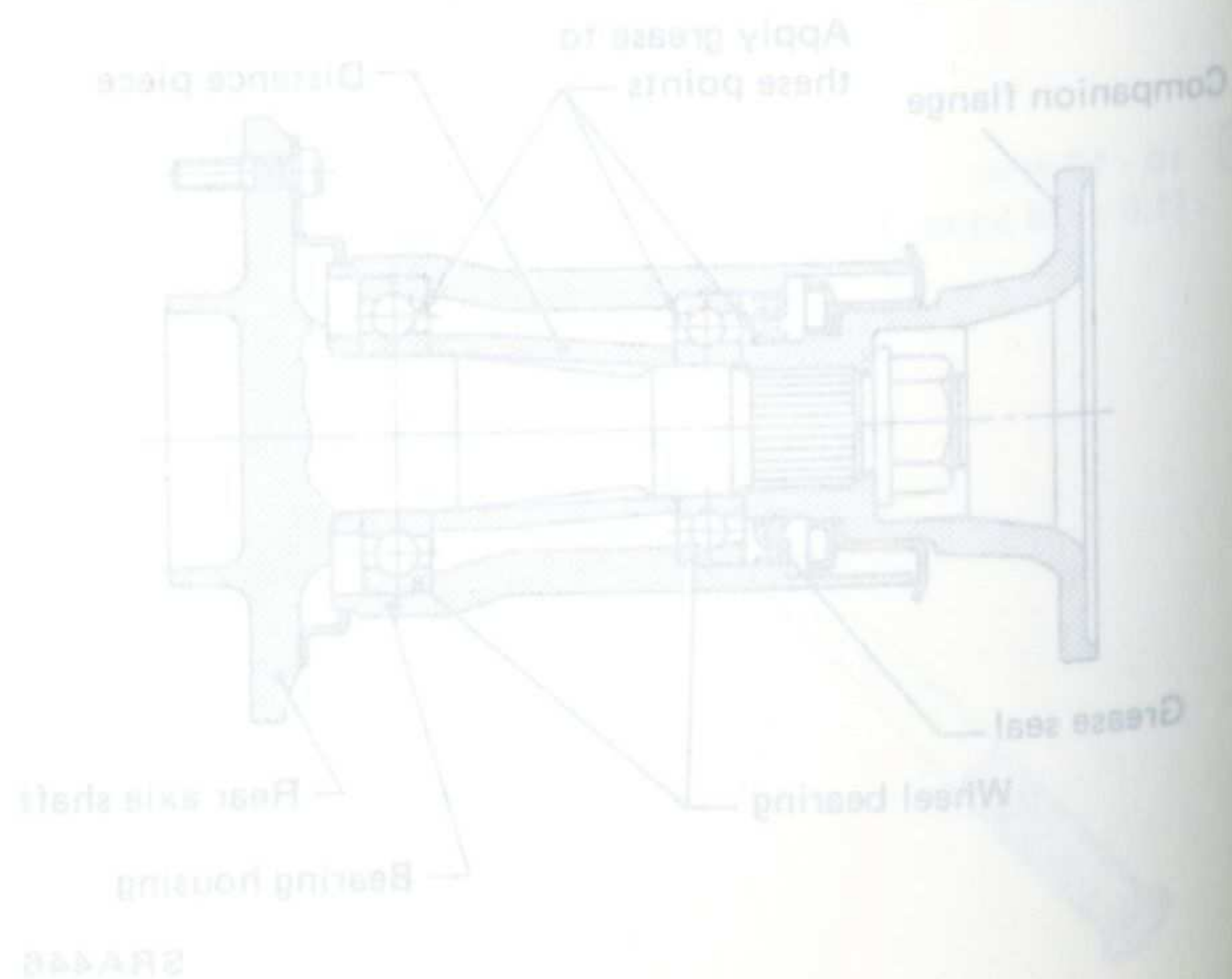


BRANDS

Inspection

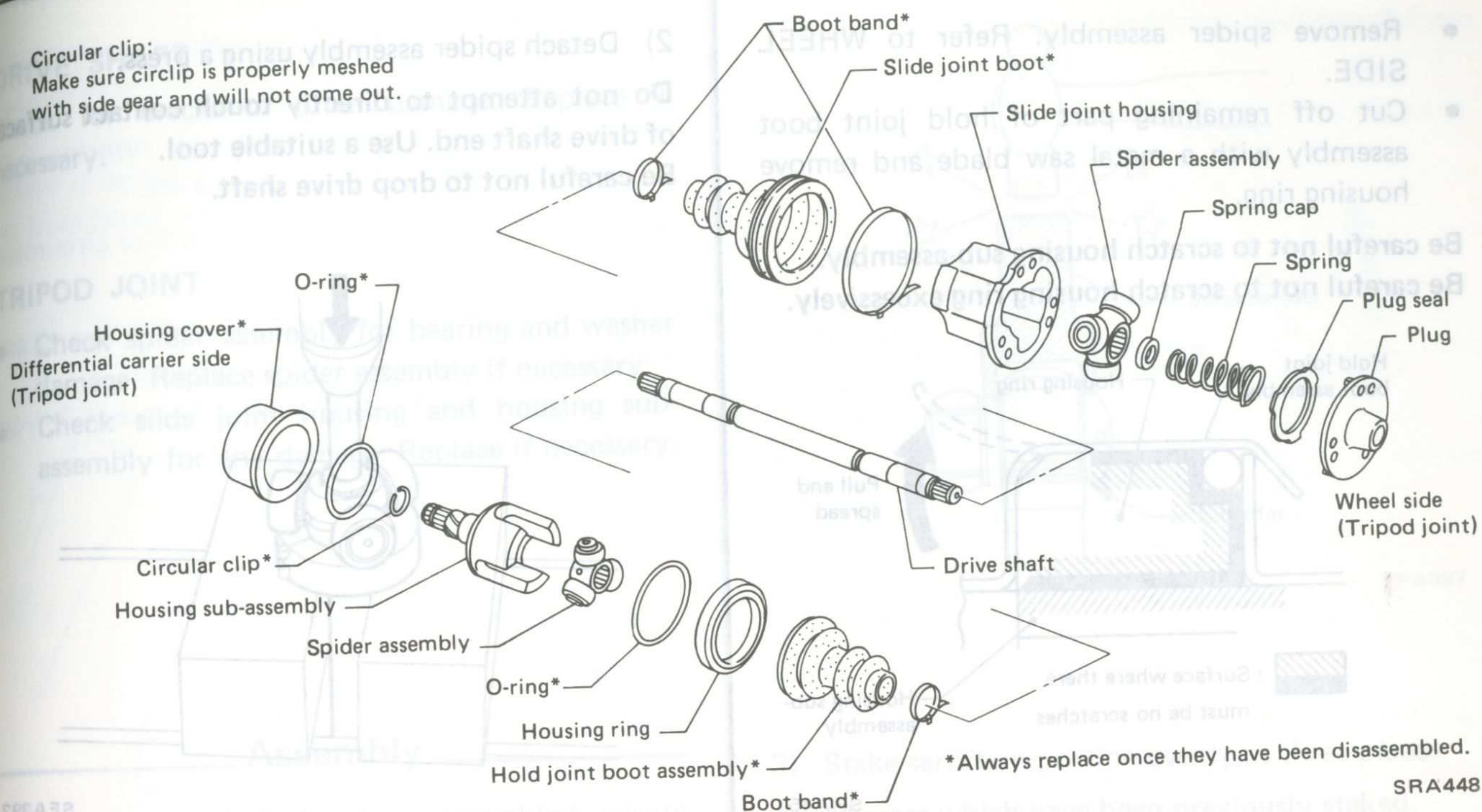
- Fill recommended multi-purpose grease to the portions indicated below.

CAUTION:
Keep grease away from lock nut thread portion and seating surface.



DRIVE SHAFT—"Tripod-Tripod" Type

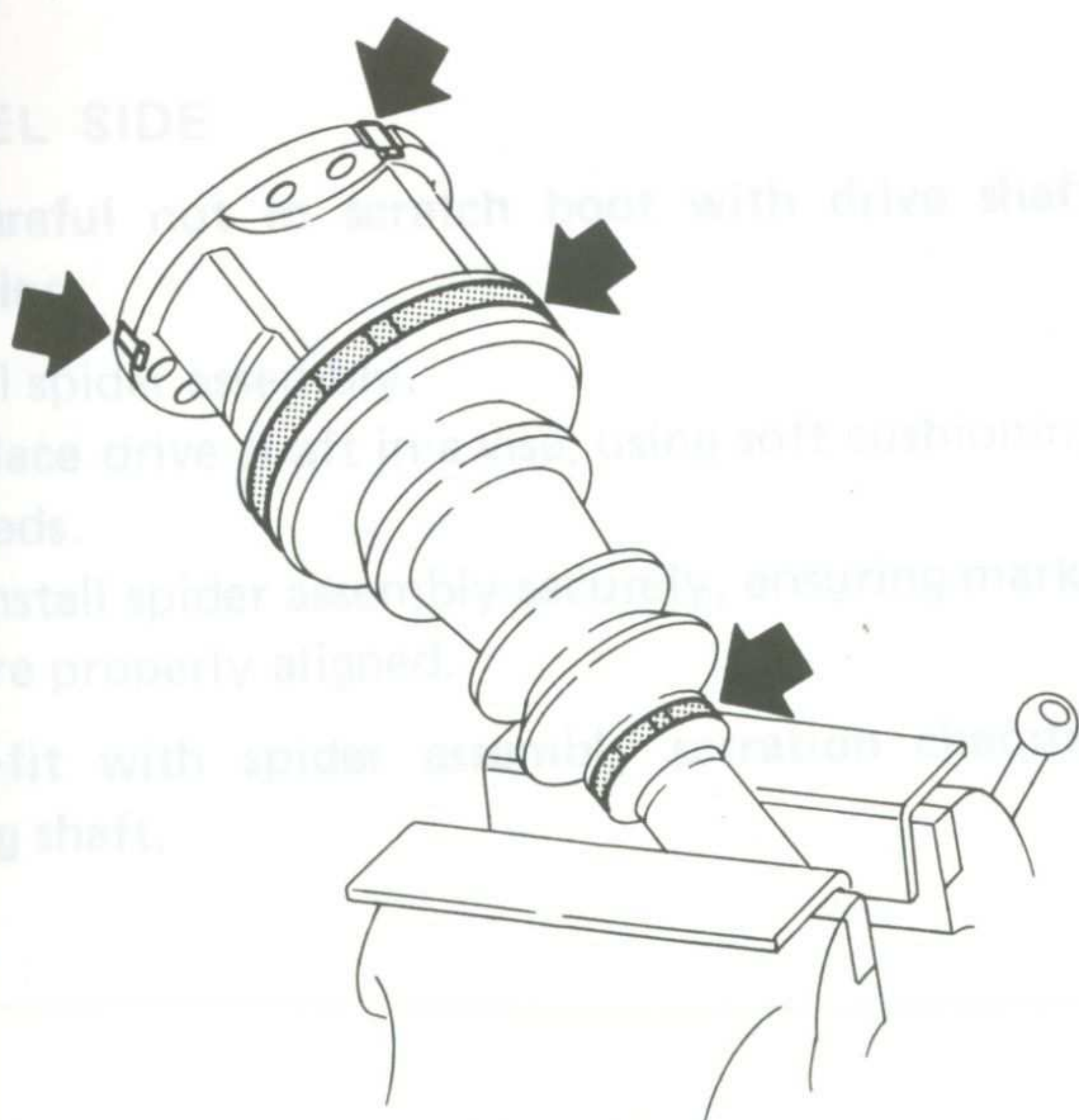
Circular clip:
Make sure circlip is properly meshed
with side gear and will not come out.



Disassembly

WHEEL SIDE

Remove plug and boot bands.

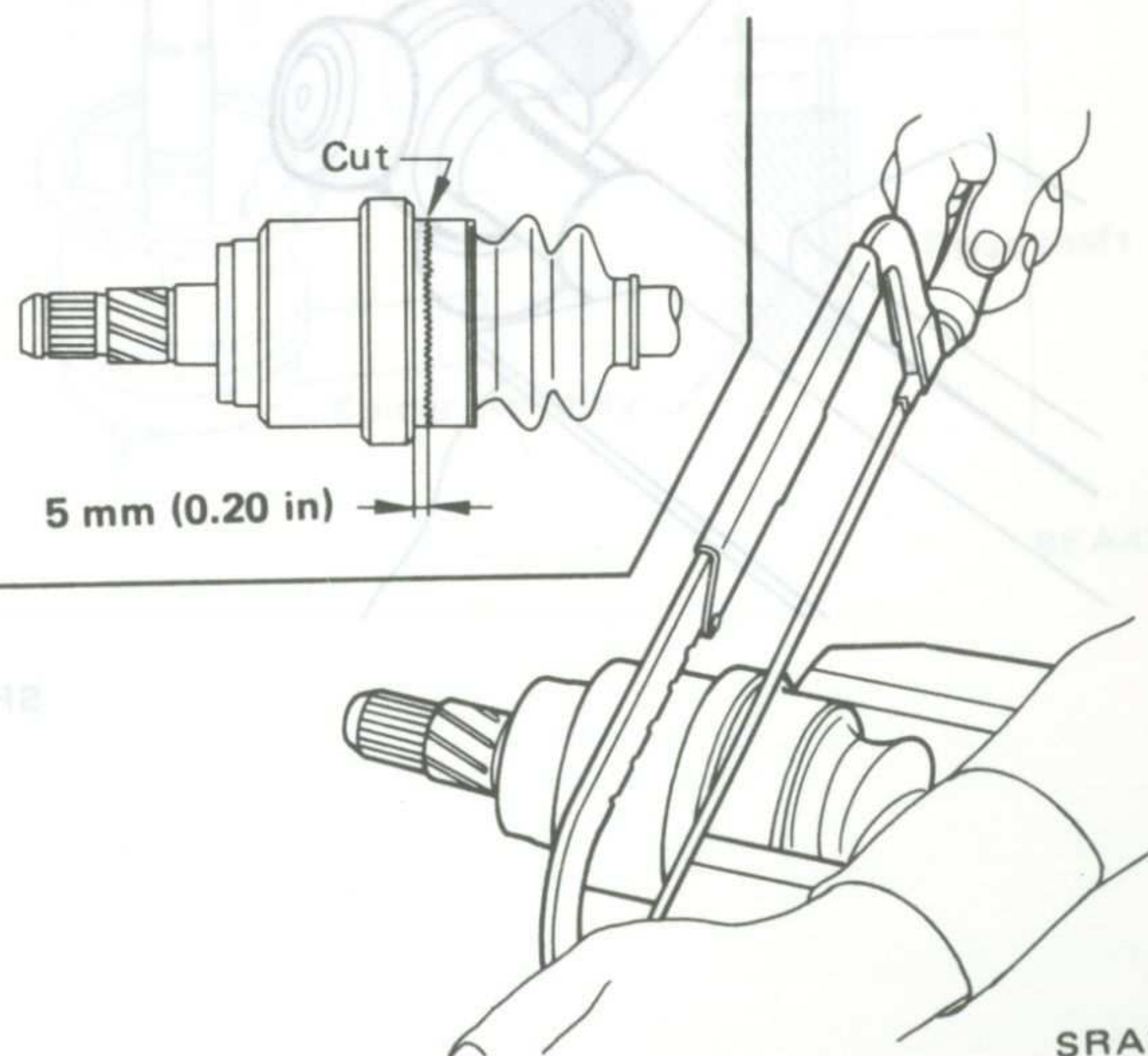


SRA450

DIFFERENTIAL CARRIER SIDE

- Snugly place drive shaft assembly in a vise.
- Be careful not to damage drive shaft assembly.
- Cut off hold joint boot assembly with a metal saw blade and remove housing sub-assembly.

When cutting, ensure that drive shaft is pushed into housing sub-assembly to prevent spider assembly from being scratched.



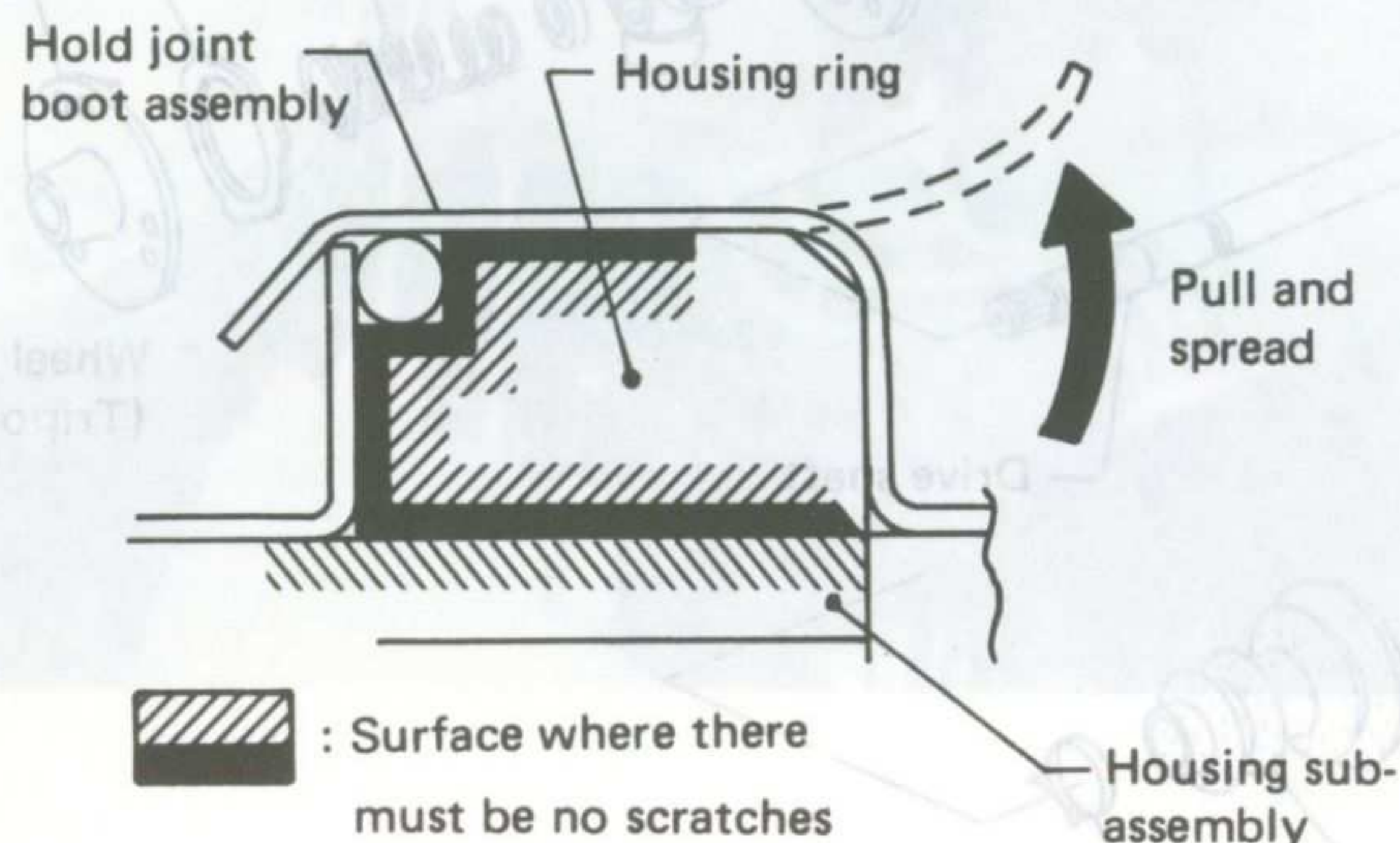
SRA337

DRIVE SHAFT—"Tripod-Tripod" Type

Disassembly (Cont'd)

- Remove spider assembly. Refer to WHEEL SIDE.
- Cut off remaining part of hold joint boot assembly with a metal saw blade and remove housing ring.

Be careful not to scratch housing sub-assembly.
Be careful not to scratch housing ring excessively.



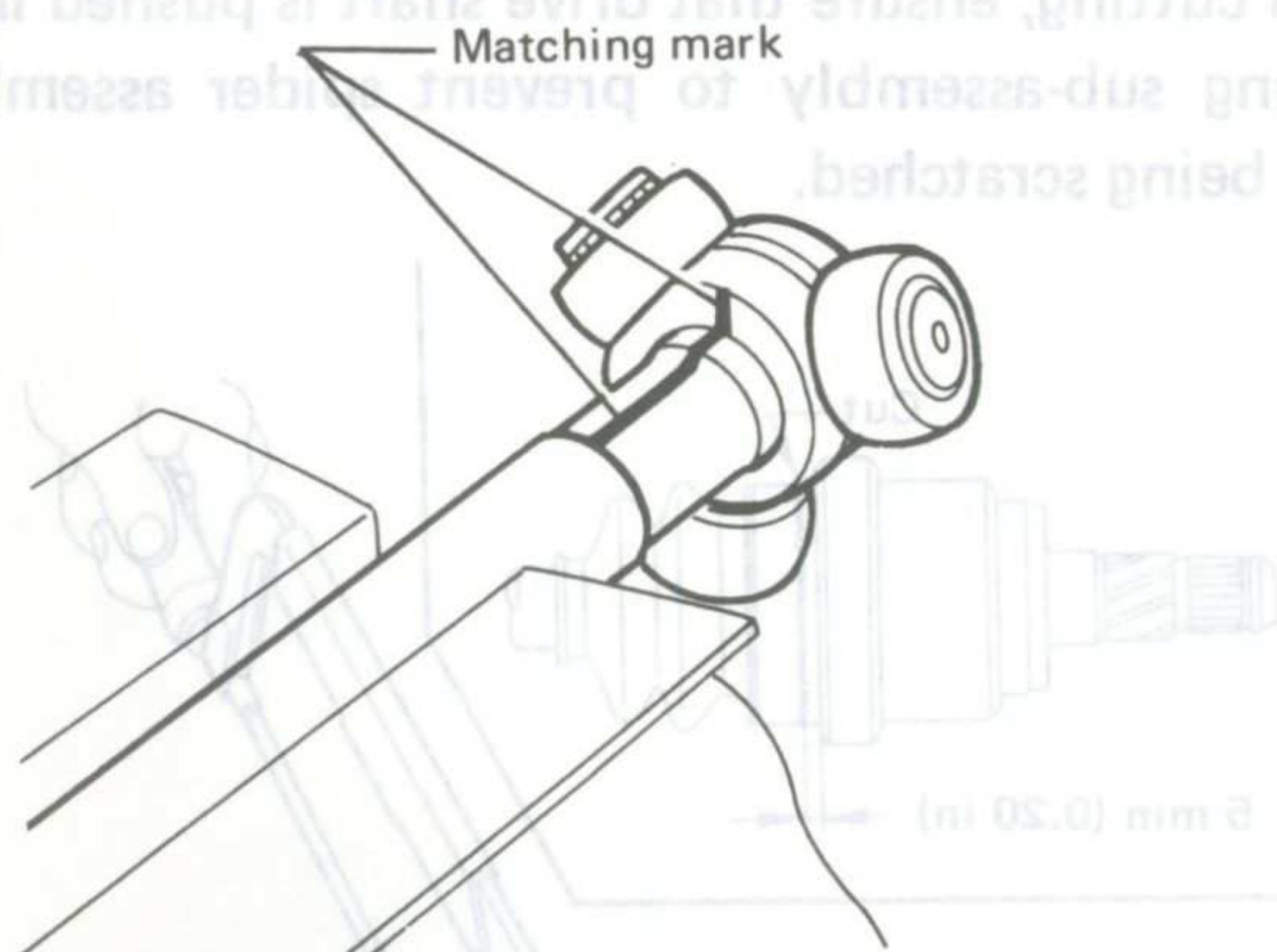
SRA451

- Remove spider assembly.

CAUTION:

The spider assembly is a non-disassembling type, consisting of a tripod, rollers, needle bearing and washer.

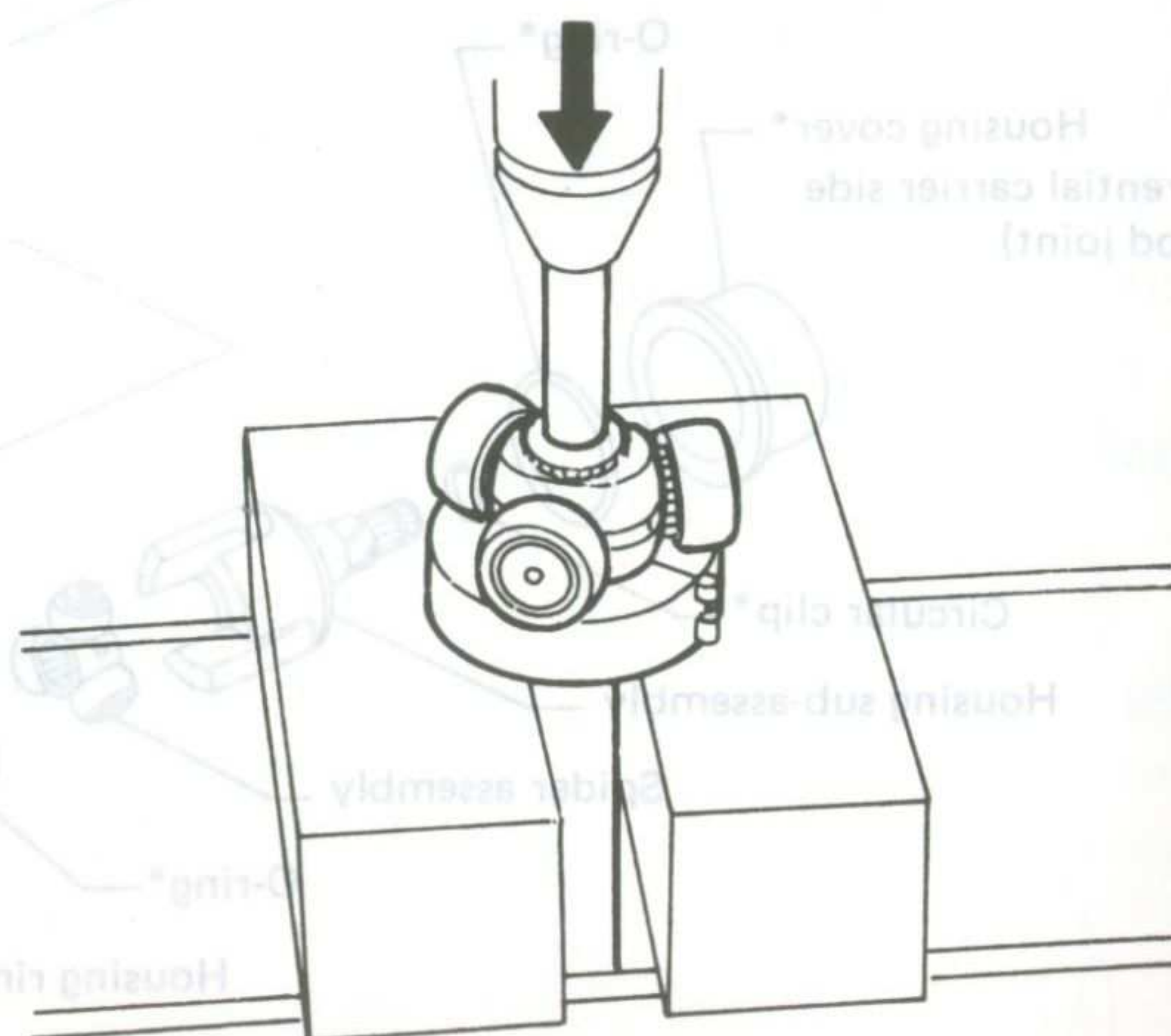
- 1) Make matching mark.



SFA391

- 2) Detach spider assembly using a press.

Do not attempt to directly touch contact surface of drive shaft end. Use a suitable tool.
Be careful not to drop drive shaft.



SFA392

DRIVE SHAFT—"Tripod-Tripod" Type

Inspection

DRIVE SHAFT

Check for cracks or other damage. Replace if necessary.

TRIPOD JOINT

- Check spider assembly for bearing and washer damage. Replace spider assembly if necessary.
- Check slide joint housing and housing sub-assembly for any damage. Replace if necessary.

Assembly

- After drive shaft has been assembled, ensure that it moves smoothly over its entire range without binding.
- Use NISSAN GENUINE GREASE or equivalent after every overhaul.

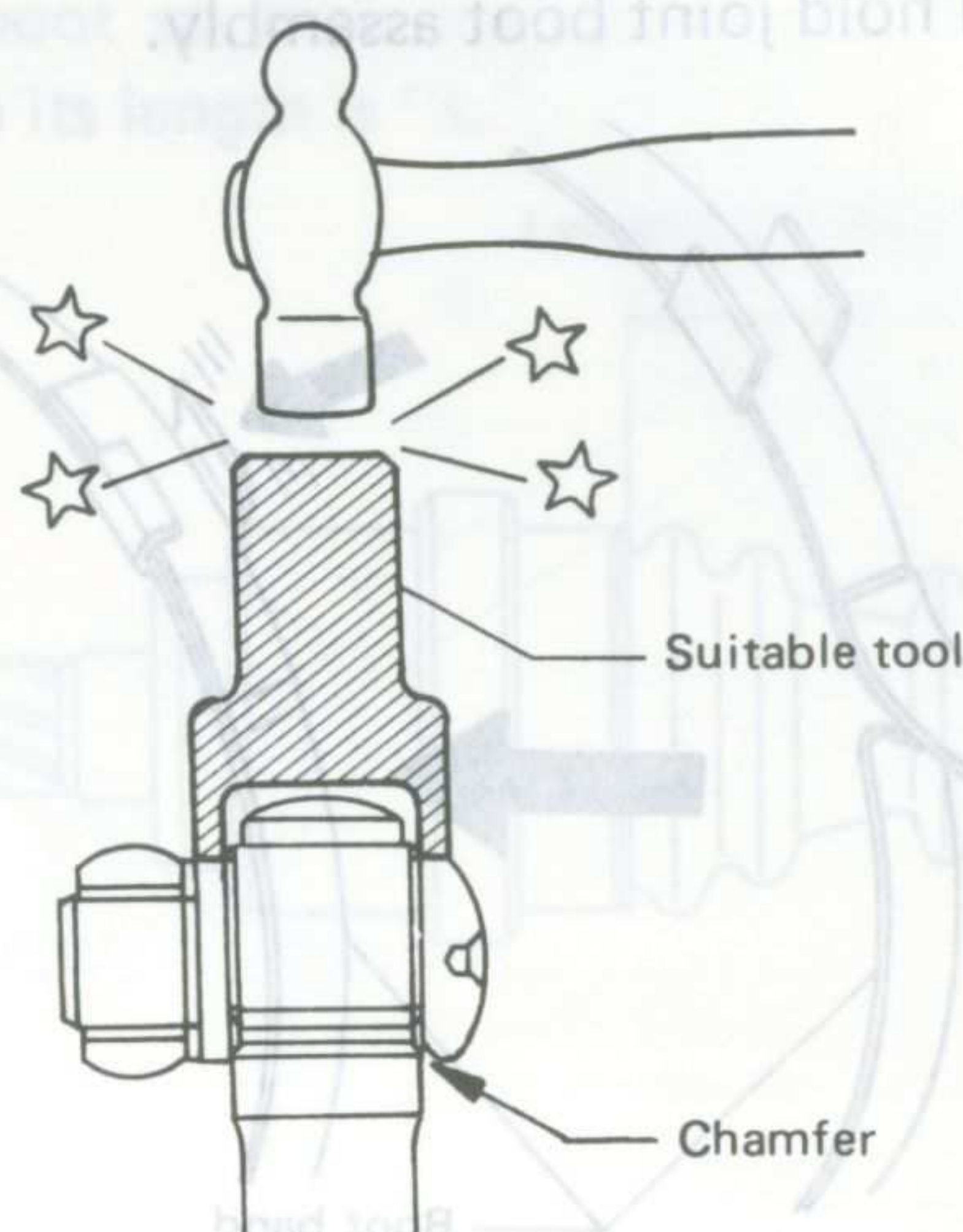
WHEEL SIDE

Be careful not to scratch boot with drive shaft serration.

Install spider assembly.

- 1) Place drive shaft in a vise, using soft cushioning pads.
- 2) Install spider assembly securely, ensuring marks are properly aligned.

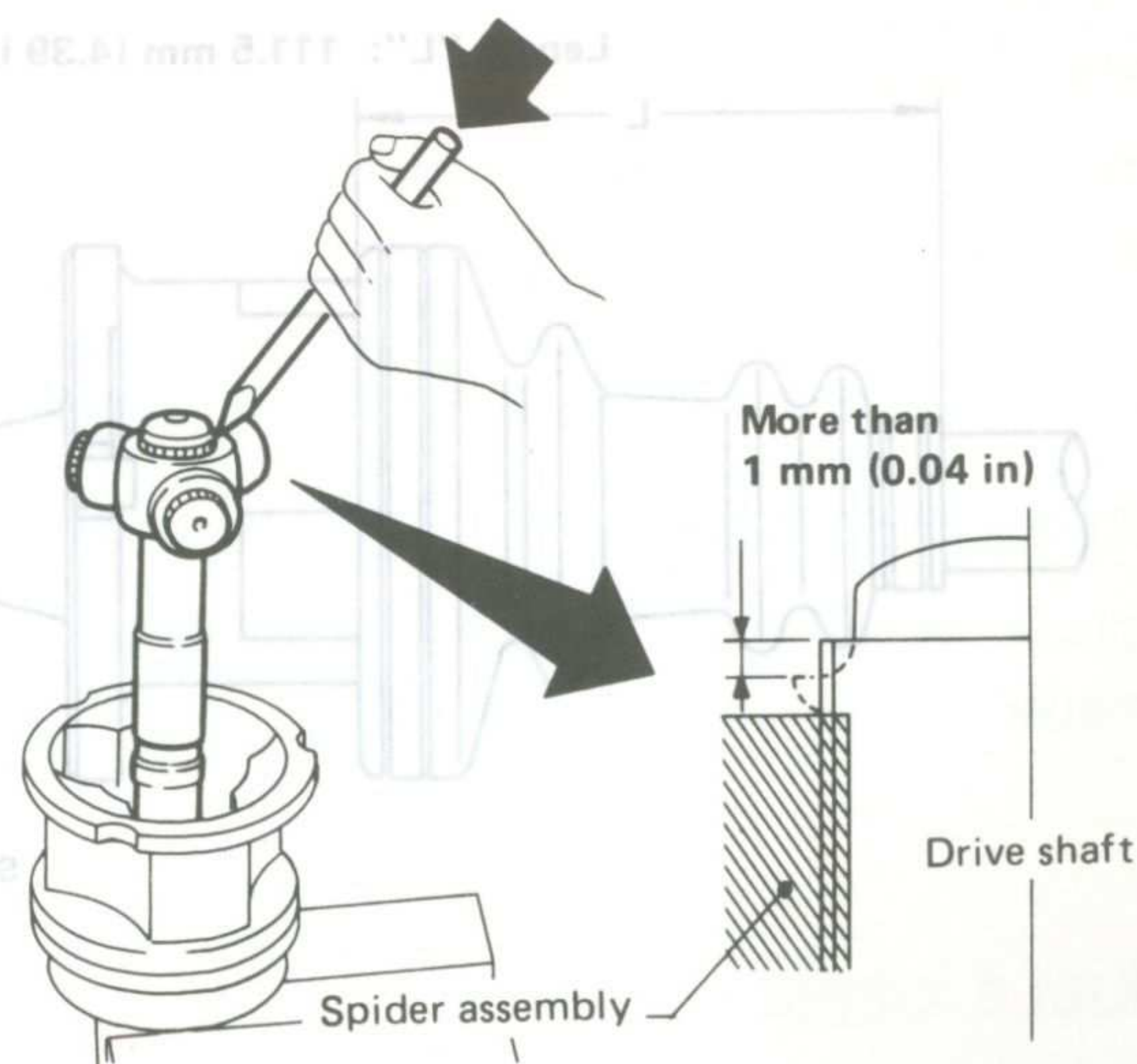
Press-fit with spider assembly serration chamfer facing shaft.



SFA397

- 3) Stake serration portion evenly at three places. Avoid areas which have been previously staked. Always stake two or three teeth at each place.

Stake more than 1 mm (0.04 in)

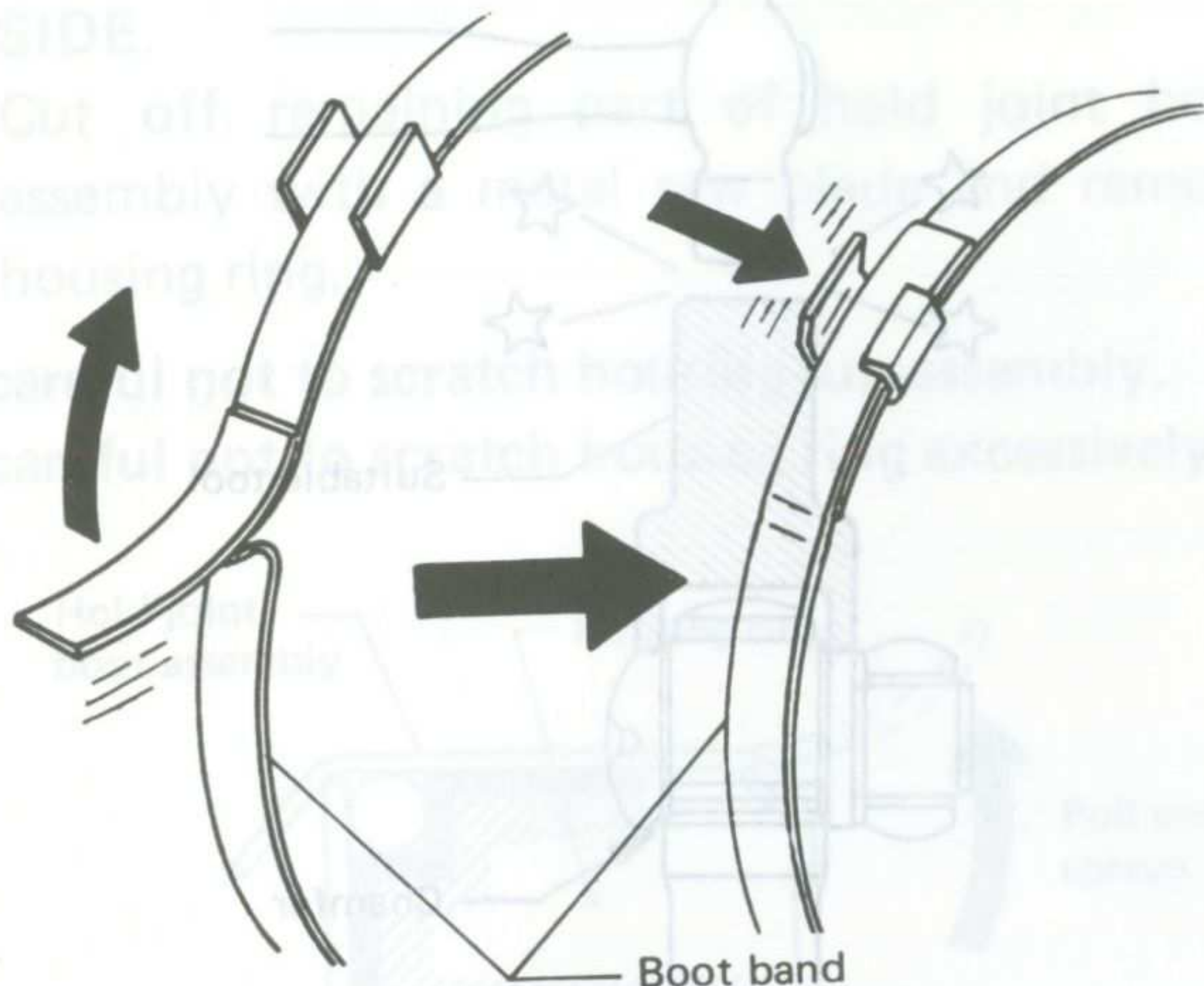


SFA422

DRIVE SHAFT—"Tripod-Tripod" Type

Assembly (Cont'd)

- Install hold joint boot assembly.



SFA395

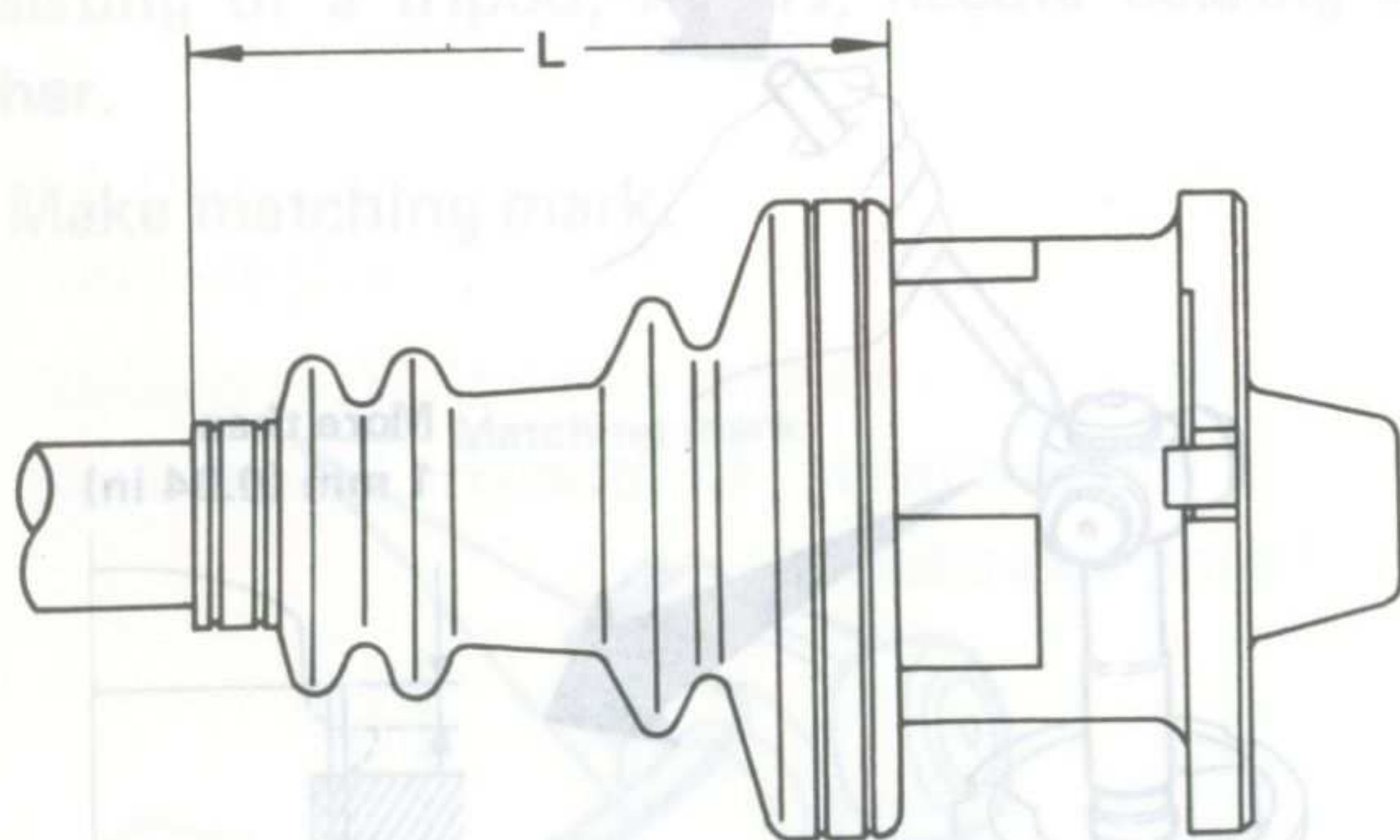
- Pack with grease.

Specified amount of grease:

185 - 195 g (6.52 - 6.88 oz)

- Set boot so that it does not swell or deform when its length is "L".

Length "L": 111.5 mm (4.39 in)



SRA452

DIFFERENTIAL CARRIER SIDE

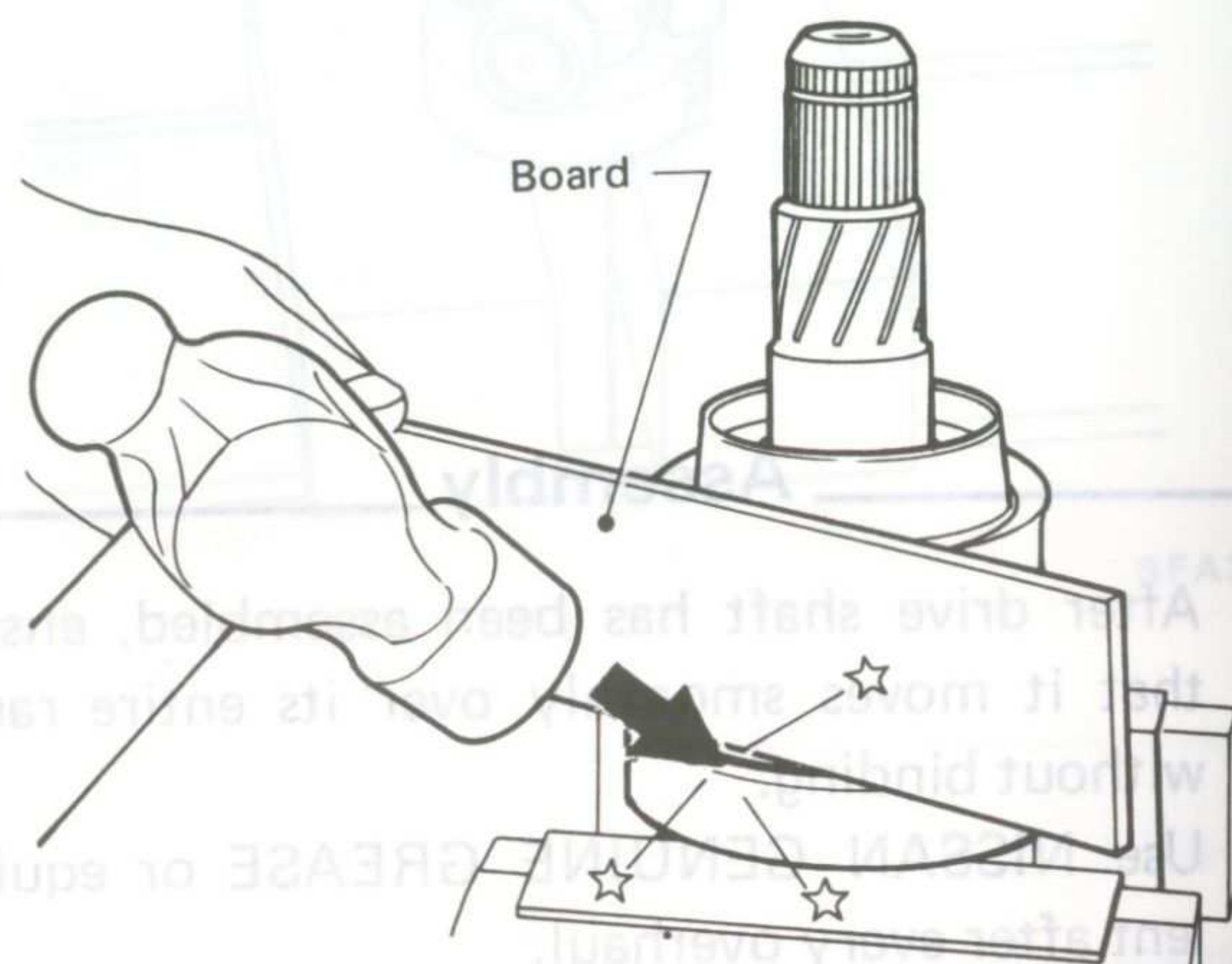
CAUTION:

When replacing housing ring or housing sub-assembly, always replace them as a set.

- Bend the edge over along the entire circumference.

Bend the edge at two positions (180° apart) and ensure that housing cover does not rattle.

Place a board on housing cover to prevent it from being scratched.



SRA340

- Install new boot band and hold joint boot assembly onto drive shaft.

Be careful not to scratch boot with drive shaft serration.

- Install spider assembly. Refer to WHEEL SIDE.
- Pack with grease.

Specified amount of grease:

155 - 165 g (5.47 - 5.82 oz)

- Place hold joint boot assembly so that its flange is in vise.

Do not place any other part of hold joint boot assembly on a vise.

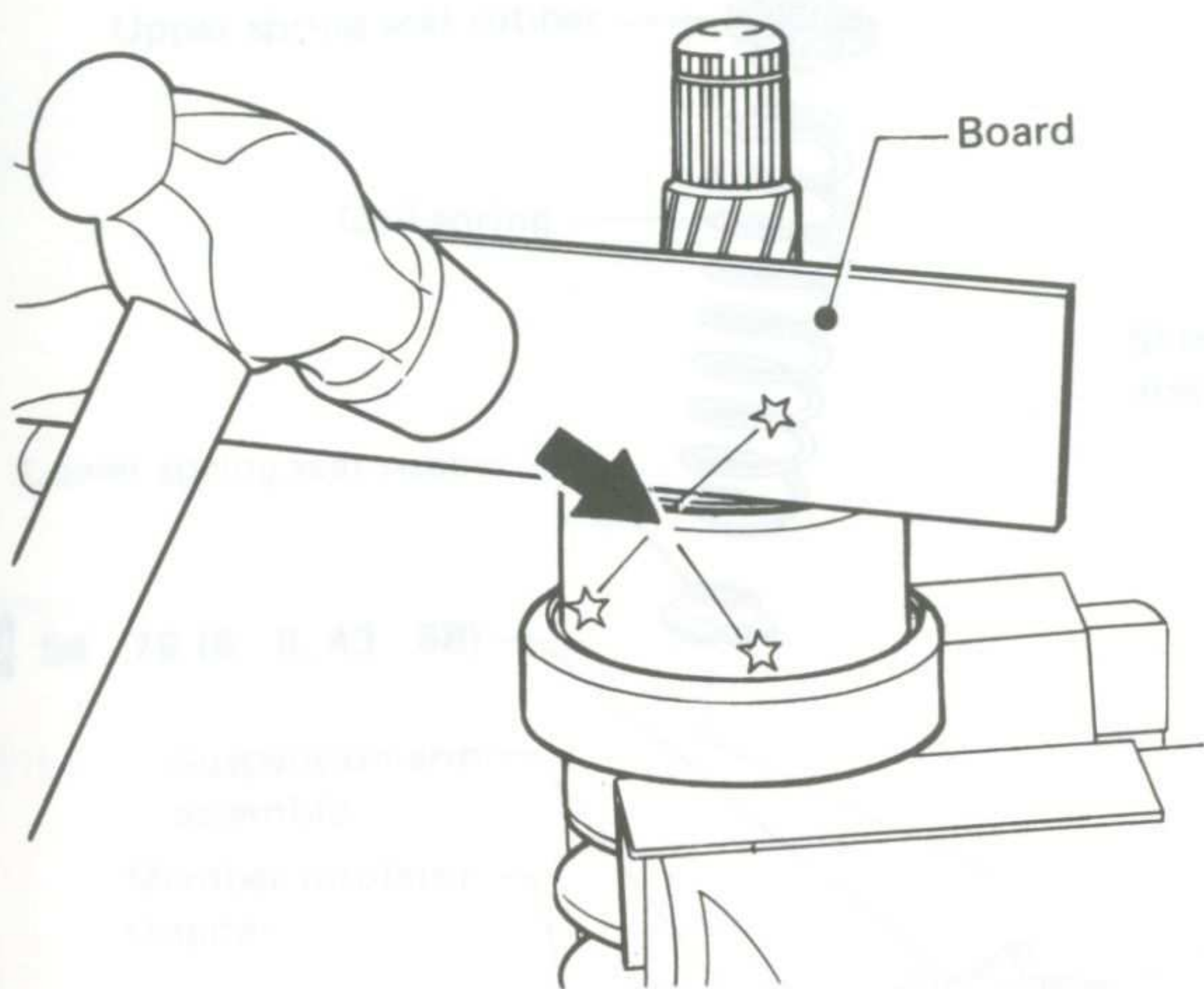
- Insert housing sub-assembly into place.
- Bend the edge over along the entire circumference.

DRIVE SHAFT—"Tripod-Tripod" Type

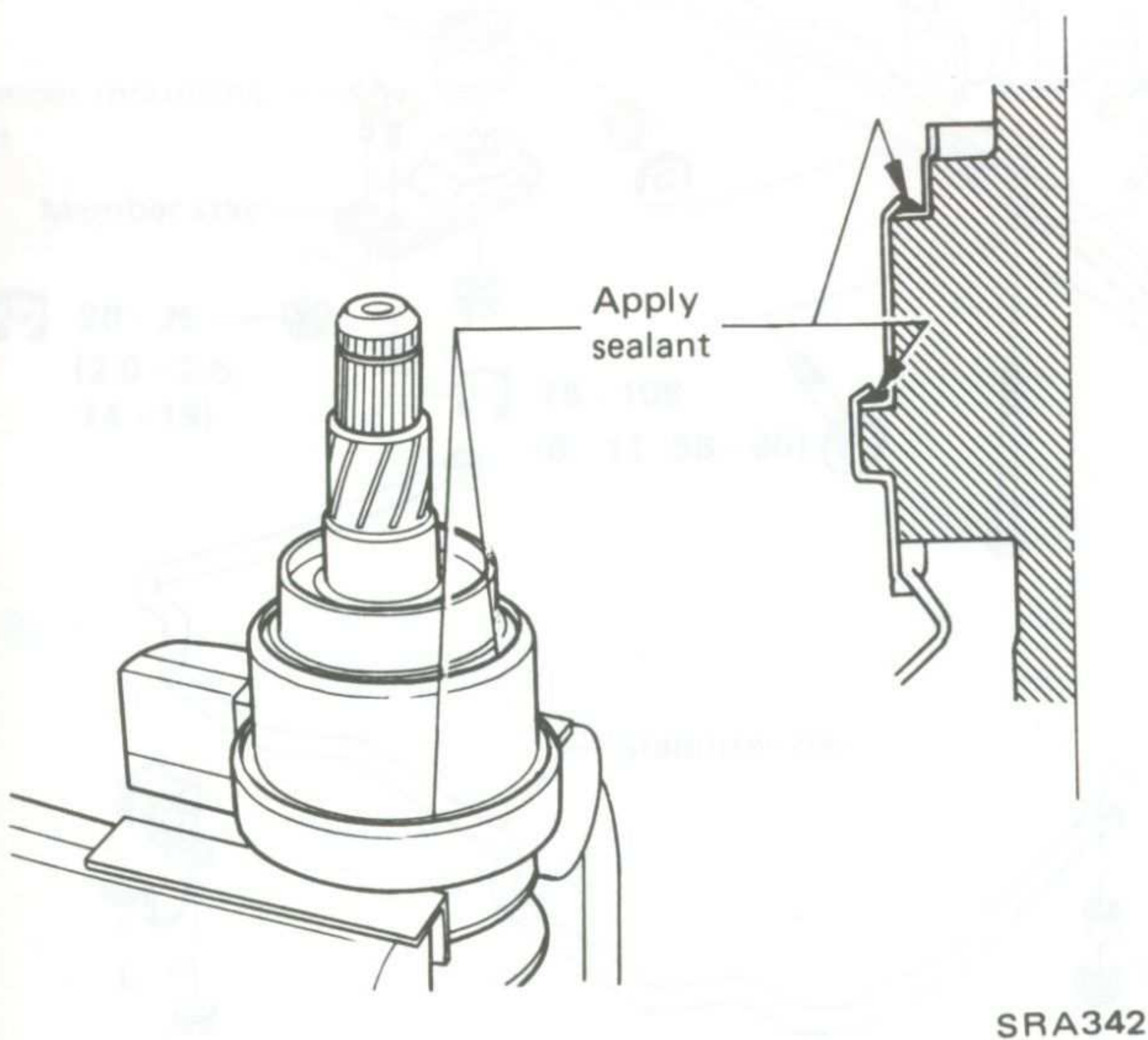
Assembly (Cont'd)

Bend the edge at two positions (180° apart) and ensure that housing sub-assembly does not rattle.

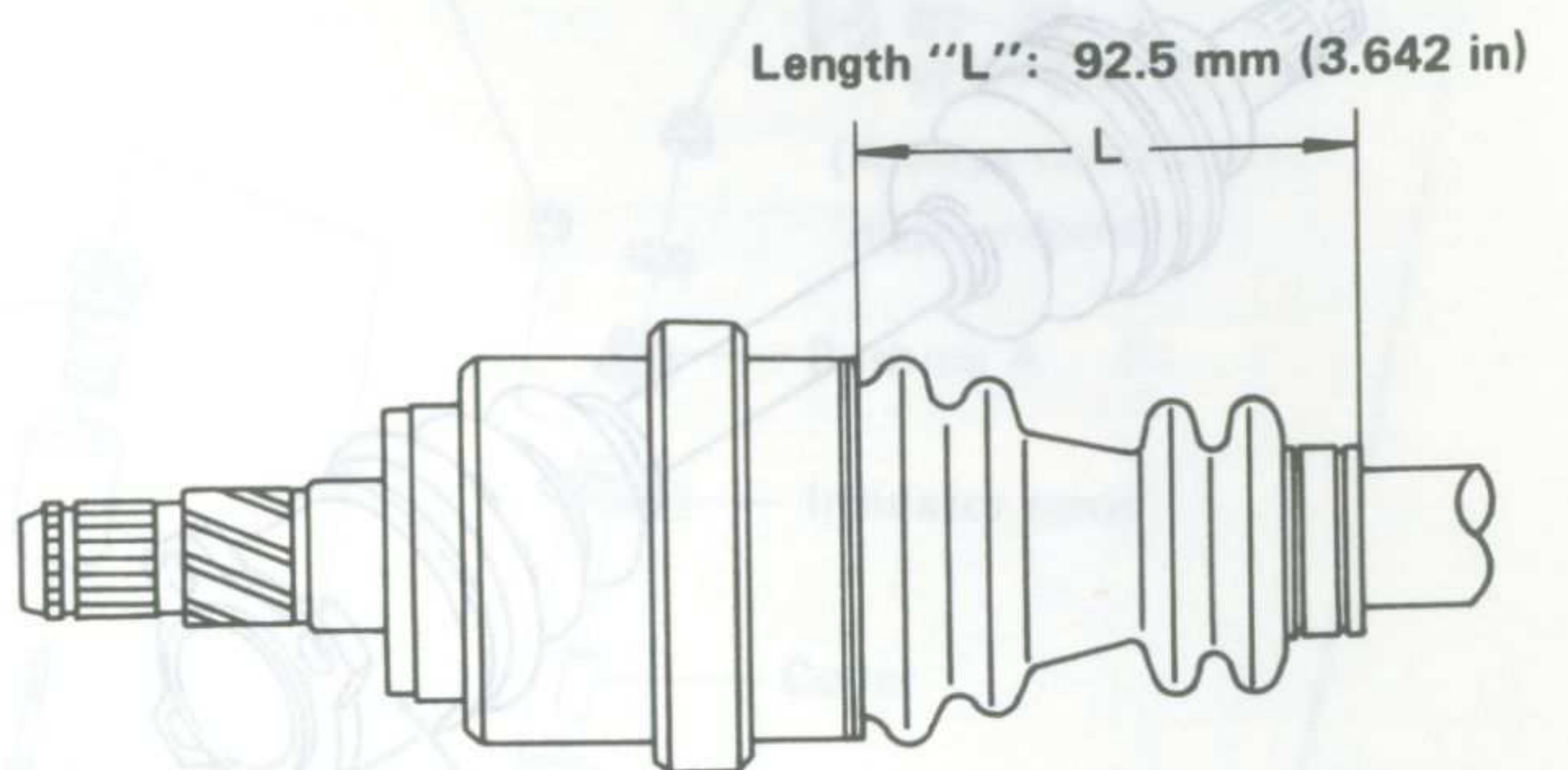
Place a board on housing sub-assembly to prevent it from being scratched.



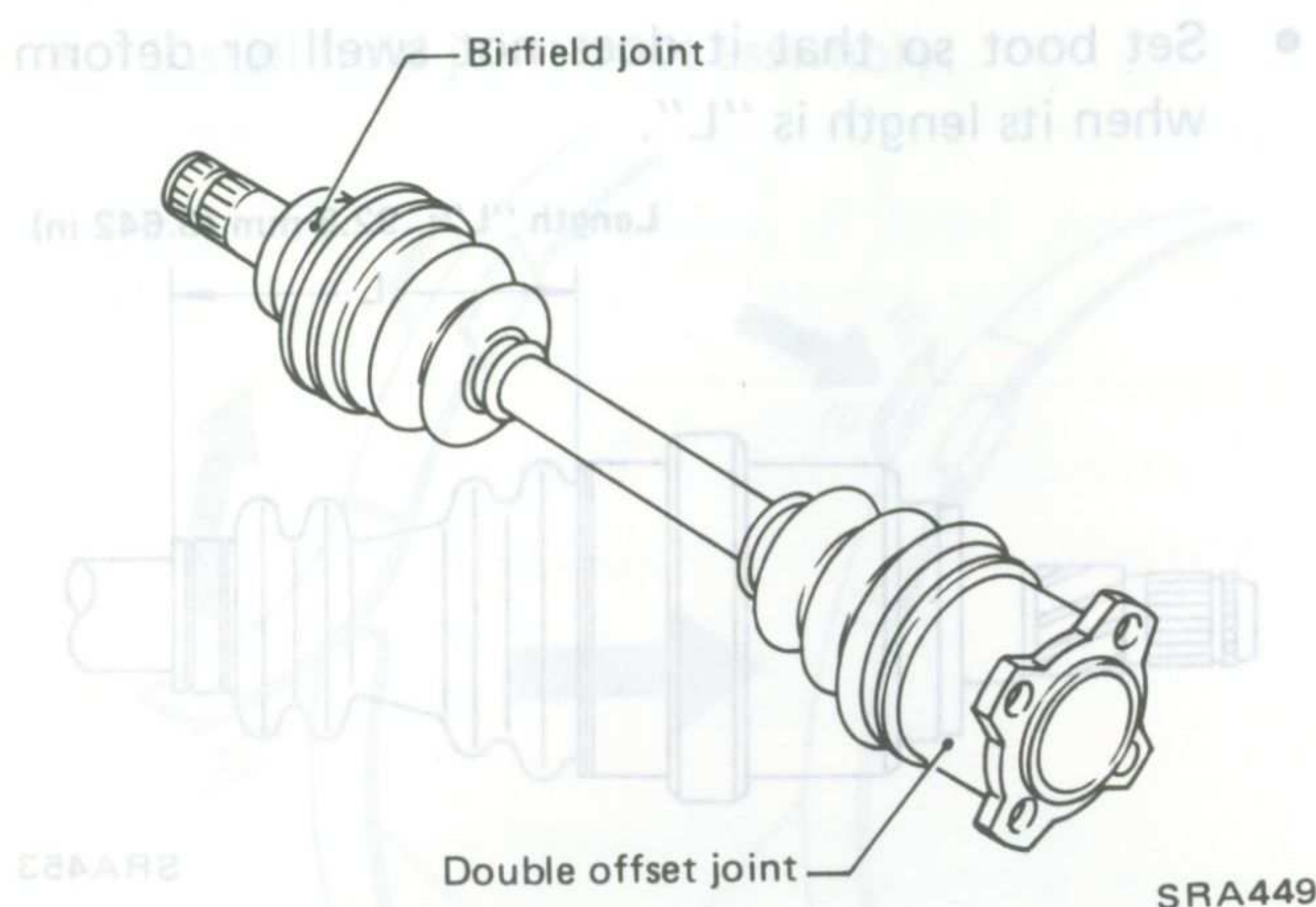
- Apply sealant.



- Set boot so that it does not swell or deform when its length is "L".



DRIVE SHAFT—"Double Offset-Birfield" Type



CAUTION:

Joints on both sides are non-disassembling type.

Inspection

DRIVE SHAFT

Check for cracks or other damage. Replace drive shaft assembly if necessary.

BIRFIELD JOINT

Replace drive shaft assembly if birfield joint is damaged.

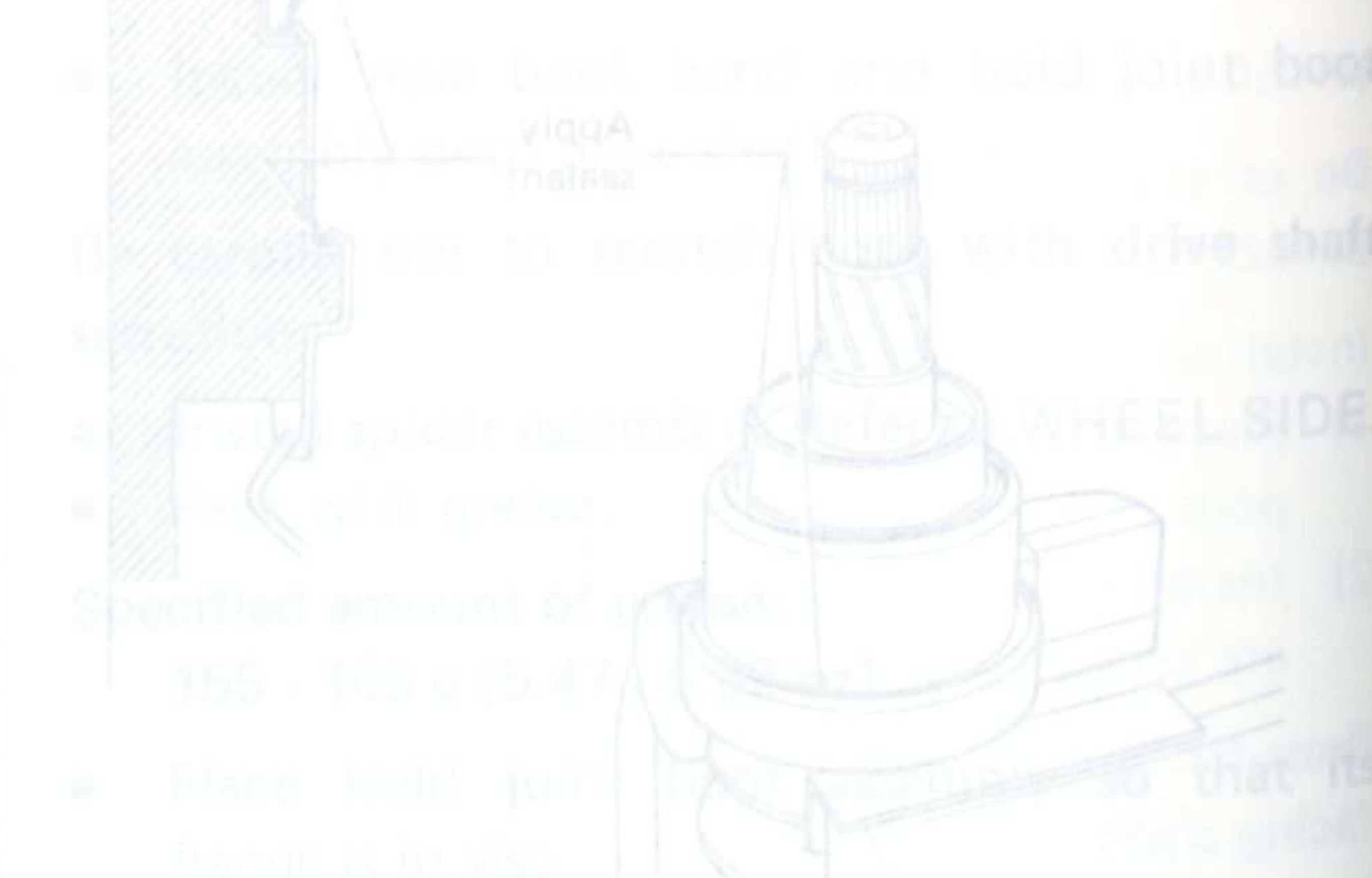
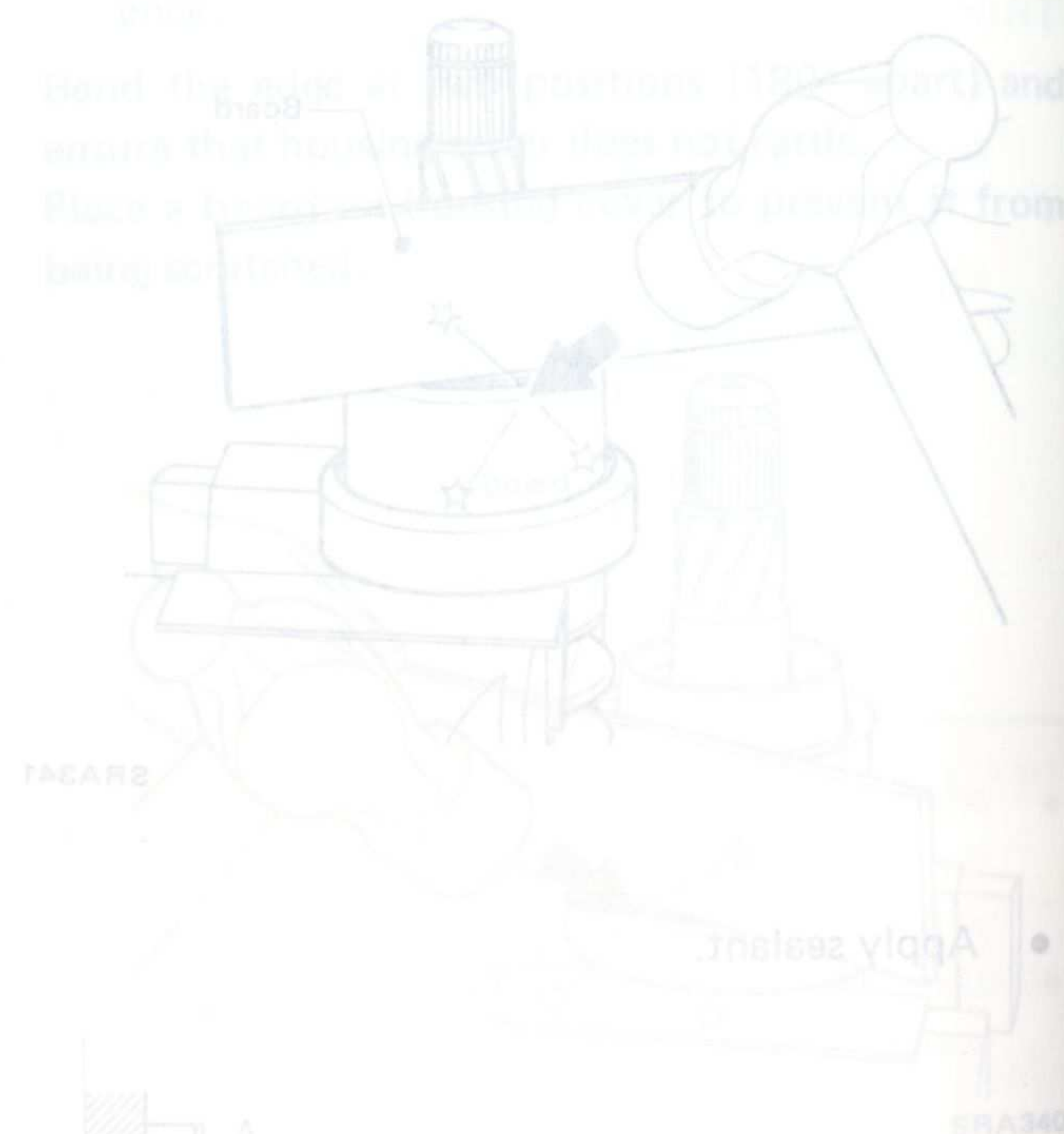
DOUBLE OFFSET JOINT

Replace drive shaft assembly if double offset joint is damaged.

BOOT

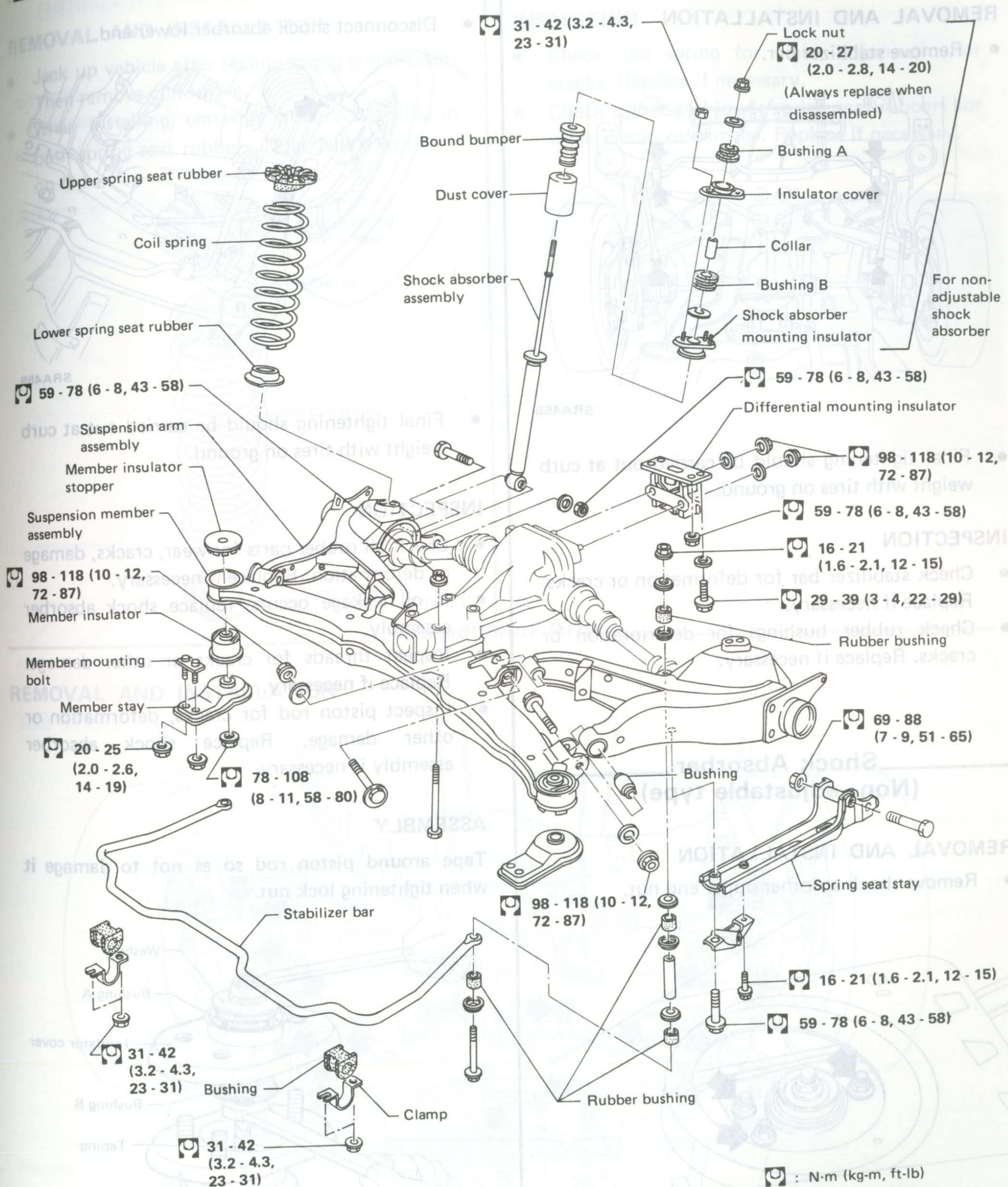
Replace drive shaft assembly if boot is fatigued, cracked or worn.

Bend the edge at two positions (180° apart) and ensure that housing sub-assembly does not rotate. Place a board on housing sub-assembly to prevent it from being scratched.



Do not place any other part of hold joint boot assembly on a vice. Band the edge along the entire circumference.

REAR SUSPENSION



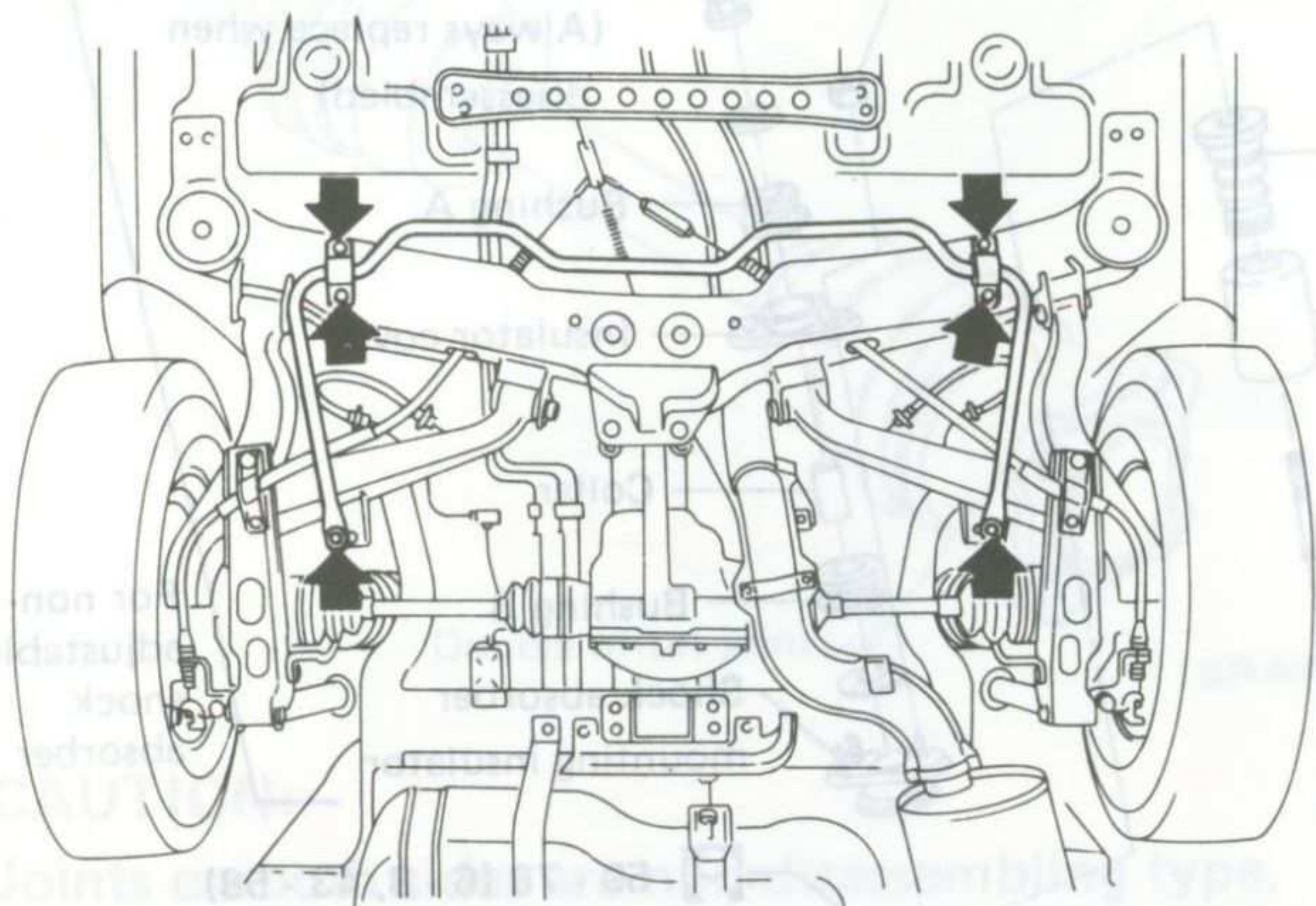
SRA454

REAR SUSPENSION

Stabilizer Bar

REMOVAL AND INSTALLATION

- Remove stabilizer bar.



SRA458

- Final tightening should be carried out at curb weight with tires on ground.

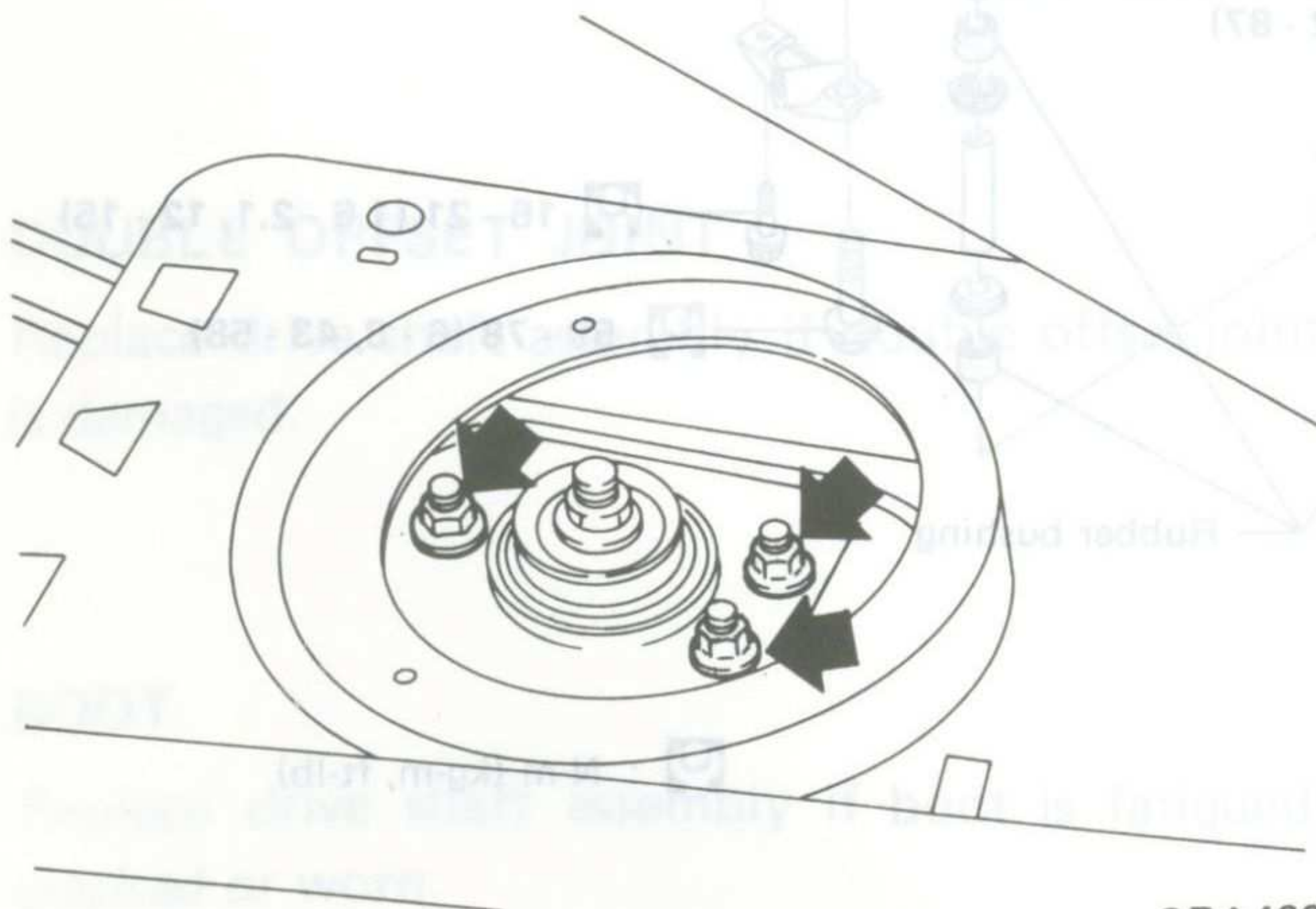
INSPECTION

- Check stabilizer bar for deformation or cracks. Replace if necessary.
- Check rubber bushings for deterioration or cracks. Replace if necessary.

Shock Absorber (Non - adjustable type)

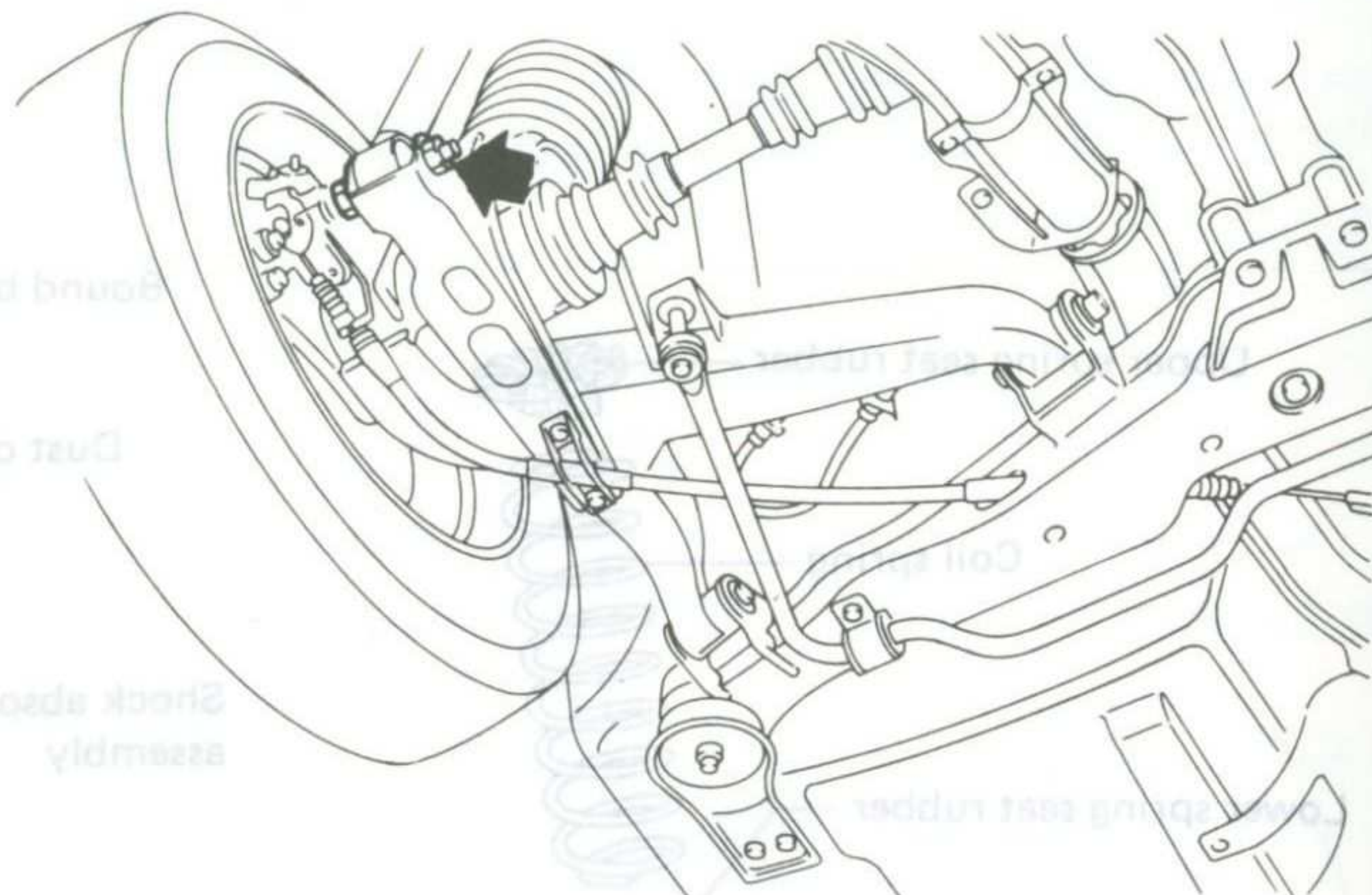
REMOVAL AND INSTALLATION

- Remove shock absorber upper end nut.



SRA460

- Disconnect shock absorber lower end.



SRA459

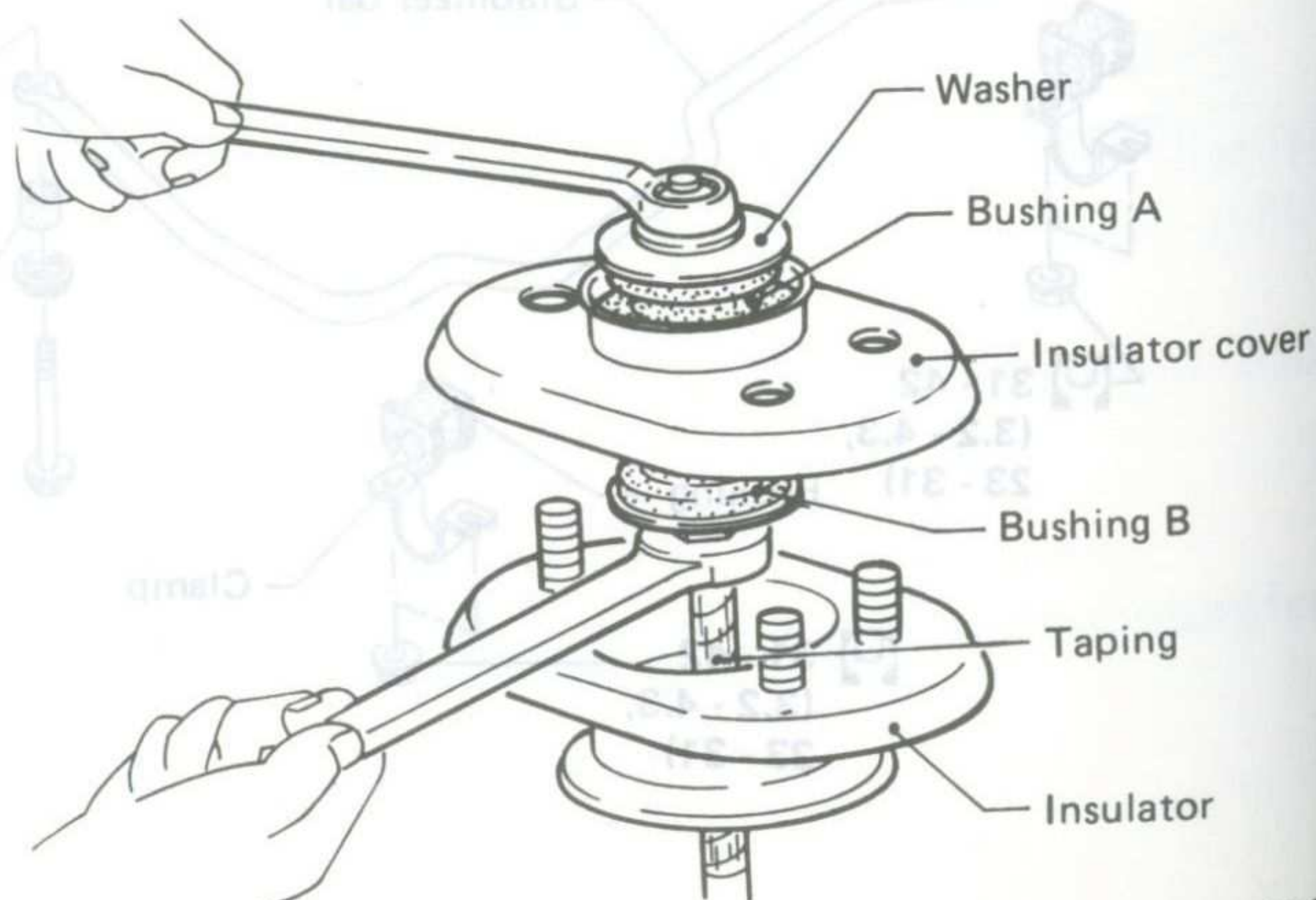
- Final tightening should be carried out at curb weight with tires on ground.

INSPECTION

- Check all rubber parts for wear, cracks, damage or deformation. Replace if necessary.
- If oil leakage occurs, replace shock absorber assembly.
- Inspect threads for cracks or other damage. Replace if necessary.
- Inspect piston rod for cracks, deformation or other damage. Replace shock absorber assembly if necessary.

ASSEMBLY

Tape around piston rod so as not to damage it when tightening lock nut.



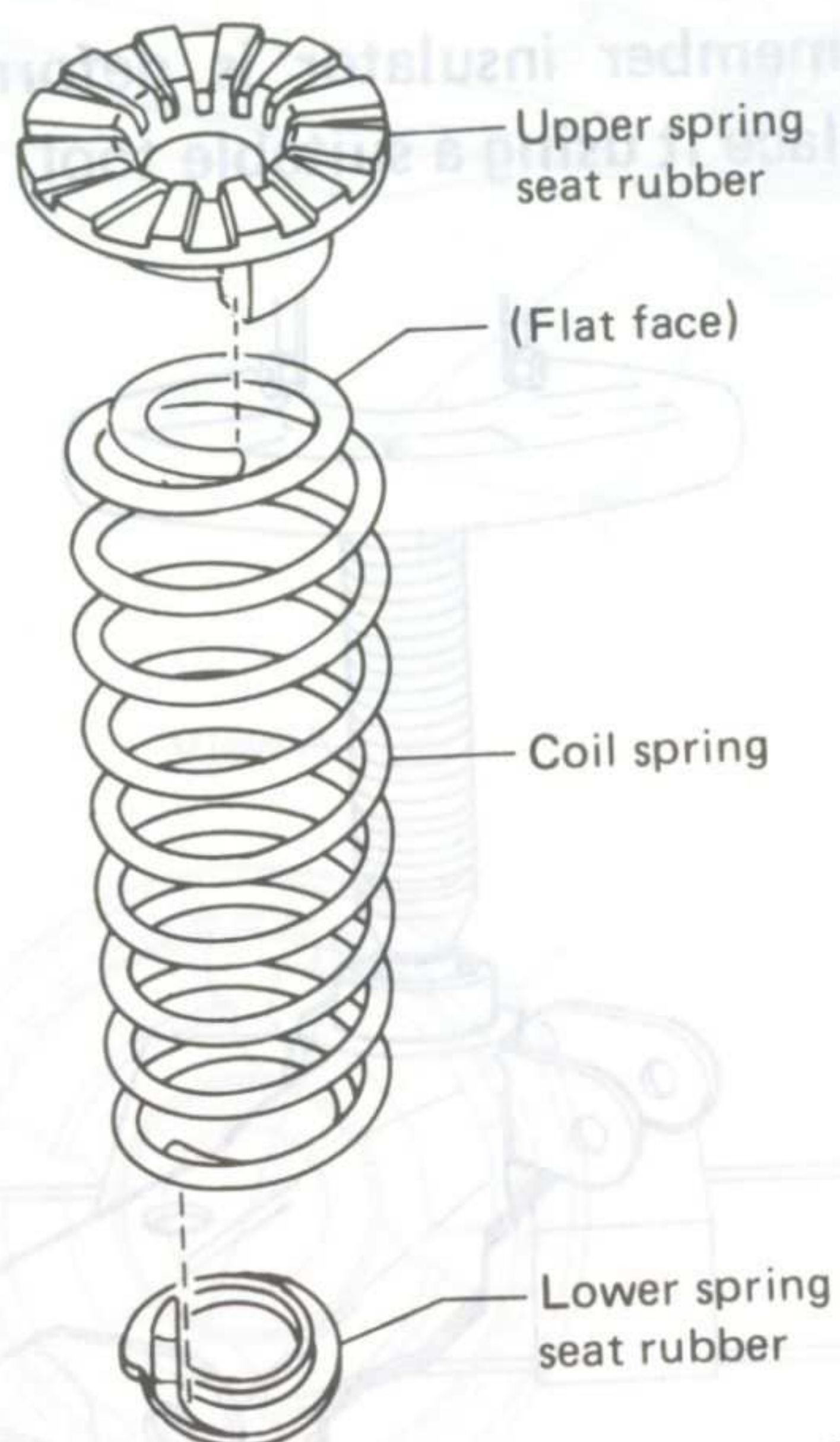
SRA461

REAR SUSPENSION

Coil Spring

REMOVAL AND INSTALLATION

- Jack up vehicle after setting spring compressor. Then remove coil spring.
- When installing, correctly place coil spring in both spring seat rubbers. (Flat face of spring is on top.)



SRA462

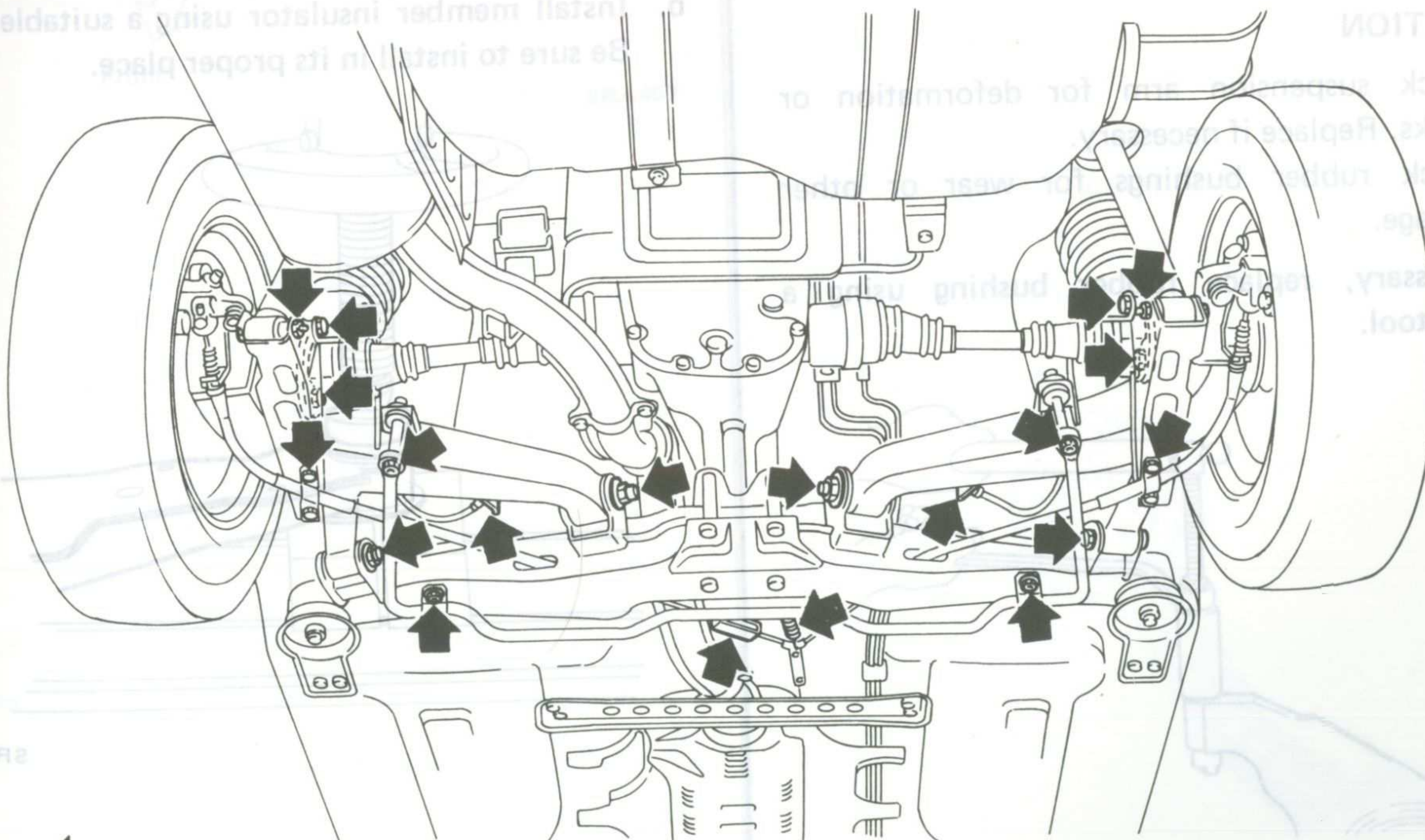
INSPECTION

- Check coil spring for yield, deformation or cracks. Replace if necessary.
- Check upper and lower spring seat rubbers for wear, cracks or damage. Replace if necessary.



Suspension Arm

REMOVAL AND INSTALLATION



← : Removing and installing points

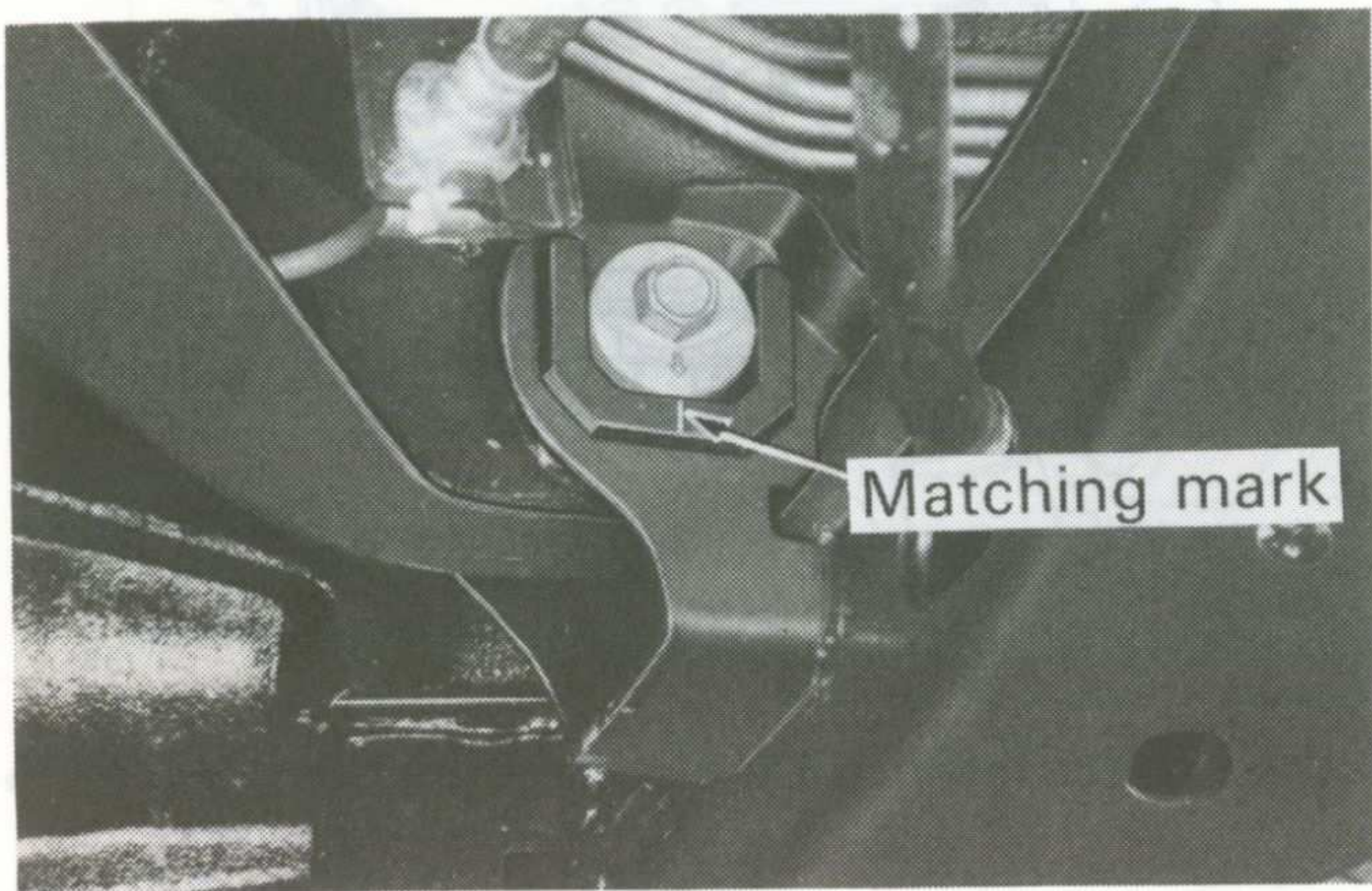
SRA463

REAR SUSPENSION

Suspension Arm (Cont'd)

- Remove axle shaft assembly. Refer to Axle Shaft for removal.
- Remove stabilizer bar bolt.
- Disconnect shock absorber lower end.
- Remove suspension arm pin.

Before removing, put matching mark on pin.

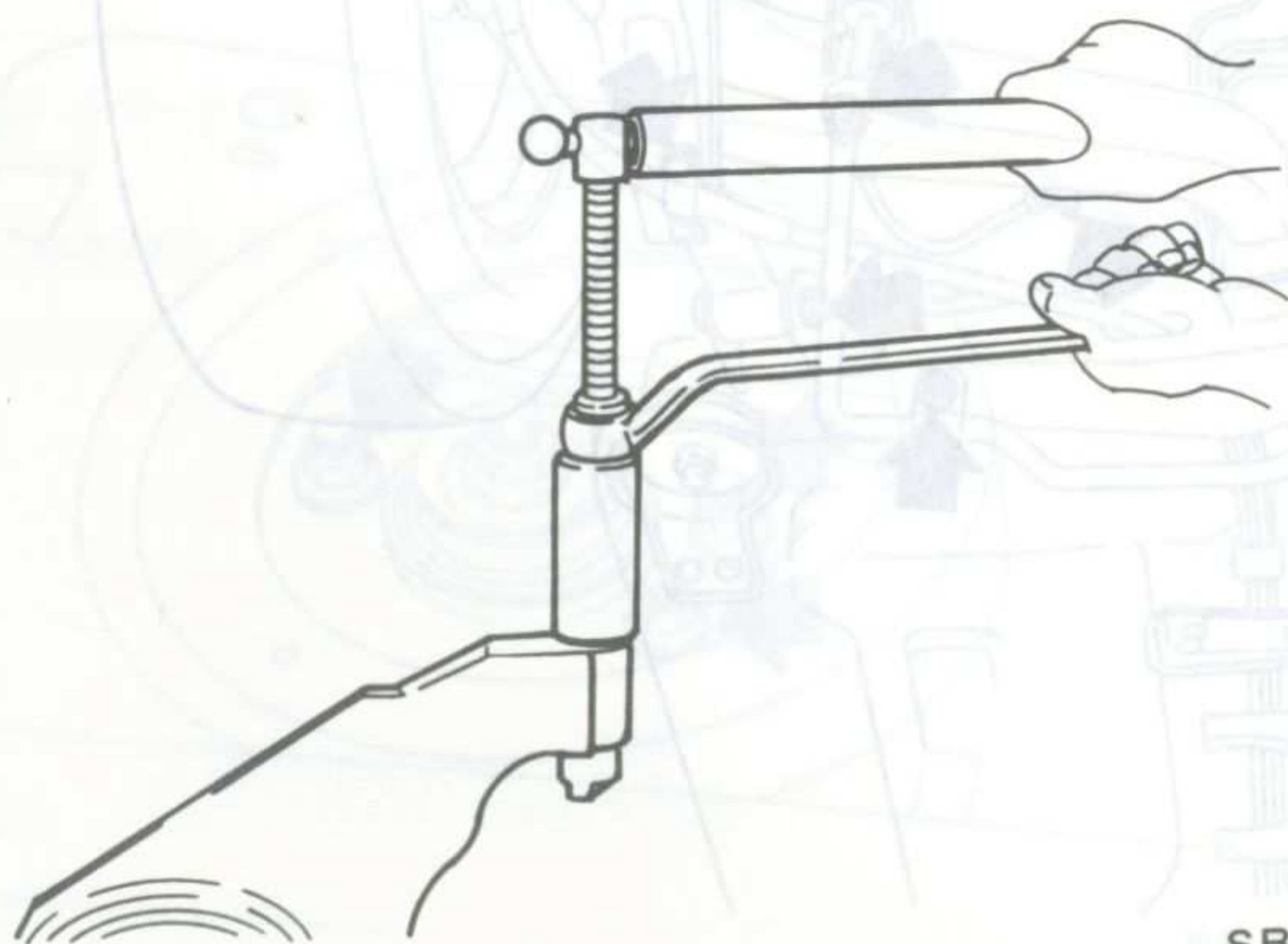


- When installing, tighten suspension arm pin nut to specified torque after installing wheels and placing vehicle on ground under the curb weight.
- Refer to Section MA for toe-in adjustment.

INSPECTION

- Check suspension arm for deformation or cracks. Replace if necessary.
- Check rubber bushings for wear or other damage.

If necessary, replace rubber bushing using a suitable tool.

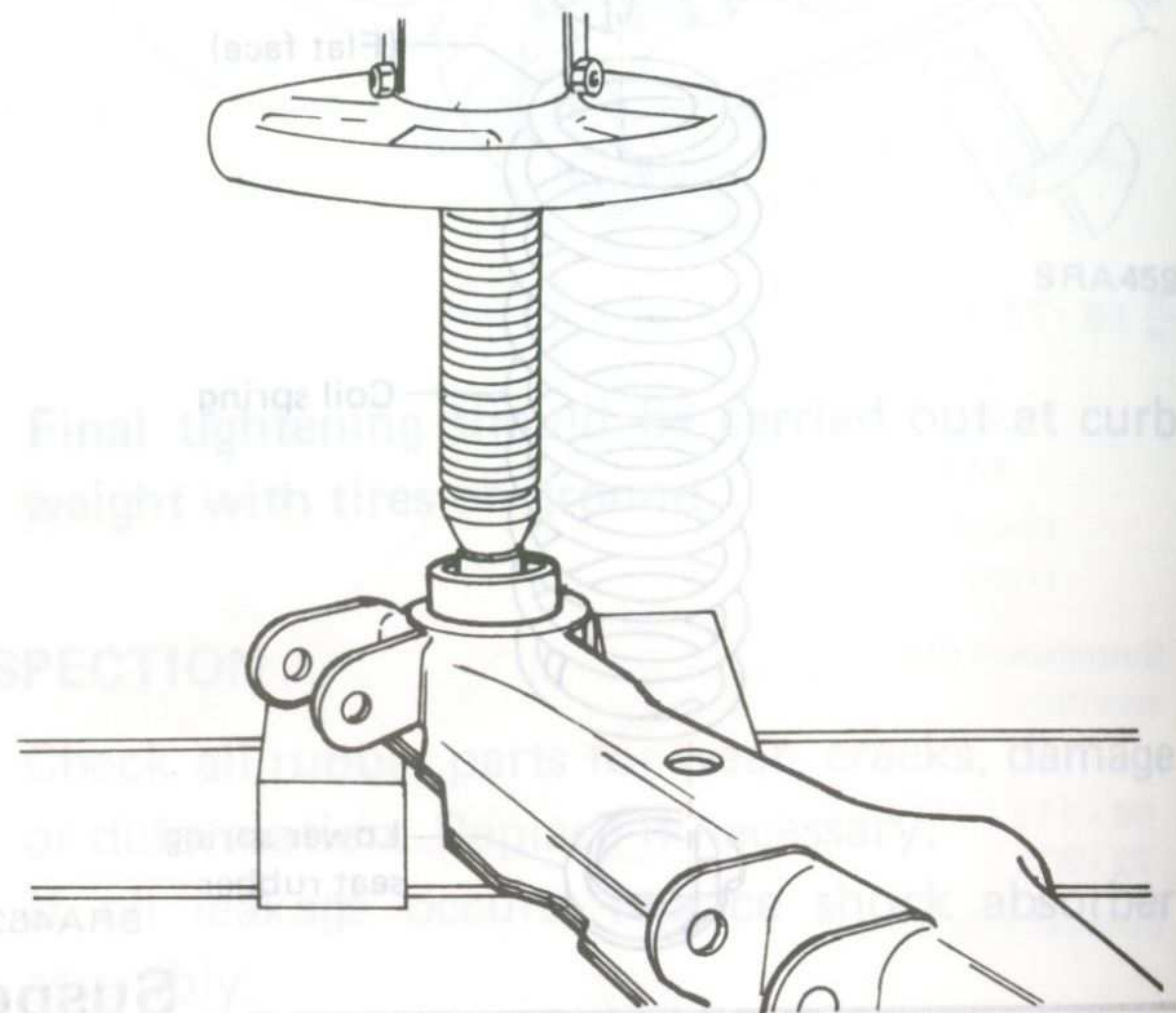


SRA465

Suspension Member and Differential Mounting Insulator

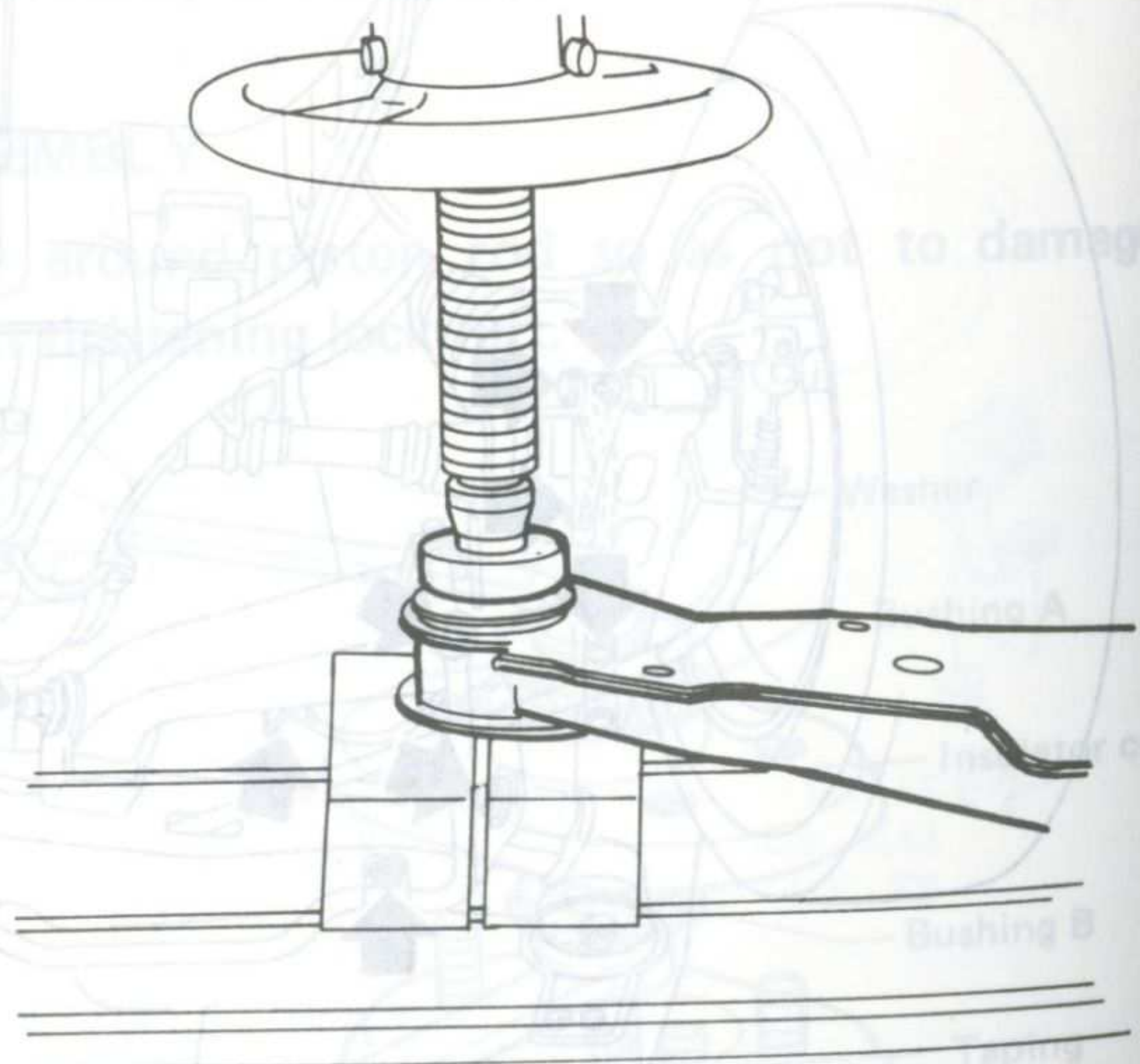
INSPECTION

- Check differential mounting insulator for deformation or cracks. Replace if necessary.
 - Check suspension member for deformation or cracks. Replace if necessary.
- a. If member insulator is deformed or cracked, replace it using a suitable tool.



SRA455

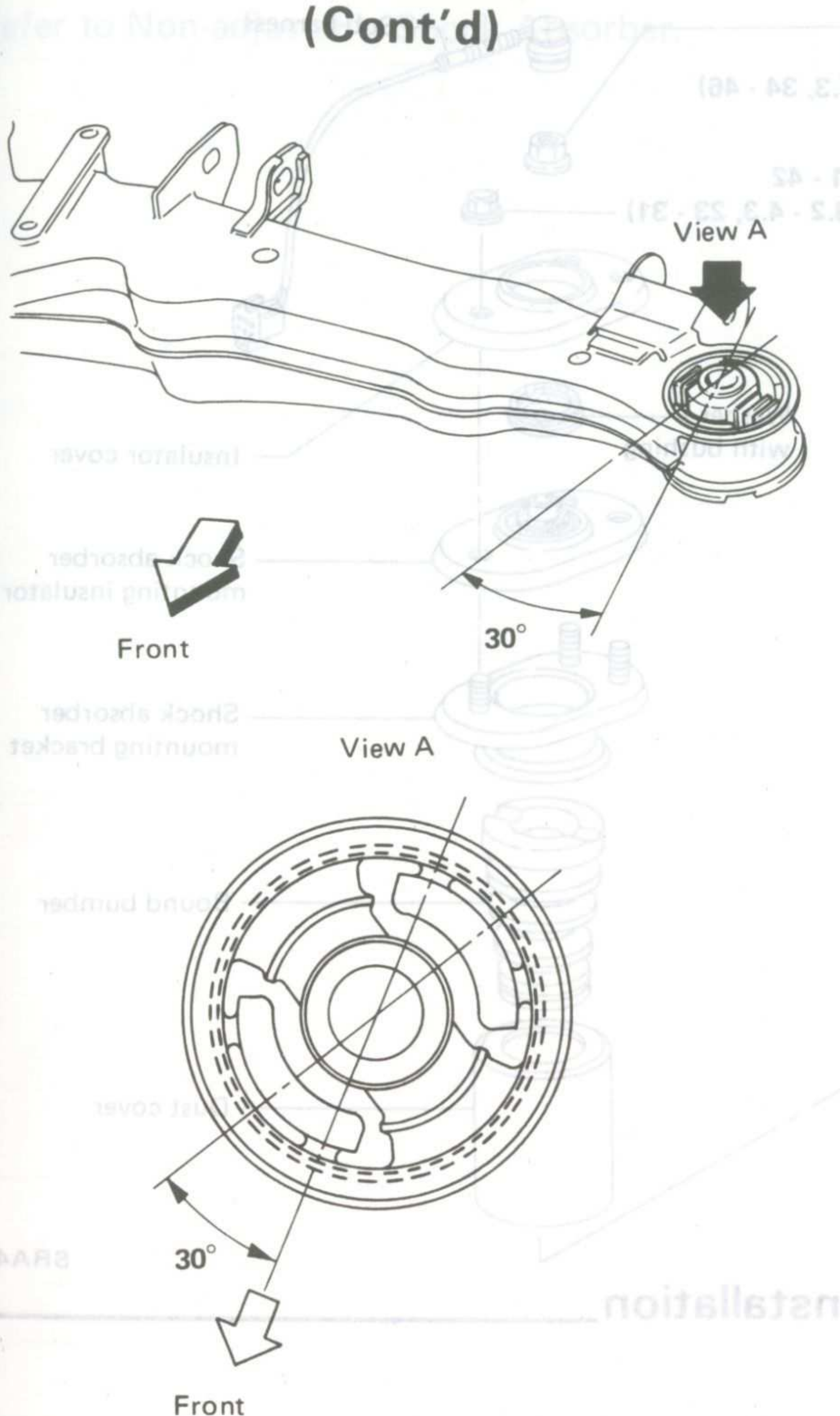
- b. Install member insulator using a suitable tool. Be sure to install in its proper place.



SRA456

REAR SUSPENSION

Suspension Member and Differential Mounting Insulator (Cont'd)



Remove shock absorber upper end nut.

CAUTION: Keep water and dust away from connector.

Disconnect shock absorber lower end.

Remove luggage side trim. Then disconnect connector.

Disconnect connector gripping both sides of sub-harness connector.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

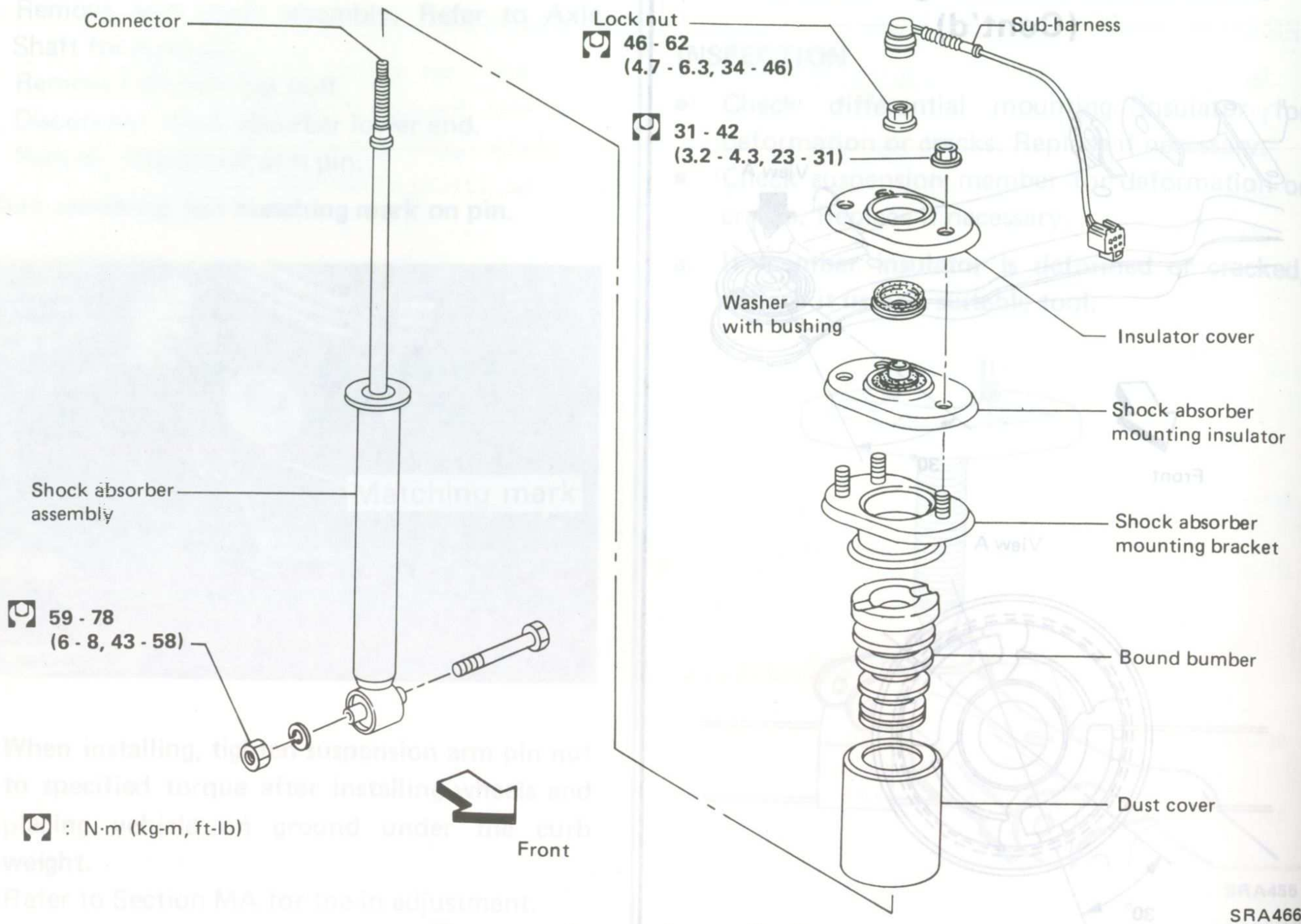
Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

Remove shock absorber assembly.

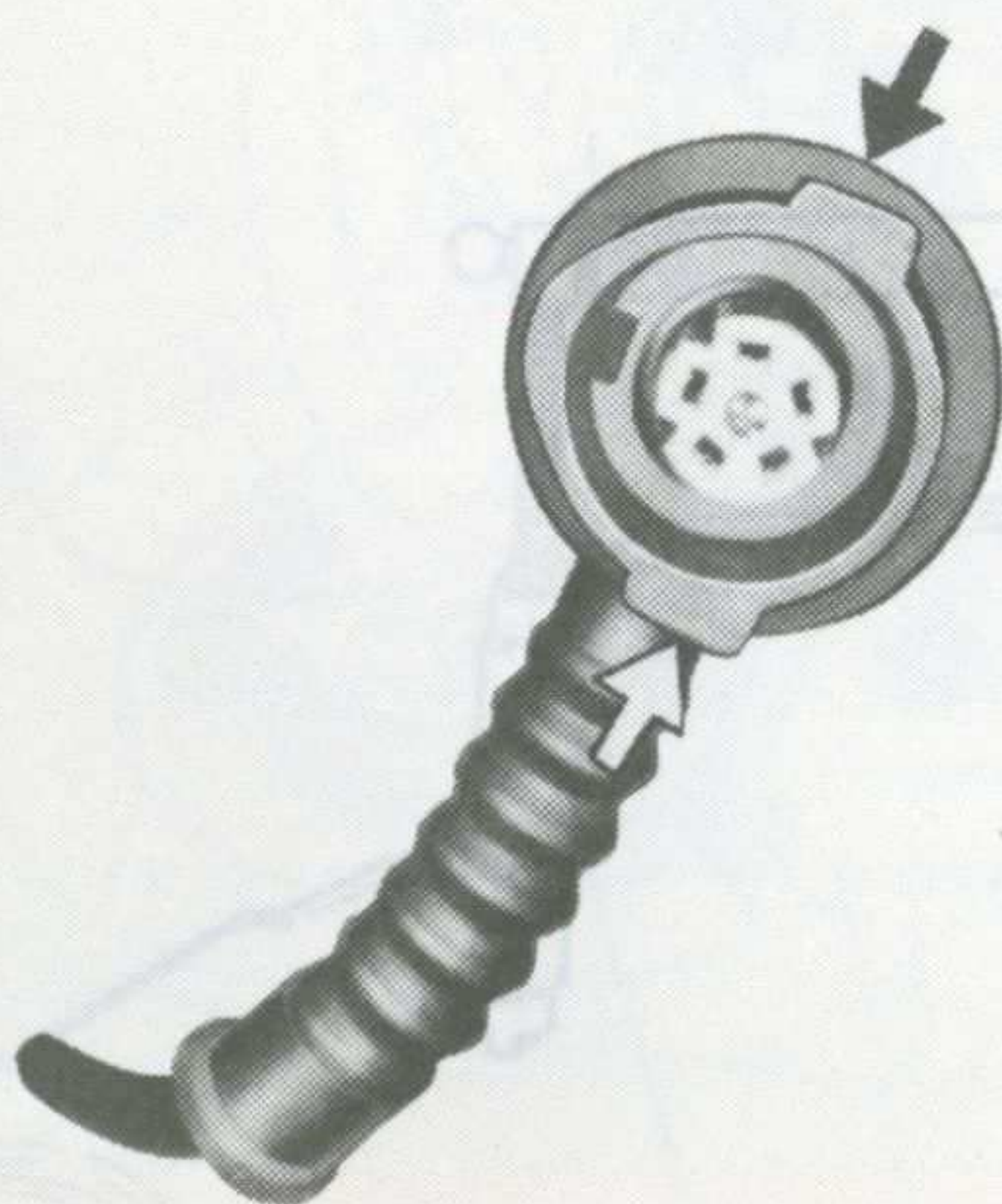
REAR SUSPENSION—Adjustable Shock Absorber



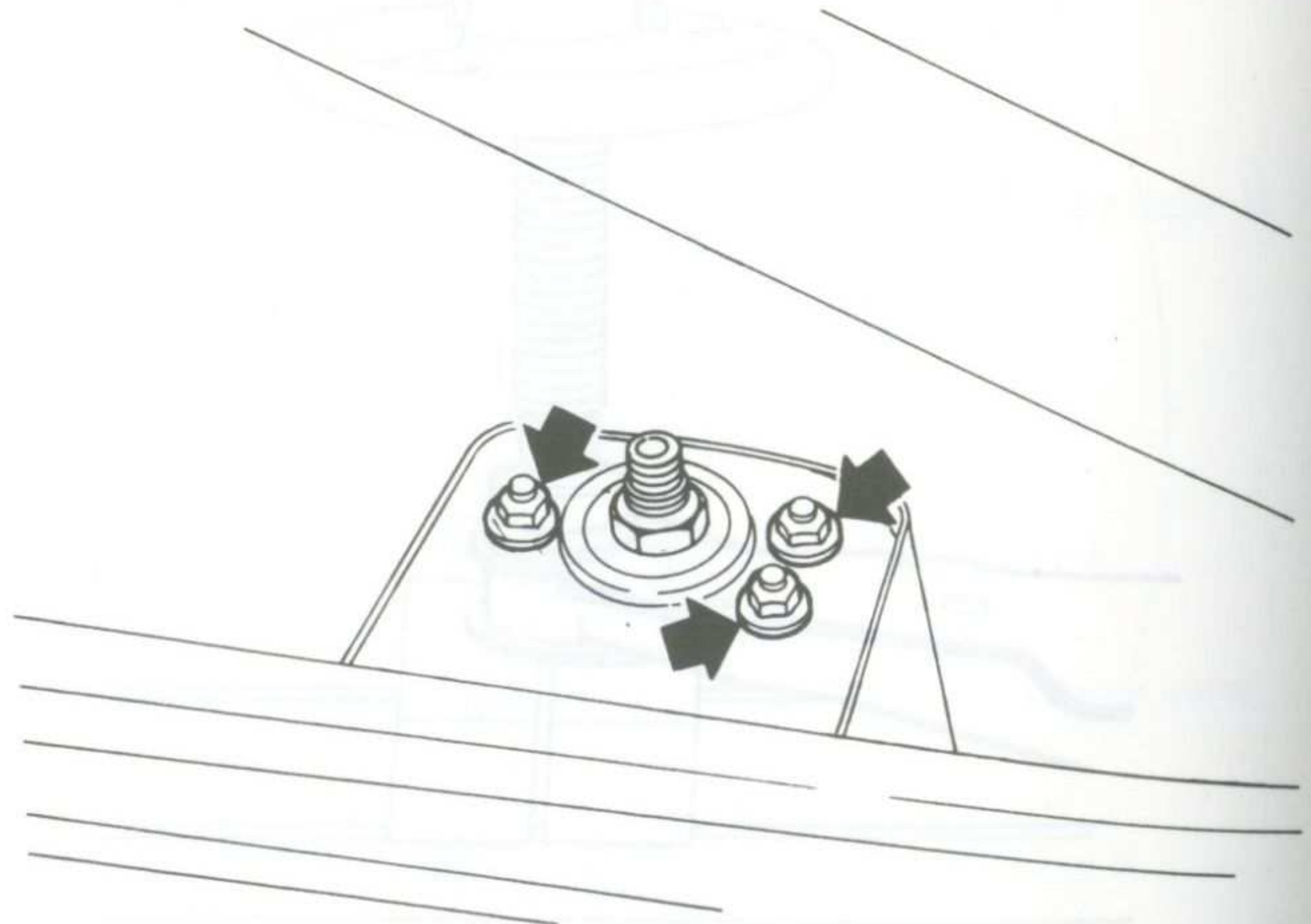
Removal and Installation

- Remove luggage side trim. Then disconnect connector.

Disconnect connector gripping both sides of sub-harness connector.



- Remove shock absorber upper end nut.



- Disconnect shock absorber lower end.

CAUTION:

Keep water and dust away from connector.

REAR SUSPENSION—Adjustable Shock Absorber

Inspection

Refer to Non-adjustable Shock Absorber.

Assembly

- Tape around piston rod so as not to damage it when assembling.
- Connect sub-harness with connector within piston rod using guide. Be careful not to damage connector.



SRA469

Trouble Diagnosis

Refer to FRONT AXLE AND FRONT SUSPENSION.

SERVICE DATA AND SPECIFICATIONS

General Specifications

SUSPENSION

Item	Destination	Engine	Europe					Australia	Except Europe and Australia						
			VG30E		VG30ET			VG30E	VG30E	VG30ET					
			Option	Option						Option					
Suspension type			Semi-trailing arm type independent rear suspension												
Coil spring															
Wire diameter mm (in)			13.8 (0.543)												
Coil diameter mm (in)			110 (4.33)												
Free length mm (in)			336.5 (13.25)	330.5 (13.01)		328 (12.91)			336.5 (13.25)		330.5 (13.01)				
Spring constant N/mm (kg/mm, lb/in)			33.0 (3.36, 188.2)			35.6 (3.63, 203.3)			33.0 (3.36, 188.2)						
Identification color			Purple x 1 Yellow x 2	Pink x 1 Yellow x 2		Orange x 1 White x 2			Purple x 1 Yellow x 2		Pink x 1 Yellow x 2				
Shock absorber Type			Gas-filled double acting hydraulic												
			Non- adjust- able	Adjustable					Non-adjustable			Adjustable			
Piston diameter mm (in)			25.0 - 25.1 (0.984 - 0.988)	32.0 - 32.1 (1.260 - 1.264)					25.0 - 25.1 (0.984 - 0.988)			32.0 - 32.1 (1.260 - 1.264)			
Piston rod diameter mm (in)			12.5 (0.492)	22 (0.87)					12.5 (0.492)			22 (0.87)			
Stroke Maximum/Minimum mm (in)			609.3/ 392.5 (23.99/ 15.45)	599.3/384.5 (23.59/15.14)					609.3/392.5 (23.99/15.45)			599.3/384.5 (23.59/15.14)			
Cylinder diameter mm (in)			38.1 (1.500)	48.6 (1.913)					38.1 (1.500)			48.6 (1.913)			
Damping force [at 0.3 m (1.0 ft/sec.)]				F	N	S	F	N	S				F	N	S
Expansion N (kg, lb)			637 (65, 143)	785 (80, 176)	637 (65, 143)	422 (43, 95)	932 (95, 209)	834 (85, 187)	686 (70, 154)	637 (65, 143)			785 (80, 176)	637 (65, 143)	422 (43, 95)
Compression N (kg, lb)			441 (45, 99)	588 (60, 132)	441 (45, 99)	186 (19, 42)	559 (57, 126)	490 (50, 110)	441 (45, 99)	441 (45, 99)			588 (60, 132)	441 (45, 99)	186 (19, 42)
Stabilizer tube diameter															
Outer mm (in)			22.2 (0.874)					24 (0.945)			22.2 (0.874)				
Inner mm (in)			17 (0.67)					—			17 (0.67)				

SERVICE DATA AND SPECIFICATIONS

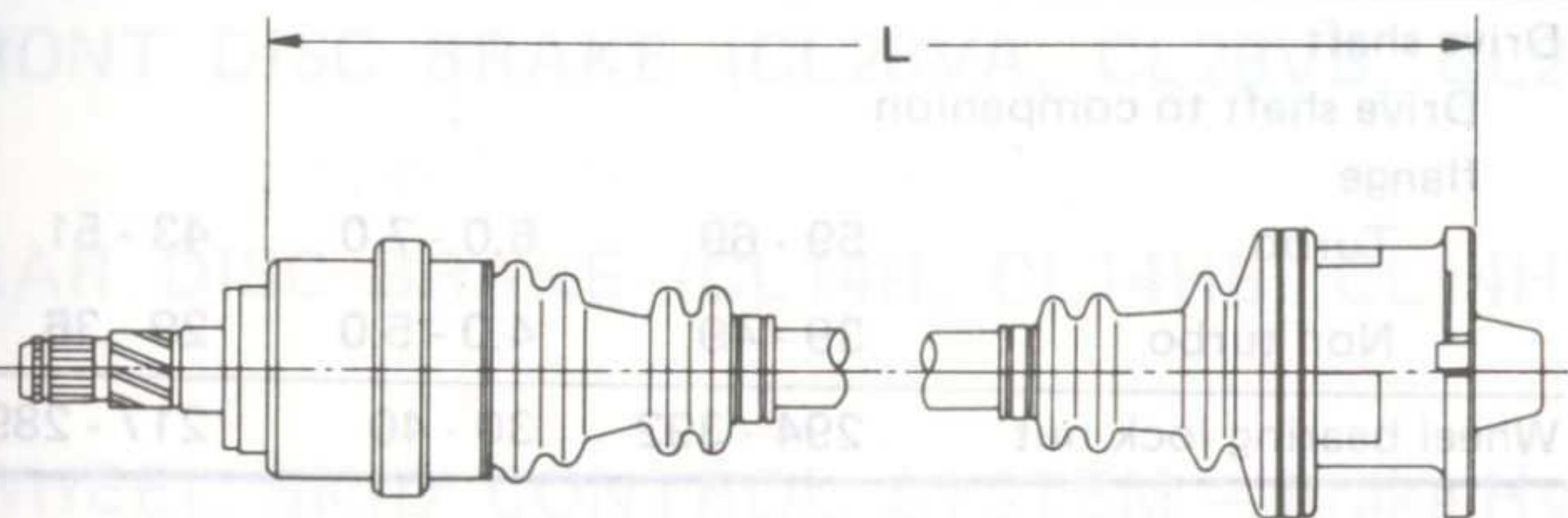
General Specifications (Cont'd)

Inspection and Adjustment

DRIVE SHAFT

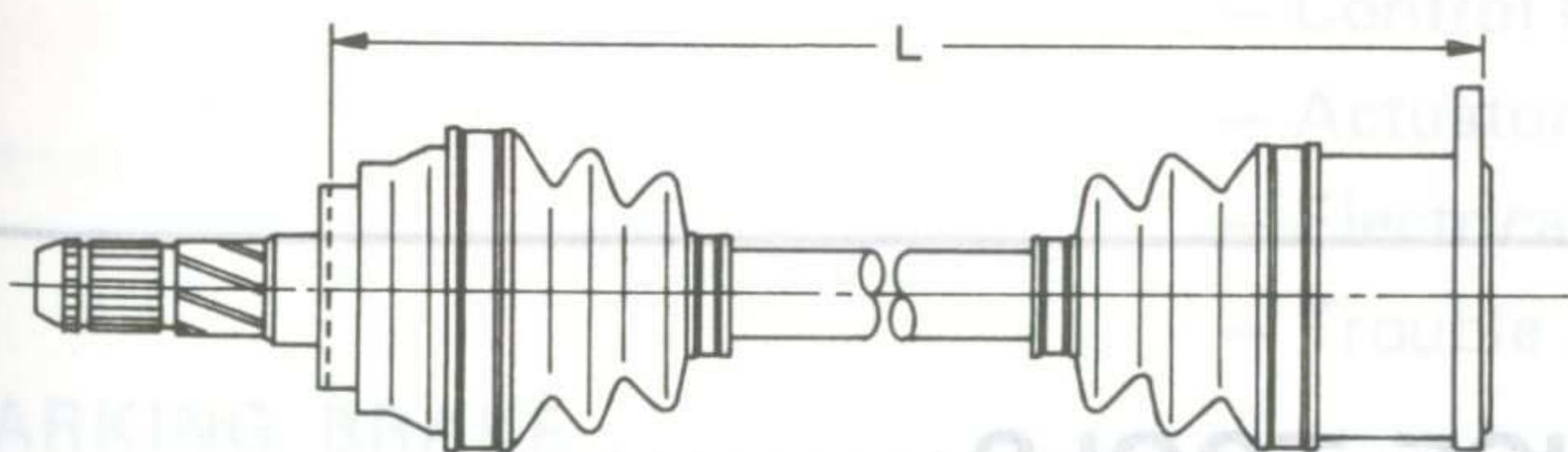
Engine	VG30E	VG30ET
Model	2T82S	BF90DS90
Joint type		
Differential carrier side	Tripod	Birfield
Wheel side	Tripod	Double offset
Maximum winding degree		
Differential carrier side	18.3°	40°
Wheel side	15°	20°
Length "L" mm (in)		
Maximum [Left/Right]	464.5 (18.29)/ 475.5 (18.72)	449.5 (17.70)/ 461.5 (18.17)
Minimum [Left/Right]	407 (16.02)/ 418 (16.46)	409.5 (16.12)/ 421.5 (16.59)

2T82S



SRA473

BF90DS90



SRA537

Wheel alignment (Unladen*1)

Camber	degree	-1°55' to -25'
Toe-in	mm (in)	-1.5 to 2.5 (-0.059 to 0.098)
	degree	-8' to 14'

*1: Tankful of fuel, radiator coolant and engine oil full.
Spare tire, jack, hand tools, mats in designed position.

Rear axle shaft

Wheel bearing preload	N·m (kg-cm, in-lb)	Less than 0.7 (7, 6.1)
Wheel bearing preload at hub bolt	N (kg, lb)	Less than 12.06 (1.23, 2.71)
Rear axle shaft end play	mm (in)	Less than 0.3 (0.012)
		A 55.82 - 55.88 (2.1976 - 2.2000)
Distance piece length	mm (in)	B 55.92 - 55.98 (2.2016 - 2.2039)
		C 56.02 - 56.08 (2.2055 - 2.2079)

Grease		
Name	Nissan genuine grease or equivalent	Nissan genuine grease or equivalent
Capacity g (oz)	Wheel side 185 - 195 (6.52 - 6.88) Differential carrier side 155 - 165 (5.47 - 5.82)	115 - 155 (4.06 - 5.47)

SERVICE DATA AND SPECIFICATIONS

Tightening Torque

Item	N-m	kg-m	ft-lb
Wheel nut	98 - 118	10 - 12	72 - 87
Three-way connector			
Connector mounting bolt	5 - 7	0.5 - 0.7	3.6 - 5.1
Connector to brake tube	15 - 18	1.5 - 1.8	11 - 13
Brake tube connector flare nut	15 - 18	1.5 - 1.8	11 - 13
Shock absorber			
Lower end fixing bolt	59 - 78	6 - 8	43 - 58
Upper end fixing bolt	31 - 42	3.2 - 4.3	23 - 31
Piston rod self-locking nut			
Adjustable	46 - 62	4.7 - 6.3	34 - 46
Non-adjustable	20 - 27	2.0 - 2.8	14 - 20
Suspension member			
Suspension member to suspension member stay	78 - 108	8 - 11	58 - 80
Suspension member stay to body	20 - 25	2.0 - 2.6	14 - 19
Suspension member to suspension arm	98 - 118	10 - 12	72 - 87
Sprint seat stay			
Stay to suspension arm			
Front	59 - 78	6 - 8	43 - 58
Rear	69 - 88	7 - 9	51 - 65
Stay to parking cable clamp	16 - 21	1.6 - 2.1	12 - 15

Item	N-m	kg-m	ft-lb
Rear disc brake			
Baffle plate fixing bolt	8 - 11	0.8 - 1.1	5.8 - 8.0
Torque member fixing bolt	38 - 58	3.9 - 5.9	28 - 43
Differential carrier			
Differential carrier to mounting bracket	98 - 118	10 - 12	72 - 87
Mounting bracket to body			
Bolt	29 - 39	3 - 4	22 - 29
Nut	59 - 78	6 - 8	43 - 58
Differential carrier to suspension member	59 - 78	6 - 8	43 - 58
Stabilizer			
Stabilizer bar to suspension arm	16 - 21	1.6 - 2.1	12 - 15
Stabilizer bar clamp to suspension member	31 - 42	3.2 - 4.3	23 - 31
Drive shaft			
Drive shaft to companion flange			
Turbo	59 - 69	6.0 - 7.0	43 - 51
Non turbo	39 - 49	4.0 - 5.0	29 - 36
Wheel bearing lock nut	294 - 392	30 - 40	217 - 289

SPECIAL SERVICE TOOLS

*: Special tool or a commercial equivalent

Tool number	Tool name
GG94310000*	Flare nut torque wrench
ST36230000*	Sliding hammer

