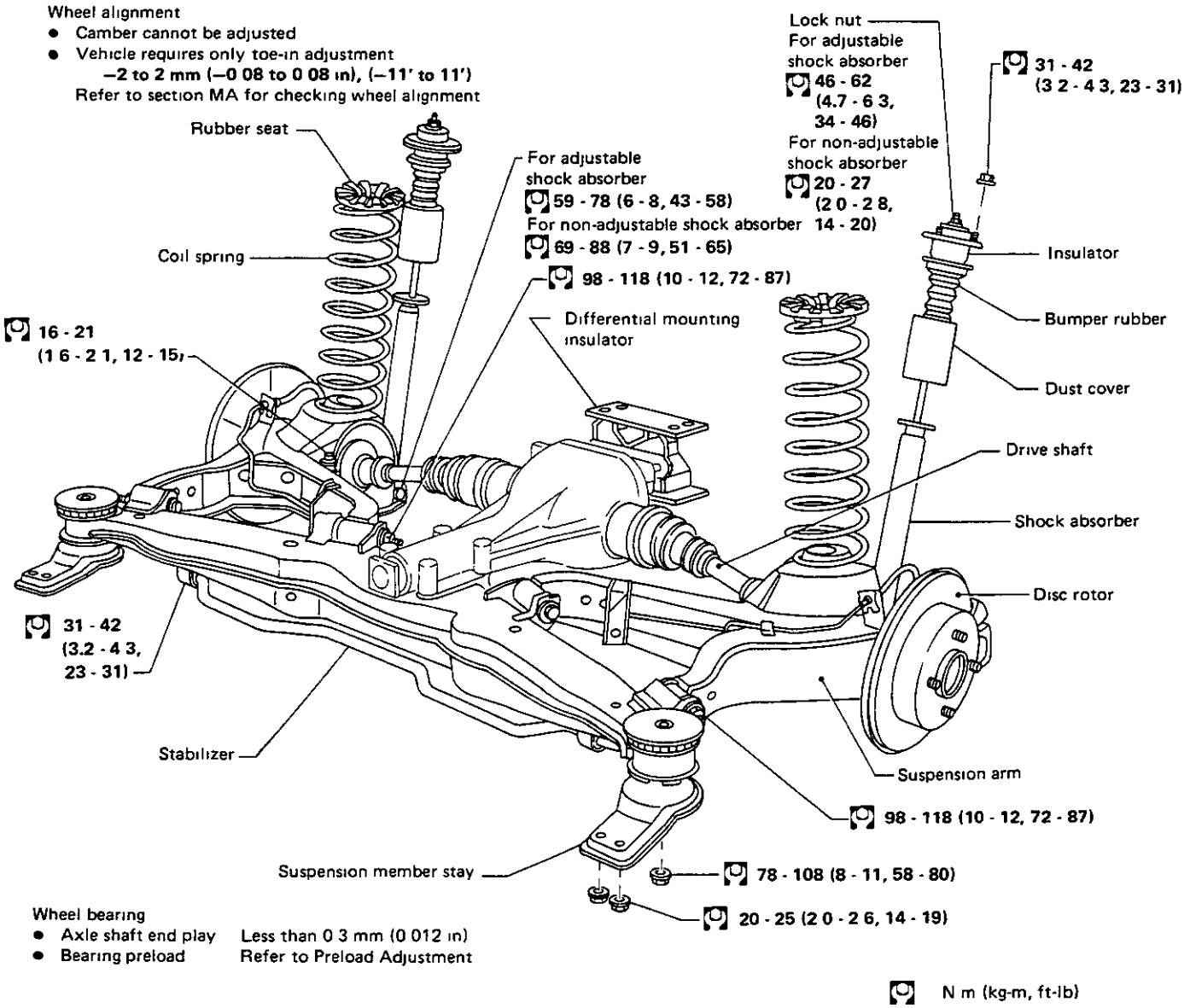
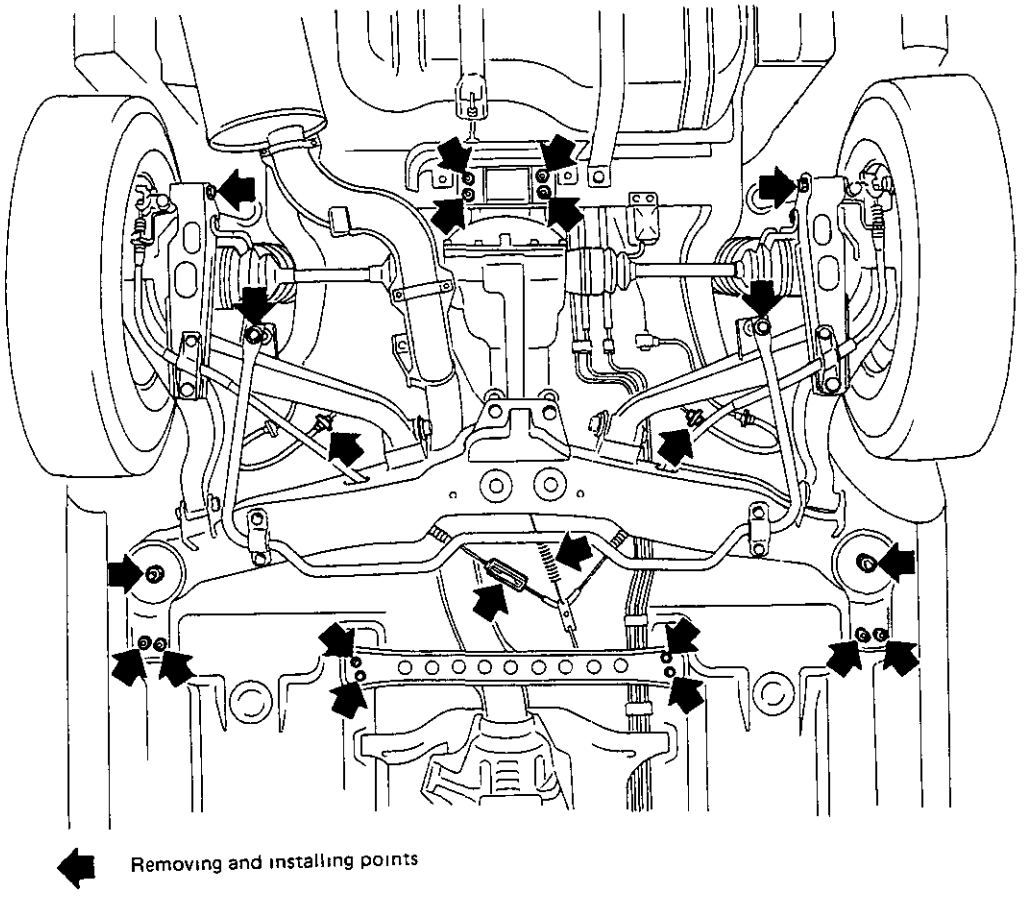
REAR AXLE & REAR SUSPENSION

SECTION RA

CONTENTS


Wheel alignment
• Camber cannot be adjusted
• Vehicle requires only toe-in adjustment
–2 to 2 mm (–0 08 to 0 08 in), (–11' to 11')
Refer to section MA for checking wheel alignment
Rubber seat
Coil spring
16 - 21 (1 6 - 2 1, 12 - 15)
31 - 42 (3.2 - 4 3, 23 - 31)
Stabilizer
For adjustable shock absorber
59 - 78 (6 - 8, 43 - 58)
For non-adjustable shock absorber
69 - 88 (7 - 9, 51 - 65)
98 - 118 (10 - 12, 72 - 87)
Differential mounting insulator
Lock nut
For adjustable shock absorber
46 - 62 (4.7 - 6 3, 34 - 46)
For non-adjustable shock absorber
20 - 27 (2 0 - 2 8, 14 - 20)
31 - 42 (3 2 - 4 3, 23 - 31)
Insulator
Bumper rubber
Dust cover
Drive shaft
Shock absorber
Disc rotor
Suspension arm
98 - 118 (10 - 12, 72 - 87)
Suspension member stay
78 - 108 (8 - 11, 58 - 80)
20 - 25 (2 0 - 2 6, 14 - 19)
Wheel bearing
• Axle shaft end play Less than 0 3 mm (0 012 in)
• Bearing preload Refer to Preload Adjustment
N m (kg-m, ft-lb)
SRA441

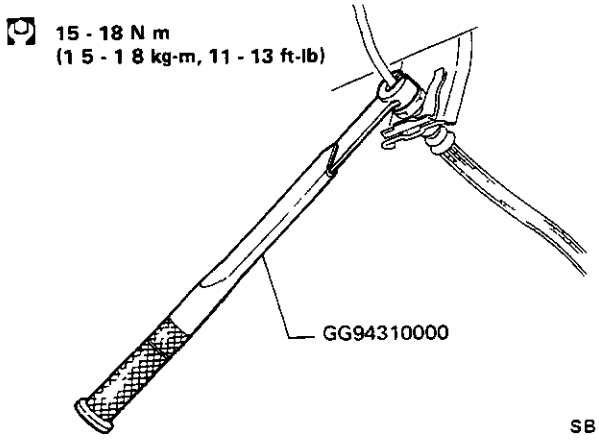
Removal and Installation



SRA442

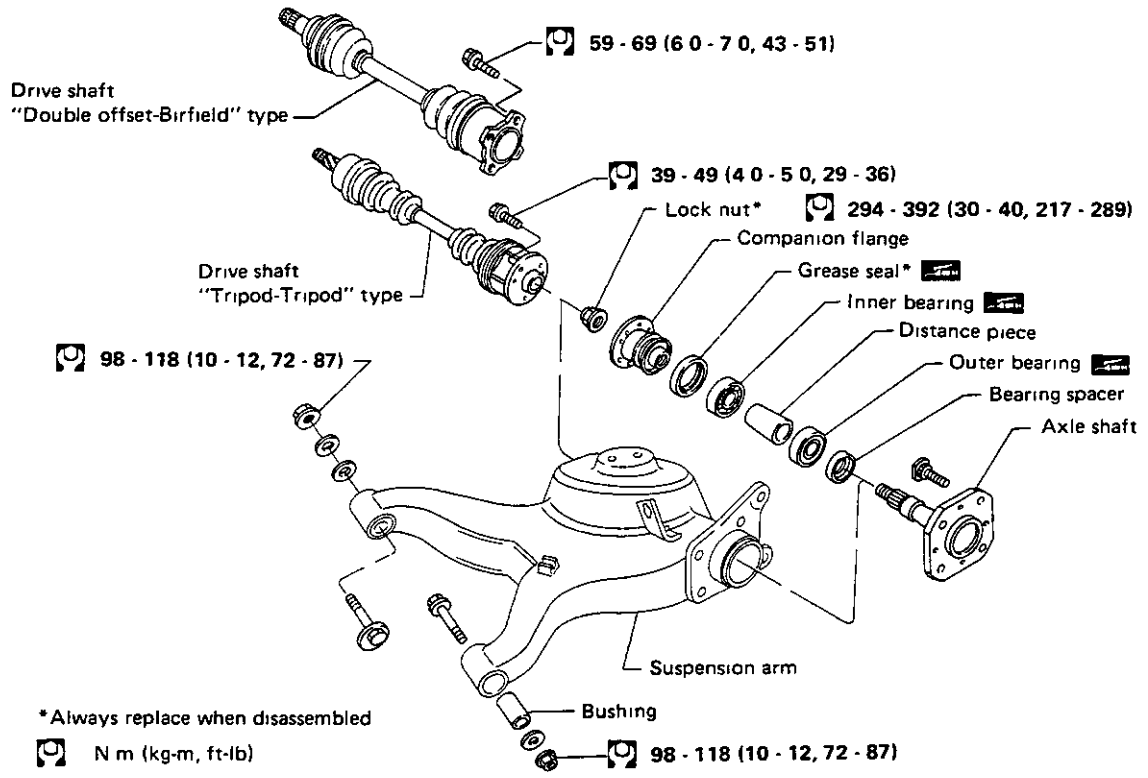
- Disconnect brake hydraulic line and parking brake cable

CAUTION.
When removing or installing brake tubes, use Tool.



SBR500

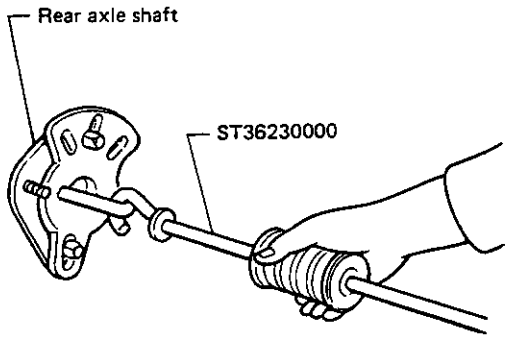
- Remove stabilizer fixing bolt
- Remove rear exhaust tube (Refer to Section FE for removal)
- Disconnect propeller shaft (Refer to Section PD for removal)



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

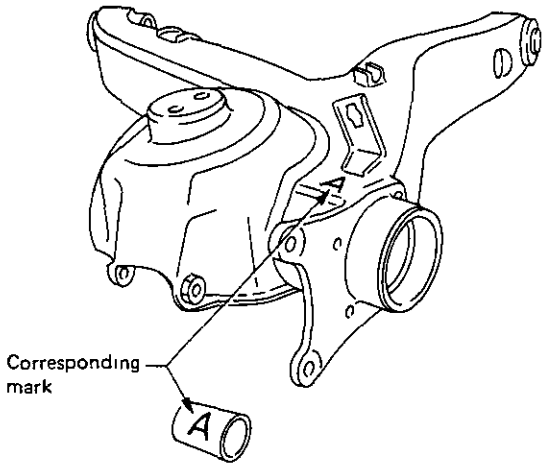
Inspection

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

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

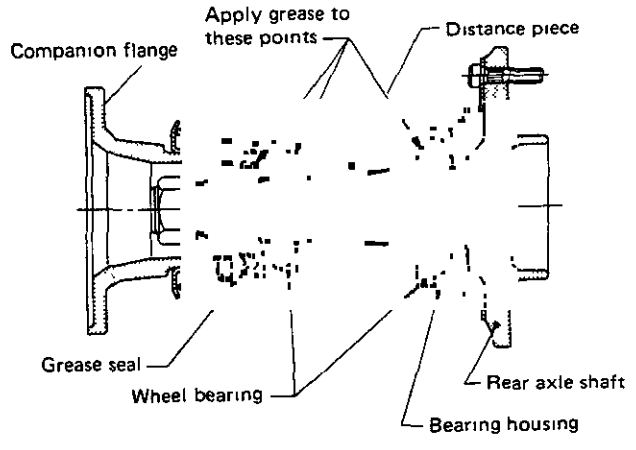
When a distance piece is reused, make sure that both ends are not collapsed or deformed.
When installing, make sure that larger side faces axle shaft flange.



SRA445

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

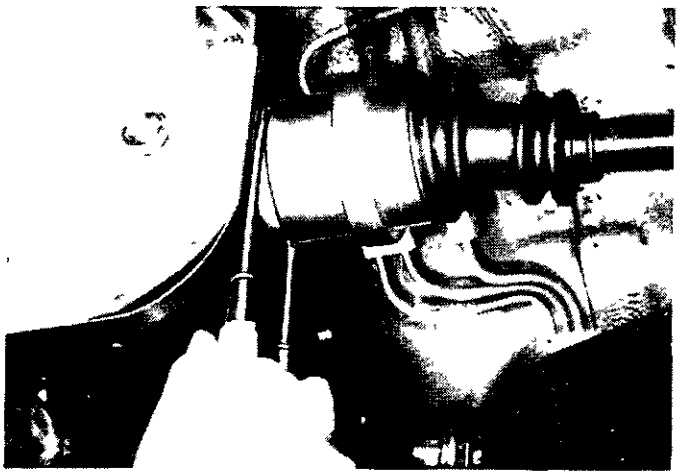
CAUTION.
Keep grease away from lock nut thread portion and seating surface.



SRA446

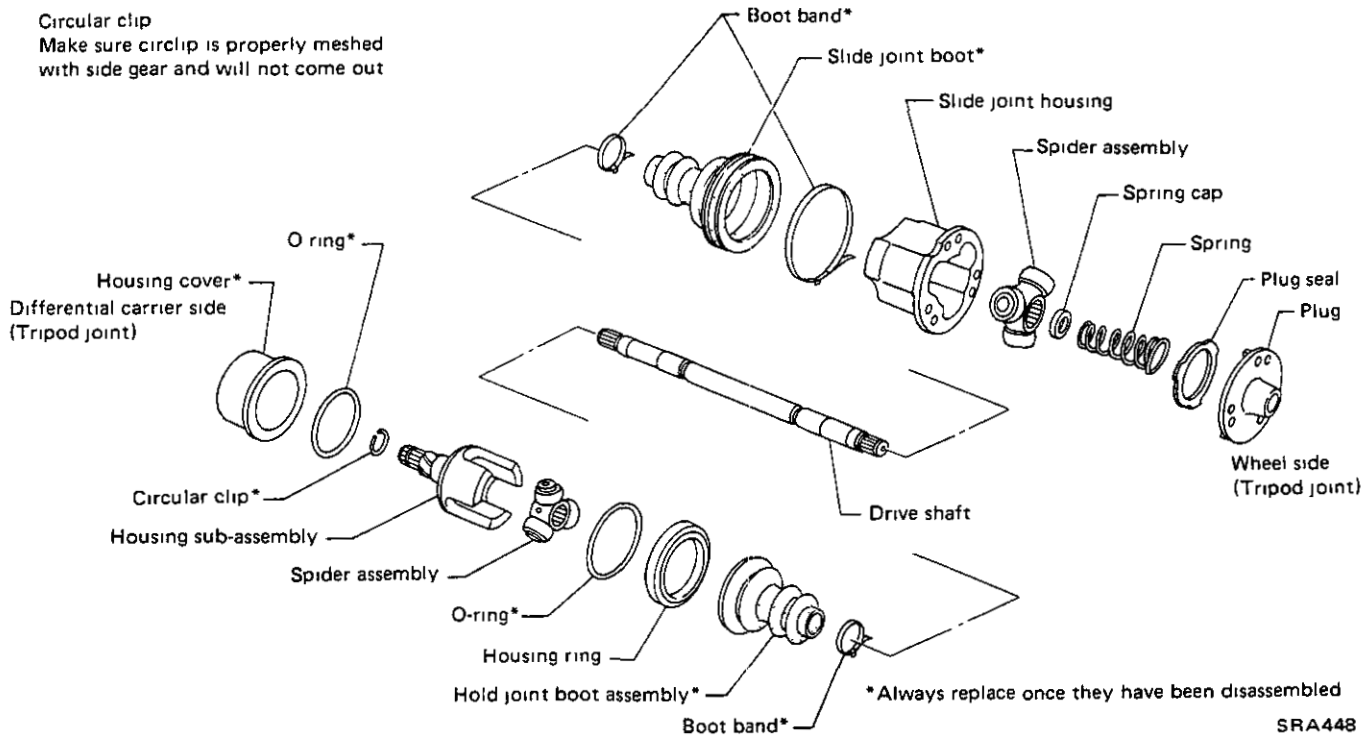
Removal and Installation

- 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

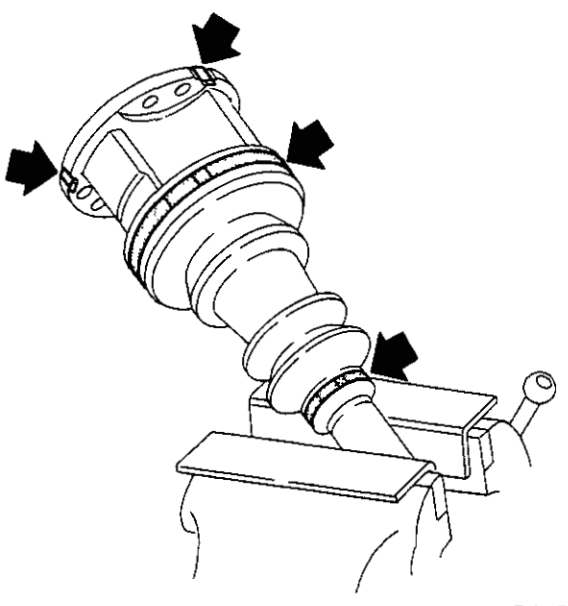
DRIVE SHAFT—"Tripod-Tripod" Type



Disassembly

WHEEL SIDE

Remove plug and boot bands



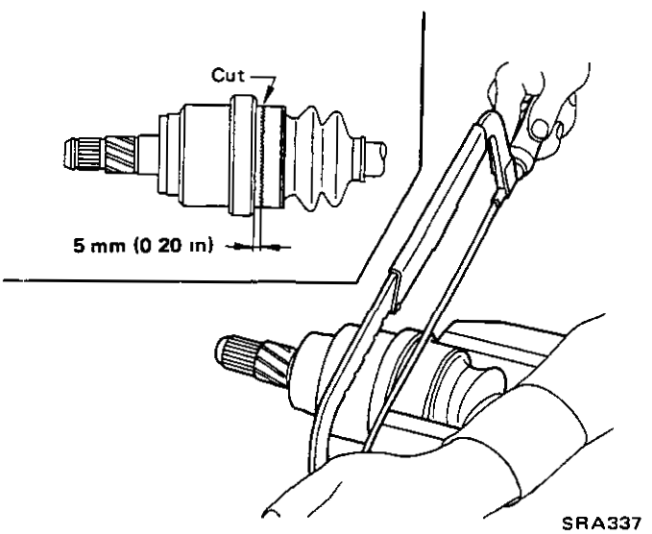
DIFFERENTIAL CARRIER SIDE

- 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

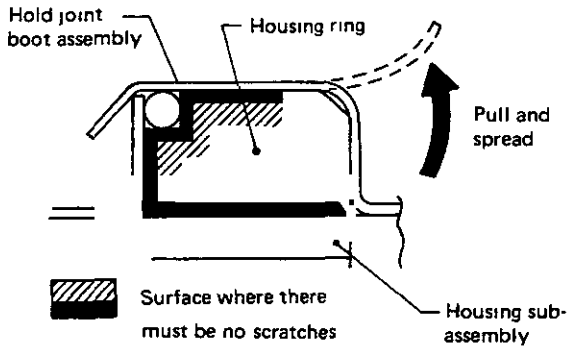
When cutting, ensure that drive shaft is pushed into housing sub-assembly to prevent spider assembly from being scratched.



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.

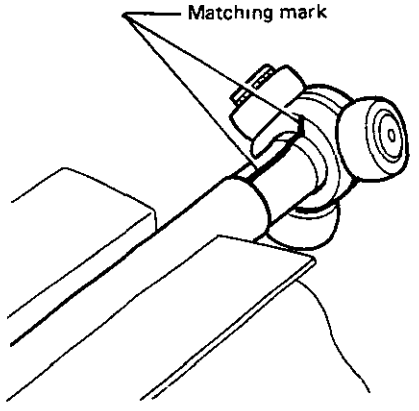


SRA451

- Remove spider assembly

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

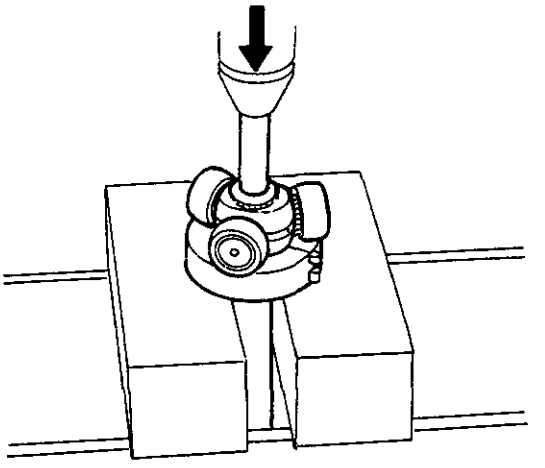
1) Make matching mark.



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

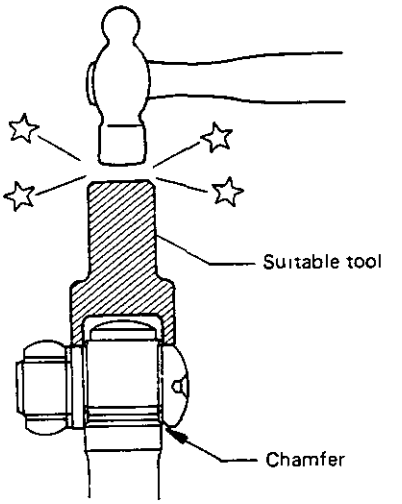
Inspection

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



SFA397

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.

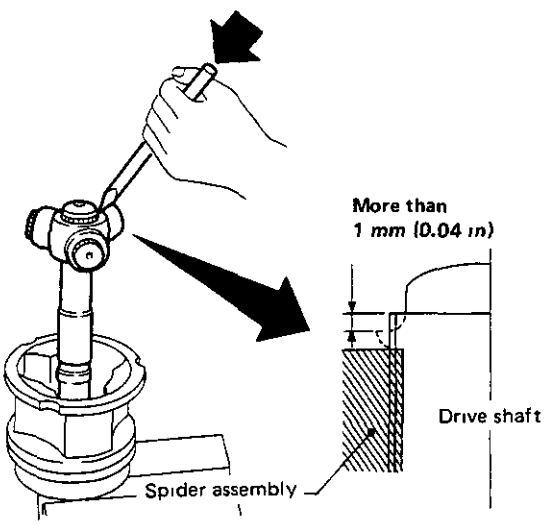
1) Place drive shaft in a vise, using soft cushioning pads.
2) Install spider assembly securely, ensuring marks are properly aligned

Press-fit with spider assembly serration chamfer facing shaft.

3) Stake serration portion evenly at three places

Avoid areas which have been previously staked
Always stake two or three teeth at each place.

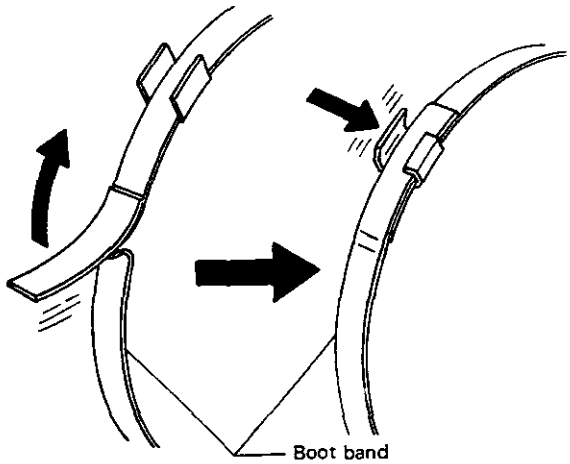
Stake more than 1 mm (0.04 in)



SFA422

Assembly (Cont'd)

- Install hold joint boot assembly



SFA395

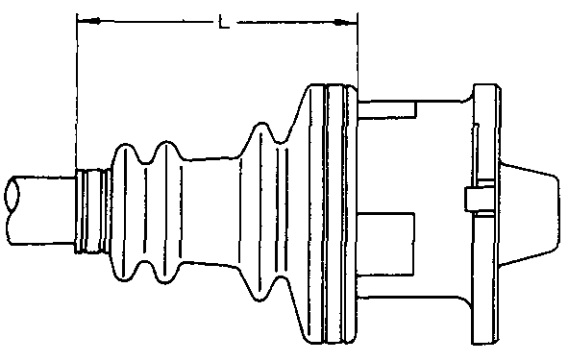
- Pack with grease

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

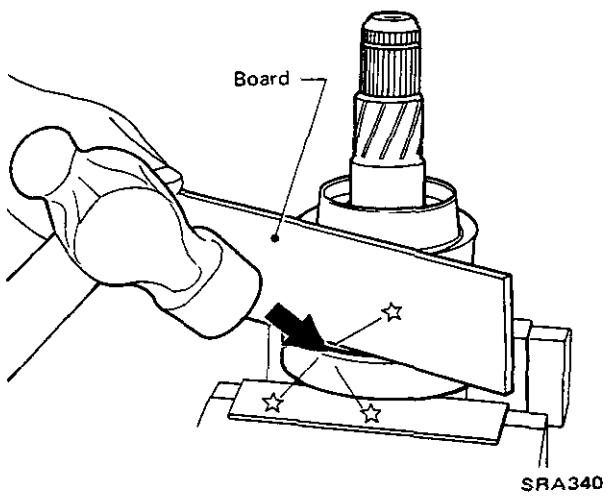
CAUTION.

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.

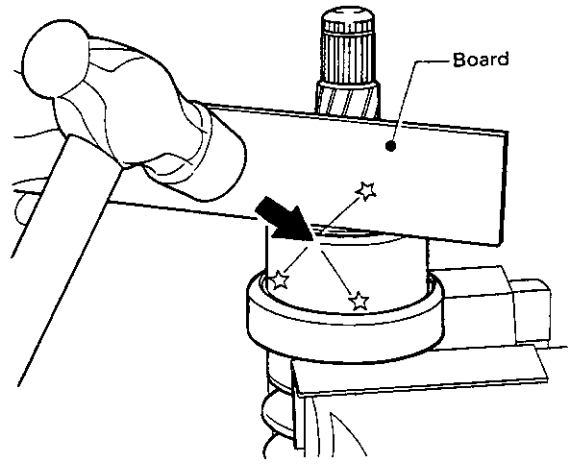
Do not place any other part of hold joint boot assembly on a vise.

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

Assembly (Cont'd)

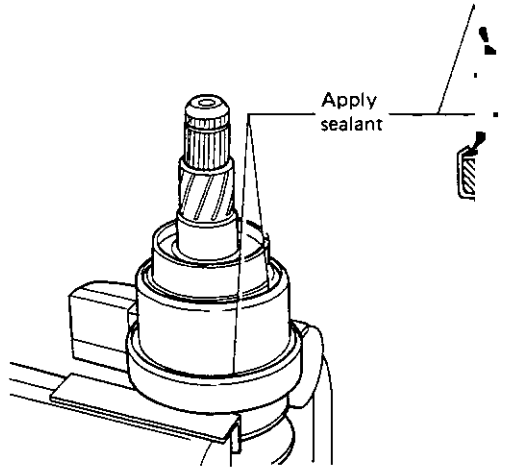
Bend the edge at two positions (180° apart) and ensure that housing sub-assembly does not rattle.

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



SRA341

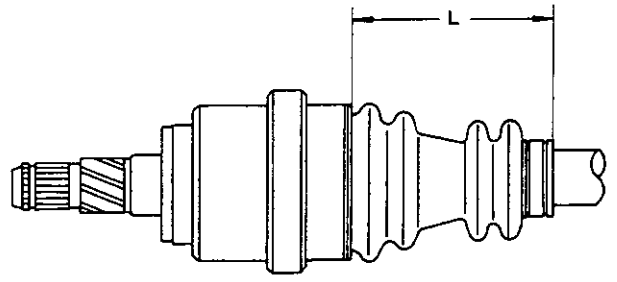
- Apply sealant



SRA342

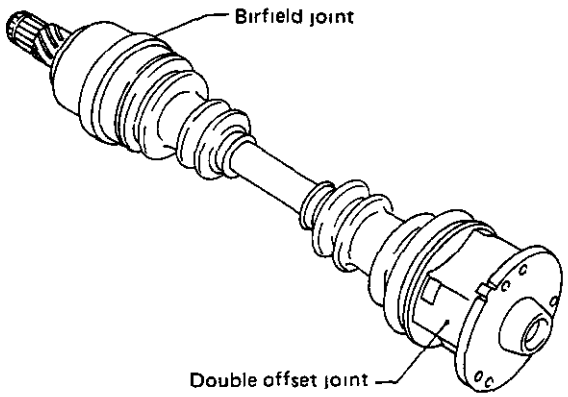
- Set boot so that it does not swell or deform when its length is "L"

Length "L" 92.5 mm (3.642 in)



SRA453

DRIVE SHAFT—"Double Offset-Birfield" Type



SRA449

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

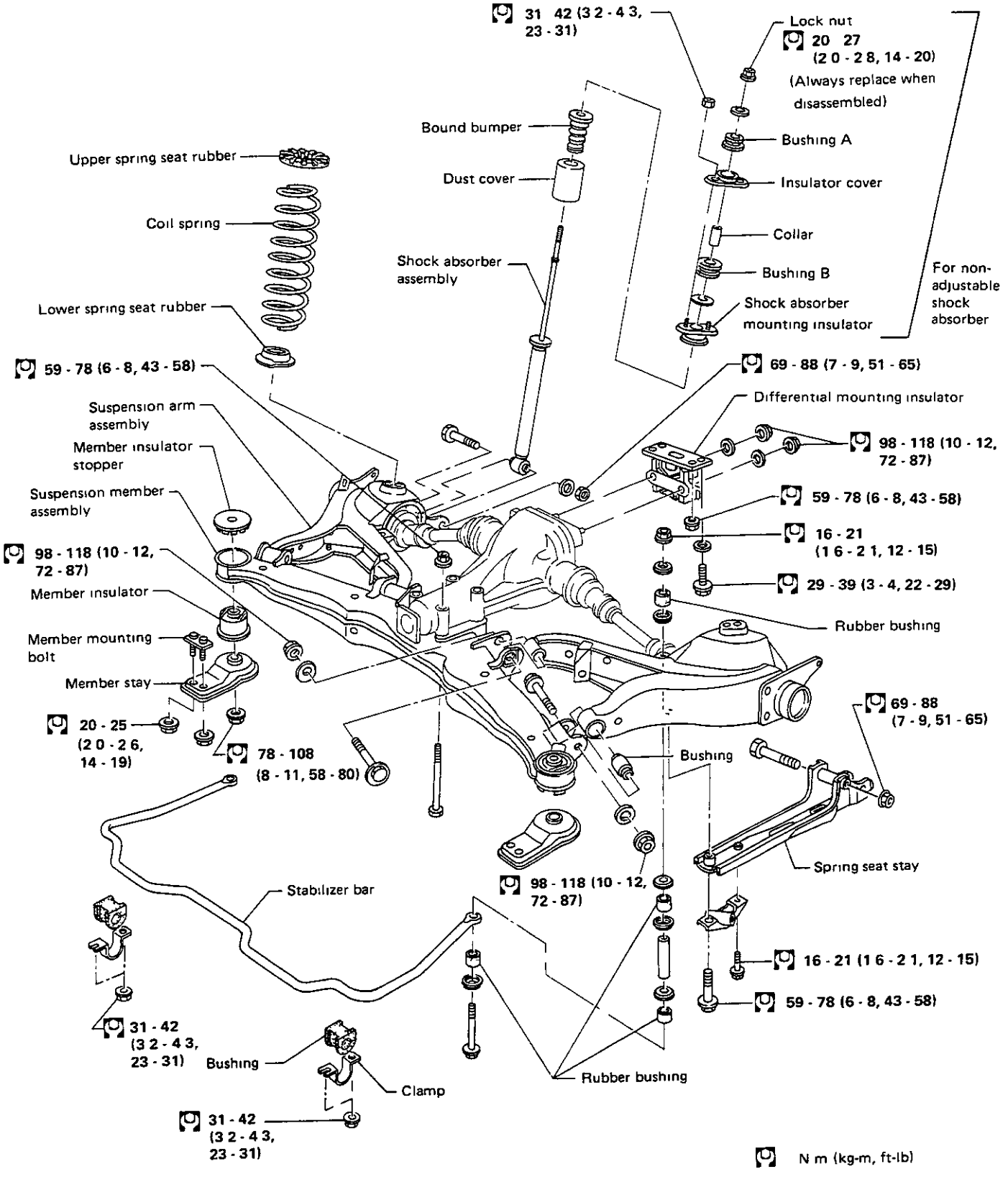
Replace drive shaft assembly if birfield joint is damaged

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

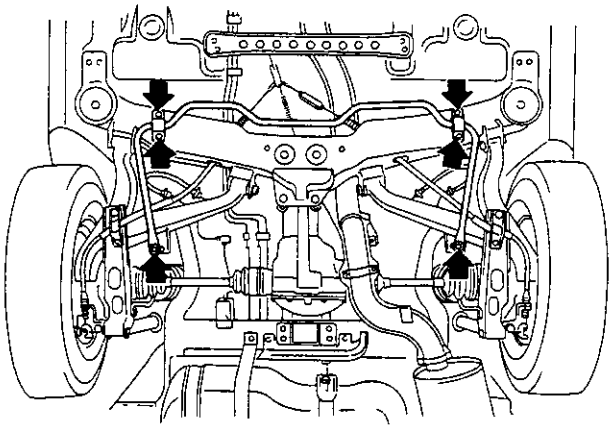

31 42 (3 2 - 4 3, 23 - 31)
Lock nut
20 27 (2 0 - 2 8, 14 - 20)
(Always replace when disassembled)
Bound bumper
Bushing A
Upper spring seat rubber
Dust cover
Insulator cover
Coil spring
Collar
Shock absorber assembly
Bushing B
For non-adjustable shock absorber
Lower spring seat rubber
Shock absorber mounting insulator
59 - 78 (6 - 8, 43 - 58)
69 - 88 (7 - 9, 51 - 65)
Differential mounting insulator
Suspension arm assembly
Member insulator stopper
98 - 118 (10 - 12, 72 - 87)
Suspension member assembly
59 - 78 (6 - 8, 43 - 58)
98 - 118 (10 - 12, 72 - 87)
16 - 21 (1 6 - 2 1, 12 - 15)
Member insulator
29 - 39 (3 - 4, 22 - 29)
Rubber bushing
Member mounting bolt
Member stay
69 - 88 (7 - 9, 51 - 65)
20 - 25 (2 0 - 2 6, 14 - 19)
78 - 108 (8 - 11, 58 - 80)
Bushing
Spring seat stay
Stabilizer bar
98 - 118 (10 - 12, 72 - 87)
16 - 21 (1 6 - 2 1, 12 - 15)
59 - 78 (6 - 8, 43 - 58)
31 - 42 (3 2 - 4 3, 23 - 31)
Bushing
Clamp
Rubber bushing
31 - 42 (3 2 - 4 3, 23 - 31)
N m (kg-m, ft-lb)

SRA454

Stabilizer Bar

REMOVAL AND INSTALLATION

- Remove stabilizer bar



SRA458

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

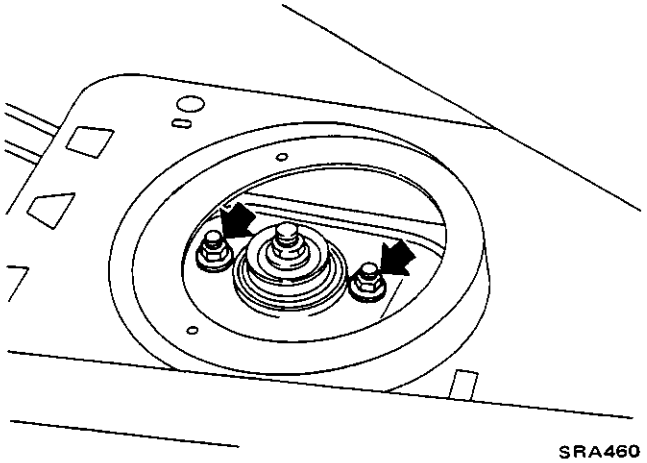
INSPECTION

- 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)

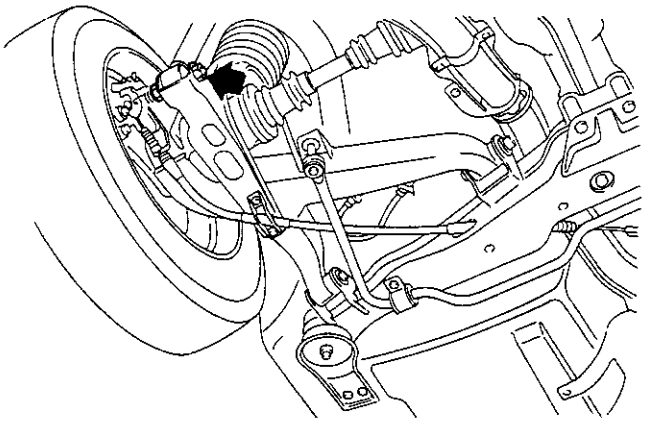
REMOVAL AND INSTALLATION

- Remove shock absorber upper end nut.



SRA460

- Disconnect shock absorber lower end.



SRA459

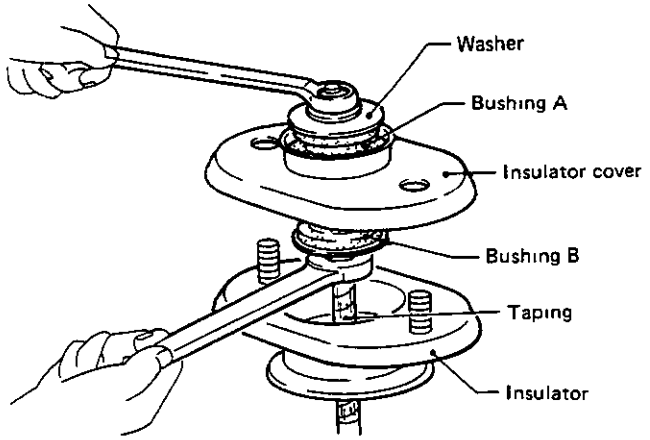
- Final tightening should be carried out at curb weight with tires on ground

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.

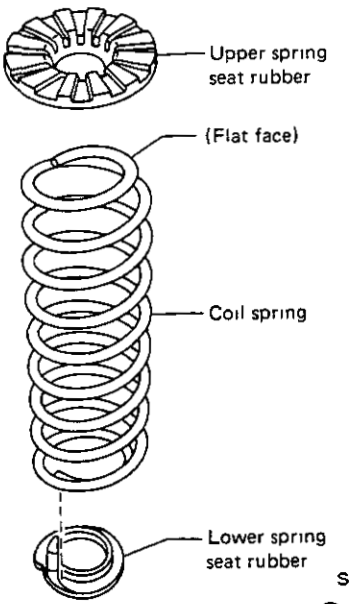


SRA461

Coil Spring

REMOVAL AND INSTALLATION

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



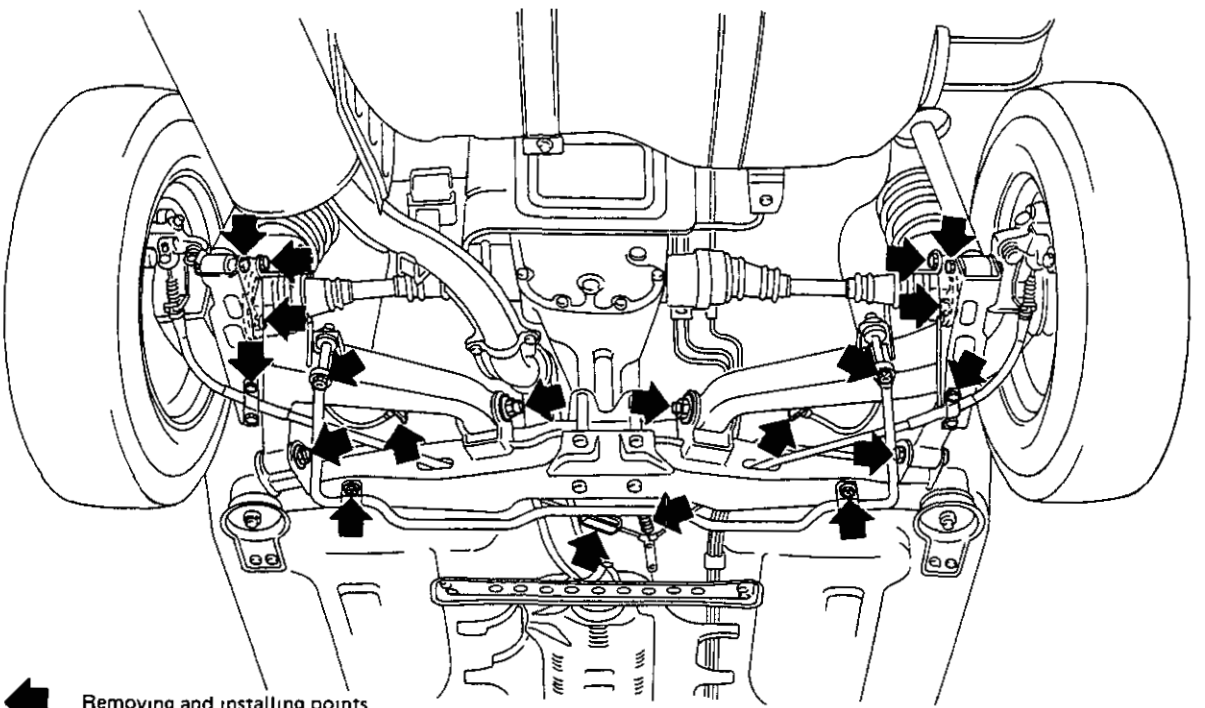
SRA462

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



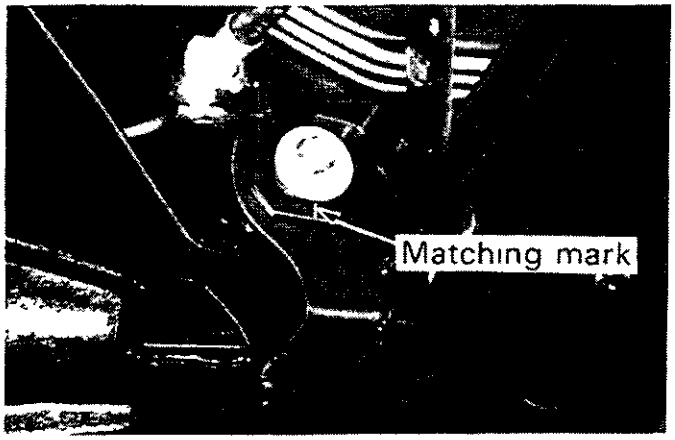
Removing and installing points

SRA463

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.

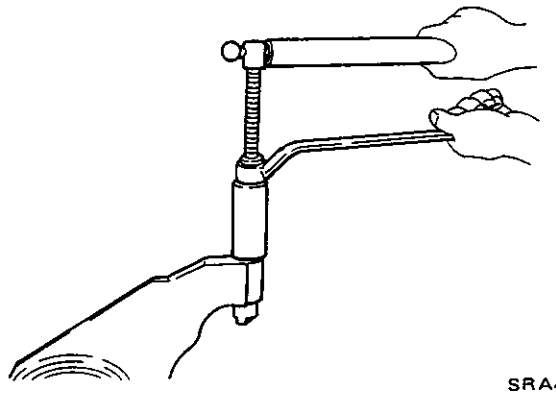


- **When installing, tighten suspension arm pin nut to specified torque after installing wheels and placing vehicle on ground under the curb weight.**
- Refer to Section MA for toe-in adjustment

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.



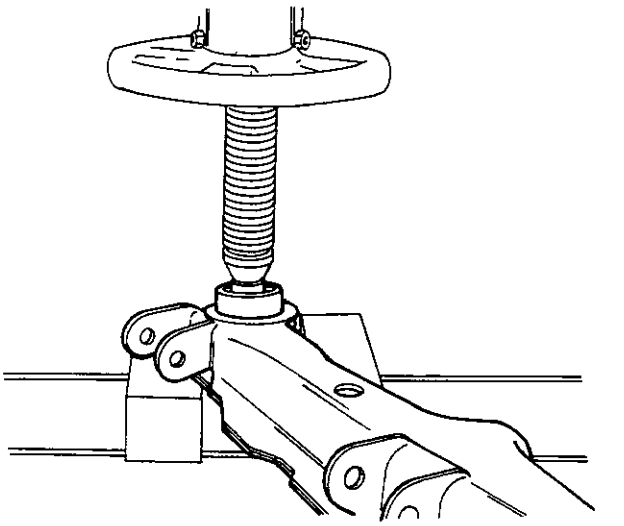
SRA465

Suspension Member and Differential Mounting Insulator

INSPECTION

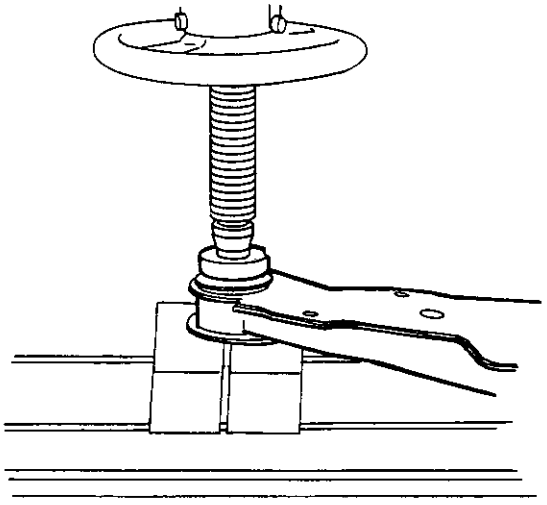
- Check differential mounting insulator for deformation or cracks Replace if necessary
- Check suspension member for deformation or cracks Replace if necessary

a **If member insulator is deformed or cracked, replace it using a suitable tool**



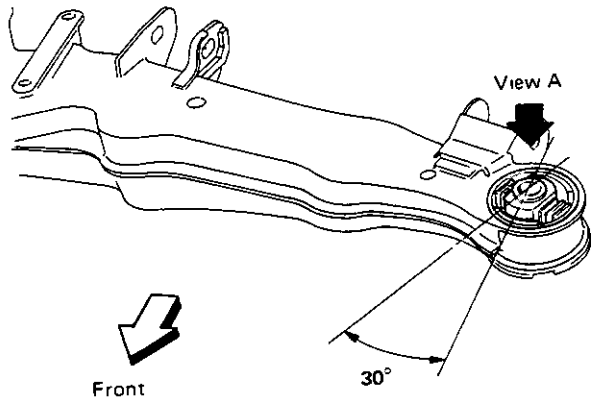
SRA455

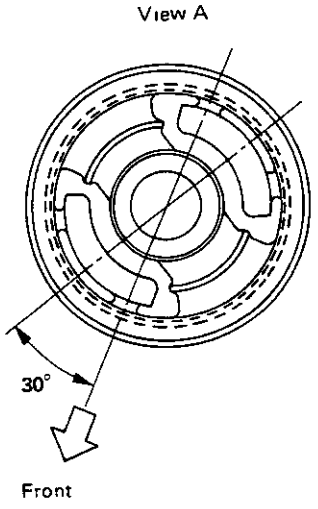
b **Install member insulator using a suitable tool. Be sure to install in its proper place.**



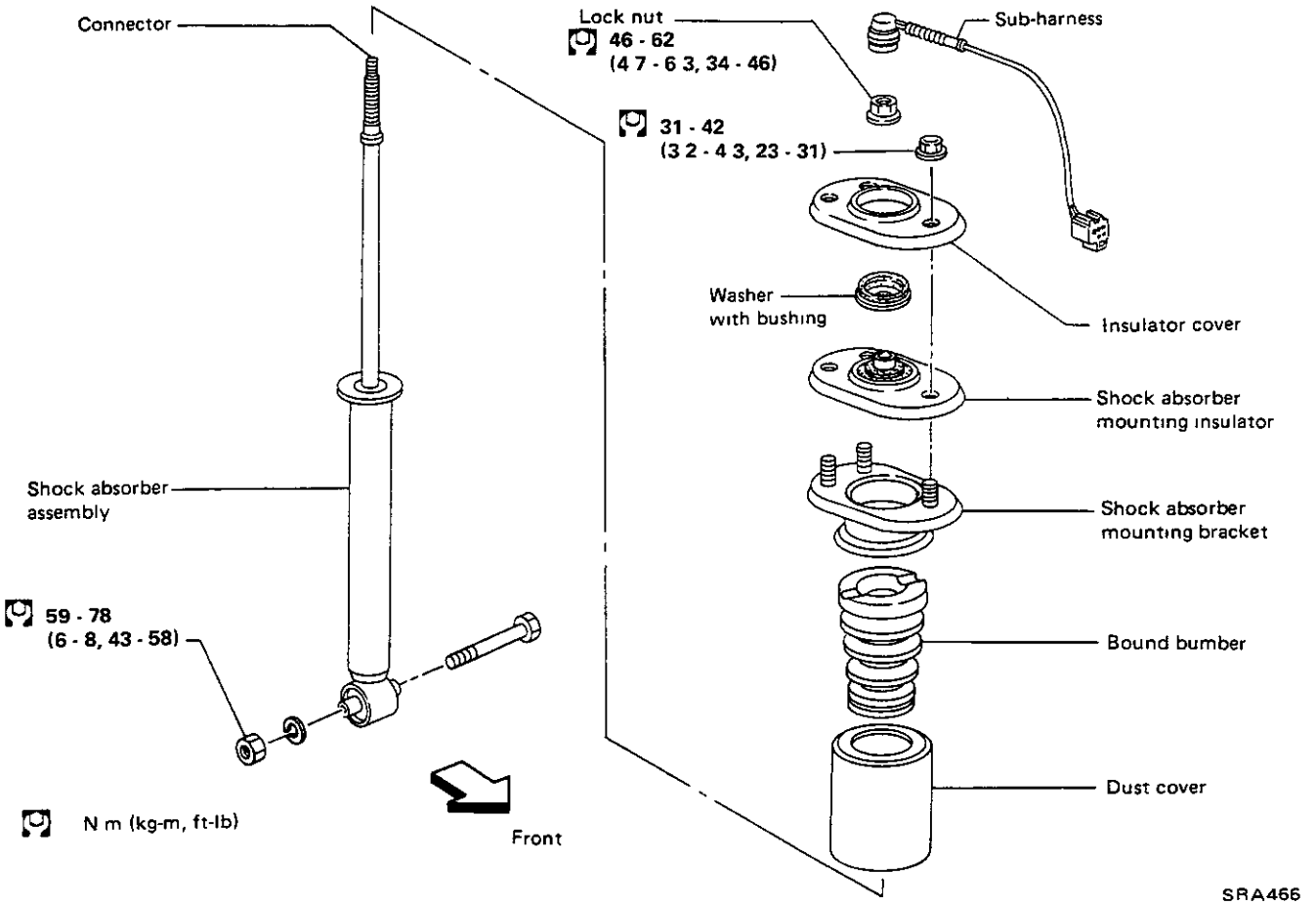
SRA456

Suspension Member and Differential Mounting Insulator (Cont'd)





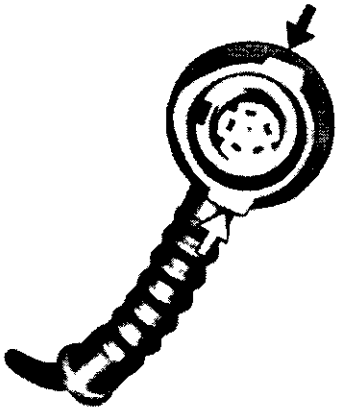
SRA457



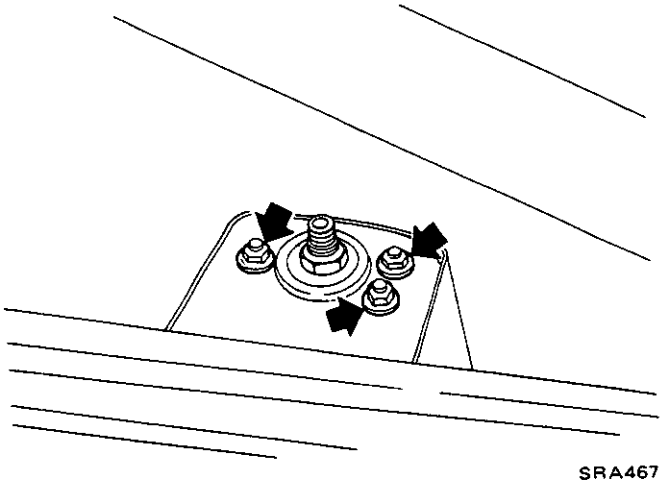
Removal and Installation

- 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.

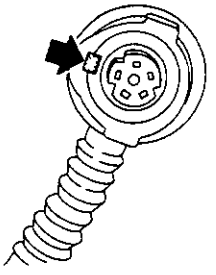
CAUTION:
Keep water and dust away from connector.

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

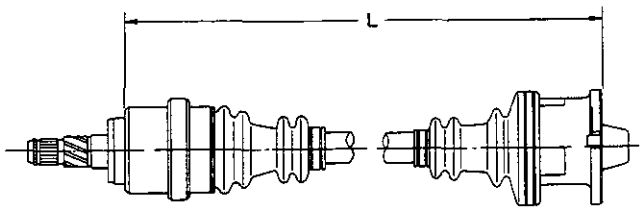
General Specifications

SUSPENSION

Item \ Engine	VG30E		VG30ET			
Vehicle model	2/2+2 seater		2 seater		2+2 seater	
Grade	GL	GL-L	SF GL		GL	GL-L
Roof	Standard/T-roof		Standard	T-roof	Standard/T-roof	
Suspension type	Semi-trailing arm type independent rear suspension					
Coil spring Wire diameter mm (in)	12 8 (0 504)	13 0 (0 512)	12 8 (0 504)	13 0 (0 512)		
Coil diameter mm (in)	110 (4 33)					
Free length mm (in)	364 (14 33)	370 (14 57)	364 (14 33)	370 (14 57)		376 (14 80)
Spring constant N/mm (kg/mm, lb/in)	24 5 (2 5, 140)					
Identification color	Red x 1 Yellow x 2	Yellow x 1 Yellow x 2	Red x 1 Yellow x 2	Yellow x 1 Yellow x 2		White x 1 White x 2
Shock absorber Type	Gas-filled double acting hydraulic					
	Adjustable		Non-adjustable			
Piston diameter mm (in)	32 - 32 1 (1 260 - 1 264)		25 - 25 1 (0 984 - 0 988)			
Piston rod diameter mm (in)	22 (0 87)		12 5 (0 492)			
Stroke Maximum/Minimum mm (in)	601 3 (23 67)/ 384 5 (15 14)		609 3 (23 99)/392 5 (15 45)			
Cylinder diameter mm (in)	48 6 (1 913)		38 1 (1 500)			
Damping force [at 0 3 m (1 0 ft/sec)]	Firm	Normal	Soft			
Expansion N (kg, lb)	785 (80, 176)	637 (65, 143)	422 (43, 95)	588 (60, 132)		
Compression N (kg, lb)	588 (60, 132)	441 (45, 99)	186 (19, 42)	294 (30, 66)		
Stabilizer tube diameter Outer mm (in)	22 2 (0 874)					
Inner mm (in)	17 0 (0 669)					

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)



SRA473

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)

Wheel alignment (Unladen*1)

Camber	degree	−1°55' to −25
Toe-in	mm (in)	−2 to 2 (−0 08 to 0 08)
	degree	−11' to 11'

*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)
Distance piece length mm (in)	A 55 82 - 55 88 (2 1976 - 2 2000) B 55 92 - 55 98 (2 2016 - 2 2039) C 56 02 - 56 08 (2 2055 - 2 2079)

Tightening Torque

Item	N m	kg-m	ft-lb
Wheel nut	78 - 98	8 0 - 10 0	58 - 72
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			
Adjustable	59 - 78	6 - 8	43 - 58
Non-adjustable	69 - 88	7 - 9	51 - 65
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 - 52	3 9 - 5 3	28 - 38
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