# REAR AXLE & REAR SUSPENSION

SECTION RA

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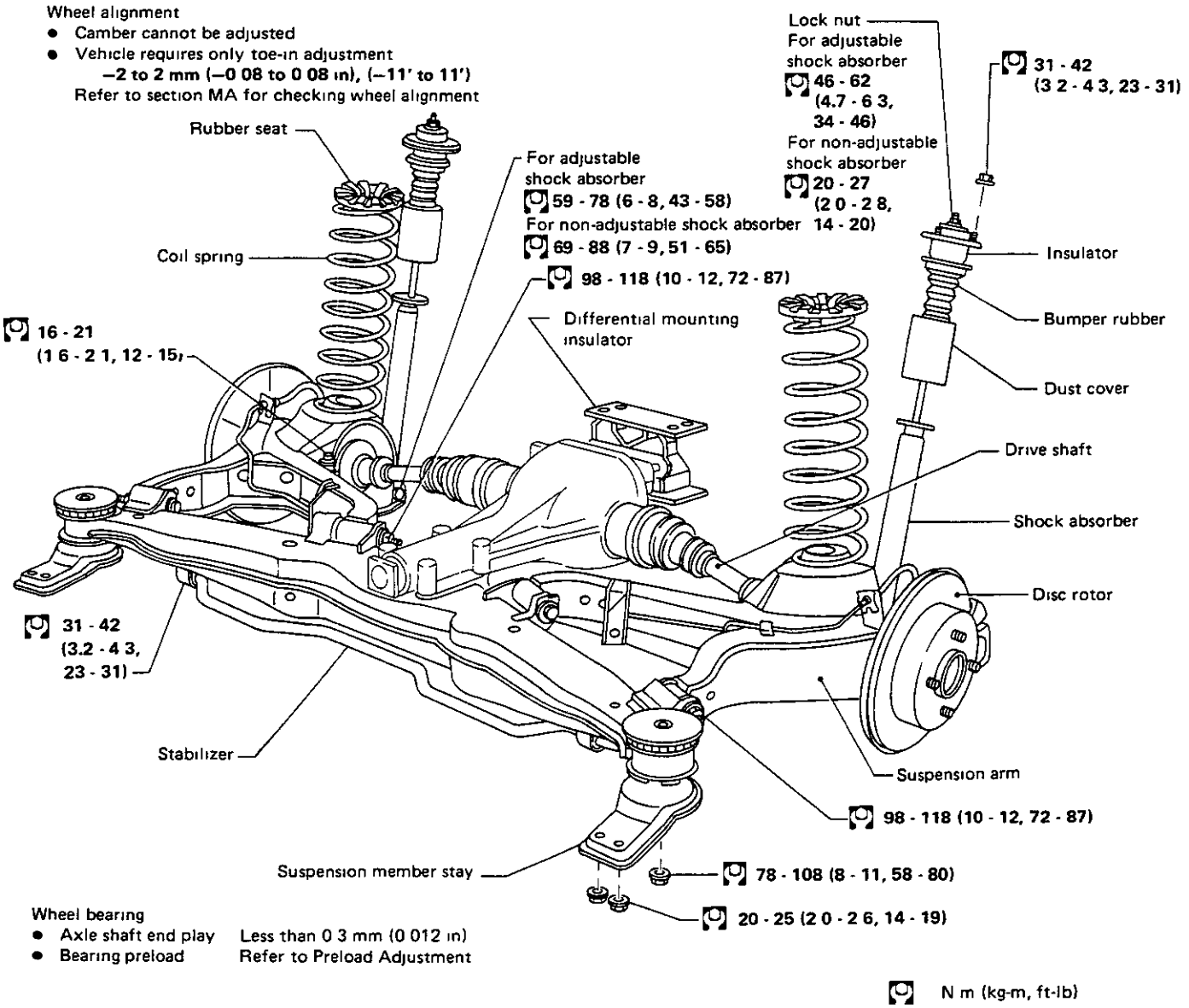
Wheel alignment
• Camber cannot be adjusted
• Vehicle requires only toe-in adjustment
–2 to 2 mm (–0 08 to 0 08 in), (–11' to 11')
Refer to section MA for checking wheel alignment
Rubber seat
Coil spring
16 - 21 (1 6 - 2 1, 12 - 15)
31 - 42 (3.2 - 4 3, 23 - 31)
Stabilizer
For adjustable shock absorber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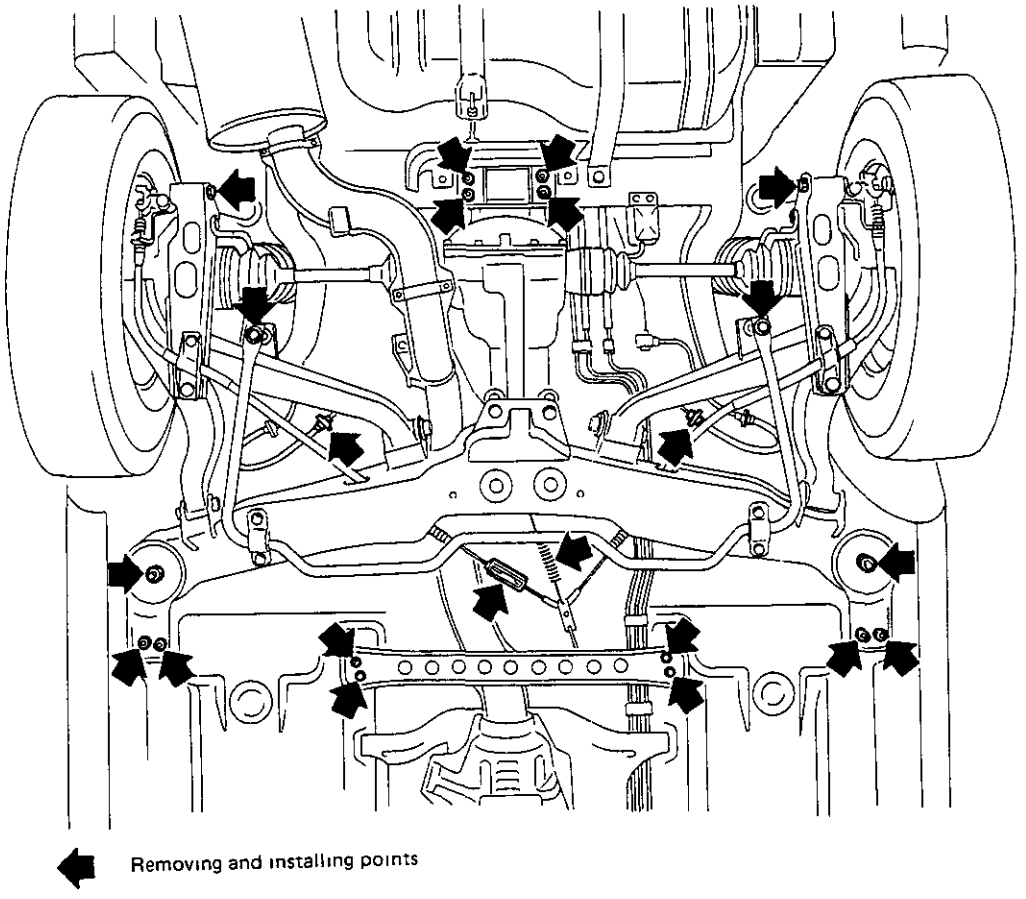
Disc rotor
Suspension arm
98 - 118 (10 - 12, 72 - 87)
Suspension member stay
78 - 108 (8 - 11, 58 - 80)
20 - 25 (2 0 - 2 6, 14 - 19)
Wheel bearing
• Axle shaft end play Less than 0 3 mm (0 012 in)
• Bearing preload Refer to Preload Adjustment
N m (kg-m, ft-lb)
SRA441

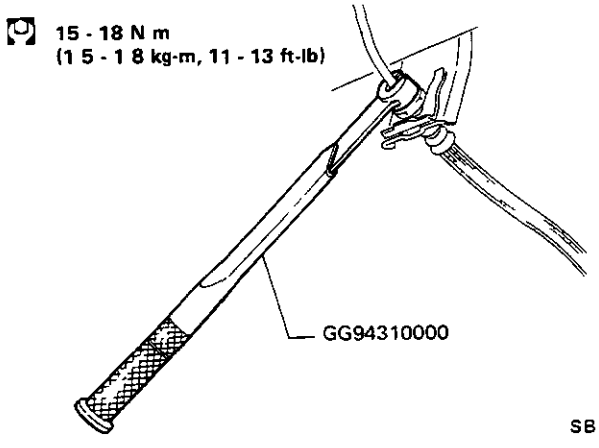
## Removal and Installation




SRA442

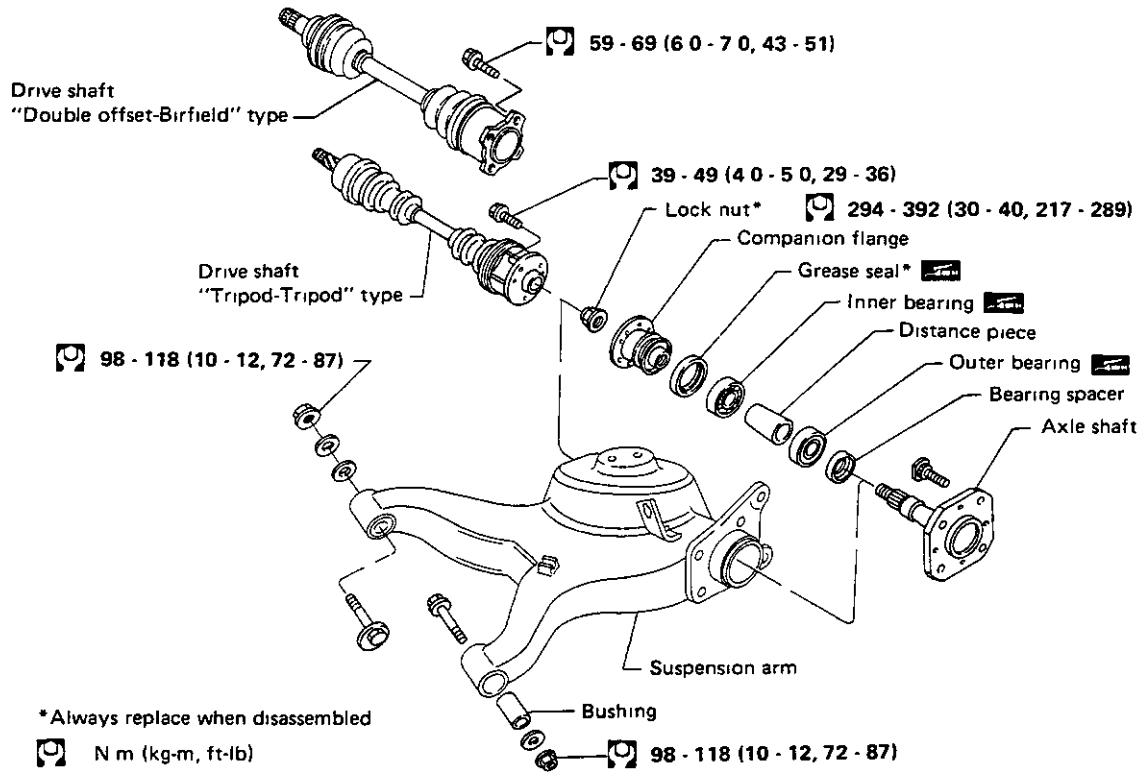
- Disconnect brake hydraulic line and parking brake cable

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




SBR500

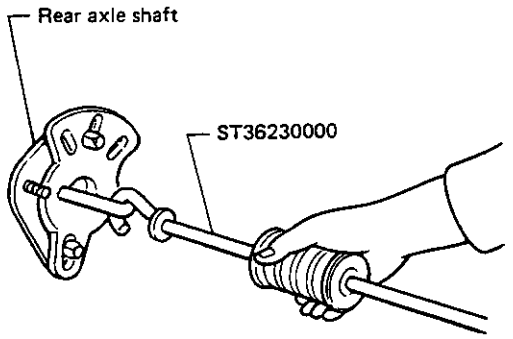
- Remove stabilizer fixing bolt
- Remove rear exhaust tube (Refer to Section FE for removal)
- Disconnect propeller shaft (Refer to Section PD for removal)




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

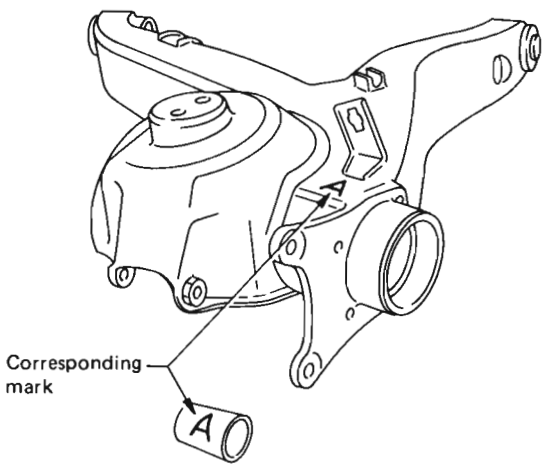
## Inspection

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.

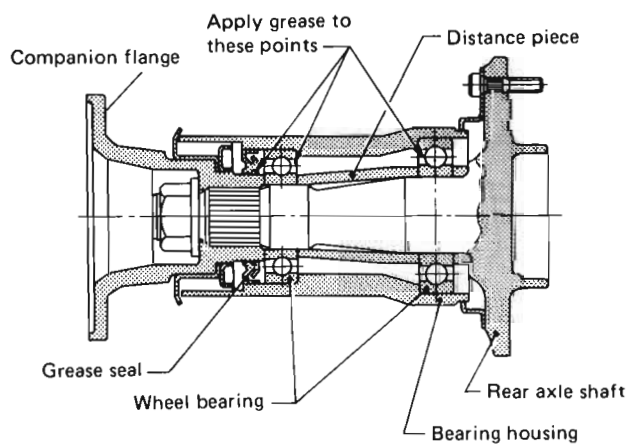
**When a distance piece is reused, make sure that both ends are not collapsed or deformed.**
**When installing, make sure that larger side faces axle shaft flange.**




SRA445

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

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



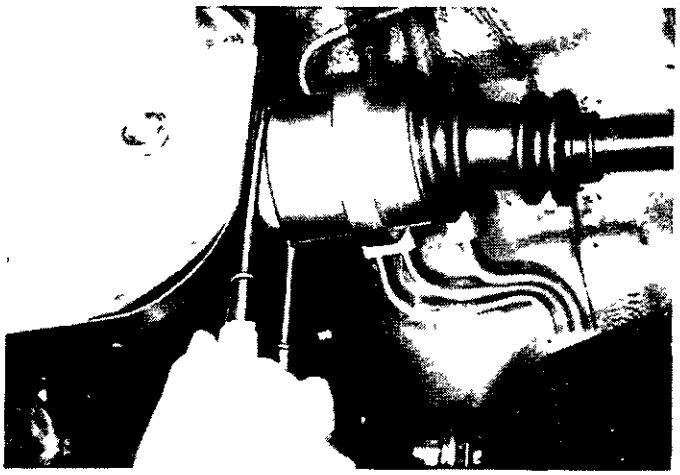

SRA446

- 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)**

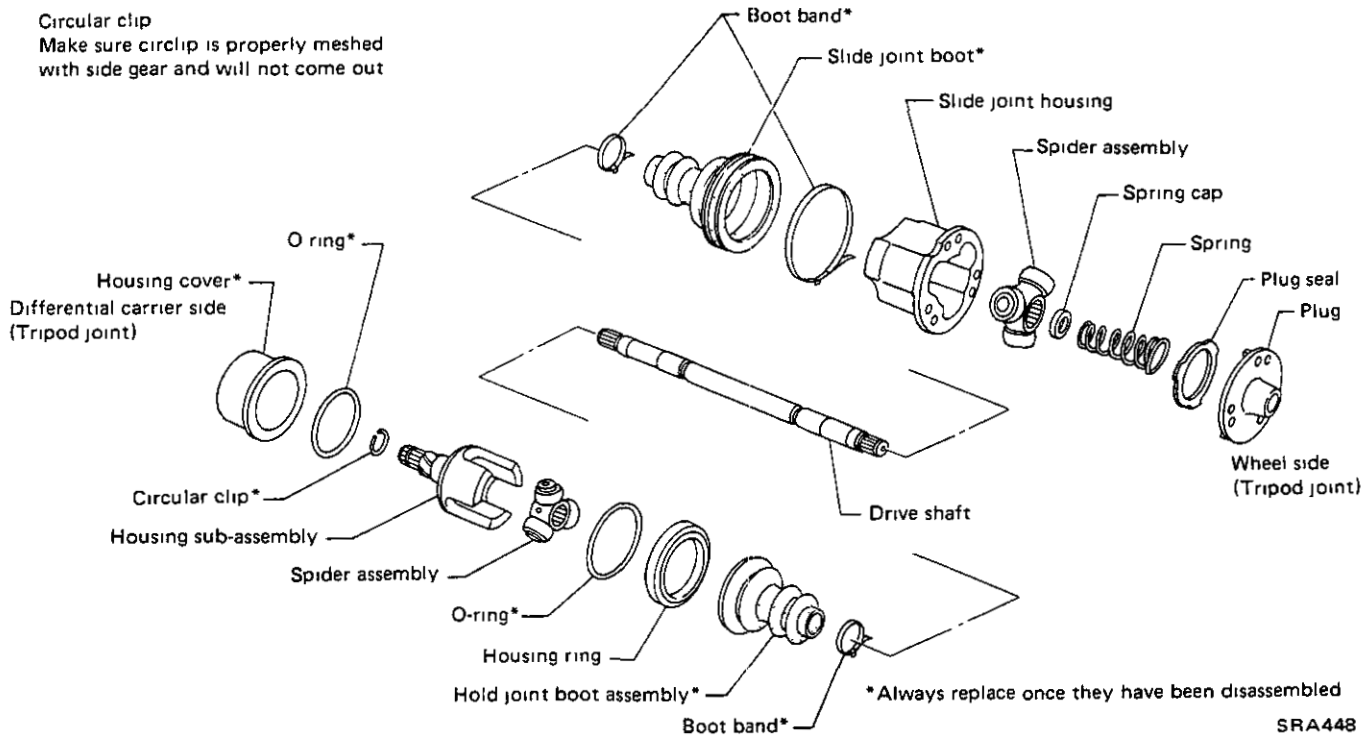
## Removal and Installation

- 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**

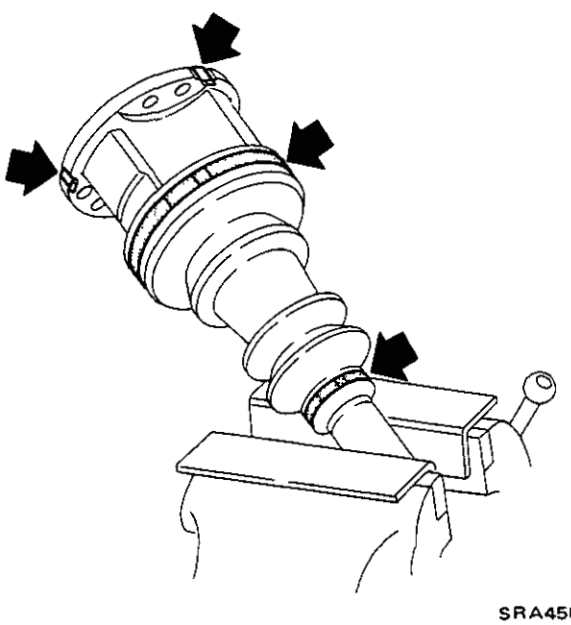
# DRIVE SHAFT—"Tripod-Tripod" Type




## Disassembly

### WHEEL SIDE

Remove plug and boot bands



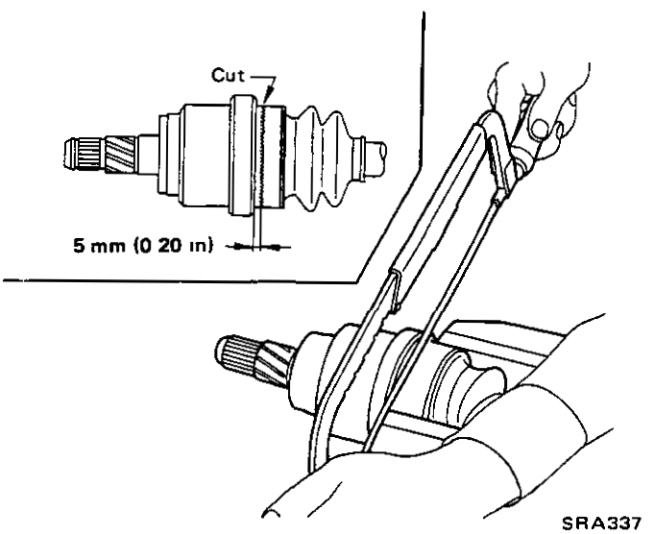

### DIFFERENTIAL CARRIER SIDE

- 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

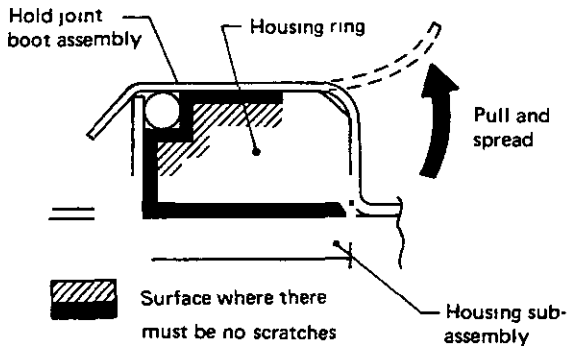
**When cutting, ensure that drive shaft is pushed into housing sub-assembly to prevent spider assembly from being scratched.**



## 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.**

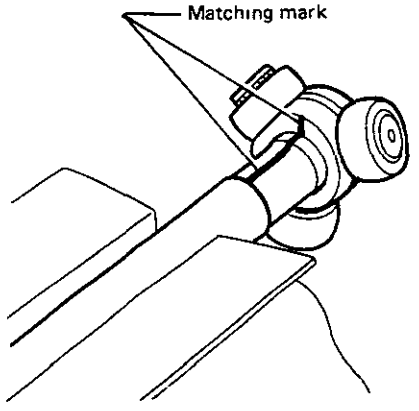



SRA451

- Remove spider assembly

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

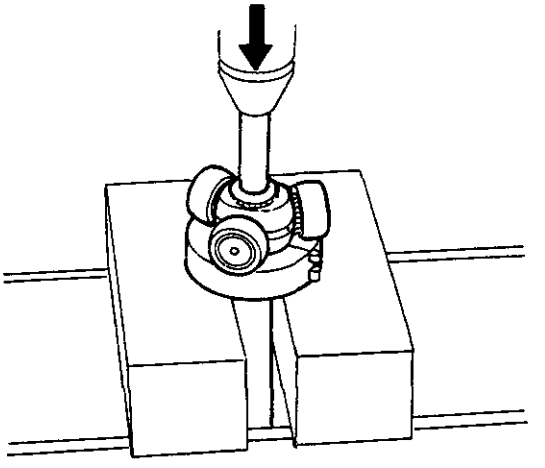
1) Make matching mark.




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

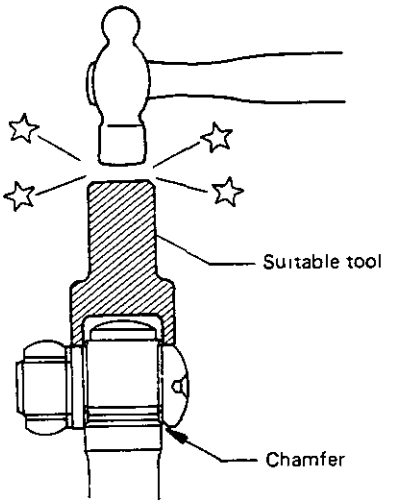
## Inspection

### 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.

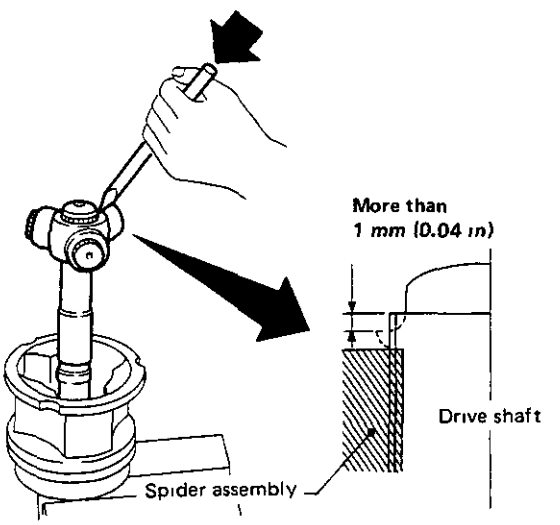
1) Place drive shaft in a vise, using soft cushioning pads.
2) Install spider assembly securely, ensuring marks are properly aligned

**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.**

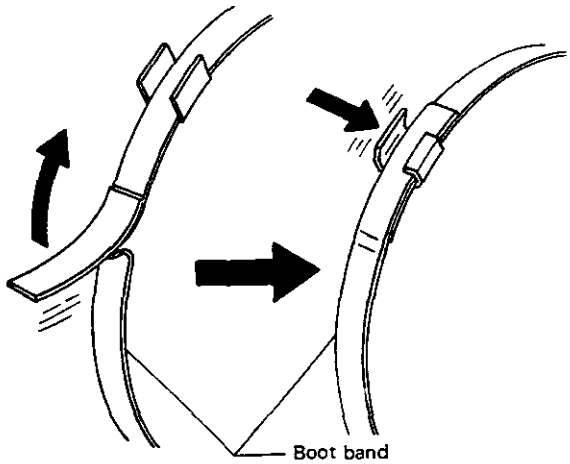
**Stake more than 1 mm (0.04 in)**




SFA422

## Assembly (Cont'd)

- Install hold joint boot assembly




SFA395

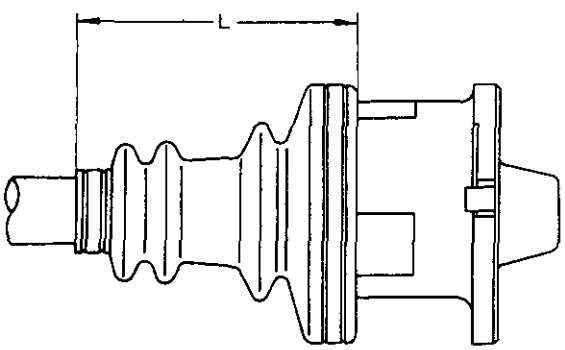
- Pack with grease

**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

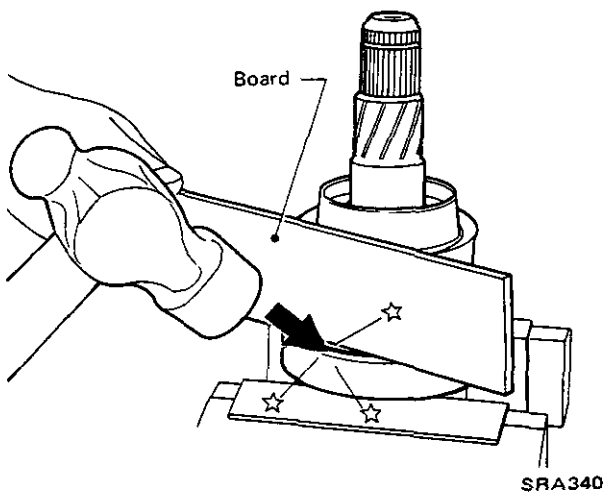
CAUTION.

**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.

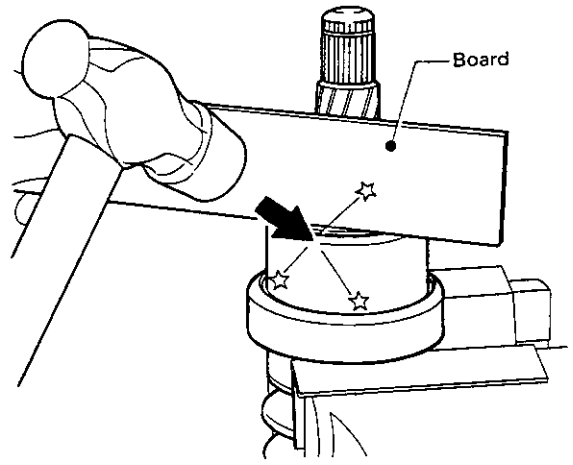
**Do not place any other part of hold joint boot assembly on a vise.**

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

## Assembly (Cont'd)

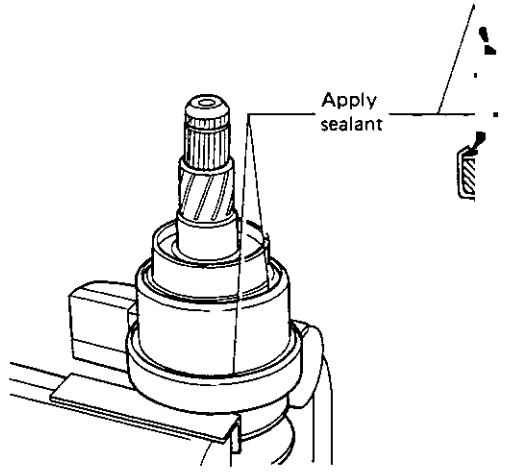
Bend the edge at two positions (180° apart) and ensure that housing sub-assembly does not rattle.

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




SRA341

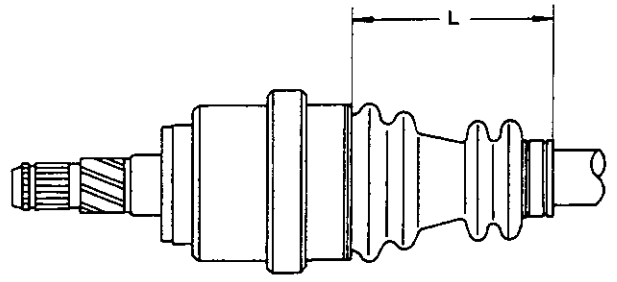
- Apply sealant




SRA342

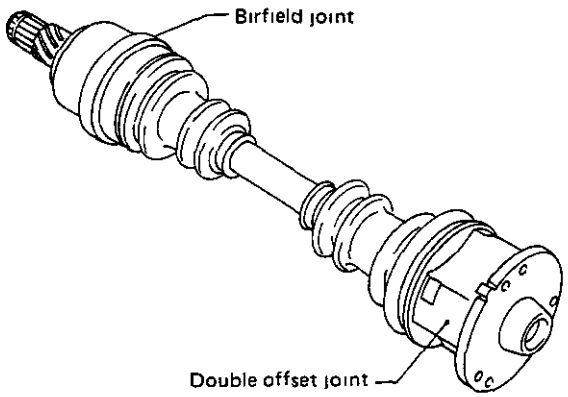
- Set boot so that it does not swell or deform when its length is "L"

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

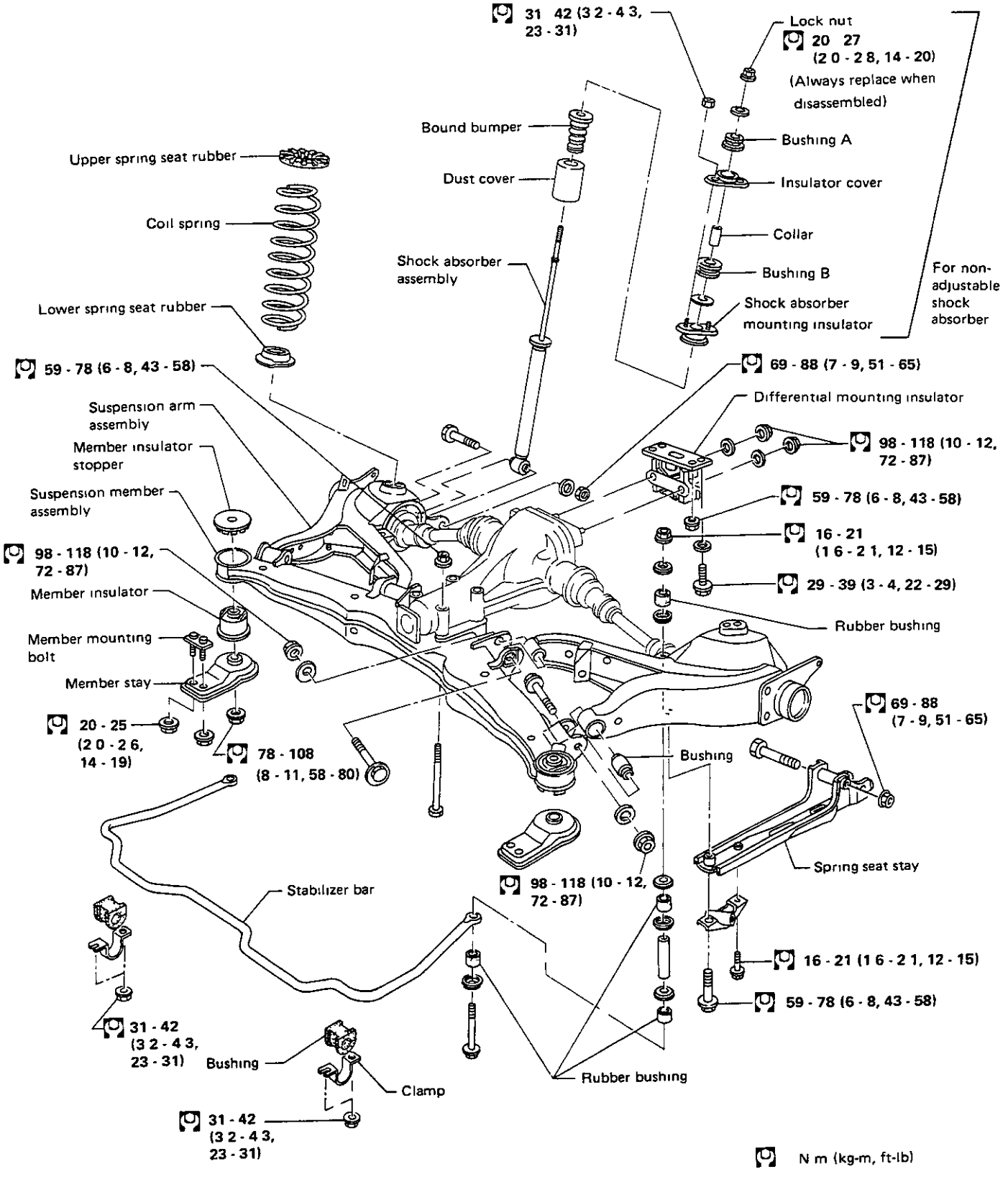
Replace drive shaft assembly if birfield joint is damaged

### 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

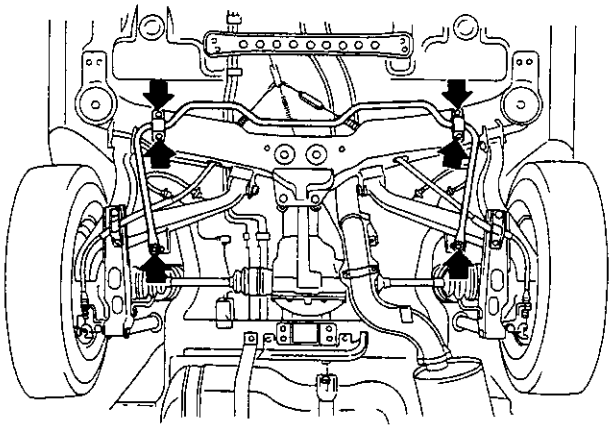

31 42 (3 2 - 4 3, 23 - 31)
Lock nut
20 27 (2 0 - 2 8, 14 - 20)
(Always replace when disassembled)
Bound bumper
Bushing A
Upper spring seat rubber
Dust cover
Insulator cover
Coil spring
Collar
Shock absorber assembly
Bushing B
For non-adjustable shock absorber
Lower spring seat rubber
Shock absorber mounting 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

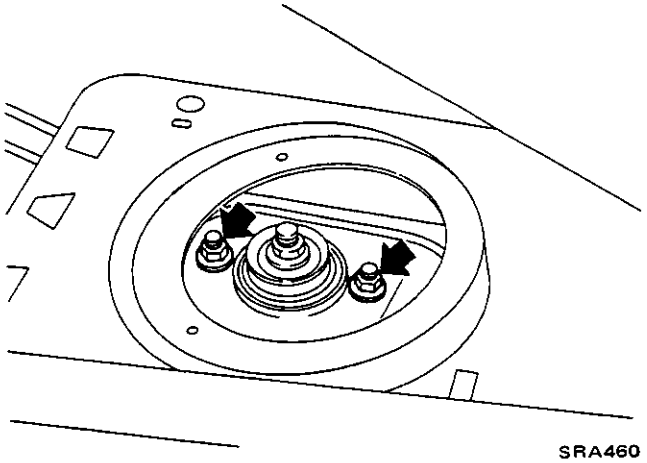
### INSPECTION

- 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)

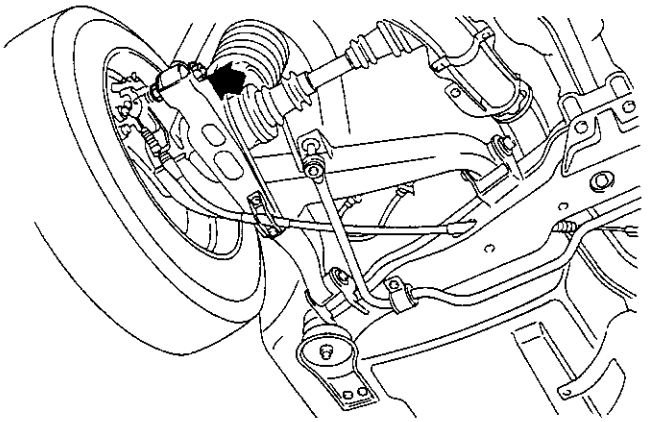
### REMOVAL AND INSTALLATION

- Remove shock absorber upper end nut.



SRA460

- Disconnect shock absorber lower end.



SRA459

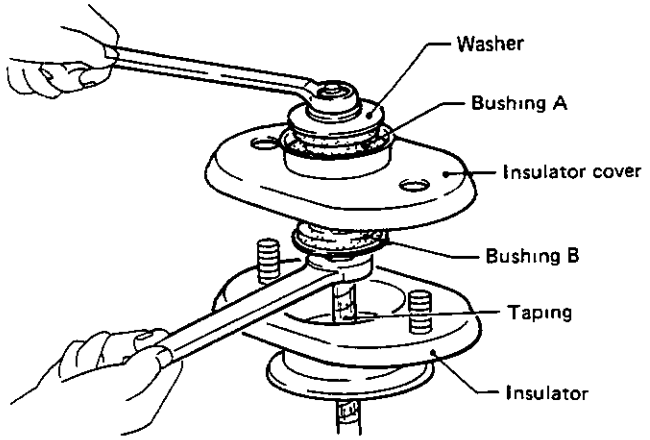
- Final tightening should be carried out at curb weight with tires on ground

### 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.**

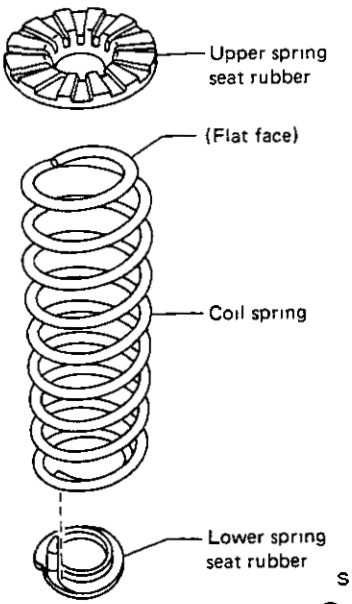



SRA461

## 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 )



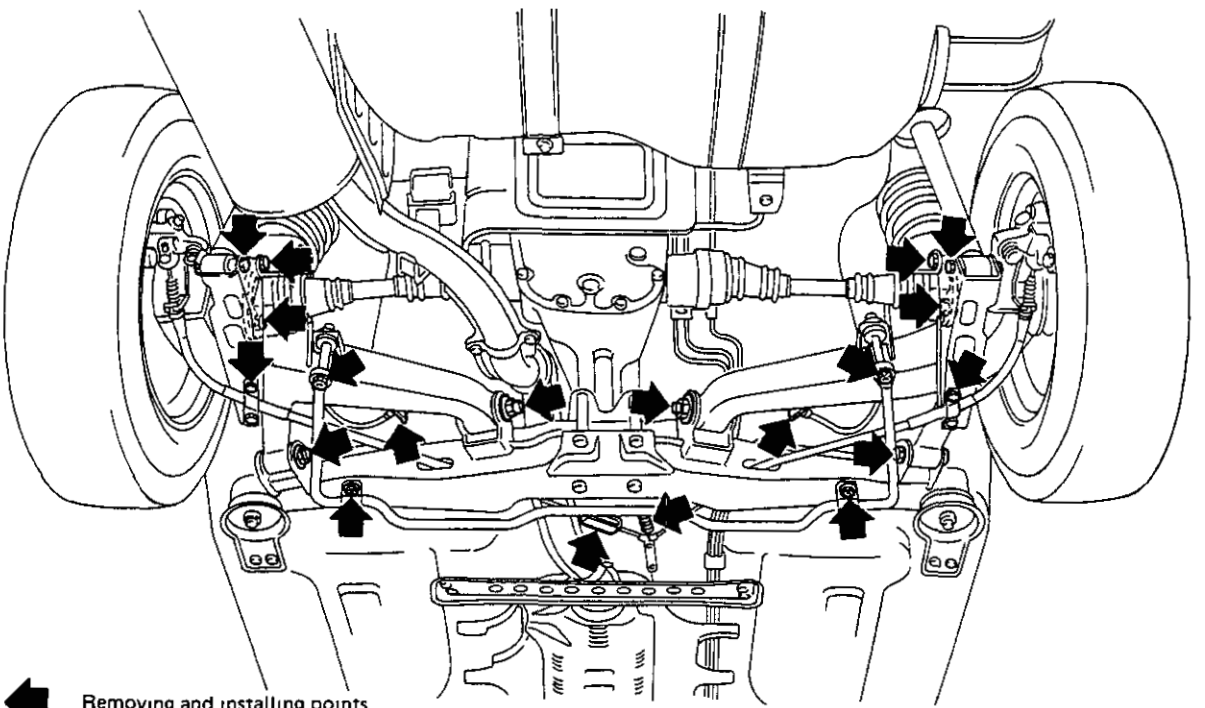

SRA462

### 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



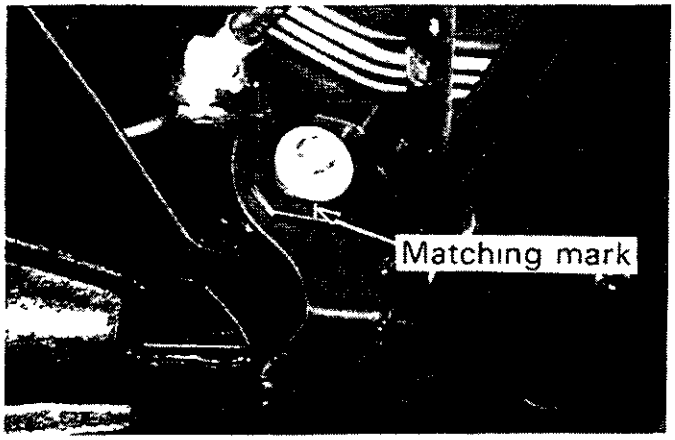
Removing and installing points

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.**

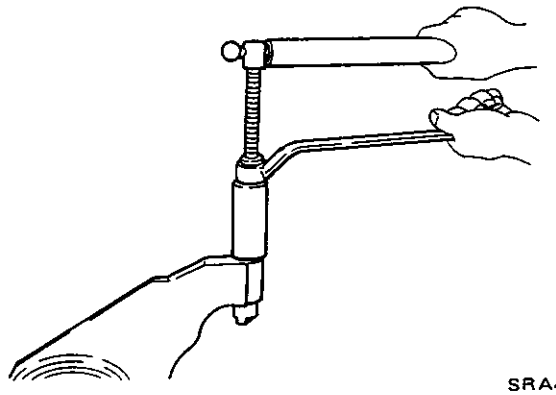



- **When installing, tighten suspension arm pin nut to specified torque after installing wheels and placing vehicle on ground under the curb weight.**
- Refer to Section MA for toe-in adjustment

### 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.**



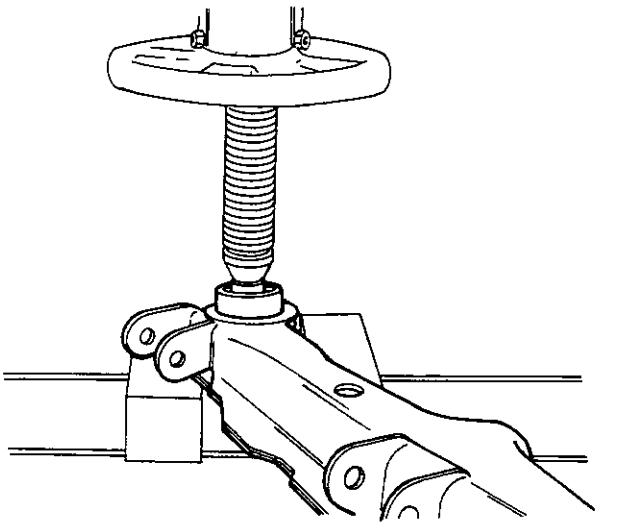
SRA465

## Suspension Member and Differential Mounting Insulator

### INSPECTION

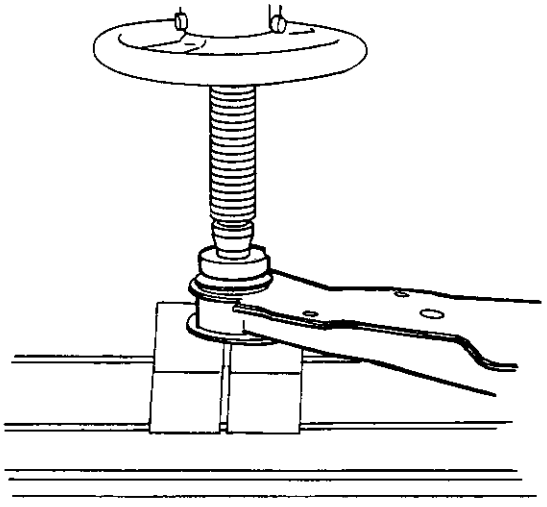
- Check differential mounting insulator for deformation or cracks Replace if necessary
- Check suspension member for deformation or cracks Replace if necessary

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



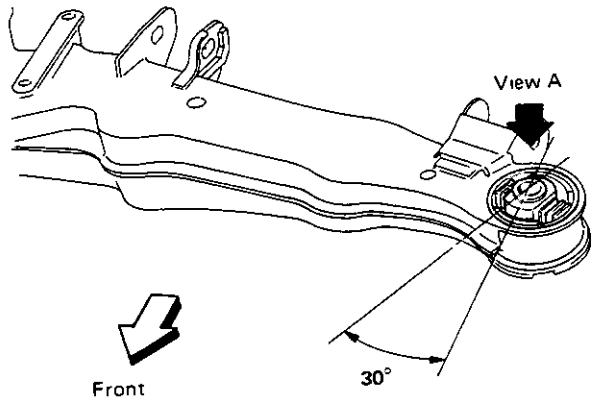
SRA455

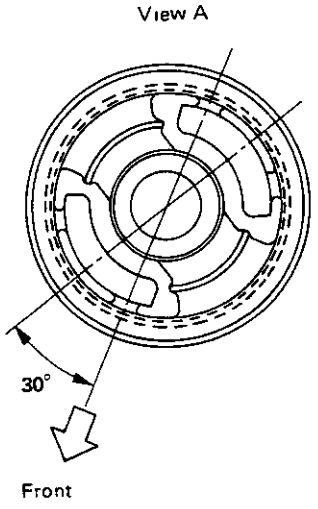
b **Install member insulator using a suitable tool. Be sure to install in its proper place.**



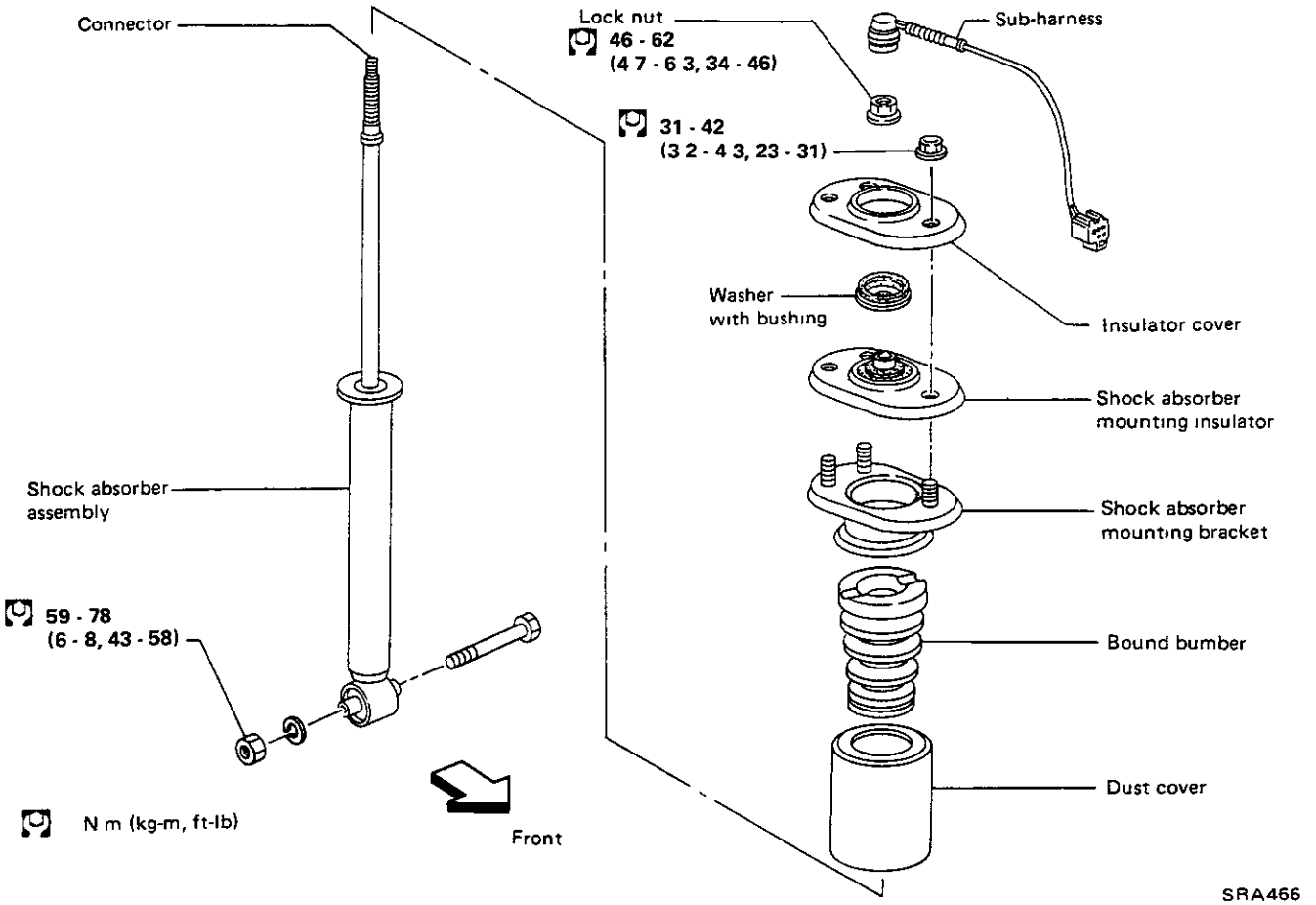
SRA456

## Suspension Member and Differential Mounting Insulator (Cont'd)



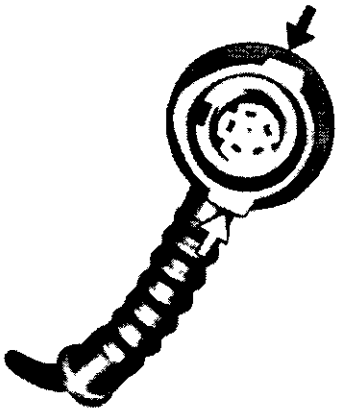

SRA457



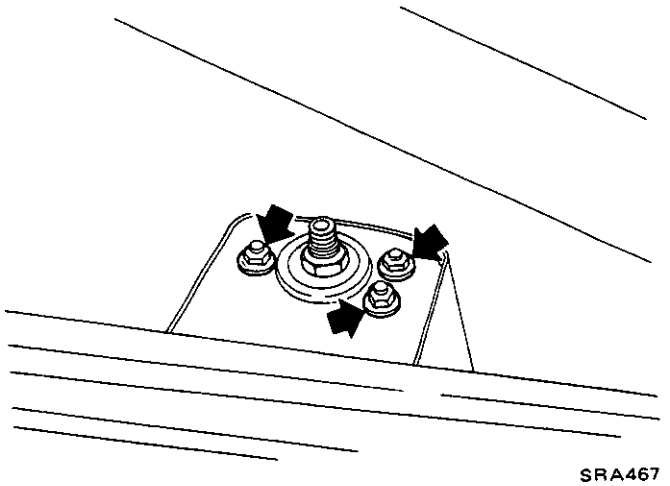

## Removal and Installation

- 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.

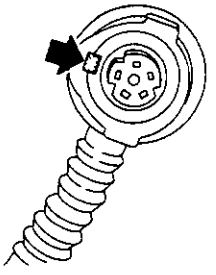
CAUTION:
**Keep water and dust away from connector.**

## 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

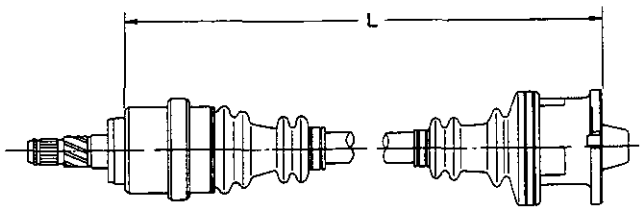
## General Specifications

### 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<br>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<br>Yellow x 2 | Yellow x 1<br>Yellow x 2 | Red x 1<br>Yellow x 2 | Yellow x 1<br>Yellow x 2 | | White x 1<br>White x 2 |
| Shock absorber<br>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<br>Maximum/Minimum mm (in) | 601 3 (23 67)/<br>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<br>[at 0 3 m (1 0 ft/sec)] | Firm | Normal | Soft | | | |
| Expansion N (kg, lb) | 785<br>(80, 176) | 637<br>(65, 143) | 422<br>(43, 95) | 588 (60, 132) | | |
| Compression N (kg, lb) | 588<br>(60, 132) | 441<br>(45, 99) | 186<br>(19, 42) | 294 (30, 66) | | |
| Stabilizer tube diameter<br>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) |

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| | | | |
|---|---|---|---|
| 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 |