

# REAR AXLE & REAR SUSPENSION

## SECTION **RA**

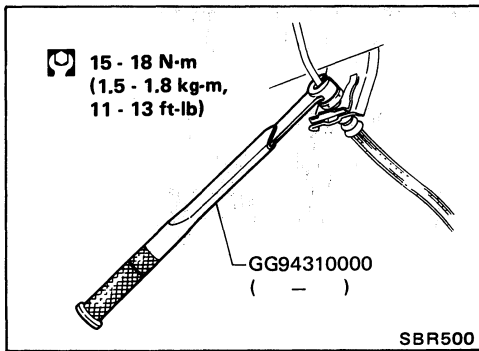
### CONTENTS

PRECAUTIONS AND PREPARATION .....	RA- 2
REAR AXLE AND REAR SUSPENSION .....	RA- 4
CHECK AND ADJUSTMENT — On-vehicle .....	RA- 6
REAR AXLE — Single-tire Models .....	RA- 7
REAR SUSPENSION — Leaf Spring Type .....	RA-12
REAR AXLE AND REAR SUSPENSION — 5-link Type .....	RA-17
REAR SUSPENSION — 5-link Type .....	RA-18
SERVICE DATA AND SPECIFICATIONS (S.D.S.) .....	RA-21

\* For adjustable shock absorber, refer to FA section.

**RA**

## PRECAUTIONS AND PREPARATION

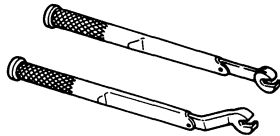

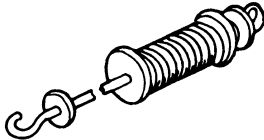
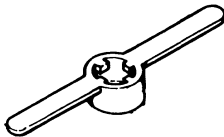
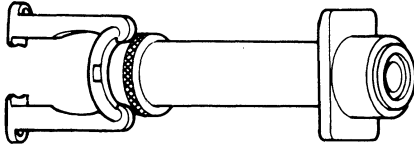
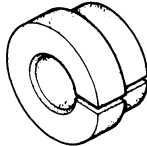


### Precautions

- (1) When installing each rubber part, final tightening must be carried out under unladen condition\* with tires on ground.
  - \* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.
- (2) Use Tool when removing or installing brake tubes.

### Preparation

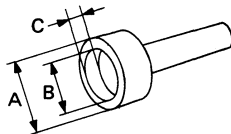
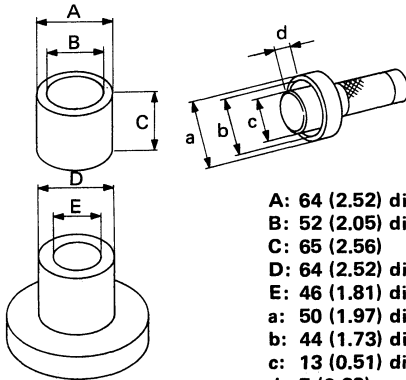
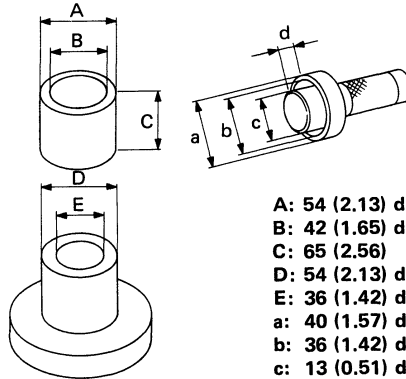
#### SPECIAL SERVICE TOOLS

Tool number (Kent-Moore No.) Tool name	Description
GG94310000 ( - ) Flare nut torque wrench	 Removing or installing brake piping
KV40101000 (J25604-01) Axle stand	 Removing rear axle shaft
ST36230000 (J25840-A) Sliding hammer	 Removing rear axle shaft
ST38020000 ( - ) Bearing lock nut wrench	 Removing wheel bearing lock nut
HT72480000 (J25852-B) Rear axle shaft bearing puller	 Removing wheel bearing
ST37840000 ( - ) Rear axle shaft guide	 Installing rear axle shaft

## PRECAUTIONS AND PREPARATION

### Preparation (Cont'd)

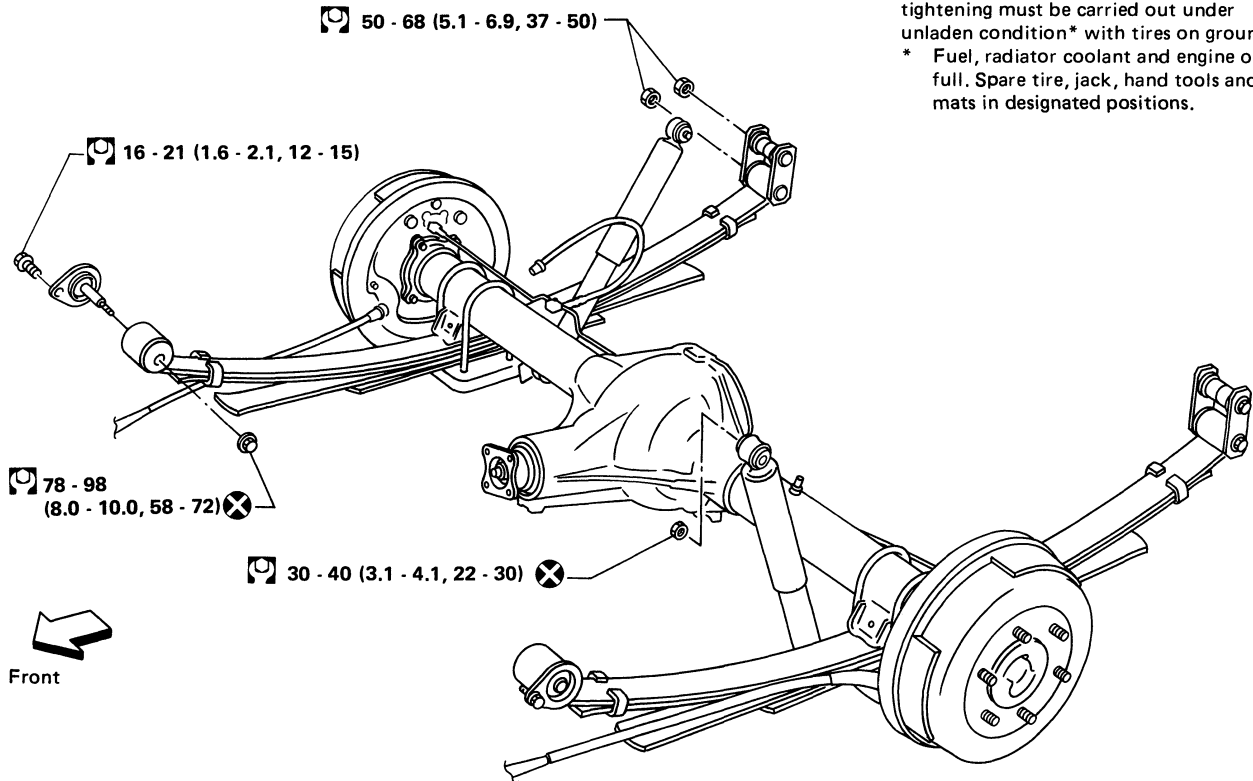
#### COMMERCIAL SERVICE TOOLS

Tool name	Description	Unit application	
		Leaf	5-link
Rear axle oil seal drift	<div><p><b>A:</b> 74 mm (2.91 in) dia. <b>B:</b> 68 mm (2.68 in) dia. <b>C:</b> 10 mm (0.39 in)</p></div> <div>Installing oil seal</div>	X	X
Drift-lower and upper links bushing	<div><p><b>A:</b> 64 (2.52) dia. <b>B:</b> 52 (2.05) dia. <b>C:</b> 65 (2.56) <b>D:</b> 64 (2.52) dia. <b>E:</b> 46 (1.81) dia. <b>a:</b> 50 (1.97) dia. <b>b:</b> 44 (1.73) dia. <b>c:</b> 13 (0.51) dia. <b>d:</b> 7 (0.28)</p></div> <div>Removing or installing lower and upper links bushing</div> <div>Unit: mm (in)</div>	—	X
Drift-panhard rod bushing	<div><p><b>A:</b> 54 (2.13) dia. <b>B:</b> 42 (1.65) dia. <b>C:</b> 65 (2.56) <b>D:</b> 54 (2.13) dia. <b>E:</b> 36 (1.42) dia. <b>a:</b> 40 (1.57) dia. <b>b:</b> 36 (1.42) dia. <b>c:</b> 13 (0.51) dia. <b>d:</b> 6 (0.24)</p></div> <div>Removing or installing panhard rod bushing</div> <div>Unit: mm (in)</div>	—	X

## REAR AXLE AND REAR SUSPENSION

### 2WD MODELS

#### Single-tire models



When installing each rubber part, final tightening must be carried out under unladen condition\* with tires on ground.  
\* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

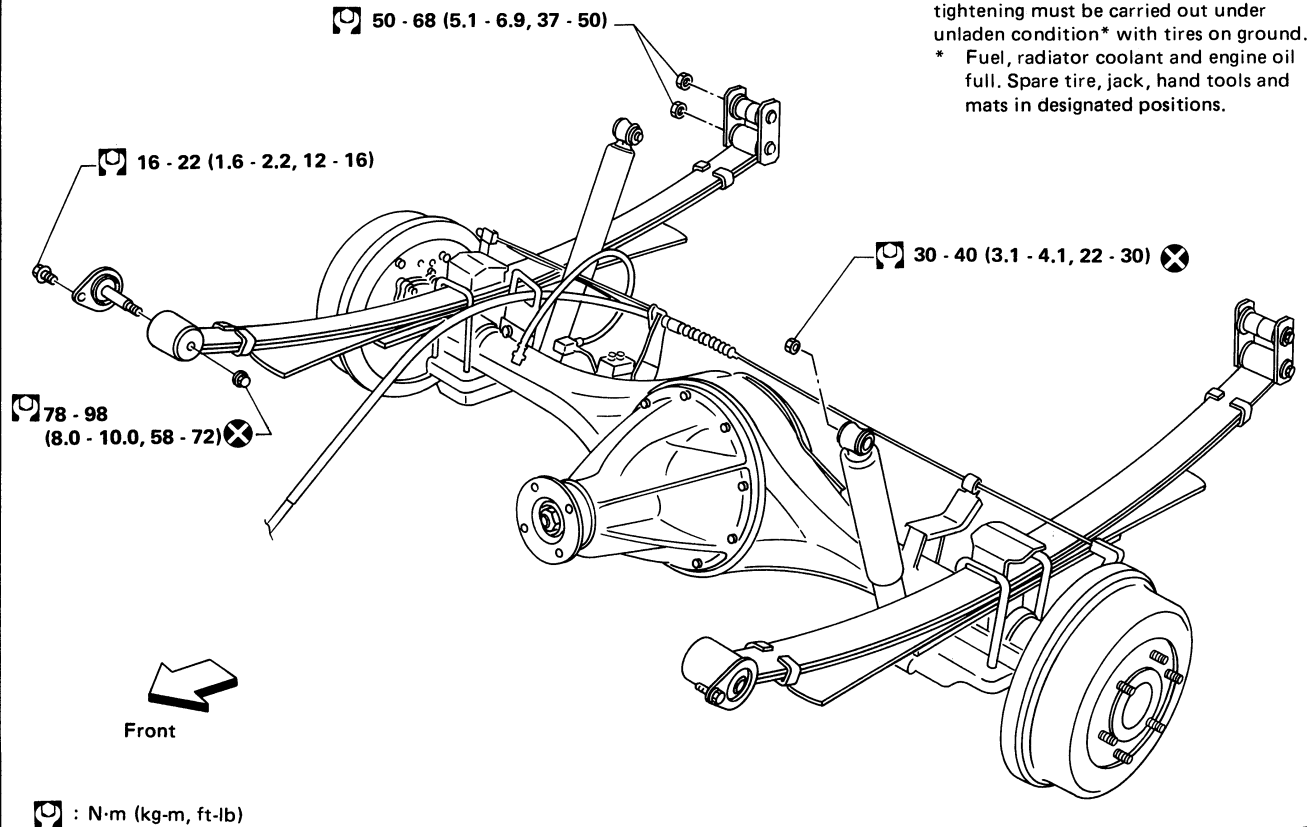
: N·m (kg·m, ft·lb)

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## REAR AXLE AND REAR SUSPENSION

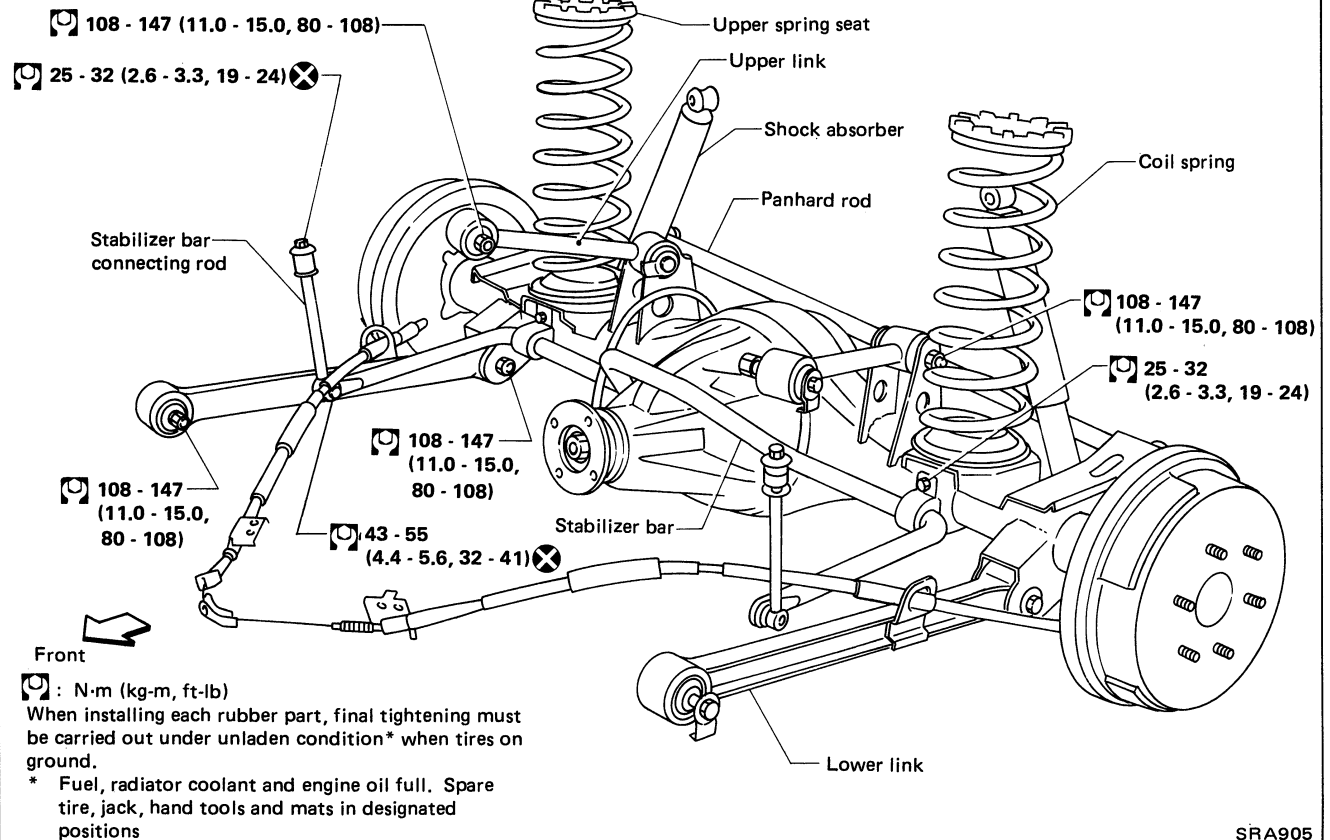
### 4WD MODELS

Except Van and Wagon models



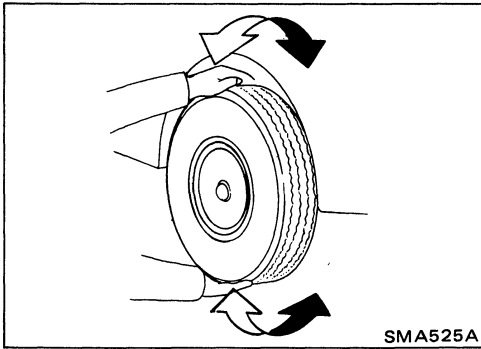
SRA733

Van and Wagon models



SRA905

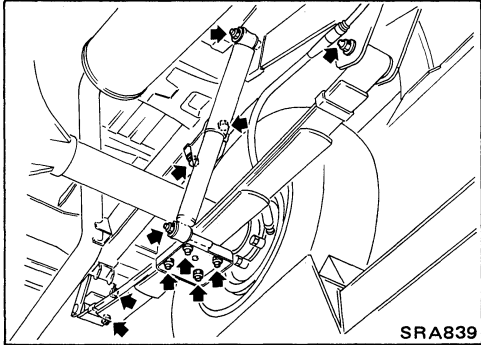
## CHECK AND ADJUSTMENT — On-vehicle



### Rear Axle and Rear Suspension Parts

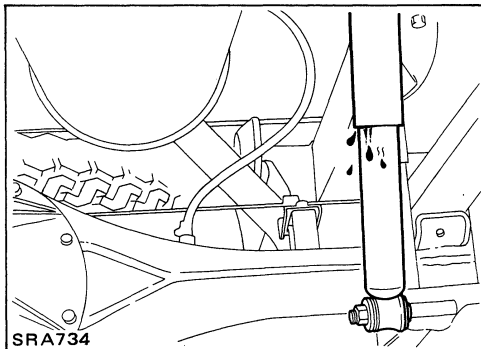
- Check rear axle and rear suspension parts for looseness, wear or damage.

(1) Shake each rear wheel.

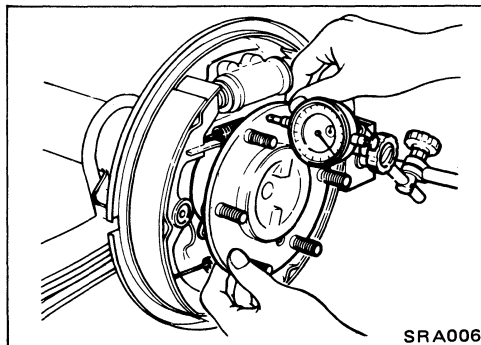


(2) Retighten all nuts and bolts to the specified torque.

**Tightening torque: Refer to S.D.S.**



- Check shock absorber for oil leakage or other damage.



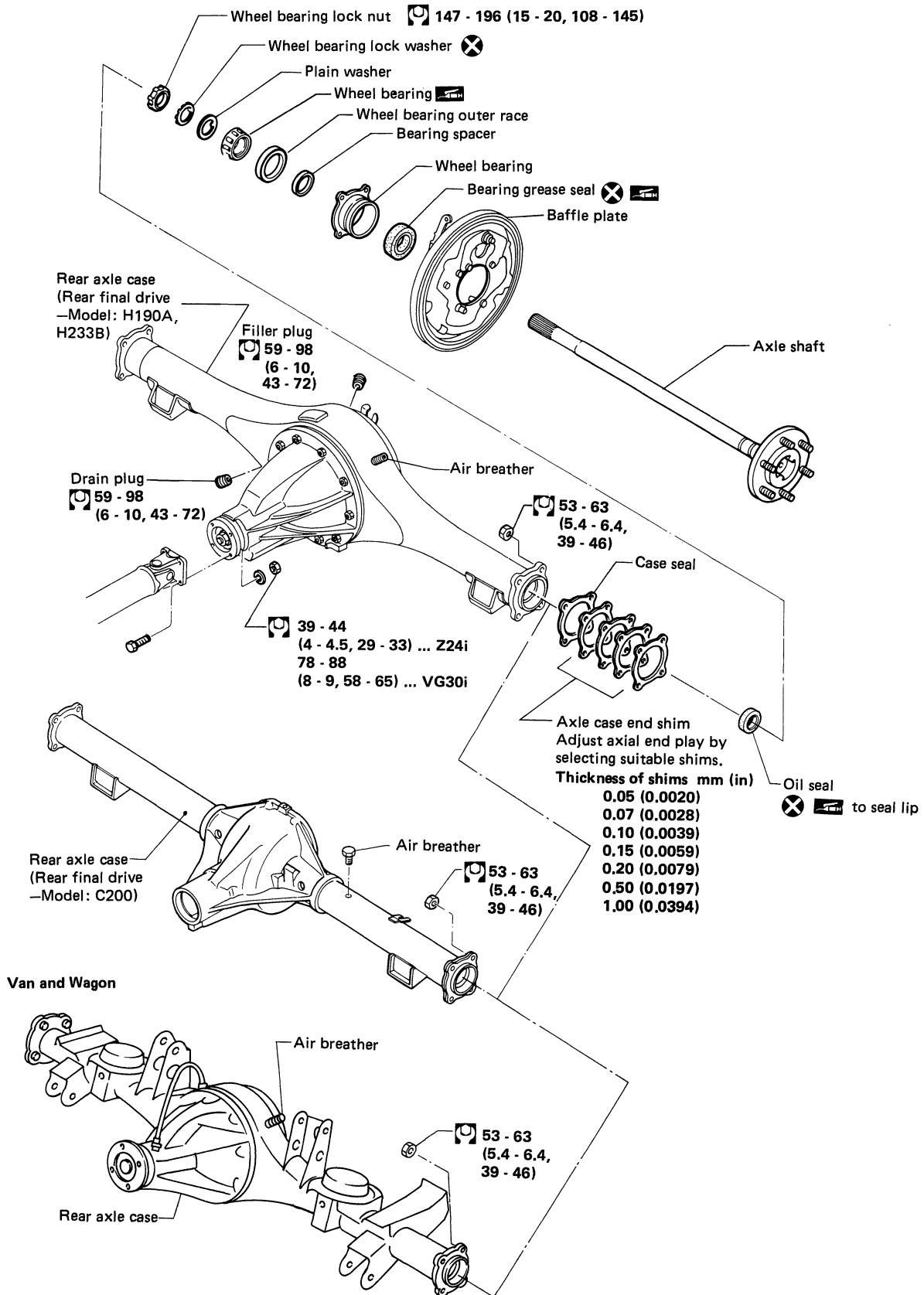
### Rear Wheel Bearing

#### SINGLE-TIRE MODELS

- Check that wheel bearings operate smoothly.
- Check axial end play. Refer to Installation of REAR AXLE — Single-tire Models.

# REAR AXLE — Single-tire Models

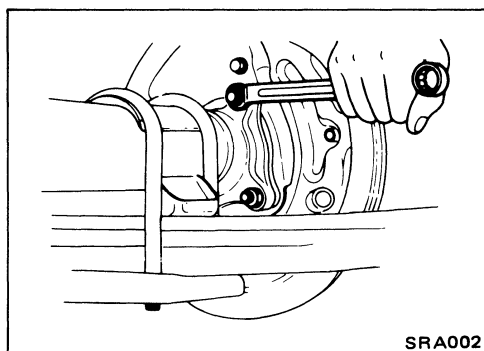
## Components



: N·m (kg-m, ft-lb)

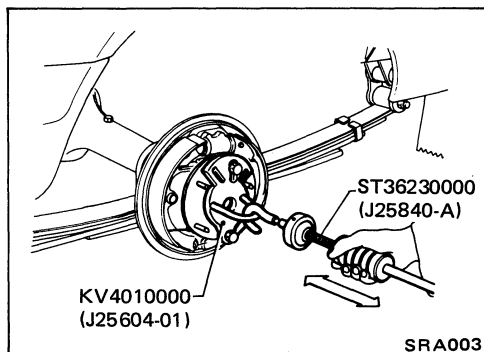
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## REAR AXLE — Single-tire Models

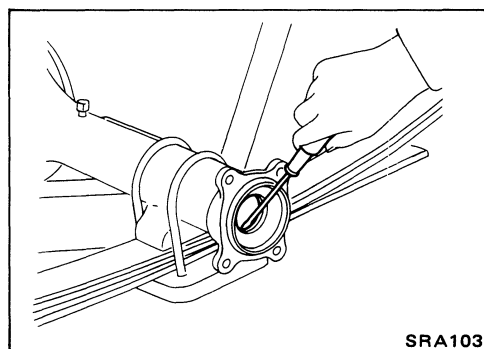


### Removal

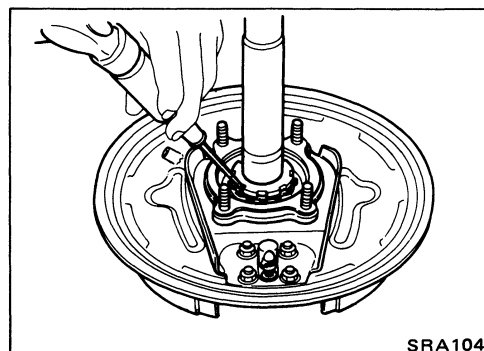
- Disconnect parking brake cable and brake tube.
- Remove nuts securing wheel bearing cage with baffle plate.



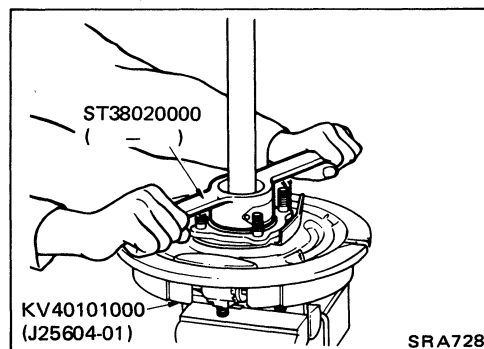
- Draw out axle shaft with Tool.
- When drawing out axle shaft, be careful not to damage oil seal.



- Remove oil seal.
- Do not reuse oil seal once it is removed.  
Always install new one.



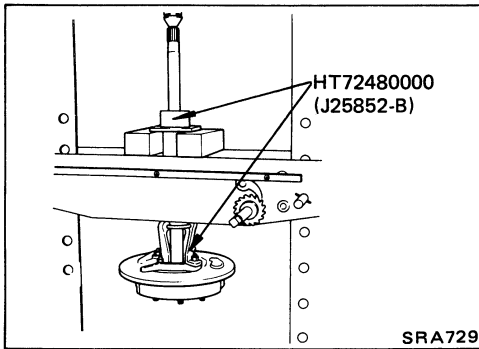
- Unbend lock washer with a screwdriver.



- Remove bearing lock nut with Tool.

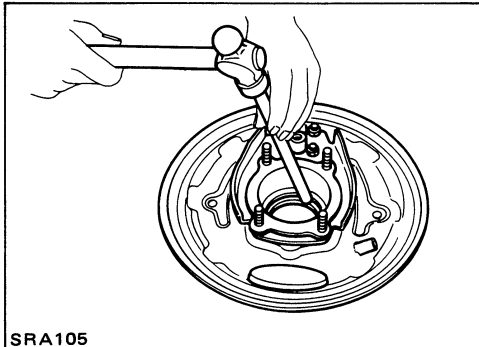


## REAR AXLE — Single-tire Models

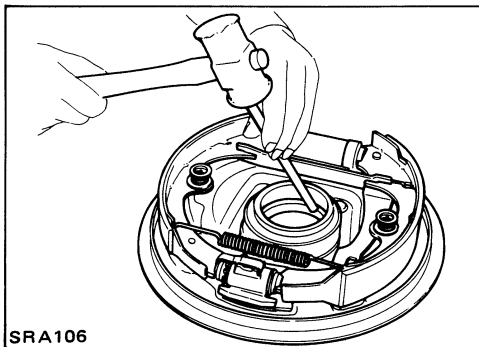


### Removal (Cont'd)

- Remove wheel bearing together with bearing cage and baffle plate from axle shaft.



- Remove grease seal in bearing cage with suitable bar.



- Remove wheel bearing outer race with a brass drift.

### Inspection

#### AXLE SHAFT

- Check axle shaft for straightness, cracks, damage, wear or distortion. Replace if necessary.

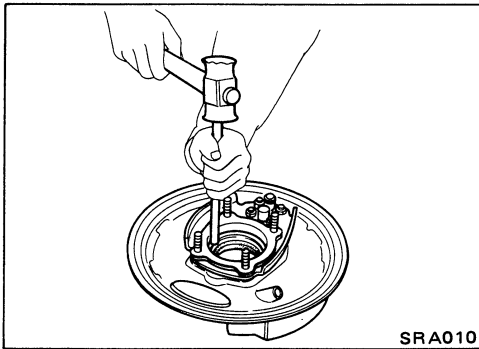
#### WHEEL BEARING

- Make sure wheel bearing rolls freely and is free from noise, cracks, pitting or wear.

#### AXLE CASE

- Check axle case for yield, deformation or cracks. Replace if necessary.

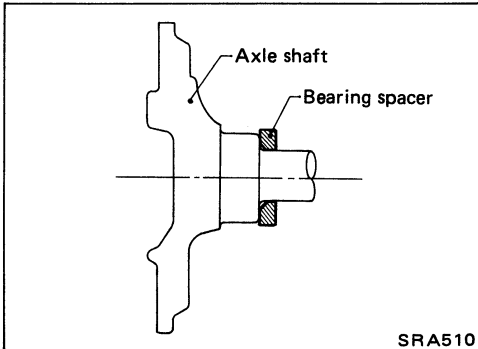
## REAR AXLE — Single-tire Models



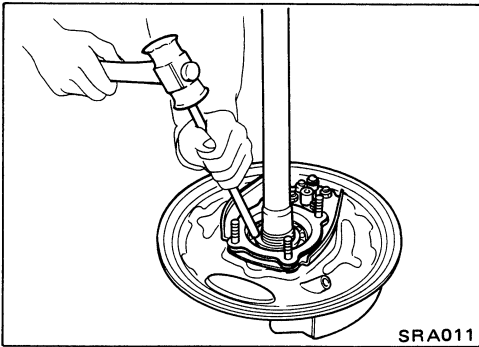
### Installation

- Install wheel bearing outer race with a brass drift.
- Install a new grease seal in bearing cage.

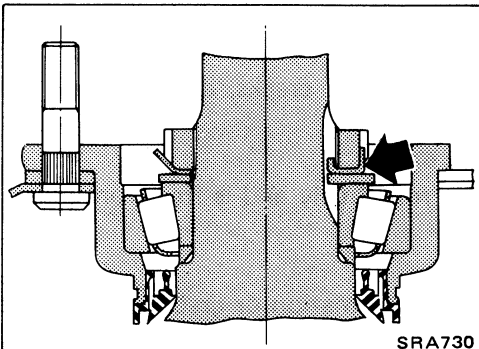
After installing new grease seal, coat sealing lip with multi-purpose grease.



- Install bearing spacer with chamfer side facing axle shaft flange.

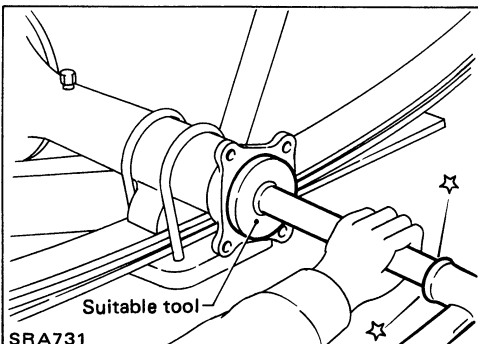


- Install wheel bearing inner race with a brass drift.
- Coat each bearing cone with multi-purpose grease.



- Install plain washer and a new wheel bearing lock washer.
- Tighten wheel bearing lock nut.

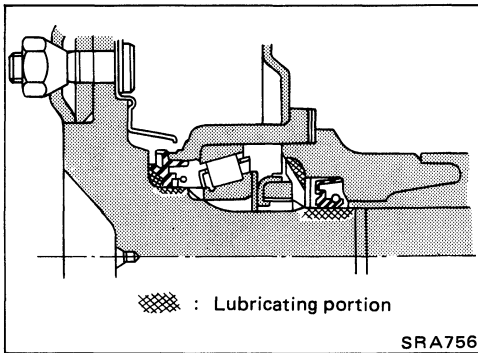
Fit wheel bearing lock washer lip in wheel bearing lock nut groove correctly by tightening lock nut. Be sure to bend it up.



- Install a new oil seal with suitable tool.

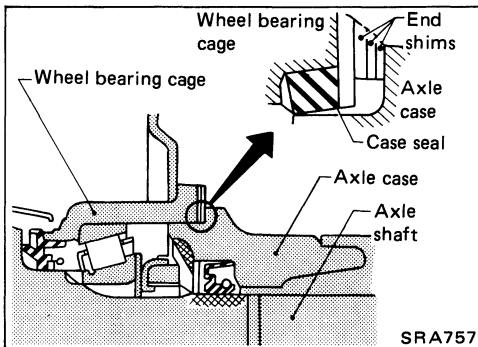
After installing new oil seal, coat sealing lip with multi-purpose grease.

## REAR AXLE — Single-tire Models



### Installation (Cont'd)

- Apply recess of axle case end with multi-purpose grease.
- Apply gear oil to the spline of axle shaft. Coat seal surface of axle shaft with multi-purpose grease (as shown left).



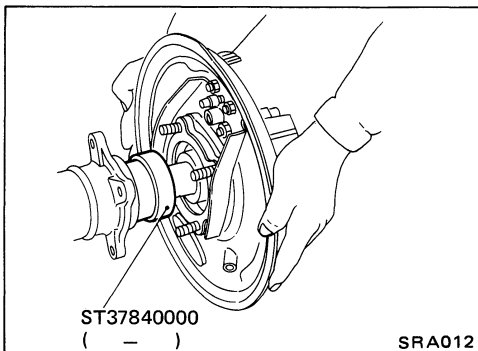
- Adjust axial end play.

(1) Select end shims.

Standard thickness: 1.5 mm (0.059 in)

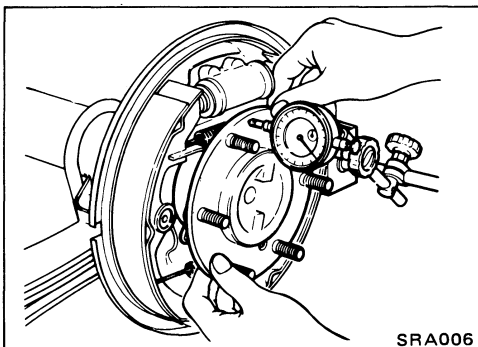
Axle case end shim: Refer to S.D.S.

Do not insert end shims between case seal and bearing cage.



(2) Insert axle shaft with Tool as a guide.

When inserting axle shaft, be careful not to damage oil seal.



(3) Measure end play of axle shaft.

Axial end play:

Servicing one side axle

0.02 - 0.15 mm (0.0008 - 0.0059 in)

Servicing both side axles

On first axle (right or left)

0.30 - 0.90 mm (0.0118 - 0.0354 in)

On second axle

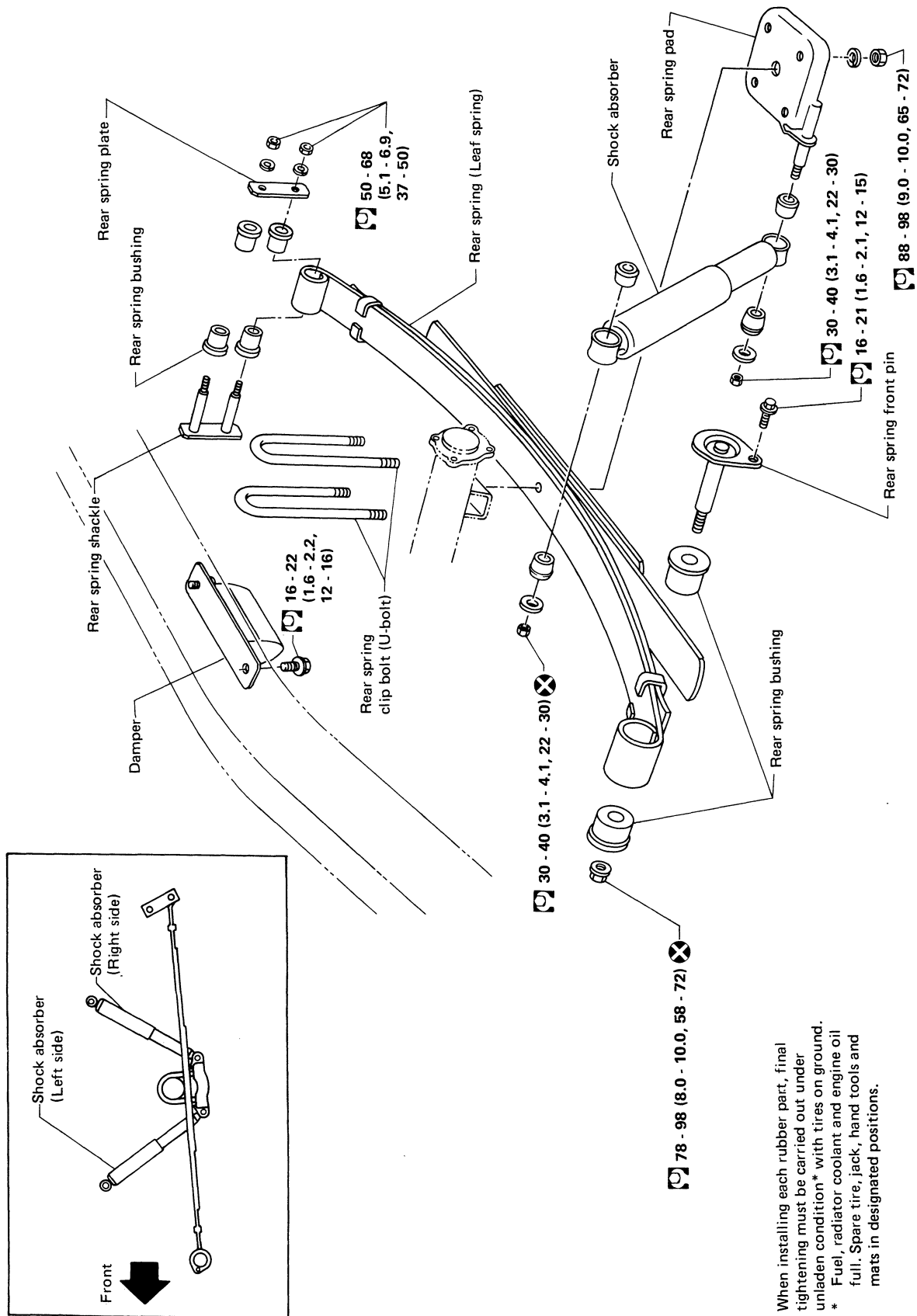
0.02 - 0.15 mm (0.0008 - 0.0059 in)

(4) If axial end play is not within the specified limit, reselect axle case end shims.

While adjusting axial end play, be careful not to damage oil seal.

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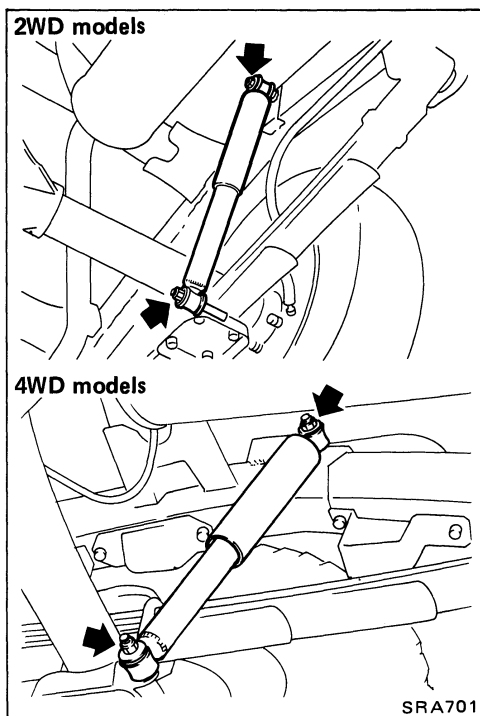
2WD models



SRA068A



## REAR SUSPENSION — Leaf Spring Type



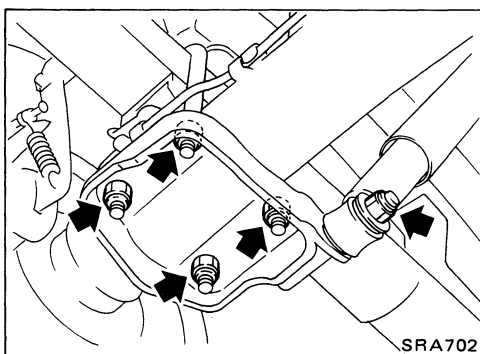
### Shock Absorber

#### REMOVAL AND INSTALLATION

- Remove shock absorber by disconnecting upper and lower end.

#### INSPECTION

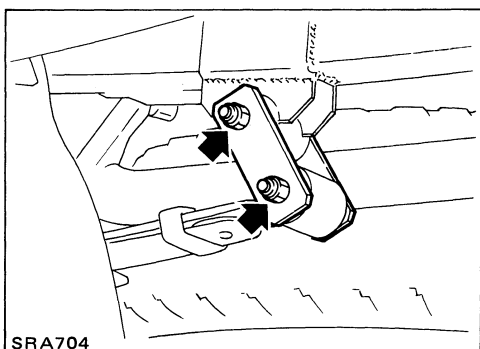
- If oil leakage, cracks or deformation occurs, replace shock absorber assembly.
- If rubber bushings are cracked or deformed, replace rubber bushings.



### Leaf Spring

#### REMOVAL AND INSTALLATION

- Disconnect shock absorber lower end, and remove U-bolts.

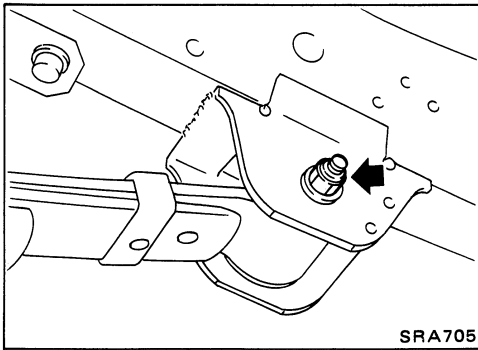


- Disconnect spring shackle.

## REAR SUSPENSION — Leaf Spring Type

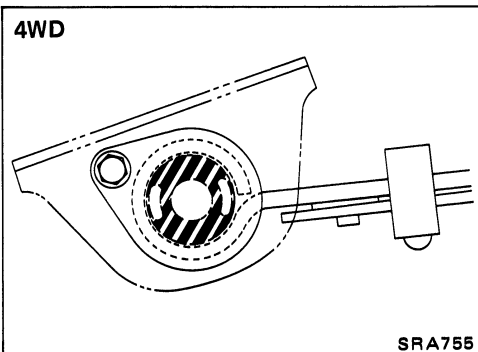
### Leaf Spring (Cont'd)

- Disconnect front pin.



### INSPECTION

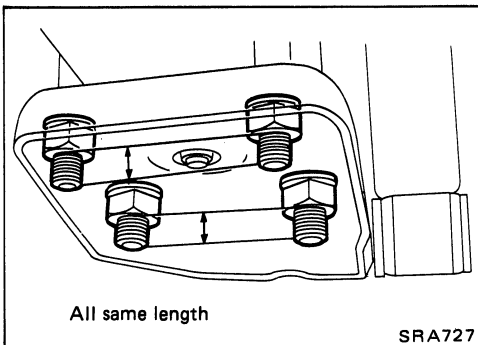
- Check leaf spring for cracks. Replace if necessary.
- Check front bracket and pin, shackle, U-bolts and spring pad for wear, cracks, straightness or damaged threads. Replace if necessary.



- Check all bushings for deformation or cracks. Replace if necessary.

[4WD: Rear spring front bushing]

Make sure that front bushing is properly installed.



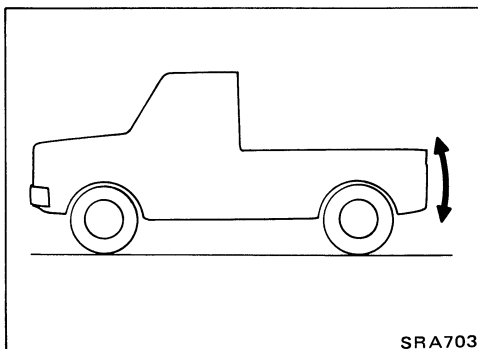
### INSTALLATION

- Apply soapsuds to rubber bushing.
- Install spring shackle and front pin, and finger tighten the nuts.
- Install spring pad and nuts under rear spring or axle case.
- Tighten U-bolt mounting nuts diagonally.

Tighten U-bolts so that the length of all U-bolts under spring pad are the same.

- Install shock absorber, and finger tighten the nuts.

- Remove stands and bounce the vehicle to stabilize suspension. (Unladen)

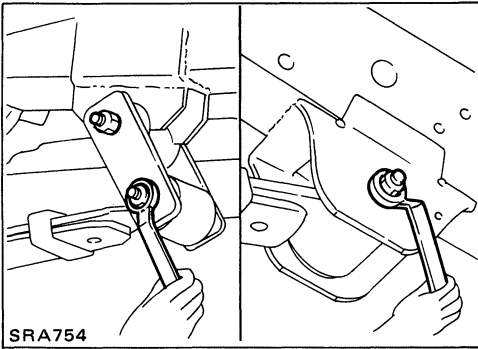


## REAR SUSPENSION — Leaf Spring Type

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### Leaf Spring (Cont'd)

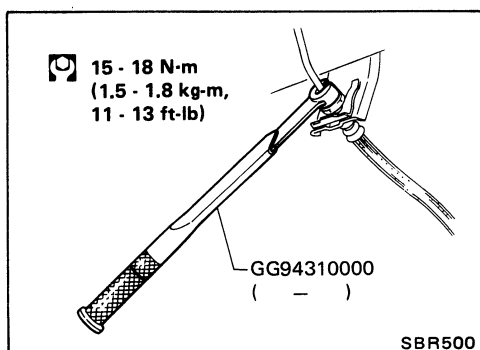
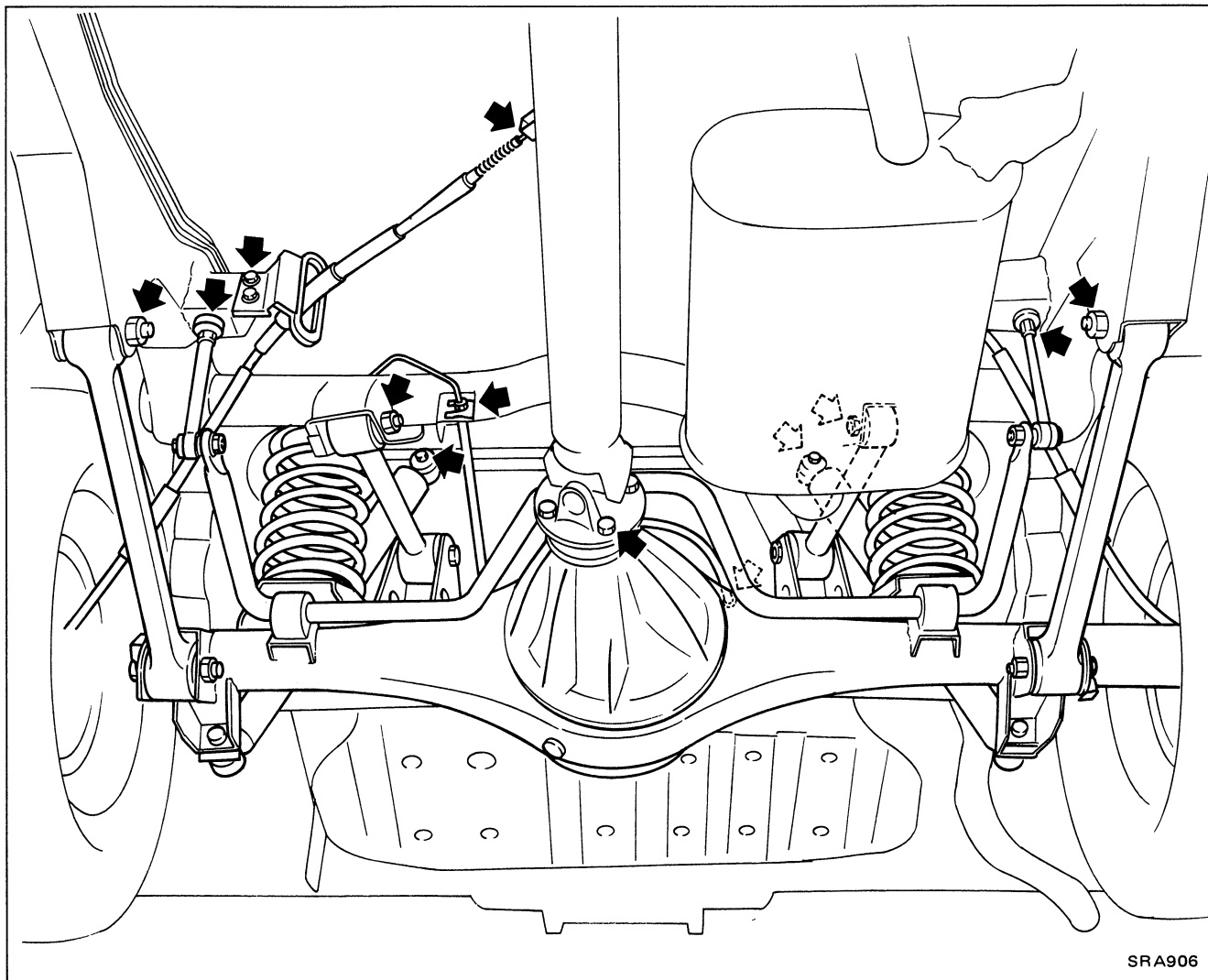
- Tighten spring shackle nuts, front pin nuts and shock absorber nuts.





## REAR AXLE AND REAR SUSPENSION — 5-link Type

### Removal and Installation

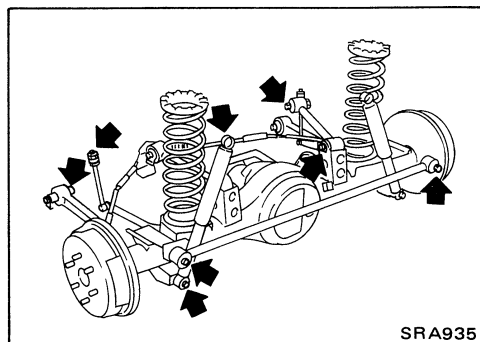


- Disconnect brake hydraulic line and parking brake cable.

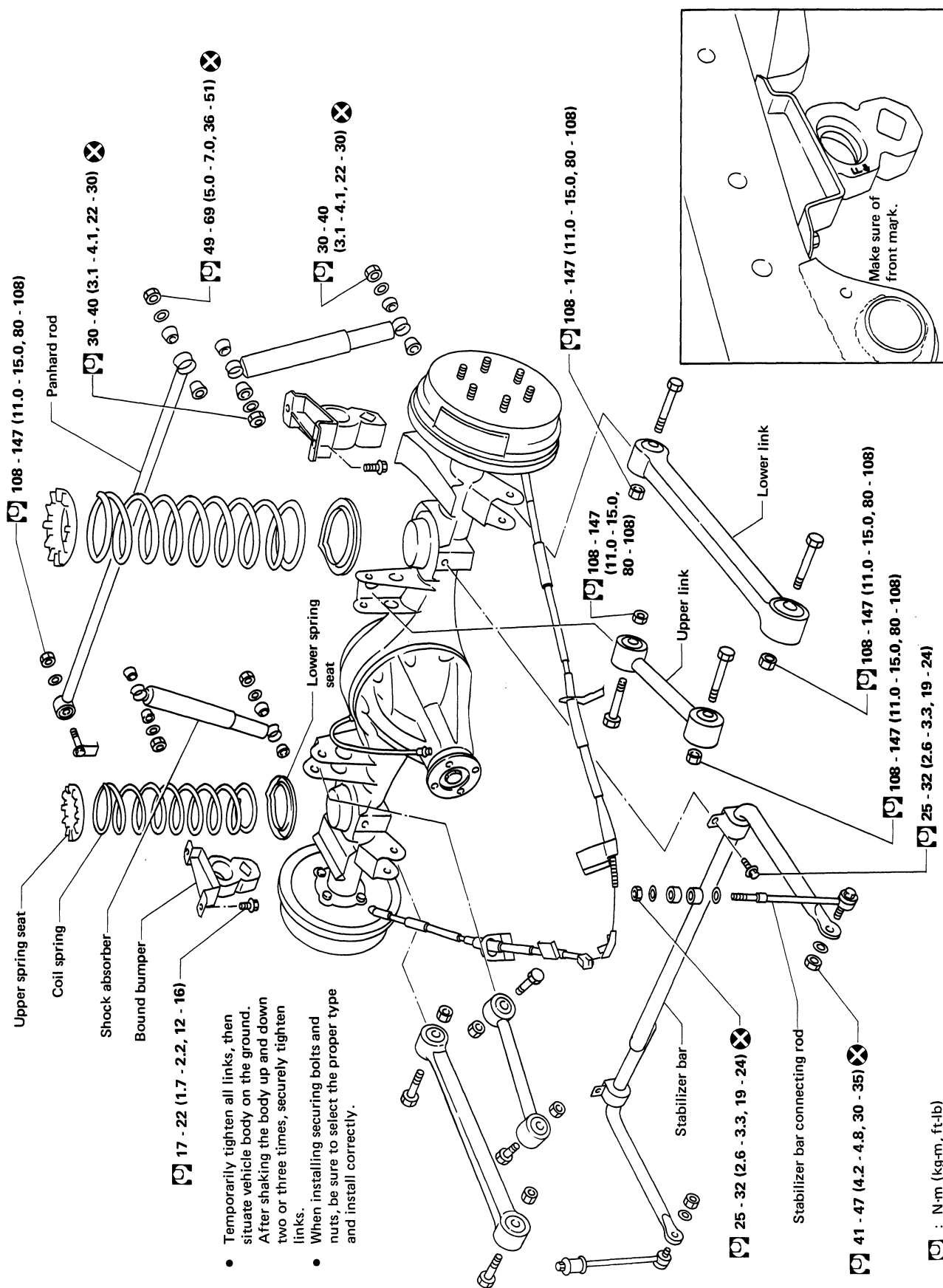
#### CAUTION:

Use Tool when removing or installing brake tubes.

- Remove stabilizer bar from body.
- Remove upper links and lower links from body.
- Remove panhard rod from body.
- Disconnect propeller shaft. Refer to section PD.
- Remove upper end nuts of shock absorber.

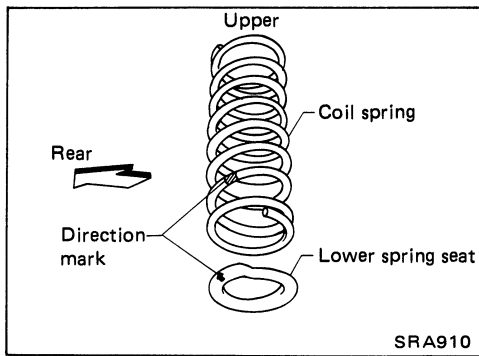


Final tightening for rubber parts requires to be carried out under unladen condition with tires on ground.



**SRA092A**

## REAR SUSPENSION — 5-link Type



### Coil Spring and Shock Absorber REMOVAL AND INSTALLATION

- Refer to Removal and Installation of REAR AXLE AND REAR SUSPENSION — 5-link Type.

When installing coil spring and lower spring seat, pay attention to its direction.

Be sure spring rubber seat is not twisted and has not slipped off when installing coil spring.

### INSPECTION

- Check coil spring for yield, deformation or cracks.
- Check coil spring specifications. Refer to S.D.S.
- Check shock absorber for oil leakage, cracks or deformation.
- Check shock absorber specifications. Refer to S.D.S.
- Check all rubber parts for wear, cracks or deformation. Replace if necessary.

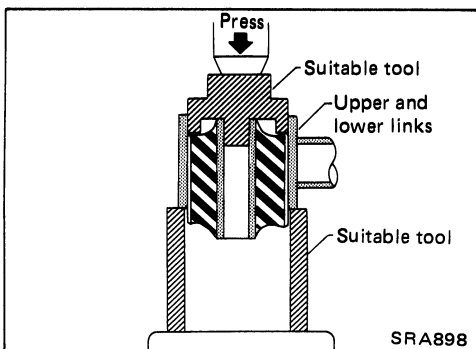
### Upper Link, Lower Link and Panhard Rod

#### INSPECTION

Check for cracks, distortion or other damage. Replace if necessary.

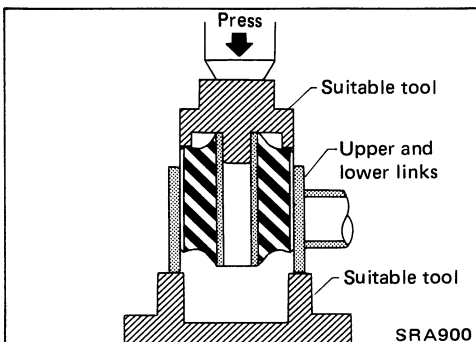
#### BUSHING REPLACEMENT

Check for cracks or other damage. Replace with suitable tool if necessary.



#### Upper and lower links bushing

- Remove upper and lower links bushing with suitable tool.



When installing upper and lower links bushing, apply a coating of 1% soap water to outer wall of bushing.

Always install new bushing.

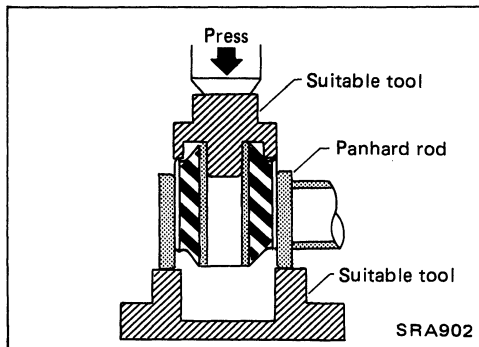
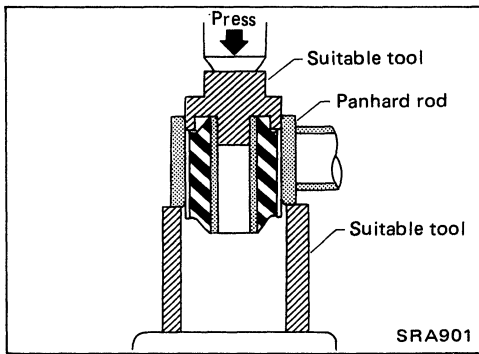
Do not tap end face of bushing directly with a hammer.

## REAR SUSPENSION — 5-link Type

### Upper Link, Lower Link and Panhard Rod (Cont'd)

#### Panhard rod bushing

- Remove panhard rod bushing with suitable tool.



When installing panhard rod bushing, apply a coating of 1% soap water to outer wall of bushing.

Always install new bushing.

Do not tap end face of bushing directly with a hammer.

#### INSTALLATION

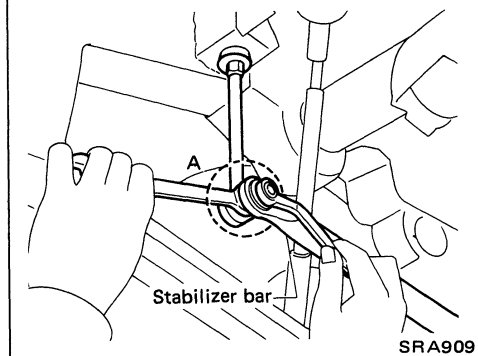
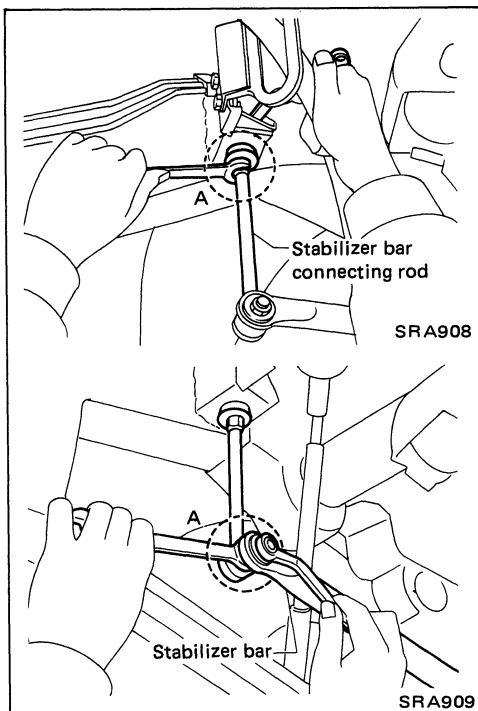
When installing each link, pay attention to direction of bolts and nuts.

When installing each rubber part, final tightening must be carried out under unladen condition with tires on ground.

### Stabilizer Bar

#### REMOVAL AND INSTALLATION

- When removing and installing stabilizer bar, fix portion A.



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

## General Specifications (Leaf spring type)

LEAF SPRING		2WD				4WD
		Model	U.S.A.	Canada	Regular Cab*	Heavy duty
Semi-elliptic leaf spring						
Suspension type						
Leaf spring	Length x width x thickness — number of leaves mm (in)	1,200 x 60 x 7 - 2 13 - 1 (47.24 x 2.36 x 0.28 - 2) 0.51 - 1	1,200 x 60 x 7 - 2 12 - 2 (47.24 x 2.36 x 0.28 - 2) 0.47 - 2	1,200 x 60 x 7 - 2 13 - 1 (47.24 x 2.36 x 0.28 - 2) 0.51 - 1	1,200 x 60 x 8 - 2 14 - 2 (47.24 x 2.36 x 0.31 - 2) 0.55 - 2	1,200 x 60 x 7 - 1 8 - 1 12 - 1 13 - 1 (47.24 x 2.36 x 0.28 - 1) 0.31 - 1 0.47 - 1 0.51 - 1
	Free camber "S" mm (in)	171 (6.73)	164.5 (6.48)	171 (6.73)	134.5 (5.30)	106 (4.17)
	Spring constant N/mm (kg/mm, lb/in)	20.9 - 58.0 (2.13 - 5.91, 119.3 - 331.0)	22.3 - 76.5 (2.27 - 7.8, 127.1 - 436.8)	20.9 - 58.0 (2.13 - 5.91, 119.3 - 331.0)	32.6 - 114.7 (3.32 - 11.7, 185.9 - 655.2)	24.1 - 90.2 (2.46 - 9.2, 137.8 - 515.2)
	Maximum length "L" mm (in)	508 (20.00)				528 (20.79)
Shock absorber	Stroke mm (in)	200 (7.87)				210 (8.27)
	Damping force [0.3 m/sec. (1.0 ft/sec.)] N (kg, lb)	785 (80, 176) 216 (22, 49)				981 (100, 221) 216 (22, 49)
	Expansion Compression	785 (80, 176) 216 (22, 49)				Except Canada Canada 785 1,716 (80, 176) (175, 386) 216 343 (22, 49) (35, 77)



SRA111



RA260

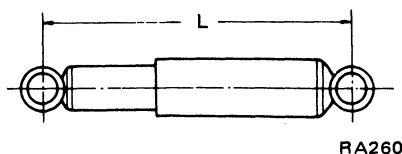
\*: 4-speed M/T models only

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

### General Specifications (5-link type)

#### SHOCK ABSORBER

Suspension type	5-link		
Shock absorber type	Non-adjustable	Adjustable	
Stroke mm (in)	234 (9.21)	211 (8.31)	
Maximum length "L" mm (in)	586 (23.07)	585 (23.03)	
Damping force at 0.3 m (1.0 ft)/sec. Expansion N (kg, lb)	785 (80, 176)	TOURING	SPORT
		628 (64, 141)	1,491 (152, 335)
Compression N (kg, lb)	343 (35, 77)	382 (39, 86)	667 (68, 150)



#### COIL SPRING

Suspension type	5-link	
Wire diameter mm (in)	13.2 (0.520)	
Coil diameter mm (in)	117.2 (4.61)	
Free length mm (in)	417 (16.42)	
Spring constant N/mm (kg/mm, lb/in)	25.5 (2.6, 146)	
Identification color	White x 1, Blue x 1	

### Inspection and Adjustment

#### SINGLE-TIRE

Unit: mm (in)

Total end play	0.02 - 0.15 (0.0008 - 0.0059)	
	Thickness	Part No.
Rear axle case end shim	0.05 (0.0020)	43086 P0110
	0.07 (0.0028)	43087 P0110
	0.10 (0.0039)	43088 P0110
	0.15 (0.0059)	43086 B9500
	0.20 (0.0079)	43089 P0110
	0.50 (0.0197)	43090 P0110
	1.00 (0.0394)	43036 01G00

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

### Tightening Torque

Unit	N·m	kg-m	ft-lb
Drain plug	59 - 98	6 - 10	43 - 72
Filler plug			
H190A	59 - 98	6 - 10	43 - 72
H233B	59 - 98	6 - 10	43 - 72
C200	39 - 59	4 - 6	29 - 43
Back plate fixing bolt	53 - 63	5.4 - 6.4	39 - 46
Wheel bearing lock nut	147 - 196	15 - 20	108 - 145
Wheel cylinder air breather	7 - 9	0.7 - 0.9	5.1 - 6.5
Differential gear carrier to axle case nut			
H190A	16 - 24	1.6 - 2.4	12 - 17
C200	11 - 14	1.1 - 1.4	8 - 10
H233B	27 - 36	2.8 - 3.7	20 - 27
Wheel nut			
Aluminum wheel	118 - 147	12 - 15	87 - 108
Steel wheel	118 - 147	12 - 15	87 - 108
Brake tube flare nut	15 - 18	1.5 - 1.8	11 - 13
Propeller shaft to companion flange			
Z24i engine	39 - 44	4 - 4.5	29 - 33
VG30i engine	78 - 88	8 - 9	58 - 65

### 5-link type

Unit	N·m	kg-m	ft-lb
Shock absorber upper end fixing nut	30 - 40	3.1 - 4.1	22 - 30
Shock absorber lower end fixing nut	30 - 40	3.1 - 4.1	22 - 30
Bumper rubber fixing bolt	17 - 22	1.7 - 2.2	12 - 16
Upper link fixing bolt	108 - 147	11.0 - 15.0	80 - 108
Lower link fixing bolt	108 - 147	11.0 - 15.0	80 - 108
Panhard rod fixing bolt (R.H. side)	108 - 147	11.0 - 15.0	80 - 108
Panhard rod fixing nut (L.H. side)	49 - 69	5.0 - 7.0	36 - 51
Stabilizer bar to connecting rod	41 - 47	4.2 - 4.8	30 - 35
Connecting rod to body	25 - 32	2.6 - 3.3	19 - 24
Stabilizer bar bracket to axle case	25 - 32	2.6 - 3.3	19 - 24

### Leaf spring type

Unit	N·m	kg-m	ft-lb
Shock absorber upper end nut	30 - 40	3.1 - 4.1	22 - 30
Shock absorber lower end nut	30 - 40	3.1 - 4.1	22 - 30
Leaf spring U-bolt nut	88 - 98	9.0 - 10.0	65 - 72
Spring front pin nut	78 - 98	8.0 - 10.0	58 - 72
Spring front pin bolt to frame			
(2WD)	16 - 21	1.6 - 2.1	12 - 15
(4WD)	16 - 22	1.6 - 2.2	12 - 16
Spring shackle	78 - 98	8.0 - 10.0	58 - 72
Bumper rubber fixing bolt	16 - 22	1.6 - 2.2	12 - 16

