

# REAR AXLE & REAR SUSPENSION

## SECTION **RA**

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**RA**

## PRECAUTIONS AND PREPARATION

### Precautions

- When installing rubber parts, final tightening must be carried out under the following conditions and with tires on ground.

(\*) Vehicle unladen.

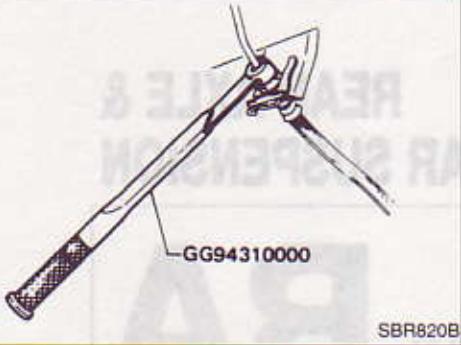



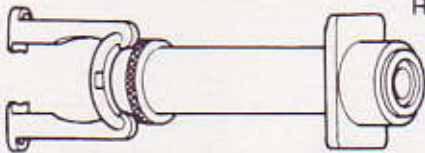
Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

- Use tools when removing or installing brake lines.
- When removing each suspension part, check wheel alignment and adjust if necessary.
- Do not jack up at the lower arm.

### Preparation

#### SPECIAL SERVICE TOOLS



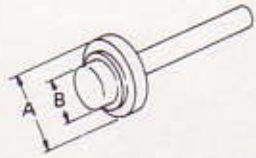
\*: Special tool or commercial equivalent

Tool number Tool name	Description	Unit application	
		IRS	Rigid axle
GG94310000 Flare nut torque wrench			
	Removing and installing brake piping	X	X
ST30031000 Bearing puller		X	—
ST07640000* Axle stand	 <p>A: 114.3 mm (4.50 in) B: 12 mm (0.47 in)</p>	X	X
ST36230000* Sliding hammer		X	X
HT72480000 Rear axle shaft bearing puller		—	X

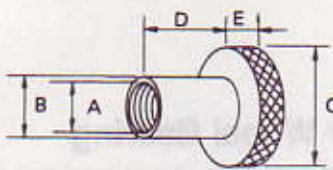
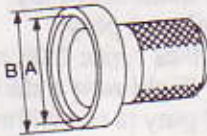




## PRECAUTIONS AND PREPARATION

### Preparation (Cont'd)

Tool number Tool name	Description	Unit application	
		IRS	Rigid axle
ST38210000* Rear axle shaft bearing collar inserter	 A: 60 mm (2.36 in) B: 44 mm (1.73 mm)	Installing axle shaft bearing collar	—  X
ST37840000* Rear axle shaft guide		Installing rear axle shaft	—  X
ST37820000* Rear axle shaft oil seal drift	 A: 72 mm (2.83 in) B: 39 mm (1.54 in)	Installing axle oil seal	—  X

### COMMERCIAL SERVICE TOOLS

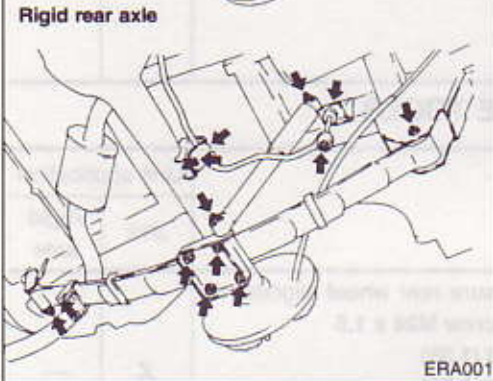
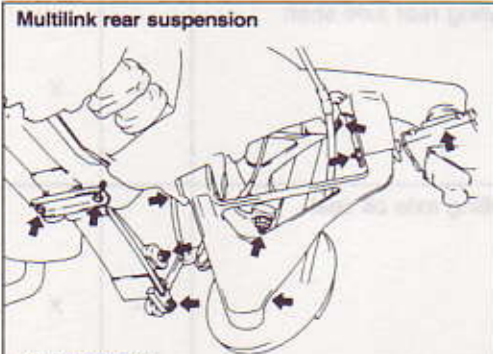
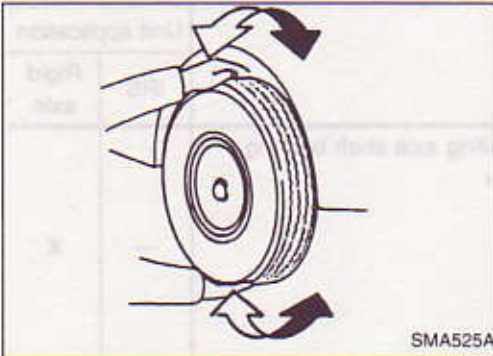
Tool name	Description	Unit application	
		IRS	Rigid axle
Attachment Wheel alignment	 Measure rear wheel alignment A: Screw M24 x 1.5 B: 35 (1.38) C: 65 (2.56) D: 56 (2.20) E: 12 (0.47)      Unit: mm (in)	X	—
Rear wheelhub drift	 A: 59 mm (2.32 in) B: 79 mm (3.11 in)	Installing wheel bearing	X  —
Wheel bearing drift	 A: 47 mm (1.85 in) B: 60 mm (2.36 in)	Installing rear wheel hub	X  —
Rear drive shaft plug seal drift	 A: 67 mm (2.64 in) B: 85 mm (3.35 in)	Installing rear drive shaft plug seal	X  —



## Rear Axle and Rear Suspension Parts

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

- Shake each rear wheel, to see if any excessive play exists.



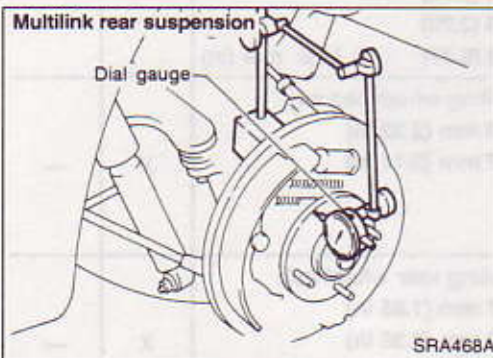
- Retighten all nuts and bolts to the specified torque.

**Tightening torque:**

**Refer to REAR SUSPENSION.**

- Make sure that cotter pin is inserted.

- Check shock absorber for oil leakage or other damage.
- Check wheelarch height. Refer to section FA.
- Check suspension lower and upper ball joint for excessive play.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.



## Rear Wheel Bearing

- Check that wheel bearings operate smoothly.
- Check axial end play.

**Axial end play:**

**IRS type: 0.05 mm (0.0020 in) or less**

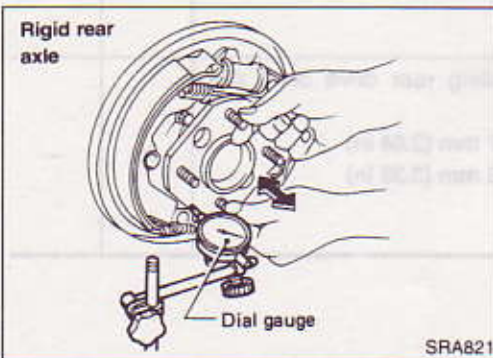
**Rigid rear axle type: 0.1 mm (0.004 in) or less**

If axial end play is not within specification or wheel bearing does not turn smoothly, replace wheel bearing assembly.

Refer to: REAR AXLE

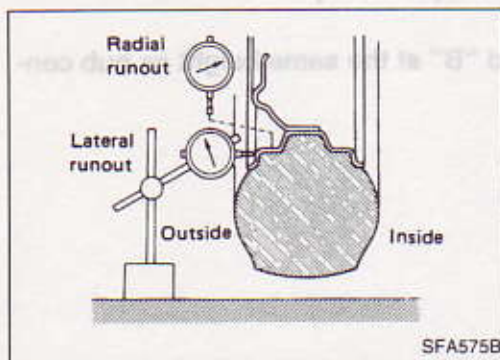
Models with I.R.S.: Wheel Hub and Axle Housing

Models with Rigid Rear Axle: Drive shaft





## ON-VEHICLE SERVICE



### Rear Wheel Alignment

Before checking rear wheel alignment, be sure to make a preliminary inspection.

#### PRELIMINARY INSPECTION

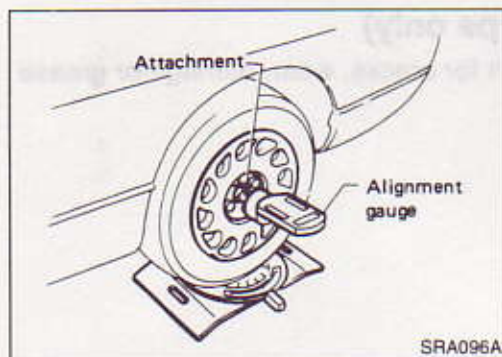
Make following checks. Adjust, repair or replace if necessary.

- Check tires for wear and for improper inflation.
- Check rear wheel bearings for looseness.
- Check wheel runout.

**Refer to S.D.S.**

- Check that rear shock absorber works properly.
- Check rear axle and rear suspension parts for looseness.
- Check vehicle posture (Unladen\*).

(\*) Fuel tank, radiator and engine oil full. Spare tire, jack, hand tools and mats in designated positions.

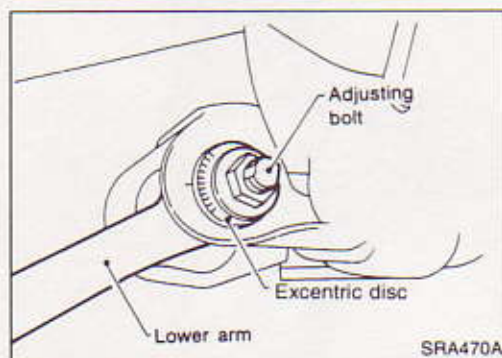


### CAMBER (I.R.S. type only)

Measure camber of both right and left wheels with a suitable alignment gauge and adjust in accordance with the following procedures.

**Camber:**

**Refer to S.D.S.**



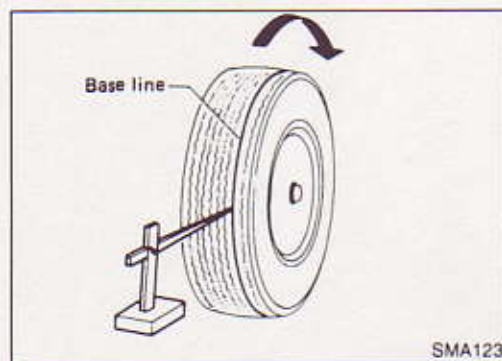
If camber is not within specification, adjust by turning the adjusting bolt.

- a. Turn the adjusting bolt to adjust.

**Camber changes about 5' with each graduation of the adjusting bolt.**

- b. Tighten to the specified torque.

**⚙: 74 - 88 N·m  
(7.5 - 9.0 kg-m, 54 - 65 ft-lb)**



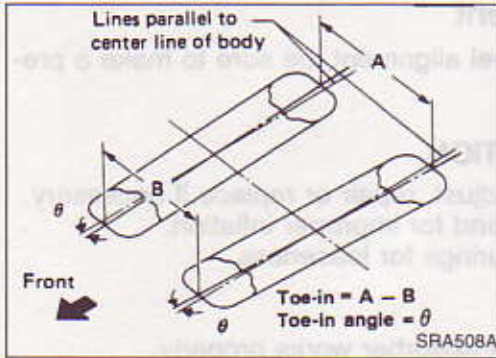
### TOE-IN (I.R.S. type only)

1. Draw a base line across the tread.

**After lowering rear of vehicle, move it up and down to eliminate friction.**

## ON-VEHICLE SERVICE

### Rear Wheel Alignment (Cont'd)

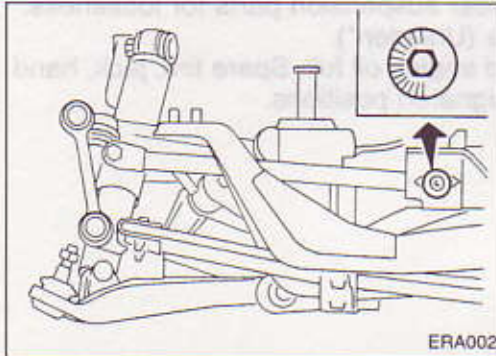


2. Measure toe-in.

Measure distance "A" and "B" at the same height as hub center.

Toe-in:

Refer to S.D.S.



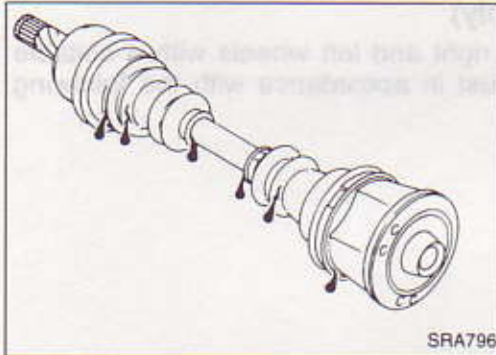
3. Adjust toe-in by turning adjusting bolts.

Toe changes about 1.5 mm (0.059 in) [One side] with each graduation of the adjusting bolt.

4. Tighten to the specified torque.

: 98 - 118 N·m

(10 - 12 kg-m, 72.5 - 87 ft-lb)

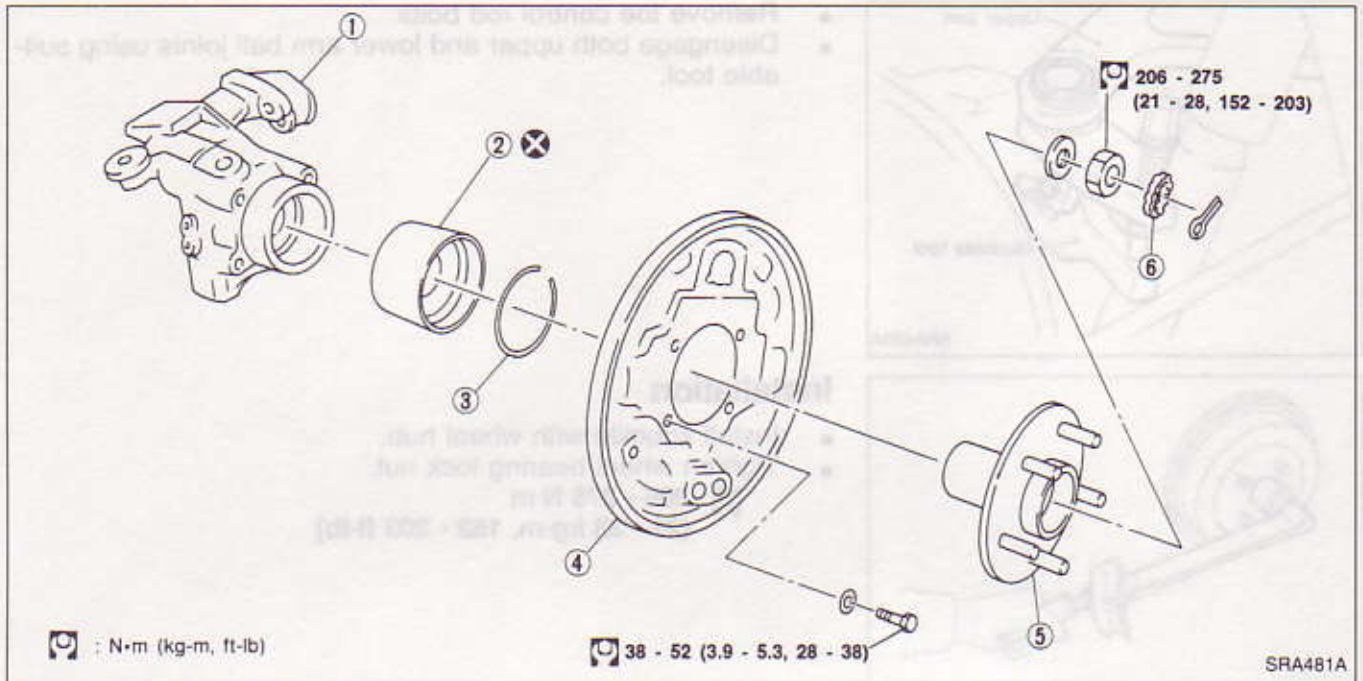


### Drive Shaft (I.R.S. type only)

Check boot and drive shaft for cracks, wear, damage or grease leakage.



## REAR AXLE — Wheel Hub and Knuckle — (I.R.S. type)



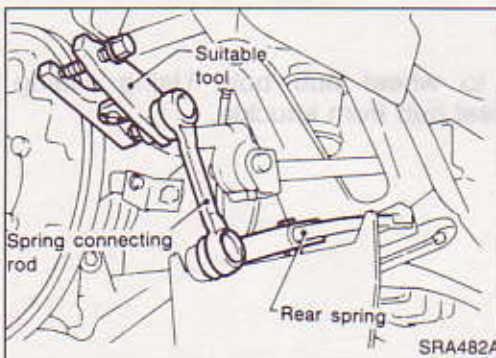
- ① Knuckle
- ② Wheel bearing

- ③ Snap ring
- ④ Baffle plate

- ⑤ Wheel hub
- ⑥ Adjusting cap

### Removal

- Remove wheel bearing lock nut.
- Remove parking brake cable, brake piping and brake drum. (Refer to section BR.)

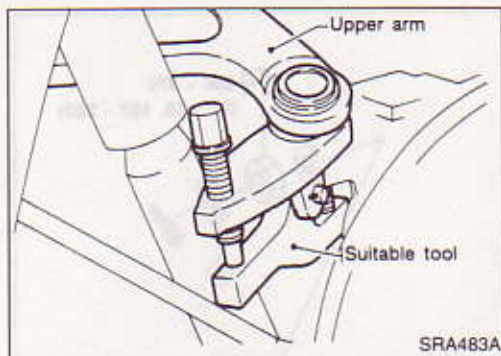


- Securely place a jack under end of transverse spring, as tension still exists. Disengage upper end of spring connecting rod using suitable tool.
- Lower jack slowly and when spring is relaxed completely, remove jack.

## REAR AXLE — Wheel Hub and Knuckle — (I.R.S. type)

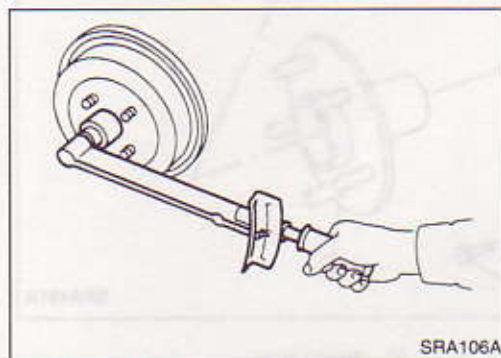
### Removal (Cont'd)

- Remove toe control rod bolts.
- Disengage both upper and lower arm ball joints using suitable tool.

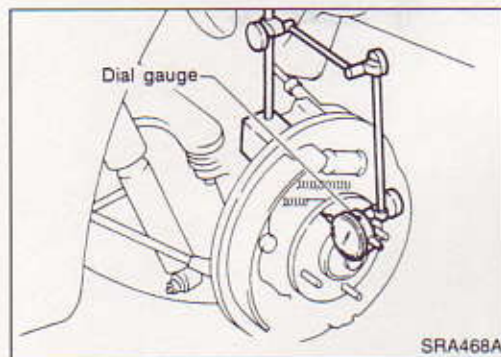


### Installation

- Install knuckle with wheel hub.
- Tighten wheel bearing lock nut.  
Ⓜ: 206 - 275 N·m  
(21 - 28 kg-m, 152 - 203 ft-lb)



- Check wheel bearing axial end play.  
Axial end play: 0.05 mm (0.0020 in) or less



### Disassembly

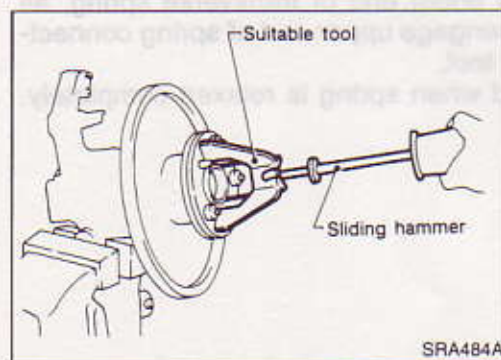
#### CAUTION:

Wheel bearing usually does not require maintenance. If any of the following symptoms are noted, replace wheel bearing assembly.

- Growling noise is emitted from wheel bearing during operation.
- Wheel bearing drags or turns roughly when hub is turned with your hand.

### WHEEL HUB

- Attach suitable tool to wheel hub bolt. Using sliding hammer, separate wheel hub from knuckle.





## REAR AXLE — Wheel Hub and Knuckle — (I.R.S. type)

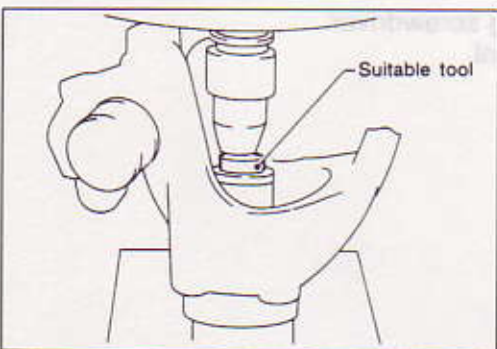
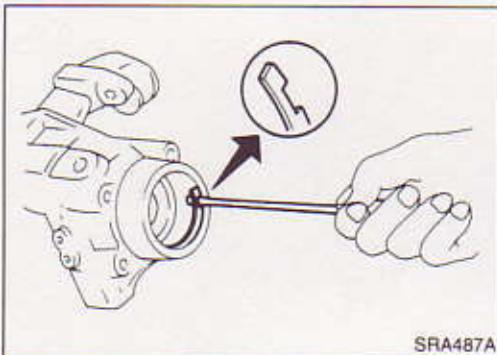
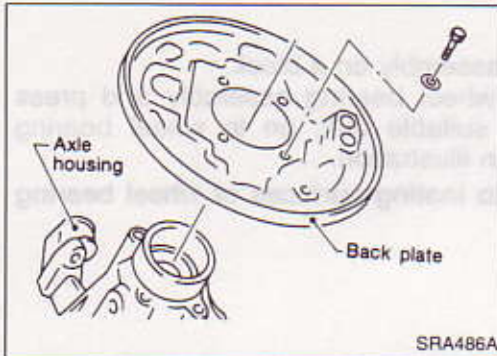
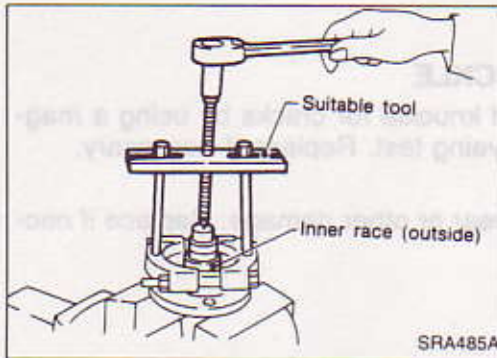
### Disassembly (Cont'd)

#### WHEEL BEARING

- Remove bearing inner race (outside) from wheel hub, then remove grease seal.

#### CAUTION:

When removing wheel hub or wheel bearing from knuckle, replace wheel bearing assembly (outer race, inner race and grease seal) with a new one.



- Remove back plate.

- Remove snap ring.

- Press out bearing outer race.

## REAR AXLE — Wheel Hub and Knuckle — (I.R.S. type)

### Inspection

#### WHEEL HUB AND KNUCKLE

- Check wheel hub and knuckle for cracks by using a magnetic exploration or dyeing test. Replace if necessary.

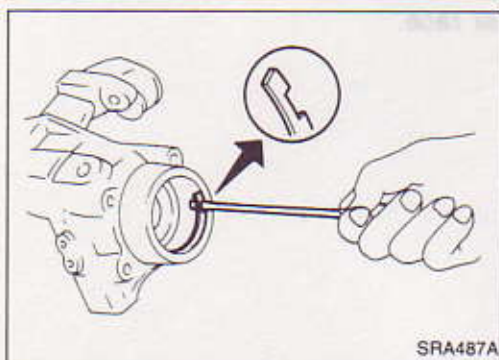
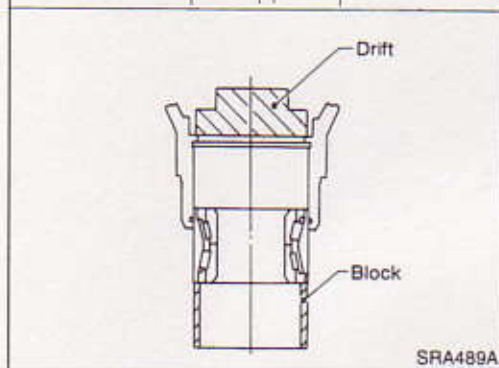
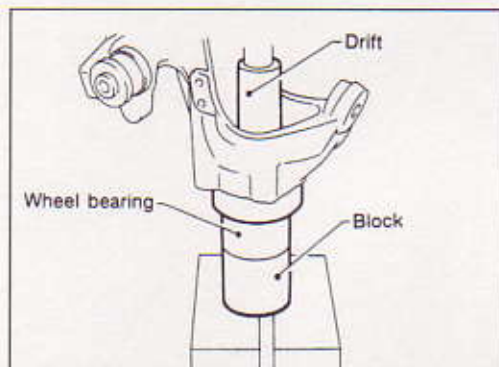
#### SNAP RING

- Check snap ring for wear or other damage. Replace if necessary.

### Assembly

- Place wheel bearing assembly on a block.
- Position knuckle on wheel bearing assembly and press knuckle, by using a suitable drift, on to wheel bearing assembly, as shown in illustration.

**Do not apply oil grease to mating surfaces of wheel bearing outer race and knuckle.**

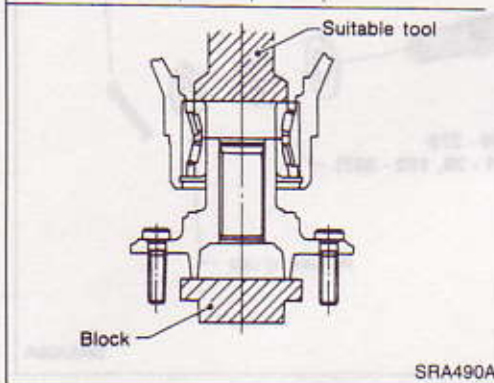
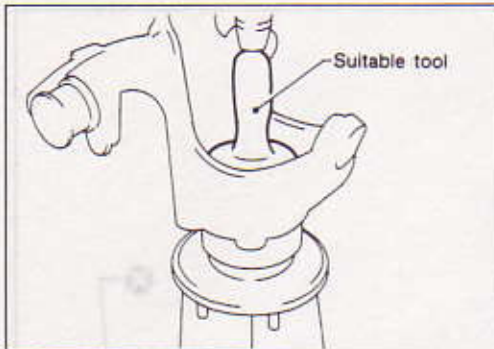


- Install snap ring using screwdriver.
- Install new grease seal.

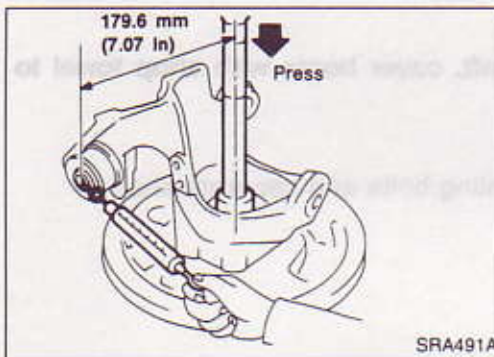


## REAR AXLE — Wheel Hub and Knuckle — (I.R.S. type)

### Assembly (Cont'd)



SRA490A



SRA491A

- Place hub on a block.
- Position knuckle with wheel bearing assembly on top of wheel hub.
- Press wheel bearing inner race, by using suitable drift, on to wheel hub, as shown in illustration.

**Be careful not to damage grease seal.**

- With wheel hub pressed into knuckle, rotate knuckle 10 times in both directions (to seat wheel bearing) while applying a load of 49,000 N (5,000 kg, 11,000 lb) to it.

**Make sure bearing rotates smoothly.**

- Attach a spring scale to knuckle and measure rotating torque.

**Rotating torque: N·m (kg-cm, in-lb)**

NSK 0.5 - 2.3 (5 - 23, 4.3 - 20.0)

NTN 0.47 - 2.45 (4.8 - 25, 4.2 - 21.7)

**Spring scale reading: N (kg, lb)**

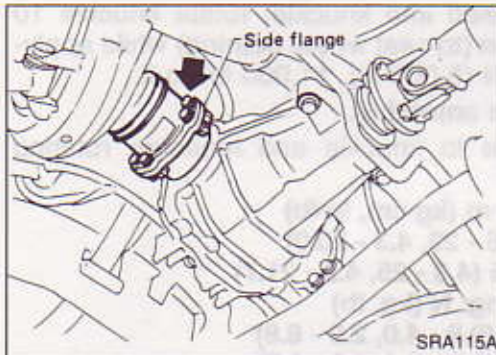
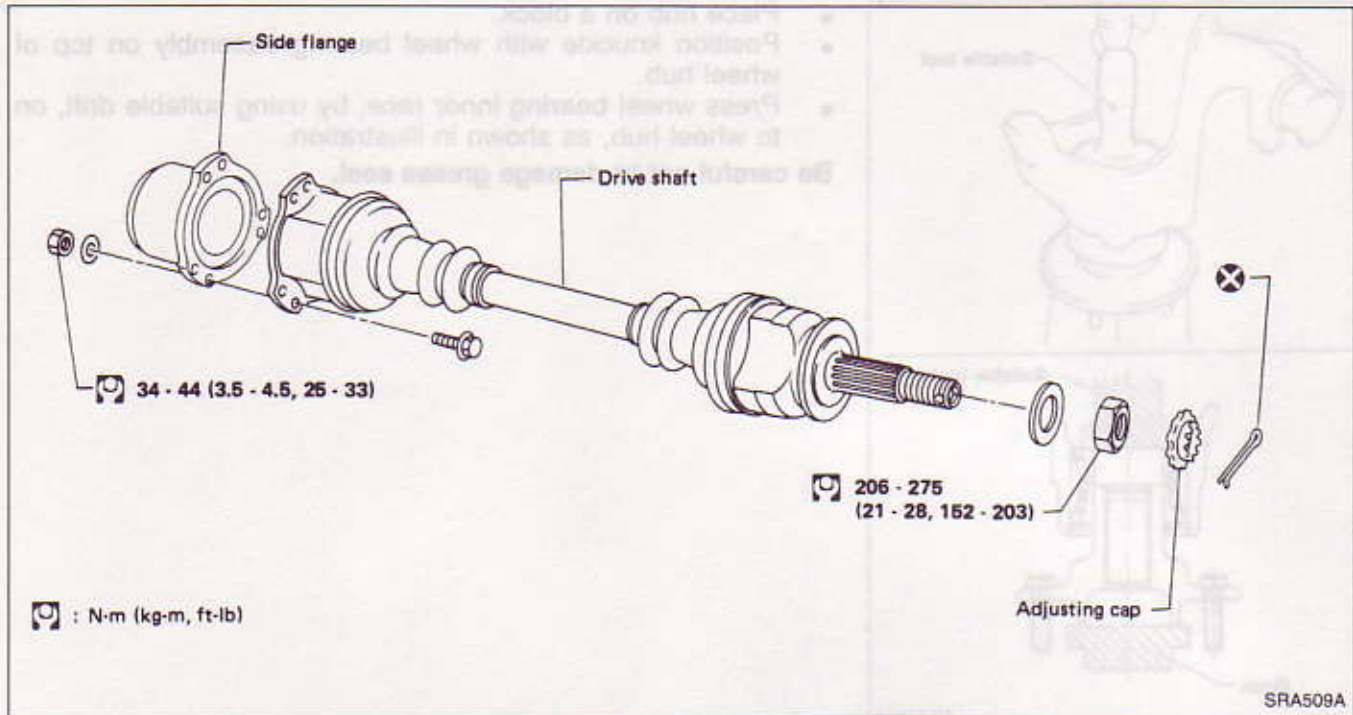
NSK 8.8 - 39.2 (0.9 - 4.0, 2.0 - 8.8)

NTN 7.8 - 43.2 (0.8 - 4.4, 1.8 - 9.7)

If measured value is outside specifications, replace wheel bearing with a new one.

Also make sure axial wheel bearing play does not exist with a load of 49,000 N (5,000 kg, 11,000 lb) applied to wheel hub.

## REAR AXLE — Drive Shaft (I.R.S. type)

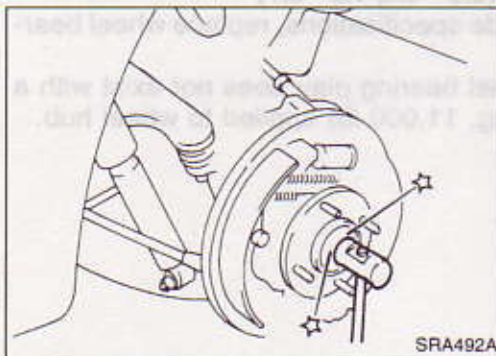


### Removal

When removing drive shaft, cover boots with shop towel to prevent damage to them.

#### FINAL DRIVE SIDE

Remove side flange mounting bolts and separate shaft.



#### WHEEL SIDE

Remove drive shaft by lightly tapping it with a copper hammer. If it is hard to remove, use puller.

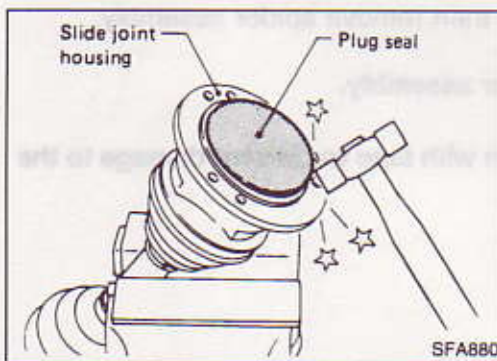
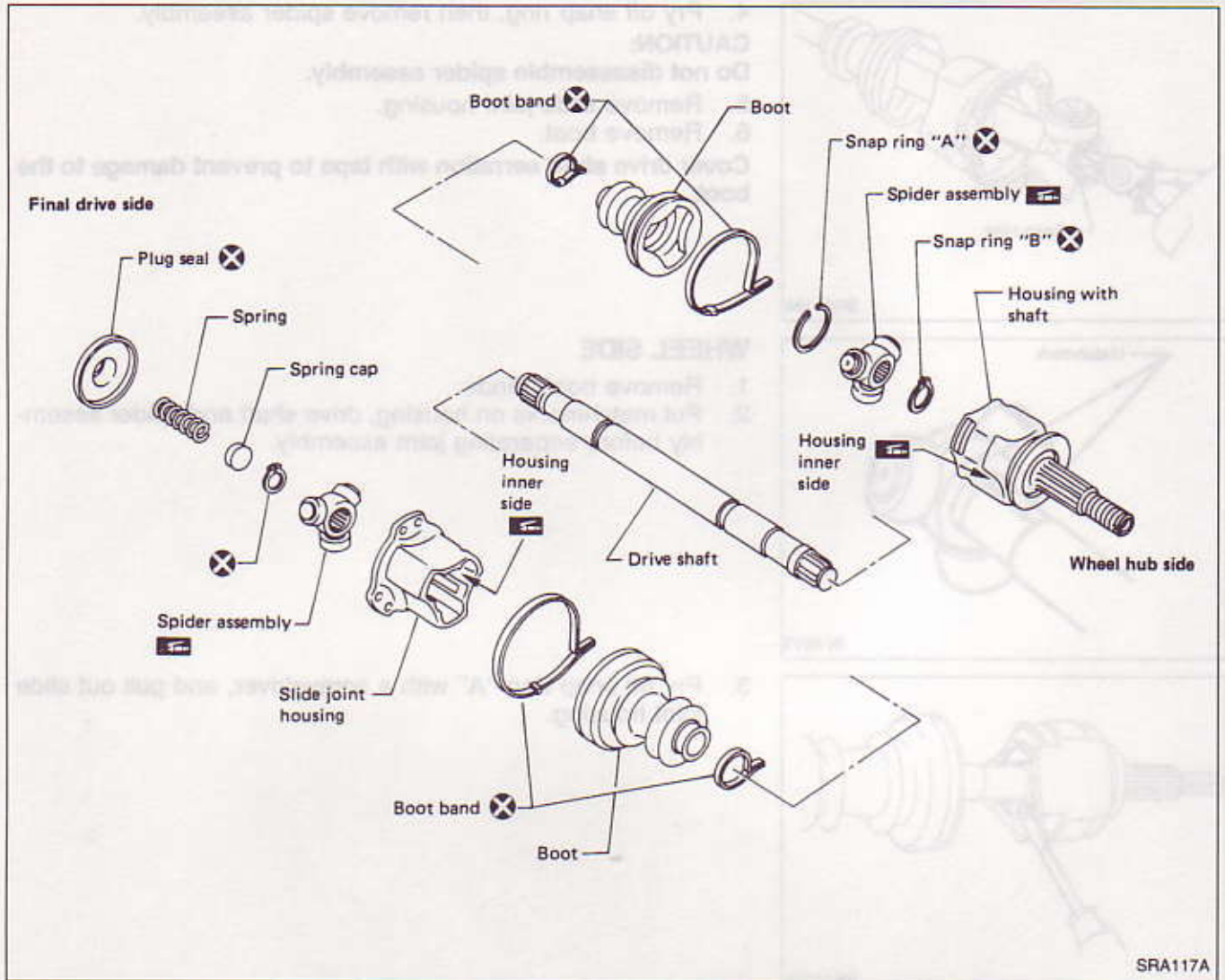
To avoid damaging threads of drive shaft, install a nut while removing drive shaft.

### Installation

- Insert drive shaft into wheel hub and temporarily tighten wheel bearing lock nut.
- Tighten side flange mounting bolts to specified torque.
- Tighten wheel bearing lock nut to specified torque.



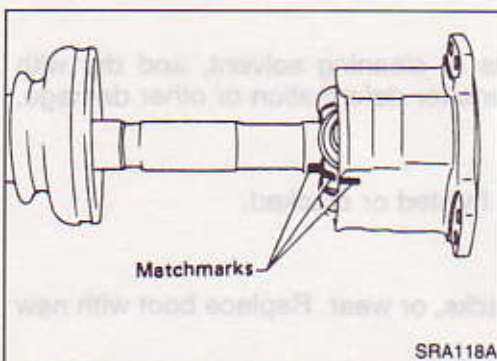
## REAR AXLE — Drive Shaft (I.R.S. type)



### Disassembly

#### FINAL DRIVE SIDE

1. Remove plug seal from slide joint housing by lightly tapping around slide joint housing.



2. Remove boot bands.
3. Put matchmarks on slide joint housing, drive shaft and spider assembly before separating joint assembly.

## REAR AXLE — Drive Shaft (I.R.S. type)

### Disassembly (Cont'd)

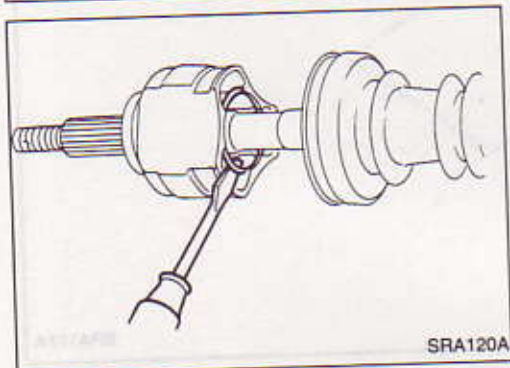
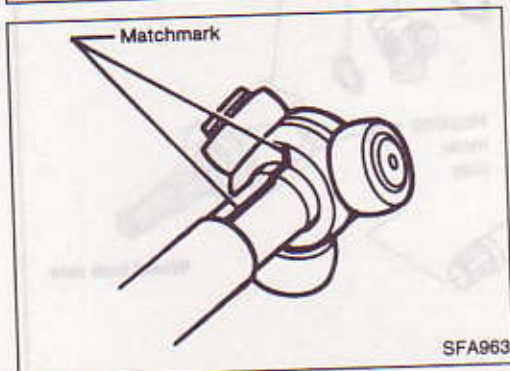
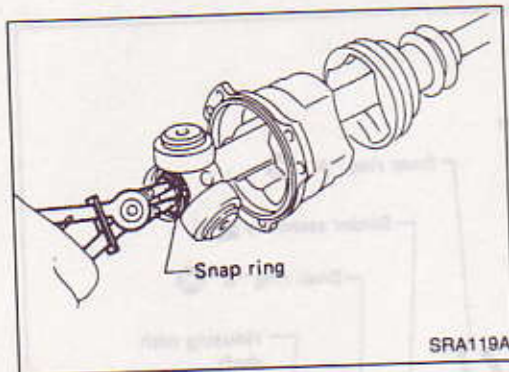
4. Pry off snap ring, then remove spider assembly.

#### CAUTION:

**Do not disassemble spider assembly.**

5. Remove slide joint housing.
6. Remove boot.

**Cover drive shaft serration with tape to prevent damage to the boot.**



### WHEEL SIDE

1. Remove boot bands.
2. Put matchmarks on housing, drive shaft and spider assembly before separating joint assembly.

3. Pry off snap ring "A" with a screwdriver, and pull out slide joint housing.

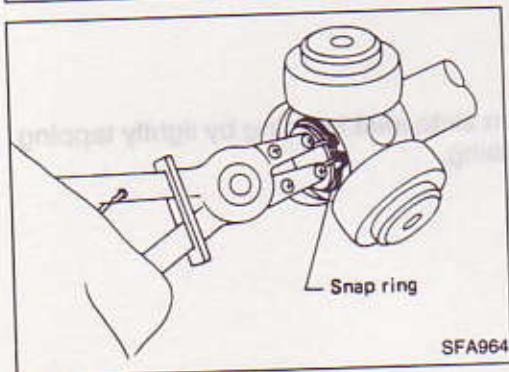
4. Pry off snap ring "B", then remove spider assembly.

#### CAUTION:

**Do not disassemble spider assembly.**

5. Remove boot.

**Cover drive shaft serration with tape to prevent damage to the boot.**



### Inspection

Thoroughly clean all parts in cleaning solvent, and dry with compressed air. Check parts for deformation or other damage.

### DRIVE SHAFT

Replace drive shaft if it is twisted or cracked.

### BOOT

Check boot for fatigue, cracks, or wear. Replace boot with new boot bands.

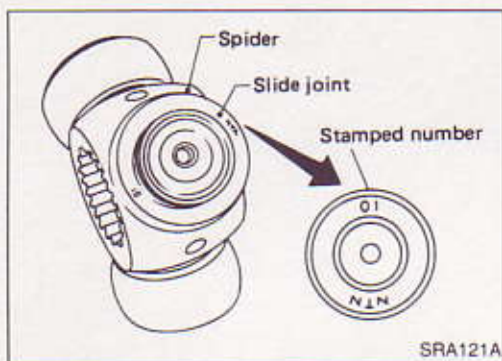


## REAR AXLE — Drive Shaft (I.R.S. type)

### Inspection (Cont'd)

#### JOINT ASSEMBLY

- Check spider assembly for bearing, roller and washer damage. Replace spider assembly if necessary.
- Check housing for any damage. Replace housing and spider assembly as a set, if necessary.



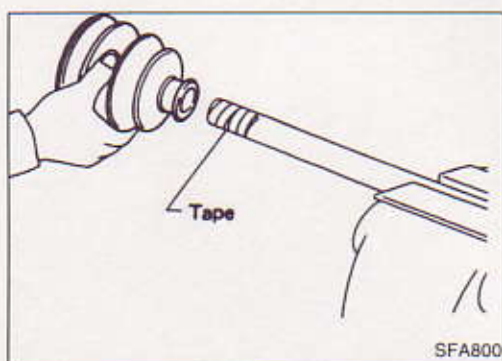
- When replacing only spider assembly, select a new spider assembly from among those listed in table below. Ensure the number stamped on sliding joint is the same as that stamped on new part.

**Housing alone cannot be replaced. It must be replaced together with spider assembly.**

Stamped number	Part No.
00	39720 10V10
01	39720 10V11
02	39720 10V12

### Assembly

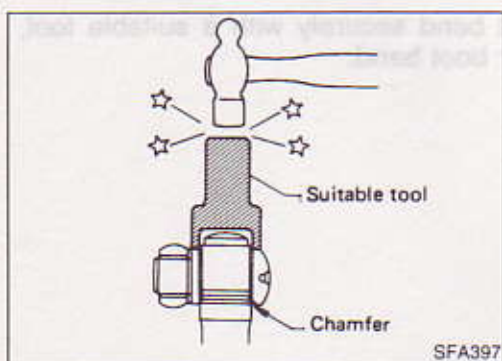
- After drive shaft has been assembled, make sure it moves smoothly over its entire range without binding.
- Use Nissan Genuine Grease or equivalent after every overhaul.



### FINAL DRIVE SIDE

1. Install boot and new small boot band. Then slide joint housing to drive shaft.

**Cover drive shaft serration with tape to prevent damage to boot during installation.**



2. Install spider assembly securely, making sure marks are properly aligned.

**Press-fit with spider assembly serration chamfer facing shaft.**

3. Install new snap ring.



## REAR AXLE — Drive Shaft (I.R.S. type)

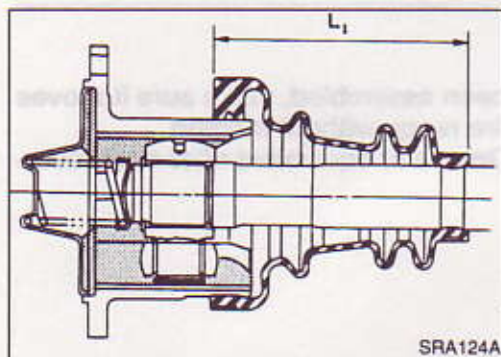
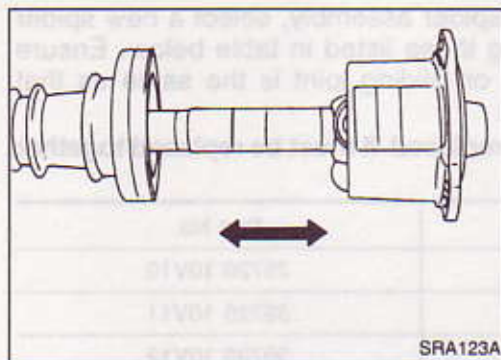
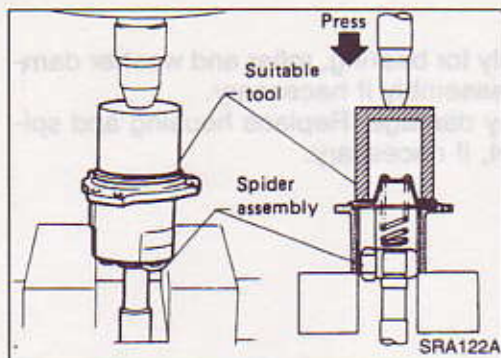
### Assembly (Cont'd)

4. Install spring cap, coil spring and new plug seal to slide joint housing. Press plug seal into slide joint housing.

**Apply sealant to mating surface of plug seal.**

#### CAUTION:

- a. When pressing plug seal into place, hold slide joint housing upright so that spring inside it does not tilt or fall down.
- b. Move shaft in axial direction to ensure that spring is installed properly. If shaft drags or if spring is not installed properly, remove plug seal and install a new one. Discard plug seal after removal.



5. Pack drive shaft with specified amount of grease.

#### Specified amount of grease:

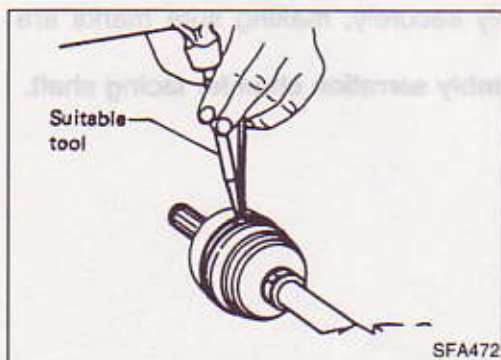
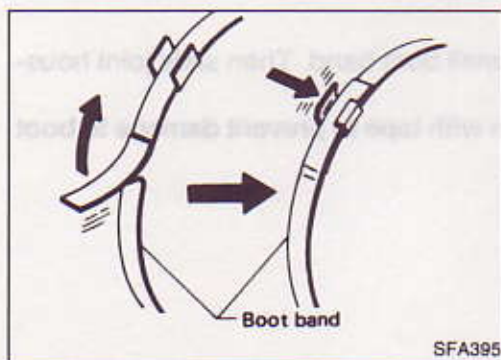
185 - 195 g (6.52 - 6.88 oz)

6. Set boot so that it does not swell and deform when its length is "L<sub>1</sub>".

#### Length "L<sub>1</sub>":

95 - 97 mm (3.74 - 3.82 in)

**Make sure that boot is properly installed on the drive shaft groove.**



7. Lock new larger boot band securely with a suitable tool, then lock new smaller boot band.

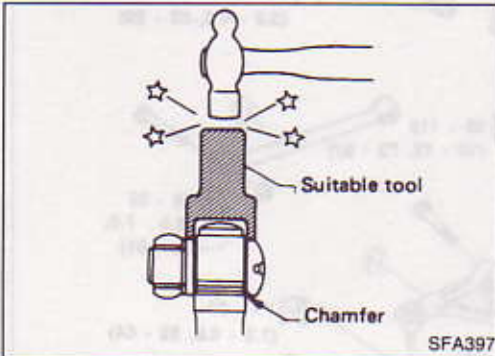
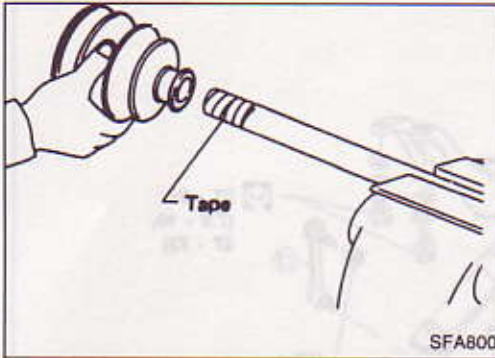


## REAR AXLE — Drive Shaft (I.R.S. type)

### Assembly (Cont'd)

#### WHEEL SIDE

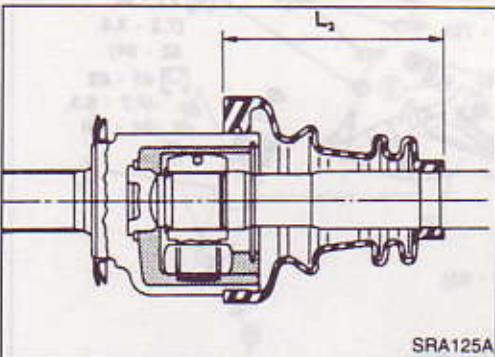
1. Install new small boot band and boot on drive shaft.  
**Cover drive shaft serration with tape to prevent damage to boot during installation.**



2. Install spider assembly securely, making sure marks are properly aligned.

**Press-fit with spider assembly serration chamfer facing shaft.**

3. Install new snap ring "B".



4. Install slide joint housing, then install new snap ring "A".
5. Pack drive shaft with specified amount of grease.

**Specified amount of grease:**

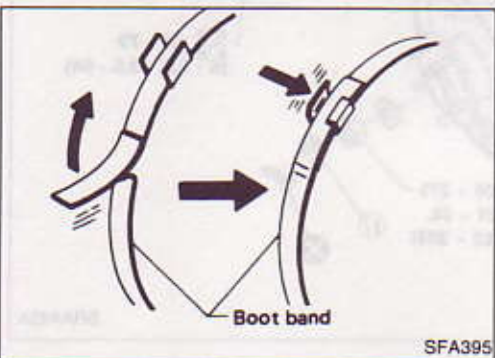
**145 - 155 g (5.11 - 5.47 oz)**

6. Set boot so that it does not swell and deform when its length is " $L_2$ ".

**Length " $L_2$ ":**

**95 - 97 mm (3.74 - 3.82 in)**

**Make sure that boot is properly installed on the drive shaft groove.**



7. Lock new larger and smaller boot bands securely with a suitable tool.

## Assembly (Cont'd)

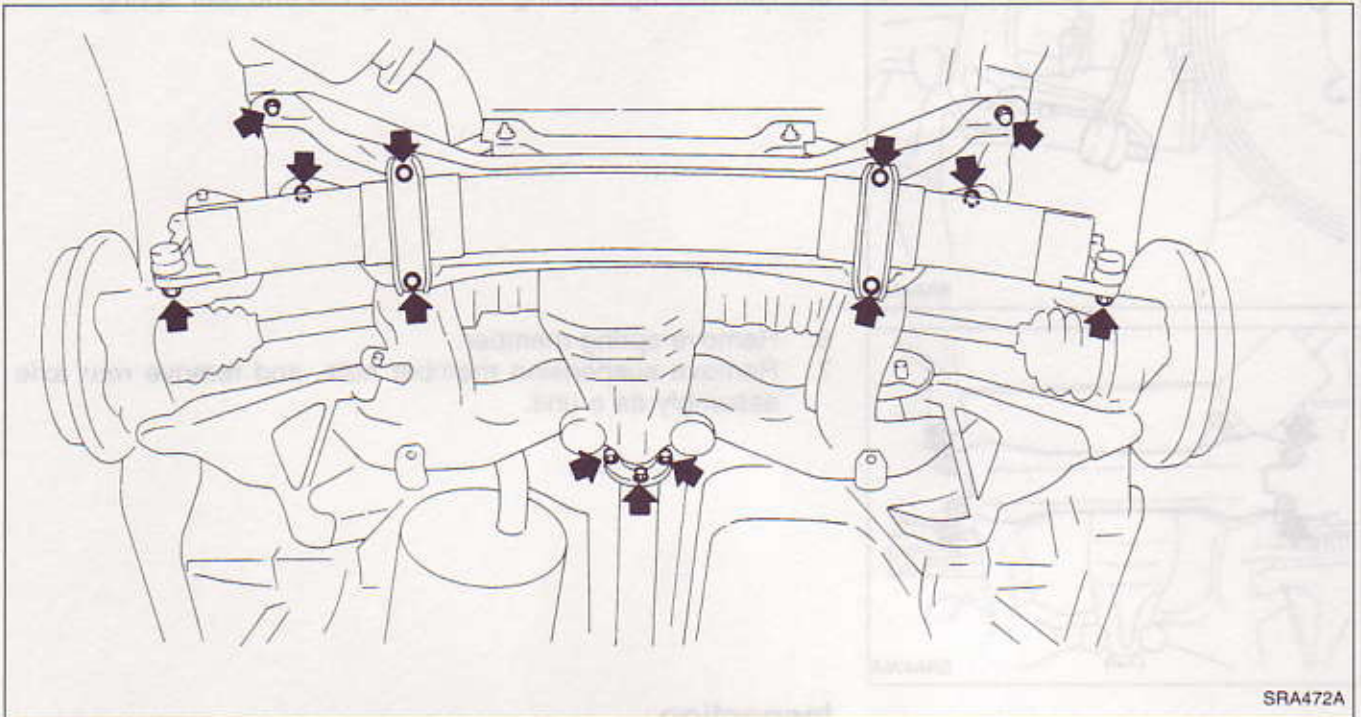


- ⑫ Spring connecting rod

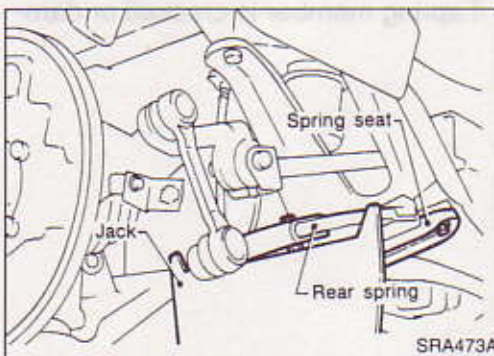


## REAR SUSPENSION — Rear Spring (I.R.S. type)

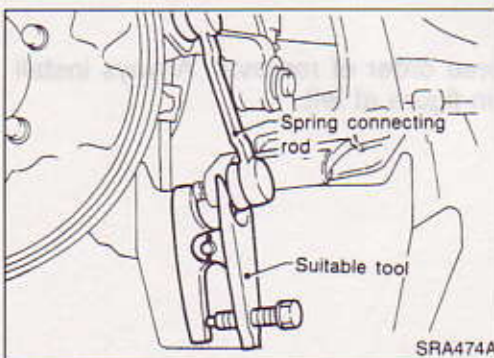
### Removal



- Remove propeller shaft.
- Disconnect brake tube and front end of parking brake cable.



1. Remove spring seat bolt.
2. Position jack at end surface of rear spring.

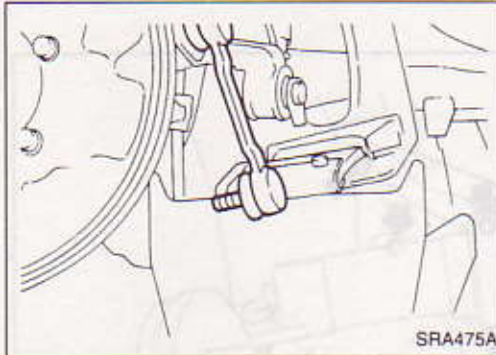


3. Disengage lower ball joint of left spring connecting rod using suitable tool.

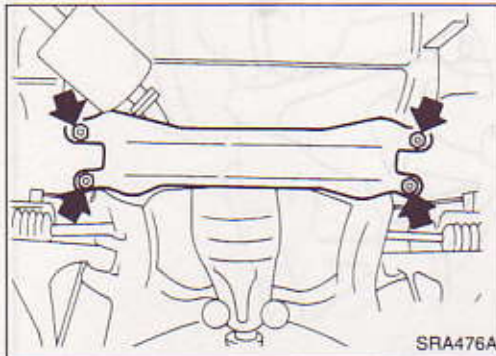
## REAR SUSPENSION — Rear Spring (I.R.S. type)

### Removal (Cont'd)

4. Slowly lower jack.
5. Remove right spring connecting rod and rear spring.



6. Remove spring member.
7. Remove suspension member nuts, and remove rear axle assembly as a unit.



### Inspection

#### REAR SUSPENSION MEMBER

- Replace with new assembly if suspension member is cracked or deformed, or if insulator is damaged.

#### REAR SPRING

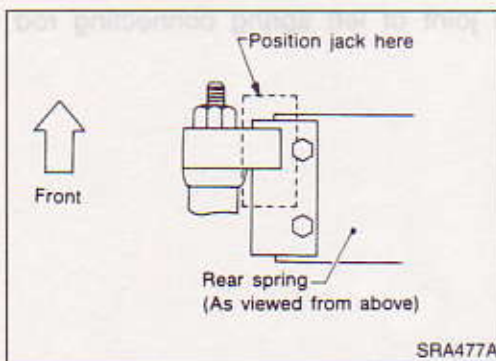
- Replace with new one if rear spring is broken, cracked or fatigued.

#### SPRING MEMBER

- Replace with new one if spring member is cracked or damaged.

### Installation

- Installation is the reverse order of removal. Always install rear spring as shown in figure at left.



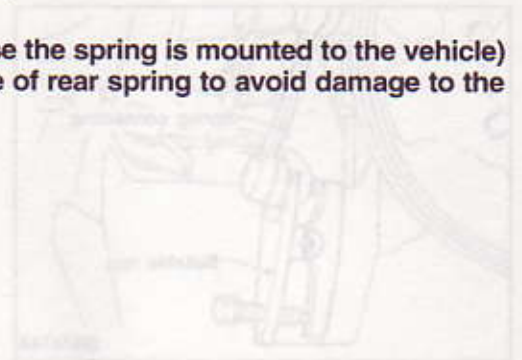
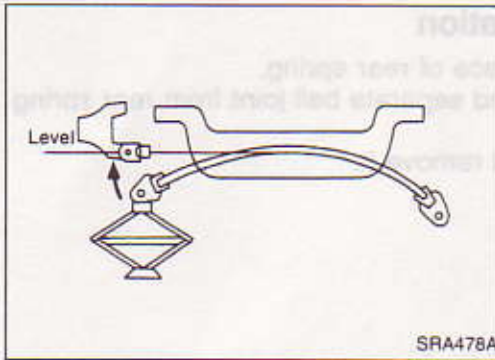


## REAR SUSPENSION — Rear Spring (I.R.S. type)

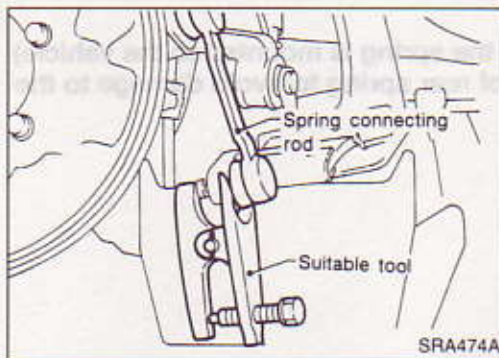
### Installation (Cont'd)

#### CAUTION:

Do not raise jack (in case the spring is mounted to the vehicle) beyond horizontal plane of rear spring to avoid damage to the spring.

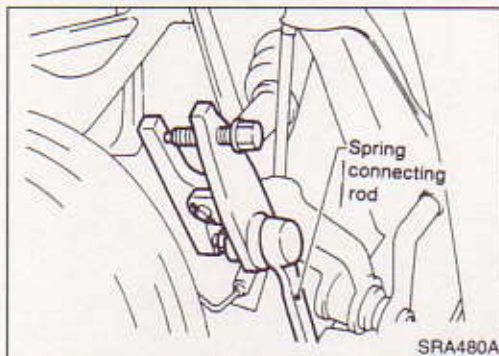


## REAR SUSPENSION — Spring Connecting Rod (I.R.S. type)

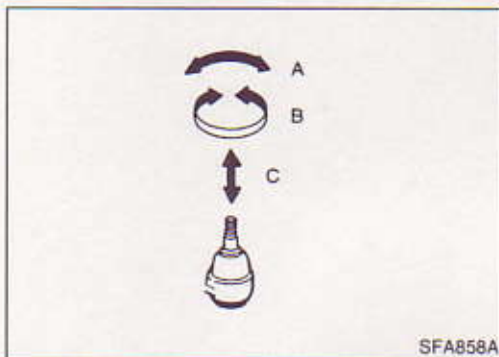


### Removal and Installation

1. Position jack at end-face of rear spring.
2. Remove lower nut, and separate ball joint from rear spring using suitable tool.
3. Slowly lower jack and remove it.



4. Loosen upper ball joint nut, and separate ball joint from axle housing.



### Inspection

#### BALL JOINT

- Check ball joint for play. If ball stud is worn, play in axial direction is excessive or joint is hard to swing, replace spring connecting rod assembly. Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.

**Swinging force "A":**

(measuring point: cotter pin hole of ball stud)

4.9 N (0.5 kg, 1.1 lb) or less

**Turning torque "B":**

0.2 N·m (2 kg-cm, 1.7 in-lb) or less

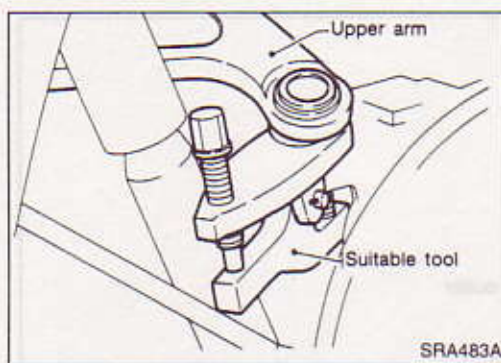
**Vertical end play "C":**

0 mm (0 in)

- Check dust cover for damage. Replace spring connecting rod if necessary.



## REAR SUSPENSION — Link and Ball Joint (I.R.S. type)



### Removal and Installation

- Remove and install link, one at a time.

#### UPPER LINK

1. Remove cotter pin and nut from ball joint.
2. Disengage knuckle from upper link using suitable tool.
3. Remove nuts and bolts securing link to suspension member and remove link.

#### LOWER LINK

1. Disengage shock absorber from lower link.
2. Remove cotter pin and nut from ball joint.
3. Disengage knuckle from lower link using suitable tool.
4. Remove nuts and bolts securing link to suspension member and remove link.

#### TOE CONTROL ROD

1. Remove nuts and bolts securing rod to knuckle and suspension member, remove rod.

- Installation is at the reverse order of removal.
- One nut of each toe control rod and lower link are used for wheel alignment adjustment.

After tightening these nuts, make sure wheel alignment is correct and adjust if necessary. Refer to "Rear Wheel Alignment" in "ON-VEHICLE SERVICE".

### Inspection

#### LINK

- Replace with new one if link is deformed, cracked or damaged, or rubber bushing is damaged.

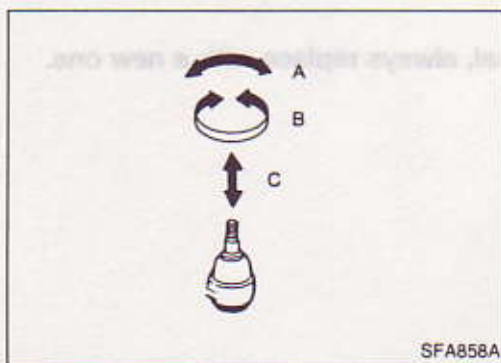
#### TOE CONTROL ROD

- Replace with new toe control rod assembly if toe control rod is deformed, cracked or damaged, or rubber bushing is damaged.

#### BALL JOINT

- Check ball joint for play. If ball stud is worn, play in axial direction is excessive or joint is hard to swing, replace link and ball joint assembly.

Before checking, turn ball joint at least 10 revolutions so that ball joint is properly broken in.



Swinging force "A":

(measuring point: cotter pin hole of ball stud)

7.8 - 54.9 N (0.8 - 5.6 kg, 1.8 - 12.3 lb)

Turning torque "B":

0.5 - 3.4 N·m (5.0 - 35 kg-cm, 4.3 - 30.4 in-lb)

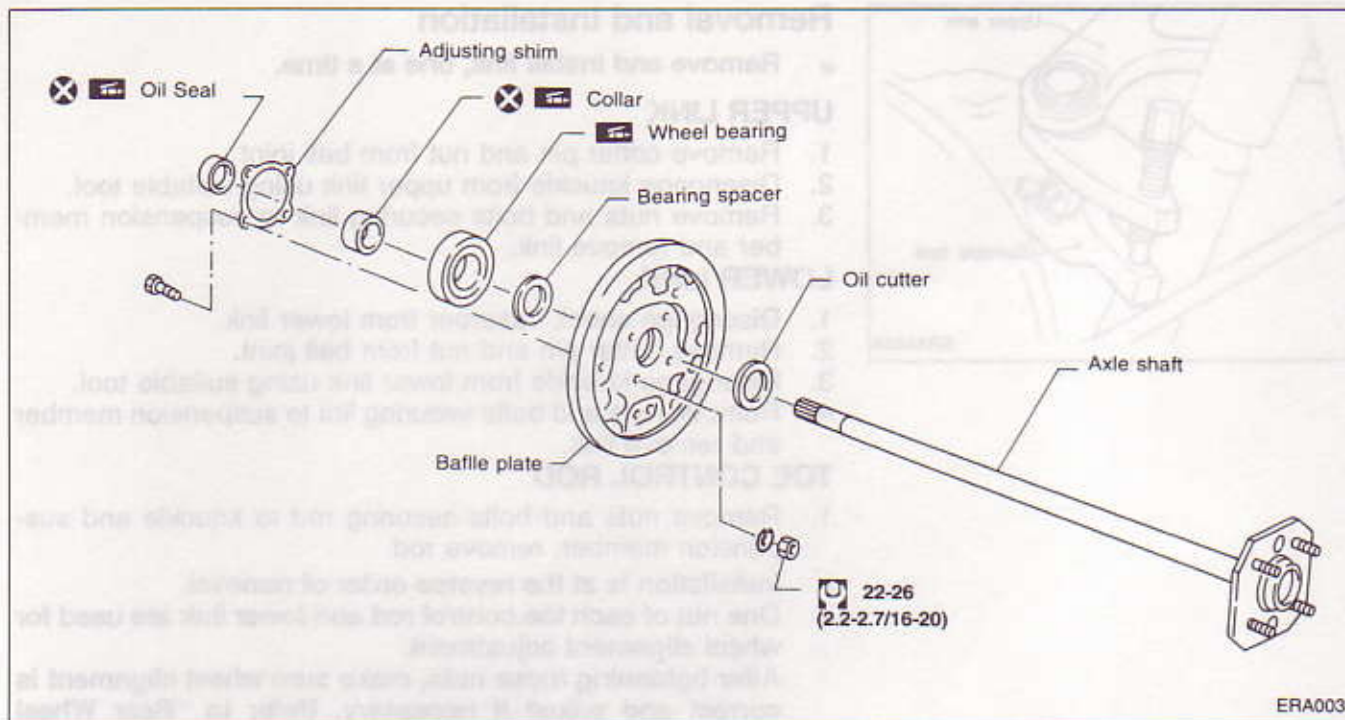
Vertical end play "C":

0 mm (0 in)

- Check dust cover for damage. Replace link if necessary.

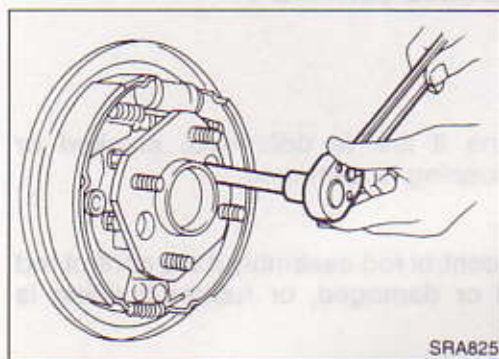


## REAR AXLE — Axle Shaft (Rigid Rear Axle type)

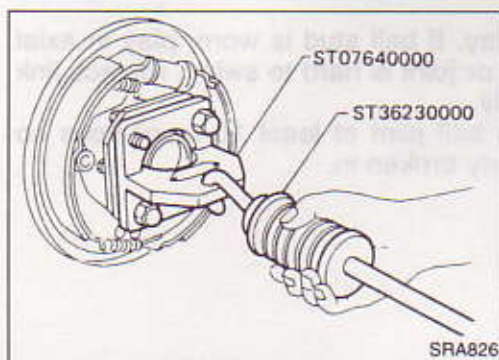


### Disassembly

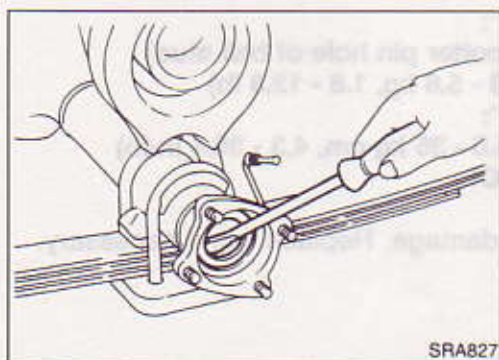
1. Disconnect brake tube and parking brake cable.
2. Remove nuts securing baffle plate to rear axle.



3. Draw out axle shaft with suitable tool. Remove axle shaft and baffle plate.



4. Remove oil seal.  
When removing oil seal, always replace with a new one.





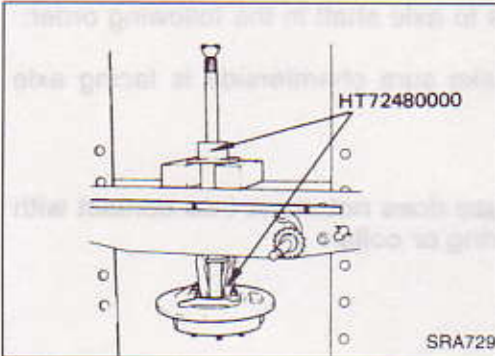
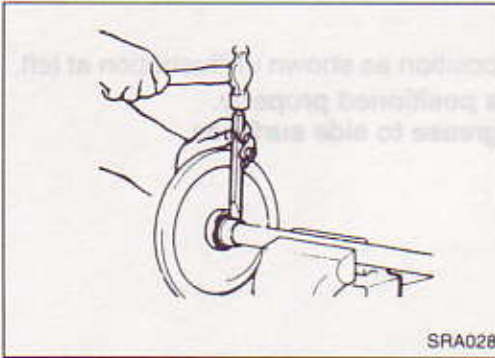
## REAR AXLE — Axle Shaft (Rigid Rear Axle type)

### Disassembly (Cont'd)

4. Cut collar with a chisel.

#### CAUTION:

Be careful not to damage axle shaft



5. Remove wheel bearing and collar, by using a puller. When wheel bearing has been removed, extract baffle plate from axle shaft.

6. Extract oil cutter

Once oil cutter has been removed, replace with a new one.

### Inspection

#### AXLE SHAFT

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

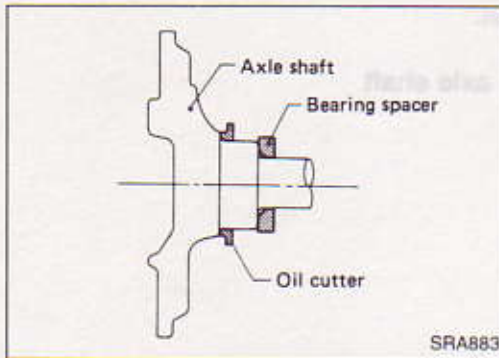
#### WHEEL BEARING

- Make sure wheel bearing rolls freely and is free from noise, cracks, pitting of wear. Replace if necessary.

#### AXLE CASE

- Check axle case for the existence of cracks and deformations. Replace if necessary.

## REAR AXLE — Axle Shaft (Rigid Rear Axle type)

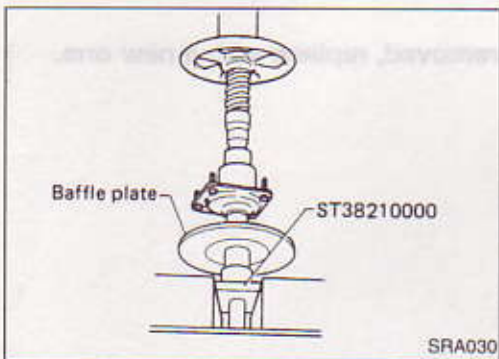


### Assembly

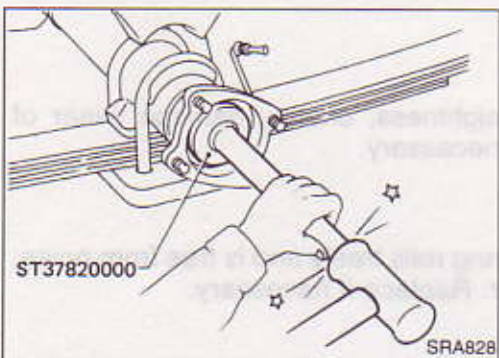
1. Install oil cutter in the position as shown in illustration at left.
  - Make sure oil cutter is positioned properly.
  - Apply multi-purpose grease to side surfaces.

2. Install remaining parts to axle shaft in the following order:
  - Baffle plate
  - Bearing spacer (Make sure chamferside is facing axle shaft flange).
  - Wheel bearing
  - Collar

**Make sure that oil or grease does not come into contact with surface of axle shaft, bearing or collar**

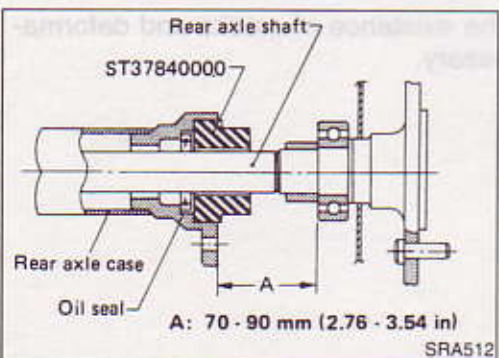


3. Position axle shaft assembly under a press and press all parts, mentioned above, onto axle shaft at a load of 39.2 to 44.1 kN (4 to 4.5 ton, 3.94 to 4.43 imp. ton)



4. Install oil seal.

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



5. Insert axle shaft assembly into axle case using Special Tool. Remove Tool when distance "A" between axle flange of axle case bearing is 70-90 mm (2.76 to 3.54 in).



## REAR AXLE — Axle Shaft (Rigid Rear Axle type)

### Assembly (Cont'd)

6. Choose adjusting shims to adjust distance "D" between wheel bearing and axle housing.

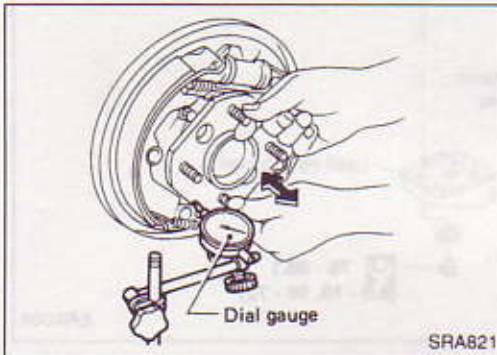
**Distance "D" : 0 - 0.1 mm (0 - 0.004 in)**

To calculate distance "D", use following formula:

$$D = A - F + E$$

A = Distance between notch of bearing and axle housing  
F = Bearing width  
E = Shim thickness

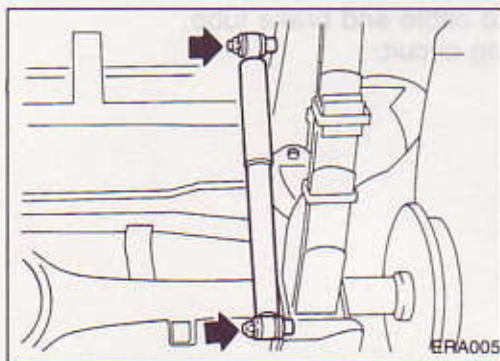
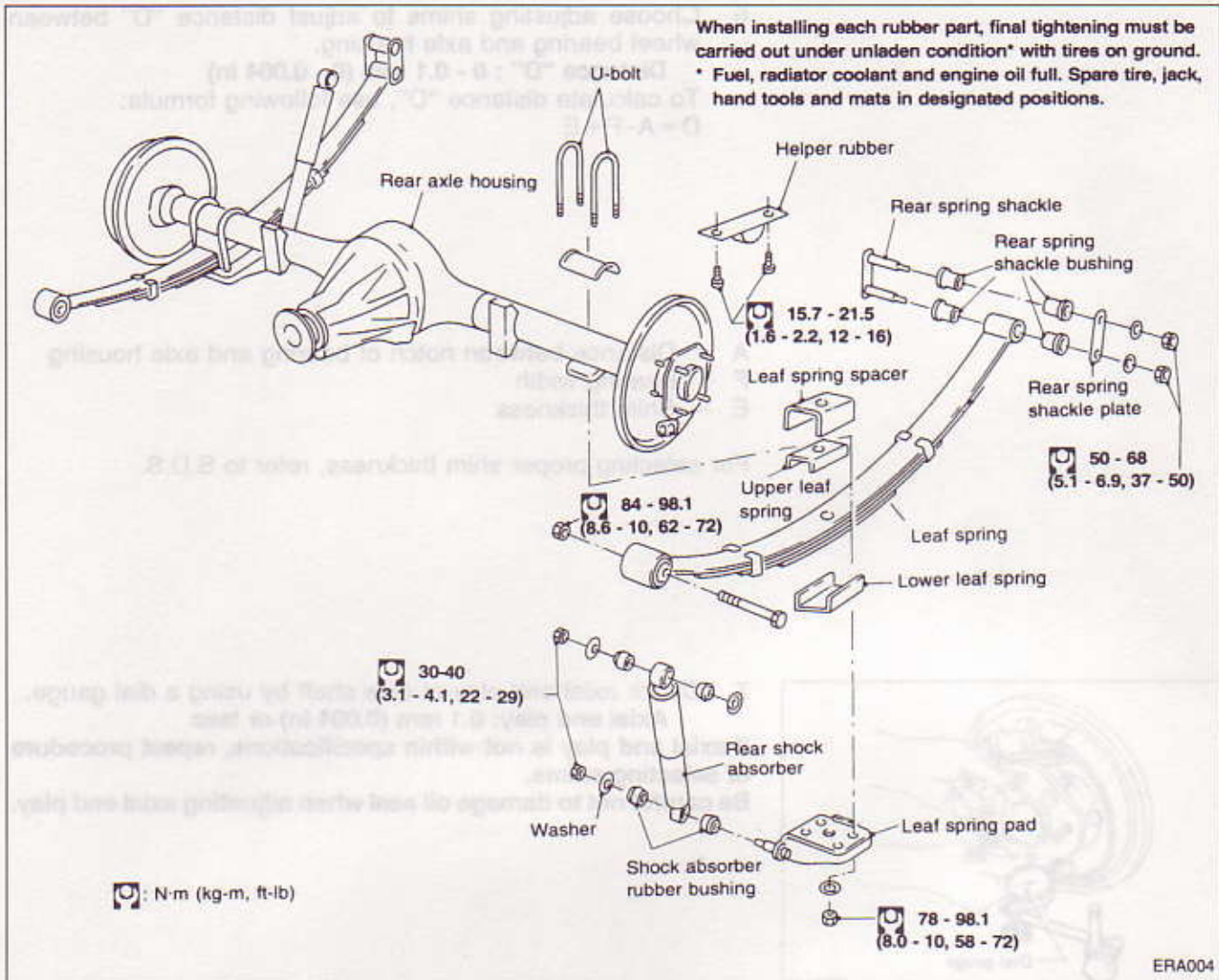
For selecting proper shim thickness, refer to S.D.S.



7. Check axial end play of axle shaft by using a dial gauge.  
**Axial end play: 0.1 mm (0.004 in) or less**  
If axial end play is not within specifications, repeat procedure of selecting shims.  
Be careful not to damage oil seal when adjusting axial end play.

8. Connect parking brake cable and brake tube.  
9. Bleed air out of braking circuit.

## REAR SUSPENSION (Rigid Rear Axle type)



### Shock Absorber

#### REMOVAL AND INSTALLATION

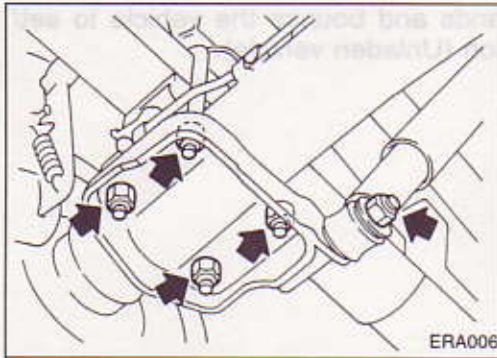
- Loosen upper and lower bolts and remove shock absorber.

#### INSPECTION

- Check shock absorber for oil leaks, cracks or deformations. Replace if necessary.
- Check rubber bushings for twisting or deformations. Replace if necessary.



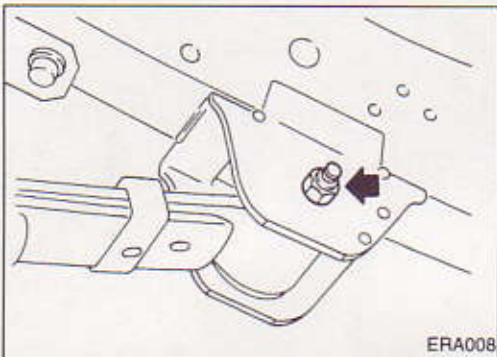
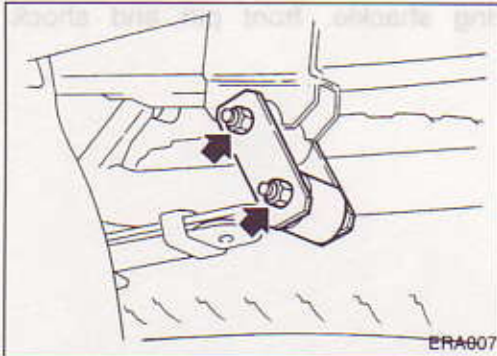
## REAR SUSPENSION (Rigid Rear Axle type)



### Leaf Spring

#### REMOVAL

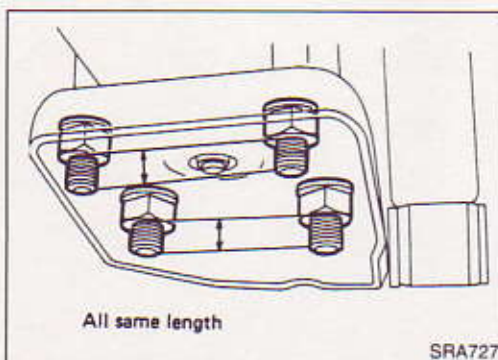
- Place wheel blocks at front and rear part of front wheels.
- Raise rear end of vehicle and support with safety stands.
- Remove nut securing lower part of shock absorber
- Loosen nuts of U-bolts and remove them.
- Disconnect spring shackle.



- 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.



#### INSTALLATION

- Apply soapsuds to rubber bushing
- Install spring shackle and front pin, and tighten nuts by hand.
- Install spring pad and nuts under leaf spring.
- Tighten U-bolts mounting nuts diagonally

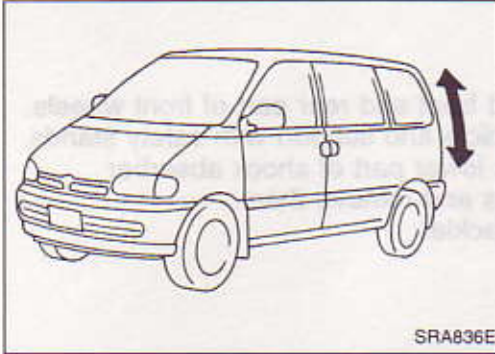
**Tighten U-bolts so that the lengths of all U-bolts under spring pad are the same.**

- Install lower part of shock absorber and tighten nut by hand.

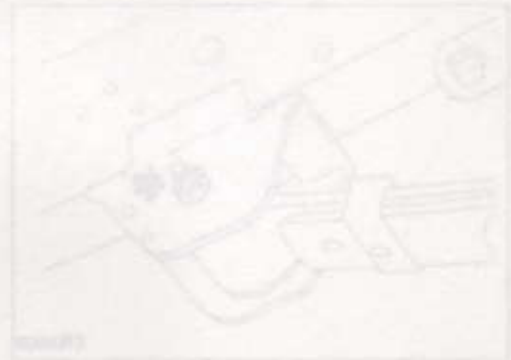
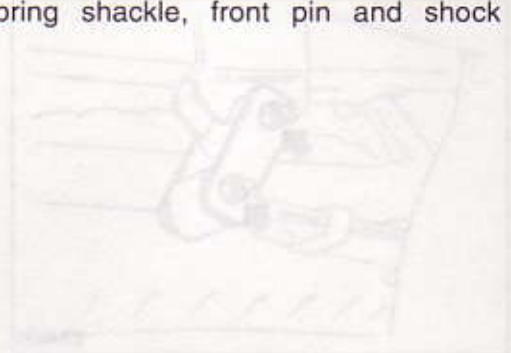
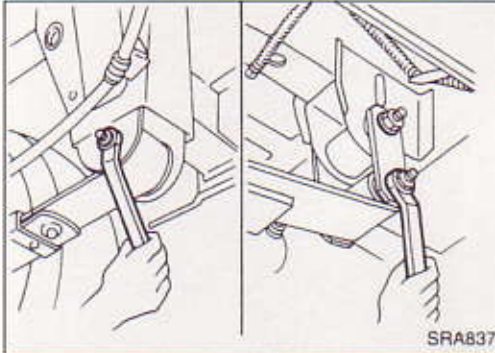
## REAR SUSPENSION (Rigid Rear Axle type)

### Leaf Spring (Cont'd)

- Take away safety stands and bounce the vehicle to set/stabilize the suspension (Unladen vehicle).



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

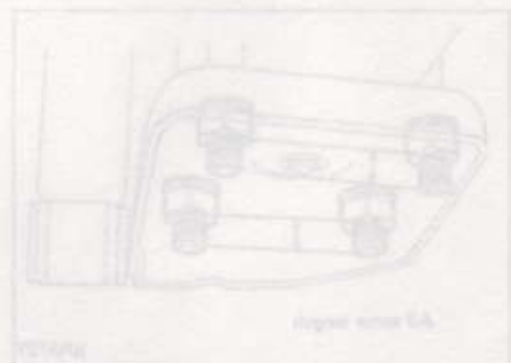


### INSPECTION

- Check rear spring for cracks. Replace if necessary.
- Check front pin and pin shackle, U-bolts and spring for wear, cracks, stretch or damaged threads. Replace if necessary.

### INSTALLATION

- Apply grease to roller bearing.
- Install spring shackle and front pin and tighten nut by hand.
- Install spring pad and nut under leaf spring.
- Tighten U-bolts mounting nuts diagonally.
- Tighten U-bolts so that the length of all U-bolts under spring pad are the same.
- Install lower part of shock absorber and tighten nut by hand.





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

## General Specifications

### LEAF SPRING (I.R.S. Type)

Spring material	G.F.R.P. (Glass-Fiber Reinforced Plastic)
Length x width x thickness – Number of leaves mm (in)	1,170 x 100 x 12.5 – 1 (46.06 x 3.94 x 0.492 – 1)
Spring constant N/mm (kg/mm, lb/in)	17.7 (1.8, 101)
Free camber "H" mm (in)	165 (6.50)



### SHOCK ABSORBER

Item	Model	I.R.S.	Rigid Rear Axle
Type		gas-filled	
Piston rod diameter mm (in)		12.5 (0.492)	12.4 (0.488)
Damping force N(kg, lb) [at 0.3 m (1.0 ft)/sec.]			
Expansion		2,824 (288, 635)	1,196 (122, 269)
Compression		1275 (130, 287)	569 (58, 128)

### LEAF SPRING (Rigid Rear Axle Type)

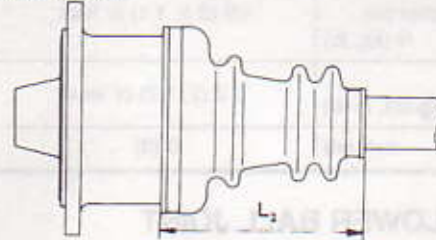
Length x width x thickness – Number of leaves mm (in)	1,015 x 60 x 7 – 1 (39.96 x 2.36 x 0.276) – 1 870 x 60 x 7 – 1 (34.25 x 2.36 x 0.276) – 1 715 x 60 x 7 – 1 (28.15 x 2.36 x 0.276) – 1 510 x 60 x 13 – 1 (20.08 x 2.36 x 0.512) – 1
Spring constant N/mm (kg/mm, lb/in) from 0 – 2,923 N (0 – 298 kg, 0 – 657 lb)	46.6 (4.75, 266)
from 4905 – 8829 N (500 – 900 kg, 1102 – 1984 lb)	76.1 (7.76, 435)
Free camber "S" mm (in)	114.5 (4.508)



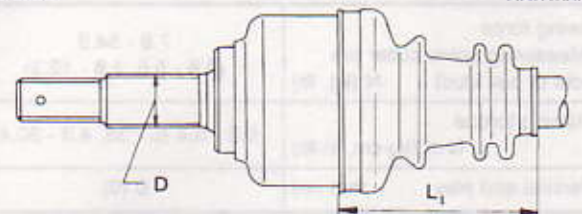
### DRIVE SHAFT (I.R.S. Type)

Joint type	
Final drive side	TS82F
Wheel side	TS82C
Grease name	
Final drive side	Nissan genuine grease or equivalent
Wheel side	Nissan genuine grease or equivalent
Specified amount of grease g (oz)	
Final drive side	185 – 195 (6.52 – 6.88)
Wheel side	145 – 155 (5.11 – 5.47)
Boot length mm (in)	
Final drive side (L <sub>1</sub> )	95 – 97 (3.74 – 3.82)
Wheel side (L <sub>2</sub> )	

Final drive side



Wheel side



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

### Inspection and Adjustment

#### WHEEL ALIGNMENT (I.R.S. Type) (Unladen\*)

Engine		SR20DE	LD20-II
Item			
Camber	degree	-1°15' to 0°15'	-0°57' to 0°33'
Toe-in			
A - B	mm (in)	-1.8 to 1.8 (-0.071 to 0.071)	
Angle θ	degree	-5' to 5'	

\*: Fuel, radiator coolant and engine oil full.  
Spare tire, jack, hand tools and mats in designated positions.

#### WHEEL BEARING (I.R.S. Type)

Wheel bearing axial end play	mm (in)	0.05 (0.0020) or less
Wheel bearing lock nut		
Tightening torque	N·m (kg-m, ft-lb)	206 - 275 (21 - 28, 152 - 203)
Preload		
Rotating torque	N·m (kg-cm, in-lb)	
NSK		0.5 - 2.3 (5 - 23, 4.3 - 20.0)
NTN		0.47 - 2.45 (4.8 - 25, 4.2 - 21.7)
Spring scale reading	N (kg, lb)	
NSK		8.8 - 39.2 (0.9 - 4.0, 2.0 - 8.8)
NTN		7.8 - 43.2 (0.8 - 4.4, 1.8 - 9.7)

#### SPRING CONNECTING ROD (I.R.S. Type)

Swing force (Measuring point: cotter pin hole of ball stud)	N (kg, lb)	4.9 (0.5, 1.1) or less
Turning torque	N·m (kg-cm, in-lb)	0.2 (2, 1.7) or less
Vertical end play	mm (in)	0 (0)

#### UPPER AND LOWER BALL JOINT (I.R.S. Type)

Swing force (Measuring point: cotter pin hole of ball stud)	N (kg, lb)	7.8 - 54.9 (0.8 - 5.6, 1.8 - 12.3)
Turning torque	N·m (kg-cm, in-lb)	0.5 - 3.4 (5 - 35, 4.3 - 30.4)
Vertical end play	mm (in)	0 (0)

#### WHEEL RUNOUT (Radial and lateral)

Wheel type	Radial runout	Lateral runout
Steel wheel	mm (in)	0.5 (0.020) or less
		0.8 (0.031) or less

#### RIGID REAR AXLE

Unit: mm (in)		
Total end play	0.1 (0.004) or less	
	Thickness	Part No.
Rear axle case end shim	0.075 (0.0030)	43036 H5000
	0.150 (0.0059)	43036 H5001
	0.225 (0.0089)	43036 H5002
	0.300 (0.0118)	43036 H5003