

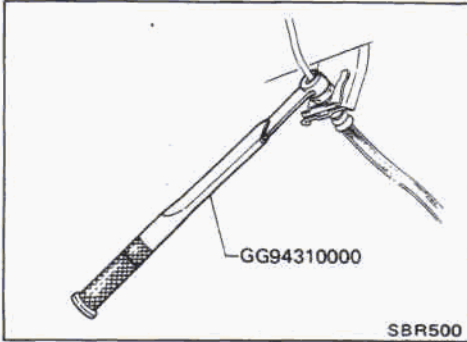
REAR AXLE & REAR SUSPENSION

SECTION **RA**

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PRECAUTIONS AND PREPARATION



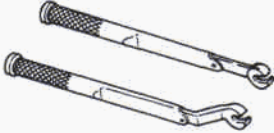

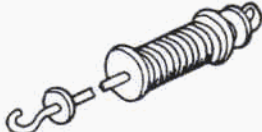
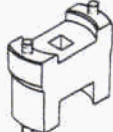
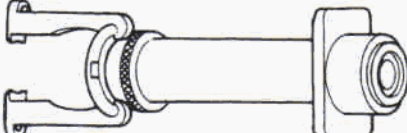

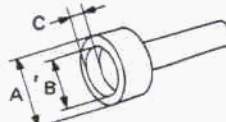
Precautions

- 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.
- Use Tool when removing or installing brake tubes.
- When removing each suspension part, check wheel alignment and adjust if necessary.

Preparation

SPECIAL SERVICE TOOLS

*: Special tool or commercial equivalent

Tool number Tool name	Description	
GG94310000* Flare nut torque wrench		Removing or installing brake piping
KV40101000* Axle stand		Removing rear axle shaft
ST36230000* Sliding hammer		Removing rear axle shaft
KV40104600 Rear wheel bearing lock nut wrench		Removing or installing wheel bearing lock nut
HT72480000 Rear axle shaft bearing puller		Removing wheel bearing
ST37840000 Rear axle shaft guide		Installing rear axle shaft
COMMERCIAL SERVICE TOOL		
Rear axle oil seal drift	 <p> A: 74 mm (2.91 in) dia. B: 68 mm (2.68 in) dia. C: 10 mm (0.39 in) </p>	Installing oil seal

REAR AXLE AND REAR SUSPENSION

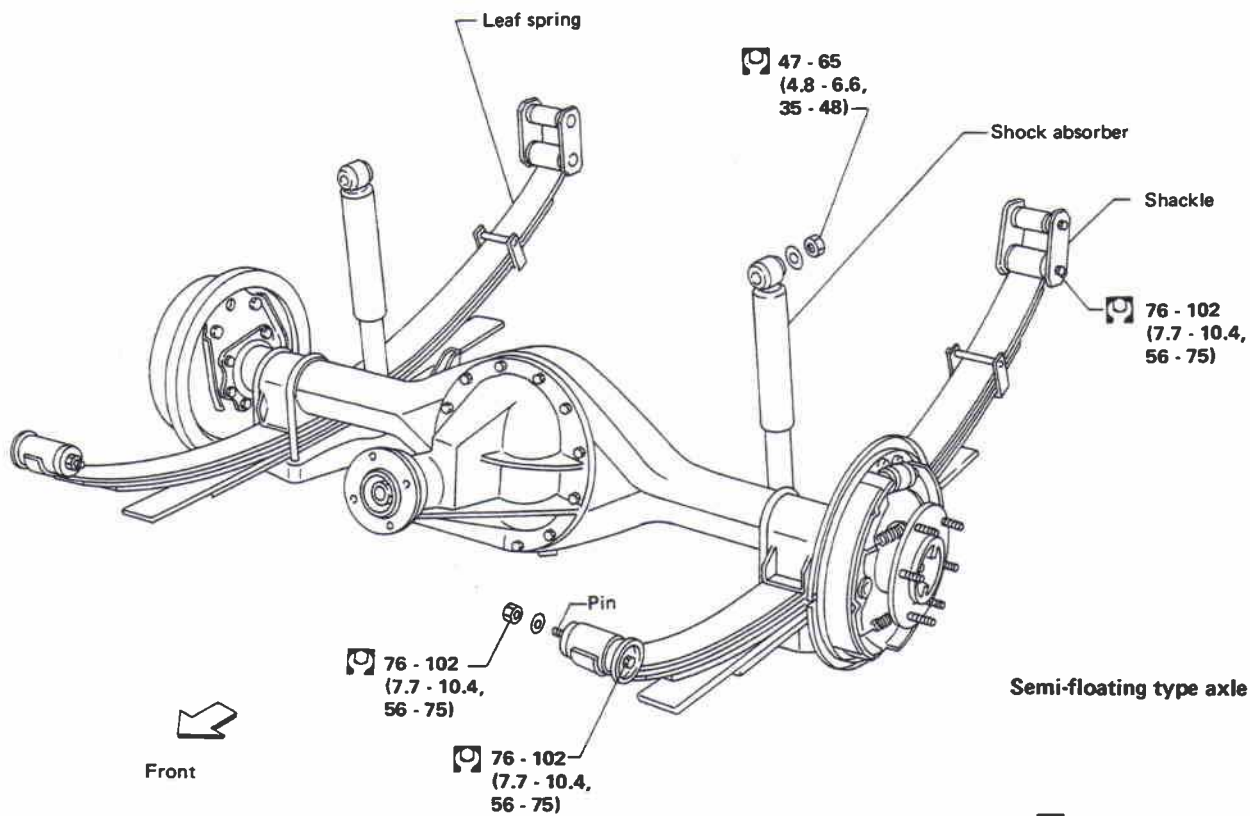
LEAF SPRING TYPE

Wheel bearing

- Axial end play: 0.02 - 0.15 mm (0.0008 - 0.0059 in)
- Tightening torque: 441 - 490 N·m (45 - 50 kg·m, 325 - 362 ft·lb)
- When measuring preload, do not include "dragging" resistance with brake shoes.

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

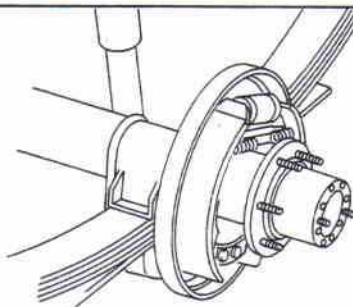
- * Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.



: N·m (kg·m, ft·lb)

Wheel bearing

- Axial end play: 0 mm (0 in)
- Tightening torque: 167 - 196 N·m (17 - 20 kg·m, 123 - 145 ft·lb)
- Wheel bearing preload (As measured at wheel hub bolt): 0 - 12.55 N (0 - 1.28 kg, 0 - 2.82 lb)
- When measuring preload, do not include "dragging" resistance with brake shoes.



Full-floating type axle

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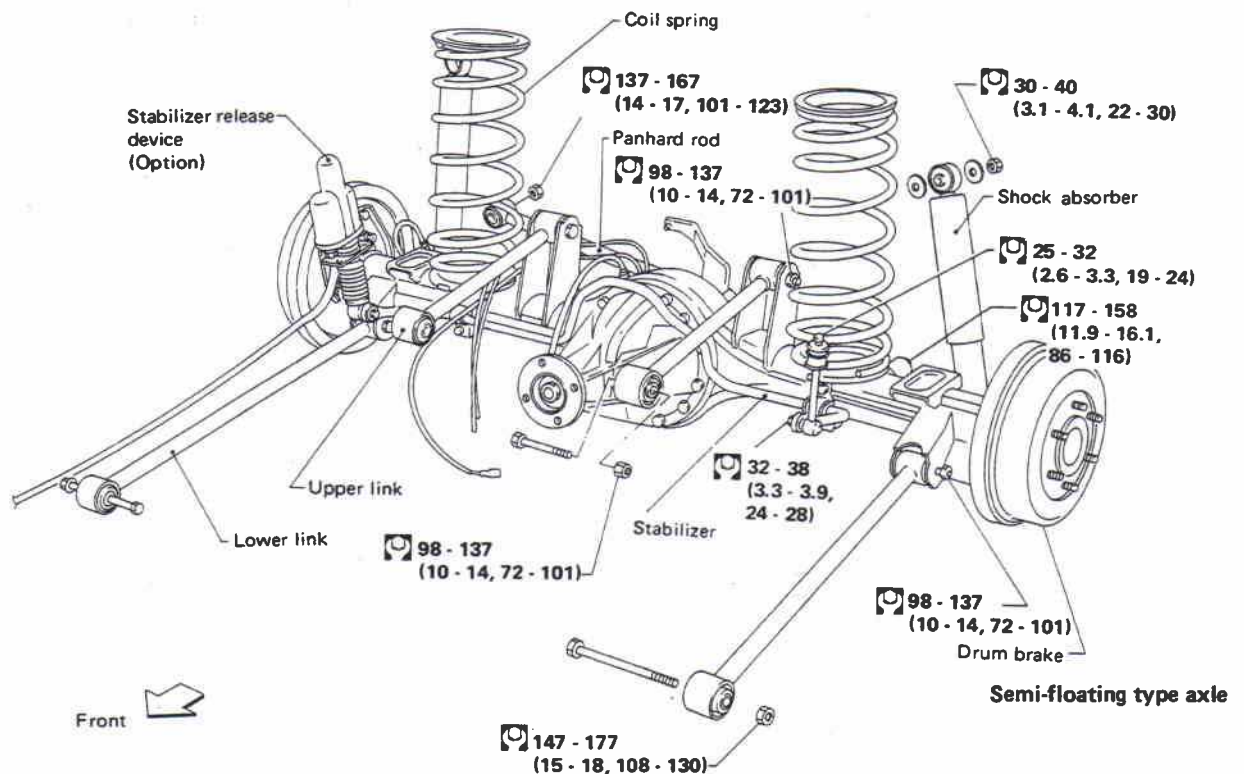
REAR AXLE AND REAR SUSPENSION

COIL SPRING TYPE

Wheel bearing

- Axial end play: 0.02 - 0.15 mm (0.0008 - 0.0059 in)
- Tightening torque: 441 - 490 N·m (45 - 50 kg·m, 325 - 362 ft·lb)
- When measuring preload, do not include "dragging" resistance with brake shoes.

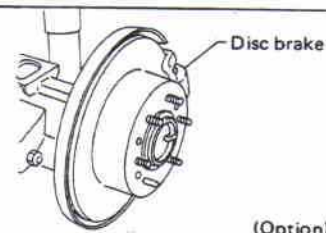
When installing each rubber part, final tightening must be carried out under unladen condition* with tires on ground.
* Fuel, radiator coolant and engine oil full. Spare tire, jack, hand tools and mats in designated positions.



: N·m (kg·m, ft·lb)

Wheel bearing

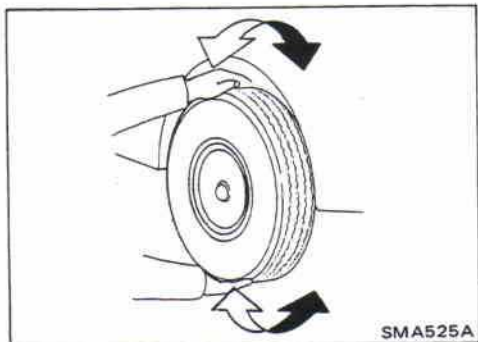
- Axial end play: 0 mm (0 in)
- Tightening torque: 441 - 490 N·m (45 - 50 kg·m, 325 - 362 ft·lb)
- Wheel bearing preload (As measured at wheel hub bolt): 8.8 - 42.2 N (0.9 - 4.3 kg, 2.0 - 9.5 lb)
- When measuring preload, do not include "dragging" resistance with brake shoes.



(Option)

Semi-floating type axle

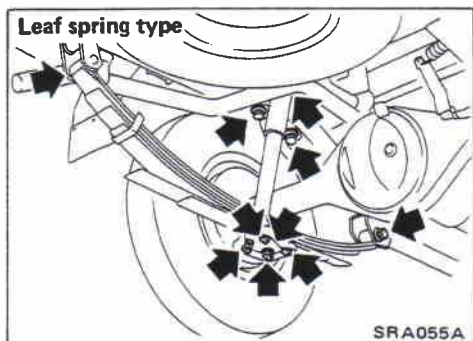
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Rear Axle and Rear Suspension Parts

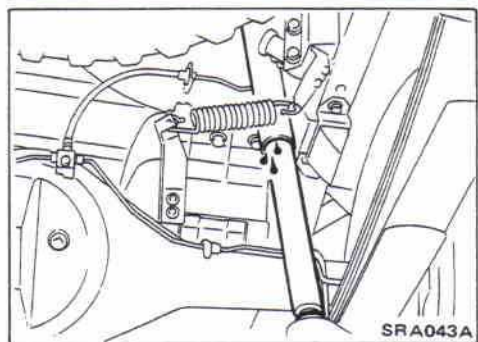
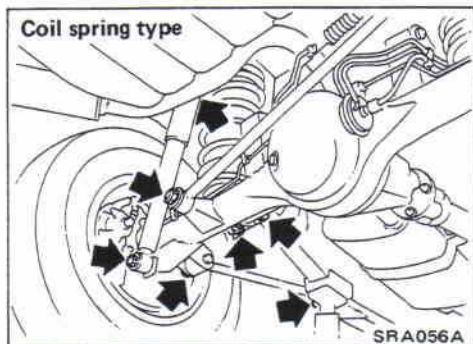
- Check rear axle and rear suspension parts for looseness, wear or damage.

(1) Shake each rear wheel.

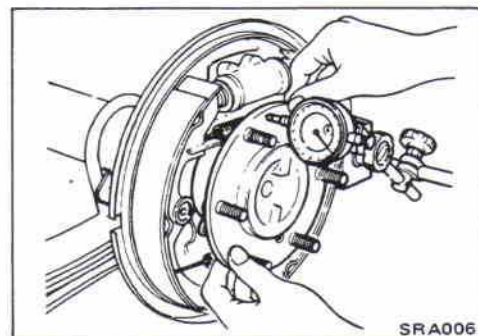


(2) Retighten all nuts and bolts to the specified torque.

Tightening torque: Refer to page RA-3, 4.



(3) Check shock absorber for oil leakage or other damage.



Rear Wheel Bearing

SEMI-FLOATING TYPE

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

Axial end play:

Drum brake type

0.02 - 0.15 mm (0.0008 - 0.0059 in)

Disc brake type

0 mm (0 in)

CHECK AND ADJUSTMENT — On-vehicle

Rear Wheel Bearing (Cont'd)

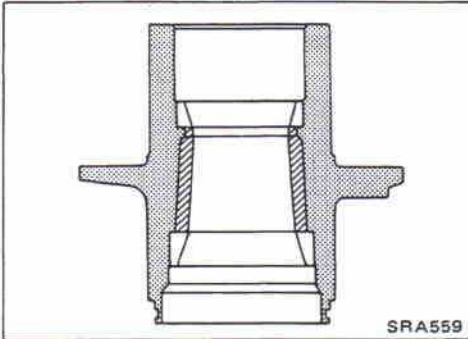
FULL-FLOATING TYPE

Preload adjustment

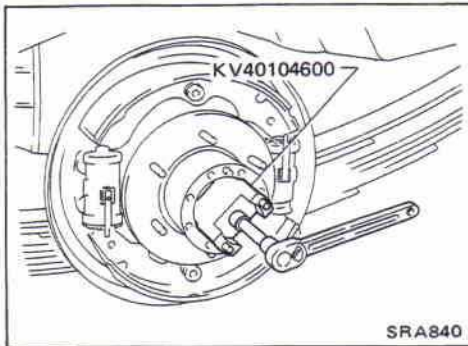
Adjust wheel bearing preload after wheel bearing has been replaced or rear axle has been reassembled.

Adjust wheel bearing preload as follows:

1. Before adjustment, thoroughly clean all parts to prevent dirt entry.

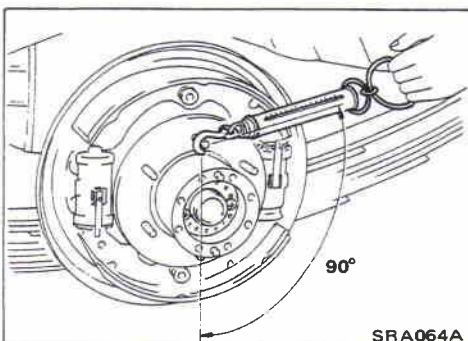


2. Apply multi-purpose grease sparingly to the following parts:
 - Threaded portion of spindle
 - Contact surface between wheel bearing washer and outer wheel bearing
 - Grease seal lip
 - Bearing housing



3. Tighten wheel bearing lock nut with Tool.
⌚: 167 - 196 N·m
(17 - 20 kg-m, 123 - 145 ft-lb)
4. Turn wheel hub several times in both directions.

5. Loosen wheel bearing lock nut and then tighten it.
⌚: 3 - 5 N·m
(0.3 - 0.5 kg-m, 2.2 - 3.6 ft-lb)
6. Turn wheel hub several times in both directions.
7. Then retighten wheel bearing lock nut.
⌚: 3 - 5 N·m
(0.3 - 0.5 kg-m, 2.2 - 3.6 ft-lb)

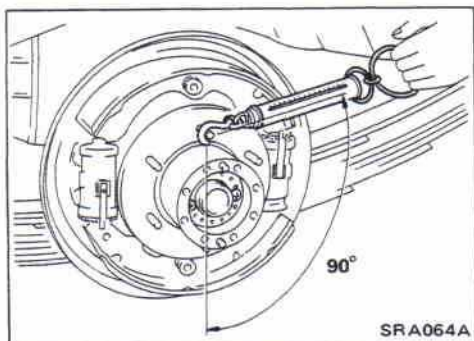


8. Measure rotating force (F_1). (as measured at wheel hub bolt)

CHECK AND ADJUSTMENT — On-vehicle

Rear Wheel Bearing (Cont'd)

9. Turn wheel bearing nut 0 to 22.5° in the direction to tighten and temporarily tighten lock washer with bolt.



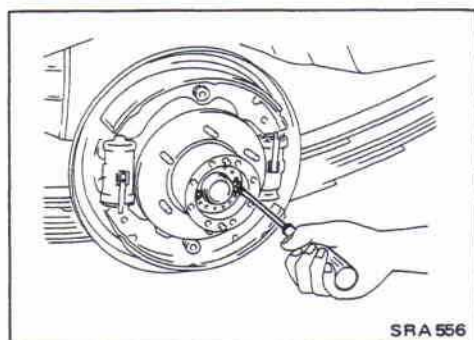
10. Turn wheel hub several times in both directions.
11. Measure rotating force (F_2). (as measured at wheel hub bolt)

12. Calculate rotating force by subtracting F_1 from F_2 .

$F_2 - F_1$:

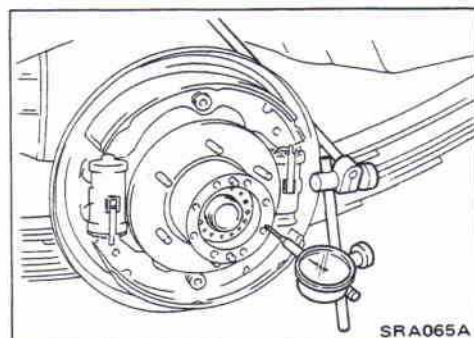
0 - 12.55 N (0 - 1.28 kg, 0 - 2.82 lb)

If it is not within specification, readjust.



13. Tighten the screws.

\square : 4 - 5 N·m (0.4 - 0.5 kg-m, 2.9 - 3.6 ft-lb)

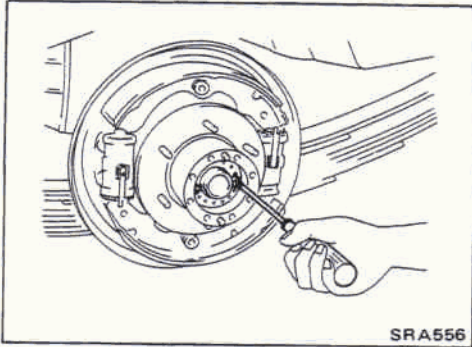


14. Measure wheel bearing axial end play.

Axial end play:

0 mm (0 in)

CHECK AND ADJUSTMENT — On-vehicle



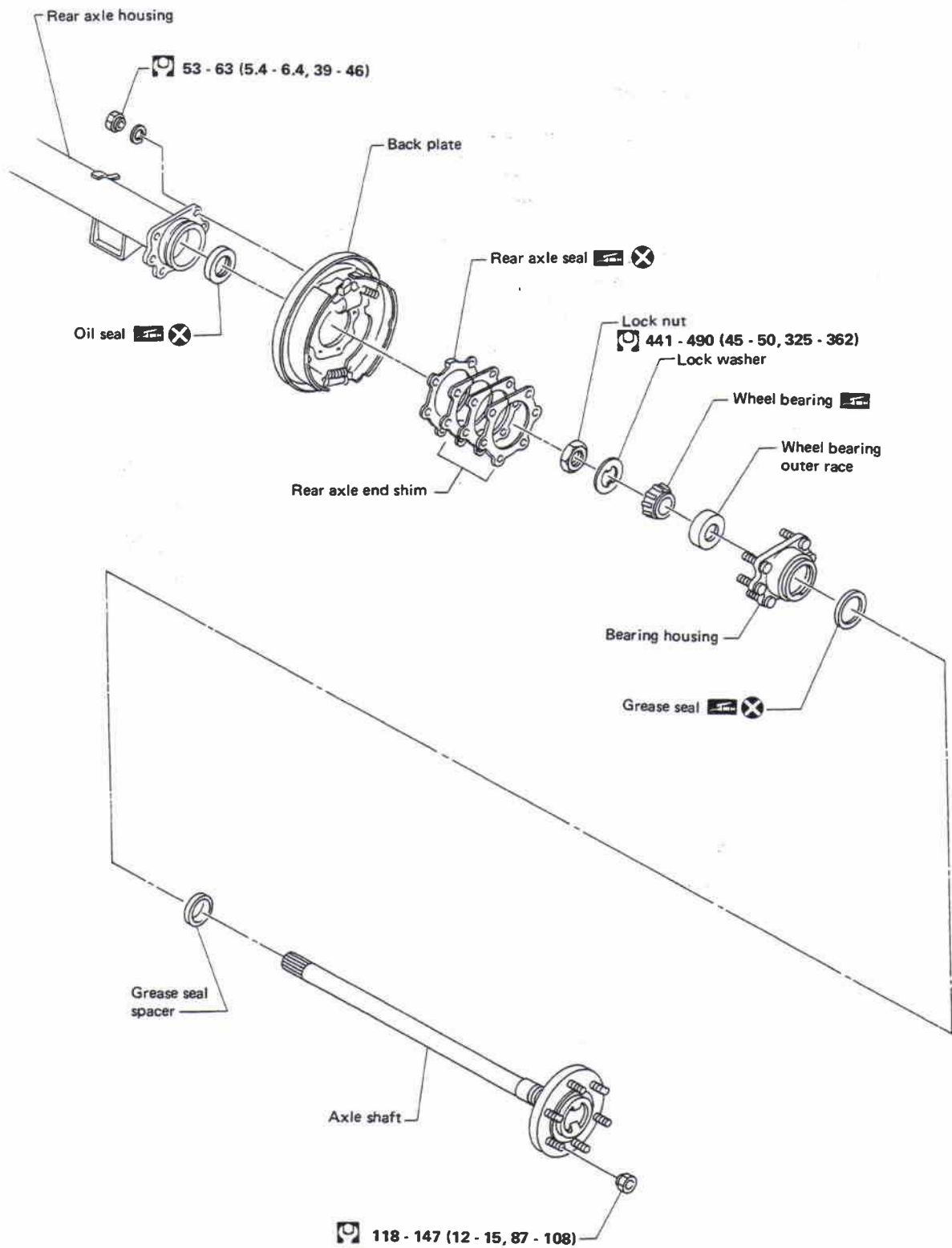
Rear Wheel Bearing (Cont'd)

15. Install lock washer.
16. Recheck wheel bearing preload.
17. Repeat above procedures until correct axial end play and wheel bearing preload are obtained.
18. Install rear axle shaft.

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

REAR AXLE — Semi-floating Type

DRUM BRAKE TYPE

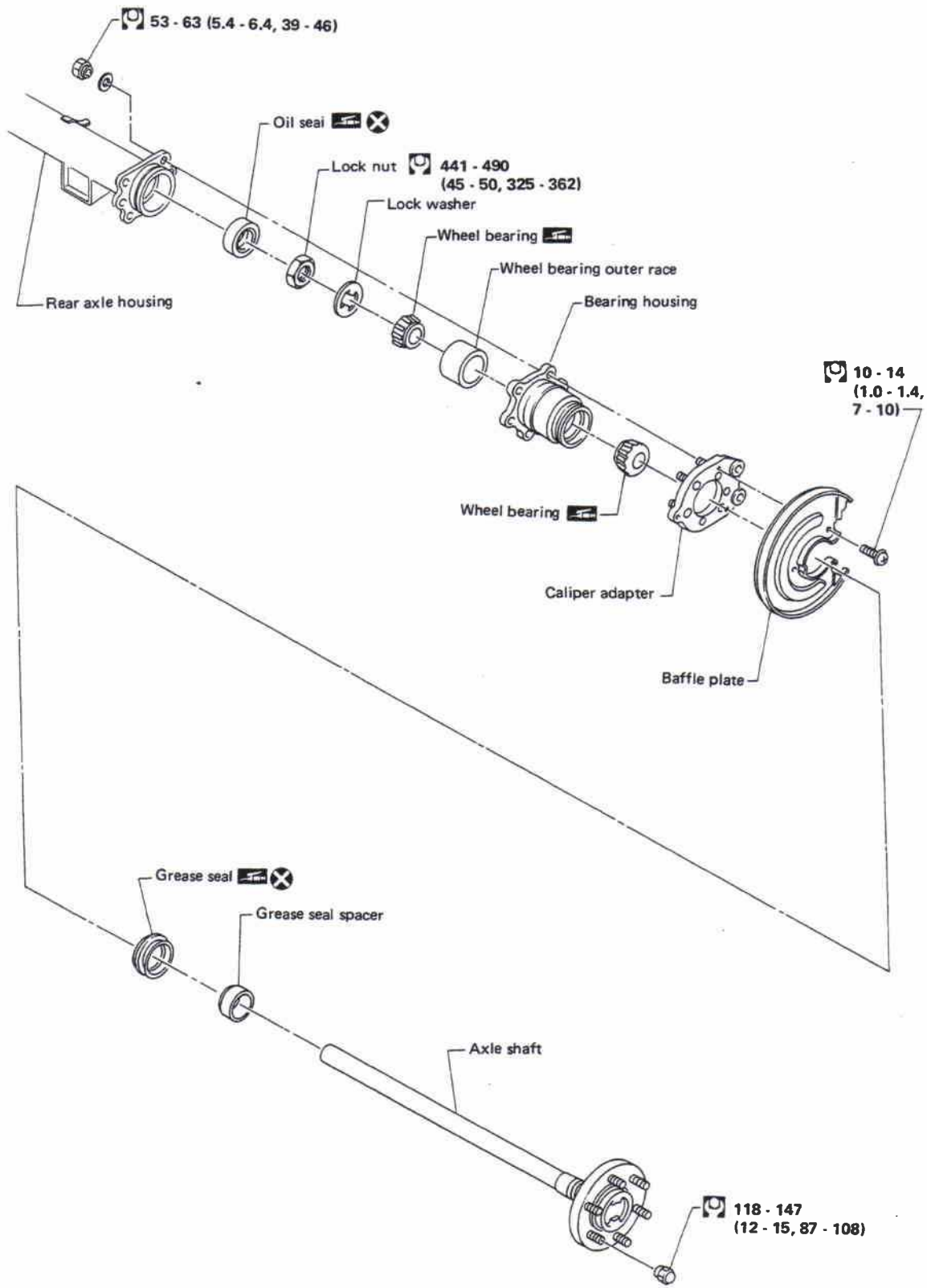


⊙ : N·m (kg·m, ft·lb)

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REAR AXLE — Semi-floating Type

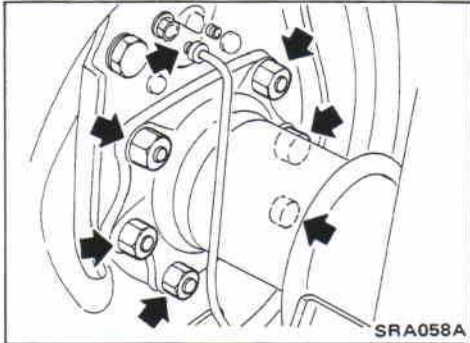
DISC BRAKE TYPE



: N·m (kg·m, ft·lb)

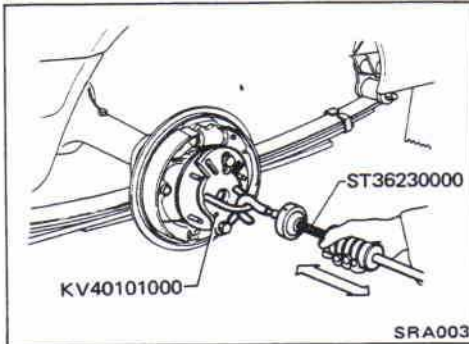
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REAR AXLE — Semi-floating Type

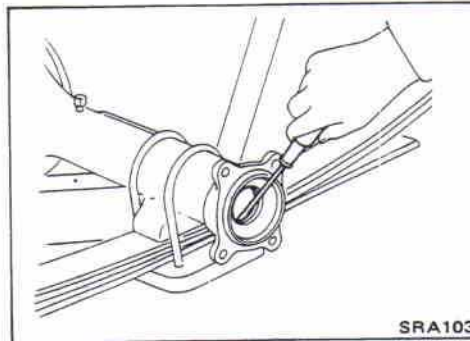


Removal

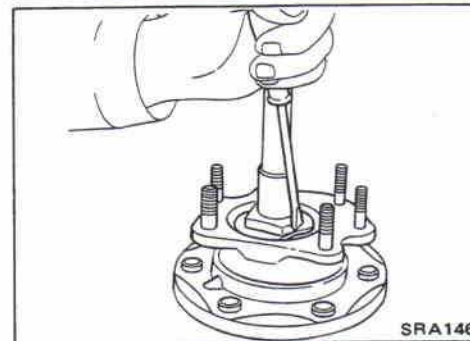
- Disconnect parking brake cable and brake tube.
- Remove nuts securing wheel bearing cage with baffle plate.



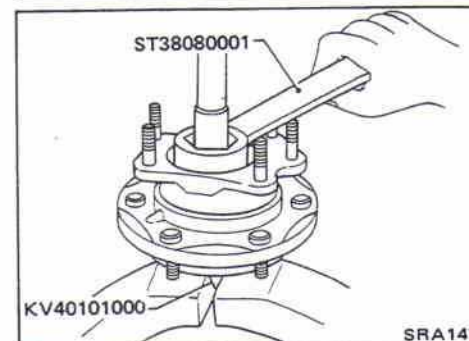
- Draw out axle shaft with Tool.
- When drawing out axle shaft, be careful not to damage oil seal.



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



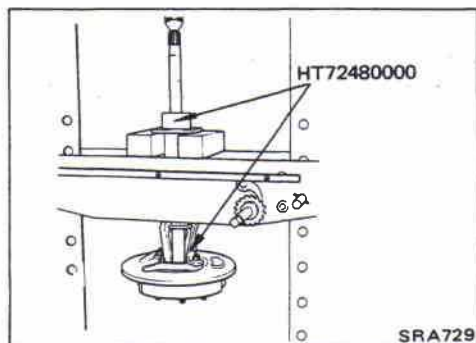
- Unbend lock washer with a screwdriver.
- Do not reuse once removed lock washer.
Always install new one.



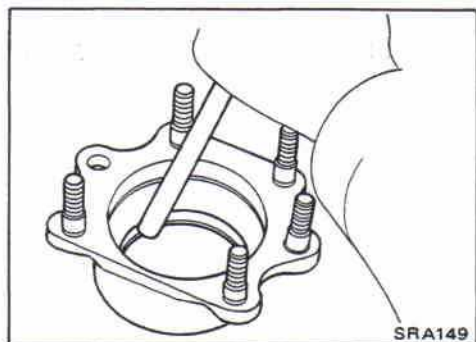
- Remove bearing lock nut with Tool.

REAR AXLE — Semi-floating Type

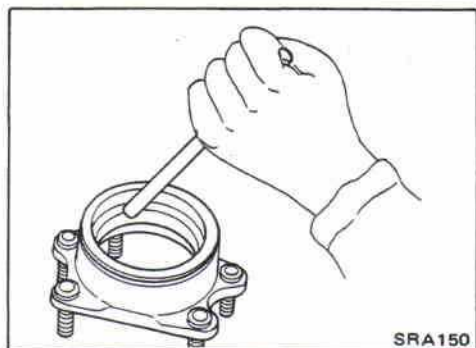
Removal (Cont'd)



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



- Remove grease seal in bearing housing 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.

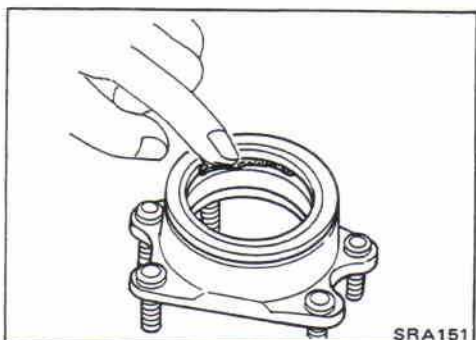
WHEEL BEARING

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

AXLE CASE

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

Installation — Models with drum brake

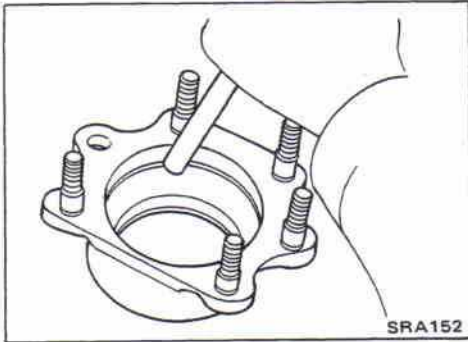


- Install a new grease seal in bearing housing.
Lubricate cavity between seal lips after fitting seal.

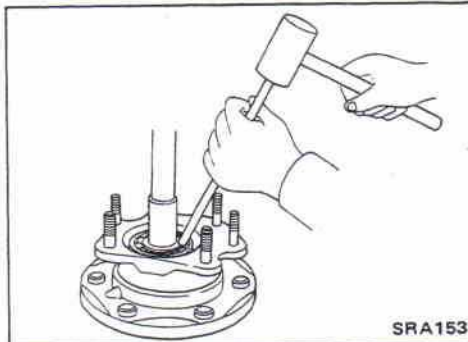
REAR AXLE — Semi-floating Type

Installation — Models with drum brake (Cont'd)

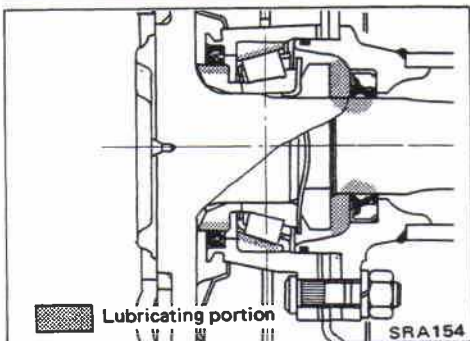
- Install wheel bearing outer race using a brass drift.




- Install wheel bearing inner race with a brass drift.

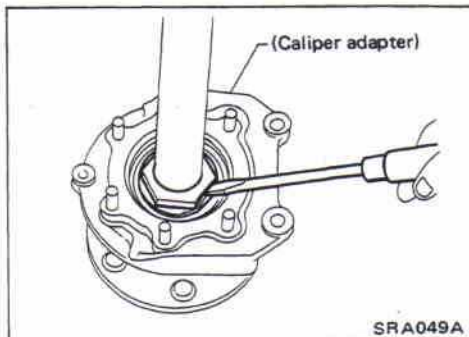


- Before installing wheel bearing, fill races and gap between rollers with wheel bearing grease. Also apply a coat of grease to seat of lock nut before installing lock washer.



- After tightening lock nut to specified torque, bend one portion of lock washer to lock the nut.

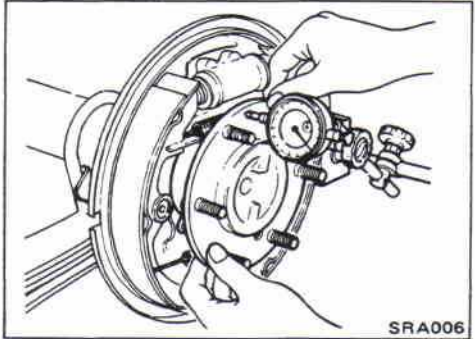
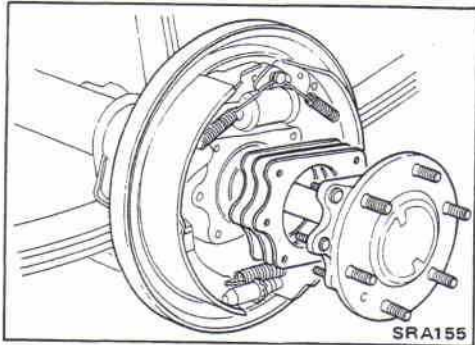
: 441 - 490 N·m
(45 - 50 kg-m, 325 - 362 ft-lb)



- Install a new oil seal to axle housing case using a suitable tool.

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

REAR AXLE — Semi-floating Type



Installation — Models with drum brake (Cont'd)

- (1) Position one (left or right) axle shaft in axle housing.
- (2) Select end shims.

Standard thickness: 1.6 mm (0.063 in)

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

Do not insert end shims between rear axle seal and bearing housing.

- (3) Position the other axle shaft in axle housing. Adjust end play of both axle shaft.

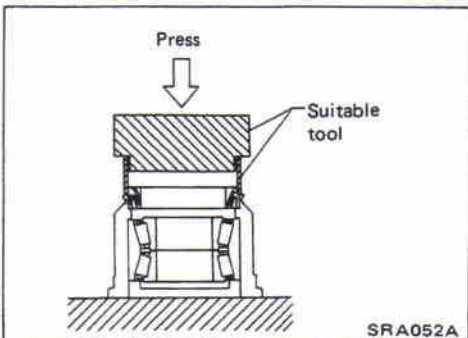
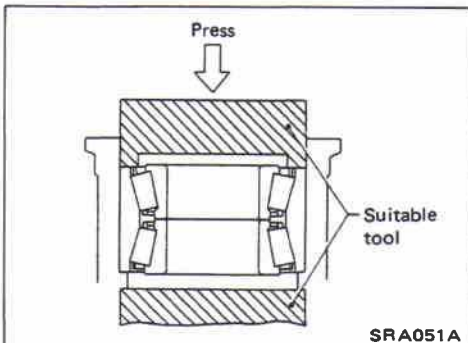
Axial end play:

0.02 - 0.15 mm (0.0008 - 0.0059 in)

If difference in left and right shim thicknesses exceeds 1 mm (0.04 in), add or remove shim on the side of shaft which was first positioned in axle housing so that difference is less than 1 mm (0.04 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.



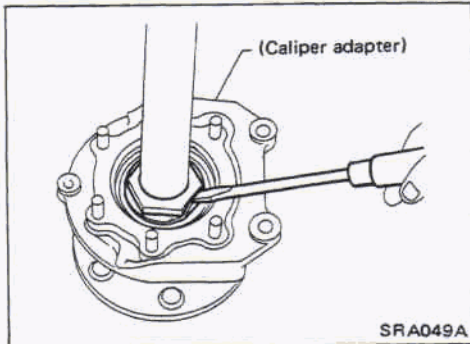
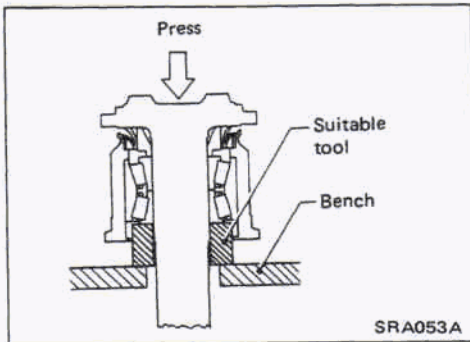
Installation — Models with disc brake

- Press wheel bearing until it bottoms end face of bearing housing.

Always press outer race of wheel bearing during installation.

- Press grease seal until it bottoms end face of bearing housing.

REAR AXLE — Semi-floating Type



Installation — Models with disc brake (Cont'd)

- Install spacer over axle shaft and press axle shaft into inner race of wheel bearing.

Be careful not to damage or deform grease seal. Fill gap between grease seal lip and spacer with wheel bearing grease.

- Before installing lock nut, apply a coat of wheel bearing grease to its seat. Tighten lock nut to specified torque.

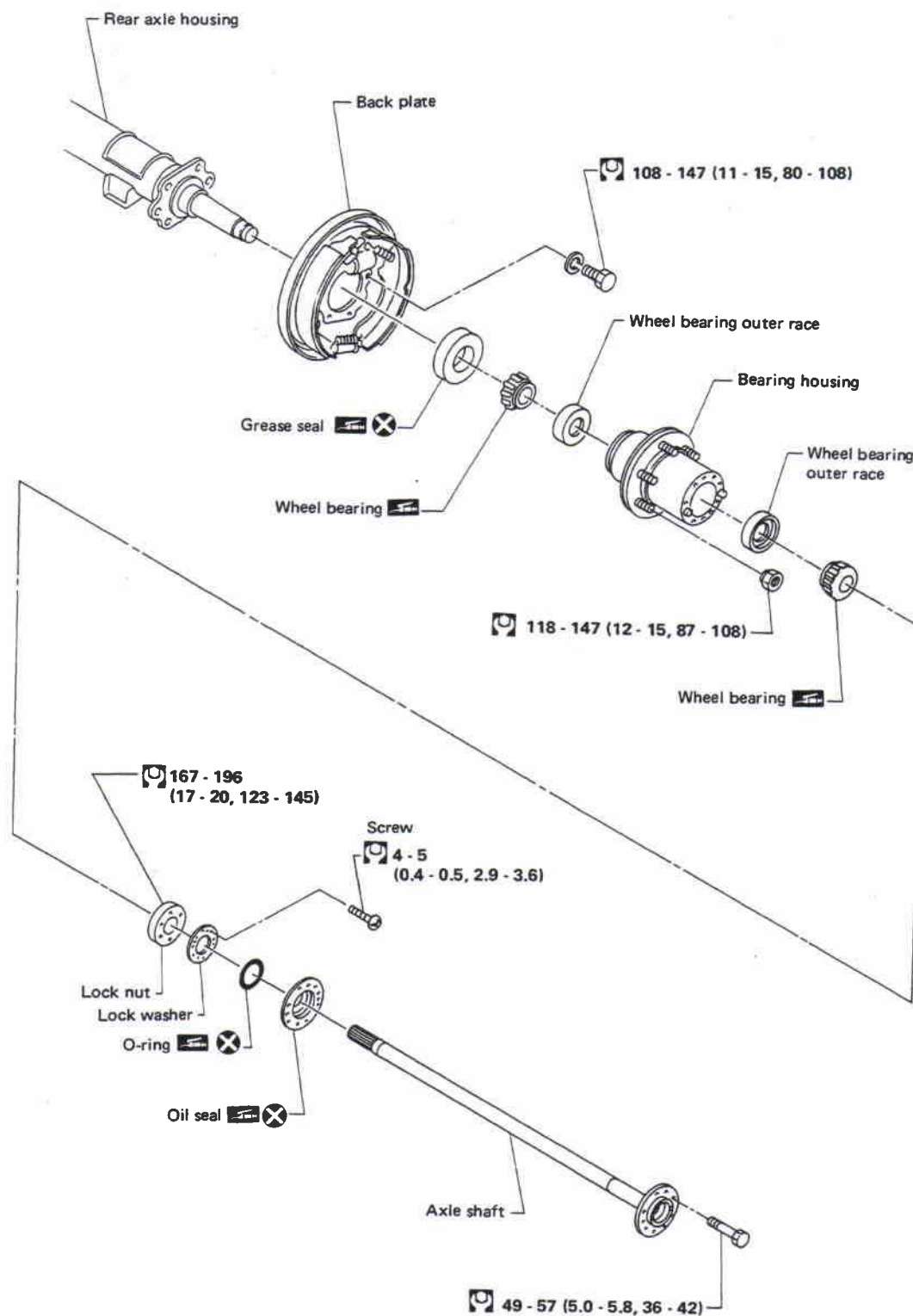
⌚: 441 - 490 N·m

(45 - 50 kg-m, 325 - 362 ft-lb)

- Lock lock nut by bending one portion of lock washer.
 - Turn bearing housing (with respect to axle shaft) two or three times. It must turn smoothly.
 - Position axle shafts in axle housing.
- Be careful not to damage oil seal.**

REAR AXLE — Full-floating Type

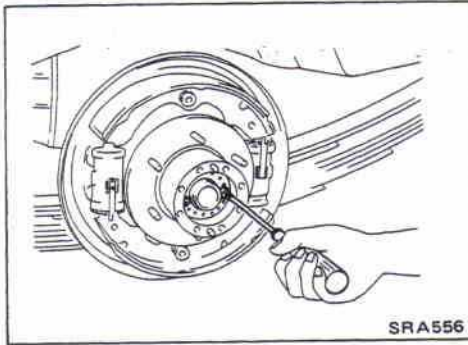
DRUM BRAKE TYPE



: N·m (kg-m, ft-lb)

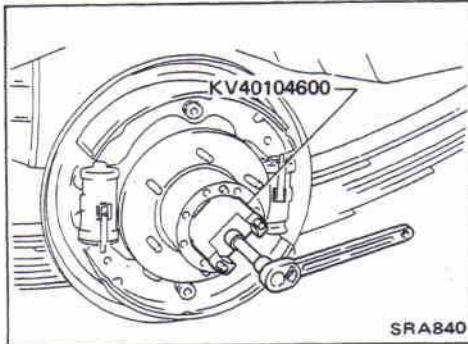
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REAR AXLE — Full-floating Type

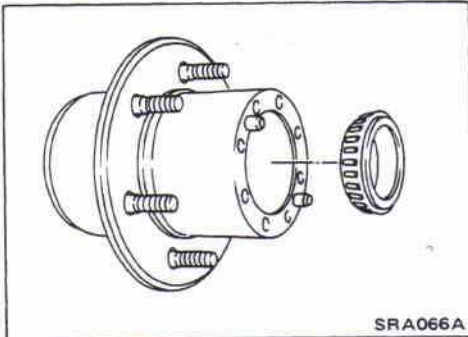


Removal and Installation

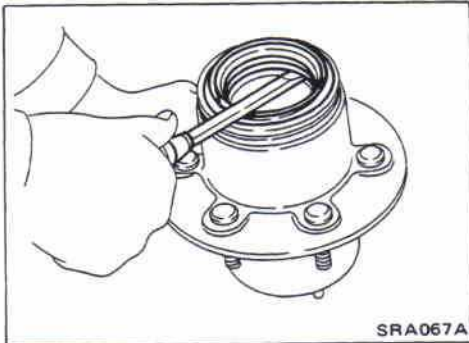
- Remove axle shaft.
- Remove oil seal and O-ring.
- Remove lock washer.



- Remove wheel bearing lock nut with Tool.



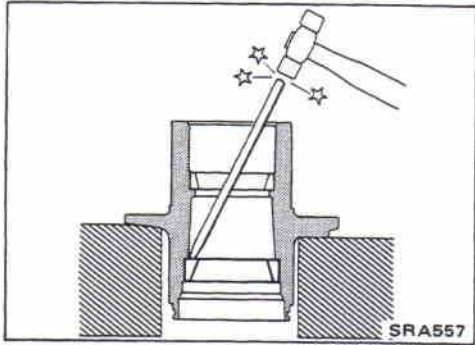
- Remove wheel bearing and wheel hub.
Be careful not to drop outer bearing.



- Remove inside wheel bearing outer race, grease seal and outside wheel bearing race.
Do not reuse oil seal once it is removed.
Always install new one.

- When adjusting wheel bearing preload, refer to Preload Adjustment of Wheel Bearing in CHECK AND ADJUSTMENT — On-vehicle.

REAR AXLE — Full-floating Type



Disassembly

- Remove bearing outer races with suitable brass bar.

Inspection

AXLE SHAFT

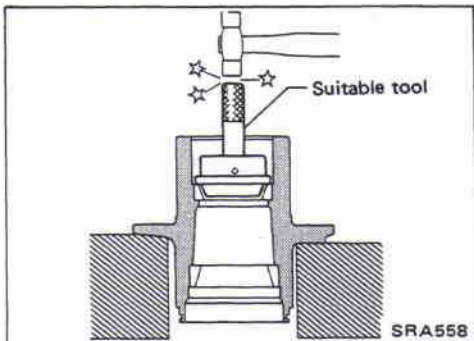
- Check axle shaft for straightness, cracks, damage, wear or distortion. Replace if necessary.

WHEEL BEARING

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

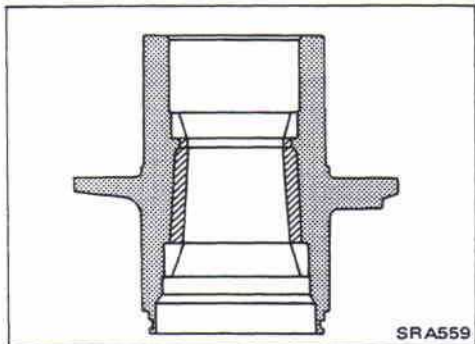
AXLE CASE

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

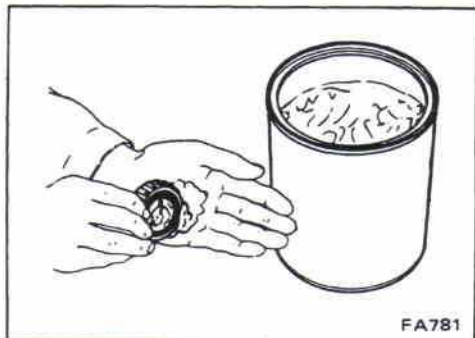


Assembly

- Install bearing outer race with tool until it seats in hub.

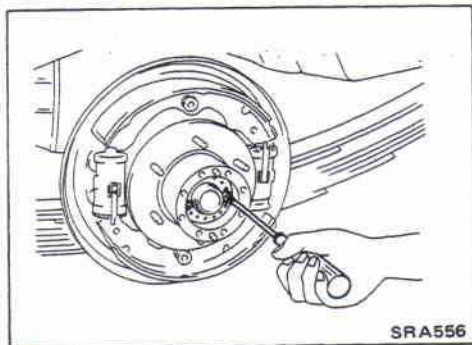


- Pack hub with multi-purpose grease.



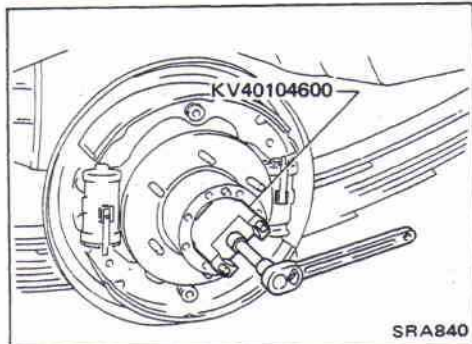
- Coat each bearing cone with multi-purpose grease.

REAR AXLE — Full-floating Type

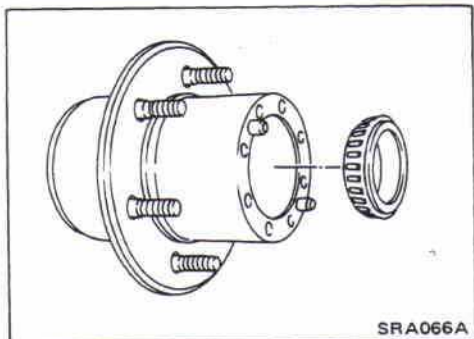


Removal and Installation

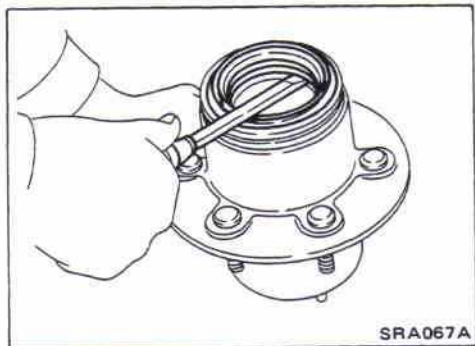
- Remove axle shaft.
- Remove oil seal and O-ring.
- Remove lock washer.



- Remove wheel bearing lock nut with Tool.



- Remove wheel bearing and wheel hub.
Be careful not to drop outer bearing.



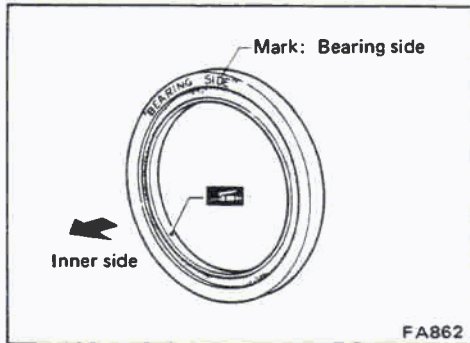
- Remove inside wheel bearing outer race, grease seal and outside wheel bearing race.
Do not reuse oil seal once it is removed.
Always install new one.

- When adjusting wheel bearing preload, refer to Preload Adjustment of Wheel Bearing in CHECK AND ADJUSTMENT — On-vehicle.

REAR AXLE — Full-floating Type

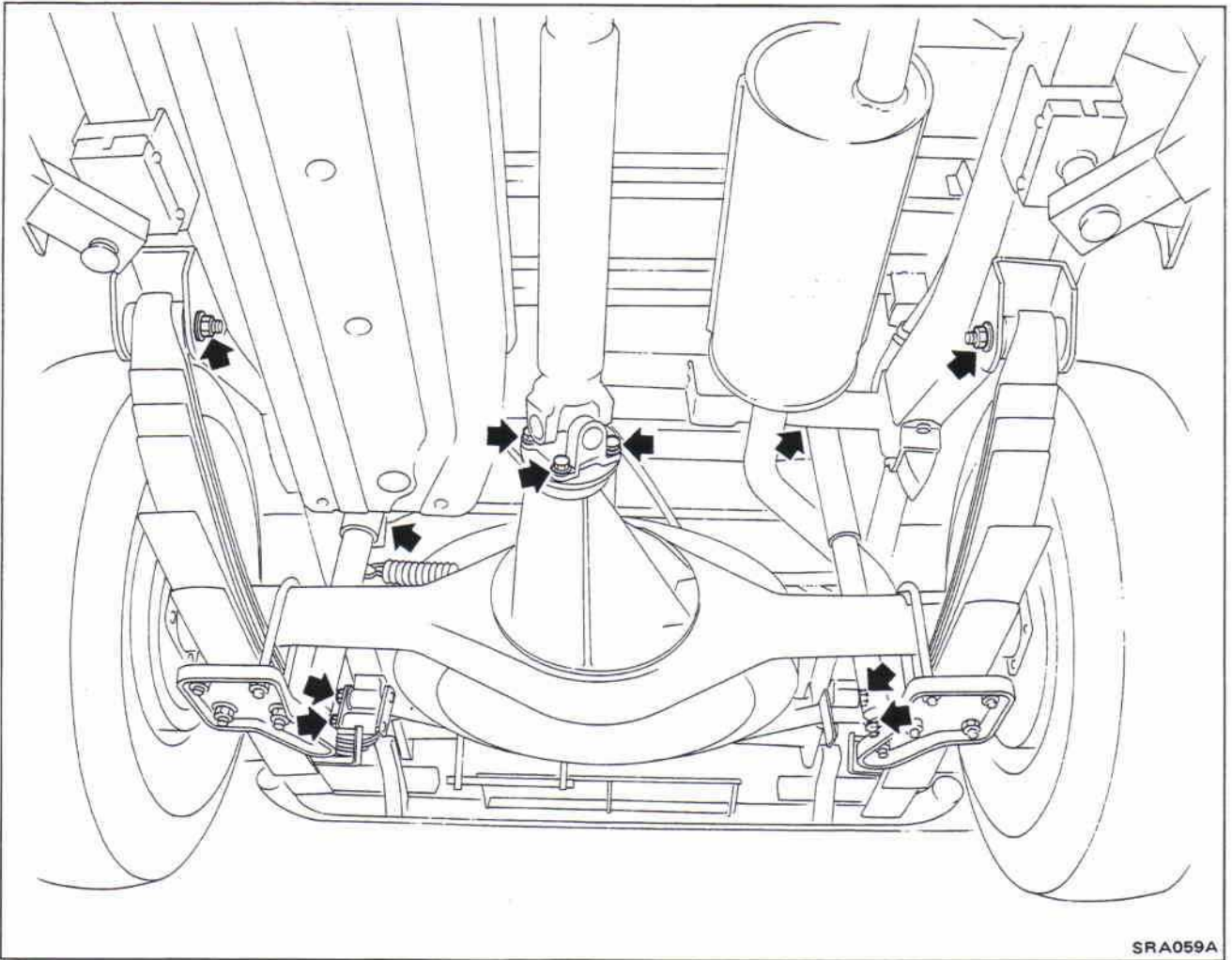
Assembly (Cont'd)

- Pack grease seal lip with multi-purpose grease, then install it into wheel hub with suitable drift.

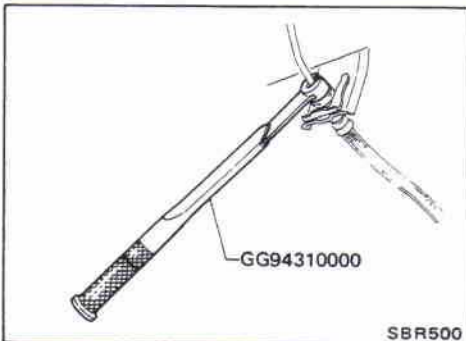


REAR SUSPENSION — Leaf Spring Type

Removal and Installation



SRA059A

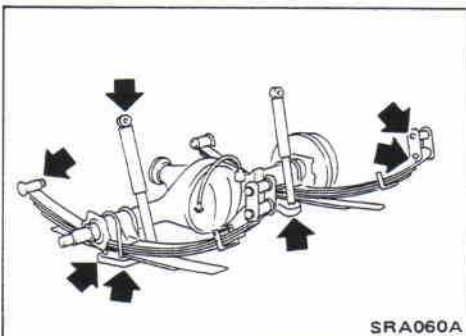


- Disconnect brake hydraulic line and parking brake cable.

CAUTION:

Use Tool when removing or installing brake tubes.

- Remove leaf spring from body.
- Remove propeller shaft. Refer to section PD.
- Remove upper end nuts of shock absorber.

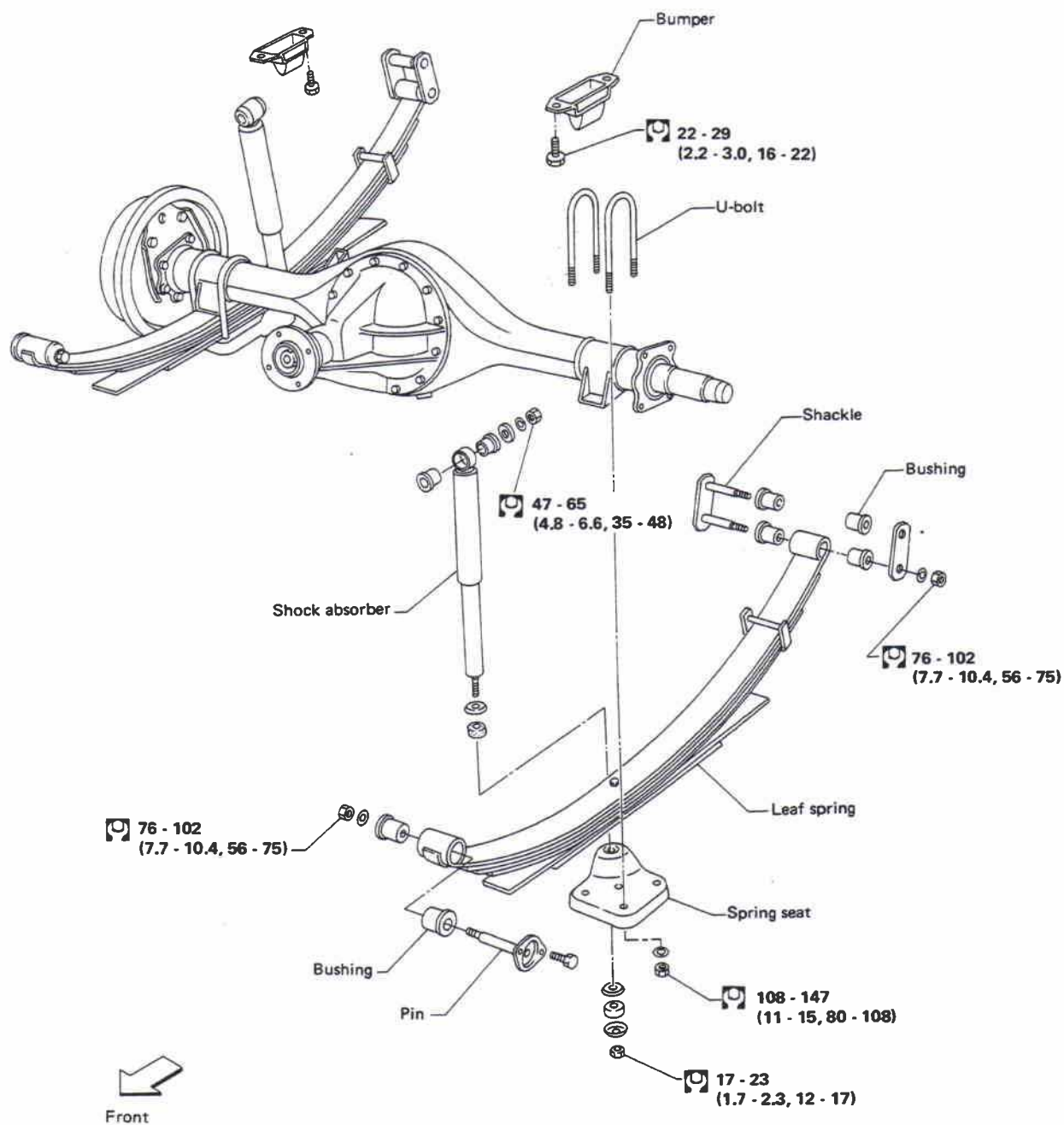


SRA060A

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

REAR SUSPENSION — Leaf Spring Type

Components



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)

SRA035A

REAR SUSPENSION — Leaf Spring Type

Shock Absorber

- Check shock absorber for oil leakage, cracks or deformation. Replace if necessary.
- Check rubber bushings for cracks. Replace if necessary.

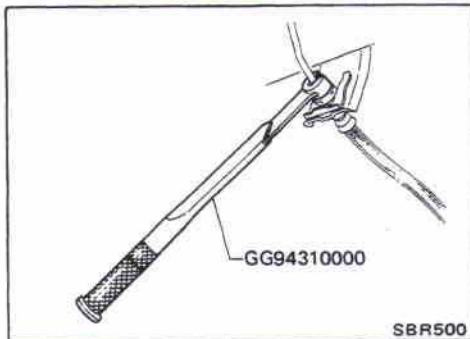
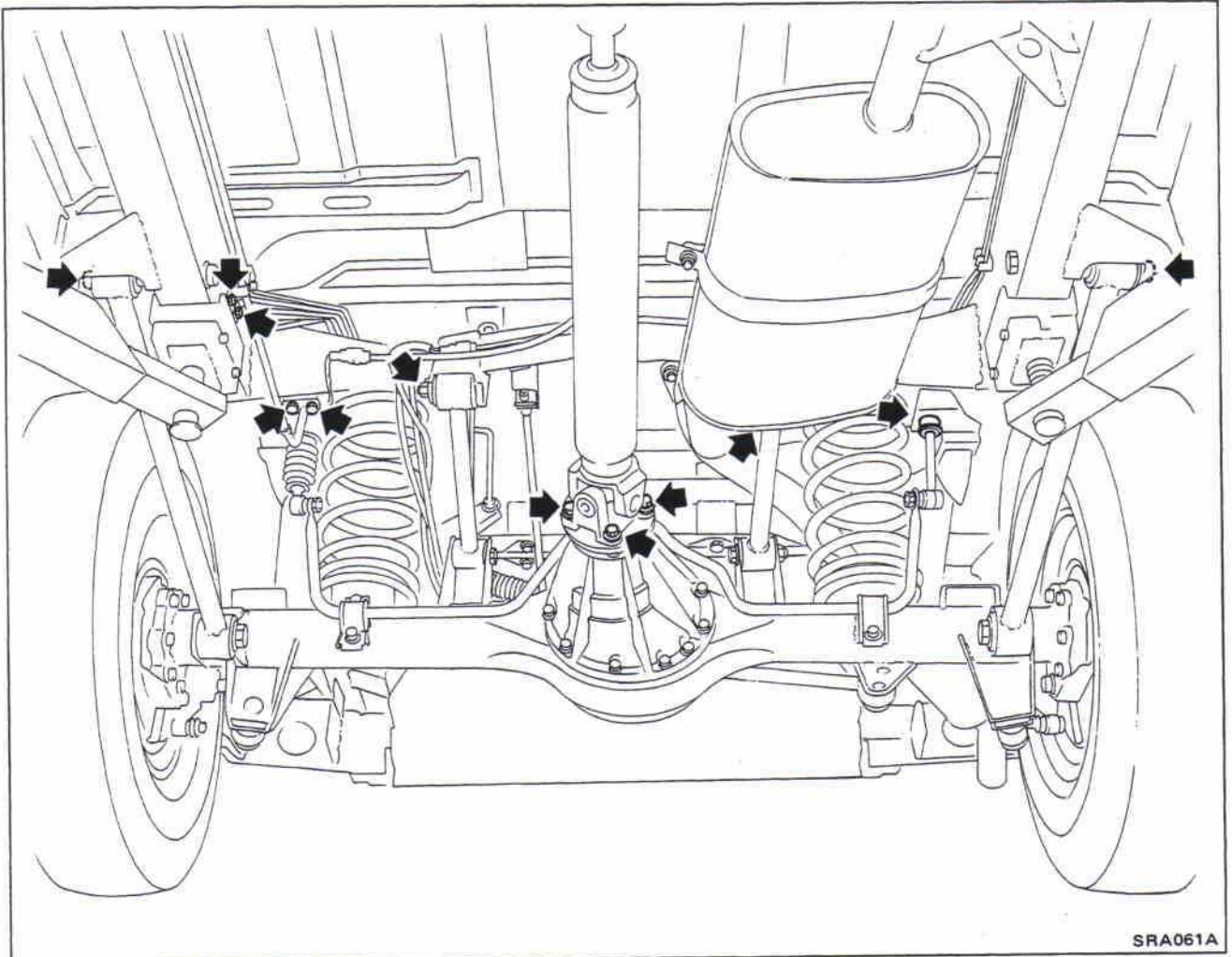
Leaf Spring

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.

REAR SUSPENSION — Coil Spring Type

Removal and Installation

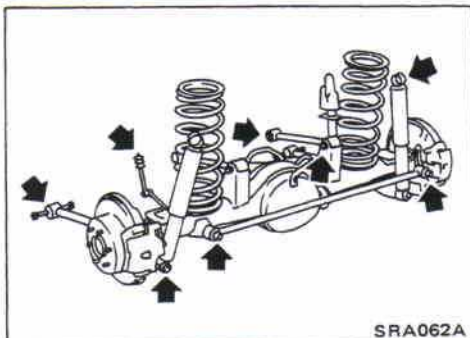


- Disconnect brake hydraulic line.

CAUTION:

Use Tool when removing or installing brake tubes.

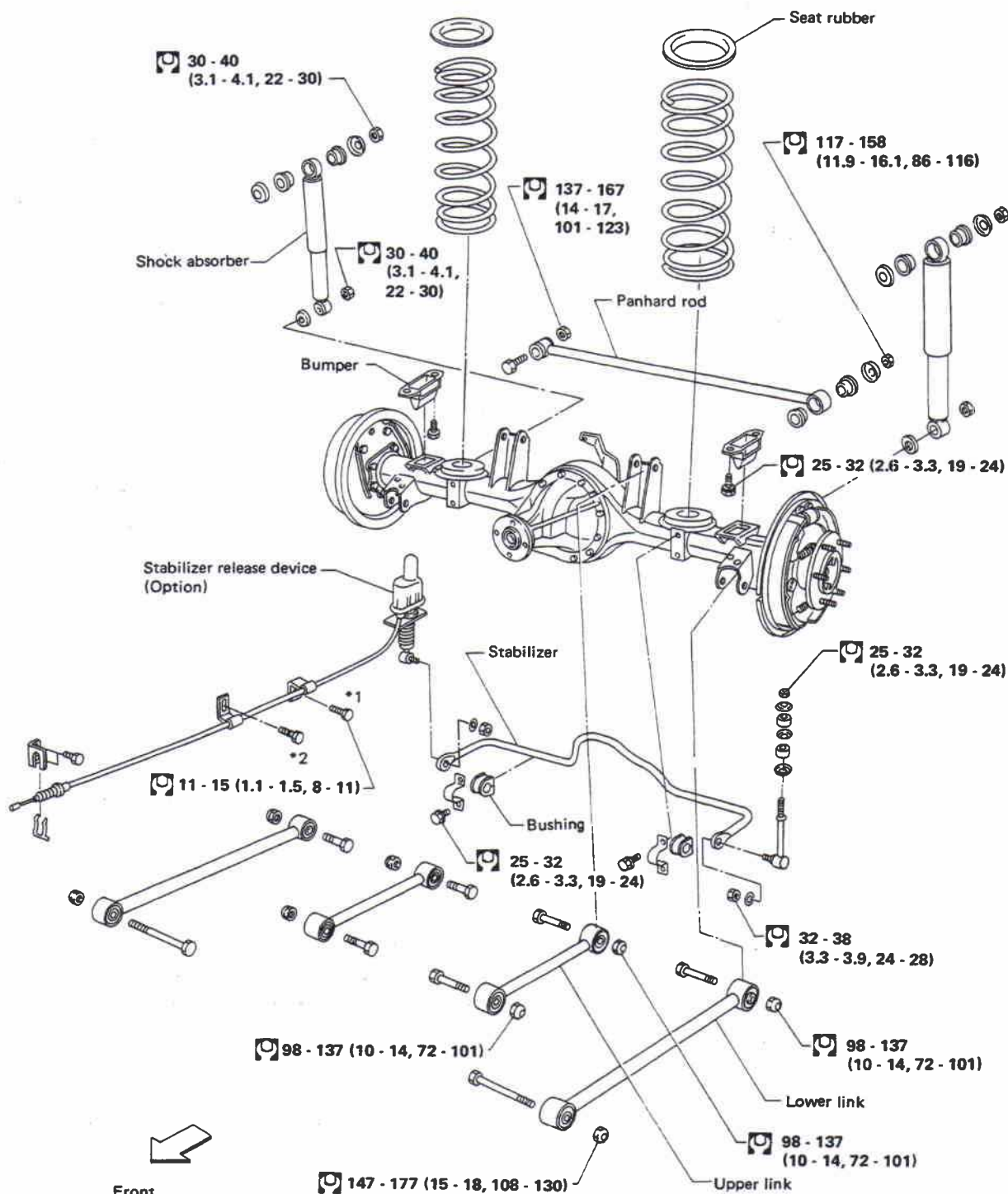
- Remove stabilizer bar from body.
- Remove upper links and lower links from body.
- Remove panhard rod from body.
- Disconnect propeller shaft. Refer to section PD.
- Remove upper end nuts of shock absorber.



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

REAR SUSPENSION — Coil Spring Type

Components



Cable clamp bolts	
Bolts	Models
*1	Hardtop
*1 & *2	Station Wagon

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)

SRA036A

REAR SUSPENSION — Coil Spring Type

Coil Spring and Shock Absorber

REMOVAL AND INSTALLATION

- Refer to Removal and Installation of REAR SUSPENSION — Coil Spring 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.

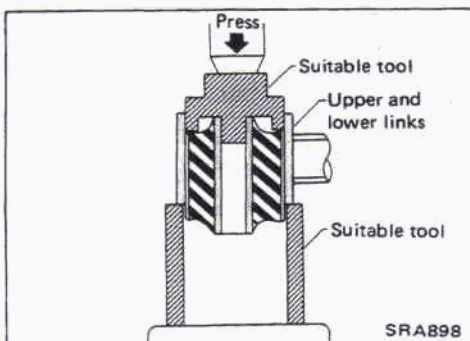
Upper Link, Lower Link and Panhard Rod

INSPECTION

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

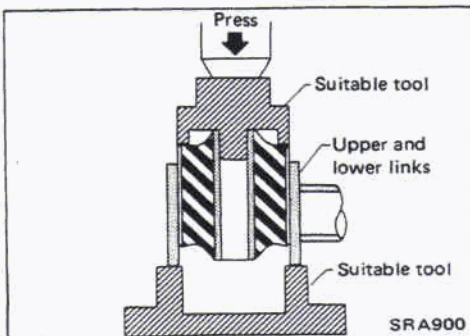
BUSHING REPLACEMENT

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.

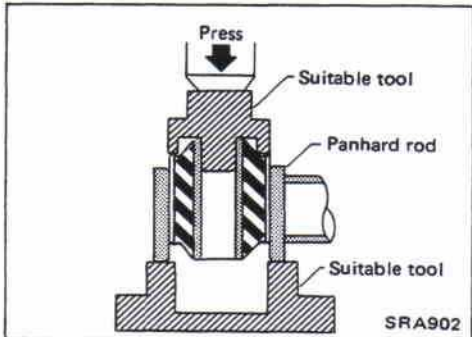
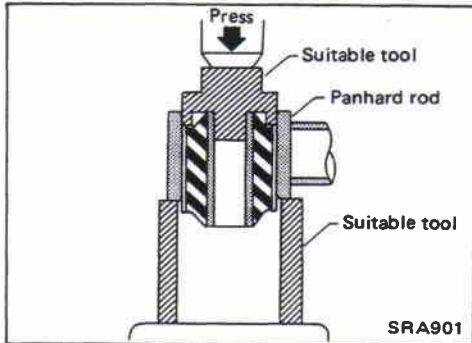
Do not tap end face of bushing directly with a hammer.

REAR SUSPENSION — Coil Spring 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.

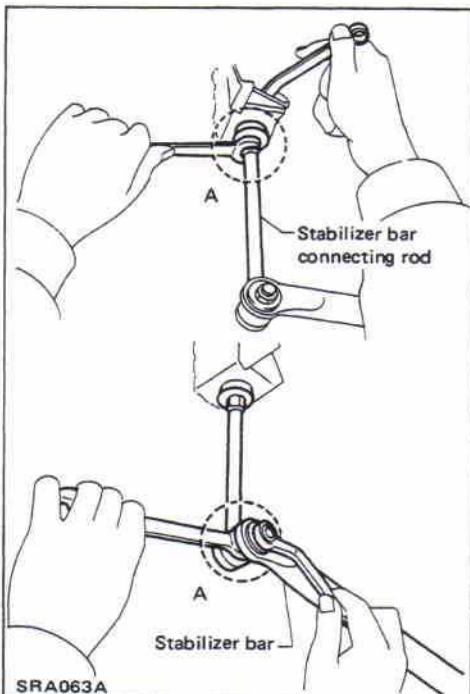
Always install new bushing.

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.



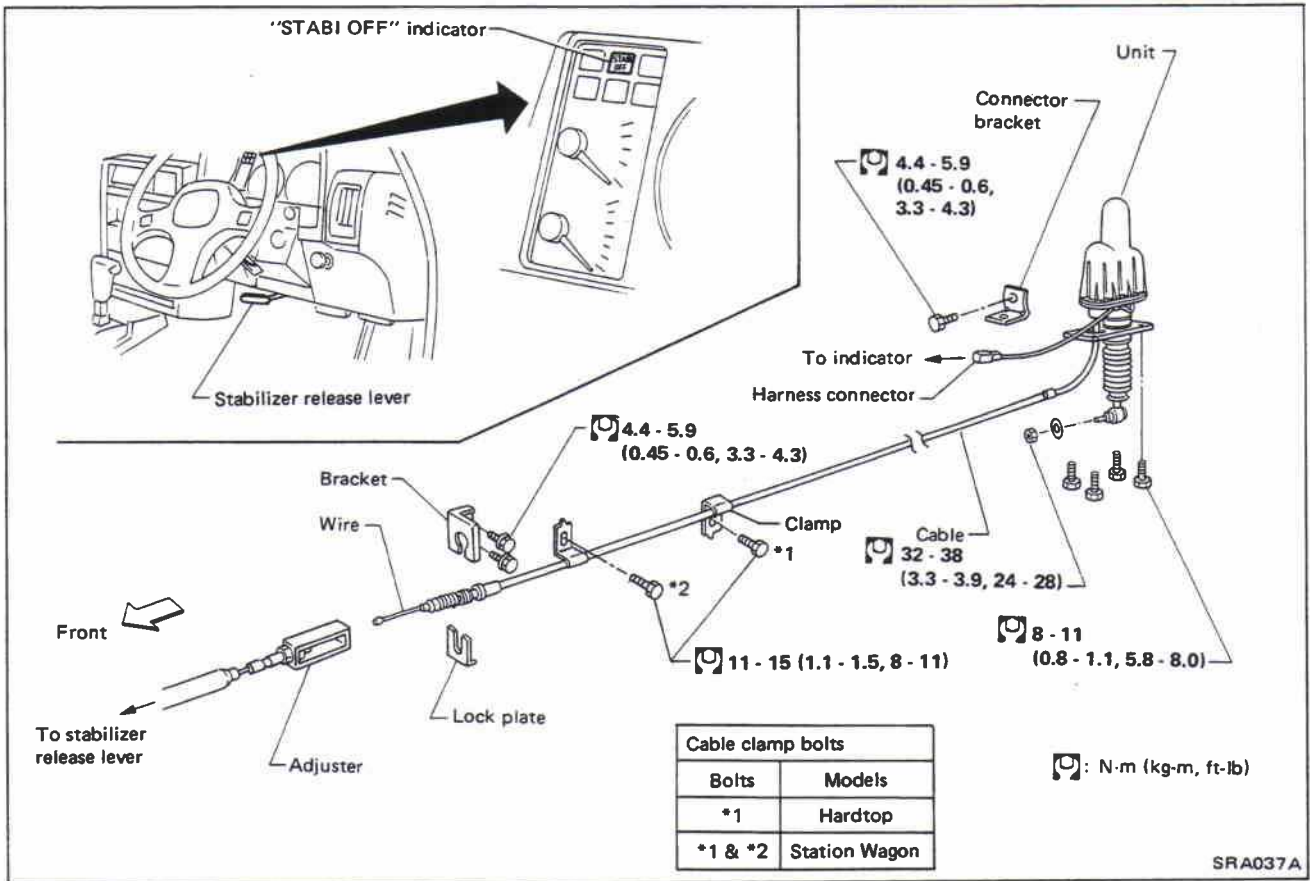
Stabilizer Bar

REMOVAL AND INSTALLATION

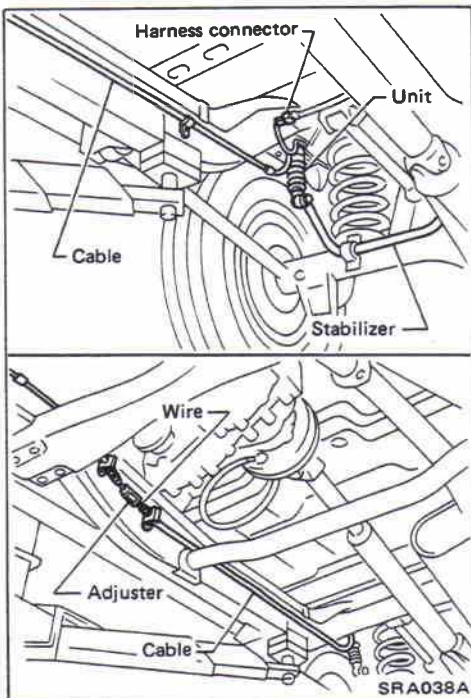
- When removing and installing stabilizer bar, fix portion A.

STABILIZER RELEASE DEVICE

Removal and Installation



SRA037A



SRA038A

1. Loosen release lever.
2. Separate unit and stabilizer.
3. Disconnect indicator harness connector.
4. Disengage adjuster from cable.

CAUTION:

- Be careful not to damage cable.
- Make sure there is no free play after installation.

STABILIZER RELEASE DEVICE

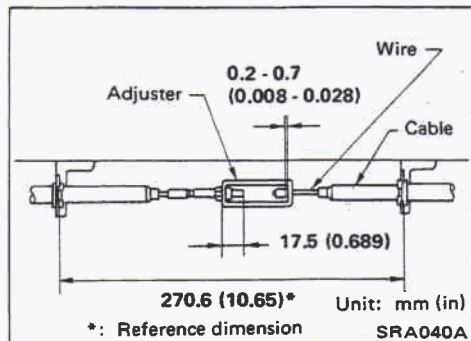
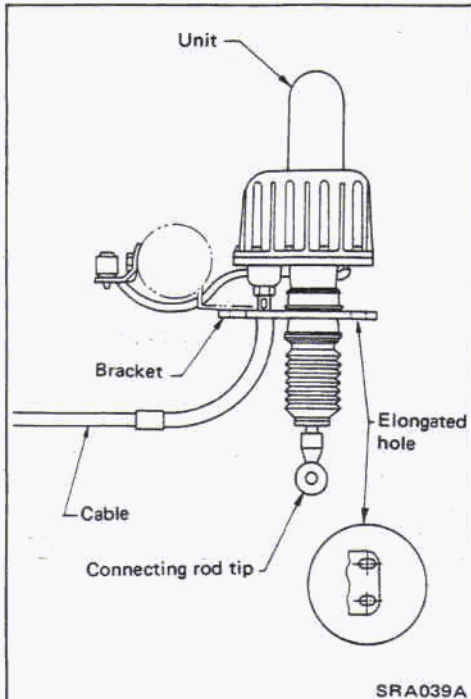
Inspection

1. Check control release lever for wear or other damage. Replace if necessary.
2. Check cables for discontinuity or deterioration. Replace if necessary.
3. Check warning lamp. Replace if necessary. Refer to EL section.
4. Check parts at each connecting portion and, if found deformed or damaged, replace.

Adjustment

Adjust control lever stroke as follows.

1. Loosen stabilizer release lever.
2. Check that unit is locked properly by moving end of connecting rod or by moving stabilizer arm up and down.



3. Adjust cable length using adjuster.

Cable elongation:

0.2 - 0.7 mm (0.008 - 0.028 in)

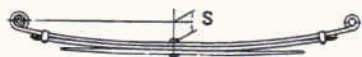
4. After temporarily adjusting cable length, pull adjuster back with hand to release unit. Relock unit and properly adjust cable length. Then lock adjuster.
5. Connect indicator harness connector.

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

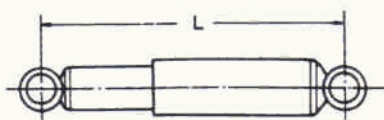
General Specifications (Leaf Spring Type)

LEAF SPRING AND SHOCK ABSORBER

Model		Pickup	
		L.H.D.	R.H.D.
Item			
Leaf spring			
Length x width x thickness — number of leaves mm (in)		1,420 x 70 x 7 — 1	
		6 — 1	
		7 — 3	
Main		(55.91 x 2.76 x 0.28 — 1)	
		0.24 — 1	
		0.28 — 3	
Helper		575 x 70 x 14 — 1	
		(22.64 x 2.76 x 0.55 — 1)	
Free camber "S" mm (in)		182.8 (7.20)	162.8 (6.41)
Spring constant N/mm (kg/mm, lb/in)		44.6 - 115.7 (4.55 - 11.8, 254.8 - 660.8)	
Shock absorber			
Maximum length "L" mm (in)		613 (24.13)	
Stroke mm (in)		252 (9.92)	
Damping force [at 0.3 m (1.0 ft)/sec.] N (kg, lb)			
Expansion		941 (96, 212)	
Compression		422 (43, 95)	



SRA111



RA260

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

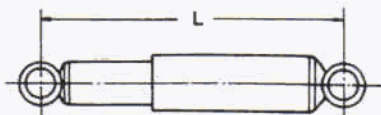
General Specifications (Coil Spring Type)

COIL SPRING AND STABILIZER BAR

Model		Station Wagon		Hardtop	Station Wagon	Hardtop
		DX	STD		With high-roof	
Item						
Coil spring						
Wire diameter	mm (in)	15.2 - 17.2 (0.598 - 0.677)	15.2 - 17.1 (0.598 - 0.673)	15.0 - 16.2 (0.591 - 0.638)	15.1 - 17.4 (0.594 - 0.685)	15.7 - 17.2 (0.618 - 0.677)
Coil inside diameter	mm (in)	140 (5.51)				
Free length	mm (in)	454 (17.87)	444 (17.48)	450.5 (17.74)	443.5 (17.46)	429.5 (16.91)
Spring constant	N/mm (kg/mm, lb/in)	30.4 - 53.9 (3.1 - 5.5, 174 - 308)	30.5 - 53.9 (3.11 - 5.5, 174.2 - 308.0)	26.2 - 46.0 (2.67 - 4.69, 149.5 - 262.6)	32.6 - 54.9 (3.32 - 5.6, 185.9 - 313.6)	30.4 - 55.9 (3.1 - 5.7, 174 - 319)
Identification color		Yellow x 1 White x 1	Yellow x 1	Blue x 1	Pink x 1	Yellow green x 1
Stabilizer bar diameter	mm (in)	17 (0.67)				

SHOCK ABSORBER

Suspension type	5-link
Shock absorber type	Non-adjustable
Stroke mm (in)	234 (9.21)
Maximum length "L" mm (in)	619 (24.37)
Damping force [at 0.3 m (1.0 ft)/sec.] N (kg, lb)	
Expansion	1,550 (158, 348)
Compression	618 (63, 139)



RA260

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

Inspection and Adjustment

SEMI-FLOATING TYPE (Pickup)

Unit: mm (in)

Total end play	0.02 - 0.15 (0.0008 - 0.0059)	
Rear axle case end shim	Thickness	Part No.
	0.10 (0.0039)	43036-C8000
	0.20 (0.0079)	43089-T0400
	0.25 (0.0098)	43088-T0400
	0.50 (0.0197)	43087-T0400
	1.00 (0.0394)	43086-T0400

FULL-FLOATING TYPE (Pickup)

Wheel bearing lock nut Tightening torque N·m (kg·m, ft·lb)	167 - 196 (17 - 20, 123 - 145)
Retightening torque after loosening wheel bearing lock nut N·m (kg·m, ft·lb)	3 - 5 (0.3 - 0.5, 2.2 - 3.6)
Axial end play mm (in)	0 (0)
Starting force at wheel hub bolt N (kg, lb)	A
Starting force at wheel hub bolt N (kg, lb)	B
Wheel bearing preload at wheel hub bolt B - A N (kg, lb)	0 - 12.55 (0 - 1.28, 0 - 2.82)

STABILIZER RELEASE DEVICE

Cable free play (at adjuster) mm (in)	0.2 - 0.7 (0.008 - 0.028)
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